

Groundwater Monitoring and Progress Report Second Quarter 2004

Sierra Pacific Industries Arcata Division Sawmill Arcata, California

Prepared for:

Sierra Pacific Industries

July 27, 2004

Project No. 9329, Task 22

Geomatrix Consultants

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July 27, 2004 Project 9329, Task 22

Executive Officer California Regional Water Quality Control Board North Coast Region 5550 Skylane Boulevard, Suite A Santa Rosa, California 95403

Attention: Dean Prat

Subject: Groundwater Monitoring and Progress Report Second Quarter 2004 Sierra Pacific Industries Arcata Division Sawmill Arcata, California

Dear Mr. Prat:

As requested by Sierra Pacific Industries, we have enclosed a copy of the subject report.

Sincerely yours, GEOMATRIX CONSULTANTS, INC.

Ross A. Seenso

Ross Steenson, C.HG. Senior Hydrogeologist

Eduran level

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

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Enclosure

cc: Bob Ellery, Sierra Pacific Industries (with enclosure)
 Gordie Amos, Sierra Pacific Industries (with enclosure)
 Fred Evenson, Law Offices of Frederic Evenson (with enclosure)
 Jim Lamport, Ecological Rights Foundation (with enclosure)



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Prepared for:

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Prepared by:

Geomatrix Consultants, Inc. 2101 Webster Street, 12th Floor Oakland, California 94612 (510) 663-4100

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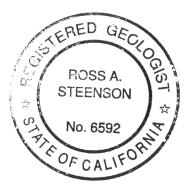
Geomatrix Consultants



PROFESSIONAL CERTIFICATION

GROUNDWATER MONITORING AND PROGRESS REPORT SECOND QUARTER 2004 Sierra Pacific Industries Arcata Division Sawmill Arcata, California

July 27, 2004 Project No. 9329.000, Task 22



This report was prepared by Geomatrix Consultants, Inc., under the professional supervision of Ross A. Steenson. The findings, recommendations, specifications and/or professional opinions presented in this report were prepared in accordance with generally accepted professional hydrogeologic practice, and within the scope of the project. There is no other warranty, either express or implied.

Ross A. Steenson, C.HG. Senior Hydrogeologist



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GROUNDWATER MONITORING AND PROGRESS REPORT SECOND QUARTER 2004

Sierra Pacific Industries Arcata Division Sawmill Arcata, California

1.0 INTRODUCTION

This report presents the methods and results of groundwater monitoring and pilot study activities performed at the Sierra Pacific Industries (SPI) Arcata Division Sawmill, located in Arcata, California (the site, Figure 1) during the second calendar quarter 2004. The quarterly groundwater monitoring activities were performed in accordance with Monitoring and Reporting Program (MRP) No. R1-2003-0127, issued by the California Regional Water Quality Control Board, North Coast Region (RWQCB) on November 13, 2003. The pilot study activities were performed in accordance with the *Pilot Study Work Plan for Implementation of Proposed Remedial Action* (Geomatrix, 2004b). The pilot study work plan was approved by RWQCB staff in a letter dated June 1, 2004.

Geomatrix Consultants, Inc. (Geomatrix) has prepared this report on behalf of SPI. This report is organized as follows:

- Background, including a discussion of site history, subsurface lithology, and hydrogeology, is presented in Section 2.0.
- Second Quarter 2004 Groundwater Monitoring Report methods and results are presented in Section 3.0.
- Progress Report on Pilot Study Activities is presented in Section 4.0.
- Future Schedule of the planned upcoming monitoring and pilot study activities is presented in Section 5.0
- References used in preparation of this report are listed in Section 6.0.



2.0 SITE BACKGROUND

This section provides background information regarding the site setting and history and discusses subsurface conditions at the site, including lithology and hydrogeology. Subsurface lithologic and hydrogeologic conditions at the site were previously investigated and described by EnviroNet (EnviroNet, 2002a).

2.1 HISTORY

The approximately 68-acre site is located on the Samoa Peninsula, inland from the northern shoreline of Humboldt Bay and approximately 4 miles west of the town of Arcata, California. The site is bounded to the north and east by the Mad River Slough, to the northwest by an old railroad grade, and to the south by New Navy Base Road and mud flats of Humboldt Bay (Figure 1).

The site is currently an active sawmill; features are shown on Figure 2. The sawmill has operated at the site since approximately 1950. Prior to construction of the mill facilities, the site consisted of undeveloped sand dunes and mud flats. During construction of mill facilities in the 1950s and 1960s, portions of the Mad River Slough on the eastern, northern, and southern sides of the site were filled. The current mill facility consists of an administrative building, a main sawmill building, numerous wood-processing buildings, log storage areas, milled lumber storage areas, and loading/unloading areas. A 140-foot-deep water supply well (Feature 48 on Figure 2) provides water for log sprinkling. An older, shallow water supply well is located adjacent to the 140-foot well, but has not been used since it began to produce sand.

Wood surface protection activities historically conducted at the site included the use of an antistain solution containing chlorinated phenols, including pentachlorophenol (PCP) and tetrachlorophenol, to control sap stain and mold on a small amount of milled lumber. The antistain solution was applied in an aboveground dip tank located in the middle of the former green chain, which was located immediately south of the eastern end of the current sorter building (Feature 49 on Figure 2, and shown on Figure 3). Use of the solution containing chlorinated phenols in the former green chain area of the site reportedly commenced in the early to mid-1960s and was discontinued in 1985 (EnviroNet, 2002b). At the direction of the RWQCB, SPI stopped purchasing anti-stain solution containing chlorinated phenols in 1985 and commenced a process of relocating the remaining solution containing chlorinated phenols to a new dip tank



facility for recycling (MFG, 2003). Due to the difficulty of disposing of the old solution containing chlorinated phenols, the remaining solution from the old dip tank was mixed with a new anti-stain solution that did not contain chlorinated phenols at the new dip tank facility (Feature 21 on Figure 2). Recycling of the solution containing chlorinated phenols in the new dip tank continued until 1987, at which time the drip basin adjacent to the old dip tank was cleaned out, filled with sand, and capped with 3 to 4 inches of concrete (MFG, 2003). The new dip tank has been cleaned three times since 1987.

The potential effects of wood surface protection activities on soil and groundwater have been investigated to depths of approximately 20 feet below ground surface (bgs). In 2002, investigation activities included the installation of 19 monitoring wells at the site: 15 monitoring wells (MW-1 through MW-12, MW-14, MW-17, and MW-18) were constructed to monitor shallow groundwater between depths of approximately 2 and 8 feet bgs, and four monitoring wells (MW-13D, MW-15D, MW-16D, and MW-19D) were constructed to monitor deeper groundwater between depths of approximately 15 and 20 feet bgs (EnviroNet, 2003b). Two additional monitoring wells (MW-20 and MW-21) were installed in January and February of 2004 to monitor shallow groundwater (Geomatrix, 2004a). Monitoring well construction details are included in Table 1.

2.2 LITHOLOGY

The site is located adjacent to the Mad River Slough near the northern shoreline of Humboldt Bay. The eastern, northern, and southern portions of the site were filled in the 1950s and 1960s.

Based on observations made during investigation activities at the site, subsurface lithology within the shallow zone (less than 8 feet bgs) is predominantly fine- to medium-grained sand of apparent sand dune origin. Wood and fill material was locally observed in this shallow zone, during activities such as the installation of monitoring wells MW-13D and MW-15D. Soil beneath the fine- to medium-grained sand consisted of more sand and locally of fine-grained material, classified as "bay mud." The fine-grained material was encountered during the installation of monitoring wells MW-3, MW-10, MW-15D, MW-16D, and MW-17 at depths of approximately 6 to 8 feet bgs and during the installation of monitoring well MW-15 at a depth of approximately 15 feet bgs. Soil described during the installation of a water supply well at the site (Feature 48 on Figure 2) suggests that subsurface soil between the ground surface and 140 feet bgs is predominately composed of sand (EnviroNet, 2001).



2.3 HYDROGEOLOGY

The groundwater surface measured in 21 site monitoring wells has ranged between approximately 0.5 and 5.5 feet bgs in the 17 shallow wells (i.e., screened from 2 to 8 feet bgs) and between approximately 4 and 6 feet bgs in the four deep wells (i.e., screened from 15 to 20 feet bgs). In the eastern portion of the site, groundwater flow generally is to the east, toward the Mad River Slough (MFG and Geomatrix, 2003). In the southwestern portion of the site, groundwater likely flows to the south-southeast, toward Humboldt Bay (MFG and Geomatrix, 2003).

Tidal fluctuations in the Mad River Slough and nearby Humboldt Bay influence groundwater levels at the site in the vicinity of the slough. A 2002 tidal influence study conducted at the site by EnviroNet suggested that tidal effects become negligible at distances greater than 100 feet from the slough shore (EnviroNet, 2003b).

3.0 GROUNDWATER MONITORING REPORT

This section presents field and laboratory methods and results of groundwater monitoring activities conducted during this calendar quarter.

3.1 FIELD METHODS

Depth to water was measured on May 17, 2004, in all site monitoring wells (MW-1 through MW-21) and at a monitoring point in the Mad River Slough using an Envirotech Ltd., Waterline Model 150 meter (Table 2). Water levels were measured before conducting groundwater sampling activities. Monitoring wells were gauged in sequence, generally from lowest expected concentrations of constituents of concern (first) to highest expected concentrations (last), based on laboratory analytical results from the previous sampling event. Field personnel cleaned the meter used to measure the groundwater surface before using it at each location. The equipment was washed in a Liquinox[®] detergent solution and then rinsed three consecutive times with distilled water.

Twenty-one monitoring wells (MW-1 through MW-21) were purged and sampled on May 17 and 18, 2004, in accordance with the site MRP. Field personnel used dedicated, disposable Teflon[®] bailers to purge groundwater and remove standing water in the well casing, except for monitoring well MW-21, where a peristaltic pump and disposable tubing were used due to the small diameter of this well casing. Field personnel measured and recorded readings of temperature, pH, and specific conductance on field sampling records during groundwater



purging activities. Purging activities stopped when a minimum of three well casing volumes of water had been removed, or three pore-tube volumes at monitoring well MW-21, and water quality parameters stabilized to within approximately 10 percent of specific conductance, 0.05 pH unit for pH, and 1 degree Celsius for temperature. Copies of the field records for groundwater monitoring and sampling activities are included in Appendix A.

After purging, groundwater within each well was allowed to recover to approximately 80 percent or more of the height of the initial water column that was measured prior to purging. Groundwater was sampled after the groundwater recovered. Groundwater samples were collected upon recharge, if applicable, using the dedicated Teflon[®] bailers and, for monitoring well MW-21, the peristaltic pump and new tubing. A field sample of groundwater was monitored for temperature, pH, specific conductance, and total dissolved solids (TDS) just prior to collecting the groundwater sample, to record water quality parameters of the groundwater being sampled. These field parameter measurements are summarized in Table 3; laboratory analytical results for TDS also are shown in this table.

Groundwater collected from each of the twenty-one monitoring wells was placed in two 125milliliter glass vials that were sealed with Teflon[®]-lined screw caps and a 1-quart plastic bottle that was sealed with a plastic screw cap. After filling, the vials and bottles were labeled and placed in an ice-cooled, insulated chest for transport to the laboratory for analysis. Chain-ofcustody records were completed for the samples and accompanied the samples until received by the laboratory. Copies of the chain-of-custody records for the groundwater samples are included in Appendix B.

An additional groundwater sample was collected from monitoring well MW-21 and submitted to the laboratory as a blind duplicate sample, labeled MW-A. This sample was placed in two additional 125-milliliter glass vials sealed with Teflon[®]-lined screw caps and sent to the laboratory as described above.

3.2 LABORATORY METHODS

Groundwater samples collected from monitoring wells MW-1 through MW-21 were analyzed at Alpha Analytical Laboratories, Inc. (Alpha), of Ukiah, California, an analytical laboratory certified by the California Department of Health Services. Analyses included the following:



- Total dissolved solids (TDS) [Environmental Protection Agency (EPA) Method 160.1]
- Chlorinated phenols (consisting of PCP, three tetrachlorophenols, and one trichlorophenol) [Canadian Pulp Method]

Results of laboratory analyses for these constituents are discussed in the following section.

3.3 GROUNDWATER MONITORING AND SAMPLING RESULTS

Monitoring and sampling results from site wells include data obtained from groundwater elevation measurements, field measurements of water quality parameters, and laboratory analysis of groundwater samples. Groundwater elevation data provide information on subsurface hydraulic conditions, discussed below as occurrence and movement of groundwater. Groundwater quality is evaluated based on laboratory analysis and field measurements of TDS and on laboratory analysis of chlorinated phenols. The results are presented below.

3.3.1 Occurrence and Movement of Groundwater

The groundwater surface measured in shallow monitoring wells at the site (i.e., screened from approximately 2 to 8 feet bgs) ranged from 0.38 to 5.43 feet below the measuring point with associated groundwater elevations ranging from 4.18 to 10.00 feet above mean sea level (msl), relative to the North American Vertical Datum of 1988. Groundwater elevation data from these monitoring wells indicate that the direction of shallow groundwater flow is generally to the east (Figure 4). The magnitude of the lateral hydraulic gradient ranges from approximately 0.005 feet/foot in the former green chain vicinity to up to approximately 0.05 feet/foot beneath the sawmill and maintenance buildings. Groundwater elevations within 100 feet of the Mad River Slough shoreline are subject to tidal fluctuations (EnviroNet, 2003b) and as such, were not used to evaluate the flow direction or gradient of shallow groundwater.

The groundwater surface measured in deep monitoring wells at the site (i.e., screened from approximately 15 to 20 feet bgs) ranged from 4.13 to 5.77 feet below the measuring point with associated groundwater elevations ranging from 5.42 to 6.43 feet above msl, relative to the North American Vertical Datum of 1988. Groundwater elevation data from these monitoring wells indicate that the direction of deep groundwater flow is generally to the east (Figure 5) at a lateral hydraulic gradient from approximately 0.005 to 0.008 feet/foot.



3.3.2 Groundwater Analytical Results

This section discusses results of laboratory analyses for TDS and chlorinated phenols in samples collected from the shallow and deep groundwater monitoring wells at the site.

Laboratory analytical reports and chain-of-custody records are included in Appendix B. Both field-measured and laboratory analyses TDS results are presented on Table 3. The results for the chlorinated phenol analyses (consisting of PCP, three tetrachlorophenols [2,3,5,6-tetrachlorophenol, 2,3,4,6-tetrachlorophenol, and 2,3,4,5-tetrachlorophenol] and one trichlorophenol [2,4,6-trichlorophenol]) are presented on Table 4. PCP results also are illustrated on Figure 6 (shallow groundwater) and Figure 7 (deep groundwater).

3.3.2.1 Shallow Groundwater

The TDS results for the laboratory analyses ranged from 360 to 1,800 milligrams per liter (mg/L). The TDS results for the field measurements ranged from 438 to 2,046 mg/L. The field-measured TDS results are higher than laboratory measurements by 26 to 499 mg/L per sample.

Trichlorophenol was not detected in any groundwater samples. PCP and tetrachlorophenols were detected in groundwater samples from monitoring wells MW-7, MW-20, and MW-21 (Table 4; PCP also shown on Figure 6). Concentrations of these constituents were the highest in groundwater samples collected from monitoring well MW-7 and lowest in samples collected at MW-20. The detected concentration of PCP were 25,000 micrograms per liter (μ g/L) at MW-7, 1,900 and 670 μ g/L at MW-21 (primary sample/blind duplicate sample); and 3.6 μ g/L at MW-20.

3.3.2.2 Deep Groundwater

TDS measured in deep groundwater samples by the laboratory ranged from 430 to 2,800 mg/L. The TDS results for the field measurements ranged from 562 to 3,457 mg/L. The field-measured TDS results are higher than laboratory measurements by 88 to 657 mg/L per sample.

No chlorinated phenols were detected (Table 4 and Figure 7).

3.4 LABORATORY DATA QUALITY REVIEW

Geomatrix reviewed the quality of laboratory data generated for the quarterly groundwater sampling as discussed in Appendix C. Based on the results of the quality assurance and quality



control procedures, the data from the quarterly groundwater sampling appear to be representative.

3.5 WASTEWATER DISPOSAL

Wastewater was generated from purging groundwater during sampling activities and from cleaning water-level measurement equipment while monitoring groundwater elevations. The purge water and equipment wash water were placed in three steel, 55-gallon drums and labeled. As the drums are filled, SPI arranges for the drums to be disposed by Asbury Environmental Services in accordance with applicable regulations.

During this calendar quarter, Asbury Environmental Services disposed of two drums of purge water. These drums were disposed at the Demenno/Kerdoon facility in Compton, California. A copy of the manifest for these two drums is included in Appendix D.

4.0 PROGRESS REPORT ON PILOT STUDY ACTIVITIES

This section presents a summary of activities performed during the calendar quarter in accordance with the *Pilot Study Work Plan for Implementation of Proposed Remedial Action* (Geomatrix, 2004b). The objectives of the Pilot Study are to:

- Demonstrate that in situ destruction of contaminants is occurring in the subsurface through natural attenuation processes
- Demonstrate that discharges of wood surface protection chemicals to surface water have been abated
- Implement risk management measures to protect current and future personnel working on site from participating in activities that would result in exposure to unacceptable risk

During the calendar quarter, surface water and debris sampling were performed to evaluate whether discharges of wood surface protection chemicals to surface water have been abated.

4.1 SURFACE WATER SAMPLING AND RESULTS

Three surface water sampling events were performed during the calendar quarter at storm water monitoring locations that are identified in the site Storm Water Pollution Prevention Plan (SWPPP; EnviroNet, 2003a). Non-storm surface water was sampled during the first sampling event (April 14, 2004), and storm water was sampled during the last two sampling events (April 20, 2004 and May 27, 2004).



4.1.1 Surface Water Sampling Methods

Field personnel collected grab samples at the SWPPP monitoring locations and additional locations by dipping laboratory-supplied containers into the water. Grab samples were labeled and placed in an ice-cooled, insulated chest for transport to the laboratory for analysis. Chain-of-custody records were completed for the samples and accompanied the samples until received by the laboratory.

4.1.2 Surface Water Sampling – April 14, 2004

During a site inspection on April 6, 2004, RWQCB personnel collected samples at location SL-1, SL-2 and SL-4 for chlorinated phenol analysis. Pentachlorophenol was detected in the sample from SL-1 at a concentration of $0.42 \mu g/L$. Monitoring location SL-1 is located in the drainage area of Drainage Ditch #1.

On April 14, 2004, sampling at monitoring location SL-1 was performed to confirm the April 6, 2004, sample results. There had been no rainfall events since the RWQCB sampling on April 6, 2004. Pentachlorophenol was detected in the sample collected at monitoring location SL-1 at 0.7 μ g/L (Table 5). Because the presence of pentachlorophenol result was confirmed, it was determined that additional investigation would be necessary. This additional investigation consisted of debris sampling in the drainage area for Drainage Ditch #1. This work is reported in Section 4.2 of this report.

4.1.3 Surface Water Sampling – April 20, 2004

During a storm event on April 20, 2004, grab samples were collected at monitoring locations SL-2 and SL-3 to evaluate the presence of chlorinated phenols and petroleum hydrocarbons, respectively. Additional grab samples were collected at approximately 35- to 40-minute intervals for two hours so that the laboratories could create a time-weighted composite sample for analysis of the same parameters.

For the samples from monitoring location SL-2, no chlorinated phenols were detected in either the grab sample or the time-weighted composite sample (Table 5).

The samples from monitoring location SL-3 were collected as a response to the TPH detections reported in the October 8, 2003, samples to assess whether there are interferences contributing to the TPH analyses. The grab samples were analyzed for TPHd and TPHmo both with and



without silica gel cleanup. The time-weighted composite sample was analyzed for TPHd and TPHmo without silica gel cleanup.

For the TPHd analysis, the non-silica gel result was $8,700 \ \mu g/L$ and the TPHd with silica gel result was $1,300 \ \mu g/L$. These results indicate that polar (non-petroleum) constituents significantly contributed to the quantitation of TPHd.

For the TPHmo analysis, the non-silica gel result was 22,000 μ g/L, and the TPHmo with silica gel result was 7,300 μ g/L. These results indicate that polar (non-petroleum) constituents significantly contributed to the quantitation of TPHmo.

The results for the time-weighted composite were 9,500 μ g/L TPHd and 24,000 μ g/L TPHmo. These data suggest that the constituents contributing to the quantitation of TPH in the sample did not vary significantly during the two-hour sampling period.

4.1.4 Storm Event Sampling – May 27, 2004

Sampling was performed on May 27, 2004, at monitoring locations SL-1 through SL-4, where there was storm water discharge. Samples were not collected at monitoring locations SL-5, SL-6, and ML-2 because there was no storm water discharge. No flow was observed at location ML-1.

The results from the sampling are presented in Table 5. Metals (arsenic, copper, zinc, lead, and nickel) were detected at low concentrations in all four samples (monitoring locations SL-1 through SL-4). Chlorinated phenols were not detected in samples from monitoring locations SL-1 through SL-4.

The measured pH values ranged from 5.61 to 6.19. Specific electrical conductance ranged from 160 to 1,300 micro-mhos per centimeter. Chemical oxygen demand ranged from 230 to 2,100 mg/L. Total suspended solids ranged from 100 to 2,900 mg/L. Tannins and lignins were detected at concentrations ranging from 6.6 to 240 mg/L.

TPHg was detected in three samples at concentrations of 340 μ g/L (SL-2), 190 μ g/L (SL-3), and 85 μ g/L (SL-4). TPHg was not detected in the sample from monitoring location SL-1. TPHd was detected in four samples at concentrations of to 92 μ g/L (SL-1), 280 μ g/L (SL-2), 2,300 μ g/L (SL-3), and 720 μ g/L (SL-4). TPHmo was detected in four samples at concentrations of 550 μ g/L (SL-1), 1,100 μ g/L (SL-2), 6,000 μ g/L (SL-3), and 3,200 μ g/L (SL-1)



4). As discussed in Section 4.1.3 of this report, it is likely that polar (non-petroleum) constituents significantly contributed to the quantitation of TPHd and TPHmo in these samples.

Oil and grease was not detected in the samples collected from monitoring locations SL-1 through SL-4.

Dioxins and furans were detected in the three samples analyzed for dioxins and furans (monitoring locations SL-2, SL-3, and SL-4). Concentrations of dioxins and furans, which refers to a complex mixture of various dioxin and furan congeners, are generally summarized in terms of their 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) toxic equivalency (TEQ) based on toxic equivalency factors adopted by the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (Cal-EPA, 2003). Dioxins and furans were detected at 25.5 pg/L TEQ, 30.5 pg/L TEQ, and 45.9 pg/L TEQ in the storm water samples from monitoring locations SL 2, SL 3, and SL 4, respectively (Table 6). These samples were prepared by Frontier using a 0.7 micron filter (EPA Method 1613 specifies use of a 1.0-micron filter). The use of a smaller pore-size filter than specified in this method likely creates a higher bias in the analytical results.

4.2 DEBRIS SAMPLING AND RESULTS

In response to the detection of pentachlorophenol in the surface water samples from Drainage Ditch #1 that were collected on April 6 and April 14, 2004, additional investigation was performed to identify the potential source of the detection. On June 10, 2004, eight debris (soil and sawdust) samples were collected within the drainage area for Drainage Ditch #1 at the locations illustrated on Figure 8.

To further assess the detection of pentachlorophenol at Drainage Ditch #2 on February 6, 2004 (Geomatrix, 2004c), seven debris samples (Figure 8) also were collected within the drainage area for Drainage Ditch #2.

4.2.1 Field Sampling Methods

Debris samples were collected by field personnel by scooping debris (soil and sawdust) into sample containers. Samples were labeled and placed in an ice-cooled, insulated chest for transport to the laboratory for analysis. Chain-of-custody records were completed for the samples and accompanied the samples until received by the laboratory. Copies of the chain-of-custody records for the surface water and debris samples are included in Appendix E.



4.2.2 Laboratory Methods

Debris samples collected were analyzed at Alpha for chlorinated phenols (consisting of PCP, three tetrachlorophenols, and one trichlorophenol) [Canadian Pulp Method].

4.2.3 Laboratory Analytical Results

Fifteen debris (soil and sawdust) samples were collected on June 10, 2004, in the drainage areas for Drainage Ditch #1 (eight samples) and Drainage Ditch #2 (seven samples). No chlorinated phenols were detected in any of the debris samples collected.

4.3 LABORATORY DATA QUALITY REVIEW

Geomatrix reviewed the quality of laboratory data generated under the pilot study as discussed in Appendix C. Based on the results of the quality assurance and quality control procedures, analytical results for samples collected as part of the pilot study program appear to be representative.

5.0 FUTURE SCHEDULE

The next groundwater monitoring and sampling event for the MRP is scheduled to be performed in August 2004. In conjunction with that event, borehole dilution testing for the pilot study will take place at the same time.



6.0 **REFERENCES**

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TABLE 1 MONITORING WELL CONSTRUCTION DETAILS 1



Sierra Pacific Industries Arcata Division Sawmill Arcata, California

		Total Boring	Total Well	Well			Ground Level	Top of Casing	Screened	Screen Slot	Filter Pack	Bentonite Seal	Surface Seal
Well	Date	Depth	Depth	Diameter			Elevation ²	Elevation ²	Interval	Size	Interval	Interval	Interval
No.	Installed	(ft bgs)	(ft bgs)	(inches)	Latitude ²	Longitude ²	(ft msl)	(ft msl)	(ft bgs)	(inches)	(ft bgs)	(ft bgs)	(ft bgs)
Shallow Wells	~			1				1					
MW-1	5-Mar-02	8	8	2	40.8661595	124.1521395	10.12	9.69	2.0 - 8.0	0.01	1.5 - 8.0	1.0 - 1.5	0 - 1.0
MW-2	5-Mar-02	9	8	2	40.8661024	124.1525276	10.41	9.61	2.0 - 8.0	0.01	1.5 - 9.0	1.0 - 1.5	0 - 1.0
MW-3	5-Mar-02	8.5	8	2	40.8662689	124.1530739	11.67	11.22	2.0 - 8.0	0.01	1.5 - 8.5	1.0 - 1.5	0 - 1.0
MW-4	5-Mar-02	8	8	2	40.8662303	124.1533599	11.17	10.74	2.0 - 8.0	0.01	1.5 - 8.0	1.0 - 1.5	0 - 1.0
MW-5	7-Mar-02	8	8	2	40.8660945	124.1536734	11.26	10.74	2.0 - 8.0	0.01	1.5 - 8.0	1.0 - 1.5	0 - 1.0
MW-6	7-Mar-02	8	8	2	40.8660710	124.1531061	10.13	9.83	2.0 - 8.0	0.01	1.5 - 8.0	1.0 - 1.5	0 - 1.0
MW-7	7-Mar-02	8	8	2	40.8659980	124.1531187	10.09	9.74	2.0 - 8.0	0.01	1.5 - 8.0	1.0 - 1.5	0 - 1.0
MW-8	8-Mar-02	8	8	2	40.8657492	124.1535343	10.55	10.33	2.0 - 8.0	0.01	1.5 - 8.0	1.0 - 1.5	0 - 1.0
MW-9	8-Mar-02	8	8	2	40.8657520	124.1532218	10.36	9.91	2.0 - 8.0	0.01	1.5 - 8.0	1.0 - 1.5	0 - 1.0
MW-10	11-Nov-02	9.5	8	2	40.8656910	124.1530670	10.08	9.85	2.0 - 8.0	0.01	1.5 – 9.5	1.0 - 1.5	0 - 1.0
MW-11	12-Nov-02	8.5	8	2	40.8655740	124.1533817	10.51	10.28	2.0 - 8.0	0.01	1.5 - 8.5	1.0 - 1.5	0 - 1.0
MW-12	12-Nov-02	9.5	8	2	40.8656625	124.1537231	11.01	10.76	2.0 - 8.0	0.01	1.5 – 9.5	1.0 - 1.5	0 - 1.0
MW-14	13-Nov-02	8	8	2	40.8657622	124.1523580	9.60	9.15	2.0 - 8.0	0.01	1.5 - 8.0	1.0 - 1.5	0 - 1.0
MW-17	14-Nov-02	9	8	2	40.8656690	124.1526420	9.46	9.16	2.0 - 8.0	0.01	1.5 - 9.0	1.0 - 1.5	0 - 1.0
MW-18	13-Nov-02	9.5	8	4	40.8657448	124.1531649	10.12	9.92	2.0 - 8.0	0.01	1.5 – 9.5	1.0 - 1.5	0 - 1.0
MW-20 ⁴	23-Jan-03	8	7	4	40.8658416	124.1532563	10.92	11.87	3.2 - 6.8	0.01	2.0 - 7.0	1.0 - 2.0	0 - 1.0
MW-21	12-Feb-03	8.3	8.3	0.75	40.8660161	124.1530089	10.11	12.89	2.1 - 8.1	0.01	1.5 - 8.3	1.0 - 1.5	0 - 1.0
Deep Wells													
MW-13D	12-Nov-02	21	20	2	40.8660809	124.1525231	10.26	9.96	15.0 - 20.0	0.01	13.5 - 21.0	12.0 - 13.5	0-12.0
MW-15D	13-Nov-02	21	20	2	40.8662658	124.1528255	11.59	11.19	15.0 - 20.0	0.01	14.0 - 21.0	12.0 - 14.0	0-12.0
MW-16D	14-Nov-02	21.5	20	2	40.8655571	124.1530363	10.13	9.83	15.0 - 20.0	0.01	14.0 - 21.5	12.0 - 14.0	0-12.0
MW-19D	14-Nov-02	21.5	20	2	40.8662419	124.1532744	11.21	11.06	15.0 - 20.0	0.01	14.0 - 21.0	12.0 - 14.0	0-12.0

Notes:

 Construction details for wells MW-1 through MW-9 were obtained from Report on Recent Hydrogeologic Investigations at Sierra-Pacific Industries, Arcata Division Sawmill, dated April 19, 200/ prepared by Environet Consulting. Construction details for wells MW-10 through MW-19D were obtained from Results of the Remedial Investigation for Sierra Pacific Industries – Arcata Divisior Sawmills, Arcata, California, dated January 30, 2003, prepared by EnviroNet Consulting. Installation of wells MW-20 and MW-21 documented in this report

2. Monitoring wells were resurveyed by Omsberg Suveyors and Company of Eureka California on February 13, 2003; latitude and longitude were surveyed relative to North American Datum (NAD) of 1983 and elevations were surveyed relative to National Geodetic Vertical Datum (NGVD) of 1929. Elevations shown have been adjusted by 3.35 feet and presented as North American Vertical Datum (NAVD) of 1988 elevations.

3. Surface seal interval consists of the concrete surface completion and a neat cement sanitary seal, if applicable.

4. Well installed on a raised concrete pad of the former green chain. Depth measurements (ft bgs) are relative to the local ground surface of the concrete pad, which is approximately 1 foot above the grade of the surrounding ground surface.

Abbreviations:

ft bgs = feet below ground surface

ft msl = feet mean sea level



SUMMARY OF WATER LEVEL MEASUREMENTS

Wall Na	Measurement ¹	MP Elevation ² (ft NAVD 88)	Depth to Water	Water Level Elevation
Well No.	Date	(III INA V D 88)	(ft bMP)	(ft NAVD 88)
Shallow Wells	1434 00	0.54	5.01	4.05
MW-1	14-Mar-02	9.56	5.31	4.25
	18-Jul-02	9.56	4.52	5.04
	16-Sep-02	9.56	4.37	5.19
	02-Dec-02	9.56	4.18	5.38
	18-Mar-03	9.56	4.09	5.47
	31-Mar-03	9.56	4.48	5.08
	21-May-03	9.56	4.66	4.90
	27-Aug-03	9.56	4.55	5.01
	03-Nov-03	9.56	4.20	5.36
	23-Mar-04	9.69	4.47	5.22
	17-May-04	9.69	4.57	5.12
MW-2	14-Mar-02	9.49	4.52	4.97
	18-Jul-02	9.49	5.43	4.06
	16-Sep-02	9.49	5.28	4.21
	02-Dec-02	9.49	5.17	4.32
	18-Mar-03	9.49	5.16	4.33
	31-Mar-03	9.49	5.43	4.06
	21-May-03	9.49	5.45	4.04
	27-Aug-03	9.49	5.09	4.40
	03-Nov-03	9.49	5.17	4.32
	23-Mar-04	9.61	5.31	4.30
	17-May-04	9.61	5.43	4.18
MW-3	14-Mar-02	11.14	2.19	8.95
	18-Jul-02	11.14	2.79	8.35
	16-Sep-02	11.14	2.96	8.18
	02-Dec-02	11.14	2.75	8.39
	18-Mar-03	11.14	2.30	8.84
	31-Mar-03	11.14	1.96	9.18
	21-May-03	11.14	2.19	8.95
	27-Aug-03	11.14	2.08	9.06
	03-Nov-03	11.14	2.35	8.79
	23-Mar-04	11.22	2.24	8.98
	17-May-04	11.22	2.25	8.97
MW-4	14-Mar-02	10.71	1.52	9.19
	18-Jul-02	10.71	1.84	8.87
	16-Sep-02	10.71	2.04	8.67
	02-Dec-02	10.71	1.80	8.91
	18-Mar-03	10.71	1.52	9.19
	31-Mar-03	10.71	0.93	9.78
	21-May-03	10.71	1.18	9.53
	27-Aug-03	10.71	1.36	9.35
	03-Nov-03	10.71	1.64	9.07
	23-Mar-04	10.74	1.17	9.57
	17-May-04	10.74	1.17	9.57





SUMMARY OF WATER LEVEL MEASUREMENTS

Well No.	Measurement ¹ Date	MP Elevation ² (ft NAVD 88)	Depth to Water (ft bMP)	Water Level Elevation (ft NAVD 88)
MW-5	14-Mar-02	10.69	0.95	9.74
	18-Jul-02	10.69	1.26	9.43
	16-Sep-02	10.69	1.35	9.34
	02-Dec-02	10.69	1.23	9.46
	18-Mar-03	10.69	0.87	9.82
	31-Mar-03	10.69	0.63	10.06
	21-May-03	10.69	0.69	10.00
	27-Aug-03	10.69	0.84	9.85
	03-Nov-03	10.69	0.92	9.77
	23-Mar-04	10.74	0.62	10.12
	17-May-04	10.74	0.78	9.96
MW-6	14-Mar-02	9.77	0.85	8.92
	18-Jul-02	9.77	1.27	8.50
	16-Sep-02	9.77	1.51	8.26
	02-Dec-02	9.77	1.30	8.47
	18-Mar-03	9.77	0.89	8.88
	31-Mar-03	9.77	0.37	9.40
	21-May-03	9.77	0.60	9.17
	27-Aug-03	9.77	0.70	9.07
	03-Nov-03	9.77	1.21	8.56
	23-Mar-04	9.83	0.69	9.14
	17-May-04	9.83	0.78	9.05
MW-7	14-Mar-02	9.68	0.73	8.95
	18-Jul-02	9.68	1.15	8.53
	16-Sep-02	9.68	1.37	8.31
	02-Dec-02	9.68	1.19	8.49
	18-Mar-03	9.68	0.75	8.93
	31-Mar-03	9.68	0.26	9.42
	21-May-03	9.68	0.45	9.23
	27-Aug-03	9.68	0.61	9.07
	03-Nov-03	9.68	1.13	8.55
	23-Mar-04	9.74	0.44	9.30
	17-May-04	9.74	0.50	9.24
MW-8	14-Mar-02	10.30	0.92	9.38
	18-Jul-02	10.30	1.24	9.06
	16-Sep-02	10.30	1.52	8.78
	02-Dec-02	10.30	1.34	8.96
	18-Mar-03	10.30	0.95	9.35
	31-Mar-03	10.30	0.29	10.01
	21-May-03	10.30	0.49	9.81
	27-Aug-03	10.30	0.91	9.39
	03-Nov-03	10.30	1.36	8.94
	23-Mar-04	10.33	0.57	9.76
	17-May-04	10.33	0.54	9.79





SUMMARY OF WATER LEVEL MEASUREMENTS

Well No.	Measurement ¹ Date	MP Elevation ² (ft NAVD 88)	Depth to Water (ft bMP)	Water Level Elevation (ft NAVD 88)
MW-9	14-Mar-02	9.86	0.71	9.15
	18-Jul-02	9.86	1.13	8.73
	16-Sep-02	9.86	1.40	8.46
	02-Dec-02	9.86	1.18	8.68
	18-Mar-03	9.86	0.79	9.07
	31-Mar-03	9.86	0.11	9.75
	21-May-03	9.86	0.30	9.56
	27-Aug-03	9.86	0.81	9.05
	03-Nov-03	9.86	1.19	8.67
	23-Mar-04	9.91	0.40	9.51
	17-May-04	9.91	0.38	9.53
MW-10	02-Dec-02	9.80	1.35	8.45
	18-Mar-03	9.80	0.95	8.85
	31-Mar-03	9.80	0.30	9.50
	21-May-03	9.80	0.52	9.28
	27-Aug-03	9.80	1.02	8.78
	03-Nov-03	9.80	1.43	8.37
	23-Mar-04	9.85	0.70	9.15
	17-May-04	9.85	0.61	9.24
MW-11	02-Dec-02	10.26	1.55	8.71
	18-Mar-03	10.26	1.12	9.14
	31-Mar-03	10.26	0.40	9.86
	21-May-03	10.26	0.64	9.62
	27-Aug-03	10.26	1.19	9.07
	03-Nov-03	10.26	1.56	8.70
	23-Mar-04	10.28	0.75	9.53
	17-May-04	10.28	0.69	9.59
MW-12	02-Dec-02	10.73	1.56	9.17
	18-Mar-03	10.73	1.15	9.58
	31-Mar-03	10.73	0.55	10.18
	21-May-03	10.73	0.70	10.03
	27-Aug-03	10.73	1.12	9.61
	03-Nov-03	10.73	1.68	9.05
	23-Mar-04	10.76	0.87	9.89
	17-May-04	10.76	0.76	10.00
MW-14	02-Dec-02	9.02	2.40	6.62
	18-Mar-03	9.02	2.21	6.81
	31-Mar-03	9.02	1.77	7.25
	21-May-03	9.02	1.69	7.33
	27-Aug-03	9.02	2.27	6.75
	03-Nov-03	9.02	2.52	6.50
	23-Mar-04	9.15	2.08	7.07
	17-May-04	9.15	2.15	7.00



SUMMARY OF WATER LEVEL MEASUREMENTS

Well No.	Measurement ¹ Date	MP Elevation ² (ft NAVD 88)	Depth to Water (ft bMP)	Water Level Elevation (ft NAVD 88)
MW-17	02-Dec-02	8.98	1.27	7.71
11211 17	18-Mar-03	8.98	0.94	8.04
	31-Mar-03	8.98	0.32	8.66
	21-May-03	8.98	0.58	8.40
	27-Aug-03	8.98	1.06	7.92
	03-Nov-03	8.98	1.30	7.68
	23-Mar-04	9.16	0.83	8.33
	17-May-04	9.16	0.74	8.42
MW-18	02-Dec-02	9.53	0.94	8.59
	18-Mar-03	9.53	0.52	9.01
	31-Mar-03	9.53	3	NC
	21-May-03	9.53	0.05	9.48
	27-Aug-03	9.53	0.55	8.98
	03-Nov-03	9.53	0.95	8.58
	23-Mar-04	9.92	0.52	9.40
	17-May-04	9.92	0.47	9.45
MW-20	23-Mar-04	11.87	2.36	9.51
	17-May-04	11.87	2.35	9.52
MW-21	23-Mar-04	12.89	3.97	8.92
	17-May-04	12.89	3.99	8.90
Deep Wells				
MW-13D	02-Dec-02	9.84	4.18	5.66
	18-Mar-03	9.84	4.21	5.63
	31-Mar-03	9.84	4.26	5.58
	21-May-03	9.84	4.52	5.32
	27-Aug-03	9.84	4.45	5.39
	03-Nov-03	9.84	4.30	5.54
	23-Mar-04	9.96	4.42	5.54
	17-May-04	9.96	4.54	5.42
MW-15D	02-Dec-02	11.08	5.31	5.77
	18-Mar-03	11.08	5.44	5.64
	31-Mar-03	11.08	5.46	5.62
	21-May-03	11.08	5.74	5.34
	27-Aug-03	11.08	5.71	5.37
	03-Nov-03	11.08	5.51	5.57
	23-Mar-04	11.19	5.66	5.53
	17-May-04	11.19	5.77	5.42
MW-16D	02-Dec-02	9.80	3.99	5.81
	18-Mar-03	9.80	4.17	5.63
	31-Mar-03	9.80	3.91	5.89
	21-May-03	9.80	4.11	5.69
	27-Aug-03	9.80	3.95	5.85
	03-Nov-03	9.80	4.26	5.54
	23-Mar-04	9.83	4.01	5.82
	17-May-04	9.83	4.13	5.70



SUMMARY OF WATER LEVEL MEASUREMENTS

Sierra Pacific Industries Arcata Division Sawmill Arcata, California

Well No.	Measurement ¹ Date	MP Elevation ² (ft NAVD 88)	Depth to Water (ft bMP)	Water Level Elevation (ft NAVD 88)
MW-19D	02-Dec-02	11.00	4.31	6.69
	18-Mar-03	11.00	4.23	6.77
	31-Mar-03	11.00	4.02	6.98
	21-May-03	11.00	4.22	6.78
	27-Aug-03	11.00	4.26	6.74
	03-Nov-03	11.00	4.61	6.39
	23-Mar-04	11.06	4.13	6.93
	17-May-04	11.06	4.63	6.43
Mad River Slough ⁴	31-Mar-03	15.70	15.15	0.55
_	31-Mar-03	15.70	15.84	-0.14
	21-May-03	15.70	17.23	-1.53
	21-May-03	15.70	16.75	-1.05
	27-Aug-03	15.70	16.20	-0.50
	27-Aug-03	15.70	12.60	3.10
	03-Nov-03	15.70	9.63	6.07
	03-Nov-03	15.70	10.53	5.17
	23-Mar-04	15.70	15.00	0.70
	23-Mar-04	15.70	12.16	3.54
	17-May-04	15.70	14.48	1.22
	17-May-04	15.70	12.50	3.20

Notes:

- Data prior to March 18, 2003 were obtained from Results of the Remedial Investigation for Sierra Pacific Industries - Arcata Division Sawmill, Arcata, California, dated January 30, 2003, prepared by Environet Consulting.
- 2. Monitoring wells surveyed by Omsberg & Company of Eureka, California. Wells were resurveyed on February 13, 2004; elevations shown are relative to the Northern American Vertical Datum of 1988.
- 3. Water level was above the top of casing measuring point.
- 4. Mad River Slough measuring point on railroad bridge. Water level measurements are obtained before and after the water level measurements in the monitoring wells.

Abbreviations:

ft NAVD 88 = feet above North American Vertical Datum of 1988

- ft bMP = feet below measuring point
- -- = not measured or sample not collected for analysis

NC = not calcuated



SUMMARY OF WATER QUALITY PARAMETERS GROUNDWATER MONITORING PROGRAM

			Laboratory Measurement ²			
Well No.	Date Sampled	Temperature (°C)	Specific Conductance (µmohs/cm)	pH (pH Units)	TDS (mg/L)	TDS (mg/L)
Shallow Wells						
	20-Mar-03	14	2,600	6.5		
	22-May-03	14	2,700	6.7		1,400
MW-1	27-Aug-03	18	2,500	6.7	1,800	1,400
101 00 - 1	04-Nov-03	16.9	2,440	6.6	1,800	1,300
	24-Mar-04					
	17-May-04	15	2635	6.3	1899	1,400
	20-Mar-03	13	2,100	6.2		
	22-May-03	14	1,700	6.4	1100	860
	27-Aug-03	18	1,500	6.6	1,100	760
MW-2	03-Nov-03	16.3	1,590	6.3	1,125	760
	24-Mar-04	13.4	1,390	6.3	973	740
	17-May-04	14.8	1,437	6.2	982	730
	20-Mar-03	13	1,100	6.4		
-	22-May-03	15	1,000	6.4	630	510
	27-Aug-03	20	1,000	6.5	720	470
MW-3	03-Nov-03	16.3	986	6.6		410
-	24-Mar-04					
-	17-May-04	15.7	1108	6.2	750	510
	20-Mar-03	14	830	6.5		
-	22-May-03	16	730	6.4	440	420
	27-Aug-03	21	730	6.5	500	340
MW-4	03-Nov-03	17.8	758	6.6	516	310
-	24-Mar-04					
-	17-May-04	17.7	884	6.2	590	360
	20-Mar-03	14	670	6.6		
-	22-May-03	14	690	6.6	410	360
-	27-Aug-03	18	670	6.7	450	360
MW-5	03-Nov-03	17.2	661	6.6	450	380
-	24-Mar-04					
-	17-May-04	15.2	662	6.3	438	360
	20-Mar-03	11	950	6.6		
F	20-Mar-03	14	1,000	6.3	620	430
F	22-May-03 27-Aug-03	17	890	6.4	620	410
MW-6	04-Nov-03	12.8	918	6.6	634	410
-	24-Mar-04	12.8	925	6.5	640	410
-	17-May-04	13.6	923	6.3	640	410



SUMMARY OF WATER QUALITY PARAMETERS GROUNDWATER MONITORING PROGRAM

			Laboratory Measurement ²			
Well No.	Date Sampled	Temperature (°C)	Specific Conductance (µmohs/cm)	pH (pH Units)	TDS (mg/L)	TDS (mg/L)
	20-Mar-03	11	910	6.6		
-	22-May-03	11	960	6.5		460
	27-Aug-03	14	840	6.6	580	400
MW-7	03-Nov-03	12.4	869	6.6	597	460
-	24-Mar-04	10.7	955	6.4		440
-	18-May-04	11.9	733	6.6	486	370
	18-Mar-03	14	730	6.4		
-	21-May-03	16	740	6.3	460	390
	27-Aug-03	21	730	6.2	500	370
MW-8	04-Nov-03	17.2	745	6.4	507	380
-	24-Mar-04	14.2	777	6.2	530	400
-	17-May-04	17.6	795	6.1	528	390
	18-Mar-03	14	820	6.4		
-	23-May-03	16	870	6.6	550	400
-	27-Aug-03	20	830	6.2	570	350
MW-9	04-Nov-03	16.7	821	6.6	563	350
	24-Mar-04	13.9	878	6.4	604	380
-	17-May-04	16.1	927	6.1	621	380
	18-Mar-03	14	920	6.4		
-	23-May-03	17	970	6.7		460
-	27-Aug-03	22	860	6.3	600	400
MW-10	04-Nov-03	17.9	878	6.6	604	430
-	24-Mar-04					
-	17-May-04	18.7	920	6.2	613	420
	20-Mar-03	14	870	6.4		
-	20-Mar-03	17	890	6.4	560	460
-	27-Aug-03	23	870	6.2	600	440
MW-11	04-Nov-03	18.6	870	6.6	600	440
-	24-Mar-04				000	450
-	17-May-04	18.1	878	6.2	586	430
	17-May-04 18-Mar-03	15	830	6.2		
	21-May-03	13	830	6.1		460
	27-Aug-03	23	840	6.2		480
MW-12				6.2	600	480
-	04-Nov-03	18.1	916		631	
	24-Mar-04					
	17-May-04	19.7	905	6.0	605	490
-	20-Mar-03	14	3,200	6.7		
	22-May-03	15	3,400	6.6		2,100
MW-14	27-Aug-03	20	3,600	6.6	2,300	1,900
	04-Nov-03	15.9	3,330	6.6	2,520	2,100
ŀ	24-Mar-04					
	17-May-04	16.9	2824	6.4	2046	1,800



SUMMARY OF WATER QUALITY PARAMETERS GROUNDWATER MONITORING PROGRAM

			Field Measu	rements ¹		Laboratory Measurement ²
Well No.	Date Sampled	Temperature (°C)	Specific Conductance (µmohs/cm)	pH (pH Units)	TDS (mg/L)	TDS (mg/L)
	20-Mar-03	13	980	6.4		
-	22-May-03	15	1,000	6.5		450
	27-Aug-03	19	860	7.0	600	420
MW-17	04-Nov-03	14.9	920	6.6	635	450
-	24-Mar-04					
-	17-May-04	15.3	944	6.5	620	440
	18-Mar-03	14	1,000	6.5		
-	23-May-03	17	980	6.6	610	640
	27-Aug-03	23	1,100	6.3	780	520
MW-18	04-Nov-03	16.7	1,092	6.6	760	490
-	24-Mar-04					
-	17-May-04	19.4	995	6.3	670	430
	24-Mar-04	13.6	425	6.9	284	250
MW-20	18-May-04	18.3	469	6.7	306	280
	24-Mar-04	11.7	987	6.3	683	460
MW-21	18-May-04	13.5	1003	6.3	663	420
Deep Wells	, j	Ч. – – – – – – – – – – – – – – – – – – –		4		
-	20-Mar-03	14	1,200	6.2		
	22-May-03	14	1,100	6.2		
	27-Aug-03	15	1,100	6.1	750	690
MW-13D	04-Nov-03	14.8	1,020	6.1		580
	24-Mar-04					
	17-May-04	13.8	1035	5.8	698	610
	20-Mar-03	13	1,300	6.8		
	22-May-03	13	1,300	6.8		800
MW 15D	27-Aug-03	14	1,300	6.3	900	810
MW-15D	04-Nov-03	14	1,290	6.8		790
	24-Mar-04					
	17-May-04	13.4	1,360	6.3	928	800
	18-Mar-03	14	5,200	7.7		
	23-May-03	14	5,200	7.6		3,200
	27-Aug-03	16	5,000	7.4	3,400	3,000
MW-16D	04-Nov-03	15.5	4,770	7.6	3,700	2,800
	24-Mar-04					
	17-May-04	14.9	4,562	7.3	3,457	2,800



SUMMARY OF WATER QUALITY PARAMETERS GROUNDWATER MONITORING PROGRAM

Sierra Pacific Industries Arcata Division Sawmill Arcata, California

			Field Measurements ¹						
Well No.	Date Sampled	Temperature (°C)	Specific Conductance (µmohs/cm)	pH (pH Units)	TDS (mg/L)	TDS (mg/L)			
	20-Mar-03	16	810	6.7					
	22-May-03	16	860	6.6	520	480			
MW-19D	27-Aug-03	17	810	6.5	560	410			
IVI W-19D	03-Nov-03	16.9	759	6.7	517	370			
	24-Mar-04								
	17-May-04	15.9	843	6.5	562	430			

Notes:

1. Water quality parameters measured in the field using an Ultrameter instrument or a flow through cell and a YSI Model 556 instrument; reported measurements recorded towards end of purge after parameters stabilized or from the last purge volume if a well was repeatedly purged dry.

2. Water quality parameter analyzed in the laboratory; EPA Method 160.1.

Abbreviations:

 $^{\circ}$ C = degrees Celsius

 μ mhos/cm = micromhos per centimeter at 25 °C

mg/L = milligrams per liter

-- = not measured or sample not collected for analysis

TDS = total dissolved solids

EPA = U.S. Environmental Protection Agency



LABORATORY ANALYTICAL RESULTS FOR CHLORINATED PHENOLS GROUNDWATER MONITORING PROGRAM

Sierra Pacific Industries Arcata Division Sawmill Arcata, California

Concentrations in micrograms per liter (µg/L)									
Monitorino	Date	Penta-	2,4,6- trichloro-	2,3,5,6- tetrachloro-	2,3,4,6- tetrachloro-	2,3,4,5- tetrachloro-	Comments		
Monitoring Well Number	Sampled ¹	chlorophenol	phenol			phenol	Comments		
Shallow Wells	Sampled	cmorophenoi	phenoi	phenol	phenol	phenor			
Shahow wens	14-Mar-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
	14-Mar-02 18-Jul-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
	16-Sep-02	1.8 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0			
	$03-Oct-02^{2}$								
MW-1	02-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
M W - 1	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
	22-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
	04-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
	24-Mar-04								
	17-May-04	<1.0	<1.0	<1.0	<1.0	<1.0			
	14-Mar-02	7.4	< 1.0	< 1.0	< 1.0	< 1.0			
	18-Jul-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
	16-Sep-02	2.5	< 1.0	< 1.0	< 1.0	< 1.0			
	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
MW-2	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
101 00 2	22-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
	4-Nov-03	<1.0	<1.0	<1.0	<1.0	<1.0			
	24-Mar-04	<1.0	<1.0	<1.0	<1.0	<1.0			
	17-May-04	<1.0	<1.0	<1.0	<1.0	<1.0			
	14-Mar-02	1.2	< 1.0	< 1.0	< 1.0	< 1.0			
	18-Jul-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
	16-Sep-02	5.0	< 1.0	< 1.0	< 1.0	< 1.0			
	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
MW-3	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
IVI W - 3	22-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
	4-Nov-03	<1.0	<1.0	<1.0	<1.0	<1.0			
	24-Mar-04								
	17-May-04	<1.0	<1.0	<1.0	<1.0	<1.0			

Concentrations in micrograms per liter (µg/L)



LABORATORY ANALYTICAL RESULTS FOR CHLORINATED PHENOLS GROUNDWATER MONITORING PROGRAM

Sierra Pacific Industries Arcata Division Sawmill Arcata, California

Concentrations in micrograms per liter (µg/L) 2,3,4,5-2,4,6-2,3,5,6-2,3,4,6-Date Comments trichloro-Monitoring Pentatetrachlorotetrachlorotetrachloro-Well Number Sampled¹ chlorophenol phenol phenol phenol phenol 14-Mar-02 8.6 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 18-Jul-02 < 1.0 < 1.0 < 1.0 16-Sep-02 5.7 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 03-Dec-02 < 1.0 < 1.0 < 1.0 20-Mar-03 < 1.0 < 1.0 < 1.0 < 1.0 MW-4 22-May-03 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 27-Aug-03 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 4-Nov-03 <1.0 <1.0 <1.0 <1.0 <1.0 24-Mar-04 ---------------<1.0 <1.0 <1.0 <1.0 <1.0 17-May-04 14-Mar-02 4.3 < 1.0 < 1.0 < 1.0 < 1.0 18-Jul-02 9.1 < 1.0 < 1.0 < 1.0 < 1.0 16-Sep-02 25 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 03-Dec-02 < 1.0 < 1.0 < 1.0 20-Mar-03 < 1.0 < 1.0 MW-5 20-Mar-03 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 duplicate sample < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 22-May-03 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 27-Aug-03 4-Nov-03 < 1.0<1.0 <1.0 < 1.0<1.0 24-Mar-04 -------------17-May-04 <1.0 <1.0 <1.0 <1.0 <1.0 14-Mar-02 4.5 < 1.0 < 1.0 < 1.0 < 1.0

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18-Jul-02

16-Sep-02

03-Dec-02

20-Mar-03

22-May-03

27-Aug-03

24-Mar-04

17-May-04

MW-6

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6.3

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LABORATORY ANALYTICAL RESULTS FOR CHLORINATED PHENOLS **GROUNDWATER MONITORING PROGRAM**

Concentrations in micrograms per liter (µg/L)										
			2,4,6-	2,3,5,6-	2,3,4,6-	2,3,4,5-				
Monitoring	Date	Penta-	trichloro-	tetrachloro-	tetrachloro-	tetrachloro-	Comments			
Well Number	Sampled ¹	chlorophenol	phenol	phenol	phenol	phenol				
	14-Mar-02	31,000	< 1.0	41	650	24				
	18-Jul-02	33,000	< 1.0	< 1.0	990	56				
	16-Sep-02	44,000	< 1.0	< 1.0	920	64				
	03-Dec-02	46,000	< 1.3	76	1,300	52				
	14-Jan-03 ³	51,000	2.4	< 1.0	970	52				
	20-Mar-03	19,000	< 1.0	36	460	22				
	22-May-03	19,000	< 1.0	< 1.0	470	< 100				
	22-May-03	16,000	< 1.0	< 1.0	400	< 100	duplicate sample			
	22-May-03	14,000	< 1.0	< 1.0	400	< 100	filtered			
MW-7	27-Aug-03	31,000	< 1.5	41	710	39				
	27-Aug-03	18,000	< 1.0	28	450	26	duplicate sample			
	3-Nov-03	28,000	<5.0	36	580	35	bailer sample / unfiltered			
	3-Nov-03	31,000	<5.0	47	740	43	bailer sample / filtered			
	3-Nov-03	20,000	<5.0	28	450	24	low flow sample / unfiltered			
	3-Nov-03	14,000	<5.0	19	300	17	low flow sample / filtered			
	24-Mar-04	19,000	<1.5	19	450	19				
	24-Mar-04	7,400	<1.0	8.7	150	9.9	duplicate sample			
	18-May-04	25,000	<2.5	86	480	41				
MW-8	14-Mar-02	22	< 1.0	< 1.0	< 1.0	< 1.0				
	18-Jul-02	31	< 1.0	< 1.0	< 1.0	< 1.0				
	16-Sep-02	4.8	< 1.0	< 1.0	< 1.0	< 1.0				
	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
	18-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
	21-May-03	1.0	< 1.0	< 1.0	< 1.0	< 1.0				
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
	4-Nov-03	<1.0	<1.0	<1.0	<1.0	<1.0				
	24-Mar-04	<1.0	<1.0	<1.0	<1.0	<1.0				
	17-May-04	<1.0	<1.0	<1.0	<1.0	<1.0				



LABORATORY ANALYTICAL RESULTS FOR CHLORINATED PHENOLS GROUNDWATER MONITORING PROGRAM

Sierra Pacific Industries Arcata Division Sawmill Arcata, California

Concentrations in micrograms per liter (µg/L)

			2,4,6-	2,3,5,6-	2,3,4,6-	2,3,4,5-	
Monitoring	Date	Penta-	trichloro-	tetrachloro-		tetrachloro-	Comments
Well Number	Sampled ¹	chlorophenol	phenol	phenol	phenol	phenol	
MW-9	14-Mar-02	94	3.1	21	130	5.5	
	18-Jul-02	2.1	< 1.0	< 1.0	< 1.0	< 1.0	
	16-Sep-02	3.1	< 1.0	< 1.0	< 1.0	< 1.0	
	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	23-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	04-Nov-03	<1.0	<1.0	<1.0	<1.0	<1.0	
	24-Mar-04	<1.0	<1.0	<1.0	<1.0	<1.0	
	17-May-04	<1.0	<1.0	<1.0	<1.0	<1.0	
MW-10	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	23-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	<1.0	<1.0	<1.0	<1.0	<1.0	
	24-Mar-04						
	17-May-04	<1.0	<1.0	<1.0	<1.0	<1.0	
	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	21-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
MW-11	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	<1.0	<1.0	<1.0	<1.0	<1.0	
	24-Mar-04						
	17-May-04	<1.0	<1.0	<1.0	<1.0	<1.0	
MW-12	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	21-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	<1.0	<1.0	<1.0	<1.0	<1.0	
	24-Mar-04						
	17-May-04	<1.0	<1.0	<1.0	<1.0	<1.0	
MW-14	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	22-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	<1.0	<1.0	<1.0	<1.0	<1.0	
	24-Mar-04						
	17-May-04	<1.0	<1.0	<1.0	<1.0	<1.0	



LABORATORY ANALYTICAL RESULTS FOR CHLORINATED PHENOLS GROUNDWATER MONITORING PROGRAM

Sierra Pacific Industries Arcata Division Sawmill Arcata, California

Concentrations in micrograms per liter (µg/L) 2,3,4,5-2,4,6-2,3,5,6-2,3,4,6-Date trichloro-Comments Monitoring Pentatetrachlorotetrachlorotetrachloro-Well Number Sampled¹ chlorophenol phenol phenol phenol phenol 03-Dec-02 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 20-Mar-03 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 22-May-03 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 **MW-17** 27-Aug-03 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 4-Nov-03 <1.0 <1.0 <1.0 <1.0 <1.0 24-Mar-04 ---------------17-May-04 <1.0 <1.0 <1.0 <1.0 <1.0 < 1.0 < 1.0 < 1.0 03-Dec-02 < 1.0 < 1.0 18-Mar-03 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 23-May-03 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 **MW-18** 27-Aug-03 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 4-Nov-03 <1.0 <1.0 <1.0 < 1.0<1.0 4-Nov-03 -----------<1.0 <1.0 <1.0 <1.0 <1.0 17-May-04 35 <1.0 <1.0 5.1 3.8 24-Mar-04 **MW-20** 18-May-04 3.6 <1.0 <1.0 1.1 <1.0 800 <1.0 6.3 17 12 24-Mar-04 **MW-21** 1,900 <1.0 36 18-May-04 11 11 18-May-04 670 <1.0 3.5 16 4.4 duplicate sample Deep Wells < 1.0 03-Dec-02 < 1.0 < 1.0 < 1.0 < 1.0 20-Mar-03 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 22-May-03 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 **MW-13D** 27-Aug-03 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 4-Nov-03 <1.0 <1.0 <1.0 <1.0 <1.0 24-Mar-04 --------17-May-04 <1.0 <1.0 <1.0 < 1.0<1.0 03-Dec-02 < 1.0 < 1.0 < 1.0 < 1.0< 1.0

20-Mar-03

22-May-03

27-Aug-03

4-Nov-03

24-Mar-04

17-May-04

MW-15D

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TABLE 4

LABORATORY ANALYTICAL RESULTS FOR CHLORINATED PHENOLS GROUNDWATER MONITORING PROGRAM

Sierra Pacific Industries Arcata Division Sawmill Arcata, California

		1		incrograms per			
Monitoring Well Number	Date Sampled ¹	Penta- chlorophenol	2,4,6- trichloro- phenol	2,3,5,6- tetrachloro- phenol	2,3,4,6- tetrachloro- phenol	2,3,4,5- tetrachloro- phenol	Comments
	03-Dec-02	1.3	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	23-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
MW-16D	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	<1.0	<1.0	<1.0	<1.0	<1.0	
	24-Mar-04						
	17-May-04	<1.0	<1.0	<1.0	<1.0	<1.0	
	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	22-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
MW-19D	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	<1.0	<1.0	<1.0	<1.0	<1.0	
	24-Mar-04						
	17-May-04	<1.0	<1.0	<1.0	<1.0	<1.0	

Concentrations in micrograms per liter (μ g/L)

Notes:

 Data prior to March 18, 2003 were obtained from Results of the Remedial Investigation for Sierra Pacific Industries, Arcata Division Sawmill, Arcata, California, dated January 30, 2003, prepared by EnviroNet Consulting.

2. Confirmation sample collected due to detection of pentachlorophenol on September 16, 2002.

3. Sample also contained 280 mg/L of 2,3,4-trichlorophenol and 190 mg/L of 2,4,5-trichlorophenol.

Abbreviation:

< = target analyte was not detected at or above the laboratory reporting limit shown.

-- = not measured or sample not collected for analysis

TABLE 5

LABORATORY ANALYTICAL RESULTS FOR METALS, CHLORINATED PHENOLS, WATER QUALITY PARAMETERS, AND HYDROCARBON CONSTITUENTS IN SURFACE WATER SAMPLES¹ PILOT STUDY PROGRAM

Sierra Pacific Industries Arcata Division Sawmill Arcata, California

					EPA	A Method 200	Series			Chlor	inated Phe	nols (Canao	lian Pulp I	(lethod)			Water Qualit	y Parameters				Hydrocarbor	n Constituents	3
Monitoring Location	Date	Sample Type	Arsenic (mg/L)	Copper (mg/L)	Zinc (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Nickel (mg/L)	PCP (µg/L)	2,3,4,5- TeCP (μg/L)	2,3,4,6- TeCP (μg/L)	2,3,5,6- TeCP (μg/L)	2,4,6-TCP (μg/L)	рН	Specific Electrical Conductance (µmhos/cm)	Chemical Oxygen Demand (mg/L)	Total Dissolved Solids ² (mg/L)	Total Suspended Solids (mg/L)		TPH as Gasoline (µg/L)	TPH as Diesel (µg/L)	TPH as Motor Oil (µg/L)	Oil and Grease (mg/L)
SL-1	4/14/2004 3	Grab								0.7	<1.0	<1.0	<1.0	<1.0										
SL-1	5/27/2004 4	Grab	0.0034	0.03	1.9					<1.0	<1.0	<1.0	<1.0	<1.0	6.19	180	230		100	6.6	<50	92	550	<5.0
SL-2	4/20/2004 3	Grab								<1.0	<1.0	<1.0	<1.0	<1.0	6.3	1,334		904						
SL-2	4/20/2004 3, 5	Composite								<1.0	<1.0	<1.0	<1.0	<1.0	5.87	734		483						
SL-2	5/27/2004 4	Grab	0.0046	< 0.020	0.46	< 0.010	< 0.010	< 0.050	< 0.010	<1.0	<1.0	<1.0	<1.0	<1.0	6.19	1,200	630		150	100	340	280	1,100	<5.0
SL-3	4/20/2004 3	Grab								<1.0	<1.0	<1.0	<1.0	<1.0	6.02	170.4		107				8,700/1,300 ⁶	⁵ 22,000/7,300 ⁶	6
SL-3	4/20/2004 3, 5	Composite								<1.0	<1.0	<1.0	<1.0	<1.0	5.85	185		116				9,500	24,000	
SL-3	5/27/2004 4	Grab	0.037	< 0.080	0.85					<1.0	<1.0	<1.0	<1.0	<1.0	5.61	1,300	2,100		1,900	240	190	2,300	6,000	<5.0
SL-4	5/27/2004 4	Grab	0.039	< 0.080	0.75					<1.0	<1.0	<1.0	<1.0	<1.0	6.06	160	1,500		2,900	160	85	720	3,200	<5.0

Notes:

1. Samples collected by MFG, Inc., of Arcata, California. The samples were analyzed by Alpha Analytical Laboratories, Inc., in Ukiah, California unless otherwise noted. The pH was measured in the field. Samples were analyzed by EPA Method 200.7 (tota EPA Method 200.9 (total arsenic and lead), Canadian Pulp Method (penta, tetra and tri), EPA Method 120.1 (specific electrical conductance), SM 410.2 (chemical oxygen demand), EPA Method 1664 (oil and grease), EPA Method 160.1 (total suspended solids), SM 425.1 (tannins and lignins), EPA Method 8015 Modified (TPH as gasoline, TPH as diesel and TPH as motor oil), and EPA Method 160.1 (total dissolved solids).

2. This parameter is not a required analysis under the SWPPP.

3. Additional sampling during rain event not related to the SWPPP.

4. Second storm sampling event for the 2003 - 2004 storm season. Samples were collected in accordance with the SWPPP for the site. Samples were not collected at monitoring locations SL-5, SL-6 and ML-2 because there was no discharge.

5. Samples were collected on a time weighted bases for two hours at 35 to 40 minute intervals at the locations. The samples were composited at Friedman & Bruya, Inc., in Seattle, Washington prior to analysis.

6. Silica gel clean-up was performed for the second analysis.

Abbreviations: PCP = pentachlorophenol 2,3,4,5-TeCP = 2,3,4,5-tetrachlorophenol 2,3,4,6-TeCP = 2,3,4,6-tetrachlorophenol 2,3,5,6-TeCP = 2,3,5,6-tetrachlorophenol 2,4,6-TCP = 2,4,6-trichlorophenol TPH = total petroleum hydrocarbons

EPA = U.S. Environmental Protection Agency SM = Standard Method $\mu g/L =$ micrograms per liter; parts per billion mg/L = milligrams per liter; parts per million μ mhos/cm = micro ohms per centimeter -- = not measured or sample not collected for analysis < = target analyte was not detected at or above the laboratory reporting limit showr



TABLE 6

LABORATORY ANALYTICAL RESULTS FOR DIOXINS AND FURANS IN SURFACE WATER SAMPLES

PILOT STUDY PROGRAM Sierra Pacific Industries

Arcata Division Sawmill

Arcata, California

Monitoring Station	Date	2,3,7,8- TCDD	1,2,3,7,8 - PeCDD	1,2,3,4,7,8- HxCDD	1,2,3,6,7,8- HxCDD	1,2,3,7,8,9- HxCDD	1,2,3,4,6,7,8,- HpCDD	OCDD	Total Dioxins	2,3,7,8- TCDF	1,2,3,7,8- PeCDF	2,3,4,7,8- PeCDF	1,2,3,4,7,8- HxCDF	1,2,3,6,7,8- HxCDF	2,3,4,6,7,8- HxCDF	1,2,3,7,8,9- HxCDF	1,2,3,4,6,7,8- HpCDF	1,2,3,4,7,8,9- HpCDF	OCDF	Total Furans	Total TEQ ^{2,3}	Percent 2,3,7,8- TCDD ⁴
SL-2	5/27/20045	<1.5	6.72 J	9.02 J	34.9	16.1 J	458	3070	1092.1	<1.32	2.97 J	4.13 J	6.87 J	14.4 J	14.9 J	<2.05	192	11.1 J	247	698.6	25.5	0
SL-3	5/27/20045	<1.8	8.37 J	10.7 J	42.2	18.7 J	516	3390	1328.5 M	4.07 J	<4.38	8.27 J	5.71 J	10.9 J	13.2 J	<3.20	181	10.1	282	805.9 M	30.5	0
SL-4	5/27/20045	<1.52	10.4 J	14.8 J	79.5	23.8 J	891	5590	2168.45 M	2.82 J	<4.20	10.1 J	10.5 J	19.4 J	23.7 J	<2.76	328	20.6 J	454	1469.5 M	45.9	0
	TEF ⁶ :	1	1	0.1	0.1	0.1	0.01	0.0001	NA	0.1	0.05	0.5	0.1	0.1	0.1	0.1	0.01	0.01	0.0001	NA	NA	NA

Notes:

1. Samples were collected by MFG Inc., of Arcata, California and analyzed by Frontier Analytical Laboratory in El Dorado Hills, California. The samples were analyzed for dioxins and furans using EPA Method 1613. EPA Method 1613 specifies that for a sample containing less than 1% solids, the sample will then be analyzed as a liquid. Frontier Analytical Laboratory determined that these samples contained less than 1% solids and, therefore, analyzed the samples as a liquid. The laboratory used a 0.7 micron filter to prepare the sample for analysis (a 1.0 micron filter is specified in EPA Method 1613.) Concentrations reported in picograms per liter (pg/L).

2. Calculated as the sum of congener concentrations after each has been multiplied by its TEF.

3. Concentrations not detected above the laboratory reporting limit were assigned a concentration of 0 pg/L or 0 pg/kg to calculate TEQ.

4. Calculated by dividing the concentration of 2,3,7,8-TCDD by the Total TEQ (multiplied by 100). When the concentration of 2,3,7,8-TCDD was not detected, it was assigned a concentration of 0 pg/g for this calculation.

5. Second seasonal storm sampling event for the 2003 - 2004 wet season. Samples were collected in accordance with the SWPPP for the site.

6. Toxicity equivalency factor (unitless) from the World Health Organization, 1997 (WHO-97), adopted from F.X.R. van Leeuwen, 1997.

Abbreviations:

TCDD = tetrachlorodibenzo-p-dioxin PeCDD = pentachlorodibenzo-p-dioxin HxCDD = hexachlorodibenzo-p-dioxin HpCDD = heptachlorodibenzo-p-dioxin OCDD = octachlorodibenzo-p-dioxin TCDF = tetrachlorodibenzofuran PeCDF = pentachlorodibenzofuran HxCDF = hexachlorodibenzofuran HpCDF = heptachlorodibenzofuran OCDF = octachlorodibenzofuran

TEQ = toxicity equivalence TEF = toxicity equivalency factor (unitless)

EPA = U.S. Environmental Protection Agency

NA = not applicable

< = target analyte was not detected at or above the laboratory reporting limit shown

J = concentration detected was below the calibration range, as flagged by the laboratory

M = maximum possible concentration, as flagged by the laboratory

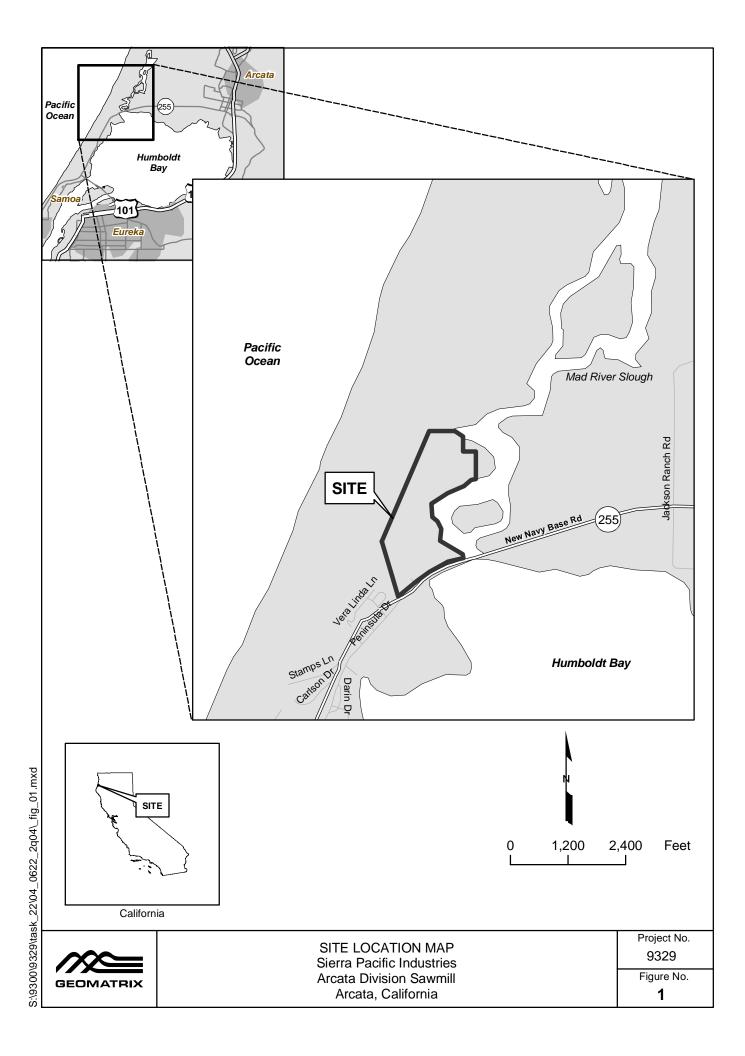
-- = not measured or sample not collected for analysis

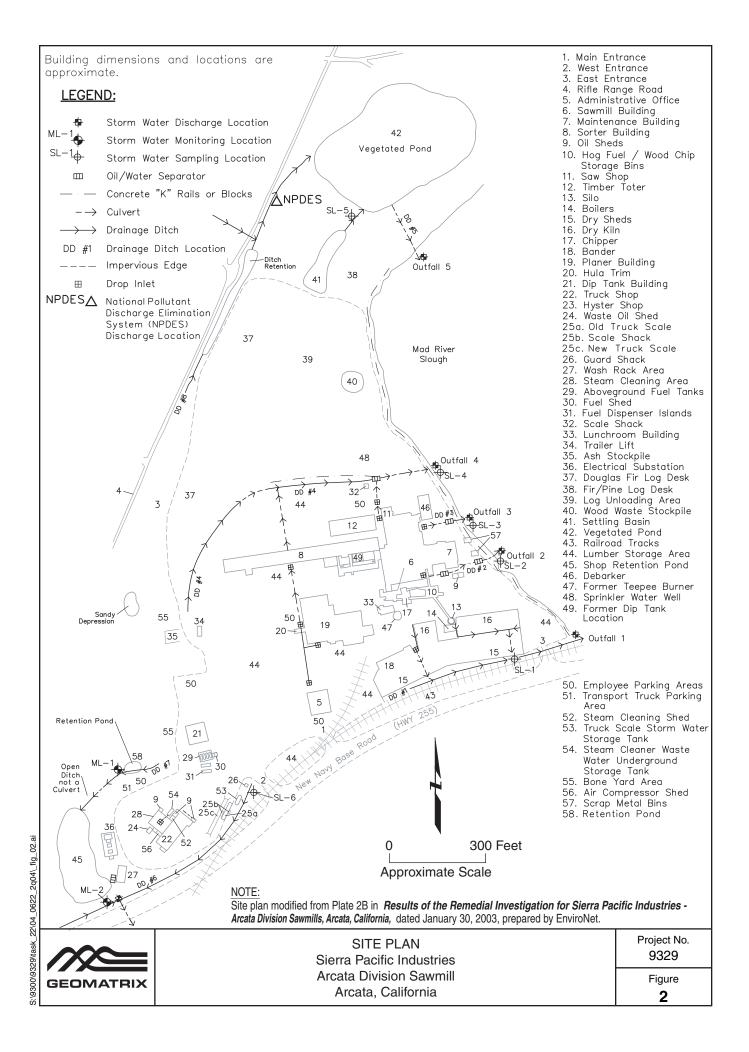
< = target analyte was not detected at or above the laboratory reporting limit shown

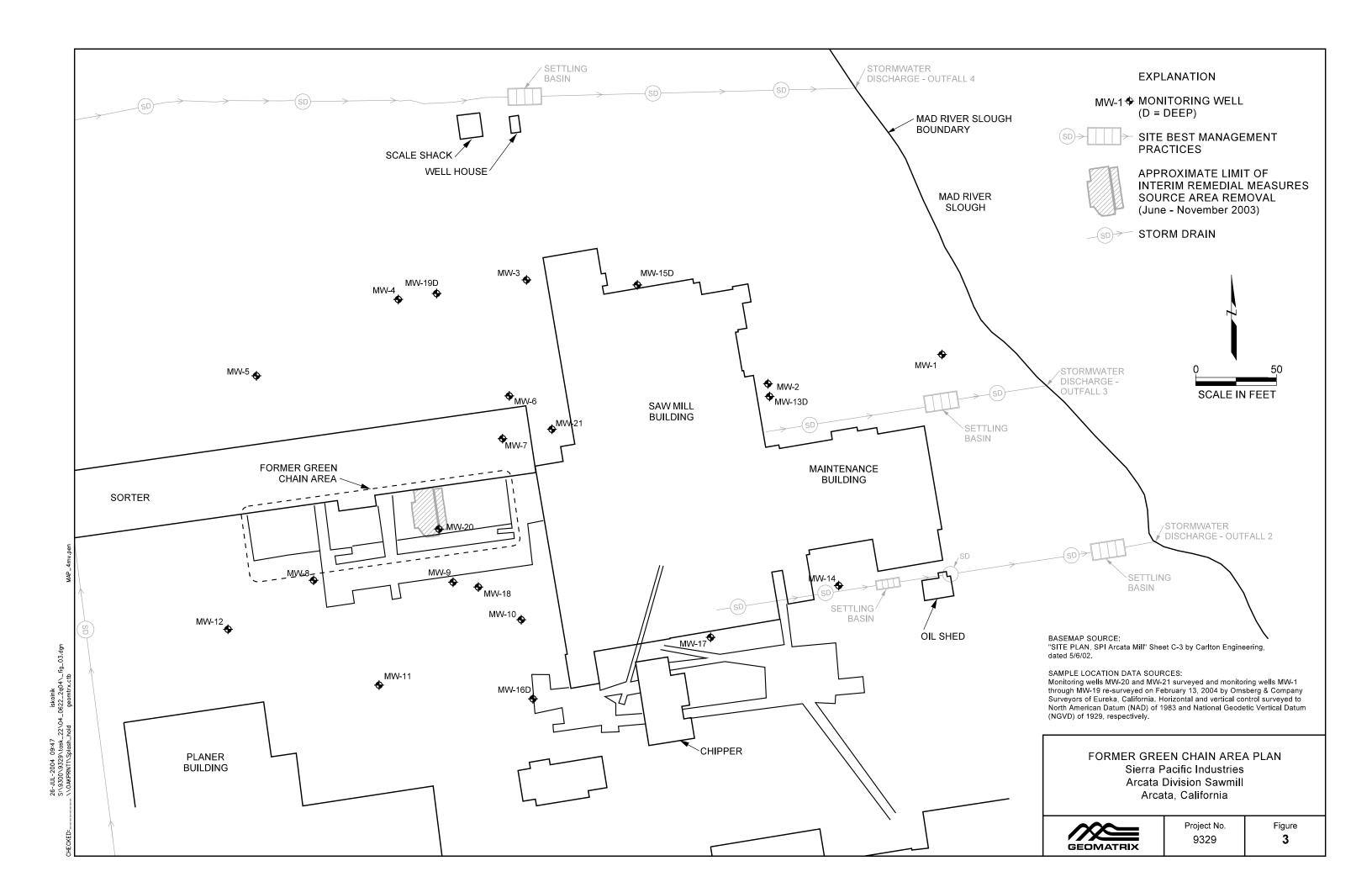


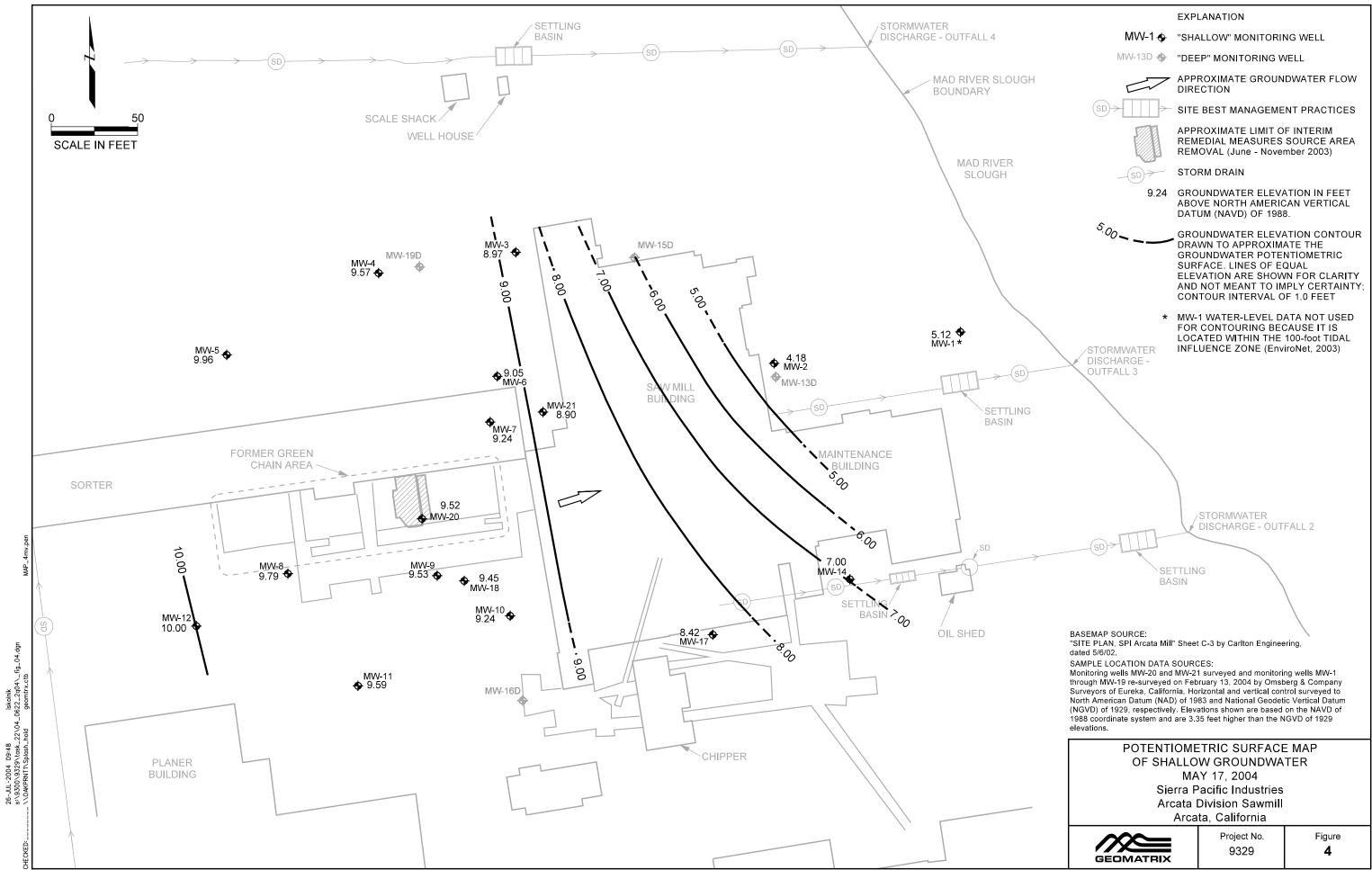


FIGURES

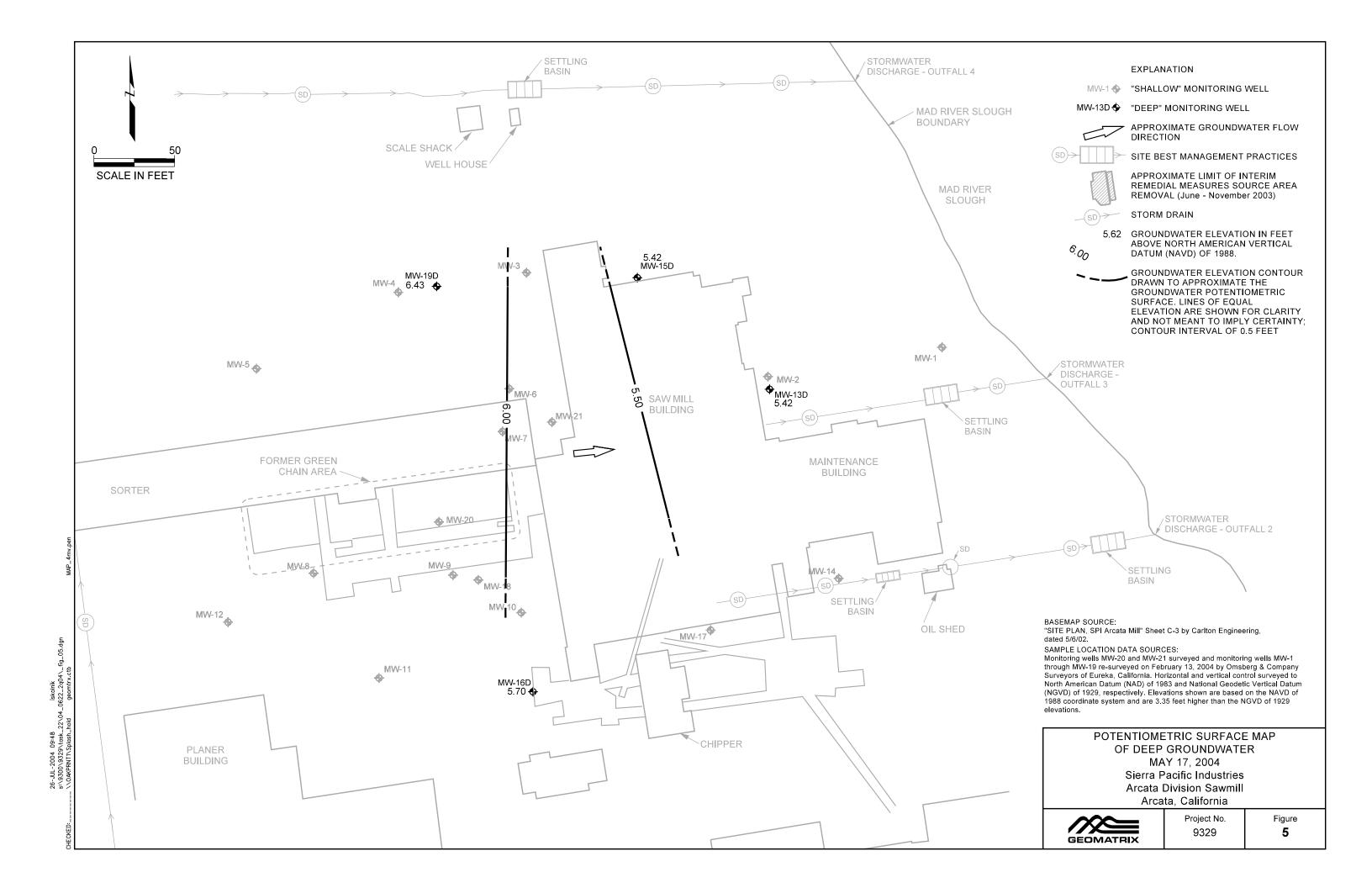


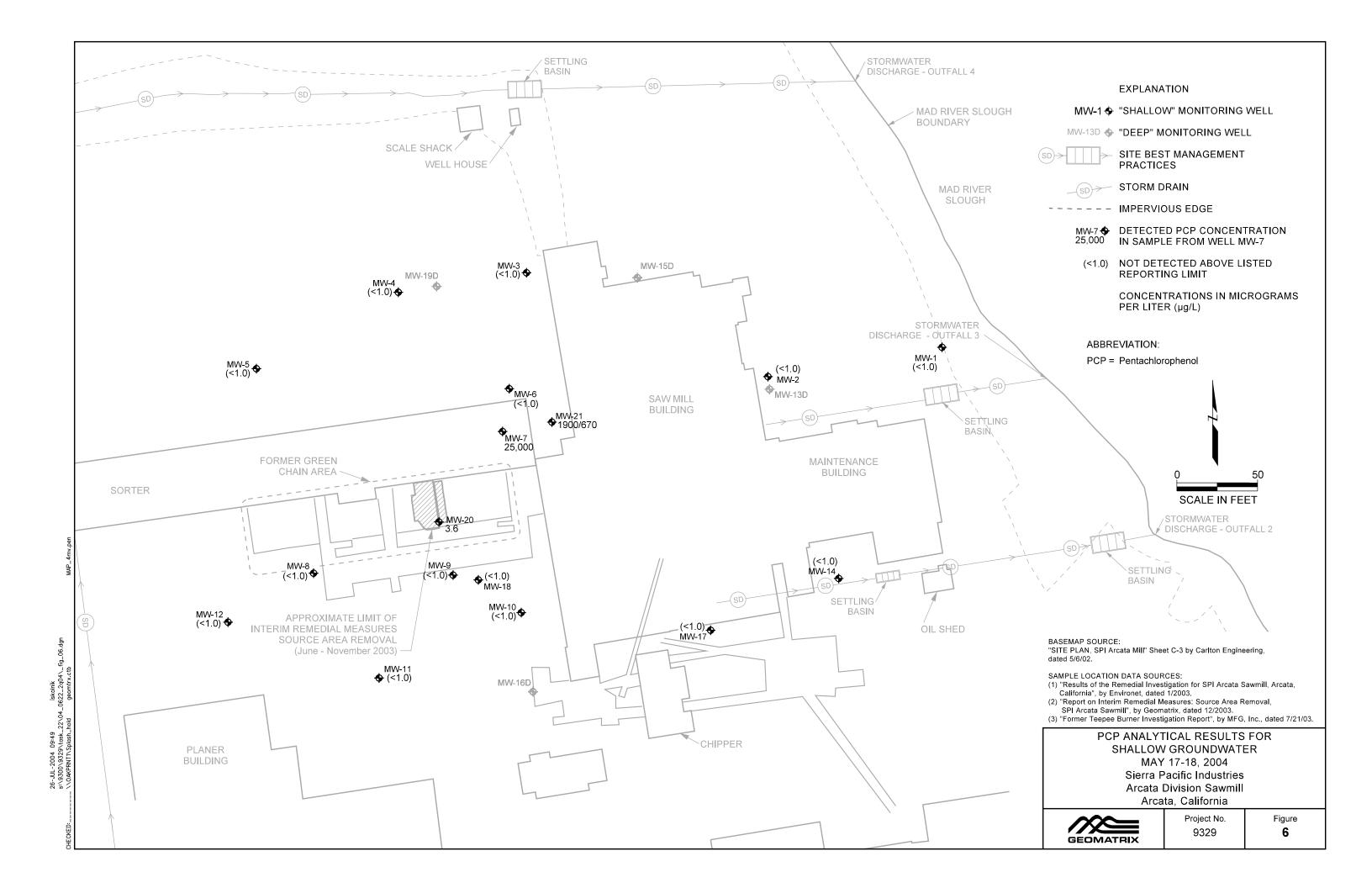


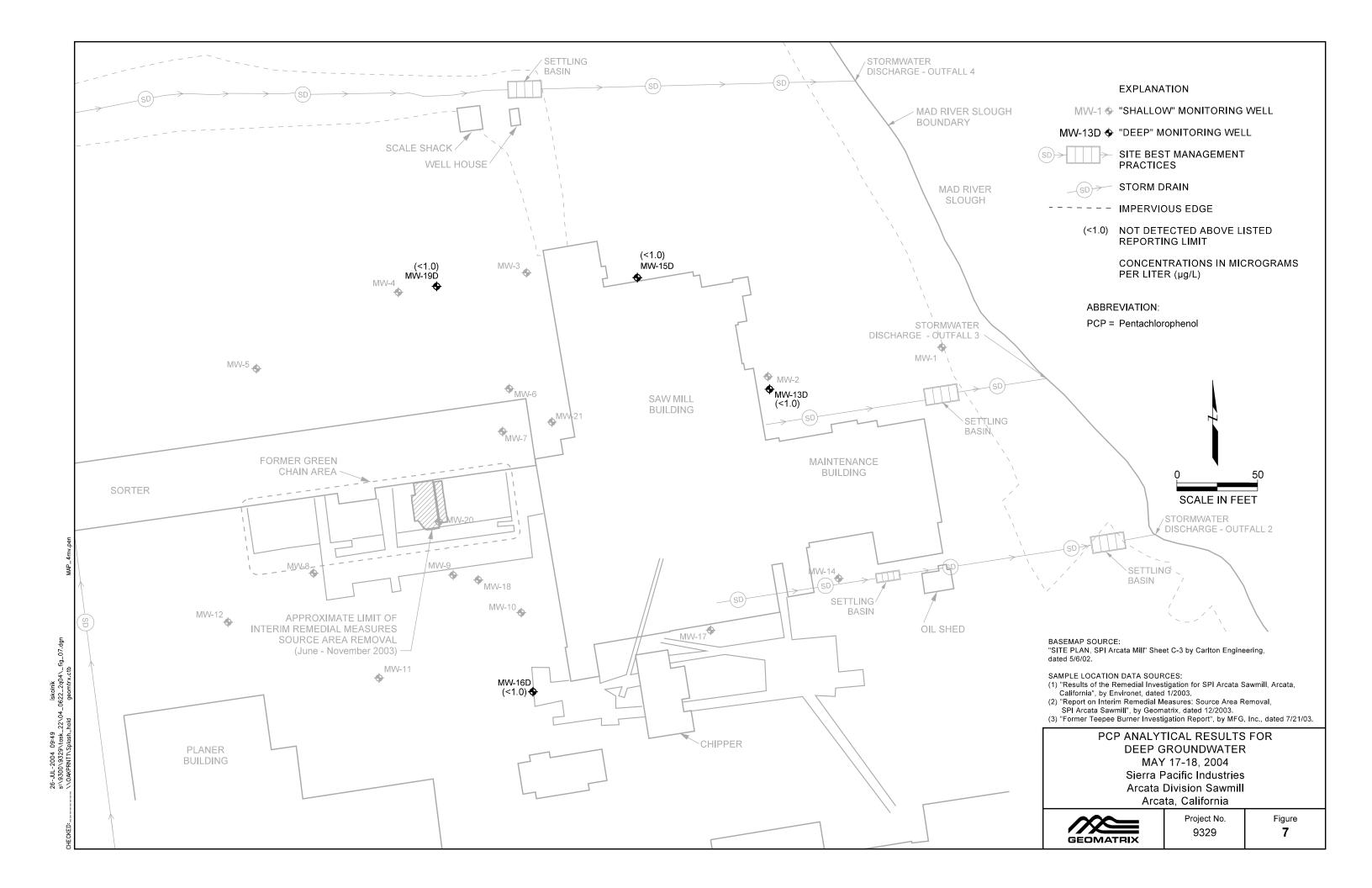




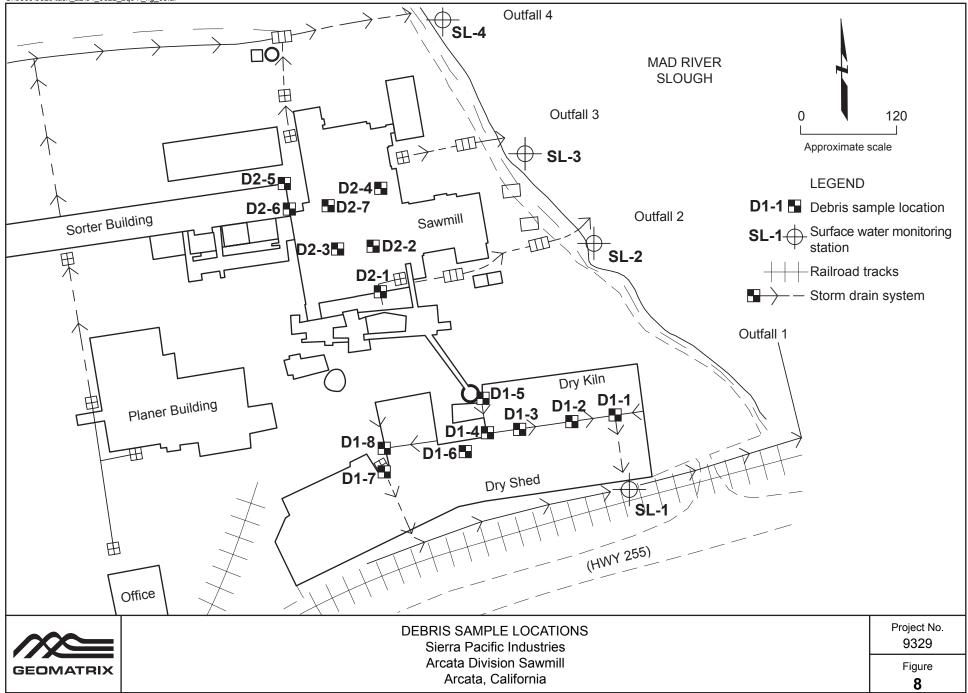
7100	ta, oumonna	
GEOMATRIX	Project No. 9329	Figure 4







S:\9300\9329\task_22\04_0622_2q04_fig_08.ai





APPENDIX A

Field Records – Groundwater Monitoring Program

Project N	o:0302		t Name: SPI Arca	atā Sawmill		PAGE:_	1 of 1
Measurin	a Point of V	Well (MP): Notch	or North	· .			
		Envirotech I'	TD, Waterline M	fodel 150			
Measurin	g Device:_						
Observat	tions / Com	ments:		Depth			
DATE or WELL	TIME	MP ELEVATION (feet, NGVD)	DEPTH TO WATER (feet below MP)	CONVERSIONS or CORRECTIONS TO DEPTH TO WATER	WATER LEVEL ELEVATION (feet, NGVD)	REMARKS	MEASURED BY
MW-1	717	9.56	OCK64.57	8.507.90			M.Hillya
MW-2	922	9.49	5.43	7.90			
MW-3	930	11.14	12.25	7.30			
MW-4	934	10.71	1.17	7.30			÷
MW-5	940.	10.69	0.73	1. SD	-		
MW-6	145	9.77	6,7%	7.50			
MW-7	993	9.68	1. S	750			
MW-8	855	10.30	0.54	7.50			
MW-9	900	9.86	0.38	780	• *	wold dringed	
MW-10		9.80	0.61	7 85			
MW-11	857-	10.26	0.69	8.45			
MW-12	8:50	10.73	0.76	8.50			
MW-13D	920	9.84	4.54	1910			
MW-14	7:10	9.02	2.15	7.90			
MW-15D	LX	11.08	5.17	19.90			
MW-16D		9.80	4,13	965			
MW-17	90%	8.98	0.74	7.60			
MW-18	900		6.47	835	•		
MW-19D	932	11.00	4.63	19.85			
MW-20	1949		2.35	677			1
MW-21	22		329				V
RR	8:15	15.70	14.48				
RR	S. F. L.	15.70	17 30				
					5		
	, 1	te de pare					

				an		:11					Date 05/ 17 /04
Project N	lo: <u>03027</u> :	5.22 Pro	ject Nan	ne: <u>SPI</u>	Arcata S	awmill				4.	Date_03///04
Sampling	J Location (V	well ID, etc.):	MW	/-1		Starting	Water Le	vel (ft. Bl	MP): '		r Column Height (ft.): <u>₹</u> ₹ ₹
Sampleo	by. <u>Mati</u>	t Hillyard									
Measurir	ng Point (MF	P) of Well:	9.50								plication Factor: 0.163
Screene	d Interval (ft	.BGL):)-8.0		Casing	Volume (g	pal.):	27:	2X:	3X 1.63 4X
Filter Pa	ck Interval (ft.BGL):	1.:	5-8.0		Water I	Level (ft.Bl	MP) at Er	nd of F	ourge:	5.50
Casing	Stick-Up/Dov	wn (ft.):				Total D	epth (ft. B	MP) at E	nd of F	Purge:	
OLIA	ITY AS	SURAN	CE							`	- *
											·
Clean	ing Equipme	ent_Liqui	nox de	tergent	& distille	d water s	solution	follow	ed by	y triple	rinse w/ distilled water
Purgin	ng:	Disposabl	e Tefle	on Baile	r	د	Samp	ling: D1	spos	able Te	eflon Bailer
Dispo	sal of Disch	arged Water	: <u>5</u>	5-Gallo	n Drum						
INSTRU	MENTS (inc	licate make,	model, i	. d.):	Madal 1	50			TI	tramete	T
Wate	r Level: Env	virotech L	ID, w	aternne	WIOUEI 1.	30	I nem	Colibrati		pH 4, 7	¹ , 10
pH M	eter:	Ultramo orUltra	meter			X		Calibrati		447, 20)70 µmhos
		Ultramet	er				Field	Calibrat			00 ppm
Other	•	MEASU		INTS							
		racteristics		Water G	uality Dat		App	earance		Intake	
Date/ Time	Curnul.Vol. (gal)		Temp.	pH	specific Co (µmho) O Field Temp	cm}	Color	Turbie & Sedia		Depth (ft. BMP)	Remarks
1347	0		15.7	7.30		2611	It yello	Cher	~		
1348	15		15.4	6.83		2641	N	्ष			
1749	(15.3	6.67		2636	styres	Clan	dy_		
1350	1.5		15.2	6.52		2615	gray	dou	dy		
1351	20		15,1	6.33		2609	11	17			
1351	2.5		15.0	6-33		2635	. KE	או בנסד			sanale
											Į.
SAN		VENTO	RY	1					•		
Wate	r Level (ft. B	MP) Before :	Sampling	5.2	0 _R	ecovery %	81	s	Sample	e Intake I	Depth (ft. BMP):
		Bottles	Collecte	d		Filtratic		rvation	Ar	alysis	Remarks (guality control sample, oth
Time			sition (gl	ass, plasti		ty (Y/N) N	(1)	/pe)	ļ		(quality control semple, ou
1353	145 11	and the second design of the			2					P/TCP TDS	
	16+	Plastic			1	N				D5	
						-					
	of Custochy	Record No	46251								
Chain-	OP-CUZIOUV										
Chain-	ol-Custody							МсСи	llev	Fric	k & Gilman, Inc.

	lo: 0302	75.2	2 Pro	ect Nam	e: SPI	Arcata S	Sawm	nill					Date 05/17/04
ioject N	Location	(wall	ID. etc.)	MW	-2		Sta	arting	Water Lev	el (ft. BN	IP):	5.4	
Sampling	by. <u>Ma</u>	tt H	illvard				То	tal De	pth (ft. BN	1P): 7.0	40	_ Water	Column Height (ft.): 7.47
	ng Point (N						Са	using [Diameter (in. ID): <u>2</u>	-Inch	Multip	lication Factor. 0.163
	d Interval (2.0	-8.0	4	Ca	sing \	/olume (g	al.):(<u>t_</u> 2	x:_ .8	4X
	ck Interval			1.5	-9.0 .				evel (ft.BN				
	ck merva Stick-Up/D												
						5			\$				
	LITY A								-				•
METHO	DS (descri	be):	Liquino	v deter	oent &	distilled	wate	r sol	ution fo	llowed	by t	riple ri	nse w/ distilled water.
			sposabl	e Teflo	n Barte	r			Samp	ling:	Disp	osable	Teflon Bailer
Purgi	ng:		od Water	5	5-Gallor	n Drum	.,		-				
INSTRE	MENTS (ndica	te make.	model, i.	d.):								
Wate	r Level: E	nvir	otech L'	TD, W	aterline	Model 1	.50		Them	nometer.	Ult	ramete	r
	eter:		Ultrame	eter						Calibratio		$\frac{0H4, 7}{147, 20}$, 10 70 umbos
	uctivity Me	eter:_		meter						Calibrati			70 μmhos 1500 ppm
Othe	r. TDS	Ult	rameter	and the second se					Field	Calibrati	<u>on:</u>	500,	
SAM	IPLING				NTS					eerence			r
Date/	Purge Ch Cumul.Vo		terietice Purge	Temp.		Specific Co	te onduct os/cm}	ance	Color	Turbic		intake Depth	Remarks
Time	(gal)		te (gpm)	(°C)	рН	(µmno CiField Tem	p. C 2	5 ° C.	0001	& Sedir		(IL BMP)	
1400	0			15.2	6.PI		14	36	Clear	· ·	Devq		
1601	.5	+		149	6.51		14	34	Clear	Sligh Cloud	t y		
1402				14 9	6.23		14	34	Haven	Clou	/		
							- I -	37	11		1		
1403	1.5			14.8	618		14	51	i (TOS=	782		squiple
		+											
													a
		+					+						
SA	MPLE	NV	ENTO	RY									0
	r Level (ft.				5.6	5	Recove	ery %:	91	s	ample	e Intake I	Depth (ft. BMP):
wate	Lover (IL	JMI	Bottles (Collecte	4	1	F	Itratio		ervation	Δ.	nalysis	Remarks
Tim		me	Compo	sition (gl	ass, plast		kity	(Y/N)		ype)			(quality control sample, ot
140	1.00		Glass			2		N				P/TCP	
	10	+	Plastic	;		1		N				DS	
				1000									
Chain	-of-Custod	ly Re	cord No	46251								·	
					.5					McCu	lley	, Fric	k & Gilman, Inc.
			Sample Form										

e e

GROUNDWATER SAMPLING	PECORD		PAGE: 1 of: 1
GROUNDWATER SAMPLING	necond	SAMPLE NUMBER:	MW-3
Project No: 030275.22 Project Name: SPI Arcata	Sawmill		Date 05/17/04
Sampling Location (well ID, etc.):MW-3	_ Starting Water L		
Sampled byMatt Hillyard	_ Total Depth (ft. 6	SMP): 7.90 Water (Column Height (ft.): 5-65
Measuring Point (MP) of Well: 11.14	Casing Diameter		cation Factor: 0.163
Screened Interval (ft.BGL): 2.0-8.0	Casing Volume	(gal.): . 9 2 2X: 1.8"	<u>3x 2 8 4x</u>
Filter Pack Interval (ft.BGL): 1.5-8.5	_ Water Level (ft.E	BMP) at End of Purge:	,70
Casing Stick-Up/Down (ft.):	Total Depth (ft. I	3MP) at End of Purge:	
QUALITY ASSUBANCE			

METHODS (describe):

 Cleaning Equipment__Liquinox detergent & distilled water solution followed by triple rinse w/ distilled water.

 Purging:______Disposable Teflon Bailer
 Sampling: Disposable Teflon Bailer

 Disposal of Discharged Water:_____55-Gallon Drum
 55-Gallon Drum

INSTRUMENTS (indicate make, model, i.d.):

SAMPLING MEASUREMENTS

Conductivity Meter.____Ultrameter

Other: TDS Ultrameter

Water Level: Envirotech LTD, Waterline Model 150 pH Meter_____Ultrameter _ Thermometer:__Ultrameter _ Field Calibration:__pH 4, 7, 10

Field Calibration: 447, 2070 µmhos Field Calibration: 300,1500 ppm

		1								
	Purgo Cha	recteristics			Quality Date		Appo	ATARCO	Intake	
Date/ Time	Cumul.Vol. (gal)		Temp. (°C)	pН	Specific Cor (µmhos O Field Temp.		Color	Turbidity & Sediment	Depth (fL BMP)	Remarks
1503	0		15.8	6.62		1204	Clear	clear		
1505			15.8	6.36		1080	(torony	Slightly Cloudy		
1506	2		15.4.			1058	٢.	0		
1507	2		15.7	6.32			7	. UT.		•
1507	3.5		15.7	6.217		1119	Ľ,	17		
1508	4.0		15.7	6.16		1108	t_1	TD5=7590-		Sample
								4		
								×		
							~			
SAN	IPLE IN	VENTO	RY	-						
Water	Level (ft. B	MP) Beiore S	ampling	2.5	<i>∽</i> Re	covery %	96	Sample	Intake l	Depth (ft. BMP):
		Bottles C	ollocte	d		Filtratic	n Prese	rvation An	alveie	Remarks

Time	Volume	Composition (glass, plastic)	Quantity	(Y/N)	(type)	74 101 y 51-5	(quality control sample, other)
1510	125 ml	Glass	2	N	-	PCP/TCP	
	1 Rt	Plastic	1	Ν	-	TDS	
Chain-of-	Custody Re	cord No. 46251			McCu	lley, Frick	& Gilman, Inc.

GW Sample Form MAC/CAD Revised: 9-8-05

Project No: 030275.22 Project Name: SPI Arcata Sawmill Date 05/770 Sampled by: Matt Hillyard Starting Water Level (R. BMP): 1.7 Total Depth (R. BMP): 7 Colored (R. BMP): Total Depth (R. BMP)		- 03027	5.22 Pm	iect Nar	a: SPI	Arcata Sa	wmill				Date_05/17/04
Sampled by: Matt Hillyard Total Depth (ft. BMP): 78° Water Contram Height (ft): 6° Screened hierval (t.BGL): $2.0-8.0$ State of the water (ft. ID): $2-1$ C. S.0 Clearing State-Up/Down (ft.): $2.0-8.0$ Casing State-Up/Down (ft.): $2.0-8.0$ Clearing State-Up/Down (ft.): $2.0-8.0$ Casing State-Up/Down (ft.): $2.7 < 2.8 < 5.7 4.2$ Casing State-Up/Down (ft.): $2.7 < 2.8 < 5.7 4.2$ Casing State-Up/Down (ft.): $2.7 < 2.8 < 5.7 4.2$ Casing Volume (gal.): $1.28: 2.7 < 2.8 < 5.7 4.2$ Casing Volume (gal.): $1.28: 2.7 < 2.8 < 5.7 4.2$ Casing Volume (gal.): $1.28: 2.7 < 2.8 < 5.7 4.2$ Casing Volume (gal.): $1.28: 2.7 < 2.8 < 5.7 4.2$ Casing Volume (gal.): $1.28: 2.7 < 2.8 < 5.7 4.2$ Casing Volume (gal.): $1.28: 2.7 < 2.8 < 5.7 4.2$ Casing Volume (gal.): $1.28: 2.7 < 2.8 < 5.6$ Casing Volume (gal.): $1.1 < 28: 5.6$ Casing Volume (gal.): $1.1 < 28: 5.6$ Total Depth (ft. BMP) at End of Purge: $2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 < 2.9 <$		0. <u>05027</u>		MW	7-4		Starting	Water Le	evel (ft. BM	P):7	
Measuring Point (MP) of Welt: 10.71 Casing Diameter (In. D): 2-InCL: Multiplication Factor: 0.105 Screened Interval (ft.BGL): 2.0-8.0 Casing Wolm: Casing Wolm: Casing Sixt-UpDown (ft):	Sampled	be Matt	Hillvard				Total D	epth (ft. B	MP):	80 Water	Column Height (ft.): 6 6
Screened Interval (ft.BGL): 2.0-8.0 Casing Volume (gal): 1.1.5-8.0 Pitter Pack Interval (ft.BGL): 1.5-8.0 Water Level (ft.BMP) at End of Purge: 2				10).71		Casing	Diameter	(in. ID): <u>2-</u>	Inch Multip	lication Factor: 0.163
Filter Pack Interval (It.BGL): 1.5-8.0 Water Level (It.BMP) at End of Purge: 2.7.7.3 Casing Skick-Up/Down (It.): Total Dopth (It. BMP) at End of Purge: .7.7.3 QUALITY ASSURANCE Total Dopth (It. BMP) at End of Purge: .7.7.3 QUALITY ASSURANCE Sampling: Disposable Tefton Bailer Sampling: Disposable Tefton Bailer Purging: Disposable Tefton Bailer Sampling: Disposable Tefton Bailer Sampling: Disposable Tefton Bailer NSTRUMENTS (indicate make, model, Ld.): Water Level: Envirotech LTD, Waterline Model 150 Thermometer. Ultrameter Pid Meter: Ultrameter Field Calibration: 47, 2070 µmhos Conductivity Meter: Ultrameter Field Calibration: 300,1500 ppm SAMPLING MEASUREMENTS Mater Cound Vol Purger Total Dept // PH Field Calibration: 300,1500 ppm Sampling: Color If % 6, 6, 7 % 2, 9 Clow Clew Clew 15, 42 I, 7 If % 6, 6, 7 % 2, 9 Clow Clew Clew 15, 42 I, 7 If % 6, 6, 7 % 2, 9 Clow Clew Clew 1				2.	0-8.0		Casing	Volume (gal.):	2X:2.	2 3X 3-3 4X
Casing Stid-Up/Down (h.): Total Depth (ft. BMP) at End of Purge; QUALITY ASSURANCE METHODS (describe): Cleaning Equipment: Liquinox detergent & distilled water solution followed by triple rinse w/ distilled water Disposable Teflon Bailer Sampling: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer Disposable Teflon Bailer Disposable Terlon Bailer Disposable Teflon Bailer Disposable Terlon Bailer Disposable Teflon Bailer NISTRUMENTS (Indicate make, model, Ld): Thermometer. Water Level Envirotech LTD, WaterTime Model 150 Thermometer. Chiner TDS Ultrameter Field Calibration: 477, 2070 µmhos Conductivity Mater, Ultrameter Field Calibration: 1100 pt Sampting: Caract (Som) Purge Terming field Sectores Intake ph Balay Rearctscriftles Field Terming 22 Coleration: Intake ph Remarks Caract Vol (Purge) Termin field Terming 22 Coleration: Intake ph Remarks Is 40 0 177 (.18					5-8.0	•	Water I	.evel (ft.B	MP) at End	d of Purge:	2.45
QUALITY ASSURANCE METHODS (describe): Clearing Explorement							Total D	epth (ft. B	MP) at En	d of Purge:	
METHODS (describe): Clearing Equipment: Liquinox detergent & distilled water solution followed by triple rinse. w/ distilled water Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer Purging: Disposable Water 55-Gallon Drum INSTRUMENTS (indicate make, model, Ld.): Water Level; Envirotech LTD, Waterline Model 150 Thermometer. Ultrameter Field Calibration: pH 4, 7, 10 Field Calibration: pH 4, 7, 10 Phi Meter: Ultrameter Field Calibration: pH 4, 7, 10 Conductivity Meter: Ultrameter Field Calibration: at47, 2070 µmhos Other: SAMPLING MEASUREMENTS Code water ate (gpm) Voltor: Purge Trop: pH Specific Cendentance Color Turbidity Beed Beed (alibration: Intake Depth Remarks (gal) Rate (gpm) Trop: pH Specific Cendentance Color Color Intake Depth Remarks (gal) Rate (gpm) Trop: pH Specific Cendentance Color <t< td=""><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td></t<>	-										-
Cleaning Equipment Liquinox detergent & distilled water solution followed by triple rinse. W/ distilled water Purging	UETHO	26 (describ	a).				•	-			•
Purging: Disposable Tefton Bailer Sampling: Disposable Tefton Bailer Disposal of Discharged Water, 55-Gallon Drum INSTRUMENTS (indicate make, model, Ld): Water Level: Envirotech LTD, Waterline Model 150 Thermometar: Ultrameter pH Meter: Ultrameter Field Calibration: pH 4, 7, 10 Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos SAMPLING MEASUREMENTS Field Calibration: 300,1500 ppm Sampling: Color Turbidity & Section: 100,00 pm Sold Cardid Vol. Funge Field Calibration: 00,1500 ppm Sold Cardid Vol. Funge Temp. PH Section Color 1 Turbidity & Section: Intake Deght Remarks 15 4/2 0 19.8 6.67 2.9 Clear Intake Deght Remarks 15 4/2 0 19.8 6.67 2.9 Clear Intake Deght Remarks 15 4/2 17.7 6.16 8.84 11 1 Section Clear Intake 15 4/4 17.7 6.16 <	Clean	ina Equipme	nt Liaui	nox det	ergent &	z distilled w	vater solu	ition fol	lowed by	triple rinse	w/ distilled water
Disposal of Discharged Water	Purair	or: Dist	oosable Tel	flon Bai	ler			Sam	pling: <u>D</u>	isposable Te	eflon Bailer
INSTRUMENTS (indexte make, model, Ld.): There Lany rotech LTD, Waterline Model 150 There Conductivity Meter. Ultrameter Total Ultrameter Total Ultrameter SAMPLING MEASUREMENTS Colspan="2">Terme Correction of setting for adjustment of the set of of the	Dispo	sal of Disch	arged Water	: <u>5</u>	5-Gallo	n Drum					
Field Calibration: DF1 4, 7, 10 Field Calibration: DF1 4, 7, 10 Conductivity Meter_Ultrameter Field Calibration: 247, 2070 µmhos Field Calibration: 447, 2070 µmhos SAMPLING MEASUREMENTS Section: Control (all bration) Conductivity Meter_Ultrameter Game Calibration: 447, 2070 µmhos The Calibration: 300,1500 ppm Sample Calibration: Appearance Data (ga) Rate (gpm) Water Generation: Game cance Color Appearance Color Appearance Color Appearance Data (ga) Rate (gpm) Water Generation: 447, 2070 µmhos (Ga) Rate (gpm) Temp. Parentice Generation: 447, 2070 µmhos (Ga / Parentice Calibration: 447, 2070 µmhos Turbdify Game cance Turbdify Game cance (Ga / 16 / 9m / Game cance Turbdify Game cance 19 / 10 / 10 / 9m / Game cance Turbdify Game cance 17 / 6.16 88/6 / 1	IN OTOL	AICATC God	Footo make	model i	d).		50	Th 4 -	manatar	Ultramete	r
pH MeterConductivity MeterUttrameter Field Calibration: 447, 2070 μmhos OtherTDS Ultrameter Field Calibration: 300,1500 ppm SAMPLING MEASUREMENTS Purge rest conductivity Data Appersame Data/ Imme Field Calibration: 300,1500 ppm Sample Ling MEASUREMENTS Purge rest conductivity Data Appersame Data/ (gai) Rate (gm) Field Calibration: 300,1500 ppm Remarks 15 40 0 19 g 6,67 g 2 q Clear Clear 15 40 0 19 g 6,67 g 2 q Clear Clear Intaker 15 42 1,7 (gai) Rate (gm) field Tengl 0 ge 2 ° C. Clear Intaker Remarks 15 42 1,7 6,16 884 11 claal-y Intaker 15 47 3,5 177 6,16 884 11 claal-y Intaker 15 47 3,5 177 6,16 884 11 claal-y Intaker Is 47 1 1 1 1 1 1 Gain-y Is 47 <	Water	Level: En	Virotech L	ID, W	ateriine		0	I her	mometer	pH 4, 7	, 10
Field Calibration: 300,1500 ppm SAMPLING MEASUREMENTS Parge Characteristice Value Colliptation: 300,1500 ppm SAMPLING MEASUREMENTS Data/ (gai) Parge Characteristice Appearance Color duality Date Appearance Intake Deptin (ft Gauly Intake Deptin (ft Gauly Intake Deptin (ft Gauly Intake Deptin (ft BMP) Sample Intake Deptin (ft BMP): Intake Deptin (ft BMP) Sample Intake Deptin (ft BMP): Intake Deptin (ft BMP) Intake Deptin (ft BMP) Intake Deptin	pH M	eter:		meter				 Fiek	d Calibratio	n: 447, 20	70 µmhos
Color Intake Deater Terme, Term			Ultramete	er				Field	d Calibratic	n: 300,150	00 ppm
Perge Characteristice Veter Oracity Date Appendence Intake Depth & Remarks Date/ (ga) Rate (gpm) Temp. (%) PH Specific Conductance (naterial and the second) Color Appendence Intake Depth & Sodiment Remarks 15 40 0 19 g 6.67 g 29 Clour Clour Clour Intake Depth & Sodiment Intake Depth & Sodiment 15 40 0 19 g 6.67 g 29 Clour Clour Intake Depth & Sodiment Intake Depth & Sodiment 15 40 0 19 g 6.27 g 6 g N 11 Intake Depth & Sodiment Intake Depth & Sodiment 19 43 2 19 g 19 g 6.20 g g 7 N 11 Intake Depth & Stogarly Intake Depth & Stogarly 19 43 2 19 g 19 g 19 g 19 g 19 g 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10		•	the second s		INTS						
Date of gal Party Print Print Print Print Color & Sediment Deptin 15 40 0 19 8 6.67 8 2.97 $Clorr & Sediment Items 15 40 0 19 8 6.67 8 2.97 Clour clour clour 1 15 42 1.7 (8.8 6.27 8 64 14 9my Clour clour 1 19 43 2 (8.6 6.20 8 87 1 clour 1 clour 1 19 43 2 17.7 6.16 8 84 11 clour 1 clour 1 15 47 3.5 17.7 6.16 8 84 11 clour 1 clour 1 clour 1 clour 1 1 1 clour 1 clour 1 clour 1 1 clour 1 1 clour 1 1 1 clour 1 1 1 1 1 1 1 1 clour 1 1 $		Purge Cha	racteristics	-	Water (Quality Data	ductance	Ap	1	And I	Bemarks
1540 0 19.8 6.67 8.29 clour clour 15.02 1.7 18.8 6.27 869 14.9my Stage14 1 15.02 1.7 18.9 6.20 885 1 1 1 15.02 17.7 6.18 886 11 cloudy 1 15.47 3 17.7 6.16 884 11 1 5.9mg/4 15.47 3.5 17.7 6.16 884 11 11 5.9mg/4 15.47 3.6 17.7 6.16 884 11 1 5.9mg/4 15.47 17.7 6.16 884 11 1 5.	-				DH	(gmhos	/cm}	Color			Pietrialiko
1542 (.5 (8.3) 6.27 869 14 9my \$1941y 1943 2 (8.6) 6.20 885 11 1 1543 2 (8.6) 6.20 885 11 1 1543 2 (8.6) 6.20 885 11 1 1 1545 3.5 17.7 6.16 884 11 11 5.44/2 1545 3.5 17.7 6.16 884 11 11 5.44/2 1545 3.5 17.7 6.16 884 11 11 5.44/2 1545 3.5 17.7 6.16 884 11 11 5.44/2 1545 3.5 17.7 6.16 884 11 11 5.44/2 1547 3.5 17.7 6.16 884 11 1 5.44/2 1547 3.5 1.7 6.16 884 11 1.54/2 1.54/2 Vater Level (it. BMP) Before Sampling: 2.10 Recovery %: 8.6 Sample Intake Depth (ft. BMP):	1540			18.8				clear		1 1	
1543 Z 19.0 6.20 89.7 11 11 16114 3 17.7 6.18 89.66 11 claul./ 15.95 3.5 17.7 6.16 89.4 11 11 5.9.9% 15.95 3.5 17.7 6.16 89.4 11 11 5.9.9% 15.95 3.5 17.7 6.16 89.4 11 11 5.9.9% 15.95 3.5 17.7 6.16 89.4 11 11 5.9.9% 15.95 3.6 17.7 6.16 89.4 11 11 5.9.9% 15.95 3.6 17.7 6.16 89.4 11 11 5.9.9% 15.95 3.6 1.0 1.0 1.0 1.0 1.0 1.0 16.0 1.0		1.5		(8,3			869	1+ gron	1 Cloud	14 1	
15114 3 177 6.18 8866 11 clacky 154= 3.5 177 6.16 884 11 11 5.94% 154= 3.5 177 6.16 884 11 11 5.94% 154= 3.5 177 6.16 884 11 11 5.94% 154= 177 6.16 884 11 11 5.94% 154= 177 6.16 884 11 11 5.94% 154= 177 6.16 884 11 11 5.94% 154= 18 16 16 16 16 16 154= 16 16 16 16 16 16 177 125 ml Glass 2 N - PCP/TCP 17 17946 125 ml Glass 2 N - PCP/TCP 16 162+ Plastic 1 N - TDS 16 16 16 16 16 16 16 <				18.0	620		885	11	1		
15 4 = 3.5 17.7 6.16 684 11 11 Sauple 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 11 11 11 11 11 11 11 11 10 11 11 11 10							886	11	clan	1-1	
Image: Second No. Im	1611-	26		177			884	10	11		C Quello
Water Level (ft. BMP) Before Sampling: 2, 0 Recovery %: 86 Sample Intake Depth (ft. BMP): •••••••••••••••••••••••••••••••••••	1745	7.7		1.1.1.	<i>e.</i> 1 <i>0</i>		001		T05: 50	iop pm	suspite
Recovery %: 86 Sample Intake Depth (ft. BMP): Water Level (ft. BMP) Before Sampling: 2, 0 Recovery %: 86 Sample Intake Depth (ft. BMP): Time Volume Composition (glass, plastic) Quantity (Y/N) Preservation (type) Analysis (quality control sample 1946 125 ml Glass 2 N - PCP/TCP 1 (Q+ Plastic 1 N - TDS											
Recovery %: 86 Sample Intake Depth (ft. BMP): Time Volume Composition (glass, plastic) Quantity (Y/N) Preservation (type) Analysis (quality control sample 1946 125 ml Glass 2 N - PCP/TCP 1946 125 ml Glass 2 N - TDS 1946 125 ml Glass 2 N - TDS 1946 125 ml Glass 2 N - TDS 10 1 N - TDS - 1 0 1 N - TDS 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 1 0 1 0 1 0 1 1 0 1 0 1 0 1 1 0 1 0 1 0 1 1 0											
Recovery %: 86 Sample Intake Depth (ft. BMP): Outline Control sampling: 2, 0 Recovery %: 86 Sample Intake Depth (ft. BMP): Outline Control sampling: 2, 0 Recovery %: 86 Sample Intake Depth (ft. BMP): Outline Control sample Filtration (type) Analysis (quality control sample Time Volume Composition (glass, plastic) Quantity (Y/N) Preservation (type) Analysis (quality control sample 1946 125 ml Glass 2 N - PCP/TCP 1 (Q+ Plastic 1 N - TDS											
Recovery %: 86 Sample Intake Depth (ft. BMP): Time Volume Composition (glass, plastic) Quantity (Y/N) Preservation (type) Analysis (quality control sample 1946 125 ml Glass 2 N - PCP/TCP 1946 125 ml Glass 2 N - TDS 1946 125 ml Glass 2 N - TDS 1946 125 ml Glass 2 N - TDS 10 1 N - TDS - 1 0 1 N - TDS 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 1 0 1 0 1 0 1 1 0 1 0 1 0 1 1 0 1 0 1 0 1 1 0											
Recovery %: 86 Sample Intake Depth (ft. BMP): Time Volume Composition (glass, plastic) Quantity (Y/N) Preservation (type) Analysis (quality control sample 1946 125 ml Glass 2 N - PCP/TCP 1946 125 ml Glass 2 N - TDS 1946 125 ml Glass 2 N - TDS 1946 125 ml Glass 2 N - TDS 10 1 N - TDS - 1 0 1 N - TDS 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 1 0 1 0 1 0 1 1 0 1 0 1 0 1 1 0 1 0 1 0 1 1 0	SAN			BY		1					•
Water Level (it. Bin?) Before Company					. 2	. 10 p.	coverv %	81	6 5	ample Intake [Depth (ft. BMP):
Time Volume Composition (glass, plastic) Quantity (Y/N) (type) Analysis (quality control sample 1946 125 ml Glass 2 N - PCP/TCP 1946 125 ml Glass 2 N - PCP/TCP 1 N - TDS - - - 1 N - TDS - - - 1 N - TDS - - - - 1 N -	i wate	Level (IT. B	-		·						Remarks
I 25 mil Orass 1 N - TDS I Q+ Plastic 1 N - TDS Chain-of-Custody Record No. 46251/46252		Volum						(type)	-	(quality control sample
Chain-of-Custody Record No. 46251/46252	Time	125 m							-		· · · ·
			Plastic	;		1	N		-	105	
		10+					1	1			
		10+									
	1946			46251	46252						

ninet ht-	. 030275	5.22 Pm	iect Nan	ne: SPI	Arcata Sa	wmill					Date 05/17/04
		ell ID, etc.):		7-5		Starting	Water Lev	vel (ft. BN	MP):	0,	78
		Hillyard				Total D	epth (ft. Bl	MP): <u>7</u> .	80	Wate	Column Height (ft): 202
			10.69			Casing	Diameter	(in. ID); 2	2-Inch	Multip	lication Factor: 0.163
	g Point (MP		2.0-8.0)		Casing	Volume (o	al.): (1	14 2X	. 2.2	8 3x 3.43 4x
	interval (ft.	Duc)				Water	Level (ft.BM	(P) at En	d of Pur	nde:	1.20
			1.5-8.0)		Total	epth (ft. Bl	AD) at Fr	nd of Pu	me:	
asing St	tick-Up/Dow	/n (ft.):				TOtal					
QUAL	ITY AS	SURAN	CE				-				-
ETHOD	S (describe):	1.		1:-+:111	tor colu	tion follo	wed by	triple r	ince u	/ distilled water
Cleanir	ng Equipme	nt_Liquin	ox dete	rgent &	distilled wa			" Di	isnosal	hle Te	/ distilled water eflon Bailer
Purging	rD1Sj	oosable T	erion E	5 Gallo	n Drum		Samp	ung:	isposa		
Dispos	al of Discha	rged Water	·								
ISTRUN	Level: Env	icate make,	TD. W	aterline	Model 15	0	Them	nometer:	Ultra	amete	r
	Level: <u>Linv</u> ter:	Ultram	eter					Calibrati	on:pł	14,7	, 10
	ctivity Mete	7 71	meter				Field	Calibrati	VIII.		70 μmhos
Other:	TDS	Ultramet	er				Field	Calibrati	on: 30	00,150	00 ppm
	PLING	MEASU	REME	INTS							
P	urge Char	acteristics		Water C	specific Cen	declance	App	Turbid		ntake	Remarks
Date/ (Time	Cumul.Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pН	(µmhos/ Ø Field Temp.	c m)	Color	& Sedin	- 1 . IL	Depth LBMP)	
1605	0		17.4	7.02	e i biz renp.	676	Clear	cle	an		
	1		· · ·	6.87		665		11	4,		
606			16.1								
1607	2		15,4	659		665		11			·
1608	3		15.3	6.37		664	1 (17			
1.0			15,2	6.32		662	(<i>1</i>	TUS = 4.	3800-		Sample
			1 37 4			402		10 1.	2pp-		samp c
				ļ		·,					
			1								
				1	1		1				
		VENTO		. [2	0		. 94				
Water	Level (ft. Bl	AP) Before \$		+	Re	covery %	·t		ample II	ntake L	Pepth (ft. BMP):
Time	Volume	Bettles (ass, plasti	c) Quantity	Filtratio		rvation /pe)	Anal	lysis	(quality control sample, other
1610	125 m				2	N	-		PCP/	TCP	
	10+		:	-	1	N	-		TE		
				£							
			46252								
Ohele -											
Chain-o	f-Custody F								llor -		& Gilman, Inc.

GROL	JNDV	VATE	R SA	MPI	LING R	ECO	RD	SAMP	LE NUN	ABER:	PAGE: <u>1</u> of: <u>1</u> MW-6
Project No:	: 03027	5.22 Pro	ject Nar	ne: <u>S</u> P	PI Arcata Sa	awmill					Date_05/}7/04
Sampling	ocation (well ID, etc.):	MW	7-6		Starting	g Water Lo	evel (ft. Bl	MP):	0.7	8
Sampled b	w: Mat	t Hillyard				Total D	epth (ft. B	MP):_7	80	Wate	r Column Height (ft.): 7.02
Measuring	Point (Mf	P) of Well:		9.77		Casing	Diameter	(in. ID): <u>2</u>	2-Inch	Multip	blication Factor: 0.163
Screened	interval (ft	BGL):	2	2.0 - 8.0		Casing	Volume (gal.):	<u>4</u> 2X	22	8_3X_3_43_4X
Eliter Pack	interval (ft.BGL):	1	.5-8.0	•	Water	Level (ft.B	MP) at Er	nd of Pu	rge:	2,05
Casing Sti	ck-Up/Do	wn (ft.):				Total D)epth (ft. E	BMP) at E	nd of Pu	rge:	2.5
_		SURAN					-				-
METHODS	S (describ	a).									
Cleaning	g Equipme	nt_Liqui	nox det	ergent &	k distilled w	ater solu	ution foll	lowed by	/ triple	rinse v	w/ distilled water
							Sam	pling:	1sposal	ble Te	eflon Bailer
		arged Water:			on Drum						
INSTRUM	ENTS (inc	ficate make,	model, i	. d.): Interline	Model 15	0	TL		Illtra	amete	r
Water L	evel: En	I Iltrame	ID, W	aternin	e Model 15	0	Then	mometer: d Calibrati		H 4. 7	, 10
pH Mete	917	Ultrame rUltra	meter				Field	d Calibrati	on: 44	17,20	70 μmhos
Other	TDS I	Jltrameter						d Calibrati			1500 ppm
		MEASU		ENTS	• • •		1 101				
Pu	rgs Cha	racteristics			Quality Data		Ap	Pearance		ntake	
Date/ C Time	turnul.Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	рН	(µmhos) @ Field Temp.	/cm}	Color	Turbic & Sedir	lity C	Depth L BMP)	Remarks
1621	Ø		14.1	6.67		891	Clear	Clea	·		
1622	1.5		[3.8	6.34		954	clear	st.			
1623	2		13.7	6.31		958	14gray	Slight	dr-		
1624	3		13.6	6.3		93	+(it			
1625	3.5		13.6	6,26		933	i C	TOS = 6	45 08m		Sample
SAM	PLE IN	VENTO	RY							10	
Water L	evel (ft. Bl	MP) Before S	ampling	r	70 _Re	covery %	: 84	S	ample Ir	ntake D	epth (ft. BMP):
Time	Volume			d ass, plast	ic) Quantity	Filtratic	- T	ervation ype)	Anat	ysis	Remarks (quality control sample, othe
1626	125 m			mot hos	2	N		- -	PCP/	ТСР	
1000	102+				1	N		-		DS	
Chain-of-	Custody F	Record No4	6252						,		
								McCul	lley, F	Frick	& Gilman, Inc.

GW Sample Form MAC/CAD Revised: 9-8-85

Project N	ю: <u>030</u>	275.2	22 Pro	ject Nan	ne: <u>SP</u>	[Ar	cata Sa	wmill				A) =	Date 05/ 1/04
Sampling	Locatio	n (wei	I ID, etc.):	MW	7-7			Starting	Water Le	vel (ft. BN	AP):		
Sampleo	i by:N	latt F	Hillyard										Column Height (ft.):
			of Well:	9.6	8			Casing	Diameter	(in. ID): <u>2</u>	-Inch	<u>1</u> Multip	lication Factor: 0.163
			GL):	2.0-	8.0			Casing	Volume (g	gal.): <u>\</u>	2	x: <u> 2</u> ∕	4 3X 3.6 4X
			BGL):		8.0	-		Water I	_evel (fLB	MP) at En	d of P	urge:	1.80
			(ft.):					Total D	epth (ft. B	MP) at Er	nd of F	Purge:	m
-			URAN					_					• *
Clean	ina Eau	pment	: Liquin	ox deter	rgent &	disti	lled wat	er solut	ion follo	wed by 1	triple	rinse w	/ distilled water
Pumir	nor Di	sposal	ble Teflo	n Baile	r				Sam	oling:	Disp	osable	Teflon Bailer
Dispo	sal of D	scharg	ed Water:	· 5:	5-Gallo	n Di	rum						· · · · · · · · · · · · · · · · · · ·
INSTRU	MENTS	(indic	ate make,	model, I.	d.):	м	dal 15(h	There		τΠt	ramete	r
			rotech L Ultrame		aternne			5	i nen Field	Calibratio	<u></u>	oH 4, 7	, 10
pH M	eter:		Ultra	meter					Field	Calibrati			070 µmhos
Cond		DS I	Itramete	er					Fiek	Calibrati	on:	300,150)0 ppm
			EASU		NTS								
			eteristics		Water	auat	ty Data Ific Conc		Apj	earance		Intake	Demade
Date/ Time	Cumul		Purge ate (gpm)	Temp (°C)	DH		(gmhos/	cm}	Color	Turbic & Sedir		Depth (fL BMP)	Remarks
1054	(ga		are (Shu)	12.8	7.93	O H	eid Temp.	140	1-,-lellon	Clea	in		
				<i>i</i> -	7.37			320	NT NT				
1056	1		-	12.2						1 11			
1057	2.			12:1	7.05			466	41	· · ·	~		
1058	3			120	6.78			608	11	.'(
1058	1	3.5		120	6.68			629	11	11			
1059	.4			120	6.59			687	1/	11			
1049	40	-		11.5	6.55			733	e ^r	TDS=	401		Sample
1019	9.4			11.7	6.9			17/		TDS=	Capta		J'a p
										-			
SA	MPLE	INV	ENTO	RY									
Wate	r Level (ft. BMF	P) Before \$	Sampling	<u>r_1</u> /	50	Rec	covery %	:6	s	ample	e Intake E	Depth (ft. BMP):
			Bottles (Collecte	d		-	Filtratio		ervation	A	alysis	Remarks (quality control sample, other
Time		lume			ass, plas	ic)	Quantity	· · · ·		ype)	PC	P/TCP	(quality control campio, card
1100		5 ml	Glass Plast				2	N N				DS	
		Rt_	Flast				1					00	
			cord No	46252	,								
I Chain-	-or-Cust	ocry Re	COLO NO.										_
									1	HeO	llow	Crial	& Gilman Inc.
										McCu	lley	, Fricl	< & Gilman, Inc.

iro	UNDV	VATE	K SA	AMPL	ING H	EUU	עאי	SAMP	LE NI	UMBER:	: MW-8
Project N	ю: 03027	5.22 Pr	oject Na	me: <u>SPI</u>	Arcata Sa	awmill					Date_05/17/04
Samplin	Location (well ID, etc.)		V-8		Starting	g Water Le	vel (ft. B	MP):_	7.80	0.54
Sampleo	by. Mat	t Hillyard				Total D	epth (ft. B	MP): <u>-</u>	-54	Wate	r Column Height (ft.): 720
•	ng Point (MF		10.3			Casing	Diameter	(in. ID):	2-Inc	h Multir	plication Factor: 0.163
		_ BGL) :2	.0-8.0			Casing	Volume (jal.):	2	2X:`	3X 3.6 4X -
Eliter Pa	ck interval f	ft.BGL):	1.5-8.0			Water	Level (ft.B	MP) at E	nd of f	ourge:	1.20
		wn (ft.):) Depth (ft. B				
		SURAN				I					• ·
	DS (describe						-				•
Clean		ent Liqui	nox det	tergent &	distilled w	ater solu	ution foll	owed by	y trip	le rinse	w/ distilled water
Purgir	Dispo	sable Teflo	on Baile	er			Samp			posable	Teflon Bailer
		arged Water			Drum						
INSTRU	MENTS (inc	icate make,	model, i	.d.):					T 73		-
		virotech L								tramete	2 <u>10</u>
pH M	eter:	Ultram	eter							pH 4, 7	, 10 070 μmhos
Cond	uctivity Mete	Ultramate	imeter								00 ppm
		JItrameter MEASU					Heid	Candrat	ION:	200,150	oo ppm
-		MEAGU			allty Data		App				
Date/ Time	Cumul.Vol.	Purge	Temp.	DH SI	ecific Con (µmhos/	ductance (cm)	Color	Turbi	dity	Intake Depth	Remarks
Ime	(gal)	Rate (gpm)	(°C)	0	Field Temp.	1		& Sedi		(ft. BMP)	
1036	0		19.1	6.31		807	It yplan	ce	C.!.~		
1037	(18.6	6.64		801	\sim	$ \geq 1$			
1038	Z		178	6.01		197	t `	. 5 F	~		
1059	3		174			796	1		ł		
1:42	4		176	6.07		795	1-	TOSE	e 72 .		Sample
								105 -	<u>, 199</u>		
											-
		-									
SAN		VENTO	RY	· · · · ·			A				
		MP) Before S		r (.00	2 84	covery %:	74	S	ample	Intake D	Pepth (ft. BMP):
TT CLOT	Lotor (it. Di	Bottles C		·		Filtratio		rvation	1		Remarks
1	Volume			ass, plastic)				pe)	ļ	alysis	(quality control sample, of
Time		1 Glass			2	N	-			P/TCP	
1044	120 111				1 4	N			I T	DS	1
		Plast	ic		1	<u> </u>				20	
1044			ic								
1041 1041	10+	Plast									
1041 1041	10+										1
1041 1041	10+	Plast						AcCu			a & Gilman, Inc.

Project N	lo: <u>03027</u>	<u>5.22</u> P	roject Na	me: <u>S</u>	PI Arcata S	awmill					Date 05/1 7/04
Sampling	g Location (well ID, etc.	: <u>M</u>	W-9		Startin	g Water Le	evel (ft. l	3MP):_	O.E	£,35
		t Hillyard				Total I	Depth (ft. B	MP):	8	Wat	er Column Height (ft.): 7.42
Measurir	ng Point (M	P) of Well:	9.8								iplication Factor: 0.163
Screene	d Interval (f	tBGL):	2.0-8	3.0	•	Casing	g Volume (gal.):	. 2	2X: 7,	4 3x 3.16 AX -
Filter Pa	ck Interval	(ft.BGL):	1.5-8	3.0	•	Water	Level (ft.B	MP) at E	End of	Purge:	100
Casing S	Stick-Up/Do	wn (ft.):				Total I	Depth (ft. B	MP) at f	End of	Purge:	-
QUA	LITY AS	SURAN	ICE				-				•
	OS (describ		1.	. 0	. 1	. 1	. C 11				
					distilled w						w/ distilled water le Teflon Bailer
		posable Te			n Drum		Sam	oling:	D	sposad	le Terion Baller
		dicate make,									
					e Model 15	50	Them	nometer	Ul	tràmete	er
pH Me	ster:							Calibrat		pH 4, 7	
	ctivity Mete		meter				Field	Calibrat	ion:		070 μmhos
		Лtramete					Field	Calibra	tion:	300,1	500 ppm
_		MEASU			Quality Date		4.5.5			1	
	Cumul.Vol. (gal)	Purge Rate (gpm)	Temp.	рН	Specific Cen (µmhos) © Field Temp	ductance /cm}	Color	Turbi & Sedi	dity	Intake Depth (t. BMP)	Remarks
1113	6		16.9	637		908	Clear	de.	¥.		Origing C. S. Jun D. Kop?
115		-	16.3	6.15		925	H gray	71220	141		
1116	2		16.1	6.14		926	1		1		
117	3		16 1	63		976	13	5.1	!		
1118	4		16.1	612		927	• 1				
	1		100 1	010		161		TDS-6	in film		Sample
									-		
SAM	PLE IN	VENTO	RY								
Water L	.evel (ft. BN	IP) Before S	ampling	1,00	Rec	xvery %:	92	s	ample	Intake D	epth (ft. BMP):
Time	Volume			ı ıss, plastic	c) Quantity	Filtration (Y/N)	n Preser (typ		An	alysis	Remarks (quality control sample, othe
120	125 ml				2	N	-			P/TCP	
	1.10+	Plasti	С		1	N	-		T	DS	-
Ohalt of	0		6253		1	<u>г</u>					1.
Unain-of-	-Custody R	ecord No4	0433								
	•						M	IcCul	ley ,	Frick	& Gilman, Inc.
				Revised 9-8-1		1					

Project No: 050275.22 Project Name. 0111100 Starting Water Level (ft. BMP):	<u>1of:</u>	
Project No. USUP 10:2000 Project Name Project Name <td< th=""><th>1000.00</th></td<>	1000.00	
Sampling Location (well ID, etc.): MW-10 Sampled by: Matt Hillyard Measuring Point (MP) of Well: 9.80 Soreand Interval (ft.BGL): 2.0-8.0 Sensend Interval (ft.BGL): 2.0-8.0 Casing Stick-Up/Down (ft.): Casing Volume (gal.): 1.2 px: 7.11 gx, 7.11 gx	05/ <u>7</u> /04	
Sampled by: Matt Hillyard Measuring Point (MP) of Welt: 9.80 Screened Interval (R.BQL): 2.0-8.0 Screened Interval (R.BQL): 1.5-9.5 Casing Stok-Up/Down (R.):	1/1	
Measuring Point (MP) of Well: 0.80 Screened Interval (ft.BGL): 2.0-8.0 Casing Diameter (ft.BGL): 1.5-9.5 Filter Pack Interval (ft.BGL): 1.5-9.5 Casing Stak-UpDown (ft): Total Depth (ft.BMP) at End of Purge: QUALITY ASSURANCE METHODS (desortio): Liquinox detergent & distilled water solution followed by triple rinse w/ distilled water solutinton followed by triple rinse w/ distilled water soluti	ft.): 7.27	
Screened Interval (ft.BGL): 2.0-8.0 Casing Volume (gal.): 1.2 ≥ X: 11 3X ≤ 3.4X Water Level (ft.BMP) at End of Purge: 2.00 Total Depth (ft. BMP) at End of Purge: 2.00 Thermometer: Ultrameter Field Calibration: pH 4, 7, 10 Field Calibration: 2.00,1500 ppm SAMPLING MEASUREMENTS Sample Intake (gram) Yeb (ft. 2.0 9 15 Yeb (ft.).163	
Water Level (ft.BMP) at End of Purge:	4X	
Casing Stick-Up/Down (ft.):		
QUALITY ASSURANCE METHODS (describe): Liquinox detergent & distilled water solution followed by triple rinse w/ distilled water Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer NSTRUMENTS (indicate make, model, Ld): Water Level, Envirotech LTD, Waterline Model 150 Thermometer. Ultrameter Order: TDS Ultrameter Field Calibration: 2447, 2070 µmhos Other: TDS Ultrameter Field Calibration: 447, 2070 µmhos Output Rate (gpm) Termp. pH Purge: Termp. pH Field Calibration: Appertance 1255 I I (? 4 6 6 7 92.0 Clear 1252 I I (? 7 6 2.2 91.5 I I 1254 I I (? 7 6 2.2 91.5 I Sample Intake Depth (ft. BMP) I254 I I (? 7 6 2.2 I (? 7 6 2.2		
METHODS (describe): Liquinox detergent & distilled water solution followed by triple rinse w/ distilled water Purging: Disposable Teflon Bailer Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer NETRUMENTS (indicate make, model, Ld.): Mater Level; Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter PH Meter: Ultrameter Field Calibration: pH 4, 7, 10 Pottometer: TDS: Ultrameter Field Calibration: 447, 2070 µmhos Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos Other: TDS: Ultrameter Field Calibration: 101kase Remark Conductivity Meter: Purge Temp. PH Persent of a field Calibration: 101kase Other: TDS: Ultrameter Temp. PH Persent of a field Calibration: 101kase Remark Time Grant Mark (gan) Purge Temp. PH Persent of a field Calibration: 101kase Remark Conductivity Mark Purge Temp. PH Persent of a field Calibration: 101kase Remark Time Gast Gan Gast	*	
Colaming Explorent: Terfon Bailer Sampling: Disposable Teflon Bailer Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer NINSTRUMENTS (indicate make, model, Ld.): Water Level; Envirotech LTD, Waterline Model 150 Thermometer. Ultrameter pH Meter: Ultrameter Field Calibration: 247, 2070 µmhos Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos Other: TDS: Soldiestermake: Appearance Other: TDS: Ultrameter Field Calibration: 447, 2070 µmhos SAMPLING MEASUREMENTS Soldiestand: Appearance Intake Deptition: 1040 pp. Sampling: Candid Vol. Purging: Termo. PH Pressentance Intake Deptition: 1040 pp. 1238 I If 4, 7 6, 20 912 Intake Deptition: Intake	ater	
Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer Disposable Teflon Bailer 55-Gallon Drum INSTRUMENTS (indicate make, model, Ld.): Thermometer: Ultrameter Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter PH Meter: Ultrameter Field Calibration: PH 4, 7, 10 Conductivity Meter: Ultrameter Field Calibration: PH 4, 7, 10 SAMPLING MEASUREMENTS Field Calibration: 300,1500 ppm SAMPLING MEASUREMENTS Mater Genetic Conductive for the field Temp 0 25 °C. Color & Sediment (the base) Time Gall Rate (gpm) PH 6 Field Temp 0 25 °C. Color & Sediment (the base) 1238 I (? Y 6, 22 92.5 Color Clear Intake Depth (the base) 1240 Z I (? T 6, 20 91.5 Intake Depth (the base) Sample 1241 Z I (? T 6, 2.2 92.5 Cloudy (the base) Sample 1241 Z I (? T 6, 2.2 92.5 Cloudy (the base) Sample 1241 Z I (? T 6, 2.2 92.5 Clo		
Disposal of Discharged Water: 55-Gallon Drum INSTRUMENTS (indicate make, model, L4): Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter pH Meter: Ultrameter Field Calibration: pH 4, 7, 10 pH Meter: Ultrameter Field Calibration: pH 4, 7, 10 conductivity Meter: Ultrameter Field Calibration: pH 4, 7, 10 other: TDS: Ultrameter Field Calibration: 447, 2070 µmhos Other: TDS: Ultrameter Field Calibration: 447, 2070 µmhos Data/ Characterize Water death Appearance Intake @rmdLVdi Purple Temp. PH Restaurce Color Turbidity Intake @rmdLVdi Purple Temp. PH Restaurce Color Turbidity Intake [2359] 1 19, 4, 6, 20 915 Intake Deptity Intake [240] 2 18, 7, 6, 22 923 C1audy Intake Intake [241] 3 19, 6, 6, 22 923 Sample Sample Sample [24		
INSTRUMENTS (indicate make, model, Ld.): Thermometer: Ultrameter Field Calibration: DH 4, 7, 10 Conductivity Meter: Ultrameter Field Calibration: 300,1500 ppm SAMPLING MEASUREMENTS Color & weiter constitute construction of the physical states of the physical statestates of the physical statestates of the physical states of the p		
Thermometer Ultrameter Thermometer Ultrameter Other: Ultrameter Other: TDS Ultrameter To Conductivity Meter: Ultrameter Other: TDS Ultrameter SAMPLING MEASUREMENTS Conductivity Data Appearance Colspan="2">Turbidity Intake Other: TDS Ultrameter Freid Calibration: 300,1500 ppm SAMPLING MEASUREMENTS Conductivity Parse Appearance Color Appearance Color Appearance Targe Characterization Turbidity Data/ (200) Pute Section Conductivity Data Appearance Color Appearance (a) Rate (gpm) (CO) Philling Best (gpm) (CO) Turbidity Intake (gpm) (24) 2 Page 2 Color Turbidity (24) (25, 7 6, 22 Page 2 <th colsp<="" td=""><td></td></th>	<td></td>	
Field Calibration:Field Calibration:Field Calibration: Field Calibration: Conductivity Meter		
Conductivity Meter_Ultrameter Field Calibration: 447, 2070 jumitos Other: TDS. Ultrameter Field Calibration: 300,1500 ppm SAMPLING MEASUREMENTS Parge Temp. PH Specific Conductance Intake Depth Other: Charnel Vol Purge Temp. PH Specific Conductance Intake Depth Remark Other: Charnel Vol Purge Temp. PH Specific Conductance Intake Depth Remark Odd Gail (Gail) Rate (gpm) (% 6 // 6 // 6 // 9 // 2 // 9 // 9 // 9 //	,	
Other: TDS: Ultrameter Field Calibration: Dot/2000 ppt: SAMPLING MEASUREMENTS Data/ Candad Canadomic Calibration: Appendix and the calibration: Dot/2000 ppt: Data/ Candad Calibration: Temp: product calibration: Appendix and the calibration: Dot/2000 ppt: Data/ Candad Calibration: Temp: product calibration: Appendix and the calibration: Intake Depth (the bar) Data/ Calibration: Temp: product calibration: Color Turbidity intake Depth (the bar) Color Appendix Appendix and the bar of the		
Date/ Currul.Vol. Purge (ga) Temp. Fate (gpm) Water Conductance (manardom) Color Turbidity & Sodiment (manardom) Intake Depth & Sodiment (manardom) Remark 1238 0 1974 677 925°C Color Clear		
Date Date Purge (ga) Temp. Rate (gpm) PH Specific Code state (masket m) Color Turbidity & Sadiment Indee (masket bepth) Remark 1239 1 19/4 6.67 923 P.grey State 9 1 19/4 6.67 923 P.grey State 9 1 1 9 1 <t< td=""><td></td></t<>		
Color Party of (ga) Party of (ga) Provide (gpr)	arks	
1239 10.1667 10.0		
1239 1 1940 1940 197 197 197 1240 2 187 6.20 915 197 197 1241 3 196 6.22 923 Cloudy 197 1242 197 6.22 923 Cloudy 197 1242 197 6.22 920 195 500 1242 197 6.22 920 195 500 1242 197 6.22 920 195 500 1242 197 6.22 920 195 500 1242 197 6.22 920 195 500 1242 197 6.22 920 195 500 1242 197 6.22 920 195 500 1243 197 197 197 100 100 1244 100 190 100 100 100 125 10 100 100 100 100 1 100 100 100 <t< td=""><td></td></t<>		
U40 Z 18.7 6.20 915 11 11 1241 3 14.6 6.22 923 Cloudy 11 1242 18.7 6.22 920 11 755-613,4 Sanple 1241 125 1 1 1 1 1 1 1 1241 125 I Glass 2 N - PCP/TCP 1 1244 125 I 1 N - TDS 1 1 1244 125 I 1 N - TDS 1 1 1 1		
1241 3 14 6 6.22 923 Cloudy 1242 18.7 6.22 925 TPS=613pc Sample 1244 125ml 10 10 10 10 125ml Glass 2 N - PCP/TCP 1244 125ml Glass 2 N - PCP/TCP 1244 125ml Glass 2 N - TDS 10 1244 125ml Glass 1 N - TDS 10 1244 125ml Glass 1 N -		
1242 19.7 6.2 920 TPS=613pp Sample 125 125 10 10 10 10 125 125 125 10 10 10 10 125 125 11 10 10 10 10 10 125 11 10 10 10 10 10 10 10 125 11 10 10 10 10 10 10 10 125 11 10		
SAMPLE INVENTORY Water Level (ft. BMP) Before Sampling: Image: Sample Intake Depth (ft. BMP): Settles Cellected Fitration Preservation Analysis (quality control s 125 ml Glass 2 1 Q+ Plastic 1 N TDS Chain-of-Custody Record No. 46253 McCulley, Frick & Gilman,		
Water Level (ft. BMP) Before Sampling: Recovery %: Sample Intake Depth (ft. BMP): Time Volume Composition (glass, plastic) Quantity (Y/N) Preservation (type) Analysis (quality control s Time Volume Composition (glass, plastic) Quantity Preservation (type) Analysis Remain (quality control s L L L L D PCP/TCP D L Q+ Plastic 1 N - TDS D Chain-of-Custody Record No. 46253 McCulley, Frick & Gilman,		
Water Level (ft. BMP) Before Sampling: Recovery %: Sample Intake Depth (ft. BMP): Time Volume Composition (glass, plastic) Quantity (Y/N) Preservation (type) Analysis (quality control s Time Volume Composition (glass, plastic) Quantity Preservation (type) Analysis Remain (quality control s L L L L D PCP/TCP D L Q+ Plastic 1 N - TDS D Chain-of-Custody Record No. 46253 McCulley, Frick & Gilman,		
Water Level (ft. BMP) Before Sampling: Recovery %: 8 Sample Intake Depth (ft. BMP): Time Volume Composition (glass, plastic) Quantity (Y/N) Preservation (type) Analysis (quality control s Time Volume Composition (glass, plastic) Quantity Filtration (type) Analysis Remain (quality control s L U 125 ml Glass 2 N - PCP/TCP I Q+ Plastic 1 N - TDS - Chain-of-Custody Record No. 46253		
Water Level (ft. BMP) Before Sampling: Recovery %: 8 Sample Intake Depth (ft. BMP): Time Volume Composition (glass, plastic) Quantity (Y/N) Preservation (type) Analysis (quality control s Time Volume Composition (glass, plastic) Quantity Filtration (type) Analysis Remain (quality control s L U 125 ml Glass 2 N - PCP/TCP I Q+ Plastic 1 N - TDS - Chain-of-Custody Record No. 46253		
Water Level (ft. BMP) Before Sampling: Recovery %: 8 Sample Intake Depth (ft. BMP): Time Volume Composition (glass, plastic) Quantity (Y/N) Preservation (type) Analysis (quality control s Time Volume Composition (glass, plastic) Quantity Filtration (type) Analysis Remain (quality control s L U 125 ml Glass 2 N - PCP/TCP I Q+ Plastic 1 N - TDS - Chain-of-Custody Record No. 46253		
Water Level (ft. BMP) Before Sampling: Recovery %: 8 Sample Intake Depth (ft. BMP): Bettles Cellected Filtration Preservation Analysis Guantity Time Volume Composition (glass, plastic) Quantity Preservation Analysis Guality control s Time Volume Composition (glass, plastic) Quantity Preservation Analysis Guality control s L Q+ PLAM PCP/TCP I Q+ Plastic 1 N - TDS - <		
Watter Lever (it. Bill?) Delote collected Filtration Preservation Analysis Remaining (quality control s Time Volume Composition (glass, plastic) Quantity Filtration (type) Analysis Remain (quality control s Time Volume Composition (glass, plastic) Quantity Filtration (type) Preservation (type) Analysis Remain (quality control s 1 125 ml Glass 2 N - PCP/TCP - 1 Q+ Plastic 1 N - TDS - Chain-of-Custody Record No. 46253		
Time Volume Composition (glass, plastic) Quantity (Y/N) (type) (type) (type) (type) 125 ml Glass 2 N - PCP/TCP 1 Q+ Plastic 1 N - TDS Chain-of-Custody Record No. 46253 McCulley, Frick & Gilman,		
Chain-of-Custody Record No. 46253 McCulley, Frick & Gilman,	I sample, o	
Chain-of-Custody Record No. 46253		
McCulley, Frick & Gilman,	Inc	
	, inc.	
	•	
GW Sample Form MAC/CAD Revised: 9-8-95		

											PAGE: 1 of: 1
GRO	UNDW	ATEF	R SA	MPL	ING R	ECO	RD	SAMPL	E NU	IMBER:	MW-11
	020275	22 5		SDI	Arcata Sa	wmill					Date 05/17/04
Project No	o: <u>030275</u>	<u></u>	ject Nan MW	ne: <u>511</u> 7_11	Arcata Sa	Starting	Water Lev	vel (ft. Bl	AP):	Cape	,69
Sampling	Location (W	ell ID, etc.):	111 11	11		Total D	apth (ft. BM	AP):	5.4	5 Water	Column Height (ft.): 7. 7
	by. Matt		10.26	5							lication Factor: 0.163
	g Point (MP))-8.0			Casing	Volume (a	al.): 1 2	5 2	x: 7.6	3x 3.9 4x -
Screened	i Interval (11.	BGL):	5-8 5	-		Water	.evel (ft.Bh	AP) at En	d of P	urge:	0
							epth (ft. Bl				
	tick-Up/Dow										
		SURAN					-				
)S (describe ng Equipme	1.10111	nox de	tergent &	distilled w	ater solu	ition follo	owed by	y tripl	e rinse	w/ distilled water
Purain	a Dispos	able Teflo	n Baile	r			Samp	ling:		Disposa	ble Teflon Bailer
Dispos	al of Discha	rged Water:	· 5	5-Gallor	n Drum						
INSTRU	MENTS (ind	icate make.	model, i	.d.):		0	-		τΠŧ	romete	r
			<u>ID, w</u>	aterline	Model 15	0	Them	nometer: Calibratio		oH 4, 7	, 10
	oter: Ictivity Mete		meter					Calibrati			70 µmhos
Other:		Ultramete						Calibrati		300,150	00 ppm
		AEASU	REME	ENTS							
	Purgs Char	actoristics		Water Q	specific Con	ductance	App	Turbic		Intake	Remarks
Time	Cumul.Vol. (gal)	Purge Rate (gpm)	Temp (°C)	I DH L	(µmhes/ C Field Temp.	and the second se	Color	& Sedir		Depth (fL BMP)	(LOTHERING
100	0		217	6.26		888	Hatthe	C.e.	v		•
8.01	1		197			891	1-gray	Cion	dy		
102			19.4	6.14		884	11	11			· ·
14.3	2		19.0			881	-		~		
	2		· ·	* 1.50				· · ·			1
Nov	4		18.1	6.15		876		TPS	-586		Sa unpi p
							,, ,				-
		-									
											x - 1
			1								
CAN		VENTO	RV	1							
				r (, ! !	2 00	covery %	95	9	omnia	Intake D	Depth (ft. BMP):
Water	Level (IL BA	AP) Before S			Ne	Filtratic	·	rvation			Remarks
Time	Volume			ass, plasti		(Y/N)		/pe)	ļ	alysis	(quality control sample, other
1105	125 m				2	N				P/TCP	
	1Q+	Plastic			1	N				DS	
		lecord No	46253/	46254							
Chain-c	A-Custody F	Lecord INO	.02331	.0257			-			Evial	& Gilman Inc
1							ſ	VICCU	uey,	FIICH	& Gilman, Inc.
1											

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RO	UNDW	ATEF	R SA	MPL	ING R	ECO	RD	SAMPL		R: MW-12
roiect No	o: 030275	5.22 Pro	ect Nam	e: SPI	Arcata S	awmill				Date 05/17/04
oniina	Location (w	vell ID, etc.):	MW	-12		Starting	Water Lev	vel (ft. BM	IP):	16
amoled	byMatt	Hillyard				Total De	opth (ft. Bl	MP): <u>85</u>	W Wa	ater Column Height (ft.): 1.74
	g Point (MP		10.73			Casing	Diameter	(in. ID): <u>2</u> -	Inch M	Itiplication Factor. 0.163
	i interval (ft.	0	.0-8.0			Casing	Volume (g	al.): 3	2X:	<u>.6 3x 3.9 4x</u>
	sk Interval (f	4	.5-9.5			Water L	evel (ft.Bl	AP) at En	d of Purge:	3-5-
	tick-Up/Dow					Total D	epth (ft. B	MP) at En	d of Purge	¥.0
			0E							- ·
QUAL	LILY AS	SURAN	UE			-	-			· · · · · ·
Cloani)S (describe	Liquino	x deterg	gent & dis	stilled wat	er solutio	n follow	ed by tr	iple rinse	w/ distilled water
Pumin	Dispos	able Teflo	n Bailer	r			Samp	ling:	Disposa	ble Teflon Bailer
Dispos	sal of Discha	arged Water:	· 55	5-Gallon	Drum					
	MENTS (ind	icate make.	model, i.	d.):		-			I Titers and	ator
Water	Level: Env	virotech L'	TD, W	aterline	Model 1	50	Them	nometer:_	Ultramon:pH 4	7 10
	əter:							Calibratic	4 4 77	2070 μmhos
	uctivity Mete	1 · · ·	meter					Calibratio	200	1500 ppm
Other		Ultramete		NTO			Lieid	Callulati	vii)	
		MEASU		Water Q	uality Dat		App		Intal	(a)
Date/	Cumul.Vol.	Purge	Temp.	DH S	pecific Co (µmhos	nductance	Color	Turbid	ity Dep	th Remarks
Time	(gal)	Rate (gpm)	(°C)		Field Temp		× 1	& Sedin		(P)
019	Ő		197	5.82		851	CEAR	Clei		
OZI	1		20.2	4.84		890	+ yellow	Clan	۲Ç	
1022	2.		149	993		908	H brn	5/ 9/10	indy !!	
	3		19.8			904	2.3	11		
02	2			6.00				· · · ·		
1025	4		197	604		965		TOST	ED YPA	Sample
SAN	IPLE IN	VENTO	RY							
Water	Level (ft. B	MP) Before \$	Sampling	r0	5R	ecovery %	84	S	ampie Intal	ke Depth (ft. BMP):
		Bottles	Collecte	đ		- Filtratic		noisvation	Analysi	Remarks s (quality control sample, other
Time		e Compo	sition (gl	ass, plasti			1)	ype)	PCP/TC	(quality condition dampier, earles
102	/ 120 11				2	N			TDS	
	IQt	Plastic			1	N			IDS	
								1		
			46054							
Chain-	of-Custody	Record No	46254							
		7						McCu	lley, Fr	ick & Gilman, Inc.
		-					1			
		QW Sample Form								

RO	UND	VATE	R'S/	AMPI	ING R	RECO	RD	SAMF	PLE N	UMBER	PAGE: <u>1</u> of: <u>1</u> : MW-13D
Project No	o: 03027	5.22 Pr	oject Na	me: <u>SP</u>	I Arcata S						Date_05/ 17/04
Sampling	Location (well ID, etc.)	<u>. MV</u>	V-13D			Water Le				
Sampled	byMat	t Hillyard				1 · · ·	• •				er Column Height (ft.): 14,56
Measurin	g Point (Mf	?) of Well:	9.	84							plication Factor: 0.163
Screened	i Interval (fi	.BGL):	15.0-2	20.0		Casing	Volume (gal.): 2	4	2X:	75 3x 7.1.4x
Filter Pac	k Interval (ft.BGL):	13.5-	21.0	•	Water I	.evel (ft.B	MP) at E	nd of l	Purge:	6.10
Casing S	tick-Up/Do	wn (ft.):				Total D	epth (ft. B	MP) at E	End of	Purge:	
QUAL	ITY AS	SURAN	ICE		-		-				- ⁻
	S (describ	a).			tilled motor	achtic	fallow	d hu te	inla ri		listilled water
	ng Equipmo	enc			silled water	solution		_			
		sable Teflo			n D	•	Samp	oling:	D1	sposabl	e Teflon Bailer
		arged Water licate make,									
Water	Level: Env	virotech L	TD, W	aterline	Model 15	0	Ther	nometer	U	tramete	r
pH Me		Ultram	eter					Calibrat	ion:	pH 4, 7	
•	ctivity Mete		meter				Field	Calibrat			070 μmhos
Other:		Ultramete					Field	Calibra	tion:	300,15	00 ppm
		MEASU	REME								ý
	Curnul.Vol.	ecteristics Purge	Temp.		Specific Con	ductance		Turbi		intake Depth	Remarks
Time		Rate (gpm)	(°C)	рН	(µmhos) Clieid Temp	and the second se	Color	& Sedi	ment	(IL BMP)	
1415	Ø		15.5	6.48		632	Clear	dea	(r		
1417	2	-	14.3	5.75		690	H. gray	Slight	414		
1419	4		13.9.	5.72		735	1	1		:	
1421	6		139	5.88		920	1.1		(.		
	<u> </u>					1035	11	Cio.	nd~1		
1423	7:5		13:8	5.79		100		TDS: E	98 pg	Ύκ,	Sample
											4-15
											1
											•
SAM	PLE IN	VENTO	RY						•		
Water L	.evel (ft. Bh	IP) Before S	ampling	6.1	0Rec	covery %:_	89	S	ample	Intake D	epth (ft. BMP):
	1	Bottles C	ollecte	d		Filtration		rvation	An	alysis	Remarks
Time	Volume		ittion (gla	ass, plastic	c) Quantity	(Y/N) N	(ty	ре)	ļ	-	(quality control sample, other
1424	125 ml					N N	-			DS	
	1 ut	Tastic			1					03	
Chain-of-	-Custody R	ecord No4	6254			Г					
					*			loCul	lov	Erick	& Gilman, Inc.
							n	แบบนไ	uey,	CHCK	a annan, mo
			,	2		1					

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											051 17 104
Project N	No: 03027	5.22 Pr	oject Nar	ne: <u>SPI</u>	Arcata Sa					2.1	Date 05/ 17/04
Samplin	g Location (well ID, etc.):	<u>M</u>	/-14		Starting	Water Le	vel (ft. B	MP):	6.1	pr Column Height (ft.): 5-75
Sampleo	d byMat	t Hillyard	9.0		· · ·						
Measuri	ng Point (Mi	P) of Well:				Casing I	Diameter	(in. ID):	2-Inci 74	<u>n</u> Multij	plication Factor: 0.163
Screene	d Interval (f	LBGL):	2.0-8.			-					<u>7 3x ².8 4x</u> 7.35
Filter Pa	ck Interval (ft.BGL):	1.5-8.	0			evel (fLBI				1.27
Casing	Stick-Up/Do	wn (ft.):				Total De	epth (ft. Bl	MP) at E	ind of I	Purge:	
QUA	LITY AS	SURAN	CE				-				• *
	DS (describ			atomant P	, distilled	water sol	lution fo	llowed	hv tri	nle rins	e w/ distilled water
Clean	ing Equipm	enc		_	aistilleu						Teflon Bailer
Purgi	ng:_Dispo	sable Teflo	n Baile		D		Samp	ling:	Dis	osable	
Dispo	sal of Disch	arged Water	:	5-Gallon	Drum						
INSTRU	MENTS (in	ficate make, virotech L	model, i	. d.): Vaterline 1	Model 15	0	Them	nometer	Ult	ramete	er
	r Level: <u>E11</u> leter:		eter	atornio 1	10401 15	~		Calibrat		oH 4, 7	
	luctivity Met		meter					Calibrat		147, 20)70 µmhos
Othe		Ultramet						Calibrat	,	300,15	00 ppm
		MEASU	REME	ENTS							
	Purgs Cha	recteristics		Water Qu	ality Data	ductance	App	erance		Intake	Remarks
Date/ Time	Cumul.Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH L	(µmhos/ Field Temp.	cm)	Color	Turbi & Sedi		Depth (fL BMP)	Hemanks
1327	0		18.0	6-11	T DE TOIP		Yellan	Clear	Plant -		
1326	Ĩ		17.9	6.19		2813	11	Y			
1329	7		16.8	6.20		3150	(I	(104	dy		
			19.8	6.21		3480	or G.1	ver-			bottom of the ! poor
1332	3					10	5.7	tur	2.0		wait 260s
				te .			- / - //	i.c.	2.0		
1555	-		16.9	6.38		2824	Y Clor		04699a		Sample
			<u> </u>							1	1
SAN	MPLE IN	IVENTO	HY	11 045	7						
Wate	r Level (ft. B	MP) Before \$		L.	<u>7</u> Rec	covery %:_	52	9	Sample	Intake [Depth (ft. BMP):
Time	Volum	Bottles		d ass, plastic)	Quantity	Filtration (Y/N)		rvation pe)	An	alysis	Remarks (quality control sample, othe
1555			Silon (gi	ass, plasue)	2	N		p0)	PCI	P/TCP	
	12511				1	N	-			DS	
		1 145110					1				
		•									
Chain-	of-Custody	Record No	46254			Γ	<u> </u>				
								JoCu	llov	Frick	k & Gilman, Inc.
1						1	E.	noou	y ,	1 1101	A A AINTIANY HIGH
1						1					

		22 Pm	lect Nam	se: SPI	Arcata Say	vmill				Date 05/) 7/04
	Location (we		MW	7-15D		Starting	Water Lev	el (ft. BMI); 5.7	7
Sampling	by: Matt H	Hillvard				Total De	opth (ft. BM	IP):_19	90 Water	Column Height (ft.): $\frac{14.13}{5}$
	g Point (MP)		1	1.08	· · ·	Casing	Diameter (i	in. ID): <u>2-</u>]	Inch Multip	lication Factor: 0.163
	Interval (fLB		15.	0-20.0		Casing	Volume (ga	al.): 2 7	2 2X: 4.(<u>a 3x 6.9 4x</u>
	k Interval (ft.)			.0-21.0		Water L	evel (ft.BM	IP) at End	of Purge:_5	.55
	tick-Up/Down					Total D	epth (ft. BM	(IP) at End	of Purge:	
_	ITY ASS		CE				_			
the second s	II T AGO IS (describe):							11		
	ng Equipment	t Liqui	nox det	ergent &	distilled wa	ater solu			triple rinse v	w/ distilled water
Pumin	r Disposa	ble Teflo	n Baile	r			Sampl	ing:	Dispos	able Teflon Bailer
Dispos	al of Dischar	ged Water:	· 5	5-Gallon	Drum					
	JENTS (indic	ate make.	model, i	.d.):)	Thorn	ometer	Ultrameter	r .
		Ultrame	ID, W	aternne	Model 150	,		Calibratio		, 10
	iter: ictivity Meter:		meter					Calibratio	n: <u>447, 20</u>	70 µmhos
Other:		Iltramete					Field	Calibratio	n: 300,150	00 ppm
	PLING M	the second s		ENTS						
F	urgs Chara	cteristics		Water Q	wallty Data pecific Cond	uctance	App	Turbidi	Intake	Remarks
Date/ Time	Cumul.Vol. (gal) F	Purge late (gpm)	Temp. (°C)	pH	(µmhos/c Field Temp	• m) 9 25 • C.	Color	& Sedim		
1436	\mathcal{O}		(3,5	6.20		802	Clear	cear	-	
1436	2	-	133	5.95		1090	/ \			
1440	4		13.4.	6.22		1311	H. yellow	clear	-	
1442	6		13.4	6.35		1350	. (T			
1445	7		13.4	6.30		1360	<u>t'</u>	TOSE9	28 ppm	Sample
	/									
				1						
		_								
SAN	IPLE IN	/ENTO	RY				0/3			
Water	Level (ft. BM	P) Before \$	Samplin	r 5.1	<u>' 5Rec</u>	xvery %			mple Intake [Depth (ft. BMP):
	N-L-	Bottles (d lass, plasti	c) Quantity	Filtratik	T T	rvation / /pe)	Analysis	Remarks (quality control sample, other
Time	Volume 125 ml		Suon (g	ass, pase	2	N			PCP/TCP	
1448	125 mi 1 Q+	Glass Plastic			1	N	-		TDS	
		1 Iustic								
Chain	of-Custody R	acord No.	46271							
I wanted at a second state							1			c & Gilman, Inc.

GRO	UNDW	ATE	R SA	MPL	ING R	ECO	RD	SAMPL	E NU	MBER:	PAGE: <u>1_of:</u> MW-16D
	<u>o: 030275</u> .	22 Pm	lect Nan	se SPI	Arcata Sa	awmill					Date 05// 7
Project N	Location (we	LD etc.)	MW	/-16D		Starting	y Water Le	vel (ft. BN	IP):	4.13	
Sampling	byMatt]	Hillvard				Total D	epth (ft. B	MP): 19	65	_ Water	Column Height (ft.): 15
	g Point (MP)		9.80)		Casing	Diameter	(in. ID): 2	-Inch	_ Multip	lication Factor: 0.163
	i Interval (ft.B		15.0-20	.0		Casing	Volume (gal.):	<u>6</u> 2	x: _6,6	3X 7.5 4X -
	k Interval (ft.		14.0-21	.5		Water	Level (ft.B	MP) at En	d of Pi	urge:	4.50
	tick-Up/Dowr					Total D	epth (ft. B	MP) at En	d of P	urge:	
	ITY ASS		CE				-				• • *
)S (describe):			etersent	& distilled	water sc	lution fo	llowed b	v trin	le rinse	w/ distilled water
Cleani	ng Equipmen	C -				water sc					le Teflon Bailer
Purgin	g: Disposa	ble Teflo	n Baile	r 5 Callor	Drum		Sam	pling:		sposad	
Dispos	al of Dischar	ged Water	<u> </u>	3-Gallo							
INSTHU	MENTS (indic Level: Envi	rotech L	TD. W	aterline	Model 15	50	Then	mometer:_	Ultı	amete	r
DH Ma	tor	Ultrame	eter		:		Field	Calibratic	м: р	H 4, 7	, 10
Condu	ctivity Meter.	Ultra	meter								70 µmhos
Other:	TDSU	Iltramete	er				Field	Calibratio	on: 3	00,150	00 ppm
1	PLING M				uality Date		4.0.0				
Date/	Curnul.Vol.	Purge	Temp.	pH	Specific Con (µmhos	ductance	Color	Turbid	ity	Intake Depth	Remarks
Time	(gal) F	Rate (gpm)	(°C)		e Field Temp.			& Sedin		(IL BMP)	
1250	0		16.4	6,66		3837	auber	clea	ir.		
1252	2		15.0	7,19		3950	. 7	, V			
1254	4.		14.9.	7.16		4860	1)	1/			
1267	6		14.9	7.24		4695	17	. (1		
1:500	8		149	7.26		4562		TDS=34	57ppa		Sample
			1						r.,		/
						1					
											· -
SAN		/ENTO	RY	1			1				
Water	Level (ft. BM	P) Before S	Sampling	r_4.5	0Re	covery %	: 95	S	ample	Intake D	epth (ft. BMP):
		Bottles (ellecte	đ		Filtratic		ervation	Ana	alysis	Remarks (quality control sample
Time	Volume		sition (gl	ass, plasti	c) Quantit	y (Y/N) N		ype) -		/TCP	Ideanth counter country
1302	125 ml	Glass Plastic			1	N				DS	
	- I OKT	I lastic		•							
										-	

•

GRO	UNDW		R SA	MPL	.IN	G R	ECO	RD	SAMP	LE NI	JMBER:	PAGE: <u>1</u> of: <u>1</u> MW-17
Droject N	lo: 030275	.22 Pr	blect Nar	ne: SP	[Arc	ata Sa	wmill	ų.				Date 05/17 /04
-	Location (w		3 677	/-17		· [g Water Le	vel (ft. B	MP):_	,74.	
•	by. Matt						Total D	epth (ft. Bl	MP): 7	60	Wate	Column Height (ft.): 4.34
	ng Point (MP)		9.9	8			Casing	Diameter	(in. ID):	2-Inc	<u>1</u> Multip	lication Factor: 0.163
Screene	d Interval (fLE	3GL):	2.0-8.0)			Casing	Volume (g	al.):	;	2X: 7.	2_3X4X
Filter Pa	ck Interval (ft.	.BGL):	1.5-9.0)	•		Water	Level (ft.Bl	MP) at E	nd of F	ourge:	
Casing S	Stick-Up/Down	n (ft.):					Total D	epth (ft. B	MP) at E	ind of I	Purge:	
QUA	LITY AS	SURAN	CE				•					• *
	DS (describe)	1 10111	inox det	ergent &	z disti	illed wa	ater solu	ution foll	owed b	y trip	le rinse	w/ distilled water
Clean	ing Equipmer ng: Disposa	IC						Samp				e Teflon Bailer
Purgir	sal of Discha	med Weter	5	5-Gallo	n Dri	ım		Samp	na 19			
INSTRU	MENTS (indi	cate make,	model, i	.d.):								
Water	Level: Envi	irotech L	TD, W	aterline	Mod	del 150)		nometer		ramete	
	eter:	Ultram				,			Calibrat		$\frac{147}{147}$ 20	, 10 70 μmhos
	uctivity Meter	Ultramet	meter						Calibrat Calibrat			00 ppm
	PLING N			NTS		· .		1 1010	Calibrat			
	Purge Chare	cteristics		Water (y Data Ic Cond		App			Intake	
Date/ Time	Cumul.Vol. (gal) F	Purge Rate (gpm)	Temp (°C)	рH	. (i Temp. (2 m }	Color	Turbi & Sedi		Depth (1L BMP)	Remarks
1308	C)		17.2	7.16			911	Clear	cleo	\sim		
1309	1	-	160	7.00			908	N. U	11			
1310	2		15.6	6.67			922	((11		
1311	3		15.4	6.52		(941	1+groy	5/194	Jy Jy		1
1312	3.5		15,3	6.50			944	()	TD5=62			Sample
1710									101-02	e pr		
											$\left \right $	
												:
SAN	IPLE IN	/ENTO	RY	2 0				m 1				
Water	Level (ft. BM	-			,4	Rec	overy %:			ample	Intake D	epth (ft. BMP):
Time	Volume	· Compo		ass, plasti	c) (C	Juantity	Filtratio (Y/N)		rvation pe)	An	alysis	Remarks (quality control sample, othe
1315	125 ml					2	N	-			P/TCP	
	10+	Plastic			,	1	N	-		T	DS	
						-						
			16071									1
Chain-o	of-Custody Re	ecord No	+62/1								· .	
									AcCu	lley,	Frick	& Gilman, Inc.

GROUNDWATER SAMPLING RECORD

SAMPLE NUMBER: MW-18

PAGE: 1 of: 1

Project I	No: 03027	5.22 Pr	oject Na	me: <u>SP</u>	l Ar	cata S	awmill						Date 05/17/04			
Samplin	g Location (Starting Water Level (ft, BMP):												
		t Hillyard				Total Depth (ft. BMP): 3.3 Water Column Height (ft.): 7.48										
Measuri	ng Point (MI) of Well:					Casing Diameter (in. ID): <u>4-Inch</u> Multiplication Factor: 0.653									
		.BGL):					Casing Volume (gal.): 5.1 2X: 10.2 3X 15.3 4X									
Filter Pa	ck Interval (ft.BGL):		-		Water	Water Level (fLBMP) at End of Purge:									
Casing	Stick-Up/Do	wn (ft.):					Total D	Total Depth (ft. BMP) at End of Purge:								
		SURAN	ICE													
METHODS (describe): Cleaning Equipment													e w/ distilled water			
		sable Teflo								ling:			Teflon Bailer			
		arged Water			n Dr				Samp	աւց						
		arged water ficate make,				um										
INSTRU	MENIS (IR	virotech I	TD W	aterline	• Mo	del 14	50		Thom	ometer	Ult	ramete	r			
Water Level: Envirotech LTD, Waterline Model 150 Theme pH Meter. Ultrameter Field C											on: 1	pH 4, 7	, 10			
•	uctivity Mete		,								70 µmhos					
Other		Ultramet	meter er										00 ppm			
	•	MEASU		INTS					1 1010							
		acteristics		Water					App	erance		Intake				
Date/ Time	Cumul.Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	рН		(µmhos	ductance /cm) C 25 ° C.	С	olor	Turbidity & Sediment		Depth (ft. BMP)	Remarks			
1.28	O		20.6	6.20			877	\mathcal{C}	Car	Close	. -					
11-31	4	-	197	6.14			922	!	e i	3.7						
1135	- E		19.4	6,24			968	.1	l	11						
1139	12		19.6	6.28				1-9	ray	Stand 4						
1149	16	194 6.33			945			70326	Fileston		sainple					
		-									1					
						-										
SAN		VENTO	RY					L								
Water	Level (ft. Bl	AP) Before S	ampling	<u> </u>	0	Re	covery %:	B	6	s	ample	Intake D	epth (ft. BMP):			
Time	Volume			d ass, plasti	ic) (Quantity	Filtratio	· · ·	Preser (ty)				Remarks (quality control sample, other)			
146	125 m				·	2	N	+	-		PCP	P/TCP				
	10+	Plastic			1		N				T					
Chain-	of-Custody F	Record No4	6271/4	46272			[,				
									N	lcCul	ley,	Frick	& Gilman, Inc.			
	-95															
-		3W Sample Form					1									

n) _____

GROUND\	NATER S	AMPLI	NG R	ECO	RD	SAMPI	ENU	IMBER:	PAGE: 1 of: 1 MW-19D			
Project No: 03027	5.22 Project Na	me: SPI A	Arcata Sa	wmill					Date 05/17/04			
Sampling Location (well ID, etc.):MV	N-19D		Starting V	Nater Le	vel (ft. Bl	AP):	4-1				
Sampled by: Mat	t Hillyard								Column Height (ft.): 15.72			
Measuring Point (Mi	11		Casing Diameter (in. ID): 2-Inch Multiplication Factor: 0.163									
Screened Interval (f	LBGL): 15.0-20).0			Casing Volume (gal.): 2.5 2X: 5 3X 7.5 4X							
Filter Pack Interval	ft.BGL): 14.0-2	1.0 .		Water Le	vel (fLB)	AP) at Er	d of P	urge:	7.30			
Casing Stick-Up/Do				Total Dep	p th (ft. B l	MP) at Er	nd of P	urge:				
QUALITY AS	SURANCE			-	-				-			
METHODS (describ	L 10111DOV de	etergent & d	istilled w	ater solut	ion foll	owed by	v tripl	e rinse v	w/ distilled water			
Cleaning Equipm	enc						and the second second second second	the second s	le Teflon Bailer			
Purging: Dispo	sable Teflon Baile	er 55 Callon I	Denim	•	Samp	ling:	D	isposau	le Terron Daner			
	arged Water: 5											
Water Levels En	dicate make, model, virotech LTD, W	Vaterline N	10del 150)	Them	nometer:	Ult	rameter	r			
nH Meter:	Ultrameter				Field	Calibrati	on:P	H 4, 7,	, 10			
Conductivity Met	or. Ultrameter				Field	Calibrati	on:4	47, 20	70 µmhos			
Other: TDS	Ultrameter	s			Field	Calibrati	on: 3	800,150	00 ppm			
	MEASUREM	ENTS										
Date/ Date/ Cumul.Vol. Time (gal)	rectoriotice Purge Temp. Rate (gpm) (°C)	DH L	tity Data cific Conc (µmhos/) Field Temp.	c m)	Color	Turbic & Sedir		intake Depth (t. BMP)	Remarks			
1519 0	16.9				+. Yeller	clea	<u> </u>					
1521 2	162	6.54		834	τί.	1.2						
1924 4	16.0	· 6. 34		834 1	+.groy	clou	JY					
1527 le	15.9	6.38		840	11	. <u>.</u>						
1529 7	15.9			841	11	5.3						
1530 8	15.9	16.50		843	705-5-62ppm				sample			
SAMPLE IN	IVENTORY		2		0 -							
Water Level (ft. B	MP) Before Samplin	g: 6.90	Rec	overy %:	85	S	ample	Intake D	epth (ft. BMP):			
Time Volum	Bettles Cellectore Composition (g		Quantity	Filtration (Y/N)	1	rvation pe)	An	alysis	Remarks (quality control sample, othe			
153 ² 125 m			2	N	-		PCP	/TCP				
10+	Plastic		1	N	-			DS				
Chain of Custorty	Record No. 46272		.1	Г	1				1.			
					ľ	AcCu	ley,	Frick	& Gilman, Inc.			
1				1								

in and the second

ROL	JND	VATE	R SA	MPL	ING R	ECC	RD	SAMP	LE NUMBER	PAGE: <u>1</u> of: <u>1</u> : MW-20						
roject No	; 03027	5.22 Pro	oject Nar	ne: SPI	Arcata S	awmill				Date_05/8 /04						
ampling I	Location (1	well ID, etc.):		<u>MW-20</u>)	Starting Water Level (ft. BMP): 2.35										
Sampled b	w. Mat	t Hillyard				Total [Total Depth (ft. BMP): 6.50 Water Column Height (ft.): 415									
		P) of Well:			-	Casing Diameter (in. ID): 4-inch Multiplication Factor:										
		.BGL):								423X 8.13 4X						
		ft.BGL):				Water	Water Level (ft.BMP) at End of Purge: 2.60									
		wn (ft.):				Total (Depth (ft. B	MP) at E	nd of Purge:	ma						
QUAL	ITY AS	SURAN	CE				-			- -						
AETHODS	S (describ	e):	1.4	. 0	1 411 - 1	1.	tion falls	und hu	trinla rinca i	w/ distilled water						
Cleanin	g Equipmo	nt_Liquir	lox dete	ergent & (distilled w	ater solu		wed by	Disposable	w/ distilled water. Teflon Bailer						
Purging	<u>. Dis</u>	posable T	erion i	5 Gallor			Samp	king:	Disposable							
		arged Water														
NSTRUM	ENTS (inc	icate make, Envirotech	nodel, i LTD.	Waterli i	ne Model	150	Ther	nometer	Ultramet	er						
	.evel:							Calibrati	TT 4	7, 10						
Conduc	tivity Mete	ultra	ameter					Calibrati	447.0	070 µmhos						
Other:	TDS	Ultramet	er				Field	Calibrati	ion: 300,15	00 ppm						
	LING	MEASU	REME	INTS												
P	rge Cha	actoristics		Water Q	nality Data pacific Com			earance		Demode						
Date/ C Time	tumul.Vol. (gal)	Purge Rate (gpm)	remp. pH		(µmhos) Field Temp	(cm)	Color	Turbic & Sedir		Remarks						
612	07		17.0	7.20	r noici reciip.	478	Clear	Clea	· · ·							
	2		18.1	6.95		466	('	11								
			(467										
016	4		[8.2.	6,71			- <u>N</u>	17								
10 8	6		18.4	6.67		468	11	.1/		·						
1626	8		18.3	6.66		467	11	1.1								
021	8.5		18.3	6.67		469	$+1^{N_{\rm eff}}$	105:30	Хорра	Sample						
							<u> </u>									
		VENTO		. 2,6	0 Ba	covery %	.94	s	amole intake (Depth (ft. BMP):						
water L	evel (IC DI	Botties C				Filtratio		rvation		Remarks						
Time	Volume			ass, plastic) Quantity			/pe)	Analysis	(quality control sample, other						
1023	125 mlGlass1 Q+Plast				4	N		-	PCP/TCP	MS/MSD						
			ic	C		N		-	TDS							
		_														
			46070	46070						1						
Chain-of-	Custody F	Record No	46272/	402/3												
										c & Gilman, Inc.						

GROU	INDW	ATEF	R SA	MPL	.ING	RE	CO	RD		SAMPLE		ABER:	PAGE: <u>1_of:_1</u> MW-21			
		5.22 Pro				ta Sav	vmill						Date 05/15/04			
Project No:	03021	vell ID, etc.):_	MW	<i>I</i> -21			Starting	Water I	Lev	el (ft. BMI	P):3	599				
Sampling L	OCATION (W	Hillword	111 11	21			Starting Water Level (ft. BMP): 3.99 Total Depth (ft. BMP): 10.8 Water Column Height (ft.): 6.01									
		t Hillyard					Cooling Diameter (in 10) 1/2-inch Multiplication Factor. 0102-023									
) of Well:					Casing Volume (gal.):2X:2X 3X42 4X									
Screened I	nterval (ft.	BGL):					Casing Volume (gal.): <u>22</u> 22: <u>22</u> 34 Water Level (fLBMP) at End of Purge: <u>22</u>									
Filter Pack	Interval (f	t.BGL):					Water Level (ft.BMP) at End of Purge: Image: Im									
Casing Sti	ck-Up/Dow	/n (ft.):				_	Total D	epth (ft.	BN	(P) at End	1.01 Pu	irge:				
		SURAN	CE			,		-								
METHODS		T 1 1		argant 1	Pr distil	led wa	ater sol	ution f	مال	owed by	triple	e rinse	w/ distilled water.			
Cleaning	g Equipme	ntLiqui	inox del	lon tub	ing	icu wa		Co		ing Pe	ristal	tic pur	np w/ teflon tubing			
Purging	Perist	altic pump	w/tei	5 Calla	n Dru			581	mpi	uig						
Disposa	l of Disch	arged Water:	·).	5-Galic	on Diu	111		1								
INSTRUM	ENTS (inc	icate make, nvirotech	model, i.	d.): Motorlin	no Mo	del 15	50	Th	-	ometor	Ultr	amete	r ·			
Water L	evel:E	nvirotech	LID, V	vateriii	ne ivio	del 15	0	IN	em statu	Calibratio	n. D	H 4, 7	, 10			
pH Met	ег	Ultram	eter							Calibratio	···	47,207	70 μmhos			
Conduc	tivity Mete	ultra	ineter							Calibratio)0 ppm			
Other:	TDS UI	trameter						FH	BIQ	Calibrado			1.			
SAMF	PLING	MEASU	REWE	NIS	0	Data										
	Purgo Characteristics Water Quality D Cumul.Vol. Purge Temp. pl (gent						uctance m)	Color		Turbidity		Intake Depth	Remarks			
Time	(gal)	Rate (gpm)	(°C)		O Field					& Sedim	ent	(IL BMP)				
1038	3		14.9	6.23			1432	Clea	r	cle.	n C					
1039	,2		13.7	6.56		6	784	. *		1 T						
1040	U		13.6	6.32			782	1.1		r f	1					
1041	.5		13.0	(L	994	57		5 T 						
1042			13.5	6.25		C	795	01		N. K.						
1043	10		135	6.25			1003	21		- (1)= 663/1 m			Squille			
1049	· /		1.5.7	OIC /				1					/			
\vdash																
								1								
		IVENTO	BY		1			1								
				. U.	40	Bec	overy %	9	3	Si	ample	Intake D	epth (ft. BMP):			
water	revei (ir B	MP) Before	Collecte	d			Filtrati	on Pr		rvation		alysis	Remarks (quality control sample, othe			
Time	Volum	e Compo	sition (gl	ass, plas	tic) Q	uantity	(Y/N	Ŋ	(t)	/ре)		-	Duplicate MW-A			
1045	125 m	d Glass	1			4	N			-		P/TCP	Duplicate WW-A			
	10+	Plasti	с	.*		1	N			=	1	DS				
										-						
Chain-o	f-Custody	Record No	46272	/46273						McCul		Fric	« & Gilman, Inc.			
1									1	noou						
	,	GW Sample Form	MACACAD	Revised S	-8-05			1								



APPENDIX B

Chain-of-Custody Records and Laboratory Analytical Reports for Groundwater Samples – Groundwater Monitoring Program

Laboratory reports in order of appearance:

Alpha Analytical Work Order A405439 Alpha Analytical Work Order A405465 File 9329 File 9329 Alpha Analytical Laboratories Inc. 208 Mason St. Ukiah, California 95482

Ipha V Analytical Laboratories Inc.208 Mason St. Ukiah, California 95482e-mail: clientservices@alpha-labs.com• Phone: (707) 468-0401• Fax: (707) 468-5267

28 May 2004

Geomatrix Consultants Attn: Ross Steenson 2101 Webster Street, 12th Floor Oakland, CA 94612 RE: SPI - Arcata Work Order: A405439

RECEIVED

TASK 22 GW MONITORING

All wells

Enclosed are the results of analyses for samples received by the laboratory on 05/19/04 14:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sheri Speaks

Sheri L. Speaks Project Manager



208 Mason St. Ukiah, California 95482

CHEMICAL EXAMINATION REPORT

Page 1 of 17

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Report Date: 05/28/04 11:06 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Order Number Receipt Date/Time Client Code Client PO/Reference A405439 05/19/2004 14:45 GEOMAT

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-01-200405	A405439-01	Water	05/17/04 13:53	05/19/04 14:45
MW-02-200405	A405439-02	Water	05/17/04 14:05	05/19/04 14:45
MW-03-200405	A405439-03	Water	05/17/04 15:10	05/19/04 14:45
MW-04-200405	A405439-04	Water	05/17/04 15:46	05/19/04 14:45
MW-05-200405	A405439-05	Water	05/17/04 16:10	05/19/04 14:45
MW-06-200405	A405439-06	Water	05/17/04 16:26	05/19/04 14:45
MW-07-200405	A405439-07	Water	05/18/04 11:00	05/19/04 14:45
MW-08-200405	A405439-08	Water	05/17/04 10:44	05/19/04 14:45
MW-09-200405	A405439-09	Water	05/17/04 11:20	05/19/04 14:45
MW-10-200405	A405439-10	Water	05/17/04 12:44	05/19/04 14:45
MW-11-200405	A405439-11	Water	05/17/04 11:05	05/19/04 14:45
MW-12-200405	A405439-12	Water	05/17/04 10:27	05/19/04 14:45
MW-13D-200405	A405439-13	Water	05/17/04 14:25	05/19/04 14:45
MW-14-200405	A405439-14	Water	05/17/04 15:55	05/19/04 14:45
MW-15D-200405	A405439-15	Water	05/17/04 14:48	05/19/04 14:45
MW-16D-200405	A405439-16	Water	05/17/04 13:02	05/19/04 14:45
MW-17-200405	A405439-17	Water	05/17/04 13:15	05/19/04 14:45
MW-18-200405	A405439-18	Water	05/17/04 11:45	05/19/04 14:45
MW-19D-200405	A405439-19	Water	05/17/04 15:32	05/19/04 14:45
MW-20-200405	A405439-20	Water	05/18/04 10:23	05/19/04 14:45
MW-21-200405	A405439-21	Water	05/18/04 10:45	05/19/04 14:45

shari Speake

Sheri L. Speaks Project Manager

5/28/04



CHEMICAL EXAMINATION REPORT

Page 2 of 17

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

 Report Date:
 05/28/04 11:06

 Project No:
 9329.000/030275.22

 Project ID:
 SPI - Arcata

Client PO/Reference

Order Number A405439 Receipt Date/Time 05/19/2004 14:45 Client Code GEOMAT

Sheri Speake



208 Mason St. Ukiah, California 95482

CHEMICAL EXAMINATION REPORT

Page 3 of 17

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Report Date: 05/28/04 11:06 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

					110,000			
Order Number A405439	Receipt Date/Time 05/19/2004 14:45			ent Code EOMAT		Client PO/F	eference	
		Alpha A	Analytical	Laborato	ries, Inc.			
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	POL	NOTE
MW-01-200405 (A405439-01)			Sample Typ	be: Water		Sampled: 05/17/04 13:	53	
Chlorinated Phenols by Canadian	n Pulp Method					-		
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/21/04	1	ND ug/l	1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "	1.0	
2,3,4,6-Tetrachlorophenol	"		"	"	"	ND "	1.0	
2,3,4,5-Tetrachlorophenol	"		"	"	"	ND "	1.0	
Pentachlorophenol	"		"	"	"	ND "	1.0	
Surrogate: Tribromophenol	"	"	"	"		84.8 %	79-119	
Conventional Chemistry Paramet	ters by APHA/EPA Me	ethods						
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	1400 mg/l	10	
MW-02-200405 (A405439-02)			Sample Typ	oe: Water		Sampled: 05/17/04 14:	05	
Chlorinated Phenols by Canadian	n Pulp Method							
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/21/04	1	ND ug/l	1.0	
2,3,5,6-Tetrachlorophenol	**		**	"	"	ND "	1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "	1.0	
2,3,4,5-Tetrachlorophenol	**	**	**	"	"	ND "	1.0	
Pentachlorophenol	"	"	"	**	"	ND "	1.0	
Surrogate: Tribromophenol	"	"	"	"		87.6 %	79-119	
Conventional Chemistry Paramet	ters by APHA/EPA Me	ethods						
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	730 mg/l	10	
MW-03-200405 (A405439-03)			Sample Typ	oe: Water		Sampled: 05/17/04 15:	10	
Chlorinated Phenols by Canadian	n Pulp Method							
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/26/04	1	ND ug/l	1.0	
2,3,5,6-Tetrachlorophenol	**	н	"			ND "	1.0	
2,3,4,6-Tetrachlorophenol	**		"	**		ND "	1.0	
2,3,4,5-Tetrachlorophenol	**		"	"	"	ND "	1.0	
Pentachlorophenol	**	**	"	**	**	ND "	1.0	
Surrogate: Tribromophenol	"	н	"	"		96.8 %	79-119	

Sheri Speake

Sheri L. Speaks Project Manager



208 Mason St. Ukiah, California 95482

CHEMICAL EXAMINATION REPORT

Page 4 of 17

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Report Date: 05/28/04 11:06 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Order Number A405439	Receipt Date/Time 05/19/2004 14:45			ent Code EOMAT		Client PO/Reference				
		Alpha A	nalytical	Laborato	ries, Inc.					
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	POL	NOTE		
MW-03-200405 (A405439-03)			Sample Ty	pe: Water		Sampled: 05/17/04 15:1	0			
Conventional Chemistry Parame	eters by APHA/EPA Me	ethods								
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	510 mg/l	10			
MW-04-200405 (A405439-04)			Sample Ty	pe: Water		Sampled: 05/17/04 15:4	16			
Chlorinated Phenols by Canadia	an Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/26/04	1	ND ug/l	1.0			
2,3,5,6-Tetrachlorophenol	"	**	"		*	ND "	1.0			
2,3,4,6-Tetrachlorophenol	"	"	"	**	"	ND "	1.0			
2,3,4,5-Tetrachlorophenol	*	**	"		**	ND "	1.0			
Pentachlorophenol	"	**	"	"	"	ND "	1.0			
Surrogate: Tribromophenol	17	"	"	"		96.8 %	79-119			
Conventional Chemistry Parame	eters by APHA/EPA Me	ethods								
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	360 mg/l	10			
MW-05-200405 (A405439-05)			Sample Ty	pe: Water		Sampled: 05/17/04 16:1	0			
Chlorinated Phenols by Canadia	an Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/26/04	1	ND ug/l	1.0			
2,3,5,6-Tetrachlorophenol	"	"	"		**	ND "	1.0			
2,3,4,6-Tetrachlorophenol	"	**	**	**		ND "	1.0			
2,3,4,5-Tetrachlorophenol	"	"	**	**	**	ND "	1.0			
Pentachlorophenol	*	"	"	**	"	ND "	1.0			

Surrogate: Tribromophenol

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

shari Speake

106 %

79-119



208 Mason St. Ukiah, California 95482

CHEMICAL EXAMINATION REPORT

Page 5 of 17

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Report Date: 05/28/04 11:06 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Client Code Order Number Receipt Date/Time Client PO/Reference A405439 05/19/2004 14:45 GEOMAT Alpha Analytical Laboratories, Inc. BATCH PREPARED ANALYZED DILUTION METHOD RESULT NOTE POL MW-05-200405 (A405439-05) Sample Type: Water Sampled: 05/17/04 16:10 Conventional Chemistry Parameters by APHA/EPA Methods Total Dissolved Solids AE42417 05/24/04 EPA 160.1 05/27/04 1 360 mg/l 10 MW-06-200405 (A405439-06) Sample Type: Water Sampled: 05/17/04 16:26 Chlorinated Phenols by Canadian Pulp Method 2,4,6-Trichlorophenol EnvCan AE42114 05/21/04 05/26/04 1 ND ug/l 1.0 2,3,5,6-Tetrachlorophenol " ND " 1.0 ND " 2,3,4,6-Tetrachlorophenol 1.0 ND " 2,3,4,5-Tetrachlorophenol 1.0 ND " Pentachlorophenol 1.0 Surrogate: Tribromophenol " 05/27/04 100 % 79-119

Conventional Chemistry Parameters by APHA/EPA Methods

Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	420 mg/l	10	
MW-07-200405 (A405439-07) Chlorinated Phenols by Canadian Pul	n Method		Sample Ty	pe: Water		Sampled: 05/18/04 11:0	0	
Chior mateu i nenois by Canadian i ui	pinteniou							
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/27/04	1	ND ug/l	2.5	R-06
2,3,5,6-Tetrachlorophenol		**	"	"	20	86 "	20	
2,3,4,6-Tetrachlorophenol		89	**	"	**	480 "	20	
2,3,4,5-Tetrachlorophenol	**	+1	**	**	**	41 "	20	
Pentachlorophenol			"	05/26/04	1000	25000 "	1000	
Surrogate: Tribromophenol	"	"	11	"		114 %	79-119	

sheri Speake



208 Mason St. Ukiah, California 95482

CHEMICAL EXAMINATION REPORT

Page 6 of 17

NOTE

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Order Number

A405439

Report Date: 05/28/04 11:06 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Receipt Date/Time Client Code Client PO/Reference 05/19/2004 14:45 GEOMAT Alpha Analytical Laboratories, Inc. BATCH PREPARED ANALYZED DILUTION METHOD RESULT POL

				1111101000	010011011	ICEDULI	IUL IN
MW-07-200405 (A405439-07)			Sample Ty	pe: Water		Sampled: 05/18/04 11	:00
Conventional Chemistry Parameters	s by APHA/EPA N	lethods				-	
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	370 mg/l	10
MW-08-200405 (A405439-08)			Sample Ty	pe: Water		Sampled: 05/17/04 10	:44
Chlorinated Phenols by Canadian P	ulp Method					•	
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/26/04	1	ND ug/l	1.0
2,3,5,6-Tetrachlorophenol	"	**	"	+4	"	ND "	1.0
2,3,4,6-Tetrachlorophenol	"	"	"	**	"	ND "	1.0
2,3,4,5-Tetrachlorophenol	"	**	"	**	"	ND "	1.0
Pentachlorophenol	"	"	"	**	**	ND "	1.0
Surrogate: Tribromophenol	"	"	"	"		102 %	79-119
Conventional Chemistry Parameters	s by APHA/EPA N	lethods					
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	390 mg/l	10
MW-09-200405 (A405439-09)			Sample Ty	pe: Water		Sampled: 05/17/04 11:	:20
Chlorinated Phenols by Canadian P	ulp Method			-			
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/26/04	1	ND ug/l	1.0
2,3,5,6-Tetrachlorophenol	"	"	"	**	**	ND "	1.0
2,3,4,6-Tetrachlorophenol	н	"	"	**	**	ND "	1.0
2,3,4,5-Tetrachlorophenol	"	**	"	**	**	ND "	1.0
Pentachlorophenol	*	"	"	19	**	ND "	1.0
Surrogate: Tribromophenol	"	"	"	"		108 %	79-119
Surer - receiption						100 /0	//-11/

hari Speake

Sheri L. Speaks Project Manager



208 Mason St. Ukiah, California 95482

CHEMICAL EXAMINATION REPORT

Page 7 of 17

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Report Date: 05/28/04 11:06 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Order Number Receipt Date/Time Client Code Client PO/Reference A405439 05/19/2004 14:45 GEOMAT Alpha Analytical Laboratories, Inc. BATCH PREPARED ANALYZED DILUTION METHOD RESULT NOTE POL

							I OL HOLD
MW-09-200405 (A405439-09)			Sample Ty	pe: Water		Sampled: 05/17/04 11:20)
Conventional Chemistry Parameters	s by APHA/EPA N	lethods					
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	380 mg/l	10
MW-10-200405 (A405439-10)			Sample Ty	pe: Water		Sampled: 05/17/04 12:44	Ļ
Chlorinated Phenols by Canadian P	ulp Method						
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/26/04	1	ND ug/l	1.0
2,3,5,6-Tetrachlorophenol	"	"	**		"	ND "	1.0
2,3,4,6-Tetrachlorophenol	**	"	**	**	"	ND "	1.0
2,3,4,5-Tetrachlorophenol	"	"	"		**	ND "	1.0
Pentachlorophenol	"	"	"		**	ND "	1.0
Surrogate: Tribromophenol	"	"	"	"		94.0 % 7	9-119
Conventional Chemistry Parameters	s by APHA/EPA N	lethods					
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	420 mg/l	10
MW-11-200405 (A405439-11)			Sample Ty	pe: Water		Sampled: 05/17/04 11:05	5
Chlorinated Phenols by Canadian P	ulp Method			-			
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/26/04	1	ND ug/l	1.0
2,3,5,6-Tetrachlorophenol	"	"	н			ND "	1.0
2,3,4,6-Tetrachlorophenol	"	"		**		ND "	1.0
2,3,4,5-Tetrachlorophenol	"	"	"	**	**	ND "	1.0
Pentachlorophenol	"	"	"	**	"	ND "	1.0
Surrogate: Tribromophenol	"	"	"	"		91.2 % 7	9-119
- 1							

shari Speake



208 Mason St. Ukiah, California 95482

CHEMICAL EXAMINATION REPORT

Page 8 of 17

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Order Number

A405439

Report Date: 05/28/04 11:06 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Receipt Date/Time Client Code Client PO/Reference 05/19/2004 14:45 GEOMAT Alpha Analytical Laboratories, Inc.

		трпа і	Marytica		1103, 1mc.		
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	POL NOT
MW-11-200405 (A405439-11)			Sample Ty	pe: Water		Sampled: 05/17/04 11:05	
Conventional Chemistry Parameters	by APHA/EPA N	Methods		-		-	
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	430 mg/l	10
MW-12-200405 (A405439-12)			Sample Ty	pe: Water		Sampled: 05/17/04 10:27	
Chlorinated Phenols by Canadian Pu	lp Method						
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/26/04	1	ND ug/l	1.0
2,3,5,6-Tetrachlorophenol	**	"		**	"	ND "	1.0
2,3,4,6-Tetrachlorophenol	"	**	**	**	"	ND "	1.0
2,3,4,5-Tetrachlorophenol	"	"	"		"	ND "	1.0
Pentachlorophenol	**	**	17	**	"	ND "	1.0
Surrogate: Tribromophenol	"	"	"	"		91.2 % 79-119)
Conventional Chemistry Parameters	by ADUA/EDA N	Inthoda					
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	100 /	10
Total Dissolved Solids	EFA 100.1	AE42417	03/24/04	05/2//04	1	490 mg/l	10
MW-13D-200405 (A405439-13)			Sample Ty	pe: Water		Sampled: 05/17/04 14:25	
Chlorinated Phenols by Canadian Pu	lp Method			-			
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/26/04	1	ND ug/l	1.0
2,3,5,6-Tetrachlorophenol	"	**	**	**	"	ND "	1.0
2,3,4,6-Tetrachlorophenol	"	**	**	**	**	ND "	1.0
2,3,4,5-Tetrachlorophenol	"	**	"		**	ND "	1.0
Pentachlorophenol	**	**	**	**	"	ND "	1.0
Surrogate: Tribromophenol	"	"	"	"		92.4 % 79-119)

sheri Speake



208 Mason St. Ukiah, California 95482

CHEMICAL EXAMINATION REPORT Page 9 of 17

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Report Date: 05/28/04 11:06 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Order Number Receipt Date/Time Client Code Client PO/Reference A405439 05/19/2004 14:45 GEOMAT Alpha Analytical Laboratories, Inc.

		лириа /	Anarytica		11cs, 1nc.		
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	POL NOTE
MW-13D-200405 (A405439-13)			Sample Ty	pe: Water		Sampled: 05/17/04 14:25	
Conventional Chemistry Parameters	by APHA/EPA M	fethods		-		•	
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	610 mg/l	10
MW-14-200405 (A405439-14)			Sample Ty	pe: Water		Sampled: 05/17/04 15:55	
Chlorinated Phenols by Canadian Pu	lp Method			-		•	
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/26/04	1	ND ug/l	1.0
2,3,5,6-Tetrachlorophenol	**	**	**	**	"	ND "	1.0
2,3,4,6-Tetrachlorophenol	**	**	"	**	"	ND "	1.0
2,3,4,5-Tetrachlorophenol	**		**	"	"	ND "	1.0
Pentachlorophenol	**	11		**		ND "	1.0
Surrogate: Tribromophenol	"	"	"	"		105 % 79-	119
Conventional Chemistry Parameters	by APHA/EPA N	lethods					
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	1800 mg/l	10
MW-15D-200405 (A405439-15)			Sample Ty	pe: Water		Sampled: 05/17/04 14:48	
Chlorinated Phenols by Canadian Pu	Ip Method					-	
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/26/04	1	ND ug/l	1.0
2,3,5,6-Tetrachlorophenol		"	**		"	ND "	1.0
2,3,4,6-Tetrachlorophenol	"	**	**	**	"	ND "	1.0
2,3,4,5-Tetrachlorophenol	**	"	**	**	"	ND "	1.0
Pentachlorophenol			"		"	ND "	1.0
Surrogate: Tribromophenol	"	"	"	"		87.2 % 79	119

shari Speake

5/28/04



208 Mason St. Ukiah, California 95482

CHEMICAL EXAMINATION REPORT

Page 10 of 17

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Report Date: 05/28/04 11:06 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Order Number Receipt Date/Time Client Code Client PO/Reference A405439 05/19/2004 14:45 **GEOMAT** Alpha Analytical Laboratories, Inc. METHOD BATCH PREPARED ANALYZED DILUTION RESULT NOTE POL MW-15D-200405 (A405439-15) Sample Type: Water Sampled: 05/17/04 14:48 Conventional Chemistry Parameters by APHA/EPA Methods Total Dissolved Solids EPA 160.1 AE42417 05/24/04 05/27/04 1 800 mg/l 10 MW-16D-200405 (A405439-16) Sample Type: Water Sampled: 05/17/04 13:02 **Chlorinated Phenols by Canadian Pulp Method** 2,4,6-Trichlorophenol EnvCan AE42114 05/21/04 05/26/04 ND ug/l 1.0 1 2,3,5,6-Tetrachlorophenol " ND " 1.0 2,3,4,6-Tetrachlorophenol ND " 1.0 ,, 2,3,4,5-Tetrachlorophenol ND " 1.0 .. Pentachlorophenol ND " 1.0 Surrogate: Tribromophenol 97.6 % 79-119 Conventional Chemistry Parameters by APHA/EPA Methods **Total Dissolved Solids** EPA 160.1 AE42417 05/24/04 05/27/04 1 2800 mg/l 10 MW-17-200405 (A405430-17)

MW-17-200405 (A405439-17)			Sample Ty	pe: Water		Sampled: 05/17/04 13:1	15	
Chlorinated Phenols by Canadian Pul	p Method							
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/26/04	1	ND ug/l	1.0	
2,3,5,6-Tetrachlorophenol	**	"	11	••	"	ND "	1.0	
2,3,4,6-Tetrachlorophenol	**	**	**		**	ND "	1.0	
2,3,4,5-Tetrachlorophenol	"	**	11	**	**	ND "	1.0	
Pentachlorophenol	**	**	"	**	"	ND "	1.0	
Surrogate: Tribromophenol	"	"	"	11		88.4 %	79-119	

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208 Mason St. Ukiah, California 95482

CHEMICAL EXAMINATION REPORT

Page 11 of 17

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Order Number

A405439

Report Date: 05/28/04 11:06 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Receipt Date/Time Client Code Client PO/Reference 05/19/2004 14:45 GEOMAT Alpha Analytical Laboratories, Inc.

		Alpha A	Marytica	Laborato	ries, mc.			
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	POL	NOTE
MW-17-200405 (A405439-17)			Sample Ty	pe: Water	6	Sampled: 05/17/04 13:15		
Conventional Chemistry Parameters	by APHA/EPA M	lethods						
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	440 mg/l	10	
MW-18-200405 (A405439-18)			Sample Ty	pe: Water	5	Sampled: 05/17/04 11:45		
Chlorinated Phenols by Canadian Pu	lp Method							
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/26/04	1	ND ug/l	1.0	
2,3,5,6-Tetrachlorophenol	**	"	"	**	"	ND "	1.0	
2,3,4,6-Tetrachlorophenol	**	**	"	**	*	ND "	1.0	
2,3,4,5-Tetrachlorophenol	**	**	"		"	ND "	1.0	
Pentachlorophenol	**	"	"	**	"	ND "	1.0	
Surrogate: Tribromophenol	"	"	"	"		90.0 % 79-119		
Conventional Chemistry Parameters		A a tha da						
•	•		05/24/04	05/05/04		100 0	10	
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	I	430 mg/l	10	
MW-19D-200405 (A405439-19)			Sample Ty	pe: Water	5	Sampled: 05/17/04 15:32		
Chlorinated Phenols by Canadian Pu	lp Method							
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/26/04	1	ND ug/l	1.0	
2,3,5,6-Tetrachlorophenol	**	"	**	**	"	ND "	1.0	
2,3,4,6-Tetrachlorophenol		"	**	**	"	ND "	1.0	
2,3,4,5-Tetrachlorophenol	"	**	**	"	*	ND "	1.0	
Pentachlorophenol	**	**	"		"	ND "	1.0	
Surrogate: Tribromophenol	"	"	"	"		104 % 79-119		

Sheri Speake



Alpha 🕻 Analytical Laboratories Inc.

208 Mason St. Ukiah, California 95482 e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

Client Code

GEOMAT

Page 12 of 17

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Receipt Date/Time

05/19/2004 14:45

Order Number

A405439

Report Date: 05/28/04 11:06 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Client PO/Reference

		Alpha A	nalytical	l Laborato	ries, Inc.			
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	POL	NOTE
MW-19D-200405 (A405439-19)			Sample Ty	pe: Water		Sampled: 05/17/04 15:32		
Conventional Chemistry Parameters	by APHA/EPA N							
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	430 mg/l	10	
MW-20-200405 (A405439-20)			Sample Ty	pe: Water		Sampled: 05/18/04 10:23		
Chlorinated Phenols by Canadian Pu	lp Method			•				
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/21/04	1	ND ug/l	1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	**	**	ND "	1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	**	"	1.1 "	1.0	
2,3,4,5-Tetrachlorophenol	"	"	**		**	ND "	1.0	
Pentachlorophenol		"	"			3.6 "	1.0	
Surrogate: Tribromophenol	"	"	"	"		95.6% 79-119		
Conventional Chemistry Parameters	by APHA/EPA N	lethods						
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	280 mg/l	10	
MW-21-200405 (A405439-21)			Sample Ty	pe: Water		Sampled: 05/18/04 10:45		
Chlorinated Phenols by Canadian Pu	lp Method					-		
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/21/04	1	ND ug/l	1.0	
2,3,5,6-Tetrachlorophenol	"	"	**	05/27/04	10	11 "	10	
2,3,4,6-Tetrachlorophenol	"	"	**	"	"	36 "	10	
2,3,4,5-Tetrachlorophenol	"	"	**	"	"	11 "	10	
Pentachlorophenol	"	**	"	05/26/04	1000	1900 "	1000	
Surrogate: Tribromophenol	"	"	"	"		103 % 79-119		

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208 Mason St. Ukiah, California 95482

Client PO/Reference

CHEMICAL EXAMINATION REPORT

Page 13 of 17

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Receipt Date/Time

Order Number

Report Date: 05/28/04 11:06 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

A405439	05/19/2004 14:45			EOMAT		Cheffit i O/Referen		
		Alpha A	Analytica	l Laborato	ries, Inc.			
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	POL	NOTE
MW-21-200405 (A40543	39-21)		Sample Ty	pe: Water		Sampled: 05/18/04 10:45		
Conventional Chemistry	Parameters by APHA/EPA Me	ethods						
Total Dissolved Solids	EPA 160.1	AE42417	05/24/04	05/27/04	1	420 mg/l	10	

Client Code

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208 Mason St. Ukiah, California 95482

CHEMICAL EXAMINATION REPORT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Receipt Date/Time

Order Number

A405439

Report Date: 05/28/04 11:06 Project No: 9329.000/030275.22 Project ID: SPI - Arcata Client PO/Reference

05/19/2004 14:45 GEOMAT

Client Code

Chlorinated Phenols by Canadian Pulp Method - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AE42114 - Solvent Extraction										
Blank (AE42114-BLK1)				Prepared	& Analyze	ed: 05/21/0	04			
2,4,6-Trichlorophenol	ND	1.0	ug/l							
2,3,5,6-Tetrachlorophenol	ND	1.0	"							
2,3,4,6-Tetrachlorophenol	ND	1.0	17							
2,3,4,5-Tetrachlorophenol	ND	1.0	н							
Pentachlorophenol	ND	1.0	**							
Surrogate: Tribromophenol	23.7		"	25.0		94.8	79-119			
LCS (AE42114-BS1)				Prepared	& Analyze	ed: 05/21/0)4			
2,4,6-Trichlorophenol	4.12	1.0	ug/l	5.00		82.4	81-120			
2,3,5,6-Tetrachlorophenol	4.66	1.0	**	5.00		93.2	78-108			
2,3,4,6-Tetrachlorophenol	4.33	1.0	**	5.00		86.6	76-108			
2,3,4,5-Tetrachlorophenol	4.27	1.0	**	5.00		85.4	80-116			
Pentachlorophenol	4.67	1.0	**	5.00		93.4	86-109			
Surrogate: Tribromophenol	22.1		"	25.0		88.4	79-119			
Matrix Spike (AE42114-MS1)	Sou	rce: A4054	439-20	Prepared	& Analyze	ed: 05/21/0)4			
2,4,6-Trichlorophenol	4.67	1.0	ug/l	5.00	ND	93.4	75-125			
2,3,5,6-Tetrachlorophenol	5.58	1.0	**	5.00	ND	103	69-115			
2,3,4,6-Tetrachlorophenol	5.62	1.0	11	5.00	1.1	90.4	66-117			
2,3,4,5-Tetrachlorophenol	5.30	1.0	**	5.00	ND	94.0	70-115			
Pentachlorophenol	8.09	1.0		5.00	3.6	89.8	55-124			
Surrogate: Tribromophenol	24.3		н	25.0		97.2	79-119			
Matrix Spike Dup (AE42114-MSD1)		rce: A4054	439-20	Prepared	& Analyze	ed: 05/21/0)4			
2,4,6-Trichlorophenol	4.63	1.0	ug/l	5.00	ND	92.6	75-125	0.860	20	
2,3,5,6-Tetrachlorophenol	5.45	1.0		5.00	ND	100	69-115	2.36	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

shari Speake

Sheri L. Speaks Project Manager

5/28/04

Page 14 of 17



208 Mason St. Ukiah, California 95482

CHEMICAL EXAMINATION REPORT

Page 15 of 17

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Report Date: 05/28/04 11:06 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A405439	05/19/2004 14:45	GEOMAT	
	Chlorinated Phenols b	y Canadian Pulp Method -	Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AE42114 - Solvent Extraction										
Matrix Spike Dup (AE42114-MSD1)	Sour	ce: A4054	439-20	Prepared	& Analyz	ed: 05/21/	04			
2,3,4,6-Tetrachlorophenol	5.48	1.0	19	5.00	1.1	87.6	66-117	2.52	20	
2,3,4,5-Tetrachlorophenol	5.19	1.0	**	5.00	ND	91.8	70-115	2.10	20	
Pentachlorophenol	7.84	1.0	"	5.00	3.6	84.8	55-124	3.14	20	
Surrogate: Tribromophenol	24.0		"	25.0		96.0	79-119			

shari Speake



208 Mason St. Ukiah, California 95482 e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

Page 16 of 17

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Report Date: 05/28/04 11:06 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Order Number Receipt Date/Time Client Code Client PO/Reference A405439 05/19/2004 14:45 GEOMAT **Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control** Spike Source %REC RPD

Analyte(s)	Result	PQL	Units	Level	Result	%REC	Limits	RPD	Limit	Flag
Batch AE42417 - General Preparation										
Blank (AE42417-BLK1)				Prepared:	05/24/04	Analyzed	: 05/27/04			
Total Dissolved Solids	ND	10	mg/l							
Duplicate (AE42417-DUP1)	Sour	ce: A4054	439-14	Prepared:	05/24/04	Analyzed	: 05/27/04			
Total Dissolved Solids	1750	10	mg/l		1800			2.82	30	

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208 Mason St. Ukiah, California 95482

Client PO/Reference

CHEMICAL EXAMINATION REPORT Page 17 of 17

Client Code

GEOMAT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Report Date: 05/28/04 11:06 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Notes and Definitions

Order Number

A405439

- R-06 The Reporting Limits for this analysis have been raised to account for matrix interference.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit

Receipt Date/Time

05/19/2004 14:45

- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD **Relative Percent Difference**
- PQL Practical Quantitation Limit

MFG, INC.	CF	IAIN-O	F-CUSIC	JDY REC	;Of	RD AND RE	QUEST	FOR ANALYSIS COC No. 46251
175 Crescent Way 17770 Cartwright Rd. 180 Ho Vrcata, CA 95521-6741 Ste. 500 San Fra 'bone (707) 826-8430- FAX (707) 826-8437 Irvine, CA 92614 Tel (41)	an Francisco ward St., Ste. 200 ancisco, CA 94105 5) 495-7110 5) 495-7107	CO - Boulder 4900 Pearl East Ste. 300W Boulder, CO 803 Tel (303) 447-18 Fax (303) 447-18	Wallace, ID 83 01 Tel (208) 556- 23 Fax (208) 556	-6811 Tel (406)	a, MT 59 728-46	600 Edison, NJ 08837	2	2 Comatrix 101 Webster St. 12th fla
Ste: 530 Phtsburgh, PA 15212 Bldg, Portland, OR 97205 Tel (412) 321-2278 Austir Tel (503) 228-8616 Fax (412) 321-2283 Tel (5 Fax (503) 228-8631 Fax (5	Austin Spicewood Springs Rd. IV, 1 ⁴⁷ Floor 12) 338-1667 512) 338-1331	TX - Hous 12337 Jor Ste. 230 Houston, Tel (281) Fax (281)	nes Rd. 320 Port TX 77070 Tel (: 890-5068 Fax	Port Lavaca East Main Lavaca, TX 77979 361) 552-8839 (361) 553-6115	4532 Texa Tel (9	Irkana, TX 75503 Ste. 1 903) 794-0625 Lynny		a Eland, CA 94612 (510) 663-4107
PROJECT NO: 030275.22 SAMPLER (Signature): Math 74/15 METHOD OF SHIPMENT: Course	d	PF	ER/WAYBILL N		ss.	Steenson DESTINA		PAGE: <u>1</u> OF: <u>6</u> DATE: <u>5/18/04</u> -1pha
	SAMPLES						ANALYSIS F	REQUEST
	Sample	P	reservation	Containe	rs	Constituents/Method	Handling	Remarks
A405439 Field Sample Identification	DATE TIME	Matrix* HCI	H ₂ SO ₄ COLD	FILTRATION* VOLUME (ml/oz) TYPE*		PLPACP TDS	HOLD RUSH STANDARD	
MW-01-200405 -1	5/17 1353	AQ		L >		X		Preteral
MW-01-200405	5/17 1353			I LOT P	2			PCR/TCP by Canadian
MW-02-200405 -2	5/17 1405	+++-+-			P2	×		The prie that
MW-02-200405	5/17 1405	1111		IQT P	1	×		TOS by EPA 160.1
MU-03-200405 ·3	5/17 1510	,		125m1 G	21	\mathbf{x}		1 0 2 4 0 17 (00.1
MW-03-200405	5/17 1510			the p	(*		
MW-04-200405-4	5/17 1546			V 125 1 G	23	X	V	
			TOTAL NUMBER OF C	ONTAINERS	1	ABORATORY COMMENTS/CO	ONDITION OF SAME	Cooler Temp: 3.3
RELINQUISHED BY:			_				RECEIVED E	ЗҮ:
SIGNATURE PRINTED NAME	/	IPANY	DATE	TIME		SIGNATURE		ME COMPANY
Martin Martin La Frillyano	MFG	, 	5-19-04	922	7	trucegor -	John in	ske Alpha
CATTING TONS TAYL	2 Mph	41	5-19-04	1445		on Spaces S	hen Spe	Pally Alpha LABORATORY
·KEY Matrix. AQ - aqueo	us NA - nonaqueous SO - soi	I SL - sludge P - petro	oleum A-air OT-other	Containers: P - plastic G - glas	ss T - tefl	lon B - brass OT - other Filtration:	F - filtered U - unfiltered	
		DISTRIBUTION:	PINK: Field Copy YELLOW: La	aboratory Copy WHITE: Return	n to Origina	ator	norea o - unimereu	

	MEG INC									ICT				20	DE			DE			07				
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Phone (707)	MFG, INC. CHAIN-OF-CUSTODY RECORD AND REQUEST FOR ANALYSIS Cocons. 46252 The mark with the mark of the mark with the mark of the mark of the mark with the mark of the mark of the mark with the mark with the mark of the mark with the mark of the mark with the mark of the mark with the mark with the mark of the mark with the mark with the mark of the mark with the mark of the mark with the mark of the mark with the mark with the mark of the mark with the mark of the mark with the mark of the mark with the mark of the mark with the mark wi																								
	Portland, OR 97205 Tel (503) 228-8616 Fax (503) 228-8631	Filtsburgh, PA 15212 Tel (412) 321-2278 Fax (412) 321-2283	4807 S Bldg. I Austin, Tel (51 Fax (5	Spicewood 8 V, 1st Floor TX 78759 2) 338-166	7		12337 . Ste. 23 Housto Tel (281	Jones F 0 n, TX 71 1) 890-5	7070 5068	32 Po Tel	0 East rt Lava I (361)	Main ca, TX 779 552-8839		45 Te Te	32 Sum xarkana 1 (903) 1	nmerhill a, TX 75 794-062	503 25	1920 Ste. Lynn Tel (4)3 36th 100 Iwood, \ 425) 92	Ave. W NA 980 1-4000	036				
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	In Office marking and marked and provide states with the destrict with																								
	In Office met ways ways by the Market States and the States ways by the Market States ways																								
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		ample tification		DATE	TIME	Matrix*	HCI	HNO3			FILTRATION*	VOLUME (ml/oz)	TYPE*	NO.	PCP	1D			НОГР	RUSH	STANDARD				
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	MFG, INC.				СН	AI	N-(OF	-C	US	ST(OD	Y R	E	20	RC) A	ND	RE	EQ	UE	S	Γ FO	RA	NAL	YSIS
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			S	SAM	PLES															AN	ALY	SIS	REQUE	ST		
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	MW-11-200	405	5/	17	1105	AQ			-	7		ū	1/24	P	1		×		+-	+	+-	2				
	MW-12-20	10405 10	2 51	17	1027	1						T	125-1	G	2	x				+	+	11				
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1		* <u>KEY</u> Matrix: AO -	- aqueous NA - I	nonaque	ous SO-soil I	SL - slud DISTRIB	ige P-µ UTION:	etroleum PINK:	A - air Field Cop	OT - oth py YELI	er (LOW: La	Container Iboratory	s: P - plastic Copy WHI	G - gla TE: Retu	iss T - t m to Orig	'eflon B - hinator	brass (17 - other	Filtration:	F - tilter	ed U-u	infiltered	,			

MFG, INC.	0		CUETO				
			-00510	DI RECC	JRD AND H		OR ANALYSIS
CA - Arcata CA - Irvine 1165 G SL, Ste. E 17770 Cartwright Rd. Arcata, CA 95521 Ste. 500 Tel (707) 826-8430 Irvine, CA 92614	CA - San Francisco 180 Howard St., Ste. 200 San Francisco, CA 94105 Tel (415) 495-7110	CO - Boulder 4900 Pearl East Cir. Ste. 300W Boulder, CO 80301	D - Osburn PO Box 30 Wallace, ID 838	MT - Missoul PO Box 7158 Missoula, MT	T 59807 Ste. 703	ges Post Rd. 🛓 🦉	omatrix
Fax (707) 826-8437 Fax (949) 253-2951 Fax (949) 253-2954	Fax (415) 495-7107	Tel (303) 447-1823 Fax (303) 447-1836	Tel (208) 556-68 Fax (208) 556-7	811 Tel (406) 728 271 Fax (406) 72		07 711 Oq	Eland
OR - Portland PA - Pittsburgh 1020 SW Taylor St. 800 Vinial St., Bldg, A Ste. 530 Pritsburgh, PA 15212 Portland, OR 97205 Tel (503) 228-8616 Fax (503) 228-8631 Fax (412) 321-2283	☐ TX - Austin 4807 Spicewood Springs Bldg. IV, 1 st Floor Austin, TX 78759 Tel (512) 338-1667 Fax (512) 338-1331	□ TX - Houston 12337 Jones I Ste. 230 Houston, TX 7 Tel (281) 890 Fax (281) 890	Rd. 320 Ea Port La 77070 Tel (36 5068 Eax (36	ast Main 4 avaca, TX 77979 T i1) 552-8839 T	4532 Summerhill Rd. 1 Fexarkana, TX 75503 S Fel (903) 794-0625 L Fax (903) 794-0626 T	/A - Seattle 9203 36th Ave. W. te. 100 ynnwood, WA 98036 el (425) 921-4000 ax (425) 921-4040	
PROJECT NO: 030275, 27 SAMPLER (Signature): Metric Metric Metric Metric Metric Metric Metric Metric Metric Co-	7 tillson		JECT MANA		5teenson Destin		GE: <u>5</u> OF: <u>6</u> TE: <u>5/18/04</u> 249
	SAMPLE	S				ANALYSIS REQU	UEST
	Samp	ole Pres	servation	Containers	Constituents/Metho	d Handling	Remarks
A405439				× O	8	D.	
Field		3 C Lix	4		50	IDAF	
Sample Identification	DATE TI	HCI HNO ₃	H ₂ SO ₄	FILTRATION [*] VOLUME (ml/oz) TYPE* NO.		HOLD RUSH STANDARD	
MW-15D-200405	15 5/17 144	18 AQ	XI	U 125m1 6 2	. *	×	
MW-15D-200405	5/17 140	48		1 1Q+ P 1	×		
MW-160-200405	16 5/17 13	02		125m1 6 2	×		
MW-160-200405	5/17 130	02		IQ+P 1	×		
MW-17-200405	17 5/17 131	15		125ml G Z	×		
MW-17-200405	5/17 13	15		IQT P 1	×		
MW-18-200405	18 5/17 114	15 4	4	125a1 6 2		Ψ	
		тоти	AL NUMBER OF CON	TAINERS	LABORATORY COMMENTS	S/CONDITION OF SAMPLES	Cooler Temp: 3.3
RELINQUISH						RECEIVED BY:	
SIGNATURE PRINTED	NAME C	OMPANY	DATE	TIME	SIGNATURE		COMPANY
Hart Aller Matt H?	lyard MF	-6 5	5-19.0+	932	amutor.	John TAYLA	2 APha
American John Tu	The Alp	ha	5-19-04	1445 ()	On Spaceto	Sheri Speak	o Alpha
	0				1		LABORATORY
<u>*KEY</u> Matrix	κ: ΑQ - aqueous NA - nonaqueous SO) - soil SL - sludge P - petroleum DISTRIBUTION: PINK:)	A - air OT - other Com Field Copy YELLOW: Labor	tainers: P - plastic G - glass T - ratory Copy WHITE: Return to Or	- teflon B - brass OT - other Filtrat riginator	ion: F - filtered U - unfiltered	

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MFG, INC.					
					QUEST FOR ANALYSIS
1165 G St., Ste. E 17770 Cartwright Rd. 180 H Arcata, CA 95521 Ste. 500 San F Tel (707) 826-8430 Irvine, CA 92614 Tel (4')	rancisco, CA 94105 Ste. 30 15) 495-7110 Boulde	der, CO 80301 Tel (208) 556		ula □NJ - Edison 8 1090 King Georges P T 59807 Ste. 703 8-4600 Edicop NL 08837	rost Rd. * Geomatrix
Fax (707) 826-8437 Tel (949) 253-2951 Fax (4 Fax (949) 253-2954	15) 495-7107 Tel (30	303) 447-1823 Fax (208) 556 303) 447-1836	6-7271 Fax (406) 728	8-4600 Edison, NJ 08837 28-4698 Tel (732) 738-5707 Fax (732) 738-5711	Oakland
1020 SW Taylor St. 800 Vinial St., Bldg. A 4807 Ste. 530 Pritsburgh, PA 15212 Bldg Portland, OR 97205 Tel (412) 321-2278 Aust Tel (503) 228-8616 Fax (412) 321-2283 Tel (Fax (503) 228-8631 Fax Fax	⁷ Spicewood Springs Rd. . IV, 1 st Floor IN, TX 78759 512) 338-1667 (512) 338-1331	12337 Jones Rd. 320 Ste. 230 Port Houston, TX 77070 Tel (Tel (281) 890-5068 Fax Fax (281) 890-5044 Fax	East Main 4 t Lavaca, TX 77979 Tr (361) 552-8839 Tr (361) 553-6115 F	Texarkana, TX 75503 Ste. 10 Tel (903) 794-0625 Lynnwi Fax (903) 794-0626 Tel (42	36th Ave. W.
PROJECT NO: 030275.22 SAMPLER (Signature): 24 24	PROJECT	NAME: SPI	Arcata		PAGE: 6 OF: 6
SAMPLER (Signature): 24 Th	Upal	PROJECT MAN	AGER: Poss	Steenson	DATE: 5/10/024
METHOD OF SHIPMENT: _ COurre		CARRIER/WAYBILL	NO:	DESTINAT	ION: Alpha
	SAMPLES		1		ANALYSIS REQUEST
ALLAGUZO	Sample	Preservation	Containers	Constituents/Method	Handling Remarks
A405439			NO NO	0	D.
Field	* xix		ATI ME	FS	
Sample Identification	Matrix,	HCI HNO ₃ H ₂ SO ₄ COLD	FILTRATION* VOLUME (ml/oz) TYPE* NO.	PCP/TC1 TDS	RUSH STANDARD
MW-18-200405	5/17 1145 AG	à X	a lot P 1	*	
MW-19D-200405 19	5/17 1532		125m1 6 Z	z +	1
MW-19D-200405	5/17 1532		IQ+P1	~	
MW-20-200405 20 AW-20-200405	5/18 1023		12521 6 Z	- +	
	5/18 1023		IQTPI	x	
MW-21-200405 21	5/18 1045		125-11 6 2	- *	
MW-21-200405	5/18 1045		VIQTPI	X	V
		TOTAL NUMBER OF C		LABORATORY COMMENTS/CO	NDITION OF SAMPLES Cooler Temp: 33
RELINQUISHED BY					RECEIVED BY:
SIGNATURE, PRINTED NAME	COMPANY	DATE	TIME	SIGNATURE	PRINTED NAME COMPANY
There At the Matt Hilly on	d MFG	5-19-04	93n 19	envoger J	obstrataz Apha
Alle and bhu into	2 Alpha	519-04	1445 1	han speaks?	Shevi Speaks Alpha
*KEY Matrix: AO - amin	ous NA - nonaqueous SO - soil SI - shi	ludge P - petroleum A - air OT - other	Cantainara: 0. alastia 0. 1. 7		
itati Matrix. Au - aque	DISTRIE	NBUTION: PINK: Field Copy YELLOW: La	containers: P - plastic G - glass T - aboratory Copy WHITE: Return to Or	-tetion B-brass OT-other Filtration: F Driginator	- filtered U - unfiltered

FILE 9329



Alpha 🛿 Analytical Laboratories Inc. 208 Mason St. Ukiah, California 95482 e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267



28 May 2004

Geomatrix Consultants Attn: Ross Steenson 2101 Webster Street, 12th Floor Oakland, CA 94612 RE: SPI - Arcata Work Order: A405465

TASK 22 GW MONITORING BLIND DUPHICATE (MW-21)

Enclosed are the results of analyses for samples received by the laboratory on 05/19/04 14:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sheri Speake

Sheri L. Speaks Project Manager



208 Mason St. Ukiah, California 95482 e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

Page 1 of 5

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Receipt Date/Time

05/19/2004 14:45

Order Number

A405465

Report Date: 05/28/04 11:47 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Client PO/Reference

ANALYTICAL REPORT FOR SAMPLES

Client Code

GEOMAT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-A-200405	A405465-01	Water	05/18/04 00:00	05/19/04 14:45

sheri Speake



208 Mason St. Ukiah, California 95482

Client PO/Reference

CHEMICAL EXAMINATION REPORT

Client Code

Page 2 of 5

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Receipt Date/Time

Order Number

Report Date: 05/28/04 11:47 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

A405465	05/19/2004 14:45			EOMAT		Chent I Or Keler	enec	
		Alpha A	Analytica	l Laborato	ries, Inc.			
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	POL	NOTE
MW-A-200405 (A405465-01)			Sample Ty	pe: Water		Sampled: 05/18/04 00:00		
Chlorinated Phenols by Canadia	n Pulp Method							
2,4,6-Trichlorophenol	EnvCan	AE42114	05/21/04	05/26/04	1	ND ug/l	1.0	
2,3,5,6-Tetrachlorophenol	"	**	"	**	"	3.5 "	1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	••	"	16 "	1.0	
2,3,4,5-Tetrachlorophenol	"	**	**	**	"	4.4 "	1.0	
Pentachlorophenol	**	*1	"	**	50	670 "	50	
Surrogate: Tribromophenol	"	"	"	"		103 % 79-1	119	

Sheri Speake



208 Mason St. Ukiah, California 95482

Client PO/Reference

CHEMICAL EXAMINATION REPORT Page 3 of 5

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Receipt Date/Time

05/19/2004 14:45

Order Number

A405465

Report Date: 05/28/04 11:47 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Chlorinated Phenols by Canadian Pulp Method - Quality Control

Client Code

GEOMAT

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AE42114 - Solvent Extraction										
Blank (AE42114-BLK1)				Prepared	& Analyze	ed: 05/21/0)4			
2,4,6-Trichlorophenol	ND	1.0	ug/l							
2,3,5,6-Tetrachlorophenol	ND	1.0	**							
2,3,4,6-Tetrachlorophenol	ND	1.0	"							
2,3,4,5-Tetrachlorophenol	ND	1.0	"							
Pentachlorophenol	ND	1.0	**							
Surrogate: Tribromophenol	23.7		"	25.0		94.8	79-119			
LCS (AE42114-BS1)				Prepared	& Analyze	ed: 05/21/0)4			
2,4,6-Trichlorophenol	4.12	1.0	ug/l	5.00		82.4	81-120			
2,3,5,6-Tetrachlorophenol	4.66	1.0	**	5.00		93.2	78-108			
2,3,4,6-Tetrachlorophenol	4.33	1.0	**	5.00		86.6	76-108			
2,3,4,5-Tetrachlorophenol	4.27	1.0	"	5.00		85.4	80-116			
Pentachlorophenol	4.67	1.0	**	5.00		93.4	86-109			
Surrogate: Tribromophenol	22.1		"	25.0		88.4	79-119			
Matrix Spike (AE42114-MS1)	Sou	rce: A4054	439-20	Prepared	& Analyze	ed: 05/21/0)4			
2,4,6-Trichlorophenol	4.67	1.0	ug/l	5.00	ND	93.4	75-125			
2,3,5,6-Tetrachlorophenol	5.58	1.0	**	5.00	ND	103	69-115			
2,3,4,6-Tetrachlorophenol	5.62	1.0		5.00	1.1	90.4	66-117			
2,3,4,5-Tetrachlorophenol	5.30	1.0	**	5.00	ND	94.0	70-115			
Pentachlorophenol	8.09	1.0	**	5.00	3.6	89.8	55-124			
Surrogate: Tribromophenol	24.3		н	25.0		97.2	79-119			
Matrix Spike Dup (AE42114-MSD1)	Prepared	& Analyze	ed: 05/21/0)4						
2,4,6-Trichlorophenol	4.63	1.0	ug/l	5.00	ND	92.6	75-125	0.860	20	
2,3,5,6-Tetrachlorophenol	5.45	1.0	**	5.00	ND	100	69-115	2.36	20	

shari Speake



Alpha 🕻 Analytical Laboratories Inc.

208 Mason St. Ukiah, California 95482 e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

Page 4 of 5

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Receipt Date/Time

05/19/2004 14:45

Order Number

A405465

Report Date: 05/28/04 11:47 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Client PO/Reference

Chlorinated Phenols by Canadian Pulp Method - Quality Control

Client Code

GEOMAT

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AE42114 - Solvent Extraction										
Matrix Spike Dup (AE42114-MSD1)	Sour	ce: A405	439-20	Prepared	& Analyz	ed: 05/21/	04			
2,3,4,6-Tetrachlorophenol	5.48	1.0	"	5.00	1.1	87.6	66-117	2.52	20	
2,3,4,5-Tetrachlorophenol	5.19	1.0	"	5.00	ND	91.8	70-115	2.10	20	
Pentachlorophenol	7.84	1.0	"	5.00	3.6	84.8	55-124	3.14	20	
Surrogate: Tribromophenol	24.0		"	25.0		96.0	79-119			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sheri

Sheri L. Speaks Project Manager

Speake



208 Mason St. Ukiah, California 95482

CHEMICAL EXAMINATION REPORT

Page 5 of 5

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Report Date: 05/28/04 11:47 Project No: 9329.000/030275.22 Project ID: SPI - Arcata

Order NumberReceipt Date/TimeClient CodeClient PO/EA40546505/19/2004 14:45GEOMAT	Reference
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Notes and Definitions

- Analyte DETECTED DET
- Analyte NOT DETECTED at or above the reporting limit ND
- NR Not Reported
- Sample results reported on a dry weight basis dry
- **Relative Percent Difference** RPD
- Practical Quantitation Limit PQL

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	KEY Matrix: AQ - aqueous NA - nonaqueous SQ - soil SL - studge P - petroleum A - air OT - other Containers: P - plastic G - plass T - teflon B - brass OT - other Filtration: F - filtered U - unfiltered DISTRIBUTION: PINK: Field Copy YELLOW: Laboratory Copy WHITE: Return to Originator																						



APPENDIX C Laboratory Data Quality Review



APPENDIX C

LABORATORY DATA QUALITY REVIEW

Geomatrix reviewed quality assurance and quality control (QA/QC) procedures to assess quality of the analytical results by evaluating the precision, accuracy, and completeness of the data. We performed the data quality review using U.S. Environmental Protection Agency National Functional Guidelines for Organic Data Review (U.S. EPA, 1999), for Inorganic Review (U.S. EPA, 2002a), and for Chlorinated Dioxin/Furan Data Review (U.S. EPA, 2002b).

PRECISION

Data precision is evaluated by comparing analytical results for the following:

- concentrations in primary and (blind) duplicate field samples
- concentrations of matrix spike (MS) and matrix spike duplicate (MSD) concentrations
- laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) concentrations

Concentrations detected in the primary or spiked samples are compared with respective concentrations in duplicate or duplicate spiked samples. Relative percent differences (RPDs) are used to calculate results, using the following equation:

$$RPD = \frac{[S-D]}{(S+D)/2} \times 100$$

Where,

S = Sample concentration

D = Duplicate sample concentration

RPDs for primary and duplicate field samples are calculated in Table C-1. RPDs are only calculated when primary and duplicate sample concentrations are greater than or equal to two times the laboratory reporting limits. In cases where the detection in either the primary or duplicate sample, or both, are less than two times the reporting limit, the absolute difference between the primary and duplicate sample concentration is calculated. RPDs for MS/MSD and LCS/LCSD analysis are reported in laboratory analytical reports, included in Appendix B and D.



RPDs for the groundwater monitoring program and pilot study program data were acceptable, except for the RPDs for primary sample MW-21 and its blind duplicate sample MW-A. These field samples were collected from monitoring well MW-21 during quarterly groundwater sampling. Previous results of samples collected from nearby well MW-7 have been variable, and the RPDs similarly have been high.

ACCURACY

Data accuracy is assessed by evaluating holding times required by analytical methods, sample preservation, method blank results, recovery of laboratory surrogates, MS/MSD results, and LCS/LCSD results. We evaluated these criteria for quarterly groundwater, pilot study groundwater, and storm water samples. Results of the review are summarized below.

- **Hold times.** Samples were analyzed within the holding time for each analytical method.
- **Preservation.** Samples were collected in laboratory-supplied containers with preservatives, if applicable. Samples were stored and transported to analytical laboratories in chilled coolers.
- **Method blanks.** No detections were observed in any of the method blanks analyzed by the laboratory.
- **Surrogate Recoveries.** Laboratory surrogates were recovered at concentrations within acceptable ranges.
- **MS/MSD analysis.** RPDs were acceptable.
- LCS/LCSD analysis. RPDs were acceptable.

COMPLETENESS

Based on our laboratory data quality review, data contained in this report is considered complete and representative.



TABLE C-1

RELATIVE PERCENT DIFFERENCES BETWEEN DUPLICATE SAMPLES¹

Sierra Pacific Industries Arcata Division Sawmill Arcata, California

Concentrations reported in micrograms per liter (μ g/L).

		Quai Groundwat		
Constituent	Reporting Limit	Sample Concentration MW-21	Duplicate Sample Concentration MW-A	Relative Percent Difference
РСР	1	1900	670	95.7%
2,3,4,5-TeCP	1	11	4.4	85.7%
2,3,4,6-TeCP	1	36	16	76.9%
2,3,5,6-TeCP	1	11	3.5	103.4%

Notes:

- 1. Quarterly groundwater samples collected on May 17 and 18, 2004 and analyzed by Alpha Analytical Laboratory, of Ukiah, California, for chlorinated phenols using the Canadian Pulp Method. Only constituents with detections in either the primary and/or secondary sample are listed in this table.
- 2. RPD calculated as ([2(S-D)]/[S+D]) x 100 where S is the sample concentration and D is the blind duplicate sample concentration.
- 3. For sample concentrations less than two times the reporting limit, the absolute difference between the sample concentration and the blind duplicate sample is calculated.

Abbreviations:

PCP = pentachlorophenol TeCP = tetrachlorophenol



APPENDIX D Copy of Manifest for Wastewater Disposal

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US DOT Description lineluding Proper Shipping Name, Hazard Class, and ID Number 12. Containers 13. Total 14. Unit 11. US ADOT Description Stare Address



APPENDIX E

Chain-of-Custody Records and Laboratory Analytical Reports for Surface Water and Debris Samples – Pilot Study Program

Laboratory reports in order of appearance:

Alpha Analytical Work Order A404339 Alpha Analytical Work Order A404473 Alpha Analytical Work Order A404474 Friedman & Bruya Project 404199 Friedman & Bruya Project 404200 Alpha Analytical Work Order A405657 Frontier Analytical Project ID 2633 Frontier Analytical Project ID 2633 (Addendum) Alpha Analytical Work Order A406328 Alpha Analytical Work Order A406329

FILE 9329



lpha Analytical Laboratories Inc 208 Mason St. Ukiah, California 95482 e-mail clientservices@alpha-labs.com • Phone (707) 468-0401 • Fax (707) 468-5267



22 April 2004

TASK 6 STORM WATER SL-1 SAMPLING 4/14/2004

Geomatrix Consultants Attn: Ross Steenson 2101 Webster Street, 12th Floor Oakland, CA 94612 **RE: SPI Arcata GW Monitoring** Work Order: A404339

Enclosed are the results of analyses for samples received by the laboratory on 04/15/04 09:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Juny M

Cheryl Watson For Sheri L. Speaks Project Manager

This represents an amended copy of the original report



na Anal	ytical Laboratories Inc			208 Mason St.	U	ciah,	California 95482
e-ma	I clientservices@alpha-labs.com	•	Phone	(707) 468-0401	٠	Fax	(707) 468-5267

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson Page 1 of 5 Report Date 04/22/04 10:46 Project No 030275.22 Project ID SPI Arcata GW Monitoring

Client PO/Reference

Order Number	Receipt Date/Time	Client Code
A404339	04/15/2004 09 30	GEOMAT

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SL-1	A404339-01	Water	04/14/04 10 45	04/15/04 09 30

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jung Witte

Cheryl Watson For Sheri L Speaks Project Manager

4/22/04



oha 🛛	Analyt	ical Laboratories Inc			208 Mason St.	U	kiah,	California 9:	5482
	e-mail	clientservices@alpha-labs com	•	Phone	(707) 468-0401	•	Fax	(707) 468-5	5267

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson Page 2 of 5 Report Date: 04/22/04 10·46 Project No: 030275.22 Project ID: SPI Arcata GW Monitoring

Order Number A404339	Receipt Date/Time 04/15/2004 09 30	_		ent Code EOMAT		Client PO/Reference							
	Alpha Analytical Laboratories, Inc.												
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE					
SL-1 (A404339-01)			Sample Ty	pe: Water		Sampled: 04/14/04 10:45							
Chlorinated Phenols by Canad	ian Pulp Method												
2,4,6-Trichlorophenol	EnvCan	AD41613	04/16/04	04/19/04	ì	ND ug/l	10						
2,3,5,6-Tetrachlorophenol	**	н	"		*	ND "	10						
2,3,4,6-Tetrachiorophenol	"	8	"	*	n	ND "	10						
2,3,4,5-Tetrachlorophenol	"				*	ND "	10						
Pentachiorophenol		**		•		0.70 "	0.30						
Surrogate Tribromophenol	n	-	"	"		102 % 79-1	19						

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Juny Witton

Cheryl Watson For Sheri L Speaks Project Manager

4/22/04



bha	Analyt	ical Laboratories Inc			208 Mason St	U	kiah,	Calıfornia 954	82
	e-mail	clientservices@alpha-labs com	•	Phone	(707) 468-0401	•	Fax	(707) 468-52	67

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson Page 3 of 5 Report Date: 04/22/04 10:46 Project No: 030275.22 Project ID: SPI Arcata GW Monitoring

Order Number	Receipt Date/Time	Chent Code	Chent PO/Reference
A404339	04/15/2004 09 30	GEOMAT	
			SourceResult

Chlorinated Phenols by Canadian Pulp Method - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AD41613 - Solvent Extraction										
Blank (AD41613-BLK1)				Prepared	04/16/04	Analyzed	04/19/04			
2,4,6-Trichlorophenol	ND	10	ug/l							
2,3,5,6-Tetrachlorophenol	ND	10	"							
2,3,4,6-Tetrachlorophenol	ND	10	H							
2,3,4,5-Tetrachlorophenol	ND	10								
Pentachlorophenol	ND	10								
Surrogate Tribromophenol	24 5			25 0	<u> </u>	980	79-119			
LCS (AD41613-BS1)				Prepared	04/16/04	Analyzed	04/19/04			
2,4,6-Trichlorophenol	4 34	10	ug/l	5 00		86 8	81-120			
2,3,5,6-Tetrachlorophenol	4 24	10	"	5 00		84 8	78-108			
2,3,4,6-Tetrachlorophenol	4 93	10		5 00		98 6	76-108			
2,3,4,5-Tetrachlorophenol	4 47	10		5 00		894	80-116			
Pentachlorophenol	4 97	10	"	5 00		99 4	86-109			
Surrogate Tribromophenol	24 7		"	25 0		988	79-119			
Matrix Spike (AD41613-MS1)	So	urce: A404	339-01	Prepared	04/16/04	Analyzed	04/19/04			
2,4,6-Trichlorophenol	4 50	10	ug/l	5 00	ND	90 0	75-125			
2,3,5,6-Tetrachlorophenol	5 02	10	"	5 00	ND	100	69-115			
2,3,4,6-Tetrachlorophenol	4 76	10		5 00	ND	95 2	66-117			
2,3,4,5-Tetrachlorophenol	4 76	10	н	5 00	ND	95 2	70-115			
Pentachlorophenol	5 67	10	"	5 00	ND	99 4	55-124			
Surrogate Tribromophenol	24 6			25 0		98 4	79-119			
Matrix Spike Dup (AD41613-MSD1)	So	urce: A404	339-01	Prepared	04/16/04	Analyzed	04/19/04	_		
2,4,6-Trichlorophenol	4 40	10	ug/l	5 00	ND	88 0	75-125	2 25	20	
2,3,5,6-Tetrachlorophenol	4 85	10	۳	5 00	ND	97 0	69-115	3 44	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Juny Witton

Cheryl Watson For Sheri L Speaks Project Manager

4/22/04



pha	Analyt	ical Laboratories Inc			208 Mason St.	Uł	kiah,	Califor	nia 95482	;
•	e-mail	clientservices@alpha-labs com	•	Phone	(707) 468-0401	•	Fax	(707)	468-5267	1

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn[.] Ross Steenson Page 4 of 5 Report Date: 04/22/04 10:46 Project No: 030275.22 Project ID: SPI Arcata GW Monitoring

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A404339	04/15/2004 09 30	GEOMAT	
	Chlorinated Phenols b	y Canadian Pulp Method	- Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AD41613 - Solvent Extraction										
Matrix Spike Dup (AD41613-MSD1)	Sou	rce: A404	339-01	Prepared	04/16/04	Analyzed	04/19/04			
2,3,4,6-Tetrachlorophenol	4 66	10	**	5 00	ND	93 2	66-117	2 12	20	
2,3,4,5-Tetrachiorophenoi	4 68	10		5 00	ND	93 6	70-115	1 69	20	
Pentachlorophenol	5 52	10	**	5 00	ND	96 4	55-124	2 68	20	
Surrogate Tribromophenol	24 4		*	25 0		976	79-119			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Juny Witte Son

Cheryl Watson For Sheri L Speaks Project Manager

4/22/04



CHEMICAL EXAMINATION REPORT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson Report Date: 04/22/04 10:46 Project No: 030275.22 Project ID: SPI Arcata GW Monitoring

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A404339	04/15/2004 09 30	GEOMAT	

Notes and Definitions

DET .	Analyte	DETECTED
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- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- PQL Practical Quantitation Limit

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FILE 9329

AlphaAnalytical Laboratories Inc208 Mason St Ukiah, California 95482e-mailclientservices@alpha-labs.com• Phone(707) 468-0401• Fax(707) 468-5267



27 April 2004

Geomatrix Consultants Attn: Ross Steenson 2101 Webster Street, 12th Floor Oakland, CA 94612 RE: SPI - Arcata Stormwater Work Order: A404473 TASK 6 STORM WATER Ditch 2 COMPOSITE 4/20/04

Enclosed are the results of analyses for samples received by the laboratory on 04/21/04 16:50 If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sheri Speaks

Sheri L. Speaks Project Manager



208 Mason St. Ukiah, California 95482

e-mail clientservices@alpha-labs.com • Phone (707) 468-0401 • Fax (707) 468-5267

CHEMICAL EXAMINATION REPORT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Report Date: 04/27/04 10.01 Project No: 9329.000/030275.6 Project ID: SPI - Arcata Stormwater

Client PO/Reference Order Number Receipt Date/Time Client Code A404473 04/21/2004 16 50 GEOMAT

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	
Ditch 2 Composite 1,2,3,4	A404473-01	Water	04/20/04 15 20	04/21/04 16 50	_

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sheri Speake

Sheri L. Speaks Project Manager

4/27/04

Page 1 of 5



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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson Report Date:04/27/04 10.01Project No:9329.000/030275.6Project ID:SPI - Arcata Stormwater

Order Number A404473	Receipt Date/Time 04/21/2004 16 50			ent Code EOMAT		Client PO/Refere	ence
· · · · · · · · · · · · · · · · · · ·		Alpha A	nalytical	Laborato	ries, Inc.		
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL NOTE
Ditch 2 Composite 1,2,3,4 (A Chlorinated Phenols by Canadi	•		Sample Ty	pe: Water		Sampled: 04/20/04 15:20	
2,4,6-Trichlorophenol	EnvCan	AD42310	04/23/04	04/23/04	1	ND ug/l	10
2,3,5,6-Tetrachlorophenol			*			ND "	10
2,3,4,6-Tetrachlorophenol	"	н	н		"	ND "	10
2,3,4,5-Tetrachlorophenol		"	*	•		ND "	10
Pentachlorophenol		н	n		•	ND "	10
Surrogate Tribromophenol	"	"	"	"		796% 79-1	19

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sheri Speake

Sheri L Speaks Project Manager 4/27/04

Page 2 of 5



oha	Analyt	ical Laboratories Inc			208 Mason S	t.	Ukiah,	Califor	nia 95482
	e-mail	clientservices@alpha-labs com	٠	Phone	(707) 468-0401		 Fax 	(707)	468-5267

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn Ross Steenson Report Date: 04/27/04 10:01 Project No: 9329.000/030275 6 Project ID[.] SPI - Arcata Stormwater

Order Number A404473	Receipt Date/Time 04/21/2004 16 50	Chent Code GEOMAT	Client PO/Reference	
			SourceResult	

Chlorinated Phenols by Canadian Pulp Method - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AD42310 - Solvent Extraction										
Blank (AD42310-BLK1)				Prepared	& Analyze	ed 04/23/0	04			
2,4,6-Trichlorophenol	ND	10	ug/l							
2,3,5,6-Tetrachlorophenol	ND	10								
2,3,4,6-Tetrachlorophenol	ND	10	"							
2,3,4,5-Tetrachlorophenol	ND	10	"							
Pentachlorophenol	ND	10								
Surrogate Tribromophenol	32 4		"	25 0		130	79-119			S-01
LCS (AD42310-BS1)				Prepared	& Analyze	ed 04/23/0	04			
2,4,6-Trichlorophenol	4 32	10	ug/l	5 00		86 4	81-120			
2,3,5,6-Tetrachlorophenol	4 17	10	۳	5 00		83 4	78-108			
2,3,4,6-Tetrachlorophenol	4 97	10	"	5 00		99 4	76-108			
2,3,4,5-Tetrachlorophenol	4 37	10		5 00		874	80-116			
Pentachlorophenol	4 91	10	"	5 00		98 2	86-109			
Surrogate Tribromophenol	29 7			25 0		119	79-119			
Matrix Spike (AD42310-MS1)	Sou	rce: A404	473-01	Prepared	& Analyze	ed 04/23/0)4			
2,4,6-Trichlorophenol	4 36	10	ug/l	5 00	ND	87 2	75-125			
2,3,5,6-Tetrachlorophenol	5 52	10	*	5 00	ND	110	69-115			
2,3,4,6-Tetrachlorophenol	5 07	10		5 00	ND	99 5	66-117			
2,3,4,5-Tetrachiorophenol	4 40	10		5 00	ND	88 0	70-115			
Pentachlorophenoi	5 56	10	н	5 00	ND	105	55-124			
Surrogate Tribromophenol	24 9		"	25 0		996	79-119			
Matrix Spike Dup (AD42310-MSD1)		rce: A404	473-01	Prepared	& Analyze	d 04/23/0)4			
2,4,6-Trichlorophenol	4 55	10	ug/1	5 00	ND	91 0	75-125	4 26	20	
2.3 5 6-Tetrachlorophenol	5 70	10		5 00	ND	114	69-115	3 21	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analysical report must be reproduced in its entirety.

Shari Speake

Sheri L Speaks Project Manager

4/27/04

Page 3 of 5



> Source Result

%REC

Spike

Level

CHEMICAL EXAMINATION REPORT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson Report Date04/27/04 10:01Project No9329.000/030275 6Project IDSPI - Arcata Stormwater

%REC Limits

RPD

RPD

Limit

Order Number Receipt Date/Time A404473 04/21/2004 16 50		Client Code GEOMAT	Client PO/Reference
	Chlorinated Phenols b	y Canadian Pulp Method -	Quality Control

PQL Units

Result

Batch AD42310 - Solvent Extraction

Analyte(s)

Matrix Spike Dup (AD42310-MSD1)	Sour	ce: A4044	73-01	Prepared	& Analyze	ed 04/23/	′04		
2,3,4,6-Tetrachlorophenol	5 29	10	н	5 00	ND	104	66-117	4 25	20
2,3,4,5-Tetrachlorophenol	4 64	10	н	5 00	ND	92 8	70-115	5 31	20
Pentachlorophenol	5 76	10	"	5 00	ND	109	55-124	3 53	20
Surrogate Tribromophenol	25 6		Ħ	25 0		102	79-119		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sheri Speake

Sheri L. Speaks Project Manager 4/27/04

Page 4 of 5

Flag



CHEMICAL EXAMINATION REPORT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn Ross Steenson
 Report Date:
 04/27/04 10.01

 Project No:
 9329.000/030275.6

 Project ID:
 SPI - Arcata Stormwater

Page 5 of 5

 Order Number
 Receipt Date/Time
 Client Code
 Client PO/Reference

 A404473
 04/21/2004 16 50
 GEOMAT
 Client PO/Reference

Notes and Definitions

S-01 The surrogate recovery for this sample is outside of established control limits

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- PQL Practical Quantitation Limit

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MFG, INC.				CH	All	N-C)F	-CI	JST	0	D	r R	EC	:0	RD		NC	R	EQ	UE	S	FOR ANALYS				
ata Office Konk Way CA 95521-6741 (07) 826-8430- FAX (707) 826-8437	☐ CA - Irvine 17770 Cartwright Rd Ste 500 Irvine, CA 92614 Tel (949) 253-2951 Fax (949) 253-2954	CA - San Fra 180 Howard San Francisc Tel (415) 495 Fax (415) 495	-7110	1	Ste 300 Soulder Fel (303	oukder Veari Eas OW r, CO 80 3) 447-1)3) 447-1	0301 823	~ ~) - Osburi O Box 30 (allace, IE al (208) 5 ax (208) 5	18387	'3 11 271	6		ssoula 7158 a, MT) 728-4 6) 728-		109 Ste	1703 1400 N	on J Georg J 08837 738-570 738-57		Rd		COC No <u>46246</u> 9 comatrix 101 webster St, 12th				
OR - Portland 1020 SW Taylor St Ste 530 Portland, OR 97205 Tel (503) 228-8616 Fax (503) 226-8631]PA - Pritsburgh 800 Virual St. Bidg A Pritsburgh PA 15212 Tel (412) 321-2278 Fax (412) 321-2283	 TX - Austin 4807 Spice Bidg 1V, 1st Austin, TX 7 Tel (512) 33 Fax (512) 3 	wood Spr Floor 78759 38 1667	nngs Rd	ļ	TX - Ho 12337 J Ste 230 Houstor Tel (281 Fax (28	lones F) 1, TX 7) 890-!	7070	33 P	X - Por 20 Eas ort Lav el (361 ax (361	st Mai vaca.	aca n TX 7797 -8839 3-6115	79	C) TX 45 Te Te Fa	(- Texar 32 Sum xarkana I (903) 7 x (903)	kana merhili F , TX 755 794-0625 794-062	7d ;03 ; 6	- 19 St	203 36 100	71 2101 webster 5+, 12+4 Oamland, cA 94612 100 100 (425) 921-4040 (125) 921-4040						
PROJECT NO. SAMPLER (Sign METHOD OF SH	ature) Matt	Hilf	J	PROJE		P	RO	JEC	T MAI YBILL		GEF	<u>م</u> :				ee	150	STIN	ATIC	DN.		PAGE OF DATE: Y/20/04 Mp69				
			SAMP	PLES			_												A	NALY	'SIS I	REQUEST				
			Sa	Imple			Pres	erva	tion	Τ	T	Con	itaine	ers	Co	nstitue	ents/N	fetho	1	Hand	lling	Remarks				
S	Field ample tification	D	ATE	TIME	Matrix*	нсі Н	HNO ₃	H₂SO₄	COLD			VOLUME (ml/oz)	TYPE*	ON	PCBACP				C Z	RUSH	STANDARD	Chlorophonols 6.				
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pha Analytical Laboratories Inc e-mail chientservices@alpha-labs.com • Phone (707) 468-0401 • Fax (707) 468-5267



27 April 2004

Geomatrix Consultants Attn: Ross Steenson 2101 Webster Street, 12th Floor Oakland, CA 94612 RE: SPI - Arcata Stormwater Work Order: A404474 TASK 6 STORM WATER DITCH # Z 4/20/04

Enclosed are the results of analyses for samples received by the laboratory on 04/21/04 16:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Shari Speake

Sheri L. Speaks Project Manager



CHEMICAL EXAMINATION REPORT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson Report Date. 04/27/04 10:06 Project No: 9329.000/030275.6 Project ID: SPI - Arcata Stormwater

Order Number A404474 Receipt Date/Time 04/21/2004 16 50 Client Code GEOMAT Client PO/Reference

Page 1 of 5

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Ditch 2-20040420	A404474-01	Water	04/20/04 13 20	04/21/04 16 50

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sheri Speake

Sheri L Speaks Project Manager 4/27/04



CHEMICAL EXAMINATION REPORT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn. Ross Steenson Report Date:04/27/04 10:06Project No9329 000/030275.6Project ID.SPI - Arcata Stormwater

Order Number A404474	Receipt Date/Time 04/21/2004 16 50			ent Code EOMAT		Chent PO/R	eference	
		Alpha A	Analytical	Laborato	ries, Inc.			
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
Ditch 2-20040420 (A404474-01) Chlorinated Phenols by Canadian			Sample Ty	pe: Water		Sampled: 04/20/04 13:2	20	
2.4.6-Trichlorophenol	EnvCan	AD42310	04/23/04	04/24/04	1	ND ug/l	10	
2,3,5,6-Tetrachlorophenol	*		*	*	"	ND "	10	
2,3,4,6-Tetrachlorophenol		**	"	"		ND "	10	
2,3,4,5-Tetrachlorophenol	м	*		н	н	ND "	10	
Pentachlorophenol	••				-	ND "	10	
Surrogate Tribromophenol	"	1	"	"		98 4 %	79-119	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sheri Speake

Sheri L Speaks Project Manager 4/27/04

Page 2 of 5



208 Mason St	Ukiah,	California	95482
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e-mail clientservices@alpha-labs.com • Phone (707) 468-0401 • Fax (707) 468-5267

CHEMICAL EXAMINATION REPORT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Order Number A404474 Receipt Date/Time

04/21/2004 16 50

Report Date: 04/27/04 10:06 Project No: 9329.000/030275 6 Project ID: SPI - Arcata Stormwater

Client Code	
GEOMAT	
 	-

SourceResult

Client PO/Reference

Chlorinated Phenols by Canadian Pulp Method - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AD42310 - Solvent Extraction										
Blank (AD42310-BLK1)				Prepared	& Analyz	ed 04/23/	04			
2,4,6-Trichlorophenol	ND	10	ug/l							
2,3,5,6-Tetrachlorophenol	ND	10	4							
2,3,4,6-Tetrachlorophenol	ND	10								
2,3,4,5-Tetrachlorophenol	ND	10	и							
Pentachlorophenol	ND	10	"							
Surrogate Tribromophenol	32 4		"	25 0		130	79-119			S-01
LCS (AD42310-BS1)				Prepared	& Analyz	ed 04/23/	04			
2,4,6-Trichlorophenol	4 32	10	ug/l	5 00		86 4	81-120			
2,3,5,6-Tetrachlorophenol	4 17	10		5 00		83 4	78-108			
2,3,4,6-Tetrachlorophenol	4 97	10	**	5 00		99 4	76-108			
2,3,4,5-Tetrachlorophenol	4 37	10	*	5 00		874	80-116			
Pentachlorophenol	4 91	10		5 00		98 2	86-109			
Surrogate Tribromophenol	29 7		"	25 0		119	79-119			
Matrix Spike (AD42310-MS1)	Sou	rce: A404	473-01	Prepared	& Analyz	ed 04/23/	04			
2,4,6-Trichlorophenol	4 36	10	ug/l	5 00	ND	87 2	75-125			
2,3,5,6-Tetrachlorophenol	5 52	10		5 00	ND	110	69-115			
2,3,4,6-Tetrachlorophenol	5 07	10		5 00	ND	99 5	66-117			
2,3,4,5-Tetrachlorophenol	4 40	10		5 00	ND	88 0	70-115			
Pentachlorophenol	5 56	10	**	5 00	ND	105	55-124			
Surrogate Tribromophenol	24 9		"	25 0		996	79-119			
Matrix Spike Dup (AD42310-MSD1)	Sou	rce: A404	473-01	Prepared	& Analyz	ed 04/23/	04			
2,4,6-Trichlorophenol	4 55	10	ug/l	5 00	ND	91 0	75-125	4 26	20	
2,3,5,6-Tetrachlorophenol	5 70	10	**	5 00	ND	114	69-115	3 21	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Shari Speaks

Sheri L Speaks Project Manager 4/27/04

Page 3 of 5



Alpha Analytical Laboratories Inc 208 Mason St Ukiah, California 95482 e-mail clientservices@alpha-labs.com • Phone (707) 468-0401 • Fax (707) 468-5267

CHEMICAL EXAMINATION REPORT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Surrogate Tribromophenol

Report Date. 04/27/04 10:06 Project No 9329.000/030275.6 Project ID. SPI - Arcata Stormwater

79-119

102

Order Number A404474		Date/Time 04 16 50		Client GEON				Client P	O/Referen	nce	
	Chlorin	ated Phenol	s by Can	adian]	Pulp Met	hod - Q	uality C	ontrol			
Analyte(s)		Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AD42310 - Solv	vent Extraction										
Matrix Spike Dup (AD	42310-MSD1)	Sour	ce: A404	473-01	Prepared	& Analyze	ed 04/23/0	04			
2,3,4,6-Tetrachlorophenol		5 29	10	н	5 00	ND	104	66-117	4 25	20	
2,3,4,5-Tetrachlorophenol		4 64	10	**	5 00	ND	92 8	70-115	5 3 1	20	
Pentachlorophenol		5 76	10		5 00	ND	109	55-124	3 53	20	

250

256

The results in this report apply to the samples analyzed in accordance with the chain of custody document This analytical report must be reproduced in its entirety

Shari Speake

Sheri L. Speaks Project Manager

4/27/04

Page 4 of 5



CHEMICAL EXAMINATION REPORT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn[.] Ross Steenson Report Date: 04/27/04 10:06 Project No: 9329.000/030275.6 Project ID: SPI - Arcata Stormwater Page 5 of 5

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A404474	04/21/2004 16 50	GEOMAT	

Notes and Definitions

- S-01 The surrogate recovery for this sample is outside of established control limits
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- PQL Practical Quantitation Limit

.23

MFG, INC.			СН	All	N-C)F·	-C	US	ТС	D	YR	EC	:0	RD	Α	NC) R	REC	QU	JES	ST			ALYSI 46245
cest, Way CA 95521-6741 07) 826-8430- FAX (707) 826-8437	CA - Irvine CA - S 17770 Cartwright Fid Ste 500 San Fr Irvine CA 92614 Tel (41 Tel (949) 253-2951 Fax (4 Fax (949) 253-2954	an Francisco oward St Ste ancisco, CA 9 5) 495-7110 15) 495-7107	200 14105	Ste 300 Rouider	oulder earl Eas 3W ; CO 80 1) 447-1 3) 447-1	301	P V T	D - Osbu PO Box 3 Vallace, Fel (208) Fax (208)	30 ID 838) 556-6	811	⊡ N P N Ti F	AT - Mis PO Box Aissoula el (406 Fax (406	ssoula 7158 a, MT () 728-4 5) 728	59807 1600 4698	Ste	e 703 Hean M	on g Geor JJ 0883 738-57 (738-5	37	ost Ad		60 210	conviti	r	6+,12#4 94612 107
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		SAM	PLES																ANA	LYS	SIS F	REQUES		
		S	ample			Pres	serva	ation			Con	ntaine	ers	Co	nstitu	ents/l	Vietho	bd	На	andlu	ng		Rem	arks
Sa Identi	ield mple fication	DATE	TIME	Matrix*	ΗCI	HNO3	H₂SO₄	согр			VOLUME (ml/oz)	TYPE*	ON	PC PMP					НОГР	RUSH	STANDARD			
Ditch 2-20040	9420	4/20	1320	12		_		×		n	221	6	Z	_ P	14d	244	17	1-1	1		×	C46	rophen	ols by
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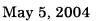
FILE 9329

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



RESENT

TASK 6 STORM WATER APRIL 20,2004 DITCH 3

COMPOSITE SAMPLES

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

Dear Mr. Steenson:

Included are the results from the testing of material submitted on April 22, 2004 from the SPI Arcata Storm Water, F&BI 404199 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.

Charlens Morrow

Charlene Morrow Chemist

Enclosures GMC0505R DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on April 22, 2004 by Friedman & Bruya, Inc. from the Geomatrix Consultants, Inc. SPI Arcata Storm Water, F&BI 404199 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Geomatrix Consultants, Inc.</u>
404199-01	Ditch 3 Comp 1
404199-02	Ditch 3 Comp2
404199-03	Ditch 3 Comp3
404199-04	Ditch 3 Comp4
	_

As requested the samples were composited to make sample "Ditch 3 2-Hr Composite" prior to extraction. All quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Date of Report: 05/05/04 Date Received: 04/22/04 Project: SPI Arcata Storm Water, F&BI 404199 Date Extracted: 04/29/04 Date Analyzed: 04/29/04

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING EPA METHOD 8015M

Results Reported as μ g/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Surrogate <u>(% Recovery)</u> (Limit 59-126)
Ditch 3 2-Hr Composite d 404199-01/02/03/04 Composite	9,500	104
Method Blank	<50	67

d - The sample was diluted

ENVIRONMENTAL CHEMISTS

Date of Report: 05/05/04 Date Received: 04/22/04 Project: SPI Arcata Storm Water, F&BI 404199 Date Extracted: 04/22/04 Date Analyzed: 04/29/04

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL USING EPA METHOD 8015M

Results Reported as $\mu g/L$ (ppb)

<u>Sample ID</u> Laboratory ID	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 50-150)
Ditch 3 2-Hr Composite d 404199-01/02/03/04 Composite	24,000	86
Method Blank	<50	67

d - The sample was diluted

.

ENVIRONMENTAL CHEMISTS

Date of Report: 05/05/04 Date Received: 04/22/04 Project: SPI Arcata Storm Water, F&BI 404199

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

Laboratory	Code 404200-	01 (Duph	cate)				
Analyte	Rep	orting	Samp Resu	-	olicate esult	Relative Percent Difference	Acceptance Criteria
Diesel	μg/Ι	(ppb)	8,700) 9	,400	8	0-20
·	Code 404200- Reporting Units	01 (Matrı Spike Level	x Spike) Samp Resu		-	Acceptance Criteria	
<u>Analyte</u> Diesel	$\mu g/L (ppb)$	2.500	8,70			50-150	
-	Code Laborat	orting	col Samp Spike		Accep Crit		
Analyte	U	nıts	Level	LUS	Urit	eria	

117

79-121

2,500

μg/L (ppb)

Diesel

4

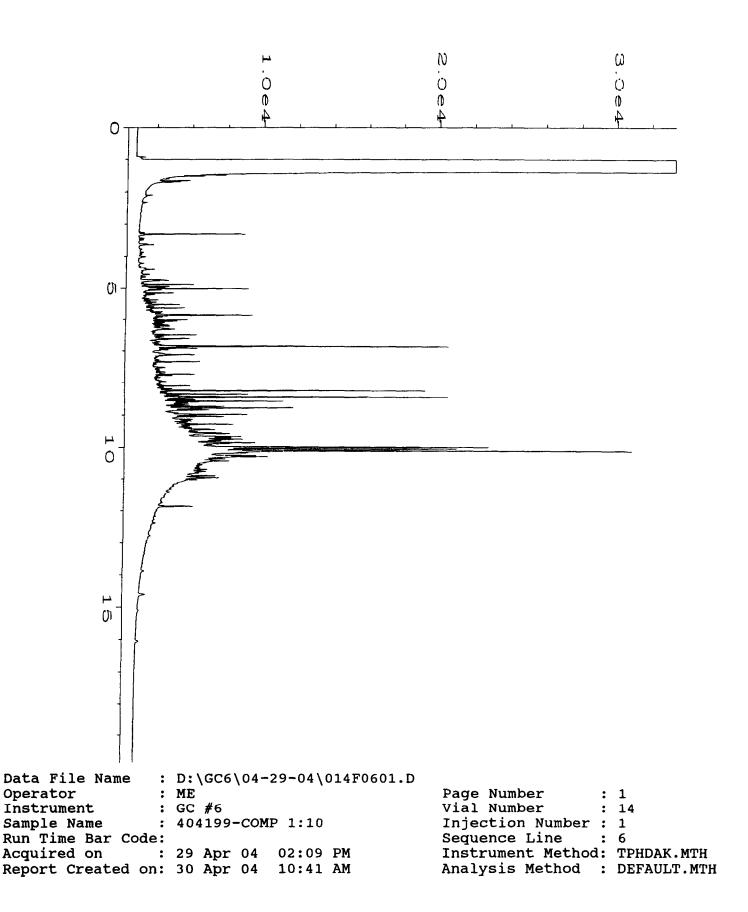
ENVIRONMENTAL CHEMISTS

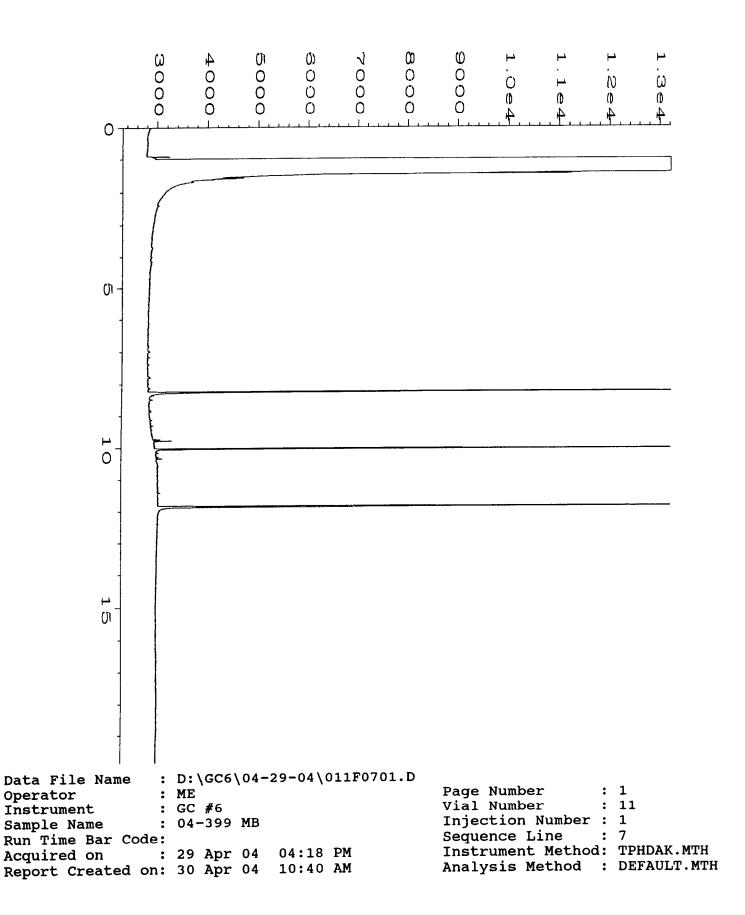
Date of Report: 05/05/04 Date Received: 04/22/04 Project: SPI Arcata Storm Water, F&BI 404199

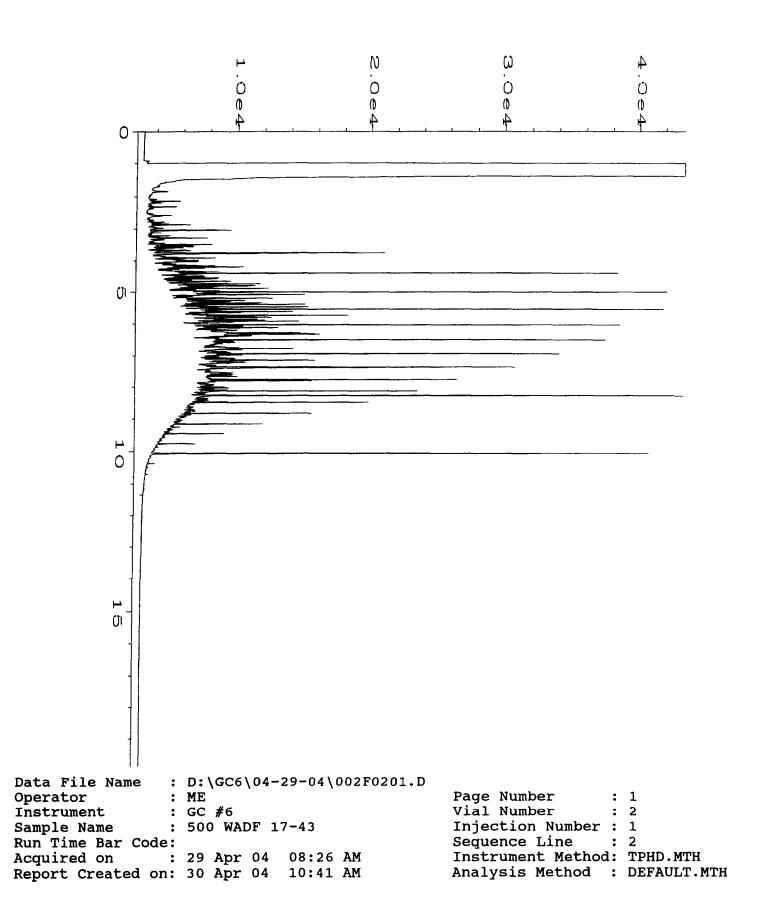
QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL USING EPA METHOD 8015M

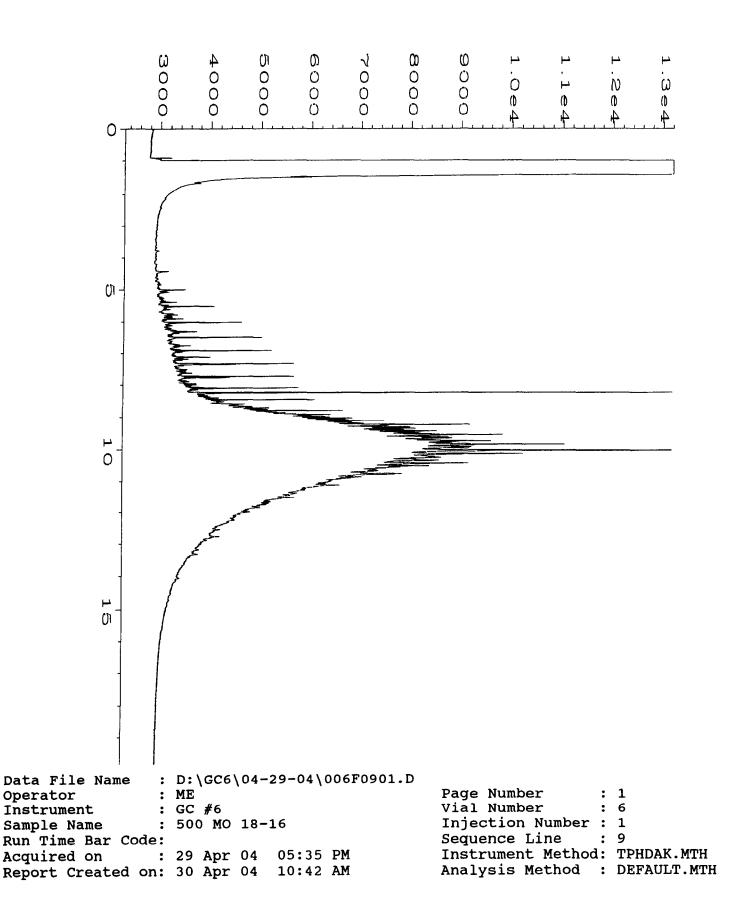
Analyte	Repo: Un	0	Sample Result	Duplicate Result	Relative Percent Difference	Acceptanc Criteria
Motor Oil	μg/L	(ppb)	22,000	25,000	13	0-20
Laboratory (Code 404200-0	l (Matrix S	Spike)			
Laboratory (Analyte	Code 404200-0 Reporting Units	l (Matrıx S Spike Level	Spike) Sample Result	% Recovery MS	Acceptance Criteria	

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Motor Oıl	μg/L (ppb)	10,000	90	70-130









MFG, INC.						-Cl	US	то	DY	R	EC	0	RD	AN	DF	RE	QL	JE	ST		
Bits Bits <th< th=""><th colspan="3">artwnght Rd 180 Howard St, Ste 200 4900 Peal East (San Francisco, CA 94105 Ste 300W A 92614 Tel (415) 495-7110 Boulder, CO 8033 253-2951 Fax (415) 495-7107 Tel (300 447 195</th><th>301 823</th><th colspan="5">Wallace, ID 83873 Missoula MT 59607 D1 Tel (208) 556-6811 Tel (406) 728-4600 C3 Fax (208) 556-7271 Fax (606) 728-4600</th><th colspan="5">T 59807 Ste 703 9-4600 Edison, NJ 08837</th><th></th><th colspan="4">COC NO. <u>46248</u> *<u>Geometri</u>; 2101 webster 5+, 12+4 flo</th></th<>	artwnght Rd 180 Howard St, Ste 200 4900 Peal East (San Francisco, CA 94105 Ste 300W A 92614 Tel (415) 495-7110 Boulder, CO 8033 253-2951 Fax (415) 495-7107 Tel (300 447 195			301 823	Wallace, ID 83873 Missoula MT 59607 D1 Tel (208) 556-6811 Tel (406) 728-4600 C3 Fax (208) 556-7271 Fax (606) 728-4600					T 59807 Ste 703 9-4600 Edison, NJ 08837						COC NO. <u>46248</u> * <u>Geometri</u> ; 2101 webster 5+, 12+4 flo					
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PROJECT NO: 030275-6 SAMPLER (Signature): Met He		PROJE	CTN																	PAGE:	OF:
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	SAM	IPLES		-		_							Ē	• ••			ANA	ALYS	SIS F	REQUEST	
	Sample			1	Pres	reservation Containers										Handling				Remarks	
Field Sample Identification	DATE	TIME	Matrix [*]	HCI	HNO ₃	H ₂ SO4	согр			(ml/oz)	TYPE'	Ö	OW/G-HAL				НОГВ	RUSH	STANDARD	B;" Ge	omatrix.
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FILE 9329

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.

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

May 7, 2004

STIDI200

TASK 6 STORM WATER

APRIL 20,2004 DITCH 3 SILICA GEL/ NON SILICA GEL SAMPLES

Dear Mr. Steenson:

Oakland, CA 94612

Ross Steenson, Project Manager

Geomatrix Consultants, Inc. 2101 Webster Street, 12th Floor

Included are the results from the testing of material submitted on April 22, 2004 from the SPI Arcata Storm Water, F&BI 404200 project. There are 9 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.

Charlene Morrow

Charlene Morrow Chemist

Enclosures GMC0507R DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

i

This case narrative encompasses samples received on April 22, 2004 by Friedman & Bruya, Inc. from the Geomatrix Consultants, Inc. SPI Arcata Storm Water, F&BI 404200 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Geomatrix Consultants, Inc.
404200-01	Ditch3-20040420

All quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Date of Report: 05/07/04 Date Received: 04/22/04 Project: SPI Arcata Storm Water, F&BI 404200 Date Extracted: 04/22/04 Date Analyzed: 04/29/04

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING EPA METHOD 8015M

Results Reported as $\mu g/L$ (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Surrogate <u>(% Recovery)</u> (Limit 59-126)
Ditch3-20040420 d 404200-01	8,700	83
Method Blank	<50	90

d - The sample was diluted

ENVIRONMENTAL CHEMISTS

Date of Report: 05/07/04 Date Received: 04/22/04 Project: SPI Arcata Storm Water, F&BI 404200 Date Extracted: 04/22/04 Date Analyzed: 04/29/04

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL USING EPA METHOD 8015M

Results Reported as μ g/L (ppb)

<u>Sample ID</u> Laboratory ID	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 50-150)
Ditch3-20040420 d 404200-01	22,000	88
Method Blank	<50	67

d - The sample was diluted

ENVIRONMENTAL CHEMISTS

Date of Report: 05/07/04 Date Received: 04/22/04 Project: SPI Arcata Storm Water, F&BI 404200 Date Extracted: 04/22/04 Date Analyzed: 04/30/04

ł.

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE 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/L (ppb)

Sample ID Laboratory ID	Diesel Range (C10-C25)	Surrogate (<u>% Recovery)</u> (Limit 59-126)
Ditch3-20040420 404200-01	1,300	88
Method Blank	<50	88

ENVIRONMENTAL CHEMISTS

Date of Report: 05/07/04 Date Received: 04/22/04 Project: SPI Arcata Storm Water, F&BI 404200 Date Extracted: 04/22/04 Date Analyzed: 05/05/04

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RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE 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/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Motor Oil Range</u> (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 50-150)
Ditch3-20040420 404200-01	7,300	97
Method Blank	<250	100

ENVIRONMENTAL CHEMISTS

Date of Report: 05/07/04 Date Received: 04/22/04 Project: SPI Arcata Storm Water, F&BI 404200

> . Units

μg/L (ppb)

Analyte

Diesel

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

Analyte	1	orting nits	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Diesel	μg/I	4 (ppb)	8,900	9,400	5	0-20
Laboratory	v Code 404200-	01 (Matru	: Spike)			
Analyte	Reporting Units	Spıke Level	Sample Result	% Recovery MS	Acceptance Criteria	
1 mary 00		0 500	8,700	132	50-150	
Diesel	μg/L (ppb)	2,500	0,700	104	00-100	

LCS

117

Criteria

79-121

Level

2,500

6

ENVIRONMENTAL CHEMISTS

Date of Report: 05/07/04 Date Received: 04/22/04 Project: SPI Arcata Storm Water, F&BI 404200

μg/L (ppb)

Motor Oil

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

Laboratory Co	ode 404200-01	(Duplic	ate)			
-					Relative	
	Repor	ting	Sample	Duplicate	Percent	Acceptance
Analyte	Ūni	ts	Result	Result	Difference	Criteria
Motor Oil	μg/L (nob)	22,000	25,000	13	0-20
	18		,			
Laboratory Co	ode 404200-01	(Matrix	Spike)			
·		`				
	Reporting	Spike	Sample	% Recovery	Acceptance	
Analyte	Units	Level	Result	MS	Criteria	
Motor Oil	μg/L (ppb)	10,000	22,000	71	50-150	
Laboratory Co	ode Laborator	y Contro	l Sample			
-		-	P	ercent		
	Repor	ting	Spike Re	covery Accep	otance	
Analyte	Uni	ts	Level	LCS Crit	teria	

90

70-130

10,000

ENVIRONMENTAL CHEMISTS

Date of Report: 05/07/04 Date Received: 04/22/04 Project: SPI Arcata Storm Water, F&BI 404200

Diesel

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

Analvte	•	orting	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Diesel	μg/I	- (ppb)	1,300	1,200	8	0-20
Laborator	y Code 404200-	01 (Matru	c Spike) Sil	ıca Gel		
Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	Acceptance Criteria	
Dıesel	μg/L (ppb)	2,500	1,300	100	50-150	
Laborator	y Code Laborat	ory Contro	-	llıca Gel ercent		

107

79-121

2,500

μg/L (ppb)

8

ENVIRONMENTAL CHEMISTS

Date of Report: 05/07/04 Date Received: 04/22/04 Project: SPI Arcata Storm Water, F&BI 404200

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

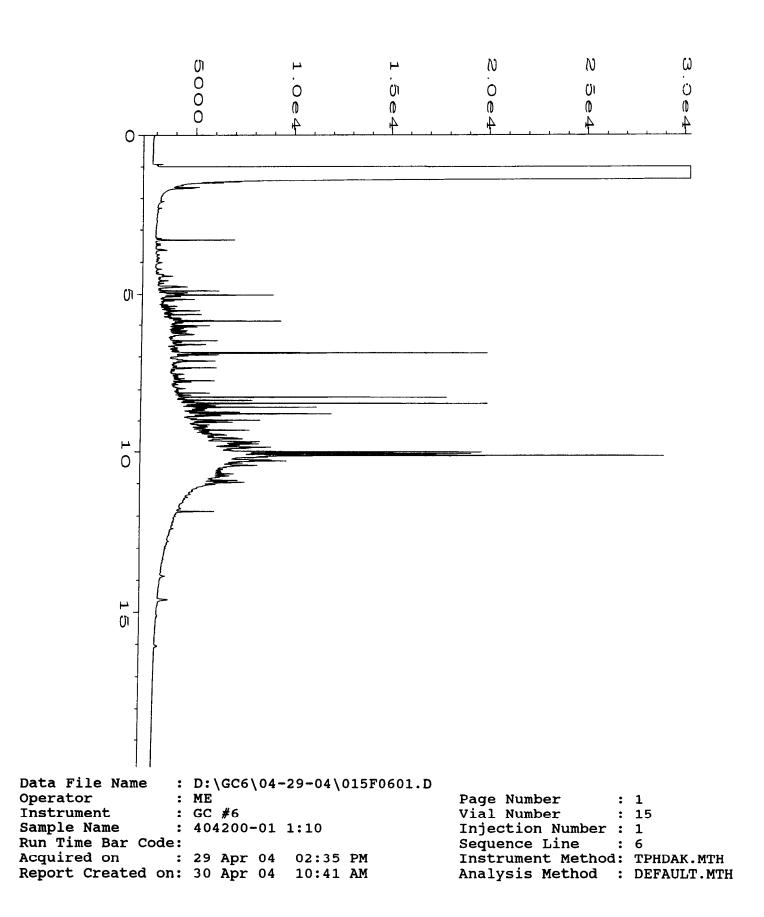
Laboratory Code 404200-01 (Duplicate) Silica Gel

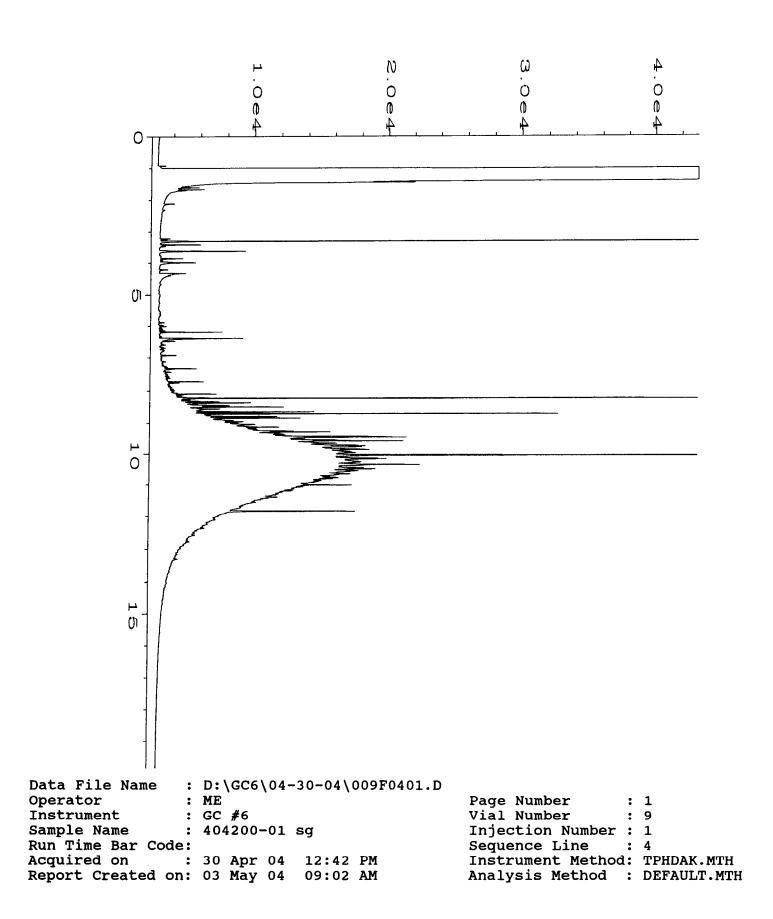
5				Relative	
Analyte	Reporting Units	Sample Result	Duplicate Result	Percent Difference	Acceptance Criteria
Motor Oil	μg/L (ppb)	7,900	7,300	8	0-20

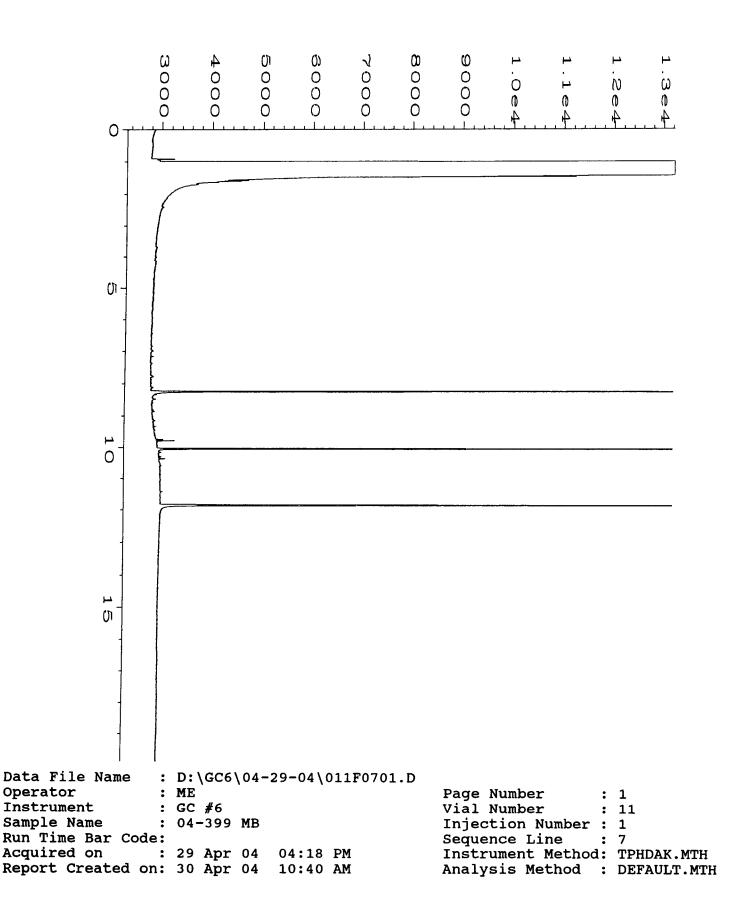
Laboratory Code 404200-01 (Matrix Spike) Silica Gel

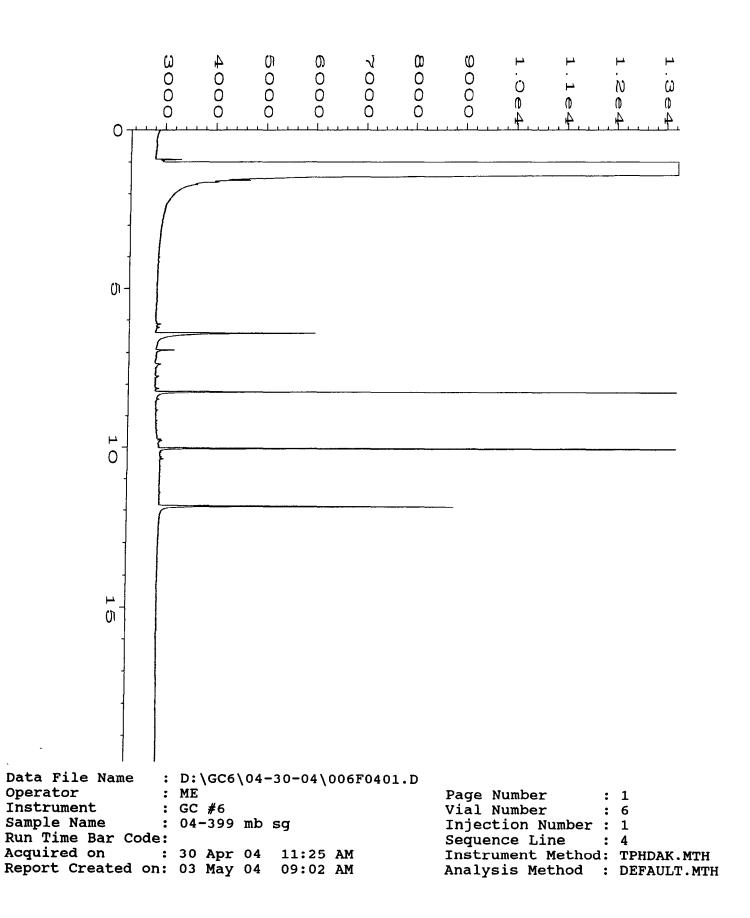
	Reporting	Spike	Sample	% Recovery	Acceptance
Analyte	Units	Level	Result	MS	Criteria
Motor Oil	μg/L (ppb)	10,000	7,900	51	50-150

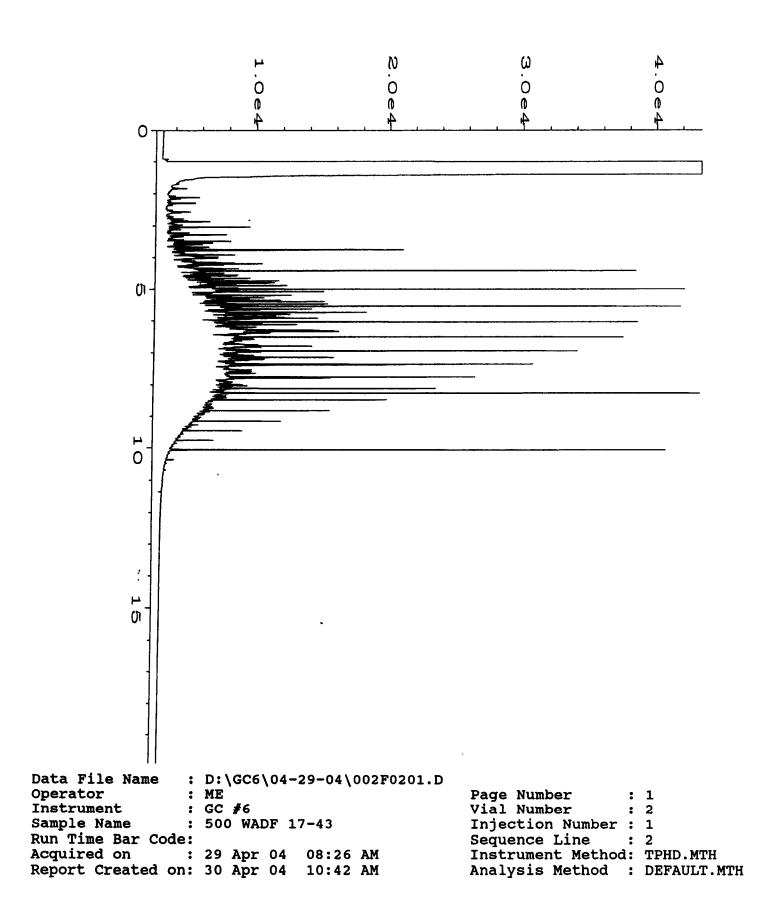
Laboratory Code	Laboratory Con	trol Samp	le Silica Ge	1
			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Motor Oıl	μg/L (ppb)	10,000	87	70-130

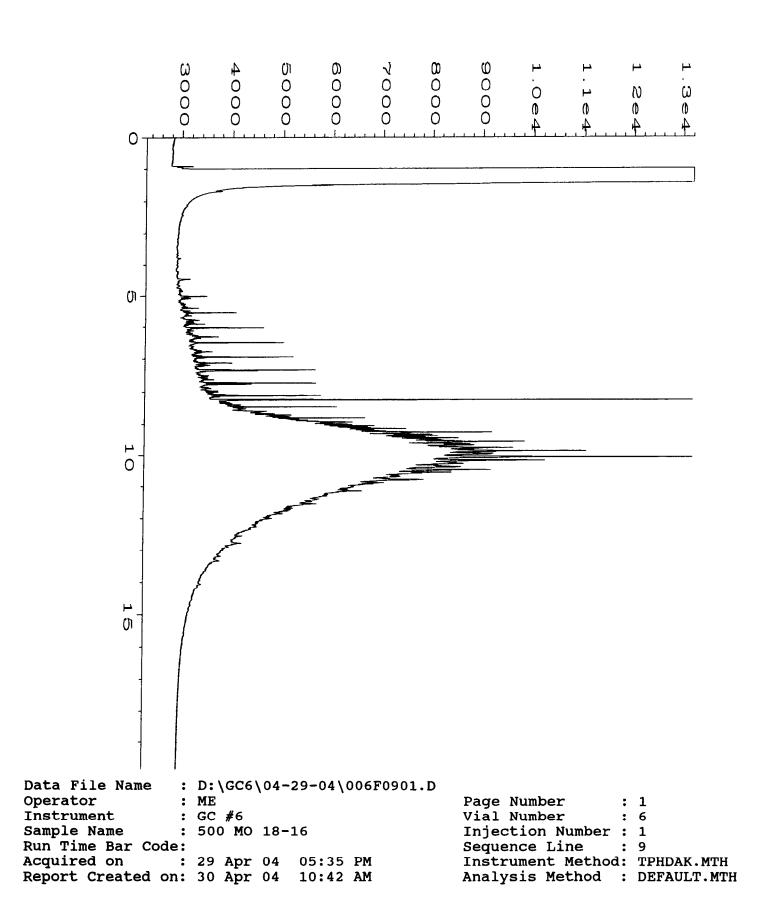












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nta Office CA 95521-6741 077) 626-8430- FAX (707)	177 Sie	- Irvine 70 Cartwnght Rd 500 1e, CA 92614 (949) 253-2951 (949) 253-2954	CA - San 180 Howa San Franc Tel (415) Fax (415)	nd SL, Ste 3 xeco, CA 94 495-7110	105 S 8 T	CO Box 1900 Per Ste 300 Soulder Sei (303) Sax (303	N CO 80 447-18	301 323	Wai	Osburn Bor 30 Race, 10 (208) 55 (208) 55	13873 1-6811 6-7271	_p	(† - Misi O Box 7 Isecula, I (406) IX (408)	158 MT 5	9807 500 1698	Ste Edea	King Geo	837	ost Ad		21	<u>eom</u> 01 W	strix stylester	4624) - 5+, 12	+++{//
□ OR - Portland 1020 SW Taylor Ste. 530 Portland, OR 91 Fel (503) 228-8 Fax (503) 228-8	516 Fax	Pittsburgh Vinial St., Bidg. A burgh, PA 15212 412) 321-2278 (412) 321-2283	 TX - Aut 4807 Sp Bidg. IV, Austin, 1 Tel (512 Fax (512) 	ulin Nicewood Sp 14 Floor TX 78759 1) 336-1867 2) 336-1331	nings Rd		te 230 louston el (281	ones Rd	070 368	320 Po Tel	(361) 5	avaca tain a. TX 7797 52-8839 53-8115		453 Text	arkana.	ana nemil Ro 1X 7550 14-0625 194-0626		WA - S 19203 : Ste 10 Lynnwc Tel (42 Fax (42	369h A4	ve W A 9803 -4000 -4040	00 **	520)6	63-4	94612	-
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METHOD	OF SHIP	MENT: Fe	d67			C				BILL	NO:	n: _	bel	0-	,			INAT	ION	: 1		olna		1-79	
				SAM	PLES								_						ANA	LY	R C	EQUES	э т		
				S	ample			Prese	ervati	ion	Τ	Cor	taine	rs	Cor	nstituer	its/Meth	юd	Ha	andli	ng		Rer	narks	
•	Fiel Sam Identific	ple		DATE	TIME	Matrix*	ΡŪ	HNO ₃	H ₂ SO ₄	COLD	FILTRATION.	VOLUME (ml/oz)	TYPE'	O	TPH-0/NO	S. Trough			НОГД	RUSH	STANDARD	B ;11	Geor	atr:X	
Ditch3-	20040	420		4/20	1330	40	-1	-+	_	x	h	1470		4	X	-	-		-	-	5				
Ditch 3	-20040	9420-5	6	4/20	1330	k		-		×	4	14 3 er		4		*	1				×				
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								TOTA		IBER OF	CONT	INERS		8	1480	RATORY	COMME	NTS/CO	NUT	ON OF	F SAN	PLES	Coole	r Temp:	
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SIGNA	URE	PRINTE	D NAME	1	COM	PANY			D	ATE		TIME	ł		SIG	NATUF	E	<u> </u>	PR	INTE	DNA	ME		COMPANY	
M# HA	d	Matt H	Thyand	M	FG	_, _,		17	1/21	164	1	000		m	1	ant	Tas	11	Jha	an	Ph	an	Fried	nan \$ [30

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Ipha Analytical Laboratories Inc 208 Mason St Ukiah, California 95482 e-mail clientservices@alpha-labs.com • Phone (707) 468-0401 • Fax (707) 468-5267



14 June 2004

Geomatrix Consultants Attn: Ross Steenson 2101 Webster Street, 12th Floor Oakland, CA 94612 RE: SPI - Arcata Stormwater Work Order: A405657

TASK 6 STORM WATER MAY 27, 2004 STORM WATER SAMPLES

Enclosed are the results of analyses for samples received by the laboratory on 05/28/04 13:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely, Melanie D. Spece

Melanie B. Neece For Sheri L. Speaks Project Manager



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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn. Ross Steenson

Report Date 06/14/04 13:43 Project No 9329.000/030275 Project ID: SPI - Arcata Stormwater

 Order Number
 Receipt Date/Time
 Client Code
 Client PO/Reference

 A405657
 05/28/2004
 13 00
 GEOMAT

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SL-1	A405657-01	Water	05/27/04 13 15	05/28/04 13 00
SL-2	A405657-02	Water	05/27/04 14 00	05/28/04 13 00
SL-3	A405657-03	Water	05/27/04 12 35	05/28/04 13 00
SL-4	A405657-04	Water	05/27/04 13 45	05/28/04 13 00

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Malanie B. There

Melanie B Neece For Sheri L Speaks Project Manager

6/14/2004

Page 1 of 16



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CHEMICAL EXAMINATION REPORT

Client Code

Page 2 of 16

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Receipt Date/Time

Order Number

Report Date06/14/04 13:43Project No9329.000/030275Project ID:SPI - Arcata Stormwater

Client PO/Reference

A405657	05/28/2004 13 00		GE	OMAT		_		
		Alpha A	Analytical	Laborato	ries, Inc.			
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
SL-1 (A405657-01)			Sample Typ	e: Water	S	ampled: 05/27/04 13:	15	
Metals by EPA 200 Series Methods	l I							
Arsenic	EPA 200 9	AF40106	06/01/04	06/10/04	1	0.0034 mg/l	0.0020	
Copper	EPA 200 7	۳	н	06/04/04		0.030 "	0.020	
Zinc		"	"	*	•	1.9 "	0.020	
Chlorinated Phenols by Canadian	Pulp Method							
2,4,6-Trichlorophenol	EnvCan	AF40125	06/01/04	06/01/04	1	ND ug/l	10	
2,3,5,6-Tetrachlorophenol	1*				*	ND "	10	
2,3,4,6-Tetrachlorophenol	*		**	*		ND "	10	
2,3,4,5-Tetrachlorophenol	.,				16	ND "	10	
Pentachlorophenol	"		•	н		ND "	10	
Surrogate Tribromophenol	"	"	"	"		960%	79-119	
Conventional Chemistry Parameter	rs by APHA/EPA M	ethods						
Chemical Oxygen Demand	SM5220D	AF40707	06/07/04	06/08/04	1	230 mg/l	10	
Specific Conductance (EC)	EPA 120 1	AE42809	05/28/04	05/28/04		180 umhos/c	m 20	
Oil & Grease (HEM-SG)	EPA 1664	AF40811	06/08/04	06/11/04		ND mg/l	50	
Total Suspended Solids	EPA 160 2	AF40119	06/01/04	06/03/04	•	100 "	1.0	
Tannins & Lignins	SM 5550B	AF40210	06/02/04	06/02/04	2	6.6 "	0.20	
TPH as Diesel and Motor Oil by El	PA Method 8015 Mo	dified						
TPH as Diesel	8015DRO	AF40303	06/02/04	06/04/04	I	92 ug/i	50	D-0
TPH as Motor Oil			"			550 "	100	
Surrogate 1 4-Bromofluorobenzet	ле "	"	,,	*		64 5 %	38-120	

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Malanie B. There

Melanie B Neece For Sheri L. Speaks Project Manager



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	e-mail	clientservices@alpha-labs.com	٠	Phone	(707) 468-0401	٠	Fax	(707) 468-5267

CHEMICAL EXAMINATION REPORT Page 3 of 16 Geomatrix Consultants 2101 Webster Street, 12th Floor Report Date 06/14/04 13 43 9329.000/030275 Oakland, CA 94612 Project No SPI - Arcata Stormwater Attn Ross Steenson Project ID. Order Number Receipt Date/Time Client Code Client PO/Reference A405657 05/28/2004 13 00 GEOMAT Alpha Analytical Laboratories, Inc. METHOD BATCH PREPARED ANALYZED DILUTION RESULT NOTE PQL SL-1 (A405657-01) Sample Type: Water Sampled: 05/27/04 13:15 TPH as Gasoline by GCFID/5030 TPH as Gasoline 8015GRO AF40308 06/03/04 06/03/04 ı ND ug/l 50 Surrogate 1,4-Bromofluorobenzene 108 % 63-150 SL-2 (A405657-02) Sample Type: Water Sampled: 05/27/04 14:00 Metals by EPA 200 Series Methods Arsenic EPA 200 9 AF40106 06/01/04 0.0046 mg/l 0.0020 06/10/04 1 Cadmium EPA 200 7 ... 06/04/04 н ND " 0 010 ., Chromium ND " 0 0 1 0 ,, н ,, . Copper ND " 0 0 2 0, " Nickel ND " 0 010 ND " Lcad 0 0 5 0 Zinc 0.46 " 0.020 **Chlorinated Phenols by Canadian Pulp Method** 2,4,6-Trichiorophenol EnvCan AF40125 06/01/04 06/01/04 ND ug/l 10 1 2,3,5,6-Tetrachlorophenol ND " 1.0 . 2,3,4.6-Tetrachlorophenol .. . ** Ħ ND " 10, 2,3,4,5-Tetrachlorophenol м ND " 10 ... " Pentachlorophenol ND " 10 Surrogate Tribromophenol 984% 79-119 Conventional Chemistry Parameters by APHA/EPA Methods SM5220D Chemical Oxygen Demand AF40707 06/07/04 06/08/04 630 mg/l 10 1 Specific Conductance (EC) EPA 1201 AE42809 05/28/04 05/28/04 1200 umhos/cm 20 Oil & Grease (HEM-SG) . EPA 1664 AF40811 06/08/04 06/11/04 ND mg/l 50 . **Total Suspended Solids** EPA 160 2 AF40119 06/01/04 06/03/04 150 " 1.0 SM 5550B Tannins & Lignins AF40210 06/02/04 06/02/04 50 100 " 5.0

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Malanie S. There

Melame B. Neece For Sheri L Speaks Project Manager



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		HEMIC	AL EXAI	MINATIO	N REPORT			Page 4 of 16
Geomatrix Cons 2101 Webster S Oakland, CA 94 Attn [.] Ross Steer	treet, 12th Floor 612				Report Date Project No Project II	o: 9329.000/0		
Order Number A405657	Receipt Date/Time 05/28/2004 13 00			ent Code EOMAT		Chent PC	0/Reference	
	<u> </u>	Alpha A	nalytical	Laborato	ries, Inc.			
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
SL-2 (A405657-02)			Sample Ty	pe: Water	Sai	npled: 05/27/04 1	4:00	
TPH as Diese! and Motor Oil by El	PA Method 8015 Mo	dified		-		-		
TPH as Diesel	8015DRO	AF40303	06/02/04	06/04/04	1	280 ug/i	50	D-09
TPH as Motor Oil	H.	-		*	*	1100 "	100	
Surrogate 1,4-Bromofluorobenzes	ne "	"	"	"		50 2 %	38-120	
TPH as Gasoline by GCFID/5030								
TPH as Gasoline	8015GRO	AF40308	06/03/04	06/03/04	2	340 ug/l	100	
Surrogate 1 4-Bromofluorobenze	ne "	н	9	"		996%	63-150	
SL-3 (A405657-03)			Sample Ty	pe: Water	Sai	npled: 05/27/04 1	2:35	
Metals by EPA 200 Series Methods								
Arsenic	EPA 200 9	AF40106	06/01/04	06/10/04	1	0.037 mg/l	0.0020	
Copper	EPA 200 7		н	06/04/04	4	ND "	0 080	
Zinc	**	н		•	"	0.85 "	0.080	
Chlorinated Phenols by Canadian	Pulp Method							
2,4,6-Trichlorophenol	EnvCan	AF40125	06/01/04	06/01/04	1	ND ug/l	10	
2,3,5,6-Tetrachlorophenol	**	"		"		ND "	10	
2,3,4,6-Tetrachlorophenol		*	"	м	•	ND "	10	
2,3,4,5-Tetrachlorophenol	*		**	"	•	ND "	10	
Pentachlorophenol	10	"	۳	*	"	ND "	10	
Surrogate Tribromophenol	17	"	"	"	v	94 4 %	79-119	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Malanie S. There

Melanie B Neece For Sheri L Speaks Project Manager



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e-mail clientservices@alpha-labs.com	•	Phone	(707) 468-0401	•	Fax	(707) 468-5267

		HEMIC	AL EXAN	MINATIO	N REPORT			Page 5 of
Geomatrix Cons 2101 Webster St Oakland, CA 94 Attn: Ross Steen	treet, 12th Floor 612				Report Date Project No Project ID		30275	
	Receipt Date/Time 05/28/2004 13 00			ent Code EOMAT		Client PO	/Reference	
		Alpha A	Analytical	Laborato	ries, Inc.			
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
SL-3 (A405657-03)			Sample Typ	pe: Water	San	npled: 05/27/04 1	2:35	
Conventional Chemistry Parameter	rs by APHA/EPA Me	ethods						
Chemical Oxygen Demand	SM5220D	AF40707	06/07/04	06/08/04	5	2100 mg/l	50	
Specific Conductance (EC)	EPA 120 1	AE42809	05/28/04	05/28/04	1	1300 umhos	/cm 20	
Oil & Grease (HEM-SG)	EPA 1664	AF40811	06/08/04	06/11/04		ND mg/l	50	
Total Suspended Solids	EPA 160 2	AF40119		06/03/04	-	1900 "	1.0	
Tannins & Lignins	SM 5550B	AF40210		06/02/04	100	240 "	10	
TPH as Diesel and Motor Oil by El	PA Method 8015 Mo	dified						
TPH as Diesel	8015DRO	AF40303	06/02/04	06/04/04	1	2300 ug/l	50	D-09, D-13
TPH as Motor Oil	"			**	**	6000 "	100	
Surrogate 1,4-Bromofluorobenzer	ne "	"	"	"		587%	38-120	····
TPH as Gasoline by GCFID/5030								
TPH as Gasoline	8015GRO	AF40308	06/03/04	06/03/04	2	190 ug/l	100	
Surrogate 1,4-Bromofluorobenzei	ne "	N	"	Ħ		106 %	63-150	
SL-4 (A405657-04)			Sample Ty	pe: Water	San	npled: 05/27/04 1	3:45	
Metals by EPA 200 Series Methods	l i							
Arsenic	EPA 200 9	AF40106	06/01/04	06/10/04	1	0 039 mg/l	0.0020	
Соррег	EPA 200 7	۳	*	06/04/04	4	ND "	0 080	
Zinc	"	"	-		-	0.75 "	0.080	
Chlorinated Phenols by Canadian 1	Pulp Method							
2,4,6-Trichlorophenol	EnvCan	AF40125	06/01/04	06/01/04	ı	ND ug/l	10	
2,3,5,6-Tetrachlorophenol	*		*	*	-	ND "	10	
2,3,4,6-Tetrachlorophenol		"			*	ND "	10	
2,3,4,5-Tetrachlorophenol						ND "	10	
Pentachlorophenol	**		-	•		ND "	10	
Surrogate Tribromophenol	"	"	"	"		102 %	79-119	

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Malanie S. There

Melame B Neece For Sheri L. Speaks Project Manager



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•	e-mail	clientservices@alpha-labs com	•	Phone	(707) 468-0401	٠	Fax	(707) 468-5267

	C	HEMIC	AL EXA	MINATIO	N REPOR	T		Page 6 of 1
Geomatrix Cons 2101 Webster St Oakland, CA 94 Attn: Ross Steer	treet, 12th Floor 612				-	ate: 06/14/04 13·43 No: 9329.000/030275 ID. SPI - Arcata Storr	nwater	
	Receipt Date/Time 05/28/2004 13 00		-	ent Code EOMAT		Client PO/Refere	nce	
		Alpha A	Analytical	l Laborato	ries, Inc.	- <u></u>		
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
SL-4 (A405657-04)		~~~	Sample Ty	pe: Water		Sampled: 05/27/04 13:45		
Conventional Chemistry Parameter	rs by APHA/EPA Me	ethods						
Chemical Oxygen Demand	SM5220D	AF40707	06/07/04	06/08/04	5	1500 mg/l	50	
Specific Conductance (EC)	EPA 120 1	AE42809	05/28/04	05/28/04	1	160 umhos/cm	20	
Oil & Grease (HEM-SG)	EPA 1664	AF40811	06/08/04	06/11/04		ND mg/l	50	
Total Suspended Solids	EPA 160 2	AF40119	06/01/04	06/03/04		2900 "	1.0	
Tannins & Lignins	SM 5550B	AF40210	06/02/04	06/02/04	100	160 "	10	
TPH as Diesel and Motor Oil by El	PA Metnod 8015 Mo	dified						
TPH as Diesel	8015DRO	AF40303	06/02/04	06/04/04	1	720 ug/i	50	D-09, D-13
TPH as Motor Oil	•		*	"	"	3200 "	100	
Surrogate 1.4-Bromofluorobenzer	ne "	"	"	"		580% 38-12	0	
TPH as Gasoline by GCFID/5030								
TPH as Gasoline	8015GRO	AF40308	06/03/04	06/03/04	2	85 ug/l	10	
Surrogate 1,4-Bromofluorobenzer	ne "	"	"	"		105 % 63-15	0	

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Malanie B. There

Melame B. Neece For Sheri L Speaks Project Manager



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CHEMICAL EXAMINATION REPORT

Page 7 of 16

Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AF40106 - EPA 3005A										
Blank (AF40106-BLK1)				Prepared	06/01/04	Analyzed	06/10/04			
Arsenic	ND	0 0020	mg/l							
Cadmium	ND	0 010								
Соррег	ND	0 020								
Nickei	ND	0 010	н							
Zinc	ND	0 020	*							
LCS (AF40106-BS1)				Prepared	06/01/04	Analyzed	06/10/04			
Arsenic	0 0199	0 0020	mg/i	0 0200		99 5	85-115			
Cadmum	0 204	0 010	*	0 200		102	85-115			
Соррет	0 189	0 020		0 200		94 5	85-115			
Nickel	0 203	0 010		0 200		102	85-115			
Zinc	0 215	0 020	-	0 200		108	93 4-127			
LCS Dup (AF40106-BSD1)				Prepared	06/01/04	Analyzed	06/10/04			
Arsenic	0 0203	0 0020	mg/l	0 0200		102	85-115	1 99	20	
Cadmium	0 205	0 010	и	0 200		102	85-115	0 489	20	
Copper	0 191	0 020	"	0 200		95 5	85-115	1 05	20	
Nickel	0 204	0 010		0 200		102	85-115	0 491	20	
Zinc	0 215	0 020		0 200		108	93 4-127	0 00	20	
Duplicate (AF40106-DUP1)	So	urce: A405	569-01	Prepared	06/01/04	Analyzed	06/10/04			
Arsenic	ND	0 0020	mg/l		ND				20	
Cadmium	ND	0 010			ND				20	
Copper	ND	0 020			ND				20	
Nickel	ND	0 010	"		ND				20	
Zinc	ND	0 020	•		ND				20	
Matrix Spike (AF40106-MS1)	So	urce: A405	569-01	Prepared	06/01/04	Analyzed	06/10/04			

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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Report Date: 06/14/04 13 43 Project No: 9329 000/030275 Project ID: SPI - Arcata Stormwater

 Order Number
 Receipt Date/Time

 A405657
 05/28/2004
 13 00

Chent Code GEOMAT Chent PO/Reference

Page 8 of 16

Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
atch AF40106 - EPA 3005A										
Matrix Spike (AF40106-MS1)	Sou	Irce: A405	569-01	Prepared	06/01/04	Analyzed	06/10/04			
Arsenic	0 0213	0 0020	mg/l	0 0200	ND	106	70-130			
Cadmium	0 203	0 010	*	0 200	ND	102	70-130			
Copper	0 196	0 020		0 200	ND	98 0	70-130			
Nickel	0 203	0 010	٠	0 200	ND	102	70-130			
Zine	0 217	0 020		0 200	ND	105	70-130			
Matrix Spike Dup (AF40106-MSD1)	Sou	Irce: A405	569-01	Prepared	06/01/04	Analyzed	06/10/04			
Arsenic	0 0207	0 0020	mg/l	0 0200	ND	104	70-130	2 86	20	
Cadmium	0 204	0 010		0 200	ND	102	70-130	0 491	20	
Copper	0 196	0 020		0 200	ND	98 0	70-130	0 00	20	
Nickel	0 206	0 010		0 200	ND	103	70-130	1 47	20	
Zinc	0 218	0 020		0 200	ND	106	70-130	0 460	20	

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CHEMICAL EXAMINATION REPORT											
Geomatrix C 2101 Webste Oakland, CA Attn' Ross S	r Street, 12th Floor 94612		Report Date06/14/04 13:43Project No9329.000/030275Project IDSPI - Arcata Stormw								
Order Number A405657	Receipt Date/Time 05/28/2004 13 00		Client GEON				Client P	O/Referer	nce		
	Chlorinated Pheno	ls by Can	adian I	Pulp Met	hod - Q	uality (Control				
Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag	
Batch AF40125 - Solvent]	Extraction					_					
Blank (AF40125-BLK1)				Prepared	& Analyze	ed 06/01	/04				
2,4,6-Trichlorophenol	ND	10	ug/l	·····							
2,3,5,6-Tetrachlorophenol	ND	10	"								
2,3,4,6-Tetrachlorophenol	ND	10	"								
2,3,4,5-Tetrachlorophenol	ND	10	n								
Pentachlorophenol	ND	10									
Surrogate Tribromophenol	24 5		-	25 0		98 0	79-119				
LCS (AF40125-BS1)				Prepared	& Analyz	d 06/01	/04				
2 4.6-Trichlorophenol	4 79	10	ug/l	5 00		95 8	81-120				
2,3,5,6-Tetrachlorophenol	4 72	10		5 00		94 4	78-108				
2,3,4,6-Tetrachlorophenol	4 68	10	-	5 00		93 6	76-108				
2,3,4,5-Tetrachlorophenol	4 65	10		5 00		93 0	80-116				
Pentachlorophenol	4 73	10		5 00		94 6	86-109				
Surrogate Tribromophenol	24 7		-	25 0		98 8	79-119			·····	
Matrix Spike (AF40125-MS	51) Sou	Irce: A405	657-01	Prepared	& Analyz	ed 06/01	/04				
2,4,6-Trichlorophenol	4 69	10	ug/l	5 00	ND	93 8	75-125				
2,3,5,6-Tetrachlorophenol	4 68	10		5 00	ND	93 6	69-115				
2,3,4,6-Tetrachlorophenol	4 48	10	-	5 00	ND	89 6	66-117				
2,3,4,5-Tetrachlorophenol	4 43	10	*	5 00	ND	88 6	70-115				
Pentachlorophenol	5 18	10	*	5 00	ND	104	55-124				
Surrogate Tribromophenol	22.4			25 0		89 6	79-119				
Matrix Spike Dup (AF4012	5-MSD1) Sol	arce: A405	657-01	Prenared	& Analyz	ed 06/01	/04				

Matrix Spike Dup (Ar 40125-MISDI)	3001	Source. Atosositor Treparca de Anaryzea do			Ju 00/01/	0-				
2,4,6-Trichlorophenol	4 65	10	ug/l	5 00	ND	93 0	75-125	0 857	20	
2,3,5,6-Tetrachlorophenol	4 66	10	"	5 00	NÐ	93 Z	69-115	0 428	20	
2,3,4,6-Tetrachlorophenol	4 46	10	"	5 00	ND	89 2	66-117	0 447	20	

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Melanie B Neece For Sheri L. Speaks Project Manager 6/14/2004



Surrogate Tribromophenol

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CHEMICAL EXAMINATION REPORT												
	ix Consultants										-	
	ebster Street, 12	h Floor				Report D	Date 0	6/14/04 1	3:43			
	, CA 94612			Project	No: 9	329.000/	030275					
Attn Ro			Project	D: S	PI - Arca	ta Storn	nwater					
Order Number A405657	Client GEON				Client P	nce						
	Chlorin	ated Pheno	ls by Can	adian]	Pulp Met	hod - Q	uality C	Control				
Analyte(s)		Result	PQL		Spike	Source	WDEC	%REC		RPD		
		Result	FQL	Units	Level	Result	%REC	Limits	RPD	Limit	Flag	
Batch AF40125 - Solv	ent Extraction		FQL	Units	Level	Kesuit	%REC		RPD	Limit	Flag	
Batch AF40125 - Solv Matrix Spike Dup (AF4			rce: A405			& Analyze		• · · · ·	RPD	Limit	Flag	
Batch AF40125 - Solv Matrix Spike Dup (AF4 2,3,4,5-Tetrachlorophenol								• · · · ·	0 450	Limit 20	Flag	

-

250

916

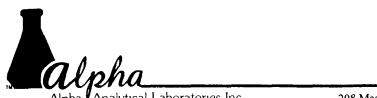
79-119

229

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Melanne B Neece For Sheri L Speaks Project Manager



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CHEMICAL EXAMINATION REPORT											
Geomatrix Cor 2101 Webster Oakland, CA 9 Attn Ross Ste	Street, 12th Floor 94612				Report I Project Project	No 9	6/14/04 1 329.000/(PI - Arca	030275	nwater		
Order Number A405657	Receipt Date/Time 05/28/2004 13 00		Client GEON				Client P	O/Refere	nce		
Conv	entional Chemistr	y Paramete	ers by A	PHA/EP	A Meth	ods - Qi	uality Co	ntrol			
Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag	
Batch AE42809 - General P	reparation										
Duplicate (AE42809-DUP1)	5	Source: A405	649-01	Prepared	& Analyze	ed 05/28/	04				
Specific Conductance (EC)	519	20	umhos/cm		520			0 192	10		
Batch AF40119 - General P	reparation										
Blank (AF40119-BLK1)				Prepared	06/01/04	Analyzed	i 06/03/04				
Total Suspended Solids	ND	10	mg/l								
Duplicate (AF40119-DUP1)	ç	Source: A405	657-04	Prepared	06/01/04	Analyzed	i 06/03/04				
Total Suspended Solids	2800	10	mg/l		2900			3 51	30		
Batch AF40210 - General P	reparation										
Blank (AF40210-BLK1)				Prepared	& Analyze	ed 06/02/	04				
Tannins & Lignins	ND	0 10	mg/l								
LCS (AF40210-BS1)				Prepared	& Analyze	d 06/02/	04				
Tannins & Lignins	4 92	0 10	mg/l	5 00	oc Astranyza	98.4	80-120				
			5			1.06/000	~ 4				
LCS Dup (AF40210-BSD1)					& Analyze						
Tannins & Lignins	4 71	0 10	mg/l	5 00		94 2	80-120	4 36	20		
Duplicate (AF40210-DUP1)		Source: A405	657-01	Prepared	& Analyze	d 06/02/	04				
Tannins & Lignins	6 90	0 20	mg/l		66			4 44	200		
Matrix Spike (AF40210-MS1)) 5	Source: A405	657-01	Prepared	& Analyze	d 06/02/	04				
Tannins & Lignins	9 39	0 20	mg/l	3 00	66	93 0	80-120				

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CHEMICAL EXAMINATION REPORT											
Geomatrix Cons 2101 Webster St Oakland, CA 94 Attn Ross Steen		Report Date06/14/04 13.43Project No:9329.000/030275Project IDSPI - Arcata Stormwate									
	Receipt Date/Time 05/28/2004 13 00		Client GEO				Client PO	D/Refere	nce		
Conven	tional Chemistry	y Paramete	rs by A	PHA/EP	A Meth	ods - Qu	ality Co	ntrol		· · · · · · · · · · · · · · · · · · ·	
Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag	
Batch AF40210 - General Pre	paration										
Matrix Spike Dup (AF40210-MS	SD1) S	ource: A405	657-01	Prepared	& Analyz	ed 06/02/0)4				
Tannins & Lignins	971	0 20	mg/l	3 00	66	104	80-120	3 35	20		
Batch AF40707 - General Pre	paration										
Blank (AF40707-BLK1)				Prepared	06/07/04	Analyzed	06/08/04				
Chemical Oxygen Demand	ND	10	mg/l								
LCS (AF40707-BS1)				Prepared	06/07/04	Analyzed	06/08/04				
Chemical Oxygen Demand	106	10	mg/l	100		106	85-115				
LCS Dup (AF40707-BSD1)				Prepared	06/07/04	Analyzed	06/08/04				
Chemical Oxygen Demand	106	10	mg/l	100		106	85-115	0 00	10		
Duplicate (AF40707-DUP1)	s	ource: A406	159-03	Prepared	06/07/04	Analyzed	06/08/04				
Chemical Oxygen Demand	ND	10	mg/l		ND	7 dial y 200	00/00/04	··	200		
Matrix Spike (AF40707-MS1)	e	ource: A406 [,]	150 02	Dramarad	06/07/04	Analyzed	06/08/04				
Chemical Oxygen Demand	410	10	mg/l	400	ND	102	85-115				
Matrix Spike Dup (AF40707-M: Chemical Oxygen Demand	SD1) S 413	ource: A406 10		Prepared 400	06/07/04 ND	Analyzed		0 729	10		
		10	mg/l	400	UN	103	85-115	0 129	10		
Batch AF40811 - General Pre	paration										
Blank (AF40811-BLK1)				Prepared	06/08/04	Analyzed	06/11/04				

Oil & Grease (HEM-SG)

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ND

50 mg/l

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CHEMICAL EXAMINATION REPORT

Client Code

GEOMAT

Page 13 of 16

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn[.] Ross Steenson

Receipt Date/Time

05/28/2004 13 00

Order Number

A405657

Report Date: 06/14/04 13:43 Project No: 9329.000/030275 Project ID SPI - Arcata Stormwater

Client PO/Reference

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AF40811 - General Preparation										
LCS (AF40811-BS1)				Prepared	06/08/04	Analyzed	06/11/04			
Oil & Grease (HEM-SG)	9 10	50	mg/l	10 0		91 0	64-116			
LCS Dup (AF40811-BSD1)				Prepared	06/08/04	Analyzed	06/11/04			
Oil & Grease (HEM-SG)	9 80	50	mg/l	10 0		98 0	64-116	7 41	132	

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	CHEN	AICAL E	XAMI	NATIO	N REPOR	T				Page 14 of 16
Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson Report Date: 06/14/04 13:43 Project No: 9329.000/030275 Project ID: SPI - Arcata Stormwater										U
Order Number A405657	Receipt Date/Time 05/28/2004 13 00		Client (GEOM				Client P	O/Refere	nce	
TI	PH as Diesel and Motor	Oil by E	PA Met	hod 801	5 Modifie	ed - Qu	uality Co	ntrol		
Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AF40303 - EPA 3	510B Water									
Blank (AF40303-BLK1)				Preparec	l & Analyzed	06/03	/04			
TPH as Diesel	ND	50	ug/l							

Diaux (AI 40303-DLINI)				Trepared of A	maryzeu 00/03/0	/ 4			
TPH as Diesel	ND	50	ug/l						
TPH as Motor Oil	ND	100							
Surrogate 1,4-Bromofluorobenzene	337			448	75 2	38-120		-	
LCS (AF40303-BS1)				Prepared 06/0)3/04 Analyzed	06/04/04			
TPH as Diesel	1880	50	ug/l	2060	91 3	57-136			
TPH as Motor Oil	2120	100		1990	107	58-138			
Surrogate 1,4-Bromofluorobenzene	326		•	448	72 8	38-120			
LCS Dup (AF40303-BSD1)				Prepared 06/0)3/04 Analyzed	06/04/04			
TPH as Diesel	1780	50	ug/l	2060	86 4	57-136	5 46	25	
TPH as Motor Oil	2030	100	"	1990	102	58-138	4 34	25	
Surrogate 1,4-Bromofluorobenzene	378			448	84 4	38-120			

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CHEMICAL EXAMINATION REPORT

Page 15 of 16

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn Ross Steenson

06/14/04 13:43 Report Date Project No 9329.000/030275 Project ID SPI - Arcata Stormwater Client PO/Reference

Receipt Date/Time Order Number 05/28/2004 13 00

A405657

Client Code GEOMAT

TPH as Gasoline by GCFID/5030 - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AF40308 - EPA 5030 Water GC										
Blank (AF40308-BLK1)				Prepared	& Analyze	ed 06/03/0	04			
TPH as Gasoline	ND	50	ug/l							
Surrogate 1,4-Bromofluorobenzene	26 1		-	23 1		113	63-150			-
LCS (AF40308-BS1)				Prepared	& Analyz	ed 06/03/	04			
TPH as Gasoline	48 1	50	ug/l	50 0		96 2	79-123			
Surrogate 1,4-Bromofluorobenzene	197		•	20 0		98 5	63-150			
LCS Dup (AF40308-BSD1)				Prepared	& Analyz	ed 06/03/	04			
TPH as Gasoline	49 6	50	ug/l	50 0		99 2	79-123	3 07	15	
Surrogate 1,4-Bromofluorobenzene	196			20 0		98 0	63-150			

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CHEMICAL EXAMINATION REPORT

Page 16 of 16

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Receipt Date/Time

05/28/2004 13 00

Report Date Project No Project ID. Client Code GEOMAT

06/14/04 13.43 9329.000/030275 SPI - Arcata Stormwater

Client PO/Reference

Notes and Definitions

Order Number A405657

D-09 Results in the diesel organics range are primarily due to overlap from a heavy oil range product

D-13 The sample chromatogram contains resolved peaks within the diesel range that do not resemble diesel

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

Sample results reported on a dry weight basis dry

RPD Relative Percent Difference

PQL Practical Quantitation Limit

MFG, INC.			CH	AIN	1-0	F-C	US	TC	<u>'</u> סכ	YR	EC	0	RD	Α	NC) R	EG	U	E	ST				YSIS
ta Office E Cont Way 24 95521-6741 177 1226-4430- FAX (707) 826-8437	17770 Cartwright Bd 190 Ho	an Francisco ward St Ste ancisco, CA 9 5) 495-7110 5) 495 7107	4105 8	Ste 300 Boulder	ulder arl East W CO 803 447 18 447-18	21	ID - Osbu PO Box 3 Wallace Tel (208) Fax (208)	30 ID 83 556-6	6811	⊡ M Pi M Te Fa	IT - Mis O Box Iissoula el (406) ax (406	soula 7158 MT 5 728-4) 728-	9807 600 4698	□ N. 10 Si Ec Te Fa	J - Edis 190 Kin e 703 #son, 1 # (732) bt (732) bt (732)	son Ig George VJ 08837 738-570) 738-571	es Posi 7 11	Rđ	D	210	ema 1 W	trix ebste	46 - 5+ 1 - 74	2** { /00
1020 SW Taylor St Ste 530 Portland OR 97205	PA - Pittsburgh □ TX 800 Vinial St Bidg A 911tsburgh PA 15212 Bidg 911tsburgh PA 15212 Bidg 7ei (412) 321-2278 Ausbi Fax (412) 321 2283 Tei (5 Fax (412) Fax (412)	Austin Spicewood S IV 1 st Floor n, TX 78759 12) 338-1667 512) 338-133	iprings Rol , 1	5 F T	el (281)	ton hes Rd TX 77070 390-5068 890-5044		TX - F 320 E Port L Tel (3 Fax (3	Port La East Ma Lavaca 361) 552 361) 55	vaca IN 7797 28839 3-6115	9	Tev	- Texark 32 Sumr (arkana (903) 7 (903) 7	TY 75	503	192	- Sea 203 36 3 100 100 100 100 100 (425) x (425)	th Ave		(5	F(A10) (10) (63	- 40	7
	730275.6 ature): Mat Thy		PROJE			S ROJE) 100	\$	CL	- 0 M	500							1	- OF	5
METHOD OF SH	IPMENT Course			C		ER/W										STIN	ΑΤΙΟ	ΝC	_	A	+ 1ph	 	0.1	- ,
		SAM	PLES						•					-			A	NAI	LYS	IS R	EQUES	ST		
		s	iample		P	reserv	ation			Con	taine	rs	Cor	istitu	ents/	Method	1	Har	ndla	ng		R	emarks	
Sa	Field ample lification	DATE	TIME	Matrix*	HCI	H ₂ SO ₄	COLD		FILTRATION*	VOLUME (ml/oz)	түре.	NO	T35, EC	LISHINS	CÓD			ного	RUSH	STANDARD	USE	= 2a) SEL	E5 01
SL-1 A4CS	5457-1	5/27	1315	AR			X		u	1/2 gal	P	1	×	×						×	ALL	MET	ns,	5M -
56-2	. 2		400							122-1	P	1	X	X							55	50B	ON T	qL.
SL-3	-3		1235				Ш			Yegyl	P	1	×	X							160	64 0	NOZ	6-'
56-4	·		1345	Ш			Ш			494	P	1	\boldsymbol{x}	x							Per	r.J	MHA	NBA
96-1		_	1315	Ш		*	Ш		\square	10+	P	1			×							M	5.2	
56-2		\downarrow	1400			<u>×</u>	HH	_		1pr	ρ	1			<u>×</u>			\perp		\mathbf{V}			<u>14:</u> 2	0
56-3	and the second secon	$ \vee$	1Z35	V	000000		I ♥ 1		M	10+	P)			7					Ŧ				
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MFG, INC.		СН		N-(OF.	-CI	UST	OD	YR	EC	:0	RD		ND	R	EQI	JE	ST	FOF		
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		Sample			Pres	serva	tion		Con	ntaine	ərs	Сог	nstitue	ints/I	Viethod	ı Tr	land	ing		Remarl	ks
Field Sample Identification	DATE		Matrix*	Ю	HNO ₃	H₂SO₄	согр	FILTRATION ⁺	VOLUME (mi/oz)	TYPE*	NO	PSP: J-#d1	1	10	60/120	НОГР	RUSH	STANDARD			
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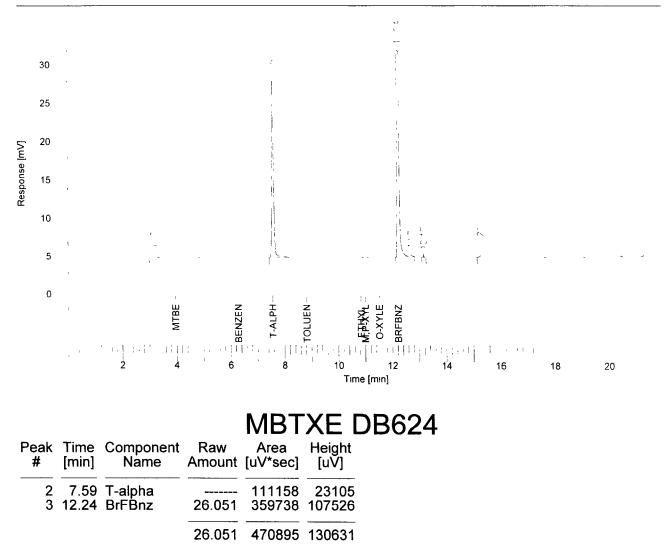
MFG, INC.	CHAI	N-OF-CUST	ODY RECO	RD AND REQU	JEST FOR ANALYSIS
Arcata, CA 95521-6741 Ste 500 San Frai Phone (707) 826-8410 Fax (707) 10 International	ncisco CA 94105 Ste 30 1 495 7110 Boulde	Boulder Di D - Osburn Pearl East Cir PO Box 30 00W Wallace, ID or, CO 80 301 Tel (208) 55 03) 447 1823 Fax (208) 55 03) 447-1836	56811 Tel (406) 728-	NJ Edison 1090 King Georges Post R 59807 Ste 703 4600 Edison, NJ 08837 -4698 Tel (732) 738-5707 Fax (732) 738-5711	COC No <u>46278</u> <u>Geomatrix</u> Oakland
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PROJECT NO 090275.6 SAMPLER (Signature) Mater 75.6	PROJECT	NAME. SPI	Arcata		PAGE 5 OF 5
SAMPLER (Signature) #44 74 M	nd	PROJECT MAN	AGER Ross		DATE 5/27/04
METHOD OF SHIPMENT	<u>r</u> 0	CARRIER/WAYBILL	NO	DESTINATION	ripha
	SAMPLES			AN	ALYSIS REQUEST
	Sample	Preservation	Containers	Constituents/Method H	andling Remarks
Field Sample Identification	DATE TIME	HCI HNO ₃ H ₂ SO ₄ COLD	FILTRATION* VOLUME (ml/oz) TYPE* NO	PLP/TLP D. DAY/L/LIN	RUSH STANDARD
56-3	5/27 1235 40		4 125-162	× + + + +	
9L-4	1 1745 1	+++++	25_1 G Z	×	<u> </u>
56-2	1400	┼┼┼┼┼	1462	×	+ + + + + + + +
56-3	1235	1 1 1 1(1	1162		<u>+ + + +</u>
52-4	1345		VILGZ		
		TOTAL NUMBER OF	CONTAINERS 0	LABORATORY COMMENTS/CONDIT	TON OF SAMPLES Cooler Temp 32
RELINQUISHED BY				RI	ECEIVED BY
SIGNATURE PRINTED NAME	COMPAN		TIME	SIGNATURE PF	RINTED NAME COMPANY
Plat Hulan Natt Hilly and	MFG	5/27/04	1630 K	Juli Vitte J.	the Mille MFG.
(The Muli	MF6_	5128/04	900	Emis afer so	WTAYM ALDBA
KUTTINGTON John TAYLOR	- Mipha	15128/04	11300 (15/1	UNSPECTO She	21. Spach Alona
KEY Malinx AO aqueou	is NA nonaqueous SO soil SL slu DISTRI	ludge P petroleum A∼air Ot ² other N BUTION PINK Field Copv YELLOW	Containers P plastic G ourse T Laboratory (Jpy WHITE Ristory to Or	tellon B brass DT other Filtration F filter nainator	ed u unintered 5-2804 13.00

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ALPHA 405657	Page 1 of
Software Version : 6.2.0.0.0:B Sample Name : METHOD E Instrument Name : 3400-624 Rack/Vial : 0/0 Sample Amount : 1.000000 Cycle : 1	

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Result File : C[.]PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\dtxe1679.rst Sequence File : C:\PenExe\TcWS\Stats\Sequences\DB624_WATER.seq

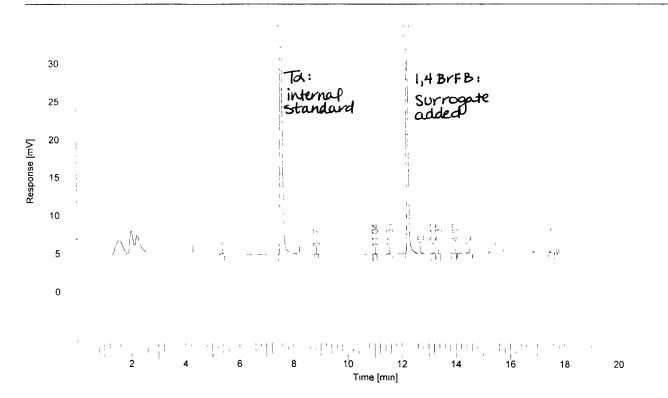


Report stored in ASCII file: C:\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\dtxe1679 TX0

Software Version Sample Name	:	METHOD BLANK
Instrument Name	:	3400-624
Rack/Vial	•	0/0
Sample Amount	:	1.000000
Cycle		1

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Result File : C:\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\etxe1679 rst Sequence File : C:\PenExe\TcWS\Stats\Sequences\DB624_WATER.seq

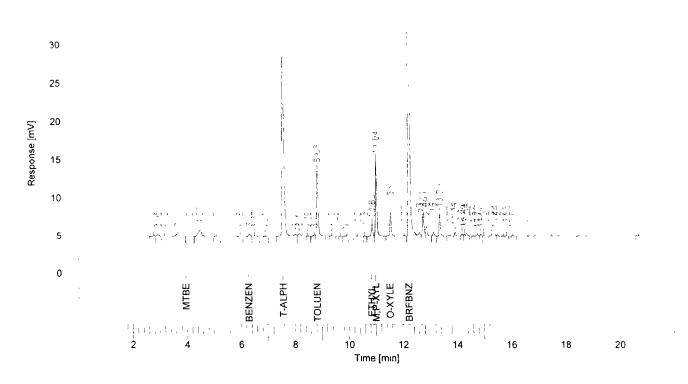


GASOLINE DB624

Peak #	Time [min]	Component Name		Area [uV*sec]	Height [uV]	Calculating qasoline:
1	5.39		0.000	443	50	0
2	7.60	Ta	0.226	<u>226</u> 394	43633	
6	12.25	BrfB	0.190	190083		425-226-190-9
7	12 72		0.001	1330	125	1.00
11	14.51		0 001	782	18	O(1)
12	15.49		0.003	3430	154	9 (.1699) · 1. 5 ppb - 50ppb
15	17.73		0.001	952	227	
16	17.83		0.001	1026	169	
17	17.93		0.000	491	90	
			0.425	424929	97467	

Software Version : 6.2.0.0.0:B27	Date	: 6/16/04 2:30:21 PM
Sample Name : GAS	Data Acquisition Time	: 6/3/04 12:21:37 PM
Instrument Name : 3400-624	Channel	: A
Rack/Vial : 0/0	Operator	. CAM
Sample Amount : 1.000000	Dilution Factor	: 1.000000
Cycle . 2	Diatorradio	

Result File . C:\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\dtxe1680.rst Sequence File : C:\PenExe\TcWS\Stats\Sequences\DB624_WATER.seq



MBTXE DB624

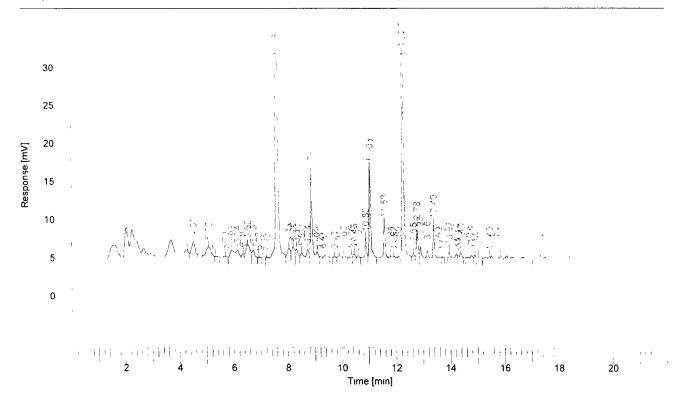
Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]	
5	4.13	MTBE	-0.255	689	80	
9	6.33	Benzene	-0.045	1714	313	
12	7.60	T-alpha		113553	23465	
17		Toluene	2 788	33837	8662	
23	10 88	Ethyl Benzene	0.414		1529	
		m,p-xylene	2.474	35370	9870	
25	11.56	o-xylene	0.814	9727	2615	. /
		BrFBnz	20.427	284792	85023	20.427/23.1 = 88% recovery
						8
			26.616	485382	131556	

Report stored in ASCII file: C:\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\dtxe1680.TX0

Software Version : 6.2.0.0.0:B27	Date : 6/16/04 2:30:36 PM
Sample Name GAS	Data Acquisition Time : 6/3/04 12.21:37 PM
Instrument Name : 3400-624	Channel . B
Rack/Vial · 0/0	Operator : CAM
Sample Amount : 1.000000	Dilution Factor 1.000000
Cycle : 2	

Result File : C:\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\etxe1680.rst Sequence File : C:\PenExe\TcWS\Stats\Sequences\DB624_WATER.seq

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GASOLINE DB624

Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
1	4.51	<u> </u>	0.011	11416	1420
2	5.08		0.014	13710	1176
3	5.33		0.000	305	52
4	5.70		0 000	341	66
5	5.93		0.009	9334	919
6	6.14		0.007	7305	886
7	6 35		0.002	2360	471
8	6.52		0.018	17794	1610
9	6.73		0.005	5499	934
12	7 61		0.243	242776	44585
13	8.05		0.009	9277	1222
14	8.20		0.011	10868	1364
15	8.32		0.007	6934	1109
16	8.51		0.004	4175	639
17	8.74		0.006	5574	986

6/16/04 2:30[.]36 PM Result: C:\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\etxe1680.rst

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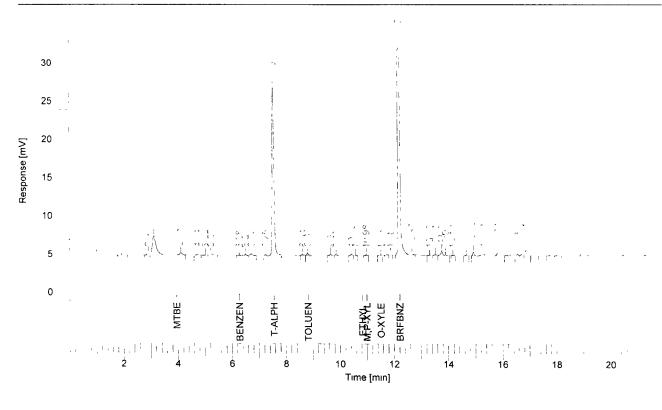
Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
# 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 35 36 37 38 39 42 43	[min] 8.88 9.09 9.21 9.38 9.73 9.91 10.08 10.36 10.46 10.61 10.89 11.05 11.58 11.81 11.92 12.09 12.27 12.65 12.78 12.90 13.16 13.40 13.97 14.22 14.30		Amount 0.046 0.004 0.001 0.002 0.001 0.003 0.001 0.002 0.002 0.001 0.002 0.002 0.001 0.002 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.002 0.001 0.003 0.001 0.003 0.001 0.003 0.001 0.003 0.001 0.003 0.001 0.003 0.001 0.003 0.003 0.003 0.003 0.003 0.003 0.003 0.003 0.002 0.003 0.003 0.002 0.003 0.003 0.003 0.002 0.003 0.003 0.002 0.001	[uV*sec] 46393 4241 730 2447 1072 2577 1346 1346 2467 1555 9936 45923 16994 1396 979 680 154970 2793 14789 5892 3171 15380 2536 1537 1395	[uV] 10695 732 145 261 256 330 195 223 493 387 2518 11568 4286 196 169 154 42690 629 3348 1392 840 4276 764 444 370
44 45 46 47 48 49 50 51 52 53 54	14.40 14.63 14 79 14.91 15.03 15.31 15.45 15.52 15.74		0.001 0.002 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.000 0.001	2435 304 1391 1360 673 478 623 830 301	370 580 86 287 377 123 109 162 231 63 137
55 58	16.08	5	0.001 0.001 0.701	785 569	235 138 147329

Page 2 of 2

	1 samples	were diluted 2x d	u to excess form
Software Version : Sample Name : Instrument Name : Rack/Vial . Sample Amount : Cycle	6.2.0.0.0:B27 ♥ A405657-01@2XF 3400-624 0/0	Date Data Acquisition Time Channel Operator	: 6/16/04 2:31:14 PM



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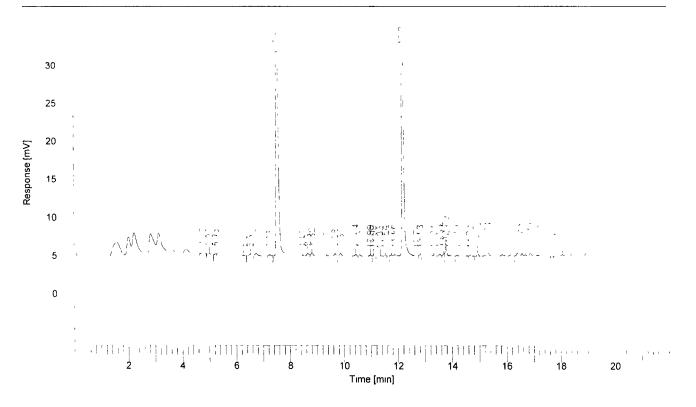
MBTXE DB624

Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
4		MTBE	0.104	1603	213
12	7.55	T-alpha		102328	21868
14	8.81	Toluene	-0.125	914	238
19	10.98	m,p-xylene	-0.292	339	88
23	12.20	BrFBnz	24.942	344960	101653
			24.628	450145	124060

Report stored in ASCII file: C.\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\dtxe1689.TX0

	:	A405657-01@2XF	Data Acquisition Time	:	_
Instrument Name	:	3400-624	Channel	:	В
Rack/Vial		0/0	Operator		CAM
Sample Amount		1.000000	Dilution Factor	:	1.000000
Cycle	:	9			

Result File : C:\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\etxe1689.rst Sequence File : C:\PenExe\TcWS\Stats\Sequences\DB624_WATER.seq



GASOLINE DB624

Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
1	4.75		0.002	1589	197
2	5.00		0.001	1134	159
3	5.26		0.001	664	155
4	5.32		0.001	1002	154
6	6.53		0.001	1389	214
7	6.75		0.002	2019	296
8	7.26		0.001	569	130
9	7.56		0.216	216464	43044
11	8.67		0.001	1246	266
12	8.82		0.001	1409	355
14	9 68		0.001	1203	284
15	9.88		0.002	1500	352
16	10.44		0.001	862	197
17	10.60		0.000	428	91
18	10.99		0.001	514	129

6/16/04 2:31[.]27 PM Result: C:\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\etxe1689.rst

i.

Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
" 22 23 24 25 26 27 28 29 30 31 32 33 35 36 37 38 39 40 41 42 43 45 46 47	$\begin{array}{c} 11.77\\ 11.89\\ 12.21\\ 12.71\\ 12.83\\ 12.93\\ 13.34\\ 13.56\\ 13.79\\ 13.92\\ 14.95\\ 15.34\\ 15.86\\ 16.16\\ 16.40\\ 16.58\\ 16.72\\ 16.89\\ 17.72 \end{array}$		0.000 0.001 0.193 0.001	494 935 193361 1384 601 695 683 1112 927 4821 557 452 650 1958 2638 509 617 1380 1136 322 1526 951	$\begin{array}{c} 114\\ 152\\ 52340\\ 125\\ 129\\ 129\\ 127\\ 199\\ 286\\ 1239\\ 111\\ 121\\ 130\\ 552\\ 511\\ 108\\ 128\\ 337\\ 287\\ 68\\ 317\\ 233\\ 149\\ 190\\ \end{array}$
			0.453	452804	104106

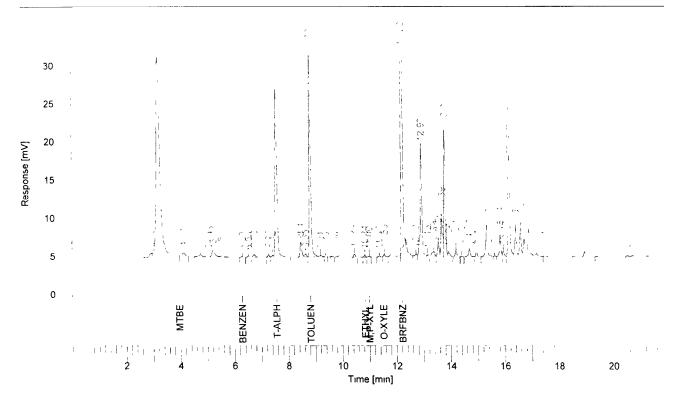
44(2)(.1699)=15450ppb

Page 2 of 2

diluted 2x due to 1	Keess Foan	Page I
Software Version : 6.2.0.0.0:B27 Sample Name : A405657-02@ Instrument Name : 3400-624 Rack/Vial : 0/0 Sample Amount 1.000000 Cycle : 10	Date	6/16/04 2.31.50 PM ≥ : 6/3/04 6:45 12 PM : A : CAM : 1.000000



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MBTXE DB624

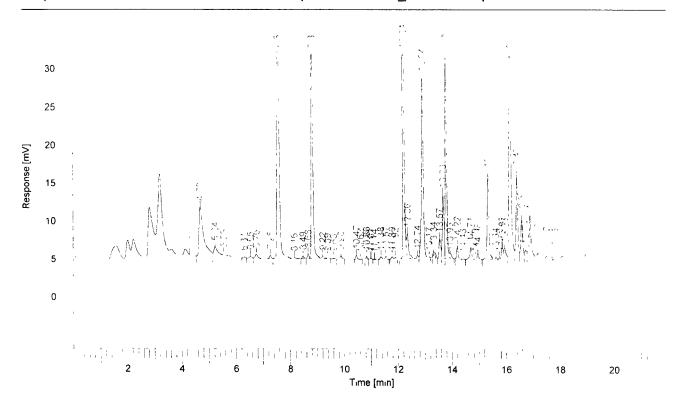
Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
3	4.12	MTBE	1.015	3966	457
8	6.30	Benzene	-0.149	464	84
13	7.57	T-alpha		106974	22195
16		Toluene	8 784	106027	26672
22	10.84	Ethyl Benzene	-0.111	738	208
		m,p-xylene	-0.281	478	108
25	11.56	o-xylene	-0.073	1145	292
		BrÉBnz	23.012	319243	97951
			32.197	539033	147967

Report stored in ASCII file: C:\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\dtxe1690 TX0

Software Version	: 6.2.0.0.0:B27 : A405657-02@2XF	Date Data Acquisition Time	: 6/16/04 2:32:04 PM
Instrument Name		Channel	: B
Rack/Vial	: 0/0	Operator	CAM
Sample Amount	: 1 000000	Dilution Factor	. 1.000000
Cycle	: 10		

Result File : C[.]\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\etxe1690.rst Sequence File : C:\PenExe\TcWS\Stats\Sequences\DB624_WATER.seq

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GASOLINE DB624

Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
1	4.70		0.074	73752	6382
2	5.24		0.012	11810	1158
2 3	5.56		0.001	1050	138
4	6.31		0.001	663	122
5	6.55		0.002	1694	256
6	6.76		0.003	3161	505
7	7.28		0.001	1496	348
8	7.58		0.226	225605	43418
9	8.16		0.002	1807	107
10	8.49		0.001	1307	304
11	8.68		0.002	2478	555
12	8.84		0.129	128874	30301
13	9.22		0.002	2243	231
14	9.39		0.000	409	93
16	9.90		0.002	2013	371

6/16/04 2:32:04 PM Result: C:\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\etxe1690.rst

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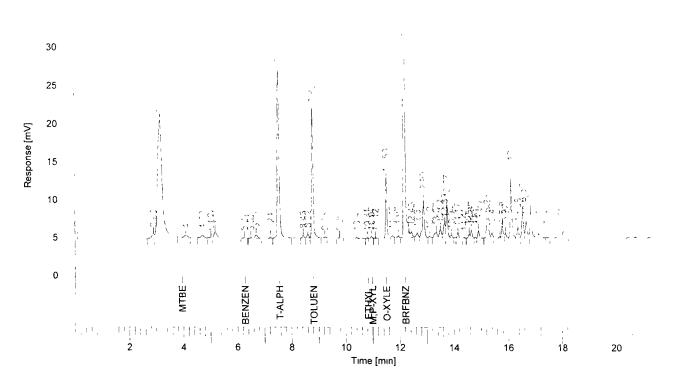
Peak	Time	Component	Raw	Area	Height
#	[min]	Name	Amount	[uV*sec]	[uV]
# 17 19 20 21 22 23 24 26 27 28 20 31 22 33 33 34 35 38 39 40 42 43 44 54	[min] 10.47 10.86 11.01 11.14 11.38 11.57 11.80 11.92 12.24 12.36 12.74 13.37 13.37 13.70 13.82 13.95 14.22 14.71 14.89 15.36 15.64 15.76 15.87 15.96 16 17	Name	Amount 0.002 0.001 0.001 0.002 0.001 0.002 0.001 0.001 0.001 0.001 0.013 0.001 0.013 0.001 0.001 0.001 0.001 0.002 0.011 0.002 0.011 0.002 0.011 0.002 0.011 0.002 0.011 0.002 0.001 0.001 0.002 0.001 0.001 0.002 0.001 0.001 0.002 0.001 0.002 0.001 0.002 0.001 0.002 0.001 0.002 0.001 0.002 0.001 0.002 0.001 0.002 0.001 0.002 0.001 0.002 0.001 0.002 0.001 0.002 0.001 0.002 0.001 0.002 0.001 0.002 0.001 0.002 0.001 0.003 0.005 0.002 0.003 0.005 0.002 0.003 0.002 0.003 0.002 0.003 0.003 0.003 0.003 0.003 0.003 0.002 0.003 0.003 0.003 0.002 0.003 0	[uV*sec] 1908 1240 801 322 1571 1370 1249 618 182098 17295 1543 111430 365 1457 12589 37842 97441 4173 6138 7818 477 3019 51417 1836 774 8151 8542 238065	[uV] 479 339 162 44 314 356 278 158 51096 3062 392 23498 73 423 2632 8396 25410 705 1624 1564 118 783 11193 246 208 1707 1507 57897
47	16.43		0.050	49802	10746
48	16.60		0.026	25727	5203
49	16.74		0.007	6637	1232
50	16.91		0.035	35418	5686
51	17.20		0.009	9212	749
52	17.52		0.004	3956	450
53	17 72		0.001	1254	253
54	17.83		0.002	2246	201
55	18.10		0.002	2191	339
			1.396	1396352	303811

= 988(2)= 1974(.1699) = 33(2PPb

Page 2 of 2

diluted 2	x due to excess of	oam	Page 1 of 1
Software Version Sample Name Instrument Name Rack/Vial Sample Amount	6.2.0.0.0:B27 . A405657-03@2XF : 3400-624 : 0/0	Date Data Acquisition Time Channel Operator Dilution Factor	: 6/16/04 2:32:22 PM : 6/3/04 7:20:34 PM : A : CAM : 1.000000





MBTXE DB624

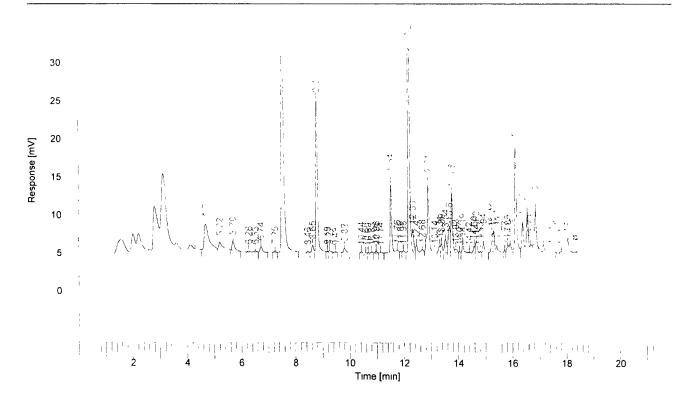
Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
3	4.11	MTBE	0.232	1932	267
7	6 27	Benzene	-0.137	604	109
11	7.54	T-alpha		107199	22193
14		Toluene	5.556	66427	16887
19	10 97	m,p-xylene	-0 256	795	191
21	11.53	o-xylene	2.480	26179	7746
		BrFBnz	24.502	339094	98942
			32.376	542229	146336

Report stored in ASCII file: C:\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\dtxe1691.TX0

Software Version		Date	: 6/16/04 2:32:33 PM
Sample Name	: A405657-03@2XF	Data Acquisition Time	: 6/3/04 7:20:34 PM
Instrument Name	: 3400-624	Channel	: B
	: 0/0	Operator	: CAM
Sample Amount	· 1.000000	Dilution Factor	: 1.000000
Cycle	· 11		

Result File : C:\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\etxe1691.rst Sequence File : C \PenExe\TcWS\Stats\Sequences\DB624_WATER.seq

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GASOLINE DB624

Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
1	4.70		0.040	40415	3368
2	5.22		0.009	9335	943
2 3	5.70		0.007	7113	1126
4	6.28		0.001	746	146
5	6.53		0.001	878	149
6	6.74		0.004	4152	710
7	7.25		0 001	851	193
8	7.56		0.234	234274	43597
10	8.65		0.004	3938	860
11	8.81		0.086	85685	19946
12	9 19		0.000	387	100
13	9.27		0.001	639	131
15	9.82		0.003	2986	564
16	10 44		0.001	582	143
19	10.83		0.000	362	101

6/16/04 2:32[.]33 PM Result: C:\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\etxe1691.rst

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Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
20	10.98		0.001	1148	267
21	11 14		0.000	433	67
22	11.54		0.033	33357	9037
23	11.76		0.003	2951	404
24	11.89		0.001	1022	223
25	11.98		0.002	1637	268
26	12 21		0.185	184990	51887
27	12.33		0.013	13243	2634
28	12 47		0.005	5216	968
29	12.68		0.003	3159	457
30	12.91 13.14		0.046 0.002	46015 2102	8951 311
31 32	13.14		0.002	3902	897
32	13.34		0.004	5308	1162
34	13.54		0.000	10353	1756
35	13.69		0.018	17825	3323
36	13.78		0.032	32011	7676
37	13.93		0.003	2898	449
38	14.07		0.001	676	164
39	14 19		0.005		1223
40	14.42		0.001	555	105
41	14.60		0.003		889
42	14.68		0.007	6695	1518
43			0.001	609	150
44			0.005		1184
45			0.010		2314
46 47			0.011 0.004	10674 4091	2663 859
47			0.004		226
40			0.001		220 944
50			0.004		1063
51			0.061		13515
52			0.018	18087	3923
53			0.026		5122
54	16 70)	0.004		819
55	16.87	7	0.030		5372
56	17.16		0.008		829
57			0.001		128
58			0.001		238
59			0.002		258
60			0.010		1856
61	18.33	5	0.000) 399	45
			0.977	7 977276	208219

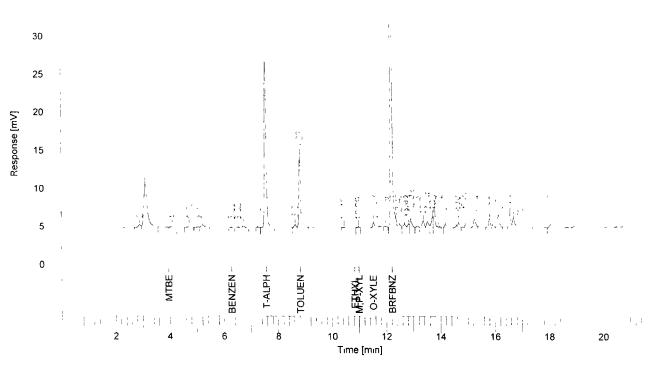
0.977 977276 208219

558(2)(.1099)=190ppb

Page 2 of 2

diluted 2x due to	o excess foam	Page 1 of 1
Software Version:6.2.0.0.0:B27Sample Name:A405657-04@2XFInstrument Name:3400-624Rack/Vial0/0Sample Amount:1.000000Cycle:12		: 6/16/04 2.32.44 PM : 6/3/04 7:55.53 PM : A : CAM : 1.000000





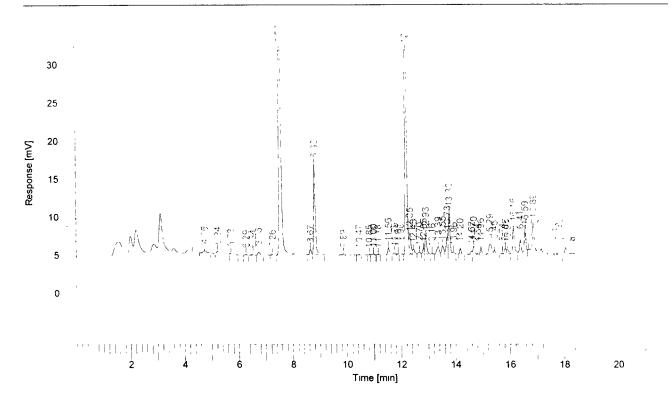
MBTXE DB624

Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
3	4.11	MTBE	-0.170	904	121
11	7.56	T-alpha		101907	21648
13	8.82	Toluene	3.033	36680	9367
15	10.99	m,p-xylene	-0.288	388	97
16	11.54	o-xylene	0.051	2342	657
19	12.22	BrFBnz	24.169	334666	98478
			26.795	476887	130368

Report stored in ASCII file[.] C:\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\dtxe1692.TX0

Instrument Name Rack/Vial	: A405657-04@2XF	Date Data Acquisition Time Channel Operator Dilution Factor	: 6/16/04 2:32:54 PM : 6/3/04 7:55 [.] 53 PM : B : CAM : 1.000000
Cycle	: 12	Didion radio	. 1.000000

Result File : C:\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\etxe1692.rst Sequence File : C:\PenExe\TcWS\Stats\Sequences\DB624_WATER.seq



GASOLINE DB624

Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
1	4.76		0.002	2247	264
2	5.24		0.003	2644	313
3	5.73		0.001	523	86
4	6.29		0.000	387	71
5	6.54		0.001	580	94
6	6.76		0.002	1982	337
7	7.26		0.000	481	103
8	7.57		0.220	219690	42782
9	8.67		0.003	2971	666
10	8.83		0.050	50123	11777
11	9.89		0.000	407	72
14	11.00		0.001	626	142
16	11.56		0.003	3240	860
17	11.79		0.001	1280	225
18	11.91		0.000	330	78

6/16/04 2:32:54 PM Result: C.\PenExe\TcWS\Stats\2003-2004 RST ARCHIVE\etxe1692.rst

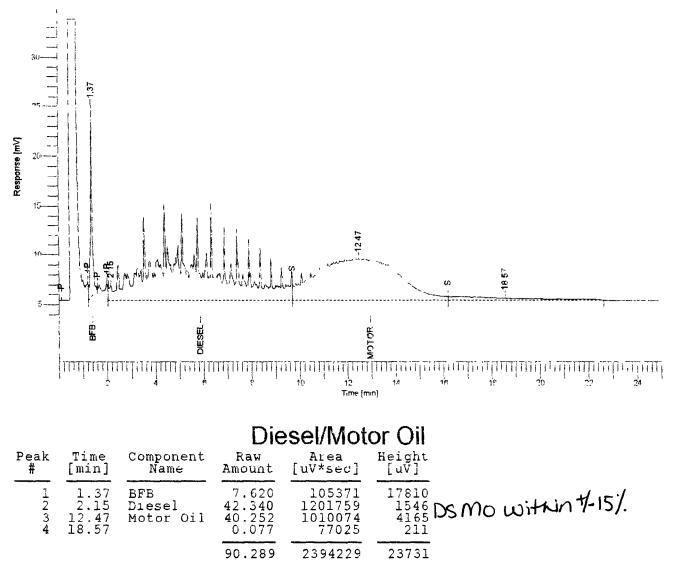
Peak		Component	Raw	Area	Height
#	[min]	Name	Amount	[uV*sec]	[uV]
19	12.00		0.001	764	125
20	12.23		0.182	181819	51240
21 22	12.35		0.010	9947	1869
22	12.48		0.004	3593	668
23	12.70		0.002	1680	251
24	12.85		0.003	2675	757
25	12.93		0.010	10466	2223
26	13.16		0.001	530	126
27	13.39		0.006	6226	946
28	13 55		0.006	5867	1022
29	13.73		0.009	9429	2343
30	13.80		0.022	21684	5315
31	13.96		0.001	1216	217
32	14.20		0.003	2724	703
33	14 62		0.001	1493	395
34	14.70		0.004	4424	1012
35	14.84		0.000	473	112
36	14.96		0.003	3071	799
37	15.29		0.010	10055	1345
38	15.46		0.002	2349	462
40	15.86		0.003	3426	674
41	15.94		0.003	2946	554
42	16.16		0.017	16879	3345
43	16.41		0.008	8063	1705
44	16.59		0.014	14100	2898
45	16.72		0.003	2631	584
46	16.89		0.021	21168	3771
47	17.18		0.005	4946	490
48	17.73		0.001	945	232
49	17.82		0.002	2303	254
50	18.09		0.005		814
51	18.33		0.000	332	65
			0.651	650739	145185

= 249(2)(.1699)= 85ppb

Fage 1 of 1

		6.2.0.0.0:B27 gaifieid. 325	Date	. 6/5/04 10:0
Reprocess Number Sample Name	•	DM(42)	Data Acquisition Time	
Instrument Name Rack/Vial	:	LSMC 0/0	Channel	
Sample Amount Cycle	:	1.000000 3	Operator Dilution Factor	. Marvin : 1.00000C

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Result File . G:\Stats\Data\ATDAT996.ist
Sequence File . G:\Stats\Sequences\Seq_DsMo_WATER_G.sey
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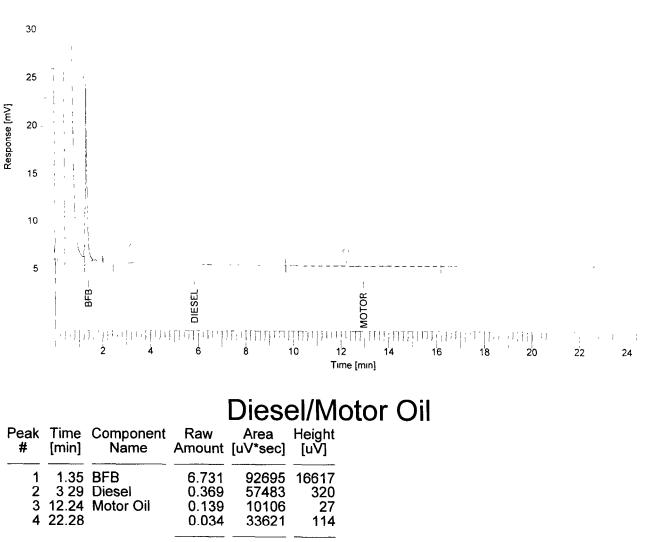


Report stored in ASCII file: G:\Stats\Data\ATDAT996.TX0



Software Version Sample Name Instrument Name Rack/Vial Sample Amount Cycle	: AF40303-BLK1 : DsMo : 0/0	Data Acquisition Time Channel : Operator :	6/21/04 9:43:22 AM 6/3/04 11:36:05 PM A Marvin 1.000000

Result File : G:\Stats\Data\atdat112.rst Sequence File : G:\Stats\Sequences\Seq_DsMo_WATER_G.seq

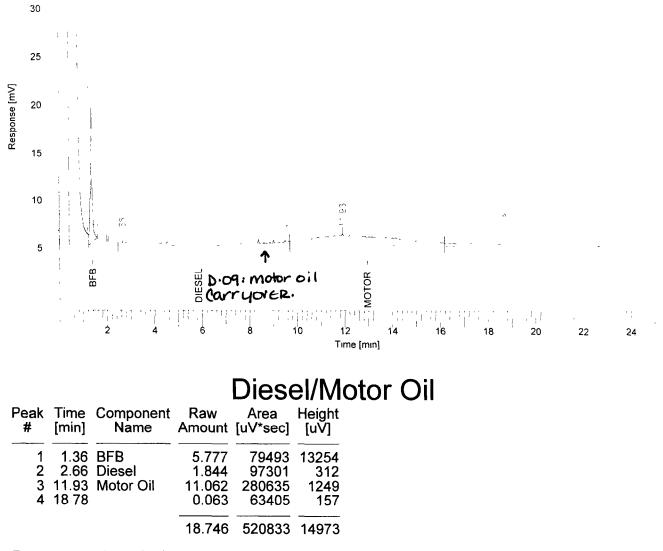


7.272 193904 17078

Report stored in ASCII file: G:\Stats\Data\atdat112 TX0

Software Version Sample Name Instrument Name Rack/Vial Sample Amount Cycle	: A405657-01 : DsMo : 0/0	Date Data Acquisition Time Channel Operator Dilution Factor	: 6/21/04 9:45:27 AM : 6/4/04 7:03:25 PM : A : Marvin : 1.000000
Result File G:\St	ats\Data\atdat138 rst		

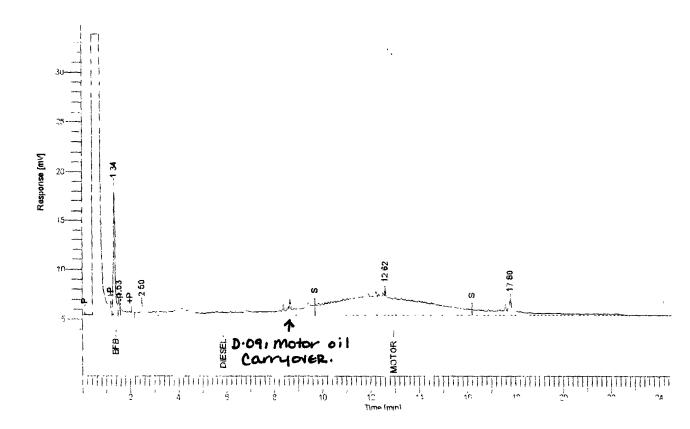
Sequence File : G \Stats \Sequences \Seq_DsMo_WATER_G.seq



Report stored in ASCII file: G:\Stats\Data\atdat138 TX0

				Page 1
Software Veision Reprocess Number	;	6.2.0.0.0:B27 garfield: 3278	Date	: 6/4/04 5:24:
Sample Name Instrument Name	:	A405657-02 DsMo	Data Acquisition Time	: 6/4/04 5:00:4 AM
Rack/Vial Sample Amount	:	0/0 1.00000	Channel Operator	: A : Marvin
Cycle	:	21	Dilution Factor	: 1.000000

Result File : G:\Stats\Data\ATDAT120.rst Sequence File : G:\Stats\Sequences\Seq_DsMo_WATER_G.seq



			Diesel/Motor Oil		
Peak #	Time [min]	Component Name	Raw Amounı	Area [uV*sec]	Height [uV]
CIFUEL	1.34	BFB	4.491 0.305	62312 4963	11666 1032
5 4 5	2.50 12.62 17.80	Diesel Motor Oil	5.638 21.603 0.107	199860 542982 106884	1118 2562 1608
			31.844	917006	17985

Report stored in ASCII file: G. Stats Data ATDAT120. TX0

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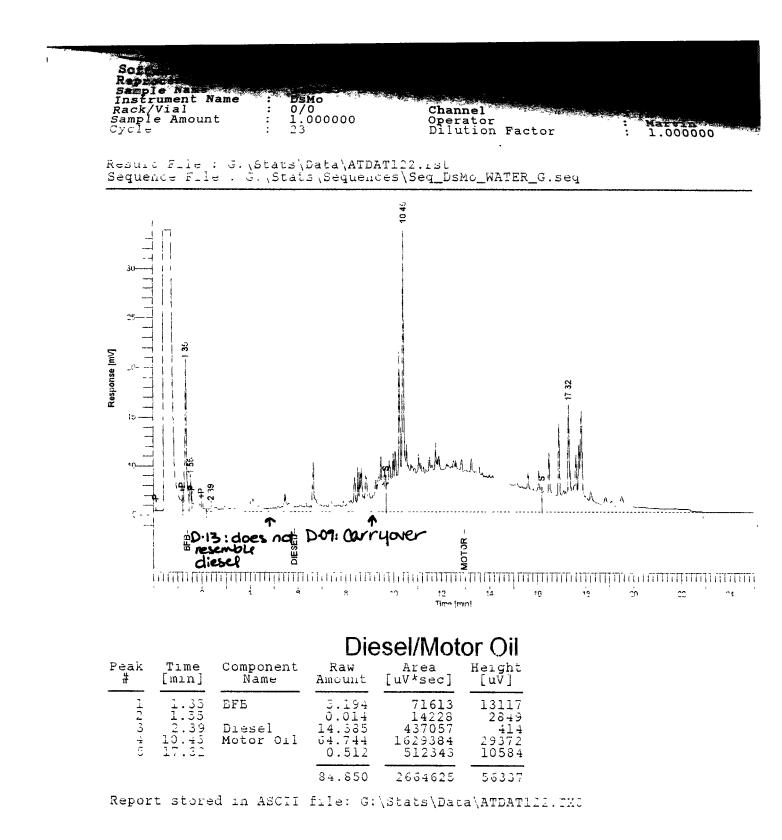
Page 1 01 _

			rage r or r
Software Version Reprocess Number Sample Name Instrument Name Rack/Vial Sample Amount Cycle	: 6.2.0.0.0:B27 : garfield: 3279 : A405657-C5 : DSMO : C/C : 1.000000 : 21	Date Data Acquisition lime Channel Operator Dilution Factor	: 0,4,04 6.00: : 0/4,04 5:41:1 AM : A : Marvin : 1.000000
Result File : G:(3 Sequence File : G.	lats',Data',ATDAT121. ,Stats',Sequences\Se	ist g_Dsmo_WATER_G.seq	
Hasponse III)	T D·O9: motor o.1 DO9: motor o.1 La La La La La La La La La La	88	
Peak Time Compo # [min] Na	onent Raw A	Motor Oil rea Height *sec] [uV]	

#	[min]	Name	Amount	[uV*sec]	[uV]	
1	1.35	BFB	5.256 G.015	72443	11663 2994	
1045	2.24 10.50 17.83	Diesel Motor Cil	45.253 120.986 0.758	1282024 3076610 757726	924 48419 15140	
			172.268	5204261	79139	

Report stored in ASCII file. G:\Stats\Data\ATDAT121.TX0

6/4/04 6:22:12





June 14, 2004

FAL Project ID: 2633

Ms. Sheri Speaks Alpha Analytical Laboratories, Inc. 208 Mason Street Ukiah, CA 95482

TASK & STORM WATER MAY 27,2004 STORM WATER SAMPLES

Dear Ms. Speaks,

Enclosed are the results for Frontier Analytical Laboratory project **2633**. This corresponds to your subcontract order # A405657. The three aqueous samples received on 6/2/04 was extracted and analyzed by EPA Method 1613 for tetra through octa chlorinated dibenzo dioxins and furans. The sampling time on the sample bottle label for sample 2633-003-SA (Alpha Analytical ID: A405657-04) did not match the sampling time on the chain of custody. Alpha Analytical Laboratories was contacted and you instructed us to use the sampling time from the chain of custody for our purposes. Alpha Analytical Laboratories, Inc. requested a turnaround time of ten business days for project **2633**. Frontier Analytical Laboratory successfully fulfilled this request.

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains the project-sample tracking log, a qualifier reference guide, a ML/MDL form and the analytical results. The Sample Receipt section contains your original chain of custody, our sample login form and a sample photo.

If you have any questions regarding project **2633**, please feel free to contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

Bradley B. Silverbush

Director of Operations



Frontier Analytical Laboratory

Sample Tracking Log

FAL Project ID: 2633

Received on: 06/02/2004

Notes

Project Due: 06/17/2004 Storage: R2

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
2633-001-SA	1	A405657	A405657-02	EPA 1613 D/F	Aqueous	05/27/2004	02:00 pm	05/27/2005
2633-002-SA	1	A405657	A405657-03	EPA 1613 D/F	Aqueous	05/27/2004	12.35 pm	05/27/2005
2633-003-SA	1	A405657	A405657-04	EPA 1613 D/F	Aqueous	05/27/2004	01 [.] 45 pm	05/27/2005

FAL Sample ID

2633-003-SA

Sample time from bottle label is incorrect. Using time from COC for our purposes



Qualifier Reference Guide

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J[‡] Analyte concentration is below calibration range
- M Maximum possible concentration
- NP Not Provided
- S Sample acceptance criteria not met
- X Matrix interferences
- * Result taken from dilution or reinjection
- Analyte Not Detected
 - [‡] "J" values are equivalent to DNQ (detected but not quantified) for California Toxics Rule (CTR)/National Pollutant Discharge Elimination System (NPDES) samples



Analyte	ML	MDL
2,3,7,8-TCDD	5.00	1.32
1,2,3,7,8-PeCDD	25.0	1.97
1,2,3,4,7,8-HxCDD	25.0	2.86
1,2,3,6,7,8-HxCDD	25.0	2.82
1,2,3,7,8,9-HxCDD	25.0	2.68
1,2,3,4,6,7,8-HpCDD	25.0	2.40
OCDD	50.0	4.89
2,3,7,8-TCDF	5.00	1.01
1,2,3,7,8-PeCDF	25.0	1.80
2,3,4,7,8-PeCDF	25.0	1.77
1,2,3,4,7,8-HxCDF	25.0	1.00
1,2,3,6,7,8-HxCDF	25.0	1.01
1,2,3,7,8,9-HxCDF	25.0	1.01
2,3,4,6,7,8-HxCDF	25.0	1.06
1,2,3,4,6,7,8-HpCDF	25.0	1.03
1,2,3,4,7,8,9-HpCDF	25.0	1.25
OCDF	50.0	3.97

Project 2413, extracted 1/22/04; analyzed 2/10/04. Based on a 1.0 Liter sample, pg/L.

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FAL ID: 2633-001-MB		Date Extrac	-	10/04	ICal: PCDDFAL1-2 GC Column: DB5	-26-04 ACC	in Lea:	11-JUN	-04
Client ID: Method Blank		Date Receiv				1.814		<u> </u>	
Matrix: Aqueous		Amount: 1.0	00 L		Units: pg/L) TEQ: (0.00	
Extraction Batch No.: X0277	,				MS/MSD Batch No.	: XU198			
Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hon
2,3,7,8-TCDD	-	1.11		-					
1,2,3,7,8-PeCDD	-	2.43		-					
1,2,3,4,7,8-HxCDD	-	3.09		-					
1,2,3,6,7,8-HxCDD	-	3.51		-	Total Tetra-Dioxins	-	1.11		0
1,2,3,7,8,9-HxCDD	-	2.92		-	Total Penta-Dioxins	-	2.43		0
1,2,3,4,6,7,8-HpCDD	-	3.34		-	Total Hexa-Dioxins	-	3.51		0
OCDD	-	5.02		-	Total Hepta-Dioxins	-	3.34		0
2,3,7,8-TCDF	-	1.01		-					
1,2,3,7,8-PeCDF	-	2.25		-					
2,3,4,7,8-PeCDF	-	2.36		-					
1,2,3,4,7,8-HxCDF	-	0.813		-					
1,2,3,6,7,8-HxCDF	-	1.11		-					
2,3,4,6,7,8-HxCDF	-	1.15		-					
1,2,3,7,8,9-HxCDF	-	1.62		-	Total Tetra-Furans	-	1.01		0
1,2,3,4,6,7,8-HpCDF	-	1.32		-	Total Penta-Furans	-	2.38		0
1,2,3,4,7,8,9-HpCDF	-	1.86		-	Total Hexa-Furans	-	1.62		0
OCDF	-	3.38		-	Total Hepta-Furans	-	1.86		0
Internal Standards	% Rec	QC Limits	Qu	al					
13C-2,3,7,8-TCDD	96.7	25.0 - 16	4						
13C-1,2,3,7,8-PeCDD	94.7	25.0 - 18							
13C-1,2,3,4,7,8-HxCDD	99.0	32.0 - 14	1						
13C-1,2,3,6,7,8-HxCDD	90.3	28.0 - 13							
13C-1,2,3,4,6,7,8-HpCDD	89.2	23.0 - 14							
13C-OCDD	87.9	17.0 - 15	7						
13C-2,3,7,8-TCDF	94.6	24.0 - 16	9						
13 C-1,2,3,7,8-PeCDF	89.0	24.0 - 18							
13C-2,3,4,7,8-PeCDF	87.1	21.0 - 17	8						
13C-1,2,3,4,7,8-HxCDF	97.8	26.0 - 15							
13C-1,2,3,6,7,8-HxCDF	104	26.0 - 12	3						
13C-2,3,4,6,7,8-HxCDF	102	29.0 - 14							
13C-1,2,3,7,8,9-HxCDF	93.1	28.0 - 13							
13C-1,2,3,4,6,7,8-HpCDF	97.3	28.0 - 14							
13C-1,2,3,4,7,8,9-HpCDF	92.2	26.0 - 13							
13C-OCDF	95.4	17.0 - 15	7						
Cleanup Surrogate									
37Cl-2,3,7,8-TCDD	94.0	35.0 - 19	7						
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Analyst:						Reviewed b	у: Т		
r.IIIIM						Date: 4	ohul.	nu	
Date: ////////////////////////////////////						vate: U	·// //		

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ICal: PCDDFAL1-2-26-04 Acquired: 11-JUN-04

WHO TEQ: NA

GC Column: DB5

MS/MSD Batch No.: X0198

Units: ng/mL

FAL ID: 2633-001-OPR Client ID: OPR Matrix: Aqueous Extraction Batch No.:)	(0277	Date Extracted: 6/10/04 Date Received: NA Amount: 1.000 L
Compound	Conc	QC Limits
2,3,7,8-TCDD	9.51	6.70 - 15.8
1,2,3,7,8-PeCDD	49.9	35.0 - 71.0
1,2,3,4,7,8-HxCDD	49.1	35.0 - 82.0
1,2,3,6,7,8-HxCDD	53.9	38.0 - 67.0
1,2,3,7,8,9-HxCDD	52.4	32.0 - 81.0
1,2,3,4,6,7,8-HpCDD	50.8	35.0 - 70.0
OCDD	98.7	78.0 - 144
		7 50 45 0
2,3,7,8-TCDF	9.84	7.50 - 15.8
1,2,3,7,8-PeCDF	51.9	40.0 - 67.0
2,3,4,7,8-PeCDF	52.6	34.0 - 80.0
1,2,3,4,7,8-HxCDF	53.4	36.0 - 67.0 42.0 - 65.0
1,2,3,6,7,8-HxCDF	52.5	
2,3,4,6,7,8-HxCDF	51.4 52.8	39.0 - 65.0 35.0 - 78.0
1,2,3,7,8,9-HxCDF		41.0 - 61.0
1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF	52.6 52.4	39.0 - 69.0
1,2,3,4,7,8,9-hpcDF OCDF	105	63.0 - 170
0CD F	105	03.0 110
Internal Standards	% Rec	QC Limits
13C-2,3,7,8-TCDD	101	20.0 - 175
13C-1,2,3,7,8-PeCDD	101	21.0 - 227
13C-1,2,3,4,7,8-HxCDD	104	21.0 - 193
13C-1,2,3,6,7,8-HxCDD	93.7	25.0 - 163
13C-1,2,3,4,6,7,8-HpCDD	89.4	26.0 - 166
13C-0CDD	92.5	13.0 - 198
	/2.12	
13C-2,3,7,8-TCDF	100	22.0 - 152
13C-1,2,3,7,8-PeCDF	94.3	21.0 - 192
13C-2,3,4,7,8-PeCDF	94.7	13.0 - 328
13C-1,2,3,4,7,8-HxCDF	104	19.0 - 202
13C-1,2,3,6,7,8-HxCDF	108	21.0 - 159
13C-2,3,4,6,7,8-HxCDF	104	17.0 - 205
13C-1,2,3,7,8,9-HxCDF	101	22.0 - 176
13C-1,2,3,4,6,7,8-HpCDF	96.6	21.0 - 158
13C-1,2,3,4,7,8,9-HpCDF	97.8	20.0 - 186
13C-OCDF	97.7	13.0 - 198
Cleanup Surrogate		

37cl-2,3,7,8-TCDD 98.0

Analyst: Date:

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Reviewed by Date:

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31.0 - 191

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2,3,7,8-FCDD - 1.50 - 1,2,3,4,7,8-FCDD 6.72 - J 0.902 1,2,3,4,7,8-HXCDD 9.02 - J 0.902 1,2,3,4,7,8-HXCDD 34.9 Total Tetra-Dioxins 11.9 - 1,2,3,7,8-FXCDD 16.1 - J 1.61 Total Penta-Dioxins 34.2 - 1,2,3,7,8-FXCDD 16.1 - J 1.61 Total Penta-Dioxins 207 - 1,2,3,7,8-FXCDF - 1.32 - <th></th>	
Extraction Batch No.: X0277 MS/MSD Batch No.: X0198 Compound Conc DL Qual WHO Tox Compound Conc DL Qual MS/MSD Batch No.: X0198 2,3,7,8-TCDD - 1.2,3,7,8-TCDD - 1.2,3,7,8-TCDD - 1.2,3,7,8-TCDD - 1.2,3,7,8-TCDD - 1.2,3,7,8-TCDD - 1.2,3,7,8-TCDD - - 1.2,3,7,8-TCDD - - 1.2,3,7,8-TCDD - - - - 1.2,3,7,8-TCDD - <td>3 5 6</td>	3 5 6
2,3,7,8-TCDD 6.72 - J 6.72 1,2,3,4,7,8-FCDD 6.72 - J 0.902 1,2,3,4,7,8-HXCDD 9.02 - J 0.902 1,2,3,4,7,8-HXCDD 34.9 - 3.49 Total Tetra-Dioxins 11.9 1,2,3,7,8-HXCDD 16.1 - J 1.61 Total Penta-Dioxins 20.7 1,2,3,7,8-HXCDF - 1.32 - - 0.307 Total Hepta-Dioxins 839 - 2,3,7,8-TCDF - 1.32 - - - - - 1,2,3,4,7,8-HXCDF - 1.2.06 - - - - - 1,2,3,4,7,8-HXCDF 6.87 - J 0.687 - - - 1,2,3,4,6,7,8-HXCDF 14.4 - J 1.44 - - - - 1,2,3,4,6,7,8-HXCDF 192 - 1.92 Total Tetra-Furans 21.2 - 1,2,3,4,6,7,8-HXCDF 192 - J 1.44 - - - - -	3 5 6
1,2,3,7,8-PECDD 6.72 - J 0.902 1,2,3,6,7,8-HXCDD 9.02 - J 0.902 1,2,3,6,7,8-HXCDD 34.9 - 3.49 Total Tetra-Dioxins 11.9 - 1,2,3,7,8,9-HXCDD 16.1 - J 1.61 Total Penta-Dioxins 207 - 0CDD 3070 - 0.307 Total Hepta-Dioxins 839 - 2,3,7,8-PECDF - 1.32 - 1,2,3,4,6,7,8-HXCDF 2.97 - J 0.148 2,3,4,7,8-PECDF 4.13 - J 2.06 1,2,3,4,6,7,8-HXCDF 14.4 - J 1.44 2,3,4,6,7,8-HXCDF 11.1 - J 0.111 Total Hexa-Furans 21.2 - 1,2,3,4,6,7,8-HXCDF 11.1 - J 0.111 Total Hexa-Furans 218 - 0CDF 247 - 0.0247 Total Hepta-Furans 380 - Internal Standards X Rec QC Limits Qual 13C-2,3,7,8-PECDD 63.4 25.0 - 181 13C-1,2,3,4,6,7,8-HXCDD 57.1 28.0 - 130 13C-1,2,3,4,6,7,8-HXCDD 57.1 28.0 - 130 13C-1,2,3,4,6,7,8-HXCDD 57.1 28.0 - 130 13C-1,2,3,4,6,7,8-HXCDD 57.1 28.0 - 130 13C-1,2,3,4,6,7,8-HXCDD 57.1 28.0 - 135 13C-1,2,3,4,6,7,8-HXCDD 57.1 28.0 - 135	5 6
1,2,3,7,8-PECDD 6.72 - J 0.902 1,2,3,6,7,8-HXCDD 9.02 - J 0.902 1,2,3,6,7,8-HXCDD 34.9 - 3.49 Total Tetra-Dioxins 11.9 - 1,2,3,7,8,9-HXCDD 16.1 - J 1.61 Total Penta-Dioxins 207 - 0CDD 3070 - 0.307 Total Hepta-Dioxins 839 - 2,3,7,8-PECDF - 1.32 - 1,2,3,4,6,7,8-HXCDF - 1.32 - 1,2,3,4,7,8-PECDF 4.13 - J 2.06 1,2,3,4,7,8-PECDF 4.13 - J 2.06 1,2,3,4,7,8-HXCDF 14.4 - J 1.44 2,3,4,6,7,8-HXCDF 14.4 - J 1.44 2,3,4,6,7,8-HXCDF 14.4 - J 1.44 2,3,4,6,7,8-HXCDF 14.4 - J 1.44 2,3,4,6,7,8-HXCDF 14.4 - J 1.49 1,2,3,4,6,7,8-HXCDF 122 - Total Tetra-Furans 21.2 - 1,2,3,4,6,7,8-HXCDF 122 - 1.92 Total Penta-Furans 79.4 - 1,2,3,4,6,7,8-HCDF 11.1 - J 0.111 Total Hexa-Furans 218 - 0CDF 247 - 0.0247 Total Hepta-Furans 380 - Internal Standards X Rec QC Limits Qual 13C-1,2,3,4,6,7,8-HCDD 65.0 25.0 - 164 13C-1,2,3,4,6,7,8-HCDD 57.1 28.0 - 130 13C-1,2,3,4,6,7,8-HCDD 57.1 28.0 - 130 13C-1,2,3,4,6,7,8-HCDD 57.1 28.0 - 140 13C-2,2,5,7,8-TCDD 65.0 24.0 - 169 13C-1,2,3,7,8-PECDF 71.3 24.0 - 185	5 6
1,2,3,4,7,8-HXCDD 9.02 - J 0.902 1,2,3,6,7,8-HXCDD 34.9 - 3.49 Total Tetra-Dioxins 11.9 - 1,2,3,7,8,9-HXCDD 16.1 - J 1.61 Total Penta-Dioxins 207 - 0CDD 3070 - 0.307 Total Hexa-Dioxins 207 - 0CDD 3070 - 0.307 Total Hexa-Dioxins 839 - 2,3,7,8-FCDF - 1.32 - 1,2,3,7,8-PeCDF 2.97 - J 0.148 2,3,4,7,8-PeCDF 4.13 - J 2.06 1,2,3,4,7,8-HXCDF 14.4 - J 1.44 2,3,4,6,7,8-HXCDF 14.4 - J 1.44 2,3,4,6,7,8-HXCDF 14.4 - J 1.44 2,3,4,6,7,8-HXCDF 14.9 - J 1.49 1,2,3,7,8,9-HXCDF 14.9 - J 1.49 1,2,3,7,8,9-HXCDF 192 - 1.92 Total Penta-Furans 21.2 - 1,2,3,4,6,7,8-HXCDF 11.1 - J 0.111 Total Hexa-Furans 218 - 0CDF 247 - 0.0247 Total Hepta-Furans 380 - Internal Standards % Rec QC Limits Qual 13C-1,2,3,4,6,7,8-HXCDD 63.4 25.0 - 181 13C-1,2,3,6,7,8-HXCDD 61.2 23.0 - 144 13C-1,2,3,6,7,8-HXCDD 57.1 28.0 - 130 13C-1,2,3,4,6,7,8-HXCDD 71.3 24.0 - 169 13C-2,2,3,7,8-PECDD 61.2 23.0 - 140 13C-2,2,3,7,8-PECDF 71.3 24.0 - 169 13C-2,2,3,7,8-PECDF 71.3 24.0 - 169 13C-1,2,3,7,8-PECDF 71.3 24.0 - 169 13C-1,2,3,7,8-PECDF 71.3 24.0 - 169 13C-1,2,3,7,8-PECDF 71.3 24.0 - 185	5 6
1,2,3,6,7,8-HxCDD 34.9 - 3.49 Total Tetra-Dioxins 11.9 - 1,2,3,7,8,9-HxCDD 16.1 - J 1.61 Total Penta-Dioxins 34.2 - 1,2,3,7,8,9-HxCDD 458 - 4.58 Total Hexa-Dioxins 207 - 0CDD 3070 - 0.307 Total Hepta-Dioxins 839 - 2,3,7,8-FCDF - 1.32 - 1,2,3,7,8-FCDF 2.97 - J 0.148 2,3,4,7,8-FCDF 4.13 - J 2.06 1,2,3,4,7,8-FCDF 6.87 - J 0.687 1,2,3,4,6,7,8-HxCDF 14.4 - J 1.44 2,3,4,6,7,8-HxCDF 14.4 - J 1.44 2,3,4,6,7,8-HxCDF 14.4 - J 1.44 2,3,4,6,7,8-HxCDF 14.4 - J 1.49 1,2,3,7,8,9-HxCDF 192 - 1.92 Total Tetra-Furans 21.2 - 1,2,3,4,6,7,8-HpCDF 192 - 1.92 Total Penta-Furans 79.4 - 1,2,3,4,7,8,9-HpCDF 11.1 - J 0.111 Total Hexa-Furans 218 - 0CDF 247 - 0.0247 Total Hepta-Furans 380 - Internal Standards % Rec 0C Limits Qual 13C-1,2,3,4,6,7,8-HxCDD 65.0 25.0 - 164 13C-1,2,3,4,6,7,8-HxCDD 61.2 23.0 - 140 13C-1,2,3,4,6,7,8-HxCDD 57.1 28.0 - 130 13C-1,2,3,4,6,7,8-HxCDD 55.6 17.0 - 157 13C-2,3,7,8-PCDF 71.3 24.0 - 169 13C-1,2,3,7,8-PCDF 71.3 24.0 - 169 13C-1,2,3,7,8-PCDF 71.3 24.0 - 185	5 6
1,2,3,7,8,9-HxCDD 16.1 - J 1.61 Total Penta-Dioxins 34.2 - 1,2,3,4,6,7,8-HpCDD 458 - 4.58 Total Hexa-Dioxins 207 - 0CDD 3070 - 0.307 Total Hepta-Dioxins 839 - 2,3,7,8-TCDF - 1.32 - 1,2,3,7,8-PeCDF 2.97 - J 0.148 2,3,4,7,8-PeCDF 4.13 - J 2.06 1,2,3,4,7,8-HxCDF 6.87 - J 0.687 1,2,3,4,7,8-HxCDF 14.4 - J 1.44 2,3,4,6,7,8-HxCDF 14.9 - J 1.49 1,2,3,7,8,9-HxCDF 192 - 1.92 Total Tetra-Furans 21.2 - 1,2,3,4,6,7,8-HxCDF 192 - 1.92 Total Penta-Furans 79.4 - 1,2,3,4,7,8,9-HpCDF 11.1 - J 0.111 Total Hexa-Furans 218 - 0CDF 247 - 0.0247 Total Hepta-Furans 380 - Internal Standards % Rec 0C Limits Qual 13C-1,2,3,4,7,8-HxCDD 65.0 25.0 - 164 13C-1,2,3,4,7,8-HxCDD 57.1 28.0 - 130 13C-1,2,3,4,6,7,8-HxCDF 71.3 24.0 - 169 13C-2,3,7,8-TCDF 71.3 24.0 - 169 13C-1,2,3,7,8-PCDF 71.3 24.0 - 185	5 6
1,2,3,4,6,7,8-HpCDD 458 - 4.58 Total Hexa-Dioxins 207 - 0CDD 3070 - 0.307 Total Hepta-Dioxins 839 - 1,2,3,7,8-TCDF - 1.32 - - - - - 1,2,3,7,8-PeCDF 2.97 - J 0.148 -	6
0CDD 3070 - 0.307 Total Hepta-Dioxins 839 - 2,3,7,8-TCDF - 1.32 - - - - 1,2,3,7,8-PeCDF 2.97 - J 0.148 - - 2,3,7,8-PeCDF 4.13 - J 2.06 - - 1,2,3,4,7,8-HxCDF 6.87 - J 0.687 - 1,2,3,4,7,8-HxCDF 14.4 - J 1.44 2,3,7,8,9-HxCDF 14.4 - J 1.49 1,2,3,4,6,7,8-HxCDF 192 - J 0.111 1,2,3,4,6,7,8-HxCDF 192 - 1.92 Total Penta-Furans 79.4 1,2,3,4,6,7,8-HxCDF 11.1 - J 0.111 Total Hepta-Furans 218 - 0CDF 247 - 0.0247 Total Hepta-Furans 380 Internal Standards % Rec QC Limits Qual 13c-1,2,3,7,8-FCDD 65.0 25.0 164 13c-1,2,3,4,6,7,8-HxCDD 63.3 32.0 140 13c-1,2,3,4,6,7,8-HxCDD 61.2 23.0 140 13c-1,2,3,7,8-FCDF 71.3 24.0 169 13c-1,2,3,7,8-FCDF	
1,2,3,7,8-PECDF 2.97 - J 0.148 2,3,4,7,8-PECDF 4.13 - J 2.06 1,2,3,4,7,8-HxCDF 6.87 - J 0.687 1,2,3,4,7,8-HxCDF 14.4 - J 1.44 2,3,4,6,7,8-HxCDF 14.9 - J 1.44 2,3,4,6,7,8-HxCDF - 2.05 - Total Tetra-Furans 21.2 - 1,2,3,4,6,7,8-HxCDF - 2.05 - Total Penta-Furans 79.4 - 1,2,3,4,6,7,8-HpCDF 192 - 1.92 Total Hexa-Furans 21.8 - 0CDF 247 - 0.0247 Total Hepta-Furans 380 - Internal Standards % Rec QC Limits Qual -	
1,2,3,7,8-PECDF 2.97 - J 0.148 2,3,4,7,8-PECDF 4.13 - J 2.06 1,2,3,4,7,8-HxCDF 6.87 - J 0.687 1,2,3,4,7,8-HxCDF 14.4 - J 1.44 2,3,4,6,7,8-HxCDF 14.9 - J 1.44 2,3,4,6,7,8-HxCDF - 2.05 - Total Tetra-Furans 21.2 - 1,2,3,4,6,7,8-HxCDF - 2.05 - Total Penta-Furans 79.4 - 1,2,3,4,6,7,8-HpCDF 192 - 1.92 Total Hexa-Furans 21.8 - 0CDF 247 - 0.0247 Total Hepta-Furans 380 - Internal Standards % Rec QC Limits Qual -	
2,3,4,7,8-PECDF 4.13 - J 2.06 1,2,3,4,7,8-HXCDF 6.87 - J 0.687 1,2,3,6,7,8-HXCDF 14.4 - J 1.44 2,3,4,6,7,8-HXCDF 14.9 - J 1.49 1,2,3,7,8,9-HXCDF - 2.05 - Total Tetra-Furans 21.2 - 1,2,3,4,6,7,8-HPCDF 192 - 1.92 Total Penta-Furans 79.4 - 1,2,3,4,7,8,9-HPCDF 11.1 - J 0.111 Total Hexa-Furans 218 - 0CDF 247 - 0.0247 Total Hepta-Furans 380 - Internal Standards % Rec QC Limits Qual 13c-2,3,7,8-TCDD 65.0 25.0 - 164 13c-1,2,3,4,7,8-HXCDD 63.4 25.0 - 181 13c-1,2,3,4,7,8-HXCDD 57.1 28.0 - 130 13c-1,2,3,4,7,8-HXCDD 57.1 28.0 - 130 13c-1,2,3,7,8-TCDF 71.3 24.0 - 169 13c-2,3,7,8-TCDF 71.3 24.0 - 169 13c-1,2,3,7,8-PECDF 60.9 24.0 - 185	
1,2,3,4,7,8-HxCDF 6.87 - J 0.687 1,2,3,6,7,8-HxCDF 14.4 - J 1.44 2,3,4,6,7,8-HxCDF 14.9 - J 1.49 1,2,3,7,8,9-HxCDF - 2.05 - Total Tetra-Furans 21.2 - 1,2,3,4,6,7,8-HxCDF 192 - 1.92 Total Penta-Furans 79.4 - 1,2,3,4,6,7,8-HxCDF 11.1 - J 0.111 Total Hexa-Furans 218 - 0CDF 247 - 0.0247 Total Hepta-Furans 380 - Internal Standards % Rec QC Limits Qual 13C-2,3,7,8-TCDD 65.0 25.0 - 164 13C-1,2,3,7,8-PeCDD 63.4 25.0 - 181 13C-1,2,3,4,7,8-HxCDD 65.0 25.0 - 141 13C-1,2,3,4,7,8-HxCDD 65.0 130 13C-1,2,3,4,6,7,8-HxCDD 61.2 23.0 - 140 13C-2,3,7,8-TCDF 71.3 24.0 - 169 13C-1,2,3,7,8-PeCDF 60.9 24.0 - 185	
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2,3,4,6,7,8-HxCDF 14.9 - J 1.49 1,2,3,7,8,9-HxCDF - 2.05 - Total Tetra-Furans 21.2 - 1,2,3,4,6,7,8-HpCDF 192 - 1.92 Total Penta-Furans 79.4 - 1,2,3,4,7,8,9-HpCDF 11.1 - J 0.111 Total Hexa-Furans 218 - 0CDF 247 - 0.0247 Total Hepta-Furans 380 - Internal Standards % Rec QC Limits Qual 13C-2,3,7,8-TCDD 65.0 25.0 - 164 13C-1,2,3,7,8-PeCDD 63.4 25.0 - 181 13C-1,2,3,4,6,7,8-HxCDD 63.3 32.0 - 141 13C-1,2,3,4,6,7,8-HxCDD 61.2 23.0 - 140 13C-1,2,3,4,6,7,8-HpCDF 71.3 24.0 - 169 13C-1,2,3,7,8-PeCDF 60.9 24.0 - 185	
1,2,3,7,8,9-HxCDF - 2.05 - Total Tetra-Furans 21.2 - 1,2,3,4,6,7,8-HpCDF 192 - 1.92 Total Penta-Furans 79.4 - 1,2,3,4,7,8,9-HpCDF 11.1 - J 0.111 Total Penta-Furans 218 - 0CDF 247 - 0.0247 Total Hepta-Furans 380 - Internal Standards % Rec QC Limits Qual Qual - - 13C-2,3,7,8-TCDD 65.0 25.0 164 - - - - 13C-1,2,3,7,8-TCDD 65.0 25.0 181 - - - - 13C-1,2,3,4,7,8-HxCDD 63.3 32.0 - 141 - - - 13C-1,2,3,6,7,8-HxCDD 57.1 28.0 - 130 - - - 13C-2,3,7,8-TCDF 71.3 24.0 - 157 - - - 13C-2,3,7,8-TCDF 71.3 24.0 - 169 - - - 13C-1,2,3,7,8-TCDF 60.9	
1,2,3,4,6,7,8-HpCDF 192 - 1.92 Total Penta-Furans 79.4 - 1,2,3,4,7,8,9-HpCDF 11.1 - J 0.111 Total Hexa-Furans 218 - 0CDF 247 - 0.0247 Total Hepta-Furans 380 - Internal Standards % Rec QC Limits Qual Qual - - 13c-2,3,7,8-TCDD 65.0 25.0 - 164 - - - 13c-1,2,3,7,8-PeCDD 63.4 25.0 - 181 - - - 13c-1,2,3,4,7,8-HxCDD 63.3 32.0 - 141 - - - 13c-1,2,3,4,6,7,8-HxCDD 57.1 28.0 - 130 - - - 13c-2,3,7,8-TCDF 71.3 24.0 - 157 - - - - - 13c-2,3,7,8-TCDF 71.3 24.0 - 169 - - - - - 13c-2,3,7,8-PeCDF 60.9 24.0 - 185 - - -<	
1,2,3,4,7,8,9-HpCDF 11.1 - J 0.111 Total Hexa-Furans 218 - 0CDF 247 - 0.0247 Total Hepta-Furans 380 - Internal Standards % Rec QC Limits Qual Qual -	4
OCDF 247 - 0.0247 Total Hepta-Furans 380 - Internal Standards % Rec QC Limits Qual Qual 13C-2,3,7,8-TCDD 65.0 25.0 164 13C-1,2,3,7,8-PeCDD 63.4 25.0 181 13C-1,2,3,4,7,8-HxCDD 63.3 32.0 141 13C-1,2,3,6,7,8-HxCDD 61.2 23.0 140 13C-1,2,3,4,6,7,8-HpCDD 61.2 23.0 140 13C-2,3,7,8-TCDF 71.3 24.0 157 13C-2,3,7,8-TCDF 71.3 24.0 169 13C-1,2,3,7,8-PeCDF 60.9 24.0 185	7
Internal Standards % Rec QC Limits Qual 13C-2,3,7,8-TCDD 65.0 25.0 - 164 13C-1,2,3,7,8-PeCDD 63.4 25.0 - 181 13C-1,2,3,4,7,8-HxCDD 63.3 32.0 - 141 13C-1,2,3,6,7,8-HxCDD 57.1 28.0 - 130 13C-1,2,3,4,6,7,8-HpCDD 61.2 23.0 - 140 13C-0CDD 55.6 17.0 - 157 13C-2,3,7,8-TCDF 71.3 24.0 - 169 13C-1,2,3,7,8-PeCDF 60.9 24.0 - 185	7
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13C-1,2,3,4,7,8-HxCDD 63.3 32.0 - 141 13C-1,2,3,6,7,8-HxCDD 57.1 28.0 - 130 13C-1,2,3,4,6,7,8-HpCDD 61.2 23.0 - 140 13C-0CDD 55.6 17.0 - 157 13C-2,3,7,8-TCDF 71.3 24.0 - 169 13C-1,2,3,7,8-PeCDF 60.9 24.0 - 185	
13C-1,2,3,6,7,8-HxCDD 57.1 28.0 - 130 13C-1,2,3,4,6,7,8-HpCDD 61.2 23.0 - 140 13C-0CDD 55.6 17.0 - 157 13C-2,3,7,8-TCDF 71.3 24.0 - 169 13C-1,2,3,7,8-PeCDF 60.9 24.0 - 185	
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13C-OCDD 55.6 17.0 - 157 13C-2,3,7,8-TCDF 71.3 24.0 - 169 13C-1,2,3,7,8-PECDF 60.9 24.0 - 185	
13C-2,3,7,8-TCDF 71.3 24.0 - 169 13C-1,2,3,7,8-PeCDF 60.9 24.0 - 185	
13C-1,2,3,7,8-PeCDF 60.9 24.0 - 185	
13C-2,3,4,7,8-PeCDF 65.3 21.0 - 178	
13C-1,2,3,4,7,8-HxCDF 59.8 26.0 - 152	
13C-1,2,3,6,7,8-HxCDF 61.8 26.0 - 123	
13C-2,3,4,6,7,8-HxCDF 67.4 29.0 - 147	
13C-1,2,3,7,8,9-HxCDF 63.3 28.0 - 136	
13C-1,2,3,4,6,7,8-HpCDF 60.0 28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF 63.5 26.0 - 138	
13C-OCDF 56.3 17.0 - 157	
Cleanup Surrogate	
37Cl-2,3,7,8-TCDD 89.7 35.0 - 197	
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Analyst: Reviewed by:	
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Date: Date:	<u>Y</u>
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FAL ID: 2633-002-SA Client ID: A405657-03		Date Extra Date Receiv			ICal: PCDDFAL1-2 GC Column: db5	-26-04 Acc	uired:	11-JUN	-04
Matrix: Aqueous		Amount: 0.9		., 04	Units: pg/L	WHO	TEQ: 3	30.5	
Extraction Batch No.: X027					MS/MSD Batch No.:				
Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	-	1.80		-					
1,2,3,7,8-PeCDD	8.37	-	J	8.37					
1,2,3,4,7,8-HxCDD	10.7	-	J	1.07					
1,2,3,6,7,8-HxCDD	42.2	-		4.22	Total Tetra-Dioxins	12.1	-		3
1,2,3,7,8,9-HxCDD	18.7	-	J	1.87	Total Penta-Dioxins	66.4	-	M	7
1,2,3,4,6,7,8-HpCDD	516	-		5.16	Total Hexa-Dioxins	260	-		7
OCĎD	3390	-		0.339	Total Hepta-Dioxins	9 90	-		2
2,3,7,8-TCDF	4.07	-	J	0.407					
1,2,3,7,8-PeCDF	-	4.38		-					
2,3,4,7,8-PeCDF	8.27	-	J	4_14					
1,2,3,4,7,8-HxCDF	5.71	-	J	0.571					
1,2,3,6,7,8-HxCDF	10.9	-	J	1.09					
2,3,4,6,7,8-HxCDF	13.2	-	J	1.32					
1,2,3,7,8,9-HxCDF	-	3.20		-	Total Tetra-Furans	39.9	-		7
1,2,3,4,6,7,8-HpCDF	181	-		1.81	Total Penta-Furans	126	-		4
1,2,3,4,7,8,9-HpCDF	10.1	-	J	0.101	Total Hexa-Furans	225	-		6
OCDF	282	-		0.0282	Total Hepta-Furans	422	-	M	4
Internal Standards 13C-2,3,7,8-TCDD 13C-1,2,3,7,8-PeCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,7,8-HxCDD	% Rec 75.1 63.0 71.3 62.7 57.4	QC Limits 25.0 - 16 25.0 - 18 32.0 - 14 28.0 - 13 23.0 - 14	54 51 51 50	al					
13C-OCDD	49.2	17.0 - 15	57						
13C-2,3,7,8-TCDF 13C-1,2,3,7,8-PeCDF 13C-2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF 13C-2,3,4,6,7,8-HxCDF 13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,7,8-HpCDF 13C-1,2,3,4,7,8,9-HpCDF 13C-0CDF	81.5 65.7 68.8 68.1 60.6 69.7 60.6 55.6 58.2 45.3	24.0 - 16 24.0 - 18 21.0 - 17 26.0 - 15 26.0 - 12 29.0 - 14 28.0 - 13 28.0 - 14 26.0 - 13 17.0 - 15	5 78 62 73 66 53 88						
Cleanup Surrogate 37Cl-2,3,7,8-TCDD	89.2	35.0 - 19	97						
Analyst: Date:(14/12/						Reviewed b Date:	. <u> </u>		

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FAL ID: 2633-003-SA		Date Extra			ICal: PCDDFAL1-2	-26-04 Acq	uired:	12-JUN	-04
Client ID: A405657-04		Date Receiv		2/04	GC Column: db5				
Matrix: Aqueous		Amount: 0.9	967 L		Units: pg/L		TEQ: 4	45.9	
Extraction Batch No.: X027	7				MS/MSD Batch No.	: X0198			
Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	-	1.52		-					
1,2,3,7,8-PeCDD	10.4	-	J	10.4					
1,2,3,4,7,8-HxCDD	14.8	-	J	1.48					
1,2,3,6,7,8-HxCDD	79.5	-		7.95	Total Tetra-Dioxins	8.85	-		2
1,2,3,7,8,9-HxCDD	23.8	-	J	2.38	Total Penta-Dioxins	80.6	-	м	7
1,2,3,4,6,7,8-HpCDD	891	-		8.91	Total Hexa-Dioxins	419	-		7
OCDD	5590	-		0.559	Total Hepta-Dioxins	1660	-		2
2,3,7,8-TCDF	2.82	-	J	0.282					
1,2,3,7,8-PeCDF	-	4.20		-					
2,3,4,7,8-PeCDF	10.1	-	J	5.03					
1,2,3,4,7,8-HxCDF	10.5	-	J	1.05					
1,2,3,6,7,8-HxCDF	19.4	-	J	1.94					
2,3,4,6,7,8-HxCDF	23.7	-	J	2.37					
1,2,3,7,8,9-HxCDF	-	2.76		-	Total Tetra-Furans	68.5	-		8
1,2,3,4,6,7,8-HpCDF	328	-		3.28	Total Penta-Furans	194	-	М	6
1,2,3,4,7,8,9-HpCDF	20.6	-	J	0.206	Total Hexa-Furans	387	-		6
OCDF	454	-		0.0454	Total Hepta-Furans	820	-		4
Internal Standards	% Rec	QC Limits	Qu	al					
13C-2,3,7,8-TCDD	70.0	25.0 - 16	4						
13C-1,2,3,7,8-PeCDD	57.3	25.0 - 18	1						
13C-1,2,3,4,7,8-HxCDD	68.2	32.0 - 14	1						
13C-1,2,3,6,7,8-HxCDD	59.0	28.0 - 13	0						
13C-1,2,3,4,6,7,8-HpCDD	50.1	23.0 - 14	0						
13C-OCDD	39.9	17.0 - 15	7						
13C-2,3,7,8-TCDF	78.2	24.0 - 16	9						
13C-1,2,3,7,8-PeCDF	61.6	24.0 - 18	5						
13C-2,3,4,7,8-PeCDF	64.9	21.0 - 17	8						
13C-1,2,3,4,7,8-HxCDF	62.0	26.0 - 15	2						
13C-1,2,3,6,7,8-HxCDF	54.5	26.0 - 12	3						
13C-2,3,4,6,7,8-HxCDF	66.8	29.0 - 14	7						
13C-1,2,3,7,8,9-HxCDF	58.2	28.0 - 13	6						
13C-1,2,3,4,6,7,8-HpCDF	46.5	28.0 - 14	3						
13C-1,2,3,4,7,8,9-HpCDF	48.2	26.0 - 13	8						
13C-OCDF	35.6	17.0 - 15	7						
Cleanup Surrogate									
37Cl-2,3,7,8-TCDD	88.6	35.0 - 19	7						
Analyst: Date:						Reviewed by Date:	/: <u> </u>		

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FAL ID: 2485-001-MS/MSD Client ID: P403069-01 Matrix: Aqueous Extraction Batch No.: X01	Da Sa 198 Ms	ate Extracted: 3/15/04 ate Received: 2/27/04 ample Amount: 1.022 L S Amount: 1.025 L SD Amount: 1.019 L		ICal: PCDDFAL1-2-26-04 GC Column: db5 Units: pg MS/MSD Batch No.: X0198	MS Acquired: 18-MAR-04 MSD Acquired: 18-MAR-04 WHO TEQ: NA 3
	Amount	Sample	MS	MSD	
Compound	Spiked	Amount	Amount	Amount	% RSD Qual
2,3,7,8-TCDD	200	-	193	182	6.79
1,2,3,7,8-PeCDD	1000	-	1060	988	7.62
1,2,3,4,7,8-HxCDD	1000	-	1040	1000	4.78
1,2,3,6,7,8-HxCDD	1000	-	1090	1020	7.41
1,2,3,7,8,9-HxCDD	1000	-	1090	1040	5.50
1,2,3,4,6,7,8-HpCDD	1000	-	1070	993	8.53
OCDD	2000	23.5	2110	1990	6.28
	200		200	100	4 FF
2,3,7,8-TCDF	200	-	200 1080	188 1020	6.55 6.51
1,2,3,7,8-PeCDF	1000		1080	1020	5.56
2,3,4,7,8-PeCDF	1000	-			
1,2,3,4,7,8-HxCDF	1000	-	1110	1020	9.17
1,2,3,6,7,8-HxCDF	1000	-	1100	1060	4.52
2,3,4,6,7,8-HxCDF	1000	•	1070	1020	5.61
1,2,3,7,8,9-HxCDF	1000	-	1090	1030	6.45
1,2,3,4,6,7,8-HpCDF	1000	-	1140	1060	8.00
1,2,3,4,7,8,9-HpCDF	1000	-	1130	1050	8.07
OCDF	2000	-	2180	2010	8.41
Internal Standards		% Rec	% Rec	% Rec	QC Limits
13C-2,3,7,8-TCDD	2000	72.4	68.5	84.0	25.0 - 150
13C-1,2,3,7,8-PeCDD	2000	67.8	67.6	80.5	25.0 - 150
13C-1,2,3,4,7,8-HxCDD	2000	76.3	72.0	83.7	25.0 - 150
13C-1,2,3,6,7,8-HxCDD	2000	72.4	68.5	80.7	25.0 - 150
13C-1,2,3,4,6,7,8-HpCDD	2000	74.6	67.8	82.9	25.0 - 150
13C-OCDD	4000	74.0	66.9	82.0	25.0 - 150
13C-2,3,7,8-TCDF	2000	82.7	79.5	87.5	25.0 - 150
13C-1,2,3,7,8-PeCDF	2000	73.1	71.8	83.2	25.0 - 150
13C-2,3,4,7,8-PeCDF	2000	75.3	73.9	83.0	25.0 - 150
	2000	73.8	69.8	87.0	25.0 - 150
13C-1,2,3,4,7,8-HxCDF	2000		70.2		25.0 - 150
13C-1,2,3,6,7,8-HxCDF 13C-2,3,4,6,7,8-HxCDF		74.0		84.1	
	2000	79.1	72.5 72.5	85.6	25.0 - 150
13C-1,2,3,7,8,9-HxCDF	2000	77.4		87.6	25.0 - 150 25.0 - 150
13C-1,2,3,4,6,7,8-HpCDF	2000	75.2	69.6 70.0	85.4	
13C-1,2,3,4,7,8,9-HpCDF	2000	75.2	70.2	85.3	25.0 - 150
13C-0CDF	4000	74.4	66.7	83.0	25.0 - 150
Cleanup Surrogate					
37cl-2,3,7,8-TCDD	800	87.0	86.0	88.0	25.0 - 150
Analyst:				Re	viewed by:
Date: <u>0/14/11/</u>				Da	te:

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SUBCONTRACT ORDER

Alpha Analytical Laboratories, Inc.

A405657

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SENDING LABORATORY:	RECEIVING LABORATORY:			
Alpha Analytical Laboratories, Inc.	Frontier Analytical Laboratory			
208 Mason St.	5172 Hillsdale Circle			
Ukiah, CA 95482	El Dorado, CA 95762			
Phone: (707)468-0401	Phone :916-934-0900			
Fax: (707)468-5267	Fax: 916-934-0999			
Project Manager. Sheri L. Speaks	Terms: Net 30			

A405657.42 SL-2 [Water] Sampled 05/27/04 14:00 Pacific Drowns Full List 06/14/04 12:00 05/27/05 14:00 Containers Suppled IL Amber-Uppres. (K) IL Amber-Uppres. (L) A405657-03 SL-3 [Water] Sampled 05/27/04 12:35 Pacific		Analysis	Due	Expires	Comments	
Containers Supplied I. Amber: Unpres. (K) II. Amber: Unpres. (L) A485657-03 SL-3 [Water] Sampled 05/27/04 12:35 Pacific Dioxins Full List 06/14/04 12:00 05/27/05 12:35 Containers Supplied II. Amber: Unpres. (K) II. Amber: Unpres. (L) A405657-04 SL-4 [Water] Sampled 05/27/04 13:45 Pacific Dioxins Full List 06/14/04 12:00 05/27/05 13:45 Containers Supplied. II. Amber: Unpres. (K) II. Amber: Unpres. (L) Report to State System Number: System System Number: System Number: System Number: System Number: System Number: System System Sy		A405657-02 SL-2 [Wate	r] Sampled 05/27/04	14:00 Pacific		
11. Amber: Unpres. (K) 11. Amber: Unpres. (L) A405657-03 SL-3 [Water] Sampled 05/27/04 12:35 Pacific Dioxins Full List 06/14/04 12:00 05/27/05 12:35 Containers Supplied 11. Amber: Unpres. (L) A405657-04 SL-4 [Water] Sampled 05/27/04 13:45 Pacific Dioxins Full List 06/14/04 12:00 05/27/05 13:45 Containers Supplied 06/14/04 12:00 05/27/05 13:45 Containers Supplied. 11. Amber: Unpres. (K) 11. Amber: Unpres. (K) I. Amber: Unpres. (K) 11. Amber: Unpres. (L) Report to State System Nume: System Number: Samplet System Number: Samplet System Number: Samplet, to vase Samplie time from COCS.rot from bottle Liser ID: Samplet System Number: Samplet, to vase Sample time from COCS.rot from bottle Wabel: K1/50, & Analyze per method 10013. State System State System Specifies Size Specifies Advisor, & Endore State Specifies Diate Received By			06/14/04 12:00	05/27/05 14·00		
A405657-03 SL-3 (Water) Sampled 05/27/04 12:35 Pacific Dioxins Full List 06/14/04 12:00 05/27/05 12:35 Containers Supplied IL. Amber-Unpres. (K) IL Amber-Unpres. (L) A405657-04 SL-4 (Water) Sampled 05/27/04 13:45 Pacific Dioxins Full List 06/14/04 12:00 05/27/05 13:45 Containers Supplied. IL Amber-Unpres. (K) IL Amber-Unpres. (L) Report to State System Number: Samplet: System Number: System Number: System Number: System Number: System Number: System Number: System Number: Supplet: System Number: Samplet: System Number: Supplet:			1L Amber- Unpres.	(L)		
Containers Supplied IL Amber-Unpres. (K) IL Amber-Unpres. (L) A 405657-04 SL-4 [Water] Sampled 05/27/04 13:45 Pacific Dioxins Full List 06/14/04 12:00 05/27/05 13:45 Containers Supplied IL Amber-Unpres. (K) IL Amber-Unpres. (L) Report to State System Number: User ID: System Number: System Nu						
11. Amber-Unpres. (K) 11. Amber-Unpres. (L) A 405657-04 SL-4 [Water] Sampled 05/27/04 13:45 Pacific Doxins Full List 06/14/04 12:00 05/27/05 13:45 Containers Supplied. 11. Amber-Unpres. (K) 11. Amber-Unpres. (L) Report to State System Name: Employed by: System Name: Sampley Sampley System Number: Sampley Sampley Sampley Sampley Sampley			06/14/04 12 00	05/27/05 12 35		
Dioxins Full List 06/14/04 12:00 05/27/05 13:45 Containers Supplied. 11 Amber: Unpres. (K) 11 Amber: Unpres. (L) Report to State System Name:			1L Amber- Unpres.	(L)		
Containers Supplied IL Amber Unpres. (K) IL Amber-Unpres. (L) Report to State System Number: User ID: System Number: System System Number: System Number: System System	*	A405657-04 SL-4 [Water	r] Sampled 05/27/04	13:45 Pacific		
IL Amber Unpres. (K) IL Amber Unpres. (L) Report to State System Name: Employed by: User ID: Samplet: System Number: Samplet in from COCS. not from bottle System Number: Samplet in from COCS. not from bottle Label. K2 Also, analyze per method 1/213. Shan Space 5.2804 Mammen of by C 0720 Released By Date Received B			06/14/04 12:00	05/27/05 13:45		
Report to State System Name: User ID: System Number: System Number: System Number: System Number: System Number: System Number: System Number: System Number: Share of Sheri to use sample time from COCS. For bottle Label. In Also, analyze per method 1613. Share Space 5.2800 Walkmenne ships @ 0920 Received By Date Received By Date			1L Amber- Unpres.	(L)		
System Name: User ID: System Number: System						
User ID: System Number: System Number: System Number: System Number: System Number: System Number: Share and share to use sample time from COC, not from bottle label. In Also, analyze per method 1613. Share Space 5.2804 method 1613. Share Space 5.2804 method 1613. Share Space 5.2804 method 1613. Released By Date Received By Date Sploy CO 0920				Employed by:		
System Number: * 4/4/04 confirmed wy sheri to use sample time from COC, not from bottle Laber. 12 Also, analyze per method 1613. Shen Space 5.2804 McMmenn 6/2/04 CO920 Released By Date Received By Date						
* 4/404 confirmed * sheri to use sample time from COCS. not from bottle Label. 12 Also, analyze per method 1613. Shen Space 5.2804 The Momenny 6/2/64 0920 Released By Date Received By Date				Sampler		
Shan Spack 5.2804 The Momen 6/2/04 C 0920 Released By Date Received By Date		System Number:	~	-		
Shan Spack 5.2804 The Momen 6/2/04 C 0920 Released By Date Received By Date				\sim		
Shan Spack 5.2804 The Momen 6/2/04 C 0920 Released By Date Received By Date						
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Shan Spack 5.2804 The Menne 6/2/04 @ 0920 Released By Date Received By Date		b/2/04 Confirme	a y sheri	to use sample tim	L HEAL COSTON THE	
Shan Spack 5.2804 The Momen 6/2/04 C 0920 Released By Date Received By Date	7	Label.	RZ AI	so, analyze per n	nethod 1613.	
Released By Date Received By Date				,		
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Released By Date Received By Date		Shon >	Socio	5.2804 JAG	Maga & 11. 0 0820	
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Released By Date Received By Date 000011 of 000013			2			
		Pelessed By	Date	Received By	Date 000011 of 0000	13
Page 1 of 1		Released by	Date	Received by	Dute Groute of about	



Frontier Analytical Laboratory

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Sample Login Form

FAL Project ID: 2633

Client:	Alpha Analytical Laboratories, Inc.
Client Project ID:	A405657
Date Received:	06/02/2004
Time Received:	09:20 am
Received By:	NM
Logged In By:	KZ
# of Samples Received:	3
Duplicates:	3
Storage Location:	R2

Method of Delivery:	Other
Tracking Number:	
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	4
Cooling Method	Blue Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test for residual Chlorine	Yes
Thiosulfate Added	Νο
Earliest Sample Hold Time Expiration	05/27/2005
Adequate Sample Volume	Yes
Anomalies or additional comments:	

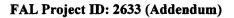




FILE 9329



June 18, 2004





TASK 6 STORM WATER MAY 27,2004 STORM WATER SAMPLES

Mr. Jim Honniball Geomatrix Consultants, Inc. 2101 Webster Street, 12th Floor Oakland, CA 94612

Dear Mr. Honnibal,

Please include this addendum cover letter with Frontier Analytical Laboratory (FAL) project 2633. This FAL project corresponds to Alpha Analytical Laboratories, Inc. subcontract order # A405657. This addendum is being issued to include details on method procedures used to extract the three aqueous samples we received on 6/2/04.

Since samples 2633-001-SA, 2633-002-SA and 2633-003-SA contained 0.00%, 0.241% and .243% solids respectively, all samples were classified as aqueous samples. According to EPA Method 1613, any liquid sample containing less than 1% solids can be extracted by solid phase extraction (SPE). Prior to SPE extraction, the samples bottles were spiked with C13 labeled dioxin/furan standard and then homogenized to insure all particulate was suspended in the aqueous portion of the sample. The samples were filtered through a Whatman Brand GF/F filter and a 3M brand C18 SPE disk. The manufacturer listed pore size of the GF/F filter is .7 micron while the pore size of the SPE disk is 12 micron. The liquid that passed through the GF/F filter and the SPE disk was discarded after filtering. The GF/F filter and the SPE disk were soxhlet extracted with toluene for a minimum of sixteen hours. A Dean Stark SDS apparatus was used in conjunction with the soxhlet apparatus to remove any residual water from the GF/F filter and the SPE disk. After extraction, the sample extracts underwent a silica gel cleanup to isolate the dioxin/furans from any possible chemical matrix interferences

If you have any questions regarding this addendum to project 2633, please feel free to contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

Dan licker

Dan Vickers Director of Air Toxics

FRONTIER ANALYTICAL LABORATORY 5172 Hillsdale Circle • El Dorado Hills, CA 95762 Tel (916) 934-0900 • Fax (916) 934-0999 dioxin@frontieranalytical.com





Alpha Analytical Laboratories Inc. 208 Mason St. Ukiah, California 95482 e-mail clientservices@alpha-labs.com • Phone (707) 468-0401 • Fax (707) 468-5267



25 June 2004

Geomatrix Consultants Attn: Ross Steenson 2101 Webster Street, 12th Floor Oakland, CA 94612 RE: SPI - Arcata Work Order: A406328

TASK II IRM Debris samples from Ditch#1 drainage area

Enclosed are the results of analyses for samples received by the laboratory on 06/11/04 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sheri Speake

Sheri L. Speaks Project Manager



208 Mason St. Ukiah, California 95482 e-mail clientservices@alpha-labs.com • Phone (707) 468-0401 • Fax (707) 468-5267

CHEMICAL EXAMINATION REPORT

Page 1 of 6

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

_

Report Date: 06/25/04 14:01 Project No: 9329.000/030275.11 Project ID: SPI - Arcata

Order Number	Receipt Date/Time	Chent Code	Client PO/Reference
A406328	06/11/2004 16 00	GEOMAT	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
D1-1-20040610	A406328-01	Soil	06/10/04 14 00	06/11/04 16 00
D1-2-20040610	A406328-02	Soıl	06/10/04 14.05	06/11/04 16 00
D1-3-20040610	A406328-03	Soil	06/10/04 14 12	06/11/04 16 00
D1-4-20040610	A406328-04	Soil	06/10/04 14 20	06/11/04 16:00
D1-5-20040610	A406328-05	Soil	06/10/04 14.25	06/11/04 16 00
D1-6-20040610	A406328-06	Soil	06/10/04 14 30	06/11/04 16 00
D1-7-20040610	A406328-07	Soil	06/10/04 14 40	06/11/04 16 00
D1-8-20040610	A406328-08	Soil	06/10/04 14.45	06/11/04 16:00

The results in this report apply to the samples analyzed in accordance with the chain of custody document This analytical report must be reproduced in its entirety

shari Speake

Sheri L. Speaks Project Manager

6/25/04



CHEMICAL EXAMINATION REPORT

Page 2 of 6

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date:	06/25/04 14:01
Project No:	9329.000/030275.11
Project ID:	SPI - Arcata

Alpha Analytical Laboratories, Inc.								
A406328	06/11/2004 16.00	GEOMAT						
Order Number	Receipt Date/Time	Client Code	Client PO/Reference					

		Aipua A	maiyuca	L'aboi ato	1 ics, 1 iic.			
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	POL	NOTE
D1-1-20040610 (A406328-01)			Sample Ty	pe: Soil		Sampled: 06/10/04 14:00		
Chlorinated Phenols by Canadian P	ulp Method			-		-		
2,4,6-Trichlorophenol	EnvCan	AF42409	06/18/04	06/24/04	1	ND mg/kg	10	
2,3,5,6-Tetrachlorophenol	"	H	"		"	ND "	10	
2,3,4,6-Tetrachlorophenol		-			۳	ND "	10	
2,3,4,5-Tetrachlorophenol	"	n	"	"	"	ND "	10	
Pentachlorophenol	"	"	•	*		ND "	10	
Surrogate Tribromophenol	"	"	"	"		35 4 % 23-140)	
D1-2-20040610 (A406328-02)			Sample Ty	pe: Soil		Sampled: 06/10/04 14:05		
Chlorinated Phenols by Canadian P	ulp Method							
2,4.6-Trichlorophenol	EnvCan	AF42409	06/18/04	06/24/04	1	ND mg/kg	10	
2,3,5,6-Tetrachlorophenol	*	"	"	H	*	ND "	10	
2,3,4,6-Tetrachlorophenol	н	Ħ	**		"	ND "	10	
2,3,4.5-Tetrachlorophenol	** *	"	11		*	ND "	10	
Pentachlorophenol	*		**	*		ND "	10	
Surrogate Tribromophenol	"	"	"	"		62 4 % 23-140)	
D1-3-20040610 (A406328-03)			Sample Ty	pe: Soil		Sampled: 06/10/04 14:12		
Chlorinated Phenols by Canadian P	ulp Method							
2,4,6-Trichlorophenol	EnvCan	AF42409	06/18/04	06/24/04	1	ND mg/kg	10	
2,3,5,6-Tetrachlorophenol		14	"	"	*	ND "	10	
2,3,4,6-Tetrachlorophenol		"	"	"	"	ND "	10	
2,3,4,5-Tetrachlorophenol		"	*	**	M	ND "	10	
Pentachlorophenol	*				11	ND "	10	
Surrogate Tribromophenol	"	n	"	"		68 5 % 23-140)	
D1-4-20040610 (A406328-04)			Sample Ty	pe: Soil		Sampled: 06/10/04 14:20		
Chlorinated Phenols by Canadian P	ulp Method			_		* · · · · · · · · · · · · · · · · · · ·		
2,4,6-Trichlorophenol	EnvCan	AF42409	06/18/04	06/24/04	1	ND mg/kg	10	
2,3,5,6-Tetrachlorophenol	**	"	"		"	ND "	10	
2,3,4,6-Tetrachlorophenol		10		"		ND "	10	
2,3,4,5-Tetrachlorophenol	"	11				ND "	10	

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Sheri Speake

Sheri L. Speaks Project Manager



CHEMICAL EXAMINATION REPORT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

Report Date:	06/25/04 14:01
Project No:	9329.000/030275.11
Project ID:	SPI - Arcata

Alpha Analytical Laboratories, Inc.								
A406328	06/11/2004 16.00	GEOMAT						
Order Number	Receipt Date/Time	Chent Code	Client PO/Reference					

		Alpna A	naiyticai	Laboratol	ries, inc.				
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT		POL	NOTE
D1-4-20040610 (A406328-04)			Sample Ty	pe: Soil		Sampled: 06/10/04 14	:20		
Chlorinated Phenols by Canadian P	ulp Method (cont'	d)							
Pentachlorophenol	EnvCan	u		06/24/04	**	ND "		10	
Surrogate Tribromophenol	"	"	"	"		65 1 %	23-140		
D1-5-20040610 (A406328-05)			Sample Ty	pe: Soil		Sampled: 06/10/04 14	:25		
Chlorinated Phenols by Canadian P	ulp Method								
2,4,6-Trichlorophenol	EnvCan	AF42409	06/18/04	06/24/04	1	ND mg/kg		10	
2,3,5,6-Tetrachlorophenol	**	n	*	"	**	ND "		10	
2,3,4,6-Tetrachlorophenol		n	11	"	*	ND "		10	
2,3,4,5-Tetrachlorophenol	"	"	"		17	ND "		10	
Pentachlorophenol	"		"	*	м	ND "		10	
Surrogate Tribromophenol	"	"	"	H		589%	23-140		
D1-6-20040610 (A406328-06)			Sample Ty	pe: Soil		Sampled: 06/10/04 14	:30		
Chlorinated Phenols by Canadian P	ulp Method								
2,4,6-Trichlorophenol	EnvCan	AF42409	06/18/04	06/24/04	1	ND mg/kg		10	
2,3,5,6-Tetrachlorophenol			"		"	ND "		10	
2,3,4,6-Tetrachlorophenol	*	н	*	**	н	ND "		10	
2,3,4,5-Tetrachlorophenol	*	*				ND "		10	
Pentachlorophenol		H	"		"	ND "		10	
Surrogate Tribromophenol	"	"	"	"		66 9 %	23-140		
D1-7-20040610 (A406328-07)			Sample Ty	pe: Soil		Sampled: 06/10/04 14	:40		
Chlorinated Phenols by Canadian P	ulp Method								
2,4,6-Trichlorophenol	EnvCan	AF42409	06/18/04	06/24/04	1	ND mg/kg		10	
2,3,5,6-Tetrachlorophenol			"	**	*	ND "		10	
2,3,4,6-Tetrachlorophenol	*		17	*	11	ND "		10	
2,3,4,5-Tetrachlorophenol	**		н	**		ND "		10	
Pentachlorophenol	17		"	"	"	ND "		10	
Surrogate Tribromophenol	"	"	"	"		576%	23-140		
D1-8-20040610 (A406328-08)			Sample Ty	pe: Soil		Sampled: 06/10/04 14	:45		

The results in this report apply to the samples analyzed in accordance with the chain of custody document This analytical report must be reproduced in its entirety

Shari Speake

Sheri L. Speaks Project Manager

Page 3 of 6



CHEMICAL EXAMINATION REPORT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

 Report Date:
 06/25/04 14:01

 Project No:
 9329.000/030275.11

 Project ID:
 SPI - Arcata

Order Number	Receipt Date/Time	Client Code	Client PO/Reference			
A406328	06/11/2004 16 00	GEOMAT				
Alpha Analytical Laboratorias Inc						

		Ацрпа А	marytical	Laborato	ries, mc.		
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	POL NOTE
D1-8-20040610 (A406328-08)			Sample Ty	pe: Soil	Sai	mpled: 06/10/04 14	:45
Chlorinated Phenols by Canadian Pu	ilp Method						
2,4,6-Trichlorophenol	EnvCan	AF42409	06/18/04	06/24/04	1	ND mg/kg	10
2,3,5,6-Tetrachlorophenol	**	"	"		"	ND "	10
2,3,4,6-Tetrachlorophenol		н	н	**		ND "	10
2,3,4,5-Tetrachlorophenol	**	"	"		"	ND "	10
Pentachlorophenol		"	"	IT	"	ND "	10
Surrogate Tribromophenol	"	"	"	"		56 5 %	23-140

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sheri Speake

Sheri L. Speaks Project Manager Page 4 of 6



Alpha Analytical Laboratories Inc 208 Mason St. Ukiah, California 95482 e-mail clientservices@alpha-labs.com • Phone (707) 468-0401 • Fax (707) 468-5267

CHEMICAL EXAMINATION REPORT

Page 5 of 6

Geomatrix Consultants							
2101 Webster Street,	12th Floor						
Oakland, CA 94612							
Attn: Ross Steenson							

Receipt Date/Time

06/11/2004 16.00

Order Number A406328

Report Date:	06/25/04 14:01
Project No:	9329.000/030275.11
Project ID:	SPI - Arcata
	Client PO/Reference

Chlorinated Phenols by Canadian Pulp Method - Quality Control

Client Code

GEOMAT

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AF42409 - Solvent Extraction										
Blank (AF42409-BLK1)				Prepared.	06/18/04	Analyzed	06/24/04			
2,4,6-Trichlorophenol	ND	10	mg/kg				<u>,</u>			
2,3,5,6-Tetrachlorophenol	ND	10								
2,3,4,6-Tetrachlorophenol	ND	10								
2,3,4,5-Tetrachlorophenol	ND	10	"							
Pentachlorophenol	ND	10	н							
Surrogate Tribromophenol	0 0672		"	0 1 2 5		538	23-140			
LCS (AF42409-BS1)				Prepared	06/18/04	Analyzed	: 06/24/04			
2,4,6-Trichlorophenol	0 0159	10	mg/kg	0 0250		63 6	32-116			
2,3,5,6-Tetrachlorophenol	0 0163	10		0 0250		65 2	18-80			
2,3,4,6-Tetrachlorophenol	0 0169	10	**	0 0250		67 6	28-89			
2,3,4,5-Tetrachlorophenol	0 0153	10		0 0250		61 2	54-85			
Pentachlorophenol	0 0194	10	*	0 0250		77 6	17-85			
Surrogate Tribromophenol	0 0740		"	0 125		59 2	23-140			
LCS Dup (AF42409-BSD1)				Prepared	06/18/04	Analyzed.	06/24/04			
2,4,6-Trichlorophenol	0 0155	10	mg/kg	0 0250		62 0	32-116	2 55	50	
2,3,5,6-Tetrachlorophenol	0 0159	10		0 0250		63 6	18-80	2 48	50	
2,3,4,6-Tetrachlorophenol	0 0182	10		0 0250		72 8	28-89	7 41	50	
2,3,4,5-Tetrachlorophenol	0 0152	10	"	0 0250		60 8	54-85	0 656	50	
Pentachlorophenol	0 0189	10	*	0 0250		75 6	17-85	2 61	50	
Surrogate Tribromophenol	0 0693		n	0 1 2 5		55 4	23-140			

The results in this report apply to the samples analyzed in accordance with the chain of custody document This analytical report must be reproduced in its entirety

shari Speake

Sheri L. Speaks Project Manager



CHEMICAL EXAMINATION REPORT

Page 6 of 6

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

 Report Date:
 06/25/04 14:01

 Project No:
 9329.000/030275.11

 Project ID:
 SPI - Arcata

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A406328	06/11/2004 16 00	GEOMAT	

Notes and Definitions

DET	Analyte DETECTED
-----	------------------

- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- PQL Practical Quantitation Limit

MFG, INC.		CH/	٩IN	OF	C	UST	OD	Y	RE	CC	RC) A	N) R	REC	<u>)</u> U	ES	ST			NAI 46	
1 Arcata Office CA - Irvine CA - Sa .75 Crescent Way 17770 Cartwright Rd 180 Hov Vicata, CA 95521-6741 Ste 500 San Fra 'hone (707) 826-8430- FAX (707) 826-8437 Tel (949) 253 2951 Fax (418) Fax (949) 253-2954 Fax (418)	n Francisco vard St., Ste. 20 ncisco, CA 941() 495-7110 5) 495-7107	00 49 05 St Bo	D - Bouide 100 Pearl e 300W pulder, CC I (303) 44 ux (303) 4	East Cir		ID - Osburn PO Box 30 Wallace, ID (208) 550 Fax (208) 55	3-6811		PO 6 PO 6 Miss Tel (4 Fax 6	Missoul 30x 7158 oula, MT 406) 728 406) 728	a 59807 4600 8-4698	ים ז נ ק ק	NJ - Edi 1090 Kir Ste 703 Edison Tel (732 Fax (732	son ng Geor NJ 088) 738-5 2) 738-5	rges Po: 37 707 5711	st Rd		210) eom VI We	atr; bste	× St,	12+4 floor
Ste 530 Pittsburgh, PA 15212 Bldg i Portland, OR 97205 Tel (412) 321-2278 Austro	ustin Spicewood Sprir V, 1 st Floor , TX 78759 2) 338-1667 12) 338-1331	ngs Rd	1233 Ste Hou: Tel (Housto 230 ston, TX 281) 89 (281) 89	s Rd 77070 0-5068	320 Por Tel	- Port L East M t Lavac (361) 5 (361) 5	lain a, TX 7 52-883	77979 39	4 T T	X - Texa 532 Sun exarkana el (903) ax (903)	amerhil a, TX 7 794 06	Rd /5503 525	1	WA - Se 19203 3 Ste 100 Lynnwoo Tel (425 Fax (425	6th Ave	e W	5	kland 10 -			
PROJECT NO: 030275.11 PROJECT NAME: SPIT Arcata PAGE: OF 2 SAMPLER (Signature): Mate 72/2000 PROJECT MANAGER: Ross Steenson DATE 6/10/04 METHOD OF SHIPMENT: Consicr CARRIER/WAYBILL NO. DESTINATION: Alpha																						
SAMPLES ANALYSIS REQUEST Sample Preservation Containers Constituents/Method Handling Remarks																						
	San	nple		Pre	eserva	ation		С	Conta	ners	Co	onstitu	uents/	Metho	od	Har	ndlır	ng		R	emarks	;
Field Sample Identification	DATE	TIME	Matrix* HCI	HNO3	H₂SO₄	COLD	FILTRATION*	VOLUME	(ml/oz)	N	PCP/72P					НОГД	RUSH	STANDARD				
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	MFG, INC.			СН	All	N-(OF	-C	US	TC	DD	YR	EC	:0	RD	Α	ND	R	EQ	UE	S			NALY	
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	□ OR - Portland □ 1020 SW Taylor St Ste 530 Portland, OR 97205 Tel (503) 228-8616 Fax (503) 228-8631	IPA - Pritsburgh □ TX 800 Vinial S1, Bidg A 48 Pitsburgh, PA 15212 Bid Tel (412) 321-2278 Au Fax (412) 321-2283 Tel	- Austin D7 Spicewood S Ig IV, 1 st Flooi stin, TX 78759 (512) 338-1667 < (512) 338-133	iprings Rd , 1		TX - He 12337 Ste 23 Housto Tel (28 Fax (28	Jones 0 n, TX 7 1) 890-	Rd 77070 -5068		320 E Port L Tel (3	361) 55	ivaca ain , TX 7797 2-8839 53-6115	9	453 Tex	- Texark 32 Sumr (arkana, (903) 79 (903) 7 (903) 7	nerhill F TX 755	7d ;03 5 6	192 Ste	100	Itle In Ave N 921-400 921-40	1036				
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	S	Field ample tification	DATE	ТІМЕ	Matrix*	HCI	HNO ₃	H₂SO₄	согр		FILTRATION*	VOLUME (ml/oz)	түре*	NO	PCITTCP		1			RUSH	STANDARD				
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FILE 4324

208 Mason St Ukiah, California 95482 Alpha Analytical Laboratories Inc. e-mail clientservices@alpha-labs.com • Phone (707) 468-0401 • Fax (707) 468-5267



25 June 2004

Geomatrix Consultants Attn: Ross Steenson 2101 Webster Street, 12th Floor Oakland, CA 94612 RE: SPI - Arcata Work Order: A406329

TASK II IRM Debris Samples from Ditch#2 drainage area

Enclosed are the results of analyses for samples received by the laboratory on 06/11/04 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sheri Speaks

Sheri L. Speaks Project Manager



CHEMICAL EXAMINATION REPORT

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

 Report Date.
 06/25/04 14:13

 Project No:
 9329.000/030275.11

 Project ID
 SPI - Arcata

 Order Number
 Receipt Date/Time

 A406329
 06/11/2004
 16 00

Client Code GEOMAT Client PO/Reference

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
D2-1-20040610	A406329-01	Soul	06/10/04 15 55	06/11/04 16 00
D2-2-20040610	A406329-02	Soil	06/10/04 16 00	06/11/04 16 00
D2-3-20040610	A406329-03	Soil	06/10/04 16 05	06/11/04 16 00
D2-4-20040610	A406329-04	Soil	06/10/04 16 15	06/11/04 16 00
D2-5-20040610	A406329-05	Soil	06/10/04 16 25	06/11/04 16 00
D2-6-20040610	A406329-06	Soil	06/10/04 16 25	06/11/04 16 00
D2-7-20040610	A406329-07	Soil	06/10/04 16 30	06/11/04 16 00

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Shari Speake

Sheri L. Speaks Project Manager

6/25/04

Page 1 of 5



AlphaAnalytical Laboratories Inc208 Mason St Ukiah, California 95482e-mailclientservices@alpha-labs.comPhone(707) 468-0401FaxFax(707) 468-0401Fax(707) 468-5267

CHEMICAL EXAMINATION REPORT

Page 2 of 5

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

 Report Date
 06/25/04 14:13

 Project No
 9329.000/030275.11

 Project ID[.]
 SPI - Arcata

Order Number A406329	Receipt Date/Time 06/11/2004 16 00			ent Code EOMAT		Client PO/Refe	rence	
		Alpha A	nalytical	Laborato	ries, Inc.			
	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	POL	NOTE
D2-1-20040610 (A406329-01)			Sample Ty	e: Soil		Sampled: 06/10/04 15:55		
Chlorinated Phenols by Canadia	an Pulp Method							
2,4,6-Trichlorophenol	EnvCan	AF42409	06/18/04	06/24/04	1	ND mg/kg	10	
2,3,5,6-Tetrachlorophenol	**	"		н	*	ND "	10	
2,3,4,6-Tetrachlorophenol	*	*	**		м	ND "	10	
2,3,4,5-Tetrachlorophenol		•	•	*	"	ND "	10	
Pentachlorophenol	*	۳		*		ND "	10	
Surrogate Tribromophenol	н	"	"	"		44 5 % 23-	-140	
D2-2-20040610 (A406329-02)			Sample Ty	pe: Soil		Sampled: 06/10/04 16:00		
Chlorinated Phenols by Canadi	an Pulp Method							
2,4,6-Trichlorophenol	EnvCan	AF42409	06/18/04	06/24/04	1	ND mg/kg	10	
2,3,5,6-Tetrachlorophenol		*	"	**		ND "	10	
2,3,4,6-Tetrachlorophenol	*	*			**	ND "	10	
2,3,4,5-Tetrachlorophenol		*			**	ND "	10	
Pentachlorophenoi	*	H	*	"		ND "	10	
Surrogate Tribromophenol	"	"	"	"		61 6 % 23.	-140	
)2-3-20040610 (A406329-03)			Sample Ty	pe: Soil		Sampled: 06/10/04 16:05		
Chlorinated Phenois by Canadi	an Pulp Method							
2,4,6-Trichlorophenol	EnvCan	AF42409	06/18/04	06/24/04	1	ND mg/kg	10	
2,3,5,6-Tetrachlorophenol	н	н	"			ND "	10	
2,3,4,6-Tetrachlorophenol		н	n			ND "	10	
2,3,4,5-Tetrachlorophenol		н	"		*	ND "	10	
Pentachlorophenol		н	**	"	**	ND "	10	
Surrogate Tribromophenol	19	"	"	"		63 2 % 23	-140	
D2-4-20040610 (A406329-04)			Sample Ty	pe: Soil		Sampled: 06/10/04 16:15		
Chlorinated Phenols by Canadi	an Pulp Method							
2,4,6-Trichlorophenol	EnvCan	AF42409	06/18/04	06/24/04	1	ND mg/kg	10	
2,3,5,6-Tetrachlorophenol	19	"	**	"	Ħ	ND "	10	
2,3,4,6-Tetrachiorophenol	•	"	**			ND "	10	
2,3,4,5-Tetrachlorophenol	*	"	"			ND "	10	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sheri Speake

Sheri L. Speaks Project Manager 6/25/04



Page 3 of 5 CHEMICAL EXAMINATION REPORT Geomatrix Consultants Report Date: 06/25/04 14:13 2101 Webster Street, 12th Floor Oakland, CA 94612 Project No: 9329.000/030275.11 Attn: Ross Steenson Project ID. SPI - Arcata Client Code Client PO/Reference Receipt Date/Time Order Number A406329 06/11/2004 16 00 GEOMAT Alpha Analytical Laboratories, Inc. BATCH PREPARED ANALYZED DILUTION METHOD RESULT POL NOTE Sampled: 06/10/04 16:15 D2-4-20040610 (A406329-04) Sample Type: Soil Chlorinated Phenols by Canadian Pulp Method (cont'd) Pentachlorophenol EnvCan 06/24/04 ND " 10 Surrogate Tribromophenol 573% 23-140 D2-5-20040610 (A406329-05) Sample Type: Soil Sampled: 06/10/04 16:25 Chlorinated Phenols by Canadian Pulp Method 2,4,6-Trichlorophenol AF42409 06/18/04 06/24/04 ND mg/kg 10 EnvCan 1 2,3,5,6-Tetrachlorophenol ND " 10 ND " 10 2.3.4.6-Tetrachlorophenol 2,3,4,5-Tetrachlorophenol н ... ND " 10 ... Pentachlorophenol ND " 10 . 549% 23-140 Surrogate Tribromophenol Sample Type: Soil Sampled: 06/10/04 16:25 D2-6-20040610 (A406329-06) **Chlorinated Phenols by Canadian Pulp Method** 2,4,6-Trichlorophenol EnvCan AF42409 06/18/04 06/24/04 1 ND mg/kg 10 2,3,5,6-Tetrachlorophenol ND " 10 ND " 2,3,4,6-Tetrachlorophenol 10 .. ,, n 2,3,4,5-Tetrachiorophenol . ND " 10 Pentachlorophenol 11 ND " 10 Surrogate Tribromophenol n " 538% 23-140 D2-7-20040610 (A406329-07) Sampled: 06/10/04 16:30 Sample Type: Soil **Chlorinated Phenols by Canadian Pulp Method** 2,4,6-Trichlorophenol 06/18/04 06/25/04 ND mg/kg EnvCan AF42409 10 1 2,3,5,6-Tetrachlorophenol ND " 10 ... ND " 2,3,4,6-Tetrachlorophenol . 10 ,, , •• ... ND " 2,3,4,5-Tetrachlorophenol 10 ,, ... Pentachlorophenol ND " 10 Surrogate Tribromophenol 485% 23-140

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Shari Speake

Sheri L Speaks Project Manager 6/25/04

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208 Mason St. Ukiah, California 95482 e-mail clientservices@alpha-labs.com • Phone (707) 468-0401 • Fax (707) 468-5267

CHEMICAL EXAMINATION REPORT

Page 4 of 5

2101 We Oakland	ux Consultants ebster Street, 12th Floor , CA 94612 ass Steenson		Project No:	06/25/04 14:13 9329.000/030275.11 SPI - Arcata
Order Number A406329	Receipt Date/Time 06/11/2004 16 00	Client Code GEOMAT		Client PO/Reference

Chlorinated Phenols by Canadian Pulp Method - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AF42409 - Solvent Extraction										
Blank (AF42409-BLK1)				Prepared.	06/18/04	Analyzed	06/24/04			
2,4,6-Trichlorophenol	ND	10	mg/kg							
2,3,5,6-Tetrachlorophenol	ND	10								
2,3,4,6-Tetrachlorophenoi	ND	10	н							
2,3,4,5-Tetrachlorophenol	ND	10								
Pentachlorophenol	ND	10	*							
Surrogate Tribromophenol	0 0672			0 125		538	23-140			
LCS (AF42409-BS1)				Prepared	06/18/04	Analyzed	06/24/04			
2,4,6-Trichlorophenol	0 0159	10	mg/kg	0 0250		63 6	32-116			
2,3,5,6-Tetrachlorophenol	0 0163	10		0 0250		65 2	18-80			
2,3,4,6-Tetrachlorophenol	0 0169	10	н	0 0250		67 6	28-89			
2,3,4,5-Tetrachlorophenol	0 0153	10	"	0 0250		61 2	54-85			
Pentachlorophenol	0 0194	10	"	0 0250		77 6	17-85			
Surrogate Tribromophenol	0 0740			0 125		592	23-140			
LCS Dup (AF42409-BSD1)				Prepared	06/18/04	Analyzed	06/24/04			
2,4,6-Trichlorophenol	0 0155	10	mg/kg	0 0250		62 0	32-116	2 55	50	
2,3,5,6-Tetrachlorophenol	0 0159	10		0 0250		63 6	18-80	2 48	50	
2,3,4,6-Tetrachlorophenol	0 0182	10		0 0250		72 8	28-89	7 41	50	
2,3,4,5-Tetrachlorophenol	0 0152	10	•	0 0250		60 8	54-85	0 656	50	
Pentachlorophenol	0 0189	10		0 0250		756	17-85	2 61	50	
Surrogate Tribromophenol	0 0693			0 125		55 4	23-140			

The results in this report apply to the samples analyzed in accordance with the chain of custody document This analytical report must be reproduced in its entirety

Shari Speake

6/25/04

Sheri L Speaks Project Manager



CHEMICAL EXAMINATION REPORT

Page 5 of 5

Geomatrix Consultants 2101 Webster Street, 12th Floor Oakland, CA 94612 Attn: Ross Steenson

 Report Date:
 06/25/04 14:13

 Project No.
 9329.000/030275.11

 Project ID
 SPI - Arcata

Client Code GEOMAT Client PO/Reference

Notes and Definitions

Order Number A406329

DET	Analyte DETECTED	
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ND Analyte NOT DETECTED at or above the reporting limit

Receipt Date/Time 06/11/2004 16 00

- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- PQL Practical Quantitation Limit

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	MFG, INC.			CH	All	N-C)F-	-Cl	JST	OD	Y	RE	C	D	٦D	A	NE) F	REC	ຊຸບ	E	ST				(SIS
	# Way 17770 Cartwright Rd 180 Ho 95521 6741 Ivrune, CA 92614 Tel (41) 9254430- FAX (707) \$26-8437 Tel (499) 253-2954 Fax (41)			n Francisco CO Boulder ward St, Ste 200 4900 Pearl East Cir ncsco, CA 94105 Ste 300W J 955-7110 Boulder, CC 8300 5) 495-71107 Tel (303) 447-1823 Fax (303) 447-1836					Wallace ID 83873 Tel (208) 556-6811 Fax (208) 556-7271			MT - Missoula PO Box 7158 Missoula, MT 5 Tel (406) 728-4 Fax (406) 728-4				[59807 Ste 703 8-4600 E dison, NJ 08837 8-4698 Tel (732) 738-5707 Fax (732) 738-5711				2 N			COC NO <u>46285</u> <u>6 comatrix</u> 2101 webster St 12 ^m flor Datloud, CA 94612			
	□ OR - Portland □ 1020 SW Tayloi St Ste 530 Portland, OR 97205 Tel (503) 228-8616 Fax (503) 228-8631	Austri Spicewood S IV 1st Floor n, TX 78759 512) 338 166 512) 338-133	Leewood Springs Rd 12337 Jones Rd 2302 East Main 1# Floor Ste 230 Port Lavaa, TX 77 X 78759 Houston, TX 77070 Tel (361) 552-8839 338 1667 Tel (281) 890-5048 Fax (361) 553-6112) 338-1331 Fax (281) 890-5044									$ \begin{array}{c c c c c c c c c c c c c c c c c c c $														
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[SAN														ANALYSIS REQUEST									
		Sample Pr					reservation			Container			;	Constituents/Method			od	Handling			Remarks					
	SaIdent	Tield Imple Infication	DATE	ТІМЕ	Matrix*	HCI	HNO ₃	H₂SO₄	COLD	FILTRATION*	VOLUME	(ml/oz) TVBE*		DN	PCP/TCP					НОГД	RUSH	STANDARD				
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	SIGNATURE	COMPANY					DATE			TIME			SKINATURE					PRINTED NAME					COMPA	NY		
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