



February 25, 2013

Ms. Mary Rose Casa
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Re: East Bay Municipal Utility District Bayside Groundwater Project, 2012 Annual Report, Order No. R2-2007-0038

Dear Ms. Casa:

In accordance with the General Waste Discharge Requirements of Order No. R2-2007-0038, this submittal is the 2012 annual self monitoring report for East Bay Municipal Utility District's (EBMUD's) Bayside Groundwater Project.

No injection or extraction events took place in 2012 (see Tables 1 and 2). Table 3 summarizes the cumulative injection and extraction volume data since 2009.

The Self Monitoring and Reporting Program (SMP) of Order No. R2-2007-0038 requires EBMUD to implement a phased approach for groundwater quality monitoring. The SMP requires EBMUD to begin groundwater level and quality monitoring three months prior to initiating operation and continue for one additional year after operation ceases. Table 3 of the SMP tabulates groundwater quality monitoring well groups for phased monitoring. Group 2 monitoring, consisting of the Bayside Well, MW-2s, MW-2D¹, MW-4, and MW-6, was initiated in 2012. The monitoring of Group 2 wells will continue on an annual basis until the expanding injected waterfront reaches MW-6.

On December 13, 2012, annual water quality sampling was conducted and samples were analyzed in accordance with Table 4 of the SMP. EBMUD retained Environmental Sampling Services (ESS) to collect water quality samples at the Bayside Well, MW-2S, MW-2I, MW-4, and MW-6. A peristaltic pump with a dedicated length of tubing was used to purge and sample MW-2S. A centrifugal pump with dedicated lengths of tubing was used to purge and sample MW-2I, MW-4, and MW-6. The Bayside Well was purged using a dedicated downhole turbine pump. The sample was collected from a spigot at the wellhead. Purge water discharges were disposed of on permeable ground adjacent to MW-2S, MW-2I, MW-4, and MW-6. The Bayside Well's purge water was pumped to an onsite holding tank and eventually discharged to Oro Loma Sanitary District under a permit. No surface water discharges occurred.

Sampling was completed according to the following procedure:

1. Disinfect all equipment including water level sounder, pump, and tubing with a dilute bleach solution².
2. Measure static water level within each well and calculate the three-well volume of the well required for purging as per USEPA groundwater sampling protocol.

¹ "MW-2D" is actually "MW-2I".

² In the case of the Bayside Well, samples were collected simply by activating the pump in the extraction mode.

3. Purge the well and collect the samples.
4. Measure field water quality data³ and collect samples in sample containers with appropriate preservatives as per relevant USEPA sampling protocols for individual constituents.
5. Transport samples to EBMUD's state certified laboratory in a cooler for further analyses, under chain of custody.

Table 4 contains construction details for all available wells in the groundwater monitoring system⁴. Table 5 contains groundwater elevation and depth to groundwater data. Table 6 summarizes general groundwater quality data; Table 7 summarizes sampling results for standard minerals; Table 8 summarizes haloacetic acids data; and Table 9 summarizes results for trihalomethanes. Tables 10 and 11 summarize vertical gradient calculations. Appendix A contains the original laboratory report including the analytical methods used and associated method detection limits and minimum levels of quantitation.

Figure 1 shows the groundwater level monitoring network and Figure 2 shows the groundwater quality monitoring network. Pressure transducers have been installed in all of the wells listed in Table 4, in addition to the Bayside Well. These transducers measure water level and temperature at a minimum of 30-minute intervals. Figures 3 and 4 present the groundwater level contour maps for February 1 and July 1, 2012, respectively. Figures 5 to 16 present the 2012 groundwater level trends for the monitoring wells.

The high chloride concentrations from MW-2S, a shallow well screened from 40 to 60 feet below grade, are consistent with historic high chloride concentrations observed in the local shallow zone. As discussed above, no water injection took place in 2012. Accordingly, water samples collected from all of the five wells monitored detected no chlorine residual and HAAs. THMs were only detected at the Bayside Well with TTHMs significantly below the permit limit of 80 µg/L. As a result, no exceedances of water quality limits in the order were observed.

EBMUD continued to collect Oxygen-18 data from all of the wells in the current monitoring network to provide information regarding the native stable isotopic compositions of the groundwater. This information can be used to evaluate the lateral and vertical extents of the injected water in the future.

Groundwater elevation contour maps were prepared to represent subsurface conditions on February 1 and July 1. On February 1, groundwater mounding was observed in the deep aquifer in the area of MW-1, MW-4, and MW-6. Water radiated outward from this area to the east, west, and southeast. On July 1, groundwater in the deep aquifer flowed in a northeasterly direction. On both occasions, the gradient measured from 0.003 to 0.005 ft/ft. Water levels at MW-1 were used to represent conditions at the Bayside Well due to its proximity to the Bayside Well and the fact that it is screened at the same depth. Water level information was missing for MW-7 for both dates because its probe had been stolen. The data logger in MW-3 also failed beginning in May.

Vertical gradients were calculated for the three nested wells at MW-5 for February 1 and July 1 (see Tables 10 and 11). The gradient was downward in each case⁵.

³ Measured field WQ parameters included pH, specific conductance, turbidity, temperature, and color. Chlorine residual was also measured immediately prior to sample collection.

⁴ Not all of the wells in Table 4 are required to be monitored according to Order No. R2-2007-0038.

⁵ The gradient direction indicates the potential for ground water flow in that direction. However, the actual flow direction is also governed by the permeability of the porous medium and by the geology.

Figures 5 through 16 show the typical pattern of higher groundwater levels that prevailed during the late winter/spring relative to summer/fall in the deep aquifer. MW-1 registered an approximately five-ft drop in water level in response to the purging of the Bayside Well during the December 13, 2012 sampling event. The nearby MW-2S also experienced a drop in water level during the January 5, 2012 resampling event (described in the 2011 Annual Report). Interestingly, no similar water level decreases were observed in MW-2I and MW-1 during the January event.

EBMUD encountered several difficulties with the transducers during 2012. The data logger in MW-1 malfunctioned starting on December 26. The data loggers for MW-2S and MW-2I both went out of service starting in July and that for MW-3 failed in May. The probe in MW-5D failed from February to May. From mid-March to early April, the recorded levels would indicate artesian conditions. However, no water injection occurred during that period of time; no other deep wells experienced such dramatic water level rises; and MW-5D was never observed to be flowing. This probe eventually failed completely in July. Similarly, the probe in MW-6 likely failed starting in July. The probe in MW-10I failed completely throughout the year and only two manual measurements are available.

EBMUD has retrieved all malfunctioning probes for replacement by the manufacturer. The new probes are scheduled for installation in February 2013. MW-7 was damaged by an outside party and its probe stolen. EBMUD is going through the claims process to obtain compensation in order to rehabilitate the well and replace the probe.

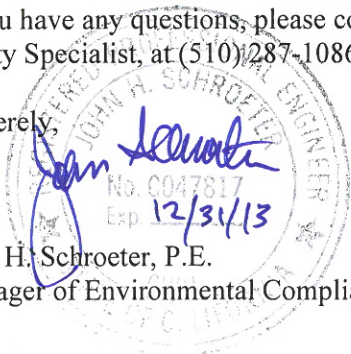
EBMUD will continue to monitor injection and extraction of groundwater in accordance with all associated regulatory permits in 2013.

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact me at (510) 287-0345 or Derek Lee, Senior Environmental Health and Safety Specialist, at (510) 287-1086.

Sincerely,



John H. Schroeter, P.E.
Manager of Environmental Compliance

Table 1: Extraction Summary		
Date	Average Flow Rate (GPM)	Approx. Daily Volume (MGD)
Permit Limit = Annual Rate of 1 MGD		
2012	0	0
Annualized Daily Rate		0

Table 2: Injection Summary		
Date	Average Flow Rate (GPM)	Approx. Daily Volume (MGD)
Permit Limit = Annual Rate of 1 MGD		
2012	0	0
Annualized Daily Rate		0

Table 3: Cumulative Total Volume		
Year	Recovered Volume (gallons)	Injected Volume (gallons)
2009	4,545,000	445,000
2010	113,000,000	0
2011	0	28,432,401
2012	0	0
Total	117,545,000	28,877,401

Table 4: Groundwater Monitoring Wells Information

Well ID	Latitude	Longitude	Address	City	Completion Date	Drilled Depth (ft bgs)	Casing Depth (ft bgs)	Depth of Perforation Begin (ft bgs)	Depth of Perforation End (ft bgs)	Casing Diameter (in)	Reference Elevation (ft amsl)	Reference Location on Well
MW-1 ¹	37° 40' 4.8"	122° 9' 25.2"	2600 Grant Ave	San Lorenzo		665	650	520	640	2	8.71	Top of steel casing
MW-2S ¹	37° 40' 4.8"	122° 9' 25.2"	2600 Grant Ave	San Lorenzo		210	60	40	60	2	9.9	Top of steel casing
MS-2I ¹	37° 40' 4.8"	122° 9' 25.2"	2600 Grant Ave	San Lorenzo		210	200	160	190	2	9.9	Top of steel casing
MW-3 ¹	37° 40' 4.8"	122° 9' 28.8"	2600 Grant Ave	San Lorenzo		665	660	520	650	2	8.12	Top of steel casing
MW-4 ¹	37° 40' 11.6"	122° 9' 28.8"	2575 Grant Ave	San Lorenzo		705	650	520	650	2	8.96	Top of steel rim
MW-5S ¹	37° 40' 34.4"	122° 9' 06.6"	2006 Via Barrett	San Lorenzo	Sep-08	460	210	200	210	2	13.88	Seat of vault lid @ e'ly edge
MW-5I ¹	37° 40' 34.4"	122° 9' 06.6"	2005 Via Barrett	San Lorenzo	Sep-08	460	325	315	325	2	13.88	Seat of vault lid @ e'ly edge
MW-5D ¹	37° 40' 34.4"	122° 9' 06.6"	2007 Via Barrett	San Lorenzo	Feb-01	1025	640	500	630	4	13.76	Top of casing @ n'ly fastener hole
MW-6 ¹	37° 40' 07"	122° 9' 04.5"	15600 Worthley	San Lorenzo	Nov-00	1000	655	480	650	4	9.46	Top of casing @ e'ly edge
MW-7 ¹	37° 39' 56.5"	122° 8' 44.2"	Western tip of San Lorenzo park	San Lorenzo	Nov-00	972	680	510	630	4	7.42	Top of casing @ n'ly edge
MW-8D	37° 43' 04"	122° 11' 50.3"	1970 Davis Street	San Leandro		910	490	420	480	2	14.76	Top of steel rim
MW-9S	37° 41' 11"	122° 6' 46"	589 E. Lewelling Ave	San Lorenzo	Jan-08	460	120	110	120	2	54.39	Seat of vault, w'ly side
MW-9I	37° 41' 11"	122° 6' 46"	589 E. Lewelling Ave	San Lorenzo	Jan-08	460	210	200	210	2	54.39	Seat of vault, w'ly side
MW-9D ¹	37° 41' 11"	122° 6' 46"	589 E. Lewelling Ave	San Lorenzo	Jan-08	460	335	325	335	2	54.39	Seat of vault, w'ly side
MW-10S	37° 41' 19"	122° 9' 43"	15528 Wick Blvd	San Leandro	Sep-08	680	120	100	120	2	11.76	Seat of vault lid @ e'ly edge
MW-10I ¹	37° 41' 19"	122° 9' 43"	15528 Wick Blvd	San Leandro	Sep-08	680	360	340	360	2	11.76	Seat of vault lid @ e'ly edge
MW-10D ¹	37° 41' 19"	122° 9' 43"	15528 Wick Blvd	San Leandro	Sep-08	680	610	590	610	2	11.76	Seat of vault lid @ e'ly edge

Notes:

1 - Groundwater level monitoring required per Order No. R2-2007-0038

Table 5: Groundwater Elevation/Depth to Groundwater Data

	Groundwater Elevation ft amsl										Depth to Groundwater ft								
	BW	MW-1	MW-2S	MW-2I	MW-4	MW-6	MW-5D	MW-7	MW-10D	BW	MW-1	MW-2S	MW-2I	MW-4	MW-6	MW-5D	MW-7	MW-10D	
12/8/2008			0.99	1.09	-4.07														
12/9/2008		-5.06			-3.75					13.74*		8.78*	8.73*	12.68*					
12/14/2009				1.44										12.71					
12/15/2009			0.95								8.95	8.46							
12/8/2010	-7.22		1.71	0.25	-7.45				15.6		8.19	9.65		16.41					
12/21/2011		-4.16	1.12	3.59	-4.17					12.87	8.78	6.31		13.13					
1/5/2012		-3.94	1.04	6.24	-3.97					12.65	8.86	3.66		12.93					
12/13/2012		-4.49	2.38	1.72	-4.16	-4.52				13.2	7.52	8.18		13.12	13.98				

Notes:

BW = Bayside Well

* Applicable well reference elevations are different from those in Table 4.

Table 8: Haloacetic Acids Data

	Tribromoacetic Acid										Trichloroacetic Acid									
	Hg/L										Hg/L									
	BW	MW-1	MW-2S	MW-21	MW-4	MW-6	MW-7	MW-10D	BW	MW-1	MW-2S	MW-21	MW-4	MW-6	MW-7	MW-10D				
12/8/2008																				
12/9/2008		<0.83	<0.83	<0.83	<0.83															
12/14/2009	<0.83			<0.83	<0.83			<0.3	<0.3		<0.3	<0.3								
12/15/2009			<0.83	<0.83																
12/8/2010	<0.83		<0.83	<0.83	<0.83			<0.3	<0.3		<0.3	<0.3								
12/21/2011	<0.83		<0.83	<0.83	<0.83			0.59	<0.3		<0.3	<0.3								
12/13/2012	<0.44		<0.44	<0.44	<0.44			<0.21	<0.21		<0.21	<0.21								

Notes:

BW = Bayside Well

Table 10: Vertical Gradients for the Nested MW-5 Wells on February 1, 2012			
Nested Well Set	MW-5S	MW-5I	MW-5D
Elevation at land surface (ft amsl)	13.88	13.88	13.76
Depth of monitoring well (ft bgs)	210	325	640
Depth to water (ft bgs)	1.49	6.79	18.14
Hydraulic Head (ft)	12.39	7.09	-4.38
Pressure Head (ft)	208.51	318.21	621.86
Elevation Head (ft)	-196.12	-311.12	-626.24
Vertical Hydraulic Gradient (ft/ft)	--	0.046	0.036

Table 11: Vertical Gradients for the Nested MW-5 Wells on July 1, 2012			
Nested Well Set	MW-5S	MW-5I	MW-5D
Elevation at land surface (ft amsl)	13.88	13.88	13.76
Depth of monitoring well (ft bgs)	210	325	640
Depth to water (ft bgs)	1.97	6.43	18.67
Hydraulic Head (ft)	11.91	7.45	-4.91
pressure Head (ft)	208.03	318.57	621.33
Elevation Head (ft)	-196.12	-311.12	-626.24
Vertical Hydraulic Gradient (ft/ft)	--	0.039	0.039

Figure 1 – Groundwater Level Monitoring Well Network

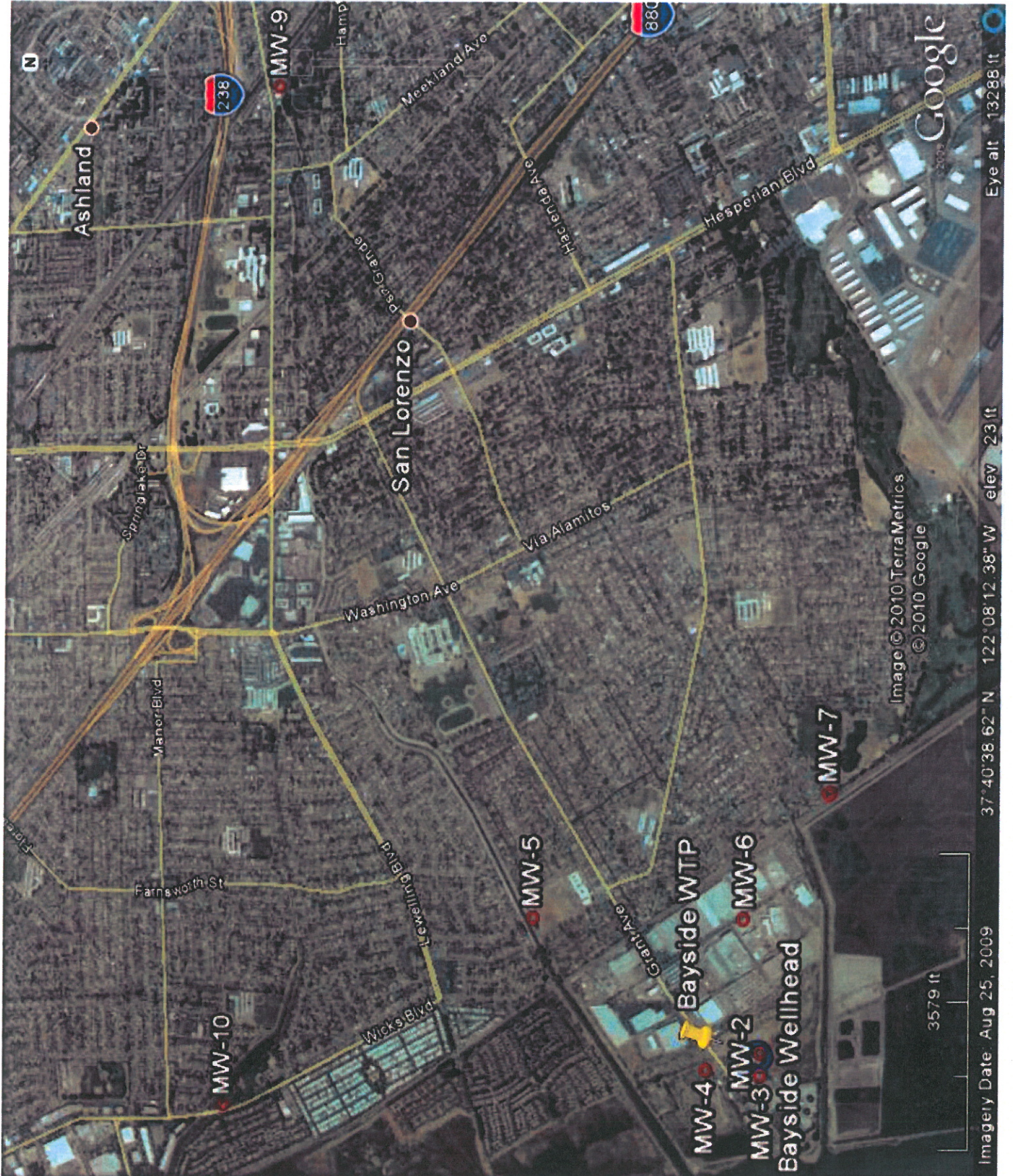


Figure 2 - Groundwater Quality Monitoring Well Network





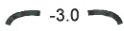
LEGEND



Groundwater monitoring well

(-3.24)

Groundwater elevation in feet below mean sea level (measured February 1, 2012)



-3.0 Groundwater elevation contour in feet below mean sea level (contour interval: 1.0 feet)



0.003 Calculated groundwater gradient direction and magnitude in foot per foot

	26817754.2008	<p align="center">GROUNDWATER ELEVATION CONTOUR MAP February 1, 2012</p>	<p align="right">Figure 3</p>
	EBMUD		



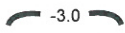
LEGEND



Groundwater monitoring well

(-3.24)

Groundwater elevation in feet below mean sea level (measured July 1, 2012)



-3.0 Groundwater elevation contour in feet below mean sea level (contour interval: 1.0 feet)



Calculated groundwater gradient direction and magnitude in foot per foot

NA

Not available (water level not measured)

	26817754.2008	GROUNDWATER ELEVATION CONTOUR MAP July 1, 2012	Figure 4
	EBMUD		

Figure 5 - 2012 MW-1 GW Level Trend

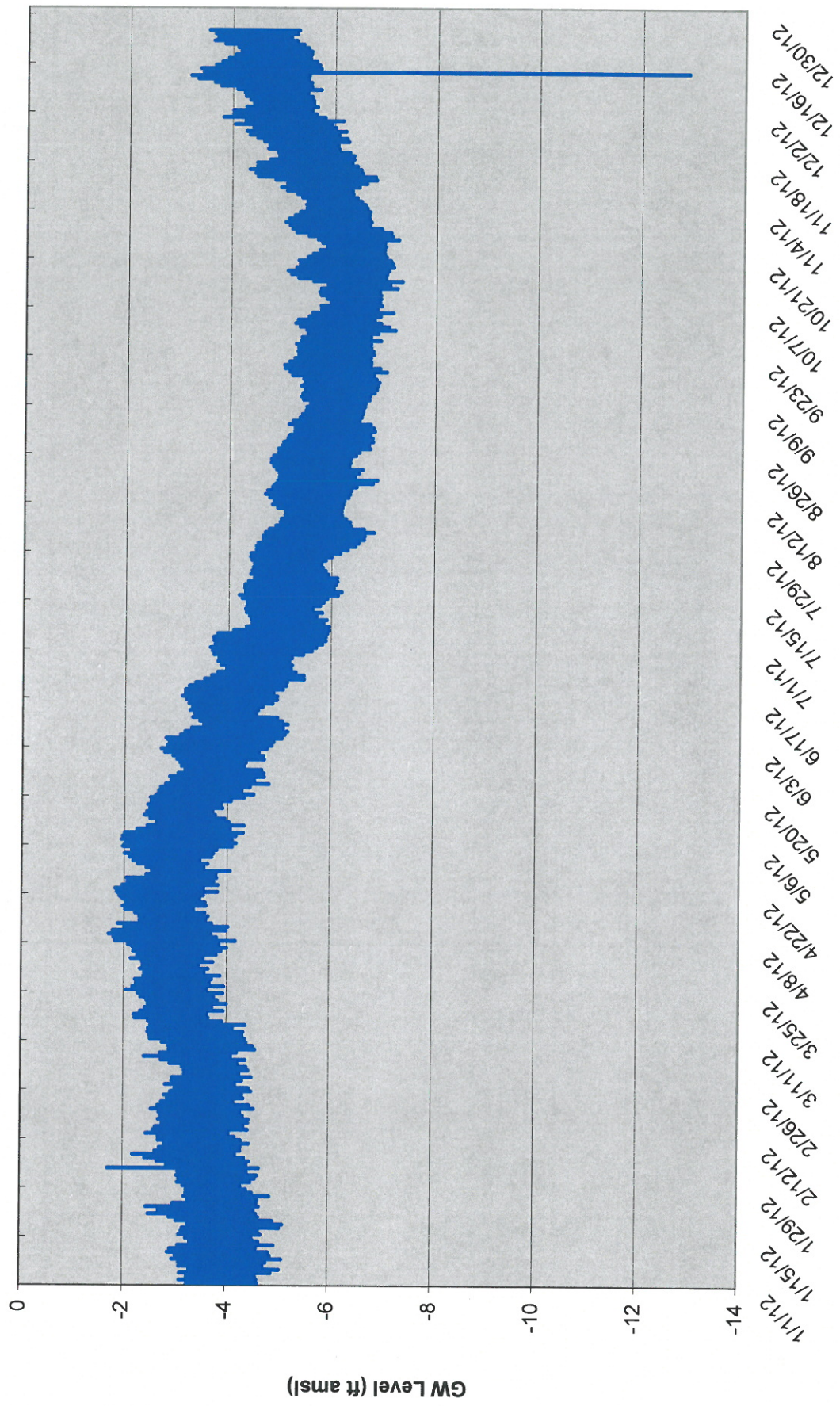


Figure 6 - 2012 MW-2S GW Level Trend

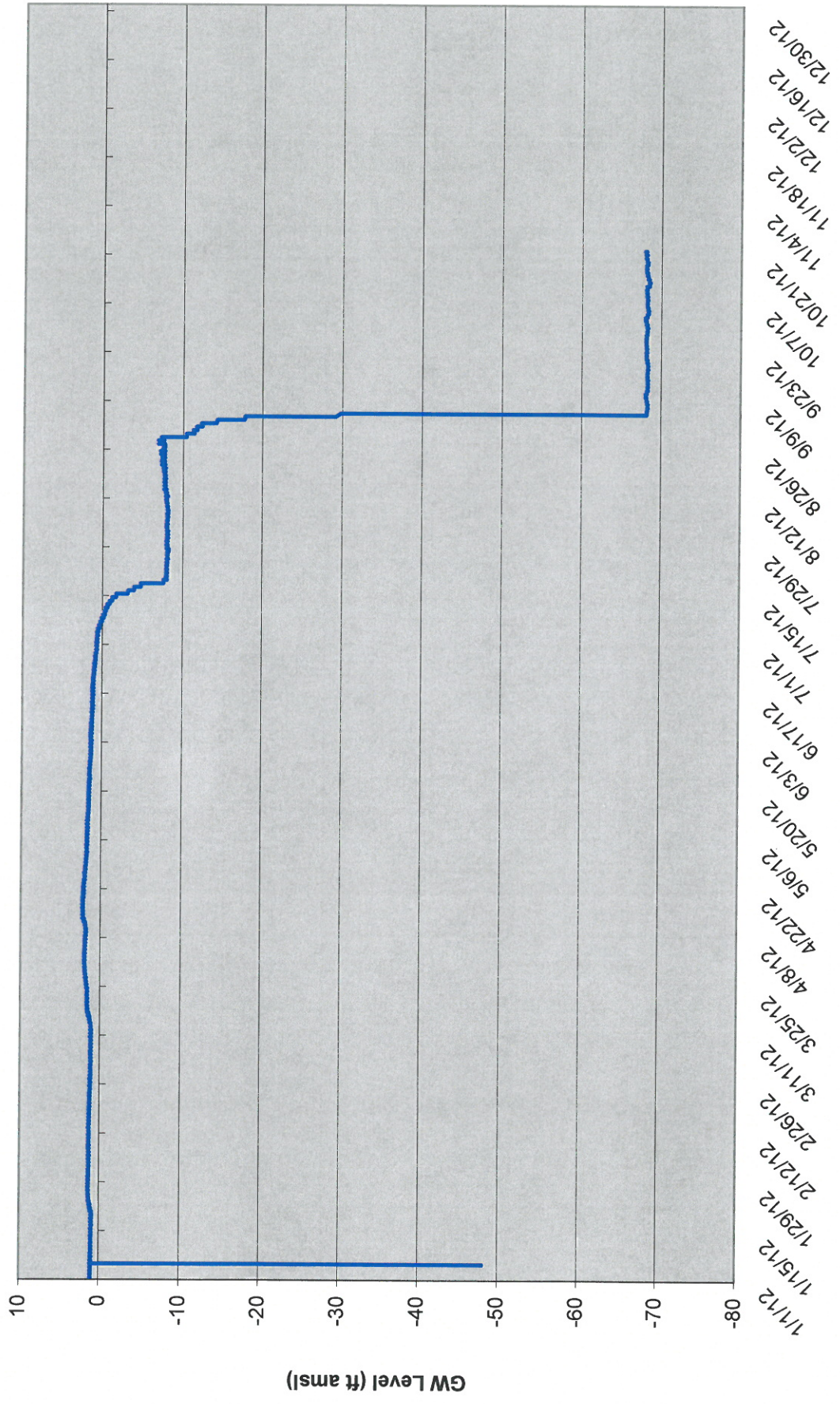


Figure 7 - 2012 MW-2I GW Level Trend

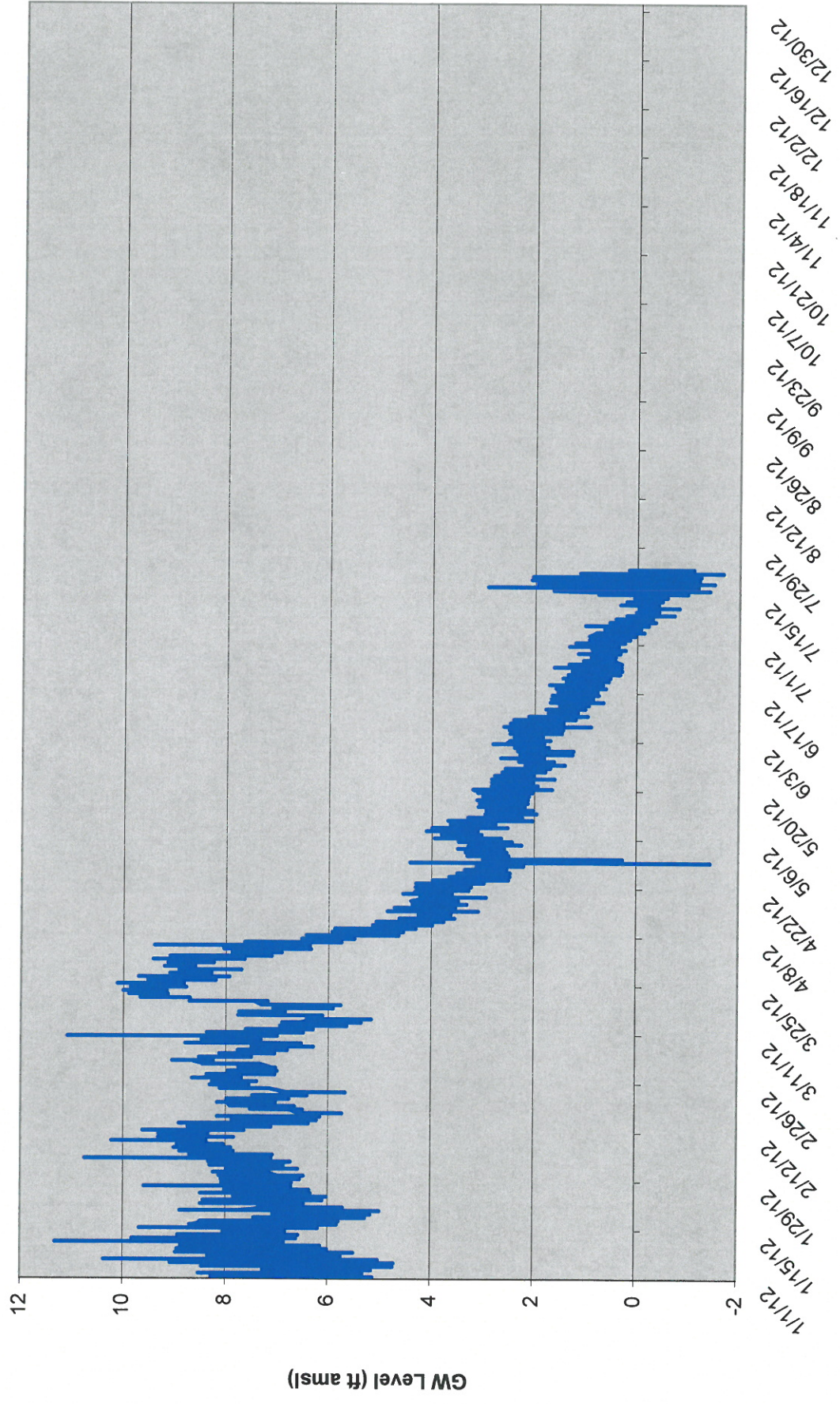


Figure 8 - 2012 MW-3 GW Level Trend

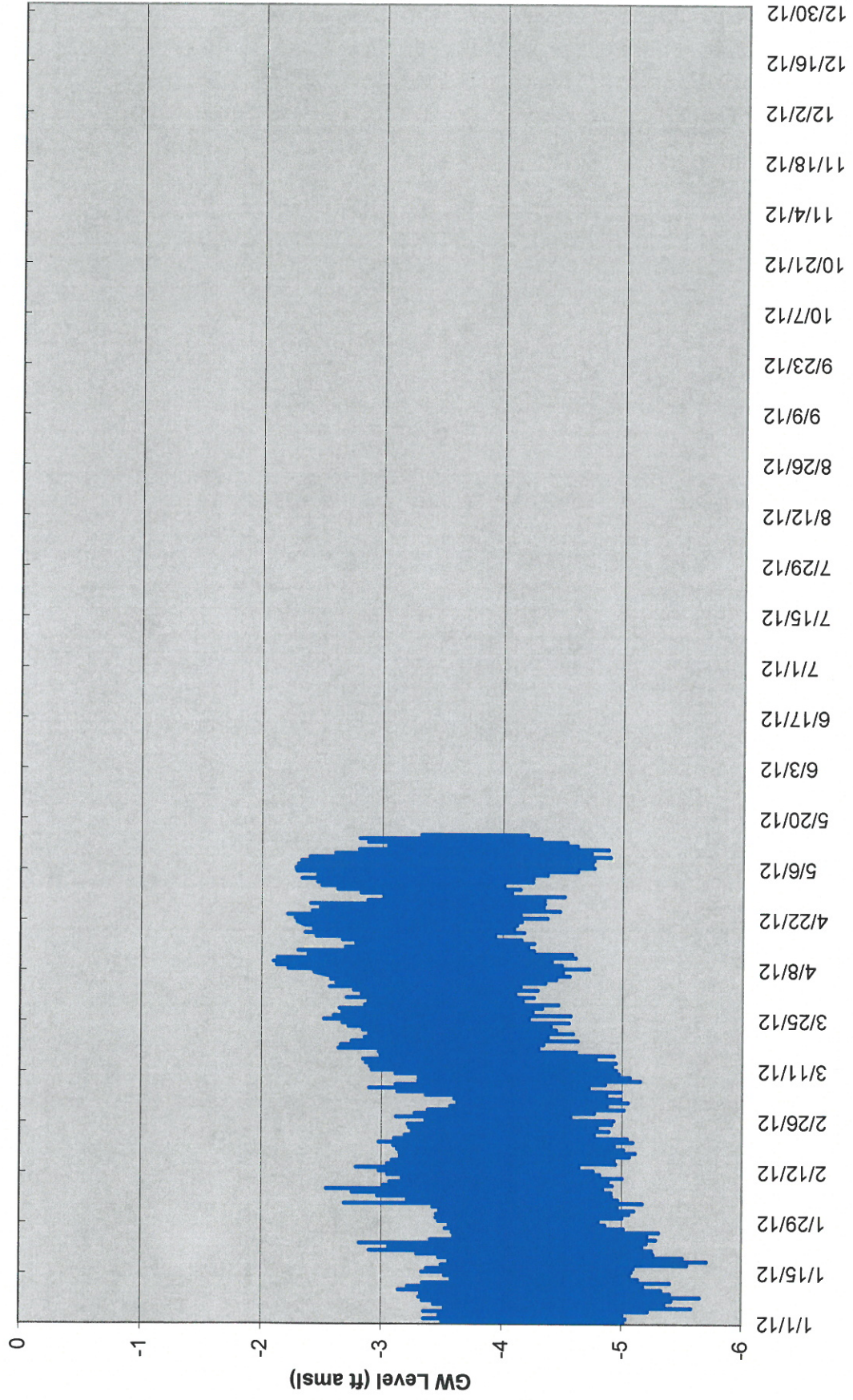


Figure 9 - 2012 MW-4 GW Level Trend

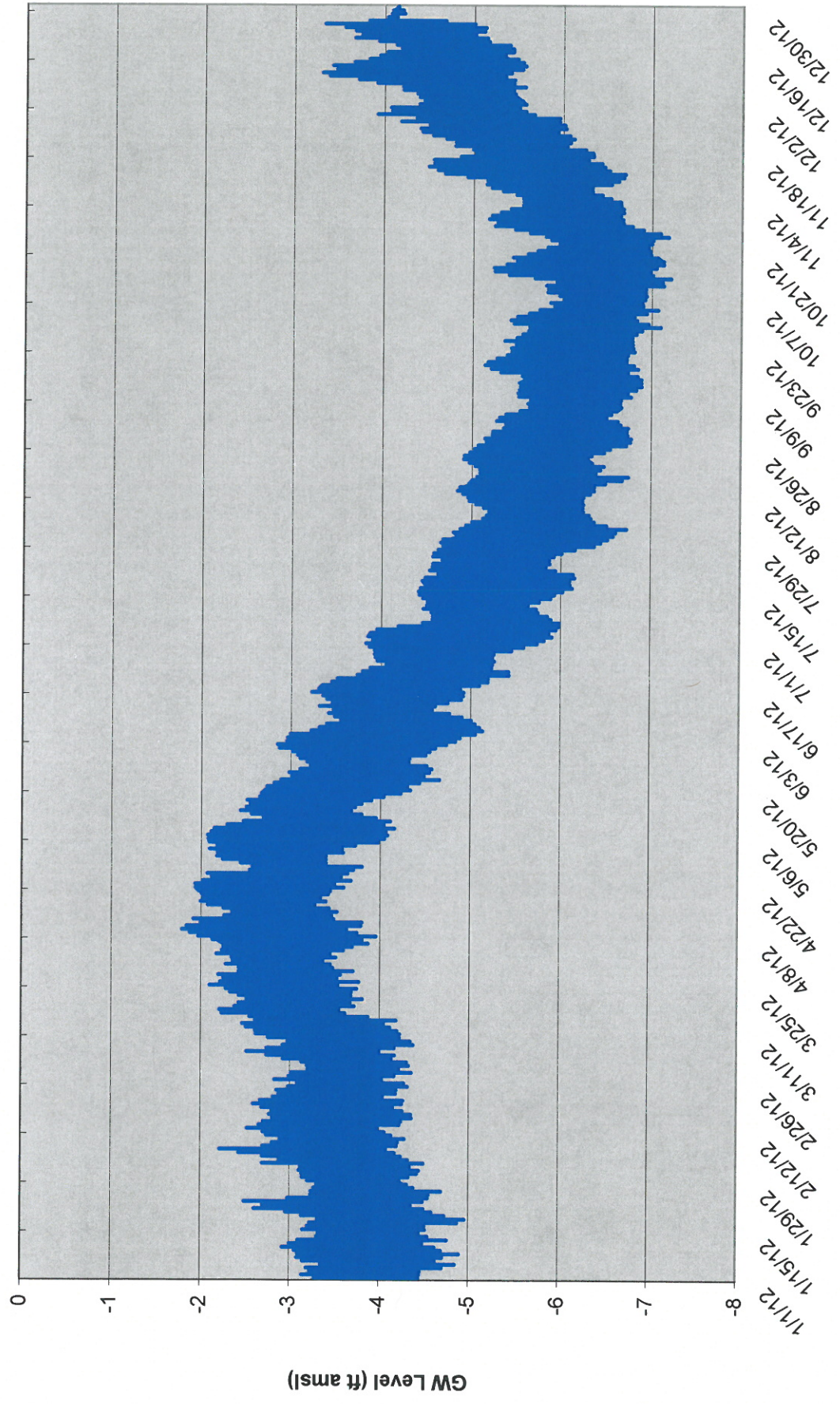


Figure 10 - 2012 MW-5S GW Level Trend

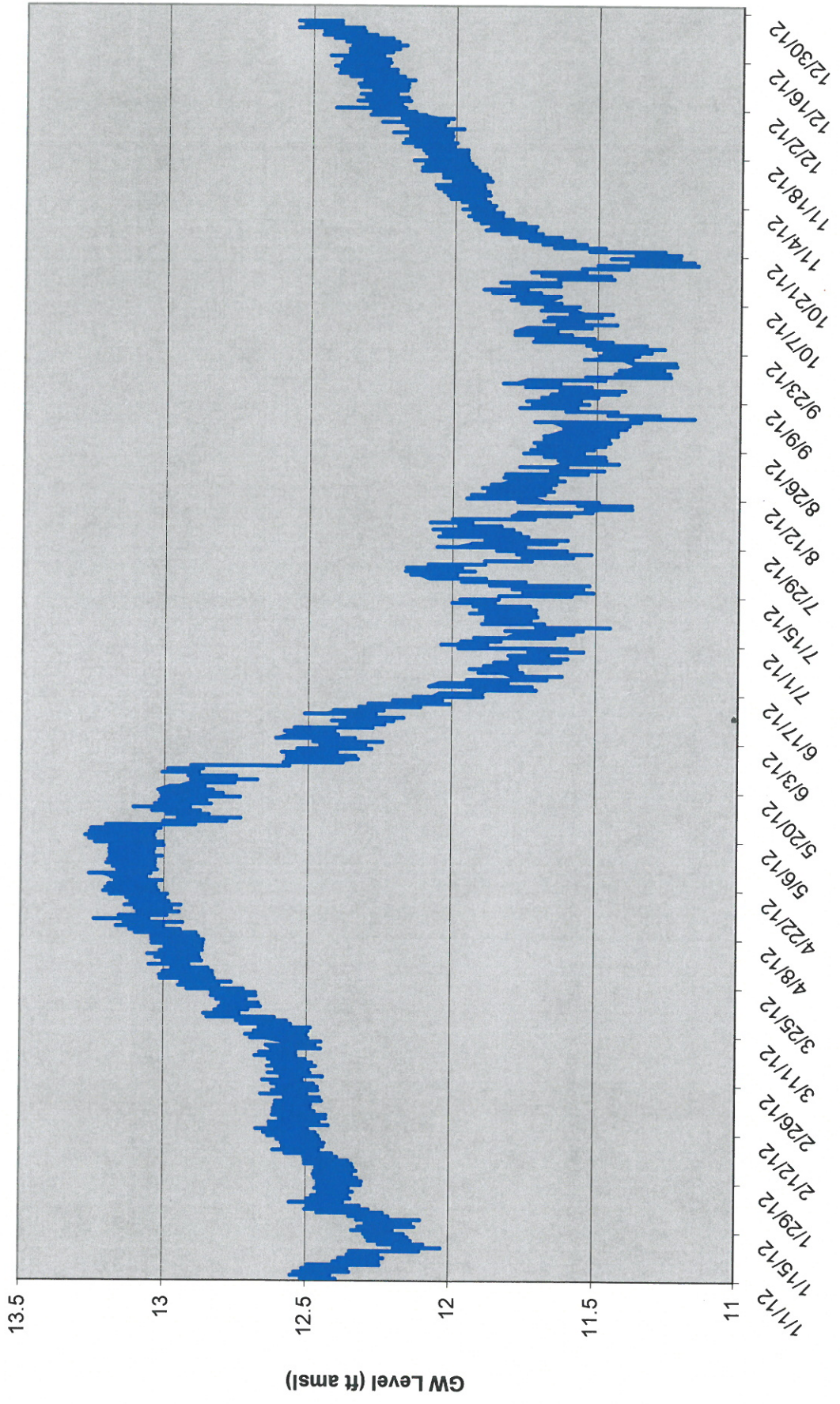


Figure 11 - 2012 MW-5I GW Level Trend

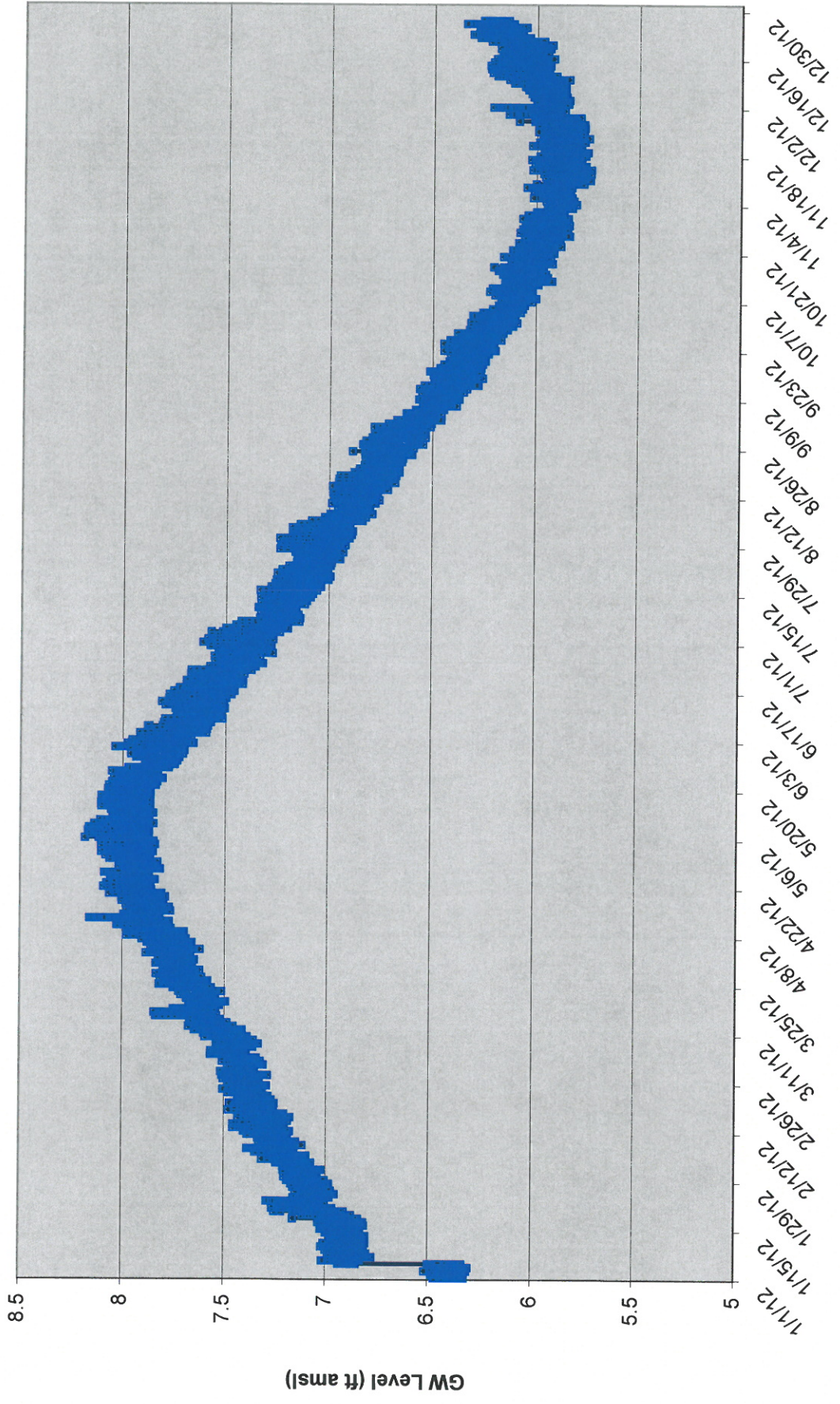


Figure 12 - 2012 MW-5D GW Level Trend

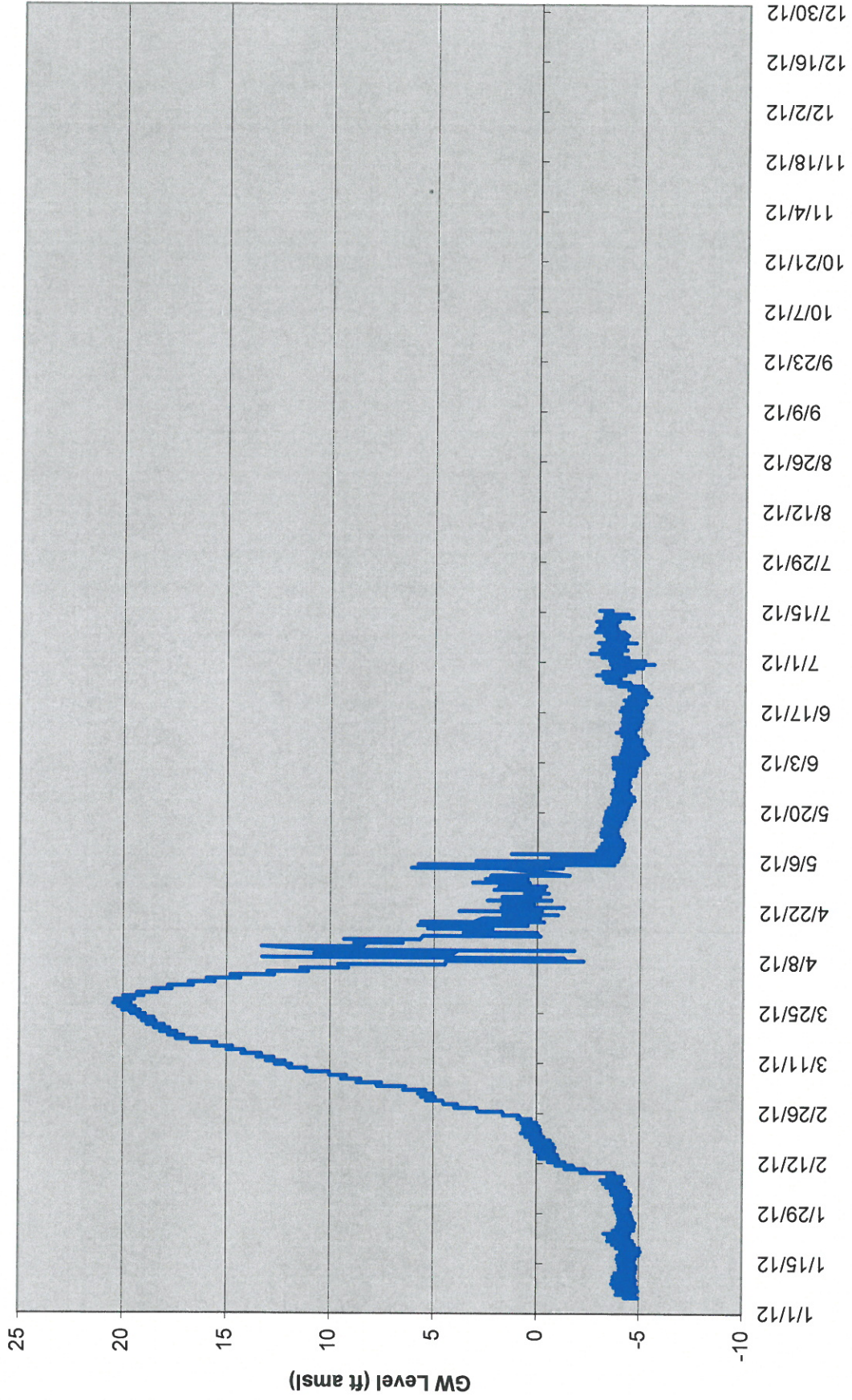


Figure 13 - 2012 MW-6 GW Level Trend

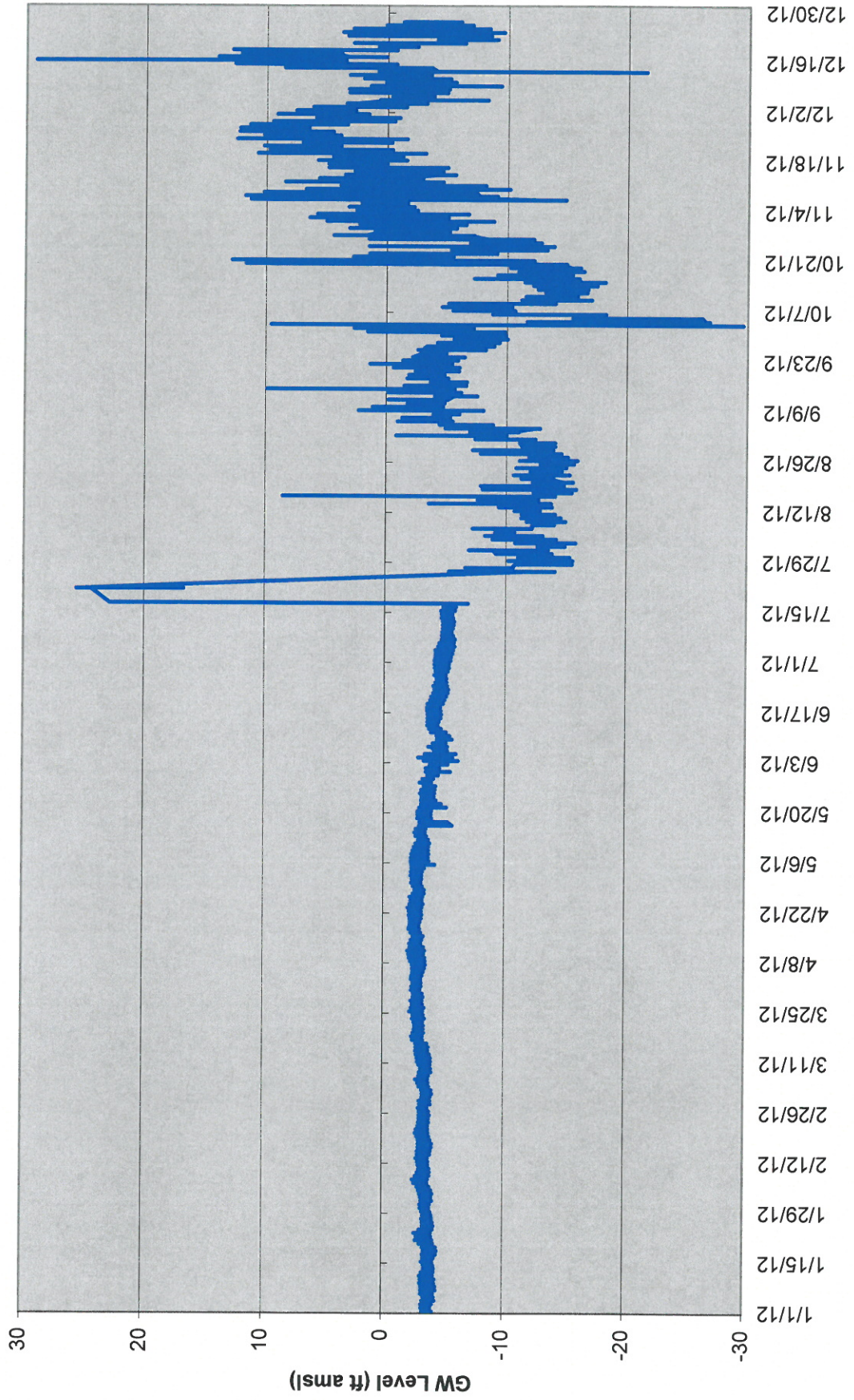


Figure 14 - 2012 MW-9D GW Level Trend

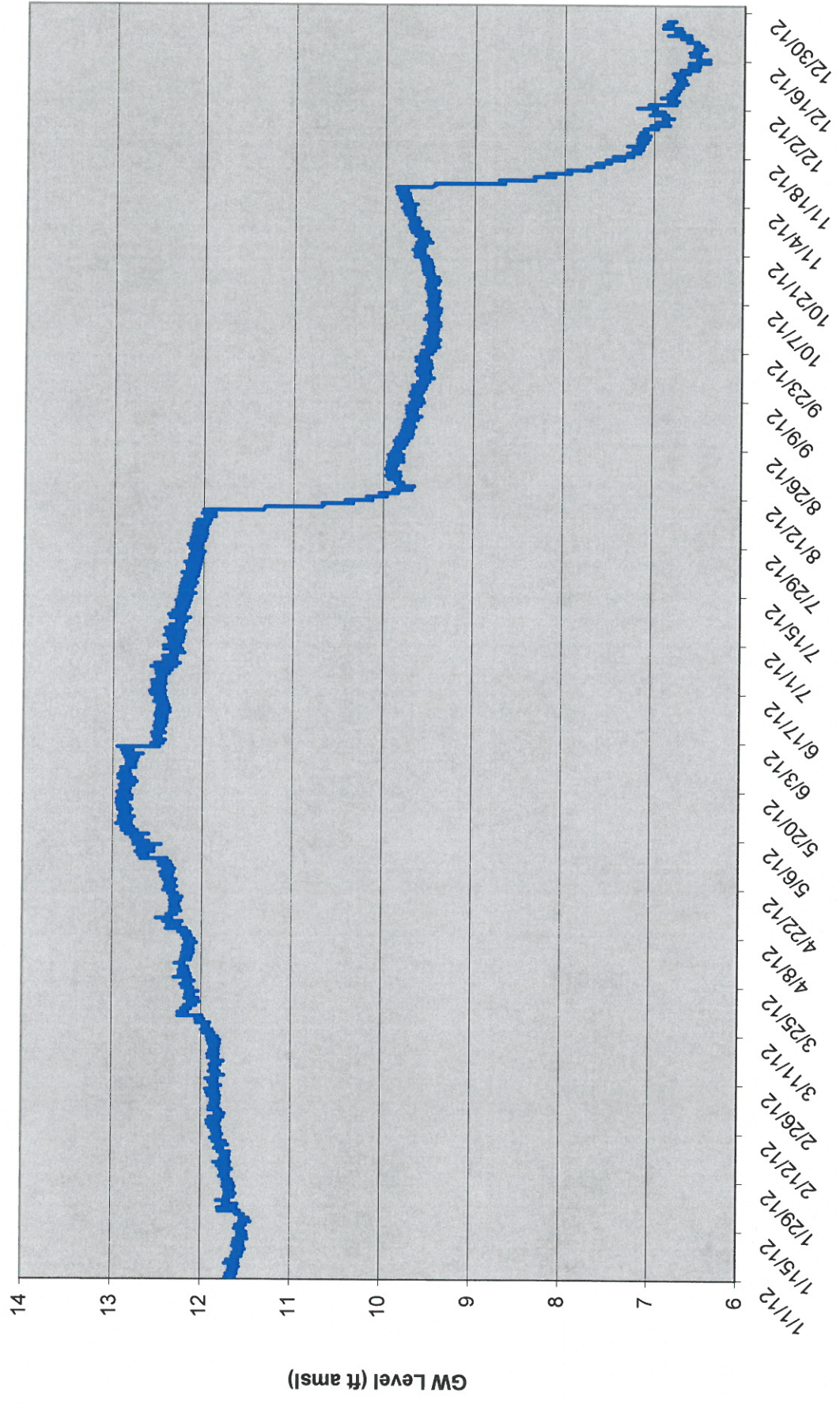


Figure 15 - 2012 MW-10I GW Level Trend

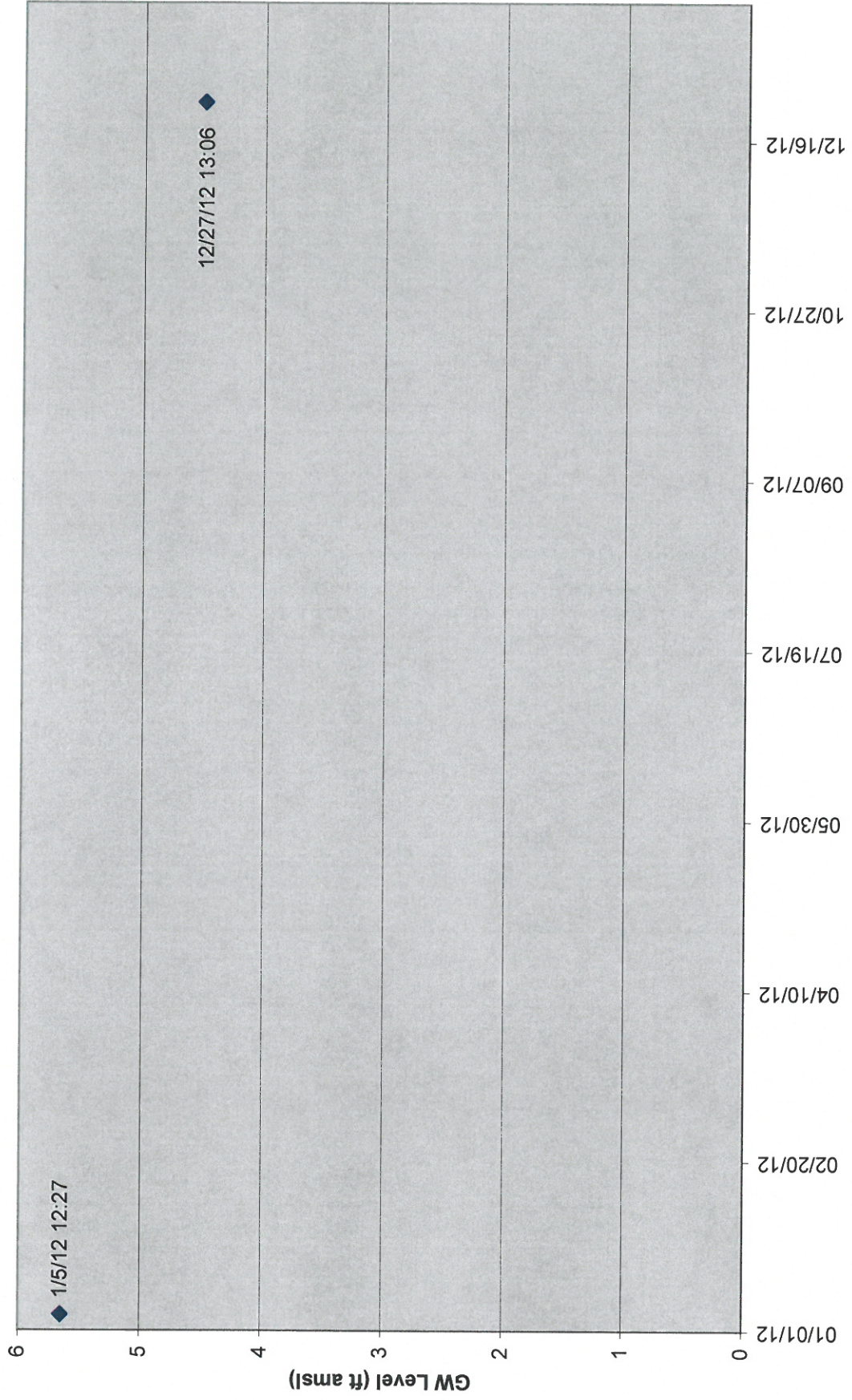
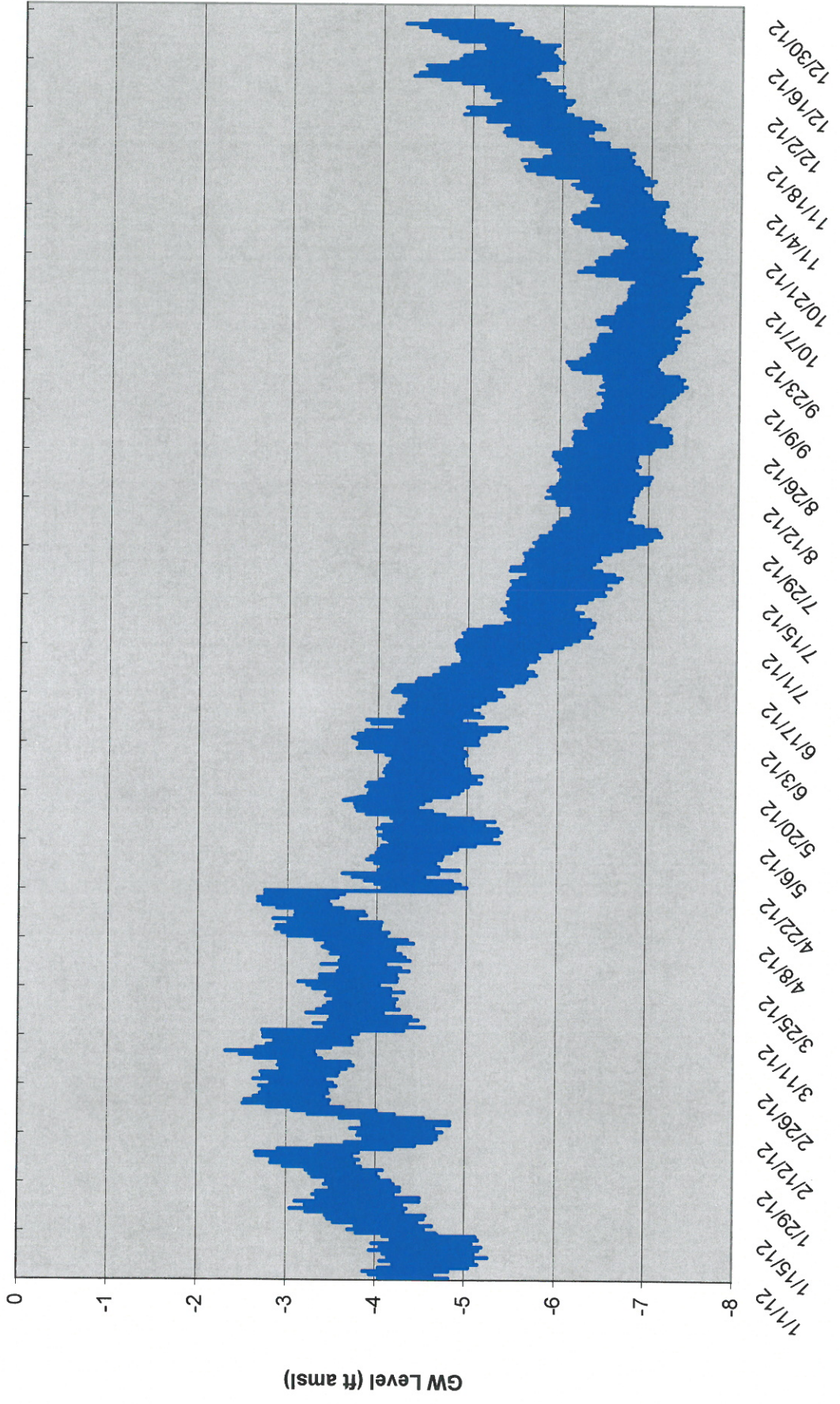


Figure 16 - 2012 MW-10D GW Level Trend



Appendix A

**Lab Report
&
Chain of Custody Record**



Analytical Report Prepared for DEREK LEE

Report generated on: Jan 25, 2013 04:33 pm
 Login No.: L179806

Reported by:

JACK C. LIM
 Laboratory Program Manager

Approved by:

NIRMELA ARSEM
 Laboratory Services Division Manager

LSR B455-0706-1

Project Title: BAYSIDE GROUND WATER PROJECT

Login Performance Summary

6 - Samples received by the lab on: Dec 14 2012, 08:20 am
 0 - Lost Analyses
 0 - Hold Time Exceedences
 Turn-around-time not met

Samples included in this report:

Sample	Type	Collected	Site	Locator	ClientID
L179806-1	GRAB	13-Dec-2012 08:45	WTP BAYSIDE	BAY WELL HEAD	-
L179806-2	GRAB	13-Dec-2012 16:04	GW BAYSIDE	BAY1-MW2S	-
L179806-3	GRAB	13-Dec-2012 16:40	GW BAYSIDE	BAY1-MW2I	-
L179806-4	GRAB	13-Dec-2012 11:38	GW BAYSIDE	BAY1-MW4	-
L179806-5	GRAB	13-Dec-2012 16:25	GW BAYSIDE	BAY1-MW6	-
L179806-6	QCFB	13-Dec-2012 10:42	FIELD QC	COLLECTION QC	-

Legend to the laboratory qualifiers used in this report:

E - Estimated value, concentration outside calibration range. For SIP, E=DNQ, Estimated Concentration.
 U - Analyte not detected
 Qualifiers for subcontract work - See textvalue for description



EAST BAY MUNICIPAL UTILITY DISTRICT
 Laboratory Services Division
 PO Box 24055, MS 59, Oakland, CA 94623
 Phone (510)287-1432 Fax (510)465-5462
Analytical Results Report

LSR B455-0706-1 BAYSIDE GROUND WATER PROJECT
 Site: WTP BAYSIDE Bayside GW Project Extraction Wells at 2540 Grant Avenue, San Lorenzo
 Locator: BAY WELL HEAD Sample tap at the well, as shown in Drawing No. 2097-C-002
 Lab ID: L179806-1 (P185618-1)
 Sample Type: GRAB (Instantaneous Grab)
 Date Collected: Dec 13 2012, 08:45am Sample collector: SPENMAN/ESS
 Date Received: Dec 14 2012, 08:20am Sample receiver: KLORENZO
 Sample Comments: BAYSIDE WELL pH = 7.98; Cl2R = 0.02 mg/L; Depth to GW = NA; Labelled as RAW WATER for the program Table 4

Method Reference	Qualifier	Result	Units	Dilution	MDL	Matrix	Tag
Parameter						RL/ML	
Method: PER SUBCONTRACT LABORATORY REPORT - Subcontract data transmittal						GroundH2O	
<i>Subcontract data from Alpha Analytical Lab</i>							
Comment: Original report transmitted to client. Copy of report archived with data packet.							
SUBCONTRACT LAB DATA							
DATA TRANSMITTAL							
Run ID: R238104 / Work Group No.: WG181394							
Prep Date1: 11-JAN-13 Analyzed 11-Jan-13 00:00							
Method: PER SUBCONTRACT LABORATORY REPORT - Subcontract data transmittal for oxygen 18						GroundH2O	
<i>Subcontract data from Alpha Analytical Lab</i>							
Comment: Refer to sublab data report attached							
SUBCONTRACT LAB DATA							
DATA TRANSMITTAL							
Run ID: R238127 / Work Group No.: WG181393							
Prep Date1: 11-JAN-13 Analyzed 11-Jan-13 00:00							
Method: SAMPLER PROVIDED FIELD MEASUREMENTS - DATA ENTRY LIST FOR FIELD DATA						GroundH2O	
FIELD ANALYSIS/OBSERVATION DATA PARAMETERS							
PH		7.98	pH units	1			
CHLORINE RESIDUAL: TOTAL		0.02	mg/L	1	0.02		
Run ID: R237226 / Work Group No.: WG180938							
Prep Date1: 13-DEC-12 Analyzed 13-Dec-12 08:45							
Method: EPA 8260B - Trihalomethanes, GC/MS						GroundH2O	
TARGET ANALYTES							
CHLOROFORM		9.1	ug/L	1	0.17		
BROMODICHLOROMETHANE		0.25	ug/L	1	0.079		
DIBROMOCHLOROMETHANE	U	0.13	ug/L	1	0.13		
BROMOFORM	U	0.23	ug/L	1	0.23		
INTERNAL STANDARD							
FLUOROBENZENE		107	% recovery	1			
D5-CHLOROBENZENE		108	% recovery	1			
D4-1,4-DICHLOROBENZENE		103	% recovery	1			
SURROGATE							
D8-TOLUENE		103	% recovery	1			
4-BROMOFLUOROBENZENE		107	% recovery	1			
Run ID: R237323 / Work Group No.: WG180987							
Prep Date1: 19-DEC-12 Analyzed 19-Dec-12 21:15							
Method: EPA 300.1 - Ion Chromatography						GroundH2O	1
<i>Instrument calibrated 26-NOV-12</i>							
TARGET ANALYTES							
CHLORIDE		10	mg/L	50	0.17		
SULFATE		13	mg/L	50	0.2	0.5	
SURROGATE							
DICHLOROACETATE		97	% recovery	50			
Run ID: R237141 / Work Group No.: WG180883							
Prep Date1: 14-DEC-12 Analyzed 14-Dec-12 16:29							

RL is either the client requested or regulatory mandated Reporting Limit. ML is the regulatory mandated Minimum Level



EAST BAY MUNICIPAL UTILITY DISTRICT
 Laboratory Services Division
 PO Box 24055, MS 59, Oakland, CA 94623
 Phone (510)287-1432 Fax (510)465-5462
Analytical Results Report

LSR B455-0706-1 BAYSIDE GROUND WATER PROJECT
 Site: WTP BAYSIDE Bayside GW Project Extraction Wells at 2540 Grant Avenue, San Lorenzo
 Locator: BAY WELL HEAD Sample tap at the well, as shown in Drawing No. 2097-C-002
 Lab ID: L179806-1 (P185618-1)
 Sample Type: GRAB (Instantaneous Grab)
 Date Collected: Dec 13 2012, 08:45am Sample collector: SPenman/ESS
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 RAW WATER for the program Table 4

Method Reference Parameter	Qualifier	Result	Units	Dilution	MDL	Matrix RL/ML	Tag
Method: EPA 300.1 - Ion Chromatography							GroundH2O
<i>Instrument calibrated 26-NOV-12</i>							
TARGET ANALYTES							
NITRATE AS N		0.0074	mg/L	1	0.002	0.4	
SURROGATE							
DICHLOROACETATE		96	% recovery	1			
Run ID: R237141 / Work Group No.: WG180883							
Prep Date1: 14-DEC-12 Analyzed 14-Dec-12 15:55							
Method: EPA 552.2 - Haloacetic Acids & Dalapon							GroundH2O
TARGET ANALYTES							
BROMOCHLOROACETIC ACID	U	0.14	ug/L	1	0.14		
BROMODICHLOROACETIC ACID	U	0.16	ug/L	1	0.16		
CHLORODIBROMOACETIC ACID	U	0.19	ug/L	1	0.19		
DALAPON	U	0.18	ug/L	1	0.18		
DIBROMOACETIC ACID	U	0.11	ug/L	1	0.11	1	
DICHLOROACETIC ACID	U	0.23	ug/L	1	0.23	1	
MONOBROMOACETIC ACID	U	0.22	ug/L	1	0.22	1	
MONOCHLOROACETIC ACID	U	0.68	ug/L	1	0.68	2	
TRIBROMOACETIC ACID	U	0.44	ug/L	1	0.44		
TRICHLOROACETIC ACID	U	0.21	ug/L	1	0.21	1	
VALUE CALCULATED FROM OTHER RESULTS							
HAA (5)		0.0	ug/L		1.4		
HAA (9)		0.0	ug/L		2.4		
INTERNAL STANDARD							
1,2,3-TRICHLOROPROPANE		98	% recovery		1		
SURROGATE							
2,3-DIBROMOPROPIONIC ACID		94	% recovery		1		
Run ID: R237425 / Work Group No.: WG180961							
Prep Date1: 18-DEC-12 Prep Date2: 19-DEC-12 Analyzed 20-Dec-12 06:11							
Method: SM2320B - 1997, Titration							GroundH2O
TARGET ANALYTES							
ALKALINITY: TOTAL AS CaCO3		59	mg/L	1	5		
Run ID: R237182 / Work Group No.: WG180899							
Prep Date1: 17-DEC-12 Analyzed 17-Dec-12 08:15							
Method: SM2340C - 1997, Titration: EDTA							GroundH2O
TARGET ANALYTES							
HARDNESS: TOTAL AS CaCO3		47	mg/L	1	3		
Run ID: R237236 / Work Group No.: WG180946							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 13:05							
Method: SM2540C - 1997, Dried at 180C							GroundH2O
TARGET ANALYTES							
TOTAL DISSOLVED SOLIDS		110	mg/L	1	18		
Run ID: R237275 / Work Group No.: WG180928							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 08:35							

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Analytical Results Report

LSR B455-0706-1 BAYSIDE GROUND WATER PROJECT
Site: WTP BAYSIDE Bayside GW Project Extraction Wells at 2540 Grant Avenue, San Lorenzo
Locator: BAY WELL HEAD Sample tap at the well, as shown in Drawing No. 2097-C-002
Lab ID: L179806-1 (P185618-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Dec 13 2012, 08:45am Sample collector: SPENMAN/ESS
Date Received: Dec 14 2012, 08:20am Sample receiver: KLORENZO
Sample Comments: BAYSIDE WELL pH = 7.98; Cl2R = 0.02 mg/L; Depth to GW = NA; Labelled as RAW WATER for the program Table 4

Method Reference	Qualifier	Result	Units	Dilution	MDL	Matrix	Tag
Method: SM4500-CO2 D - Calculation						GroundH2O	
TARGET ANALYTES							
ALKALINITY: HYDROXIDE	U	0.10	mg/L	1	0.1		
Run ID: R237229 / Work Group No.: WG180944							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 11:30							
Method: SM4500-CO2 D - Calculation						GroundH2O	
TARGET ANALYTES							
ALKALINITY: CARBONATE		0.53	mg/L	1	0.1		
Run ID: R237229 / Work Group No.: WG180944							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 11:30							
Method: SM4500-CO2 D - Calculation						GroundH2O	
TARGET ANALYTES							
ALKALINITY: BICARBONATE		59	mg/L	1	5		
Run ID: R237229 / Work Group No.: WG180944							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 11:30							
Method: SM4500-NH3 B, C - 1997, Distillation & Titration						GroundH2O	
TARGET ANALYTES							
AMMONIA AS N	U	0.300	mg/L	1	0.3		
Run ID: R237269 / Work Group No.: WG180939							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 10:25							
Method: EPA 200.7 - Rev. 4.4, ICP Scan						RawH2O	
TARGET ANALYTES							
CALCIUM		12,200	ug/L	1.04	14.6		
IRON		236	ug/L	1.04	6.24	100	
POTASSIUM		789	ug/L	1.04	11.4		
MAGNESIUM		3,120	ug/L	1.04	13.5		
MANGANESE		16.8	ug/L	1.04	0.52	20	
SODIUM		21,300	ug/L	1.04	8.32		
Run ID: R237639 / Work Group No.: WG181156							
Prep Date1: 02-JAN-13 Analyzed 02-Jan-13 11:59							

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Analytical Results Report

LSR B455-0706-1 BAYSIDE GROUND WATER PROJECT
Site: GW BAYSIDE East Bay Ground Water Injection/Extraction Project Bayside Groundwater
Locator: BAY1-MW2S OW-1 the same parcel as the Bayside Well on Oro Loma Property; formerly BAY1-MW2-60
Lab ID: L179806-2 (P185618-2)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Dec 13 2012, 04:04pm Sample collector: SPenman/ESS
Date Received: Dec 14 2012, 08:20am Sample receiver: KLORENZO
Sample Comments: MS2S pH = 6.29; Cl2R = 0.02 mg/L; Depth to GW = 7.70 feet; Labelled as RAW WATER for the program. (Analytical NOTE: may need to dilute for ICP & IC - salt water intrusion)

Method Reference Parameter	Qualifier	Result	Units	Dilution	MDL	Matrix RL/ML	Tag
Method: PER SUBCONTRACT LABORATORY REPORT - Subcontract data transmittal for oxygen 18 Subcontract data from Alpha Analytical Lab Comment: Refer to sublab data report attached SUBCONTRACT LAB DATA DATA TRANSMITTAL Run ID: R238127 / Work Group No.: WG181393 Prep Date1: 11-JAN-13 Analyzed 11-Jan-13 00:00							GroundH2O
Method: SAMPLER PROVIDED FIELD MEASUREMENTS - DATA ENTRY LIST FOR FIELD DATA FIELD ANALYSIS/OBSERVATION DATA PARAMETERS							GroundH2O
PH		6.29	pH units	1			
DEPTH		7.7	feet	1			
CHLORINE RESIDUAL: TOTAL		0.02	mg/L	1	0.02		
Run ID: R237226 / Work Group No.: WG180938 Prep Date1: 13-DEC-12 Analyzed 13-Dec-12 16:04							
Method: EPA 8260B - Trihalomethanes, GC/MS TARGET ANALYTES							GroundH2O
CHLOROFORM	U	0.17	ug/L	1	0.17		
BROMODICHLOROMETHANE	U	0.079	ug/L	1	0.079		
DIBROMOCHLOROMETHANE	U	0.13	ug/L	1	0.13		
BROMOFORM	U	0.23	ug/L	1	0.23		
INTERNAL STANDARD							
FLUOROBENZENE		108	% recovery	1			
D5-CHLOROBENZENE		108	% recovery	1			
D4-1,4-DICHLOROBENZENE		103	% recovery	1			
SURROGATE							
D8-TOLUENE		104	% recovery	1			
4-BROMOFLUOROBENZENE		106	% recovery	1			
Run ID: R237323 / Work Group No.: WG180987 Prep Date1: 19-DEC-12 Analyzed 19-Dec-12 21:47							
Method: EPA 300.1 - Ion Chromatography Instrument calibrated 26-NOV-12							GroundH2O 1
TARGET ANALYTES							
CHLORIDE	E	52,000	mg/L	25000	85		
Result is <10% above calibration; result ok'd by PM - JLim.							
SULFATE		6,700	mg/L	25000	100	0.5	
SURROGATE							
DICHLOROACETATE		93	% recovery	25000			
Run ID: R237141 / Work Group No.: WG180883 Prep Date1: 14-DEC-12 Analyzed 14-Dec-12 23:56							
Method: EPA 300.1 - Ion Chromatography Instrument calibrated 26-NOV-12							GroundH2O
TARGET ANALYTES							
NITRATE AS N	E	0.19	mg/L	50	0.1	0.4	
SURROGATE							
DICHLOROACETATE		96	% recovery	50			
Run ID: R237141 / Work Group No.: WG180883 Prep Date1: 14-DEC-12 Analyzed 14-Dec-12 23:21							

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Analytical Results Report

LSR B455-0706-1 BAYSIDE GROUND WATER PROJECT
 Site: GW BAYSIDE East Bay Ground Water Injection/Extraction Project Bayside Groundwater
 Locator: BAY1-MW2S OW-1 the same parcel as the Bayside Well on Oro Loma Property; formerly BAY1-MW2-60
 Lab ID: L179806-2 (P185618-2)
 Sample Type: GRAB (Instantaneous Grab)
 Date Collected: Dec 13 2012, 04:04pm Sample collector: SPENMAN/ESS
 Date Received: Dec 14 2012, 08:20am Sample receiver: KLORENZO
 Sample Comments: MS2S pH = 6.29; Cl2R = 0.02 mg/L; Depth to GW = 7.70 feet; Labelled as RAW WATER for the program. (Analytical NOTE: may need to dilute for ICP & IC - salt water intrusion)

Method Reference Parameter	Qualifier	Result	Units	Dilution	MDL	Matrix RL/ML	Tag
Method: EPA 552.2 - Haloacetic Acids & Dalapon						GroundH2O	
<i>TARGET ANALYTES</i>							
BROMOCHLOROACETIC ACID	U	0.14	ug/L	1	0.14		
BROMODICHLOROACETIC ACID	U	0.16	ug/L	1	0.16		
CHLORODIBROMOACETIC ACID	U	0.19	ug/L	1	0.19		
DALAPON	U	0.18	ug/L	1	0.18		
DIBROMOACETIC ACID	U	0.11	ug/L	1	0.11	1	
DICHLOROACETIC ACID	U	0.23	ug/L	1	0.23	1	
MONOBROMOACETIC ACID	U	0.22	ug/L	1	0.22	1	
MONOCHLOROACETIC ACID	U	0.68	ug/L	1	0.68	2	
TRIBROMOACETIC ACID	U	0.44	ug/L	1	0.44		
TRICHLOROACETIC ACID	U	0.21	ug/L	1	0.21	1	
<i>VALUE CALCULATED FROM OTHER RESULTS</i>							
HAA(5)		0.0	ug/L		1.4		
HAA(9)		0.0	ug/L		2.4		
<i>INTERNAL STANDARD</i>							
1,2,3-TRICHLOROPROPANE		99	% recovery		1		
<i>SURROGATE</i>							
2,3-DIBROMOPROPIONIC ACID		100	% recovery		1		
Run ID: R237425 / Work Group No.: WG180961							
Prep Date1: 18-DEC-12 Prep Date2: 19-DEC-12 Analyzed 20-DEC-12 06:56							
Method: SM2320B - 1997, Titration						GroundH2O	
<i>TARGET ANALYTES</i>							
ALKALINITY: TOTAL AS CaCO3		390	mg/L	1	5		
Run ID: R237182 / Work Group No.: WG180899							
Prep Date1: 17-DEC-12 Analyzed 17-DEC-12 08:15							
Method: SM2340C - 1997, Titration: EDTA						GroundH2O	
<i>TARGET ANALYTES</i>							
HARDNESS: TOTAL AS CaCO3		16,000	mg/L	50	150		
Run ID: R237236 / Work Group No.: WG180946							
Prep Date1: 18-DEC-12 Analyzed 18-DEC-12 13:05							
Method: SM2540C - 1997, Dried at 180C						GroundH2O	
<i>TARGET ANALYTES</i>							
TOTAL DISSOLVED SOLIDS		83,000	mg/L	20	360		
Run ID: R237275 / Work Group No.: WG180928							
Prep Date1: 18-DEC-12 Analyzed 18-DEC-12 08:35							
Method: SM4500-CO2 D - Calculation						GroundH2O	
<i>TARGET ANALYTES</i>							
ALKALINITY: HYDROXIDE	U	0.10	mg/L	1	0.1		
Run ID: R237229 / Work Group No.: WG180944							
Prep Date1: 18-DEC-12 Analyzed 18-DEC-12 11:30							
Method: SM4500-CO2 D - Calculation						GroundH2O	
<i>TARGET ANALYTES</i>							
ALKALINITY: CARBONATE	U	0.10	mg/L	1	0.1		
Run ID: R237229 / Work Group No.: WG180944							
Prep Date1: 18-DEC-12 Analyzed 18-DEC-12 11:30							

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Analytical Results Report

LSR B455-0706-1 BAYSIDE GROUND WATER PROJECT
Site: GW BAYSIDE East Bay Ground Water Injection/Extraction Project Bayside Groundwater
Locator: BAY1-MW2S OW-1 the same parcel as the Bayside Well on Oro Loma Property; formerly BAY1-MW2-60
Lab ID: L179806-2 (P185618-2)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Dec 13 2012, 04:04pm Sample collector: SPenman/ESS
Date Received: Dec 14 2012, 08:20am Sample receiver: KLORENZO
Sample Comments: MS2S pH = 6.29; Cl2R = 0.02 mg/L; Depth to GW = 7.70 feet; Labelled as RAW
WATER for the program. (Analytical NOTE: may need to dilute for ICP & IC -
salt water intrusion

Method Reference Parameter	Qualifier	Result	Units	Dilution	MDL	Matrix RL/ML	Tag
Method: SM4500-CO2 D - Calculation							GroundH2O
TARGET ANALYTES							
ALKALINITY: BICARBONATE		390	mg/L	1	5		
Run ID: R237229 / Work Group No.: WG180944							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 11:30							
Method: SM4500-NH3 B, C - 1997, Distillation & Titration							GroundH2O
TARGET ANALYTES							
AMMONIA AS N		0.420	mg/L	1	0.3		
Run ID: R237269 / Work Group No.: WG180939							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 10:25							
Method: EPA 200.7 - Rev. 4.4, ICP Scan							RawH2O
TARGET ANALYTES							
CALCIUM		1.23E+06	ug/L	52	728		
IRON	U	31.2	ug/L	5.2	31.2	100	
POTASSIUM		488,000	ug/L	52	572		
MAGNESIUM		2.95E+06	ug/L	52	676		
MANGANESE		36,700	ug/L	5.2	2.6	20	
SODIUM		2.49E+07	ug/L	52	416		
Run ID: R237639 / Work Group No.: WG181156							
Prep Date1: 02-JAN-13 Analyzed 02-Jan-13 12:53							

Results with 6 figures or more are expressed in scientific notation.
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Analytical Results Report

LSR B455-0706-1 BAYSIDE GROUND WATER PROJECT
 Site: GW BAYSIDE East Bay Ground Water Injection/Extraction Project Bayside Groundwater
 Locator: BAY1-MW2I OW-1 the same parcel as the Bayside Well on Oro Loma Property; aka BAY1-MW2D until 11-2009;
 formerly BAY1-MW2-190
 Lab ID: L179806-3 (P185618-3)
 Sample Type: GRAB (Instantaneous Grab)
 Date Collected: Dec 13 2012, 04:40pm Sample collector: SPENMAN/ESS
 Date Received: Dec 14 2012, 08:20am Sample receiver: KLORENZO
 Sample Comments: MW2I pH = 8.08; Cl2R = 0.02 mg/L; Depth to GW = 27.32 feet; Labelled as RAW
 WATER for the program. Table 4

Method Reference Parameter	Qualifier	Result	Units	Dilution	MDL	Matrix RL/ML	Tag
Method: PER SUBCONTRACT LABORATORY REPORT - Subcontract data transmittal for oxygen 18 Subcontract data from Alpha Analytical Lab Comment: Refer to sublab data report attached SUBCONTRACT LAB DATA DATA TRANSMITTAL Run ID: R238127 / Work Group No.: WG181393 Prep Date: 11-JAN-13 Analyzed 11-Jan-13 00:00						GroundH2O	
Method: SAMPLER PROVIDED FIELD MEASUREMENTS - DATA ENTRY LIST FOR FIELD DATA FIELD ANALYSIS/OBSERVATION DATA PARAMETERS						GroundH2O	
PH		8.08	pH units	1			
DEPTH		27.32	feet	1			
CHLORINE RESIDUAL: TOTAL		0.02	mg/L	1	0.02		
Run ID: R237226 / Work Group No.: WG180938 Prep Date: 13-DEC-12 Analyzed 13-Dec-12 16:40							
Method: EPA 8260B - Trihalomethanes, GC/MS TARGET ANALYTES						GroundH2O	
CHLOROFORM	U	0.17	ug/L	1	0.17		
BROMODICHLOROMETHANE	U	0.079	ug/L	1	0.079		
DIBROMOCHLOROMETHANE	U	0.13	ug/L	1	0.13		
BROMOFORM	U	0.23	ug/L	1	0.23		
INTERNAL STANDARD							
FLUOROBENZENE		107	% recovery	1			
D5-CHLOROBENZENE		104	% recovery	1			
D4-1,4-DICHLOROBENZENE		104	% recovery	1			
SURROGATE							
D8-TOLUENE		104	% recovery	1			
4-BROMOFLUOROBENZENE		110	% recovery	1			
Run ID: R237323 / Work Group No.: WG180987 Prep Date: 19-DEC-12 Analyzed 19-Dec-12 22:15							
Method: EPA 300.1 - Ion Chromatography Instrument calibrated 26-NOV-12 TARGET ANALYTES						GroundH2O	1
CHLORIDE		82	mg/L	100	0.34		
SULFATE		31	mg/L	100	0.4	0.5	
SURROGATE							
DICHLOROACETATE		99	% recovery	100			
Run ID: R237141 / Work Group No.: WG180883 Prep Date: 14-DEC-12 Analyzed 14-Dec-12 17:38							
Method: EPA 300.1 - Ion Chromatography Instrument calibrated 26-NOV-12 TARGET ANALYTES						GroundH2O	
NITRATE AS N	E	0.0036	mg/L	1	0.002	0.4	
SURROGATE							
DICHLOROACETATE		98	% recovery	1			
Run ID: R237141 / Work Group No.: WG180883 Prep Date: 14-DEC-12 Analyzed 14-Dec-12 17:04							

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Analytical Results Report

LSR B455-0706-1 BAYSIDE GROUND WATER PROJECT
 Site: GW BAYSIDE East Bay Ground Water Injection/Extraction Project Bayside Groundwater
 Locator: BAY1-MW2I OW-1 the same parcel as the Bayside Well on Oro Loma Property; aka BAY1-MW2D until 11-2009; formerly BAY1-MW2-190
 Lab ID: L179806-3 (P185618-3)
 Sample Type: GRAB (Instantaneous Grab)
 Date Collected: Dec 13 2012, 04:40pm Sample collector: SPENMAN/ESS
 Date Received: Dec 14 2012, 08:20am Sample receiver: KLORENZO
 Sample Comments: MW2I pH = 8.08; Cl2R = 0.02 mg/L; Depth to GW = 27.32 feet; Labelled as RAW WATER for the program. Table 4

Method Reference Parameter	Qualifier	Result	Units	Dilution	MDL	Matrix RL/ML	Tag
Method: EPA 552.2 - Haloacetic Acids & Dalapon						GroundH2O	
<i>TARGET ANALYTES</i>							
BROMOCHLOROACETIC ACID	U	0.14	ug/L	1	0.14		
BROMODICHLOROACETIC ACID	U	0.16	ug/L	1	0.16		
CHLORODIBROMOACETIC ACID	U	0.19	ug/L	1	0.19		
DALAPON	U	0.18	ug/L	1	0.18		
DIBROMOACETIC ACID	U	0.11	ug/L	1	0.11	1	
DICHLOROACETIC ACID	U	0.23	ug/L	1	0.23	1	
MONOBROMOACETIC ACID	U	0.22	ug/L	1	0.22	1	
MONOCHLOROACETIC ACID	U	0.68	ug/L	1	0.68	2	
TRIBROMOACETIC ACID	U	0.44	ug/L	1	0.44		
TRICHLOROACETIC ACID	U	0.21	ug/L	1	0.21	1	
<i>VALUE CALCULATED FROM OTHER RESULTS</i>							
HAA(5)		0.0	ug/L		1.4		
HAA(9)		0.0	ug/L		2.4		
<i>INTERNAL STANDARD</i>							
1,2,3-TRICHLOROPROPANE		100	% recovery		1		
<i>SURROGATE</i>							
2,3-DIBROMOPROPIONIC ACID		96	% recovery		1		
Run ID: R237425 / Work Group No.: WG180961							
Prep Date1: 18-DEC-12 Prep Date2: 19-DEC-12 Analyzed 20-DEC-12 07:40							
Method: SM2320B - 1997, Titration						GroundH2O	
<i>TARGET ANALYTES</i>							
ALKALINITY: TOTAL AS CaCO3		310	mg/L	1	5		
Run ID: R237182 / Work Group No.: WG180899							
Prep Date1: 17-DEC-12 Analyzed 17-DEC-12 08:15							
Method: SM2340C - 1997, Titration: EDTA						GroundH2O	
<i>TARGET ANALYTES</i>							
HARDNESS: TOTAL AS CaCO3		93	mg/L	1	3		
Run ID: R237236 / Work Group No.: WG180946							
Prep Date1: 18-DEC-12 Analyzed 18-DEC-12 13:05							
Method: SM2540C - 1997, Dried at 180C						GroundH2O	
<i>TARGET ANALYTES</i>							
TOTAL DISSOLVED SOLIDS		520	mg/L	2	36		
Run ID: R237275 / Work Group No.: WG180928							
Prep Date1: 18-DEC-12 Analyzed 18-DEC-12 08:35							
Method: SM4500-CO2 D - Calculation						GroundH2O	
<i>TARGET ANALYTES</i>							
ALKALINITY: HYDROXIDE	U	0.10	mg/L	1	0.1		
Run ID: R237229 / Work Group No.: WG180944							
Prep Date1: 18-DEC-12 Analyzed 18-DEC-12 11:30							
Method: SM4500-CO2 D - Calculation						GroundH2O	
<i>TARGET ANALYTES</i>							
ALKALINITY: CARBONATE		3.5	mg/L	1	0.1		
Run ID: R237229 / Work Group No.: WG180944							
Prep Date1: 18-DEC-12 Analyzed 18-DEC-12 11:30							

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Analytical Results Report

LSR B455-0706-1 BAYSIDE GROUND WATER PROJECT

Site: GW BAYSIDE East Bay Ground Water Injection/Extraction Project Bayside Groundwater
 Locator: BAY1-MW2I OW-1 the same parcel as the Bayside Well on Oro Loma Property; aka BAY1-MW2D until 11-2009;
 formerly BAY1-MW2-190

Lab ID: L179806-3 (P185618-3)
 Sample Type: GRAB (Instantaneous Grab)
 Date Collected: Dec 13 2012, 04:40pm Sample collector: SPENMAN/ESS
 Date Received: Dec 14 2012, 08:20am Sample receiver: KLORENZO
 Sample Comments: MW2I pH = 8.08; Cl2R = 0.02 mg/L; Depth to GW = 27.32 feet; Labelled as RAW
 WATER for the program. Table 4

Method Reference Parameter	Qualifier	Result	Units	Dilution	MDL	Matrix RL/ML	Tag
Method: SM4500-CO2 D - Calculation							GroundH2O
TARGET ANALYTES							
ALKALINITY: BICARBONATE		310	mg/L	1	5		
Run ID: R237229 / Work Group No.: WG180944							
Prep Date: 18-DEC-12 Analyzed 18-Dec-12 11:30							
Method: SM4500-NH3 B, C - 1997, Distillation & Titration							GroundH2O
TARGET ANALYTES							
AMMONIA AS N	U	0.300	mg/L	1	0.3		
Run ID: R237269 / Work Group No.: WG180939							
Prep Date: 18-DEC-12 Analyzed 18-Dec-12 10:25							
Method: EPA 200.7 - Rev. 4.4, ICP Scan							RawH2O
TARGET ANALYTES							
CALCIUM		14,800	ug/L	1.04	14.6		
IRON		190	ug/L	1.04	6.24	100	
POTASSIUM		5,600	ug/L	1.04	11.4		
MAGNESIUM		13,000	ug/L	1.04	13.5		
MANGANESE		105	ug/L	1.04	0.52	20	
SODIUM		177,000	ug/L	1.04	8.32		
Run ID: R237639 / Work Group No.: WG181156							
Prep Date: 02-JAN-13 Analyzed 02-Jan-13 12:57							

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 Laboratory Services Division
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Analytical Results Report

LSR B455-0706-1 BAYSIDE GROUND WATER PROJECT
 Site: GW BAYSIDE East Bay Ground Water Injection/Extraction Project Bayside Groundwater
 Locator: BAY1-MW4 OW-1 the same parcel as the Bayside Well on Oro Loma Property; formerly BAY1-MW5
 Lab ID: L179806-4 (P185618-4)
 Sample Type: GRAB (Instantaneous Grab)
 Date Collected: Dec 13 2012, 11:38am Sample collector: SPenman/ESS
 Date Received: Dec 14 2012, 08:20am Sample receiver: KLORENSE
 Sample Comments: MW4 pH = 7.64; Cl2R = 0.03 mg/L; Depth to GW = 12.48 feet; Labelled as RAW WATER for the program. Table 4

Method Reference	Qualifier	Result	Units	Dilution	MDL	Matrix	Tag
Parameter						RL/ML	
Method: PER SUBCONTRACT LABORATORY REPORT - Subcontract data transmittal for oxygen 18 Subcontract data from Alpha Analytical Lab Comment: Refer to sublab data report attached SUBCONTRACT LAB DATA DATA TRANSMITTAL Run ID: R238127 / Work Group No.: WG181393 Prep Date: 11-JAN-13 Analyzed 11-Jan-13 00:00							GroundH2O
Method: SAMPLER PROVIDED FIELD MEASUREMENTS - DATA ENTRY LIST FOR FIELD DATA FIELD ANALYSIS/OBSERVATION DATA PARAMETERS							GroundH2O
PH		7.64	pH units	1			
DEPTH		12.48	feet	1			
CHLORINE RESIDUAL: TOTAL		0.03	mg/L	1	0.02		
Run ID: R237226 / Work Group No.: WG180938 Prep Date: 13-DEC-12 Analyzed 13-Dec-12 11:38							
Method: EPA 8260B - Trihalomethanes, GC/MS TARGET ANALYTES							GroundH2O
CHLOROFORM	U	0.17	ug/L	1	0.17		
BROMODICHLOROMETHANE	U	0.079	ug/L	1	0.079		
DIBROMOCHLOROMETHANE	U	0.13	ug/L	1	0.13		
BROMOFORM	U	0.23	ug/L	1	0.23		
INTERNAL STANDARD							
FLUOROBENZENE		109	% recovery	1			
D5-CHLOROBENZENE		105	% recovery	1			
D4-1,4-DICHLOROBENZENE		106	% recovery	1			
SURROGATE							
D8-TOLUENE		100	% recovery	1			
4-BROMOFLUOROBENZENE		110	% recovery	1			
Run ID: R237323 / Work Group No.: WG180987 Prep Date: 19-DEC-12 Analyzed 19-Dec-12 22:46							
Method: EPA 300.1 - Ion Chromatography Instrument calibrated 26-NOV-12 TARGET ANALYTES							GroundH2O 1
CHLORIDE		57	mg/L	50	0.17		
SULFATE		40	mg/L	50	0.2	0.5	
SURROGATE							
DICHLOROACETATE		100	% recovery	50			
Run ID: R237141 / Work Group No.: WG180883 Prep Date: 14-DEC-12 Analyzed 14-Dec-12 20:30							
Method: EPA 300.1 - Ion Chromatography Instrument calibrated 26-NOV-12 TARGET ANALYTES							GroundH2O
NITRATE AS N		0.0071	mg/L	1	0.002	0.4	
SURROGATE							
DICHLOROACETATE		98	% recovery	1			
Run ID: R237141 / Work Group No.: WG180883 Prep Date: 14-DEC-12 Analyzed 14-Dec-12 19:55							

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Analytical Results Report

LSR B455-0706-1 BAYSIDE GROUND WATER PROJECT
 Site: GW BAYSIDE East Bay Ground Water Injection/Extraction Project Bayside Groundwater
 Locator: BAY1-MW4 OW-1 the same parcel as the Bayside Well on Oro Loma Property; formerly BAY1-MW5
 Lab ID: L179806-4 (P185618-4)
 Sample Type: GRAB (Instantaneous Grab)
 Date Collected: Dec 13 2012, 11:38am Sample collector: SPENMAN/ESS
 Date Received: Dec 14 2012, 08:20am Sample receiver: KLORENZO
 Sample Comments: MW4 pH = 7.64; Cl2R = 0.03 mg/L; Depth to GW = 12.48 feet; Labelled as RAW WATER for the program. Table 4

Method Reference Parameter	Qualifier	Result	Units	Dilution	MDL	Matrix RL/ML	Tag
Method: EPA 552.2 - Haloacetic Acids & Dalapon						GroundH2O	
<i>TARGET ANALYTES</i>							
BROMOCHLOROACETIC ACID	U	0.14	ug/L	1	0.14		
BROMODICHLOROACETIC ACID	U	0.16	ug/L	1	0.16		
CHLORODIBROMOACETIC ACID	U	0.19	ug/L	1	0.19		
DALAPON	U	0.18	ug/L	1	0.18		
DIBROMOACETIC ACID	U	0.11	ug/L	1	0.11	1	
DICHLOROACETIC ACID	U	0.23	ug/L	1	0.23	1	
MONOBROMOACETIC ACID	U	0.22	ug/L	1	0.22	1	
MONOCHLOROACETIC ACID	U	0.68	ug/L	1	0.68	2	
TRIBROMOACETIC ACID	U	0.44	ug/L	1	0.44		
TRICHLOROACETIC ACID	U	0.21	ug/L	1	0.21	1	
<i>VALUE CALCULATED FROM OTHER RESULTS</i>							
HAA(5)		0.0	ug/L		1.4		
HAA(9)		0.0	ug/L		2.4		
<i>INTERNAL STANDARD</i>							
1,2,3-TRICHLOROPROPANE		99	% recovery		1		
<i>SURROGATE</i>							
2,3-DIBROMOPROPIONIC ACID		92	% recovery		1		
Run ID: R237425 / Work Group No.: WG180961							
Prep Date1: 18-DEC-12 Prep Date2: 19-DEC-12 Analyzed 20-Dec-12 08:24							
Method: SM2320B - 1997, Titration						GroundH2O	
<i>TARGET ANALYTES</i>							
ALKALINITY: TOTAL AS CaCO3		250	mg/L	1	5		
Run ID: R237182 / Work Group No.: WG180899							
Prep Date1: 17-DEC-12 Analyzed 17-Dec-12 08:15							
Method: SM2340C - 1997, Titration: EDTA						GroundH2O	
<i>TARGET ANALYTES</i>							
HARDNESS: TOTAL AS CaCO3		120	mg/L	1	3		
Run ID: R237236 / Work Group No.: WG180946							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 13:05							
Method: SM2540C - 1997, Dried at 180C						GroundH2O	
<i>TARGET ANALYTES</i>							
TOTAL DISSOLVED SOLIDS		420	mg/L	1.25	22		
Run ID: R237275 / Work Group No.: WG180928							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 08:35							
Method: SM4500-CO2 D - Calculation						GroundH2O	
<i>TARGET ANALYTES</i>							
ALKALINITY: HYDROXIDE	U	0.10	mg/L	1	0.1		
Run ID: R237229 / Work Group No.: WG180944							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 11:30							
Method: SM4500-CO2 D - Calculation						GroundH2O	
<i>TARGET ANALYTES</i>							
ALKALINITY: CARBONATE		1.0	mg/L	1	0.1		
Run ID: R237229 / Work Group No.: WG180944							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 11:30							

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Analytical Results Report

LSR B455-0706-1 BAYSIDE GROUND WATER PROJECT
 Site: GW BAYSIDE East Bay Ground Water Injection/Extraction Project Bayside Groundwater
 Locator: BAY1-MW4 OW-1 the same parcel as the Bayside Well on Oro Loma Property; formerly BAY1-MW5
 Lab ID: L179806-4 (P185618-4)
 Sample Type: GRAB (Instantaneous Grab)
 Date Collected: Dec 13 2012, 11:38am Sample collector: SPenman/BSS
 Date Received: Dec 14 2012, 08:20am Sample receiver: KLORENZO
 Sample Comments: MW4 pH = 7.64; Cl2R = 0.03 mg/L; Depth to GW = 12.48 feet; Labelled as RAW WATER for the program. Table 4

Method Reference	Qualifier	Result	Units	Dilution	MDL	Matrix	Tag
Parameter						RL/ML	
Method: SM4500-CO2 D - Calculation						GroundH2O	
TARGET ANALYTES							
ALKALINITY: BICARBONATE		240	mg/L	1	5		
Run ID: R237229 / Work Group No.: WG180944							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 11:30							
Method: SM4500-NH3 B, C - 1997, Distillation & Titration						GroundH2O	
TARGET ANALYTES							
AMMONIA AS N	U	0.300	mg/L	1	0.3		
Run ID: R237269 / Work Group No.: WG180939							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 10:25							
Method: EPA 200.7 - Rev. 4.4, ICP Scan						RawH2O	
TARGET ANALYTES							
CALCIUM		28,900	ug/L	1.04	14.6		
IRON		84.2	ug/L	1.04	6.24	100	
POTASSIUM		2,490	ug/L	1.04	11.4		
MAGNESIUM		11,200	ug/L	1.04	13.5		
MANGANESE		232	ug/L	1.04	0.52	20	
SODIUM		119,000	ug/L	1.04	8.32		
Run ID: R237639 / Work Group No.: WG181156							
Prep Date1: 02-JAN-13 Analyzed 02-Jan-13 13:02							

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Analytical Results Report

LSR B455-0706-1 BAYSIDE GROUND WATER PROJECT
 Site: GW BAYSIDE East Bay Ground Water Injection/Extraction Project Bayside Groundwater
 Locator: BAY1-MW6 R APN 438-0010-003 2364 Baumann Ave., San Lorenzo; formerly BAY-MW-WORTHLEY
 Lab ID: L179806-5 (P185618-5)
 Sample Type: GRAB (Instantaneous Grab)
 Date Collected: Dec 13 2012, 04:25pm Sample collector: SPENMAN/ESS
 Date Received: Dec 14 2012, 08:20am Sample receiver: KLORENZO
 Sample Comments: MW6 pH = 7.26; Cl2R = 0.03 mg/L; Depth to GW = 13.73 feet; Labelled as RAW WATER for the program. Table 4

Method Reference	Qualifier	Result	Units	Dilution	MDL	Matrix RL/ML	Tag
Method: PER SUBCONTRACT LABORATORY REPORT - Subcontract data transmittal for oxygen 18							GroundH2O
<i>Subcontract data from Alpha Analytical Lab</i>							
<i>Comment: Refer to sublab data report attached</i>							
SUBCONTRACT LAB DATA							
DATA TRANSMITTAL							
Run ID: R238127 / Work Group No.: WG181393							
Prep Date1: 11-JAN-13 Analyzed 11-Jan-13 00:00							
Method: SAMPLER PROVIDED FIELD MEASUREMENTS - DATA ENTRY LIST FOR FIELD DATA							GroundH2O
FIELD ANALYSIS/OBSERVATION DATA PARAMETERS							
PH		7.26	pH units	1			
DEPTH		13.73	feet	1			
CHLORINE RESIDUAL: TOTAL		0.03	mg/L	1	0.02		
Run ID: R237226 / Work Group No.: WG180938							
Prep Date1: 13-DEC-12 Analyzed 13-Dec-12 16:25							
Method: EPA 8260B - Trihalomethanes, GC/MS							GroundH2O
TARGET ANALYTES							
CHLOROFORM	U	0.17	ug/L	1	0.17		
BROMODICHLOROMETHANE	U	0.079	ug/L	1	0.079		
DIBROMOCHLOROMETHANE	U	0.13	ug/L	1	0.13		
BROMOFORM	U	0.23	ug/L	1	0.23		
INTERNAL STANDARD							
FLUOROBENZENE		105	% recovery	1			
D5-CHLOROBENZENE		103	% recovery	1			
D4-1,4-DICHLOROBENZENE		101	% recovery	1			
SURROGATE							
D8-TOLUENE		101	% recovery	1			
4-BROMOFLUOROBENZENE		111	% recovery	1			
Run ID: R237323 / Work Group No.: WG180987							
Prep Date1: 19-DEC-12 Analyzed 19-Dec-12 23:14							
Method: EPA 300.1 - Ion Chromatography							GroundH2O 1
<i>Instrument calibrated 26-NOV-12</i>							
TARGET ANALYTES							
CHLORIDE		56	mg/L	100	0.34		
SULFATE		46	mg/L	100	0.4	0.5	
SURROGATE							
DICHLOROACETATE		97	% recovery	100			
Run ID: R237141 / Work Group No.: WG180883							
Prep Date1: 14-DEC-12 Analyzed 14-Dec-12 22:47							
Method: EPA 300.1 - Ion Chromatography							GroundH2O
<i>Instrument calibrated 26-NOV-12</i>							
TARGET ANALYTES							
NITRATE AS N		0.099	mg/L	10	0.02	0.4	
SURROGATE							
DICHLOROACETATE		97	% recovery	10			
Run ID: R237141 / Work Group No.: WG180883							
Prep Date1: 14-DEC-12 Analyzed 14-Dec-12 22:13							

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Analytical Results Report

LSR B455-0706-1 BAYSIDE GROUND WATER PROJECT
 Site: GW BAYSIDE East Bay Ground Water Injection/Extraction Project Bayside Groundwater
 Locator: BAY1-MW6 R APN 438-0010-003 2364 Baumann Ave., San Lorenzo; formerly BAY-MW-WORTHLEY
 Lab ID: L179806-5 (P185618-5)
 Sample Type: GRAB (Instantaneous Grab)
 Date Collected: Dec 13 2012, 04:25pm Sample collector: SPenman/ESS
 Date Received: Dec 14 2012, 08:20am Sample receiver: KLORENZO
 Sample Comments: MW6 pH = 7.26; Cl2R = 0.03 mg/L; Depth to GW = 13.73 feet; Labelled as RAW WATER for the program. Table 4

Method Reference Parameter	Qualifier	Result	Units	Dilution	MDL	Matrix RL/ML	Tag
Method: EPA 552.2 - Haloacetic Acids & Dalapon						GroundH2O	
<i>TARGET ANALYTES</i>							
BROMOCHLOROACETIC ACID	U	0.14	ug/L	1	0.14		
BROMODICHLOROACETIC ACID	U	0.16	ug/L	1	0.16		
CHLORODIBROMOACETIC ACID	U	0.19	ug/L	1	0.19		
DALAPON	U	0.18	ug/L	1	0.18		
DIBROMOACETIC ACID	U	0.11	ug/L	1	0.11	1	
DICHLOROACETIC ACID	U	0.23	ug/L	1	0.23	1	
MONOBROMOACETIC ACID	U	0.22	ug/L	1	0.22	1	
MONOCHLOROACETIC ACID	U	0.68	ug/L	1	0.68	2	
TRIBROMOACETIC ACID	U	0.44	ug/L	1	0.44		
TRICHLOROACETIC ACID	U	0.21	ug/L	1	0.21	1	
<i>VALUE CALCULATED FROM OTHER RESULTS</i>							
HAA(5)		0.0	ug/L		1.4		
HAA(9)		0.0	ug/L		2.4		
<i>INTERNAL STANDARD</i>							
1,2,3-TRICHLOROPROPANE		93	% recovery		1		
<i>SURROGATE</i>							
2,3-DIBROMOPROPIONIC ACID		90	% recovery		1		
Run ID: R237425 / Work Group No.: WG180961							
Prep Date1: 18-DEC-12 Prep Date2: 19-DEC-12 Analyzed 20-Dec-12 09:09							
Method: SM2320B - 1997, Titration						GroundH2O	
<i>TARGET ANALYTES</i>							
ALKALINITY: TOTAL AS CaCO3		220	mg/L	1	5		
Run ID: R237182 / Work Group No.: WG180899							
Prep Date1: 17-DEC-12 Analyzed 17-Dec-12 08:15							
Method: SM2340C - 1997, Titration: EDTA						GroundH2O	
<i>TARGET ANALYTES</i>							
HARDNESS: TOTAL AS CaCO3		120	mg/L	1	3		
Run ID: R237236 / Work Group No.: WG180946							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 13:05							
Method: SM2540C - 1997, Dried at 180C						GroundH2O	
<i>TARGET ANALYTES</i>							
TOTAL DISSOLVED SOLIDS		420	mg/L	1.25	22		
Run ID: R237275 / Work Group No.: WG180928							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 08:35							
Method: SM4500-CO2 D - Calculation						GroundH2O	
<i>TARGET ANALYTES</i>							
ALKALINITY: HYDROXIDE	U	0.10	mg/L	1	0.1		
Run ID: R237229 / Work Group No.: WG180944							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 11:30							
Method: SM4500-CO2 D - Calculation						GroundH2O	
<i>TARGET ANALYTES</i>							
ALKALINITY: CARBONATE		0.38	mg/L	1	0.1		
Run ID: R237229 / Work Group No.: WG180944							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 11:30							

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Analytical Results Report

LSR B455-0706-1 BAYSIDE GROUND WATER PROJECT
 Site: GW BAYSIDE East Bay Ground Water Injection/Extraction Project Bayside Groundwater
 Locator: BAY1-MW6 R APN 438-0010-003 2364 Baumann Ave., San Lorenzo; formerly BAY-MW-WORTHLEY
 Lab ID: L179806-5 (P185618-5)
 Sample Type: GRAB (Instantaneous Grab)
 Date Collected: Dec 13 2012, 04:25pm Sample collector: SPENMAN/ESS
 Date Received: Dec 14 2012, 08:20am Sample receiver: KLORENZO
 Sample Comments: MW6 pH = 7.26; Cl2R = 0.03 mg/L; Depth to GW = 13.73 feet; Labelled as RAW WATER for the program. Table 4

Method Reference Parameter	Qualifier	Result	Units	Dilution	MDL	Matrix RL/ML	Tag
Method: SM4500-CO2 D - Calculation						GroundH2O	
TARGET ANALYTES							
ALKALINITY: BICARBONATE		220	mg/L	1	5		
Run ID: R237229 / Work Group No.: WG180944							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 11:30							
Method: SM4500-NH3 B, C - 1997, Distillation & Titration						GroundH2O	
TARGET ANALYTES							
AMMONIA AS N	U	0.300	mg/L	1	0.3		
Run ID: R237269 / Work Group No.: WG180939							
Prep Date1: 18-DEC-12 Analyzed 18-Dec-12 10:25							
Method: EPA 200.7 - Rev. 4.4, ICP Scan						RawH2O	
TARGET ANALYTES							
CALCIUM		31,000	ug/L	1.04	14.6		
IRON		144	ug/L	1.04	6.24	100	
POTASSIUM		1,880	ug/L	1.04	11.4		
MAGNESIUM		7,680	ug/L	1.04	13.5		
MANGANESE		302	ug/L	1.04	0.52	20	
SODIUM		117,000	ug/L	1.04	8.32		
Run ID: R237639 / Work Group No.: WG181156							
Prep Date1: 02-JAN-13 Analyzed 02-Jan-13 13:06							

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Analytical Results Report

LSR B455-0706-1 BAYSIDE GROUND WATER PROJECT
 Site: FIELD QC Sample collection QC
 Locator: COLLECTION QC Field QC Sample submitted for analysis
 Lab ID: L179806-6 (P185618-6)
 Sample Type: QCFB (Field Blank Grab)
 Date Collected: Dec 13 2012, 10:42am Sample collector: SPenman/ESS
 Date Received: Dec 14 2012, 08:20am Sample receiver: KLORENZO
 Sample Comments: QCFB for L179806-1, -2, -3, -4 and -5; Prep'd on 6-DEC12 by JLA

Method Reference Parameter	Qualifier	Result	Units	Dilution	MDL	Matrix RL/ML	Tag
Method: EPA 8260B - Trihalomethanes, GC/MS						GroundH2O	
<i>TARGET ANALYTES</i>							
CHLOROFORM	U	0.17	ug/L	1	0.17		
BROMODICHLOROMETHANE	U	0.079	ug/L	1	0.079		
DIBROMOCHLOROMETHANE	U	0.13	ug/L	1	0.13		
BROMOFORM	U	0.23	ug/L	1	0.23		
<i>INTERNAL STANDARD</i>							
FLUOROBENZENE		106	% recovery	1			
D5-CHLOROBENZENE		101	% recovery	1			
D4-1,4-DICHLOROBENZENE		103	% recovery	1			
<i>SURROGATE</i>							
D8-TOLUENE		104	% recovery	1			
4-BROMOFLUOROBENZENE		112	% recovery	1			
Run ID: R237323 / Work Group No.: WG180987							
Prep Date: 19-DEC-12 Analyzed 19-Dec-12 20:47							

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East Bay Municipal Utility District
Laboratory Services Chain of Custody Record

Prelog or Login No.: L179806
Project Title: BAYSIDE GROUND WATER PROJECT
Account or Project: B455-0706-1

Client PM: DEREK LEE
Tel No.: (510) 287-1086
Lab PM: JACK C. LIM

Sampled by: SPENMAN/ESS
Rcvd: 14-DEC-12 08:20
Sample Date: 13-DEC-12

Lab No.	Sample Type	Time	Site	Locator	Sample Matrix	Tests Required	Container Barcode	Chemical Preservative	Date	DueDate Initials
L179806-1	GRAB	08:45	WTP BAYSIDE	BAY WELL HEAD	GroundH2O	*300 IC ANIONS (1-3); CHLORIDE: IC; NITRATE: IC; SULFATE: IC	1143773 PLSTM		04-JAN-13	
					GroundH2O	ALKALINITY: CO3; ALKALINITY: HCO3; ALKALINITY: OH;	1143774 PLSTL			
					GroundH2O	ALKALINITY: TOTAL; HARDNESS: TOTAL; TDS: GRAVIMETRIC				
					GroundH2O	AMMONIA: TITR				
					RawH2O	*ICP EPA 200.7; CA EPA 200.7; FE EPA 200.7; K EPA	1143775 PLSTL Y	H2SO4 PH<2		
					RawH2O	200.7; MG EPA 200.7; MN EPA 200.7; NA EPA 200.7	1143776 PLSTL Y	ANO3 PH<2	12/11/12 09:32	
					GroundH2O	552	1143780 A125N Y			
					GroundH2O	552	1143781 A125N Y			
					GroundH2O	+TRANSMITTAL; OXYGEN 18	1143782 PLSTS			
					GroundH2O	8260-TMS	1143783 VOC4T Y			
					GroundH2O	8260-TMS	1143784 VOC4T Y			
					GroundH2O	8260-TMS	1143785 VOC4T Y			
					GroundH2O	+FLD DATA; +REPORT; +SAMP KIT				

ClientID:

Sample Comments: BAYSIDE WELL pH = 7.98; Cl2R = 0.02 mg/L; Depth to GW = NA; Labelled as RAW WATER for the program Table 4 Pricing: STD

Lab No.	Sample Type	Time	Site	Locator	Sample Matrix	Tests Required	Container Barcode	Chemical Preservative	Date	DueDate Initials
L179806-2	GRAB	16:04	GW BAYSIDE	BAY1-MW2S	GroundH2O	*300 IC ANIONS (1-3); CHLORIDE: IC; NITRATE: IC; SULFATE: IC	1143790 PLSTM		04-JAN-13	
					GroundH2O	ALKALINITY: CO3; ALKALINITY: HCO3; ALKALINITY: OH;	1143791 PLSTL			
					GroundH2O	ALKALINITY: TOTAL; HARDNESS: TOTAL; TDS: GRAVIMETRIC				
					GroundH2O	AMMONIA: TITR				
					RawH2O	*ICP EPA 200.7; CA EPA 200.7; FE EPA 200.7; K EPA	1143792 PLSTL Y	H2SO4 PH<2		
					RawH2O	200.7; MG EPA 200.7; MN EPA 200.7; NA EPA 200.7	1143793 PLSTL Y	HNO3 PH<2	12/11/12 09:32	
					GroundH2O	552	1143794 A125N Y			
					GroundH2O	552	1143795 A125N Y			
					GroundH2O	OXYGEN 18	1143796 PLSTS			
					GroundH2O	8260-TMS	1143797 VOC4T Y			
					GroundH2O	8260-TMS	1143798 VOC4T Y			
					GroundH2O	8260-TMS	1143799 VOC4T Y			
					GroundH2O	+FLD DATA				

ClientID:

Sample Comments: MS2S pH = 6.29; Cl2R = 0.02 mg/L; Depth to GW = 7.70 feet; Labelled as RAW WATER for the program. (Analytical NOTE: may need to dilute for ICP & IC - salt water intrusion Pricing: STD)

East Bay Municipal Utility District
Laboratory Services Chain of Custody Record

Prelog or Login No.: L179806
Project Title: BAYSIDE GROUND WATER PROJECT
Account or Project: B455-0706-1

Client PM: DEREK LEE
Tel No.: (510) 297-1086
Lab PM: JACK C. LIM

Sampled by: SPENMAN/ESS
Rcvd: 14-DEC-12 08:20
Sample Date: 13-DEC-12

Lab No.	Sample Type	Time	Site	Locator	Sample Matrix	Tests Required	Container ID Barcode	Chemical Preservative	Date	Due Date	Initials
L179806-3	GRAB	16:40	GW BAYSIDE	BAY1-MW21	GroundH2O	*300 IC ANIONS (1-3); CHLORIDE: IC; NITRATE: IC; SULFATE: IC ALKALINITY: CO3; ALKALINITY: HCO3; ALKALINITY: OH; ALKALINITY: TOTAL; HARDNESS: TOTAL; TDS: GRAVIMETRIC AMMONIA: TITR *ICP EPA 200.7; CA EPA 200.7; FE EPA 200.7; K EPA 200.7; MG EPA 200.7; MN EPA 200.7; NA EPA 200.7 552 552 OXYGEN 18 8260-THMS 8260-THMS 8260-THMS +FLD DATA	1143810 PLSTM 1143811 PLSTL 1143812 PLSTL 1143813 PLSTL 1143814 AI25N 1143815 AI25N 1143816 PLSTS 1143817 VOC4T 1143818 VOC4T 1143819 VOC4T	Y Y Y Y Y Y Y Y Y Y	04-JAN-13		

Handwritten: H2SO4 pH=2
HNO3 pH=2 12/14/12 0932

ClientID:

Sample Comments: MW21 pH = 8.08; CL2R = 0.02 mg/L; Depth to GW = 27.32 feet; Labelled as RAW WATER for the program. Table 4 Pricing: STD

Lab No.	Sample Type	Time	Site	Locator	Sample Matrix	Tests Required	Container ID Barcode	Chemical Preservative	Date	Due Date	Initials
L179806-4	GRAB	11:38	GW BAYSIDE	BAY1-MW4	GroundH2O	*300 IC ANIONS (1-3); CHLORIDE: IC; NITRATE: IC; SULFATE: IC ALKALINITY: CO3; ALKALINITY: HCO3; ALKALINITY: OH; ALKALINITY: TOTAL; HARDNESS: TOTAL; TDS: GRAVIMETRIC AMMONIA: TITR *ICP EPA 200.7; CA EPA 200.7; FE EPA 200.7; K EPA 200.7; MG EPA 200.7; MN EPA 200.7; NA EPA 200.7 552 552 OXYGEN 18 8260-THMS 8260-THMS 8260-THMS +FLD DATA	1143820 PLSTM 1143821 PLSTL 1143822 PLSTL 1143823 PLSTL 1143824 AI25N 1143825 AI25N 1143826 PLSTS 1143827 VOC4T 1143828 VOC4T 1143829 VOC4T	Y Y Y Y Y Y Y Y Y Y	04-JAN-13		

Handwritten: H2SO4 pH=2
HNO3 pH=2 12/14/12 0932

ClientID:

Sample Comments: MW4 pH = 7.64; CL2R = 0.03 mg/L; Depth to GW = 12.48 feet; Labelled as RAW WATER for the program. Table 4 Pricing: STD

East Bay Municipal Utility District
Laboratory Services Chain of Custody Record

Prelog or Login No.: L179806
Project Title: BAYSIDE GROUND WATER PROJECT
Account or Project: B455-0706-1

Client PM: DEREK LEE
Tel No.: (510) 287-1086
Lab PM: JACK C. LIM

Sampled by: SPENMAN/ESS
Rcvd: 14-DEC-12 08:20
Sample Date: 13-DEC-12

Lab No.	Sample Type	Time	Site	Locator	Sample Matrix	Tests Required	Container Barcode	Chemical Preservative	Date	Due Date	Initials
L179806-5	GRAB	16:25	GW BAYSIDE	BAY1-MW6	GroundH2O	*300 IC ANIONS (1-3); CHLORIDE: IC; NITRATE: IC; SULFATE: IC ALKALINITY: CO3; ALKALINITY: HCO3; ALKALINITY: OH; ALKALINITY: TOTAL; HARDNESS: TOTAL; TDS: GRAVIMETRIC AMMONIA: TITR *ICP EPA 200.7; CA EPA 200.7; FE EPA 200.7; K EPA 200.7; MG EPA 200.7; MN EPA 200.7; NA EPA 200.7 552 552 OXYGEN 18 8260-THMS 8260-THMS 8260-THMS 8260-THMS +FLD DATA	1143800 PLSTM 1143801 PLSTL 1143802 PLSTL Y H2SO4 PH<2 1143803 PLSTL Y HNO3 PH<2 1143804 A125N Y 1143805 A125N Y 1143806 PLSTS 1143807 VOC4T Y 1143808 VOC4T Y 1143809 VOC4T Y		04-JAN-13		
L179806-6	QCFB	10:42	FIELD QC	COLLECTION QC	GroundH2O	8260-THMS	1143788 VOC4T Y 1143789 VOC4T Y		04-JAN-13		

ClientID:

Sample Comments: MW6 pH = 7.26; Cl2R = 0.03 mg/L; Depth to GW = 13.73 feet; Labelled as RAW WATER for the program. Table 4 Pricing: STD

ClientID:

Sample Comments: QCFB for L179806.1, -2, -3, -4 and -5. Prepd on 6 DEC12 by JLA Pricing: STD

Total containers received: 52

East Bay Municipal Utility District
Laboratory Services Chain of Custody Record

Prelog or
Login No.: L179806

Project Title
BAYSIDE GROUND WATER PROJECT
Account or Project: B455-0706-1

Client PM: DEREK LEE
Tel No.: (510) 287-1086
Lab PM: JACK C. LIM

Sampled by: SPENMAN/ESS
Rcvd: 14-DEC-12 08:20
Sample Date: 13-DEC-12

Signature	Print Name	Time	Date
Relinquished by			
Received by			
Relinquished by			
Received by			
Relinquished by			
Received by	Kristi L. Lorensen	08:20	14-DEC-12

Sample Type Descriptions:
GRAB - Instantaneous Grab
QCFB - Field Blank Grab

Container Type Descriptions:
PLSTM - Plastic, WM, 500 mL
PLSTS - Plastic, NM, 125 mL
A125N - Glass, amber, NM, septa top, NH4Cl, 125 mL
VOC4T - Glass, clear, septa top, 10 mg Na2S2O3, 40 mL
PLSTL - Plastic, WM, 1000 mL

Samples will be retained beyond the approval process only if requested by the client.

L179806

East Bay Municipal Utility District
Laboratory Services Chain of Custody Record

Project Title
BAYSIDE GROUND WATER PROJECT
Account or Project: B455-0706-1

Client PM: DEREK LEE
Tel No.: (510) 287-1086
Lab PM: JACK C. LIM

Sampled by: *Stephen Penman*
Rcvd:
Sample Date: *12/13/2012*

Lab No.	Sample Type	Site	Locator	Sample Matrix	Tests Required	Container Barcode	Chemical Preservative	Date	Due Date	Initials
P185618-1	GRAB	WTF BAYSIDE	BAY WELL HEAD	GroundH2O	*300 IC ANIONS (1-3); CHLORIDE: IC; NITRATE: IC; SULFATE: IC	1143773 PLSTP				
				GroundH2O	ALKALINITY: CO3; ALKALINITY: HCO3; ALKALINITY: OH;	1143774 PLSTL				
				GroundH2O	ALKALINITY: TOTAL; HARDNESS: TOTAL; TDS: GRAVIMETRIC	1143775 PLSTL				
				GroundH2O	AMMONIA: TITR	1143776 PLSTL				
				RawH2O	*ICP EPA 200.7; CA EPA 200.7; FE EPA 200.7; K EPA	1143780 A125N				
				RawH2O	200.7; MG EPA 200.7; MN EPA 200.7; NA EPA 200.7	1143781 A125N				
				GroundH2O	552	1143782 PLSTS				
				GroundH2O	552	1143783 VOC4T				
				GroundH2O	+TRANSMITTAL; OXYGEN 18	1143784 VOC4T				
				GroundH2O	8260-TMS	1143785 VOC4T				
				GroundH2O	8260-TMS					
				GroundH2O	8260-TMS					
				GroundH2O	+FLD DATA; +REPORT; +SAMP KIT					

ClientID:

Sample Comments: BAYSIDE WELL pH = **7.98** ; Cl2R = **0.02** mg/L; Depth to GW = **NA** feet; Labelled as RAW WATER for the program Table 4 Pricing: STD

Lab No.	Sample Type	Site	Locator	Sample Matrix	Tests Required	Container Barcode	Chemical Preservative	Date	Due Date	Initials
P185618-2	GRAB	GW BAYSIDE	BAY1-MW2S	GroundH2O	*300 IC ANIONS (1-3); CHLORIDE: IC; NITRATE: IC; SULFATE: IC	1143790 PLSTP				
				GroundH2O	ALKALINITY: CO3; ALKALINITY: HCO3; ALKALINITY: OH;	1143791 PLSTL				
				GroundH2O	ALKALINITY: TOTAL; HARDNESS: TOTAL; TDS: GRAVIMETRIC	1143792 PLSTL				
				GroundH2O	AMMONIA: TITR	1143793 PLSTL				
				RawH2O	*ICP EPA 200.7; CA EPA 200.7; FE EPA 200.7; K EPA	1143794 A125N				
				RawH2O	200.7; MG EPA 200.7; MN EPA 200.7; NA EPA 200.7	1143795 A125N				
				GroundH2O	552	1143796 PLSTS				
				GroundH2O	552	1143797 VOC4T				
				GroundH2O	OXYGEN 18	1143798 VOC4T				
				GroundH2O	8260-TMS	1143799 VOC4T				
				GroundH2O	8260-TMS					
				GroundH2O	8260-TMS					
				GroundH2O	+FLD DATA					

ClientID:

Sample Comments: MS2S pH = **6.29** ; Cl2R = **0.02** mg/L; Depth to GW = **7.70** feet; Labelled as RAW WATER for the program. (Analytical NOTE: may need

L1798070

East Bay Municipal Utility District
Laboratory Services Chain of Custody Record

Prelog or Login No.: P185618
Project Title: BAYSIDE GROUND WATER PROJECT
Account or Project: B455-0706-1

Client PM: DEREK LEE
Tel No.: (510) 287-1086
Lab PM: JACK C. LIM

Sampled by: Stephen Perman
Rcvd:
Sample Date: 12/13/2012

Lab No.	Sample Type	Time	Site	Locator	Sample Matrix	Tests Required	Container Barcode	Chemical Preservative	Date	Due Date	Initials
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to dilute for ICP & IC - salt water intrusion Pricing: STD

P185618-3	GRAB	16:40	GW BAYSIDE	BAY1-MW21	GroundH2O	*300 IC ANIONS (1-3); CHLORIDE: IC; NITRATE: IC; SULFATE: IC	1143810	PLSTM			
					GroundH2O	ALKALINITY: CO3; ALKALINITY: HCO3; ALKALINITY: OH;	1143811	PLSTL			
					GroundH2O	ALKALINITY: TOTAL; HARDNESS: TOTAL; TDS: GRAVIMETRIC	1143812	PLSTL			
					RawH2O	AMMONIA: TITR	1143813	PLSTL			
					RawH2O	*ICP EPA 200.7; CA EPA 200.7; FE EPA 200.7; K EPA 200.7; MG EPA 200.7; MN EPA 200.7; NA EPA 200.7	1143814	A125N			
					GroundH2O	552	1143815	A125N			
					GroundH2O	552	1143816	PLSTL			
					GroundH2O	OXYGEN 18	1143817	PLSTL			
					GroundH2O	8260-THMS	1143818	VOC4T			
					GroundH2O	8260-THMS	1143819	VOC4T			
					GroundH2O	8260-THMS					
					GroundH2O	+FLD DATA					

ClientID:

Sample Comments: MW21 pH = 8.08 ; Cl2R = 0.02 mg/L; Depth to GW = 27.32 feet; Labelled as RAW WATER for the program. Table 4 Pricing: STD

P185618-4	GRAB	11:38	GW BAYSIDE	BAY1-MW4	GroundH2O	*300 IC ANIONS (1-3); CHLORIDE: IC; NITRATE: IC; SULFATE: IC	1143820	PLSTM			
					GroundH2O	ALKALINITY: CO3; ALKALINITY: HCO3; ALKALINITY: OH;	1143821	PLSTL			
					GroundH2O	ALKALINITY: TOTAL; HARDNESS: TOTAL; TDS: GRAVIMETRIC	1143822	PLSTL			
					RawH2O	AMMONIA: TITR	1143823	PLSTL			
					RawH2O	*ICP EPA 200.7; CA EPA 200.7; FE EPA 200.7; K EPA 200.7; MG EPA 200.7; MN EPA 200.7; NA EPA 200.7	1143824	A125N			
					GroundH2O	552	1143825	A125N			
					GroundH2O	552	1143826	PLSTL			
					GroundH2O	OXYGEN 18	1143827	PLSTL			
					GroundH2O	8260-THMS	1143828	VOC4T			
					GroundH2O	8260-THMS	1143829	VOC4T			
					GroundH2O	8260-THMS					
					GroundH2O	+FLD DATA					

ClientID:

Sample Comments:

L179806

East Bay Municipal Utility District
Laboratory Services Chain of Custody Record

Project Title: BAYSIDE GROUND WATER PROJECT
Account or Project: B455-0706-1
Locator: BAY1-MW6
Sample Type: GRAB
Site: GW BAYSIDE
pH = 7.64
MW4 pH = 7.64 ; Cl2R = 0.03 mg/L; Depth to GW = 12.10 feet; Labelled as RAW WATER for the program. Table 4 Pricing: STD

Client PM: DEREK LEE
Tel No.: (510) 287-1086
Lab PM: JACK C. LIM

Prelog or Login No.: P185618
Sampled by: Stephen Penman, Jack Lee
Rcvd:
Sample Date: 12/13/2012

Lab No.	Sample Type	Time	Site	Locator	Sample Matrix	Tests Required	Container ID Barcode	Chemical Preservative	Date	Due Date	Initials
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P185618-5	GRAB	16:35	GW BAYSIDE	BAY1-MW6	GroundH2O	*300 IC ANIONS (1-3); CHLORIDE: IC; NITRATE: IC; SULFATE: IC	1143800 PLSTM				
					GroundH2O	ALKALINITY: CO3; ALKALINITY: HCO3; ALKALINITY: OH;	1143801 PLSTB				
					GroundH2O	ALKALINITY: TOTAL; HARDNESS: TOTAL; TDS: GRAVIMETRIC	1143802 PLSTL				
					GroundH2O	AMMONIA: TITR	1143803 PLSTL				
					RawH2O	*ICP EPA 200.7; CA EPA 200.7; FE EPA 200.7; K EPA 200.7; MG EPA 200.7; MN EPA 200.7; NA EPA 200.7	1143804 AI25N				
					GroundH2O	552	1143805 AI25N				
					GroundH2O	OXYGEN 18	1143806 PLSTS				
					GroundH2O	8260-TMS	1143807 VOC&T				
					GroundH2O	8260-TMS	1143808 VOC&T				
					GroundH2O	8260-TMS	1143809 VOC&T				
					GroundH2O	+FLD DATA					

ClientID:
 Sample Comments: MW6 pH = 7.26 ; Cl2R = 0.03 mg/L; Depth to GW = 13.73 feet; Labelled as RAW WATER for the program. Table 4 Pricing: STD
 P185618-6 QCFB 10:42 FIELD QC COLLECTION QC
 Container ID Barcode: 1143786 A250Z
 1143788 VOC&T
 1143789 VOC&T

ClientID:
 Sample Comments: QCFB for Lxxxxxx-x; Prep'd on DD-MMM-YY by XXX Pricing: STD
 Total containers received: 53

East Bay Municipal Utility District
Laboratory Services Chain of Custody Record


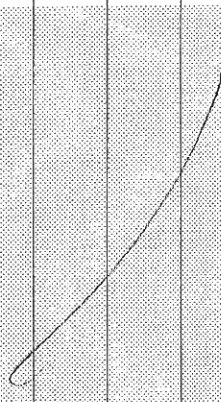

L179806

Prelog or
Login No.: P185618

Project Title
BAYSIDE GROUND WATER PROJECT
Account or Project: B455-0706-1

Client PM: DEREK LEE
Tel No.: (510) 287-1086
Lab PM: JACK C. LIM

Sampled by: *Stephen Perman*
Rcvd:
Sample Date: *12/13/2012*

	Signature	Print Name	Time	Date
Relinquished by		Stephen Perman	18:15	12/13/12
Received by				
Relinquished by				
Received by				
Relinquished by		Kristi L Lovenson	08:20	12/14/12
Received by				

Sample Type Descriptions:
GRAB - Instantaneous Grab
OCFB - Field Blank Grab

Container Type Descriptions:
PLSTM - Plastic, WM, 500 mL
PLSTS - Plastic, NM, 125 mL
A125N - Glass, amber, NM, septa top, NH4Cl, 125 mL
A250Z - Glass, amber, NM, septa top, ZHS, 250 mL
VOC4T - Glass, clear, septa top, 10 mg Na2S2O3, 40 mL
PLSTL - Plastic, WM, 1000 mL

Samples will be retained beyond the approval process only if requested by the client.

EBMUD LABORATORY COOLER RECEIPT FORM

Login Number: L179806 Received: 14-Dec-2012 08:20
 Converted from P185618

Cooler ID: 210367

SHIPPING INFORMATION

- Did cooler come with a shipping slip?
Tracking number:

PACKAGING AND PRESERVATION

- Ice present?
- Type of cooler packing:
- Temperature of a representative sample. Measured temp:
Corrected temperature:
Container type used to measure temperature:

LOGIN PHASE

- Containers intact?
- Preservation correct?
- Correct sample containers?
- Sufficient sample volume?
- Labels legible?
- Label info agrees with COC?
- Label information complete?
- Bubbles present in VOA-type containers?
Container IDs w/ bubbles:
- Senior Chemist notified of anomalies?
Senior Chemist called
Who called?

CHAIN OF CUSTODY DOCUMENTATION

- COC signed by Lab?
- Project identified on COC?
- COC info complete?

Comments:

210367 Cooler #1 for -2, -3, -4 Samples received from night drop refrigerator.
 210368 Cooler #2 for -1 and -5. Samples received from night drop refrigerator.
 210369 Cooler #3 for all VOC4T vials. Samples received from night drop refrigerator.
 Site / locator: GW BAYSIDE/BAY1-MW4
 Site / locator: GW BAYSIDE/BAY1-MW2S
 Site / locator: GW BAYSIDE/BAY1-MW6
 Site / locator: GW BAYSIDE/BAY1-MW2I
 Site / locator: WTP BAYSIDE/BAY WELL HEAD
 Site / locator: FIELD QC/COLLECTION QC

210367	210368	210369		
No	No	No		
Yes None 2.5 2.9 PLSTL	Yes None 1.3 1.7 PLSTL	Yes None 3.8 2.1 VOC4T		
Yes Yes Yes Yes Yes Yes Yes No No	Yes Yes Yes Yes Yes Yes Yes No No	Yes Yes Yes Yes Yes Yes Yes No No		
Yes Yes Yes Yes Yes	Yes Yes Yes Yes Yes	Yes Yes Yes Yes Yes		