

**THIRD QUARTER 2003  
GROUNDWATER MONITORING  
REPORT**

**Sierra Pacific Industries  
Arcata Division Sawmill  
2593 New Navy Base Road  
Arcata, California**

**November 3, 2003**



**G**

consulting  
scientists and  
engineers



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*Prepared For:*

**SIERRA PACIFIC INDUSTRIES**

*Prepared By:*

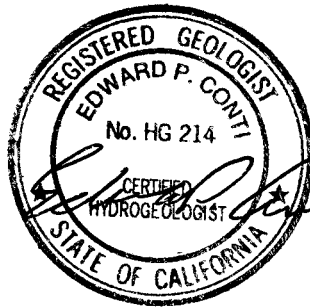
**MFG, INC.**  
875 Crescent Way  
Arcata, California 95521  
(707) 826-8430

**GEOMATRIX CONSULTANTS, INC.**  
2101 Webster Street, 12<sup>th</sup> Floor  
Oakland, California 94612  
(510) 663-4100

MFG Project No. 030229.2

## PROFESSIONAL CERTIFICATION

This report has been prepared by MFG, Inc. and Geomatrix Consultants, Inc. under the professional supervision of Edward P. Conti. The findings, recommendations, specifications and/or professional opinions presented in this report have been 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.



*November 3, 2003*

Edward P. Conti  
C.H.G. No. HG 214  
Principal Geologist

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## 1.0 INTRODUCTION

This report presents the methods and results of the third quarter 2003 groundwater monitoring event performed at the Sierra Pacific Industries (SPI) Arcata Division Sawmill. The Arcata Division Sawmill is located at 2593 New Navy Base Road in Arcata, California (the Site). The Site location is shown in Figure 1. A Site plan is shown in Figure 2. This report was prepared by MFG, Inc. and Geomatrix Consultants, Inc. on behalf of SPI.

The third quarter groundwater monitoring event consisted of measuring the depth to water in 19 monitoring wells at the Site and in the Mad River Slough, and collecting groundwater samples from 19 monitoring wells at the Site.

This report is organized as described below. Background information is provided in Section 2.0. Water level measurements and an evaluation of the lateral hydraulic gradient are included in Section 3.0. Groundwater sampling methods and chemical analysis methods and results are presented in Section 4.0. The disposal of wastewater is discussed in Section 5.0. The monitoring schedule is presented in Section 6.0, and references cited in this report are listed in Section 7.0.

## 2.0 BACKGROUND

The Site is located on the Samoa Peninsula in Arcata, Humboldt County, California (Figure 1). The Site was originally undeveloped land, consisting of sand dunes and mud flats, until approximately 1950 when SPI converted the land into a lumber mill. During conversion, SPI filled in portions of the Site. SPI began operations at this facility before the area was completely filled in. The mill has been active from approximately 1950 to present day.

In the early to mid-1960s, the mill started using anti-stain products that contained pentachlorophenol (PCP) and tetrachlorophenol (TCP) on a small amount of milled lumber (Environet, 2003). Historical records indicate that the anti-stain solution was stored in a dip tank that was located at the former green chain (Environet, 2003) and in an above ground storage tank located near the former green chain. The former green chain was located to the south of the current sorter building and immediately west of the current sawmill building (Figure 2). The use of anti-stain solutions containing PCP and TCP was discontinued in September 1987 (MFG, 2003b). The area of the former green chain is currently covered with concrete or asphalt and various equipment used to move lumber and lumber cutting by-products.

The subsurface lithology and hydrogeology at the Site was previously investigated and described by Environet Consulting (Environet, 2003). The subsurface lithology consists primarily of fine- to medium-grained sand of apparent sand dune origin to a depth of approximately 22 feet below ground level (bgl), the maximum depth explored. The sand is sporadically interbedded with thin lenses of "Bay Mud," consisting of a mixture of sand and silt (Environet, 2003).

Nineteen groundwater monitoring wells have been installed at the Site. Monitoring well construction details are included in Table 1.

In the eastern portion of the Site, groundwater has been measured in the existing monitoring wells at depths ranging from approximately 1 to 5 feet bgl and the groundwater flow direction is generally to the east, toward the Mad River Slough (Figure 2) (Environet, 2003). In the southwestern portion of the Site, groundwater was measured at a depth of approximately 2 feet bgl in a temporary monitoring well that was installed in April 2003 in the vicinity of the Truck Shop (MFG, 2003c). Based on the proximity of the Truck Shop to Humboldt Bay, the groundwater flow direction in this area is likely to the south-southeast, toward Humboldt Bay.



### **3.0 EVALUATION OF LATERAL HYDRAULIC GRADIENT**

#### **3.1 Water Level Measurements**

MFG measured the depth to water in all 19 monitoring wells and at the Mad River Slough measuring point on August 27, 2003 using an electronic water level probe. The depth to water measurements for August 27, 2003 are included in Table 2. The depth to water in the monitoring wells ranged from approximately 0.55 to 5.71 feet below the top of casing measuring points.

The depth to water in the tidally influenced Mad River Slough was measured from a surveyed measuring point on the railroad bridge adjacent to the Site. The water in the slough was measured at approximately 16.2 feet below the measuring point on the railroad bridge before the monitoring wells were measured and approximately 12.6 feet below the measuring point on the railroad bridge after the monitoring wells were measured (Table 2).

#### **3.2 Lateral Hydraulic Gradient**

Water level elevations were calculated using the depth-to-water measurements and the measuring point elevations of the wells. On August 27, 2003, the calculated water level elevations in the monitoring wells ranged from approximately 4.4 to 9.8 feet above the North American Vertical Datum of 1988 (NAVD 88) (Table 2). The water level elevations in the Mad River Slough were approximately 0.5 feet below the NAVD 88 and 3.1 feet above the NAVD 88 during the water level measurement activities on August 27, 2003.

The water level elevations from August 27, 2003 were plotted and contoured on a Site plan to interpret the potentiometric surface for shallow and deep groundwater. The interpreted potentiometric surface for shallow groundwater is shown on Figure 3. The potentiometric surface contours for shallow groundwater indicate that the lateral hydraulic gradient direction was generally to the southeast, east and northeast with a magnitude ranging from approximately 0.005 foot/foot near the sorter to approximately 0.02 foot/foot in the sawmill area. A groundwater depression exists in the vicinity of well MW-2 that is consistent with previous monitoring events (Environet, 2002, MFG, 2003a and MFG, 2003d). The interpreted potentiometric surface for deep groundwater is shown on Figure 4. The potentiometric surface

contours for deep groundwater indicate that the lateral hydraulic gradient direction was to the east-southeast and east-northeast with a magnitude of approximately 0.008 foot/foot.

## 4.0 GROUNDWATER SAMPLING AND ANALYSIS

### 4.1 Field Methods

On August 27, 2003, monitoring wells MW-1 through MW-19D were purged and sampled. Each monitoring well was purged using a dedicated, disposable Teflon<sup>®</sup> bailer to remove standing water in the well casing. The temperature, pH and specific conductance of the water were monitored during purging and were recorded in the field. Purging was complete when the field-measured parameters were relatively stable and at least three casing volumes of water had been removed from each well. Copies of the groundwater sampling record field forms are included in Appendix A.

After purging, the groundwater in each well was allowed to recover to at least 80 percent of the initial water column height before sampling, except for monitoring well MW-14, which only recovered to approximately 38 percent two and a half hours after purging. Groundwater samples were collected from the 19 monitoring wells using the dedicated, disposable Teflon<sup>®</sup> bailers. The initial bailer volume of water collected from each well during sampling was used to measure the temperature, pH, and specific conductance of the groundwater samples, except for well MW-14, where the final purge volume was used. Total dissolved solids (TDS) was also field-measured and recorded for each monitoring well at the time of sampling. The field parameters measured for the samples are provided in Table 3.

Groundwater samples collected from each monitoring well were placed in two 125-milliliter (ml) glass vials sealed with Teflon<sup>®</sup>-lined screw caps and a 1-quart plastic bottle 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-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 groundwater samples are included in Appendix B.

A duplicate groundwater sample, identified as MW-A, was collected from monitoring well MW-7. This sample was placed in two additional 125-ml glass vials sealed with a Teflon<sup>®</sup>-lined screw caps.

All non-disposable equipment used to measure water levels was washed in a solution of Liquinox<sup>®</sup> detergent and distilled water and rinsed three times with distilled water before each use. Water generated during groundwater sampling and equipment decontamination is temporarily stored at the Site in three labeled, Department of Transportation (DOT)-approved, 55-gallon drums pending disposal (Section 5.0).

## 4.2 Chemical Analysis Methods and Results

Groundwater samples collected from the monitoring wells were analyzed by Alpha Analytical Laboratories Inc. of Ukiah, California, a laboratory certified by the California Department of Health Services (DHS). The groundwater samples were analyzed for total dissolved solids (TDS) using EPA Method 160.1 and chlorinated phenols using the Canadian Pulp Method.

The chemical analysis results of the groundwater samples are summarized in Table 3 for TDS and Table 4 for chlorinated phenols. Copies of the laboratory report and chain-of-custody records are included in Appendix B.

The TDS of the groundwater samples analyzed by the laboratory ranged from 340 to 3,000 milligrams per liter (mg/L).

Chlorinated phenols were detected only in the groundwater sample from shallow monitoring well MW-7. The following analytes were detected in the groundwater sample from monitoring well MW-7 (sample MW-7 and duplicate sample MW-A, respectively): pentachlorophenol (PCP) at concentrations of 31,000 and 18,000 micrograms per liter ( $\mu\text{g/L}$ ); 2,3,5,6-tetrachlorophenol (TCP) at concentrations of 41 and 28  $\mu\text{g/L}$ ; 2,3,4,6-TCP at concentrations of 710 and 450  $\mu\text{g/L}$ ; and 2,3,4,5-TCP at concentrations of 39 and 26  $\mu\text{g/L}$  (Table 4).

Chlorinated phenols were not detected in any of the deep groundwater monitoring wells.

An interpreted isoconcentration contour map of dissolved PCP in shallow groundwater is presented in Figure 5. A map showing the distribution of dissolved PCP in deep groundwater (all sample results were “not detected”) is presented in Figure 6.

The relative percent differences (RPDs) for the chlorinated phenols detected in the duplicate sample pair from monitoring well MW-7 (samples MW-7 and MW-A) during this sampling event were 53 percent for PCP, 38 percent for 2,3,5,6-TCP, 45 percent for 2,3,4,6-TCP, and 40 percent for 2,3,4,5-TCP. To assess the reasons for this difference, we contacted the lab, and they indicated that one of the samples had more sediment. Potentially, PCP-containing sediment in the samples may have affected the quantification of PCP and resulted in elevated RPDs.

Chemical analysis results of groundwater samples collected at the Site during previous sampling events are also tabulated in this report and include the following constituents: dioxins and furans (Table 5); total organic carbon (TOC), chemical oxygen demand (COD) and chloride (Table 6); natural attenuation parameters (Table 7); and total metals (Table 8).



## **5.0 DISPOSAL OF INVESTIGATION-DERIVED WASTE**

The purge water and equipment wash water generated during the third quarter 2003 groundwater sampling event are being stored temporarily at the Site in three steel, 55-gallon drums (Section 4.1). The drums will be disposed of by SPI in accordance with applicable regulations.

The first and second quarter 2003 groundwater sampling events generated a total of three 55-gallon drums of purge water and wash water. The three 55-gallon drums of wastewater were removed from the Site on September 12, 2003 by Asbury Environmental Services and transported to Demenno/Kerdoon in Compton, California for treatment. Following treatment, the water is discharged to the Los Angeles Sanitation District. A copy of the Uniform Hazardous Waste Manifest for this shipment, which also included two additional 55-gallon drums associated with other investigations at the Site, is included in Appendix C.

## 6.0 MONITORING SCHEDULE

The fourth quarter 2003 groundwater monitoring event will be conducted in November 2003.

This groundwater monitoring event will consist of the following activities:

- Depth to groundwater will be measured in all 19 groundwater monitoring wells;
- Water levels will be measured at the Mad River Slough measuring point before and after the monitoring well measurements; and
- Groundwater samples will be collected from all 19 monitoring wells and analyzed for chlorinated phenols using the Canadian Pulp Method and total dissolved solids (TDS) using EPA Method 160.1.

The methods and results of the sampling event will be presented in a groundwater monitoring report. The report will include: a summary of the activities performed; a discussion of the methods and results; tables consisting of groundwater elevation and laboratory chemical analysis data; maps showing the locations of monitoring wells and the interpreted lateral hydraulic gradient of the shallow and deep groundwater; maps showing isoconcentration contours of PCP, if detected, in shallow and deep groundwater; and copies of field groundwater sampling records, laboratory analytical reports, and sample chain-of-custody records.

## 7.0 REFERENCES

Environet Consulting (Environet), 2002. *Results of the 3<sup>rd</sup> Quarter 2002 Groundwater Monitoring and Sampling Event for Sierra Pacific Industries – Arcata Division Sawmills, Arcata, California:* November 25.

Environet Consulting (Environet), 2003. *Results of the Remedial Investigation for Sierra Pacific Industries – Arcata Division Sawmills, Arcata, California:* January 30.

MFG, Inc., 2003a. *First Quarter 2003 Groundwater Monitoring Report, Sierra Pacific Industries, Arcata Division Sawmill, 2593 New Navy Base Road, Arcata, California:* June 9.

MFG, Inc., 2003b. *Interim Remedial Measures Report, Sierra Pacific Industries, Arcata Division Sawmill, 2593 New Navy Base Road, Arcata, California:* June 10.

MFG, Inc., 2003c. *Waste Oil Underground Storage Tank Investigation and Closure Report, Sierra Pacific Industries, Arcata Division Sawmill, 2593 New Navy Base Road, Arcata, California:* June 10.

MFG, Inc., 2003d. *Second Quarter 2003 Groundwater Monitoring Report, Sierra Pacific Industries, Arcata Division Sawmill, 2593 New Navy Base Road, Arcata, California:* August 7.

## **TABLES**

**TABLE 1**

**MONITORING WELL CONSTRUCTION DETAILS <sup>1</sup>**

Sierra Pacific Industries  
Arcata Division Sawmill  
Arcata, California

WELL NO.	DATE INSTALLED	TOTAL BORING DEPTH (ft bgl)	TOTAL WELL DEPTH (ft bgl)	WELL DIAMETER (inches)	SCREENED INTERVAL (ft bgl)	SCREEN SLOT SIZE (inches)	FILTER PACK INTERVAL (ft bgl)	BENTONITE SEAL INTERVAL (ft bgl)	SURFACE SEAL INTERVAL <sup>2</sup> (ft bgl)
MW-1	5-Mar-02	8.0	8.0	2	2.0 – 8.0	0.010	1.5 – 8.0	1.0 – 1.5	0 – 1.0
MW-2	5-Mar-02	9.0	8.0	2	2.0 – 8.0	0.010	1.5 – 9.0	1.0 – 1.5	0 – 1.0
MW-3	5-Mar-02	8.5	8.0	2	2.0 – 8.0	0.010	1.5 – 8.5	1.0 – 1.5	0 – 1.0
MW-4	5-Mar-02	8.0	8.0	2	2.0 – 8.0	0.010	1.5 – 8.0	1.0 – 1.5	0 – 1.0
MW-5	7-Mar-02	8.0	8.0	2	2.0 – 8.0	0.010	1.5 – 8.0	1.0 – 1.5	0 – 1.0
MW-6	7-Mar-02	8.0	8.0	2	2.0 – 8.0	0.010	1.5 – 8.0	1.0 – 1.5	0 – 1.0
MW-7	7-Mar-02	8.0	8.0	2	2.0 – 8.0	0.010	1.5 – 8.0	1.0 – 1.5	0 – 1.0
MW-8	8-Mar-02	8.0	8.0	2	2.0 – 8.0	0.010	1.5 – 8.0	1.0 – 1.5	0 – 1.0
MW-9	8-Mar-02	8.0	8.0	2	2.0 – 8.0	0.010	1.5 – 8.0	1.0 – 1.5	0 – 1.0
MW-10	11-Nov-02	9.5	8.0	2	2.0 – 8.0	0.010	1.5 – 9.5	1.0 – 1.5	0 – 1.0
MW-11	12-Nov-02	8.5	8.0	2	2.0 – 8.0	0.010	1.5 – 8.5	1.0 – 1.5	0 – 1.0
MW-12	12-Nov-02	9.5	8.0	2	2.0 – 8.0	0.010	1.5 – 9.5	1.0 – 1.5	0 – 1.0
MW-13D	12-Nov-02	21.0	20.0	2	15.0 – 20.0	0.010	13.5 – 21.0	12.0 – 13.5	0 – 12.0
MW-14	13-Nov-02	8.0	8.0	2	2.0 – 8.0	0.010	1.5 – 8.0	1.0 – 1.5	0 – 1.0
MW-15D	13-Nov-02	21.0	20.0	2	15.0 – 20.0	0.010	14.0 – 21.0	12.0 – 14.0	0 – 12.0
MW-16D	14-Nov-02	21.5	20.0	2	15.0 – 20.0	0.010	14.0 – 21.5	12.0 – 14.0	0 – 12.0
MW-17	14-Nov-02	9.0	8.0	2	2.0 – 8.0	0.010	1.5 – 9.0	1.0 – 1.5	0 – 1.0
MW-18	13-Nov-02	9.5	8.0	4	2.0 – 8.0	0.010	1.5 – 9.5	1.0 – 1.5	0 – 1.0
MW-19D	14-Nov-02	21.5	20.0	2	15.0 – 20.0	0.010	14.0 – 21.0	12.0 – 14.0	0 – 12.0

NOTES:

ft bgl Feet below ground level.

1 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, 2002 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 Division Sawmills, Arcata, California*, dated January 30, 2003, prepared by Environet Consulting.

2 Surface seal interval includes the concrete surface seal and neat cement sanitary seal.



**TABLE 2**

**SUMMARY OF WATER LEVEL MEASUREMENTS**

Sierra Pacific Industries  
 Arcata Division Sawmill  
 Arcata, California

WELL NO.	MEASUREMENT <sup>1</sup> DATE	MP ELEVATION <sup>2</sup> (ft NAVD 88)	DEPTH TO WATER (ft bMP)	WATER LEVEL ELEVATION (ft NAVD 88)
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
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
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
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

**TABLE 2**

**SUMMARY OF WATER LEVEL MEASUREMENTS**

Sierra Pacific Industries  
 Arcata Division Sawmill  
 Arcata, California

WELL NO.	MEASUREMENT <sup>1</sup> DATE	MP ELEVATION <sup>2</sup> (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
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
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
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
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

**TABLE 2****SUMMARY OF WATER LEVEL MEASUREMENTS**

Sierra Pacific Industries  
Arcata Division Sawmill  
Arcata, California

WELL NO.	MEASUREMENT <sup>1</sup> DATE	MP ELEVATION <sup>2</sup> (ft NAVD 88)	DEPTH TO WATER (ft bMP)	WATER LEVEL ELEVATION (ft NAVD 88)
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
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
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
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
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
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
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

**TABLE 2**

**SUMMARY OF WATER LEVEL MEASUREMENTS**

Sierra Pacific Industries  
 Arcata Division Sawmill  
 Arcata, California

WELL NO.	MEASUREMENT <sup>1</sup> DATE	MP ELEVATION <sup>2</sup> (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
	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
MW-18	02-Dec-02	9.53	0.94	8.59
	18-Mar-03	9.53	0.52	9.01
	31-Mar-03 <sup>3</sup>	9.53	--	--
	21-May-03	9.53	0.05	9.48
	27-Aug-03	9.53	0.55	8.98
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
SLOUGH	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

NOTES:

- ft NAVD 88      Feet above North American Vertical Datum of 1988.
- ft bMP          Feet below measuring point.
- Not measured.
- SLOUGH        Mad River Slough measuring point on railroad bridge. Water level measurements are obtained before and after the water level measurements in the monitoring wells.
- 1.                Data prior to March 18, 2003 were obtained from *Results of the Remedial Investigation for Sierra Pacific Industries - Arcata Division Sawmills, Arcata, California*, dated January 30, 2003, prepared by Environet Consulting.
- 2.                Monitoring wells MW-10 through MW-19D were surveyed by Omsberg & Company on January 27, 2003.
- 3.                Water level was above the top of casing measuring point.

**TABLE 3****SUMMARY OF WATER QUALITY PARAMETERS**

Sierra Pacific Industries  
Arcata Division Sawmill  
Arcata, California

WELL NO.	DATE SAMPLED	SPECIFIC				
		TEMPERATURE <sup>1</sup> (°C)	CONDUCTANCE <sup>1</sup> (µmohs/cm)	pH <sup>1</sup> (std. units)	TDS <sup>1</sup> (mg/L)	TDS <sup>2</sup> (mg/L)
MW-1	20-Mar-03	14	2,600	6.5	--	--
	22-May-03	14	2,700	6.7	--	1,400
	27-Aug-03	18	2,500	6.7	1,800	1,400
MW-2	20-Mar-03	13	2,100	6.2	--	--
	22-May-03	14	1,700	6.4	1,100	860
	27-Aug-03	18	1,500	6.6	1,100	760
MW-3	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-4	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-5	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-6	20-Mar-03	11	950	6.6	--	--
	22-May-03	14	1,000	6.3	620	430
	27-Aug-03	17	890	6.4	620	410
MW-7	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-8	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-9	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-10	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-11	20-Mar-03	14	870	6.4	--	--
	21-May-03	17	890	6.4	560	460
	27-Aug-03	23	870	6.2	600	440



**TABLE 3**

**SUMMARY OF WATER QUALITY PARAMETERS**

Sierra Pacific Industries  
Arcata Division Sawmill  
Arcata, California

WELL NO.	DATE SAMPLED	SPECIFIC				
		TEMPERATURE <sup>1</sup> (°C)	CONDUCTANCE <sup>1</sup> (µmhos/cm)	pH <sup>1</sup> (std. units)	TDS <sup>1</sup> (mg/L)	TDS <sup>2</sup> (mg/L)
MW-12	18-Mar-03	15	830	6.3	--	--
	21-May-03	18	840	6.1	--	460
	27-Aug-03	23	870	6.2	600	480
MW-13D	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-14	20-Mar-03	14	3,200	6.7	--	--
	22-May-03	15	3,400	6.6	--	2,100
	27-Aug-03 <sup>3</sup>	20	3,600	6.6	2,300	1,900
MW-15D	20-Mar-03	13	1,300	6.8	--	--
	22-May-03	13	1,300	6.8	--	800
	27-Aug-03	14	1,300	6.3	900	810
MW-16D	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-17	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-18	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-19D	20-Mar-03	16	810	6.7	--	--
	22-May-03	16	860	6.6	520	480
	27-Aug-03	17	810	6.5	560	410

NOTES:

- °C        Degrees Celsius.
- µmhos/cm    Micromhos per centimeter at 25 °C.
- mg/L        Milligrams per liter.
- Not analyzed.
- TDS        Total dissolved solids.
- 1.         Field-measured parameter.
- 2.         Laboratory analysis using EPA Method 160.1.
- 3.         Measurements obtained from final purge volume.

**TABLE 4**

**SUMMARY OF CHEMICAL ANALYSES OF GROUNDWATER SAMPLES  
FROM MONITORING WELLS FOR CHLORINATED PHENOLS**

Sierra Pacific Industries  
Arcata Division Sawmill  
Arcata, California

WELL NO.	DATE SAMPLED <sup>1</sup>	PCP (µg/L)	2,4,6-TRI- CHLORO- PHENOL (µg/L)	2,3,5,6-TCP (µg/L)	2,3,4,6-TCP (µg/L)	2,3,4,5-TCP (µg/L)
MW-1	14-Mar-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	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
	03-Oct-02 <sup>2</sup>	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	02-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
MW-2	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
	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
MW-3	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
	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
MW-4	14-Mar-02	8.6	< 1.0	< 1.0	< 1.0	< 1.0
	18-Jul-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	16-Sep-02	5.7	< 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
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-5	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
	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
	20-Mar-03 <sup>3</sup>	< 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

**TABLE 4**

**SUMMARY OF CHEMICAL ANALYSES OF GROUNDWATER SAMPLES  
FROM MONITORING WELLS FOR CHLORINATED PHENOLS**

Sierra Pacific Industries  
Arcata Division Sawmill  
Arcata, California

WELL NO.	DATE SAMPLED <sup>1</sup>	PCP (µg/L)	2,4,6-TRI- CHLORO- PHENOL (µg/L)	2,3,5,6-TCP (µg/L)	2,3,4,6-TCP (µg/L)	2,3,4,5-TCP (µg/L)
MW-6	14-Mar-02	4.5	< 1.0	< 1.0	< 1.0	< 1.0
	18-Jul-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	16-Sep-02	6.3	< 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
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-7	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 <sup>4</sup>	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 <sup>3</sup>	16,000	< 1.0	< 1.0	400	< 100
	22-May-03 <sup>5</sup>	14,000	< 1.0	< 1.0	400	< 100
	27-Aug-03	31,000	< 1.5	41	710	39
27-Aug-03 <sup>3</sup>	18,000	< 1.0	28	450	26	
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
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
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

**TABLE 4**

**SUMMARY OF CHEMICAL ANALYSES OF GROUNDWATER SAMPLES  
FROM MONITORING WELLS FOR CHLORINATED PHENOLS**

Sierra Pacific Industries  
Arcata Division Sawmill  
Arcata, California

WELL NO.	DATE SAMPLED <sup>1</sup>	PCP (µg/L)	2,4,6-TRI- CHLORO- PHENOL (µg/L)	2,3,5,6-TCP (µg/L)	2,3,4,6-TCP (µg/L)	2,3,4,5-TCP (µg/L)
MW-11	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
	27-Aug-03	< 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
MW-13D	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
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
MW-15D	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
MW-16D	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
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-17	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
MW-18	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

**TABLE 4**

**SUMMARY OF CHEMICAL ANALYSES OF GROUNDWATER SAMPLES  
FROM MONITORING WELLS FOR CHLORINATED PHENOLS**

Sierra Pacific Industries  
Arcata Division Sawmill  
Arcata, California

WELL NO.	DATE SAMPLED <sup>1</sup>	PCP (µg/L)	2,4,6-TRI- CHLORO- PHENOL (µg/L)	2,3,5,6-TCP (µg/L)	2,3,4,6-TCP (µg/L)	2,3,4,5-TCP (µg/L)
MW-19D	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

NOTES:

PCP Pentachlorophenol.

TCP Tetrachlorophenol.

µg/L Micrograms per liter.

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

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

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

3. Duplicate sample.

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

5. Filtered sample.

Chlorinated phenols were analyzed using the Canadian Pulp Method.

TABLE 5

SUMMARY OF CHEMICAL ANALYSES OF GROUNDWATER SAMPLES FROM MONITORING WELL MW-7 FOR DIOXINS AND FURANS

Sierra Pacific Industries  
Arcata Division Sawmill  
Arcata, California

WELL NO.	DATE SAMPLED	DIOXINS								FURANS								TOTAL FURANS <sup>1</sup>	TOTAL <sup>2,3</sup> TEQ (pg/L)	PERCENT 2,3,7,8-TCDD <sup>4</sup> (%)		
		2,3,7,8-TCDD (pg/L)	1,2,3,7,8-PeCDD (pg/L)	1,2,3,4,7,8-HxCDD (pg/L)	1,2,3,6,7,8-HxCDD (pg/L)	1,2,3,7,8,9-HxCDD (pg/L)	1,2,3,4,6,7,8-HpCDD (pg/L)	OCDD (pg/L)	TOTAL DIOXINS <sup>1</sup> (pg/L)	2,3,7,8-TCDF (pg/L)	1,2,3,7,8-PeCDF (pg/L)	2,3,4,7,8-PeCDF (pg/L)	1,2,3,4,7,8-HxCDF (pg/L)	1,2,3,6,7,8-HxCDF (pg/L)	1,2,3,4,6,7,8-HpCDF (pg/L)	OCDF (pg/L)	TOTAL FURANS <sup>1</sup> (pg/L)					
MW-7	16-Sep-02 <sup>5</sup>	<3.12	<3.45	<5.82	<6.31	<5.32	32.4	144	194	<3.36	<4.21	<4.59	<2.38	<2.81	<2.86	<2.99	6.59	<6.67	22.2	103.63 J	0.407	0
	22-May-03	<1.62	<4.05	22.6 J	<3.83	<3.10	30.2	449	550.5 J	<1.26	<2.04	<2.02	<1.02	<1.17	<1.19	<1.15	4.97 J	<0.807	20.7 J	69.14 J	2.66	0
	22-May-03 <sup>6</sup>	<1.27	<2.00	7.89 J	<2.47	<1.97	16.3 J	231	281 J	<1.01	<1.66	<1.64	<1.09	<1.28	<1.40	<1.67	2.09 J	<1.19	7.05 J	39.68 J	0.996	0
	TEF <sup>7</sup> :	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:

- 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 equivalency.
- pg/L Picograms per liter.
- NA Not applicable.
- < Target analyte was not detected at or above the laboratory reporting limit shown.
- J Analyte concentration was below the calibration range.
- TEF Toxicity equivalency factor (unitless).
- 1. Total concentration includes target and non-target analytes.
- 2. Calculated by multiplying the congener concentration by its TEF.
- 3. When an analyte concentration was not detected, it was assigned a concentration of 0 pg/L to calculate TEQ.
- 4. Calculated by dividing the concentration of 2, 3, 7, 8-TCDD by the Total TEQ. When the concentration of 2, 3, 7, 8-TCDD was not detected, it was assigned a concentration of 0 pg/L for this calculation.
- 5. Data were obtained from *Results of the 3rd Quarter 2002 Groundwater Monitoring and Sampling Event for Sierra Pacific Industries - Arcata Division Sawmills, Arcata, California*, dated November 25, 2002, prepared by Environet Consulting.
- 6. Filtered sample.
- 7. World Health Organization, 1997 (WHO-97) adopted from F.X.R. van Leeuwen, 1997.

Dioxins and furans were analyzed using EPA Method 1613.

**TABLE 6****SUMMARY OF CHEMICAL ANALYSES OF GROUNDWATER SAMPLES FROM MONITORING WELLS FOR TOC, COD AND CHLORIDE**

Sierra Pacific Industries  
Arcata Division Sawmill  
Arcata, California

WELL NO.	DATE SAMPLED <sup>1</sup>	TOC (mg/L)	COD (mg/L)	Chloride (mg/L)
MW-1	25-Mar-02	45.7	110	520
	22-May-03	--	--	12
MW-2	25-Mar-02	31.1	100	200
MW-3	25-Mar-02	20.0	57	41
MW-4	25-Mar-02	17.1	47	32
MW-5	25-Mar-02	9.04	28	16
MW-6	25-Mar-02	14.6	47	40
MW-7	25-Mar-02	23.2	57	73
MW-8	25-Mar-02	20.1	47	23
MW-9	25-Mar-02	12.3	47	37

**NOTES:**

TOC Total organic carbon. Analyzed using EPA Method 415.1.

COD Chemical oxygen demand. Analyzed using EPA Method 410.2.

mg/L Milligrams per liter.

-- Not analyzed.

1. March 2002 data were obtained from the laboratory report provided in the *Report on Recent Hydrogeologic Investigation at Sierra Pacific Industries, Arcata Division Sawmill, 2293 Samoa Road, Arcata, California*, dated April 19, 2002, prepared by Environet Consulting.

Chloride was analyzed using EPA Method 300.0.

**TABLE 7**

**SUMMARY OF CHEMICAL ANALYSES OF GROUNDWATER SAMPLES FROM MONITORING WELLS FOR NATURAL ATTENUATION PARAMETERS**

Sierra Pacific Industries  
Arcata Division Sawmill  
Arcata, California

WELL NO.	DATE SAMPLED	CONDUCTIVITY ( $\mu$ S/cm)	TOTAL													
			ALKALINITY (mg CaCO <sub>3</sub> /L)	FREE CO <sub>2</sub> (mg CO <sub>2</sub> /L)	NO <sub>3</sub> <sup>-1</sup> (mg/L)	SO <sub>4</sub> <sup>-2</sup> (mg/L)	Mn (mg/L)	Fe <sup>+2</sup> (mg/L)	Ca (mg/L)	Mg (mg/L)	ORP (mV)	TSS (mg/L)	TDS (mg/L)	DO <sup>2</sup> (mg/L)	pH (std. units)	METHANE (mg/L)
MW-3	14-Jan-03 <sup>1</sup>	1,050	420	--	--	--	5.3	32	59	49	130	220	550	9.3	6.38	--
MW-7	14-Jan-03 <sup>1</sup>	660	350	280	<0.50	<2.0	2.9	35	30	50	190	950	560	8.6	6.45	50

NOTES:

CO<sub>2</sub> Carbon dioxide. Free CO<sub>2</sub> was calculated using SM 4500 CO<sub>2</sub>-D.  
 NO<sub>3</sub><sup>-1</sup> Nitrate. Analyzed using EPA Method 300.0.  
 SO<sub>4</sub><sup>-2</sup> Sulfate. Analyzed using EPA Method 300.0.  
 Mn Manganese. Analyzed using EPA Method 6010.  
 Fe<sup>+2</sup> Ferrous iron. Analyzed using EPA Method 3500.  
 Ca Calcium. Analyzed using EPA Method 6010.  
 Mg Magnesium. Analyzed using EPA Method 6010.  
 ORP Oxidation reduction potential. Analyzed using SM 2580.  
 TSS Total suspended solids. Analyzed using SM 2540 D.  
 TDS Total dissolved oxygen. Analyzed using SM 2540 C.  
 DO Dissolved oxygen. Analyzed using SM 4500-O, G.

$\mu$ S/cm Microsiemens per centimeter.  
 mg CaCO<sub>3</sub>/L Milligrams of calcium carbonate per liter.  
 mg CO<sub>2</sub>/L Milligrams of carbon dioxide per liter.

mg/L Milligrams per liter.  
 mV Millivolts.

-- Not analyzed.

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

1. Data were obtained from *Results of the Remedial Investigation for Sierra Pacific Industries - Arcata Division Sawmills, Arcata, California*, dated January 30, 2003, prepared by Environet Consulting.
2. Laboratory measurement.

Conductivity was analyzed using SM 2510.  
 Total alkalinity was analyzed using SM 2320B  
 pH was analyzed using SM 4500.  
 Methane was analyzed using modified EPA Method 8015.



**TABLE 8**

**SUMMARY OF CHEMICAL ANALYSES OF GROUNDWATER SAMPLES FROM  
MONITORING WELLS FOR TOTAL METALS**

Sierra Pacific Industries  
Arcata Division Sawmill  
Arcata, California

WELL NO.	DATE SAMPLED <sup>1</sup>	Sb (mg/L)	As (mg/L)	Ba (mg/L)	Be (mg/L)	Cd (mg/L)	Cr (mg/L)	Co (mg/L)	Cu (mg/L)	Pb (mg/L)	Hg (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/L)	Ag (mg/L)	Tl (mg/L)	V (mg/L)	Zn (mg/L)
MW-7	14-Jan-03	< 0.15	< 0.2	< 0.05	< 0.01	< 0.01	< 0.01	< 0.05	< 0.05	< 0.05	< 0.0002	< 0.05	< 0.05	< 0.2	< 0.01	< 0.4	< 0.05	< 0.05

NOTES:

Sb	Antimony	Hg	Mercury
As	Arsenic	Mo	Molybdenum
Ba	Barium	Ni	Nickel
Be	Beryllium	Se	Selenium
Cd	Cadmium	Ag	Silver
Cr	Chromium	Tl	Thallium
Co	Cobalt	V	Vanadium
Cu	Copper	Zn	Zinc

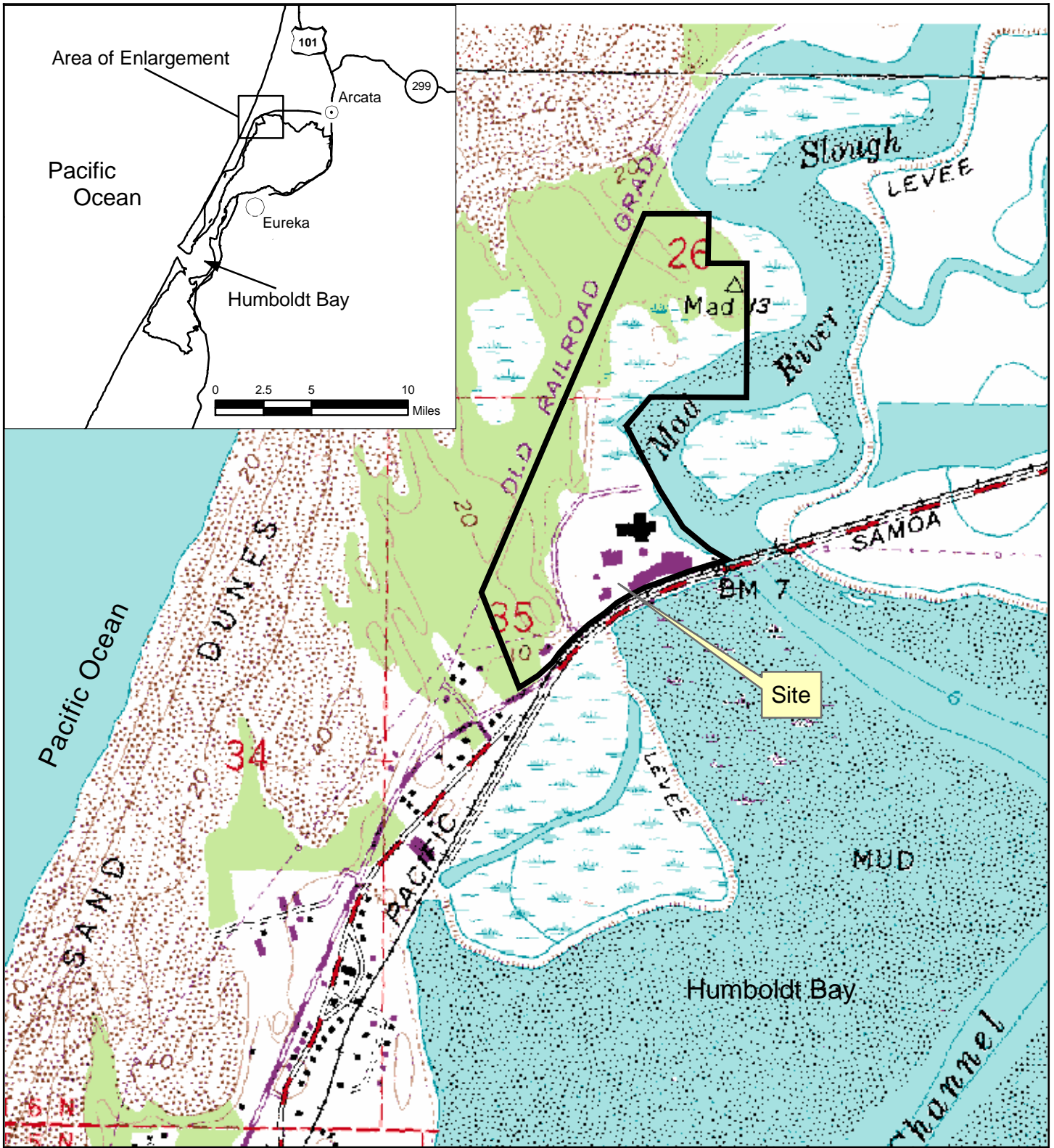
mg/L Milligrams per liter.

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

1. Data were obtained from *Results of the Remedial Investigation for Sierra Pacific Industries - Arcata Division Sawmills, Arcata, California*, dated January 30, 2003, prepared by Environet Consulting.

Metals were analyzed using EPA Methods 6010 and 7470.

## **FIGURES**



Source: USGS 24k Digital Raster Graph, Eureka Quadrangle, Year - 1972

— Site Boundary

0 500 1,000 2,000

Feet

Approximate Scale



**LOCATION MAP**

Sierra Pacific Industries  
Arcata Division Sawmill  
Arcata, California

Project No. 030229

By: I.Pryor

Date: 6/6/03

Checked: O.Plocher

**Figure 1**

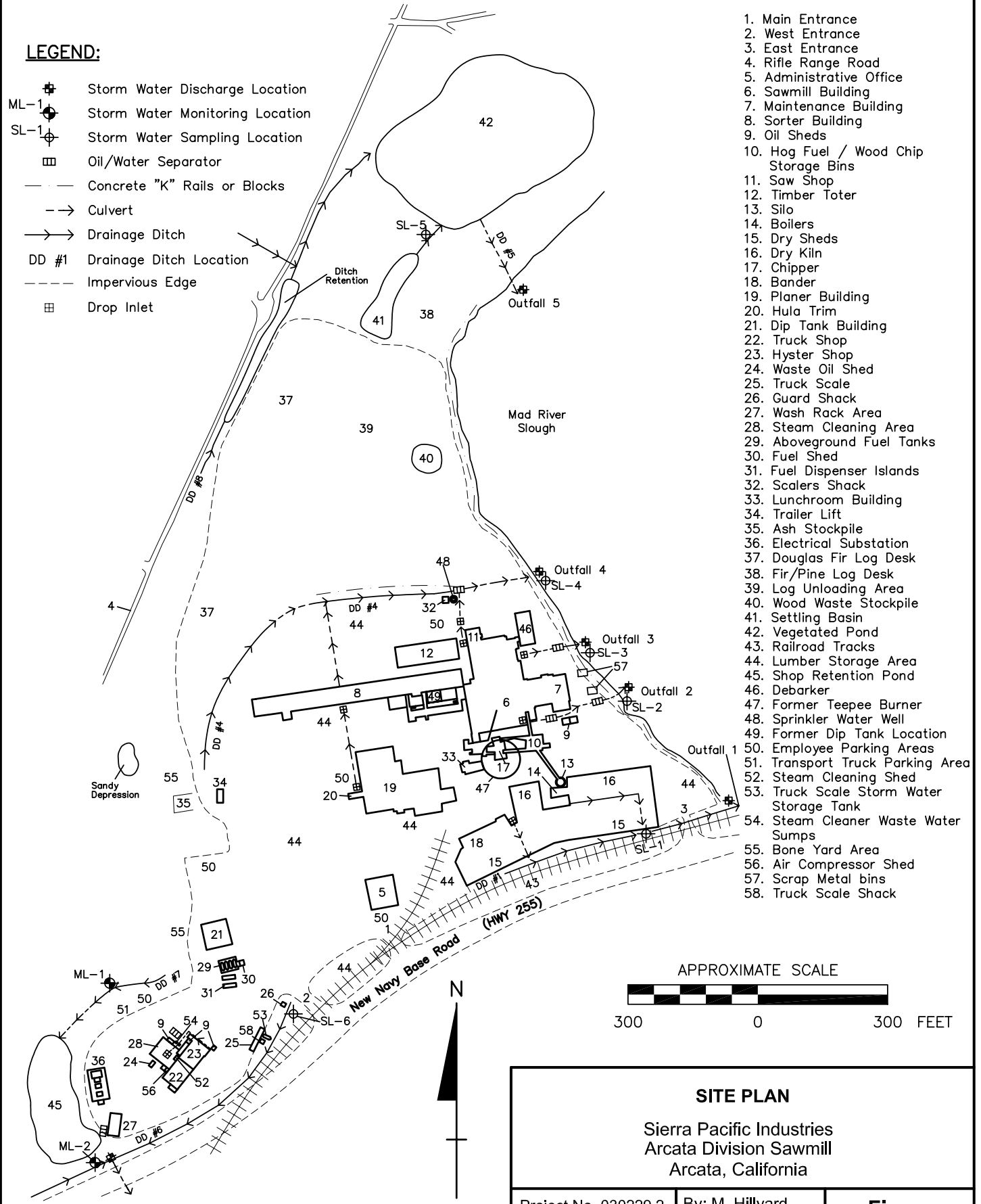
**MFG, Inc.**

consulting scientists and engineers

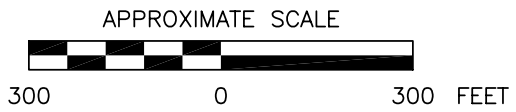
**LEGEND:**

- ⊕ Storm Water Discharge Location
- ML-1 ⊕ Storm Water Monitoring Location
- SL-1 ⊕ Storm Water Sampling Location
- ▣ Oil/Water Separator
- Concrete "K" Rails or Blocks
- > Culvert
- > Drainage Ditch
- DD #1 Drainage Ditch Location
- - - Impervious Edge
- ⊕ Drop Inlet

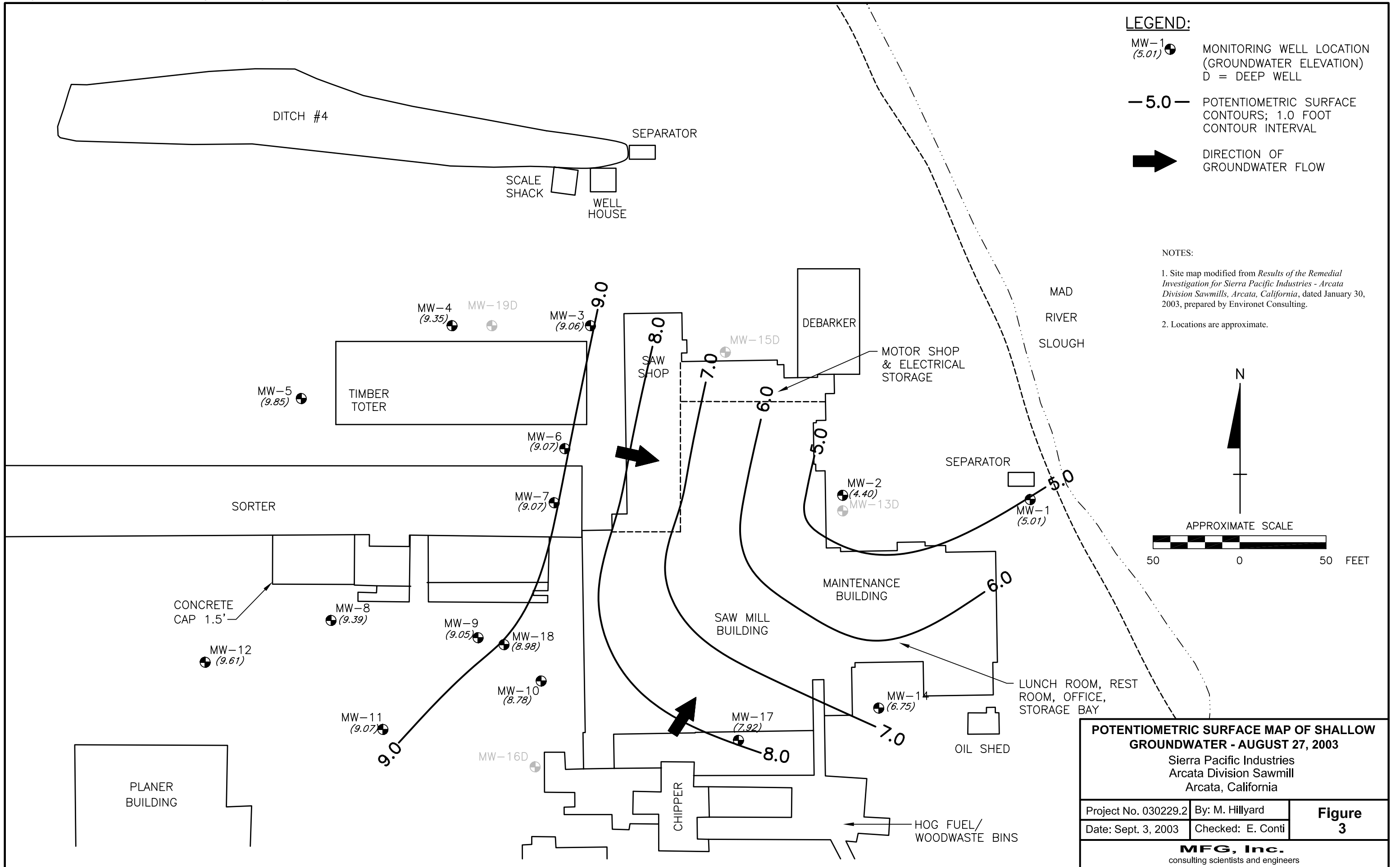
1. Main Entrance
2. West Entrance
3. East Entrance
4. Rifle Range Road
5. Administrative Office
6. Sawmill Building
7. Maintenance Building
8. Sorter Building
9. Oil Sheds
10. Hog Fuel / Wood Chip Storage Bins
11. Saw Shop
12. Timber Toter
13. Silo
14. Boilers
15. Dry Sheds
16. Dry Kiln
17. Chipper
18. Bander
19. Planer Building
20. Hula Trim
21. Dip Tank Building
22. Truck Shop
23. Hyster Shop
24. Waste Oil Shed
25. Truck Scale
26. Guard Shack
27. Wash Rack Area
28. Steam Cleaning Area
29. Aboveground Fuel Tanks
30. Fuel Shed
31. Fuel Dispenser Islands
32. Scalers Shack
33. Lunchroom Building
34. Trailer Lift
35. Ash Stockpile
36. Electrical Substation
37. Douglas Fir Log Desk
38. Fir/Pine Log Desk
39. Log Unloading Area
40. Wood Waste Stockpile
41. Settling Basin
42. Vegetated Pond
43. Railroad Tracks
44. Lumber Storage Area
45. Shop Retention Pond
46. Debarker
47. Former Teepee Burner
48. Sprinkler Water Well
49. Former Dip Tank Location
50. Employee Parking Areas
51. Transport Truck Parking Area
52. Steam Cleaning Shed
53. Truck Scale Storm Water Storage Tank
54. Steam Cleaner Waste Water Sumps
55. Bone Yard Area
56. Air Compressor Shed
57. Scrap Metal bins
58. Truck Scale Shack

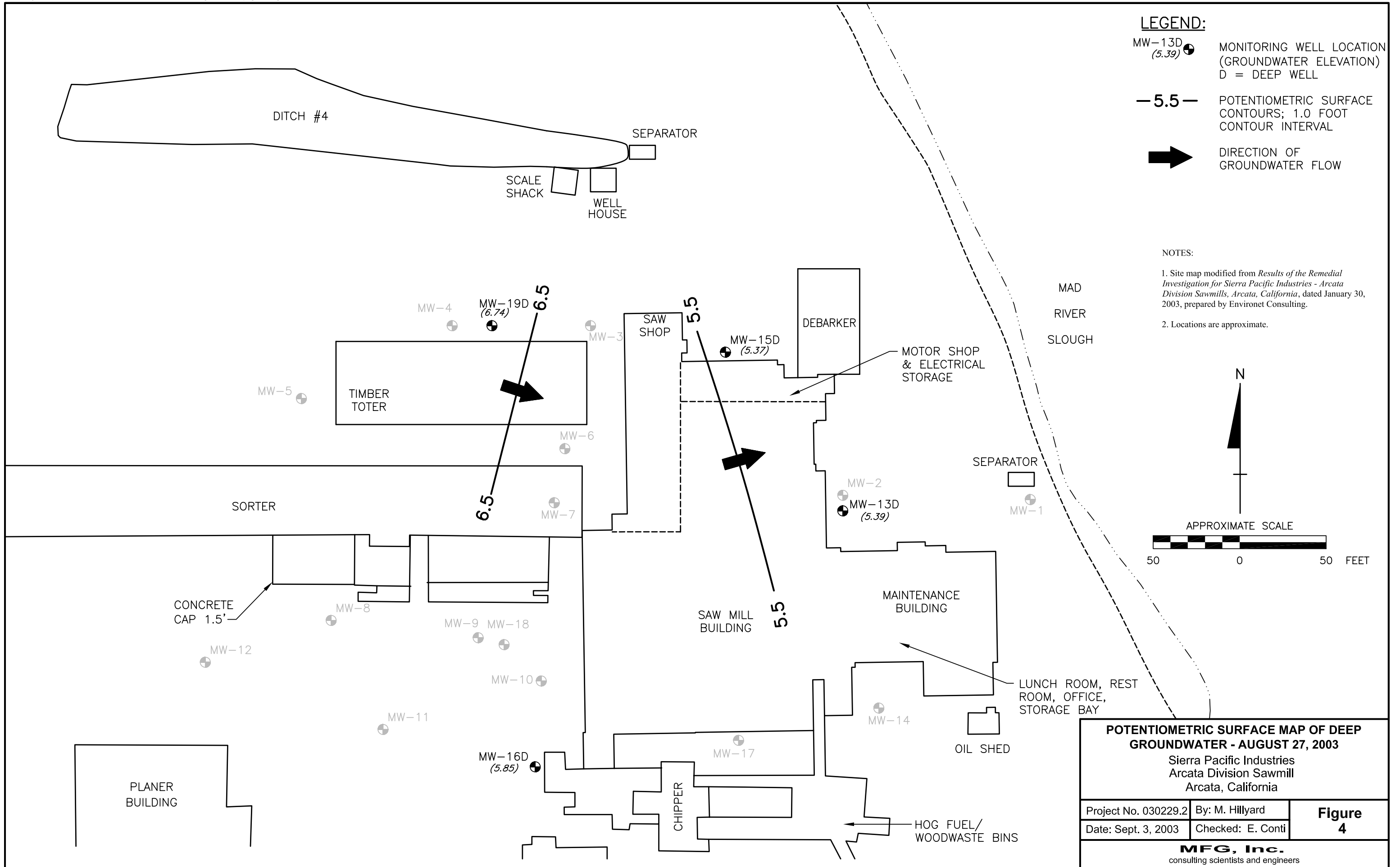


**NOTES:**  
 Site plan modified from Plate 2B in *Results of the Remedial Investigation for Sierra Pacific Industries - Arcata Division Sawmills, Arcata, California*, dated January 30, 2003, prepared by Environet Consulting. Building dimensions and locations are approximate.



<b>SITE PLAN</b>		
Sierra Pacific Industries Arcata Division Sawmill Arcata, California		
Project No. 030229.2	By: M. Hillyard	<b>Figure 2</b>
Date: October 9, 2003	Checked: E. Conti	
<b>MFG, Inc.</b> consulting scientists and engineers		



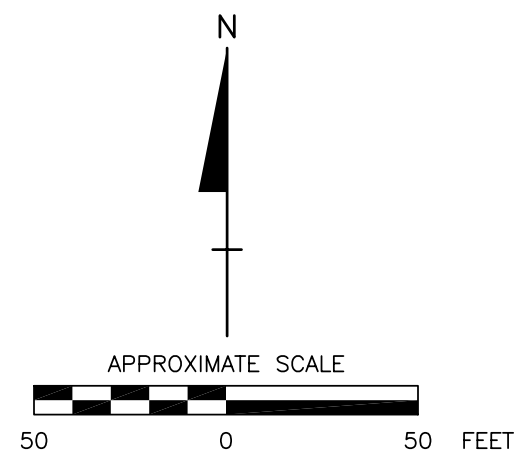


**LEGEND:**

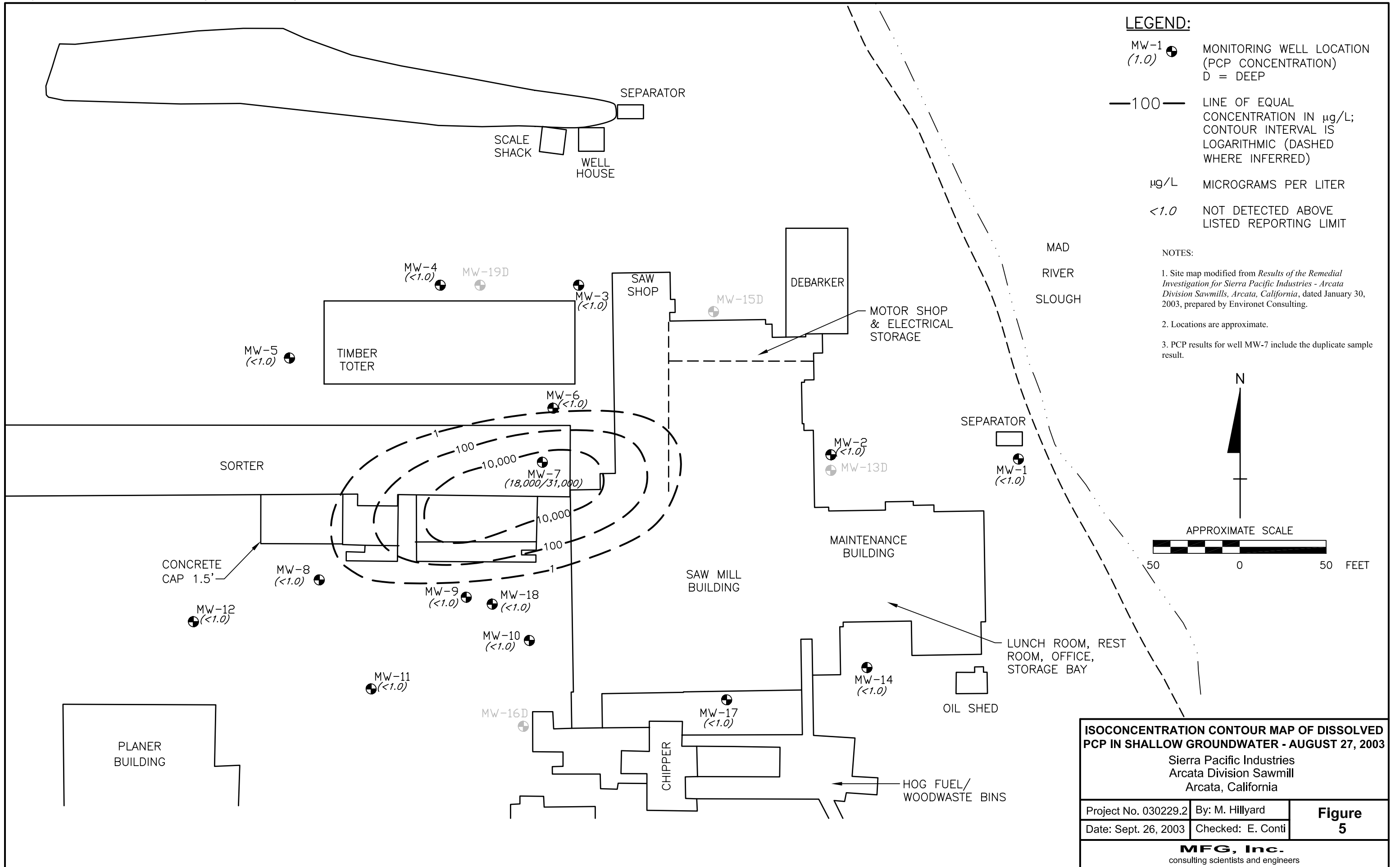
- MW-13D (5.39) MONITORING WELL LOCATION (GROUNDWATER ELEVATION) D = DEEP WELL
- 5.5 - POTENTIOMETRIC SURFACE CONTOURS; 1.0 FOOT CONTOUR INTERVAL
- DIRECTION OF GROUNDWATER FLOW

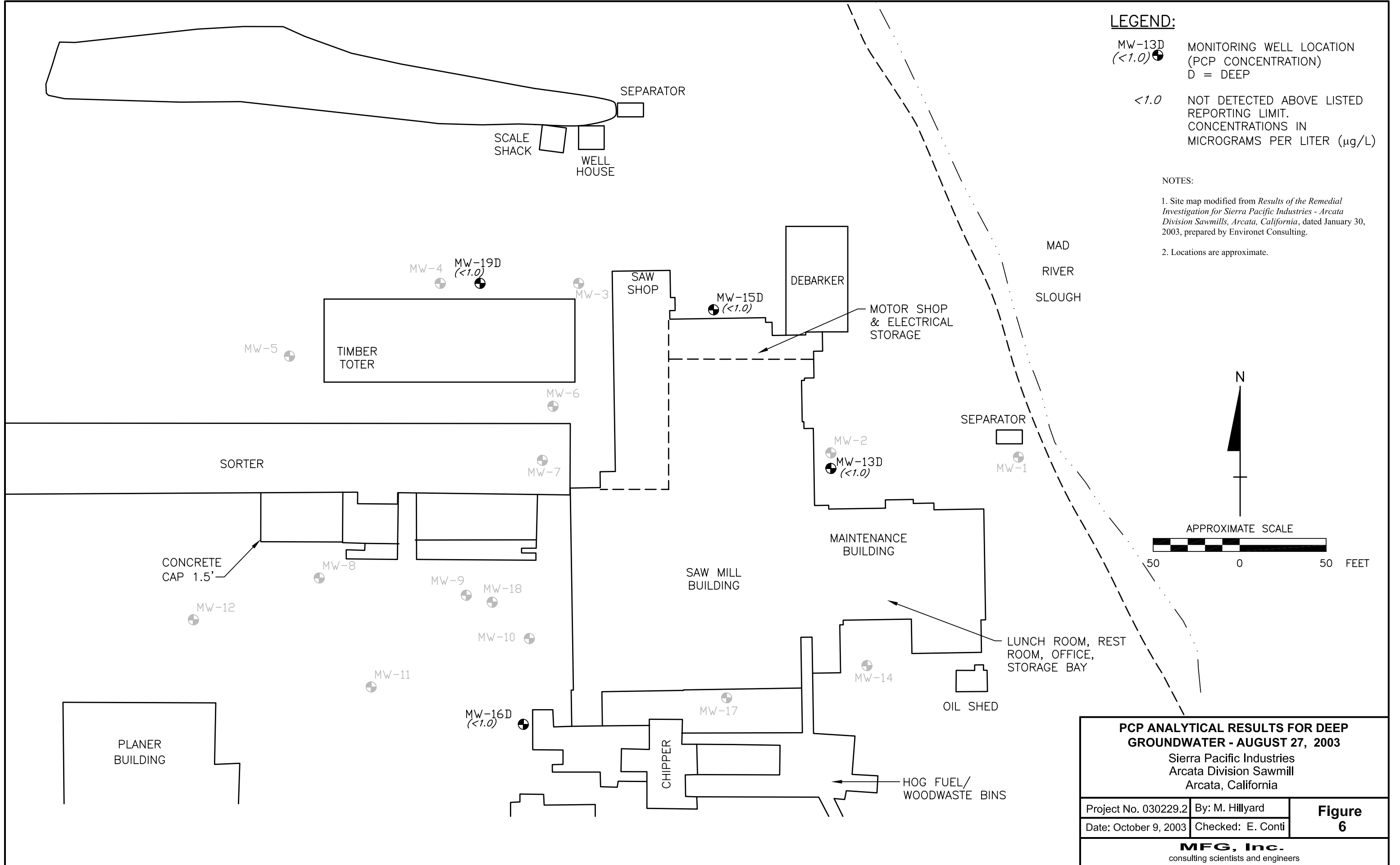
**NOTES:**

1. Site map modified from Results of the Remedial Investigation for Sierra Pacific Industries - Arcata Division Sawmills, Arcata, California, dated January 30, 2003, prepared by Environet Consulting.
2. Locations are approximate.



<b>POTENTIOMETRIC SURFACE MAP OF DEEP GROUNDWATER - AUGUST 27, 2003</b>		
Sierra Pacific Industries Arcata Division Sawmill Arcata, California		
Project No. 030229.2	By: M. Hillyard	<b>Figure 4</b>
Date: Sept. 3, 2003	Checked: E. Conti	
<b>MFG, Inc.</b> consulting scientists and engineers		







**APPENDIX A**

**Groundwater Sampling Record Field Forms**

# GROUNDWATER SAMPLING RECORD

SAMPLE NUMBER: MW-1

Project No: 030229.2 Project Name: SPI Arcata Sawmill

Date 8/27/03

Sampling Location (well ID, etc.): MW-1  
 Sampled by: Matt Hillyard  
 Measuring Point (MP) of Well: 9.56  
 Screened Interval (ft.BGL): 2.0-8.0  
 Filter Pack Interval (ft.BGL): 1.5-8.0  
 Casing Stick-Up/Down (ft.):

Starting Water Level (ft. BMP): 4.55  
 Total Depth (ft. BMP): 7.65 Water Column Height (ft.): 3.1  
 Casing Diameter (In. ID): 2-Inch Multiplication Factor: 0.163  
 Casing Volume (gal.): 45 2X: 1.0 3X: 1.5 4X  
 Water Level (ft.BMP) at End of Purge: 4.88  
 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.  
 Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer  
 Disposal of Discharged Water: 55-Gallon Drum

### INSTRUMENTS (indicate make, model, Id.):

Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter  
 pH Meter: Ultrameter Field Calibration: pH 4, 7, 10  
 Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos  
 Other: TDS Ultrameter Field Calibration: 300, 1500 ppm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data			Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm)	Color	Turbidity & Sediment		
					Field Temp. @ 25 °C.				
132	0		18.9	7.14	2450	lt yellow	clear		
133	1		18.9	6.82	2480	gray	cloudy		
134	1.5		18.3	6.76	2480	"	"		
135	2.0		18.3	6.73	2480	"	TDS 184 ppm		Sample

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 4.88 Recovery %: 89 Sample Intake Depth (ft. BMP):

Bottles Collected				Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
Time	Volume	Composition (glass, plastic)	Quantity				
1:36	125ml	glass	2	N	-	PCR/TCP	
1:36	Quart	plastic	1	N	-	TDS	

Chain-of-Custody Record No. 46199

McCulley, Frick & Gilman, Inc.

# GROUNDWATER SAMPLING RECORD

SAMPLE NUMBER: MW-2

Project No: 030229.2 Project Name: SPI Arcata Sawmill Date 8/27/03

Sampling Location (well ID, etc.): MW-2  
 Sampled by: Matt Hillyard  
 Measuring Point (MP) of Well: 9.49  
 Screened Interval (ft.BGL): 2.0-8.0  
 Filter Pack Interval (ft.BGL): 1.5-9.0  
 Casing Stick-Up/Down (ft.):

Starting Water Level (ft. BMP): 5.09  
 Total Depth (ft. BMP): 7.60 Water Column Height (ft.): 2.51  
 Casing Diameter (in. ID): 2-Inch Multiplication Factor: 0.163  
 Casing Volume (gal.): 4 2X: 8 3X 1.2 4X  
 Water Level (ft.BMP) at End of Purge: 5.18  
 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.  
 Purging: Disposable Teflon Barter Sampling: Disposable Teflon Bailer  
 Disposal of Discharged Water: 55-Gallon Drum

INSTRUMENTS (indicate make, model, I.d.):  
 Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter  
 pH Meter: Ultrameter Field Calibration: pH 4, 7, 10  
 Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos  
 Other: TDS ultrameter Field Calibration: 300, 1500 ppm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data			Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm)	Color	Turbidity & Sediment		
145	0		18.5	6.82	1500	clear	clear		
146	0.5		18.6	6.67	1480	"	"		
147	1.0		18.5	6.62	1500	hazy	cloudy		
148	1.5		18.5	6.58	1480	lt gray	cloudy		sample
							TDS=1057ppm		

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 5.18 Recovery %: 96 Sample Intake Depth (ft. BMP):

Bottles Collected				Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
Time	Volume	Composition (glass, plastic)	Quantity				
149	25ml	glass	2	N	-	PCP/TCP	
14a	Quart	plastic	1	N	-	TDS	

Chain-of-Custody Record No. 46199

McCulley, Frick & Gilman, Inc.

# GROUNDWATER SAMPLING RECORD

SAMPLE NUMBER: MW-3

Project No: 030229.2 Project Name: SPI Arcata Sawmill Date 8/27/03

Sampling Location (well ID, etc.): MW-3 Starting Water Level (ft. BMP): 2.08

Sampled by: Matt Hilliard Total Depth (ft. BMP): 7.70 Water Column Height (ft.): 5.62

Measuring Point (MP) of Well: 11.14 Casing Diameter (in. ID): 2-Inch Multiplication Factor: 0.163

Screened Interval (ft.BGL): 2.0-8.0 Casing Volume (gal.): 9 2X: 1.8 3X: 2.7 4X

Filter Pack Interval (ft.BGL): 1.5-8.5 Water Level (ft.BMP) at End of Purge: 2.30

Casing Stick-Up/Down (ft.): 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.  
 Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer  
 Disposal of Discharged Water: 55-Gallon Drum

**INSTRUMENTS (indicate make, model, Ld.):**  
 Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter  
 pH Meter: Ultrameter Field Calibration: pH 4, 7, 10  
 Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos  
 Other: TDS Ultrameter Field Calibration: 300, 1500 ppm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data				Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm)		Color	Turbidity & Sediment		
					Field Temp.	25 °C.				
259	0		19.7	6.95		1010	clear	clear		
300	1		19.6	6.98		1023	lm/bk	clear w/ fine mud bottom		
301	2		19.5	6.93		1029	degmt	cloudy		
302	3		19.5	6.93		1030	"	TDS = 220 ppm		sample

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 2.30 Recovery %: 96 Sample Intake Depth (ft. BMP):

Time	Volume	Bottles Collected		Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
		Composition (glass, plastic)	Quantity				
303	125ml	glass	2	N	-	PCP/PCP	
303	QT	plastic	1	N	-	TDS	

Chain-of-Custody Record No. 46199

McCulley, Frick & Gilman, Inc.

# GROUNDWATER SAMPLING RECORD

PAGE: 1 of 1

SAMPLE NUMBER: MW-4

Project No: 030229.2 Project Name: SPI Arcata Sawmill Date 8/27/03

Sampling Location (well ID, etc.): MW-4 Starting Water Level (ft. BMP): 1.36

Sampled by: Matt Hillyard Total Depth (ft. BMP): 7.63 Water Column Height (ft.): 6.27

Measuring Point (MP) of Well: 10.71 Casing Diameter (in. ID): 2-Inch Multiplication Factor: 0.163

Screened Interval (ft.BGL): 2.0-8.0 Casing Volume (gal.): 1 2X: 2 3X: 3 4X: 4

Filter Pack Interval (ft.BGL): 1.5-8.0 Water Level (ft.BMP) at End of Purge: 2.32

Casing Stick-Up/Down (ft.): \_\_\_\_\_ 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

Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer

Disposal of Discharged Water: 55-Gallon Drum

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

Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter

pH Meter: Ultrameter Field Calibration: pH 4, 7, 10

Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos

Other: TDS Ultrameter Field Calibration: 300, 1500 ppm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data			Appearance		Intake Depth (ft. BMP)	Remarks
	Cumulative Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm) @ Field Temp @ 25 °C	Color	Turbidity & Sediment		
3:35	0		21.5	6.58	765	clear	clear		
3:37	1		21.9	6.54	734	light gray	slightly cloudy		
3:39	2		21.1	6.55	715	"	"		
3:39	3		21.1	6.51	730	"	TDS 2495 µm		Sample

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 2.32 Recovery %: 85 Sample Intake Depth (ft. BMP): \_\_\_\_\_

Bottles Collected				Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
Time	Volume	Composition (glass, plastic)	Quantity				
3:40	125 mL	glass	2	N	-	PCP/TCP	
3:40	Quart	plastic	1	N	-	TDS	

Chain-of-Custody Record No. 46199/46200

McCulley, Frick & Gilman, Inc.

# GROUNDWATER SAMPLING RECORD

PAGE: 1 of 1

SAMPLE NUMBER: MW-5

Project No: 030229.2 Project Name: SPI Arcata Sawmill Date: 8/7/03

Sampling Location (well ID, etc.): MW-5 Starting Water Level (ft. BMP): 1.84

Sampled by: Matt Hillyard Total Depth (ft. BMP): 7.60 Water Column Height (ft.): 6.76

Measuring Point (MP) of Well: 10.69 Casing Diameter (in. ID): 2-Inch Multiplication Factor: 0.163

Screened Interval (ft.BGL): 2.0-8.0 Casing Volume (gal.): 1.1 2X: 2.2 3X: 3.3 4X

Filter Pack Interval (ft.BGL): 1.5-8.0 Water Level (ft.BMP) at End of Purge: 1.01

Casing Stick-Up/Down (ft.): 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  
 Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer  
 Disposal of Discharged Water: 55-Gallon Drum

**INSTRUMENTS (indicate make, model, I.d.):**  
 Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter  
 pH Meter: Ultrameter Field Calibration: pH 4, 7, 10  
 Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos  
 Other: TDS ultrameter Field Calibration: 300, 1500 pp<sub>m</sub>

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data			Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm) ① Field Temp. ② 25 °C.	Color	Turbidity & Sediment		
406	0		19.6	7.37	657	Clear	Clear		
408	1.5		18.6	6.88	661	"	"		
410	2.5		18.4	6.77	658	"	"		
412	3.5		18.3	6.72	670	"	TDS=492		sample

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 1.01 Recovery %: 97 Sample Intake Depth (ft. BMP):

Time	Volume	Bottles Collected		Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
		Composition (glass, plastic)	Quantity				
414	125ml	glass	2	N	-	PCP/TCF	
414	Quart	plastic	1	N	-	TDS	

Chain-of-Custody Record No. 46200

McCulley, Frick & Gilman, Inc.

# GROUNDWATER SAMPLING RECORD

PAGE: 1 of 1

SAMPLE NUMBER: MW-6

Project No: 030229.2 Project Name: SPI Arcata Sawmill

Date 8/27/03

Sampling Location (well ID, etc.): MW-6  
 Sampled by: Matt Hillyard  
 Measuring Point (MP) of Well: 9.77  
 Screened Interval (ft.BGL): 2.0-8.0  
 Filter Pack Interval (ft.BGL): 1.5-8.0  
 Casing Stick-Up/Down (ft.):

Starting Water Level (ft. BMP): 0.70  
 Total Depth (ft. BMP): 7.60 Water Column Height (ft.): 6.90  
 Casing Diameter (in. ID): 2-Inch Multiplication Factor: 0.163  
 Casing Volume (gal.): 1.1 2X: 2.2 3X: 3.3 4X  
 Water Level (ft.BMP) at End of Purge: 1.36  
 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  
 Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer  
 Disposal of Discharged Water: 55-Gallon Drum

### INSTRUMENTS (indicate make, model, I.d.):

Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter  
 pH Meter: Ultrameter Field Calibration: pH 4, 7, 10  
 Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos  
 Other: TDS ultrameter Field Calibration: 300, 1500 ppm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data				Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm)		Color	Turbidity & Sediment		
					Field Temp.	25 °C.				
425	0		17.6	6.69		872	Clear	Clear		
426	1		17.3	6.58		900	"	"		
427	2		17.1	6.41		946	gray	Slightly cloudy		
429	3.5		17.1	6.40		893	"	TDS=629ppm		sample

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 1.36 Recovery %: 90 Sample Intake Depth (ft. BMP):

Time	Bottles Collected			Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
	Volume	Composition (glass, plastic)	Quantity				
430	125 ml	glass	2	N	-	PCP/TCP	
430	Quart	Plastic	1	N	-	TDS	

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McCulley, Frick & Gilman, Inc.

# GROUNDWATER SAMPLING RECORD

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SAMPLE NUMBER: MW-7

Project No: 030229.2 Project Name: SPI Arcata Sawmill Date 8/27/03

Sampling Location (well ID, etc.): MW-7  
 Sampled by: Matt Hillyard  
 Measuring Point (MP) of Well: 9.68  
 Screened Interval (ft.BGL): 2.0-8.0  
 Filter Pack Interval (ft.BGL): 1.5-8.0  
 Casing Stick-Up/Down (ft.):

Starting Water Level (ft. BMP): 0.61  
 Total Depth (ft. BMP): 7.63 Water Column Height (ft.): 7.02  
 Casing Diameter (in. ID): 2-Inch Multiplication Factor: 0.163  
 Casing Volume (gal.): 1.15 2X: 2.3 3X: 3.45 4X:  
 Water Level (ft.BMP) at End of Purge: 1.10  
 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  
 Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer  
 Disposal of Discharged Water: 55-Gallon Drum

### INSTRUMENTS (indicate make, model, I.D.):

Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter  
 pH Meter: Ultrameter Field Calibration: pH 4, 7, 10  
 Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos  
 Other: TDS Ultrameter Field Calibration: 300, 1500 ppm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data			Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm) ① Field Temp. ② 25 °C.	Color	Turbidity & Sediment		
438	0		14.5	6.72	796	1 gray	Slightly cloudy		
439	1		14.2	6.61	810	"	"		
440	2		13.9	6.27	980	"	"		
441	3		14.0	6.63	845	"	"		
442	35		13.9	6.58	842	"	TDS = 585		sample
	0								
	0								

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 1.10 Recovery %: 93 Sample Intake Depth (ft. BMP):

Time	Volume	Bottles Collected		Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
		Composition (glass, plastic)	Quantity				
443	129 ml	Glass	4	N	-	PCP/TCF	2(MW-7) 2(MW-A)
447	Quart	plastic	1	N	-	TDS	

Chain-of-Custody Record No. 46200/

McCulley, Frick & Gilman, Inc.



# GROUNDWATER SAMPLING RECORD

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SAMPLE NUMBER: MW-8

Project No: 030229.2 Project Name: SPI Arcata Sawmill

Date 8/27/03

Sampling Location (well ID, etc.): MW-8  
 Sampled by: Matt Hillyard  
 Measuring Point (MP) of Well: 10.3  
 Screened Interval (ft.BGL): 2.0-8.0  
 Filter Pack Interval (ft.BGL): 1.5-8.0  
 Casing Stick-Up/Down (ft.):

Starting Water Level (ft. BMP): 0.91  
 Total Depth (ft. BMP): 7.64 Water Column Height (ft.): 6.73  
 Casing Diameter (In. ID): 2-Inch Multiplication Factor: 0.163  
 Casing Volume (gal.): 1.1 2X: 2.2 3X: 3.3 4X  
 Water Level (ft.BMP) at End of Purge:  
 Total Depth (ft. BMP) at End of Purge: 1.20

## QUALITY ASSURANCE

### 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

### INSTRUMENTS (indicate make, model, I.d.):

Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter  
 pH Meter: Ultrameter Field Calibration: pH 4, 7, 10  
 Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos  
 Other: TDS: Ultrameter Field Calibration: 300, 1500 µm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data			Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm) ① Field Temp. ② 25°C	Color	Turbidity & Sediment		
1005	0		21.6	6.54	736	clear	clear		
1007	1		21.0	6.29	733.5	lt brn	cloudy		
1008	2		20.9	6.19	732	"	"		
1009	3.5		20.8	6.15	730	"	TDS = 501 µm		sample

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 1.20 Recovery %: 96 Sample Intake Depth (ft. BMP):

Bottles Collected				Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
Time	Volume	Composition (glass, plastic)	Quantity				
1010	125 mL	glass	2	N	-	PCP/TCP	
1010	1-qt	plastic	1	N	-	TDS	

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McCulley, Frick & Gilman, Inc.

# GROUNDWATER SAMPLING RECORD

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SAMPLE NUMBER: MW-9

Project No: 030229.2 Project Name: SPI Arcata Sawmill Date 8/27/03

Sampling Location (well ID, etc.): MW-9  
 Sampled by: Matt Hillyard  
 Measuring Point (MP) of Well: 9.86  
 Screened Interval (ft.BGL): 2.0-8.0  
 Filter Pack Interval (ft.BGL): 1.5-8.0  
 Casing Stick-Up/Down (ft.):

Starting Water Level (ft. BMP): 0.81  
 Total Depth (ft. BMP): 7.60 Water Column Height (ft.): 6.79  
 Casing Diameter (In. ID): 2-Inch Multiplication Factor: 0.163  
 Casing Volume (gal.): 1.1 2X: 2.2 3X: 3.3 4X:  
 Water Level (ft.BMP) at End of Purge: 1.20  
 Total Depth (ft. BMP) at End of Purge: 7.60

## QUALITY ASSURANCE

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

INSTRUMENTS (indicate make, model, I.d.):  
 Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter  
 pH Meter: Ultrameter Field Calibration: pH 4, 7, 10  
 Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos  
 Other: TPS: Ultrameter Field Calibration: 300, 1500 ppm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data				Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm)	Color	Turbidity & Sediment			
1045	0		21.8	6.39	805	Clear	Clear			
1046	1.0		20.9	6.29	833	ll	ll			
1048	2		20.2	6.27	804	lt gray	Cloudy			
1050	3.5		20.4	6.24	830	ll	TPS = 573 ppm		sample	

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 1.20 Recovery %: 94 Sample Intake Depth (ft. BMP):

Bottles Collected				Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
Time	Volume	Composition (glass, plastic)	Quantity				
1050	125 mL	glass	2	N	-	PCP/PCP	
1050	Quart	plastic	1	N	-	TDS	

Chain-of-Custody Record No. 46201

McCulley, Frick & Gilman, Inc.

# GROUNDWATER SAMPLING RECORD

SAMPLE NUMBER: MW-10

Project No: 030229.2 Project Name: SPI Arcata Sawmill Date 8/27/03

Sampling Location (well ID, etc.): MW-10  
 Sampled by: Matt Hillyard  
 Measuring Point (MP) of Well: 9.80  
 Screened Interval (ft.BGL): 2.0-8.0  
 Filter Pack Interval (ft.BGL): 1.5-9.5  
 Casing Stick-Up/Down (ft.):

Starting Water Level (ft. BMP): 1.02  
 Total Depth (ft. BMP): 7.70 Water Column Height (ft.): 6.68  
 Casing Diameter (in. ID): 2-Inch Multiplication Factor: 0.163  
 Casing Volume (gal.): 1.1 2X: 2.2 3X: 3.3 4X  
 Water Level (ft.BMP) at End of Purge: 1.80  
 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  
 Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer  
 Disposal of Discharged Water: 55-Gallon Drum

### INSTRUMENTS (indicate make, model, I.d.):

Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter  
 pH Meter: Ultrameter Field Calibration: pH 4, 7, 10  
 Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos  
 Other: TDS: Ultrameter Field Calibration: 300, 1500 ppm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data				Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm)	Color	Turbidity & Sediment			
					Field Temp	25 °C				
1125	0		23.1	6.33		895	clear	clear		
1126	1		22.7	6.27		865	lt gray	slightly cloudy		
1128	2.5		22.5	6.25		858	"	cloudy		
1129	3.5		22.5	6.26		861	"	cloudy		sample
								TDS=599ppm		

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 1.84 Recovery %: 87 Sample Intake Depth (ft. BMP):

Bottles Collected				Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
Time	Volume	Composition (glass, plastic)	Quantity				
1130	125 mL	glass	2	N	-	PCP/TCF	
1130	Quart	plastic	1	N	-	TDS	

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McCulley, Frick & Gilman, Inc.

# GROUNDWATER SAMPLING RECORD

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SAMPLE NUMBER: MW-11

Project No: 030229.2 Project Name: SPI Arcata Sawmill Date 8/7/03

Sampling Location (well ID, etc.): MW-11  
 Sampled by: Matt Hillyard  
 Measuring Point (MP) of Well: 10.26  
 Screened Interval (ft.BGL): 2.0-8.0  
 Filter Pack Interval (ft.BGL): 1.5-8.5  
 Casing Stick-Up/Down (ft.):

Starting Water Level (ft. BMP): 1.19  
 Total Depth (ft. BMP): 8.50 Water Column Height (ft.): 7.31  
 Casing Diameter (in. ID): 2-Inch Multiplication Factor: 0.163  
 Casing Volume (gal.): 1.2 2x: 2.4 3x: 3.6 4x:  
 Water Level (ft.BMP) at End of Purge: 1.38  
 Total Depth (ft. BMP) at End of Purge: ~~1.2~~

## QUALITY ASSURANCE

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

INSTRUMENTS (indicate make, model, I.d.):  
 Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter  
 pH Meter: Ultrameter Field Calibration: pH 4, 7, 10  
 Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos  
 Other: TDS Ultrameter Field Calibration: 300, 1500 ppm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data				Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm)	Color	Turbidity & Sediment			
1022	0		23.3	6.24	890	clear	clear			
1023	1.0		23.6	6.22	878	lt brn	slightly cloudy			
1024	2.0		23.4	6.20	876	"	cloudy			
1025	3.0		23.2	6.20	876	"	"			
1026	4.0		22.7	6.22	874	"	"		sample	
							TDS: 605 µm			

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 1.38 Recovery %: 97 Sample Intake Depth (ft. BMP):

Bottles Collected				Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
Time	Volume	Composition (glass, plastic)	Quantity				
1027	125 ml	glass	2	N	-	PCP/CLP	
1027	Quart	plastic	1	N	-	TDS	

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McCulley, Frick & Gilman, Inc.

# GROUNDWATER SAMPLING RECORD

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SAMPLE NUMBER: MW-12

Project No: 030229.2 Project Name: SPI Arcata Sawmill Date 8/ /03

Sampling Location (well ID, etc.): MW-12  
 Sampled by: Matt Hillyard  
 Measuring Point (MP) of Well: 10.73  
 Screened Interval (ft.BGL): 2.0-8.0  
 Filter Pack Interval (ft.BGL): 1.5-9.5  
 Casing Stick-Up/Down (ft.):

Starting Water Level (ft. BMP): 1.12  
 Total Depth (ft. BMP): 8.33 Water Column Height (ft.): 7.21  
 Casing Diameter (In. ID): 2-Inch Multiplication Factor: 0.163  
 Casing Volume (gal.): 1.2 2X: 2.4 3X: 3.6 4X  
 Water Level (ft.BMP) at End of Purge: 1.45  
 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  
 Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer  
 Disposal of Discharged Water: 55-Gallon Drum

### INSTRUMENTS (indicate make, model, Id.):

Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter  
 pH Meter: Ultrameter Field Calibration: pH 4, 7, 10  
 Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos  
 Other: TDS Ultrameter Field Calibration: 300, 1500 µm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data				Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm)		Color	Turbidity & Sediment		
					@ Field Temp.	@ 25°C.				
942	0		21.1	6.50		718	clear	clear		
943	1.0		22.9	6.20		820				
945	2.0		23.2	6.16		862	lt brn	slightly cloudy		
946	3.0		23.1	6.16		867	lt brn	cloudy		
948	4.0		23.2	6.20		872	lt brn	TDS 605µm		Sample

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 1.45 Recovery %: 95 Sample Intake Depth (ft. BMP):

Bottles Collected				Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
Time	Volume	Composition (glass, plastic)	Quantity				
949	125mL	g/gss	2	N		PERFECT	
949	1 quart	plastic	1	N		TDS	

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McCulley, Frick & Gilman, Inc.

# GROUNDWATER SAMPLING RECORD

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SAMPLE NUMBER: MW-13D

Project No: 030229.2 Project Name: SPI Arcata Sawmill Date 8/27/03

Sampling Location (well ID, etc.): MW-13D  
 Sampled by: Matt Hillyard  
 Measuring Point (MP) of Well: 9.84  
 Screened Interval (ft.BGL): 15.0-20.0  
 Filter Pack Interval (ft.BGL): 13.5-21.0  
 Casing Stick-Up/Down (ft.): \_\_\_\_\_

Starting Water Level (ft. BMP): 4.45  
 Total Depth (ft. BMP): 18.70 Water Column Height (ft.): 14.45  
 Casing Diameter (in. ID): 2-Inch Multiplication Factor: 0.163  
 Casing Volume (gal.): 2.35 2X: 4.7 3X: 7.05 4X: \_\_\_\_\_  
 Water Level (ft.BMP) at End of Purge: 5.00  
 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  
 Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer  
 Disposal of Discharged Water: 55-Gallon Drum

INSTRUMENTS (indicate make, model, Id.):  
 Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter  
 pH Meter: Ultrameter Field Calibration: pH 4, 7, 10  
 Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos  
 Other: TDS Ultrameter Field Calibration: 300, 1500 ppm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data			Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm) @ Field Temp @ 25 °C	Color	Turbidity & Sediment		
158	0		20.0	6.72	650	clear	clear		
201	2		16.2	6.32	722	"	"		
204	4		15.2	6.21	755	"	"		
208	6		14.9	6.07	1106	"	"		
211	225		14.6	6.12	1070		TDS 148 ppm		sample

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 5.00 Recovery %: 96 Sample Intake Depth (ft. BMP): \_\_\_\_\_

Bottles Collected				Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
Time	Volume	Composition (glass, plastic)	Quantity				
212	125 mL	glass	2	N	-	PCP/PCP	
212	Quart	plastic	1	N	-	TDS	

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McCulley, Frick & Gilman, Inc.

# GROUNDWATER SAMPLING RECORD

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SAMPLE NUMBER: MW-14

Project No: 030229.2 Project Name: SPI Arcata Sawmill Date 8/27/03

Sampling Location (well ID, etc.): MW-14

Sampled by: Matt Hillyard

Measuring Point (MP) of Well: 9.02

Screened Interval (ft.BGL): 2.0-8.0

Filter Pack Interval (ft.BGL): 1.5-8.0

Casing Stick-Up/Down (ft.): \_\_\_\_\_

Starting Water Level (ft. BMP): 2.27

Total Depth (ft. BMP): 7.70 Water Column Height (ft.): 5.43

Casing Diameter (in. ID): 2-Inch Multiplication Factor: 0.163

Casing Volume (gal.): 9 2X: 1.8 3X: 2.7 4X: \_\_\_\_\_

Water Level (ft.BMP) at End of Purge: 7.41

Total Depth (ft. BMP) at End of Purge: \_\_\_\_\_

## QUALITY ASSURANCE

METHODS (describe): Liquinox detergent & distilled water solution followed by triple rinse w/ distilled water

Cleaning Equipment: \_\_\_\_\_

Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer

Disposal of Discharged Water: 55-Gallon Drum

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

Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter

pH Meter: Ultrameter Field Calibration: pH 4, 7, 10

Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos

Other: TDS Ultrameter Field Calibration: 300, 1500 ppm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data				Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm)		Color	Turbidity & Sediment		
					@ Field Temp.	@ 25 °C.				
1312	0		22.1	6.54		2820	yellow	clear		
1313	1		21.7	6.51		2860	"	"		
1315	2		20.7	6.39		3240	lt brn	cloudy		
1316	2.5		20.0	6.57		3430	brn	"		
1319	3.0		17.5	6.58		3590	"	TDS 2230 ppm		No recovery sample after 2 hrs

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 5.65 Recovery %: 38 Sample Intake Depth (ft. BMP): \_\_\_\_\_

Time	Volume	Bottles Collected		Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
		Composition (glass, plastic)	Quantity				
1551	125 mL	glass	2	N	-	PCP/TCP	
1551	Quart	plastic	1	N	-	TDS	

Chain-of-Custody Record No. 46202

McCulley, Frick & Gilman, Inc.

# GROUNDWATER SAMPLING RECORD

SAMPLE NUMBER: MW-15D

Project No: 030229.2 Project Name: SPI Arcata Sawmill Date 8/27/03

Sampling Location (well ID, etc.): MW-15D Starting Water Level (ft. BMP): 5.71

Sampled by: Matt Hillyard Total Depth (ft. BMP): 19.75 Water Column Height (ft.): 14.04

Measuring Point (MP) of Well: 11.08 Casing Diameter (in. ID): 2-Inch Multiplication Factor: 0.163

Screened Interval (ft.BGL): 15.0-20.0 Casing Volume (gal.): 2.3 2X: 4.6 3X: 6.9 4X

Filter Pack Interval (ft.BGL): 14.0-21.0 Water Level (ft.BMP) at End of Purge: 5.45

Casing Stick-Up/Down (ft.): \_\_\_\_\_ Total Depth (ft. BMP) at End of Purge: \_\_\_\_\_

## QUALITY ASSURANCE

METHODS (describe): Liquinox detergent & distilled water solution followed by triple rinse w/ distilled water

Cleaning Equipment: \_\_\_\_\_

Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer

Disposal of Discharged Water: 55-Gallon Drum

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

Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter

pH Meter: Ultrameter Field Calibration: pH 4, 7, 10

Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos

Other: TDS Ultrameter Field Calibration: 300, 1500 ppm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data				Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm)	Color	Turbidity & Sediment			
225	0		16.4	6.68	630	clear	clear			
229	2		14.4	6.30	1108	light yellow	clear			
232	4		14.1	6.55	1200	"	"			
236	6		14.1	6.53	1260	"	"			
238	7		13.9	6.28	1270	"	"			
239	7.5		13.9	6.32	1275	"	TDS = 9.09 ppm		Sample	

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 5.45 Recovery %: 102 Sample Intake Depth (ft. BMP): \_\_\_\_\_

Bottles Collected				Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
Time	Volume	Composition (glass, plastic)	Quantity				
239	125 mL	glass	2	N	-	PLP/TEP	
239	Quart	plastic	1	N	-	TDS	

Chain-of-Custody Record No. 46203

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# GROUNDWATER SAMPLING RECORD

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SAMPLE NUMBER: MW-16D

Project No: 030229.2 Project Name: SPI Arcata Sawmill Date 8/2703

Sampling Location (well ID, etc.): MW-16D

Sampled by: Matt Hillyard

Measuring Point (MP) of Well: 9.80

Screened Interval (ft.BGL): 15.0-20.0

Filter Pack Interval (ft.BGL): 14.0-21.5

Casing Stick-Up/Down (ft.): \_\_\_\_\_

Starting Water Level (ft. BMP): 3.95

Total Depth (ft. BMP): 19.30 Water Column Height (ft.): 15.35

Casing Diameter (in. ID): 2-Inch Multiplication Factor: 0.163

Casing Volume (gal.): 2.5 2X: 5 3X: 7.5 4X: \_\_\_\_\_

Water Level (ft.BMP) at End of Purge: 4.25

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

Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer

Disposal of Discharged Water: 55-Gallon Drum

INSTRUMENTS (indicate make, model, I.d.):  
 Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter

pH Meter: Ultrameter Field Calibration: pH 4, 7, 10

Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos

Other: TDS: Ultrameter Field Calibration: 300, 1500 ppm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data				Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm)		Color	Turbidity & Sediment		
					Field Temp.	@ 25 °C				
1137	0		20.2	6.69		4200	amber	clear		
1141	2		16.7	7.04		4500	dk amber	clear		
1145	4		15.7	7.22		5000	"	"		
1149	6		15.7	7.38		4890	"	"		
1152	7.5		16.1	7.40		4990	"	"	TDS = 3420 ppm	sample

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 4.25 Recovery %: 98 Sample Intake Depth (ft. BMP): \_\_\_\_\_

Time	Volume	Bottles Collected		Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
		Composition (glass, plastic)	Quantity				
1152	127 ml	glass	2	N	-	PCP/TCP	
1152	Quota	plastic	1	N	-	TDS	

Chain-of-Custody Record No. 46203

**McCulley, Frick & Gilman, Inc.**

# GROUNDWATER SAMPLING RECORD

PAGE: 1 of 1

SAMPLE NUMBER: MW-17

Project No: 030229.2 Project Name: SPI Arcata Sawmill Date 8/27/03

Sampling Location (well ID, etc.): MW-17

Sampled by: Matt Hillyard

Measuring Point (MP) of Well: ~~9.98~~ 8.98

Screened Interval (ft.BGL): 2.0-8.0

Filter Pack Interval (ft.BGL): 1.5-9.0

Casing Stick-Up/Down (ft.): \_\_\_\_\_

Starting Water Level (ft. BMP): 1.06

Total Depth (ft. BMP): 7.40 Water Column Height (ft.): 6.34

Casing Diameter (in. ID): 2-Inch Multiplication Factor: 0.163

Casing Volume (gal.): 1 2X: 2 3X: 3 4X: \_\_\_\_\_

Water Level (ft.BMP) at End of Purge: 1.46

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

Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer

Disposal of Discharged Water: 55-Gallon Drum

INSTRUMENTS (indicate make, model, Id.):  
 Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter

pH Meter: Ultrameter Field Calibration: pH 4, 7, 10

Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos

Other: TDS Ultrameter Field Calibration: 300, 1500 ppm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data				Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm)		Color	Turbidity & Sediment		
					① Field Temp.	② 25 °C.				
1250	0		20.7	8.23		793	Clear	Clean		
1252	1		18.9	8.00		862	"	"		
1254	2		18.7	7.68		828	gray	Cloudy		
1255	3		18.6	7.38		855	"	"		
1256	3.4		18.6	7.28		851	"	"		
1257	4		18.6	7.15		865	"	"		
1258	5		18.7	7.05		870	"	"		
1259	5.5		18.6	7.00		860	"	TDS=595		Sample

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 1.46 Recovery %: 94 Sample Intake Depth (ft. BMP): \_\_\_\_\_

Time	Volume	Bottles Collected		Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
		Composition (glass, plastic)	Quantity				
1259	125 mL		2	N	-	PCP/CO	
1259	8 well		1	N	-	TDS	

Chain-of-Custody Record No. 46203

McCulley, Frick & Gilman, Inc.

# GROUNDWATER SAMPLING RECORD

SAMPLE NUMBER: MW-18

Project No: 030229.2 Project Name: SPI Arcata Sawmill Date 8/27/03

Sampling Location (well ID, etc.): MW-18  
 Sampled by: Matt Hillyard  
 Measuring Point (MP) of Well: 9.53  
 Screened Interval (ft.BGL): 2.0-8.0  
 Filter Pack Interval (ft.BGL): 1.5-9.5  
 Casing Stick-Up/Down (ft.):

Starting Water Level (ft. BMP): 0.55  
 Total Depth (ft. BMP): 7.80 Water Column Height (ft.): 7.25  
 Casing Diameter (in. ID): 4-Inch Multiplication Factor: 0.653  
 Casing Volume (gal.): 4.7 2X: 9.4 3X: 14.2 4X  
 Water Level (ft.BMP) at End of Purge: 1.5  
 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  
 Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer  
 Disposal of Discharged Water: 55-Gallon Drum

### INSTRUMENTS (indicate make, model, Id.):

Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter  
 pH Meter: Ultrameter Field Calibration: pH 4, 7, 10  
 Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos  
 Other: TDS Ultrameter Field Calibration: 300, 1500 ppm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data				Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm) @ Field Temp. @ 25 °C.	Color	Turbidity & Sediment			
1058	0		23.3	6.15	928	clear	clear			
1102	4		22.2	6.25	1003	lt brn	slightly cloudy			
1106	8		22.7	6.22	1113	"	cloudy			
1110	12		22.7	6.24	1143	"	"			
1113	14.5		22.7	6.26	1123	"	TDS = 783 ppm		sample	

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 1.50 Recovery %: 87 Sample Intake Depth (ft. BMP):

Bottles Collected				Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
Time	Volume	Composition (glass, plastic)	Quantity				
1114	125 mL	glass	2	N	-	PCP/TCB	
1114	Quart	plastic	1	N	-	TDS	

Chain-of-Custody Record No. 46203/46204

McCulley, Frick & Gilman, Inc.

# GROUNDWATER SAMPLING RECORD

SAMPLE NUMBER: MW-19D

Project No: 030229.2 Project Name: SPI Arcata Sawmill Date 8/2/03

Sampling Location (well ID, etc.): MW-19D Starting Water Level (ft. BMP): 4.26

Sampled by: Matt Hilliard Total Depth (ft. BMP): 17.66 Water Column Height (ft.): 15.4

Measuring Point (MP) of Well: 11.0 Casing Diameter (in. ID): 2-Inch Multiplication Factor: 0.163

Screened Interval (ft.BGL): 15.0-20.0 Casing Volume (gal.): 2.5 2X: 5 3X 7.5 4X

Filter Pack Interval (ft.BGL): 14.0-21.0 Water Level (ft.BMP) at End of Purge: 6.01

Casing Stick-Up/Down (ft.): \_\_\_\_\_ Total Depth (ft. BMP) at End of Purge: \_\_\_\_\_

## QUALITY ASSURANCE

METHODS (describe): Liquinox detergent & distilled water solution followed by triple rinse w/ distilled water

Cleaning Equipment: \_\_\_\_\_

Purging: Disposable Teflon Bailer Sampling: Disposable Teflon Bailer

Disposal of Discharged Water: 55-Gallon Drum

INSTRUMENTS (indicate make, model, Ld.):

Water Level: Envirotech LTD, Waterline Model 150 Thermometer: Ultrameter

pH Meter: Ultrameter Field Calibration: pH 4, 7, 10

Conductivity Meter: Ultrameter Field Calibration: 447, 2070 µmhos

Other: TDS: Ultrameter Field Calibration: 300, 1500 ppm

## SAMPLING MEASUREMENTS

Date/Time	Purge Characteristics		Water Quality Data				Appearance		Intake Depth (ft. BMP)	Remarks
	Cumul. Vol. (gal)	Purge Rate (gpm)	Temp. (°C)	pH	Specific Conductance (µmhos/cm)		Color	Turbidity & Sediment		
					Field Temp.	25 °C.				
315	0		21.5	6.69		774	Clear	Clear		
318	2		18.3	6.58		802	hazy	Slightly cloudy		
320	4		17.3	6.53		808	"	"		
323	6		17.0	6.54		808	"	"		
325	7.5		17.0	6.51		810		TDS = 560 ppm		sample

## SAMPLE INVENTORY

Water Level (ft. BMP) Before Sampling: 6.01 Recovery %: 89 Sample Intake Depth (ft. BMP): \_\_\_\_\_

Time	Volume	Bottles Collected		Filtration (Y/N)	Preservation (type)	Analysis	Remarks (quality control sample, other)
		Composition (glass, plastic)	Quantity				
325	125ml	glass	2	N	-	PCP/PCF	
325	Quart	plastic	1	N	-	TDS	

Chain-of-Custody Record No. 46204

**McCulley, Frick & Gilman, Inc.**

**APPENDIX B**

**Laboratory Report and Chain-of-Custody Records  
for Groundwater Samples**



*Alpha*

Alpha Analytical Laboratories Inc.

208 Mason St. Ukiah, California 95482

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

12 September 2003

MFG, Inc - Arcata

Attn: Ed Conti

875 Crescent Way

Arcata, CA 95521

RE: SPI - Arcata

Work Order: A308634

Enclosed are the results of analyses for samples received by the laboratory on 08/28/03 14:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Cheryl Watson For Sheri L. Speaks  
Project Manager

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Tetra Tech/MFG, Inc.



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 1 of 16

MFG, Inc - Arcata  
875 Crescent Way  
Arcata, CA 95521  
Attn: Ed Conti

Report Date: 09/12/03 14:44  
Project No: 030229.2  
Project ID: SPI - Arcata

Order Number  
A308634

Receipt Date/Time  
08/28/2003 14:30

Client Code  
MFGARC

Client PO/Reference

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	A308634-01	Water	08/27/03 13:36	08/28/03 14:30
MW-2	A308634-02	Water	08/27/03 13:49	08/28/03 14:30
MW-3	A308634-03	Water	08/27/03 15:03	08/28/03 14:30
MW-4	A308634-04	Water	08/27/03 15:40	08/28/03 14:30
MW-5	A308634-05	Water	08/27/03 16:14	08/28/03 14:30
MW-6	A308634-06	Water	08/27/03 16:30	08/28/03 14:30
MW-7	A308634-07	Water	08/27/03 16:43	08/28/03 14:30
MW-8	A308634-08	Water	08/27/03 10:10	08/28/03 14:30
MW-9	A308634-09	Water	08/27/03 10:50	08/28/03 14:30
MW-10	A308634-10	Water	08/27/03 11:30	08/28/03 14:30
MW-11	A308634-11	Water	08/27/03 10:27	08/28/03 14:30
MW-12	A308634-12	Water	08/27/03 09:49	08/28/03 14:30
MW-13D	A308634-13	Water	08/27/03 14:12	08/28/03 14:30
MW-14	A308634-14	Water	08/27/03 15:51	08/28/03 14:30
MW-15D	A308634-15	Water	08/27/03 14:39	08/28/03 14:30
MW-16D	A308634-16	Water	08/27/03 11:52	08/28/03 14:30
MW-17	A308634-17	Water	08/27/03 12:59	08/28/03 14:30
MW-18	A308634-18	Water	08/27/03 11:14	08/28/03 14:30
MW-19D	A308634-19	Water	08/27/03 15:25	08/28/03 14:30
MW-A	A308634-20	Water	08/27/03 00:00	08/28/03 14:30
Temp A	A308634-21	Water	08/27/03 00:00	08/28/03 14:30
Temp C	A308634-22	Water	08/27/03 00:00	08/28/03 14:30

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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.

Tetra Tech/MFG, Inc.

Cheryl Watson For Sheri L. Speaks  
Project Manager

9/12/03



Alpha Analytical Laboratories Inc.

208 Mason St. Ukiah, California 95482

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

**CHEMICAL EXAMINATION REPORT**

Page 2 of 16

MFG, Inc - Arcata  
875 Crescent Way  
Arcata, CA 95521  
Attn: Ed Conti

Report Date: 09/12/03 14:44  
Project No: 030229.2  
Project ID: SPI - Arcata

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A308634	08/28/2003 14:30	MFGARC	

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 Tetra Tech/MFG, Inc.

Cheryl Watson For Sheri L. Speaks  
Project Manager

9/12/03





Alpha Analytical Laboratories Inc.

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**CHEMICAL EXAMINATION REPORT**

MFG, Inc - Arcata  
875 Crescent Way  
Arcata, CA 95521  
Attn: Ed Conti

Report Date: 09/12/03 14:44  
Project No: 030229.2  
Project ID: SPI - Arcata

Order Number: A308634      Receipt Date/Time: 08/28/2003 14:30      Client Code: MFGARC      Client PO/Reference:

**Alpha Analytical Laboratories, Inc.**

METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
<b>MW-1 (A308634-01)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 13:36</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		101 %	79-119
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	<b>1400 mg/l</b>	<b>10</b>
<b>MW-2 (A308634-02)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 13:49</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		97.6 %	79-119
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	<b>760 mg/l</b>	<b>10</b>
<b>MW-3 (A308634-03)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 15:03</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		79.1 %	79-119

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*Cheryl Watson*  
Tetra Tech/MFG, Inc.

Cheryl Watson For Sheri L. Speaks  
Project Manager

9/12/03



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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 16

MFG, Inc - Arcata  
875 Crescent Way  
Arcata, CA 95521  
Attn: Ed Conti

Report Date: 09/12/03 14:44  
Project No: 030229.2  
Project ID: SPI - Arcata

Order Number      Receipt Date/Time      Client Code      Client PO/Reference  
A308634      08/28/2003 14:30      MFGARC

**Alpha Analytical Laboratories, Inc.**

METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
<b>MW-3 (A308634-03)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 15:03</b>		
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	470 mg/l	10
<b>MW-4 (A308634-04)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 15:40</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		89.2 %	79-119
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	340 mg/l	10
<b>MW-5 (A308634-05)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 16:14</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		107 %	79-119

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*Cheryl Watson* Tetra Tech/MFG, Inc

Cheryl Watson For Sheri L. Speaks  
Project Manager

9/12/03



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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 5 of 16

MFG, Inc - Arcata  
875 Crescent Way  
Arcata, CA 95521  
Attn: Ed Conti

Report Date: 09/12/03 14:44  
Project No: 030229.2  
Project ID: SPI - Arcata

Order Number: A308634      Receipt Date/Time: 08/28/2003 14:30      Client Code: MFGARC      Client PO/Reference:

**Alpha Analytical Laboratories, Inc.**

METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
<b>MW-5 (A308634-05)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 16:14</b>		
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	360 mg/l	10
<b>MW-6 (A308634-06)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 16:30</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		90.8 %	79-119
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	410 mg/l	10
<b>MW-7 (A308634-07)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 16:43</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	1	ND ug/l	1.5
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	41 "	1.0
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	710 "	1.0
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	39 "	1.0
Pentachlorophenol	"	"	"	"	"	31000 "	1.0
<i>Surrogate: Tribromophenol</i>	"	"	"	"		101 %	79-119

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SEP 18 2003

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.

*Cheryl Watson*  
Tetra Tech/MFG, Inc.

Cheryl Watson For Sheri L. Speaks  
Project Manager

9/12/03



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 6 of 16

MFG, Inc - Arcata  
875 Crescent Way  
Arcata, CA 95521  
Attn: Ed Conti

Report Date: 09/12/03 14:44  
Project No: 030229.2  
Project ID: SPI - Arcata

Order Number A308634	Receipt Date/Time 08/28/2003 14:30	Client Code MFGARC	Client PO/Reference
-------------------------	---------------------------------------	-----------------------	---------------------

**Alpha Analytical Laboratories, Inc.**

METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
<b>MW-7 (A308634-07)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 16:43</b>		
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	400 mg/l	10
<b>MW-8 (A308634-08)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 10:10</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		104 %	79-119
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	370 mg/l	10
<b>MW-9 (A308634-09)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 10:50</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		88.0 %	79-119

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*Cheryl Watson*  
 Cheryl Watson For Sheri L. Speaks  
 Project Manager  
 Tetra Tech/MFG, Inc.  
 9/12/03



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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 7 of 16

MFG, Inc - Arcata  
875 Crescent Way  
Arcata, CA 95521  
Attn: Ed Conti

Report Date: 09/12/03 14:44  
Project No: 030229.2  
Project ID: SPI - Arcata

Order Number A308634	Receipt Date/Time 08/28/2003 14:30	Client Code MFGARC	Client PO/Reference
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**Alpha Analytical Laboratories, Inc.**

METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
<b>MW-9 (A308634-09)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 10:50</b>		
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	<b>350 mg/l</b>	<b>10</b>
<b>MW-10 (A308634-10)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 11:30</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		<i>89.2 %</i>	<i>79-119</i>
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	<b>400 mg/l</b>	<b>10</b>
<b>MW-11 (A308634-11)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 10:27</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		<i>87.1 %</i>	<i>79-119</i>

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 Cheryl Watson For Sheri L. Speaks  
 Project Manager

Tetra Tech/MFG, Inc.  
 9/12/03



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**CHEMICAL EXAMINATION REPORT**

MFG, Inc - Arcata  
875 Crescent Way  
Arcata, CA 95521  
Attn: Ed Conti

Report Date: 09/12/03 14:44  
Project No: 030229.2  
Project ID: SPI - Arcata

Order Number: A308634      Receipt Date/Time: 08/28/2003 14:30      Client Code: MFGARC      Client PO/Reference:

**Alpha Analytical Laboratories, Inc.**

METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
<b>MW-11 (A308634-11)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 10:27</b>		
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	<b>440 mg/l</b>	10
<b>MW-12 (A308634-12)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 09:49</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		104 %	79-119
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	<b>480 mg/l</b>	10
<b>MW-13D (A308634-13)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 14:12</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		94.0 %	79-119

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*Cheryl Watson*  
Cheryl Watson For Sheri L. Speaks  
Project Manager  
Tetra Tech/MFG, Inc.  
9/12/03



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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**

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MFG, Inc - Arcata  
875 Crescent Way  
Arcata, CA 95521  
Attn: Ed Conti

Report Date: 09/12/03 14:44  
Project No: 030229.2  
Project ID: SPI - Arcata

Order Number A308634	Receipt Date/Time 08/28/2003 14:30	Client Code MFGARC	Client PO/Reference
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**Alpha Analytical Laboratories, Inc.**

METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
<b>MW-13D (A308634-13)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 14:12</b>		
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	<b>690 mg/l</b>	<b>10</b>
<b>MW-14 (A308634-14)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 15:51</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		92.4 %	79-119
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	<b>1900 mg/l</b>	<b>10</b>
<b>MW-15D (A308634-15)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 14:39</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		96.0 %	79-119

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Tetra Tech/MFG, Inc.

Cheryl Watson For Sheri L. Speaks  
Project Manager

9/12/03



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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 10 of 16

MFG, Inc - Arcata  
875 Crescent Way  
Arcata, CA 95521  
Attn: Ed Conti

Report Date: 09/12/03 14:44  
Project No: 030229.2  
Project ID: SPI - Arcata

Order Number                      Receipt Date/Time                      Client Code                      Client PO/Reference  
A308634                      08/28/2003 14:30                      MFGARC


**Alpha Analytical Laboratories, Inc.**

METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
<b>MW-15D (A308634-15)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 14:39</b>		
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	<b>810 mg/l</b>	<b>10</b>
<b>MW-16D (A308634-16)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 11:52</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		<i>101 %</i>	<i>79-119</i>
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	<b>3000 mg/l</b>	<b>10</b>
<b>MW-17 (A308634-17)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 12:59</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		<i>84.7 %</i>	<i>79-119</i>

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Project Manager                      9/12/03





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

CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata  
875 Crescent Way  
Arcata, CA 95521  
Attn: Ed Conti

Report Date: 09/12/03 14:44  
Project No: 030229.2  
Project ID: SPI - Arcata

Order Number: A308634      Receipt Date/Time: 08/28/2003 14:30      Client Code: MFGARC      Client PO/Reference:

Alpha Analytical Laboratories, Inc.

METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
<b>MW-17 (A308634-17)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 12:59</b>		
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	<b>420 mg/l</b>	<b>10</b>
<b>MW-18 (A308634-18)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 11:14</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		<i>82.7 %</i>	<i>79-119</i>
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	<b>520 mg/l</b>	<b>10</b>
<b>MW-19D (A308634-19)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 15:25</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	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
<i>Surrogate: Tribromophenol</i>	"	"	"	"		<i>85.1 %</i>	<i>79-119</i>

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Tetra Tech/MFG, Inc.

Cheryl Watson For Sheri L. Speaks  
Project Manager

9/12/03



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**CHEMICAL EXAMINATION REPORT**

Page 12 of 16

MFG, Inc - Arcata  
875 Crescent Way  
Arcata, CA 95521  
Attn: Ed Conti

Report Date: 09/12/03 14:44  
Project No: 030229.2  
Project ID: SPI - Arcata

Order Number A308634	Receipt Date/Time 08/28/2003 14:30	Client Code MFGARC	Client PO/Reference
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**Alpha Analytical Laboratories, Inc.**

METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
<b>MW-19D (A308634-19)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 15:25</b>		
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Total Dissolved Solids</b>	EPA 160.1	AI30304	09/03/03	09/08/03	1	410 mg/l	10
<b>MW-A (A308634-20)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 00:00</b>		
<b>Chlorinated Phenols by Canadian Pulp Method</b>							
2,4,6-Trichlorophenol	EnvCan	AI30309	09/02/03	09/03/03	1	ND ug/l	1.0
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	28 "	1.0
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	450 "	1.0
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	26 "	1.0
Pentachlorophenol	"	"	"	"	"	18000 "	1.0
<i>Surrogate: Tribromophenol</i>	"	"	"	"	"	112 %	79-119
<b>Temp A (A308634-21)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 00:00</b>		
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Temperature</b>	Temperature	AI31213	08/28/03	08/28/03	1	7.0 °C	
<b>Temp C (A308634-22)</b>		<b>Sample Type: Water</b>			<b>Sampled: 08/27/03 00:00</b>		
<b>Conventional Chemistry Parameters by APHA/EPA Methods</b>							
<b>Temperature</b>	Temperature	AI31213	08/28/03	08/28/03	1	5.0 °C	

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Cheryl Watson For Sheri L. Speaks  
Project Manager

9/12/03



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

CHEMICAL EXAMINATION REPORT

Page 13 of 16

MFG, Inc - Arcata
875 Crescent Way
Arcata, CA 95521
Attn: Ed Conti

Report Date: 09/12/03 14:44
Project No: 030229.2
Project ID: SPI - Arcata

Order Number A308634 Receipt Date/Time 08/28/2003 14:30 Client Code MFGARC Client PO/Reference

SourceResult
Chlorinated Phenols by Canadian Pulp Method - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Includes sections for Blank (AI30309-BLK1), LCS (AI30309-BS1), Matrix Spike (AI30309-MS1), and Matrix Spike Dup (AI30309-MSD1).

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Signature of Cheryl Watson
Cheryl Watson For Sheri L. Speaks
Project Manager
9/12/03



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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**

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875 Crescent Way  
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Project No: 030229.2  
Project ID: SPI - Arcata

Order Number A308634	Receipt Date/Time 08/28/2003 14:30	Client Code MFGARC	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
<b>Batch AI30309 - Solvent Extraction</b>										
<b>Matrix Spike Dup (AI30309-MSD1)</b>		<b>Source: A308634-01</b>		<b>Prepared: 09/02/03</b>		<b>Analyzed: 09/03/03</b>				
2,3,4,6-Tetrachlorophenol	4.58	1.0	"	5.00	ND	91.6	66-117	0.219	20	
2,3,4,5-Tetrachlorophenol	4.59	1.0	"	5.00	ND	91.8	70-115	0.875	20	
Pentachlorophenol	4.34	1.0	"	5.00	ND	86.8	55-124	0.231	20	
Surrogate: Tribromophenol	22.8		"	24.9		91.6	79-119			

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Cheryl Watson For Sheri L. Speaks  
Project Manager

9/12/03



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

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Order Number: A308634
Receipt Date/Time: 08/28/2003 14:30
Client Code: MFGARC
Client PO/Reference:

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Rows include Blank (AI30304-BLK1) and Duplicate (AI30304-DUP1) for Total Dissolved Solids.

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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.

Signature of Cheryl Watson for Sheri L. Speaks, Tetra Tech/MFG, Inc.

Cheryl Watson For Sheri L. Speaks
Project Manager

9/12/03



Alpha

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 16 of 16

MFG, Inc - Arcata  
875 Crescent Way  
Arcata, CA 95521  
Attn: Ed Conti

Report Date: 09/12/03 14:44  
Project No: 030229.2  
Project ID: SPI - Arcata

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A308634	08/28/2003 14:30	MFGARC	

**Notes and Definitions**

- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- 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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**CHAIN-OF-CUSTODY RECORD AND REQUEST FOR ANALYSIS**  
COC No. 46199

PROJECT NO: 030229.2 PROJECT NAME: SPI - Arcata PAGE: 1 OF: 6  
SAMPLER (Signature): Matt Hillyard PROJECT MANAGER: Ed Conti DATE: 8/28/03  
METHOD OF SHIPMENT: Carrier CARRIERWAYBILL NO.: \_\_\_\_\_ DESTINATION: Alpha

Field Sample Identification	PRESERVATION				FILTRATION*	CONTAINERS			ANALYSIS REQUEST			Remarks			
	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	COLD		VOLUME (ml/oz)	TYPE†	NO.	Constituents/Method	Handling					
MW-1						125ml	G	2	X	PCP/TCP	TDS	STANDARD	Email results to: matt.hillyard@ mfgenv.com		
MW-1						1Qt	P	1		ABC80303-1				PCP/TCP by	
MW-2						125ml	G	2	X						Concentration Pulp Method
MW-2						1Qt	P	1	X						
MW-3						125ml	G	2	X						
MW-3						1Qt	P	1	X						
MW-4						125ml	G	2	X						
TOTAL NUMBER OF CONTAINERS						11			LABORATORY COMMENTS/CONDITION OF SAMPLES			Cooler Temp: <u>1.2</u>			

RELINQUISHED BY:		RECEIVED BY:	
SIGNATURE	PRINTED NAME	SIGNATURE	PRINTED NAME
<u>Matt Hillyard</u>	<u>Matt Hillyard</u>	<u>J. Matthews</u>	<u>J. Matthews</u>
<u>J. Matthews</u>	<u>J. Matthews</u>	<u>S. Speck</u>	<u>S. Speck</u>
<b>RECEIVED</b>	<b>Alpha</b>		<b>Alpha</b>
			<b>LABORATORY</b>

\*KEY Matrix: AQ - aqueous NA - nonaqueous SO - soil SL - sludge P - petroleum A - air OT - other Containers: P - plastic G - glass F - fiber B - brass OT - other Filtration: F - filtered U - unfiltered  
DISTRIBUTION: PINK Field Copy YELLOW Laboratory Copy WHITE Return to Originator

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**CHAIN-OF-CUSTODY RECORD AND REQUEST FOR ANALYSIS**  
COC No. **46200**

PROJECT NO: **030229.2**

SAMPLER (Signature): *Platt Nylund*

METHOD OF SHIPMENT: *Carrier*

PROJECT NAME: *SPI-Arcata*

PROJECT MANAGER: *Ecl Cont'*

CARRIER/WAYBILL NO:

PAGE: **2** OF: **6**

DATE: **8/28/03**

DESTINATION: *Alpha*

SAMPLES		ANALYSIS REQUEST														
Field Sample Identification	DATE	TIME	Matrix*	Preservation			FILTRATION*	Containers		Constituents/Method	Handling		Remarks			
				HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>		COLD	VOLUME (ml/oz)		TYPE*	NO.		HOLD	RUSH	STANDARD
MW-4	8/27	1540	AQ					1QT	P	1	PCB/TCB				A3081034-4	
MW-5		1614						125ml	G	2	X				-5	
MW-5		1614						1QT	P	1	X					
MW-6		1630						125ml	G	2	X					-6
MW-6		1630						1QT	P	1	X					
MW-7		1643						125ml	G	2	X					-7
MW-7		1643						1QT	P	1	X					
TOTAL NUMBER OF CONTAINERS								10		LABORATORY COMMENTS/CONDITION OF SAMPLES					Cooler Temp: <b>1.2</b>	

RELINQUISHED BY:			RECEIVED BY:		
SIGNATURE	PRINTED NAME	COMPANY	SIGNATURE	PRINTED NAME	COMPANY
<i>Platt Nylund</i>	Matt Hillyard	MFG	<i>J. Matthews</i>	J. Matthews	Alpha
<i>J. Matthews</i>	J. Matthews	Alpha	<i>B. Specko</i>	B. Specko	LABORATORY

SEP 18 2003

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

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**CHAIN-OF-CUSTODY RECORD AND REQUEST FOR ANALYSIS**  
 COC No. 46201

PROJECT NO: 030229.2 PROJECT NAME: SPE - Arcata PAGE: 3 OF: 6  
 SAMPLER (Signature): Matt Hilliard PROJECT MANAGER: Ed Cont. DATE: 8/28/03  
 METHOD OF SHIPMENT: Carrier CARRIER/WAYBILL NO: \_\_\_\_\_ DESTINATION: Alpha

SAMPLES		ANALYSIS REQUEST												
Field Sample Identification	DATE	TIME	Matrix*	Preservation			FILTRATION*	Containers		Constituents/Method	Handling		Remarks	
				HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>		COLD	VOLUME (ml/oz)		TYPE*	NO.		HOLD
MW-8	8/27	1010	AQ						125ml G 2	X	PCP/TCO			A308634-8
MW-8		1010							1QT P 1	X				
MW-9		1050							125ml G 2	X				-9
MW-9		1050							1QT P 1	X				
MW-10		1130							125ml G 2	X				-10
MW-10		1130							1QT P 1	X				
MW-11		1027							125ml G 2	X				-11
								TOTAL NUMBER OF CONTAINERS	11		LABORATORY COMMENTS/CONDITION OF SAMPLES			Cooler Temp: <u>1.2</u>

RELINQUISHED BY:			RECEIVED BY:		
SIGNATURE	PRINTED NAME	COMPANY	SIGNATURE	PRINTED NAME	COMPANY
<i>Matt Hilliard</i>	Matt Hilliard	MFG	<i>J. Matthews</i>	J. Matthews	Alpha
<i>J. Matthews</i>	J. Matthews	Alpha	<i>Shobri Specks</i>	Shobri Specks	Alpha
<b>RECEIVED</b>			LABORATORY		

\*KEY Matrix: AQ - aqueous NA - nonaqueous SO - soil SL - sludge P - petroleum A - air OT - other Containers: P - plastic G - glass I - Ieflon B - brass OT - other Filtration: F - filtered U - unfiltered  
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**MFG, INC.**

**CHAIN-OF-CUSTODY RECORD AND REQUEST FOR ANALYSIS**

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PROJECT NO: **030229.2**

PROJECT NAME: **SPI-Arcata**

PAGE: **5** OF: **6**

SAMPLER (Signature): *Mark Hillard*

PROJECT MANAGER: **Ed Cont.**

DATE: **8/28/03**

METHOD OF SHIPMENT: **Carner**

CARRIER/WAYBILL NO:

DESTINATION: **Alpha**

SAMPLES		PRESERVATION						CONTAINERS			ANALYSIS REQUEST				
Field Sample Identification	DATE	TIME	Matrix*	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	COLD	FILTRATION*	VOLUME (ml/oz)	TYPE*	NO.	Constituents/Method	Handling	Remarks	
MW-15 D	8/27	1439	AQ						125ml	G	2	PCP/PCP TOS	HOLD RUSH STANDARD	A308634-15	
MW-15 D		1439							100ml	P	1	X			
MW-16 D		1152							125ml	G	2	X		16	
MW-16 D		1152							100ml	P	1	X			
MW-17		1259							125ml	G	2	X		17	
MW-17		1259							100ml	P	1	X			
MW-18		1114							125ml	G	2	X		18	
TOTAL NUMBER OF CONTAINERS									11			LABORATORY COMMENTS/CONDITION OF SAMPLES			Cooler Temp: <b>1.2</b>

RELINQUISHED BY:			RECEIVED BY:		
SIGNATURE	PRINTED NAME	COMPANY	SIGNATURE	PRINTED NAME	COMPANY
<i>Mark Hillard</i>	Mark Hillard	MP G	<i>J. Matthews</i>	J. Matthews	Alpha
<i>J. Matthews</i>	J. Matthews	Alpha	<i>S. Speaks</i>	S. Speaks	Alpha
<b>RECEIVED</b>			LABORATORY		

\*KEY Matrix: AQ - aqueous NA - nonaqueous SO - soil SL - sludge P - petroleum A - air OT - other Containers: P - plastic G - glass T - teflon B - brass OT - other Filtration: F - filtered U - unfiltered  
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**CHAIN-OF-CUSTODY RECORD AND REQUEST FOR ANALYSIS**

COC No. 46204

PROJECT NO: 030229.2 PROJECT NAME: SPI - Arcata PAGE: 6 OF: 6  
 SAMPLER (Signature): Mark Hilliard PROJECT MANAGER: Ed Conti DATE: 8/28/03  
 METHOD OF SHIPMENT: Carrier CARRIERWAYBILL NO.: \_\_\_\_\_ DESTINATION: Alpha

SAMPLES		ANALYSIS REQUEST													
Field Sample Identification	DATE	TIME	Matrix*	Preservation			FILTRATION*	VOLUME (ml/oz)	TYPE*	NO.	Containers/Method			Handling	Remarks
				HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>					COLD	Temperature	HOLD		
MW-18	8/27	1114	AQ					1QT	P	1	X				A308034 - 18
MW-19D		1525						125ml	G	2	X				19
MW-19D		1925						1QT	P	1	X				
MW-A								125ml	G	2	X				20
Temp A								125ml	G	1		X			21
Temp C								125ml	G	1		X			22

RELINQUISHED BY:				RECEIVED BY:			
SIGNATURE	PRINTED NAME	COMPANY	DATE	SIGNATURE	PRINTED NAME	COMPANY	COOLER TEMP
<i>Mark Hilliard</i>	Mark Hilliard	MFC	8/28/03 10:30	<i>J. Matthews</i>	J. Matthews	Alpha	1.2
<i>J. Matthews</i>	J. Matthews	Alpha	8/28/03 14:30	<i>Shari Speck</i>	Shari Speck	Shari Speck Lab	
<b>RECEIVED</b>							

\*KEY Matrix: AQ - aqueous NA - nonaqueous SO - soil SL - sludge P - petroleum A - air OT - other Containers: P - plastic G - glass T - teflon B - brass OT - other Filtration: F - filtered U - unfiltered  
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**APPENDIX C**

**Waste Disposal Manifest  
for First and Second Quarter 2003**

2281/615  
 IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802. WITHIN CALIFORNIA, CALL 1-800-852-7550

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. CA 0004740160517018		Manifest Document No.		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.		
3. Generator's Name and Mailing Address SIERRA PACIFIC INDUSTRIES - ARCATA P.O. BOX 1189 ARCATA CA 95518 4. Generator's Phone (707) 443-3111					A. State Manifest Document Number <b>22817615</b>					
5. Transporter 1 Company Name ASBURY ENVIRONMENTAL SERVICES 6. US EPA ID Number CA 020277036					B. State Generator's ID					
7. Transporter 2 Company Name					C. State Transporter's ID [Reserved.]					
8. US EPA ID Number					D. Transporter's Phone (800)974-4495					
9. Designated Facility Name and Site Address DEMENNO / KERDOON 2000 NORTH ALAMEDA STREET COMPTON CA 90222 10. US EPA ID Number CA 090013352					E. State Transporter's ID [Reserved.]					
					F. Transporter's Phone					
					G. State Facility's ID					
					H. Facility's Phone (310)537-7100					
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number) a. NON RCRA HAZARDOUS WASTE LIQUID (WATER WITH TRACE PENTACHLOROPHENOL) b. c. d.					12. Containers		13. Total Quantity	14. Unit Wt/Vol	I. Waste Number	
					No.	Type			State 343	
					205 DM 202310				EPA/Other NONE	
									State	
									EPA/Other	
J. Additional Descriptions for Materials Listed Above 11A) 208829, X G					K. Handling Codes for Wastes Listed Above a. b. c. d.					
15. Special Handling Instructions and Additional Information USE PPE NAERG #: 11A. 171 SITE: 2593 NEW NAVY BASE ROAD, ARCATA, CA 95518 EMERGENCY CONTACT CHEMTREC 1-800-424-9300 # 22817615										
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.  If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.										
Printed/Typed Name <i>Jay Hawsey</i>				Signature <i>Jay Hawsey</i>				Month Day Year 07/17/03		
17. Transporter 1 Acknowledgement of Receipt of Materials										
Printed/Typed Name <i>William P...</i>				Signature <i>William P...</i>				Month Day Year 09/18/03		
18. Transporter 2 Acknowledgement of Receipt of Materials										
Printed/Typed Name				Signature				Month Day Year		
19. Discrepancy Indication Space										
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.										
Printed/Typed Name				Signature				Month Day Year		

DO NOT WRITE BELOW THIS LINE.