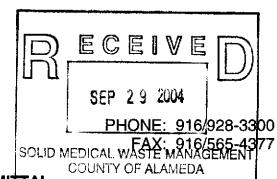
Shaw Environmental, Inc. 1326 N. Market Boulevard Sacramento, California 95834-1943



TRANSMITTAL

То:	Ms. Je	anne M. Zolezzi	DA	<i>TE:</i> SEPTEM	BER 23, 2004				
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FROM:	David	W. Herzog							
RE:		ttal of Third Quarter 2004 Monitori ne Engineering	ng Repo	ort, McLen	nore Trust/Hard				
QUANT	TITY:	Descr	IPTION:						
1		Third Quarter 2004 Monitoring Rependence Engineering	ort, McL	emore Trus	t/Hard Chrome				
	F	or Your:	St	ENT BY:					
	$\boxtimes$	USE	$\boxtimes$	REGULAR	MAIL				
		Approval		OVERNIGHT					
		REVIEW/COMMENTS		UPS					
		Information		COURIER					
		OTHER		OTHER					

cc: Ms. Cheryl McLemore, 4790 Caughlin Parkway, #429, Reno, Nevada 89509

Mr. Tom Peacock, Alameda County Environmental Health

Mr. Mark Piros, Department of Toxic Substances Control (California)

Ms. Sumadhu Arigala, Regional Water Quality Control Board (San Francisco Bay Area)

# SEMI-ANNUAL THIRD QUARTER 2004 MONITORING REPORT HARD CHROME ENGINEERING

OAKLAND, CALIFORNIA

Prepared for:

McLemore Trust

September 23, 2004

Prepared by:

Shaw Environmental, Inc. 1326 North Market Boulevard Sacramento, California 95834

Project No.: 792775.00005000

# Semi-Annual Third Quarter 2004 Monitoring Report Hard Chrome Engineering Oakland, California

The material and data in this report were prepared under the supervision and direction of the undersigned.

No. 7211

Shaw "Shaw Environmental, Ing

David W. Herzog, R.G. Project Manager

SHAW ENVIRONMENTAL, INC.

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#### INTRODUCTION

The following report documents the semi-annual third quarter 2004 monitoring event conducted by Shaw Environmental, Inc. (Shaw) at the Hard Chrome Engineering facility, located at 750 107<sup>th</sup> Avenue, Oakland, California (see Figure 1). The site currently operates as a chrome plating facility and occupies approximately 27,500 square feet. Groundwater monitoring consists of collecting groundwater samples for laboratory analyses from each monitoring well, measuring groundwater elevation in each monitoring well, and evaluating groundwater gradient and direction of groundwater flow beneath the site.

### **Background**

Based on the Preliminary Environmental Characterization, BSK & Associates, September 29, 1992, Summary and Evaluation of Environmental Conditions, Soil and Groundwater Investigation, March 24, 1998, EMCON, and Recommendations for Future Actions, Levine Fricke, July 2, 1996, it appears that groundwater and, to a lesser extent, soil beneath the site is impacted with chromium. As part of the previous investigations, soil borings SB-1 through SB-17 were drilled, and groundwater monitoring wells MW-1 and MW-1B through MW-6 were installed at the site. Site soil and groundwater impacted with chromium appears to be primarily located near a concrete-lined pit within the Hard Chrome facility (see Figure 2).

#### SAMPLING AND ANALYSIS PROGRAM

Groundwater monitoring wells MW-1 through MW-6 were monitored and sampled consistent with the protocol presented in Appendix A. Shaw measured groundwater levels in each well on site using an electronic sounding device and reported the data on the monitoring well data forms included in Appendix B. Groundwater samples collected on September 1, 2004, were filtered in the field, and then submitted for chemical analysis.

Groundwater samples collected from wells MW-1 through MW-6 were submitted to California Laboratory Services (CLS) (a state-certified laboratory, ELAP No. 1233) and analyzed for the CAM 17 listed dissolved metals using U. S. Environmental Protection Agency (EPA) Methods 200.7/200.8, for dissolved hexavalent chromium using EPA Method 7196A, and for dissolved mercury by EPA Method 245.1. See Appendix C for certified analytical results and chain-of-custody reports.

#### **RESULTS**

#### **Groundwater Flow and Gradient**

Groundwater during the third quarter 2004 monitoring event was measured, and groundwater elevations were calculated in each well and used to construct a groundwater contour map (see Figure 3). During the third quarter 2004 monitoring event, groundwater flowed to the west with a gradient of approximately 0.0026. These flow conditions are generally similar to those previously reported and generally agree with assumed regional flow patterns.

#### **Quality Control Results**

Laboratory Quality Control (QC) data were evaluated to assess the acceptability of the analytical data, and therefore, their usefulness in interpreting groundwater quality. Laboratory QC results are included with the analytical reports in Appendix C. The QC evaluation is summarized below.

- All analyses were performed within EPA-recommended holding times.
- The results of the daily laboratory method blanks were acceptable.
- Matrix spike and matrix spike duplicates (MS/MSD) were performed by the laboratory. MS and MSD recoveries, and the relative percent difference (RPD) between duplicate results were within acceptance limits.
- The laboratory reported the results of laboratory control samples (LCS).
   Results were within acceptance limits except for cadmium and silver, but were determined to be acceptable based on MS/MSD recoveries and RPD's.
- Routine reporting limits were used to quantify and report the analytical results.

SHAW ENVIRONMENTAL. INC.

The laboratory QC results indicate that the groundwater analytical data are of acceptable quality and can be used to evaluate groundwater quality.

#### **Groundwater Analytical Results**

Antimony was reported in well MW-2 at a concentration of 0.45 milligrams per liter (mg/L). Barium was reported in all wells at concentrations ranging between 0.067 and 0.34 mg/L. Chromium was reported in all wells except MW-1 and MW-6 at concentrations ranging between 0.045 and 450 mg/L. Hexavalent chromium was reported in wells MW-1B, MW-2, MW-3, MW-5, and MW-6 at concentrations ranging between 0.019 and 450 mg/L. Copper was reported in well MW-2 at a concentration of 1.4 mg/L. Mercury was reported in wells MW-1 and MW-2 at concentrations of 0.00024 and 0.00034 mg/L, respectively. Molybdenum was reported in well MW-2 at a concentration of 0.024 mg/L. Nickel was reported in wells MW-1 and MW-2 at concentrations of 0.034 and 0.4 mg/L, respectively. Zinc was reported in wells MW-2 and MW-5 at concentrations of 0.34 and 0.02 mg/L, respectively. Table 2 summarizes the groundwater analytical results.

#### SUMMARY AND CONCLUSIONS

Based on analytical results of samples collected from wells MW-1 through MW-6 on September 1, 2004, metals reported include antimony, barium, chromium, hexavalent chromium, copper, lead, mercury, molybdenum, nickel, and zinc. Impacted water extends from the existing sump (well MW-2) west (hydraulically downgradient) toward the locations of wells MW-5 and MW-1B. The lateral extent of impacted groundwater beneath the site appears to be defined to the north by monitoring well MW-4, and to the south and southwest by wells MW-1, MW-3, and MW-6. The lateral extent of impacted groundwater has not been defined to the east or northwest of the site; however, concentrations of total chromium and hexavalent chromium have generally declined in wells MW-1B, MW-2, and MW-5. Vertically, the extent of impacted groundwater has not been defined.

During the September 2004 monitoring event, the monitoring well exhibiting the greatest chromium impact was well MW-2, located adjacent to and hydraulically downgradient from the sump.

Concentrations of total chromium in wells MW-1B, MW-2, MW-3, and MW-5 currently exceed the maximum contaminant level (MCL) for this compound (.05 mg/L). Overall, concentration trends in these wells have declined with respect to historical levels. Total and hexavalent chromium concentrations in downgradient wells MW-1B and MW-5 show declining trends. Historical analytical results are summarized in Table 2.

#### **LIMITATIONS**

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

Table 1 Groundwater Analytical Data McLemore Trust Hard Chrome Engineering Inc. 750 107th Avenue, Oakland, California

												•										
Well ID / Elevation (feet SSD)	Sampling Date	Depth to Water (feet btoc)	Groundwater Elevation (feet SSD)	Antimony	Arsenic	Berium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Cobait	Copper	Lead	Mercury	Molybdenum	Nickel	Sclenium	Silver	Thallium	Vanadium	Zine	pH (units)
MW-1/	06/26/97	16.27	83.96	NA	<0.05	NA	<0.005	NA	0.33	<0.01	NA	NA	NA	NA	NA	NA.	<0.05	NA	NA	NA	NA	4 67
100.23	08/11/97	17.62	82.61	NA	NA	NA	NA	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA NA	NA NA	NA NA	6,57 6.46
ĺ	09/29/97 12/30/97	17.87 16.32	82.36 83.91	NA	<0.05	NA	<0,005	NA	< 0.01	< 0.01	NA	NA	NA	NA.	NA	NA	<0.05	NA	NA.	NA	NA	6.53
	04/23/98	15.67	84.56	NA NA	<0.01 NA	NA NA	<0,005 NA	NA NA	0.01 <0.01	<0.01 <0.01	NA NA	NA	NA	NA	NA	NA	< 0.01	NA	NA	NA	NA	7.18
i	03/13/00	12.47	87,76	<0.1	<0.1	<0.1	<0.01	< 0.01	0.0305	0.0261	<0.04	NA <0,01	NA <0.1	NA <0.0002	NA <0.04	NA <0,04	NA. <0.1	NA <0.01	NA <0.1	NA <0.04	NA 0.0107	NA
	09/20/00	17.12	83,11	<0.05	<0.05	0,105	<0,005	< 0.005	< 0.005	<0.005	<0.02	<0.005	< 0.05	<0.0002	<0.02	<0.02	< 0.05	< 0.005	<0.05	<0.04	<0.0107	6,51 6.31
	03/20/01	15.77	84.46	<0.1	<0.1	<0.1	< 0.01	<0.01	0.0951	0.0486	< 0.04	<0.01	<0.1	< 0.0002	<0.04	<0.04	<0.1	< 0.01	<0.1	< 0.04	0.0236	6.88
	09/13/01 03/12/02	17.49 14,63	82.74 85.60	<0.1 <0.05	<0.1 <0.005	<0.1 0.068	<0.01 <0.005	<0.01 <0.01	<0.01 0.016	0.0052	<0.04	<0.01	<0.1	<0.0002	<0.04	<0.04	<0.1	< 0.01	<0.1	<0.04	< 0.01	5.54
	09/23/02	17,20	83.03	<0.05	<0.005	0.068	<0.005	<0.01	<0.018 <0.02	<0.01 <0.01	<0.02 <0.02	<0.02 <0.02	<0.005 <0.005	<0,0002 <0,0002	<0.02 <0.02	<0.02 0.022	<0.005 <0.005	<0.01	< 0.005	<0.02	<0.02	5.80
	03/26/03	16.18	84.05	<0.05	< 0.005	0.098	<0.005	<0.01	<0.02	< 0.01	< 0.02	<0.02	<0.005	0.0002	<0.02	<0.022	<0.005	<0,01 <0,01	<0.01 <0.01	<0.02 <0.02	<0.02 <0.02	6.86 7.11
	09/24/03	17.32	82.91	<0.05	<0.005	0.11	< 0.005	< 0.01	< 0.02	< 0.01	< 0.02	<0.02	< 0.005	<0.0002	<0.02	0,036	<0.005	<0.01	<0.01	< 0.02	<0.02	6.63
	02/24/04 09/01/04	14.63 17.26	85,60 82,97	<0.05 <0.05	<0.005 <0.005	0.095	< 0.005	< 0.01	0.026	0.021	< 0.02	< 0.02	< 0.005	<0.0002	<0.02	0.024	<0.005	<0.01	<0.01	< 0.02	< 0.02	6.71
ĺ	03/01/04	17.20	62.71	<b>~0,03</b>	<0.003	0.11	<0.005	<0.01	<0.02	<0.01	< 0.02	<0.02	<0.005	0,00024	<0.02	0.034	< 0.005	<0.01	<0.01	<0.02	<0.02	7.01
MW-1B/	06/27/97	16.38	82.63	NA	< 0.05	NA	0.011	NA	430	360	NA	NA	NA	NA	NA	NA	< 0.05	NA	NA	NA	NA	6.57
99.01	08/11/97 09/29/97	16.73 17.06	82,28	NA	NA so s	NA	NA	NA	340	330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.48
	12/30/97	15.50	81,95 83,51	NA NA	<0.5 <0.05	NA NA	<0.05 <0.025	NA NA	280 200	260	NA	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	7.59
	04/23/98	15.05	83.96	NA.	NA	NA NA	NA	NA. NA	580	160 520	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	<0.05	NA	NA	NA	NA	6.9)
Ì	03/13/00	12,10	86.91	<0,1	<0.1	<0.1	< 0.01	<0,01	252	258	<0.04	<0.01	<0.1	<0,0002	<0.04	NA. <0.04	NA <0.1	NA <0.01	NA <0.1	NA <0.04	NA <0.01	6.47 6.56
	09/20/00	17.89	81.12	0.56	< 0.5	<0.5	<0.05	<0.05	134	122	<0.2	< 0.05	< 0.5	< 0.0002	<0.2	<0.2	<0.5	< 0.05	<0.5	<0,2	<0.005	6.01
	03/20/01 09/13/01	15,08 NM	83.93 NM	< 0.5	<0.5	< 0.5	<0.05	<0.05	72.6	74.6	<0.2	< 0.05	<0,5	<0.0002	<0.2	<0.2	<0.5	<0.05	<0.5	<0.2	< 0.05	6,95
	03/12/02	NM NM	NM NM	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA	NA	NA	NA.	NA.	NA	NA	NA	NA	NA	NA	NA
	09/23/02	16.38	82.63	0.16	<0.005	0.051	<0.005	<0.01	33	35	NA <0.02	NA <0.02	NA <0.005	NA <0.0002	NA. <0.02	NA <0.02	NA <0.005	NA <0.01	NA <0.01	NA 0.071	NA <0,02	NA 6 50
	03/26/03	15.35	83,66	0.092	< 0.005	0.056	< 0.005	<0.01	35	37	<0.02	<0.02	< 0.005	<0.0002	<0.02	< 0.02	<0.005	<0.01	<0.01	<0.02	<0.02	6.5 <b>8</b> 6.91
	09/24/03	16.52	82.49	0.059	< 0.005	0.061	<0.005	10.0>	28	28	<0.02	< 0.02	<0,005	<0.0002	<0.02	< 0.02	< 0.005	< 0.01	<0.01	<0.02	<0.02	6.86
	02/24/04 09/01/04	14.08 16.41	84.93 82.60	0.074 <0.05	<0.005 <0.005	0.066 0.068	<0.005 <0.005	<0.01 <0.01	24 23	27 10	<0.02 <0.02	<0.02	<0.005	<0.0002	<0.02	<0.02	< 0.005	< 0.01	<0.01	<0.02	<0.02	7.08
	03/01/04	10,41	02.00	40.03	C00,00	0.000	<b>~0.003</b>	<b>~0.01</b>	23	10	<0.02	<0.02	<0.005	<0.0002	<0.02	< 0.02	<0.005	<0.01	<0.01	<0.02	<0.02	6,96
MW-2/	06/27/97	17.57	82.81	NA	0.21	NA	0.032	NA	3000	3000	NA	NA.	NA	NA	NA	NA	0.14	NA	NA	NA	NA	4.65
100,38	08/11/97 * · · · · · · · · · · · · · · · · · ·	17.91 18.22	82.47	NA	NA ro c	NA	NA.	NA	2600	2600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.66
	12/30/97	16.54	82.16 83.84	NA NA	<0.5 <0.05	NA NA	<0.05 <0.025	NA NA	1500 86	1400 83	NA NA	NA NA	NA	NA NA	NA	NA	<0.5	NA	NA	NA	NA	4.82
	04/23/98	16.15	84,23	NA	NA.	NA	NA	NA.	150	140	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	<0.05 NA	NA NA	NA NA	NA NA	NA NA	6.42 6,31
	03/13/00	13.12	87,26	<0.1	<0.1	<0.1	<0.01	< 0.01	139	136	< 0.04	1.24	<0.1	<0.0002	<0.04	0.3	<0.1	<0.01	<0.1	<0.04	0.294	4.77
	09/20/00	17,48	82.90	2.67	<2.5	<2.5	<0.25	< 0.25	598	611	<1.0	7.06	<2.5	0.00078	<1.0	1.04	<2.5	< 0.25	<2.5	<1.0	1.12	3.49
	03/20/01 09/13/01	16.21 17.83	84.17 82.55	2.24 <10	<2 <10	<2 <10	<0.2 <1	<0.2 <1	752 1000	757 55	<0.8	17.2	<2	0.00122	<0.8	1.69	<2	<0.2	<2	<0.8	1.88	6,37
	03/12/02	15.11	85.27	<0.05	<0,005	<0.02	<0.005	<0.01	410	35 410	<4 <0.02	14 7.0	<10 <0,005	0.00088 0.00045	<4 <0.02	<4 0.94	<10 <0.005	<1 <0,01	<10 <0.005	<4 1.5	2,3	5.19
	09/23/02	17.56	82.82	2.9	<0.05	0.12	< 0.025	<0.05	610	510	<0.02	2.9	<0.005	0.00043	<0.1	0.78	<0.005	<0.05	<0.005	1.5 1.2	0.97 0.75	5.47 6,24
	03/26/03	16.58	83.80	1.2	<0.05	0.22	<0.01	< 0.02	530	530	< 0.04	6.7	<0.05	0.00095	<0.04	0.95	<0.05	< 0.02	<0.1	< 0.04	0.94	5.91
	09/24/03 02/24/04	17.67 15.16	82,71 85,22	I.7	<0.025	0.22	<0.025	<0.05	750	650	<0.1	9.4	< 0.025	0.00075	<0.1	1.3	< 0.025	<0.05	<0.05	<0.1	1.3	5,37
•	02/24/04	17.61	85,22 82,77	0.64 0.45	<0.005 <0.005	0.11 0.34	<0.005 <0.005	<0.01 <0.01	250 450	250 450	<0.02 <0.02	2.8 1.4	<0.005 <0.005	0.00061 0.00034	<0.02 0,024	0.45 0.4	<0.005 <0.005	<0.01 <0.01	<0.01 <0.01	<0.02	0.41	5,84
					0,000	4.54	-2.005	-5,01	7.70	UCF	~0.02	1.4	COD,o~	0,00034	0,024	V.4	~0.005	<b>~</b> 0,01	<v.u1< td=""><td>&lt;0.02</td><td>0.34</td><td>7.01</td></v.u1<>	<0.02	0.34	7.01
MW-3/	06/26/97	17.43	82,94	NA	<0.05	NA	0.011	NA	1	<0.01	NA	NA	NA	NA	NA	NA	<0.05	NA	NA	NA	NA	6.86
100.37	08/11/97 09/29/97	17.74 18.02	82.63 82.35	NA NA	NA <0.05	NA.	NA CO COS	NA.	<0.01	< 0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.84
	12/30/97	16.55	82.33 83,82	NA NA	<0.05 <0.01	NA NA	<0.005 <0.005	NA NA	<0.01 <0.01	<0,01 <0,01	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	0.05	NA	NA	NA	NA	7.55
	04/23/98	15.94	84.43	NA	NA.	NA	NA.	NA NA	0.01	<0.01	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	<0.01 NA	NA NA	NA NA	NA NA	NA NA	7.42 6.94
	03/13/00	12.80	87.57	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	0.00623	<0.04	< 0.01	<0.1	<0.0002	<0.04	NA <0.04	<0.1	<0,01	NA <0.1	NA <0,04	NA. <0.01	6,68
	09/20/00	17.34	83.03	< 0.05	<0.05	0.0553	< 0.005	<0.005	0.014	< 0.005	< 0.02	<0,005	<0.05	< 0.0002	<0.02	<0.02	< 0.05					
	03/20/01	16.06	84.31	1.0>	<0.1	< 0.1	< 0.01	< 0.01	0.0368	0.017	<0.04	<0.01	<0.1	~0,000 <u>2</u> .	~0.0Z	NO.02	<b>~0.03</b>	0.0056	<0.05	<0.02	< 0.0005	6.56

Table 1 Groundwater Analytical Data McLemore Trust Hard Chrome Engineering Inc. 750 107th Avenue, Oakland, California

Welt ID / Elevation (feet SSD)	Sampling Date	Depth to Water (feet btoc)	Groundwater Elevation (feet SSD)	Antimony	Arsenic	Baríum	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Cobait	Соррег	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	pH (units)
MW-3	09/13/01	17,70	82.67	<0.1	<0.1	<0,1	<0.01	<0.01	0.11	0.074	<0.04	<0.01	<0.1	<0.0002	<0.04	<0.04	<0.1	<0.01	<0.1	<0.04	< 0.01	6,28
(cont.)	03/12/02	14.94	85,43	<0.05	<0.005	0.066	<0.005	<0.01	0.024	<0.01	< 0.02	< 0.02	<0.005	< 0.0002	<0.02	<0.02	< 0.005	<0.01	<0.005	<0.02	<0.02	6.28
i	09/23/02 03/26/03	17,43 16.45	82.94 83.92	<0.05 <0.05	<0.005	0.053	<0.005	<0,01	0.044	0.049	<0.02	<0.02	<0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	< 0.01	<0.02	< 0.02	6,86
	03/26/03	17.55	83.92 82.82	<0.05	<0.005 <0.005	0.059 0.066	<0.005 <0.005	<0.01 <0.01	0,14 0,083	0.039 0.022	<0.02 <0.02	<0.02 <0.02	<0.005 <0.005	0.00022 <0.0002	<0.02 <0.02	<0.02	<0.005	<0.01	<0.01	<0.02	< 0.02	6.36
	02/24/04	15.09	85.28	<0.05	<0.005	0.082	<0.005	<0.01	0.14	0.022	<0.02	<0.02	0.0051	<0.0002	<0.02	<0.02 <0.02	<0.005 <0.005	<0.01 <0.01	<0.01 <0.01	<0.02 <0.02	<0.02 <0.02	6.74 7.01
	09/01/04	17.51	82,86	<0.05	< 0.005	0.076	<0.005	<0.01	0.19	0.019	<0.02	< 0.02	<0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.01	<0.02	<0.02	7.00
MW-4/	06/26/97	17.40	82.90	NA	< 0.05	NA	0.006	NA	0.55	<0.01	NA	NA	NA	NA	NA	NA	0.06	NA	NA	NA	NA	6,88
100,3	08/11/97	17.76	82.54	NA	NA	NA	NA	NA	< 0.01	<0.01	NA	NA	NA	NA	NA	NA.	NA.	NA NA	NA.	NA.	NA NA	6.72
	09/29/97	18.30	82.00	NA	<0.05	NA	<0.005	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA	0.07	NA	NA	NA	NA	7.61
	12/30/97	16.50	83.80	NA	<0.01	NA	< 0.005	NA	0.01	<0.01	NA	NA	NA	NA	NA	NA	<0.01	NA	NA	NA	NA	7.40
	04/23/98 03/13/00	15.93 13.24	84.37 87.06	NA <0.1	NA <0.1	NA <0.1	NA. <0.01	NA <0.01	<0.01 <0.01	< 0.01	NA co.o.t	NA (0.01	NA co.1	NA ro cono	NA	NA.	NA	NA	NA	NA.	NA	NA
	09/20/00	18.88	81.42	<0.05	<0.05	0,0624	<0.005	<0.005	<0.005	0.00623 <0.005	<0.04 <0.02	<0.01 <0.005	<0.1 <0.05	<0.0002 <0.0002	<0.04 <0.02	<0.04 <0.02	<0.1 <0.05	<0.01 <0.005	<0.1 <0.05	<0.04 <0.02	<0.01	6.60
	03/20/01	15.99	84.31	<0.1	<0.1	0.118	<0.01	<0.01	1.03	0,475	<0.04	<0.003	<0.1	<0.0002	<0.04	0.059	<0.03	<0.003	<0.03	<0.04	<0.0005 <0.01	6.62 6.64
i	09/13/01	17.62	82.68	<0.1	<0.1	0.1	<0.01	<0.01	1.3	0.011	< 0.04	< 0.01	<0.1	<0.0002	< 0.04	0.052	<0.1	<0.01	<0.1	<0.04	<0.01	5.94
	03/12/02	14.96	85.34	< 0.05	<0,005	0.078	< 0.005	< 0.01	0.028	< 0.01	< 0.02	<0.02	< 0.005	0.00032	< 0.02	0.024	< 0.005	<0.01	<0,005	<0.02	<0.02	6.15
İ	09/23/02	17.34	82.96	< 0.05	<0,005	0.077	< 0.005	<0.01	<0.02	<0.01	< 0.02	<0.02	<0.005	< 0.0002	< 0.02	0.028	< 0.005	<0.01	<0.01	< 0.02	< 0.02	7.00
ł	03/26/03	16,36	83,94	<0.05	< 0.005	0.08	< 0.005	<0.01	0.064	0.049	<0.02	<0.02	< 0.005	0.0002	< 0.02	0.02	<0.005	<0.01	<0.01	< 0.02	<0.02	6.74
1	09/24/03 02/24/04	17.64 15.00	82.66 85.30	<0.05 <0.05	<0.005 <0.005	0.077 0.066	<0.005 <0.005	<0.01 <0.01	0,034 0.15	<0.01 0.12	<0.02 <0.02	<0.02	<0.005	<0.0002	< 0.02	0.022	< 0.005	<0.01	<0.01	<0.02	<0.02	6.79
1	09/01/04	17.41	82,89	<0.05	<0.005	0.000	<0.005	<0.01	0.15	<0.01 <0.01	<0.02	<0.02 <0.02	<0,005 <0,005	<0.0002 <0.0002	<0.02 <0.02	<0.02 <0.02	<0.005 <0.005	<0.01 <0.01	<0.01 <0.01	<0.02 <0.02	<0.02 <0.02	6.98
	02101101	.,	D2.07	10.05	40,000	0,077	40.003	<b>~0,01</b>	0,043	~0.01	~0.02	~0.02	~0,003	~0,0002	~0.02	V0.02	~u,uu3	₹0.01	<0.01	<0.02	<0.02	6,96
MW-5/	06/27/97	16.69	82.60	NA	< 0.05	NA	0,005	NA	110	90	NA	NA	NA	NA	NA	NA.	< 0.05	NA	NA	NA	NA	6,70
99.29	08/11/97	16,95	82.34	NA	NA	NA	NA	NA	120	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6,67
	09/29/97	17.20	82.09	NA	<0.5	NA	<0.05	NA	130	100	NA	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	7.13
	12/30/97 04/23/98	15.80 15.28	83.49 84,01	NA NA	<0.05	NA	<0.025	NA	110	98	NA	NA	NA	NA	NA	NA	<0.05	NA	NA	NA	NA	7.13
	03/13/00	12.36	86.93	NA. <0.1	NA <0,1	NA <0.1	NA. <0.01	NA <0.01	70 49.4	58 54.3	NA. <0.04	NA <0.01	NA <0.1	NA <0.0002	NA <0.04	NA. <0.04	NA <0.1	NA <0.01	NA <0.1	NA <0.04	NA <0.01	6.67
	09/20/00	18.11	81.18	<0.5	<0.5	<0.5	<0.05	<0.05	81.6	81.4	<0.2	<0.05	<0.5	<0.0002	<0.2	<0.2	<0.5	< 0.05	<0.1	<0.04	<0.005	6.63 6.56
	03/20/01	15.27	84.02	<0.1	<0.1	<0.1	<0.01	<0.01	0.448	<0.005	<0.04	<0,01	<0.1	<0.0002	<0.04	<0.04	<0.1	< 0.01	<0.1	<0.04	< 0.01	6.94
	09/13/01	NM	NM	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NΑ	NA	NA	NA	NA	NA	NA	NA	NA	NA
	03/12/02	NM	NM	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	09/23/02	16.60 15.59	82.69	< 0.05	<0.005	0.084	<0.005	<0.01	2.4	2.5	<0.02	<0.02	<0.005	<0.0002	<0.02	< 0.02	< 0.005	<0.01	<0.01	<0.02	<0.02	6.86
	03/26/03 09/24/03	15.39	83.70 82.57	<0.05 <0.05	<0.005 <0.005	0.06 <del>7</del> 0.1	<0,005 <0,005	<0.01 <0.01	6 9.7	6.1 10	<0.02 <0.02	<0.02 <0.02	<0.005 <0.005	<0.0002 <0.0002	<0.02 <0.02	<0.02 <0.02	<0,005 <0,005	<0.01 <0.01	<0.01	<0.02	<0.02	6,69
	02/24/04	14.19	85.10	<0.05	<0.005	0.055	<0.005	<0.01	8	8.8	<0.02	<0.02	<0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.01 <0.01	<0.02 <0.02	<0,02 0.02	6.70 7.05
	09/01/04	16,64	82.65	<0.05	< 0.005	0.11	<0,005	<0.01	15	6.9	< 0.02	<0.02	< 0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.01	<0.02	0.02	6.94
M₩-6/	06/26/97	17,68	82,80	NA	<0.05	NA	0.005	NA	0.47	<0.01	214	N1.4	374		274		*0.05					
100.48	08/11/97	18.08	82.40	NA NA	NA	NA NA	NA	NA NA	<0.01	<0.01	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	<0,05 NA	NA NA	NA NA	NA NA	NA NA	6.91
	09/29/97	18.00	82.4B	NA	<0.05	NA	<0.005	NA	<0.01	<0.01	NA	NA	NA.	NA	NA	NA NA	0.05	NA.	NA NA	NA NA	NA NA	6.84 7.79
	12/30/97	16,77	83.71	NA	< 0.01	NA	< 0.005	NA	< 0.01	< 0.01	NA	NA	NA	NA	NA	NA	<0.01	NA	NA	NA	NA	7.40
	04/23/98	16.22	84.26	NA	NA	NA	NA	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	03/13/00	13.19	87.29	<0.1	<0.1	0.102	< 0.01	<0.01	<0.01	0.00733	<0.04	<0.01	<0.1	<0.0002	<0.04	<0.04	<0.1	< 0.01	<0.1	<0.04	<0.01	6.71
	09/20/00 03/20/01	17,57 16,29	82.91 84.19	<0.05	<0.05	0.0667	<0.005	<0.005	0.00665	<0.005	<0.02	<0.005	<0.05	<0.0002	<0.02	<0.02	<0.05	<0.005	< 0.05	<0.02	0.0133	6,65
	03/20/01	16.29 17.93	84.19 82.55	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1	<0.01 <0.01	<0.01 <0.01	0.028 0.031	0.0249 <0.005	<0.04 <0.04	<0.01 <0.01	<0.1 <0.1	<0.0002 <0.0002	<0.04 <0.04	<0.04 <0.04	<0.1 <0.1	<0.01 <0.01	<0.1 <0.1	<0.04 <0.04	<0.01 <0.01	6.83
	03/12/02	15.18	85.30	<0.05	<0.005	0,075	<0.005	< 0.01	0.031	<0.003	<0.04	<0.01	<0.005	0.00044	<0.04	<0.02	<0.005	<0.01	<0.005	<0.04	<0.01	6.36 6.37
	09/23/02	17.66	82.82	<0.05	<0.005	0.067	<0.005	< 0.01	<0.02	0.028	< 0.02	< 0.02	<0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.01	<0.02	< 0.02	6.B7
	03/26/03	16.64	83.84	< 0.05	<0.005	0.074	< 0.905	<0.01	0.066	0.13	<0.62	<0.02	0.0082	<0.0002	<0.02	< 0.02	<0.005	< 0.01	<0.01	< 0.02	< 0.02	7.03
	09/24/03	17.78	82,70	< 0.05	< 0.005	0.062	<0.005	10.0>	0.034	0.028	<0.02	< 0.02	<0.005	<0.0002	<0.02	<0.02	< 0.005	< 0.01	<0.01	<0.02	<0.02	6.61
	02/24/04 09/01/04	15.27 17.72	85.21 82.76	<0.05	<0.005	0.071	<0.005	<0.01	0.071	0.021	<0.02	< 0.02	0.011	<0.0002	< 0.02	< 0.02	<0.005	<0.01	<0.01	<0.02	<0.02	6.87
	V7/VL/U9	17.74	04.70	<0.05	<0,005	0.067	<0.005	<0.01	<0.02	0.019	<0.02	<0.02	<0.005	<0.0002	<0.02	<0.02	<0,005	<0.01	<0.01	<0.02	<0.02	7.03
											<u></u>											1

#### Table 1 **Groundwater Analytical Data** McLemore Trust Hard Chrome Engineering Inc. 750 107th Avenue, Oakland, California

Well ID / Elevation (feet SSD)	Sampling Date	Depth to Water (feet btoc)	Groundwater Elevation (feet SSD)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Cobalt	Copper	Lead	Mercury	Motybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	pH (units)
MCL				0.006	0.05	1	0.004	0.005	0.05	***		1.0 **		0.002		0.1	0.05	0.1 **	0.002	***	5.0 **	<b></b> -

Note: Samples collected on 06/26/97 and 06/27/97 were unfiltered and analyzed for total metals; all other samples were field filtered and analyzed for dissolved metals.

Concentrations in milligrams per liter (mg/L)

NA = Not analyzed.

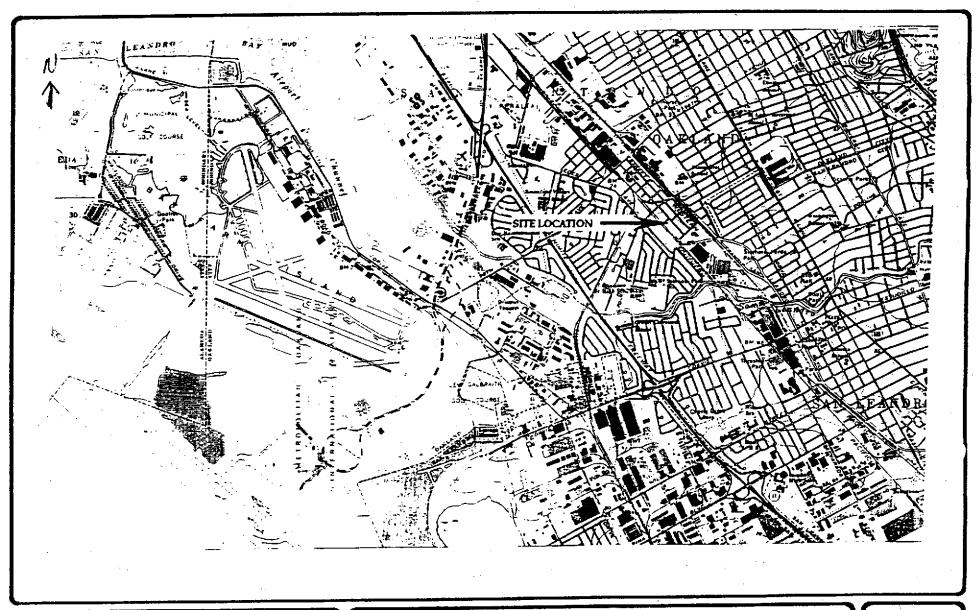
NM = Not monitored

Total dissolved solids and total suspended solids were analyzed and detected at concentrations of 5,200 and 13,000 mg/L.

MCL = California primary maximum contaminant level (MCL).

\*\* = Secondary MCL

\*\*\* = Primary MCL to be adopted by January 1, 2004.
--- = MCL not established.





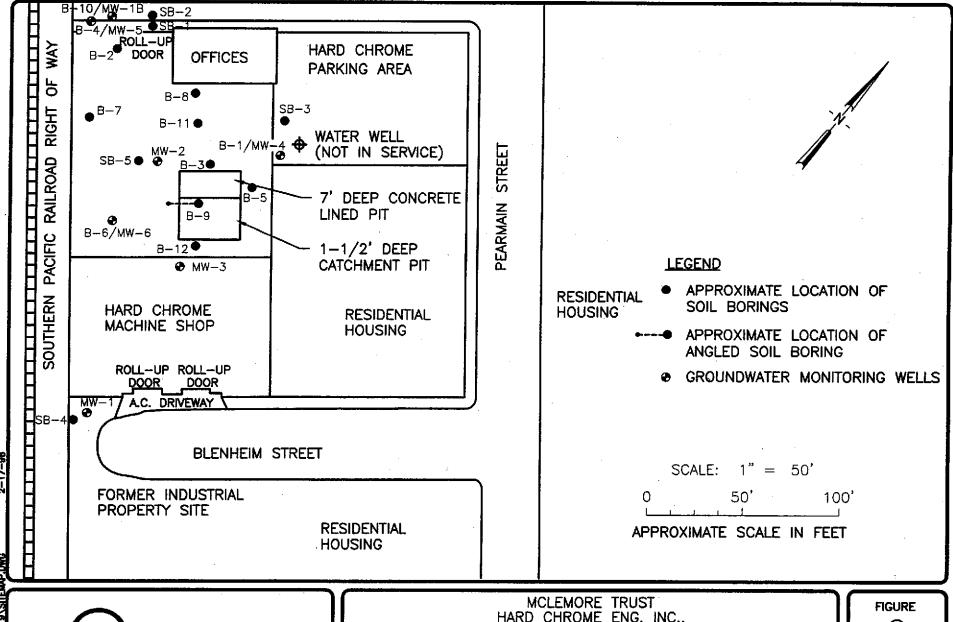
McLEMORE TRUST HARD CHROME ENG. INC., 750 1107th AVENUE, OAKLAND, CALIFORNIA

SITE LOCATION MAP

**FIGURE** 

1

PROJECT NO. 22619-100.001

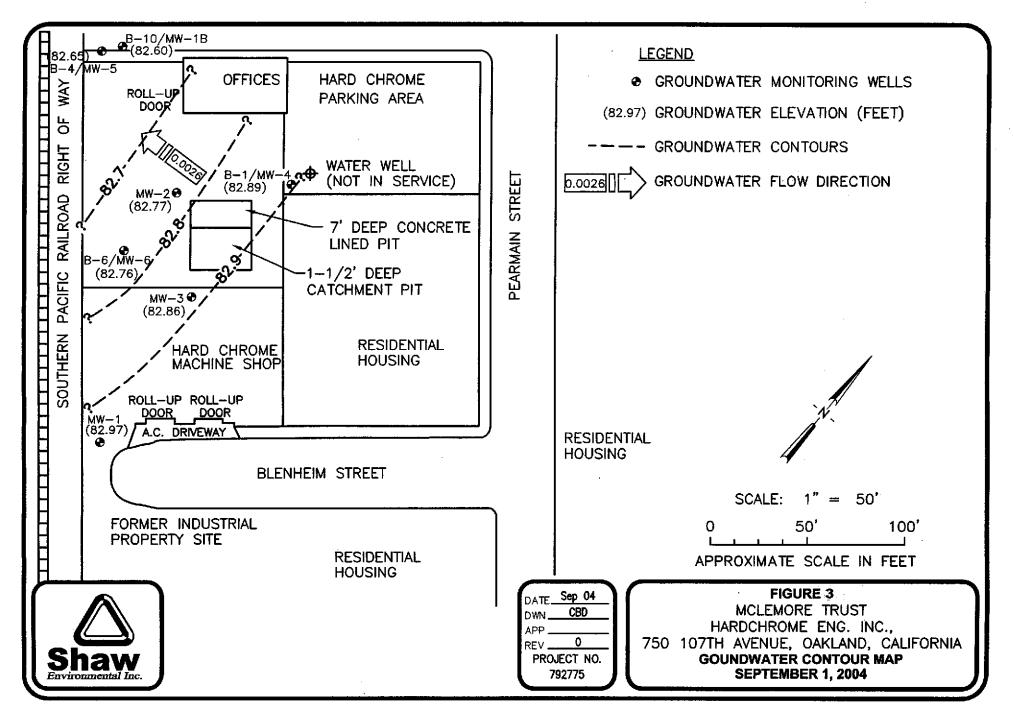


**EMCON** 

MCLEMORE TRUST
HARD CHROME ENG. INC.,
750 107TH AVENUE
OAKLAND, CALIFORNIA
SITE MAP

FIGURE

2
PROJECT NO. 792775



# APPENDIX A SAMPLING AND ANALYSIS PROCEDURES

# APPENDIX A SAMPLING AND ANALYSIS PROCEDURES

The sampling and analysis procedures for the water quality monitoring program at the site are contained in this appendix. The procedures are provided to ensure consistent and reproducible sampling methods, proper application of analytical methods, and accurate and precise analytical results. Finally, these procedures provide guidelines so that the overall objectives of the monitoring program are achieved.

The following documents have been used as guidelines for developing these procedures:

- Procedures Manual for Groundwater Monitoring at Solid Waste Disposal Facilities, Environmental Protection Agency (EPA)-530/SW-611, August 1977
- Resource Conservation and Recovery Act (RCRA) Groundwater Monitoring Technical Enforcement Guidance Document, Office of Solid Waste and Emergency Response (OSWER) 9950.1, September 1986
- Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA SW-846, 3rd edition, November 1986
- Methods for Organic Chemical Analysis of Municipal and Industrial Waste Water, EPA-600/4-82-057, July 1982
- Methods for Organic Chemical Analysis of Water and Wastes, EPA-600/4-79-020, revised March 1983
- Leaking Underground Fuel Tank (LUFT) Field Manual, California State Water Resources Control Board, revised October 1989

## **Sample Collection**

Sample collection procedures include equipment cleaning, water level and total well depth measurements, and well purging and sampling.

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### **Equipment Cleaning**

Equipment used to sample groundwater is cleaned with detergent water and then rinsed with deionized water prior to sampling. Equipment surfaces that are placed in the well or that come into contact with groundwater during field sampling are steam cleaned with deionized water before the next well is purged or sampled.

#### Water Level, Floating Hydrocarbon, and Total Well Depth Measurements

Depth to water, floating hydrocarbon thickness (if any), and the total well depth are measured using an oil/water interface measuring system before purging and sampling occurs. The oil/water interface measuring system consists of a probe that emits a continuous audible tone when immersed in a nonconductive fluid, such as oil or gasoline, and an intermittent tone when immersed in a conductive fluid, such as water. The floating hydrocarbon thickness and water level are measured by lowering the probe into the well. Liquid levels are recorded relative to the tone emitted at the groundwater surface. The sonic probe is as decontaminated by rinsing with deionized water or steam cleaned after each use. Bottom-filling, clear Teflon® bailer is used to verify floating hydrocarbon thickness measurements (if any) of less than 0.02 foot. Alternatively, an electric sounder and a bottom-filling Teflon bailer may be used to record floating hydrocarbon thickness and depth to water.

The electric sounder is a transistorized instrument that uses a reel-mounted, two-conductor, coaxial cable that connects the control panel to the sensor. Cable markings are stamped at 1-foot intervals. The water level is measured by lowering the sensor into the monitoring well. A low-current circuit is completed when the sensor contacts the water, which serves as an electrolyte. The current is amplified and fed into an indicator light and audible buzzer, signaling when water is contacted. A sensitivity control compensates for highly saline or conductive water. The electric sounder is decontaminated by being rinsed with deionized water after each use. The bailer is lowered to a point just below the liquid level, retrieved, and observed for floating hydrocarbon.

Liquid measurements are recorded to the nearest 0.01 foot on the water sample field data sheet. The groundwater elevation at each monitoring well is calculated by subtracting the measured depth to water from the surveyed elevation of the top of the well casing. (Every attempt is made to measure depth to water for all wells on the same day.) Total well depth is measured by lowering the sensor to the bottom of the well. Total well depth, used to calculate purge volumes and to determine whether the well casing has sediment in it, is recorded to the nearest 0.1 foot on the water sample field data sheet.

#### **Well Purging**

Prior to sampling, a polyvinyl chloride (PVC) bailer, centrifugal pump, low-flow submersible pump, or Teflon bailer is used to purge standing water in the well casing and gravel pack from the monitoring well. Monitoring wells are purged according to the protocol presented in Figure A-1. In most monitoring wells, the amount of water purged before sampling is greater than or equal to three casing volumes. Some monitoring wells may be evacuated to dryness after removing fewer than three casing volumes. These low-yield monitoring wells are allowed to recharge for up to 24 hours. Samples are obtained as soon as the monitoring wells recharged to a level sufficient for sample collection. If insufficient water recharges after 24 hours, the monitoring well is recorded as dry for the sampling event.

Groundwater purged from the monitoring wells is stored on site in 55-gallon drums. Shaw arranges for transport and disposal of the purged groundwater through Delta Oil Field Services, Inc.

Field measurements of pH, specific conductance, and temperature are recorded on the water sample field data sheet. Figure A-2 shows an example of the water sample field data sheet on which field data are recorded. Field data sheets are reviewed for completeness by the sampling coordinator after the sampling event is completed.

The pH, specific conductance, and temperature meter are calibrated each day before field activities begin. The calibration is checked once each day to verify meter performance. Field meter calibrations are recorded on the water sample field data sheet.

### Well Sampling

After the wells have been purged and have recharged sufficiently, groundwater samples are collected using a Teflon or disposable bailer. The color of the sampled groundwater is noted on the field data sheet. As a standard health and safety practice, the sampler does not smell the samples for odor. If the sampler notices an odor emanating from the sample without purposefully attempting to smell the sample, then the sampler will note the presence of odor in the remarks section of the water sample field data sheet. Problems encountered in the field during sampling, as well as maintenance and repair issues, are also noted in the comments section of the water sample field data sheet.

### Sample Preservation and Handling

The following section specifies sample containers, preservation methods, and sample handling procedures.

#### **Sample Containers and Preservation**

Sample containers vary with each type of analytical parameter. Container types and materials are selected to be nonreactive with the particular analytical parameter tested.

#### Sample Handling

Sample containers are labeled immediately prior to sample collection. Samples are kept cool in an ice-chilled cooler until received by the laboratory. At the time of sampling, each sample is logged on a Shaw chain-of-custody record that accompanies the sample to the laboratory.

Samples that require overnight storage prior to shipping to the laboratory are kept cool (4°C) in a refrigerator. The refrigerator is kept in a warehouse, which is locked when not occupied by an Shaw employee. A sample/refrigerator log is kept to record the date and time that samples are placed into and removed from the refrigerator.

Samples are transferred from Shaw to a California State-approved laboratory by courier or taken directly to the laboratory by the environmental sampler. Sample shipments from

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Shaw to laboratories performing the selected analyses routinely occur within 24 hours of sample collection.

#### Sample Documentation

The following procedures are used during sampling and analysis to provide chain-ofcustody control during sample handling from collection through storage. Sample documentation includes the use of the following:

- Water sample field data sheets to document sampling activities in the field
- Labels to identify individual samples
- Groundwater sampling and analysis request form documenting analyses requested by the project manager
- Chain-of-custody/laboratory analysis request form for documenting possession and transfer of samples and analyses to be performed

#### Field Logbook

In the field, the sampler records the following information on the water sample field data sheet (Figure A-2) for each sample collected:

- Project number
- Client's name
- Location
- Name of sampler
- Date and time
- Well accessibility and integrity
- Pertinent well data (e.g., casing diameter, depth to water, well depth)

- Calculated and actual purge volumes
- Purging equipment used
- Sampling equipment used
- Appearance of each sample (e.g., color, turbidity, sediment)
- Results of field analyses (temperature, pH, specific conductance)
- General comments

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The water sample field data sheet is signed by the sampler and reviewed by the sampling coordinator.

#### Labels

Sample labels contain the following information:

- Project number
- Sample number (i.e., well designation)
- · Sample depth

- Sampler's initials
- Date and time of collection
- Type of preservation used (if any)

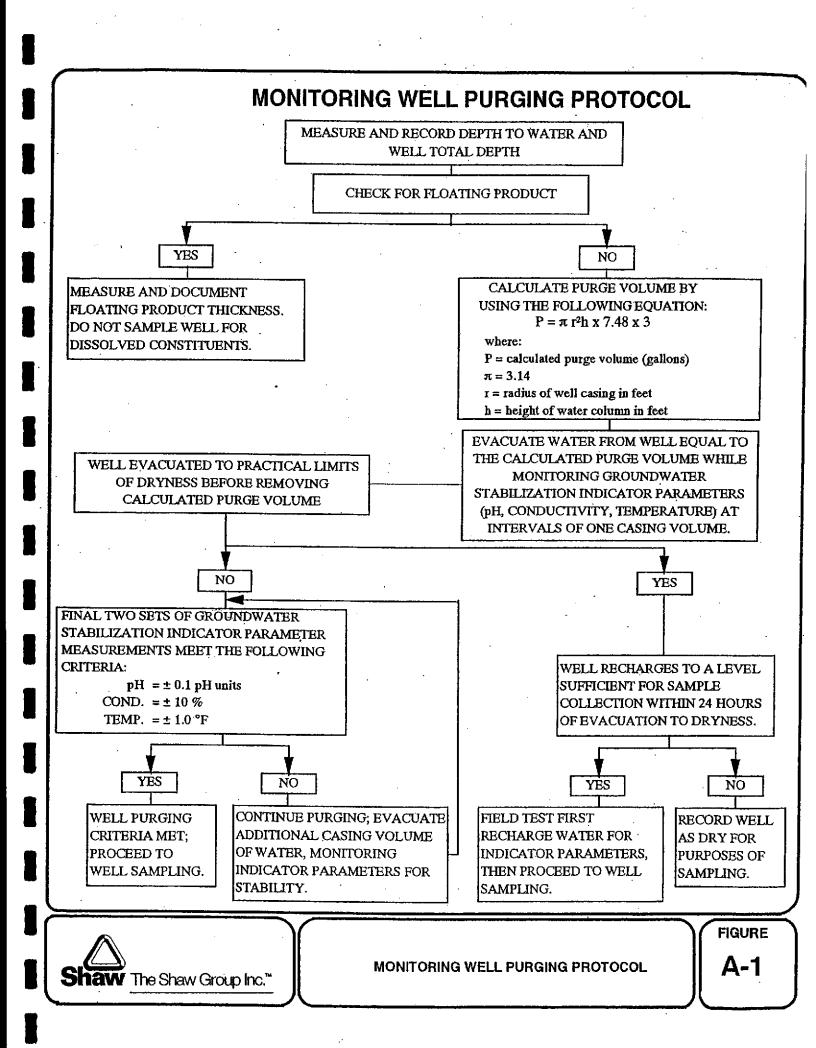
#### **Groundwater Sampling and Analysis Request Form**

A groundwater sampling and analysis request form (Figure A-3) is used to communicate to the environmental sampler the requirements of the monitoring event. At a minimum, the groundwater sampling and analysis request form includes the following information:

- Date scheduled
- Site-specific instructions
- Specific analyses requested
- Well number
- Well specifications (expected total depth, depth of water, and product thickness)

#### Sampling and Analysis Chain-of-Custody Record

The chain-of-custody record initiated at the time of sampling contains, at a minimum, the sample designation (including the depth at which the sample was collected), sample type, analytical request, date of sampling, and the name of the sampler. The record sheet is signed, timed, and dated by the sampler when transferring samples. The number of custodians in the chain of possession is minimized. A copy of the chain-of-custody record is returned to Shaw with the laboratory analytical results.



	W	ATER SA	MPLE	FIELD	DATA SI	HEET	Rev. 5/96
	PROJECT N	0:			SAMPLE ID	: <u></u> _	ż
	PURGED B	Y:	<del></del>	<del></del>	CLIENT NAME	:	
	SAMPLED B	Y :	-	<del></del>		:	
TYPE:	Groundwater					Other	
CASING	DIAMETER (inche	rs): 2	3	4		6 Othe	
CASING E	ELEVATION (feet/N	MSL) :		VOL	UME IN CASING	G (gal.) :	-
1	DEPTH OF WELL	(feet) :				B (gal.) :	
DI	EPTH OF WATER	(feet):		ACTU	JAL PURGE VOL	(gal.) :	
	DATE PURGED :				END PURGE:		
D	ATE SAMPLED			SAMI	PLING TIME :		
тіме	VOLUMI	3 рН	. 1	B.C. T	EMPERATURE	TURBIDITY	TIME
(2400 HR	(gal.)	(units)	(µmhos	/cm@25°c)	(°F)	(visual/NTU)	(2400 HR)
		<del></del>					
		_		<del></del>			
		<del></del>					
-		<del>-</del>		<del></del> -			
<del></del>	<u></u>			<del></del> -			
<del></del>		<del>-</del>	<del></del> , <del></del>	<del></del> -		-	
OTHER:		· · · · · · · · · · · · · · · · · · ·		ODOR:	<del></del> .	(COBALT 0-100)	
FIELD QC	SAMPLES COLLI	ECTED AT THIS				(COBALT 0-100)	(NTU 0-200)
	PURGING EQUIP	MENT			SAMPLING	G EQUIPMENT	
2" B	Bladder Pump	Bailer (Tefl	on)		2" Bladder Pump	Bailer (	Teflon)
Сеп	trifugal Pump	Bailer (PVC			<del></del>	Bailer (	i
Sub	mersible Pump	Bailer (Stair	niess Steel)		Dipper		rsible Pump
Wel	l Wizard™	Dedicated			Well Wizard™	Dedica	ted
Other:			<del>-</del>	Othe	er:		· · · · · · · · · · · · · · · · · · ·
WELL INTE	GRITY <u>:</u>	····				LOCK	
REMARKS:						BOOK	
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WATER SAMPLE FIELD DATA SHEET

FIGURE

**A-2** 

# IT/EMCON - SACRAMENTO GROUNDWATER SAMPLING AND ANALYSIS REQUEST FORM

PROJECT NAME:

SCHEDU!	LED D	ATE:
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Shaw The Shaw Group Inc.™

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SAMPLING AND ANALYSIS REQUEST FORM

# APPENDIX B FIELD REPORT AND FIELD DATA SHEETS

# FIELD REPORT WATER LEVEL / FLOATING PRODUCT SURVEY

Shaw Environmental & Infrastructure, Inc. 1326 North Market Boulevard Sacramento, California 95834 (916) 928-3300

PD	റ	TEC	T	NO	702775	1	00002000	
				1417	 1747117	,	201000412000001	

LOCATION: 750 107th Avenue, Oakland

DATE: 9-1-04

CLIENT: Hard Chrome Engineering

SAMPLER: Paul Weinhardt

WELL ID	CASING ELEVATION (Feet, MSL)	TOTAL DEPTH (Feet)	PREVIOUS DEPTH TO WATER 2/24/2004	DEPTH TO WATER (Feet)	FLOATING PRODUCT THICKNESS (Feet)	COMMENTS
MW-1		24.40	14.63	17.26		
MW-2		23.90	15.16	17.61		
MW-3		23.50	15.09	17.51		
MW-4		22.90	15.00	17,41		
MW-5		23.20	14.19	16,64		
MW-6		22.70	15.27	17.72		
MW-1B		30.00	14.08	16,41		
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Comments:

## CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

1326 North Market Boulevard, Steramento, CA 95834   Lab: CDSTab	Shaw Environmenta										Purchase Order:					:	209797											
Project Name: Part Chrome Engineering Project Name: Part Sylogo00000 Project Manager: Pavid Herzog Company: Shaw Environmental & Infrastructure, Inc. Address: 1326 North Market Boulevard Sacramento, CA 95834 Dir Phone: (916) 565-4377 FAX: (916) 565-4356  LD. Date Time LAB Sample LD. Date Time LD. Metrix.  Sampler's Signature:    LAB Sample LD. Metrix.   HNOS NP						95834												,							<del></del>		11-4-71 1 2, 2	<u></u>
Project Manager David Herzer Da	Project Name: Hard	Chre	me E	ngineerin	ıg	.,										, A	naly	sis R	eques	ted								
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#### WATER SAMPLE FIELD DATA SHEET Rev. 1/9 PROJECT NO: 792775 / 00002000 SAMPLE ID: MW13 PURGED BY: Paul Weinhardt CLIENT NAME: Hard Chrome Engineering SAMPLED BY: Paul Weinhardt LOCATION: 750 107th Avenue, Oakland TYPE: Groundwater X Surface Water\_\_\_ Leachate Other CASING DIAMETER (inches): 2 X 3 6\_\_\_\_\_ Other\_\_\_ 4.5 CASING ELEVATION (feet/MSL): VOLUME IN CASING (gal.): 30.<u>0</u> DEPTH OF WELL (feet): CALCULATED PURGE (gal.) : DEPTH TO WATER (feet):\_\_\_ ACTUAL PURGE VOL. (gal.): DATE PURGED: 9.11.04 1200 END PURGE : \_\_\_\_ DATE SAMPLED : 9.1.04 1206 SAMPLING TIME: TIME **VOLUME** pН TEMPERATURE E.C. COLOR **TURBIDITY** (2400 HR) (gal.) (units) (µmhos/cm@25°c) (°C) (visual) (visual) 225 1148 ७१५ 20.10 <u>uellow Mon</u> U.SO 1154 عبطاعي MOD 1200 <u>uclau</u> OTHER: ODOR: (COBALT 0-100) (NTU 0-200) FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): PURGING EQUIPMENT SAMPLING EQUIPMENT 2" Bladder Pump Bailer (Teflon) 2" Bladder Pump Bailer (Teflon) Centrifugal Pump Bailer (PVC) Bomb Sampler Bailer (Stainless Steel) Submersible Pump Bailer (Stainless Steel) Dipper Submersible Pump X Disposal Bailer Dedicated Disposal Bailer Dedicated Other: Other: WELL INTEGRITY: LOCK: OULY 1000 REMARKS:

Meter Serial No.:

REVIEWED BY:

pH, E.C., Temp. Meter Calibration: Date:

SIGNATURE:

E.C. 1000\_\_\_\_\_ Temperature °C

#### WATER SAMPLE FIELD DATA SHEET Rev. 1/97 MW2 PROJECT NO: 792775 / 00002000 SAMPLE ID: PURGED BY : Paul Weinhardt CLIENT NAME: Hard Chrome Engineering SAMPLED BY: Paul Weinhardt LOCATION: 750 107th Avenue, Oakland TYPE: Groundwater X Surface Water\_\_\_\_ Leachate Other\_ CASING DIAMETER (inches): 2 X 3 \_\_\_\_\_ 6 Other 4.5 1.02 CASING ELEVATION (feet/MSL): VOLUME IN CASING (gal.): 23,90 DEPTH OF WELL (feet):\_\_\_ CALCULATED PURGE (gal.): DEPTH TO WATER (feet): ACTUAL PURGE VOL. (gal.): 3,00 DATE PURGED: 9,1,04 END PURGE: 104 DATE SAMPLED: 91,04 SAMPLING TIME: TIME **VOLUME** рH TEMPERATURE E.C. COLOR TURBIDITY (2400 HR) (gal.) (units) (µmhos/cm@25°c) (°C) (visual) (visual) 02 160g 1.0 <u>yellow</u> 1092 19.40 <u>COM</u> io" 0 OPI <u>Uellow</u> MOD 1014 <u> 4ellow</u> MOD ODOR: (COBALT 0-100) (NTU 0-200) FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): PURGING EQUIPMENT SAMPLING EQUIPMENT 2" Bladder Pump Bailer (Teflon) 2" Bladder Pump Bailer (Teflon) Centrifugal Pump Bailer (PVC) Bomb Sampler Bailer (Stainless Steel) Submersible Pump Bailer (Stainless Steel) Dipper Submersible Pump A Disposal Bailer Dedicated X Disposal Bailer Dedicated Other: (Joop) WELL INTEGRITY: \_\_\_\_ LOCK: **Оч**6Ч REMARKS:

Meter Serial No.:

REVIEWED BY PAGE 3 OF

pH 10 / pH 4

pH, E.C., Temp. Meter Calibration: Date:

E.C. 1000\_\_\_\_

Temperature °C

SIGNATURE:

#### WATER SAMPLE FIELD DATA SHEET Rev. 1/9 PROJECT NO: 792775 / 00002000 MW3 SAMPLE ID: PURGED BY : Paul Weinhardt CLIENT NAME: Hard Chrome Engineering SAMPLED BY : Paul Weinhardt LOCATION: 750 107th Avenue, Oakland TYPE: Groundwater X Surface Water\_\_\_\_ Leachate\_\_ Other CASING DIAMETER (inches): 2 X 3 4.5 6 Other CASING ELEVATION (feet/MSL): VOLUME IN CASING (gal.): DEPTH OF WELL (feet): 2350 CALCULATED PURGE (gal.) :\_\_ 2.93 DEPTH TO WATER (feet): 12.21 ACTUAL PURGE YOL. (gal.): DATE PURGED : 94104 طالل END PURGE: DATE SAMPLED: 41.04 SAMPLING TIME: · 1122 TIME VOLUME pН E.C. TEMPERATURE COLOR TURBIDITY (2400 HR) (gal.) (units) (µmhos/cm@25°c) (°C) (visual) (visual) 1110 O 704 375 1910 Brown 1113 OTHER: ODOR: (COBALT 0-100) (NTU 0-200) FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): **PURGING EQUIPMENT** SAMPLING EQUIPMENT 2" Bladder Pump Bailer (Teflon) 2" Bladder Pump Bailer (Teflon) Centrifugal Pump Bailer (PVC) Bomb Sampler Bailer (Stainless Steel) Submersible Pump Bailer (Stainless Steel) Dipper Submersible Pump Disposal Bailer Dedicated Disposal Bailer Dedicated Other: Other: WELL INTEGRITY: 71000 \_\_\_\_\_ LOCK: 0464 REMARKS:

Meter Serial No.:

pH 10 / pH 4

Munhauch REVIEWED BY: PAGE 4 OF 7

pH, E.C., Temp. Meter Calibration: Date:

E.C. 1000\_\_\_\_

Temperature °C

SIGNATURE:

#### MW4 PROJECT NO: 792775 / 00002000 SAMPLE ID: PURGED BY : Paul Weinhardt CLIENT NAME: Hard Chrome Engineering SAMPLED BY : Paul Weinhardt LOCATION: 750 107th Avenue, Oakland TYPE: Groundwater X Surface Water Leachate Other CASING DIAMETER (inches): 2 X 3 4.5 6\_\_\_\_\_ Other CASING ELEVATION (feet/MSL): VOLUME IN CASING (gal.): 22.90 DEPTH OF WELL (feet): CALCULATED PURGE (gal.): 3.68 17.41 DEPTH TO WATER (feet): ACTUAL PURGE VOL. (gal.): 300 DATE PURGED: M-1-64 **Q46** END PURGE : \_\_\_\_ DATE SAMPLED: 9-1-04 asz SAMPLING TIME : \_\_\_\_ TIME VOLUME pН E.C. TEMPERATURE COLOR TURBIDITY (2400 HR) (gal.) (units) (µmhos/cm@25°c) (visual) (visual) 940 1.0 704 439 90.Pe Cloudy COM 943 20 101 426 cloupe MOD 3<u>.0.</u> Cloud MOD OTHER; ODOR: (COBALT 0-100) (NTU 0-200) FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): **PURGING EQUIPMENT** SAMPLING EQUIPMENT 2" Bladder Pump Bailer (Teflon) 2" Bladder Pump Bailer (Teflon) Centrifugal Pump Bailer (PVC) Bomb Sampler Bailer (Stainless Steel) Submersible Pump Bailer (Stainless Steel) Dipper Submersible Pump X\_ Disposal Bailer Dedicated X Disposal Bailer Dedicated Other: Other: WELL INTEGRITY: 7000 LOCK: 0464 REMARKS: pH, E.C., Temp. Meter Calibration: Date: Meter Serial No.: E.C. 1000\_\_\_\_ pH 7\_\_\_\_ pH 10 Temperature °C REVIEWED BY: PAGE 5 OF +

SIGNATURE:

WATER SAMPLE FIELD DATA SHEET

Rev. 1/97

#### WATER SAMPLE FIELD DATA SHEET Rev. 1/9 PROJECT NO: 792775 / 00002000 SAMPLE ID: PURGED BY : Paul Weinhardt CLIENT NAME: Hard Chrome Engineering SAMPLED BY: Paul Weinhardt LOCATION: 750 107th Avenue, Oakland TYPE: Groundwater X Surface Water \_\_\_\_ Leachate Other CASING DIAMETER (inches): 2 X 3 4.5 \_\_\_\_\_ 6\_\_\_\_Other CASING ELEVATION (feet/MSL): 1.06 VOLUME IN CASING (gal.): DEPTH OF WELL (feet): 23,20 CALCULATED PURGE (gal.): 3.20 DEPTH TO WATER (feet):\_\_\_ ACTUAL PURGE VOL. (gal.): 3,00 DATE PURGED:\_\_\_ 9-1-04 END PURGE:\_\_ 1225 DATE SAMPLED: SAMPLING TIME :\_\_\_\_ 1232 TIME VOLUME pΉ E.C. TEMPERATURE COLOR TURBIDITY (2400 HR) (gal.) (units) (μmhos/cm@25°c) (visual) (visual) 1217 Q, 7 66. Brown 1221 ).ø BROWN BROWN OTHER: ODOR: (COBALT 0-100) (NTU 0-200) FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): **PURGING EQUIPMENT** SAMPLING EQUIPMENT 2" Bladder Pump Bailer (Teflon) 2" Bladder Pump Bailer (Teflon) Centrifugal Pump Bailer (PVC) Bomb Sampler Bailer (Stainless Steel) Submersible Pump Bailer (Stainless Steel) Dipper Submersible Pump X Disposal Bailer Dedicated Disposal Bailer Dedicated Other: Other: WELL INTEGRITY: 71000 LOCK: OUBY

Meter Serial No.:

pH 10 / pH 4 /

hour REVIEWED BY: PAGE OF 7

REMARKS:

E.C. 1000\_\_\_

Temperature °C

SIGNATURE:

pH, E.C., Temp. Meter Calibration: Date:

pH 7

#### PROJECT NO: 792775 / 00002000 Much SAMPLE ID: PURGED BY: Paul Weinhardt CLIENT NAME: Hard Chrome Engineering SAMPLED BY: Paul Weinhardt LOCATION: 750 107th Avenue, Oakland TYPE: Groundwater X Surface Water\_\_\_\_ Leachate Other CASING DIAMETER (inches): 2 X 3\_\_\_\_\_4 4.5 \_ 6 Other CASING ELEVATION (feet/MSL): 22,70 DEPTH OF WELL (feet): CALCULATED PURGE (gal.): 2.43 DEPTH TO WATER (feet): ACTUAL PURGE VOL. (gal.):\_\_\_\_ DATE PURGED : 9-1-04 END PURGE : 1648 DATE SAMPLED: 9-1-04 SAMPLING TIME: 1056 TIME VOLUME pΗ E.C. TEMPERATURE COLOR TURBIDITY (2400 HR) (gal.) (units) (µmhos/cm@25°c) (°C) (visual) (visual) 4045 1,0 415 18,90 Brown 1045 **BPO**( 3.0 OTHER: ODOR: (NTU 0-200) FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): **PURGING EQUIPMENT** SAMPLING EQUIPMENT 2" Bladder Pump Bailer (Teflon) 2" Bladder Pump Bailer (Teflon) Centrifugal Pump Bailer (PVC) Bomb Sampler Bailer (Stainless Steel) Submersible Pump Bailer (Stainless Steel) Dipper Submersible Pump X Disposal Bailer Dedicated Y Disposal Bailer Other: G1000 LOCK:\_\_\_\_ WELL INTEGRITY: REMARKS: pH, E.C., Temp. Meter Calibration: Date: Meter Serial No.: E.C. 1000 pH 10 Temperature °C REVIEWED BY: SIGNATURE:

WATER SAMPLE FIELD DATA SHEET

Rev. 1/97

# APPENDIX C CERTIFIED ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY REPORTS

3249 Fitzgerald Road Rancho Cordova, CA 95742

September 09, 2004

CLS Work Order #: CNI0018

COC #: None

David Herzog Shaw E & I, Inc. 4005 Port Chicago Highway Concord, CA 945201120

Project Name: Hard Chrome Engineering

Enclosed are the results of analyses for samples received by the laboratory on 09/01/04 14:15. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that the results are in compliance both technically and for completeness.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,

James Liang, Ph.D. Laboratory Director

CA DOHS ELAP Accreditation/Registration number 1233

09/09/04 13:27

Shaw E & I, Inc.

4005 Port Chicago Highway Concord CA, 945201120

Project: Hard Chrome Engineering

Project Number: 792775/00002000

Project Manager: David Herzog

COC #: None

CLS Work Order #: CNI0018

#### **CAM 17 Metals (Dissolved Metals)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
MW-1 (CNI0018-01) Water	Sampled: 09/01/04 09:16	Received: (	9/01/04	14:15					
Antimony	ND	50	μg/L	1	CN06792	09/02/04	09/02/04	EPA 200.7	
Barium	110	20	11	H	**	n	**	Ħ	
Beryllium	ND	5.0	11	#	**	**	**	n	
Cadmium	ND	10	Ħ	**	**	**	**	**	
Cobalt	ND	20	н	11	#	н	**	11	
Chromium	ND	20	n	**	Ħ	**	**	le	
Copper	ND	20	н	*	<b>#</b> .	н	**	16 -	
Mołybdenum	ND	20	10	"	**	•	**		
Nickel	34	20	Ħ	Ħ	**	**	н	. 19	
Silver	ND	10	tt	Ħ	**	*1	n	H	
V <b>ana</b> dium	ND	20	H	"	**	*1	II .	U	
Zinc	ND	20	••	**	11	<b>\$1</b>	п	B	
Arsenic	ND	5.0	**	**	CN06791	09/02/04	09/02/04	EPA 200.8	
Lead	ND	5.0	**	n	и	, II	H	U	-
Selenium	ND	5.0	19	**	II .	II .	n	п	
Thallium	ND	10	71	н	ri .	11	**	Ħ	
Mercury	0.24	0.20	**	II	CN06781	09/02/04	09/02/04	EPA 245.1	
MW-2 (CNI0018-02) Water	Sampled: 09/01/04 10:19	Received: (	09/01/04	14:15					
Antimony	450	50	μg/L	1	CN06792	09/02/04	09/02/04	EPA 200.7	
Barium	340	20	"	**	"	**	tr .	Tf.	
Beryllium	ND ·	5.0	**	H	11	**	**	. "	•
Cadmium	ND	10	11	۳.	**	*	••	. 4	
Cobalt	ND	20	н	**	**	**	"	11	
Chromium	450000	100	"	5	11	"	"	•	
Copper	1400	20	11	1	**	H		**	
Molybdenum	24	20	н	11	**	#1	n	n	
Nickel	400	20	**	#	19	ė1	н	. 16	
Silver	ND	10	**	**	**	49	II .	10	
Vanadium	ND	20	**	**	н	11	II .	II.	
Zinc	340	20	**	11	11	11	н	it .	
Arsenic	ND	5.0	**	n	CN06791	09/02/04	09/02/04	EPA 200.8	
Lead	ND	5.0	+	п	н	II .	**	n	
Selenium	ND	5.0	*	li .	n	н	**	и	
Thallium	ND	10	**	н	н	*	44	н	
Mercury	0.34	0.20	**	W .	CN06781	09/02/04	09/02/04	EPA 245.1	
MW-3 (CNI0018-03) Water	Sampled: 09/01/04 11:22	Received:	09/01/04	14:15					
Antimony	ND	50	μg/L	1	CN06792	09/02/04	09/02/04	EPA 200.7	
Barium	76	20	11	**		**	**	*1	

CA DOHS ELAP Accreditation/Registration Number 1233

09/09/04 13:27

Shaw E & I, Inc.

4005 Port Chicago Highway Concord CA, 945201120

Project: Hard Chrome Engineering

Project Number: 792775/00002000

Project Manager: David Herzog

CLS Work Order #: CNI0018

COC #: None

#### **CAM 17 Metals (Dissolved Metals)**

		Reporting					** ** ·		<del></del>
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-3 (CNI0018-03) Water	Sampled: 09/01/04 11:22	Received: 0	9/01/04	14:15					
Beryllium	ND	5.0	μg/L	1	CN06792	09/02/04	09/02/04	EPA 200.7	
Cadmium	ND	10	11	. "	*1	**	**	*	
Cobalt	ND	20	**	**	H	**	11	41	
Chromium	190	20	н	11	"	*17	**	. "	
Copper	ND	20	H	**	*	17	H	10	
Molybdenum	ND	20	II .	Ħ	**	H	ij	И	
Nickel .	ND	20	н	#	14	11	, II	li	
Bilver	ND	10	n	r•	n	**	н	н	1
Vanadium	ND	20	**	**	н -	41	H	н	
Zinc	ND	20	"	*1	tt	Ħ	Ħ	ŧ	
Arsenic	ND	5.0	**	н .	CN06791	09/02/04	09/02/04	EPA 200.8	
Lead	ND	5.0	**	н	"	11	**	H	
Selenium	ND	5.0	14	11	**	Ц	**	•	
Thallium	ND	10	н	ij	n	н	п		
Mercury	ND	0.20	"	li	CN06781	09/02/04	09/02/04	EPA 245.1	
MW-4 (CNI0018-04) Water	Sampled: 09/01/04 09:52	Received: (	09/01/04	14:15					
Antimony	ND	50	μg/L	1	CN06792	09/02/04	09/02/04	EPA 200.7	
Barium	79	20	11	**	•	Ħ	ш	19	
Beryllium	ND	5.0	н	**	19	H	n n	10	
Cadmium	ND	10	"	11	14	**	ш	Р	
Cobalt	ND	20	n	**	и	**	н	н	
Chromium	45	20	н	**	н	11	••	n	
Соррег	ND	20	"	**	Ħ	н		н	
Molybdenum	ND	20	"	11	H	II	**	н	
Nickel	ND	20	•	u	N	II	11	**	
Silver	ИD	10	"	н	H	ĮI	Ħ	*1	
Vanadium	ND	20	**	11	. "	**	•	19	
Zinc	ND	20		H	Ħ		••	#	
Arsenic	ND	5.0	•	••	CN06791	09/02/04	09/02/04	EPA 200.8	
Lead	ND	5.0	**	<b>i</b> 11	<b>H</b> 1 1	**	н	41	
Selenium	ND	5.0	н	71	11	**	н	16	
Thallium	ND	10	п	**	11	**	H		
Mercury	ND	0.20	u	**	CN06781	09/02/04	09/02/04	EPA 245.1	
MW-5 (CNI0018-05) Water	Sampled: 09/01/04 12:32	Received:	09/01/04	14:15					
Antimony	ND	50	μg/L	1	CN06792	09/02/04	09/02/04	EPA 200.7	
Barium	110	20	*	tt		II .	н	а	
Beryllium	ND	5.0		""	**	*1		н	
Cadmium	ND	10	*	**	н	Ħ	"	"	•

CA DOHS ELAP Accreditation/Registration Number 1233

09/09/04 13:27

Shaw E & I, Inc.

4005 Port Chicago Highway Concord CA, 945201120

Project: Hard Chrome Engineering

Project Number: 792775/00002000

Project Manager: David Herzog

CLS Work Order #: CNI0018

COC #: None

#### **CAM 17 Metals (Dissolved Metals)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
MW-5 (CNI0018-05) Water	Sampled: 09/01/04 12:32	Received:	09/01/04	14:15					
Cobalt	ND	20	μg/L	1	CN06792	09/02/04	09/02/04	EPA 200.7	
Chromium	15000	20	н	u	п	16	11	n	
Copper	ND	20		11	u	Ħ	H	H	
Molybdenum	ND	20		**	· H	+	11	н	
Nickel	ND	20	**	*	H	"	n	et e	
Silver	ND	10	41	**		**	п	# .	
Vanadium	ND	20	Ħ	**	**	**	н	. "	
Zinc	ND	20	**	M	**	**	n	н	
Arsenic	ND	5.0	"	Ħ	CN06791	09/02/04	09/02/04	EPA 200.8	
Lead	ND	5.0	**	**	н	n	**	"	
Selenium	ND	5.0	*11		+7	p	*	Ħ	
Thallium	NID	10	11	"	**	IJ	**	я	
Mercury	ND	0.20	и	#	CN06781	09/02/04	09/02/04	EPA 245.1	
MW-6 (CNI0018-06) Water	Sampled: 09/01/04 10:56	Received:	09/01/04	14:15					
Antimony	ND	50	. μg/L	1	CN06792	09/02/04	09/02/04	EPA 200.7	
Barium	67	20	er	fl	н	**	**	. н	
Beryllium	ND	5.0	**	H	н	"	. "	n	
Cadmium	ND	10	н	"	**	н	н	н	
Cobalt	ND	20	**	*	**	H	н	n	
Chromium	ND	20	**	**	11	**	п	ū	
Copper	ND	20	n	N	17	**	н	*1	
Molybdenum	ND	20	••	Ħ	н	11	**	**	
Nickel	ND	20	**	**	**	н	**	*	
Silver	ND	10	11	19	19	п	**	10	
Vanadium	ND	20	н	II .	11	0	**	н	
Zinc	20	20	"	n	н	u	11	. 11	
Arsenic	ND	5.0	It	li .	CN06791	09/02/04	09/02/04	EPA 200.8	
Lead	ND	5.0	Ħ	Ħ	ц	H	Ħ	11	
Selenium	ND	5.0	n	11	H	*	* .	U	
Thallium	ND	10		**	4	*	и	II.	
Mercury	ND	0.20	#	. **	CN06781	09/02/04	09/02/04	EPA 245.1	
MW-1B (CNI0018-07) Water	Sampled: 09/01/04 12:00	6 Received	l: 09/01/0	4 14:15			•	·	
Antimony	ND	50	μ <b>g</b> /L	1	CN06792	09/02/04	09/02/04	EPA 200.7	
Barium	68	20	*	**	"	"	н	H	
Beryllium	ND	5.0	11 .	11	11	p	*	н	
Cadmium	ND	10	II	н	н	II .	"	Ħ	
Cobalt	ND	20	п	II	п	ıı.	**	**	
Chromium	23000	20	11	n	η	н	**	17	

CA DOHS ELAP Accreditation/Registration Number 1233

09/09/04 13:27

Shaw E & I, Inc.

4005 Port Chicago Highway Concord CA, 945201120

Project: Hard Chrome Engineering

Project Number: 792775/00002000

Project Manager: David Herzog

CLS Work Order #: CNI0018

COC #: None

#### **CAM 17 Metals (Dissolved Metals)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1B (CNI0018-07) Water	Sampled: 09/01/04 12:06	Received	09/01/0	4 14:15					
Copper	ND	20	μg/L	1	CN06792	09/02/04	09/02/04	EPA 200.7	
Molybdenum	ND	20	**	Ħ	**	11	H	н	
Nickel	ND	20		н	#	п	н	N	
Silver	ND	10	11	п	н	п	**	**	
Vanadium .	ND	20	19	н	19	u	**	a	
Zinc	ND	20	19	п	н	п	**		
Arsenic	ND	5.0	n	н	CN06791	09/02/04	09/02/04	EPA 200.8	
Lead	ND	5.0		**	н	н.	**	н .	
Selenium	ND	5.0	*	Ħ	N	**	"	, н	
Thallium	ND	10	**	**	n	**	н	II .	
Mercury	ND	0.20	**	**	CN06781	09/02/04	09/02/04	EPA 245.1	

09/09/04 13:27

Shaw E & I, Inc.

4005 Port Chicago Highway

Project: Hard Chrome Engineering

Project Number: 792775/00002000

COC #: None

CLS Work Order #: CNI0018

Concord CA, 945201120

Project Manager: David Herzog

#### Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (CNI0018-01) Water	Sampled: 09/01/04 09:16	Received:	09/01/04	14:15					
Hexavalent Chromium  MW-2 (CNI0018-02) Water	ND Sampled: 09/01/04 10:19	10 Received:	μg/L <b>09/01/04</b>	1 14:15	CN06774	09/01/04	09/01/04	EPA 7196A	
Hexavalent Chromium MW-3 (CNI0018-03) Water	450000 Sampled: 09/01/04 11:22	10000 Received:	μg/L 09/01/04	1000 <b>14:15</b>	CN06774	09/01/04	09/01/04	EPA 7196A	
Hexavalent Chromium MW-4 (CNI0018-04) Water	19 Sampled: 09/01/04 09:52	10 Received:	μg/L 09/01/04	1 14:15	CN06774	09/01/04	09/01/04	EPA 7196A	
Hexavalent Chromium  MW-5 (CNI0018-05) Water	ND Sampled: 09/01/04 12:32	10 Received:	μg/L 09/01/04	1 14:15	CN06774	09/01/04	09/01/04	EPA 7196A	
lexavalent Chromium MW-6 (CNI0018-06) Water	6900 Sampled: 09/01/04 10:56	1000 Received:	μg/L 09/01/04	100 <b>14:15</b>	CN06774	09/01/04	09/01/04	EPA 7196A	
Hexavalent Chromium AW-1B (CNI0018-07) Water	19 Sampled: 09/01/04 12:0	10 6 Received	μg/L 1: 09/01/(	1 )4 14:15	CN06774	09/01/04	09/01/04	EPA 7196A	
Hexavalent Chromium	10000	1000	μg/L	100	CN06774	09/01/04	09/01/04	EPA 7196A	

### California Laboratory Services

09/09/04 13:27

Shaw E & I, Inc.

4005 Port Chicago Highway Concord CA, 945201120

Project: Hard Chrome Engineering

Project Number: 792775/00002000

Project Manager: David Herzog

CLS Work Order #: CNI0018

COC #: None

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CN06781 - EPA 7470A										
Blank (CN06781-BLK1)				Prepared	& Analyzo	ed: 09/02/	04			
Mercury	ND	0.20	μg/L							
LCS (CN06781-BS1)			÷	Prepared	& Analyza	ed: 09/02/	04			
Mercury	5.03	0.20	μg/L	5.00		101	75-125			
LCS Dup (CN06781-BSD1)				Prepared	& Analyzo	ed: 09/02/	04			
Mercury	5.20	0.20	μg/L	5.00		104	75-125	3.32	25	
Matrix Spike (CN06781-MS1)	So	urce: CNI000	06-11	Prepared	& Analyz	ed: 09/02/	04			
Mercury	5.14	0.20	μg/L	5.00	0.025	102	75-125			
Matrix Spike Dup (CN06781-MSD1)	So	urce: CNI000	06-11	Prepared	& Analyz	ed: 09/02/	04			
Mercury	4.86	0.20	μg/L	5.00	0.025	96.7	75-125	5.60	25	
Batch CN06791 - EPA 3020A										
Blank (CN06791-BLK1)				Prepared	& Analyz	ed: 09/02/	04			
Arsenic	ND	5.0	μg/L		<del>_</del>					
Lead	ND	5.0	п							
Selenium	ND	5.0	**							
Thallium	ND	10	**							
LCS (CN06791-BS1)				Prepared	& Analyz	ed: 09/02/	04			
Arsenic	97.0	5.0	μ <b>g/</b> L	100		97.0	80-120			
Lead	86.4	5.0	**	100		86.4	80-120			
Selenium	90.3	5.0	•	100		90.3	80-120			•
[hallium	91.6	10	**	100		91.6	80-120		•	

### California Laboratory Services

09/09/04 13:27

Shaw E & I, Inc.

4005 Port Chicago Highway Concord CA, 945201120

Project: Hard Chrome Engineering

Project Number: 792775/00002000

COC #: None

CLS Work Order #: CNI0018

Project Manager: David Herzog

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CN06791 - EPA 3020A										
LCS Dup (CN06791-BSD1)				Prepared	& Analyze	ed: 09/02/0	)4			
Arsenic	97.5	5.0	μg/L	100		97.5	80-120	0.514	20	
Lead	88.0	5.0	n	100		88.0	80-120	1.83	20	
Selenium	90.5	5.0	"	100		90.5	80-120	0.221	20	
Thallium	93.5	10.	••	100		93.5	80-120	2.05	20	
Matrix Spike (CN06791-MS1)	So	urce: CNI001	18-01	Prepared	& Analyze	d: 09/02/0	04			
Arsenic	101	5.0	μg/L	100	0.80	100	75-125			
Lead	88.0	5.0	*1	100	ND	88.0	75-125			
Selenium	93.6	5.0	**	100	ND	93.6	75-125			
<u> Thallium</u>	95.5	10	••	100	ND	95.5	75-125		_	
Matrix Spike Dup (CN06791-MSD1)	So	urce: CNI001	18-01	Prepared	& Analyze	ed: 09/02/	04			
Arsenic	101	5.0	μg/L	100	0.80	100	75-125	0.00	25	
Lead	86.4	5.0	н	100	ND	86.4	75-125	1.83	25	
Selenium	92.3	5.0	п	100	ND	92.3	75-125	1.40	25	
Thallium	92.4	10	fi	100	ND	92.4	75-125	3.30	25	
Batch CN06792 - EPA 3010A										
Blank (CN06792-BLK1)				Prepared	& Analyze	ed: 09/02/	04			
Antimony	ND	50	μg/L							- "
Barium	ND	20	17		•					
Beryllium	ND	5.0	**							
Cadmium	ND	10	**							
Cobalt	ND	20	••							
Chromium	ND	20	11							
Copper	ND	20	**							
Molybdenum	ND	20	н .							
Nickel	ND	20	п							
Silver	ND	10	н					,		
Vanadium	ND	20	**					•		
	1112	20								

09/09/04 13:27

Shaw E & I, Inc.

4005 Port Chicago Highway Concord CA, 945201120

Project: Hard Chrome Engineering

Project Number: 792775/00002000

COC #: None

CLS Work Order #: CNI0018

Project Manager: David Herzog

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CN06792 - EPA 3010A										<u> </u>
LCS (CN06792-BS1)				Prepared	& Analyzo	ed: 09/02/	04		-	
Antimony	466	50	μg/L	500	<del></del>	93.2	80-120			
Barium	2080	20	11	2000		104	80-120			
Beryllium	52.4	5.0	n	50,0		105	80-120			
Cadmium	44.4	10	H	50.0		88.8	80-120			
Cobalt	517	20	п	500		103	80-120			
Chromium	224	20	н	200		112	80-120			
Copp <del>er</del>	257	20	ŧı	250		103	80-120			
Molybdenum	487	20	11	500		97.4	80-120			
Nickel	509	. 20	**	500		102	80-120			
Silver	58.4	10	**	50.0		117	80-120			
Vanadium	524	20	"	500		105	80-120			
Zinc	519	20		500		104	80-120			
LCS Dup (CN06792-BSD1)				Prepared	& Analyze	ed: 09/02/0	04			
Antimony	473	50	μg/L	500		94.6	80-120	1.49	20	
Barium	2060	20	**	2000		103	80-120	0.966	20	
Beryllium	51.8	5.0	••	50.0		104	80-120	1.15	20	
Cadmium	41.2	10	**	50.0		82.4	80-120	7.48	20	
Cobalt	510	20	**	500		102	80-120	1.36	20	
Chromium	215	20	**	200		108	80-120	4.10	20	
Copper	258	20	**	250		103	80-120	0.388	20	
Molybdenum	482	20	**	500		96.4	80-120	1.03	20	
Nickel	504	20	**	500		101	80-120	0.987	20	
Bilver	59.0	10	**	50.0		118	80-120	1.02	20	
Vanadium	518	20	**	500		104	80-120	1.15	20	
line	493	20	11	500		98.6	80-120	5.14	20	
Matrix Spike (CN06792-MS1)	So	urce: CNI001	18-01	Prepared	& Analyze	ed: 09/02/0	04			
Antimony	459	50	μg/L	500	ND	91.8	75-125		***	
Barium	2130	20	11	2000	110	101	75-125			
Beryllium	51.8	5.0	н	50.0	ND	104	75-125			
Cadmium	40.7	10	**	50.0	2.0	77.4	75-125			
Cobalt	490	20	н	500	ND	98.0	75-125			
thromium	212	20		200	ND	106	75-125			
copper	248	20	n	250	ND	99.2	75-125			
Molybdenum	468	20	н	500	ND	93.6	75-125			
Tickel	509	20	н	500	34	95.0	75-125			

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Shaw E & I, Inc.

4005 Port Chicago Highway Concord CA, 945201120

Project: Hard Chrome Engineering

Project Number: 792775/00002000

Project Manager: David Herzog

CLS Work Order #: CNI0018

COC#: None

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CN06792 - EPA 3010A										
Matrix Spike (CN06792-MS1)	Sou	rce: CNI001	18-01	Prepared	& Analyze	ed: 09/02/	 04			
Silver	61.7	10	μg/L	50.0	ND	123	75-125			
Vanadium	510	20	"	500	2.2	102	75-125			
Zinc	481	20	*1	500	4.5	95.3	75-125			
Matrix Spike Dup (CN06792-MSD1)	Sou	rce: CNI001	18-01	Prepared	& Analyze	ed: 09/02/0	04			
Antimony	462	50	μg/L	500	ND	92.4	75-125	0.651	25	
Barium	2150	20	н	2000	110	102	75-125	0.935	25	
Beryllium	52.6	5.0	11	50.0	ND	105	75-125	1.53	25	
Cadmium	40.6	10	п	50.0	2.0	77.2	75-125	0.246	25	
Cobalt	498	20	11	500	ND	99.6	75-125	1.62	25	
Chromium	214	20	ч	200	ND	107	75-125	0.939	25	
Copper	254	20	• п	250	ND	102	75-125	2.39	25	
Molybdenum	476	20	н	500	ND	95.2	75-125	1.69	25	
Nickel	519	20	н	500	34	97.0	75-125	1.95	25	
Silver	58.1	10	п	50.0	ND	116	75-125	6.01	- 25	
Vanadium	515	20	n	500	2.2	103	75-125	0.976	25	
Zinc	485	20	ц	500	4.5	96.1	75-125	0.828	25	

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Shaw E & I, Inc.

4005 Port Chicago Highway

Project: Hard Chrome Engineering

Project Number: 792775/00002000

COC #: None

CLS Work Order #: CNI0018

Concord CA, 945201120 Project Manager: David Herzog

### Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CN06774 - General Preparation										
Blank (CN06774-BLK1)				Prepared .	& Analyze	ed: 09/01/	 04	<u>.</u>		
Hexavalent Chromium	ND	10	μg/L	<del></del> -	<del></del>					
LCS (CN06774-BS1)				Prepared	& Analyza	ed: 09/01/0	04			
Hexavalent Chromium	241	10	μg/L	250		96.4	85-115			
LCS Dup (CN06774-BSD1)				Prepared	& Analyze	ed: 09/01/0	04			
Hexavalent Chromium	239	10	μg/L	250		95.6	85-115	0.833	20	
Matrix Spike (CN06774-MS1)	Sou	rce: CNI001	8-04	Prepared a	& Analyze	ed: 09/01/0	04			
Hexavalent Chromium	255	10	μg/L	250	9.0	98.4	85-115			
Matrix Spike Dup (CN06774-MSD1)	Sou	rce: CNI001	8-04	Prepared a	& Analyze	ed: 09/01/0	04			
Hexavalent Chromium	258	10	μg/L	250	9.0	99.6	85-115	1.17	20	

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4005 Port Chicago Highway

Concord CA, 945201120

Project: Hard Chrome Engineering

Project Number: 792775/00002000

Project Manager: David Herzog

CLS Work Order #: CNI0018

COC#: None

#### Notes and Definitions

Analyte DETECTED

ND

Analyte NOT DETECTED at or above the reporting limit

NR

Not Reported

Sample results reported on a dry weight basis

RPD

Relative Percent Difference

### CHAIN OF COSTODY / LABORATORY ANALYSIS REQUEST FORM

Shaw Environmental & Infrastructure, Inc. Purchase Order: 209797 1326 North Market Boulevard, Sacramento, CA 95834 Lab: CLS Lab Project Name: Hard Chrome Engineering Analysis Requested Project Number: 792775 / 00002000 24-Hr Hold) (Field Filtere Project Manager: David Herzog Number of Containers Company: Shaw Environmental & Infrastructure, Inc. Method 7196 Hexavalent Chromium Address: 1326 North Market Boulevard Field Filtered) Sacramento, CA 95834 Cam 17 Metals Dir Phone: (916) 565-4377 / FAX: (916) 565-4356 EPA ] Sampler's Signature: Š REMARKS LAB Sample Sample 3 Container Types I.D. Date Time Matrix HNO3 NP I.D. Preservations 9-1 916 MW-1 1 water 1019 2 MW-2 water 1122 2 MW-3 water 1 952 2 MW-4 water 1 1232 2 MW-5 water 1 1 ماكحا MW-6 2 water 1 124 MW-1B water RELINQUISHED BY RECEIVED BY RELINOUISHED BY RECEIVED BY TURN AROUND TIME REPORT REQUIREMENTS X I. Routine Report Signature Signature Signature 24 hr II. Report (includes DUP, MS X Standard (~10-15 working days) MSD, as required, may be Printed Name Printed Name Printed Name Printed Name Provide Verbal Preliminary Results charged as samples) MUL III. Data Validation Report Provide FAX Preliminary Results Firm Firm Firm Requested Report Date: (includes All Raw Data) RWQCB Date/Time # 9-1-04 Date/Time Date/Tame Date/Time (MDLs/PQLs/TRACE#) RECEIVED BY RELINOUISHED BY Special Instructions/Comments: Container Types Key: CLS 40 ml VOA: Signature Signature 3249 Fitzgerald Road 250 ml LPE: 2 Chrom VI has a 24 hour hold time. Rancho Cordova, Calif 95742 500 ml LPE: Printed Name All samples need to be field filtered. Printed Name 916-638-7301 / Fx: 638-4510 1 liter HDPE: 4 Ray Oslowski 500 ml glass: 5 Firm Firm 1 liter glass 6 2x6 s/s ring: Date/Time Date/Time glass jar: