February 24, 2016

Project No.: 484-13-14-02.002
SENT VIA: EMAIL

Mr. Gregory Buncab
Environmental Compliance
East Bay Municipal Utility District
375 11th Street
Oakland CA 94607

SUBJECT: EBMUD Bayside Groundwater Project, 2015 Annual Report, Waste Discharge Requirements Order No. R2-2007-0038

Dear Mr. Buncab:

West Yost Associates (West Yost) has prepared this 2015 Annual Report (Report) on behalf of the East Bay Municipal Utility District (EBMUD) for the Bayside Groundwater Project (Project) in Alameda County. West Yost has prepared this Report in accordance with the Self Monitoring and Reporting Program (SMRP) of Waste Discharge Requirements (Permit) Order No. R2-2007-0038, which was adopted by the San Francisco Regional Water Quality Control Board (Regional Board) on May 9, 2007 (Regional Board, 2007).

The Project consists of the Bayside Well and a number of monitoring wells constructed near and in the vicinity of the Bayside Well. Depth to groundwater was monitored in the Bayside Well and associated monitoring wells during 2015. Groundwater samples were collected from November 16 to December 15, 2015, for analytical testing. Groundwater elevations and analytical results are provided in this Report, along with results from previous years, in accordance with the SMRP, for evaluation of long-term trends.

This Report addresses the following topics:

- Project Overview
- Regulatory Requirements
- Injection and Recovery Activities
- Sampling and Analysis Activities
- Groundwater Elevations and Flow Directions
- Groundwater Quality Results
- Conclusions

PROJECT OVERVIEW

The Project is located in a predominantly industrial area within unincorporated portions of the City of San Lorenzo and the City of San Leandro. The Bayside Well is located at 2600 Grant Avenue in San Lorenzo. The Project area is bounded by residential communities to the north and east, and the San Francisco Bay about a half-mile to the west.

The Bayside Well is an Aquifer Storage and Recovery (ASR) well designed, constructed, and operated for injection of treated drinking water from EBMUD's distribution system into the South East Bay Plain Groundwater Basin (SEBPB) for aquifer storage during wet years and, later, for recovery as a source of supplemental drinking water supply for EBMUD during dry years. Injection has not occurred since 2011.

The Bayside Well was constructed with 18-inch diameter stainless steel casing and is screened from 520 feet below ground surface (bgs) to 650 feet bgs. The monitoring well network consists of 17 monitoring wells constructed to various depths (Figure 1). Well construction details are summarized in Table 1. Additional background information on the Project is provided in the Permit.

REGULATORY REQUIREMENTS

The SMRP requires groundwater level monitoring in 13 of the Project monitoring wells (MW-1, MW-2S, MW-2I, MW-3, MW-4, MW-5S, MW-5I, MW-5D, MW-6, MW-7, MW-9D, MW-10I, and MW-10D).[1] After the first year of monitoring, groundwater level monitoring in 11 of the 13 wells listed above is required to be performed on an hourly basis. For wells MW-4 and MW-6, groundwater level monitoring is required to be performed quarterly only.

With the 2014 Annual Report, a request was made to the Regional Board to reduce the frequency of groundwater level measurements from hourly to quarterly during periods when the Project is inactive. We understand that Regional Board staff acknowledged this request in August 2015; however, EBMUD is still awaiting an official approval letter from the Regional Board before reducing the monitoring frequency.

The SMRP also requires EBMUD to implement a phased approach for monitoring groundwater quality in a subset of the Project monitoring wells. Each phase is successive and depends on certain triggers, generally related to the location of the injected water front (i.e., leading edge of the injected water). The SMRP specifies the following phased approach consisting of four groups of monitoring wells:

- Initial monitoring in Group 1 wells (Bayside Well, MW-2S, MW-2I, MW-4, and MW-10D[2]) is required to start three months prior to the start of Project operations and to continue on an annual basis until Group 2 monitoring is triggered.
- Monitoring of Group 2 wells (Group 1 wells, excluding MW-10D, plus MW-6) would begin once the injected water front reaches MW-4 and would continue on an annual basis until Group 3 monitoring is triggered.
- Monitoring of Group 3 wells (Group 2 wells plus MW-5D and MW-7) would begin once the injected water front reaches MW-6 and would continue on an annual basis until Group 4 monitoring is triggered.

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[1] EBMUD uses slightly different well names than those used in the Permit. For example, "MW-2I" is used instead of "MW-2D" and "MW-9D" instead of "MW-9." EBMUD's well naming convention is used in this Report.

[2] Group 1 monitoring included limited monitoring at MW-10D. Specifically, the SMRP requires monitoring of MW-10D only once in the beginning of the Group 1 monitoring phase.

- Monitoring of Group 4 wells (Group 3 wells plus MW-10D) would begin with the detection of injected water at MW-5D or MW-7, or 15 years after initiating Project operations, whichever is earlier.

Water quality parameters, which are required to be measured annually, are listed in Table 4 of the SMRP and include pH, chlorine residual, Total Dissolved Solids (TDS), ammonia, nitrate, chloride, manganese, iron, total trihalomethanes and haloacetic acids (including the individual components), and various "standard minerals" (e.g. calcium and magnesium).[3]

The SMRP requires the submission of data from the Project's monitoring well network to the Regional Board in an annual report. Annual reports, due by March 1 of the following year, are required to include the following items, per Part A.4 of the SMRP:

- A table of water injection and groundwater recovery data, including the cumulative total volume injected and recovered since Project inception.
- Maps of well locations, groundwater elevation contours, extent of the injected water front, and extent of dissolved water quality parameters (isoconcentration maps).
- A table of location and construction details for the wells.
- A table of current groundwater depths, elevations, and horizontal and vertical gradients.
- A table of current and historical (past five years) water quality results for the wells.
- A discussion of field and laboratory results that includes conclusions, recommendations, and data anomalies.

INJECTION AND RECOVERY ACTIVITIES

No injection or recovery activities took place during 2015. Accordingly, the injection and recovery rates were in compliance with the permitted maximum rates – for both injection and recovery – of one million gallons per day. The cumulative volumes of injected and recovered water since Project inception (2009) are shown in Table 2.

MONITORING AND SAMPLING ACTIVITIES

The SMRP requires groundwater level monitoring on an hourly basis in the applicable monitoring wells listed above for each group. In early 2014, EBMUD installed new dedicated pressure transducers in these wells to collect hourly groundwater level data. Hourly groundwater level data were collected from January through December 2015.

As noted in the past two annual reports, monitoring well MW-7 was damaged by a PG&E contractor in 2012. MW-7 was repaired in May 2015; however, groundwater level monitoring

[3] Table 4 of the SMRP also requires monitoring for "Title 22" drinking water parameters under the following conditions that are not currently applicable: MW-10D once with Group 1 monitoring and MW-5D and MW-7 with Group 4 monitoring.

was not conducted at MW-7 in 2015 because EBMUD does not want to use the well before PG&E can review the repair work due to cost implications.

The SMRP also requires groundwater quality monitoring, as discussed above, following a phased approach. In 2013, EBMUD initiated monitoring of Group 2 wells, which added MW-6 to the annual monitoring well network. In 2015, EBMUD initiated monitoring of Group 3 wells, which added MW-5D and MW-7 to the annual monitoring well network, in response to the detection of chlorine residual and haloacetic acids (HAAs) at MW-6, as detailed in the 2013 Annual Report.

EBMUD staff collected the 2015 groundwater samples from the required monitoring wells with the exceptions of MW-6 and MW-7 for the required water quality analyses on five separate days: November 16 and 17, and December 8, 10, and 15. MW-6 was not sampled due to pump failure and the inability to repair the equipment prior to the end of 2015. As discussed above, MW-7 was previously damaged and, although repaired in 2015, is not yet considered acceptable for sampling.

A peristaltic pump with new tubing was used to purge and sample wells MW-2I, and MW-4. A submersible pump with new tubing was used to purge and sample MW-2S and MW-5D. The Bayside Well was purged using the dedicated downhole turbine pump with the sample collected from a spigot at the wellhead. Purge water was disposed of on permeable ground adjacent to wells MW-2S, MW-2I, MW-4, and MW-5D. Purge water from the Bayside Well was pumped to an onsite holding tank and eventually discharged to Oro Loma Sanitary District under a separate discharge permit. No surface water discharges occurred.

Groundwater monitoring and sampling were completed using the following procedures:

1. Measured static water level within each well, and calculate three well casing volumes required for purging in accordance with USEPA groundwater sampling protocols.
2. Purged the well until three well casing volumes were removed.
3. Measured field water quality parameters (pH, specific conductance, and temperature) periodically during purging.
4. Collected samples in containers with appropriate preservatives in accordance with USEPA sampling protocols for individual constituents.
5. Measured residual chlorine immediately after sample collection.
6. Transported samples to EBMUD's state-certified laboratory in a cooler under chain of custody for analytical testing.

Attachment A provides well purge logs, including the static water level, purge volumes, and field parameter measurements.

GROUNDWATER ELEVATIONS AND FLOW DIRECTIONS

Static water levels measured prior to well purging and sampling in 2015 are summarized in Table 3, along with calculated groundwater elevations based on the reference elevations noted in Table 1. Table 3 also provides historical static water levels and groundwater elevations.

Groundwater elevations derived from the new pressure transducers installed in May 2014 are plotted by well for January through December 2015 (Attachment B). Groundwater elevation contours for August 1, 2015, corresponding to a low tide in San Francisco Bay, are shown on Figure 2. Groundwater elevation contours for December 1, 2015, corresponding to a high tide in San Francisco Bay, are shown on Figure 3. As shown on Figures 2 and 3, the groundwater flow direction is primarily to the southwest at low tide (Figure 2) and southeasterly to westerly components at high tide (Figure 3). Horizontal hydraulic gradients are variable with lower gradients further from the bay and higher gradients closer to the bay.

Groundwater elevations during low tide ranged from -6.87 feet above mean sea level (amsl) to -5.90 feet amsl for the five wells shown on Figure 2. Groundwater elevations during high tide ranged from -5.65 feet amsl to -5.30 feet amsl at the same wells (Figure 3).

Vertical hydraulic gradients were calculated based on groundwater elevations and well construction information for the nested wells MW-5S, MW-5I, and MW-5D. Specifically, vertical gradients were calculated for a low tide using groundwater elevation data from 6:43 AM on August 1, 2015, and for a high tide using data from 4:19 AM on December 1, 2015. The calculated vertical gradients for these dates, including supporting data for the calculations, are presented in Table 4. The overall vertical gradient under both conditions is downward at approximately 0.04 feet per foot. These results are consistent with the vertical gradients reported in the 2014 Annual Report.

GROUNDWATER QUALITY RESULTS

The 2015 analytical results are included in the following tables, along with historical water quality results for the last five years (2010 through 2014):

- Table 5 includes data for general water quality parameters (e.g., pH, chlorine residual, iron) and standard minerals (e.g., calcium, magnesium, potassium).
- Table 6 includes data for disinfection byproducts (HAAs and trihalomethanes [THMs]).

Copies of the analytical laboratory reports for the 2015 water quality data are provided in Attachment C.[4]

For wells with pre-2015 data (Bayside Well, MW-2S, MW-2I, MW-4, MW-5D, and MW-6), the 2015 water quality results summarized in Table 5 are generally consistent. Concentrations of a number of parameters in MW-2S are significantly higher than in the other monitoring wells; however, MW-2S is a significantly shallower well.

[4] The laboratory reports in Attachment C include results for additional parameters beyond those required by the SMRP. EBMUD collected this information per drinking water regulations unrelated to the Permit and SMRP. These data are not discussed in this Report.

For the 2015 groundwater quality results summarized in Table 5, TDS has been used as a representative constituent to evaluate overall groundwater quality conditions. The isoconcentration contours shown on Figure 4 are based on TDS concentrations for deep monitoring wells, including the Bayside Well, MW-4, MW-5D, and MW-6 (Table 1). The isoconcentration contours indicate the lowest concentration of 75 milligrams per liter (mg/L) occurs at the Bayside Well with increasing TDS concentrations in a northerly direction (i.e. further inland). The highest TDS concentration of 450 mg/L was detected at well MW-5D. Therefore, TDS concentrations decrease along the southerly groundwater flow direction (Figure 3).

The disinfection byproducts data summarized in Table 6 are also consistent with previous results with all but one constituent below Method Detection Limits (MDLs) in each well. This exception is chloroform at 0.37 µg/L in the Bayside Well. In addition, the combined parameters HAA(5), HAA(9), and total THMs (TTHMs) are within the range of historical results. These data also indicate no exceedances of the Permit's effluent water quality limits for HAAs and TTHMs.

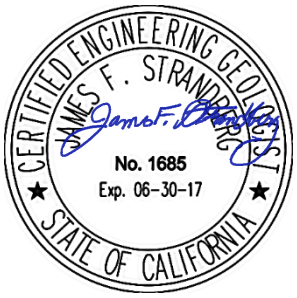
CONCLUSIONS

EBMUD conducted the 2015 groundwater monitoring for the Bayside Groundwater Project site in accordance with the Self Monitoring and Reporting Program of Waste Discharge Requirements Order No. R2-2007-0038 with minor exceptions, as noted above. In 2016, EBMUD will continue to implement groundwater monitoring for the Group 3 wells. The 2016 Annual Report will be submitted to the Regional Board by March 1, 2017.

Please call Charles Hardy at (925) 949-5814 or Jim Strandberg at (925) 949-5825 with any questions or comments on this Report.

Sincerely,

WEST YOST ASSOCIATES



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Regional Board, 2007, Order No. R2-2007-0038 *Waste Discharge Requirements for East Bay Municipal Utility District, Bayside Groundwater Project, San Lorenzo, Alameda County*, Adopted May 9, 2007.

Table 1. Groundwater Monitoring Well Construction Details

Well ID	Latitude	Longitude	Address	City	Completion Date	Drilled Depth, feet bgs[a]	Casing Depth, feet bgs	Depth of Top of Perforation, feet bgs	Depth of Bottom of Perforation, feet bgs	Casing Diameter, inches	Reference Elevation, feet amsl[b]	Reference Location on Well
MW-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						210	60	40	60	2	9.90	Top of steel casing
MW-2I[c]						210	200	160	190	2		
MW-3	37° 40' 4.8"	122° 9' 28.8"				665	660	520	650	2	8.12	Top of steel casing
MW-4	37° 40' 11.6"	122° 9' 28.8"	2575 Grant Ave.			705	650	520	650	2	8.96	Top of steel rim
MW-5S	37° 40' 34.4"	122° 9' 06.6"	2006 Via Barrett		Sep-08	460	210	200	210	2	13.88	Seal of vault lid at easterly edge
MW-5I	37° 40' 34.4"	122° 9' 06.6"	2005 Via Barrett		Sep-08	460	325	315	325	2		
MW-5D	37° 40' 34.4"	122° 9' 06.6"	2007 Via Barrett		Feb-01	1,025	640	500	630	4	13.76	Top of casing at northerly edge
MW-6	37° 40' 07"	122° 9' 04.5"	15600 Worthley		Nov-00	1,000	655	480	650	4	9.46	Top of casing at easterly edge
MW-7	37° 39' 56.5"	122° 8' 44.2"	Western tip of San Lorenzo Park		Nov-00	972	680	510	630	4	7.42	Top of casing at northerly edge
MW-8D	37° 43' 04"	122° 11' 50.3"	1970 Davis St.			910	490	420	480	2	14.76	Top of steel rim
MW-9S	37° 41' 11"	122° 6' 46"	589 E. Lewelling Ave.		Jan-08	460	120	110	120	2	54.39	Seal of vault lid at westerly edge
MW-9I					Jan-08	460	210	200	210	2		
MW-9D[d]					Jan-08	460	335	325	335	2		
MW-10S	37° 41' 19"	122° 9' 43"	15526 Wick Blvd.	San Leandro	Sep-08	680	120	100	120	2	11.76	Seal of vault lid at easterly edge
MW-10I					Sep-08	680	360	340	360	2		
MW-10D					Sep-08	680	610	590	610	2		

[a] bgs = below ground surface

[b] amsl = above Mean Sea Level

[c] Well MW-2I is referred to in the Permit as "MW-2D."

[d] Well MW-9D is referred to in the Permit as "MW-9."

Table 2. Historical Injected and Recovered Water Volumes		
Year	Injected Volume, gallons	Recovered Volume, gallons
2009	445,000	4,545,000
2010	0	113,000,000
2011	28,432,401	0
2012	0	0
2013	0	0
2014	0	0
2015	0	0
Total	**28,877,401**	**117,545,000**

Table 3. Summary of Groundwater Elevation and Depth

Measurement Date	Groundwater Elevation, feet amsl								Depth to Groundwater, feet							
	Bayside	MW-1	MW-2S	MW-2I	MW-4	MW-6	MW-5D	MW-7	Bayside	MW-1	MW-2S	MW-2I	MW-4	MW-6	MW-5D	MW-7
12/8/08			0.99		-4.07	[a]					8.78[b]		12.68[b]			
12/9/08		-5.06		1.09						13.74[b]		8.73[b]				
12/14/09					-3.75								12.71			
12/15/09			0.95	1.44							8.95	8.46				
12/8/10	-7.22		1.71	0.25	-7.45				15.6		8.19	9.65	16.41			
12/21/11		-4.16	1.12	3.59	-4.17					12.87	8.78	6.31	13.13			
1/5/12		-3.94	1.04	6.24	-3.97					12.65	8.86	3.66	12.93			
12/13/12		-4.49	2.38	1.72	-4.16	-4.52				13.20	7.52	8.18	13.12	13.98		
12/18/13		-4.06	1.59	0.37	-6.68	-6.46				12.77	8.31	9.53	15.64	15.92		
12/12-12/17/14		-6.54	2.75	0.18	-6.01	-5.99	-5.76	[c]		15.25	7.15	9.72	14.97	15.45	19.52	[c]
11/16-12/15/15		-5.44	2.90	0.32	-4.94	[d]	-5.87	[c]		-13.56	7.00	9.58	13.90	[d]	19.63	[c]

[a] Gray shaded cells indicate that no monitoring was required for the well at that time period, reflecting the transition between monitoring groups.

[b] Applicable well reference elevations are different from those in Table 1.

[c] Well MW-7 was damaged in 2012, and accurate data collection has not been feasible.

[d] Well MW-6 was not monitored in late 2015 due to a pump equipment failure.

Table 4. Calculated Vertical Hydraulic Gradients for Low Tide and High Tide in San Francisco Bay

Nested Well	Measurement Date and Time	Screened Interval, feet	Center of Screened Intervals, feet bgs	Groundwater Elevation, feet amsl	Shallow to Intermediate Vertical Gradient, feet/foot	Intermediate to Deep Vertical Gradient, feet/foot	Shallow to Deep Vertical Gradient, feet/foot	Vertical Gradient Direction
Low Tide								
MW-5S	8/1/2015 @ 06:43	200 - 210	205	9.78	0.037	--	0.042	downward
MW-5I	8/1/2015 @ 06:43	315 - 325	320	5.51		0.044		
MW-5D	8/1/2015 @ 06:43	500 - 630	575	-5.81	--			
High Tide								
MW-5S	12/1/2015 @ 04:19	200 - 210	205	10.60	0.044	--	0.043	downward
MW-5I	12/1/2015 @ 04:19	315 - 325	320	5.58		0.043		
MW-5D	12/1/2015 @ 04:19	500 - 630	575	-5.42	--			

Table 5. Current and Historical Groundwater Quality Results for General Water Quality Parameters and Standard Minerals[a]

Sample Date	General Water Quality Parameters								Standard Minerals									
															Alkalinity (as CaCO3)			
	pH	Chlorine Residual, mg/L	TDS, mg/L	Ammonia, mg/L	Nitrate as N, mg/L	Chloride, mg/L	Manganese, µg/L	Iron, µg/L	Calcium, mg/L	Magnesium, mg/L	Potassium, mg/L	Sodium, mg/L	Sulfate, mg/L	Hardness, mg/L	Total, mg/L	Hydroxide, mg/L	Carbonate, mg/L	Bicarbonate, mg/L
Bayside Well																		
12/8/2010	7.37	ND	360	<0.3	E0.004	55	58.1	160	27.0	7.90	1.70	84.0	42	100	170	<0.1	0.37	170
12/21/2011	8.17	ND	89	<0.12	0.18	9	11.2	312	10.8	2.78	0.768	15.2	11	40	47	<0.1	0.64	46
1/5/2012	7.82	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/13/2012	7.98	ND	110	<0.3	0.0074	10	16.8	236	12.2	3.12	0.789	21.3	13	47	59	<0.1	0.53	59
12/18/2013	7.87	ND	120	0.56	<0.003	13	22.8	580	14.0	3.77	1.05	22.5	15	50	65	<0.1	0.45	64
12/17/2014	8.19	ND	130	0.42	<0.00090	15	23.0	52.3	14.7	3.88	1.07	28.0	15	70	69	<0.1	0.99	68
11/16/2015	7.68	0.10	75	<0.30	<0.00090	15	22.3	215	13.5	3.64	1.01	23.3	16	48	70	<0.1	<0.1	70
MW-2S																		
12/8/2010	6.33	ND	80,000	<0.3	<0.31	44,000	35,000	<83	1,300	2,500	450	21,000	5,700	16,000	390	<0.1	<0.1	390
12/21/2011	6.67	0.14	78,000	<0.12	<0.095	44,000	36,400	<26	1,250	2,780	509	22,200	5,700	16,000	420	<0.1	0.18	420
1/5/2012	6.83	0.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/13/2012	6.29	ND	83,000	0.42	E0.19	E52,000	36,700	<31.2	1,230	2,950	488	24,900	6,700	16,000	390	<0.1	<0.1	390
12/18/2013	6.67	0.08	85,000	0.7	<0.15	45,000	36,100	2,530	1,230	2,580	568	22,300	5,700	17,000	430	<0.1	0.19	420
12/13/2014	6.57	0.20	83,000	<0.30	23[b]	39,000	36,900	<31.2	1,230	2,680	462	22,000	6,100	17,000	380	<0.1	0.13	380
12/10/2015	6.85	ND	76,000	<0.30	27	41,000	21,900	76.8	1,250	3,040	401	20,500	5,200	16,000	390	<0.1	<0.1	390
MW-2I																		
12/8/2010	7.56	ND	620	<0.3	<0.0031	110	99.8	390	17.0	15.0	6.00	170	23	100	310	<0.1	1.0	310
12/21/2011	7.86	ND	520	0.168	<0.095	79	102	151	13.9	12.6	5.20	153	32	94	310	<0.1	2.1	300
1/5/2012	7.82	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/13/2012	8.08	ND	520	<0.3	E0.0036	82	105	190	14.8	13.0	5.60	177	31	93	310	<0.1	3.5	310
12/18/2013	7.83	ND	500	<0.3	<0.003	75	115	606	14.8	13.4	6.76	153	32	89	310	<0.1	1.9	300
12/12/2014	7.90	ND	520	1.12	<0.0090	81	98.7	213	14.6	12.6	5.33	153	31	94	310	<0.1	2.3	310
12/15/2015	7.75	ND	490	0.56	0.044	59	105	177	14.4	12.5	6.73	156	34	90	300	<0.1	<0.1	300
MW-4																		
12/8/2010	7.51	ND	430	<0.3	<0.0031	57	203	77	29.0	12.0	2.60	100	42	130	230	<0.1	0.7	230
12/21/2011	7.80	0.08	400	<0.12	0.026	56	260	281	27.8	10.5	2.41	103	41	120	230	<0.1	1.4	230
1/5/2012	7.42	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/13/2012	7.64	ND	420	<0.3	0.0071	57	232	84.2	28.9	11.2	2.49	119	40	120	250	<0.1	1.0	240
12/18/2013	7.78	ND	430	<0.3	<0.003	59	237	31.2	32.2	13.0	3.05	113	42	130	260	<0.1	1.5	260
12/16/2014	8.22	0.10	450	<0.3	0.028	56	239	33.7	32.2	12.8	2.72	113	39	130	270	<0.1	4.2	270
12/8/2015	7.98	ND	420	<0.3	0.039	56	215	32.5	28.8	11.7	3.08	106	41	130	250	<0.1	<0.1	250
MW-5D																		
12/16/2014	7.00	0.40	490	<0.3	<0.009	96	241	180	42.8	10.8	2.59	123	46	150	230	<0.1	0.22	230
11/18/2015	7.53	0.20	450	<0.3	<0.009	82	175	46.4	35.6	9.06	2.30	112	49	140	240	<0.1	<0.1	240
MW-6																		
12/13/2012	7.26	ND	420	<0.3	0.099	56	302	144	31.0	7.68	1.88	117	46	120	220	<0.1	0.38	220
12/18/2013	7.41	0.07	420	<0.3	0.017	120	223	60.4	32.4	8.58	2.14	110	95	110	230	<0.1	0.55	230
12/13/2014	7.92	0.10	430	<0.3	0.0042	58	209	25.4	34.1	8.89	2.39	110	56	120	230	<0.1	1.8	230
12/10/2015	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]

[a] Symbols and data qualifiers are described as follows:
"<" or "ND" indicates non-detect (ND) results, with the Method Detection Limit (MDL) shown as the value following "<".
"B" preceding a value indicates that the parameter was detected in the laboratory blank associated with the reported result.
"E" preceding a value indicates an estimated value detected between the MDL and the Reporting Limit.
"--" indicates that no result was reported for the analyte on the corresponding sample date.

[b] The analytical laboratory report notes that the analysis for nitrate exceeded the hold time for the MW-2S sample collected 12/13/2014.

[c] Well MW-6 was not sampled in 2015 due to pump equipment failure.

Table 6. Current and Historical Groundwater Quality Results for Disinfection Byproducts[a]

Sample Date	Haloacetic Acids											Trihalomethanes				
	HAA(5),[a] µg/L	HAA(9),[b] µg/L	Bromochloro-acetic Acid, µg/L	Bromodichloro-acetic Acid, µg/L	Chlorodibromo-acetic Acid, µg/L	Dibromo-acetic Acid, µg/L	Dichloro-acetic Acid, µg/L	Monobromo-acetic Acid, µg/L	Monochloro-acetic Acid, µg/L	Tribromo-acetic Acid, µg/L	Trichloro-acetic Acid, µg/L	TTHMs,[d] µg/L	Chloroform, µg/L	Bromodichloro-methane, µg/L	Dibromochloro-methane, µg/L	Bromoform, µg/L
Bayside Well																
12/8/2010	<2.9	<5	<0.55	<0.26	<0.54	<0.25	<0.99	<0.54	<0.78	<0.83	<0.3	<2.43	<0.57	<0.58	<0.64	<0.64
12/21/2011	0.59	0.59	<0.55	<0.26	<0.54	<0.25	<0.99	<0.54	<0.78	<0.83	0.59	--	--	--	--	--
1/5/2012	--	--	--	--	--	--	--	--	--	--	--	<40.09	38	1.6	0.26	<0.23
12/13/2012	ND	ND	<0.14	<0.16	<0.19	<0.11	<0.23	<0.22	<0.68	<0.44	<0.21	<9.71	9.1	0.25	<0.13	<0.23
12/18/2013	0.35	1.6	I 1.3	<0.16	<0.19	I 0.35	<0.23	<0.22	<0.68	<0.44	<0.21	<2.94	2.5	<0.079	<0.13	<0.23
12/17/2014	ND	ND	<0.15	<0.31	<0.31	<0.25	<0.18	<0.29	<0.65	<0.72	<0.17	<0.89	0.45	<0.079	<0.13	<0.23
11/16/2015	<1.7	<3.2	<0.15	<0.31	<0.31	<0.25	<0.18	<0.29	<0.65	<0.72	<0.36	<0.94	0.34	<0.145	<0.20	<0.27
MW-2S																
12/8/2010	<2.9	<5	<0.55	<0.26	<0.54	<0.25	<0.99	<0.54	<0.78	<0.83	<0.3	<2.43	<0.57	<0.58	<0.64	<0.64
12/21/2011	0.31	0.31	<0.55	<0.26	<0.54	0.31	<0.99	<0.54	<0.78	<0.83	<0.3	--	--	--	--	--
1/5/2012	--	--	--	--	--	--	--	--	--	--	--	<0.609	<0.17	<0.079	<0.13	<0.23
12/13/2012	ND	ND	<0.14	<0.16	<0.19	<0.11	<0.23	<0.22	<0.68	<0.44	<0.21	<0.609	<0.17	<0.079	<0.13	<0.23
12/18/2013	ND	ND	<0.14	<0.16	<0.19	<0.11	<0.23	<0.22	<0.68	<0.44	<0.21	<0.609	<0.17	<0.079	<0.13	<0.23
12/13/2014	ND	ND	<0.15	<0.31	<0.31	<0.25	<0.18	<0.29	<0.65	N,J <0.72	<0.17	<0.609	<0.17	<0.079	<0.13	<0.23
12/10/2015	ND	ND	<0.15	<0.31	<0.31	<0.25	<0.18	<0.29	<0.65	<0.72	<0.17	<0.609	<0.17	<0.079	<0.13	<0.23
MW-2I																
12/8/2010	<2.9	<5	<0.55	<0.26	<0.54	<0.25	<0.99	<0.54	<0.78	<0.83	<0.3	<2.43	<0.57	<0.58	<0.64	<0.64
12/21/2011	<2.9	<5	<0.55	<0.26	<0.54	<0.25	<0.99	<0.54	<0.78	<0.83	<0.3	--	--	--	--	--
1/5/2012	--	--	--	--	--	--	--	--	--	--	--	<0.609	<0.17	<0.079	<0.13	<0.23
12/13/2012	ND	ND	<0.14	<0.16	<0.19	<0.11	<0.23	<0.22	<0.68	<0.44	<0.21	<0.609	<0.17	<0.079	<0.13	<0.23
12/18/2013	0.34	0.34	<0.14	<0.16	<0.19	I 0.34	<0.23	<0.22	<0.68	<0.44	<0.21	<0.609	<0.17	<0.079	<0.13	<0.23
12/12/2014	ND	<3.4	0.50	<0.31	<0.31	<0.25	<0.18	<0.29	<0.65	J <0.72	<0.17	<0.609	<0.17	<0.079	<0.13	<0.23
12/15/2015	ND	ND	<0.15	<0.31	<0.31	<0.25	<0.18	<0.29	<0.65	<0.72	<0.17	<0.609	<0.17	<0.079	<0.13	<0.23
MW-4																
12/8/2010	<2.9	<5	<0.55	<0.26	<0.54	<0.25	<0.99	<0.54	<0.78	<0.83	<0.3	<2.43	<0.57	<0.58	<0.64	<0.64
12/21/2011	<2.9	<5	<0.55	<0.26	<0.54	<0.25	<0.99	<0.54	<0.78	<0.83	<0.3	--	--	--	--	--
1/5/2012	--	--	--	--	--	--	--	--	--	--	--	<0.609	<0.17	<0.079	<0.13	<0.23
12/13/2012	ND	ND	<0.14	<0.16	<0.19	<0.11	<0.23	<0.22	<0.68	<0.44	<0.21	<0.609	<0.17	<0.079	<0.13	<0.23
12/18/2013	0.36	4.0	I 3.6	<0.16	<0.19	0.36	<0.23	<0.22	<0.68	<0.44	<0.21	<0.609	<0.17	<0.079	<0.13	<0.23
12/16/2014	<1.6	<3.1	<0.15	<0.31	<0.31	<0.25	<0.18	<0.29	0.72	<0.72	<0.17	<0.609	<0.17	<0.079	<0.13	<0.23
12/8/2015	ND	ND	<0.15	<0.31	<0.31	<0.25	<0.18	<0.29	<0.65	<0.72	<0.17	<0.609	<0.17	<0.079	<0.13	<0.23
MW-5D																
12/16/2014	<1.5	<3.0	<0.15	<0.31	<0.31	<0.25	<0.18	<0.29	<0.65	<0.72	<0.17	<0.609	<0.17	<0.079	<0.13	<0.23
11/18/2015	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6																
12/13/2012	ND	ND	<0.14	<0.16	<0.19	<0.11	<0.23	<0.22	<0.68	<0.44	<0.21	<0.609	<0.17	<0.079	<0.13	<0.23
12/18/2013	0.34	3.9	I, N 3.6	<0.16	<0.19	0.34	<0.23	<0.22	<0.68	<0.44	<0.21	<0.609	<0.17	<0.079	<0.13	<0.23
12/13/2014	(e)	(e)	(e)	(e)	(e)	(e)	(e)	(e)	(e)	(e)	(e)	<0.609	<0.17	<0.079	<0.13	<0.23
12/10/2015	(f)	(f)	(f)	(f)	(f)	(f)	(f)	(f)	(f)	(f)	(f)	(f)	(f)	(f)	(f)	(f)

[a] Symbols and data qualifiers are described as follows:
"<" or "ND" indicates non-detect (ND) results, with the Method Detection Limit (MDL) shown as the value following "<", except for total haloacetic acids (HAA) and total trihalomethanes (TTHMs) as detailed below.
"I" preceding a value indicates a dual column quantitation difference greater than 40 percent Relative Percent Difference.
"J" preceding a value indicates that the quantitation of the result does not meet the laboratory's Standard Operating Procedure criteria.
"N" preceding a value indicates that the spike recovery for the result was outside the laboratory control limits.
"--" indicates that no result was reported for the analyte on the corresponding sample date.

[b] HAA5 value is calculated by adding values for dibromoacetic, dichloroacetic, monobromoacetic, monochloroacetic, and trichloroacetic acids, with "<" indicating that the total includes ND data (MDLs used). If all results are ND, then the total is indicated as ND.

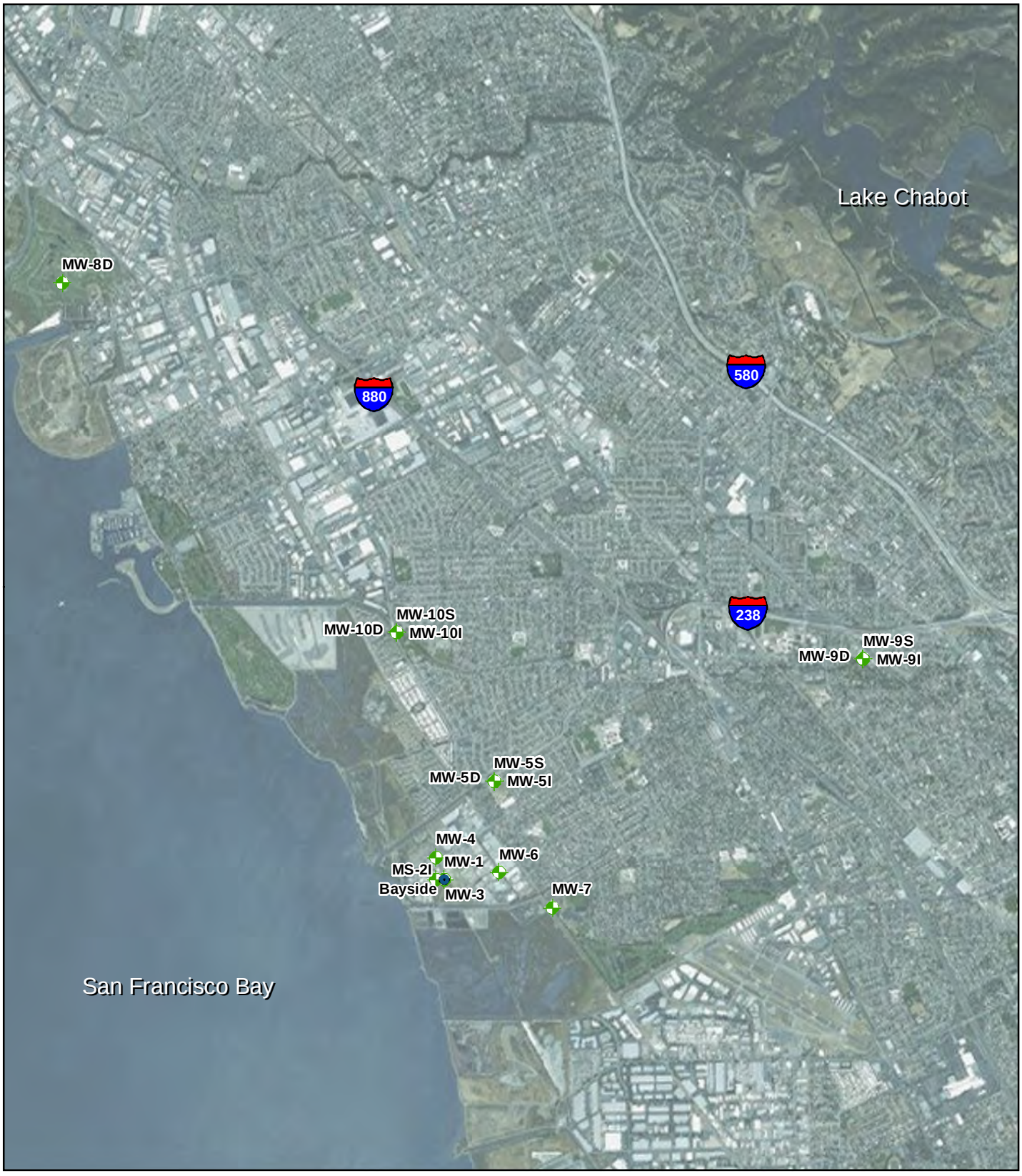
[c] HAA9 value is calculated by adding results for all individual haloacetic acids shown, with "<" indicating that the total includes ND data (MDLs used). If all results are ND, then the total is indicated as ND.

[d] TTHMs value is calculated by adding individual trihalomethane results (including MDLs for ND data). If ND data is included, "<" is indicated with the TTHMs result.

[e] Well MW-6 was not monitored for haloacetic acids in 2014.

[f] Well MW-6 was not monitored in 2015 due to pump equipment failure.

Last Saved: 2/9/2016 3:09:51 PM poconnell; W:\Clients\484 EBMUD\13-14-02 GWW WW Services\GIS\Figures\Bayside 2015\Bayside-Fig 1-2015 Well Location Map.mxd



LEGEND

- Groundwater Monitoring Well
- ASR (Bayside) Well

N

0 0.5 1

Miles

FIGURE 1

East Bay Municipal Utility District
2015 Bayside Annual Report

Well Location Map

WEST YOST ASSOCIATES

LEGEND

- Groundwater monitoring well and elevation, feet above mean sea level (amsl)
- Groundwater elevation contour, feet amsl, dashed where approximate
- Approximate groundwater horizontal gradient direction and magnitude

N

0 300 600

Scale in Feet

FIGURE 2

East Bay Municipal Utility District
2015 Bayside Annual Report

Groundwater Elevation Contours
Low Tide (August 1, 2015)

WEST YOST ASSOCIATES

LEGEND

- Groundwater monitoring well and elevation, feet above mean sea level (amsl)
- Groundwater elevation contour, feet amsl, dashed where approximate
- Approximate groundwater horizontal gradient direction and magnitude

N

0 300 600

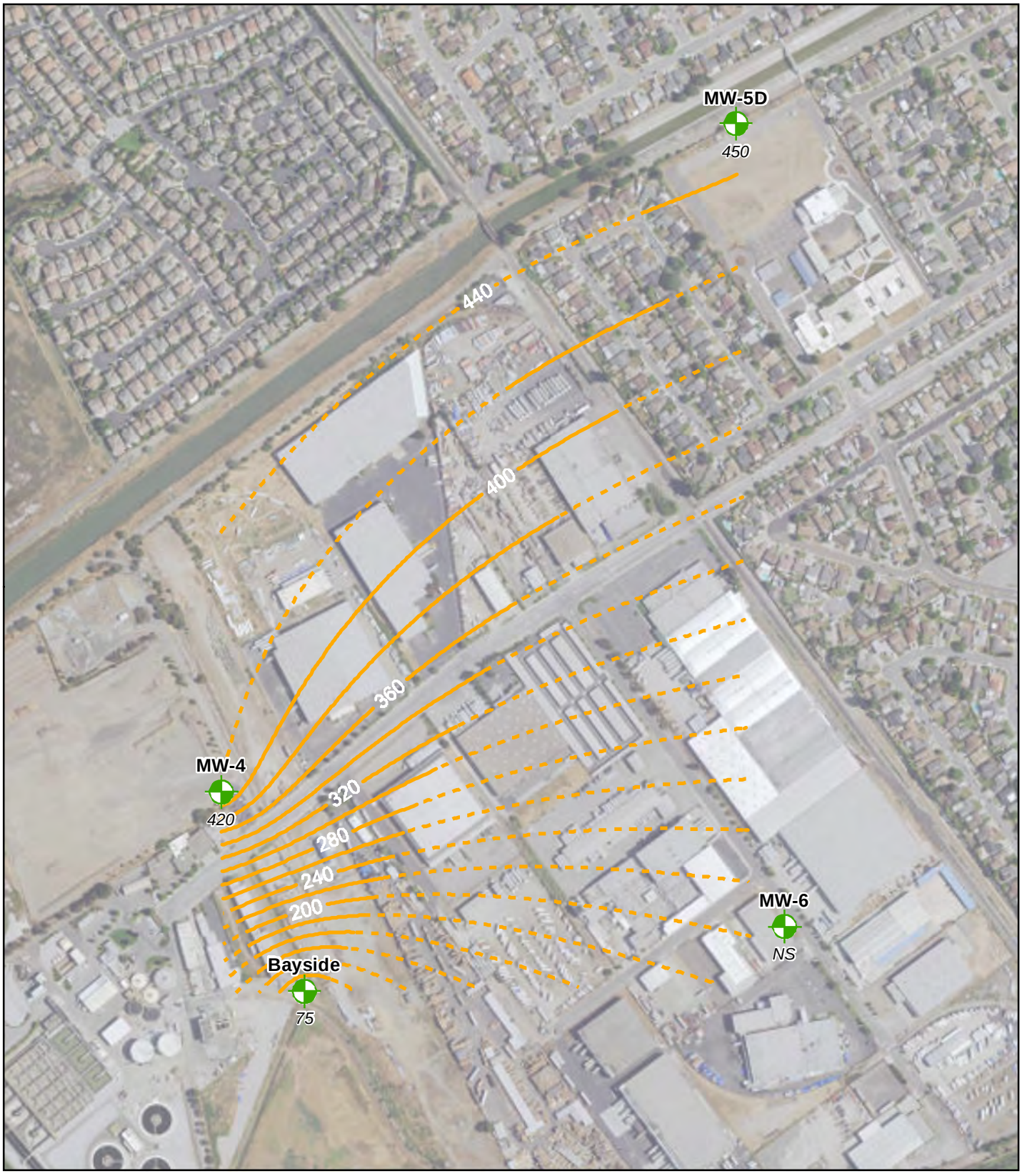
Scale in Feet

FIGURE 3

East Bay Municipal Utility District
2015 Bayside Annual Report

Groundwater Elevation Contours
High Tide (December 1, 2015)

WEST YOST ASSOCIATES



LEGEND

Groundwater monitoring well and TDS concentration in mg/L.
NS: Not Sampled.

TDS concentration contour, dashed where approximate.

N

0 300 600

Scale in Feet

FIGURE 4

East Bay Municipal Utility District
2015 Bayside Annual Report

Groundwater TDS Contours
December 2015

WEST YOST ASSOCIATES

ATTACHMENT A

Groundwater Purging Logs

GROUNDWATER PURGING LOG

SITE NAME: **Bayside Well**		
WELL NO: **Bayside**	INSPECTOR: MW/NPK	DATE: 11/16/15

PURGING DATA

WELL DIAMETER (inches): **18**	TUBING DIAMETER (inches): **NA**	WELL SCREEN INTERVAL DEPTH: **NA**	INITIAL TOTALIZER READING (gal): 5871570	PURGE PUMP TYPE: O – dedicated well pump

WELL VOLUME PURGE: 30,000 gal

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): **NA**	PURGING INITIATED AT: 0840	PURGING ENDED AT: 0905	TOTAL VOLUME PURGED (gallons): 30,000	FINAL TOTALIZER READING (gal): 5901570

TIME	VOLUME PURGED (gallons)	TOTAL VOLUME PURGED (gallons)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm
0847	5,000	5,000	8.4	16	227
0850	5,000	10,000	8.0	17	212
0854	5,000	15,000	7.8	17	202
0857	5,000	20,000	7.6	17	202
0901	5,000	25,000	7.5	17	199
0904	5,000	30,000	7.6	17	122

WELL CAPACITY (Gallons Per Foot): **2"** = 0.16; **4"** = 0.65

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

GROUNDWATER PURGING LOG

SITE NAME: Bayside Wells		
WELL NO: 5	INSPECTOR: MW/NPK	DATE: 11/17/15

PURGING DATA

WELL DIAMETER (inches): 4	TUBING DIAMETER (inches): 3/8	WELL SCREEN INTERVAL DEPTH: 500 feet to 630 feet	STATIC DEPTH TO WATER (feet): 19.63	PURGE PUMP TYPE: ESP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (630 feet – 19.63 feet) X 0.65 gallons/foot = 397 X 3 = 1191 gallons total

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 0820 11/17/15	PURGING ENDED AT: 1047 11/18/15	TOTAL VOLUME PURGED (gallons): 1200	FINAL STATIC DEPTH TO WATER (feet): 19.65

TIME	VOLUME PURGED (gallons)	TOTAL VOLUME PURGED (gallons)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm
0906	100	100	7.41	18.7	739
0950	100	200	7.35	21.2	769
0034	100	300	7.46	18.8	734
1118	100	400	7.37	22.3	759
1202	100	500	7.39	22.1	780
1246	100	600	7.43	22.0	770
1330	100	700	7.45	21.1	762
1414	100	800	7.53	21.1	753
1458	100	900	7.54	21.0	745
purging started 0835 11/18/15					~~742~~
0919	100	1000	7.44	19.6	742
1003	100	1100	7.50	19.4	733
1047	100	1200	7.43	22.6	762

purging stopped at 1458 11/17/15

WELL CAPACITY (Gallons Per Foot): 2" = 0.16; 4" = 0.65

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

GROUNDWATER PURGING LOG

SITE NAME: **Bayside Wells**		
WELL NO: **4**	INSPECTOR: MW/NPK	DATE: 12/8/15

PURGING DATA

WELL DIAMETER (inches): **2**	TUBING DIAMETER (inches): **3/8**	WELL SCREEN INTERVAL DEPTH: **520** feet to **650** feet	STATIC DEPTH TO WATER (feet): 13.9'	PURGE PUMP TYPE: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (**650** feet – 13.9 feet) X **0.16** gallons/foot = 102 gallons 306

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 0813	PURGING ENDED AT: 1421	TOTAL VOLUME PURGED (gallons): 306	FINAL STATIC DEPTH TO WATER (feet): 14.46

TIME	VOLUME PURGED (gallons)	TOTAL VOLUME PURGED (gallons)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)
1013	100	100	8.22	18.4	671
1213	100	200	8.07	19.9	660
1421	106	306	7.98	19.4	637

WELL CAPACITY (Gallons Per Foot): **2"** = 0.16; **4"** = 0.65

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

GROUNDWATER PURGING LOG

SITE NAME: **Bayside Wells**		
WELL NO: **2S**	INSPECTOR: NPK/KB	DATE: 12/16/15

PURGING DATA

WELL DIAMETER (inches): **2**	TUBING DIAMETER (inches): **3/8**	WELL SCREEN INTERVAL DEPTH: **40** feet to **60** feet	STATIC DEPTH TO WATER (feet): 7.0	PURGE PUMP TYPE: **ESP**

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (**60** feet – 7.0 feet) X **0.16** gallons/foot = 8.5 gallons 25.5

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 0816	PURGING ENDED AT: 0845	TOTAL VOLUME PURGED (gallons): 26	FINAL STATIC DEPTH TO WATER (feet): 7.7

TIME	VOLUME PURGED (gallons)	TOTAL VOLUME PURGED (gallons)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm
0819	5	5	7.01	17.0	82.4
0825	5	10	6.91	16.8	83.5
0831	5	15	6.85	16.6	83.6
0838	5	20	6.85	16.7	83.5
0845	6	26	6.85	16.4	83.3

WELL CAPACITY (Gallons Per Foot): **2"** = 0.16; **4"** = 0.65

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

GROUNDWATER PURGING LOG

SITE NAME: **Bayside Wells**		
WELL NO: **2I**	INSPECTOR: NPK/MT	DATE: 12/15/15

PURGING DATA

WELL DIAMETER (inches): **2**	TUBING DIAMETER (inches): **3/8**	WELL SCREEN INTERVAL DEPTH: **160** feet to **190** feet	STATIC DEPTH TO WATER (feet): 9.58	PURGE PUMP TYPE: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (**190** feet – 9.58 feet) X **0.16** gallons/foot = 29 gallons 87

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 0900	PURGING ENDED AT: 1157	TOTAL VOLUME PURGED (gallons): 90	FINAL STATIC DEPTH TO WATER (feet): 13.74

TIME	VOLUME PURGED (gallons)	TOTAL VOLUME PURGED (gallons)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm
0950	~~20~~	~~20~~	8.13	~~25.0~~ 17.3	1020
1041	30	~~50~~	7.49	~~25.0~~ 17.3	755
1132	25	75	7.79	17.8	726
1157	15	90	7.75	17.6	719

WELL CAPACITY (Gallons Per Foot): **2"** = 0.16; **4"** = 0.65

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

ATTACHMENT B

Groundwater Elevation Trends for Monitoring Wells

Figure B-1. 2015 MW-1 Groundwater Elevation Trend

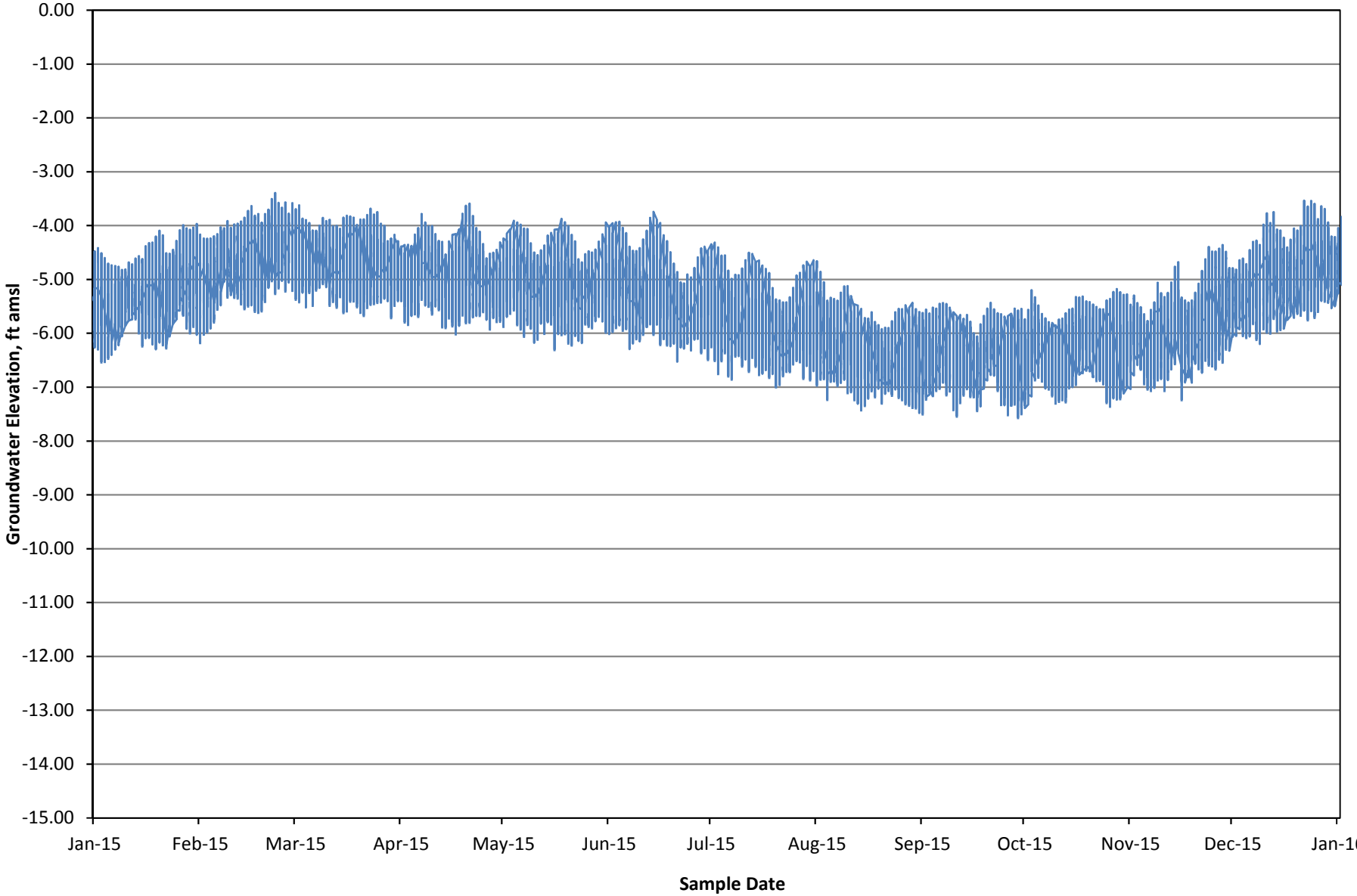


Figure B-2. 2015 MW-2S Groundwater Elevation Trend

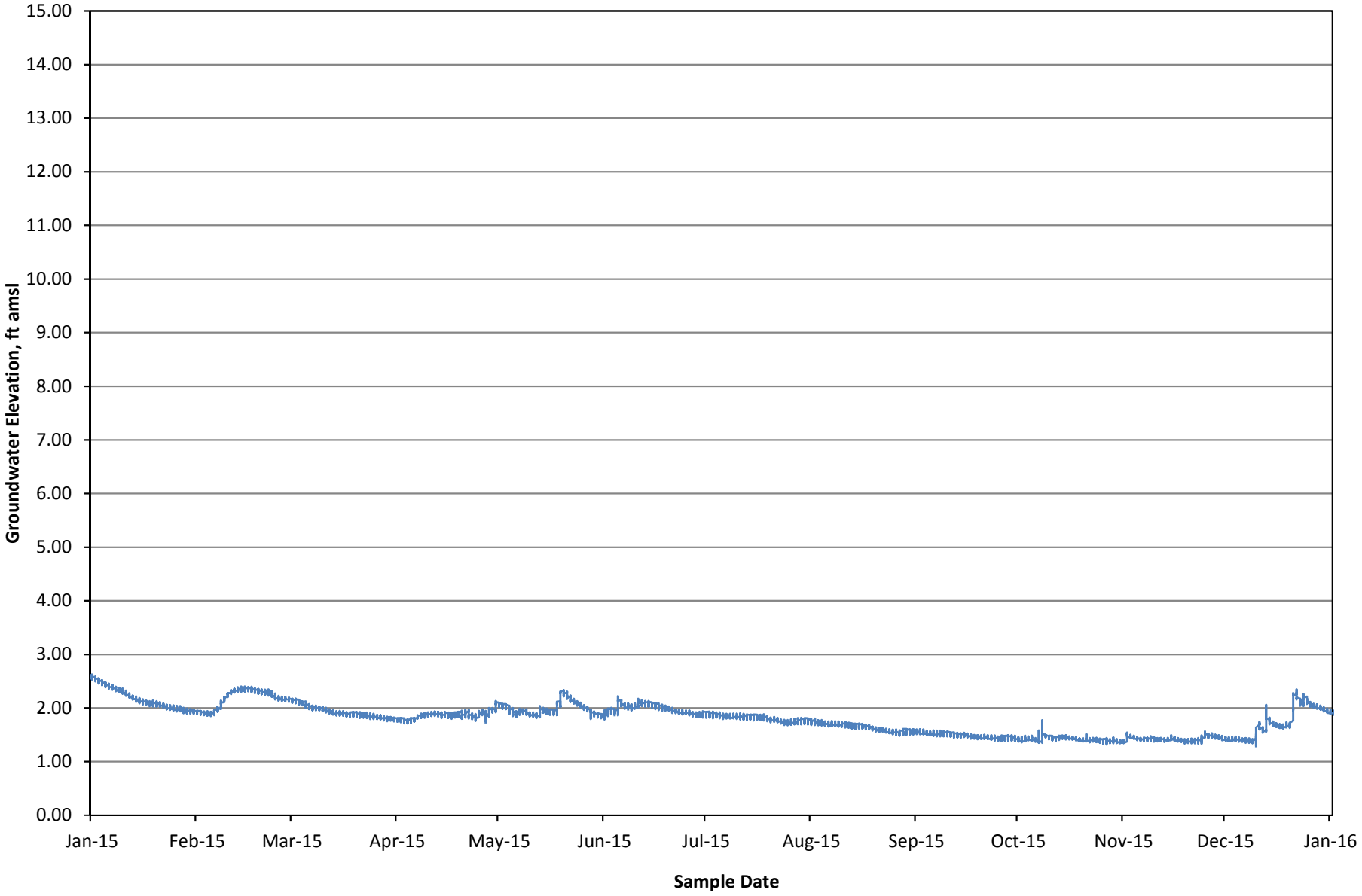


Figure B-3. 2015 MW-2I Groundwater Elevation Trend

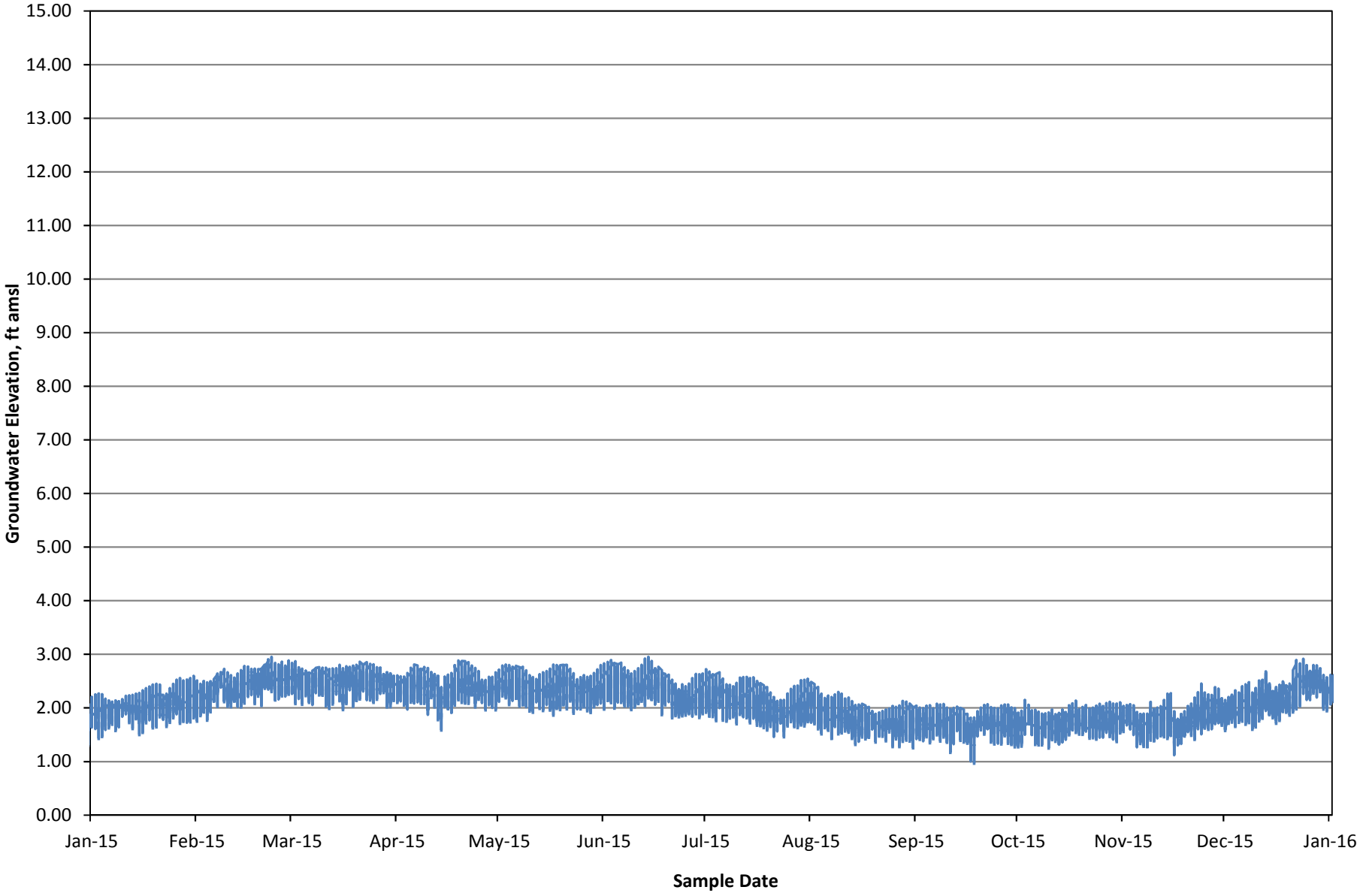


Figure B-4. 2015 MW-3 Groundwater Elevation Trend

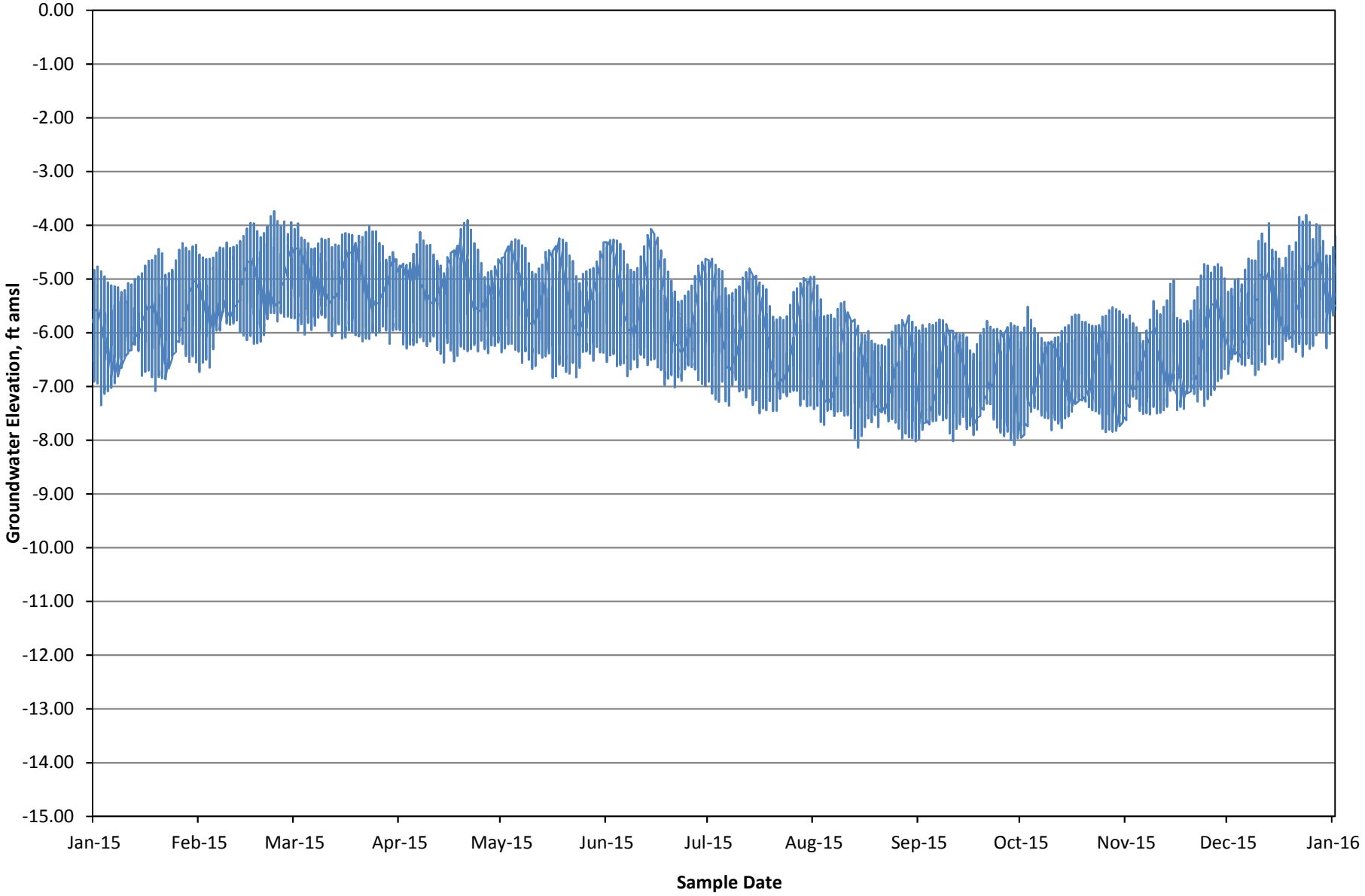


Figure B-5. 2015 MW-4 Groundwater Elevation Trend

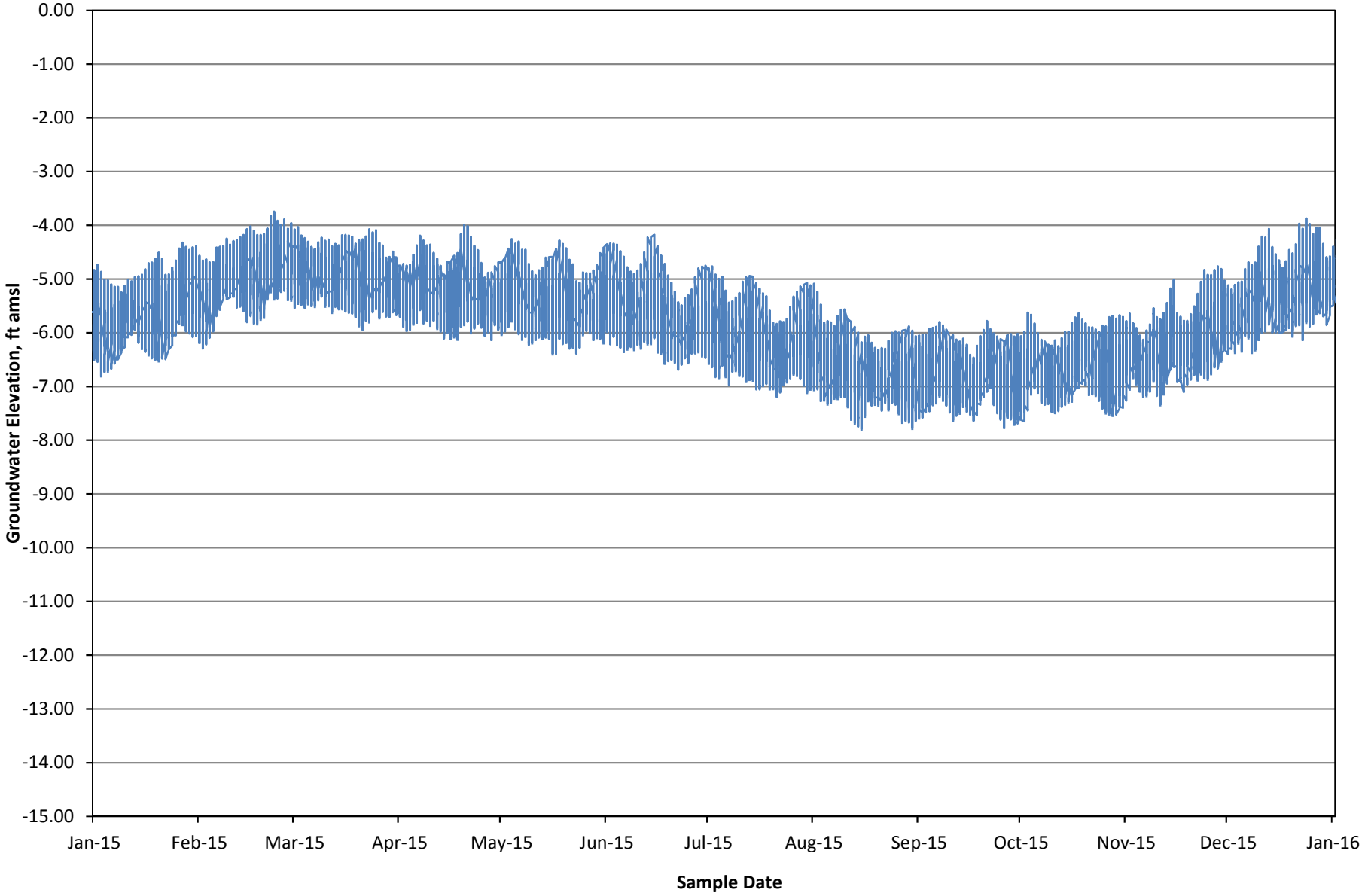


Figure B-6. 2015 MW-5S Groundwater Elevation Trend

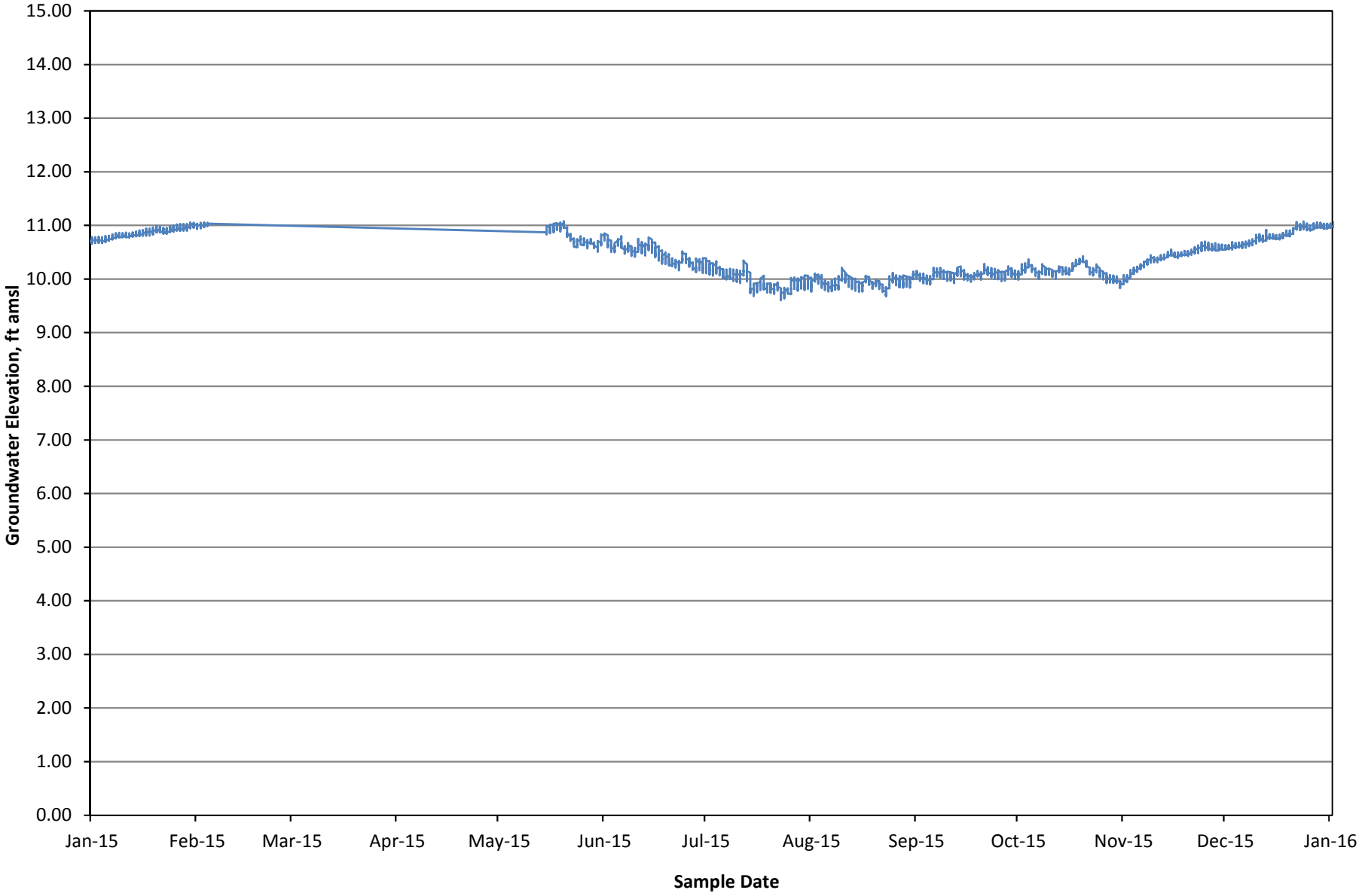


Figure B-7. 2015 MW-5I Groundwater Elevation Trend

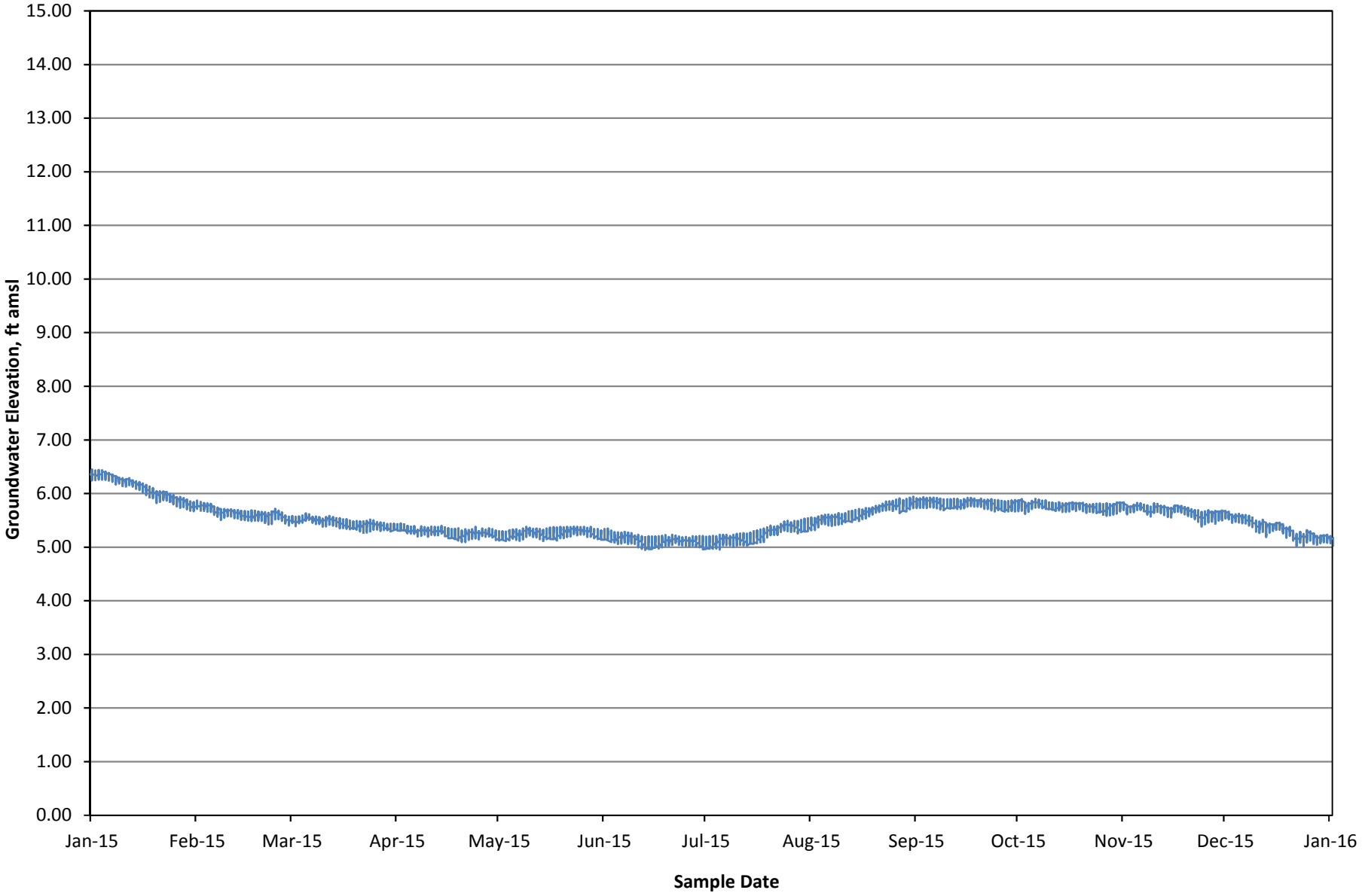


Figure B-8. 2015 MW-5D Groundwater Elevation Trend

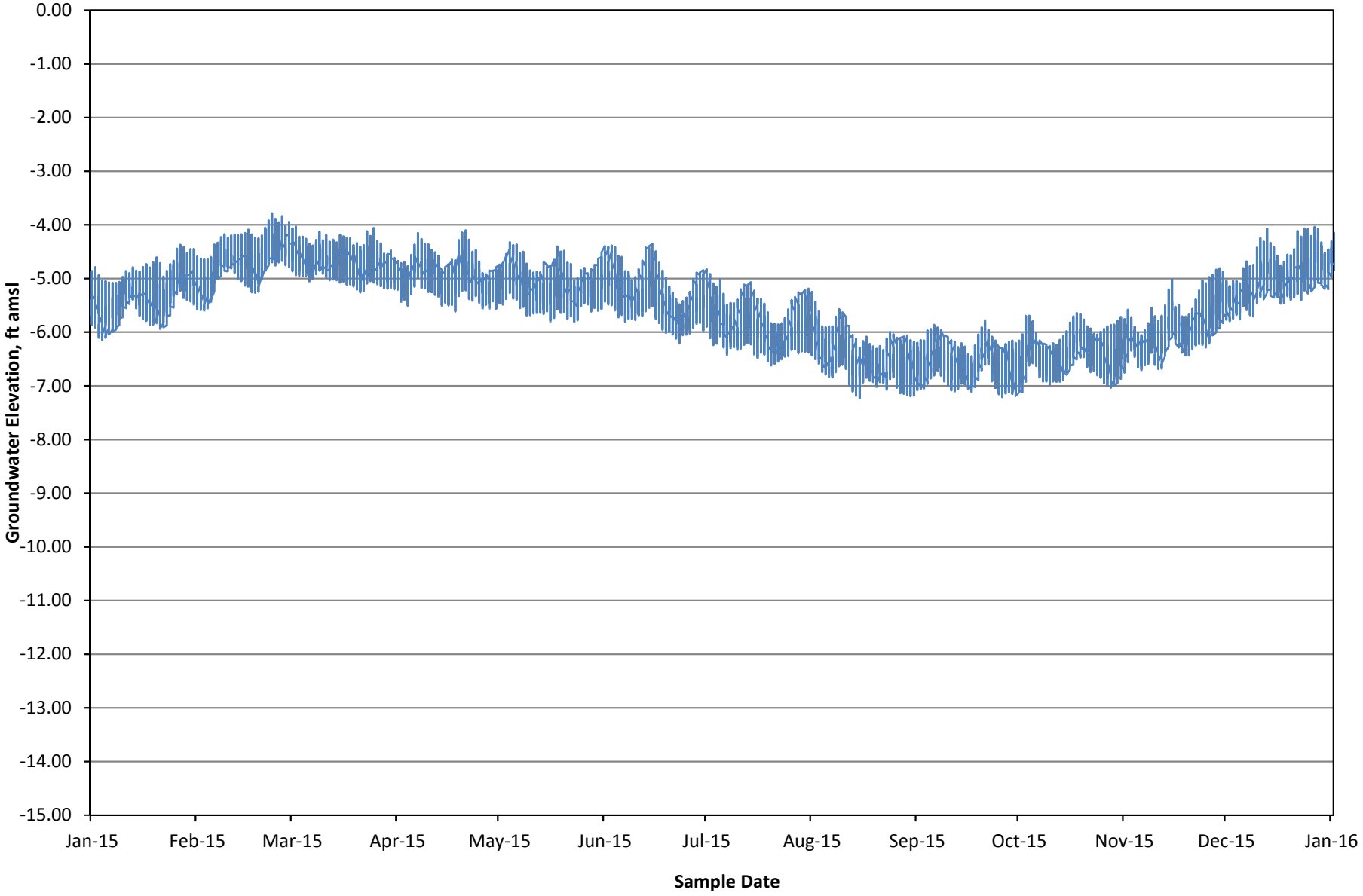


Figure B-9. 2015 MW-6 Groundwater Elevation Trend

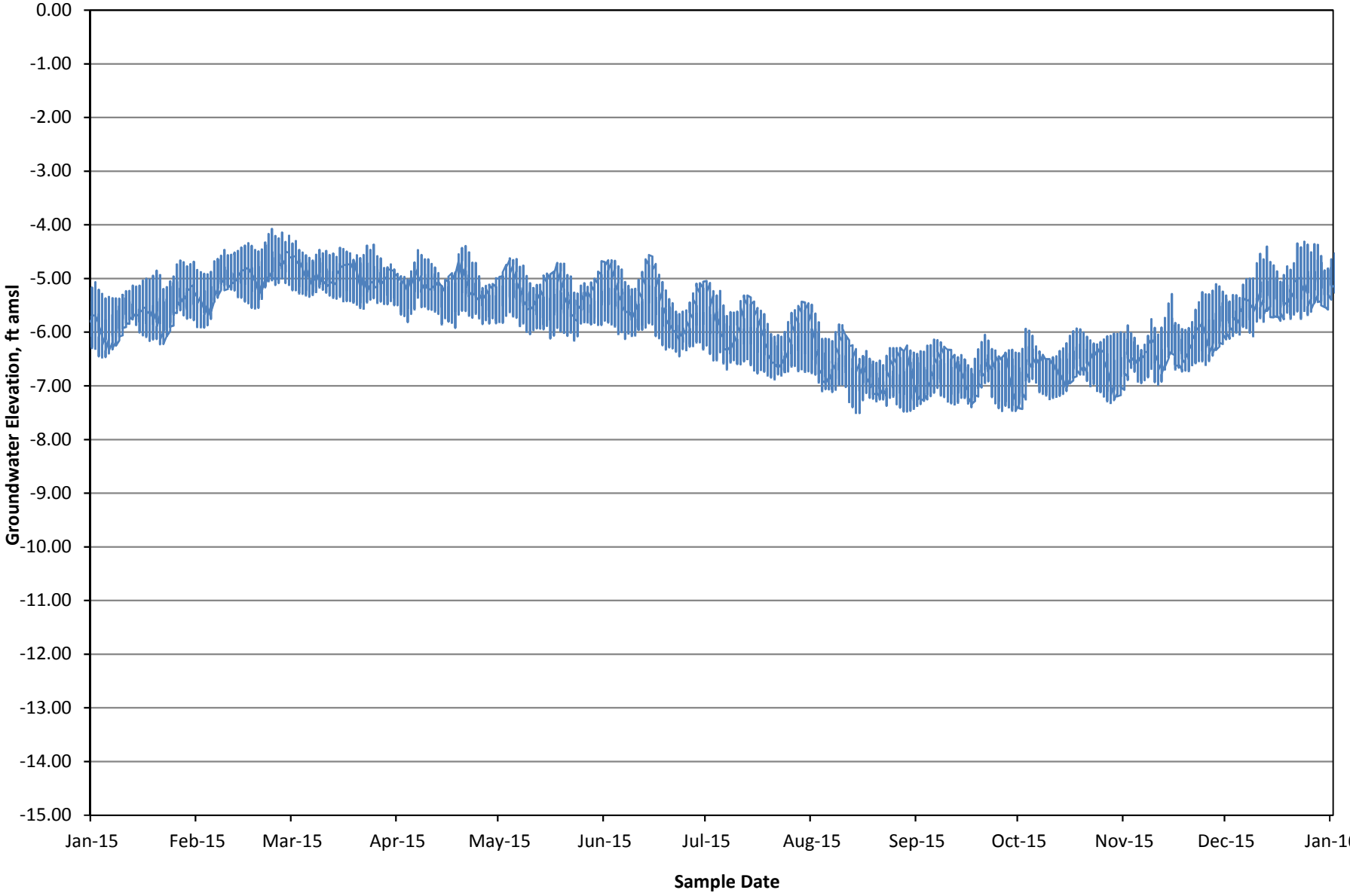


Figure B-10. 2015 MW-9D Groundwater Elevation Trend

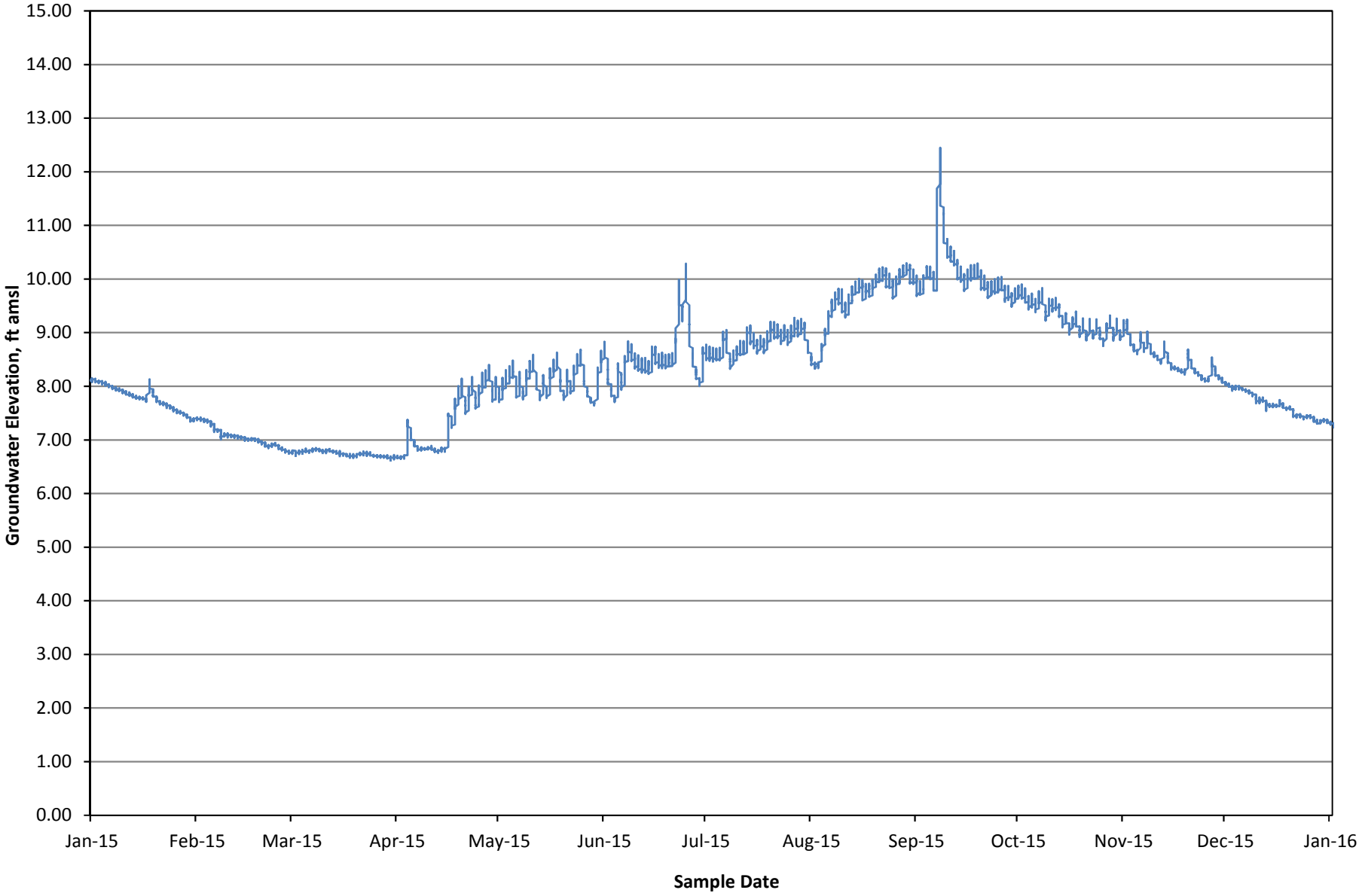


Figure B-11. 2015 MW-10I Groundwater Elevation Trend

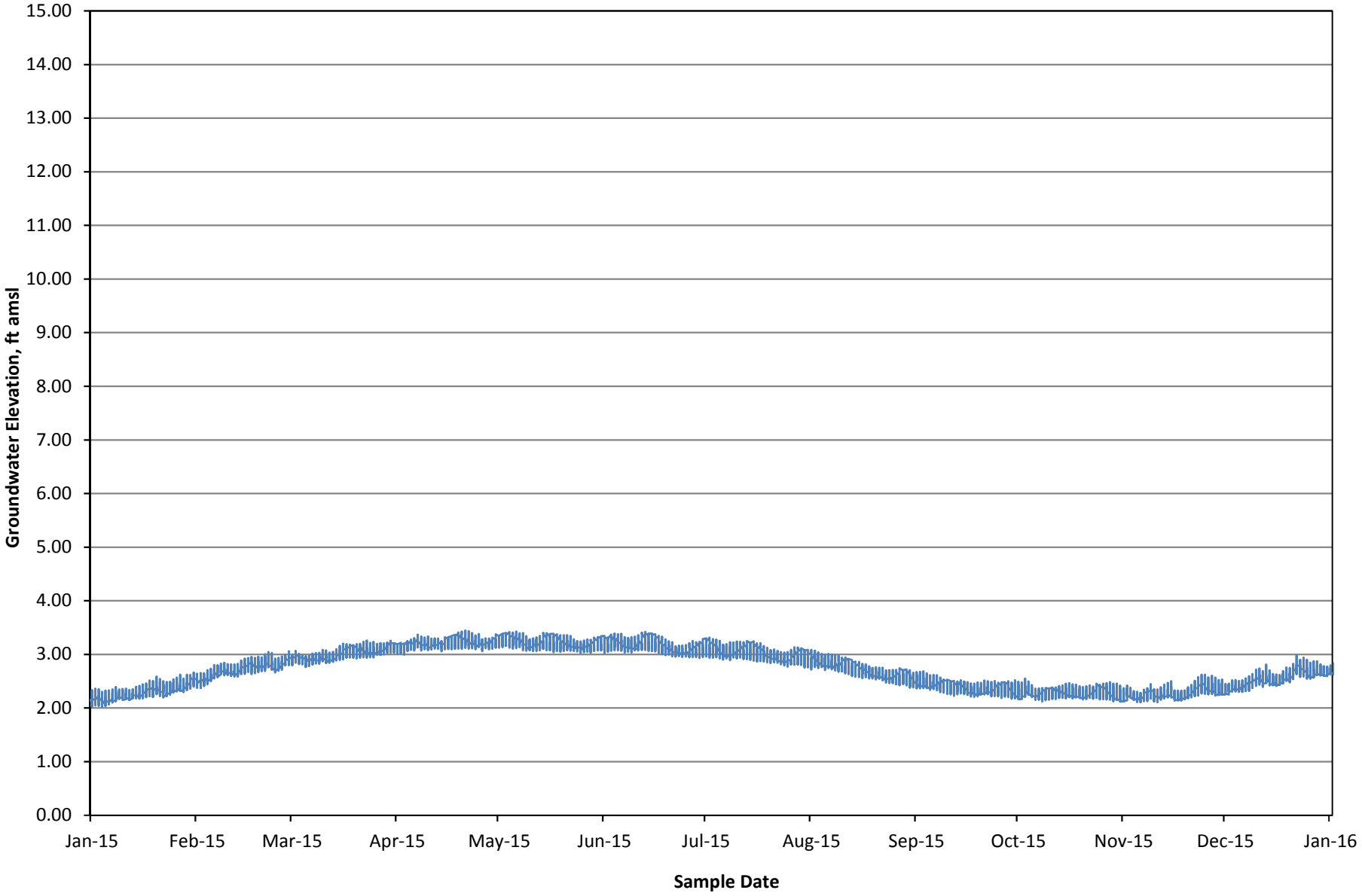
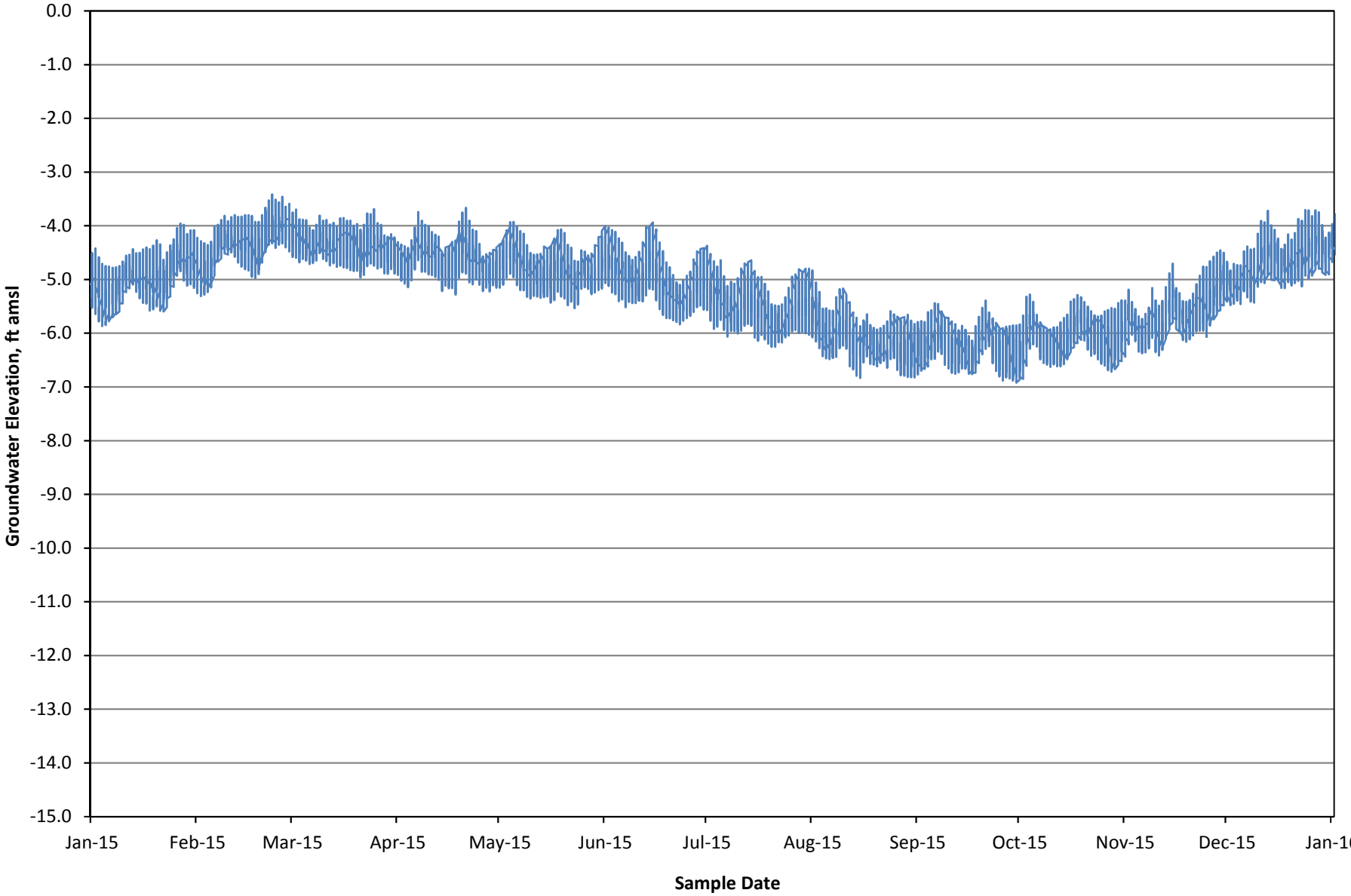


Figure B-12. 2015 MW-10D Groundwater Elevation Trend



ATTACHMENT C

Analytical Lab Reports for 2015 Water Quality Sampling

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

Analytical Report Prepared for GREGORYLEE BUNCAB

Report generated on: Dec 16, 2015 01:03 pm
Login No.: L202511

Reported by:

KRISTI LORENSON
Laboratory Program Manager

Approved by:

NIRMELA ARSEM
Laboratory Services Division Manager

LSR B455-0706-1
Project Title: BAYSIDE GROUND WATER PROJECT

Login Performance Summary
3 - Samples received by the lab on: Nov 16 2015, 12:30 pm
0 - Lost Analyses
1 - Hold Time Exceedences
Turn-around-time not met

Samples included in this report:

Sample	Type	Collected	Site	Locator	ClientID
L202511-1	GRAB	16-Nov-2015 09:10	WTP BAYSIDE	BAY WELL HEAD	-
L202511-2	GRAB	16-Nov-2015 11:15	WTP BAYSIDE	BAY WELL HEAD	-
L202511-3	QCFB	16-Nov-2015 11:30	FIELD QC	COLLECTION QC	-

Legend to the laboratory qualifiers used in this report:
* - Duplicate value outside of control limits
< - Less than
B - Analyte detected in method blank
D - Surrogate spike outside of control limits
H - Analyzed past hold time
JB - Estimated value, method blank exceeds 10% of sample concentration
N - Spike recovery outside of control limits
Q - Data not suitable for regulatory compliance reporting
U - Analyte not detected
Qualifiers for subcontract work - See textvalue for description

EAST BAY MUNICIPAL UTILITY DISTRICT
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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: L202511-1 (P210261-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Nov 16 2015, 09:10am Sample collector: N Klump
Date Received: Nov 16 2015, 12:30pm Sample receiver: RMOLINA
Sample Comments: Annual Bayside Sampling per DDW T22 and WDR; +FLD DATA: pH = 7.68 CL2R = 0.1 mg/L (MDL=0.02 mg/L per NKlumpp 11/24/15)

Method Reference / Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix	Tag
Method: SAMPLER PROVIDED FIELD MEASUREMENTS - DATA ENTRY LIST FOR FIELD DATA							RawH2O	
FIELD ANALYSIS/OBSERVATION DATA PARAMETERS								
PH		**7.68**	pH units	1				
CHLORINE RESIDUAL: TOTAL		**0.1**	mg/L	1	0.02			
Run ID: R264232 / Work Group No.: WG203304								
Prep Date1: 16-NOV-15 Analyzed 16-Nov-15 09:10								
Method: EPA 524.2 - Volatile Organics, GC/MS							RawH2O	
TARGET ANALYTES								
ACETONE	U	0.35	ug/L	1	0.35			
ACRYLONITRILE	U	0.45	ug/L	1	0.45			
ALLYL CHLORIDE	U	0.17	ug/L	1	0.17			
TERT-AMYL METHYL ETHER	U	0.17	ug/L	1	0.17	3		
BENZENE	U	0.14	ug/L	1	0.14	0.5		
BROMOBENZENE	U	0.16	ug/L	1	0.16			
BROMOCHLOROMETHANE	U	0.21	ug/L	1	0.21			
BROMODICHLOROMETHANE	U	0.21	ug/L	1	0.21			
BROMOFORM	U	0.31	ug/L	1	0.31			
BROMOMETHANE	U	0.55	ug/L	1	0.55			
TERT-BUTYL ALCOHOL	U	1.7	ug/L	1	1.7	2		
N-BUTYLBENZENE	U	0.25	ug/L	1	0.25			
SEC-BUTYLBENZENE	U	0.69	ug/L	1	0.69			
TERT-BUTYLBENZENE	U	0.18	ug/L	1	0.18			
CARBON DISULFIDE	U	0.44	ug/L	1	0.44			
CARBON TETRACHLORIDE	U	0.25	ug/L	1	0.25	0.5		
CHLOROACETONITRILE	U	0.23	ug/L	1	0.23			
CHLOROBENZENE	U	0.21	ug/L	1	0.21	0.5		
1-CHLOROBUTANE	U	0.21	ug/L	1	0.21			
CHLOROETHANE	U	0.38	ug/L	1	0.38			
CHLOROFORM		**0.30**	ug/L	1	0.15			
CHLOROMETHANE	U	0.15	ug/L	1	0.15			
O-CHLOROTOLUENE	U	0.19	ug/L	1	0.19			
P-CHLOROTOLUENE	U	0.19	ug/L	1	0.19			
DIBROMOCHLOROMETHANE	U	0.26	ug/L	1	0.26			
DIBROMOCHLOROPROPANE	U	0.28	ug/L	1	0.28			
DIBROMOMETHANE	U	0.28	ug/L	1	0.28			
1,2-DICHLOROBENZENE	U	0.23	ug/L	1	0.23	0.5		
1,3-DICHLOROBENZENE	U	0.23	ug/L	1	0.23			
1,4-DICHLOROBENZENE	U	0.18	ug/L	1	0.18	0.5		
TRANS-1,4-DICHLORO-2-BUTENE	U	0.20	ug/L	1	0.2			
DICHLORODIFLUOROMETHANE	U	0.17	ug/L	1	0.17	0.5		
1,1-DICHLOROETHANE	U	0.21	ug/L	1	0.21	0.5		
1,2-DICHLOROETHANE	U	0.14	ug/L	1	0.14	0.5		
1,1-DICHLOROETHENE	U	0.20	ug/L	1	0.2	0.5		
CIS-1,2-DICHLOROETHENE	U,N	0.25	ug/L	1	0.25	0.5		
TRANS-1,2-DICHLOROETHENE	U	0.19	ug/L	1	0.19	0.5		
1,2-DICHLOROPROPANE	U	0.15	ug/L	1	0.15	0.5		
1,3-DICHLOROPROPANE	U	0.22	ug/L	1	0.22			
SEC-DICHLOROPROPANE	U	0.24	ug/L	1	0.24			
1,1-DICHLOROPROPENE	U	0.26	ug/L	1	0.26			
1,1-DICHLORO-2-PROPANONE	U	0.21	ug/L	1	0.21			
CIS-1,3-DICHLOROPROPENE	U	0.23	ug/L	1	0.23	0.5		
TRANS-1,3-DICHLOROPROPENE	U	0.18	ug/L	1	0.18	0.5		

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

EAST BAY MUNICIPAL UTILITY DISTRICT
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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: L202511-1 (P210261-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Nov 16 2015, 09:10am Sample collector: N Klump
Date Received: Nov 16 2015, 12:30pm Sample receiver: RMOLINA
Sample Comments: Annual Bayside Sampling per DDW T22 and WDR; +FLD DATA: pH = 7.68 CL2R = 0.1 mg/L (MDL=0.02 mg/L per NKlumpp 11/24/15)

Method Reference — Matrix — Tag

Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML
DIISOPROPYL ETHER	U	0.29	ug/L	1	0.29	
ETHYL BENZENE	U	0.18	ug/L	1	0.18	0.5
ETHYL ETHER	U	0.20	ug/L	1	0.2	
ETHYLENE DIBROMIDE	U	0.19	ug/L	1	0.19	
ETHYLMETHACRYLATE	U	0.14	ug/L	1	0.14	
ETHYL-T-BUTYL ETHER	U	0.19	ug/L	1	0.19	3
FLUOROTRICHLOROMETHANE	U,N	0.22	ug/L	1	0.22	5
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	U	0.25	ug/L	1	0.25	10
HEXACHLOROBUTADIENE	U	0.20	ug/L	1	0.2	
HEXACHLOROETHANE	U	0.25	ug/L	1	0.25	
2-HEXANONE	U	0.25	ug/L	1	0.25	
IODOMETHANE	U	0.69	ug/L	1	0.69	
ISOPROPYLBENZENE	U	0.21	ug/L	1	0.21	
P-ISOPROPYLTOLUENE	U	0.22	ug/L	1	0.22	
METHYLACRYLONITRILE	U	0.20	ug/L	1	0.2	
METHYLACRYLATE	U	0.26	ug/L	1	0.26	
METHYLENE CHLORIDE	U	0.18	ug/L	1	0.18	0.5
2-BUTANONE	U	0.43	ug/L	1	0.43	
4-METHYL-2-PENTANONE	U	0.20	ug/L	1	0.2	
METHYLMETHACRYLATE	U	0.28	ug/L	1	0.28	
METHYL-T-BUTYL ETHER	U	0.39	ug/L	1	0.39	3
NAPHTHALENE	U	0.20	ug/L	1	0.2	
NITROBENZENE	U	1.0	ug/L	1	1	
2-NITROPROPANE	U	0.77	ug/L	1	0.77	
PENTACHLOROETHANE	U	0.17	ug/L	1	0.17	
N-PROPYLBENZENE	U	0.20	ug/L	1	0.2	
STYRENE	U	0.19	ug/L	1	0.19	0.5
1,1,1,2-TETRACHLOROETHANE	U	0.18	ug/L	1	0.18	
1,1,2,2-TETRACHLOROETHANE	U	0.20	ug/L	1	0.2	0.5
TETRACHLOROETHENE	U	0.20	ug/L	1	0.2	0.5
TETRAHYDROFURAN	U	0.54	ug/L	1	0.54	
TOLUENE	U	0.16	ug/L	1	0.16	0.5
1,2,3-TRICHLOROBENZENE	U	0.24	ug/L	1	0.24	
1,2,4-TRICHLOROBENZENE	U	0.19	ug/L	1	0.19	0.5
1,1,1-TRICHLOROETHANE	U	0.19	ug/L	1	0.19	0.5
1,1,2-TRICHLOROETHANE	U	0.21	ug/L	1	0.21	0.5
TRICHLOROETHENE	U	0.17	ug/L	1	0.17	0.5
1,2,3-TRICHLOROPROPANE	U	0.19	ug/L	1	0.19	
1,2,4-TRIMETHYLBENZENE	U	0.21	ug/L	1	0.21	
1,3,5-TRIMETHYLBENZENE	U	0.20	ug/L	1	0.2	
VINYL CHLORIDE	U	0.22	ug/L	1	0.22	0.5
O-XYLENE	U	0.18	ug/L	1	0.18	0.5
M+P XYLENES	U	0.37	ug/L	1	0.37	0.5
VALUE(S) USED TO CALCULATE OTHER VALUE(S)						
TOTAL 1,3-DICHLOROPROPENES	U	0.41	ug/L	1		0.5
TOTAL XYLENES	U	0.55	ug/L	1		0.5
INTERNAL STANDARD						
FLUOROBENZENE		102	% recovery	1		
SURROGATE						
4-BROMOFLUOROBENZENE		105	% recovery	1		
D4-1,2-DICHLOROBENZENE		107	% recovery	1		

Run ID: R264370 / Work Group No.: WG203259
Prep Date1: 17-NOV-15 Analyzed 23-Nov-15 13:38

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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: L202511-1 (P210261-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Nov 16 2015, 09:10am Sample collector: N Klump
Date Received: Nov 16 2015, 12:30pm Sample receiver: RMOLINA
Sample Comments: Annual Bayside Sampling per DDW T22 and WDR; +FLD DATA: pH = 7.68 CL2R = 0.1 mg/L (MDL=0.02 mg/L per NKlumpp 11/24/15)

Method Reference / Parameter	Qualifier	Result	Units	Dilution	MDL	Matrix / RL/ML	Tag
Method: EPA 525.2 - Semivolatile Organics, GC/MS						RawH2O	
TARGET ANALYTES							
ACENAPHTHYLENE	U	0.037	ug/L	1.02	0.037		
ALACHLOR	U,N	0.021	ug/L	1.02	0.021	1	
ALDRIN	U	0.011	ug/L	1.02	0.011		
ANTHRACENE	U,N,*	0.043	ug/L	1.02	0.043		
ATRAZINE	U	0.026	ug/L	1.02	0.026	0.5	
BENZO(A)ANTHRACENE	U,N,*	0.017	ug/L	1.02	0.017		
BENZO(B)FLUORANTHENE	U	0.014	ug/L	1.02	0.014		
BENZO(K)FLUORANTHENE	U	0.013	ug/L	1.02	0.013		
BENZO(A)PYRENE	U,N,*	0.011	ug/L	1.02	0.011	0.1	
BENZO(GHI)PERYLENE	U	0.016	ug/L	1.02	0.016		
BIS(2-ETHYLHEXYL)ADIPATE	**JB,***	**0.22**	ug/L	1.02	0.03	5	
BIS(2-ETHYLHEXYL)PHTHALATE	**JB**	**0.19**	ug/L	1.02	0.06	3	
ALPHA BHC	U	0.012	ug/L	1.02	0.012		
BETA BHC	U,N	0.020	ug/L	1.02	0.02		
DELTA BHC	U,N	0.012	ug/L	1.02	0.012		
GAMMA BHC	U	0.017	ug/L	1.02	0.017	0.2	
BROMACIL	U,N	0.018	ug/L	1.02	0.018		
BUTACHLOR	U,N	0.026	ug/L	1.02	0.026		
BUTYLBENZYL PHTHALATE	**JB**	**0.22**	ug/L	1.02	0.026		
CHLORDANE	U	0.10	ug/L	1.02	0.1	0.1	
CHLORDANE-ALPHA	U,N	0.018	ug/L	1.02	0.018		
CHLORDANE-GAMMA	U,N	0.018	ug/L	1.02	0.018		
CHLOROBENZILATE	U,N	0.048	ug/L	1.02	0.048		
CHLORONEB	U	0.053	ug/L	1.02	0.053		
CHLOROTHALONIL	U,N	0.033	ug/L	1.02	0.033		
CHRYSENE	U	0.012	ug/L	1.02	0.012		
DCPA	U	0.029	ug/L	1.02	0.029		
4,4'-DDD	U,N	0.022	ug/L	1.02	0.022		
4,4'-DDE	U	0.025	ug/L	1.02	0.025		
4,4'-DDT	U	0.023	ug/L	1.02	0.023		
DIBENZO(A,H)ANTHRACENE	U	0.014	ug/L	1.02	0.014		
DI-N-BUTYL PHTHALATE	**JB**	**0.15**	ug/L	1.02	0.029		
DIELDRIN	U,N	0.023	ug/L	1.02	0.023		
DIETHYL PHTHALATE	U,N	0.014	ug/L	1.02	0.014		
DIMETHOATE	U,N	0.039	ug/L	1.02	0.039		
DIMETHYL PHTHALATE	U,N	0.010	ug/L	1.02	0.01		
2,4-DINITROTOLUENE	U,N	0.025	ug/L	1.02	0.025		
2,6-DINITROTOLUENE	U,N	0.019	ug/L	1.02	0.019		
ALPHA ENDOSULFAN	U,N	0.012	ug/L	1.02	0.012		
BETA ENDOSULFAN	U,N	0.019	ug/L	1.02	0.019		
ENDOSULFAN SULFATE	U,N	0.036	ug/L	1.02	0.036		
ENDRIN	U,N	0.032	ug/L	1.02	0.032	0.1	
ENDRIN ALDEHYDE	U,N	0.030	ug/L	1.02	0.03		
EPTC	U	0.010	ug/L	1.02	0.01		
ETRIDIAZOLE	U	0.010	ug/L	1.02	0.01		
FLUORENE	U	0.022	ug/L	1.02	0.022		
HEPTACHLOR	U	0.0061	ug/L	1.02	0.0061	0.01	
HEPTACHLOR EPOXIDE	U,N	0.0061	ug/L	1.02	0.0061	0.01	
HEXACHLOROBENZENE	U,N	0.018	ug/L	1.02	0.018	0.5	
HEXACHLOROCYCLOPENTADIENE	U	0.019	ug/L	1.02	0.019	1	
HEXAZINONE	U,N	0.036	ug/L	1.02	0.036		

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

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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: L202511-1 (P210261-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Nov 16 2015, 09:10am Sample collector: N Klump
Date Received: Nov 16 2015, 12:30pm Sample receiver: RMOLINA
Sample Comments: Annual Bayside Sampling per DDW T22 and WDR; +FLD DATA: pH = 7.68 CL2R = 0.1 mg/L (MDL=0.02 mg/L per NKlumpp 11/24/15)

Method Reference						Matrix	Tag
Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	
INDENO(1,2,3-CD)PYRENE	U	0.013	ug/L	1.02	0.013		
ISOPHORONE	U	0.011	ug/L	1.02	0.011		
METHOXYCHLOR	U	0.011	ug/L	1.02	0.011	10	
METOLACHLOR	U,N	0.023	ug/L	1.02	0.023		
METRIBUZIN	U	0.025	ug/L	1.02	0.025		
MOLINATE	U	0.026	ug/L	1.02	0.026	2	
AROCLOR 1016	U	0.51	ug/L	1.02	0.51		
AROCLOR 1221	U	0.51	ug/L	1.02	0.51		
AROCLOR 1232	U	0.51	ug/L	1.02	0.51		
AROCLOR 1242	U	0.51	ug/L	1.02	0.51		
AROCLOR 1248	U	0.51	ug/L	1.02	0.51		
AROCLOR 1254	U	0.51	ug/L	1.02	0.51		
AROCLOR 1260	U	0.51	ug/L	1.02	0.51		
PENTACHLOROPHENOL	U	0.10	ug/L	1.02	0.1		
CIS-PERMETHRIN	U,N	0.048	ug/L	1.02	0.048		
TRANS-PERMETHRIN	U,N	0.020	ug/L	1.02	0.02		
PHENANTHRENE	U	0.015	ug/L	1.02	0.015		
PROMETRYN	U	0.022	ug/L	1.02	0.022		
PROPACHLOR	U,N	0.014	ug/L	1.02	0.014		
PYRENE	U	0.031	ug/L	1.02	0.031		
SIMAZINE	U,N	0.029	ug/L	1.02	0.029	1	
TERBACIL	U,N	0.033	ug/L	1.02	0.033		
THIOBENCARB	U	0.018	ug/L	1.02	0.018	1	
TOXAPHENE	U	0.51	ug/L	1.02	0.51	1	
TRIFLURALIN	U	0.010	ug/L	1.02	0.01		
INTERNAL STANDARD							
D10-ACENAPHTHENE		62.0	% recovery	1	1		
D10-PHENANTHRENE		99.0	% recovery	1	1		
D12-CHRYSENE		116	% recovery	1	1		
SURROGATE							
D12-PERYLENE		83	% recovery	1	1		
1,3-DIMETHYL-2-NITROBENZENE		89	% recovery	1	1		
TRIPHENYL PHOSPHATE	D	140	% recovery	1	1		

Run ID: R264505 / Work Group No.: WG203429
Prep Date1: 20-NOV-15 Prep Date2: 23-NOV-15 Analyzed 23-Nov-15 20:11

Method: EPA 548.1 - Endothall, GC/MS						RawH2O
TARGET ANALYTES						
ENDOTHALL	U,N	1.0	ug/L	1	1	45
INTERNAL STANDARD						
D10-ACENAPHTHENE	N	55.6	% recovery		1	

Run ID: R264504 / Work Group No.: WG203467
Prep Date1: 20-NOV-15 Prep Date2: 24-NOV-15 Analyzed 24-Nov-15 20:44

Method: EPA 8260B - Trihalomethanes, GC/MS						GroundH2O
TARGET ANALYTES						
CHLOROFORM		**0.37**	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		96.0	% recovery	1		
D5-CHLOROBENZENE		99.2	% recovery	1		
D4-1,4-DICHLOROBENZENE		95.6	% recovery	1		

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EAST BAY MUNICIPAL UTILITY DISTRICT
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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: L202511-1 (P210261-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Nov 16 2015, 09:10am Sample collector: N Klump
Date Received: Nov 16 2015, 12:30pm Sample receiver: RMOLINA
Sample Comments: Annual Bayside Sampling per DDW T22 and WDR; +FLD DATA: pH = 7.68 CL2R = 0.1 mg/L (MDL=0.02 mg/L per NKlumpp 11/24/15)

Method Reference / Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix	Tag
SURROGATE								
D8-TOLUENE		102	% recovery	1				
4-BROMOFLUOROBENZENE		95.4	% recovery	1				
Run ID: R264245 / Work Group No.: WG203295								
Prep Date1: 18-NOV-15 Analyzed 18-Nov-15 12:35								
Method: EPA 300.1 - Ion Chromatography							RawH2O	
Instrument calibrated 03-NOV-15								
TARGET ANALYTES								
FLUORIDE		**0.55**	mg/L	1	0.0004	0.1		
CHLORIDE		**15**	mg/L	1	0.002			
NITRITE AS N	U	0.00050	mg/L	1	0.0005	0.4		
NITRATE AS N	U	0.00090	mg/L	1	0.0009	0.4		
SULFATE		**16**	mg/L	1	0.003	0.5		
SURROGATE								
DICHLOROACETATE		100	% recovery	1				
Run ID: R264221 / Work Group No.: WG203265								
Prep Date1: 17-NOV-15 Analyzed 17-Nov-15 15:46								
Method: EPA 314.0 - Ion Chromatography							RawH2O	
Instrument calibrated 18-NOV-15								
TARGET ANALYTES								
PERCHLORATE	U	0.500	ug/L	1	0.5	4		
Run ID: R264261 / Work Group No.: WG203307								
Prep Date1: 18-NOV-15 Analyzed 18-Nov-15 16:41								
Method: EPA 504.1 - EDB & DBCP, GC/ECD							RawH2O	
TARGET ANALYTES								
ETHYLENE DIBROMIDE	U	0.0020	ug/L	1	0.002	0.02		
DIBROMOCHLOROPROPANE	U	0.0020	ug/L	1	0.002	0.01		
Run ID: R264265 / Work Group No.: WG203278								
Prep Date1: 17-NOV-15 Prep Date2: 17-NOV-15 Analyzed 17-Nov-15 17:27								
Method: EPA 508.1 - Organochlorine Pesticides & PCBs: GC/ECD							RawH2O	
TARGET ANALYTES								
HEPTACHLOR	U	0.0063	ug/L	.98	0.0063			
HEPTACHLOR EPOXIDE	U	0.0040	ug/L	.98	0.004			
INTERNAL STANDARD								
PENTACHLORONITROBENZENE		100	% recovery		1			
SURROGATE								
DECACHLOROBIPHENYL		92	% recovery		1			
Run ID: R264653 / Work Group No.: WG203673								
Prep Date1: 19-NOV-15 Prep Date2: 07-DEC-15 Analyzed 07-Dec-15 20:56								
Method: EPA 508A - PCB Screen, GC/ECD							RawH2O	
TARGET ANALYTES								
DECACHLOROBIPHENYL	**Q**		ug/L	1	0.22	0.5		
Extracted, not analyzed. No 508-PCB reference								
Run ID: R264412 / Work Group No.: WG203491								
Prep Date1: 25-NOV-15 Prep Date2: 25-NOV-15 Analyzed 25-Nov-15 12:00								

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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: L202511-1 (P210261-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Nov 16 2015, 09:10am Sample collector: N Klump
Date Received: Nov 16 2015, 12:30pm Sample receiver: RMOLINA
Sample Comments: Annual Bayside Sampling per DDW T22 and WDR; +FLD DATA: pH = 7.68 CL2R = 0.1 mg/L (MDL=0.02 mg/L per NKlumpp 11/24/15)

Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix	Tag
Method Reference								
Method: EPA 515.3 - Chlorinated Acids, GC/ECD							RawH2O	
TARGET ANALYTES								
ACIFLUORFEN	U	0.028	ug/L	1	0.028			
BENTAZON	U	0.14	ug/L	1	0.14	2		
CHLORAMBEN	U	0.012	ug/L	1	0.012			
(2,4-DICHLOROPHENOXY)ACETIC ACID	U	0.056	ug/L	1	0.056	10		
DALAPON	U	0.25	ug/L	1	0.25	10		
4-(2,4-DICHLOROPHENOXY)BUTANOIC ACID	U	0.26	ug/L	1	0.26			
DACTHAL (DCPA)	U	0.050	ug/L	1	0.05			
DICAMBA	U	0.036	ug/L	1	0.036	1.5		
3,5-DICHLOROBENZOIC ACID	U	0.025	ug/L	1	0.025			
DICHLORPROP	U	0.21	ug/L	1	0.21			
DINOSEB	U	0.057	ug/L	1	0.057	2		
4-NITROPHENOL	U,*	0.075	ug/L	1	0.075	5		
Qualitative result only. Diazomethane derivatization procedure does not provide accurate quantitation.								
PENTACHLOROPHENOL	U	0.014	ug/L	1	0.014	0.2		
PICLORAM	U	0.022	ug/L	1	0.022	1		
(2,4,5-TRICHLOROPHENOXY)ACETIC ACID	U	0.082	ug/L	1	0.082			
2-(2,4,5-TRICHLOROPHENOXY)PROPIONIC ACID	U	0.063	ug/L	1	0.063	1		
INTERNAL STANDARD								
4,4'-DIBROMOCTAFLUOROBENZENE		100	% recovery	1				
SURROGATE								
DICHLOROPHENYLACETIC ACID		100	% recovery	1				
Run ID: R264620 / Work Group No.: WG203548								
Prep Date1: 30-NOV-15 Prep Date2: 01-DEC-15 Analyzed 03-Dec-15 02:52								
Method: EPA 552.2 - Haloacetic Acids & Dalapon							RawH2O	
TARGET ANALYTES								
BROMOCHLOROACETIC ACID	U	0.15	ug/L	1	0.15			
BROMODICHLOROACETIC ACID	U	0.31	ug/L	1	0.31			
CHLORODIBROMOACETIC ACID	U	0.31	ug/L	1	0.31			
DALAPON	U	0.53	ug/L	1	0.53			
DIBROMOACETIC ACID	U	0.25	ug/L	1	0.25	1		
DICHLOROACETIC ACID	U	0.18	ug/L	1	0.18	1		
MONOBROMOACETIC ACID	U	0.29	ug/L	1	0.29	1		
MONOCHLOROACETIC ACID	U	0.65	ug/L	1	0.65	2		
TRIBROMOACETIC ACID	U	0.72	ug/L	1	0.72			
TRICHLOROACETIC ACID		**0.36**	ug/L	1	0.17	1		
VALUE CALCULATED FROM OTHER RESULTS								
HAA(5)		0.36	ug/L		1.5			
HAA(9)		0.36	ug/L		3			
INTERNAL STANDARD								
1,2,3-TRICHLOROPROPANE		100	% recovery	1				
SURROGATE								
2,3-DIBROMOPROPIONIC ACID		110	% recovery	1				
Run ID: R264407 / Work Group No.: WG203455								
Prep Date1: 24-NOV-15 Prep Date2: 24-NOV-15 Analyzed 24-Nov-15 21:16								

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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: L202511-1 (P210261-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Nov 16 2015, 09:10am Sample collector: N Klump
Date Received: Nov 16 2015, 12:30pm Sample receiver: RMOLINA
Sample Comments: Annual Bayside Sampling per DDW T22 and WDR; +FLD DATA: pH = 7.68 CL2R = 0.1 mg/L (MDL=0.02 mg/L per NKlumpp 11/24/15)

Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix	Tag
Method Reference								
Method: SM5310C - 5310 C. Heated-Persulfate Oxidation Method							RawH2O	
TARGET ANALYTES								
TOTAL ORGANIC CARBON		**0.58**	mg/L	1	0.024			
Run ID: R264315 / Work Group No.: WG203349								
Prep Date1: 20-NOV-15 Analyzed 20-Nov-15 12:46								
Method: EPA 531.1 - Carbamates, HPLC							RawH2O	
TARGET ANALYTES								
ALDICARB SULFOXIDE	U	0.220	ug/L	1	0.22	3		
ALDICARB SULFONE	U	0.450	ug/L	1	0.45	4		
ALDICARB	U	0.410	ug/L	1	0.41	3		
OXAMYL	U	0.420	ug/L	1	0.42	20		
METHOMYL	U	0.280	ug/L	1	0.28	2		
3-HYDROXYCARBOFURAN	U	0.230	ug/L	1	0.23	3		
PROPOXUR	U	0.490	ug/L	1	0.49			
CARBOFURAN	U	0.390	ug/L	1	0.39	5		
CARBARYL	U	0.750	ug/L	1	0.75			
METHIOCARB	U	0.520	ug/L	1	0.52			
Run ID: R264481 / Work Group No.: WG203279								
Prep Date1: 17-NOV-15 Analyzed 18-Nov-15 19:23								
Method: EPA 547 - Glyphosate, HPLC							RawH2O	
TARGET ANALYTES								
GLYPHOSATE	U	2.1	ug/L	1	2.1	25		
Run ID: R264477 / Work Group No.: WG203348								
Prep Date1: 19-NOV-15 Analyzed 19-Nov-15 16:18								
Method: EPA 549.2 - Diquat & Paraquat, HPLC							RawH2O	
TARGET ANALYTES								
DIQUAT	U,N,J	0.29	ug/L	1	0.29	4		
Poor spike recovery								
PARAQUAT	U,N,J	0.25	ug/L	1	0.25	20		
Poor spike recovery								
Run ID: R264498 / Work Group No.: WG203410								
Prep Date1: 18-NOV-15 Prep Date2: 23-NOV-15 Analyzed 23-Nov-15 12:06								
Method: SM2120B - 2001, Visual Comparison							RawH2O	
TARGET ANALYTES								
COLOR	**H**	**2.0**	color unit	1	1			
pH=5.8								
Run ID: R264257 / Work Group No.: WG203302								
Prep Date1: 18-NOV-15 Analyzed 18-Nov-15 16:00								
Method: SM2130B - 2001, Nephelometric							RawH2O	
TARGET ANALYTES								
TURBIDITY		**0.66**	NTU	1	0.08			
Run ID: R264200 / Work Group No.: WG203285								
Prep Date1: 17-NOV-15 Analyzed 17-Nov-15 15:15								

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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: L202511-1 (P210261-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Nov 16 2015, 09:10am Sample collector: N Klump
Date Received: Nov 16 2015, 12:30pm Sample receiver: RMOLINA
Sample Comments: Annual Bayside Sampling per DDW T22 and WDR; +FLD DATA: pH = 7.68 CL2R = 0.1 mg/L (MDL=0.02 mg/L per NKlumpp 11/24/15)

Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix	Tag
Method: SM2320B - 1997, Titration							RawH2O	
TARGET ANALYTES								
ALKALINITY: TOTAL AS CACO3		**70**	mg/L	1	5			
Run ID: R264294 / Work Group No.: WG203368								
Prep Date1: 20-NOV-15 Analyzed 20-Nov-15 07:12								
Method: SM2340C - 1997, Titration: EDTA							RawH2O	
TARGET ANALYTES								
HARDNESS: TOTAL AS CACO3		**48**	mg/L	1	3			
Run ID: R264371 / Work Group No.: WG203449								
Prep Date1: 24-NOV-15 Analyzed 24-Nov-15 12:45								
Method: SM2510B - 1997, Meter: Platinum Electrode							RawH2O	
TARGET ANALYTES								
CONDUCTIVITY		**210**	umhos/cm	1	0.3			
Run ID: R264357 / Work Group No.: WG203440								
Prep Date1: 24-NOV-15 Analyzed 24-Nov-15 08:00								
Method: SM2540C - 1997, Dried at 180C							RawH2O	
TARGET ANALYTES								
TOTAL DISSOLVED SOLIDS		**75**	mg/L	.667	7.3			
Run ID: R264321 / Work Group No.: WG203350								
Prep Date1: 20-NOV-15 Analyzed 20-Nov-15 07:40								
Method: SM4500-CN C, E - 1999, Distillation & Colorimetric							RawH2O	
TARGET ANALYTES								
CYANIDE: TOTAL	U	0.003	mg/L	1	0.003			
Run ID: R264345 / Work Group No.: WG203387								
Prep Date1: 23-NOV-15 Analyzed 23-Nov-15 09:00								
Method: SM4500-CO2 D - Calculation							RawH2O	
TARGET ANALYTES								
ALKALINITY: HYDROXIDE	U	0.10	mg/L	1	0.1			
Run ID: R264295 / Work Group No.: WG203369								
Prep Date1: 20-NOV-15 Analyzed 20-Nov-15 07:12								
Method: SM4500-CO2 D - Calculation							RawH2O	
TARGET ANALYTES								
ALKALINITY: CARBONATE	U	0.10	mg/L	1	0.1			
Run ID: R264295 / Work Group No.: WG203369								
Prep Date1: 20-NOV-15 Analyzed 20-Nov-15 07:12								
Method: SM4500-CO2 D - Calculation							RawH2O	
TARGET ANALYTES								
ALKALINITY: BICARBONATE		**70**	mg/L	1	5			
Run ID: R264295 / Work Group No.: WG203369								
Prep Date1: 20-NOV-15 Analyzed 20-Nov-15 07:12								

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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: L202511-1 (P210261-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Nov 16 2015, 09:10am Sample collector: N Klump
Date Received: Nov 16 2015, 12:30pm Sample receiver: RMOLINA
Sample Comments: Annual Bayside Sampling per DDW T22 and WDR; +FLD DATA: pH = 7.68 CL2R = 0.1 mg/L (MDL=0.02 mg/L per NKlumpp 11/24/15)

Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix	Tag
Method: SM4500-NH3 B, C - 1997, Distillation & Titration							GroundH2O	
TARGET ANALYTES								
AMMONIA AS N	U	0.300	mg/L	1	0.3			
Run ID: R264268 / Work Group No.: WG203336								
Prep Date1: 19-NOV-15 Analyzed 19-Nov-15 08:45								
Method: EPA 200.7 - Rev. 4.4, ICP Scan							RawH2O	
TARGET ANALYTES								
ALUMINUM		**44.5**	ug/L	1.04	7.28	50		
CALCIUM		**13,500**	ug/L	1.04	6.24			
COPPER		**6.02**	ug/L	1.04	5.2	50		
IRON		**215**	ug/L	1.04	0.52	100		
POTASSIUM		**1,010**	ug/L	1.04	10.4			
MAGNESIUM	**B**	**3,640**	ug/L	1.04	1.04			
MANGANESE		**22.3**	ug/L	1.04	0.104	20		
SODIUM		**23,300**	ug/L	1.04	4.16			
ZINC		**9.21**	ug/L	1.04	0.52	50		
Run ID: R264596 / Work Group No.: WG203549								
Prep Date1: 01-DEC-15 Analyzed 01-Dec-15 13:52								
Method: EPA 200.8 - Rev. 5.4, ICP-MS Scan							RawH2O	
TARGET ANALYTES								
SILVER	U	0.020	ug/L	1.02	0.02	10		
BARIUM		**26**	ug/L	1.02	0.03	100		
BERYLLIUM	U	0.030	ug/L	1.02	0.03	1		
CADMIUM		**0.027**	ug/L	1.02	0.0061	1		
CHROMIUM		**0.40**	ug/L	1.02	0.3	10		
NICKEL		**0.68**	ug/L	1.02	0.2	10		
LEAD		**0.22**	ug/L	1.02	0.02	5		
ANTIMONY	U	0.20	ug/L	1.02	0.2	6		
THALLIUM	U	0.051	ug/L	1.02	0.051	1		
Run ID: R264496 / Work Group No.: WG203525								
Prep Date1: 25-NOV-15 Prep Date2: 30-NOV-15 Analyzed 30-Nov-15 14:41								
Method: EPA 245.1 - Cold Vapor AA							RawH2O	
TARGET ANALYTES								
MERCURY	U	0.040	ug/L	1	0.04			
Run ID: R264463 / Work Group No.: WG203400								
Prep Date1: 23-NOV-15 Analyzed 23-Nov-15 07:00								
Method: SM3114B - 2009, Gaseous Hydride AA							RawH2O	
TARGET ANALYTES								
ARSENIC		**0.40**	ug/L	1	0.2	2		
Run ID: R264351 / Work Group No.: WG203344								
Prep Date1: 19-NOV-15 Prep Date2: 19-NOV-15 Analyzed 19-Nov-15 12:05								
Method: SM3114B - 2009, Gaseous Hydride AA							RawH2O	
TARGET ANALYTES								
SELENIUM	U	0.300	ug/L	1	0.3			
Run ID: R264353 / Work Group No.: WG203343								
Prep Date1: 19-NOV-15 Prep Date2: 19-NOV-15 Analyzed 19-Nov-15 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: L202511-1 (P210261-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Nov 16 2015, 09:10am Sample collector: N Klump
Date Received: Nov 16 2015, 12:30pm Sample receiver: RMOLINA
Sample Comments: Annual Bayside Sampling per DDW T22 and WDR; +FLD DATA: pH = 7.68 CL2R = 0.1 mg/L (MDL=0.02 mg/L per NKlumpp 11/24/15)

Method Reference / Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix	Tag
Method: SM9221B - 2006, Multiple Tube Fermentation							RawH2O	
TARGET ANALYTES								
TOTAL COLIFORMS	<	1.8	MPN/100 mL		1.8			
Run ID: R264283 / Work Group No.: WG203238								
Prep Date1: 16-NOV-15 Analyzed 16-Nov-15 13:54								
Method: SM9221F - 2001, Multiple Tube Fermentation							RawH2O	
TARGET ANALYTES								
E. COLI	<	1.8	MPN/100 mL		1.8			
Run ID: R264283 / Work Group No.: WG203238								
Prep Date1: 16-NOV-15 Analyzed 16-Nov-15 13:54								

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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: L202511-2 (P210261-2)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Nov 16 2015, 11:15am Sample collector: N Klump
Date Received: Nov 16 2015, 12:30pm Sample receiver: RMOLINA
Sample Comments: Annual Sampling per DDW T22 and WDR; SUBCONTRACT DATA; 1613 for 2,3,7,8-TCDD only

Method Reference / Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix	Tag
Method: EPA 100.1: EPA 100.2 - Asbestos by Electron Microscopy							RawH2O	
Subcontract data from Forensic Analytical								
Comment: None detected.								
SUBCONTRACT LAB DATA								
ASBESTOS	<	0.2	MFL	1	0.2	0.2		
Run ID: R264650 / Work Group No.: WG203692								
Prep Date1: 17-NOV-15 Analyzed 02-Dec-15 00:00								
Method: EPA 1613 - DIOXIN 1613A TCDD							RawH2O	
Subcontract data from Frontier Geosciences								
Comment: ND = Analyte Not Detected at Detection Limit (DL) Level 0.508 pg/L								
SUBCONTRACT LAB DATA								
2,3,7,8-TETRACHLORODIBENZO DIOXIN	**ND**	**0.177**	pg/L	1	0.177	5		
Run ID: R264586 / Work Group No.: WG203630								
Prep Date1: 20-NOV-15 Analyzed 23-Nov-15 00:00								
Method: EPA 218.6 - Hexavalent Chromium by IC							RawH2O	
Subcontract data from Alpha Analytical Lab								
Comment: U = Analyte included in analysis, but not detected at or above MDL.								
SUBCONTRACT LAB DATA								
HEXAVALENT CHROMIUM	U	0.05	ug/L	1	0.05	1		
Run ID: R264652 / Work Group No.: WG203694								
Prep Date1: 26-NOV-15 Analyzed 26-Nov-15 00:22								
Method: EPA 508 - PCBS by 508							RawH2O	
Subcontract data from Alpha Analytical Lab								
Comment: U = Analyte included in analysis, but not detected at or above MDL. Total PCBs as DCB STORET # 39516; U = Analyte included in analysis, but not detected at or above MDL.								
SUBCONTRACT LAB DATA								
AROCLOR 1016	U	0.03	ug/L	1	0.03	0.5		
AROCLOR 1221	U	0.03	ug/L	1	0.03	0.5		
AROCLOR 1232	U	0.03	ug/L	1	0.03	0.5		
AROCLOR 1242	U	0.03	ug/L	1	0.03	0.5		
AROCLOR 1248	U	0.03	ug/L	1	0.03	0.5		
AROCLOR 1254	U	0.03	ug/L	1	0.03	0.5		
AROCLOR 1260	U	0.03	ug/L	1	0.03	0.5		
TOTAL PCB'S	U	0.3	ug/L	1	0.3	0.5		
Run ID: R264443 / Work Group No.: WG203507								
Prep Date1: 18-NOV-15 Analyzed 20-Nov-15 22:05								
Method: EPA 900.0 - NONE							RawH2O	
Subcontract data from FG Labs - Santa Paula								
Comment: MDL value is the MDA.								
SUBCONTRACT LAB DATA								
RADIONUCLIDES: ALPHA		**1.19**	pCi/L		1.39	3		
RADIONUCLIDES: BETA		**0**	pCi/L		1.57	4		
RADIONUCLIDES: ALPHA COUNTING ERROR	**+/-**	**1.15**	pCi/L					
RADIONUCLIDES: BETA COUNTING ERROR	**+/-**	**1.1**	pCi/L					
GROSS ALPHA MDA95		**1.39**	pCi/L					
GROSS BETA MDA95		**1.57**	pCi/L					
Run ID: R264818 / Work Group No.: WG203874								
Prep Date1: 23-NOV-15 Analyzed 24-Nov-15 19:00								

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EAST BAY MUNICIPAL UTILITY DISTRICT
Laboratory Services Division
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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: L202511-2 (P210261-2)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Nov 16 2015, 11:15am Sample collector: N Klump
Date Received: Nov 16 2015, 12:30pm Sample receiver: RMOLINA
Sample Comments: Annual Sampling per DDW T22 and WDR; SUBCONTRACT DATA; 1613 for 2,3,7,8-TCDD only

Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix	Tag
Method Reference								
Method: EPA 903.0,903.1, 904.0 - Radium 226 by 903.0 or 903.1 and Radium 228 by 904.0							RawH2O	1
Subcontract data from FG Labs - Santa Paula								
Comment: MDL value is the MDA95.								
SUBCONTRACT LAB DATA								
RADIUM 228		**0**	pCi/L		0.253	1		
RADIUM 228 COUNTING ERROR	+/-	**0.507**	pCi/L					
RADIUM 228 MDA95		**0.253**	pCi/L					
Run ID: R264818 / Work Group No.: WG203874								
Prep Date1: 01-DEC-15 Analyzed 05-Dec-15 13:10								
Method: EPA 903.0,903.1, 904.0 - Radium 226 by 903.0 or 903.1 and Radium 228 by 904.0							RawH2O	
Subcontract data from FG Labs - Santa Paula								
Comment: MDL value is the MDA95.								
SUBCONTRACT LAB DATA								
RADIUM 226		**0**	pCi/L		0.47	1		
RADIUM 226 COUNTING ERROR	+/-	**0.145**	pCi/L					
RADIUM 226 MDA95		**0.47**	pCi/L					
Run ID: R264818 / Work Group No.: WG203874								
Prep Date1: 26-NOV-15 Analyzed 01-Dec-15 07:40								
Method: EPA 905.0 -							RawH2O	
Subcontract data from FG Labs - Santa Paula								
Comment: MDL value is the MDA.								
SUBCONTRACT LAB DATA								
STRONTIUM 90		**0**	pCi/L		0.682	2		
STRONTIUM 90 COUNTING ERROR	+/-	**0.579**	pCi/L					
STRONTIUM 90 MDA95		**0.682**	pCi/L					
Run ID: R264818 / Work Group No.: WG203874								
Prep Date1: 21-NOV-15 Analyzed 28-Nov-15 12:00								
Method: EPA 906.0 -							RawH2O	
Subcontract data from FG Labs - Santa Paula								
Comment: MDL value is the MDA.								
SUBCONTRACT LAB DATA								
TRITIUM		**211**	pCi/L		434	1000		
TRITIUM COUNTING ERROR	+/-	**271**	pCi/L					
TRITIUM MDA95		**434**	pCi/L					
Run ID: R264818 / Work Group No.: WG203874								
Prep Date1: 25-NOV-15 Analyzed 26-Nov-15 09:00								
Method: EPA 908.0 -							RawH2O	
Subcontract data from FG Labs - Santa Paula								
Comment: MDL value is the MDA.								
SUBCONTRACT LAB DATA								
URANIUM		**0.283**	pCi/L		0.3	1		
URANIUM COUNTING ERROR	+/-	**0.666**	pCi/L					
URANIUM MDA95		**0.3**	pCi/L					
Run ID: R264818 / Work Group No.: WG203874								
Prep Date1: 02-DEC-15 Analyzed 03-Dec-15 18:46								

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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: L202511-2 (P210261-2)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Nov 16 2015, 11:15am Sample collector: N Klump
Date Received: Nov 16 2015, 12:30pm Sample receiver: RMOLINA
Sample Comments: Annual Sampling per DDW T22 and WDR; SUBCONTRACT DATA; 1613 for 2,3,7,8-TCDD only

Method Reference / Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix	Tag
Method: EPA 913.0 - RADON: EPA 913.0							RawH2O	
Subcontract data from FG Labs - Santa Paula								
Comment: MDL value is the MDA.								
SUBCONTRACT LAB DATA								
RADON 222		**534**	pCi/L		20.5			
RADON 222 COUNTING ERROR	+/-	**33.2**	pCi/L					
RADON 222 MDA95	+/-	**20.5**	pCi/L					
Run ID: R264818 / Work Group No.: WG203874								
Prep Date1: 18-NOV-15 Analyzed 18-Nov-15 13:00								
Method: PER SUBCONTRACT LABORATORY REPORT - Subcontract data transmittal							RawH2O	
Subcontract data								
Comment: Original report transmitted to client. Copy of report archived with data packet.								
SUBCONTRACT LAB DATA								
DATA TRANSMITTAL								
Run ID: R264816 / Work Group No.: WG203873								
Prep Date1: 17-NOV-15 Analyzed 05-Dec-15 13:10								
Method: SM2150B - 1997, Ambient Temperature, one panelist							RawH2O	
Subcontract data from Caltest Analytical								
Comment: Musty; Musty, Ambient @ 20C. No dechlorination.								
SUBCONTRACT LAB DATA								
THRESHOLD ODOR NUMBER		**1**	TON	1	1	1		
ODOR CHARACTERIZATION (SEE COMMENT)		**1**	Panelists					
NUMBER ANALYZING SAMPLE		**1**	Panelists					
TEMPERATURE		**20**	deg C					
Run ID: R264346 / Work Group No.: WG203433								
Prep Date1: 17-NOV-15 Analyzed 17-Nov-15 09:40								
Method: SM5540C - 2000, Colorimetric							RawH2O	
Subcontract data from Alpha Analytical Lab								
Comment: U = Analyte included in analysis, but not detected at or above MDL.								
SUBCONTRACT LAB DATA								
MBAS	U	0.03	mg/L	1	0.03	0.05		
Run ID: R264651 / Work Group No.: WG203693								
Prep Date1: 18-NOV-15 Analyzed 24-Nov-15 14:30								

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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: L202511-3 (P210261-3)
Sample Type: QCFB (Field Blank Grab)
Date Collected: Nov 16 2015, 11:30am Sample collector: N Klump
Date Received: Nov 16 2015, 12:30pm Sample receiver: RMOLINA
Sample Comments: QCFB for L202511-1; Prep'd on 12-NOV-15 by JLA; 524 acidified with 1+1 HCL?
Y Acid CONTAINER ID # 1314353 504 NOT ACIDIFIED.

Method Reference / Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix / Tag
Method: EPA 524.2 - Volatile Organics, GC/MS							DrinkH2O
TARGET ANALYTES							
ACETONE	U	0.35	ug/L	1	0.35		
ACRYLONITRILE	U	0.45	ug/L	1	0.45		
ALLYL CHLORIDE	U	0.17	ug/L	1	0.17		
TERT-AMYL METHYL ETHER	U	0.17	ug/L	1	0.17	3	
BENZENE	U	0.14	ug/L	1	0.14	0.5	
BROMOBENZENE	U	0.16	ug/L	1	0.16		
BROMOCHLOROMETHANE	U	0.21	ug/L	1	0.21		
BROMODICHLOROMETHANE	U	0.21	ug/L	1	0.21		
BROMOFORM	U	0.31	ug/L	1	0.31		
BROMOMETHANE	U	0.55	ug/L	1	0.55		
TERT-BUTYL ALCOHOL	U	1.7	ug/L	1	1.7	2	
N-BUTYLBENZENE	U	0.25	ug/L	1	0.25		
SEC-BUTYLBENZENE	U	0.69	ug/L	1	0.69		
TERT-BUTYLBENZENE	U	0.18	ug/L	1	0.18		
CARBON DISULFIDE	U	0.44	ug/L	1	0.44		
CARBON TETRACHLORIDE	U	0.25	ug/L	1	0.25	0.5	
CHLOROACETONITRILE	U	0.23	ug/L	1	0.23		
CHLOROBENZENE	U	0.21	ug/L	1	0.21	0.5	
1-CHLOROBUTANE	U	0.21	ug/L	1	0.21		
CHLOROETHANE	U	0.38	ug/L	1	0.38		
CHLOROFORM	U	0.15	ug/L	1	0.15		
CHLOROMETHANE	U	0.15	ug/L	1	0.15		
O-CHLOROTOLUENE	U	0.19	ug/L	1	0.19		
P-CHLOROTOLUENE	U	0.19	ug/L	1	0.19		
DIBROMOCHLOROMETHANE	U	0.26	ug/L	1	0.26		
DIBROMOCHLOROPROPANE	U	0.28	ug/L	1	0.28		
DIBROMOMETHANE	U	0.28	ug/L	1	0.28		
1,2-DICHLOROBENZENE	U	0.23	ug/L	1	0.23	0.5	
1,3-DICHLOROBENZENE	U	0.23	ug/L	1	0.23		
1,4-DICHLOROBENZENE	U	0.18	ug/L	1	0.18	0.5	
TRANS-1,4-DICHLORO-2-BUTENE	U	0.20	ug/L	1	0.2		
DICHLORODIFLUOROMETHANE	U	0.17	ug/L	1	0.17	0.5	
1,1-DICHLOROETHANE	U	0.21	ug/L	1	0.21	0.5	
1,2-DICHLOROETHANE	U	0.14	ug/L	1	0.14	0.5	
1,1-DICHLOROETHENE	U	0.20	ug/L	1	0.2	0.5	
CIS-1,2-DICHLOROETHENE	U	0.25	ug/L	1	0.25	0.5	
TRANS-1,2-DICHLOROETHENE	U	0.19	ug/L	1	0.19	0.5	
1,2-DICHLOROPROPANE	U	0.15	ug/L	1	0.15	0.5	
1,3-DICHLOROPROPANE	U	0.22	ug/L	1	0.22		
SEC-DICHLOROPROPANE	U	0.24	ug/L	1	0.24		
1,1-DICHLOROPROPENE	U	0.26	ug/L	1	0.26		
1,1-DICHLORO-2-PROPANONE	U	0.21	ug/L	1	0.21		
CIS-1,3-DICHLOROPROPENE	U	0.23	ug/L	1	0.23	0.5	
TRANS-1,3-DICHLOROPROPENE	U	0.18	ug/L	1	0.18	0.5	
DIISOPROPYL ETHER	U	0.29	ug/L	1	0.29		
ETHYL BENZENE	U	0.18	ug/L	1	0.18	0.5	
ETHYL ETHER	U	0.20	ug/L	1	0.2		
ETHYLENE DIBROMIDE	U	0.19	ug/L	1	0.19		
ETHYLMETHACRYLATE	U	0.14	ug/L	1	0.14		
ETHYL-T-BUTYL ETHER	U	0.19	ug/L	1	0.19	3	
FLUOROTRICHLOROMETHANE	U	0.22	ug/L	1	0.22	5	

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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: L202511-3 (P210261-3)
Sample Type: QCFB (Field Blank Grab)
Date Collected: Nov 16 2015, 11:30am Sample collector: N Klump
Date Received: Nov 16 2015, 12:30pm Sample receiver: RMOLINA
Sample Comments: QCFB for L202511-1; Prep'd on 12-NOV-15 by JLA; 524 acidified with 1+1 HCL?
Y Acid CONTAINER ID # 1314353 504 NOT ACIDIFIED.

Method Reference — Matrix: Tag

Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	U	0.25	ug/L	1	0.25	10
HEXACHLOROBUTADIENE	U	0.20	ug/L	1	0.2	
HEXACHLOROETHANE	U	0.25	ug/L	1	0.25	
2-HEXANONE	U	0.25	ug/L	1	0.25	
IODOMETHANE	U	0.69	ug/L	1	0.69	
ISOPROPYLBENZENE	U	0.21	ug/L	1	0.21	
P-ISOPROPYLTOLUENE	U	0.22	ug/L	1	0.22	
METHYLACRYLONITRILE	U	0.20	ug/L	1	0.2	
METHYLACRYLATE	U	0.26	ug/L	1	0.26	
METHYLENE CHLORIDE	U	0.18	ug/L	1	0.18	0.5
2-BUTANONE	U	0.43	ug/L	1	0.43	
4-METHYL-2-PENTANONE	U	0.20	ug/L	1	0.2	
METHYLMETHACRYLATE	U	0.28	ug/L	1	0.28	
METHYL-T-BUTYL ETHER	U	0.39	ug/L	1	0.39	3
NAPHTHALENE	U	0.20	ug/L	1	0.2	
NITROBENZENE	U	1.0	ug/L	1	1	
2-NITROPROPANE	U	0.77	ug/L	1	0.77	
PENTACHLOROETHANE	U	0.17	ug/L	1	0.17	
N-PROPYLBENZENE	U	0.20	ug/L	1	0.2	
STYRENE	U	0.19	ug/L	1	0.19	0.5
1,1,1,2-TETRACHLOROETHANE	U	0.18	ug/L	1	0.18	
1,1,2,2-TETRACHLOROETHANE	U	0.20	ug/L	1	0.2	0.5
TETRACHLOROETHENE	U	0.20	ug/L	1	0.2	0.5
TETRAHYDROFURAN	U	0.54	ug/L	1	0.54	
TOLUENE	U	0.16	ug/L	1	0.16	0.5
1,2,3-TRICHLOROBENZENE	U	0.24	ug/L	1	0.24	
1,2,4-TRICHLOROBENZENE	U	0.19	ug/L	1	0.19	0.5
1,1,1-TRICHLOROETHANE	U	0.19	ug/L	1	0.19	0.5
1,1,2-TRICHLOROETHANE	U	0.21	ug/L	1	0.21	0.5
TRICHLOROETHENE	U	0.17	ug/L	1	0.17	0.5
1,2,3-TRICHLOROPROPANE	U	0.19	ug/L	1	0.19	
1,2,4-TRIMETHYLBENZENE	U	0.21	ug/L	1	0.21	
1,3,5-TRIMETHYLBENZENE	U	0.20	ug/L	1	0.2	
VINYL CHLORIDE	U	0.22	ug/L	1	0.22	0.5
O-XYLENE	U	0.18	ug/L	1	0.18	0.5
M+P XYLENES	U	0.37	ug/L	1	0.37	0.5
VALUE(S) USED TO CALCULATE OTHER VALUE(S)						
TOTAL 1,3-DICHLOROPROPENES	U	0.41	ug/L	1		0.5
TOTAL XYLENES	U	0.55	ug/L	1		0.5
INTERNAL STANDARD						
FLUOROBENZENE		107	% recovery	1		
SURROGATE						
4-BROMOFLUOROBENZENE		108	% recovery	1		
D4-1,2-DICHLOROBENZENE		107	% recovery	1		

Run ID: R264370 / Work Group No.: WG203259
Prep Date1: 17-NOV-15 Analyzed 23-Nov-15 13:15

Method: EPA 504.1 - EDB & DBCP, GC/ECD — DrinkH2O

Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML
TARGET ANALYTES						
ETHYLENE DIBROMIDE	U	0.0020	ug/L	1	0.002	0.02
DIBROMOCHLOROPROPANE	U	0.0020	ug/L	1	0.002	0.01

Run ID: R264265 / Work Group No.: WG203278
Prep Date1: 17-NOV-15 Prep Date2: 17-NOV-15 Analyzed 17-Nov-15 17:12

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Analytical Report Prepared for NA

Report generated on: Jan 26, 2016 10:38 am
Login No.: L203028

LSR B455-0706-1
Project Title: BAYSIDE GROUND WATER PROJECT

Login Performance Summary
1 - Sample received by the lab on: Dec 10 2015, 02:28 pm
0 - Lost Analyses
0 - Hold Time Exceedences
Turn-around-time met

Samples included in this report:

Sample	Type	Collected	Site	Locator	ClientID
L203028-1	GRAB	10-Dec-2015 08:55	GW BAYSIDE	BAY1-MW2S	MW-2S

Legend to the laboratory qualifiers used in this report:
B - Analyte detected in method blank
U - Analyte not detected
Qualifiers for subcontract work - See textvalue for description

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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
ClientID: MW-2S
Lab ID: L203028-1 (P210292-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Dec 10 2015, 08:55am Sample collector: KB/NPK
Date Received: Dec 10 2015, 02:28pm Sample receiver: RMOLINA
Sample Comments: MW-2S; +FLD DATA: pH = 6.85 ; Cl2R <0.02 mg/L; Depth to GW = 7.7 feet; GW Elevation = NA feet; Labelled as RAW WATER for the program. [Analyst Note: May need to dilute for ICP & IC due to salt water intrusion]

Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Tag
Method Reference						Matrix	
Method: SAMPLER PROVIDED FIELD MEASUREMENTS - DATA ENTRY LIST FOR FIELD DATA						GroundH2O	
FIELD ANALYSIS/OBSERVATION DATA PARAMETERS							
PH		**6.85**	pH units	1			
DEPTH		**7.7**	feet	1			
CHLORINE RESIDUAL: TOTAL	U	0.02	mg/L	1	0.02		
Run ID: R264977 / Work Group No.: WG204045							
Prep Date1: 10-DEC-15 Analyzed 10-Dec-15 08:55							
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		91.4	% recovery	1			
D5-CHLOROBENZENE		95.0	% recovery	1			
D4-1,4-DICHLOROBENZENE		94.2	% recovery	1			
SURROGATE							
D8-TOLUENE		102	% recovery	1			
4-BROMOFLUOROBENZENE		98.4	% recovery	1			
Run ID: R264835 / Work Group No.: WG203857							
Prep Date1: 14-DEC-15 Analyzed 14-Dec-15 13:20							
Method: EPA 300.1 - Ion Chromatography						GroundH2O	
Instrument calibrated 03-NOV-15							
TARGET ANALYTES							
CHLORIDE		**41,000**	mg/L	5000	10		
NITRATE AS N		**27**	mg/L	5000	4.5	0.4	
SULFATE		**5,200**	mg/L	5000	15	0.5	
SURROGATE							
DICHLOROACETATE		100	% recovery	5000			
Run ID: R264798 / Work Group No.: WG203815							
Prep Date1: 11-DEC-15 Analyzed 11-Dec-15 14:50							
Method: EPA 552.2 - Haloacetic Acids & Dalapon						GroundH2O	
TARGET ANALYTES							
BROMOCHLOROACETIC ACID	U	0.15	ug/L	1	0.15		
BROMODICHLOROACETIC ACID	U	0.31	ug/L	1	0.31		
CHLORODIBROMOACETIC ACID	U	0.31	ug/L	1	0.31		
DALAPON	U	0.53	ug/L	1	0.53		
DIBROMOACETIC ACID	U	0.25	ug/L	1	0.25	1	
DICHLOROACETIC ACID	U	0.18	ug/L	1	0.18	1	
MONOBROMOACETIC ACID	U	0.29	ug/L	1	0.29	1	
MONOCHLOROACETIC ACID	U	0.65	ug/L	1	0.65	2	
TRIBROMOACETIC ACID	U	0.72	ug/L	1	0.72		
TRICHLOROACETIC ACID	U	0.17	ug/L	1	0.17	1	
VALUE CALCULATED FROM OTHER RESULTS							
HAA(5)		0.0	ug/L		1.5		
HAA(9)		0.0	ug/L		3		
INTERNAL STANDARD							

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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
ClientID: MW-2S
Lab ID: L203028-1 (P210292-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Dec 10 2015, 08:55am Sample collector: KB/NPK
Date Received: Dec 10 2015, 02:28pm Sample receiver: RMOLINA
Sample Comments: MW-2S; +FLD DATA: pH = 6.85 ; Cl2R <0.02 mg/L; Depth to GW = 7.7 feet; GW Elevation = NA feet; Labelled as RAW WATER for the program. [Analyst Note: May need to dilute for ICP & IC due to salt water intrusion]

Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix	Tag
Method Reference								
1,2,3-TRICHLOROPROPANE		98	% recovery		1			
SURROGATE								
2,3-DIBROMOPROPIONIC ACID		110	% recovery		1			
Run ID: R265071 / Work Group No.: WG204054								
Prep Date1: 22-DEC-15 Prep Date2: 22-DEC-15 Analyzed 22-Dec-15 22:33								
Method: SM2320B - 1997, Titration							GroundH2O	
TARGET ANALYTES								
ALKALINITY: TOTAL AS CACO3		**390**	mg/L	1	5			
Run ID: R264802 / Work Group No.: WG203854								
Prep Date1: 14-DEC-15 Analyzed 14-Dec-15 07:23								
Method: SM2340C - 1997, Titration: EDTA							GroundH2O	
TARGET ANALYTES								
HARDNESS: TOTAL AS CACO3		**16,000**	mg/L	100	300			
Run ID: R265023 / Work Group No.: WG204062								
Prep Date1: 23-DEC-15 Analyzed 23-Dec-15 10:00								
Method: SM2540C - 1997, Dried at 180C							GroundH2O	
TARGET ANALYTES								
TOTAL DISSOLVED SOLIDS		**76,000**	mg/L	50	550			
Run ID: R264877 / Work Group No.: WG203882								
Prep Date1: 15-DEC-15 Analyzed 15-Dec-15 08:00								
Method: SM4500-CO2 D - Calculation							GroundH2O	
TARGET ANALYTES								
ALKALINITY: HYDROXIDE	U	0.10	mg/L	1	0.1			
Run ID: R264800 / Work Group No.: WG203855								
Prep Date1: 14-DEC-15 Analyzed 14-Dec-15 07:23								
Method: SM4500-CO2 D - Calculation							GroundH2O	
TARGET ANALYTES								
ALKALINITY: CARBONATE	U	0.10	mg/L	1	0.1			
Run ID: R264800 / Work Group No.: WG203855								
Prep Date1: 14-DEC-15 Analyzed 14-Dec-15 07:23								
Method: SM4500-CO2 D - Calculation							GroundH2O	
TARGET ANALYTES								
ALKALINITY: BICARBONATE		**390**	mg/L	1	5			
Run ID: R264800 / Work Group No.: WG203855								
Prep Date1: 14-DEC-15 Analyzed 14-Dec-15 07:23								
Method: SM4500-NH3 B, C - 1997, Distillation & Titration							GroundH2O	
TARGET ANALYTES								
AMMONIA AS N	U	0.300	mg/L	1	0.3			
Run ID: R264838 / Work Group No.: WG203879								
Prep Date1: 15-DEC-15 Analyzed 15-Dec-15 07:15								

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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
ClientID: MW-2S
Lab ID: L203028-1 (P210292-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Dec 10 2015, 08:55am Sample collector: KB/NPK
Date Received: Dec 10 2015, 02:28pm Sample receiver: RMOLINA
Sample Comments: MW-2S; +FLD DATA: pH = 6.85 ; Cl2R <0.02 mg/L; Depth to GW = 7.7 feet; GW Elevation = NA feet; Labelled as RAW WATER for the program. [Analyst Note: May need to dilute for ICP & IC due to salt water intrusion]

Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix	Tag
Method: EPA 200.7 - Rev. 4.4, ICP Scan							RawH2O	
TARGET ANALYTES								
CALCIUM		**1.25E+06**	ug/L	1040	6240			
POTASSIUM		**401,000**	ug/L	1040	10400			
MAGNESIUM		**B3.04E+06**	ug/L	1040	1040			
MANGANESE		**21,900**	ug/L	1040	104		20	
SODIUM		**2.05E+07**	ug/L	1040	4160			
Run ID: R265279 / Work Group No.: WG204256								
Prep Date1: 05-JAN-16 Analyzed 05-Jan-16 13:41								
Method: EPA 200.7 - Rev. 4.4, ICP Scan							RawH2O	1
TARGET ANALYTES								
IRON		**76.8**	ug/L	104	52		100	
Run ID: R265279 / Work Group No.: WG204256								
Prep Date1: 05-JAN-16 Analyzed 05-Jan-16 15:28								

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

Report generated on: Jan 26, 2016 10:38 am
Login No.: L203114

LSR B455-0706-1
Project Title: BAYSIDE GROUND WATER PROJECT

Login Performance Summary
1 - Sample received by the lab on: Dec 15 2015, 01:03 pm
0 - Lost Analyses
0 - Hold Time Exceedences
Turn-around-time met

Samples included in this report:

Sample	Type	Collected	Site	Locator	ClientID
L203114-1	GRAB	15-Dec-2015 12:03	GW BAYSIDE	BAY1-MW2I	MW-2I

Legend to the laboratory qualifiers used in this report:
U - Analyte not detected
Qualifiers for subcontract work - See textvalue for description

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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
ClientID: MW-2I
Lab ID: L203114-1 (P210290-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Dec 15 2015, 12:03pm Sample collector: MTerry
Date Received: Dec 15 2015, 01:03pm Sample receiver: CSOOHOO
Sample Comments: MW-2I; +FLD DATA: pH = 7.75 ; Cl2R = <0.02 mg/L; Depth to GW = 13.74 feet; GW Elevation = NA feet; Labelled as RAW WATER for the program.

Method Reference / Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix / Tag
Method: SAMPLER PROVIDED FIELD MEASUREMENTS - DATA ENTRY LIST FOR FIELD DATA							GroundH2O
FIELD ANALYSIS/OBSERVATION DATA PARAMETERS							
PH		**7.75**	pH units	1			
DEPTH		**13.74**	feet	1			
CHLORINE RESIDUAL: TOTAL	U	0.02	mg/L	1	0.02		
Run ID: R264978 / Work Group No.: WG204046							
Prep Date1: 15-DEC-15 Analyzed 15-Dec-15 12:03							
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		89.8	% recovery	1			
D5-CHLOROBENZENE		91.2	% recovery	1			
D4-1,4-DICHLOROBENZENE		89.4	% recovery	1			
SURROGATE							
D8-TOLUENE		98.4	% recovery	1			
4-BROMOFLUOROBENZENE		101	% recovery	1			
Run ID: R264964 / Work Group No.: WG204002							
Prep Date1: 21-DEC-15 Analyzed 21-Dec-15 12:25							
Method: EPA 300.1 - Ion Chromatography							GroundH2O
Instrument calibrated 03-NOV-15							
TARGET ANALYTES							
CHLORIDE		**59**	mg/L	10	0.02		
NITRATE AS N		**0.044**	mg/L	10	0.009	0.4	
SULFATE		**34**	mg/L	10	0.03	0.5	
SURROGATE							
DICHLOROACETATE		100	% recovery	10			
Run ID: R264857 / Work Group No.: WG203898							
Prep Date1: 15-DEC-15 Analyzed 15-Dec-15 17:59							
Method: EPA 552.2 - Haloacetic Acids & Dalapon							GroundH2O
TARGET ANALYTES							
BROMOCHLOROACETIC ACID	U	0.15	ug/L	1	0.15		
BROMODICHLOROACETIC ACID	U	0.31	ug/L	1	0.31		
CHLORODIBROMOACETIC ACID	U	0.31	ug/L	1	0.31		
DALAPON	U	0.53	ug/L	1	0.53		
DIBROMOACETIC ACID	U	0.25	ug/L	1	0.25	1	
DICHLOROACETIC ACID	U	0.18	ug/L	1	0.18	1	
MONOBROMOACETIC ACID	U	0.29	ug/L	1	0.29	1	
MONOCHLOROACETIC ACID	U	0.65	ug/L	1	0.65	2	
TRIBROMOACETIC ACID	U	0.72	ug/L	1	0.72		
TRICHLOROACETIC ACID	U	0.17	ug/L	1	0.17	1	
VALUE CALCULATED FROM OTHER RESULTS							
HAA(5)		0.0	ug/L		1.5		
HAA(9)		0.0	ug/L		3		
INTERNAL STANDARD							

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

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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
ClientID: MW-2I
Lab ID: L203114-1 (P210290-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Dec 15 2015, 12:03pm Sample collector: MTerry
Date Received: Dec 15 2015, 01:03pm Sample receiver: CSOOHOO
Sample Comments: MW-2I; +FLD DATA: pH = 7.75 ; Cl2R = <0.02 mg/L; Depth to GW = 13.74 feet; GW Elevation = NA feet; Labelled as RAW WATER for the program.

Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix	Tag
Method Reference								
1,2,3-TRICHLOROPROPANE		110	% recovery		1			
SURROGATE								
2,3-DIBROMOPROPIONIC ACID		100	% recovery		1			
Run ID: R265071 / Work Group No.: WG204054								
Prep Date1: 22-DEC-15 Prep Date2: 22-DEC-15 Analyzed 22-Dec-15 22:57								
Method: SM2320B - 1997, Titration							GroundH2O	
TARGET ANALYTES								
ALKALINITY: TOTAL AS CACO3		**300**	mg/L	1	5			
Run ID: R264868 / Work Group No.: WG203915								
Prep Date1: 16-DEC-15 Analyzed 16-Dec-15 07:29								
Method: SM2340C - 1997, Titration: EDTA							GroundH2O	
TARGET ANALYTES								
HARDNESS: TOTAL AS CACO3		**90**	mg/L	1	3			
Run ID: R265023 / Work Group No.: WG204062								
Prep Date1: 23-DEC-15 Analyzed 23-Dec-15 10:00								
Method: SM2540C - 1997, Dried at 180C							GroundH2O	
TARGET ANALYTES								
TOTAL DISSOLVED SOLIDS		**490**	mg/L	1.33	15			
Run ID: R265001 / Work Group No.: WG204004								
Prep Date1: 21-DEC-15 Analyzed 21-Dec-15 09:30								
Method: SM4500-CO2 D - Calculation							GroundH2O	
TARGET ANALYTES								
ALKALINITY: BICARBONATE		**300**	mg/L	1	5			
Run ID: R264866 / Work Group No.: WG203916								
Prep Date1: 16-DEC-15 Analyzed 16-Dec-15 07:29								
Method: SM4500-CO2 D - Calculation							GroundH2O	
TARGET ANALYTES								
ALKALINITY: CARBONATE	U	0.10	mg/L	1	0.1			
Run ID: R264866 / Work Group No.: WG203916								
Prep Date1: 16-DEC-15 Analyzed 16-Dec-15 07:29								
Method: SM4500-CO2 D - Calculation							GroundH2O	
TARGET ANALYTES								
ALKALINITY: HYDROXIDE	U	0.10	mg/L	1	0.1			
Run ID: R264866 / Work Group No.: WG203916								
Prep Date1: 16-DEC-15 Analyzed 16-Dec-15 07:29								
Method: SM4500-NH3 B, C - 1997, Distillation & Titration							GroundH2O	
TARGET ANALYTES								
AMMONIA AS N		**0.560**	mg/L	1	0.3			
Run ID: R264998 / Work Group No.: WG204030								
Prep Date1: 22-DEC-15 Analyzed 22-Dec-15 06:30								

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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
ClientID: MW-2I
Lab ID: L203114-1 (P210290-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Dec 15 2015, 12:03pm Sample collector: MTerry
Date Received: Dec 15 2015, 01:03pm Sample receiver: CSOOHOO
Sample Comments: MW-2I; +FLD DATA: pH = 7.75 ; Cl2R = <0.02 mg/L; Depth to GW = 13.74 feet; GW Elevation = NA feet; Labelled as RAW WATER for the program.

Method Reference / Parameter	Qualifier	Result	Units	Dilution	MDL	Matrix RL/ML	Tag
Method: EPA 200.7 - Rev. 4.4, ICP Scan						RawH2O	
TARGET ANALYTES							
CALCIUM		**14,400**	ug/L	1.04	6.24		
IRON		**177**	ug/L	1.04	0.52	100	
POTASSIUM		**6,730**	ug/L	1.04	10.4		
MAGNESIUM		**12,500**	ug/L	1.04	1.04		
MANGANESE		**105**	ug/L	1.04	0.104	20	
SODIUM		**156,000**	ug/L	10.4	41.6		

Run ID: R265301 / Work Group No.: WG204328
Prep Date1: 07-JAN-16 Analyzed 07-Jan-16 13:21

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Analytical Report Prepared for NA

Report generated on: Jan 26, 2016 10:39 am
Login No.: L202967

LSR B455-0706-1
Project Title: BAYSIDE GROUND WATER PROJECT

Login Performance Summary
1 - Sample received by the lab on: Dec 08 2015, 03:28 pm
0 - Lost Analyses
0 - Hold Time Exceedences
Turn-around-time met

Samples included in this report:

Sample	Type	Collected	Site	Locator	ClientID
L202967-1	GRAB	08-Dec-2015 14:30	GW BAYSIDE	BAY1-MW4	MW-4

Legend to the laboratory qualifiers used in this report:
U - Analyte not detected
Qualifiers for subcontract work - See textvalue for description

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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
ClientID: MW-4
Lab ID: L202967-1 (P210293-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Dec 08 2015, 02:30pm Sample collector: NKlumpp
Date Received: Dec 08 2015, 03:28pm Sample receiver: CSOOHOO
Sample Comments: MW-4; +FLD DATA: pH = 7.98 ; Cl2R = <0.02 mg/L; Depth to GW = 14.46 feet;
GW Elevation = NA feet; Labelled as RAW WATER for the program.

Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix	Tag
Method: SAMPLER PROVIDED FIELD MEASUREMENTS - DATA ENTRY LIST FOR FIELD DATA							GroundH2O	
FIELD ANALYSIS/OBSERVATION DATA PARAMETERS								
PH		**7.98**	pH units	1				
DEPTH		**14.46**	feet	1				
CHLORINE RESIDUAL: TOTAL	U	0.02	mg/L	1	0.02			
Run ID: R264701 / Work Group No.: WG203751								
Prep Date1: 08-DEC-15 Analyzed 08-Dec-15 14:30								
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		96.0	% recovery	1				
D5-CHLOROBENZENE		96.8	% recovery	1				
D4-1,4-DICHLOROBENZENE		96.6	% recovery	1				
SURROGATE								
D8-TOLUENE		99.6	% recovery	1				
4-BROMOFLUOROBENZENE		95.0	% recovery	1				
Run ID: R264835 / Work Group No.: WG203857								
Prep Date1: 14-DEC-15 Analyzed 14-Dec-15 12:57								
Method: EPA 300.1 - Ion Chromatography							GroundH2O	
Instrument calibrated 03-NOV-15								
TARGET ANALYTES								
CHLORIDE		**56**	mg/L	4	0.008			
NITRATE AS N		**0.039**	mg/L	4	0.0036	0.4		
SULFATE		**41**	mg/L	4	0.012	0.5		
SURROGATE								
DICHLOROACETATE		99	% recovery	4				
Run ID: R264761 / Work Group No.: WG203779								
Prep Date1: 10-DEC-15 Analyzed 10-Dec-15 11:15								
Method: EPA 552.2 - Haloacetic Acids & Dalapon							GroundH2O	
TARGET ANALYTES								
BROMOCHLOROACETIC ACID	U	0.15	ug/L	1	0.15			
BROMODICHLOROACETIC ACID	U	0.31	ug/L	1	0.31			
CHLORODIBROMOACETIC ACID	U	0.31	ug/L	1	0.31			
DALAPON	U	0.53	ug/L	1	0.53			
DIBROMOACETIC ACID	U	0.25	ug/L	1	0.25	1		
DICHLOROACETIC ACID	U	0.18	ug/L	1	0.18	1		
MONOBROMOACETIC ACID	U	0.29	ug/L	1	0.29	1		
MONOCHLOROACETIC ACID	U	0.65	ug/L	1	0.65	2		
TRIBROMOACETIC ACID	U	0.72	ug/L	1	0.72			
TRICHLOROACETIC ACID	U	0.17	ug/L	1	0.17	1		
VALUE CALCULATED FROM OTHER RESULTS								
HAA(5)		0.0	ug/L		1.5			
HAA(9)		0.0	ug/L		3			
INTERNAL STANDARD								
1,2,3-TRICHLOROPROPANE		120	% recovery		1			

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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
ClientID: MW-4
Lab ID: L202967-1 (P210293-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Dec 08 2015, 02:30pm Sample collector: NKlumpp
Date Received: Dec 08 2015, 03:28pm Sample receiver: CSOOHOO
Sample Comments: MW-4; +FLD DATA: pH = 7.98 ; Cl2R = <0.02 mg/L; Depth to GW = 14.46 feet;
GW Elevation = NA feet; Labelled as RAW WATER for the program.

Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix	Tag
Method Reference								
SURROGATE								
2,3-DIBROMOPROPIONIC ACID		110	% recovery		1			
Run ID: R265071 / Work Group No.: WG204054								
Prep Date1: 22-DEC-15 Prep Date2: 22-DEC-15 Analyzed 22-Dec-15 21:21								
Method: SM2320B - 1997, Titration							GroundH2O	
TARGET ANALYTES								
ALKALINITY: TOTAL AS CACO3		**250**	mg/L	1	5			
Run ID: R264714 / Work Group No.: WG203742								
Prep Date1: 09-DEC-15 Analyzed 09-Dec-15 06:30								
Method: SM2340C - 1997, Titration: EDTA							GroundH2O	
TARGET ANALYTES								
HARDNESS: TOTAL AS CACO3		**130**	mg/L	1	3			
Run ID: R264753 / Work Group No.: WG203800								
Prep Date1: 10-DEC-15 Analyzed 10-Dec-15 14:00								
Method: SM2540C - 1997, Dried at 180C							GroundH2O	
TARGET ANALYTES								
TOTAL DISSOLVED SOLIDS		**420**	mg/L	1	11			
Run ID: R264745 / Work Group No.: WG203746								
Prep Date1: 09-DEC-15 Analyzed 09-Dec-15 09:00								
Method: SM4500-CO2 D - Calculation							GroundH2O	
TARGET ANALYTES								
ALKALINITY: BICARBONATE		**250**	mg/L	1	5			
Run ID: R264715 / Work Group No.: WG203764								
Prep Date1: 09-DEC-15 Analyzed 09-Dec-15 10:42								
Method: SM4500-CO2 D - Calculation							GroundH2O	
TARGET ANALYTES								
ALKALINITY: CARBONATE	U	0.10	mg/L	1	0.1			
Run ID: R264715 / Work Group No.: WG203764								
Prep Date1: 09-DEC-15 Analyzed 09-Dec-15 10:42								
Method: SM4500-CO2 D - Calculation							GroundH2O	
TARGET ANALYTES								
ALKALINITY: HYDROXIDE	U	0.10	mg/L	1	0.1			
Run ID: R264715 / Work Group No.: WG203764								
Prep Date1: 09-DEC-15 Analyzed 09-Dec-15 10:42								
Method: SM4500-NH3 B, C - 1997, Distillation & Titration							GroundH2O	
TARGET ANALYTES								
AMMONIA AS N	U	0.300	mg/L	1	0.3			
Run ID: R264838 / Work Group No.: WG203879								
Prep Date1: 15-DEC-15 Analyzed 15-Dec-15 07:15								
Method: EPA 200.7 - Rev. 4.4, ICP Scan							RawH2O	
TARGET ANALYTES								
CALCIUM		**28,800**	ug/L	1.04	6.24			
IRON		**32.5**	ug/L	1.04	0.52		100	
POTASSIUM		**3,080**	ug/L	1.04	10.4			
MAGNESIUM		**11,700**	ug/L	1.04	1.04			

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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-MW4 OW-1 the same parcel as the Bayside Well on Oro Loma Property; formerly BAY1-MW5
ClientID: MW-4
Lab ID: L202967-1 (P210293-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Dec 08 2015, 02:30pm Sample collector: NKlumpp
Date Received: Dec 08 2015, 03:28pm Sample receiver: CSOOHOO
Sample Comments: MW-4; +FLD DATA: pH = 7.98 ; Cl2R = <0.02 mg/L; Depth to GW = 14.46 feet;
GW Elevation = NA feet; Labelled as RAW WATER for the program.

Method Reference						Matrix	Tag
Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	
MANGANESE		**215**	ug/L	1.04	0.104	20	
SODIUM		**106,000**	ug/L	1.04	4.16		

Run ID: R264917 / Work Group No.: WG203970
Prep Date1: 18-DEC-15 Analyzed 18-Dec-15 13:09

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Analytical Report Prepared for NA

Report generated on: Jan 26, 2016 10:40 am
Login No.: L202575

LSR B455-0706-1
Project Title: BAYSIDE GROUND WATER PROJECT

Login Performance Summary
1 - Sample received by the lab on: Nov 18 2015, 01:03 pm
0 - Lost Analyses
0 - Hold Time Exceedences
Turn-around-time met

Samples included in this report:

Sample	Type	Collected	Site	Locator	ClientID
L202575-1	GRAB	18-Nov-2015 12:10	GW BAYSIDE	BAY1-MW5D	MW-5D

Legend to the laboratory qualifiers used in this report:
B - Analyte detected in method blank
U - Analyte not detected
Qualifiers for subcontract work - See textvalue for description

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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: GW BAYSIDE East Bay Ground Water Injection/Extraction Project Bayside Groundwater
Locator: BAY1-MW5D Q APN 411-0003-0083 Via Barrett, San Lorenzo; Formerly BAY-MW-BARETT
ClientID: MW-5D
Lab ID: L202575-1 (P210295-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Nov 18 2015, 12:10pm Sample collector: C**Pagtakhan**
Date Received: Nov 18 2015, 01:03pm Sample receiver: ESHEETEN
Sample Comments: MW-5D; +FLD DATA: pH = 7.53; Cl2R = 0.2 mg/L; Depth to GW = 19.65 feet; GW Elevation = (Unknown) feet; Labelled as RAW WATER for the program.

Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	Matrix	Tag
Method Reference								
Method: SAMPLER PROVIDED FIELD MEASUREMENTS - DATA ENTRY LIST FOR FIELD DATA							GroundH2O	
FIELD ANALYSIS/OBSERVATION DATA PARAMETERS								
PH		**7.53**	pH units	1				
DEPTH		**19.65**	feet	1				
CHLORINE RESIDUAL: TOTAL		**0.2**	mg/L	1	0.08			
Run ID: R264432 / Work Group No.: WG203502								
Prep Date1: 18-NOV-15 Analyzed 18-Nov-15 12:10								
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		98.2	% recovery	1				
D5-CHLOROBENZENE		99.4	% recovery	1				
D4-1,4-DICHLOROBENZENE		97.8	% recovery	1				
SURROGATE								
D8-TOLUENE		99.0	% recovery	1				
4-BROMOFLUOROBENZENE		101	% recovery	1				
Run ID: R264245 / Work Group No.: WG203295								
Prep Date1: 18-NOV-15 Analyzed 18-Nov-15 15:43								
Method: EPA 300.1 - Ion Chromatography							GroundH2O	
Instrument calibrated 03-NOV-15								
TARGET ANALYTES								
CHLORIDE		**82**	mg/L	10	0.02			
NITRATE AS N	U	0.0090	mg/L	10	0.009	0.4		
SULFATE		**49**	mg/L	10	0.03	0.5		
SURROGATE								
DICHLOROACETATE		100	% recovery	10				
Run ID: R264276 / Work Group No.: WG203342								
Prep Date1: 19-NOV-15 Analyzed 19-Nov-15 17:49								
Method: EPA 552.2 - Haloacetic Acids & Dalapon							GroundH2O	
TARGET ANALYTES								
BROMOCHLOROACETIC ACID	U	0.15	ug/L	1	0.15			
BROMODICHLOROACETIC ACID	U	0.31	ug/L	1	0.31			
CHLORODIBROMOACETIC ACID	U	0.31	ug/L	1	0.31			
DALAPON	U	0.53	ug/L	1	0.53			
DIBROMOACETIC ACID	U	0.25	ug/L	1	0.25	1		
DICHLOROACETIC ACID	U	0.18	ug/L	1	0.18	1		
MONOBROMOACETIC ACID	U	0.29	ug/L	1	0.29	1		
MONOCHLOROACETIC ACID	U	0.65	ug/L	1	0.65	2		
TRIBROMOACETIC ACID	U	0.72	ug/L	1	0.72			
TRICHLOROACETIC ACID	U	0.17	ug/L	1	0.17	1		
VALUE CALCULATED FROM OTHER RESULTS								
HAA(5)		0.0	ug/L		1.5			
HAA(9)		0.0	ug/L		3			
INTERNAL STANDARD								
1,2,3-TRICHLOROPROPANE		100	% recovery		1			

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Method Reference								
SURROGATE								
2,3-DIBROMOPROPIONIC ACID		99	% recovery		1			
Run ID: R264407 / Work Group No.: WG203455								
Prep Date1: 24-NOV-15 Prep Date2: 24-NOV-15 Analyzed 24-Nov-15 21:40								
Method: SM2320B - 1997, Titration							GroundH2O	
TARGET ANALYTES								
ALKALINITY: TOTAL AS CACO3		**240**	mg/L	1	5			
Run ID: R264325 / Work Group No.: WG203403								
Prep Date1: 23-NOV-15 Analyzed 23-Nov-15 07:49								
Method: SM2340C - 1997, Titration: EDTA							GroundH2O	
TARGET ANALYTES								
HARDNESS: TOTAL AS CACO3		**140**	mg/L	1	3			
Run ID: R264371 / Work Group No.: WG203449								
Prep Date1: 24-NOV-15 Analyzed 24-Nov-15 12:45								
Method: SM2540C - 1997, Dried at 180C							GroundH2O	
TARGET ANALYTES								
TOTAL DISSOLVED SOLIDS		**450**	mg/L	1	11			
Run ID: R264403 / Work Group No.: WG203441								
Prep Date1: 24-NOV-15 Analyzed 24-Nov-15 08:30								
Method: SM4500-CO2 D - Calculation							GroundH2O	
TARGET ANALYTES								
ALKALINITY: BICARBONATE		**240**	mg/L	1	5			
Run ID: R264326 / Work Group No.: WG203404								
Prep Date1: 23-NOV-15 Analyzed 23-Nov-15 07:49								
Method: SM4500-CO2 D - Calculation							GroundH2O	
TARGET ANALYTES								
ALKALINITY: CARBONATE	U	0.10	mg/L	1	0.1			
Run ID: R264326 / Work Group No.: WG203404								
Prep Date1: 23-NOV-15 Analyzed 23-Nov-15 07:49								
Method: SM4500-CO2 D - Calculation							GroundH2O	
TARGET ANALYTES								
ALKALINITY: HYDROXIDE	U	0.10	mg/L	1	0.1			
Run ID: R264326 / Work Group No.: WG203404								
Prep Date1: 23-NOV-15 Analyzed 23-Nov-15 07:49								
Method: SM4500-NH3 B, C - 1997, Distillation & Titration							GroundH2O	
TARGET ANALYTES								
AMMONIA AS N	U	0.300	mg/L	1	0.3			
Run ID: R264268 / Work Group No.: WG203336								
Prep Date1: 19-NOV-15 Analyzed 19-Nov-15 08:45								
Method: EPA 200.7 - Rev. 4.4, ICP Scan							RawH2O	
TARGET ANALYTES								
CALCIUM		**35,600**	ug/L	1.04	6.24			
IRON		**46.4**	ug/L	1.04	0.52		100	
POTASSIUM		**2,300**	ug/L	1.04	10.4			
MAGNESIUM	**B**	**9,060**	ug/L	1.04	1.04			

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Method Reference						Matrix	Tag
Parameter	Qualifier	Result	Units	Dilution	MDL	RL/ML	
MANGANESE		**175**	ug/L	1.04	0.104	20	
SODIUM		**112,000**	ug/L	1.04	4.16		

Run ID: R264596 / Work Group No.: WG203549
Prep Date1: 01-DEC-15 Analyzed 01-Dec-15 15:26

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