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1:16 pm, May 08, 2007

Alameda County Environmental Health

# Treadwell&Rollo

1 May 2007 Project 4511.01

Mr. Steven Plunkett Alameda County Environmental Health Department 1131 Harbor Bay Parkway Alameda, California 94502

### Subject: Groundwater Monitoring Well Redevelopment and Sampling Report SLIC Case No. RO0002624 Pacific Shops, Inc. 1829 Clement Avenue Alameda, California

Dear Mr. Plunkett:

This letter summarizes the monitoring well redevelopment and sampling activities conducted at 1829 Clement Avenue (Site) in Alameda, California (Figure 1). This work was completed by Treadwell & Rollo, Inc. (Treadwell & Rollo) on behalf of Pacific Shops, Inc. The work was conducted in response to the 15 February 2007 letter by the Alameda County Environmental Health Department (ACEH) requesting development and sampling of existing groundwater monitoring wells at the Site<sup>1</sup>.

In conformance with the letter and subsequent communication, Treadwell and Rollo has conducted the monitoring well redevelopment and sampling, and has prepared this report which describes the Site background, current work, and presents recommendations.

### BACKGROUND

The Site is located along Clement Avenue in Alameda, California (Figure 1), and is part of the Alameda Marina Site owned by Pacific Shops. During the late 1980s it was discovered that a Site tenant, Chem-Mil-Co had a release of photochemicals containing metals and cyanide. In 1990 a soil investigation was conducted, and soil remediation was completed<sup>2</sup>. A groundwater quality investigation followed in September and October 1990. The investigation was performed to satisfy the requirements of the ACEH, as outlined in their site remediation letter dated 17 April 1990 (Kaldveer, 1990).

On 11 September 1990, three monitoring wells were installed and developed at the Site. The wells were completed to approximately 15 feet below ground surface using Schedule 40, 2-inch nominal, flush threaded, PVC well casing (Kaldveer, 1990). Each well was completed with one 10-foot section of 0.010-inch slotted well screen packed with a Lonestar #2/12 gravel filter material. The well seal was completed by adding 6-inches of 3/8-inch, hydrated bentonite pellets to the top of the filter pack and then the

<sup>&</sup>lt;sup>1</sup> Letter from Alameda County Health Care Services, 2007, *SLIC Case No. RO0002624, Pacific Shops Inc., 1829 Clement Avenue, Alameda, CA,* 15 February.

Kaldveer Associates, 1990, Ground Water Quality Report, 1829 Clement Avenue, Alameda, California, 5 November.



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remaining annular space was filled with a Portland Cement grout mixture (Kaldveer, 1990). Kaldveer's boring logs and well construction details are presented in Attachment A.

Groundwater samples were collected from the wells on three occasions: 12 September 1990, 26 September 1990, and 9 October 1990. Groundwater elevation data is presented in Table 1. Groundwater samples were analyzed for chromium, molybdenum, and copper using EPA Method 6010, lead using EPA Method 7421, chromium VI using EPA Method 7195, arsenic using EPA Method 7060, and cyanide using EPA Method 335.2 and 9010. Analytical results of the three rounds of sampling are summarized in Table 2.

The concentrations of metals detected in groundwater were all below laboratory detection limits or below United States Environmental Protection Agency (USEPA) Maximum Contaminant Levels for drinking water (MCLs) at the time, with the exception of total chromium measured in one sampling episode from monitoring well MW-3. Total cyanide was only detected in monitoring well MW-1 at concentrations ranging from 350 to 2,400 micrograms per liter ( $\mu$ g/l), which exceeded the total cyanide MCL.

It was Kaldveer's opinion that metals concentrations for the site soil and groundwater did not represent a significant environmental concern and the sampling program was stopped. Treadwell and Rollo understands that the wells have not been sampled since the final sampling event in October 1990.

### MONITORING WELL DEVELOPMENT ACTIVITIES

Treadwell and Rollo commissioned Blaine Tech Services (Blaine Tech) of San Jose, California to conduct the well development activities. On 16 March 2007, Blaine Tech performed the redevelopment of MW-1, MW-2, and MW-3 (Figure 2). Prior to development activities, water levels were collected at all wells and recorded in the well gauging data field form (Attachment B).

Development began by lowering a close-fitting surge block into the well and gently surging to allow any material blocking the screen to break up, go into suspension, and move into the well. The surging continued for 5-10 minutes. Immediately following the surging activities, the well was purged using a positive air displacement pump. Groundwater field parameters (temperature, pH, conductivity, and turbidity) were measured and recorded during development. Development continued until the field parameters stabilized. All three wells dewatered after approximately three case volumes were removed. Once dewatering of the well occurred during the purge, Blaine Tech allowed the well to recharge, returned to surge the well, and continued purging. Each well dewatered a second time after approximately an additional four case volumes were removed. After surging the wells for a third time, the wells were purged of three casing volumes and sampled. All development data sheets are presented in Attachment B. The purged water was stored in 55-gallon drums onsite pending testing and disposal.

#### MONITORING WELL SAMPLING ACTIVITIES

On 16 March 2007, Blaine Tech performed the groundwater sampling activities at wells MW-1, MW-2 and MW-3. After receiving verbal permission from ACEH, the wells were sampled on the same day as the development, after the field parameters had stabilized.

After each well had been dewatered for the second time, the wells were allowed to recharge and were purged of an additional two case volumes to ensure stability of field parameters and then sampled using



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a new disposable bailer. All samples for metals analyses were field-filtered using a 0.45-micron filter. The groundwater samples were preserved and submitted for analysis to McCampbell Analytical, a California-certified laboratory in Pittsburg, California, under chain-of-custody protocol.

All reusable pumping equipment was decontaminated using a Hotsy® steam cleaner and pressure washer. Decontamination rinse water was contained on the Blaine Tech truck and transferred to 55-gallon drums along with the purge water. Drums were stored onsite pending testing and disposal. All field sampling data forms are presented in Attachment B.

### **GROUNDWATER ELEVATION AND FLOW DIRECTION**

Depth to groundwater from the top of casing was measured in each well prior to development and sampling. Groundwater elevation data is presented in Table 1 and presented graphically in Figure 2. The groundwater flow appears to be towards the north at a calculated gradient of 0.0008 ft/ft.

### **GROUNDWATER ANALYTICAL RESULTS**

The analytical plan was developed based on the previous sampling conducted by Kaldveer in 1990. The EPA analytical method numbers were adjusted to present-day methods. All samples were analyzed for the following:

- chromium, molybdenum, and copper using EPA Method 200.8;
- lead using EPA Method 200.8;
- chromium VI using EPA Method 218.6;
- arsenic using EPA Method 200.8; and
- total cyanide using EPA Method 335.3.

Table 2 summarizes the current and previous sampling results, and for comparison purposes lists the MCLs and the Regional Water Quality Control Board Environmental Screening Levels from Table B (ESLs). No total chromium, chromium VI, copper, lead or molybdenum were detected above the laboratory reporting limits. Arsenic was detected in MW-1, MW-2, and MW-3 at concentrations of 1.4, 0.57, and 0.83  $\mu$ g/L, respectively, which are below the drinking water MCL of 10  $\mu$ g/l and the ESL of 36  $\mu$ g/l. Total cyanide was detected in well MW-1 at a concentration of 16 micrograms per liter ( $\mu$ g/L), which is below the drinking water MCL of 200  $\mu$ g/l. There is no ESL for total cyanide. Wells MW-2 and MW-3 did not contain cyanide above the laboratory reporting limit of 2.0  $\mu$ g/L.

### SUMMARY AND RECOMMENDATIONS

During the late 1980s it was discovered that a release of photochemicals containing metals and cyanide had occurred at the Site and it was listed as a SLIC Site on the RWQCB database. After soil remediation was completed in 1990, three monitoring wells were installed and sampled three times to evaluate potential groundwater impacts and confirm Site cleanup. No metals exceeded the MCLs with the exception of total chromium measured in one sampling episode from monitoring well MW-3. Cyanide was only detected in monitoring well MW-1, and twice exceeded the MCL of 200 µg/l.



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The Site was sold in 2006 and Treadwell & Rollo was retained by the new owner to asses the Sites regulatory status. At the request of the ACEHD the wells were redeveloped and sampled. Arsenic was the only metal detected, but at concentrations below the drinking water MCL and ESLs, and within the range of naturally occurring arsenic concentrations. Total cyanide was only detected in one well, at less than a tenth of the drinking water MCL.

The Cyanide concentration detected is much lower than detected in 1990, and will continue to naturally degrade. According to the USEPA fact sheet on cyanide, "Cyanides are generally not persistent when released to water or soil, and are not likely to accumulate in aquatic life. They rapidly evaporate and are broken down by microbes."<sup>3</sup> Regarding the 200 µg/l MCL, the cyanide fact sheet states that EPA believes this level of protection would not cause potential human health problems, and that "given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water."

On the basis of groundwater samples at the Site being below the RWQCB ESLs and USEPA drinking water MCLs, Treadwell & Rollo recommends that the wells be destroyed and the SLIC case be closed.

If you have any questions regarding this report please call either of the undersigned at (415) 955-9040.

Sincerely yours, TREADWELL & ROLLO, INC.

Christopher Gordon Senior Staff Scientist

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### **Attachments:**

- ML No. 7066 David Dixon Senior Associate Geologist, PG 7066
- Table 1Well Construction Details and Groundwater Elevation DataTable 2Groundwater Analytical Results
- Figure 1 Site Location Map
- Figure 2 Site Plan and Groundwater Potentiometric Map
- Attachment A Soil Boring Logs and Well Construction Data
- Attachment B Field Sampling Forms
- Attachment C Chain-of-Custody Record and Certified Laboratory Reports
- cc: Sean Svendson Pacific Shops, Inc.

<sup>&</sup>lt;sup>3</sup> <u>http://www.epa.gov/safewater/contaminants/dw\_contamfs/cyanide.html</u>

TABLES

### Table 1 Well Construction Details and Groundwater Elevation Data Former Chem-Mil-Co Site 1829 Clement Avenue

### Alameda, CA

Well ID	Installation Date	Sample Date	Borehole Diameter	Casing Diameter	Bottom of Casing	Top of Screen		Top of Casing Elevation <sup>1</sup>		Groundwater Elevation <sup>1</sup>
			(inches)	(inches)	(depth in feet)	(depth in feet)	(depth in feet)	(feet-msl)	(feet-below TOC)	(feet-msl)
MW-1	11-Sep-90	16-Mar-07	(inches)	(inclies)	leet)	III leet)	leet)	(leet-msi)	3.04	( <b>reet-ms</b> ) 88.48
	11 500 > 0	9-Oct-90							3.40	88.12
		26-Sep-90							3.83	87.69
		13-Sep-90	8	2	15.0	5.0	15.0	91.52	3.82	87.70
MW-2	11-Sep-90	16-Mar-07							2.93	88.43
		9-Oct-90							3.83	87.53
		26-Sep-90							3.73	87.63
		13-Sep-90	8	2	15.0	5.0	15.0	91.36	3.67	87.69
MW-3	11-Sep-90	16-Mar-07							2.42	88.39
		9-Oct-90							3.38	87.43
		26-Sep-90							3.21	87.60
		13-Sep-90	8	2	15.0	5.0	15.0	90.81	3.17	87.64

 $\frac{Notes}{feet-msl} = feet above mean sea level$ 

TOC = Top of casing

<sup>1</sup> top of casing elevations were surveyed by Kalveer Associates in 1990 and is based on an arbitrary datum.

# Table 2Groundwater Analytical ResultsFormer Chem-Mil-Co Site1829 Clement AvenueAlameda, CA

Sample ID	Sampling Date	As	Total Cr	Cr VI	Cu	Total CN	Мо	Pb
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-1	16-Mar-2007	1.4	< 0.5	< 0.2	< 0.5	16 (i)	< 0.5	< 0.5
	9-Oct-1990					950		
	26-Sep-1990	<10.0	<5.0	<10.0	40	350	<10.0	<30.0
	13-Sep-1990	5.0	7.0	<10.0	20	2,400	<10.0	<30.0
MW-2	16-Mar-2007	0.57	< 0.5	< 0.2	< 0.5	<2.0	< 0.5	< 0.5
	9-Oct-1990					<20.0		
	26-Sep-1990	<5.0	170	<10.0	30	<20.0	<10.0	<30.0
	13-Sep-1990	40	83	<10.0	10	<20.0	<10.0	<30.0
MW-3	16-Mar-2007	0.83	<0.5	< 0.2	<0.5	<2.0	<0.5	<0.5
	9-Oct-1990					<20.0		
	26-Sep-1990	<5.0	<5.0	<10.0	20	<20.0	<10.0	<30.0
	13-Sep-1990	5.0	<5.0	<10.0	<10.0	<50.0	<10.0	<30.0
Regulatory Agenc	y Screening Level	s						
ESLs		36	180	11	3.1	None <sup>1</sup>	35	2.5
MCL		10	100	None	1,300	200	None	15

Notes:

As = Arsenic using Method 200.8

Cr = Total Cromuim using EPA Method 200.8

Cr VI = Cromium VI using EPA Method 218.6

Cu = Copper using EPA Method 200.8

CN = Toal cyanide using EPA Method 335.3

Mo = Molybdenum using EPA Method 200.8

Pb = Lead using EPA Method 200.8

 $\mu g/L = Micrograms per liter$ 

<10.0 = Not detected at or above the laboratory reporting limit

-- = Analysis not requested

ESLs = California Regional Water Quality Control Board Environmental Screening Levels, Table B

MCL = United States Environmental Protection Agency Maximum Contaminant Level (MCL) for drinking water

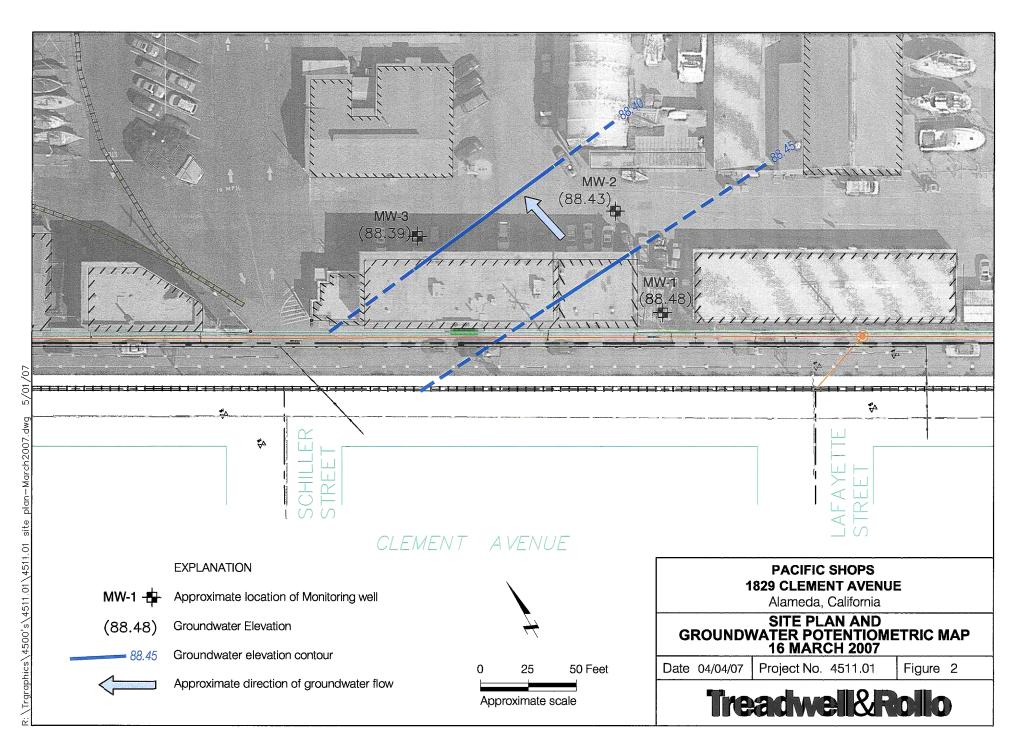
1 = There is no ESL for total cyanide, but there is one for free cyanide.

#### Laboratory Notes:

i = Liquid sample contains greater than ~ 1 vol. % sediment

FIGURES





ATTACHMENT A Soil Boring Logs and Well Construction Data

DRILL RIG	CME 4	15	SURF	ACE ELE	VATIO	)N	N.	S. LOG	GED BY	G. Fiedle	r
DEPTH TO GROUND	WATER	3.2 feet	BORIN	IG DIAM	ETER		8-in	ch DATI	E DRILLED	9/11/90	
DESCRIPTI		ASSIFICATION		DEPTH (FEET)		ETRATION	PID READING		Remarks		MELL METON
DESCRIPT	Ion and re	MARKS	SOTL TYPE		Ű	PENE					
Asphalt SILTY SAND (SM brown, moist, sof poorly graded, (F SAND (SW), light medium grained, CLAYEY SAND (S yellowish brown, plasticity, minor of mottling SILTY SAND (SM firm, well graded, moderate oxidation SAND (SW), light trace clay Total Depth = 16. Notes: Well Construction - 2-inch PVC, Se slotted (0.010- - 2/12 washed s - cement grout steel stovepipe N.S Not surveyed	t, fine to med ILL) brown, mois well graded <b>3C)</b> , pale to r moist, firm, r usky brown ), light browr rootlets, son on mottling brown, wet, brown, wet, 5 Feet Details chedule 40, s inch) casing sand filter pa ets plug surface seal e locking cov	lium, it, loose, noderate noderate oxidation n, moist, ne clay, loose, solid and ck with		- 10		5 6 10 16					
····		· · · · · · · · · · · · · · · · · · ·				EXF		TORY BO		 A	
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		orma corporation		PROJE		О.		DATE	BORING		
				(E1179	.14	272	Nove	mber 1990	NO	MW-3	

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Contraction of

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Name of Street o

DRILL RIG	СМ	E 45	SURF	ACE ELEVA		N	N.S	LOGO	ED BY	G. Fiedl	er
DEPTH TO GROUN	OWATER	3.8 feet	BORI		ER		8-inc	h DATE	DRILLED	9/11/9	0
DESCRIPT		CLASSIFICATION		DEPTH (FEET)	SAMPLER	TRATION ESTANCE DMS/FT)	PID READING		REMARKS		MELL CONSTRUCTTON
	TION AND		SOTL		SA	PENE RESJ (BLC	RE				
Asphalt and bas material SAND (SP), dus poorly graded (f	ky brown, c									묳	
SAND (SW), pal brown, damp, fir moderately plas	m, well gra			5		9					
grading pale yell trace clay	owish brow	n, wet, loose,		- 10		7					
grading moist				- 15 -		15					
Bottom of boring Notes: Well Constructio - 2-inch PVC, s slotted (0.010 - 2/12 washed - bentonite pel - cement grou steel stovepi N.S Not survey	n Details Schedule 4( D-inch) casi I sand filter I ets seal It surface se De locking o	ng pack al with									
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	Geosc	el ASSOCIA ience Consulta alifornia Corporation	nts	PROJEC	2T A#	·	Alan	LEMENT AV	rnia		
				KE1179-				mber 1990	BORING NO	MW-1	i

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DRILL RIG	CM	E 45	SURF	ACE ELE		ON		N.S	LOGG	ED BY	G. Fiedler
DEPTH TO GROUNDW	ATER	3.7 feet	BORI		IETER	٩		8-inc	h DATE	DRILLED	9/11/90
DESCRIPTIO	N AND C	LASSIFICATION	- <u>r</u>	DEPTH		SAMPLER	TRATION STANCE MS/FT)	PID READING		Remarks	MELL
DESCRIPTIO	on and	REMARKS	SOIL			SA	PENE RESI (BLC	L RE			Ξ
Asphalt and fill				Ŕ							2
SAND (SP), yellow fine to medium grading dusky brow plasticity											
SAND (SW), light b loose, fine to medi		oist, very									₽
CLAYEY SAND (SO yellowish brown, m moderate to low pl weathered, moderate ovidation motiling	ioist, firm asticity, r	, noderately		5			9				
oxidation mottling SILTY SAND (SM), moist, loose, minor brown oxidation sta carbonized rootlets	yellowis aining, tra	h					6				
				– 10 -			9				
grading yellowish b graded	rown, we	et, loose, well				F					
-				- 15			19				
Total Depth = 16 F Notes: Well Construction I - 2-inch PVC, Scl slotted (0.010-ir - 2/12 washed sa - bentonite pellet - cement grout s steel stovepipe N.S Not surveyed	Details nedule 4( nch) casi and filter s seal urface se locking c	ng pack al with									
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	Kaldy	veer Associa	tes				· · · · · · · · · · · · · · · · · · ·				i
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ATTACHMENT B Field Sampling Forms

### WELLHEAD INSPECTION CHECKLIST

	2007  815 Cleme  070316 - MAI			Tec	hnician	Milce	∧	
Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Debris Removed From Wellbox	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)
<u>mw-1</u>					·	but K Lock		
MW-Z						Gut to		
MW-3						Cut K Lock		
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NOTES:	* Replaced w	12.357	lock				<u> </u>	
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Page \_ 1\_\_ of \_ 1\_\_

### WELL GAUGING DATA

Project # 070316-MNI Date 3/16/2007 Client Treadwell & Rollo Site 1815 clement Ave., Alameda 

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)		Immiscibles Removed		Depth to well bottom (ft.)	Survey Point: TOB or	Notes
MW-1	1035	2	4,3				304	14.58	$\square$	
MW-2	1021	2	4. 2				2.93	14.71		
MW-3	1013	2					2.42	14.71 14.27 +4.17		
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BLAINE TECH SERVICES, INC. SAN JOSE SACRAMENTO LOS ANGELES SAN DIEGO SEATTLE

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www.blainetech.com

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Project #:	07031	6-MNI		Client: Tree	adwell \$Ro	10 @ 1815 clement
Develope	. Mile 1	V		Date Devel	oped: 3/1	6/2007
Well I.D.	MW-	l		Well Diam	eter: (circle	one) 🙆 3 4 6
Total Wel	l Depth:			Depth to W		
Before /4	.58	After /4.7	1	Before 3.	of Afte	er
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Additiona	I Notation	is: Surg	rd well fi	OR 20M	in <u>prior</u>	to purge and 1285
	version <sup>®</sup> Factor (VCF) d <sup>2</sup> /4) x π} /231	):	Well dia.         VC           2"         =         0.1		•	
where 12 = in /	foot		$3^{"} = 0.3^{"}$ $4^{"} = 0.6^{"}$			
$d = dia  \pi = 3.1$	meter (in.) 416		$6^{"} = 1.4^{"}$ $10^{"} = 4.0^{"}$			
231 = in 3	/gal		12" = 6.8	7		
1.8		Х				
1 Case	Volume		Specified	l Volumes	= 	gallons
Purging De	vice:		Bailer			Electric Submersible
			Suction Pum	р	P	Positive Air Displacement
		Type of Insta	lled Pump			•
		Other equipm	nent used	• *		
			Cond.	TURBIDITY	VOLUME	NOTATIONS
TIME	TEMP (F)	pН	(mS or	(NTUs)	REMOVED:	NOTATIONS: Zean Soft bottom
1320	Bezin	· -		<b>N</b> (1) N		Brown, Silly , Fine Sand
1323	70.4	7.98	544.1	71000	1.8	Drad = 10.74 Down, Jilly, fine Sand
1326	67.7	7.70	543.3	>1600	3.6	DAW 8.95 Brown, J. Hy File Sand
1329	67.0	7.60	54.7	71000	5.4	DTW= 10.95
1330	Well 1	lenataco			6.4	DTW= 12.80
1525	Surger	well for	10mm	prov	to proje	072/ = 3.25
1541	Begin	5				Semi Sift Bottom
1543	66.9	763	552.2	71000	8.2	Grown, Cest Solly Dive 6.20
1546	64.9	7.53	551.9	7:000	10.0	Brown, C# 50 Solty Diele 835
1549.	64.7	7.49	549.9	71000	11.8	Brown, Loss folky Hand bottom DTN = 40,65
1552	64.5	7.45	547.7	71000	13.0	Less fills Ofthe Barbarte Bl
1552	Wen	dewater	ed			onde pl
1701	tegn	aurse				DTN= 4.03
Did Well Dev		If yes, note abo	ve.	Gallons Actual	ly Evacuated:	
Dia wen De	matol :	11 yes, note abo				

Well I.D. MW-1 PA	GE 2 OF 2
	ent:

TIME	TEMP (F)	pH	Cond. (mS or AS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIO	NS:
1723			551.8	71000	14.8	Lisht brown	5.97
1706	643	7.60 7.54	552.9	71:00	16.6	Light Brown Light Brown	Dil-19
				· · · · · ·			
			Saude	ID-	MW-1		
			Sand	ID- Time-	1711		
				·			
	1						
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	+	<u> </u>					

Project #:	070316	- MNI		Client: Trea	dwell \$Rol	lo O 1815 Clement					
Developer:				Date Develo	oped: 3/14	/2007					
Well I.D.			,	Well Diameter: (circle one) 2 3 4 6							
Total Well	-			Depth to Wa	ater:						
Before /	-	After 14, S	85	Before 2.9	3 After	·					
Reason no	t develope	d:		If Free Prod	luct, thickne	ess: NA					
Additional	Notations	: Surge	d well fe	DR 20M	n prior	to purge stop 1220					
	eter (in.) 16		Well dia.         VCR $2^{"}$ =         0.16 $3^{"}$ =         0.37 $4^{"}$ =         0.65 $6^{"}$ =         1.47 $10^{"}$ =         4.08 $12^{"}$ =         6.87	5 9 5, • 7 8	• •	/.					
1.9		X	10			20.0 19.0					
1 Case V	/olume		Specified	l Volumes	=	gallons					
Purging Dev			nent used		OK 1 Sulab	Positive Air Displacement					
TIME	TEMP (F)	pН	Cond. (mS o (µS)	TURBIDITY (NTUs)	VOLUME REMOVED	NOTATIONS:					
1224	Bezm	pirse				Soft Bottom					
1226	63.5	8.13	700.0	71000	2.0	Bogwon, Silly, Fine Sand Utal = 7.21					
1229	61.4	7.76	700.5	>/000	4.0	Brown, Solty, Fine Sand DTN = 263					
1232	61.7	7.62	705.7	71000	6.0	Brann, Silty Fine Sand					
1232	Well	deilaten				DTW = 13.00					
1443	Surger		R 10 min	· prior y	6 purge	DTW- 2.95					
1456	Besin	Purse				Semi Soft Bottom					
4859	63.7	7.70	698.6	71000	8.0	DTL= 6.60					
1502	61.4	7.61	700.4	71000	10.0	Hand Lottom Less Seltry DAL= 9.20					
1505	61.5	7.85	700,3	>1000	12.0	Less Silly DTW = 11.22					
1507		evalered	•		•13.0	Less S. try DTW= 17.76					
		<u> </u>			1						
1639	bein	wran				DTW= 3:38					
1637	bein o 64.5	2.66	703.L	71000	15.0	DTW= 3:38 Silling DTN 6.21					

· • • •

Well I.D. MN-2	PAGE 2 OF 2
Project #:	Client:

TIME	TEMP (F)	рН	Cond. (mS or μS)	TURBIDITY (NTUs)	VOLUME REMOVED:		TIONS:
1645	67.2	7.57	202-7	7000	17.0	Lisht Bonn	DRN=855
		Se	mple I	D = MW +lme =	2		
			Sanghe	the :	1650		
		· · · · · · · · · · · · · · · · · · ·					
<u></u>		· ·					
							······································
·····							
· · · •							
							•
							2
	<u> </u>						<u></u>

Project #:	070314	- MNI		Client: Tree	dwell & Role	601BIS clement
Developer:					oped: 3/14	
Well I.D.				Well Diame	eter: (circle o	one) 🖉 3 4 6
Total Well	· · · · · · · · · · · · · · · · · · ·			Depth to W	ater:	
Before / 4.	-	After 144	9	Before 2.5	12 After	
Reason not				If Free Proc	luct, thickne	ess:
Additional		s: Surge	d well for	OR 20M	in prior	to purge ENDIIOB
Volume Conver	rsion Factor (VCF): /4) x π} /231 oot eter (in.) 16	· · ·	Well dia.         VCl $2''$ =         0.16 $3''$ =         0.37 $4''$ =         0.65 $6''$ =         1.47 $10''$ =         4.08 $12''$ =         6.87	5 7 5 · · · · · · · · · · · · · · · · · · ·	•	• •
1.0	7	Х	10			19.0
1 Case V			Specified	Volumes	=	gallons
Purging Dev				) I	—	Electric Submersible Positive Air Displacement
[]			Cond.	TURBIDITY	VOLUME	
TIME	TEMP (F)	pН	(mS or µS)	(NTUs)	REMOVED:	NOTATIONS:
1116	Besin	Purse				SOFT BOTTOM BROWLE SILL DEW =
1122	65.7	8.12	722	71000	2.0	FIAC 5.14 5.36
1125	61.2	7.80	737	71100	4.0	Fine Silt 6.20
1128	61.3	7.87	713	71000	10.0	Brown, Selly DTals 1956 Sturbulity, Fine solt
1132		watercol			7.0	Brown, Solly DELA 12.72
1347	Sur	red for	1D min	prese	to purje	OTW-1052 2.32
1411	Besin	purze				Jew; Soft Bottom
1415	44.2	810	724.2	71000	9.0	Loss Silly DTW = 5.33
1417	60.8	7,72	747.3	71000	11.0	Less Silly OTW=6.57
1419	61.0	7.69	731.2	7(00	12.0	Less Silty Dras 9.21
1421	61-1	7.59	728.6	71001	14.0	Lear Silly DTW-41-21
1429	Welt				15.5	Less Satty DTW-
1606	Svir			jæren	4	072-2-49
Did Well Dev	water?	If yes, note abo	ove.	Gallons Actual	lly Evacuated:	<u> </u>

Well I.D. MN-D	PAGE 2 OF 2
Project #: DTB(6-MA)	Client: Traducci + Pollo

TIME	TEMP (F)	pН	Cond. (mS or (15))	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTA	TIONS:
1613		n puze					
1615	47.1	7.67	741.3	7100	817.5	Brown Less Silty	וראיבנהם
1017	61.9		143.3	71000	19.5	Cight Brown Loss Silks	154=470 60=690 6570
		Saugh	· <i>T</i> D=	MW-7	·		
		Saude	TD = Time =	1622			
		and the second sec	<u> </u>				
· · · · · · · · · · · · · · · · · · ·		.4	<u> </u>	· · · · · · · · · · · · · · · · · · ·			
	· · · · · ·		<u> </u>				
<u></u>							
	A 100						. <u></u>
							<u></u>
			· · · · · · · · · · · · · · · · · · ·				
· · · ·							
		,	. <u> </u>				

# TEST EQUIPMENT CALIBRATION LOG

.

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PROJECT NA	ME			PROJECT NU	MBER		
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALŞ
Myron L Ultrameter	605785	3/14/07 0715	pH 4.0 7.0 10.0	4.03 7.00 10.01	***	237°C	roa
			Con ¢ 3900	3891	Ý	21.6°C	W
					· · · · · · · · · · · · · · · · · · ·		

...

SPE of Parge Water Drum Log

Clience Treadwell 4	Rollo					
Site Address 1815 Clemen	+ Aley	Mamed	la - Pac	the Shor	<u></u> رہ	
STATUS OF DRUM(S) UPON	ARRIVAL					
Date	3/10/07				·	
Number of drum(s) empty:	D		···			
Number of drum(s) 1/4 full:	6					
Number of drum(s) 1/2 full:	0					
Number of drum(s) 3/4 full:	0					
Number of drum(s) full:	0					
Total drum(s) on site:	0					
Are the drum(s) properly labeled?	NA					
Drum ID & Contents:	NA					
If any drum(s) are partially or totally filled, what is the first use date:	NA					

- If you add any SPH to an empty or partially filled drum, drum must have at least 20 gals. of Purgewater or DI Water.

-If drum contains SPH, the drum MUST be steel AND labeled with the appropriate label.

-All BTS drums MUST be labeled appropriately.

STATUS OF DRUM(S) UPON	DEPART	URE				
Date	3/13/07					
Number of drums empty:			· · · · · · · · · · · · · · · · · · ·	 		
Number of drum(s) 1/4 full:			 		ļ	
Number of drum(s) 1/2 full:						
Number of drum(s) 3/4 full:	1					
Number of drum(s) full:	1				 	
Total drum(s) on site:	2					
Are the drum(s) properly labeled?	Yes					
Drum ID & Contents:	Purgentikk					
LOCATION OF DRUM(S)	an a	an a				
Describe location of drum(s): New	- MW-1.	Dr				
FINAL STATUS						
Number of new drum(s) left on site this event	2					
Date of inspection:	3/16/07					
Drum(s) labelled properly:	Y					
Logged by BTS Field Tech:	res					
Office reviewed by:						

ATTACHMENT C Chain-of-Custody Record and Certified Laboratory Reports



## **McCampbell Analytical, Inc.**

"When Ouality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269

Treadwell & Rollo	Client Project ID: 1815 Clement Ave.	Date Sampled: 03/16/07
555 Montgomery St., Suite 1300	Alameda, CA	Date Received: 03/16/07
San Francisco, CA 94111	Client Contact: Chris Gordon	Date Reported: 03/22/07
	Client P.O.:	Date Completed: 03/22/07

#### WorkOrder: 0703406

March 22, 2007

### Dear Chris:

Enclosed are:

- 1). the results of 3 analyzed samples from your 1815 Clement Ave. Alameda, CA project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence

in quality, service and cost. Thank you for your business and I look forward to working with you again.

Best regards,

Angela Rydelius, Lab Manager

			ANI 1007		ERS AVENUE			CON	DUCT	ANAL	YSIS TO	DETEC	Г	LAB	McCampbell		DHS #
BLAI TECH SER			AN JOSE	FAX (	IIA 95112-1105 408) 573-7771 (408) 573-0555		0.8	t3 Harad	Fleed					MUST MEET SPECIFICATIONS C EPA LIA	C	] RWQCB RE	GION
CHAIN OF CUS	TODY	BTS #	DTE	316-1	NI	]	EPA 200.8	eld t	Fredd								
CLIENT	Tread					CONTAINERS	er by E	I &		8.				SPECIAL INSTRUCTION	ONS All metals by 2	200.8 are field	filtered
SITE	1815 (	Clemer	nt Ave.			ONTA	Copper by	200.8	200.8	A 216.8	5.2			Invoice and Report t	o:		
	Alame	da, CA			23 1	ALL C(	enum,		PA	EPA	A 335.			CI	nris Gordon		
						SITE A	Molybdenum,	EPA	DY E	6 by	/ EPA				cmgordon@t	readwellrolle	o.com
			NATRIX	CON		= COMPOSITE	Chromium, M	Lead by	Arsenic by EPA	Chromium 6 by	Cyanide by						
AMPLE I.D.	DATE	TIME	  	TOTAL	12-250 NP	Ü	ъ Ч	Ľ	A X	Ū	С Х		+	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
1W-1	3/16/07	1711	W	3	1-500 NACH		X	X		X	X		-				
1W-2	3/16/07	1650	W)	3	1-550 NGC	<u> </u>	X	X	X	X	X		+				
1W-3	2/10/0	1622	~~~~	~	1 STO MOH	-	X	~	~	-		-					
		5												Notek			
25	24	/												MW-1 - Sup	died 25	o Field	Filtered
ICE/t <sup>®</sup> 2	ITION V		PROPRIAT	в											Aloc	Preserv	ed Poly
HEAD SPACE DECHLORIN	ATED IN LAB	PR	NTAINERS ESERVED	IN LAB	-										FOR	200.8	4
PRESERVAT			$\nabla$											MUJ-ZZ	Bupplied	250 10	Field Filtge
AMPLING	DATE	TIME	SAMPLIN											MW-3 W RESULTS NEEDED	Ata Ott	14NDS	Preserved Pe
OMPLETED	3/16/07 1	175	PERFOR	MED BY	Michael	Ne	ende	ate	-				/	NO LATER THAN	STAN DAY	PD TAT	FOR ZE
ELEASED BY						DAT	E,	57	TIME 52	0	F	RECEIVED				DATE/ 3//6/0	TIME 7 SZ
ELEASED BY			1		-	DAT	E/b	50	TIME	X	5	RECEIVED	BY	Al Vall		1DATE 3/10/01	TIME 7-00PA
ELEASED BY	~	$\sim$		-	- /	ØATI	1	6	TIME		R	RECEIVED	BY			DATE	TIME
IPPED VIA						DAT	E SEN	г	TIME	SENT	0	OOLER #					

.

### McCampbell Analytical, Inc.



1534 Willow Pass Rd

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Pittsburg, CA 94565-1701 (925) 252-9262				WorkOr	der: 0703406	ClientID: TWRE	7	
			EDF	Fax	✓ Email	HardCopy	ThirdParty	
Report to:				Bil	to		Requested TAT:	5 days
Chris Gordon	Email:	chrisgordon@trea	adwellrollo.com		Accounts Payable			
Treadwell & Rollo	TEL:	(415) 955-904	FAX: (415) 955-90	)4	Treadwell & Rollo			
555 Montgomery St., Suite 1300	ProjectNo:	1815 Clement Ave	e. Alameda, CA		555 Montgomery St.,	Suite 1300	Date Received:	03/16/2007
San Francisco, CA 94111	PO:				San Francisco, CA 94	1111	Date Printed:	03/16/2007

					Requested Tests (See legend below)											
Sample ID	ClientSampID	Matrix	Collection Date	Hold	1	2	3	4	5	6	7	8	9	10	11	12
0703406-001	MW-1	Water	03/16/07 5:11:00		В	С	Α									
0703406-002	MW-2	Water	03/16/07 4:50:00		В	С	А									
0703406-003	MW-3	Water	03/16/07 4:22:00		В	С	Α									

Test Legend:

1 218_6_W	2 CN_TOTAL_W	3 METALSMS_W	4	5
6	7	8	9	10
11	12			

### Prepared by: Melissa Valles

#### **Comments:**

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

	Campbell Analyti "When Ouality Counts"	cal, Inc.		1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269					
Treadwell & Roll		Client Project ID Alameda, CA	: 181	15 Clement Ave.	Date Sampled: 03/16/07				
555 Montgomery	St., Suite 1300	Alaincua, CA							
San Francisco, C.	A 94111	Client Contact:	Chris	Chris Gordon Date Extracted: 03/16/07					
Suil I fuileiseo, e.		Client P.O.:			Date Analyzed 03/16/07				
Analytical Method: E	218.6	Hexach	rome	by IC*	Work Order: 0	703406			
Lab ID	Client ID	Mat	trix		Hexachrome	DF			
0703406-001B	MW-1	W	V		ND	1			
0703406-002B	MW-2	W	V		ND	1			
0703406-003B	MW-3	W	V		ND	1			

Reporting Limit for DF = 1; ND means not detected at	W	0.2 µg/L	
or above the reporting limit	S	NA	

\* water samples are reported in  $\mu g/L$ .

N/A means surrogate not applicable to this analysis; # surrogate diluted out of range or surrogate coelutes with another peak.

h) a lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to matrix interference; p) see attached narrative.

<u> </u>	Campbell Analyti "When Ouality Counts"	<u>cal, Inc.</u>		1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269				
Treadwell & Roll	0			5 Clement Ave.	Date Sampled: 03/16/07			
555 Montgomery	v St., Suite 1300	Alameda, CA	A		Date Received: 03/16/07			
San Francisco, C.	A 94111	Client Conta	ct: Chris	Gordon	Date Extracted: 03/19/07			
Sull I fullelised, C.		Client P.O.:			Date Analyzed 03/19/07			
Analytical Method: E	335.3 / Kelada-01	C.	yanide, To	otal*	Work Order: 0	703406		
Lab ID	Client ID		Matrix		Total Cyanide	DF		
0703406-001C	MW-1		W		16,i	1		
0703406-002C	MW-2		W		ND	1		
0703406-003C	MW-3		W		ND	1		
L	1	I		1		L		

Reporting Limit for DF = 1; ND means not detected at	W	2.0 µg/L	
or above the reporting limit	S	NA	

\* water samples are reported in ug/L; soil/sludge/solid samples in mg/kg; wipe samples in µg/wipe.

^ All water samples are screened for sulfide interference prior to analysis and treated to remove sulfide if it is present. All soil samples are treated to remove sulfide, nitrate and nitrite interference prior to analysis.

i) liquid sample contains greater than ~1 vol. % sediment; j) reporting limit raised due to high sediment content/matrix interference; m) sample treated to remove interfering nitrate and nitrite per E335.4; p) see attached narrative.

Intercal Project ID: 1815 Cleme ID: and Project ID: 1915 Cleme ID: and Project ID: 1915 Cleme ID: and Project ID: 1916 Cleme ID: 191		McCampbe	<b>alyti</b> <sup>Counts"</sup>	cal	<u>, Inc.</u>	w	1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269						
Bate Receive: $0.3/1607$	Treadw	ell & Rollo					1815 Clemo	ent Ave.	Date Sampl	ed: 03/16/07	7		
Name         Name         Discription (Note)         Discrin (Note)         Discrin (Note)	555 Mo	ontgomery St., Suite 1	1300		Ala	ineda, CA		Date Received: 03/16/07					
<table-container>           Circu USUP           Discret USUP           Set USUP           Set USUP           Set USUP           Circu USUP           Circu USUP           Set USUP           Set USUP           Set USUP           Circu USUP           Circu USUP           Set USUP           Set USUP           Set USUP           Circu USU</table-container>	San Fra	ancisco, CA 94111			Clie	ent Contact: C	Chris Gordon	1	Date Extrac	eted: 03/16/07	7		
Autore Letter       Structure       Structure<					Clie	ent P.O.:			Date Analy	zed 03/19/07	7		
001A         MW-1         W         TTLC         1.4         ND         ND         ND         ND         1         104           002A         MW-2         W         TTLC         0.57         ND         ND         ND         ND         1         108           003A         MW-2         W         TTLC         0.57         ND         ND         ND         ND         1         108           003A         MW-3         W         TTLC         0.83         ND         ND         ND         ND         1         108           003A         MW-3         W         TTLC         0.83         ND         ND         ND         ND         1         108           003A         MW-3         W         TTLC         0.83         ND         ND         ND         ND         1         108           014         Internet state         Interne state<	Extraction	method E200.8						8		Work Orde	r: 0703	3406	
002AMW-2WTTLC0.57NDNDNDNDND1108003AMW-3WTTLC0.83NDNDNDNDND1105013AMW-3WTTLC0.83NDNDNDNDND1105013AMW-3WTTLC0.83NDNDNDNDND1105013AMW-3WTTLC0.83NDNDNDNDND1105014MM-3MStateStateStateStateStateStateStateState015MM-3MStateStateStateStateStateStateStateStateState015MM-3MStateStateStateStateStateStateStateStateState016MStateStateStateStateStateStateStateStateStateStateState017StateStateStateStateStateStateStateStateStateStateStateStateStateState018StateStateStateStateStateStateStateStateStateStateStateStateState019StateStateStateStateStateStateStateStateStateStateStateStateState <td>Lab ID</td> <td>Client ID</td> <td>Matrix</td> <td>Extrac</td> <td>tion</td> <td></td> <td></td> <td></td> <td>Lead</td> <td>Molybdenum</td> <td>DF</td> <td>% SS</td>	Lab ID	Client ID	Matrix	Extrac	tion				Lead	Molybdenum	DF	% SS	
003A         MW-3         W         TTLC         0.83         ND         ND         ND         ND         1         105           Image: Image	001A	MW-1	W	TTL	.C	1.4	ND	ND	ND	ND	1	104	
Image: Normal state in the state	002A	MW-2	w	TTL	.C	0.57	ND	ND	ND	ND	1	108	
ND means not detected at or	003A	MW-3	w	TTL	.C	0.83	ND	ND	ND	ND	1	105	
ND means not detected at or													
ND means not detected at or													
ND means not detected at or													
ND means not detected at or													
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ND means not detected at or													
ND means not detected at or													
ND means not detected at or													
ND means not detected at or			<u> </u>										
ND means not detected at or													
ND means not detected at or													
ND means not detected at or		ing Limit for DE 1											
above the reporting limit S TTLC NA NA NA NA NA NA	ND me	ans not detected at or	W S	TTL TTL		0.5 NA	0.5 NA	0.5 NA	0.5 NA	0.5 NA			

\*water samples are reported in ug/L, product/oil/non-aqueous liquid samples and all TCLP / STLC / DISTLC / SPLP extracts are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in  $\mu$ g/wipe, filter samples in  $\mu$ g/filter.

# means surrogate diluted out of range; ND means not detected above the reporting limit; N/A means not applicable to this sample or instrument.

i) aqueous sample containing greater than ~1 vol. % sediment; for DISSOLVED metals, this sample has been preserved prior to filtration; for TTLC metals, a representative sediment-water mixture was digested; j) reporting limit raised due to insufficient sample amount; J) analyte detected below quantitation limits; k) reporting limit raised due to matrix interference; m) estimated value due to low/high surrogate recovery; n) results are reported on a dry weight basis; p) see attached narrative.

DHS ELAP Certification Nº 1644





### McCampbell Analytical, Inc.

"When Ouality Counts"

### **QC SUMMARY REPORT FOR E218.6**

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0703406

EPA Method E218.6 Extraction E218.6					BatchID: 26880			Spiked Sample ID: 0703406-001b				
Analyte	Sample Spiked MS MS		MSD	MS-MSD	LCS	LCSD	LCS-LCSD Acceptance Criteria		Criteria (%)			
, and y to	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Hexachrome	ND	25	106	104	1.33	90.4	94.6	4.63	90 - 110	10	90 - 110	10
All target compounds in the Method											90 - 110	

#### BATCH 26880 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0703406-001B	03/16/07 5:11 PM	03/16/07	03/16/07 8:51 PM	0703406-002B	03/16/07 4:50 PM	03/16/07	03/16/07 9:12 PM
0703406-003B	03/16/07 4:22 PM	03/16/07	03/16/07 9:34 PM				

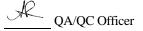
MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.





"When Ouality Counts"

### **QC SUMMARY REPORT FOR Kelada-01**

W.O. Sample Matrix: Water QC Matrix: Water							WorkC	order 07034	06			
EPA Method E335.3 / Kelada-01	EPA Method E335.3 / Kelada-01 Extraction E335.3 / Kelada-01 BatchID: 26839					Sp	iked Samp	ole ID:	0703361-00	1B		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	eptance	Criteria (%)	1
, and y to	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Total Cyanide	4.2	40	102	107	3.67	95.7	97.1	1.37	80 - 120	20	90 - 110	20
All target compounds in the Method B NONE	lank of this	extraction	batch we	ere ND les	ss than the	method R	L with th	e following	exceptions:			

#### BATCH 26839 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0703406-001C	03/16/07 5:11 PM	03/19/07	03/19/07 1:21 PM	0703406-002C	03/16/07 4:50 PM	03/19/07	03/19/07 1:22 PM
0703406-003C	03/16/07 4:22 PM	03/19/07	03/19/07 1:23 PM				

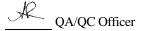
MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.





"When Ouality Counts"

### **QC SUMMARY REPORT FOR E200.8**

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0703406

EPA Method E200.8	Extra	ction E20	0.8		Bat	chID: 26	878	Sp	piked Sample ID: 0703406-003A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	eptance	Criteria (%)	
Analyte	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Arsenic	0.83	10	98.8	99.5	0.651	102	105	2.80	75 - 125	20	85 - 115	20
Chromium	ND	10	97.7	96.7	0.995	103	104	1.06	75 - 125	20	85 - 115	20
Copper	ND	10	94.1	93.4	0.758	104	106	1.43	75 - 125	20	85 - 115	20
Lead	ND	10	98	97.4	0.675	101	102	1.09	75 - 125	20	85 - 115	20
Molybdenum	ND	10	96.7	95.6	1.18	96.3	99.5	3.30	75 - 125	20	85 - 115	20
%SS:	105	750	107	108	0.794	104	104	0	70 - 130	20	70 - 130	20
All target compounds in the Method H NONE	Blank of this	extraction	batch we	ere ND les	ss than the	method F	L with th	ne following	exceptions:			

#### BATCH 26878 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0703406-001A	03/16/07 5:11 PM	03/16/07	03/19/07 5:20 PM	0703406-002A	03/16/07 4:50 PM	03/16/07	03/19/07 5:27 PM
0703406-003A	03/16/07 4:22 PM	03/16/07	03/19/07 4:16 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

