PUEBLO water resources

SUMMARY OF OPERATIONS

MONTEREY PENINSULA ASR PROJECT

WATER YEAR 2016

Prepared for:

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

MAY 2018

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May 31, 2018
Project No. 12-0046

Monterey Peninsula Water Management District
Post Office Box 85
Monterey, California 93942-0085

Attention: Mr. Jonathan Lear, Senior Hydrogeologist

Subject: Monterey Peninsula ASR Project; Water Year 2016 Summary of Operations Report

Dear Jon:

We are transmitting five copies and one digital image (PDF) of the subject report documenting operations of the Monterey Peninsula ASR Project during Water Year 2016 (WY 2016). WY 2016 was a Normal Water Year on the on the Monterey Peninsula, and as a result a commensurately modest volume totaling 699 acre-feet (af) of water was able to be diverted from the Carmel River system for recharge in the Seaside Groundwater Basin (SGB) via the ASR-1, -2, -3 and -4 wells. To date, a total volume of approximately 5,090 af of excess Carmel River system water has been successfully injected, stored, and recovered in the SBG since the ASR project was initiated in 2001.

We appreciate the opportunity to provide ongoing assistance to the District on this important community water-supply project. Please contact us with any questions.

Sincerely,

PUEBLO WATER RESOURCES, INC.

Robert C. Marks, P.G., C.Hg.
Principal Hydrogeologist

Stephen P. Tanner, P.E.
Principal Engineer

Copies submitted: 5 hard
1 digital (PDF)

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TABLE OF CONTENTS

TABLES

TABLE OF CONTENTS (Continued)

FIGURES

APPENDICES

INTRODUCTION

GENERAL STATEMENT

Presented in this report is a summary of operations of the Monterey Peninsula Aquifer Storage and Recovery (ASR) Project during Water Year 2016 (WY 2016)[1]. During WY 2016, approximately 699 acre-feet (af) of excess flows were diverted from the Carmel River system for recharge, storage, and subsequent recovery in the Seaside Groundwater Basin (SGB). This report presents a summary of the project operations during WY 2016, an assessment of ASR well performance, aquifer response and water-quality data, and provides recommendations for ongoing operation of the project.

BACKGROUND

The Monterey Peninsula ASR Project is cooperatively implemented by the Monterey Peninsula Water Management District (MPWMD or District) and California American Water (CAW) and involves the diversion of excess winter and spring time flows from the Carmel River system for recharge and storage in the Seaside Groundwater Basin (SGB). The excess water is captured by CAW wells in the Carmel Valley during periods when flows in the Carmel River exceed fisheries bypass flow requirements, treated to potable drinking water standards, and then conveyed through CAW's distribution system to ASR facilities in the SGB. Recharge is accomplished via injection of these excess flows into specially designed ASR wells drilled in the SGB. The locations of the ASR wells and associated project monitoring wells in the SGB are shown on **Figure 1**. The recharged water is temporarily stored underground utilizing the available storage space within the aquifer system. During periods of high demand, other existing CAW production wells in the SGB and/or the ASR wells can be used to recover the previously recharged water, which in turn allows for reduced extractions from the Carmel River system during seasonal dry periods.

The District and CAW have been cooperatively developing an ASR project on the Monterey Peninsula since 1996. These efforts have evolved over time, from the performance of various technical feasibility investigations, leading to the construction and testing of pilot- and then full-scale ASR test wells to demonstrate the viability and operational parameters for ASR wells in the SGB. Based on the success of the ASR demonstration testing program, MPWMD and CAW are in the process of implementing a full-scale permanent ASR Project.

The Phase 1 ASR Project includes two ASR wells (ASR-1 and ASR-2) located at the Santa Margarita ASR Facility at 1910 General Jim Moore Blvd. in Seaside. The Phase 1 Project is capable of recharging up to the State Water Resources Control Board (SWRCB) water right[2] maximum annual diversion limit of 2,426 acre-feet per year (afy) at a combined

[1] Water Year 2016 is the period of October 1, 2015 through September 30, 2016.
[2] SWRCB water right 20808A for the Phase 1 ASR Project is held jointly by MPWMD and CAW.

permitted injection rate of approximately 3,000 gallons per minute ([gpm] maximum diversion rate of 6.7 cubic feet per second [cfs]), with an average annual yield of approximately 920 afy. ASR-1 is designed for an injection capacity of 1,000 gpm and ASR-2 is designed for an injection capacity of 1,500 gpm. As-built schematics of ASR-1 and ASR-2 are presented on **Figures 2 and 3**, respectively.

The Phase 2 ASR Project includes two ASR wells (ASR-3 and ASR-4) located at the Seaside Middle School (SMS) ASR Facility at 2111 General Jim Moore Blvd. in Seaside. The Phase 2 Project is designed to be capable of recharging up to the SWRCB water right[3] maximum annual diversion limit of 2,900 afy at a combined permitted injection rate of approximately 3,600 gpm (maximum diversion rate of 8.0 cfs), with an average annual yield of approximately 1,020 afy. ASR-3 and ASR-4 are both designed for injection capacities of 1,500 gpm. ASR-3 was constructed in 2010, and WY 2012 was the first time injection occurred at this well. ASR-4 was constructed in 2012, and WY 2015 was the first time injection occurred at this well. As-built schematics of ASR-3 and ASR-4 are presented on **Figures 4 and 5**, respectively.

A graphical summary of historical ASR operations in the SGB is shown on **Figure 6**. Shown are the annual injection and recovery volumes since the inception of injection operations at the Santa Margarita ASR Facility in WY 2001 through the current period of WY 2016. Also presented is a delineation of the various phases of project implementation, starting with the Santa Margarita Test Injection Well (SMTIW) in 2001, which became SM ASR-1 as the project transitioned from a testing program to a permanent project in WY 2008 (Phase 1 ASR Project), through construction and operation of the second well (ASR-2) at the facility in 2010. As shown, having the Santa Margarita Facility in full operation with two ASR wells injecting simultaneously since 2010 (combined with above normal rainfall and Carmel River flows during WY 2010 and WY 2011) resulted in significant increases in the volume injected annually. As the two additional Phase 2 Project ASR wells (ASR-3 and ASR-4) come on line in full operation, commensurate increases in annual injection volumes are expected to occur (depending on hydrologic conditions in any given year).

PURPOSE AND SCOPE

The overall purpose of the ongoing ASR program is to recharge the SGB with excess treated Carmel River system water when it is available during wet periods for storage and later extraction (recovery) during dry periods. ASR benefits the resources of both systems by raising water levels in the SGB during the recharge and storage periods and reducing extractions from the Carmel River System during dry periods.

The scope of the ongoing data collection, analysis, and reporting program for the ASR program can be categorized into issues generally associated with:

1) ASR well hydraulics and performance;

[3] The SWRCB water right 20808C for the Phase 2 ASR Project is held jointly by MPWMD and CAW.

2) Aquifer response to injection, and;

3) Water-quality issues associated with geochemical interaction and mixing of injected and native groundwaters.

The ongoing data collection and reporting program is intended to monitor and track ASR well performance and aquifer response to injection (both hydraulic and water quality) and to comply with the requirements of the Central Coast Regional Water Quality Control Board (RWQCB) for submitting annual technical reports for the project pursuant to Section 13267 of the California Water Code[4] and the existing General Waiver for Specific Types of Discharges (Resolution R3-2008-0010).

FINDINGS

WY 2016 ASR OPERATIONS

General Recharge Procedures

Recharge of the SGB occurs via injection of diverted flows from the CAW distribution system into ASR wells during periods of available excess Carmel River system flows. The ASR recharge source water is potable (treated) water provided from the CAW distribution system. The water is currently diverted by various production well sources in Carmel Valley and (after treatment and disinfection to potable standards) then conveyed through the Segunda-Crest pipeline network to the ASR Pipeline in General Jim Moore Blvd and then to the Santa Margarita and Seaside Middle School ASR facilities.

Injection water is introduced into the ASR wells via the pump columns. Injection rates are controlled primarily by downhole flow control valves (FCV's) installed on the pump columns, and secondarily by modulating the automatic pressure control valves (i.e., Cla-Vals) installed on the ASR wellhead piping. Injection flow rates and total injected volumes are measured with rate and totalizing meters at each of the wellheads. Positive gauge pressures are maintained at the wellheads during injection to prevent cascading of water into the wells (which can lead to air-binding). Continuous water-level data at each of the ASR wells are collected with submersible pressure transducer data loggers.

Injection generally occurs at each of the ASR wells on a continuous basis when flows are available, interrupted only for periodic backflushing, which typically occurs on an approximate weekly basis. Most sources of injection water contain trace amounts of solids that slowly accumulate in the pore spaces in the well's gravel pack and adjacent aquifer materials, and the CAW source water is no exception. Periodic backflushing of the ASR wells is therefore necessary to maintain well performance by removing materials deposited/accumulated around

[4] Letter from Roger W. Briggs, Executive Officer of the Central Coast RWQCB, to Joseph Oliver, Water Resources Manager for MPWMD, dated April 29, 2009.

the well bore during injection. The procedure is similar to backwashing a media filter to remove accumulated material deposited during filtration.

The trigger for backflushing occurs when the amount of water-level drawup during injection equals the available drawdown (as measured from the static water level to the top of the pump bowls) in the well for backflushing, or one week of continuous injection, whichever occurs first. This helps to avoid over-pressurization and compression of plugging materials, thereby maximizing the efficiency of backflushing and limiting the amount of residual plugging. This factor is the basis for the maximum recommended drawup levels referenced in the following section.

The general procedure consists of temporarily stopping injection and then pumping the wells at rates of approximately 2,000 to 3,000 gpm (i.e., at least twice the rate of injection) for 3 cycles of 10 minutes resting between 10 minute pumping cycles, and repeated as necessary to effectively remove particulates from the well screen / gravel pack / aquifer matrix. Backflush water is discharged to the Santa Margarita ASR Facility backflush pit, where it percolates back into the groundwater basin.

Injection Operations Summary

A summary of injection operations at the four ASR wells is presented in **Table 1** below. Field data collected during injection operations are presented in **Appendix A**.

Table 1. WY 2016 Injection Operations Summary

Well	Injection Season		Active	Injection Rate (gpm)			Total Vol
	Start	End	Days	Min	Max	Avg	(af)
ASR-1	1/7/16	4/4/16	37	144	1,615	1,002	163.8
ASR-2	1/7/16	4/4/16	55	1,024	2,156	1,510	367.0
ASR-3	1/19/16	4/1/16	42	703	1,008	884	164.0
ASR-4	1/20/16	3/17/16	5	116	349	197	4.4
						Total	**699.2**

As shown in **Table 1**, recharge operations were performed intermittently in WY 2016 during the period January 7 through April 4, 2016. WY 2016 was classified as a “Normal” Water Year[5] on the Carmel River with up to 55 days of active injection and a total volume of approximately 699 acre-feet (af) of water was available for diversion from the CAW system for recharge in the SGB. The recharge water was injected at all four ASR wells into the Santa Margarita Sandstone aquifer with per-well average injection rates ranging from approximately 115 to 2,150 gpm (approximately 0.5 to 9.53 acre-feet per day [afd]).

[5] Based on 44,923 af of unimpaired Carmel River flow at the Sleepy Hollow Weir in WY 2016.

It is noted that the variability in injection rates at the ASR wells during the injection season is controlled by various factors, including the number of active sources to the CAW system, customer demands on the CAW system, and the ability of CAW's distribution system to maintain piping pressure at the ASR wellheads.

Water-level data collected at ASR-1, ASR-2, ASR-3 and ASR-4 during WY 2016 are presented in **Figures 7 through 10**, respectively. The water-level data show the response of both ASR-1 and ASR-2 to injection, with maximum water-level drawups of approximately 80 and 110 feet, which were below the maximum recommended drawup levels of approximately 100 and 130 feet, respectively. At ASR-3 the maximum water-level drawup was approximately 115 feet, which was also well below its maximum recommended drawup level of approximately 170 feet. At ASR-4, the limited volume and rates of injection resulted in maximum water-level drawup of approximately 75 feet, well below the maximum recommended of 210 feet. In summary, water levels were effectively maintained below the maximum recommended drawup levels at all ASR wells during WY 2016.

Recovery Operations Summary

When the injected water is recovered via delivery through the CAW system, the recovered water is offset by reduced pumping by CAW from the Carmel River system during the low-flow, high demand periods of the year. During WY 2016, ASR-1 was utilized for recovery of previously injected water. As shown on **Figure 6**, 493 af of recharged water was recovered by ASR-1 into the CAW system during WY 2016.

It is noted that in this context, ASR recovery is essentially an accounting / allocation of CAW's various water rights and pumping from the SGB, and does not represent a "molecule-for-molecule" recovery of the injected water. Rather, the volume recharged increases the operational yield of the SGB by the same amount and can be "recovered" by any of CAW's wells in the SGB and / or the ASR wells themselves.

WELL PERFORMANCE

Well performance is generally measured by specific capacity (pumping) and / or specific injectivity (injection), which is the ratio of flow rate (pumping or injection) to water-level change in the well (drawdown or drawup) over a specific elapsed time. The value is typically expressed as gallons per minute per foot of water level change (gpm/ft). The value normalizes well performance by taking into account differing static water levels and flow rates. As such, specific capacity / injectivity data are useful for comparing well performance over time and at differing flow rates. Decreases in specific capacity / injectivity are indicative of decreases in the hydraulic efficiency of a well due to the effects of plugging and/or particle rearrangement.

Injection Performance

Injection performance has been tracked at ASR-1 since the inception of the ASR program in WY 2002 by measurement and comparison of 24-hour injection specific injectivities (a.k.a. injection specific capacity).

ASR-1. A summary of 24-hour specific injectivity for ASR-1 for WY 2002 through 2016 is presented in **Table 2** below:

Table 2. Injection Performance Summary - ASR-1

Water Year	Injection Rate (gpm)	24-hour DUP (feet)	Specific Injectivity (gpm/ft)	Water Year Change	Comments
WY2002					
Beginning Period	1,570	81.7	**19.2**		FCV not installed yet in WY2002. No recovery pumping performed.
Ending Period	1,164	199.8	**6.4**	**-67%**	
WY2003					
Beginning Period	1,070	70.0	**15.5**		Recovery pumping performed following WY2003 Injection
Ending Period	1,007	49.7	**20.3**	**+31%**	
WY2004					
Beginning Period	1,383	183.4	**7.5**		Recovery pumping performed following WY2004 Injection
Ending Period	1,072	67.4	**15.9**	**+112%**	
WY2005					
Beginning Period	1,045	46.6	**22.4**		Injectate dechlorinated in WY2005. No recovery pumping performed.
Ending Period	976	94.1	**10.4**	**-54%**	
WY2006					
Beginning Period	1,039	71.5	**15.0**		Injection procedures consistent and performance stable in WY2006. No recovery pumping performed.
Ending Period	1,008	62.2	**17.5**	**+17%**	
WY2007					
Beginning Period	1,098	92.4	**11.9**		Only one injection period in WY2007. No recovery pumping performed.
Ending Period	--	--	**--**	**--**	
WY2008					
Beginning Period	979	25.5	**38.4**		Formal rehabilitation performed prior to WY2008 injection
Ending Period	1,063	33.4	**31.8**	**-17%**	
WY 2009					
Beginning Period	1,119	56.1	**19.9**		Beginning period low specific injectivity due to high plugging rate during initial injection period. No recovery pumping performed.
Ending Period	1,069	34.3	**31.1**	**+56%**	
WY 2010					
Beginning Period	1,080	35.6	**30.3**		Observed decline in performance due to residual plugging.
Ending Period	1,326	54.0	**24.6**	**-19%**	

Water Year	Injection Rate (gpm)	24-hour DUP (feet)	Specific Injectivity (gpm/ft)	Water Year Change	Comments
WY 2011					
Beginning Period	1,367	53.0	**25.8**		Observed decline in performance due to residual plugging.
Ending Period	1,454	63.7	**22.8**	**-10%**	
WY 2012					
Beginning Period	NA	NA	NA		No injection at this well this year.
Ending Period	NA	NA	NA	**NA**	
WY 2013					
Beginning Period	NA	NA	NA		No injection at this well this year.
Ending Period	NA	NA	NA	**NA**	
WY 2014					
Beginning Period	NA	NA	NA		No injection at this well this year.
Ending Period	NA	NA	NA	**NA**	
WY 2015					
Beginning Period	NA	NA	NA		No beginning period due to datalogger malfunction.
Ending Period	1,018	40.7	**25.0**	**NA**	
WY 2016					
Beginning Period	NA	NA	NA		**No beginning period due to datalogger malfunction.**
Ending Period	460	14.4	**31.9**	**NA**	

As shown in **Table 2**, the 24-hour specific injectivity the end of WY 2016 was 31.9 gpm/ft; there are no beginning season data to base calculation of residual plugging that occurred at ASR-1 over the course of the WY 2016 injection season.

ASR-2. A summary of the beginning and ending injection performance at ASR-2 for WY 2010 through WY 2016 is presented in **Table 3** below:

Table 3. Injection Performance Summary - ASR-2

Water Year	Injection Rate (gpm)	24-hour DUP (feet)	Specific Injectivity (gpm/ft)	Water Year Change	Comments
WY 2010					
Beginning Period	1,017	156.5	**6.5**		Significant residual plugging.
Ending Period	237	85.0	**2.8**	**-57%**	

Water Year	Injection Rate (gpm)	24-hour DUP (feet)	Specific Injectivity (gpm/ft)	Water Year Change	Comments
WY 2011					
Beginning Period	1,497	39.5	**37.9**		Significant improvement as a result of well rehabilitation. No residual plugging during year.
Ending Period	1,292	34.3	**37.7**	**-0.5%**	
WY 2012					
Beginning Period	1,830	56.1	**32.6**		Observed decline in performance due to residual plugging.
Ending Period	1,817	63.4	**28.7**	**-12%**	
WY 2013					
Beginning Period	1,087	32.7	**33.2**		No residual plugging during year.
Ending Period	1,508	44.2	**34.1**	**+3%**	
WY 2014					
Beginning Period	NA	NA	NA		No injection at this well this year.
Ending Period	NA	NA	NA	**NA**	
WY 2015					
Beginning Period	1,456	38.9	**37.4**		Observed decline in performance due to residual plugging.
Ending Period	1,574	49.1	**32.1**	**-14%**	
WY 2016					
Beginning Period	1,270	34.9	**36.4**		See discussion below.
Ending Period	1,620	63.9	**25.4**	**-30%**	

As shown in **Table 3**, the 24-hour specific injectivity at the beginning of WY 2016 was 36.4 gpm/ft and at the end of WY 2016 it was 25.4 gpm/ft, representing a decrease of approximately 30 percent, indicating that significant residual plugging occurred at ASR-2 over the course of the WY 2016 injection season (discussed further in a following section).

ASR-3. A summary of the beginning and ending injection performance at ASR-3 for WY 2013 through WY 2016 is presented in **Table 4** below:

Table 4. Injection Performance Summary – ASR-3

Water Year	Injection Rate (gpm)	24-hour DUP (feet)	Specific Injectivity (gpm/ft)	Water Year Change	Comments
WY 2013					
Beginning Period	1,044	87.0	**12.0**		See discussion below.
Ending Period	822	99.6	**8.3**	**-31%**	

Water Year	Injection Rate (gpm)	24-hour DUP (feet)	Specific Injectivity (gpm/ft)	Water Year Change	Comments
WY 2014					
Beginning Period	NA	NA	NA		No injection at this well this year.
Ending Period	NA	NA	NA	**NA**	
WY 2015					
Beginning Period	NA	NA	NA		No beginning period data.
Ending Period	892	90.3	**9.9**	**NA**	
WY 2016					
Beginning Period	948	83.6	**11.3**		See discussion below.
Ending Period	897	74.1	**12.1**	**+7%**	

As shown in **Table 4**, the 24-hour specific injectivity at the beginning of WY 2016 was 11.3 gpm/ft and at the end of WY 2016 it was 12.1 gpm/ft, representing a slight increase of approximately 7 percent, indicating that no residual plugging occurred at ASR-3 over the course of the WY 2016 injection season.

ASR-4. There are no 24-hr constant rate injection data for ASR-4 during WY 2016. Rather, injection at ASR-4 during WY 2016 was limited to 5 days of well "conditioning" (4.4 af). This "conditioning" effort consisted of numerous injection and backflushing cycles at relatively low rates and durations, being incrementally increased upon confirmation that well performance was being maintained. The conditioning was performed in an effort to limit the performance decline that has historically been observed at all three previous ASR wells following their initial injection operations (discussed below).

Initial injection was performed at a rate of approximately 260 gpm for 10 minutes, followed by backflushing. The injection rate and duration were incrementally increased over the course of 5 days during WY 2016, up to an injection rate of approximately 1,530 gpm for a maximum duration of 2 hours, followed by backflushing. The specific injectivity during these operations ranged between approximately 54 gpm/ft at the initial low injection rate of approximately 260 gpm to 36 gpm/ft at the ending high rate of 1,530 gpm (the design injection rate is 1,500 gpm). The "conditioning" effort at ASR-4 was considered complete in WY 2016 and formal baseline injection testing is planned for WY 2017.

Injection Performance Summary. The above results indicate a pattern in ASR well performance, with all three ASR wells having experienced comparably significant declines in performance following initial injection, followed by a period of relative stability in performance. It is hypothesized that the observed loss in performance is due to particle rearrangement (mechanical jamming) and/or chemical precipitation, as opposed to the normal and relatively slow plugging caused by particulates. This phenomenon is the reason for the well "conditioning" effort performed at ASR-4 during WY 2015 and WY 2106. It is also noted that while ASR-3 has experienced a significant decline in performance following its initial injection, (which limits its

injection capacity to approximately 1,000 gpm,) it is expected that rehabilitation will result in significantly improved performance as has been observed at both ASR-1 and ASR-2.

Pumping Performance and Residual Plugging

Experience at injection well sites around the world shows that all injection wells are subject to some amount of plugging, because no water source is completely free of particulates, bionutrients, or oxidants, all of which can contribute to well plugging; the CAW source water is no exception. During injection, trace amounts of suspended solids are continually being deposited in the gravel pack and aquifer pore spaces, much as a media filter captures particulates in the filter bed. The effect of plugging is to impede the flow of water from the injection well into the aquifer, causing increased injection heads in the well to maintain a given injection rate, or reduced injection rates at a given head level. Well plugging reduces injection and extraction capacity, and can result in decreased useful well life if not mitigated.

Relative measurements of the particulate matter in the injectate have historically been made at the Santa Margarita site through silt density index (SDI) testing during injection. The SDI was originally developed to quantitatively assess particulate concentrations in reverse-osmosis feed waters. The SDI test involves pressure filtration of source water through a 0.45-micron membrane, and observation of the decrease in flow rate through the membrane over time; the resulting (dimensionless) value of SDI is used as a comparative value for tracking relative declines in well plugging rates associated with particulate plugging during an injection season (i.e., plugging rates tend to increase directly with SDI). During WY 2016 injection operations, SDI values at the beginning of the injection season were as high as 5.2 and fell to approximately 1.3 after the first month of injection.

Following routine backflushing operations and periods of water-level recovery, controlled 10-minute specific-capacity tests are typically performed to track well pumping performance, similar to the tracking of injection performance from 24-hour specific injectivity discussed above. Residual plugging is the plugging that remains following backflush pumping. Residual plugging increases drawdown during pumping and drawup during injection, and is manifested as declining specific capacity / injectivity. The presence of residual plugging is indicative of incomplete removal of plugging particulates during backflushing and has the cumulative effect of reducing well performance and capacity over time.

As discussed previously, routine 10-minute specific capacity tests were performed at the ASR wells as part of backflushing events during WY 2016. Presented in **Table 8** below is a summary of the residual plugging calculations for the ASR wells during WY 2016.

Table 5. Pumping Performance and Residual Plugging Summary

Well	Test	Pumping Rate (gpm)	10-min Drawdown (ft)	10-min Q/s[1] (gpm/ft)	Normaliz-ation Ratio[2]	Normalized Drawdown[2] (ft)	Residual Plugging (ft)
ASR-1	Pre-Injection	3,300	57.5	57.4	0.91	52.3	--
	Post-Injection	3,300	89.1	37.0	0.91	81.0	28.7
ASR-2	Pre-Injection	2,800	66.5	42.1	1.07	71.3	--
	Post-Injection	2,800	97.7	28.7	1.07	104.7	33.4
ASR-3	Pre-Injection	1,800	106.6	16.9	1.11	118.4	--
	Post-Injection	2,100	156.3	13.4	0.95	148.9	30.4
ASR-4	Pre-Injection	3,200	121.4	26.4	0.94	113.8	--
	Post-Injection	3,300	147.2	22.4	0.91	133.8	20.0
Notes:							
1 - Specific Capacity. Ratio of pumping rate to drawdown.							
2 - Normalized based on ratio of 3,000 gpm to actual test pumping rate for ASR-1, -2 and -4. Based on 2,000 gpm for ASR-3.							

As shown on **Figures 7 through 10**, injection water levels were maintained below the recommended maximum available drawup levels at all four ASR wells during WY 2016; however, as shown in **Table 8**, all four wells experienced residual plugging ranging between approximately 20 and 35 feet and commensurate declines in pumping specific capacity. These results indicate that more intensive backflushing (e.g., multiple backflush cycles as opposed to a single cycle) should be implemented at all four ASR wells during WY 2017 to limit residual plugging and maintain performance.

AQUIFER RESPONSE TO INJECTION

The response of the regional aquifer system to injection has been monitored since the SMTIW project was initiated in WY 2002. Submersible water-level transducer/data logger units have been installed at seven offsite monitoring well locations in the SGB as well as three onsite monitoring wells. The locations of each offsite monitoring well are shown on **Figure 1**, and water-level hydrographs for the monitoring wells during WY 2016 are graphically presented on **Figures 11 through 19**. A summary of the regional water-level observations during the WY 2016 injection season is presented in **Table 9** below.

Table 6. Aquifer Response Summary

Well ID	Distance from Nearest Active ASR Well (feet)	Aquifer Monitored	Fig. No.	Pre-Injection DTW (ft. bgs)	Shallowest Injection DTW (ft. bgs)	Maximum Drawup Response (ft.)
SMS (Shallow)	25 (SMS ASR-3)	QTp	**11**	No Discernable Response		
SMS (Deep)		Tsm		No Data	314.5	**NA**
SM MW-1	190 (SM ASR-2)	Tsm	**12**	345.4	316.8	**28.6**
Paralta Test	650 (SM ASR-2)	QTp & Tsm	**13**	335.8	320.6	**15.2**
Ord Grove Test	1,820 (SM ASR-2)	QTp & Tsm	**14**	No Discernable Response		
Ord Terrace (Shallow)	2,550 (SM ASR-2)	Tsm	**15**	No Discernable Response		
FO-7 (Shallow)	3,700 (SMS ASR-3)	QTp	**16**	No Discernable Response		
FO-7 (Deep)		Tsm		492.4	478.1	**14.3**
FO-9 (Deep)	6,130 (SMS ASR-3)	Tsm	**17**	135.6	123.9	**11.7**
PCA East (Shallow)	6,200 (SMS ASR-3)	QTp	**18**	No Discernable Response		
PCA East (Deep)		Tsm		89.4	77.3	**12.1**
FO-8 (Deep)	6,450 (SMS ASR-3)	Tsm	**19**	399.5	388.1	**11.4**

Notes:
QTp – Quaternary / Tertiary-age Paso Robles Formation aquifer
Tsm – Tertiary-age Santa Margarita Sandstone aquifer
DTW – Depth to Water

As shown on the water-level hydrographs, water levels in the Santa Margarita Sandstone (Tsm) aquifer at the start of the WY 2016 recharge season ranged between approximately 6 to 22 feet below sea level. Positive response to injection during WY 2016 was observed at 7 of the 9 monitoring wells completed in the Santa Margarita Sandstone aquifer, with apparent water-level responses ranging between approximately 11 to 29 feet, with levels decreasing with distance from the ASR wells, which is the typical and expected aquifer response to hydraulic stresses (i.e., injection or pumping). The WY 2016 responses are comparable to those observed in previous water years.

The available water-level data also continue to show that at the Tsm-only monitoring wells, water levels consistently remained below sea level throughout the injection season. Under these water-level conditions, little to no offshore groundwater flow from the Tsm aquifer would be expected to occur and any “losses” associated with ASR project operations from water potentially migrating offshore are highly unlikely.

The limited available data for wells completed in the Paso Robles Formation (QTp) also continue to show no discernible response to injection into the Tsm, and water levels in this aquifer remained above the water levels in the underlying Tsm aquifer during WY 2016. Under these water-level conditions, little to no flow of water from the Tsm to the QTp aquifer would be expected to occur.

It is further noted that the Ord Grove Test and Ord Terrace monitoring wells (refer to **Figures 14 and 15**) continue to show no discernible response to injection operations, as has been observed during previous injection seasons. Most project monitoring wells show no discernible response to the pumping of CAW's Ord Grove production well. These observations suggest that the Ord Terrace Fault or a parallel branch of the fault may represent a hydraulic barrier in the Tsm aquifer.

WATER QUALITY

General

Source water for injection is supplied from the CAW municipal water system, primarily from Carmel River system wells which are treated at the CAW Begonia Iron Removal Plant (BIRP) for iron and manganese removal. The BIRP water is also disinfected and maintains a free chlorine residual. A phosphate-based corrosion inhibitor (Zinc Orthophosphate) is also added to the filtered water before entering the CAW distribution system. The finished product water meets all California Department of Public Health (CADPH) Primary and Secondary water quality standards.

As in previous years, water quality was routinely monitored at the ASR well sites during WY 2016 injection and aquifer storage operations. Far-field water quality was also monitored at the CAW Paralta production well and at the PCE-East Deep monitoring well (PCA-E Deep). Summaries of the collected water-quality data during WY 2016 are presented in **Tables 10 through 18** below. Analytic laboratory reports are presented in **Appendix B**. A discussion of the water-quality data collected during WY 2016 is presented below.

Injection Water Quality

Injection water quality from the CAW system during WY 2016 is presented in **Table 11** below; the data show injection water quality was typical of recent years. Levels of Trihalomethanes (THM) and Haloacetic Acid (HAA) compounds, as well as bionutrients (oxygen, nitrogen, phosphorous, and organic carbon), were all present at levels similar to previous years.

Mixing and Dilution

Injection operations have occurred over the past 15 Water Years (injection began at ASR-1 in WY 2002), an as a result, the proximate groundwater quality in the vicinity of the ASR well field has been altered from the natural subsurface conditions, making a clear distinction between "native" and "non-native" water quality both complex and somewhat subjective. In the past, the most illustrative basis for discussing water-quality changes for the ASR project was to consider groundwater conditions immediately prior to the injection season as a baseline; however, establishing baseline conditions is more complex now that injection is occurring at multiple wells. Because the issue of precisely defining baseline water-quality conditions is increasingly difficult as injection occurs at multiple wells with varying amounts of recovery pumping between injection seasons, the practice has been dropped in this and future reports.

Water Quality During Aquifer Storage

Tables 12 through 15 present summaries of water-quality data collected at the four ASR wells. **Tables 16 and 17** present similar data collected at the on-site monitoring wells SM MW-1 and SMS Deep, respectively; and **Table 18** presents the water-quality data collected at the off-site monitoring wells (PCA-E Deep and Paralta). Data for the ASR wells include baseline water quality taken prior to WY 2016 injection (end of WY 2015 Storage) and stored water quality (WY 2016 Storage) collected periodically from the aquifer after WY 2016 injection operations were terminated.

Review of water-quality parameters gathered at the ASR wells, including major anions and cations, redox potential (ORP), and conductivity all showed similar effects of dilution / intermixing of injected water with native groundwater during aquifer storage. As found in previous ASR operations at the site, the most significant water-quality changes observed during aquifer storage other than simple dilution/mixing were redox-related (and likely biologically mediated) reactions; these were primarily evidenced by the degradation of HAA and THM compounds and absence of hydrogen sulfide[6] even in mixed NGW and injected waters.

Disinfection Byproducts (DBPs) parameters at the on-site wells during WY 2016 are graphically presented on **Figures 20 through 24**. As shown, THMs at the ASR wells showed their typical initial and significant ingrowth during the storage period, which results from the presence of free chlorine and trace levels of organic carbon in the injected water. THM ingrowth generally peaks in concentration approximately 60 to 120 days after the cessation of injection, followed by a gradual decline during the storage period. After approximately 150 to 180 days of storage, THMs typically degraded to below the initial injection levels. The decline in THMs observed at the ASR and on-site monitoring wells followed the characteristic process: rapid degradation of Bromoform and the highly brominated species with much slower decline in Chloroform. It is noted that THMs were below the Maximum Contaminant Level (MCL) of 80 ug/L throughout WY 2016, with the exception of transiently elevated levels during the peak in-growth periods, which dropped to below the MCL by the end of the storage season[7]. HAAs also showed their typical pattern of limited (if any) ingrowth during the initial storage period, followed by rapid degradation by the end of the storage season.

Water Quality at Off-Site Monitor Wells

Water-quality data collected from off-site wells in WY 2016 data are presented in **Table 18**. Samples from PCA-E Deep were collected following the WY 2016 injection season (but were not collected prior for unknown reasons). The absence of DBP's suggest that the influence of recharge operations is negligible to date at this location. Limited data are available from the nearest CAW production well to the ASR wells (i.e., Paralta)[8]; however, the available

[6] Low levels of Hydrogen Sulfide are ubiquitous in the Tsm aquifer under natural conditions.
[7] SMS Deep could not be sampled in the 3rd quarter of 2016 due to a sampling pump malfunction.
[8] Paralta was not sampled by CAW during WY 2016 in accordance with the SAP for unknown reason(s).

THM data show a potential trend of an increasing contribution of injected water quality over the WY 2016 storage season.

Additional Water Quality Observations

As discussed in the WY 2015 Summary of Operations Report (SOR), at the commencement of WY 2013 recovery pumping of ASR-1, a sample collected by CAW[9] had a Mercury (Hg) concentration of 4 µg/L, exceeding the State MCL of 2 µg/L. Although the occurrence of Hg in surface water and groundwater has been documented elsewhere in the Monterey Bay region, the detection of Hg in SGB water was unusual; further investigation of the actual sampling conditions and protocols for that sample were also nonstandard. The results were nonetheless followed up with additional sampling to verify the presence of Hg; the subsequent sampling identified detectable levels of Hg, although below the MCL. The fact that detectable Hg was identified, and at levels above historical NGW and Injectate concentrations led to the development of an in-depth investigation of Hg occurrence at the ASR wells. The origin of the detected Hg above background concentrations could be the result one or more sources, including the following:

- Naturally occurring Hg present in the Santa Margarita Sandstone (Tsm) aquifer mineralogy, which solubilized into the groundwater under natural NGW / Tsm geochemical interaction conditions.
- Hg present in the Carmel River System injection source water that accumulated in the well bore area, similar to the accumulation of other particulate matter present in the Carmel River injectate and CAW conveyance system.
- Solubilization of naturally occurring Hg present in the Tsm minerals, which is the result of geochemical interactions between the injection source water, NGW and aquifer minerals. Recent mineralogy analyses have identified the presence of trace levels of four different sulfide minerals in Tsm cuttings and ASR well backflush residue; the speciation of these four minerals are potentially capable of harboring elemental Hg within their matrix. Further analysis of these samples is in progress.
- Other anthropogenic sources of Hg in well components or other off-site sources.

Prior to WY 2016, a Supplemental Sampling and Analysis Plan[10] (SSAP) was developed for additional investigation of the Hg occurrence. In addition to the collection of Hg samples utilizing a variety of EPA-approved laboratory methods and detections limits, the suite of analytes included a variety of constituents that are known to affect (or directly react with) Hg and/or Hg compounds. As of this writing, the investigation is ongoing; however, the results of SSAP during WY 2016 provided several initial findings, discussed below:

[9] Collected on October 24, 2013.
[10] Dated September 4, 2015

WY 2016 Sampling and Analysis Discussion. Additional sampling was performed during the WY 2016 injection season to further assess the correlation between Hg detections and high Turbidity levels, resulting in these additional findings:

- All sample results showed Hg levels below MCL's, with positive correlation between declining turbidity and decreasing Hg levels.
- Additional sampling of CAW source waters from the Begonia Iron Removal Plant (BIRP) indicated detectable Hg in the raw well water plant influent, and in the BIRP plant finished product water. These Hg levels were all far below MCL's, and even below the detection limits of conventional EPA 200.8 analysis methods; the influent Hg detections were in sub-parts-per-trillion levels.

Figure 25 presents a plot of Hg and Turbidity versus time for a series of samples collected on February 11, 2016 at ASR-1 during a backflush event after one week of injection operations at approximately 1,100 gpm. The new triple-surge backflushing procedure was implemented at this time. Samples were collected at 1, 6, 20, and 30 minutes after well startup; the characteristic occurrence of elevated Hg and elevated Turbidity are present, but decline rapidly as the well is flushed. Similar results are presented in **Figure 26,** which presents the results of a similar well backflushing event at ASR-1 on March 23, 2016; again after approximately one week of injection. The same decline in Hg content and Turbidity is observed.

Figure 27 is a summary plot of all Hg and Turbidity data collected to date from the ASR-1 Hg study, showing the correlation between Hg and Turbidity versus time from start of well pumping. The data thus far are strongly suggestive that there is a meaningful correlation between Hg content, Turbidity, and pumping time in the produced water from ASR-1. The possible explanation for this phenomenon is that the trace-level Hg present in the Carmel River System injection source waters is accumulating in the near-well-bore area during injection operations, and is then released when reverse flows associated with backflushing or recovery production occur.

Initial Recommendations for Facility and Operational Improvements. The results of the investigation thus far have identified important issues associated with the occurrence – and mitigation of Hg in the ASR-1 well. The following conclusions and recommendations provided below are based on the results of the investigation thus far:

- Because the occurrence of elevated Hg levels in ASR-1 appears to be directly correlated to elevated turbidity levels in initial well flush waters, the formal adoption of the enhanced well flushing procedure should be made a part of regular well operations both in Injection mode backflushing operations, and in regular production service whenever the well is placed back into service after any idle period. This procedure should consist of performing a series of 3 consecutive short flush episodes instead of a single longer flush period; thusly increasing well bore velocity changes and inducement of reverse flows in the well. This process resulted in lower final turbidities and lower Hg levels overall after well flushing operations were completed.

- As an additional conservative measure, we recommend continuation of periodic (monthly) well backflushing and associated water quality monitoring with the ASR wells during the WY 2017 storage periods to further assess and confirm the data collected thus far regarding the correlation of Hg occurrence with turbidity on initial well flush discharges.
- To ensure compliant water quality once the ASR-1 well is in recovery mode and is delivering water directly into the Cal-Am distribution system, the use of Turbidity as a surrogate parameter for possible elevated Hg would allow continuous on-line monitoring of water quality vis-à-vis the installation of an online Turbidity analyzer on the well discharge line that is interlocked to a well shutdown and alarm algorithm in the facility PLC/SCADA controls.
- To verify the absence of Hg in produced waters from the well, special sampling is recommended prior to bringing the well back online for production, or whenever the well has been offline for more than one month. The special testing program consists of a series of Hg samples collected at 1, 6, 30 and 60 minutes after initial well startup; these samples will be analyzed by an outside laboratory and results received before the well is placed back into production service.

A revised protocol reflecting the new triple-surge well flushing procedure has been developed and is planned to be adopted for all regular and special operations in WY 2017. The addition of an on-line Turbidity analyzer as discussed above, along with the associated modification of PLC and SCADA system algorithms, are also planned to be implemented to serve as a safeguard against the possible conveyance of turbid (and potentially Hg-noncompliant) waters into the distribution system.

Next Steps. The investigation thus far has established a strong correlation between turbidity in initial flush waters and Hg occurrence at ASR-1, with both parameters declining in the early period of well purging operations. There are currently several additional technical issues that are planned for further investigation in WY 2017, including the following:

- Collection of high-frequency (daily) samples of injectate during the Injection Season to monitor for the presence / absence of Hg in the injected water.
- “Breakthrough” sampling of arrival of injection front from ASR-3 at ASR-4.
- Determination of the precise identification of Hg-bearing particulates (i.e., molecular composition and structure) will be pursued via specialty analytical laboratory methods. This will aid in the understanding of which chemical compounds might be associated with Hg-occurrence. Residue samples collected during the course of the WY 2017 Injection Season are planned for evaluation by the specialty lab to establish if the samples have sufficient quantities of Hg-bearing particulates for this determination.
- Assuming there are suitable quantities of Hg-bearing compounds available that can be identified analytically, this will then be utilized to facilitate refined geochemical

modeling to provide an improved understanding of the geochemical mechanism(s) responsible for Hg-occurrence in the initial flush water samples.

- These recommended steps are intended to facilitate long-term operational improvement considerations for the Aquifer Storage and Recovery program.

As the Hg investigation continues, additional findings, conclusions, and recommendations will be documented in the WY 2017 SOR to facilitate ongoing operation of the ASR project.

Water Quality Summary

Overall, water-quality data from WY 2016 showed no significant deviations from previous years. The only deviation from the norm for the ASR program was the intermittent and transient occurrence of Hg detections as described for the ASR-1 well; however, as discussed above, additional investigation in WY 2017 will be implemented to further investigate the origin of the detected Hg. The most important factors regarding ASR operations to date are that:

1. No evidence of adverse geochemical reactions has been observed during aquifer storage (with the exception of near-bore Hg accumulation possibly related to Hg dissolution), and;
2. Injection has shown direct and measurable benefit to the basin water quality vis-à-vis reductions in salinity, dissolved solids, hardness, and aesthetic parameters such as manganese and sulfide ion, which impart color and odor to the consumers' drinking water.

These improvements are likely to prevail as ASR operations continue and expand in the future.

Table 7. Summary of WY 2016 Water Quality Data – Injectate

Parameter	Unit	PQL	MCL	Results		
				CAW Injectate		
				1/11/16	2/19/16	3/16/16
		Sample Description		Injectate		
Major Cations						
Calcium	mg/L	*0.5*		47		
Magnesium	mg/L	*0.5*		15		
Potasium	mg/L	*0.5*		3.2		
Sodium	mg/L	*0.5*		52		
Major Anions						
Alkalinity, Total (as CaCO3)	mg/L	*2*		153		
Chloride	mg/L	*1*	*250*	34		
Sulfate	mg/L	*1*	*250*	91		
Nitrate (as NO3)	mg/L	*1*	*45*	1		
Nitrite (as Nitrogen)	mg/L	*1*	*1*	0.3		
General Physical						
pH	Std Units			7.6		
Specific Conductance (EC)	uS	*1*	*900*	603		
Total Dissolved Solids	mg/L	*10*	*500*	380		
Metals						
Arsenic (Total)	ug/L	*1*	*10*	1		
Barium (Total)	ug/L	*10*	*1000*	70		
Iron (Dissolved)	ug/L	*10*		ND		
Iron (Total)	ug/L	*10*	*300*	ND		
Lithium	ug/L	*1*		7		
Manganese (Dissolved)	ug/L	*10*		ND		
Manganese (Total)	ug/L	*10*	*50*	ND		
Molybdenum	ug/L	*1*	*1000*	3		
Nickel	ug/L	*10*	*100*	ND		
Selenium	ug/L	*2*	*50*	4		
Strontium (Total)	ug/L	*5*		263		
Uranium (by ICP/MS)	ug/L	*1*	*30*	1		
Vanadium (Total)	ug/L	*1*	*1000*	ND		
Zinc (Total)	ug/L	*10*	*5000*	318		
Miscellaneous						
Ammonia-N	mg/L	*0.05*		ND		
Boron	mg/L	*0.05*		ND		
Chloramines	mg/L	*0.05*		0.19	0.11	0.11
Gross Alpha	pCi/L		*15*	1.72 +/- 1.65		
Kjehldahl Nitrogen (Total)	mg/L	*0.5*		ND		
Methane	ug/L	*0.1*		0.59		
Nitrogen (Total)	mg/L	*0.5*		0.5		
o-Phosphate-P	mg/L	*0.05*		0.3		
Phosphorous (Total)	mg/L	*0.03*		0.47		
Radium 226	pCi/L		*3*	0.036 +/- 0.159		
Organic Analyses						
Haloacetic Acids (Total)	ug/L	*1.0*	*60.0*	11.5	13.9	12.7
Dibromoacetic Acid	*ug/L*	*1.0*		*3.1*	*2.6*	*1.9*
Dichloroacetic Acid	*ug/L*	*1.0*		*5.2*	*6.8*	*6.1*
Monobromoacetic Acid	*ug/L*	*1.0*		*ND*	*ND*	*ND*
Monochloroacetic Acid	*ug/L*	*2.0*		*ND*	*ND*	*ND*
Trichloroacetic Acid	*ug/L*	*1.0*		*3.2*	*4.5*	*4.7*
Organic Carbon (Dissolved)	mg/L	*0.2*		1.4		
Organic Carbon (Total)	mg/L	*0.2*		1.4		
Trihalomethanes (Total)	ug/L	*1.0*	*80.0*	25.8	30.4	27.2
Bromodichloromethane	*ug/L*	*0.5*		*8.8*	*11.0*	*9.5*
Bromoform	*ug/L*	*0.5*		*1.7*	*0.99*	*0.73*
Chloroform	*ug/L*	*0.5*		*6.9*	*11.0*	*11.0*
Dibromochloromethane	*ug/L*	*0.5*		*8.4*	*7.4*	*6.0*
Field Parameters						
Temperature	^{0} C	*0.1*			14.6	16.1
Specific Conductance (EC)	uS	*1.0*	*900*		476	450
pH	Std Units	*0.1*	*6.5 - 8.5*		7.5	6.9
ORP	mV	*1.0*			589	372
Free Chlorine Residual	mg/L	*0.1*	*2 - 5*		0.2	1.5
Dissolved Oxygen	mg/L	*0.01*				2.7
Silt Density Index	Std Units	*0.1*				
Gas Volume	mL	*2.0*				
H_2S	mg/L	*0.1*				

Notes:

Constituents exceeding MCLs denoted in **BOLD** type

Table 8. Summary of WY 2016 Water-Quality Data – ASR-1

Parameter	Unit	PQL	MCL	Results SM ASR-1 3/21/01	9/22/15	7/12/16	9/21/16
		Sample Description		NGW	WY 2015 Storage	WY 2016 Storage	
Elapsed Storage Time	Days			--	**217**	**99**	**170**
Volume Purged at Sampling	1,000 gals			--			
Major Cations							
Calcium	mg/L	*0.5*		85	96	41	68
Magnesium	mg/L	*0.5*		19	23	13	17
Potasium	mg/L	*0.5*		5.3	5.7	2.9	4.0
Sodium	mg/L	*0.5*		88	101	43	71
Major Anions							
Alkalinity, Total (as CaCO3)	mg/L	*2*		224	237	135	180
Chloride	mg/L	*1*	*250*	120	141	28	72
Sulfate	mg/L	*1*	*250*	95	118	70	96
Nitrate (as NO3)	mg/L	*1*	*45*	ND	ND	ND	1.0
Nitrite (as Nitrogen)	mg/L	*1*	*1*		0.3	ND	0.3
General Physical							
pH	Std Units			7.1	7.1	7.4	7.4
Specific Conductance (EC)	uS	*1*	*900*	**1015**	**1141**	496	763
Total Dissolved Solids	mg/L	*10*	*500*	**618**	**677**	317	471
Metals							
Arsenic (Total)	ug/L	*1*	*10*	ND	1	1	1
Barium (Total)	ug/L	*10*	*1000*	52	84	56	55
Iron (Dissolved)	ug/L	*10*			10	ND	ND
Iron (Total)	ug/L	*10*	*300*	120	59	120	ND
Lithium	ug/L	*1*			41	6	19
Manganese (Dissolved)	ug/L	*10*			20	ND	ND
Manganese (Total)	ug/L	*10*	*50*	40	23	ND	ND
Molybdenum	ug/L	*1*	*1000*		10	3	6
Nickel	ug/L	*10*	*100*		ND	ND	ND
Selenium	ug/L	*2*	*50*	ND	2	4	2
Strontium (Total)	ug/L	*5*			472	222	308
Uranium (by ICP/MS)	ug/L	*1*	*30*		1	ND	1
Vanadium (Total)	ug/L	*1*	*1000*		ND	ND	ND
Zinc (Total)	ug/L	*10*	*5000*	10	118	219	87
Miscellaneous							
Ammonia-N	mg/L	*0.05*		0.33	0.19	ND	ND
Boron	mg/L	*0.05*		0.14	0.13	ND	0.08
Chloramines	mg/L	*0.05*			ND	ND	ND
Gross Alpha	pCi/L		*15*		4.70 +/- 2.00	1.76 +/- 1.57	2.52 +/- 1.55
Kjehldahl Nitrogen (Total)	mg/L	*0.5*			ND	ND	ND
Methane	ug/L	*0.1*			0.4	0.59	2.2
Nitrogen (Total)	mg/L	*0.5*			ND	ND	0.5
o-Phosphate-P	mg/L	*0.05*		0.46	0.2	ND	0.1
Phosphorous (Total)	mg/L	*0.03*			0.17	0.26	0.13
Radium 226	pCi/L		*3*		1.28 +/- 0.34	0.264 +/- 0.245	0.758 +/- 0.437
Organic Analyses							
Haloacetic Acids (Total)	ug/L	*1.0*	*60.0*		0.0	6.0	0.0
Dibromoacetic Acid	*ug/L*	*1.0*			*ND*	*1*	*ND*
Dichloroacetic Acid	*ug/L*	*1.0*			*ND*	*1*	*ND*
Monobromoacetic Acid	*ug/L*	*1.0*			*ND*	*ND*	*ND*
Monochloroacetic Acid	*ug/L*	*2.0*			*ND*	*ND*	*ND*
Trichloroacetic Acid	*ug/L*	*1.0*			*ND*	*4*	*ND*
Organic Carbon (Dissolved)	mg/L	*0.2*			1.5		1.0
Organic Carbon (Total)	mg/L	*0.2*		6.3	1.3		1.0
Trihalomethanes (Total)	ug/L	*1.0*	*80.0*		0.6	**93.0**	28.9
Bromodichloromethane	*ug/L*	*0.5*			*ND*	*20.7*	*7.6*
Bromoform	*ug/L*	*0.5*			*ND*	*0.9*	*0.5*
Chloroform	*ug/L*	*0.5*			*0.6*	*62.1*	*18.8*
Dibromochloromethane	*ug/L*	*0.5*			*ND*	*9.3*	*2.0*
Field Parameters							
Temperature	^{0}C	*0.1*			20.4	16.4	19.4
Specific Conductance (EC)	uS	*1.0*	*900*	1015	1211	455	667
pH	Std Units	*0.1*	*6.5 - 8.5*	7.1	7.3	7.8	7.0
ORP	mV	*1.0*			-147	-98	-243
Free Chlorine Residual	mg/L	*0.1*	*2 - 5*		ND	0.51	ND
Dissolved Oxygen	mg/L	*0.01*			ND	1.93	1.17
Silt Density Index	Std Units	*0.1*					
Gas Volume	mL	*2.0*					
H_2S	mg/L	*0.1*		1.5	0.07		ND

Notes:
Constituents exceeding MCLs denoted in **BOLD** type

Table 9. Summary of WY 2016 Water Quality Data – ASR-2

Parameter	Unit	PQL	MCL	Results SM ASR-2 12/15/15	6/21/16	9/27/16
		Sample Description		WY 2015 Storage	WY 2016 Storage	
Elapsed Storage Time	Days			**301**	**78**	**176**
Volume Purged at Sampling	1,000 gals					
Major Cations						
Calcium	mg/L	*0.5*			40	60
Magnesium	mg/L	*0.5*			13	19
Potasium	mg/L	*0.5*			3.0	3.8
Sodium	mg/L	*0.5*			42	64
Major Anions						
Alkalinity, Total (as CaCO3)	mg/L	*2*			129	180
Chloride	mg/L	*1*	*250*	126	29	64
Sulfate	mg/L	*1*	*250*		72	81
Nitrate (as NO3)	mg/L	*1*	*45*		1	1
Nitrite (as Nitrogen)	mg/L	*1*	*1*		ND	0.3
General Physical						
pH	Std Units				7.7	7.5
Specific Conductance (EC)	uS	*1*	*900*		487	707
Total Dissolved Solids	mg/L	*10*	*500*		326	431
Metals						
Arsenic (Total)	ug/L	*1*	*10*		1	1
Barium (Total)	ug/L	*10*	*1000*		54	83
Iron (Dissolved)	ug/L	*10*			ND	ND
Iron (Total)	ug/L	*10*	*300*		70	66
Lithium	ug/L	*1*			6	14
Manganese (Dissolved)	ug/L	*10*			ND	10
Manganese (Total)	ug/L	*10*	*50*		ND	11
Molybdenum	ug/L	*1*	*1000*		5	6
Nickel	ug/L	*10*	*100*		ND	ND
Selenium	ug/L	*2*	*50*		6	2
Strontium (Total)	ug/L	*5*			206	300
Uranium (by ICP/MS)	ug/L	*1*	*30*		ND	1
Vanadium (Total)	ug/L	*1*	*1000*		ND	ND
Zinc (Total)	ug/L	*10*	*5000*		228	317
Miscellaneous						
Ammonia-N	mg/L	*0.05*			ND	ND
Boron	mg/L	*0.05*			ND	0.06
Chloramines	mg/L	*0.05*		ND	0.05	ND
Gross Alpha	pCi/L		*15*		0.550 +/- 1.08	2.59 +/- 2.16
Kjehldahl Nitrogen (Total)	mg/L	*0.5*			ND	1
Methane	ug/L	*0.1*			0.43	1.7
Nitrogen (Total)	mg/L	*0.5*			ND	1.5
o-Phosphate-P	mg/L	*0.05*			0.3	0.3
Phosphorous (Total)	mg/L	*0.03*			0.31	0.25
Radium 226	pCi/L		*3*		0.000 +/- 0.105	0.000 +/- 0.246
Organic Analyses						
Haloacetic Acids (Total)	ug/L	*1.0*	*60.0*	0.0	12.0	0.0
Dibromoacetic Acid	*ug/L*	*1.0*		*ND*	*1.0*	*ND*
Dichloroacetic Acid	*ug/L*	*1.0*		*ND*	*2.0*	*ND*
Monobromoacetic Acid	*ug/L*	*1.0*		*ND*	*ND*	*ND*
Monochloroacetic Acid	*ug/L*	*2.0*		*ND*	*ND*	*ND*
Trichloroacetic Acid	*ug/L*	*1.0*		*ND*	9.0	*ND*
Organic Carbon (Dissolved)	mg/L	*0.2*			1.4	
Organic Carbon (Total)	mg/L	*0.2*			1.4	1.10
Trihalomethanes (Total)	ug/L	*1.0*	*80.0*	0.0	**101.8**	47.9
Bromodichloromethane	*ug/L*	*0.5*		*ND*	23.7	*12.0*
Bromoform	*ug/L*	*0.5*		*ND*	1.0	0.60
Chloroform	*ug/L*	*0.5*		*ND*	66.5	29.8
Dibromochloromethane	*ug/L*	*0.5*		*ND*	10.6	5.5
Field Parameters						
Temperature	^{0} C	*0.1*		18.5	16.3	18.0
Specific Conductance (EC)	uS	*1.0*	*900*	**1048**	540	610.0
pH	Std Units	*0.1*	*6.5 - 8.5*	7.4	7.6	6.5
ORP	mV	*1.0*		-188	-189	-202.5
Free Chlorine Residual	mg/L	*0.1*	*2 - 5*	ND	0.2	0.24
Dissolved Oxygen	mg/L	*0.01*		ND	1.98	1.01
Silt Density Index	Std Units	*0.1*				
Gas Volume	mL	*2.0*				
H_2S	mg/L	*0.1*		0.05		0.02

Notes:
Constituents exceeding MCLs denoted in **BOLD** type

Table 10. Summary of WY 2016 Water Quality Data – ASR-3

Parameter	Unit	PQL	MCL	Results SMS ASR-3 10/22/10	12/16/15	6/22/16	9/21/16
		Sample Description		NGW	WY 2015 Storage	WY 2016 Storage	
Elapsed Storage Time	Days				302	79	170
Volume Purged at Sampling	1,000 gals						
Major Cations							
Calcium	mg/L	*0.5*		76		38	53
Magnesium	mg/L	*0.5*		18		13	17
Potasium	mg/L	*0.5*		5		2.8	3.6
Sodium	mg/L	*0.5*		102		41	59
Major Anions							
Alkalinity, Total (as CaCO3)	mg/L	*2*		304		129	171
Chloride	mg/L	*1*	*250*	107	95	30	58
Sulfate	mg/L	*1*	*250*	56		72	72
Nitrate (as NO3)	mg/L	*1*	*45*	1		1.0	1.0
Nitrite (as Nitrogen)	mg/L	*1*	*1*	ND		ND	0.3
General Physical							
pH	Std Units			7.7		7.6	7.5
Specific Conductance (EC)	uS	*1*	*900*	**954**		501	657
Total Dissolved Solids	mg/L	*10*	*500*	**575**		306	426
Metals							
Arsenic (Total)	ug/L	*1*	*10*	4		16	6
Barium (Total)	ug/L	*10*	*1000*	50		52	78
Iron (Dissolved)	ug/L	*10*		21		ND	ND
Iron (Total)	ug/L	*10*	*300*	21		53	56
Lithium	ug/L	*1*		36		6	14
Manganese (Dissolved)	ug/L	*10*		27		ND	12
Manganese (Total)	ug/L	*10*	*50*	27		ND	13
Molybdenum	ug/L	*1*	*1000*	--		76	21
Nickel	ug/L	*10*	*100*	ND		ND	ND
Selenium	ug/L	*2*	*50*	ND		9	3
Strontium (Total)	ug/L	*5*		403		207	281
Uranium (by ICP/MS)	ug/L	*1*	*30*	--		1	3
Vanadium (Total)	ug/L	*1*	*1000*	--		ND	ND
Zinc (Total)	ug/L	*10*	*5000*	--		231	266
Miscellaneous							
Ammonia-N	mg/L	*0.05*		249		ND	ND
Boron	mg/L	*0.05*		ND		ND	0.05
Chloramines	mg/L	*0.05*		0.08	ND	ND	ND
Gross Alpha	pCi/L		*15*	--		1.16 +/- 1.41	4.28 +/- 1.73
Kjehldahl Nitrogen (Total)	mg/L	*0.5*		ND		ND	1
Methane	ug/L	*0.1*		ND		0.52	1.40
Nitrogen (Total)	mg/L	*0.5*		ND		ND	1.5
o-Phosphate-P	mg/L	*0.05*		ND		0.3	0.2
Phosphorous (Total)	mg/L	*0.03*		0.03		0.28	0.27
Radium 226	pCi/L		*3*	--		0.835 +/- 0.370	0.178 +/- 0.302
Organic Analyses							
Haloacetic Acids (Total)	ug/L	*1.0*	*60.0*	ND	0.0	16.0	3.0
Dibromoacetic Acid	*ug/L*	*1.0*		*ND*	*ND*	*1.0*	*1.0*
Dichloroacetic Acid	*ug/L*	*1.0*		*ND*	*ND*	*4.0*	*2.0*
Monobromoacetic Acid	*ug/L*	*1.0*		*ND*	*ND*	*ND*	*ND*
Monochloroacetic Acid	*ug/L*	*2.0*		*ND*	*ND*	*ND*	*ND*
Trichloroacetic Acid	*ug/L*	*1.0*		*ND*	*ND*	*11*	*ND*
Organic Carbon (Dissolved)	mg/L	*0.2*		0.71		1.5	0.9
Organic Carbon (Total)	mg/L	*0.2*		0.70		1.4	1.0
Trihalomethanes (Total)	ug/L	*1.0*	*80.0*	ND	20.9	**99.7**	61.4
Bromodichloromethane	*ug/L*	*0.5*		*ND*	*6.2*	*22.5*	*15.9*
Bromoform	*ug/L*	*0.5*		*ND*	*ND*	*1.1*	*0.8*
Chloroform	*ug/L*	*0.5*		*ND*	*11.0*	*65.8*	*36.7*
Dibromochloromethane	*ug/L*	*0.5*		*ND*	*3.7*	*10.3*	*8.0*
Field Parameters							
Temperature	^{0}C	*0.1*		26.2	20.8	16.3	17.3
Specific Conductance (EC)	uS	*1.0*	*900*	991	788	486	588
pH	Std Units	*0.1*	*6.5 - 8.5*	7.0	7.4	7.6	7.07
ORP	mV	*1.0*		-82	-136	-164	-171
Free Chlorine Residual	mg/L	*0.1*	*2 - 5*	ND	ND	0.2	ND
Dissolved Oxygen	mg/L	*0.01*		--	ND	2.72	4.67
Silt Density Index	Std Units	*0.1*		--			
Gas Volume	mL	*2.0*		--			
H_2S	mg/L	*0.1*		0.60	0.03		ND

Notes:
Constituents exceeding MCLs denoted in **BOLD** type

Table 11. Summary of WY 2016 Water Quality Data – ASR-4

Parameter	Unit	PQL	MCL	7/13/2016	9/21/16
			Sample Description	WY 2016 Storage	
Elapsed Storage Time	Days			**100**	**170**
Volume Purged at Sampling	1,000 gals				
Major Cations					
Calcium	mg/L	*0.5*		65	76
Magnesium	mg/L	*0.5*		14	16
Potasium	mg/L	*0.5*		3.7	4.6
Sodium	mg/L	*0.5*		88	103
Major Anions					
Alkalinity, Total (as CaCO3)	mg/L	*2*		215	234
Chloride	mg/L	*1*	*250*	109	121
Sulfate	mg/L	*1*	*250*	51	55
Nitrate (as NO3)	mg/L	*1*	*45*	ND	1.0
Nitrite (as Nitrogen)	mg/L	*1*	*1*	ND	0.3
General Physical					
pH	Std Units			7.4	7.5
Specific Conductance (EC)	uS	*1*	*900*	850	**924**
Total Dissolved Solids	mg/L	*10*	*500*	**529**	**563**
Metals					
Arsenic (Total)	ug/L	*1*	*10*	6	5
Barium (Total)	ug/L	*10*	*1000*	52	54
Iron (Dissolved)	ug/L	*10*		41	ND
Iron (Total)	ug/L	*10*	*300*	108	144
Lithium	ug/L	*1*		28	32
Manganese (Dissolved)	ug/L	*10*		14	21
Manganese (Total)	ug/L	*10*	*50*	16	21
Molybdenum	ug/L	*1*	*1000*	7	6
Nickel	ug/L	*10*	*100*	61	58
Selenium	ug/L	*2*	*50*	3	2
Strontium (Total)	ug/L	*5*		457	444
Uranium (by ICP/MS)	ug/L	*1*	*30*	2	1
Vanadium (Total)	ug/L	*1*	*1000*	5	ND
Zinc (Total)	ug/L	*10*	*5000*	28	ND
Miscellaneous					
Ammonia-N	mg/L	*0.05*		ND	ND
Boron	mg/L	*0.05*		0.08	0.11
Chloramines	mg/L	*0.05*		ND	ND
Gross Alpha	pCi/L		*15*	2.76 +/- 1.40	3.01 +/- 2.64
Kjehldahl Nitrogen (Total)	mg/L	*0.5*		ND	0.5
Methane	ug/L	*0.1*		1.2	1.7
Nitrogen (Total)	mg/L	*0.5*		ND	1.0
o-Phosphate-P	mg/L	*0.05*		ND	ND
Phosphorous (Total)	mg/L	*0.03*		0.04	ND
Radium 226	pCi/L		*3*	0.596 +/- 0.326	0.760 +/- 0.438
Organic Analyses					
Haloacetic Acids (Total)	ug/L	*1.0*	*60.0*	1.0	0.0
Dibromoacetic Acid	*ug/L*	*1.0*		*1.0*	*ND*
Dichloroacetic Acid	*ug/L*	*1.0*		*ND*	*ND*
Monobromoacetic Acid	*ug/L*	*1.0*		*ND*	*ND*
Monochloroacetic Acid	*ug/L*	*2.0*		*ND*	*ND*
Trichloroacetic Acid	*ug/L*	*1.0*		*ND*	*ND*
Organic Carbon (Dissolved)	mg/L	*0.2*		0.8	
Organic Carbon (Total)	mg/L	*0.2*		0.7	0.6
Trihalomethanes (Total)	ug/L	*1.0*	*80.0*	4.5	0.0
Bromodichloromethane	*ug/L*	*0.5*		*1.2*	*ND*
Bromoform	*ug/L*	*0.5*		*ND*	*ND*
Chloroform	*ug/L*	*0.5*		*2.6*	*ND*
Dibromochloromethane	*ug/L*	*0.5*		*0.7*	*ND*
Field Parameters					
Temperature	^{0}C	*0.1*		21.4	25.1
Specific Conductance (EC)	uS	*1.0*	*900*	926	564
pH	Std Units	*0.1*	*6.5 - 8.5*	8.1	7.1
ORP	mV	*1.0*		-218	-262
Free Chlorine Residual	mg/L	*0.1*	*2 - 5*	ND	ND
Dissolved Oxygen	mg/L	*0.01*		1.75	0.97
Silt Density Index	Std Units	*0.1*			
Gas Volume	mL	*2.0*			
H_2S	mg/L	*0.1*		ND	0.01

Notes:
Constituents exceeding MCLs denoted in **BOLD** type

Table 12. Summary of WY 2016 Water Quality Data – SM MW-1

Parameter	Unit	PQL	MCL	Results SM MW-1 12/15/15	1/12/16	6/16/16	9/27/16
		Sample Description		WY 2015 Storage	WY 2016 Injection	WY 2016 Storage	
Elapsed Storage Time	Days			301	0	73	176
Volume Purged at Sampling	1,000 gals						
Major Cations							
Calcium	mg/L	*0.5*			61	45	
Magnesium	mg/L	*0.5*			14	11	
Potasium	mg/L	*0.5*			3.5	2.9	
Sodium	mg/L	*0.5*			57	45	
Major Anions							
Alkalinity, Total (as CaCO3)	mg/L	*2*			175	138	
Chloride	mg/L	*1*	*250*	161	63	32	47
Sulfate	mg/L	*1*	*250*		83	73	
Nitrate (as NO3)	mg/L	*1*	*45*		1.0	ND	
Nitrite (as Nitrogen)	mg/L	*1*	*1*		0.3	ND	
General Physical							
pH	Std Units				7.5	7.6	
Specific Conductance (EC)	uS	*1*	*900*		715	520	
Total Dissolved Solids	mg/L	*10*	*500*		446	323	
Metals							
Arsenic (Total)	ug/L	*1*	*10*		2	2	
Barium (Total)	ug/L	*10*	*1000*		37	19	
Iron (Dissolved)	ug/L	*10*			ND	ND	
Iron (Total)	ug/L	*10*	*300*		ND	ND	
Lithium	ug/L	*1*			19	8	
Manganese (Dissolved)	ug/L	*10*			ND	ND	
Manganese (Total)	ug/L	*10*	*50*		ND	ND	
Molybdenum	ug/L	*1*	*1000*		6	3	
Nickel	ug/L	*10*	*100*		ND	ND	
Selenium	ug/L	*2*	*50*		2	4	
Strontium (Total)	ug/L	*5*			226	242	
Uranium (by ICP/MS)	ug/L	*1*	*30*		2	1	
Vanadium (Total)	ug/L	*1*	*1000*		ND	ND	
Zinc (Total)	ug/L	*10*	*5000*		23	ND	
Miscellaneous							
Ammonia-N	mg/L	*0.05*			ND	ND	
Boron	mg/L	*0.05*			0.06	ND	
Chloramines	mg/L	*0.05*		ND	ND	ND	ND
Gross Alpha	pCi/L		*15*		2.53 +/- 1.27	0.924 +/- 1.32	
Kjehldahl Nitrogen (Total)	mg/L	*0.5*			ND	ND	
Methane	ug/L	*0.1*			1.0	0.57	
Nitrogen (Total)	mg/L	*0.5*			0.5	ND	
o-Phosphate-P	mg/L	*0.05*			ND	ND	
Phosphorous (Total)	mg/L	*0.03*			0.05	0.04	
Radium 226	pCi/L		*3*		0.000 +/- 0.393	0.000 +/- 0.389	
Organic Analyses							
Haloacetic Acids (Total)	ug/L	*1.0*	*60.0*	0.0	0.0	0.0	0.0
Dibromoacetic Acid	*ug/L*	*1.0*		*ND*	*ND*	*ND*	*ND*
Dichloroacetic Acid	*ug/L*	*1.0*		*ND*	*ND*	*ND*	*ND*
Monobromoacetic Acid	*ug/L*	*1.0*		*ND*	*ND*	*ND*	*ND*
Monochloroacetic Acid	*ug/L*	*2.0*		*ND*	*ND*	*ND*	*ND*
Trichloroacetic Acid	*ug/L*	*1.0*		ND	ND	ND	ND
Organic Carbon (Dissolved)	mg/L	*0.2*			1.0	1.3	
Organic Carbon (Total)	mg/L	*0.2*			0.9	1.1	
Trihalomethanes (Total)	ug/L	*1.0*	*80.0*	0.0	58.8	**82.1**	1.9
Bromodichloromethane	*ug/L*	*0.5*		*ND*	*15*	*15.9*	***0.7***
Bromoform	*ug/L*	*0.5*		*ND*	*ND*	*0.7*	*ND*
Chloroform	*ug/L*	*0.5*		*ND*	*41*	*58.8*	*1.2*
Dibromochloromethane	*ug/L*	*0.5*		*ND*	*2.8*	*6.7*	*ND*
Field Parameters							
Temperature	^{0} C	*0.1*		17.4	18.1	19.6	18.9
Specific Conductance (EC)	uS	*1.0*	*900*	975	967	473	519
pH	Std Units	*0.1*	*6.5 - 8.5*	7.3	7.3	7.8	6.45
ORP	mV	*1.0*		-212	-210	-151	-243
Free Chlorine Residual	mg/L	*0.1*	*2 - 5*	ND	ND	0.15	ND
Dissolved Oxygen	mg/L	*0.01*		ND	ND	2.72	0.38
Silt Density Index	Std Units	*0.1*					
Gas Volume	mL	*2.0*					
H_2S	mg/L	*0.1*		0.07	0.04		0.01

Notes:
Constituents exceeding MCLs denoted in **BOLD** type

Table 13. Summary of WY 2016 Water Quality Data – SMS Deep

Parameter	Unit	PQL	MCL	Results		
				SMS Deep		
				12/16/15	2/19/16	6/16/16
		Sample Description		WY 2015 Storage	WY 2016 Injection	WY 2016 Storage
Elapsed Storage Time	Days			**302**	**0**	**73**
Volume Purged at Sampling	1,000 gals					
Major Cations						
Calcium	mg/L	*0.5*			46	43
Magnesium	mg/L	*0.5*			11	11
Potasium	mg/L	*0.5*			2.8	2.8
Sodium	mg/L	*0.5*			45	41
Major Anions						
Alkalinity, Total (as CaCO3)	mg/L	*2*			142	134
Chloride	mg/L	*1*	*250*	123	31	29
Sulfate	mg/L	*1*	*250*		81	70
Nitrate (as NO3)	mg/L	*1*	*45*		1.0	ND
Nitrite (as Nitrogen)	mg/L	*1*	*1*		0.3	ND
General Physical						
pH	Std Units				7.6	7.6
Specific Conductance (EC)	uS	*1*	*900*		554	501
Total Dissolved Solids	mg/L	*10*	*500*		366	328
Metals						
Arsenic (Total)	ug/L	*1*	*10*		16	12
Barium (Total)	ug/L	*10*	*1000*		31	35
Iron (Dissolved)	ug/L	*10*			ND	ND
Iron (Total)	ug/L	*10*	*300*		ND	ND
Lithium	ug/L	*1*			6	7
Manganese (Dissolved)	ug/L	*10*			ND	ND
Manganese (Total)	ug/L	*10*	*50*		ND	ND
Molybdenum	ug/L	*1*	*1000*		39	43
Nickel	ug/L	*10*	*100*		ND	ND
Selenium	ug/L	*2*	*50*		12	13
Strontium (Total)	ug/L	*5*			287	267
Uranium (by ICP/MS)	ug/L	*1*	*30*		2	2
Vanadium (Total)	ug/L	*1*	*1000*		ND	ND
Zinc (Total)	ug/L	*10*	*5000*		ND	ND
Miscellaneous						
Ammonia-N	mg/L	*0.05*			ND	ND
Boron	mg/L	*0.05*			ND	ND
Chloramines	mg/L	*0.05*		ND	ND	ND
Gross Alpha	pCi/L		*15*		1.97 +/- 1.64	1.20 +/- 1.32
Kjehldahl Nitrogen (Total)	mg/L	*0.5*			ND	ND
Methane	ug/L	*0.1*			0.52	0.55
Nitrogen (Total)	mg/L	*0.5*			0.5	ND
o-Phosphate-P	mg/L	*0.05*			ND	0.2
Phosphorous (Total)	mg/L	*0.03*			0.12	0.2
Radium 226	pCi/L		*3*		0.067 +/- 0.228	0.000 +/- 0.316
Organic Analyses						
Haloacetic Acids (Total)	ug/L	*1.0*	*60.0*	0.0	17.4	9.0
Dibromoacetic Acid	*ug/L*	*1.0*		*ND*	*1.1*	*1*
Dichloroacetic Acid	*ug/L*	*1.0*		*ND*	*4.3*	*2*
Monobromoacetic Acid	*ug/L*	*1.0*		*ND*	*ND*	*ND*
Monochloroacetic Acid	*ug/L*	*2.0*		*ND*	*ND*	*ND*
Trichloroacetic Acid	*ug/L*	*1.0*		*ND*	12	6
Organic Carbon (Dissolved)	mg/L	*0.2*			1.1	1.4
Organic Carbon (Total)	mg/L	*0.2*			1.4	1.4
Trihalomethanes (Total)	ug/L	*1.0*	*80.0*	0.0	**104.5**	**84.2**
Bromodichloromethane	*ug/L*	*0.5*		*ND*	*31*	*19.6*
Bromoform	*ug/L*	*0.5*		*ND*	*1.5*	*1.0*
Chloroform	*ug/L*	*0.5*		*ND*	*57*	*54.4*
Dibromochloromethane	*ug/L*	*0.5*		*ND*	*15*	*9.2*
Field Parameters						
Temperature	^{0} C	*0.1*		19.7	18.5	19.7
Specific Conductance (EC)	uS	*1.0*	*900*	775	511	470
pH	Std Units	*0.1*	*6.5 - 8.5*	7.4	7.1	7.7
ORP	mV	*1.0*		-142	+2.4	-149
Free Chlorine Residual	mg/L	*0.1*	*2 - 5*	ND	0.04	0.09
Dissolved Oxygen	mg/L	*0.01*		ND		2.76
Silt Density Index	Std Units	*0.1*				
Gas Volume	mL	*2.0*				
H_2S	mg/L	*0.1*		0.04	ND	

Notes:
Constituents exceeding MCLs denoted in **BOLD** type

Table 14. Summary of WY 2016 Water Quality Data – Off-Site Monitoring Wells

Parameter	Unit	PQL	MCL	PCA-E Deep	Paralta	
				7/26/16	11/12/15	4/26/16
		Sample Description		WY 2016 Storage	WY 2015 Storage	WY 2016 Storage
Volume Pumped at Sampling	1,000 gals					
Major Cations						
Calcium	mg/L	*0.5*		38		32
Magnesium	mg/L	*0.5*		8		10
Potasium	mg/L	*0.5*		3.4		5
Sodium	mg/L	*0.5*		72		55
Major Anions						
Alkalinity, Total (as CaCO3)	mg/L	*2*		148		95
Chloride	mg/L	*1*	*250*	82		68
Sulfate	mg/L	*1*	*250*	22		41
Nitrate (as NO3)	mg/L	*1*	*45*	ND		0.8
Nitrite (as Nitrogen)	mg/L	*1*	*1*	ND		0.1
General Physical						
pH	Std Units			7.4		7.8
Specific Conductance (EC)	uS	*1*	*900*	587		551
Total Dissolved Solids	mg/L	*10*	*500*	358		
Metals						
Arsenic (Total)	ug/L	*1*	*10*	6		3
Barium (Total)	ug/L	*10*	*1000*	59		100
Iron (Dissolved)	ug/L	*10*		ND		
Iron (Total)	ug/L	*10*	*300*	17		100
Lithium	ug/L	*1*		22		
Manganese (Dissolved)	ug/L	*10*		ND		
Manganese (Total)	ug/L	*10*	*50*	ND		20
Molybdenum	ug/L	*1*	*1000*	10		
Nickel	ug/L	*10*	*100*	36		10
Selenium	ug/L	*2*	*50*	ND		5
Strontium (Total)	ug/L	*5*		200		
Uranium (by ICP/MS)	ug/L	*1*	*30*	ND		
Vanadium (Total)	ug/L	*1*	*1000*	ND		
Zinc (Total)	ug/L	*10*	*5000*	24		50
Miscellaneous						
Ammonia-N	mg/L	*0.05*		ND		
Boron	mg/L	*0.05*		0.06		100
Chloramines	mg/L	*0.05*		ND		
Gross Alpha	pCi/L		*15*	1.27 +/- 1.54		
Kjehldahl Nitrogen (Total)	mg/L	*0.5*		ND		
Methane	ug/L	*0.1*		0.19		
Nitrogen (Total)	mg/L	*0.5*		ND		
o-Phosphate-P	mg/L	*0.05*		ND		
Phosphorous (Total)	mg/L	*0.03*		0.05		
Radium 226	pCi/L		*3*	0.035 +/- 0.470		
Organic Analyses						
Haloacetic Acids (Total)	ug/L	*1.0*	*60.0*	1.0		
Dibromoacetic Acid	*ug/L*	*1.0*		*1*		
Dichloroacetic Acid	*ug/L*	*1.0*		*ND*		
Monobromoacetic Acid	*ug/L*	*1.0*		*ND*		
Monochloroacetic Acid	*ug/L*	*2.0*		*ND*		
Trichloroacetic Acid	*ug/L*	*1.0*		*ND*		
Organic Carbon (Dissolved)	mg/L	*0.2*		0.5		
Organic Carbon (Total)	mg/L	*0.2*		0.4		
Trihalomethanes (Total)	ug/L	*1.0*	*80.0*	0.0	4.7	8.0
Bromodichloromethane	*ug/L*	*0.5*		*ND*	*1.0*	*1.6*
Bromoform	*ug/L*	*0.5*		*ND*	*1.0*	*1.0*
Chloroform	*ug/L*	*0.5*		*ND*	*1.7*	*4.4*
Dibromochloromethane	*ug/L*	*0.5*		*ND*	*1.0*	*1.0*
Field Parameters						
Temperature	^{0} C	*0.1*				
Specific Conductance (EC)	uS	*1.0*	*900*			
pH	Std Units	*0.1*	*6.5 - 8.5*			
ORP	mV	*1.0*				
Free Chlorine Residual	mg/L	*0.1*	*2 - 5*			
Dissolved Oxygen	mg/L	*0.01*				
Silt Density Index	Std Units	*0.1*				
Gas Volume	mL	*2.0*				
H_2S	mg/L	*0.1*				

Notes:
Constituents exceeding MCLs denoted in **BOLD** type

CONCLUSIONS

Based on the findings developed from operation of Monterey Peninsula ASR Project during WY 2016, we conclude the following:

WY 2016 Recharge Operations

WY 2016 was classified as a Normal Water Year on the Monterey Peninsula and a total volume of 699 af of water was recharged into the Seaside Groundwater Basin at the Santa Margarita and Seaside Middle Schools ASR Facilities during the WY 2016 injection season.

ASR Well Performance

ASR-1. Pertinent well performance conclusions for ASR-1 during WY 2016 are summarized below:

- Injection Rates: Ranged between approximately 145 to 1,615 gpm, averaging approximately 1,000 gpm.
- Water Levels: Generally maintained greater than 270 ft. bgs with 15 ft. of available "freeboard" remaining below the maximum recommended drawup level.
- Specific Injectivity: Although there are no initial specific injectivity data for WY 2016, the ending specific injectivity was approximately 32 gpm/ft, which is slightly great than the ending value in WY 2015 of approximately 25 gpm/ft.
- Residual Plugging: Approximately 29 feet of residual plugging occurred.
- General Conclusions: ASR-1 performed well during WY 2016; however, the well did experience a moderate level residual plugging. The negative trend in performance at injection rates ranging up to 1,600 gpm suggests the injection rate at this well should be maintained at or below the design rate of 1,500 gpm in WY 2017 and the triple-backflush procedure should be implemented to limit residual plugging.

ASR-2. Pertinent well performance conclusions for ASR-2 during WY 2016 are summarized below:

- Injection Rates: Ranged between approximately 1,025 to 2,160 gpm, averaging approximately 1,510 gpm.
- Water Levels: Generally maintained greater than 270 ft. bgs with 20 ft. of available "freeboard" remaining below the maximum recommended drawup level.

- Specific Injectivity: Ranged between approximately 25 to 36 gpm/ft with an overall negative trend in 24-hr specific injectivity.

- Residual Plugging: Approximately 33 feet of residual plugging occurred.

- General Conclusions: ASR-2 performed well during WY 2016; however, the well did experience a moderate level residual plugging. The negative trend in performance at injection rates ranging up to 2,160 gpm suggests the injection rate at this well should be maintained at or below the design rate of 1,500 gpm in WY 2017 and the triple-backflush procedure should be implemented to limit residual plugging.

ASR-3. Pertinent well performance conclusions for ASR-3 during WY 2016 are summarized below:

- Injection Rates: Ranged between approximately 700 to 1,010 gpm, averaging approximately 885 gpm.

- Water Levels: Generally maintained greater than 240 ft bgs with 60 ft of available "freeboard" remaining below the maximum recommended drawup level.

- Specific Injectivity: Ranged between approximately 11 to 12 gpm/ft and overall stable trend in 24-hr specific injectivity.

- Residual Plugging: Approximately 30 feet of residual plugging occurred.

- General Conclusions: ASR-3 performance appeared to be relatively stable compared to the significant declines observed in WY 2012. The pattern of relative performance stabilization followed by the initial significant decline in well performance observed at ASR-3 is very similar to the pattern observed at both ASR-1 and ASR-2 when they were initially brought on-line. The stable performance at injection rates ranging between 700 to 1,010 gpm suggests the injection rate should be maintained at or below 1,000 gpm to maintain performance.

ASR-4. Injection at ASR-4 during WY 2016 was limited to five days of well "conditioning". This conditioning was a continuation of similar efforts performed over the course of three days in WY 2015, and consisted of initial injection at relatively low rates and durations, being incrementally increased following thorough backflushing and upon confirmation that well performance was being maintained. The conditioning was performed in an effort to limit the amount of residual plugging that has historically been observed at all three previous ASR wells following their initial injection operations. Injection rates ranging between approximately 250 gpm up to the design rate of 1,500 gpm for durations up to 2 hours were achieved during WY

2016 without a measurable loss in performance. Based on these results, a baseline injection testing program should be implemented in WY 2017.

Water Quality

Significant conclusions regarding the water-quality investigation during WY 2016 include the following:

- Consistent with previous observations, no significant ion exchange, acid-base, or precipitation reactions were observed at the ASR sites.
- THMs at the ASR sites showed characteristic and significant initial "ingrowth" that peaked at approximately 60 to 120 days after the cessation of injection, followed by a gradual decline over the remainder of the WY 2016 Storage Period.
- HAAs showed little "ingrowth" following the cessation of injection and degraded completely during aquifer storage.
- Although there appears to be a correlative relationship between Hg and Turbidity at ASR-1, the exact nature and source of observed Hg exceedances are still unknown. Developing a more complete understanding of the geochemical mechanism(s) responsible for Hg-occurrence will be subject to additional investigation in WY 2017.

RECOMMENDATIONS

Based on the WY 2016 ASR program results and our experience with similar ASR projects, we offer the following recommendations for continued and future operations of the Monterey Peninsula ASR Project wells:

ASR-1 Well Operational Parameters

- Injection Rate: Based on the amount of residual plugging that occurred during WY 2016 with the well injecting up to 1,615 gpm, we recommend the injection rate be limited to approximately **1,500 gpm** in order to limit residual plugging and maintain long-term performance.
- Water-Level Drawup: Under the present local water-level conditions, the amount of water-level drawup should be limited to approximately 100 feet. This amount of water-level drawup during injection equals the typical available drawdown in the well for backflushing. This helps to avoid over-pressurization and compression of plugging materials, thereby maximizing the efficiency of backflushing and limiting the amount of residual plugging.
- Backflushing Frequency: During the recharge season, routine backflushing should continue to be performed on an approximate weekly basis, or when the amount of water-level drawup in the casing reaches approximately 100 feet, whichever occurs first. Backflushing should consist of the triple-flush procedure discussed above.

ASR-2 Well Operational Parameters

- Injection Rate: Based on the amount of residual plugging that occurred during WY 2016 with the well injecting up to 2,160 gpm, we recommend the injection rate be limited to the design rate of approximately **1,500 gpm** in order to limit residual plugging and maintain long-term performance.
- Water-Level Drawup: Under the present local water-level conditions, the amount of water-level drawup should be limited to approximately 130 feet, which is equal to the typical amount of available drawdown in the well for backflushing. Again, this helps to avoid over-pressurization and compression of plugging materials and limiting the amount of residual plugging.
- Backflushing Frequency: During the recharge season, routine backflushing should continue to be performed on an approximate weekly basis, or when the amount of water-level drawup in the casing reaches approximately 130 feet, whichever occurs first. Backflushing should consist of the triple-flush procedure discussed above.

ASR-3 Well Operational Parameters

- Injection Rate: Based on the amount of residual plugging that occurred during WY 2016 with the well injecting up to 1,010 gpm, we recommend the injection rate continue to be limited to **1,000 gpm** in order to limit residual plugging and maintain long-term performance.
- Water-Level Drawup: Under the present local water-level conditions, the amount of water-level drawup should be limited to approximately 170 feet, which is equal to the typical amount of available drawdown in the well for backflushing. Again, this helps to avoid over-pressurization and compression of plugging materials and limiting the amount of residual plugging.
- Backflushing Frequency: During the recharge season, routine backflushing should continue to be performed on an approximate weekly basis, or when the amount of water-level drawup in the casing reaches approximately 170 feet, whichever occurs first. Backflushing should consist of the triple-flush procedure discussed above.

ASR-3 should undergo formal rehabilitation to improve well performance and injection capacity, similar to that performed at SM ASR-1 and SM ASR-2. It is believed that following rehabilitation, the well will be able to operate at its design injection rate of 1,500 gpm (i.e., 50 percent greater than the current capacity of 1,000 gpm).

SMS ASR-4 Well Startup Conditioning and Baseline Injection Testing

"Conditioning" of ASR-4 was completed in WY 2016. A baseline injection testing program should be implemented in WY 2017 that includes the following tests:

1. 8-hr variable rate injection test;
2. 24-hr constant rate injection test;
3. 7-day constant rate injection test;
4. Backflushing between each of the above injection tests, and;
5. Post-injection production performance testing.

At the conclusion of the baseline injection testing program, recommendations for the long-term injection operations of ASR-4 can then be provided.

CLOSURE

This report has been prepared exclusively for the Monterey Peninsula Water Management District for the specific application to the ASR Project on the Monterey Peninsula. The findings and conclusions presented herein were prepared in accordance with generally accepted hydrogeologic and engineering practices. No other warranty, express or implied, is made.

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FIGURES

May 2018
Project No. 12-0046

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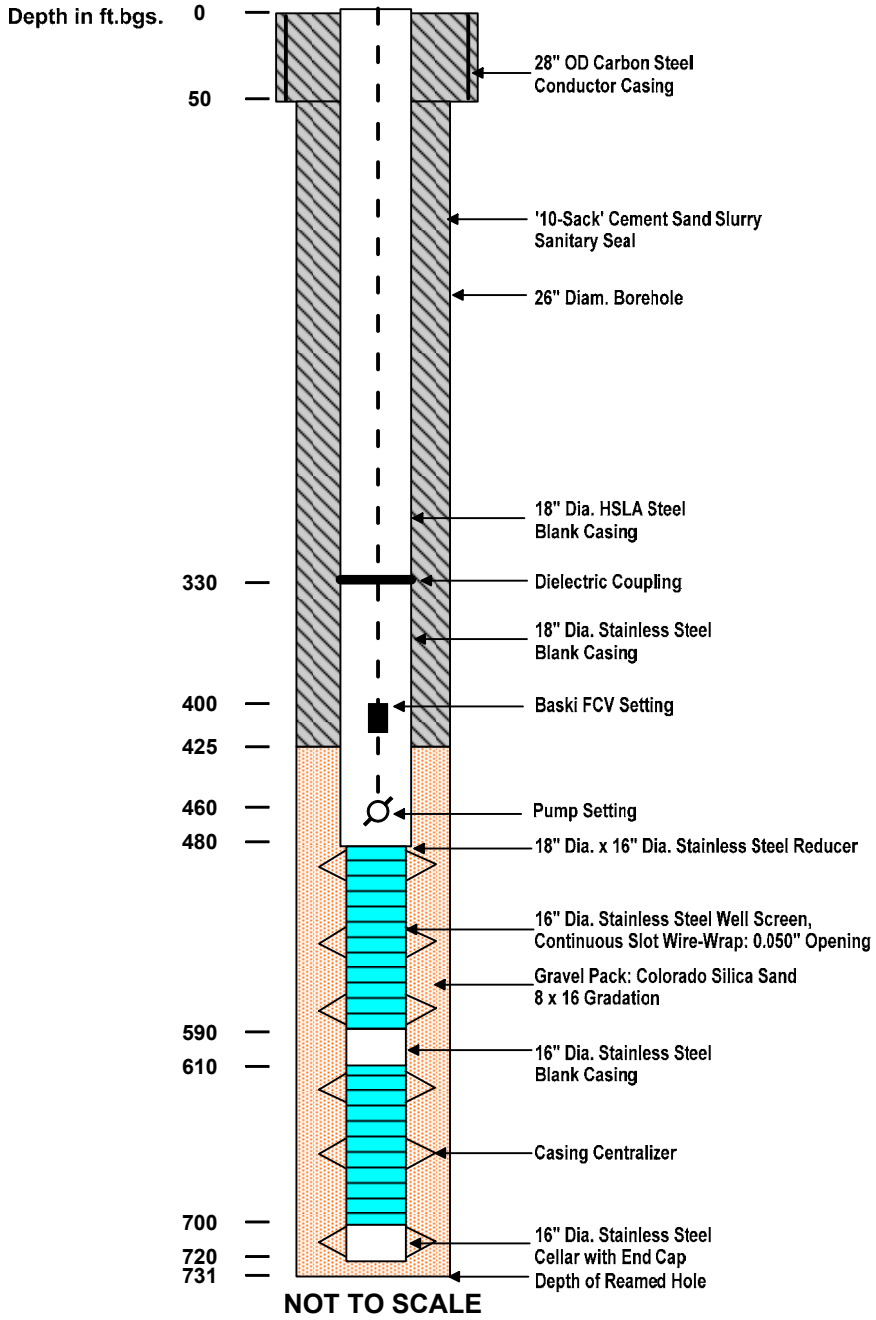
N
W E
S

Feet
0 1,000 2,000

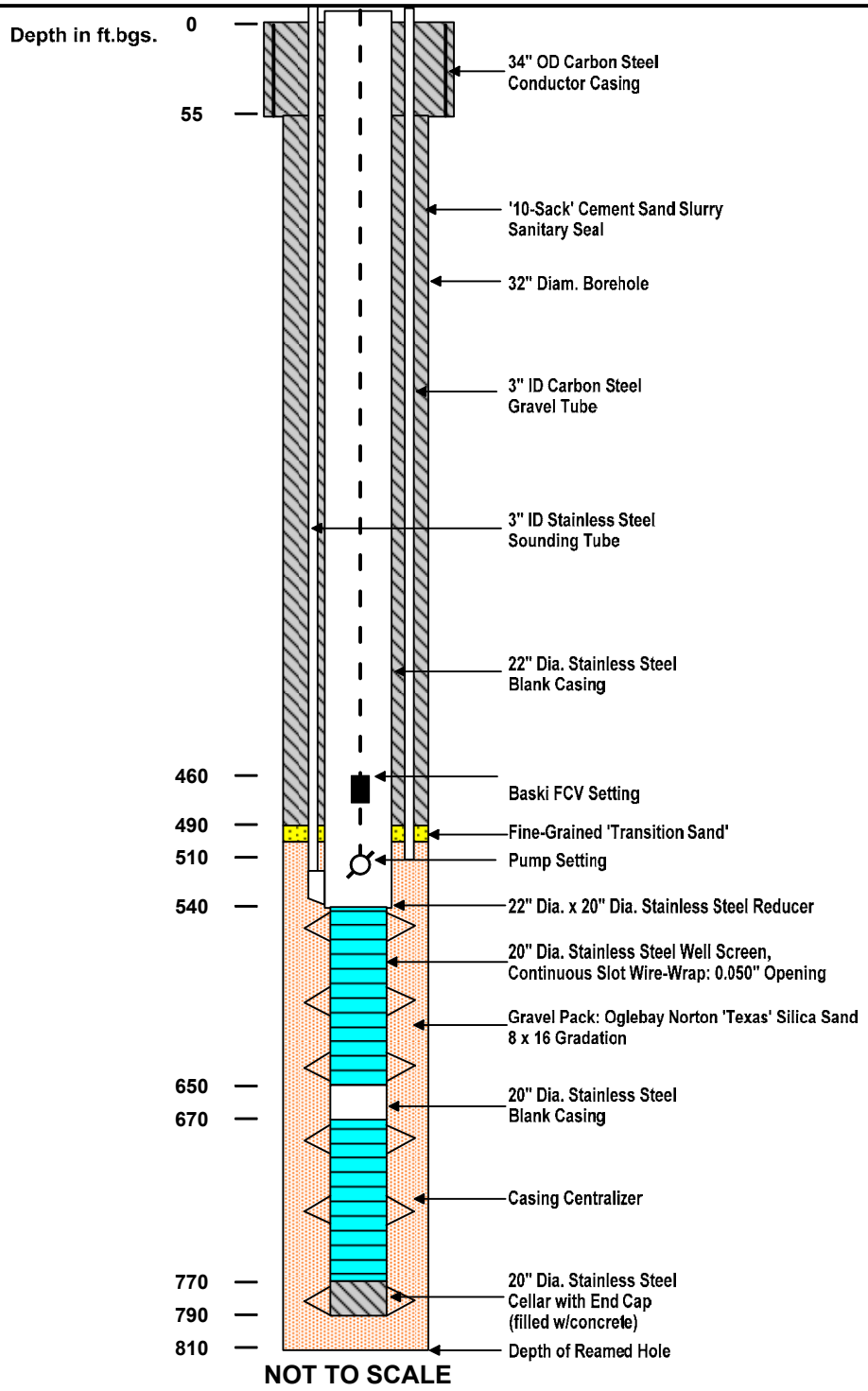
FIGURE 1. SITE LOCATION MAP
WY 2016 ASR Program
Monterey Peninsula Water Management District



Pump Assembly Notes:
Hp: 600
Bowls: 16ENL, 7 stage
Col. Pipe Dia: 12"
Col. Pipe Length: 20'
Assy. Type: Water Lube/Open Shaft
Baski FCV Setting: 400' - 410'
Top of Bowls: 460'
Bowl Length: 10.5'
Suction Length: 10'
Intake: 480.5'

PUEBLO water resources

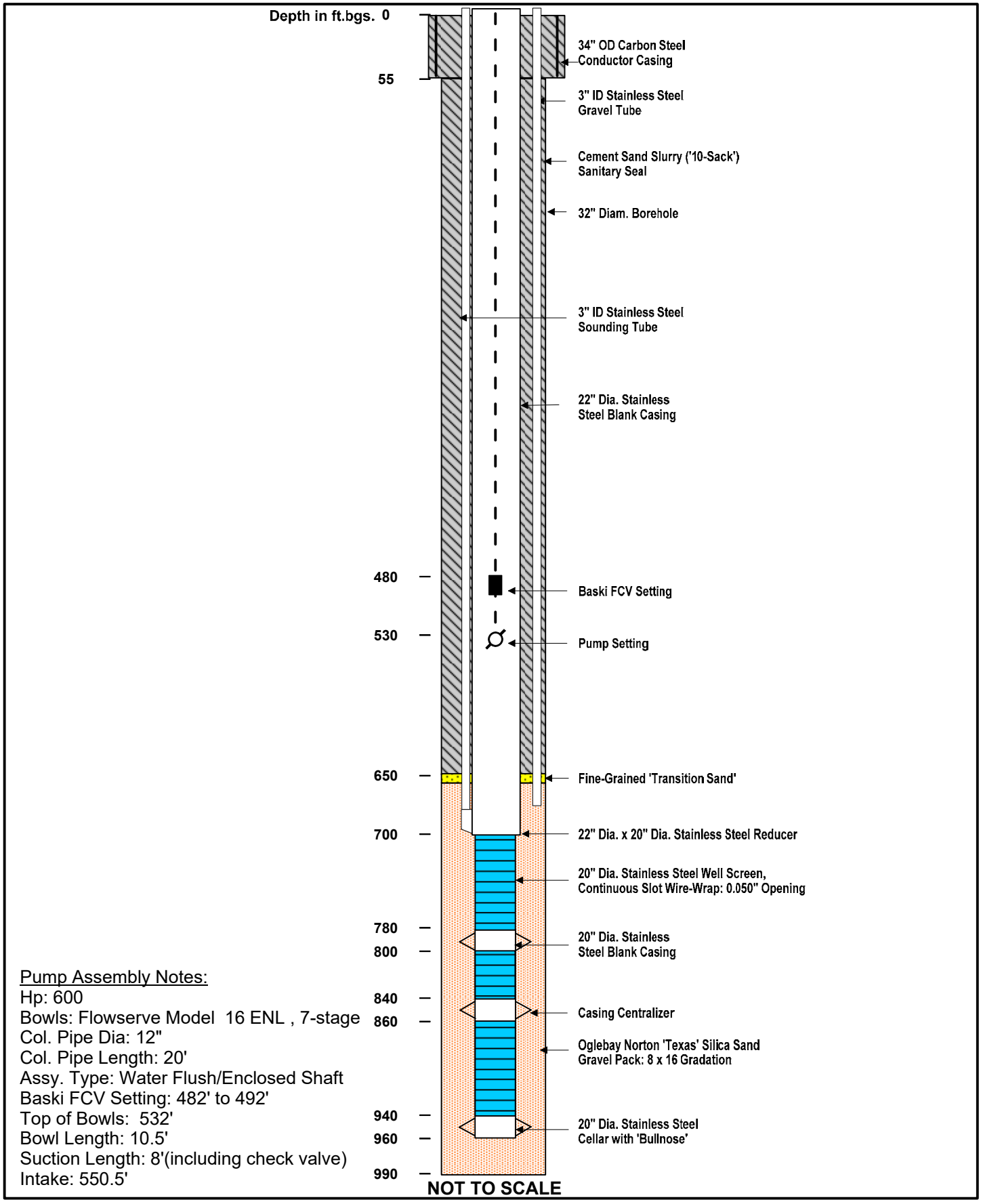
FIGURE 2. ASR-1 AS-BUILT SCHEMATIC
WY 2016 ASR Program
Monterey Peninsula Water Management District



Pump Assembly Notes:
Hp: 600
Bowls: 16ENL, 7 stage
Col. Pipe Dia: 12"
Col. Pipe Length: 20'
Assy. Type: Water Flush/Enclosed Shaft
Baski FCV Setting: 460' - 470'
Top of Bowls: 510'
Bowl Length: 10.5'
Suction Length: 10'
Intake: 530.5'

PUEBLO water resources

FIGURE 3. ASR-2 AS-BUILT SCHEMATIC
WY 2016 ASR Program
Monterey Peninsula Water Management District



Pump Assembly Notes:
Hp: 600
Bowls: Flowserve Model 16 ENL , 7-stage
Col. Pipe Dia: 12"
Col. Pipe Length: 20'
Assy. Type: Water Flush/Enclosed Shaft
Baski FCV Setting: 482' to 492'
Top of Bowls: 532'
Bowl Length: 10.5'
Suction Length: 8'(including check valve)
Intake: 550.5'

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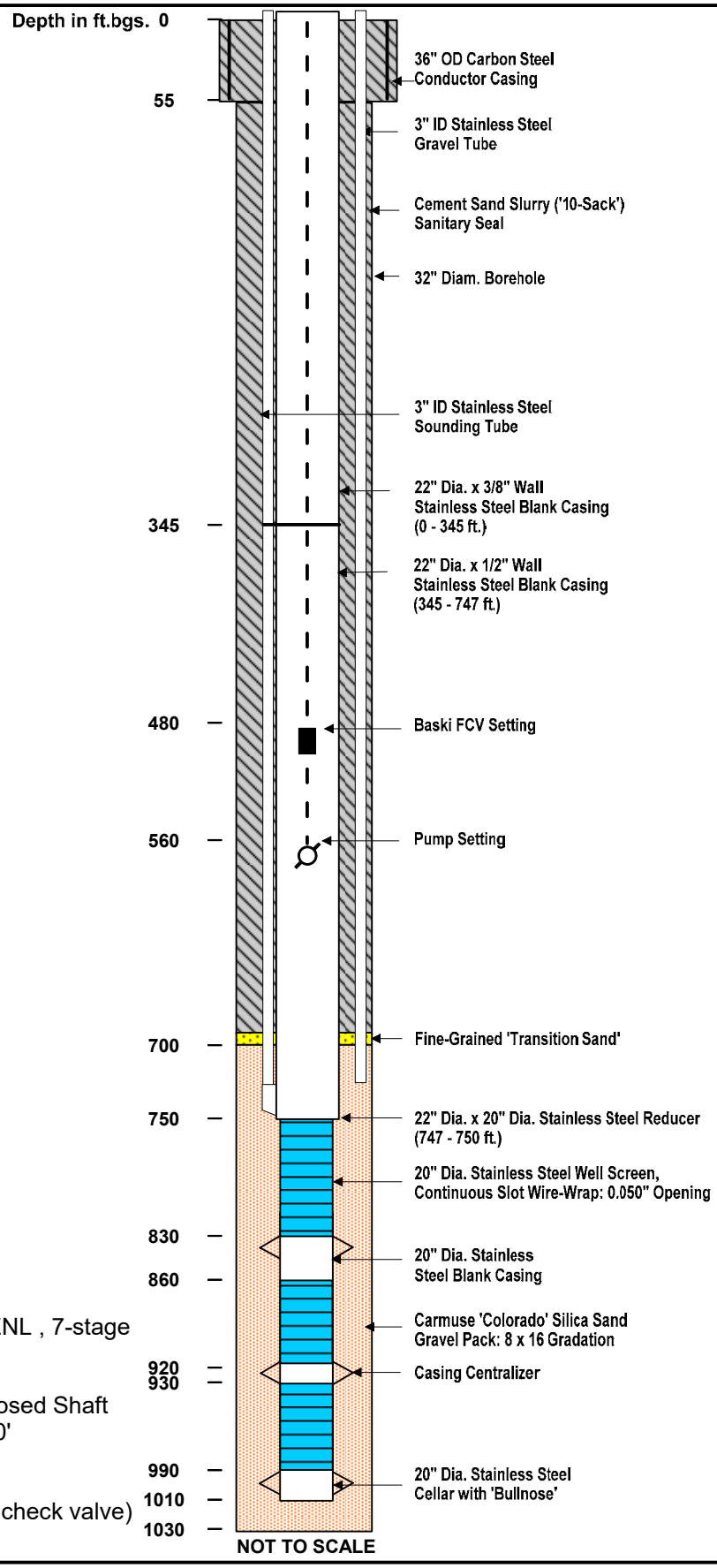
FIGURE 4. ASR-3 AS-BUILT SCHEMATIC
WY 2016 ASR Program
Monterey Peninsula Water Management District

May 2018
Project No. 12-0046



Pump Assembly Notes:
Hp: 600
Bowls: Flowserve Model 16 ENL , 7-stage
Col. Pipe Dia: 12"
Col. Pipe Length: 20'
Assy. Type: Water Flush/Enclosed Shaft
Baski FCV Setting: 480' to 490'
Top of Bowls: 562'
Bowl Length: 10.4'
Suction Length: 10' (including check valve)
Intake: 582.4'

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FIGURE 5. ASR-4 AS-BUILT SCHEMATIC
WY 2016 ASR Program
Monterey Peninsula Water Management District

May 2018
Project No. 12-0046

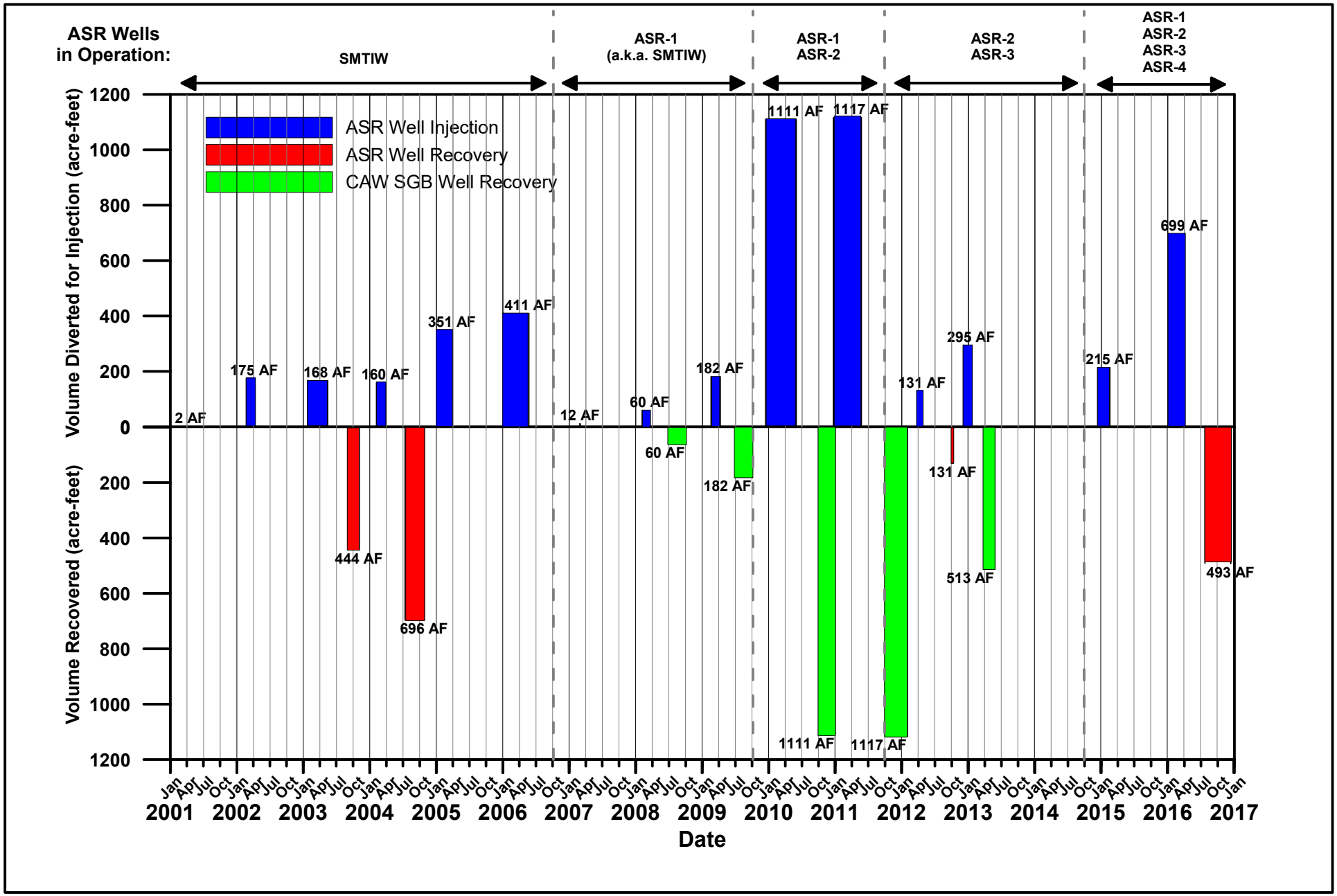

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FIGURE 6. SUMMARY OF ASR OPERATIONS (WY 2001 - WY 2016)
WY 2016 ASR Program
Monterey Peninsula Water Management District

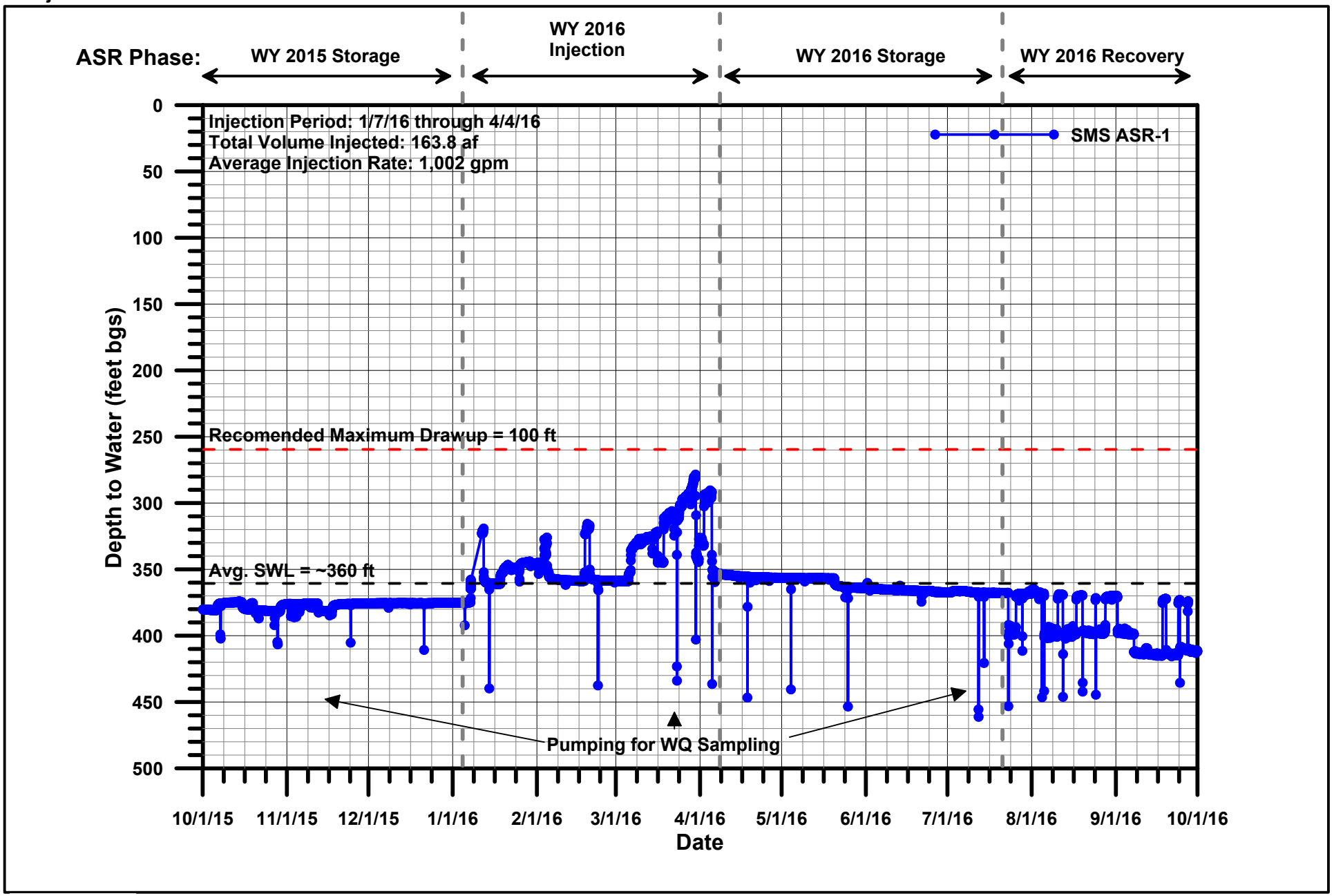

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FIGURE 7. ASR-1 WATER-LEVEL DATA
WY 2016 ASR Program
Monterey Peninsula Water Management District

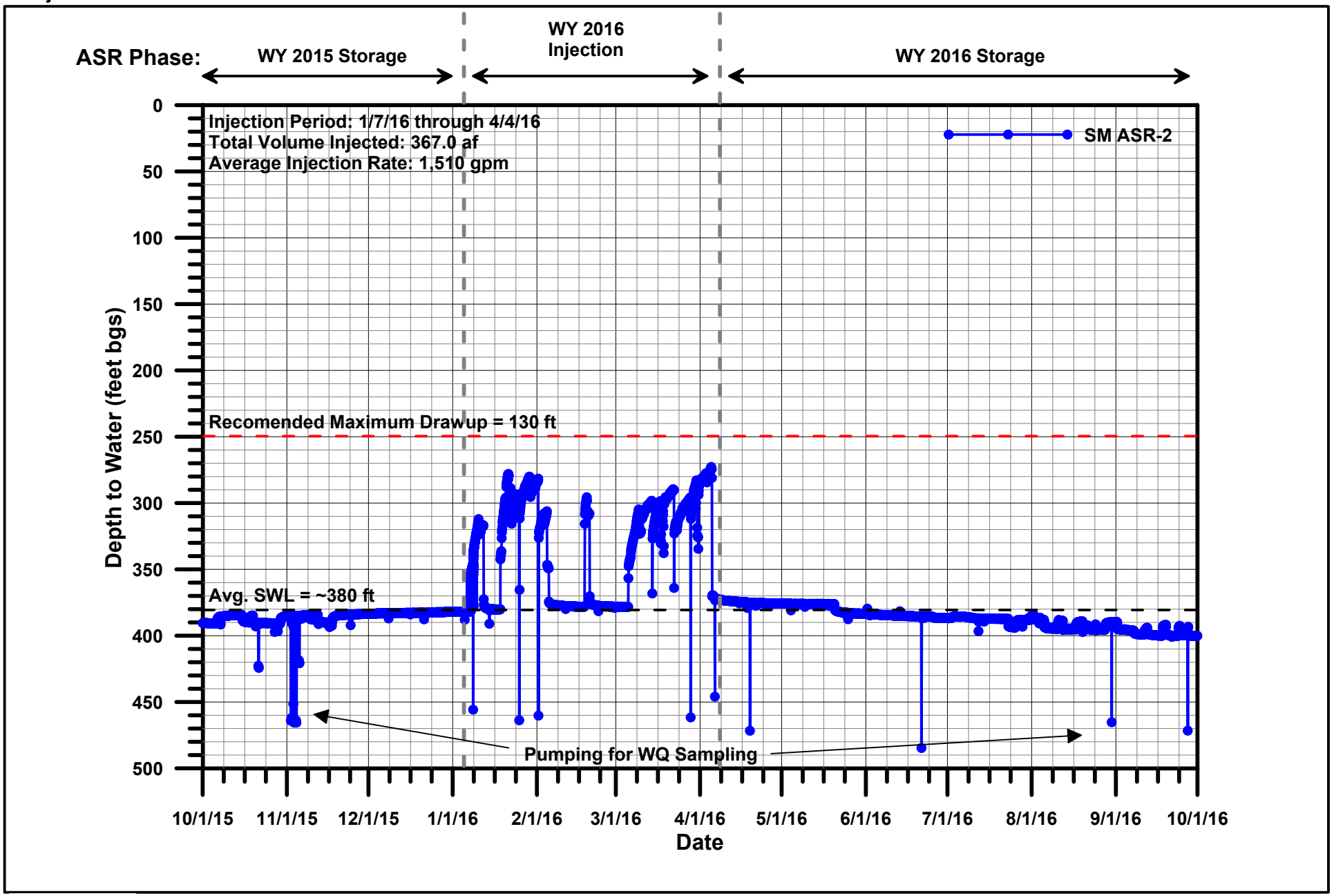

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FIGURE 8. ASR-2 WATER-LEVEL DATA
WY 2016 ASR Program
Monterey Peninsula Water Management District

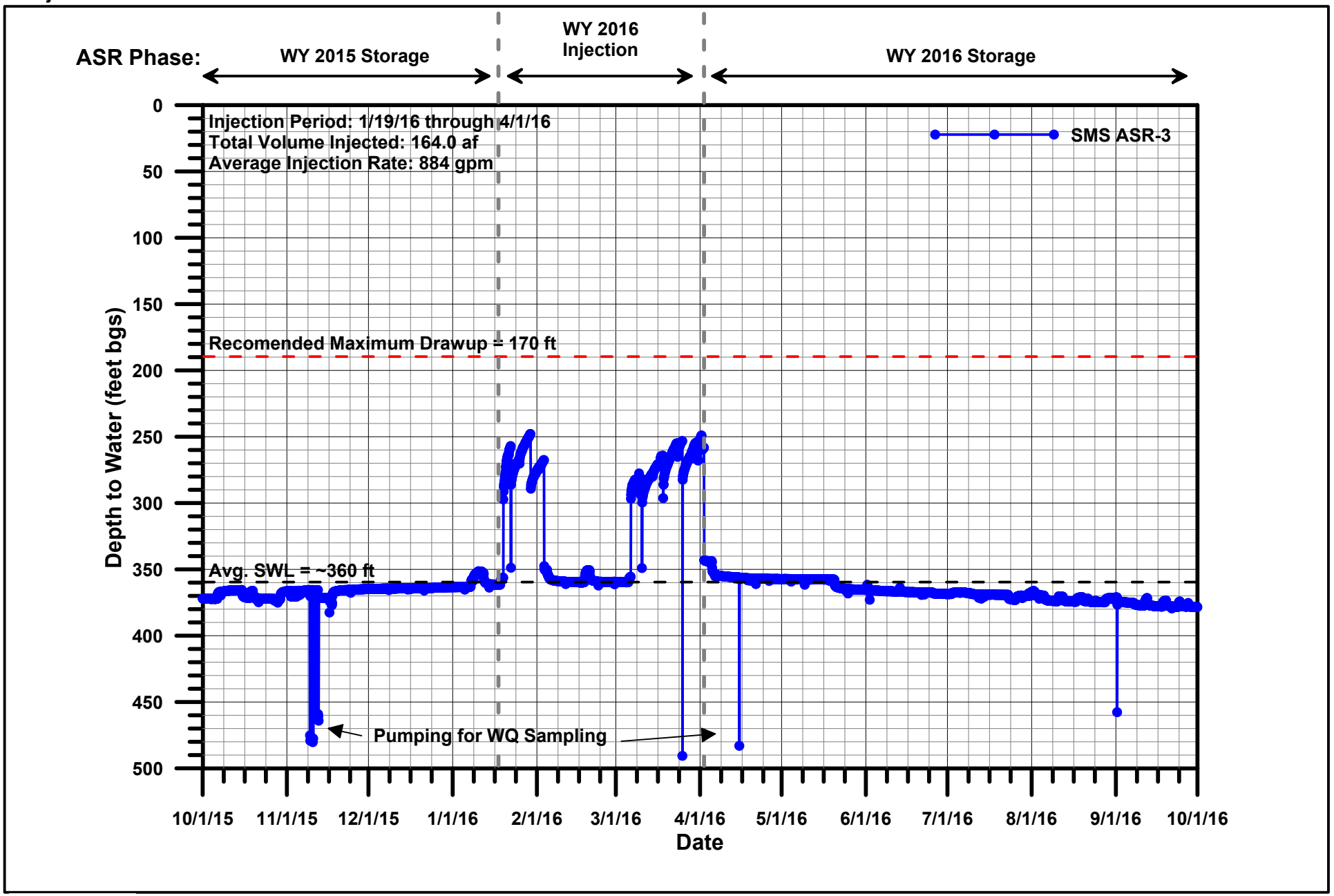

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FIGURE 9. ASR-3 WATER-LEVEL DATA
WY 2016 ASR Program
Monterey Peninsula Water Management District

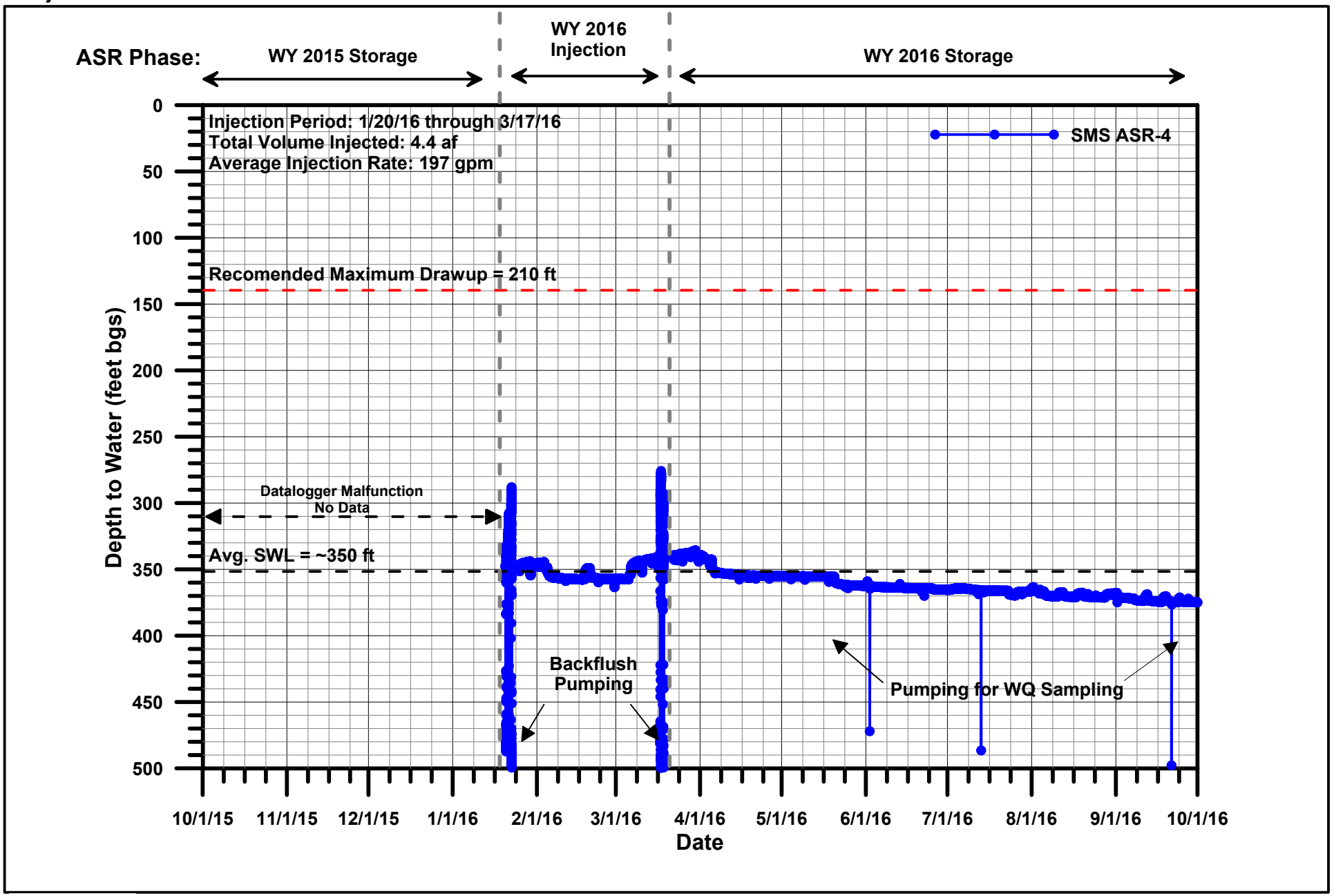

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FIGURE 10. ASR-4 WATER-LEVEL DATA
WY 2016 ASR Program
Monterey Peninsula Water Management District

May 2018
Project No. 12-0046

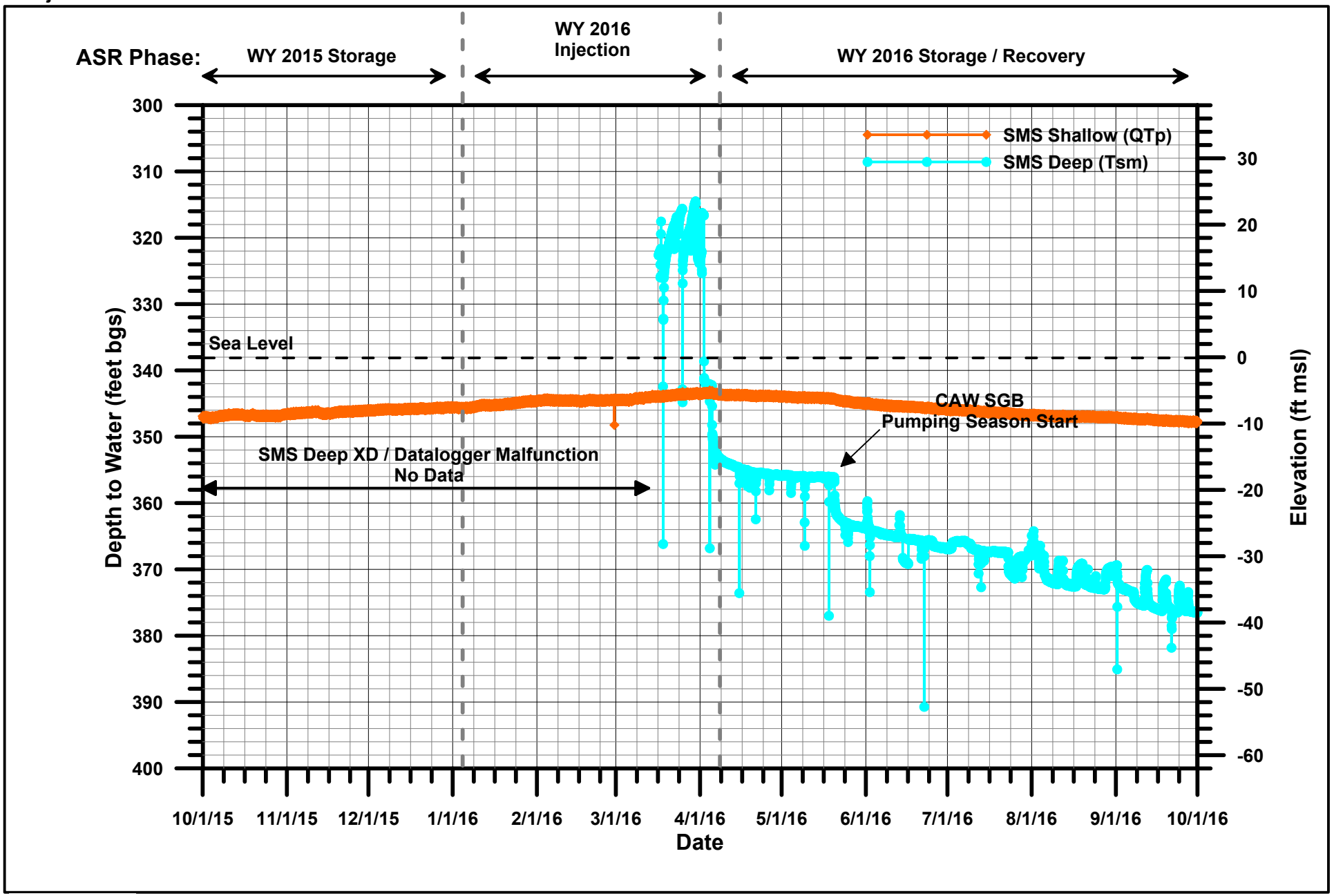

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FIGURE 11. SMS MW WATER-LEVEL DATA
WY 2016 ASR Program
Monterey Peninsula Water Management District

May 2018
Project No. 12-0046

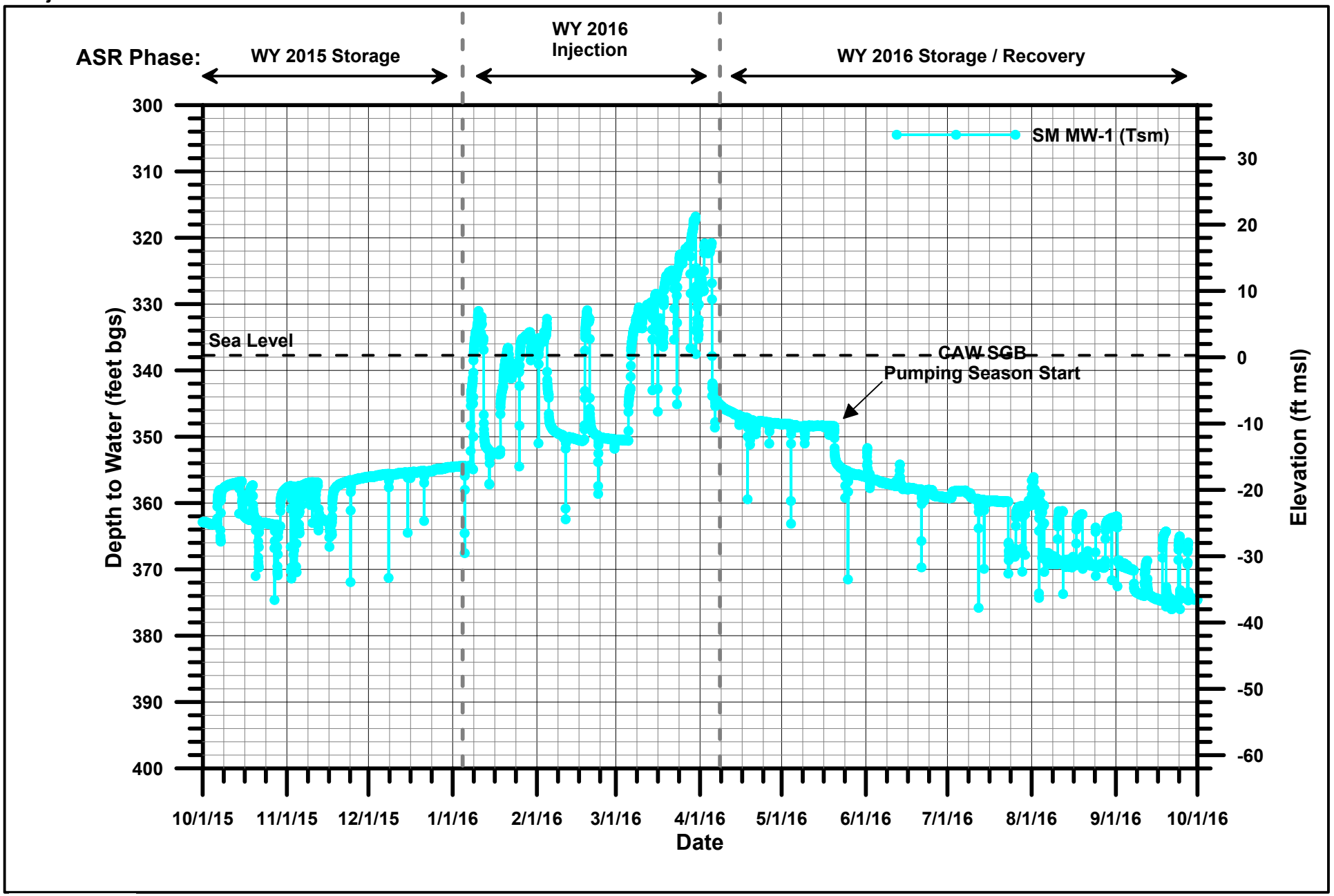

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FIGURE 12. SM MW-1 WATER-LEVEL DATA
WY 2016 ASR Program
Monterey Peninsula Water Management District

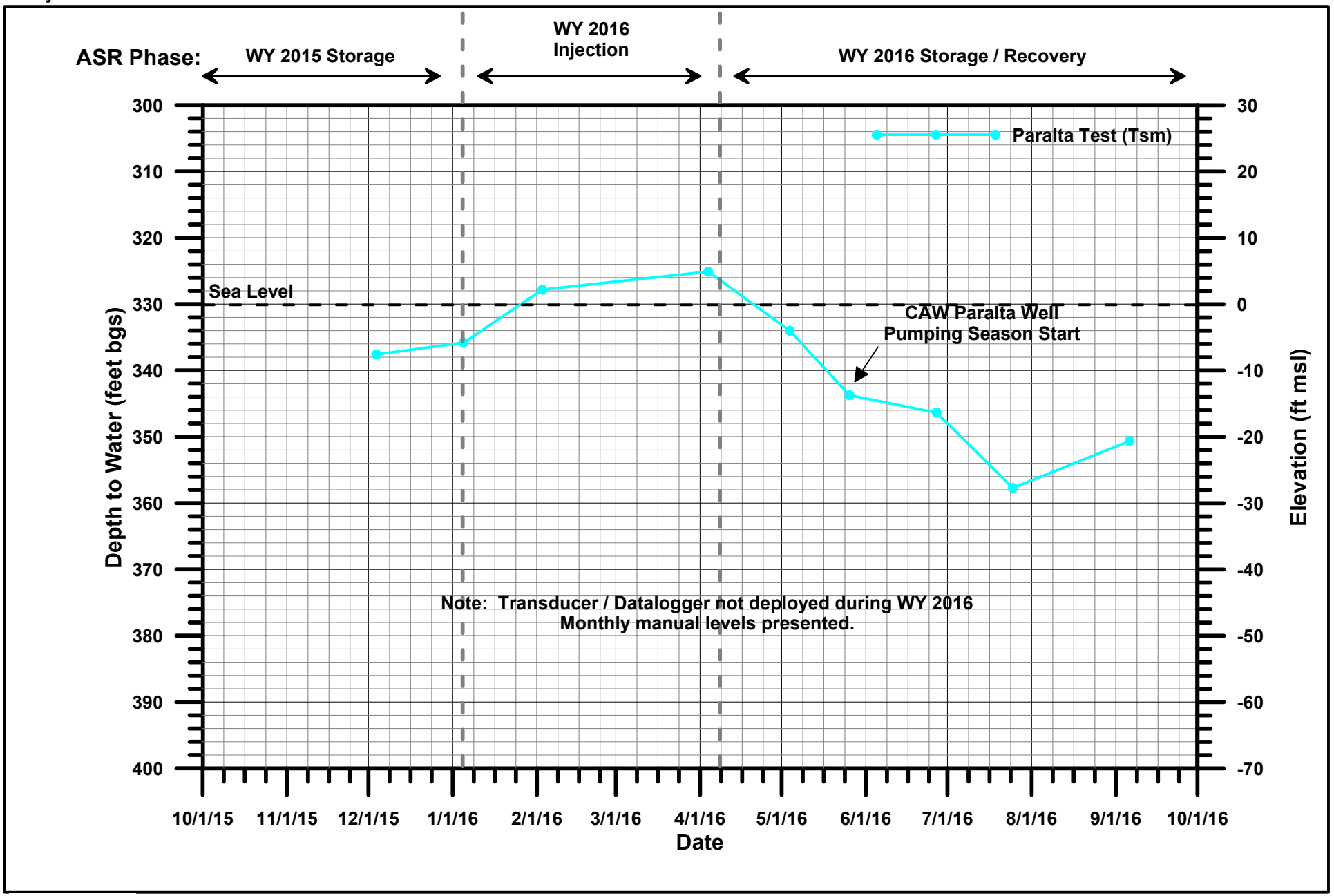

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FIGURE 13. PARALTA TEST WATER-LEVEL DATA
WY 2016 ASR Program
Monterey Peninsula Water Management District

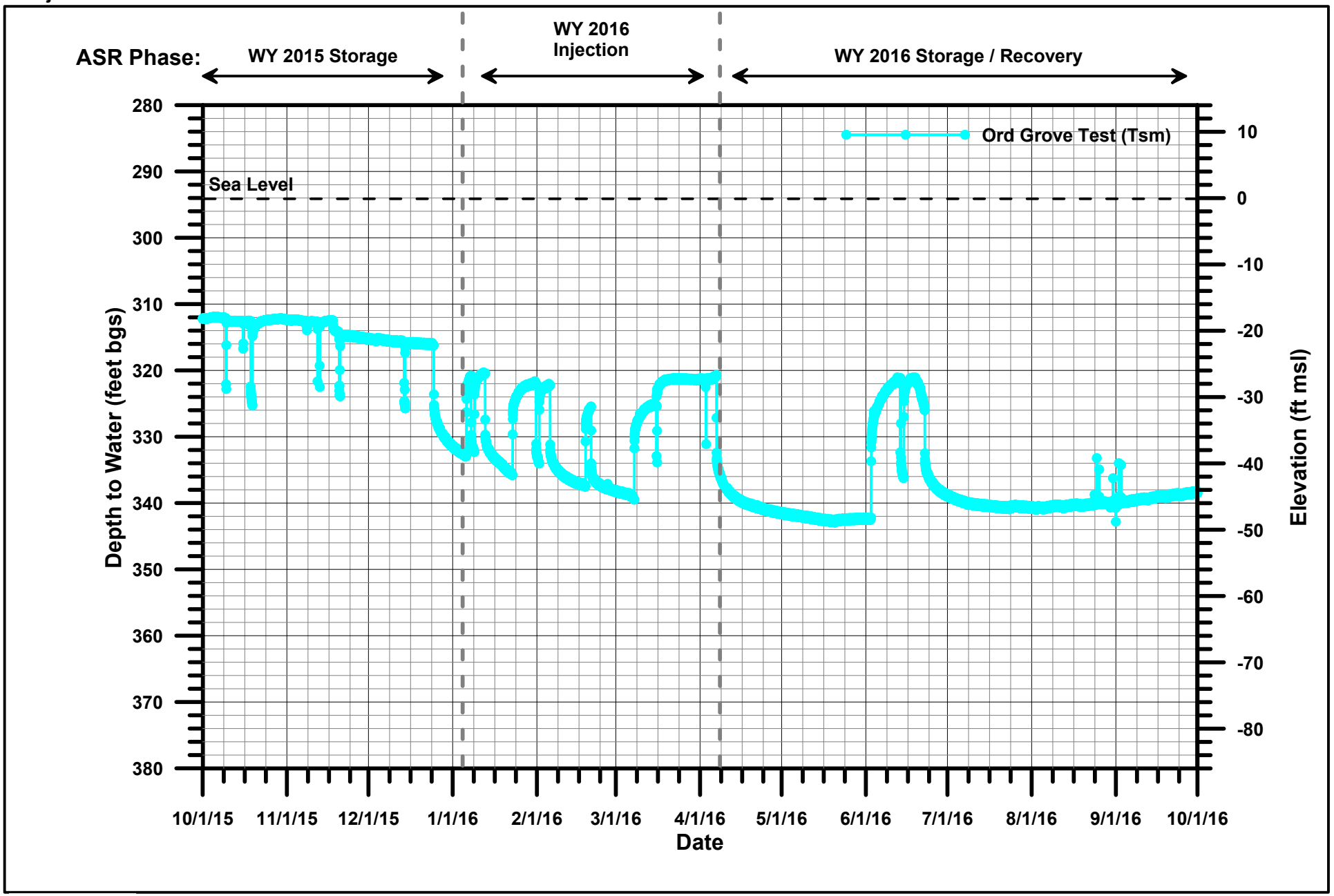

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FIGURE 14. ORD GROVE TEST WATER-LEVEL DATA
WY 2016 ASR Program
Monterey Peninsula Water Management District

May 2018
Project No. 12-0046

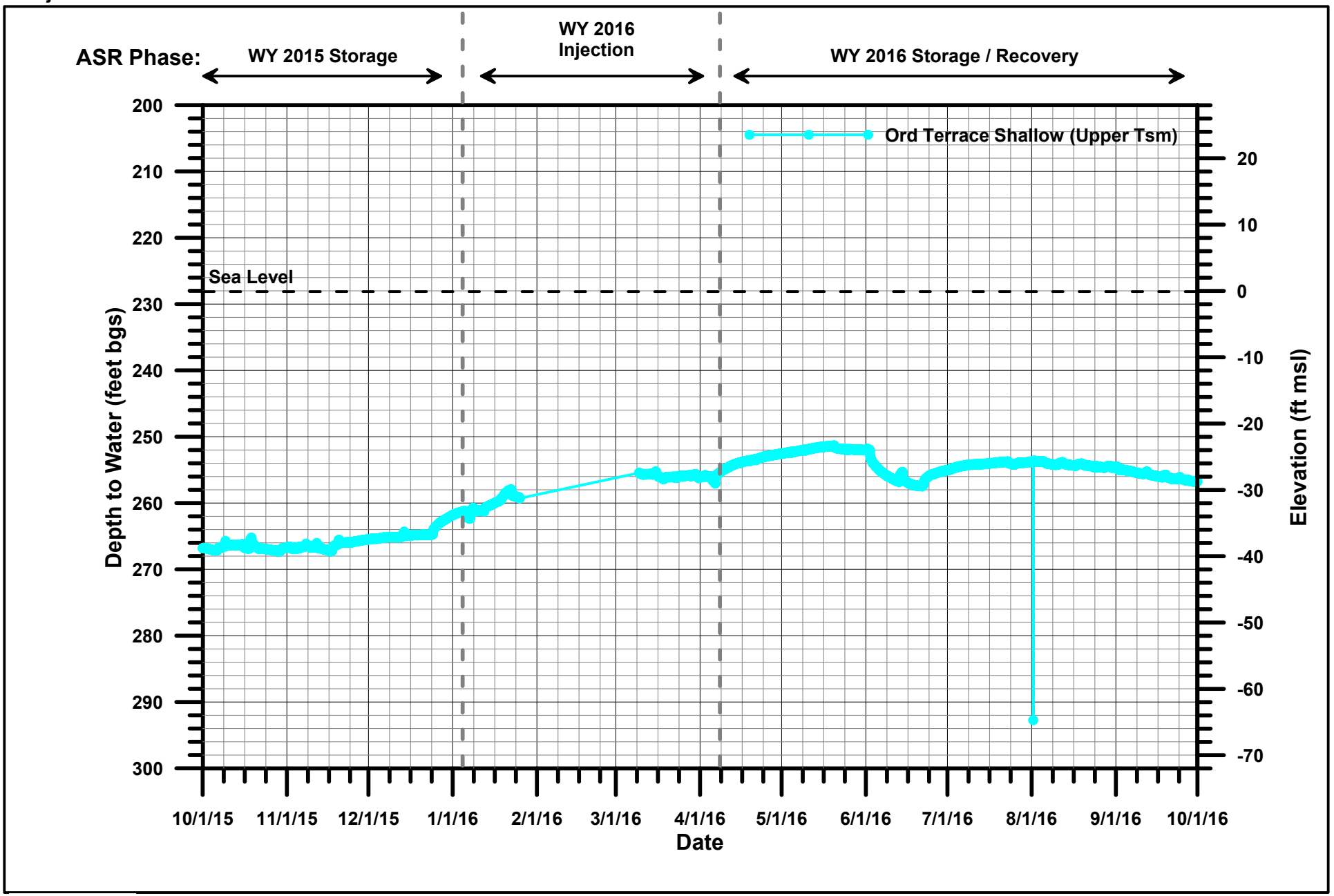

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FIGURE 15. ORD TERRACE WATER-LEVEL DATA
WY 2016 ASR Program
Monterey Peninsula Water Management District

May 2018
Project No. 12-0046

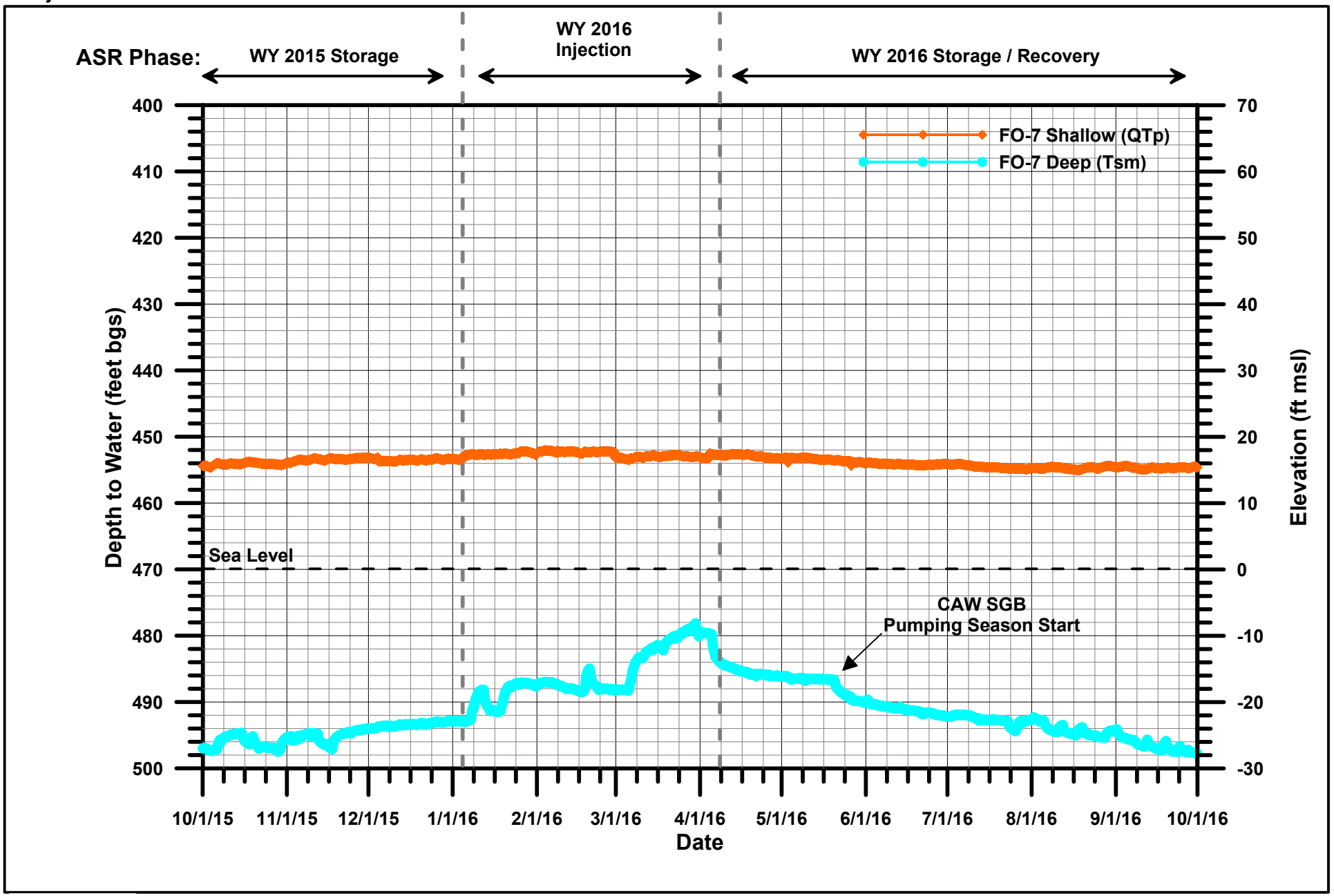

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FIGURE 16. FO-7 WATER-LEVEL DATA
WY 2016 ASR Program
Monterey Peninsula Water Management District

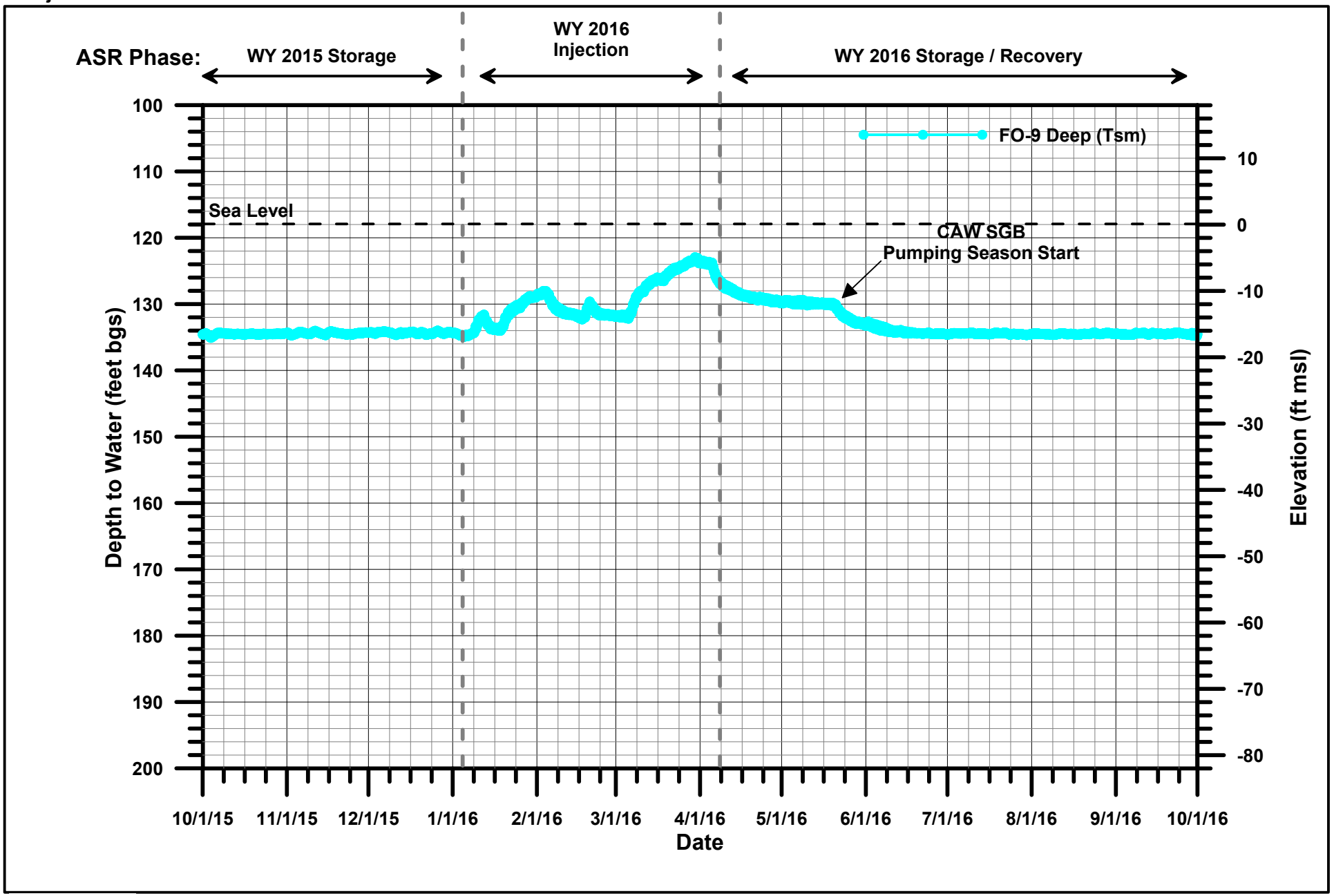

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FIGURE 17. FO-9 WATER-LEVEL DATA
WY 2016 ASR Program
Monterey Peninsula Water Management District

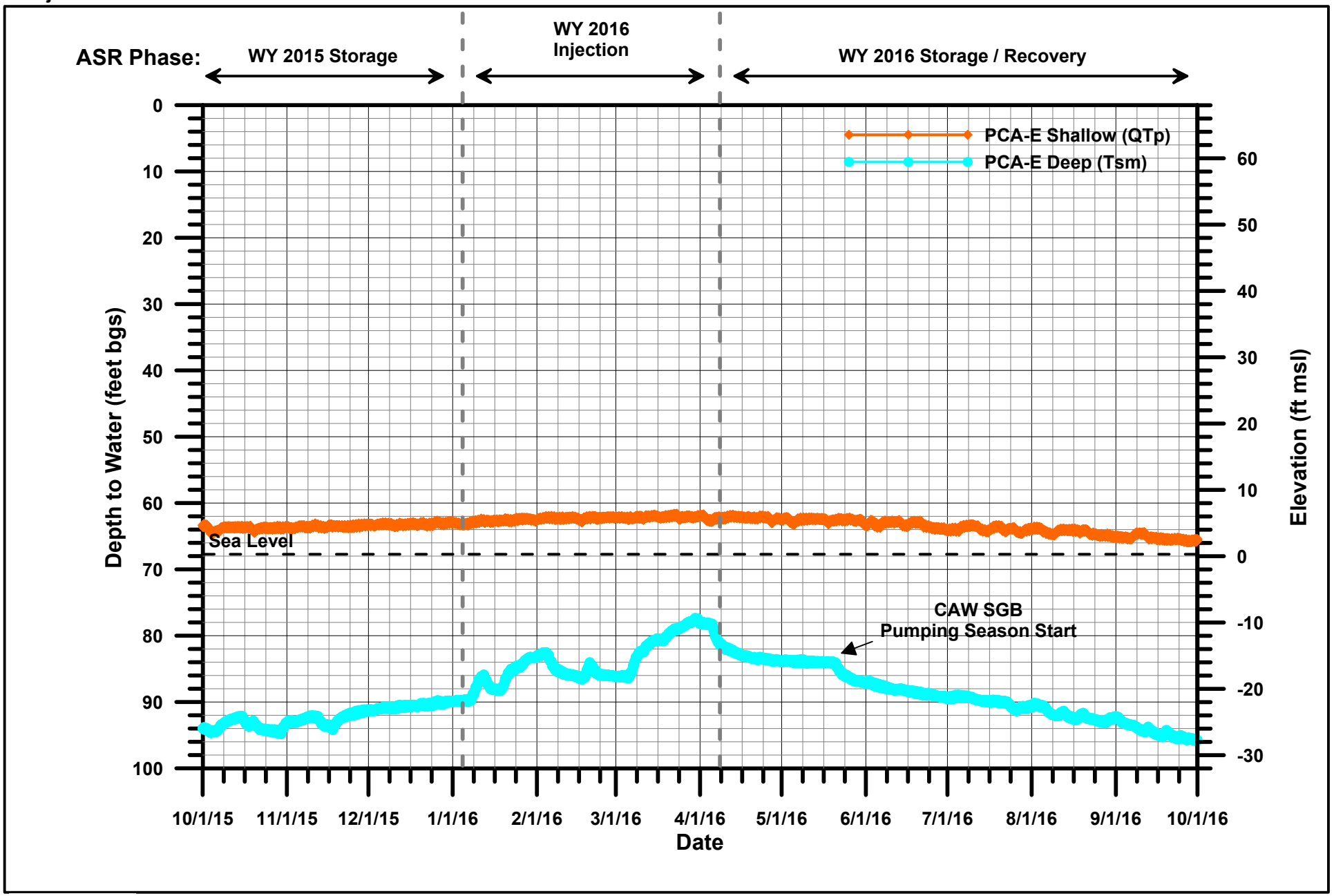

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FIGURE 18. PCA-EAST WATER-LEVEL DATA
WY 2016 ASR Program
Monterey Peninsula Water Management District

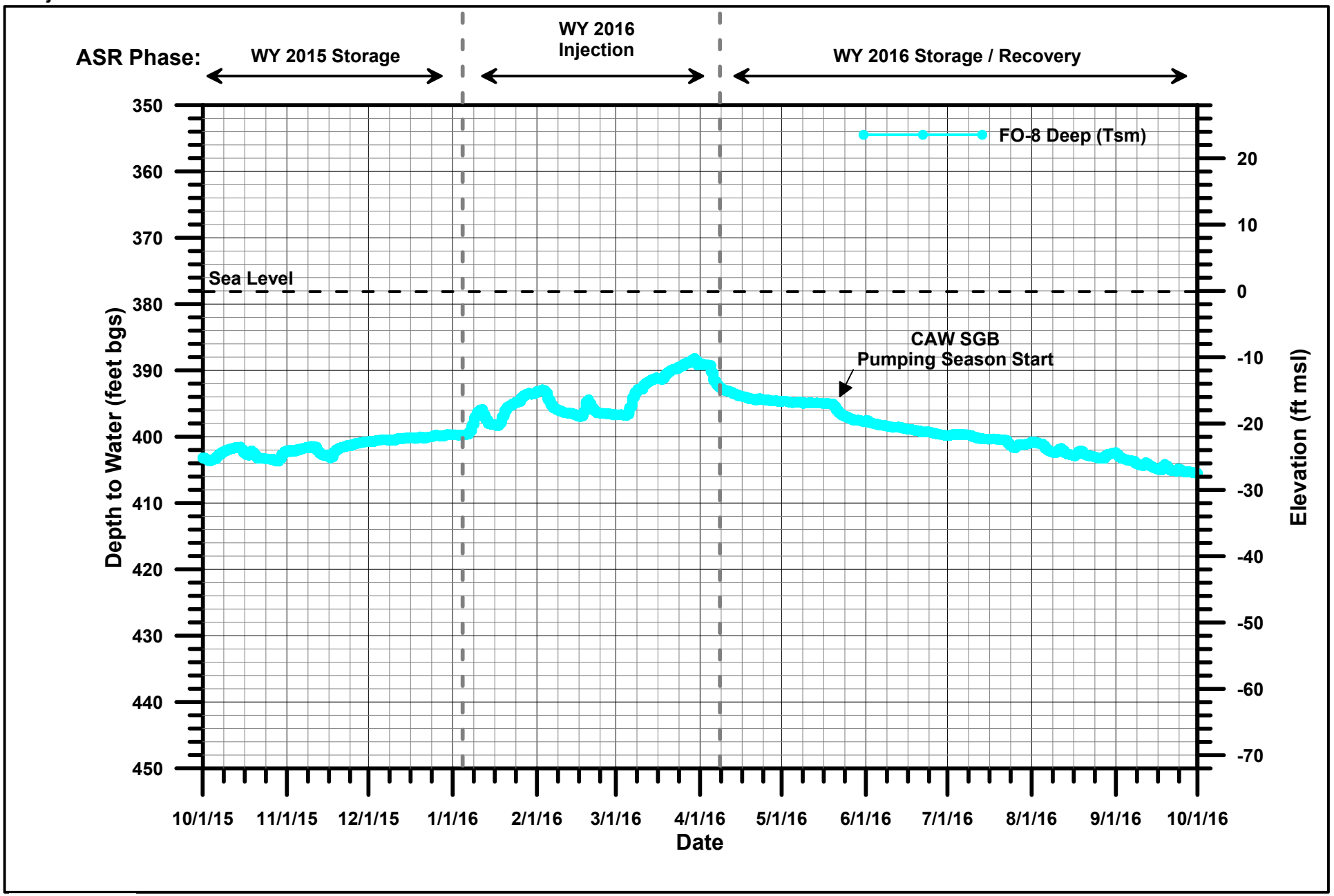

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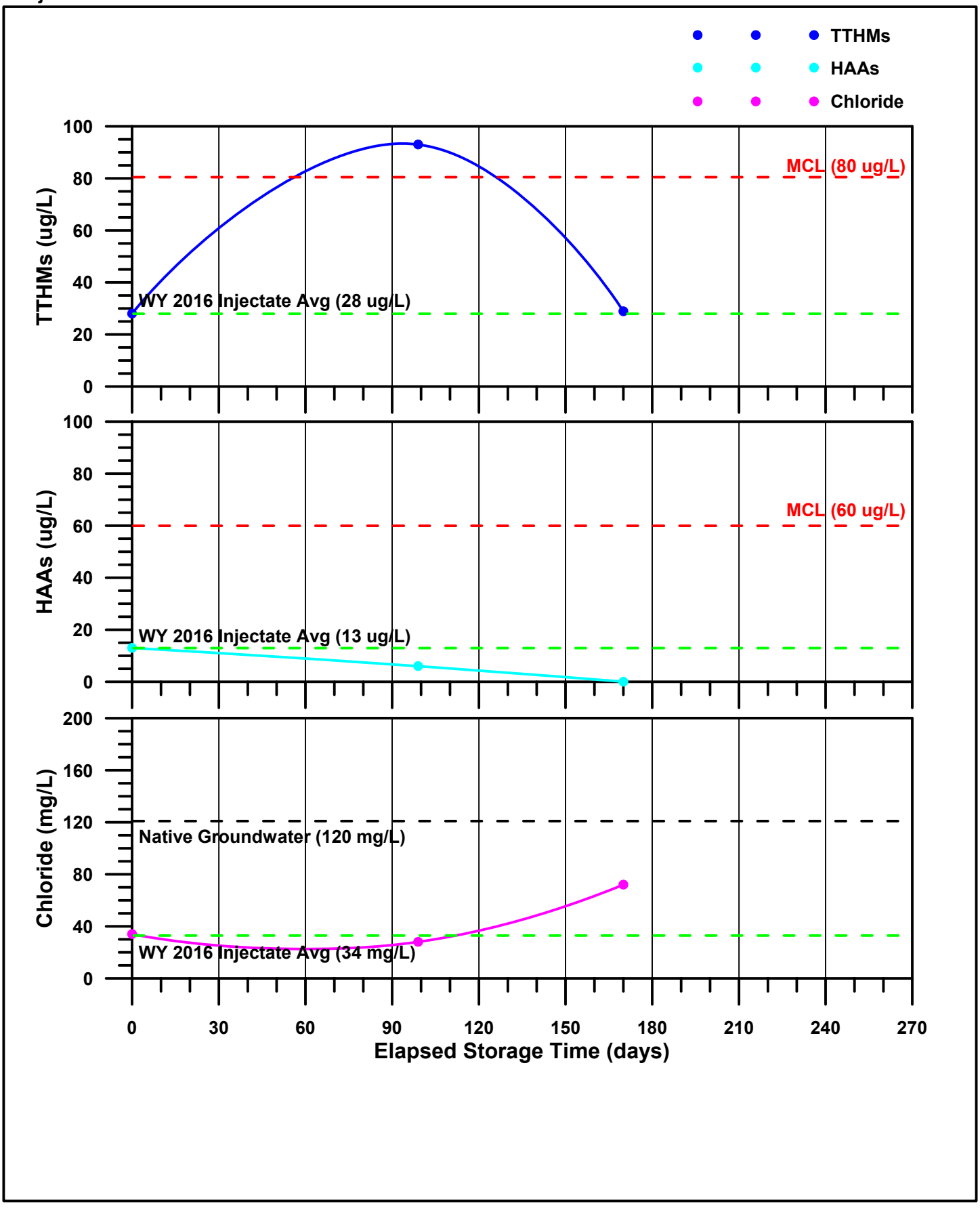
FIGURE 19. FO-8 WATER-LEVEL DATA
WY 2016 ASR Program
Monterey Peninsula Water Management District



PUEBLO water resources

FIGURE 20. ASR-1 DISINFECTION BYPRODUCTS PARAMETERS
WY 2016 ASR Program
Monterey Peninsula Water Management District

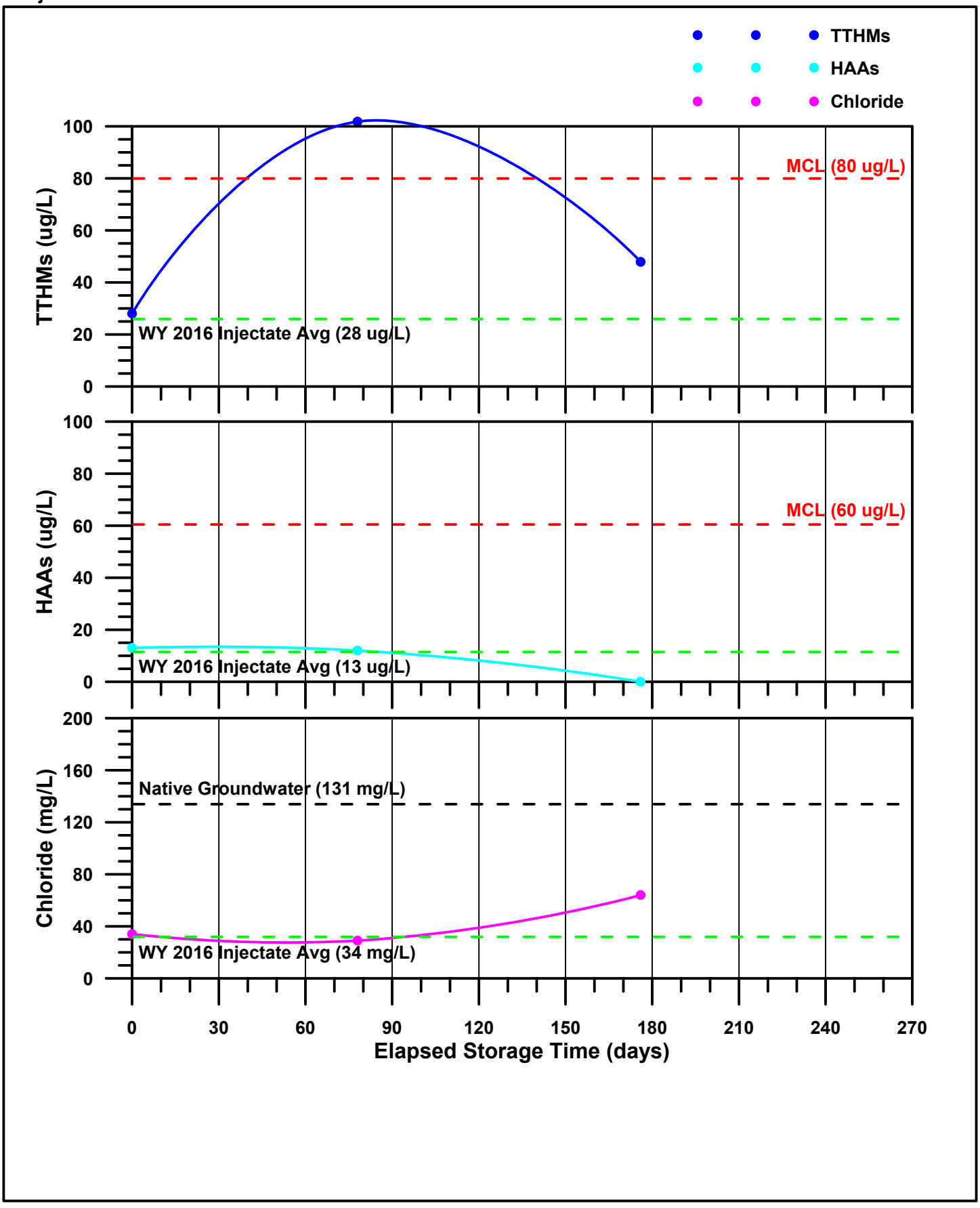
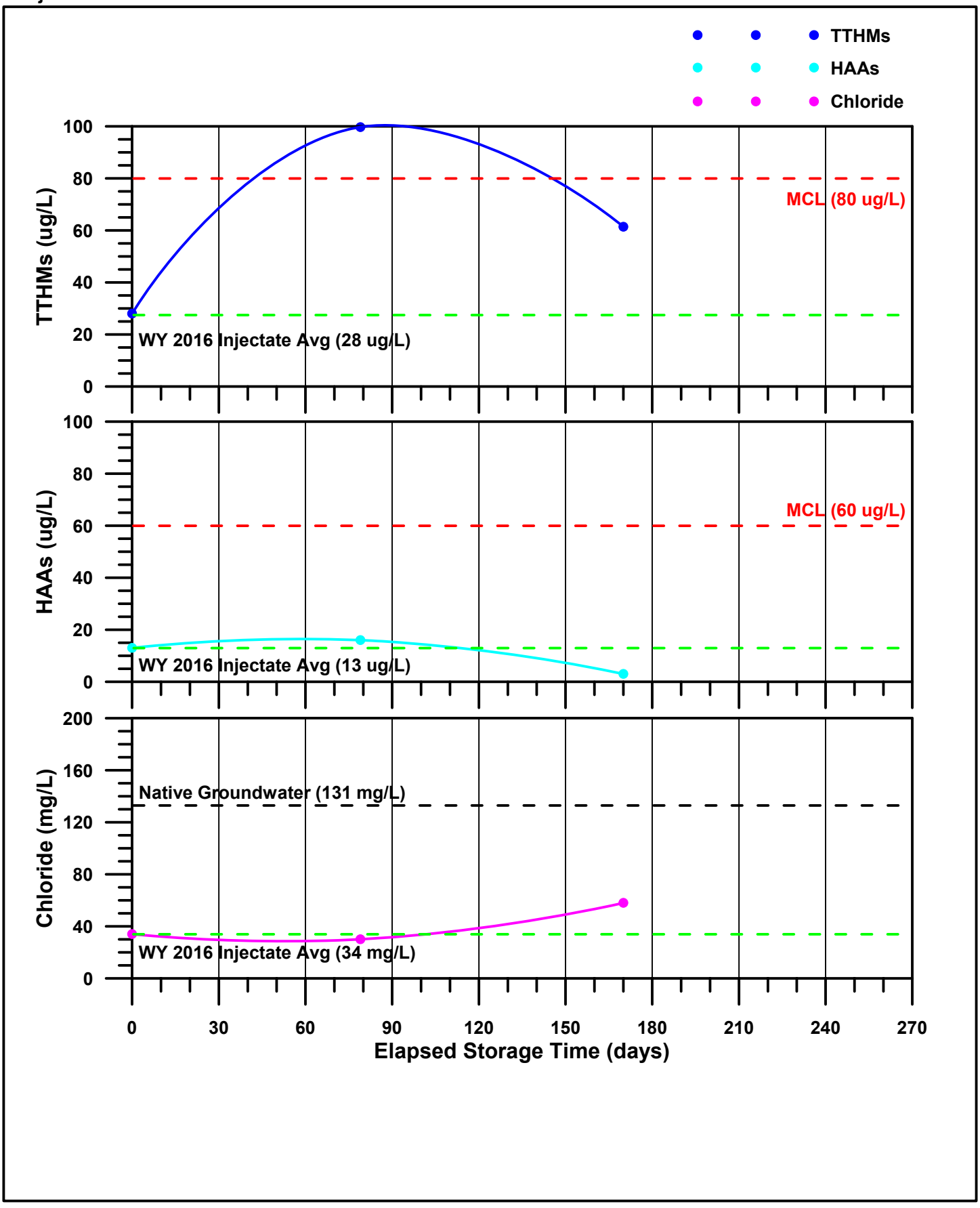
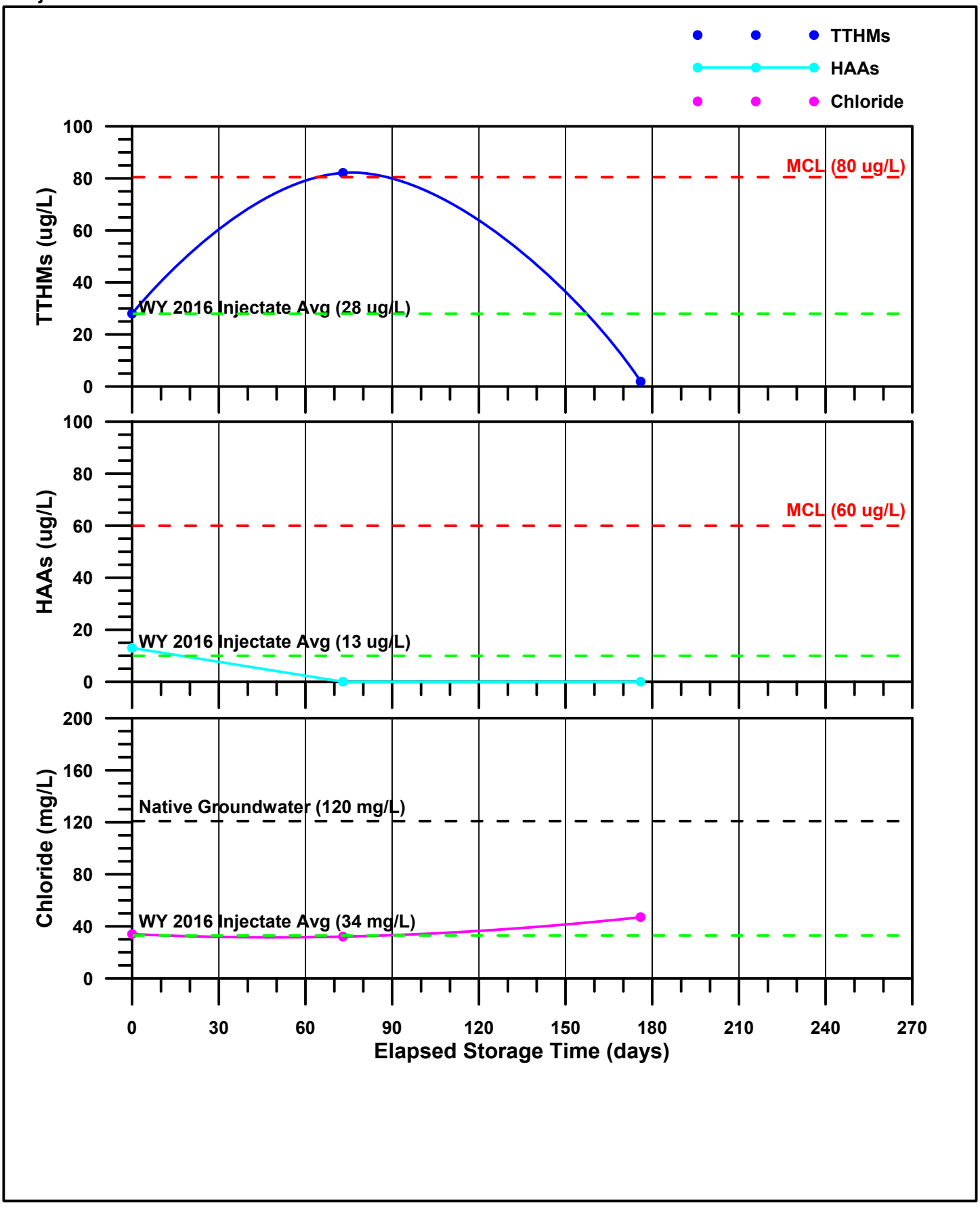


FIGURE 21. ASR-2 DISINFECTION BYPRODUCTS PARAMETERS
WY 2016 ASR Program
Monterey Peninsula Water Management District



PUEBLO water resources

FIGURE 22. ASR-3 DISINFECTION BYPRODUCTS PARAMETERS
WY 2016 ASR Program
Monterey Peninsula Water Management District



PUEBLO water resources

FIGURE 23. SM MW-1 DISINFECTION BYPRODUCTS PARAMETERS
WY 2016 ASR Program
Monterey Peninsula Water Management District

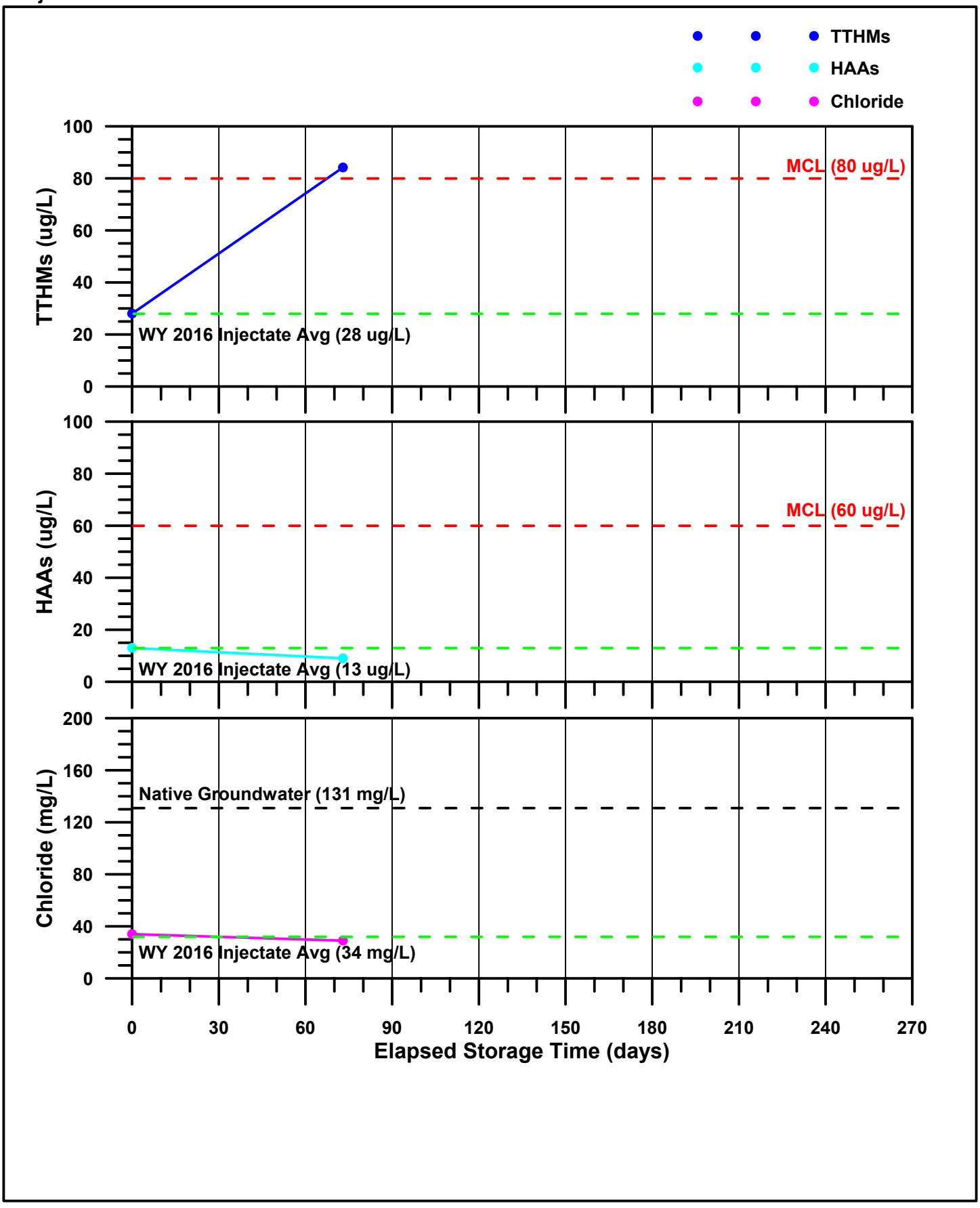
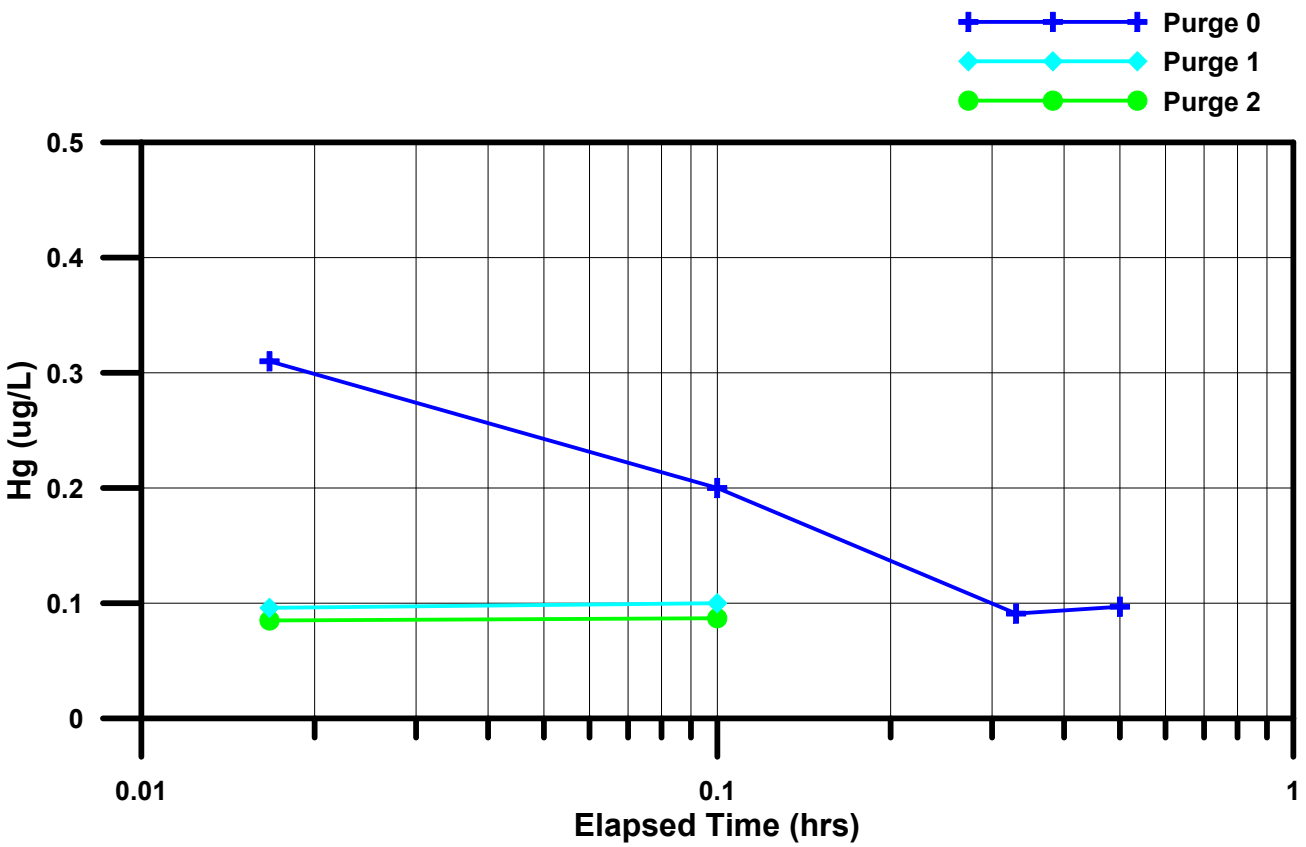
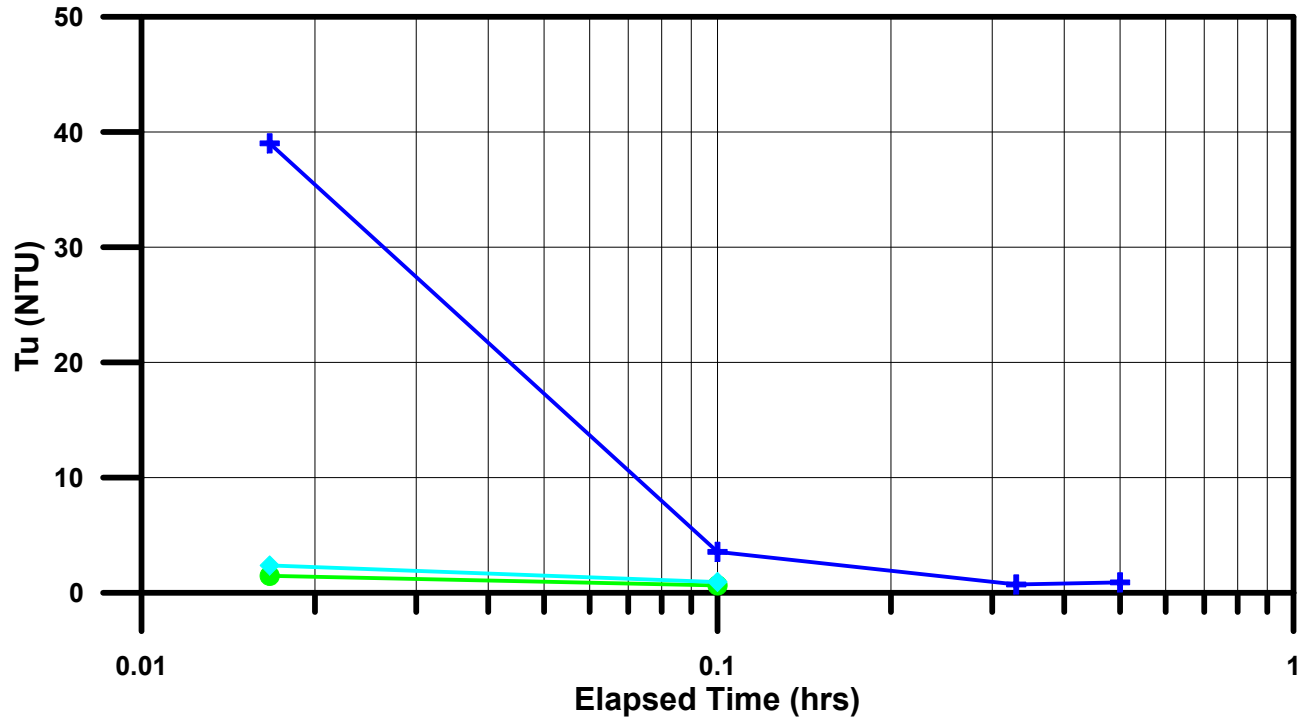


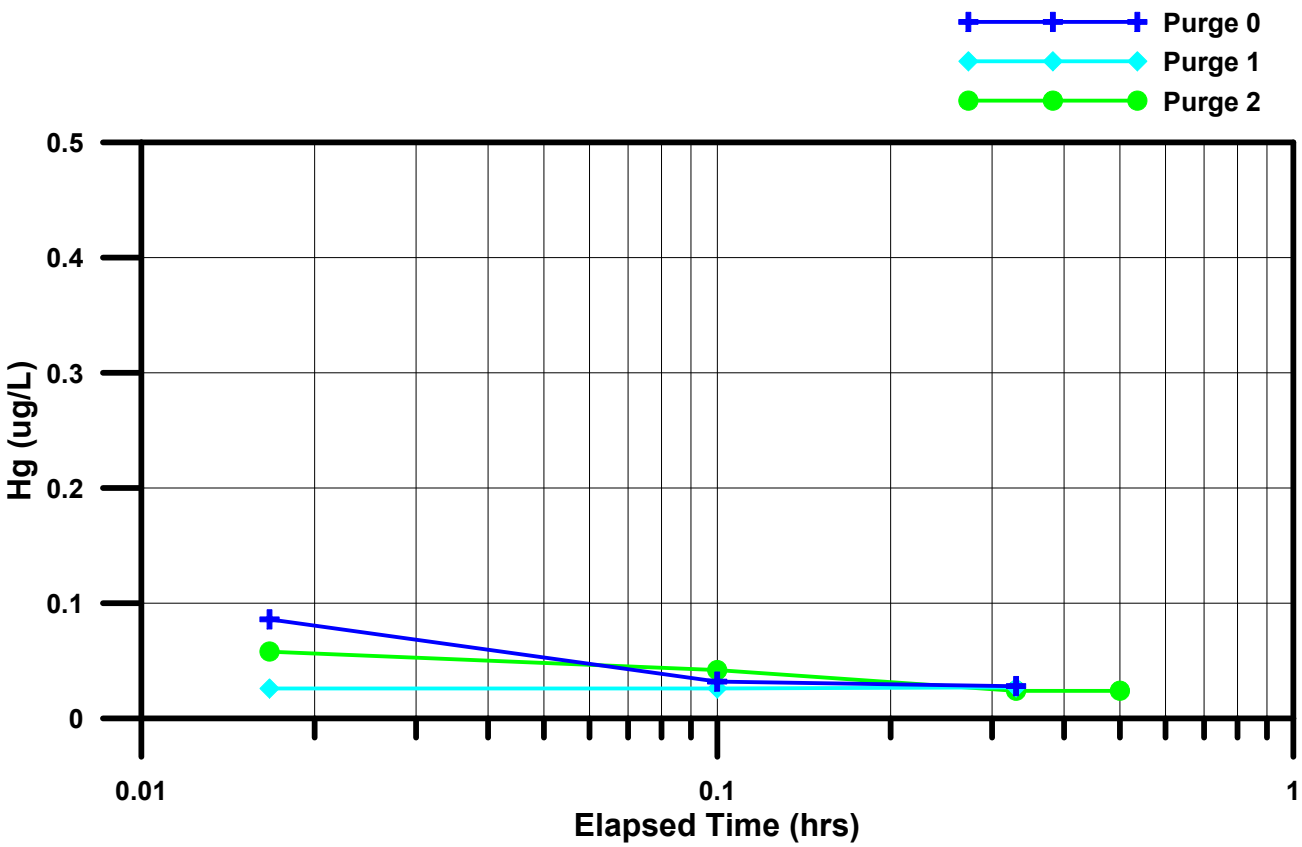
FIGURE 24. SMS DEEP DISINFECTION BYPRODUCTS PARAMETERS
WY 2016 ASR Program
Monterey Peninsula Water Management District

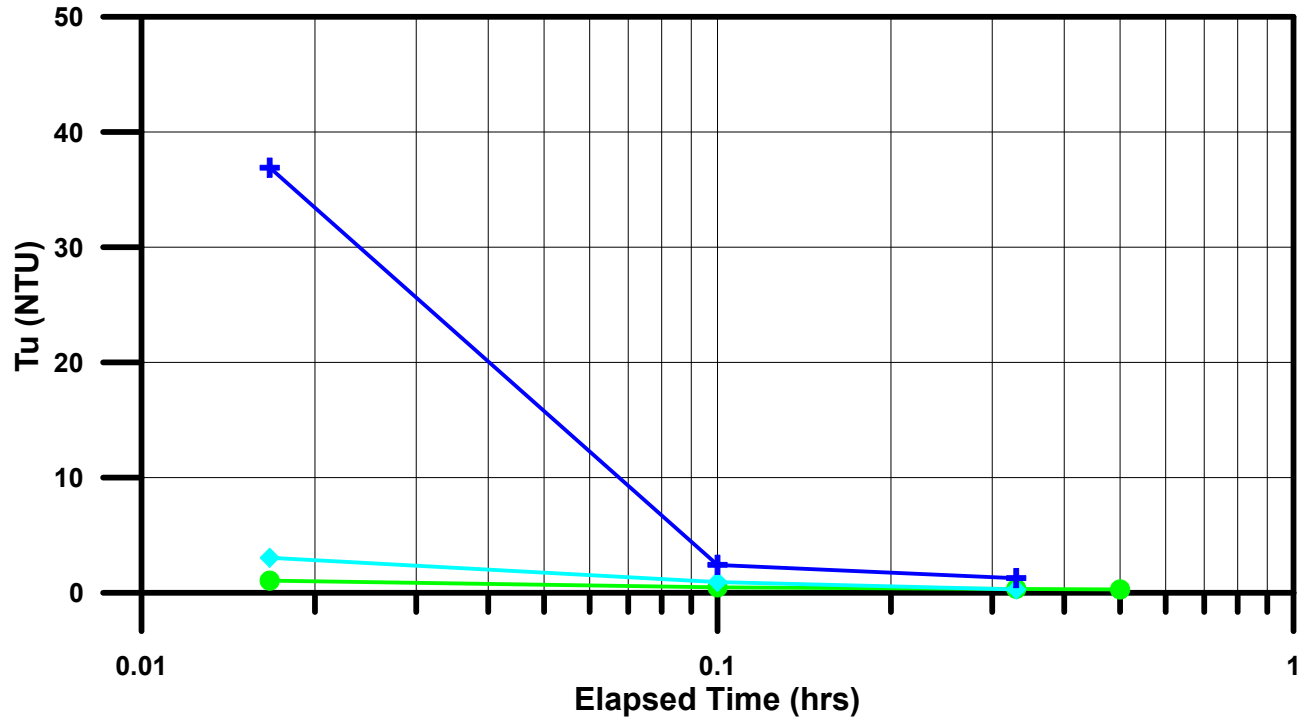




PUEBLO water resources

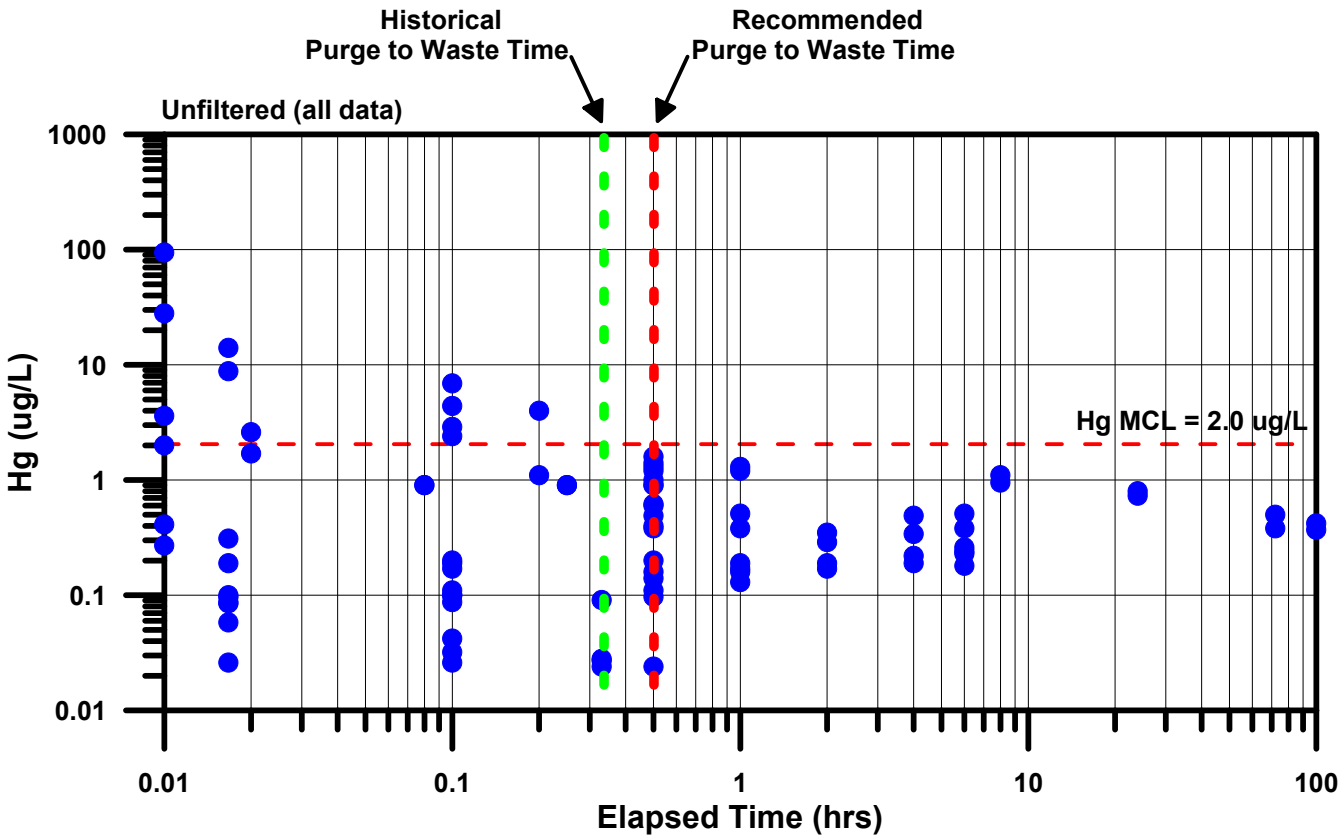
FIGURE 25. SM ASR-1 (2/11/16 SAMPLE EVENT)
WY 2016 ASR Program
Monterey Peninsula Water Management District

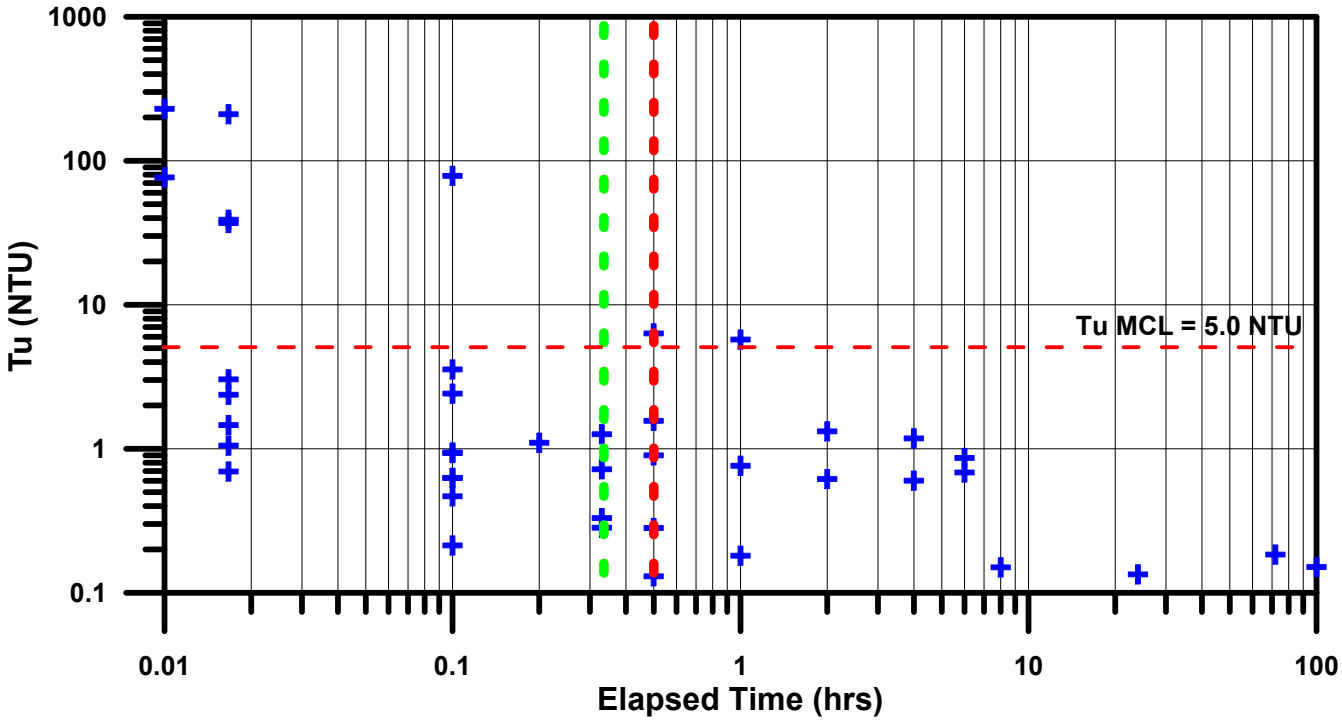




PUEBLO water resources

FIGURE 26. SM ASR-1 (3/23/16 SAMPLE EVENT)
WY 2016 ASR Program
Monterey Peninsula Water Management District





PUEBLO water resources

FIGURE 27. SM ASR-1 (Unfiltered Hg vs. Tu)
WY 2016 ASR Program
Monterey Peninsula Water Management District

APPENDIX A - FIELD DATA

MPWMD ASR DATA SHEET

Monterey Peninsula Water Management District

Well: ASR-1 ASR Period storage Sheet 1

Test: SSAP 2A (SAMPLE ID) Weather sunny, warm of

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
10/7/15	0900	272732	1163457	064612	317	78	∅	1990	375.91		∅	406080	Lube line rate = 3.8 gal/min
10/7/15	1730	272732	1163457	65067	—	—		OFF				457640	56psi ↔ 54psi

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge ~~Volume~~ RATE	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory
10/7/15	1 min	—	—	450GPM	23.1	932	7.39	-150 235		ND		TL, JL, JD MCCAMBELL
	6 min	.3 4×500+400	.45 2×500+350	450GPM	22.5	976	7.38	157 235		ND		
	0 MIN	—	—	400GPM	22.6	828	7.43	— 235		ND		
	30 MIN	.3 800 ML	.45 3×500+350	450GPM	23.4	1018	7.38	-228.4 235		ND		
	60 MIN	.3 6×500	.45 6×500+50	~~BS~~ 1300GPM	23.5	1003	7.34	-266.8 235		ND		
	120 MIN	.3 6×500+300	.45 7×500	1300GPM	23.4	1039	7.35	-294.7 235		ND		
	240 MIN	.3 7×500+200	.45 10×500+250	1300GPM	23.4	1050	7.37	-302.1 235		ND		
	360 MIN	.3 9×500	.45 13×500	1300GPM	23.3	1054	7.32	-304.4 235		ND		

Turbidity (NTU) min after start

0	1	2	5	10	15	20
190						
148						
247						
18						
7.7						
4.2						
2.4						
3.9						

MPWMD ASR DATA SHEET

Well: ASR1 ASR Period STORAGE Sheet 1

Test: CALAM DDW Weather SUNNY of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
10/14/15	930	277232	1163457	65067	310	75	~~0~~	FOD	381.4		—	4101010 —	40 ↔ 42 PSI @ FILTER
↓		↓	↓	65077	310				399.7		TOP OF 1000		
	1030			65105	~~0~~	75	~~0~~	1900				4107760 —	JN - COLLECTED

10

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
10/14/15	0930	65067	65105	38000	22.4	1043	7.4	~~143~~ 237	—	ND	0.08	JN - CALAM DBP	34	14	7.2	5.4	3.2	4.3	3.7

MPWMD ASR DATA SHEET

Monterey Peninsula Water Management District

Well: ASR 1 ASR Period ~~Start~~ STORAGE Sheet 1

Test: MONTHLY STORAGE FIELD SAMPLE CAL AM BI-WEEKLY DBP Weather COOL, SUN of 1

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
10·27·15	0900	272732	1163466	65105	305	102	∅	1900	381.68		∅	413820 —	52↔53 PSI LUBELINE
				65115					392.37		750		
10·27·15	1100	272732	1163466	65161	315	102	∅	1900	—		—		CAL-AM DBP COLLECTION - ARZEL
10·27·15	1145	↓	↓	65256					—		3500		
12·27·15				65263	315	102	∅	1900	—		1300		SET UP SAMPLING PORTS FOR SSAP & BACK PRESSURE
													SET WELL TO PRODUCE ~1300 & HAVE ~27PSI @ SAMPLE MANIFOLD FOR FILTERED SAMPLES
													LEFT LUBE ON FOR SSAP SAMPLING TOMORROW
													TURNED OFF N_2 -JL

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
10/27/15	0900	65105	65161	750 GPM	19.2	1047	7.47	-146 / 238	ND	ND	NO	JL FIELD	232	54.2	18.1	12.9	4.19	13.4	6.73
10/27/15	1100	65161	65256	3000 GPM	—	—	—	— / —	—	—	—	JL NONE	7.26	12.4	13.2	3.24	5.66	5.73	3.05
10/27/15	1145	65256	65263	1300 GPM	—	—	—	— / —	—	—	—	JL NONE	3.57						

MPWMD ASR DATA SHEET

Monterey Peninsula Water Management District

Well: ASR 1 ASR Period STORAGE Sheet 1

Test: CALAM DBP Weather SUN of 1

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
11/10/15	0900	272732	1163623	65738	350	110	68	1500	—	—	—	424030	CAL-AM DBP
11/10/15	1015	↓	↓	65777	OFF	110	68	OFF	-	-	-	424200	50 ⟷ 52 psi
													N_2 OFF

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0 1 2 5 10 15 20 min after start
11/10/15	0900	65738	65777	39,000								ARZEL CALAM	

MPWMD ASR DATA SHEET

Well: 1 ASR Period STORAGE Sheet 1

Test: CALAM DBP SAMPLE Weather RAIN / CLOUDY of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
11/24/15	0800			65778	340	110	Ø	1500	380.4	—	Ø	427500	52 ↔ 50 psi FILTER
10				65787					397.5	17.1	PROD 3000		57HZ
		272232	1163623	66035	OFF	110	Ø	1450				428120	
													UN- COLLECTED DBP
													LUBE OFF

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
11/24/15	0900	65778	66035	257,000	19.8	989	7.47	-158 / 235	—	NO	—	UN-CALAM / CALAM	73	472	11.3	8.4	3.7	7.8	5.7

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR-1 ASR Period: storage Sheet: 1 of 1

Test: CAL-AM DBP sample Weather: overcast, humid

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
12-21-15	1010	272723	1163623	066198	340	105	Ø	1310	—	—	Ø	0435640	45/44 us/ds f/hr
													50.5 Hz 2300 gpm
STOP	1130	272723	1163623	066333	330		Ø	1350	—	—	—	0435960	adjust 1029 48.0 Hz 1900 g/m
													TL/JO
													Arzel collected DBPs
													*0.05 H_2S from Arzel (Cal-Am)'s Hach test kit. Could smell it in pit after ~10 minutes.

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (μ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start: 0	1	2	5	10	15	20	30
12-21-15	1010	66198	66333	135,000	—	—	—	/	—	—	0.05*		91.9	16.5	4.58	2.21	1.20	1.07	1.15	1.57

ENTERED

MPWMD ASR DATA SHEET

Well: ASR1 ASR Period STORAGE Sheet 1

Test: CALAM DBP Weather RAIN of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	PSI U/D	Comments
1·5·15	0900	272723	1163623	66333	320	112	ø	1250	372.3		2900	439350		54 ↔ 52 psi on filter JL
1·5·15	1100	272723	1163623	66599	320	112	ø	1250				439970		LUBE & N_2 OFF

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
1·5·15	0900	66333	66599		20.1	853	7.36	-180 / 243	—	ND	0.04	CALAM DBP	545	14.6	6.4	3.2	1.1	0.98	1.03

MPWMD ASR DATA SHEET

Well: ASR 1 ASR Period WY 2016 Sheet 1

Test: Weather of

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
													FCV tank = 750 psi
1-7-16	1410	272732	1163623	066599	335	92	0	750	372.33	0	0	0439770	TL/JO
	1445	272732	1163631	066606	335								
	1500				~190				367		~530		begin inj.
	1510				186				364.14		~560		adj FCV
	1512				185				362.98		600		adj FCV
	1515				184				360.95		705		" "
	1520				183				360.46		720		JO goes to #2 to Adj rate
	1525				182				359.90		735		JO made NO ADJ @ #2
	1530				181				359.11		755		
	1535				180				358.72		770		
	1539				181				358.04		780		Adj FCV + tank + 0 181 psi
	1541				181				358.25		785		NO ADJ
	1545				180				357.83		790		JO back up to #2 for a check
	1550				179				1,705?		800		
	1535				180				?		810		Adj. #2 to higher rate
	1625				176				?		870		Recg. seems to drift
	1630				181						770		NO ADJ, but closed and then opened both valves,
1-8-16	0830		1164433		179				?	—	785	439940	NO ADJ. DL IS OFF.
	1045				179	96	45	700	340.42	31.91	863		JO - ASR2 off @ 1040 for BF

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0 1 2 5 10 15 20

MPWMD ASR DATA SHEET

Monterey Peninsula Water Management District

Well: ASR 1 **ASR Period** INJECTION **Sheet** 1

Test: 2ND INJ CYCLE **Weather** CLOUDY / COOL **of** _____

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
1-8-16	1300	272732	1164677	666606	199	91	27	600			1000	44550	55 / 51	SHUT DOWN FOR BF
				666606					372.4					
10 MIN				66642					427.90		3400			BACKFLUSH EVENT
				66687										* LOGGER NOT WORKING PULL ON MONDAY.
2ND CYCLE														
1-8-16	1400	272732	1164677		300	91	—		372.4	—	Ø			REPLACED N_2 TANK
												444710		JN PHONED, SET TO
1-8-16	1420			66701	190	86	42	2000	372.4		400			2000GPM FOR BOTH WELLS
					159	67	40	2000			1450			* ADD LF TO INJ
1-8-16	1630				163						1380			
1-9-16	0850	272732	1166176	066701	161	64	40	2050	321.9	50.5	1420			
	0920				164						1340			Adj. to keep total < 3000
1-10-16	1230	272732	1168593	066701	164	56	45	2090			1625			JO - Bowen onsite - tanks low
	1320				174	74	45		324.11	48.3	1150			JO - adjust to reduce rate
1-11-16	0820	272732		066701	174				322.2		1190			TL - NO ADJ.
	0840		1169974		175	74	46	2100			1200			Attempted to adj. to 169 FCV = 1410 gpm
	0918				166	66	47				1490			checked, NO ADJ.

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
BF → 1-8-16	1330	666606	66687										17.6	14.9	12.8	5.63	4.85	3.99	6.23

MPWMD ASR DATA SHEET

Well: ASR 1 ASR Period ~~OCT 2016~~ INJ Sheet 2

Test: 2ND INJ CYCLE Weather COOL, SUN of 2

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
1-11-16	1100	272732	1170192	066701	166	65	48	2010			1560			JO- flow rate not stable; fluxing +/- 50 gpm
	1530		1170623		173	68	50	2040			1350			JO - reduced from 1710 gpm
1-12-16	0830	272732	1171830	066701	168	73	40	1950	319.54		1207	—	—	ADJ Q1
			1171875		161	72	40	1950			1430			
1-12-16	0900		1171875		300	90	—	1950			Ø			FLOW BELOW 40 CFS @ HWY 1 - STOPPED INJECTION
BF ASR 1	1-14-16	1100	272732	1171875	66701	300	81	—	1900	377.65	—	Ø	448490	52	BACKFLUSH
10 MIN					66735					446.4				54	
					66845									
													448670		LUBE OFF, N_2 OFF, PSV CLOSED

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
INJ F1 →	1-11-16	1400										TL - MBAS							
MW 1 →	1-12-16	1000		25966 GAL		18.1	967	7.32	-210 244	ND	ND	0.04	JL - SJ & I DBP MBAS						
													657	51.2	13.4	10.9	5.3	1.7	1.9
ASR 1 BF	1-14-16	1100	66701	66845															

MPWMD ASR DATA SHEET

Well: ASR-1 ASR Period INJ Sheet 1

Test: 2ND INJ CYCLE Weather COOL/CLOUDY of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
1-8-16		272732	1171891	66845	350	75	Ø	1810			Ø			JO - no inj @ ASR1 today
2ND CYC														
2-3-16	1430	272732	1171891	66845	345	75	Ø	1810	344.1	—	Ø	448670	—	INITIATE INJ JL, TC, TL
				66846										LINE FLUSH 2000GAL
BEGIN INJ	1500	272732	1171891	66846	184	82	40				650			BJW 24HR OVERNIGHT
2-4-16	0830	272732	1172521	66846	182	82	41	1610	339.6		602	—	—	↓ MI ADJ
2-4-16	1600	272732	1172784	66846	175	81	41	1600			850			ADJ TO 850 FOR ION EXCH
2/4/16	1705	272732	1172907	66846	175	81	41		325.88		946			INJ. SHUT DOWN TC
2/11/16	1100	272732	1173004	66846	330	100	0	1600	358.11		Ø	0452390 ON	48/47	Will BF & collect SSAP samples
2/11/16				66912							Ø			3450 gal / 439-363 = 45 SpC
2/11/16	1320	272732	1173004	66989	322	101	0	1600	360.65		Ø	0452810 OFF		JO - Sample collection done!

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
RUN 1 2-11-16	1200	66846	66910										132	69.6	19.4	9.73	3.66	4.42	3.44
RUN 2 2-11-16	1230	66912	66946										8.46	8.65	6.01	2.93	—		
RUN 3 2-11-16	1250	66946	66988										267	5.17	4.23	2.40	1.98		

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR-1 + MW-1 ASR Period ______ Sheet ______

Test: ______ Weather ______ of ______

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
2-18-16	0900	272732	1173004	66989	326	102	∅	1500	358.73	∅	∅		prior to injection TL/JO
	1000-1400	Continue LF'ing -- not able to get PSV to shut until 1410 hr (w/ J. Nichols, Cleo & Hoss)											
	1410	ND	1173207	67173									prior to attempting inj. again
				67198 - after meeting w/ JN, Hoss + CLEO									
	1450		1173247		158	70	34	1500			1350		TL/JO
	1620				159						1315		TL/JO
2-19-16	0840	272732	1174588	67198	158	65	35	1400			1320		TL
	1330										1425		crept up on its own - TL
2/20/16	0900										1370		
	0910	272732	1176570	67198	159	92	56	1408	318.35		1380		after shutdown @ #2 TL
	0916	OFF	1176572										
2/22/16	1645											452810	Turn on Lube line (TL)
2/23/16	0930	meter drift 272734	1176572	67198	330	88	0	1190	358.1		0	456410	will BF & collect SSAP 100-gal (JO)
2/23/16	1020			67198									
2/23/16	1030			67233					437.2				10-min SpC = 3500/79.1 = 44.2
2/23/16	1115	272739	1176572	67323	312	76	0	1200	–	--	0	456690 off	stop BF; close FCV & tank (JO)

Margin notes: 1380, 1600, 2980; 10-min BF SpC (bracketing 2/23/16 1020–1030)

Well	Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (μ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
ASR-1	2/10/16	1715	Turned on Lube Line = 0448670 g																	
MW-1	2/12/16		0031700	0041300	9600	18.8	567	7.23	-186.3	0.02	ND	ND	TL						SDI	
														SDI ASR-1 INJECTATE						
Injectate	2/18/16	0930	1173024											19	19	~~18~~	22		0.9	
			1173065	1173096										17	19	20	21		1.3	
ASR-1	2/23/16	1030	67198	67271	73,000								Turbidity →	7.9	18.7	2.3	2.7	1.41	1.55	1.20
	2/23/16	1050	67,271	67304	33,000									1.52	2.97	4.19	1.95	1.41		
	2/23/16	1110	67304	67323	19,000									1.36	0.85	2.38	1.68			

MPWMD ASR DATA SHEET

Well: ASR-1 ASR Period WY 2016 Sheet

Test: Weather of

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
3-5-16	1015	272739	1176572	067323	0/320	74	Ø	1120	358.8	Ø	Ø			Prior to line flush TL, JO
3-5-16	1320	Had to wait to start line flush until CAW CV crew got more wells online.												Begin LF @ 3000 gpm
3-5-16	1600	272739	1176782	67528	279 shut	95		1090						Can't shut PSV - no inj JO
3-6-16	1115	272739	1176782	67528	286 shut	92	Ø	1060						PSV is shut today JO / TL
3-6-16	1300	272739	1176833	67528	178	78	36		340.7	18.1	680			rate +/- 50 gpm JO
3-7-16	0815	272739	1177630	67528	176	70	36	1000	332.9		700			no morning adj JO
	1210	272739	1177797	67528	177	70	36	1000	—		690			NO ADJ TL
3-8-16	0850	272739	1178641	67528	175	68	38	995	330.5	28.3	720			NO ADJ. TL
	1640	272739	1178989	67528	177	66	37	1000	330.1	28.7	700			NO ADJ. TL
3-9-16	0950	272739	1179650	67528	175	64	36	975	328.5	30.3	725			NO ADJ TL
	1200	272739	1179797	67528	173	62	34	1000			800			Check on low pressure shut this AM. TL
	1235	↓			175	65	36	1000			815			Adj @ #2, not here TL
	1410	272739	1179896	67528	175	69	35	1000			770			NO ADJ here TL
	1710	272739	1180029	67528	176	88	36	1000			780			NO ADJ TL
3-10-16	0840	272739	1180700	67528	175	77	38	900	329.05	26.75	760			NO ADJ. TL
3-11-16	0850	272739	1181769	67528	177	72	36	900	328.4	30.4	690			NO ADJ. TL/JO
3-12-16	0820	272739	1182756	67528	175	70	36	850	326.25	32.55	730			NO ADJ. TL
3-13-16	0940	272739	1183800	?? can't read	176	65	36	825	326.1	32.7	705			no adj JO
3-14-16	1040	272739	1184852	67528	178	90	36	800	334.7	24.1*	720			no adj JO

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0	1	2	5	10	15	20	min after start
													Line flush SDI							
3-5-16	1330												17	–	–	19	19	19		=1.65

* 3-14-16 Draw-up value (24.1') could be misleading -- ASR2 inj is temporarily off for BF (JWO).

SCANNED TO DROPBOX

JWO

MPWMD ASR DATA SHEET

Well: ASR-1 ASR Period Jun 2016 Sheet

Test: Weather of

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
3-14-16	1645	272739	1185120	67528	176	64	35	820	325.6	33.2	735		TL no adj.
3-15-16	0820	272739	1185755	67528	176	63	37	800			695	045669 ☑	no adj JO
	1620	272739	1186119	67528	176	56	36	808	322.6		775	ON	no adj TL
3-16-15	0915	272739	1186880	67528	175	58		800	321.05	3774	815	045982 ☑	prior to shutdown for BF TL/JO/KM
	1000		1186880	67528	300				340.7	DON			Start BF
10	10^{10}			67562					422.8	(82.1)			Q/s = 3400/82.1 = 41.4 gpm/sf
	10^{22}			67602									Stop BF
	10^{30}			67602					345.2	DON			start BF
10	10^{40}			67637					425.3	(80.1)			Q/s = 3500/80.1 = 43.7 10:30 SWL
	?			67649									stop 84.6 = 41.4 10:00 SWL
	11^{00}			67649					345.5				start BF
10	11^{10}			67683					425.6	DON (80.1)			Q/s = 3400/80.1 = 42.5
	11^{12}			67691									stop
3-17-16	0830	272739	1186880	67691	closed 300	78	0	625			Ø		Well OFF; no inj JO
3-18-16	1340	272739	1186880	67691	re-open 100	80	0	2025	344.4		Ø	046993 ☑ off today	Readings prior to inj resume JO
3-18-16	14^{05}				157	36	28				1250		Start inj; rate variable (ASR-4 test) RM/JO
3-18-16	1730	272739	1187165		169	55	42	2010			1200		Target NTE = 1200 gpm JO
3-19-16	1030	272739	1188220	67	171	52	44	2010	311.9	32.5	1175		No adj TL

3/16/16 ASR-1 BF

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$\|Cl_2\|$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory (ASR-1 BF)	Turbidity (NTU) min after start 0	1	2	5	10	15	20
run 1	3-16-15 10^{00}	67528	67602	74000					1.33 @ 20 min				2.01	98.4	69.7	4.17	2.11	1.4	1.24
run 2	10^{30}	67602	67649	47000									2.55	13.3	4.45	1.96	0.88	1.1	
Run 3	11^{00}	67649	67691	42000									6.52	3.43	2.26	1.21	0.86		
Injectate 3/16/16	12^{30}				16.1	450	6.4	372/243 [1]	1.46	2.74		[1] @ 18.7°C							
													3-15-16 meter start 00263.00				3-17-16 meter end 00502.00		
MW-1	3-17-16 0930 (ORION meter indicates 25°C) ←				16.9	544	7.37	-68/251 [2]	0.07	3.68		[2] @ 17.5°C							

SCANNED TO DROPBOX

MPWMD ASR DATA SHEET

Well: ASR-1 ASR Period WY2016 Sheet _____ JWO

Test: _____ Weather _____ of _____

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

	Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
Sun	3-20-16	0925	272739	1189830	67691	171	54	45	2050	309.6	34.8	1200	469930	no adj JO
Mon	3-21-16	0840	272739	1191435		172	56	46	2000	308.9		1150		no adj JO
		1645	272739	1192014	67691	174	55	44	2050			1130		no adj TL
	3-22-16	0950	272739	1193141	67691	172	56	43	2000	306.5	37.9	1175		no adj TL
		1640	2722239	1193510	67691	172	55	41	2050	309.1	35.3	1100	0469930	
	3-23-16	0920	272739	1194527	67691	174	57	42	1920	309.2	35.2	1040	0470260	no adj JO
10-min SpC		1055	272739	1194518	67691	310	76	Ø	1950	339.4		Ø	0470320 ON 44/44	Purge to BF JO TL CB
		1105		1	67727					426.2	Ddn 86.8			SpC = 3600 / 86.8 = 41.4
		1130	272739	1194618	67766	315	52	Ø	1950	343.2		Ø		
					67801					420.6	Ddn 85.4	Ø		SpC = 3500 / 85.4 = 41.0
		1200			67840					345.4		Ø		
		1210			67874					430.8		Ø		SpC = 3400 / 85.4 = 39.8
		1300	272739	1194618	67964	314	55	Ø	2000	345.0				readings prior to inj resume JO
		1605		1194893		165	53	39		312.0		1345	0470950 OFF	rate likely to ↑ overnight JO
	3-24-16	0825	272739	1196129	67964	164	51	42	1890	307.3	37.7	1390		adj to 1530 gpm @ 0930 hr JO
		1500		1196740		158	45	36				1630		adj ↓ to 1575 gpm @ 1600 hr JO
	3-25-16	0810	272739	1198283	67964	160	49	41	1900	301.7	43.3	1470	0470950 OFF	no adj JO
		1630	272739	1199066	67964	160	45	37	2000	298.8	46.2	1570	off	no adj. TL
	3-26-16	0945	272739	1200608	67964	159	47	40	1870	297.7	47.3	1515		no adj JO

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$\|Cl_2\|$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
run1 3-23-16	1105	67691	67766	75000									2.61	18.6	74.6	6.54	3.29	3.59	1.76
run2	1125	67766	67840										2.63	7.12	5.06	3.55	1.45	1.99	0.87 30 min
	1200	67840	67946										2.30	3.08	14.1	2.77	0.89	1.00	0.73 0.3

SCANNED TO DROPBOX JUC

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR-1 ASR Period WY 2016 Sheet ____

Test: ____ Weather ____ of ____

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
3-22-16	1105	272739	1202886	67964	159	45	40	1880	294.4	50.4	1525		No adj. TL (2 [illegible])
3-28-16	0835	272739	1204810	67964	160	50	42	1800	294.2	50.2	1460		No adj - windy TL
"	1625	272739	1205545	67964	150	39	29	1875	289.1	55.6	1625	off	No adj TL
3-29-16	0900	272739	1207111	67964	150	41	31	1890	286.2	58.8	1585	off	No adj. TL
"	1700	272739	1207896	67964	150	39	31	1880	280.9	64.1	1695	047094.0 ON *	Turned off SDI filter lines [illegible] OTL
3-30-16	0835	272739	1209413	67964	150	41	35	1700	278.5	66.5	1650	0473830 ON	59/60 lube purge BF
	1000	272739	1209511	67964	290	69	[illegible]		334.2		0		readings prior to BF
	1010			67999					427.2	Ddn 93.0			SpC = 3500 / 93.0 = 37.6
	1030			68036					340.1				
	1040			68071					430.8	Ddn 90.7			SpC = 3500 / 90.7 = 38.6
	1050			68078					341.9				
	1100			68113					432.7	Ddn 90.8			SpC = 3500 / 90.8 = 38.5
	1130	272739	1209511	68125	290				340.4		Ø	047447.2 OFF	readings prior to inj resume
✓	1315	272739	1209620		300				336.5		Ø		Stop inj - low system press (per JN)
3-31-16	0800	272739		68125	300						Ø		
"	1240	272739	1209620	68125	300	77	31	1700	342.0	Ø	9		Adj to 400gpm - 188psi TL (per JN)
"	1645	272739	1209750	68125	175	64	40	1700	327.6	14.4	630		Adj to 420gpm 190psi TL
4-1-16	0820	272739	1210147	68125	[illegible]	68	42	1625	328.0	14.0	460		No adj TL
"	1320	272739	1210292	68125	186	65		1650	326.5	15.5	565		Adj to 500 gpm JO

	Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (μ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
BF Run 1	3-30-16	10:00	67964	68036	72,000									1.0	139	55.1	7.18	2.30	1.82	0.97
Run 2		1030	68036	68078	42,000									1.98	3.61	2.67	1.62	0.99		
Run 3		1050	68078	068128	50,000									0.89	1.38	1.97	0.94			
INJEC TATE	3-30-16			"		14.0	465	7.3	485 / 256	@14.0°C 0.2	2.9	--								
MW-1	3-30-16	1200	502400	00546 x100	4400	18.2	564	7.3	146 / 248	0.02	--	--								

@16.3°C Zobell

@10.9°C Zobell

Δ Lube @ MW1 = 00502 x100 gal

SCANNED TO DROPBOX JWD

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT JWD

Well: ASR-1 ASR Period WY 2016 Sheet ____

Test: ____ Weather ____ of ____

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
									342.0				4/1/16 1420 hr - Bowen says OK to target NTE 3000gpm for ASR1 & 2 combined over the weekend (PM1 limit).
4-2-16	1045	272739	1210775	68125	159	85	43	1620	331.2	10.8	340		Before flow increase
"	1130				161	65	42				1490	47447 ○	After flow increase
4-3-16	0950	272739	1212961	68125	160	63	42	1510	294.3	47.7	1630		Try to adj to 1515 161psi
	1450	272739	1213448	68125	159	67	41	1550			1700		Adj to 1540 @165psi
4-4-16	0830	272739	1215014	68125	165	67	43	1450	295.8	46.2	1505		no adj JO
"	1410	272739	1215537		165	63	42	1510			1580		no adj JO
"	1650		1215801		165	62	43	1575			1690	047447 ○ ON	Adj to 170psi/1420gpm JO
4-5-16	0720	272739	1217092	68125	166	65	44	1410	291.4	50.6	1540	047733 ○ ON	Reading prior to low flow stop JO
"	1020	272739	1217120	68125	300	88	Ø	1420	346.2		Ø	047784 ○ 59gp/56dn	Inj stopped@0750; BF today JO
"	1030			68158					435.3	DDW 89.1			SpC = 3300/89.1 = 37.0
"	1050			68193					351.1				
"	1100			68226					439.0	DDW 87.9			SpC = 3300/87.9 = 37.5
"	1110			68233					352.6				
"	1120			68266					440.2	DDW 87.6			SpC = 3300/87.6 = 37.7
"	1140	272739	1217120	68293	300 tank/FCV	100	Ø	1400	352.7		Ø	047812 ○ OFF	BF end; shut FCV, tank & lube JO

ASR-1 BF

	Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
RUN1	4-5-16	1020	68125000	68193000	68.000									4.39	3.39	26.7	5.61	1.63	1.59	0.86
RUN2	"	1050	68193000	68233000	40,000									1.87	1.33	1.93	1.66	0.98		
RUN3	"	1110	68233000	68293000	60,000									1.65	0.65	3.24	1.46	1.17	0.44	

SCANNED TO DROPBOX

Two

MPWMD ASR DATA SHEET

Monterey Peninsula Water Management District

Well: ASR - 1 ASR Period WY 2016 Sheet ____

Test: ____ Weather ____ of ____

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
4-17-16	1630				closed 42	76	0					0478120		lube line on TL
4-18-16	1015	272747	1217120	068293	310	76	0		355.3		+425 drift	0481640	48 / 47	BF today TL/JO
	1025			68327					445.3	DDN 90.0				SpC = 3400 / 90 = 37.8
	1045			68359					358.1					
	1055			68392					447.1	DDN 89.0				SpC = 3300 / 89 = 37.1
	1105		meter drift	68399					360.4					
	1115			68432					448.1	DDN 87.7				SpC = 3300 / 87.7 = 37.6
	1135	272755	1217120	68486	shut 310		0	1380				0481960	OFF	Well off; lube off
4-26-16	0900	272755	1217176	68486	shut 315	79	0	shut 1100				0481960	OFF	Turn off TXZ circuit JO
5-4-16	1000	272755	1217176	68486	closed 318	55	0	1250	356.5	Ø	Ø	0485190	55 / 58	Lube on since 1715 on 5/3 TL/JO
	1010			68520	open 314				446.8	DDN 90.3	Ø			SpC = 3400 / 90.3 = 37.6
	1030			68554					360.3					
	1040			68588					448.6	DDN 88.3				SpC = 3400 / 88.3 = 38.5
	1050			68592					360.8					
	1100			68625					449.4	DDN 88.6				SpC = 3300 / 88.6 = 37.2
	1130	272755	1217176	68711	closed 314	79	0	closed 1200	362.0			0485680	OFF	Well off; shut FCV; shut PSV

(Left margin notes: "10-min SpC" beside the 4-18-16 and 5-4-16 entries)

	Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0	1	2	5	10	15	20
RUN 1	4-18-16	1015	68293	68359	66,000									4.61	38.9	5.7	0.97	0.85	1.14	0.9
RUN 2	↓	1045	68359	68399	40,000	20.4	*545	6.9	~~73~~ 232	0.06	–	–		19.1	2.25	1.73	0.82	0.77		
RUN 3	↓	1105	68399	68486	87,000								JO - SSAP / MAI	2.38	0.97	2.4	0.72	0.77	0.15	0.66
			from 4/20		from pH stick				18.9°C ← from ORP meter											
MW-1 →	4-21-16	10:00	065466	579	3300 g	19.6	508	7.46	-160.4 / -243 @ 18°C	0.07	–	–	TL							
	5-4-16	10:00	68486	68554		16.5	585	7.36	-151.8 / 223 @ 17.8	ND				2.00	17.1	3.36	0.52	1.18	1.10	0.73
		10:30	68554	68592										3.55	–	2.66	0.59	0.48		
		10:50	68592											1.38	0.98	1.88	0.57			

*Temp of water from pH meter. ORP meter reads 25°C

ORP T°C = 15.7 on 5/4

SCANNED TO DROPBOX

MPWMD ASR DATA SHEET

Monterey Peninsula Water Management District

Well: ASR-1 ASR Period WY 2016 Sheet Two

Test: _____ Weather _____ of _____

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
					FCV & reg Shut									JO/TL
10-min SpC 5-25-16	0917	— TX 2 breaker off —		068711	318	60	Ø	1190	363.2			048897	56/54	BF & record ORP, temp, pH
	0927			068745	open 319				452.4	DDN 89.2				SpC = 3400/89.2 = 38.1
	1017			068914	open 314	64			457.7					
	1027			068949	shut 314	64								well off, shut FCV, tank, lube (JO)
														Arzell collects samples for Cal-Am compliance JO

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20	30	50
5-25-16	0917	068711							18.8				31.7	10.1	2.37	1.50	0.75	0.69	0.58	0.71	0.46
↓			068949	238,000	16.0	455	7.64	-240	-0.01	3.23	–										

SCANNED TO DROPBOX

NOTE: When valve to FCV was opened, gauge dropped to 0 psi.

JWO

MPWMD ASR DATA SHEET

Well: ASR-1 ASR Period WY2016 Sheet

Test: Weather of

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments (JO/TL/SL/ST)
7-11-16	1630			068949	314 shut			lube line ON				048924		
7-12-16	1015	272755	1217176	068949	316 open	101	0	1200	367.59	DDN		049247	57 / 55	BF well collect ORP & SSAP samples & SAP samples
10-min SpC	1025			068984					454.34	86.75				SpC = 3500/86.75 = 40.3
	1120			069161										
↓	1140	272755	1217176	069240	311 shut	100	0	1180	460.86			049310		Well off; FCV shut; lube off

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2] @16.9	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
7-12-16	1130	068949	069227		16.4	455	7.78	-96 / 279	0.51	1.93	–		670	19.7	5.35	4.23	1.86	2.71	0.96
7-12-16	1140		069240	291,000															

MPWMD ASR DATA SHEET

Well: ASR 1 ASR Period STORAGE Sheet 1

Test: CAL AM SAMPLE Weather SUN/WIND of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
7-14-16	1100	272755	1217776	69240	320	60	ø	1150	367.68	—	ø / 2400 BF	497190	55 / 55	ARZEL TO SAMPLE
10 —		↓	↓											
7-14-16	1215			69375				1150			ø	4974160	55 / 55	LUBE + N_2 OFF - JL
														BOWEN IS OUT CHECKING ON Cl⁻ INJECTOR

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0	1	2	5	min after start 10	15	20
7/14/16	1000-1200	69240	69375									ARZEL / CALAM							

1, Put VFD control to "Remote"
2. Set right dial to Auto, left to HAND   Ernesto set Hz to 58 = 3100-3200 gpm BF >   HAND (circled) well operator   (circled) AUTO

Scanned to dropbox TL

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR-1 **ASR Period** ______ **Sheet** ______

Test: ______ **Weather** ______ **of** ______

On since 1500 on 7/22 (above Lube / Skid Meter column)

JN Ariel Bowen Ernesto (above Comments)

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
7-23-16	0915	272755	1217176	069375	320	Ø	Ø	1050	367.6	Ø	—	050104(?)	56/58	Prepare to put in CAW system
				BF 15 from PLC, then 30 from NTU										blowoff 15 min,
		Started	going onto system ~1100 gpm @ ~1030											rest (0), then try to
														start using PLC
7-25	0830	275671	1217176	069507	310	40	40	1000	—	—	1120 to sys	050980		TL AC MAX set to 80, on
														and temp is 85, OK

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (μ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20

MPWMD ASR DATA SHEET

Well: ASR 1 ASR Period RECOVERY Sheet 1

Test: BI WEEKLY REC FIELD Weather FOG / SMOKE of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	REC ~~Inj Rate~~ (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
8.10.16	1110	284563	1217252	707177	320	45	45	1850	399.82	—	1085	584290	48/40	CAL AM REC

	Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / @ 18.1 Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0	1	2	5	10	15	20	min after start
F-1	8.10.16	1110	NO PURGE	REC SAMPLE	—	18.0	533	7.2	~~229.3~~ 230.8	0.22	2.51	N/A		0.32							

MPWMD ASR DATA SHEET

Well: ASR1 ASR Period Recovery Sheet 1

Test: Bi-WEEKLY FIELD Weather SUN/CLOUDS of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
9.8.16	1300	—	—	—	308	39	39	1900			REC 1050			Bi-WEEKLY FIELD -JL

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	18.2 $[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0 1 2 5 10 15 20 min after start
9.8.16	1300	—	—	—	16.3	483	7.52	-88 / 238	ND	1.3	0.04	JL FIELD	0.53

MPWMD ASR DATA SHEET

Well: ASR 1 ASR Period Recovery Sheet 1

Test: N/A QUARTERLY SAG, DBP Weather FOG of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM) REC	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
9.21.16	0916	1217428	340534	70813	315	418	48	1050	413.90	—	1590	770660		REC TO SYSTEM @ 1500
														H_2S Slugs getting Low

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0 1 2 5 10 15 20
9/21/16	0927	—	—	NA	19.4	667	7.03	+242.9	ND	1.17	ND	SI-HL-DBP JL- MRAS	NA

MPWMD ASR DATA SHEET

Well: ASR 2 ASR Period 0800 STORAGE 0800 Sheet 1

Test: FIELD - MONTHLY Weather FOG / SUN of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter ~~(gal)~~ CF	Comments
10/20/15	0900	22035	137876	281786	336	84	Ø	1800	389.91	—	Ø	15369	S2 ↔ S0 JL REPLACED
				281817					465.10				FILTER 10/19/15
10/20/15	1145	22134	↓	281884	336	84	Ø	1800				15404	→ LEFT LUBE ON FOR 10/21/ SAMPLING
													ADJUST FCV FOR SSAP SAMPLING TOMORROW
													SET WELL @ 1300 GPM AND 20 PSI @ WELLHEAD FOR SAMPLING

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0	1	2	5	min after start 10	15	20
10/20/15	0900	281786	281884	98000	21.7	841	7.67	-90.1 +237	ND	0.04	ND	FIELD JL TL SD	43.5	38.1	23.3	15.2	3.65	2.16	3.32

WaterBerrels

MPWMD ASR DATA SHEET

Well: ASR 2 ASR Period STORAGE Sheet 1

Test: SSAP SAMPLING Weather SUN of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal) CF	Comments
10.21.15	0830	22134	137876	281884	318	85	16	1800	390.22	—	—	15729 —	SSAP SAMPLING
				281899					420.1		EVENTUAL 1288		
				282383								15836	

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	Res $[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	NTU	VOLUME OF FILTERED WATER Turbidity (NTU) — min after start: 1	2	5	10	15	20
10.21.15	0830	281884	281884	—	22.9	824	7.32	NA	ND	ND	ND	TL, JL MCCAMBELL	37.7						
			281887	3000	22.3	657	7.53	-92.8	ND	ND	ND	TL, JL MCCAMBELL	8.03						
			281893	9000	21.8	738	7.28	-97.9	ND	ND	ND	TL, JL MCCAMBELL	0.95	.30 3590	.45 7480	+250+	1086		
			281924	40,000	21.6	815	7.15	-111.3	ND	0.03	ND	TL, JL MCCAMBELL	1.04	.30 5150	.45 12(500)	+380+	250		
			281966	82,000	22.1	825	7.16	-89.8	ND	0.02	ND	TL, JL MCCAMBELL	1.22	.38 5680	.45	N 19(900)	+250		
			282076	192,000	22.1	820	7.21	-90.9	ND	0.61	ND	TL, JL MCCAMBELL	0.74	.38 6760	.45 18580		+250		
			282225	341,000	22.7	808	7.39		ND	0.00	ND	JL, TL MCCAMBELL	1.12	.38 4920	.45 9390		+586		
		↓	282378	494,000	24.0	753	7.16	-58.5	ND	ND		JL, JL, JD	1.36	.30 3480	.45 7880		+250		
					22.4	736	7.77	685.3 / 241.7	0.85	ND	ND	JL, JD			.45				

0.01 / 0.167 / 0.1 / 0.5 / 1 / 2 / 4 / 6 / MCWD

22.7°C

22(500)+ 380

MPWMD ASR DATA SHEET

Well: ASR2 ASR Period STORAGE Sheet 1

Test: FLUSH Weather RAIN of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
1ST FLUSH 11/2/15	930	22677	137876	282383	335	—	—	1600	—	—	—	16176	NO FIELD PARAMETERS FLUSHING ONLY
	1400	22986		282684									
2ND FLUSH	1630	23340	137876	283041									
11/3/15	0800	23340	137876	283041	335							16528	
11/3/15	1600			283793	335								
11/4/15	0800	24109	137876	283793	355			1600				16685	

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0 1 2 5	min after start 10 15 20

MPWMD ASR DATA SHEET

Monterey Peninsula Water Management District

Well: ASR 2 | ASR Period: STORAGE | Sheet 1 of 1

Test: SSAP | Weather: SUN

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
11/5/15	0900	24792	137876	284481	330	92	Ø	1850	—	Ø	Ø	17271	SSAP SAMPLING
11/5/15	1630	25282	137876	285023	330	92	Ø	1850		Ø	1325	17373	NO SPECIFIC CAPACITY TAKEN ~~4,930 [illegible]~~

	Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	0	membrane volumes (mL) ~~Turbidity (NTU) min after start~~ ~~1~~ 2 5	~~10 15 20~~
0.01						21.9	854	7.56		ND	ND	—	SL, JO, TL McCAMBEL	3.89		
0.0167						20.2	945	7.70	-220	ND	ND	—	↓	0.38		
0.1				284501		20.7	904	7.67	-224	ND	ND	—	↓	0.39	0.22 3x500+700=2200	.39 4,730+1086= 5816
0.5				284521		19.8	880	7.69	-197.7	ND	ND	—	↓	0.40	0.21 7x500+650=4150	.30 4,990+586= 5576
1				284570		20.5	823	7.80	-173.2	ND	ND	—	↓	0.49	.22 6890+250=7140	.30 5,380+250 = 5630
2				284657		21.5	830	7.75	-155.3	ND	ND	—	↓	0.38	0.22 6x500+450=3450	.301 4,775+250 = 5025
4				284430		19.4	820	7.67	-140.6	ND	ND	-	↓	0.71	0.22 8x500+600=4600	.301 5,250+586 = 5836
6				285001		19.5	843	7.77	-142.2	ND	ND	—	↓	0.49	.301 8x500+550=4550	.301 8x500+250 = 4250

MPWMD ASR DATA SHEET

Well: ASR 2 & MW 1 ASR Period STORAGE Sheet 1

Test: QUARTERLY DBP Weather COLD, SUN of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
12/15/15	0800	25361	137876	285023	330	Ø	92	1500	383.1	—	Ø	17604	S4 ↔ SOPS ON FILTER
		25424	↓	285051					449.6		2700		10 MIN SPC TEST
		25424	↓	285088								17640	
													JL - LUBE OFF
													N_2 - OFF

10

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0	1	2	5	10	15	20 min after start
ASR 2 12/15/15	1000	285023	285088		18.5	1048	7.43	-188 / 244	ND	ND	0.05	JL-DBP MBAS	73.2	69.3	16.0	11.3	12.5	9.48	4.45
MW 1 12/15/15	1100	0022000	0022670		17.4	975	7.31	-212 / 245	ND	ND	0.07	JL-DBP MBAS							

MPWMD ASR DATA SHEET

Well: ASR-2 ASR Period INJECTION Sheet 1

Test: LINE FLUSH TO INJECTION TEST 2 Weather COOL/SUN of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
1-7-16	0900	25425	137876	285087	328	90	∅	1425	381.91	—	—	17640	OFF	Prior to Line flush
													39 37	
													50 45	LF INITIATED 0930
														1500GPM @ 74PSI ASR2
														LUBE ON FOR BF TOMORROW
1-7-16	1400	25425	137878	285799	322	90	32	1600	381.84	∅	∅	17711	50 45	BEGINNING BF
1-7-16					206	87	27				1200			TL ADJ TO 1200
1-7-16	1550	25425	137998	285700	209	74	27	1510			1086	17740		JO no adj
1-7-16	1620	25425	138031	285700	209	72	27		354.74		1160			
1-8-16	0815	25425	139193	285700	206	70	27	1400	346.9	34.94	1270	18253	50 45	JL NO ADJ
1-8-16	1050	25425	139379	285700	300	86	0	1470			0	18014	48 45	JO well ∅ for BF
1-8-16	1100			285700					374.80		BF 3000			BACKFLUSH EVENT
				285730					454.67		3000			
				285798							∅			

BF 10

SDI FLUSHING 2750GPM @ 1500GPM

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$\|Cl_2\|$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	MIN 0	1	2	5	10	15	SDI
1-7-16	0900	285087	285168	81									18	X	X	20	36	53	4.4
	0930	285168	285204	36									14	X	X	22	33	46	4.6
	0945	~~285204~~ 285204	285264	60									14	X	X	29	—	69	5.3
	1000	285264	285318	54									13	X	X	—	44	61	5.3
	1230	285318	285530	—									22	X	X	23	35	52	3.8
	1400	285691		373									19	X	X	19	21	23	1.2
				604,000 TOTAL LF															
BF 1	1-8-16	285700	285718		—	—	—		—	—	—	TURBIDITY	4.88	32	29.5	6.01	1.76	1.05	1.11

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR2 **ASR Period** INJ **Sheet** 1

Test: 2ND INJ CYCLE **Weather** COOL/SUN **of** 1

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
1.8.16	1230	25525	139379	285798	300	86	Ø	1600	381.41	—	Ø	308 - JL 18~~038~~	Ø / Ø	NEW INJ CYCLE (END CYCLE)
				285801										FLUSH BASKI CLOSING
1-8-16	1245	25525	139379	285801	203	69	25	1550	—	—	1480			NO ADJ'S
1-8-16	1630				209						1540			1540 + 1380 = 2920 TOTAL
														#1 @ 1430, turned FCV up to 210
1-9-16	0840	25525	141273	285801	209	53	37	1400	327.21		1630			here, but after 20 mins, the
	0905				210						1630			inj. rate here is the same and
														slightly decreased at #1 to →
(note continued) → 1410 gpm, although no ADJ. made @ #1. No further adj's made on 1-9. ←														
went back to #1, rate ~1,430, ADJ. there to ~1340 to keep total below 3600 gpm - TL														
1-10-16	1245	25525	144176	285801	208	53	37	1450	321.54	59.9	1825			Jo. Bowen on site.
1-10-16	1315				217	62	37				1490			Jo - reduce flow
1-11-16	0920	25525	145913	285801	215	63	37	1410	321.20	60.2	1470			Jo/TL

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR 2 | ASR Period INJ (2ND CYCLE) | Sheet 2

Test: 2ND INJ CYCLE / BF | Weather SUN ; COOL | of 2

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
1·12·16	0830	25525	148069	285801	215	62	37	1450	316.5		1507	18297		LEFT SETTINGS
1·12·16	0900		148132		320	91	—	1450			Ø			
														FLOW BELOW 40
														CFS @ HWY 1
BACKFLUSH	1·14·16	1000	25525	148132	285801	330	96	—	1425	379.7	—	Ø	18297	48	SHUT DOWN INJECTION
10MIN					285835					458.2		BF 3000		45	
					285901				OFF				18308		BACKFLUSH EVENT
															LUBE & N_2 OFF
															PSV CLOSED

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
BACKFLUSH 1·14·16	1000	285801	285901	100 000									76.7	41.5	12.6	8.5	4.3	2.1	1.9

MPWMD ASR DATA SHEET

Well: ASR-2 ASR Period WY 2016 Sheet ____

Test: _____ Weather sunny of _____

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi) 262(cl)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
1-18-16	1030	25637	148132	285901	340(op)	64	ø	1375	380.37	0.0	ø	18308 (off)	TL/JO	N_2 was closed, FCV was 262
1-18-16	1200		148133	→	throttle down on PSV bonnet while opening FCV to start smoothe flow transition to well									
1-18-16	1230	25637	148161	286049	218	78	35	1410	347.17	33.2	1490			JN turned up prv set pt to 35 psi (was at 25psi)
1-19-16	0900	25637	150070	286049	214	77	40	1350	313.6	66.7	1620			
1-19-16	1530	25637	150685	286049	217	64	42	1300			1560			started INJ IN #3 ~12-07
1-19-16	1645	25637	150807		217	64	43	1400			1570			
1-20-16	1015	25637	152537	286049	217	61	43	1425			1725			
	1500	25637	152980	286049	224	63	44	1425			1575			
	1630				219						1590			
	1640				208						1745			Adj. rate up TL
1-21-16	0835	25637	154960	286049	212	57	51	1575			1930			
	0840	STARTED MW-1 @ 1105 = 00285 ×100			209			1200			1980			ADJ rate up TL
	1650	25637	155860	286049	220	59	48	1390			1830		JO	
	1705				226	64	47				1535			ADJ rate down per Bowen
1-22-16	0830	25637	157294	286049	225	65	48	1500			1530			
1-23-16	1000	25637	159156	286049	230	70	47	1380	301.90	78.47	1240		JO - meet w/ Cleo on site. Only partial system recovery last night. No adj.	
1-24-16	1030	25637	161075	286049	228	68	47	1350	--		1360	18360 (turn on)		50/47 Lube psi
	1050				231	72	47	1350			1235			ADJ FCV TL
1-25-16	0805	25637	162550	286049	232	71	48	1300	307.65	72.7	1105	18613	54/51	slight adj. TL SQI

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	~~Temp~~ Purge (°C)	~~Cond~~ Rate (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	SQI 0	~~Turbidity (NTU)~~ 1	2	5	min after start ~~10~~	~~15~~	~~20~~
1-18-16	1115		285961		2000	gpm							14	20	20	21		2.2	
1-18-16	1140	285964	286005		2500	gpm							17	17	18	19		0.7	

MPWMD ASR DATA SHEET

Well: ASR-2 ASR Period _____ Sheet _____

Test: _____ Weather _____ of _____

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	TANK N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
10-min BF	1-25-16 1125	25637	162753	286049	330	83	40	1400	370.4		Ø	18658	54/49	Shut down for BF
	1145			286076		hr MAG 15	hr PSV 18		463.9	BF=	BF 2700			10 min SpC = 2700/93.5 = 28.9
	1219	25749	162753	286163	332	85	Ø	1400	489.6		Ø			shut down 1st run
	1240		162753	286163					377.00					begin 2nd BF run
	1250		162753	286189		hr MAG 15	hr PSV 18		467.7		BF 2600			10-min SpC = 2600/90.7 = 28.7
	1317	25781		286189					375.6					JN working on clay val
	1327	25809	162753	286222					469.9			18697 Tube off		Resume inj
	1405				212	58	41		322.0		1790			JO
	1540		162956		214		43		311.7		1795			JO
1-26-16	0825	25809	164817	286222	213	56	42	1510	296.22	74.2	1805			TL
	1050	25809	165099	286223	215	57	44		295.1	75.3	1915	18697 off	OFF	JO - rate came up with no adj, but OK with BJW
	1715	25809	165827	286223	214	57	46	1570			1900			TL - nudged FCV up a tad
1-27-16	0900	25809	167586	286223	217	57	47	1350	289.9	80.5	1870	18697 - off	OFF	JO/TC - no adj (OK with BJW)
1-28-16	0845	25809	170250	286223	217	56	47	1325	285.1	85.3	1865	18697 - off	OFF	JO - no adj (OK with BJW)
1-29-16	0930	25809	173041	286223	216	56	45	1380	280.2	90.2	1875	18697	OFF	JO - no adj
1-29-16	1630	25809	173781		223	64	46				1610			JO - adj rate down / BJW says system stressed
1-30-16	0825	25809	175305	286223	222	65	47	1300	291.2		1595			TC - NO Adj
1-31-16	1050	25809	177852	286223	223	63	48	1300	288.2	82.2	1600	18697 - turn on	41/39	JO - no adj
2-1-16	0830	25809	179978	286223	223	63	48	1300			1645	19996	54/52	TC - NO ADJ.

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20	30
													8.5	2.1	59.7	72.1	10.3	6.66	3.96	4.16

2800 2767

MPWMD ASR DATA SHEET

Well: ASR-2 ASR Period _____ Sheet _____

Test: _____ Weather _____ of _____

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
2-1-16	1255	25809	180419	286223	229	63	48	1300	281.25	89.15	1686	19057	55/53	Prior to BF
	1348			286223	↘ 2900 gpm				368.86					BF 2900/93.8 = 30.9 SpC
	1350			286252	↗				462.4	- 93.84				
	1400			286279					465.3					stop BF @ 1410
	1415	25890	180434	286306	333	85	ø		374.7	ø	ø	19075 OFF		
	1450	25840	180463	286306	213	65	38	1300	329.5	45.2	1590			TL/TC Restart inj
	1645	25840	180632	286306	215	66	38	1275			1550			
	1650				213			↓			1608	19075 OFF		905. TL
2-2-16	0845	25890	182166	286306	215	64	41	1250			1620	19075 OFF		TL
	1615	25890	182907	286306	215	63	41	1300			1670			890 + 1670 TL
2/3/16	0825	25890	184508	286306	217	63	42	1250			1650			895 + 1650 = 2545 TL
2.4.16	0830	25890	186742	286306	218	72	42	1300	310.4		1560	—	—	NO ADJ
2.4.16	1600	25890		286306	218	70	42	1320			1603			NO ADJ
2.4.16	1730	25890	187586	286306					306.77		1620			INJECTION SHUT DOWN TC
2.4.16	1740	11	11	286306	228	85	44		306.77		800			STARTING INJ. TC
2/5/16	0800	25890	188207	286306	230	86	45	1200	349.25		690			INJECTION SHUT DOWN TC

10 min BF SpC

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$\|Cl_2\|$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
2-4-16	1340	25809	25838										2.5	1.81	11.5	33.4	5.01	3.76	3.21
			25866 20 M.	10 MW fiber (BF water)															

MPWMD ASR DATA SHEET

* FCV reg was set at 350 psi last and lost 175 psi with tank closed. JW0

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR2 **ASR Period** _____ **Sheet** _____

Test: _____ **Weather** _____ **of** _____

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi) (1100)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal) CF	Lube Pressure Up/Down	Comments
2-18-16	1145	25994	188207	286305	175	90	0	OFF*	377.98	0	0			JO/TL - prepare to inject
	1210				215	76	38	1220	319.98	58.0	1535			
	1625	25995	188613	286305	216	53	41	1250			1590			TL
2-19-16	0830	25995	190242	286305	216	53	44	1200			1760			TL
	0900				219					After Adjust	1610			slight adj; TL
	1110				223					1560 ←	1680			#1 @ 1380 so adjusted TL
	1200				224					1425 ←	1390			adj again after DBP sampling
	1330				223					1425				check after sampling SMS
2-20-16	0900	25995	192295		226	61	44	1225	307.5		1350			
	0905	off	192302		274						∅			shutdown inj. TL
2/22/16														Lube line on
2/23/16	1135	25995	192302	286305	277	66	44	1210	380.0	0	0	19368 ON	53 51	Prepare to BF JO/TL
2/23/16	1155								-					
2/23/16	1205			286334					467.2					10-min SpC = 2900/87.2 = 33.3
2/23/16	1340	26171	192302	286485	277	65	0		-	0		19402		Finished w/ BF; close FCV & tank JO/TL

1310
1590
10-min BF
SpC
1520
3080

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0	1	2	5	10	15	20
Injectate	2-19-16	1115	injectate sampling		14.6	476	7.47	589	0.21	--	--	TL							
SMS deep	"	1230	09208×100		18.15	511	7.07	2.4	0.04	--	ND	TL							
ASR-2	2/23/16	1155	286305	286362	57,000								4.79	1.61	35.3	28.6	6.12	5.81	3.78
	2/23/16	1225	286362	286390	28,000								5.68	4.02	5.82	6.71	2.99		
	2/23/16	1275	286390	286450	60,000								7.21	4.18	4.97	5.38	2.14	3.06	2.88
	2/23/16	1315	286450	286484	34,000								2.9	4.87	4.10	3.65	1.95		

1 215 psi was on the FCV when 1st opened today. Opened regulator - was set to 285 psi ∴ 70 psi loss since _____.

2 3-13-16 Caught mouse in Unit 6 trap.

SCANNED TO DROPBOX JO

MPWMD ASR DATA SHEET

Well: ASR 2 ASR Period W4 2016 Sheet _____

Test: _____ Weather _____ of _____

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
3-5-16	1045	26171	192302	286485	215[1]	66	0	1100	378.4	0	0			Prepare to inject JO/TL
3-5-16	1440	26183	192302	286485	281	85	0	1160						Prior to inject
3-5-16	1530	26183	192381	286485	219	81	40	1100	351.9		1300			Rate is +/- 150 gpm JO
3-6-16	1104	26183	193776	286485	221	80	37	1200	340.0	38.4	1270			TL/JO
3-6-16	1315	26183	193938		221	63	37				1270			no adj JO
3-7-16	0800	26183	195419	286485	220	58	41	1100	328.25		1360			no adj TO
" "	1215	26183	195759	28485	221	58	42	1150		—	1380			no adj. TL
3-8-16	0840	26183	197534	286485	220	53	45	1150	319.1	59.3	1515			No adj TL
" "	1645	26183	198283	286485	220	57	47	1180	313.7	64.7	1600			no adj. TL
3-9-16	0900	26183	199888	286485	215	51	43	1150	306.7	71.7	1690			no adj TL
" "	1210	26183	200220	286485	216	52	43	1200			1710			call from JN about stopping recirc
" "	1221	26183			226	56	45				1475			after adj. line TL
" "	1311	26183	200420		226	59	44	1200			1380			check after lunch, no adj TL
" "	1700	26183	200620	286485	226	76	43	1180	3		1265			NO ADJ. TL
3-10-16	0850	26183	201798	286485	229	63	44	1200	326.11	57.89	1245			Adj FCV TL
	0907	↓		↓	—		—	—			1440			After adj. TL
3-11-16	845	26183	203905	286485	222	59	46	1150	307.1		1490			NO ADJ. TL/JO
3-12-16	0830	26153	206060	286485	223	57	47	1125	304.3	74.1	1520			NO ADJ. TL
3-13-16	0930	26183	208312	286485	222	53	47	1150	301.1	77.3	1550	19402 turned on	40/38	no adj. lube ON JO[2]

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20

SCANNED TO DROPBOX

MPWMD ASR DATA SHEET

Well: ASR-2 ASR Period WY 2016 Sheet Two

Test: Weather of

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal) (cu ft)	Lube Pressure Up/Down	Comments
3-14-16	0945	26183	210571	286485	222	53	46	1140	29815		1540	19742	55/53	prior to BF TL/TC JO
10 min SpC	1020	26183	210589	286485	300	80	0		362.5		0			readings before BF
	1030			286514					456.1					SpC = 2900/93.6 = 31.0
	1145	26330	210589	286635					369.3			19775 OFF		Finish BF; restart inj
	1210	26330	210610	286635	217	54	37	1110	330.15	39.15	1465			ADJ. for INJ. TL/TC
	1650	26330	211022	286635	218	54	41	1110	321.9	47.4	1490			NO ADJ. TL
3-15-16	0815	26330	212462	286635	217	52	43	1050			1625			no adj JO
" "	1630	26330	213272	286635	214	48	40	1100	310.2	59.1	1655			NO adj. MW-1 Lube ON #00413 TL
3-16-16	0855	26330	214909	286635	214	47	40	1100	307.0	62.3	1630			NO adj TL
	1705	26330	215756	286635	217	62	47	1110			1770			NO adj TL
3-17-16	0815	26330	217430	286635	216	58	47	1100			1895	19775	OFF	reduce flow JO
	0825				222	64	47				1610			may need further adj today due to ASR4 inj testing JO
	1000				230	70	46	1125			1270			flow rate and line press ↑ing JO
	1745	26330	218073		229	70	47	1100			1300			adj to 1300 overnight per JN JO
Fri 3-18-16	0815	26330	219273	286635	222	64	48	1000			1550	19775	OFF	↑ from 1350 to 1550 per JN JO
3-18-16	1100	26330	219525		219	42	37				1305			Rate is temporarily ↓ ; ASH test JO
3-18-16	1745	26330	219944		216	43	38				1475			Target NTE = 1500 gpm JO
Sat 3-19-16	1025	26330	221478	286635	213	42	36	1050	296.3	73	1510	19775		3575 total before adj TL
" "	1640				216						1485			ADJ. TL

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
Run1 3-14-16	1020	286485	286543	58000									4.32	2.64	15.6	37.2	7.12	3.80	2.32
Run2 3-14-16	1051	286543	286588	45,000									3.83	3.13	5.33	6.85	2.57	1.90	
Run 3 3-14-16	1120	286588	286635	47,000									1.99	2.88	3.82	4.47	1.70	1.48	

SCANNED TO DROPBOX

MPWMD ASR DATA SHEET

Well: ASR-2 ASR Period WY 2016 Sheet _____

Test: _____ Weather _____ of _____

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

	Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (~~gal~~ cuft)	Lube Pressure Up/Down	Comments
Sun	3-20-16	0915	26330	223488	286635	217	43	37	1080	295.1	74.2	1450			no adj JO
Mon	3-21-16	0850	26330	225540	286635	217	44	38	1025	292.8		1440	19775	OFF	no adj JO
	" "	1635	26330	226206	286635	217	44	38	1100			1445	19775 ~~6.00~~	30 / 27	ram, no adj TL
	3-22-16	0940	26330	227689	286635	217	43	37	1100	290.1	79.2	1440	20017 ~~20~~	53 / 51	TL/JO
10-min SpC		1020	26330	227730	286635	336	73	∅	1100	357.8	∅	∅			prior to ISF
		1030	26358							454.3					SpC = 2800/96.5 = 29.0
		1050	26387							363.3					
		1100	26415							458.1					SpC = 2800/94.8 = 29.5
		1110	26418							365.0					
		1120	26447							463.0					SpC = 2900/98.0 = 29.6
		1140	26482	227730	286789	335	74	46	1020	365.8	∅.∅	∅	20047 TURNED	OFF	readings prior to inj resume JO
		1200	26482	227739	286789	218		40	1100	329.1	36.7	1470			reset FCV after ISF
		1650	26482	228161	286789	218	46	38	1000	319.10	46.7	1450			NO MDS. TL
	3-23-16		26482	229555	286789	216	45	39	1000	314.05	51.75	1490			NO MDS, TL
	3-24-16	0810	26482	231599	286789	215	39	35	1000	311.22	54.58	1400	20047	OFF	no adj JO
		1505		232158		215	36	31				1335			no adj JO
	3-25-16	0805	26482	233566	286789	214	39	34	1000	306.8	59.0	1370	20047	OFF	no adj JO
		1620	26482	234257	286789	214	36	30	1025	305.6	60.2	1380		OFF	No adj. TL
	3-26-16	0940	26482	235712	286789	214	36	32	1020	302.1	63.7	1390			no adj JO

	Date	Time	Pre Purge Meter Read	Post Purge Meter Read	VFD H_3 Purge Volume	~~Temp (°C)~~	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
RUN 1	3-22-16	1021	26330	26387	57,000	59.8								0.59	1.52	12.9	83.2	7.65	3.71	2.85
RUN 2		1051	26387	26418	31,000	59.8								3.57	3.39	4.63	6.09	2.23		
RUN 3		1101	26418	26482	64,000	60.4								7.47	3.52	3.45	4.95	2.66	2.43	1.29

SCANNED TO DROPBOX

JWO

MPWMD ASR DATA SHEET

Well: ~~ASR-1~~ ASR-2 ASR Period WY 2016 Sheet

Test: Weather of

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
3-27-16	1045	26482	237882	286789	213	37	32	1000	299.3	66.5	1375	20047 - on		no adj TL
3-28-16	0830	26482	239615	286789	214	38	33	1000	296.9	68.9	1380	20359 - on	53/50	no adj - will BF today JO
10-min SpC	1130	26482	239802	286790	305	66	60+	1000	356.1	ø	ø	20397 - on		reading prior to BF TL/JO
	1140	26511		286820					455-37	Ddn 99.3				SpC = 3000/99.3 = 30.2
	1200	26543		286851					360.4					
	1210	26572		286881					459.5	Ddn 99.1				SpC = 3000/99.1 = 30.3
	1230	26588		286898					360.7					
	1240	26635		286926					460.7	Ddn 100.0				SpC = 3000/1000 = 30.0
	1300	26635	239802	286944	305	66	46		361.4	ø	ø	20424 - off		readings prior to inj resume
	1310	26635	239816	286944	200	33	26	950	321.9		1600			adj. to 1600 TL/JO
	1635	26635	240135	286944	198	28	21	950	309.6	51.8	1600	off		No adj. TL
3-29-16	0905	26635	241777	286944	196	28	21	910	297.5	63.9	1620	off		no adj TL
	1650	26635	242501	286944	197	29	21	957	291.8	69.6	1645	off		No adj TL
3-30-16	0830	26635	244067	286944	197	29	22	900	286.1	75.3	1665			no adj TL
"	1310	26635	244510			29	22				1500			no adj JO
	1635	26635	244846	286944	222	59	49	950	278.0		1790			↑ adj to 236 FCV ~1515 SpC
3-31-16	0830	26635	245885	286944	238	78	49	910	334.4	27.0	685			rate declined overnight JO
	0900		245916		226	66	49		292.8	68.6	1490			↑ flow rate TL / JO
	1440	26635	246597	286944	225	54	47	925	286.2	75.2	1520			No adj TL

ASR2 BF

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
RUN 1	3-28	1130 286790	286851	61,000									0.61	2.02	14.8	17.7	4.65	2.27	1.75
RUN 2	"	1700 286851	286896	45,000									1.73	3.01	3.43	4.99	2.35	1.48	
RUN 3	"	1930 286896	286944	48,000									2.87	2.56	2.40	3.59	1.99	1.33	

01510 on 4/3/16
Started Lube @ ASR3 = 0214446
0006710 skid (on)

SCANNED TO DROPBOX
JO

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR-2 ASR Period ______ Sheet ______

Test: ______ Weather ______ of ______

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet) (361.4)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal) (cuft)	Lube Pressure Up/Down	Comments
4-1-16	0830	26635	248087	286945	227	55	48	925	282.7	78.7	1550	20424 off		no ADJ TL
"	1330	26635	248555		225	54	47	950	281.1	80.3	1590		OFF	Adj to 1530 gpm JO
4-2-16	1100	26635	250541	286944	228	56	48	970	280.5	80.9	1525		OFF	no adj JO
4-3-16	0940	26635	252528	286944	227	53	47	920	279.6	81.8	1460			no adj TL
"	1445	26635	252948	286944	232	54	49	950			1366			no adj TL
4-4-16	0835	26635	254461	286944	229	57	50	920	277.7	83.7	1470	20424	OFF	no adj JO
"	1400	26635	254945		227	54	47				1475			no adj JO
"	1715	26635	255228	286944	229	58	52	950			1480			no adj TL
4-5-16	0910				228	79	49		271.4	90.0	1505			Prior to stop - lowflow JO
"	0920	26635	256688	286944	306	93	49	950	362.1		Ø	20424	OFF	Inj stopped JO
4-6-16	1045	26635	256688	286944	284/300	77	48	910	371.1			20704	53 50	Prior to start for BF JO
	1055			286972					468.8	DDW 97.7	Ø			SpC = 2800/97.7 = 28.7
	1115			287003					375.2					
	1125			287030					472.2	DDW 97.0				SpC = 2700/97.0 = 27.8
	1140			287046					375.9					
	1150			287 074					474.6	DDW 98.7				SpC = 2800/98.7 = 28.4
	1210	26781	256688	287092	set to 327	79	Ø	950	376.8		Ø	20726	OFF	Shut FCV tank, up GV, MAG power

ASR-2 BF

	Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
RUN 1	4-6-16	1045	286,944,000	287,003,000	59,000									17.3	3.21	11.1	38.8	7.34	3.46	2.52
RUN 2	"	1115	287,003,000	287,046,000	43,000									40.0	13.3	2.86	5.67	2.92	2.01	
RUN 3	"	1140	287,046,000	287,092,000	46,000								SSAP BF sample	31.9	4.20	2.71	3.95	2.07	1.62	

SCANNED TO DROPBOX
JWO

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR-2 **ASR Period** WY 2016 **Sheet** ____
Test: ____ **Weather** ____ **of** ____

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (~~gal~~ cf)	Lube Pressure Up/Down	Comments (lube 4-18-16 20726)
4-19-16	0840	26781	256688	287092	closed 166	65	0	925	375.2			20966	52 / 49	BF well today TL/JO
	0850			287120	310				473.3	DDN 98.1				SpC = 2800 / 98.1 = 28.5
	0910			287148					378.7					
	0920			287176					475.6	DDN 96.9				SpC = 2800 / 96.9 = 28.9
	0930	meter drift		287179					379.1					
	0940			287207					475.6	DDN 96.5				SpC = 2800 / 96.5 = 29.0
↓	0955	26933	256688	287247	310	66	0	900	380.5 ← still recovering			20987		Stop BF, shut lube
4-26-16	0845	27125	256688	287247	closed	68	0	closed				20987	OFF	Turn off TX2 circuit JO
5-6-16												20987		Start Lube 0200
												21058	~~OFF~~	Turned on wrong lube TL
5-24-16	0850	— TX2 breaker off —		287247	320	70	0	800	382.7			21326	54 / 51	JO
	0950			287274					478.4	DDN 95.7				SpC = 2700 / 95.7 = 28.2
	0910			287282					385.3					
	0920			287310					480.1	DDN 94.8				SpC = 2800 / 94.8 = 29.5
↓												21347		Lube off 21347

(Left margin notes: 10 min SpC)

	Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	*Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start: 0	1	2	5	10	15	20
RUN 1	4-19-16	0840	287092	287148	56,000									238	49.5	22.9	1.45	1.92	1.22	4.8
RUN 2	↓	0910	287148	287179	31,000					-16.1°C				4.95	5.73	3.97	2.17	1.14		
RUN 3	↓	0930	287179	287247	68,000	16.0	445	7.18	-75.5 / 249	0.03	—	—	TL	3.20	6.59	2.74	2.06			
RUN 1	5-24-16	0858	287247	287282	35,000					@16.5				409	61.9	23.3	8.7	1.58		
RUN 2	↓	0910	287282	287368	86,000	15.7	539	7.4	-97 / 240	0.08	2.84			27.8	2.65	7.53	2.97	2.15	1.23	1.67
				Ran ~29 mins while sampling F-1																

* Zobell Temp from pH stick
Temp 25° on ORP meter

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR-2 **ASR Period** ______ **Sheet** ______

Test: ______ **Weather** ______ **of** ______

10-min SpC

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
6-21-16	1000	— TX2 breaker off —		287368	316	90 95	∅	∅	385.65	∅	∅	21347 (6/20/16 @1650)	53/51	TL/JO
				287396					479.50	DDN 93.85				SpC = 2800/93.85 = 29.8
	1115			287577								21634	OFF	collected filtered + unfilt metal
														for McCampbell, also SI, GI
														DBPs

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start: 0	1	2	5	10	15	20	30
6-21-16	1000	287368	287577	209,000	16.3	540	7.59	-189 / 235 @18°C	0.2(?)	1.98		MBAS/MAI	617	34.6	23.3	8.95	1.77	1.47	1.49	1.45

MPWMD ASR DATA SHEET

Monterey Peninsula Water Management District

Well: ASR 2 ASR Period STORAGE Sheet 1

Test: MONTHLY FIELD Weather FOG, SMOKE (SOBRANTES FIRE) of 1

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
7.27.16	1000	27415	256688	287577	320	24	—	800	388.3		Ø	21952 CF	48/48	RESET PSV TO OPEN
				287596			20		454.73		2200			MORE QUICKLY
				287639	/	/					Ø	21962		FCV+LUBE OFF

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0 min after start 1	2	5	10	15	20	JB
7.27.16	1000	287577	287639		15.2	490	7.64	~~78.6~~ 241 mV	ND	2.89	ND	NS JL	359 167	53	27.7	9.06	5.23	1.61	1.41

★ ORDER MORE H_2S STRIPS

MPWMD ASR DATA SHEET

Well: ASR # 2 ASR Period RECOVERY @ ASR 1 Sheet 1

Test: 4th Quarter SAP Weather SUNNY & HOT / SMOKE of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
9/27/16	0932	29469	256688	2877113	334	83	0	2000	394.06		/	22552	98/45	2550 GPM
10 MIN				287766					466.90					
		29614	256688	287891	→							25578		N_2 + LUBE OFF - JL

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
9/27/16	1000	287243	287891		18.0	610	6.53	-202.5	0.24	1.01	0.02	JL-TC SAP-MBAS	149	101	103	13.1	4.73	7.36	
					18.9	519	6.45	-243	ND	0.38	0.61								
MW1 9.27.16	1030		91500									JL-TC DBP							

30
6.52

MPWMD ASR DATA SHEET

Well: ASR 3 ASR Period STORAGE Sheet 1

Test: PURGE SSAP Weather 11/9 RAIN; 11/10 SUN; 11/11 SUN of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
11/9/15	1030	70308	21644	4736	350	82	Ø	1600	365.7	—	Ø	18410 17841	89 GPM FORWARD DRIFT
11/10/15	0830	DRIFT 70309	21644	5143	350	82	Ø	1600	365.6	—	Ø	18430 20913	SOME FORWARD DRIFT
11/11/15	0830			5680								18790 24441	Some Forward Drift.

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0 1 2 5	min after start 10 15 20
11/9/15		4736	5143	407,000								JL NONE		
11/10/15		5143	5680	537,000										

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR-3	ASR Period: STORAGE	Sheet: 1	
Test: SSAP SAMPLING	Weather: SUN / SHADE	of: 1	

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
11-12-15	0900	70309	21644	006108	345	>100	Ø	1708	365.65	—	Ø	19110 27777	
											3XT 1250		70 PSI ON VALVE FOR FILTERING SAMPLES.
11/12/15	1700	NC		006576	OFF	>100	Ø	1650	—	—	Ø	192050 28,600	

	Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (μ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	NTU	SAMPLE VOLUME ~~Turbidity (NTU) min after start~~ ~~1~~ ~~2~~ ~~5~~	~~10~~ ~~15~~ 20
0.01	11·12·15	945	6108	—		16.3	676	7.89		—	ND		JL, TL, JO MCCAMBEL	39.8		
0.0167			↓	6110	2000	17.5	635	7.70	-121.7	—	ND		↓	20.9		
0.1				6132	24,000	19.8	775	7.56	-81.5	—	ND			1.92	.1) 625+500 = 1125	.3) 7×500+1386 = 4886
0.5				6149	41,000	21.4	776	7.65	-88.2	—	UD			0.90	.1) 1150+250 = 1400	.3) 10×500+636 = 5636
1				6187	79,000	22.9	750	7.47	-96.9	—	ND			1.37	.1) 600+250 = 850	.3) 8×500+250 = 4250
2				6265	157,000	18.8	821	7.72	-131.7	—	ND			0.95	.1) 725+250 = 975	.3) 7×500+250+250 = 4,000
4				6425	317,000	18.7	774	7.76	-192.7	—	ND			1.41	.1) 900+250 = 1150	.3) 10×500+325+586 = 5911
6			↓	6576	468,000	18.4	792	7.60	-190.8	—	ND		↓		.1) 900	.3) 12×500+250 SV = 6250

MPWMD ASR DATA SHEET

Well: ASR 3 + SMS(D) ASR Period STORAGE Sheet 1

Test: QUARTERLY DBP Weather SUN, COLD of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
12-16-15	930	703360	21644	6592	350	92	Ø	1650	371.4	—	Ø	194980 / 37890	90 ↔ 85 psi LUBE
		↓	↓	6603					446.1		1600		
				6653									
											Ø	195120 / 37920	LUBE OFF
													N_2 OFF

10

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0	1	2	5	10	15	20 min after start
ASR3	12-16-15	0930	6592	6653	61,000	20.8	788	7.41	-136 / 244	ND	ND	0.03	JL-DBP MBAS	153	53.7	42.3	12.5	5.6	7.8	3.2
SMS(D)	12-16-15	0930	13680	14545	865	19.7	775	7.38	-142 / 244	ND	ND	0.04	JL-DBP MBAS							

MPWMD ASR DATA SHEET

Well: ASR3 ASR Period WY 2016 Sheet

Test: Weather of

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
1-19-16	1100	70342	21644	6654	342 (280 LC)	88	0	1600	356.4	0.0	0	195140 / 37900	0 / 0	TL/JO - prepare to line flush
	1130-1350	→ line flushing to reduce SDI (see notes at bottom of page)												
	1340		21780	6792										
	1350		21908	6796	215	75	49		315.78	40.6	900			HAND BF valve closed
	1450		21856	6796	215	74	50		299.8	56.6	935			- closed injection valve was leaking into pit
	1515				216						890	lube ON	72 / 66	Minor FCV adj
	1655	70342	21961		217			?			890			
1-20-16	1030	70342	22917	6799	218	71	49	1600?			915			
	1500				218	63	49	~1600			920			
1-21-16	0820	70342	24122	6799	218	67	50	~1600			920			
1-22-16	0820	70342	25458	6796	221	73	50	1600	258.2	98.2	930	202650 / 50300		JO/TL/RM
	0930	70342	25515	6797	348	90	0	1550						Stop inj prior to BF
	945								349.7		0			Start BF (51.9 Hz)
10	955			6815			30		492.0	142.3	0			Q/s = 1800/142.3 = 12.6
	957													↑Q (54.0 Hz)
	1005			6836					513.3	163.6	0			Q/s = 2100/163.6 = 12.8
	1015								515.7	166.0	0			
	1018			6861										Stop BF

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start: 0	SDI 1	2	5	10	15	20
1-15-16	1205	6664	6684		~1200 gpm								34	40	59	93	4.72		
		6695	6726		~1500 gpm								18	35	50	69	4.9		
		6729	6754		~1500 gpm								18	28	58	82	5.2		
																		13	15/ea
1-22					Turbidity →								3.1	35.9	29.1	50.7	21.7	9.41	8.5/8.3

MPWMD ASR DATA SHEET

Well: ASR-3 ASR Period WY 2016 Sheet _____

Test: _____ Weather _____ of _____

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
														JO/TL/RM
1/22/16	10^{25}	70342	25515	6861	340	92	0	~1600						Fill WH piping
	10^{30}		25515						356.1					Start Inj
	10^{40}		25520		216	80	50		312.7	43.4	760			Q/s = 500/43.4 = 11.5
	11^{10}	70342	25547	6861	218	48	50	1590			890			[illegible]
1-23-16	1020	70342	26812	6861	220	81	49	1550	275.4	80.6	910	lube OFF	OFF	JO - no adj
1-24-16	1020	70342	28134	6861	219	78	48	1500	--		925			TL
1-25-16	0800	70342	29337	6861	218	78	50	1550	--		935			TL
1-26-16	0815	70342	30708	6861	217	67	49	1600	260.7	95.4	945			TL - 0815 · JO - 1030 - WL
1-27-16	0940	70342	32159	6861	219	67	50	1550	256.5	99.6	960	202820 / 51200	OFF	JO/TC - no adj
1-28-16	0910	70342	33519	6861	219	67	50	1550	252.6	103.5	975	202820	OFF	JO - no adj
1-29-16	0900	70342	34926	6861 (water in line)	218	66	50	1550	249.0	107.1	985	202820 / 51200	62 / 54	JO - turn on lube for BF
	1440	70342	35209	6861	340	88	0	1525	348.0	0.0	0	203470		shut inj for BF (JO)
RUN 1	1482			6883					503.5		BF 2200			10-min SpC = 2200/155.5 = 14.1
	1530			6929					354.0					
RUN 2	1540			6949					507.4		BF 2000			10-min SpC = 2000/153.4 = 13.0
1-29-16	1600	70342	35209	6949	217	79	50		348.0	0.0	860	203630 / 52000	OFF	Resume inj (JO)
1-30-16	0845	70342	36074	6984	217	79	50	1500	282.53	65.5	866			TC - NO ADJ
1-31-16	1100	70342	37450	6964 (H_2O in line)	219	79	50	1510	277.9	70.1	875	203630 / 52000	OFF	JO - no adj
2-1-16	845	70342	38584		218	79	50	1525	273.9	74.1	880	203630 / 52087	TL	Iron sulfide drum

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20	30
34 min 1-29-16	RUN 1	6861	6929	68000									2.58	41.2	26.6	82.7	11.8	5.53	5.01	2.62
17 min 1-29-16	RUN 2	6929	6964	35000									2.07	3.52	3.44	7.75	6.69	3.21	--	--

344.72 SMSS
1040 on 2/29/16

SCANNED TO DROPBOX JO

MPWMD ASR DATA SHEET

Well: ASR3 ASR Period W4 2016 Sheet 1

Test: Weather of 2

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
2-7-16	0835	70342	39845		218	73	52	1500			885			rack TL
	1605	70342	40245		220	73	51	1500			890	203630FF		turned lube ON, TL
2-8-16	0815	70342	41107		218	73	49	1500			895			
	1505	70342	41478	006964	223	77	50	1550	206.8		900			start shut down
	1512	70342	41479	006964	343	91	Ø	SHUT	342.8		Ø			OFF
2-28												206190		Turn lube on TL
2-29-16	1130	70362	41483	006964	305	72	Ø		359.5	Ø	Ø	020871 571.00		
2-29-16	1135	7		6986					510.0					10-min SpC = 2200/150.5 = 14.6
2-29-16	1245	70362	41483	7073	345 (close)	72	0	1550	364.0			020901 574.00		Finish BF; stop lube line JO
3-6-16	1200	70362	41483	7073	241 (closed)	85	Ø	1500	355.68	Ø	Ø	209010 57460	OFF	Prior to line flush TL/JO
3-6-16	1220	70362	41494	7082	350	83	96		355.5	Ø	Ø			Post LF, pre inj
3-6-16	1240	70362	41500	7082	245	77	80		308.0		850			Note high well head press
3-7-16	0820	70362	42502	7082	245	67	75	1450	286.0	69.6	840			no adj TL/JO
3-8-16	0820	70362	43699	7082	244	64	72	1500	--		780	57400		no adj TL
" "	1555	70362	44097	7082	244	64	74	1510	285.99	69.61	770			ADJ to ~242 on FCV TL
3-9-16	0840	70362	44828	7082	242	61	74	1490	284.0	71.6	765	57460		NO ADJ. can't am to close w/ curve,
" "	1155	70362	44979	7082	243	63	72	1510	-	-	780			NO ADJ, CHECKED AFTER w/ call from JN - TL
" "	1350	70362	45077	7082	246	68	77	1510			840			check after lunch, turned FCV to 246 TL

BF
RUN 1
RUN 2
RUN 3

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
2-29-16	1115	6984	7007	31000									367	32.6	16.2	25.7	7.81	6.13	3.99
	1145	7007	7028	21,000									9.66	22.5	8.49	7.83	3.35		
	1205	7028	7073	45,000									32.7	8.92	8.06	6.86	4.04	2.45	2.03

SCANNED TO DROPBOX

*ASR4 Lube ON = 003608[0]9 3/15/16 1700 hrs 45/45 psi

MPWMD ASR DATA SHEET

Well: ASR-3 ASR Period WY 2016 Sheet 1 of 1

Test: Weather

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
3-9-16	1400	70362	45084	7082	247	68	78	1510	–	–	805			after adj FCV TL
"	1713	70362	45173		247	86	51	1500	334	21.6	out of [illegible]			WH<Line pressure TL
	1735	70362	45179	7082	219	79	50	1500	304.4	51.2	740			ADJ FCV to restart inj TL
3-10-16	0830	70362	45862	7082	220	72	50	1500	283.5	72.25	775	020401[0]	63/60	No ADJ. TL
3-10-16	1420	70362	46134	7082	221	67	50	1550	281.51		775	020964[0] 581[00]	67/65	prior to shut for BF JO/TL
10-min BF SpC 3-10-16	1450	70362	46142	7082	300	83	0		345.7		0			after stop inj (close PRV to stop)
3-10-16	1500			7102					486.0					Q/s = 2000/140.3 = 14.2
" "	1645	70367	46142	7182	218	80	50	1550	355.6	[illegible]	800			BF + resume TL/JO
3-11-16	0820	70362	46910	7182	219	68	50	1450			820			ran TL
3-12-16	0810	70362	48097	7182	219	67	51	1475	–	–	835			NO ADJ TL
3-13-16	0945	70362	49356	7182	219	63	50	1450	281.2	74.4	850	020912[0] 584[00]	OFF	no adj JO
3-14-16	1100	70362	50368	7182	219	89	49	1500	279.9	75.7	870			no adj JO
" "	1710	70367	50959	7182	219	63	50	1490	277.3	78.3	870			No adj TL
3-15-16	0825	70362	51755	7182	219	62	49	1400	274.75	81.15	870			No adj TL
" "	1645	70362	52195	7182	220	58	51	1490	273.1	82.5	880	209926[0] 584[00]		SMD MW=00208* TL
3-16-16	0945	70362	53094	7182	220	73	51	1500	271.6	84.6		594[00]		No ADJ. TL MW=00263 ON
" "	1650	70362	53477	7182	220	69	33	1500			900			TL
3-17-16	0905	70362	54356	7182	219	74	33	1475			910			no adj JO
3-18-16	0930	70362	55639	7182	220	78	34	1450			930			Will BF & resume today JO

ASR-3 1ST BF (not measured)

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0 min after start	1	2	5	10	15	20
2ND BF 3-10-16													3.69	3.49	9.26	4.03	4.7	1.5	
3RD BF 3-10-16													3.5	17.5	5.35	4.85		2.01	
SMS-D 3-16-16	1400		00278 OFF		19.6*	507	7.35	265/237	0.93	2.43	–								

*Temp from pC/pH meter ORP button reads 25.0°C, 24.8°C on DO meter

SCANNED TO DROPBOX

JW

MPWMD ASR DATA SHEET

Well: ASR 3 ASR Period W4 2016 Sheet

Test: Weather of

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

	Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
												2-2 gpm			(54.1 Hz)
	3-18-16	0900	70362	55660	7184	350	88	0		345.0	DON	Ø			Stop inj for BF JO/RM
10		910			7203		34			488.9	(143.9)				Q/s = 1900/143.9 = 13.2
		920			7221										stop pump
		930			7221					350.8	DON				Restart (54.1 Hz, Gate open)
10		940			7241		30			495.4	(144.6)				Q/s = 2000/144.6 = 13.8
		945			7250										stop
		955			7250					352.1	DON				Restart (a/a)
10		1005			7270					496.1	(144.0)				Q/s = 2000/144.0 = 13.9
		1007			7273										stop
		1015	70362	55660	7273	355	89	0	1400	352.5		Ø			Resume Inj
		1025				218	78	34		309.7		840			
		1155				218	78	34				885			No Adj (RM)
		1455				217	33	30				865			ASR-4 Inj. @
Fri	3-18-16	1640	70362	55990	7273	219	60	33	Target NTE = 900gpm			890	66800	OFF	ASR-4 inj off @ 1630 hr +/- (JO)
Sat	3-19-16	1000	70367	56912	7273	218	52	33	1400			890	211998 to 66864	OFF	NT adj TL
Sun	3-20-16	0940	70362	58193	7273	219	52	32	1450	269.2	83.3	915	211998 66800	OFF	no adj JO
Mon	3-21-16	0810	70362	59452	7273	218	54	34	1450	264.3		935			no adj JO

ASR 3 BF

	Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
RUN 2	3/14/16		7221	7250										3.57	24.1	11.1	7.44	4.16	2.42	
Run 3	"		7250	7273										15.4	8.9	1.66	3.04	3.58		

SCANNED TO DROPBOX

JWD

MPWMD ASR DATA SHEET

Well: ASR-3 ASR Period WY 2016 Sheet

Test: Weather of

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
									352.5					
3-22-16	0825	70367	60810	7273	218	53	33	1405	261.8	90.7	955			no adj. TL
	1700	70362	61310	7273	219	54	33	1400			970			no adj. TL
3-23-16	0805	70362	62187	7273	217	54	34	1400	255.2	97.3	980	211990	OFF	no adj. TL
3-23-16	1645				219						915			slthy reduce rate ST/JO
3-24-16	0835	70362	63575	7273	219	49	33	1400	257.7	94.8	925	211990 66800	OFF	no adj JO
	1510		63937		219	49	32				925		58/52	turn on lube @1510hr JO
3-25-16	0815	70362	64899	7273	219	47	33	1400	253.4	99.1	930	213920 66800	59/57	no adj; will BF today JO
3-25	1055	70362	65038	7273	218	46	32	1450	253.1	99.4	935	24158	60/56	Pre-BF TL/JO
RUN 1 10-min SpC	1130			7273	315				338.2		Ø			
	1140			7293					488.9	DD 150.7				SpC = 2000/150.7 = 13.3
RUN 3 10-min SpC	1225			7342					345.8					
	1235			7362					488.9	DD 143.1				SpC = 2000/143.1 = 14.0
	1300	70362	65058	7383	315	60	38		346.5		Ø	214448 67100	OFF	Pre-inj resume
	1320				217	45	34				900			
	1645	70362	65256	7383	218	45	33	N00			900			no adj TL
3-26-16	1000	70362	66189	7383	219	46	32	1450	274.0	72.5	910	214448 67100	OFF	no adj JO
3-27-16	1120	70362	67575	7383	218	46	33	1400	268.5	78.0	920		OFF	no adj TL missed reader in building
3-28-16	0815	70362	68737	7383	218	47	33	1400	264.8	81.7	925			no adj TL / JO
	1650	70362	69210	7383	218	37	32	1400	264.6	81.9	920	off		no adj TL

3-25-16 ASR3 BF

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
RUN 1 3-25-16	1130	7273	7312 est	61,000 est									16.7	6.33	28.8	27.8	9.93	3.99	2.25
Run 2	1200	7312 est	7342	30,000									5.24	30.5	3.99	4.66	3.54	3.3	
Run 3	1225	7342	7383	41,000									1.97	3.58	3.61	3.70	3.34	1.68	

SCANNED TO DROPBOX

JWO

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR-3 ASR Period: WY 2016 Sheet: ____ of ____

Test: ____ Weather: ____

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet) 346.5	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
3/29/16	0825	70362	70071	7383	218	38	33	1400	260.3	86.2	920	off		NC adj TL
	1715	70362	70564	7383	218	37	32	1400	257.6	88.9	925	off		NC adj TL
3/30/16	0820	70362	71411	7383	218	37	33	1400	254.9	91.6	940			NC adj TL
	1300	70362	71676	7383	219	33	31	1450			975			↑ FCV to 220 psi to lower rate to 950 GPM JO
	1700	70362	71902	7383	220	~~75~~	33	1450	254.1		965			ADJ to 221 ≈ 950 TL
3/31/16	0825	70362	72688	7383	222	88	34	1400	268.3	77.8	830	021444.0 ~~off~~ 67100		2 overshot it Adj FCV = 218 925 gpm TL
	1700	70362	73176	7383	220	64	33	1400	254.5	92.0	950			NO ADJ TL MW Lube = 00278 - ON
4-1-16	0810	70362	74044	7383	218	65	33	1400	250.2	95.8	970	off		NC adj TL MW Lube = 00324
"	1345	70362	74377	7383	219	63	32	1450	248.4	98.1	990			Adj to 950 gpm JO
4-2-16	1030	70362	75466 (F)	7383	221	70	33	1400	258.3	88.2	875	021444.0 67100	OFF	Stop inj - low flow trigger JO
4-3-16	1510										∅	021444.0 67100	ON	Turn lube on TL
4-4-16	1220	70362	75466	7384	328	64	∅	1450	343.8		∅	021703.0 69700	64 66	Readings before BF JO
	1230			7405					504.4	DDW 160.6				SpC = 2100 / 160.6 = 13.1
	1250			7426					348.3					
	1300			7447					507.3	DDW 159.0				SpC = 2100 / 159.0 = 13.2
	1310			7452					349.3					
	1320			7473					507.4	DDW 158.1				SpC = 2100 / 158.1 = 13.3
	1340	70362	75466	7489	329	64	23*		347.8		∅	021728.0 70000	OFF	FCV tank & lube OFF JO
		↳ NOTE: TX-1 breaker on MCC panel OFF to de-energize MAG.												

(Left margin: 10-min SpC)

	Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
SMS MW D	4-1-16	1600	00278.00	00349.00	7100	17.3	580	7.3	357 @17.3° / 237	0.70 22.4°	—	—	TL							
ASR-3 BF																				
RUN 1	4-4-16	1220	7384000	7426000	42,000									52.1	19.4	27.8	31.4	12.9	3.74	2.57
RUN 2	"	1250	7426000	7452000	26,000									31.9	15.5	10.6	3.96	3.38	—	—
RUN 3	"	1310	7452000	7489000	37,000									23.0	10.1	2.09	3.75	2.59	1.69	—

ASR3 wellhead press gauge may be stuck; should be 0 psi (JO).

SCANNED TO DROPBOX JWF

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR-3 **ASR Period** INJ/Storage **Sheet** ____

Test: ____ **Weather** sunny **of** ____

	Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments (Skid was 00070000; Lube 02172800 on 4/14)
10-min SpC	4-15-16	1005	70362	75466	007489	311	77	Ø	1450	356.2	Ø	Ø	02196200 / 00072300	72 / 69	Prior to BF
	↓	1015			7510					512.5	DDN 156.3				SpC = 2100/156.3 = 13.4
		1035			7531					360.5					
		1045			7552					516.5	DDN 156.0				SpC = 2100/156.0 = 13.5
		1055			7556					360.6					
		1105			7576					517.4	DDN 156.8		02198200 / 72500		SpC = 2000/156.8 = 12.8
	↓	1130	70362	75466	7605	325	77	Ø	1400	363.1		Ø			OFF TL/JO
10-min SpC	5-18-16	0943	TX2 breaker off		7605	closed 276	100+	Ø	1450	357.5		Ø	02221400 / 00083600	100 / 94	
	↓	0953			7627					512.4	DDN 154.9				SpC = 2200/154.9 = 14.2
		1010			7638					361.3					
		1020			7659					514.6	DDN 153.3				SpC = 2100/153.3 = 13.7
		1030			7661					362.5					
		1040			7681					513.3	DDN 150.8				SpC = 2000/150.8 = 13.3
	↓	1045			7697	closed 327							222330	OFF	Shut FCV, lube JO/TL

	Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (μ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20
RUN 1	4-15-16	1005	7489000	7531000	42,000									151	18.6	22	3.89	2.67	1.21	1.22
RUN 2	↓	1035	7531000	7556000	25,000				@16.6° / 14.4°					2.26	3.25	1.48	1.72	1.33		
RUN 3		1055	7556000	7605000	49000	16.6	519	6.9	-147 / 246	0.06	—	—	JO - SSAP / MAI	1.62	1.30	1.76	–	1.37	0.74	
				TOTAL →	116,000															
RUN 1	5-18-16	945	7605	7638	33,000									165	21.0	17.0	3.2	1.66	2.50	
RUN 2	↓	1010	7638	7661	23,000				@16.7					4.66	15.4	1.9	1.78	1.08		
		1030	7661	7697	36,000	17.2	466	6.94	-253 / 214.5	0.03	2.1			2.34	2.15	1.8	2.8	1.63		
				TOTAL →	92,000				@ 28.5 °C											

SCANNED TO DROPBOX JWO

NOTE: Pump 1 on booster skid is ON @ PSI = 70

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR-3 ASR Period W/Y 2016 Sheet

Test: monthly storage BF Weather of

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
		* OUTPUT INHIBITED												JO/TL
6-21-16									Lube line ON →					
6-22-16	1025	70362*	75466*	7697	285 shut	54	0	1400	367.50			224820 / 88800	66/64	
10-min SpC				7718	329 open	54	0	1400	516.70	DDN 149.2	--			SpC = 2100/149.2 = 14.1
	1120	70362	75466	7804								225000 / 88800	OFF	PI pump - over voltage error 13

@ 24.8°C

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20	30
6-22	1025	7697	7804	107 900	16.3	486	7.61	164 / 229	0.2	2.72	—	TL MBAS/MAI	112	19.2	18.1	3.23	2.93	1.95	1.20	1.30

MPWMD ASR DATA SHEET

Well: ASR 3 ASR Period STORAGE Sheet 1

Test: MONTHLY FIELD SAMPLE Weather FOG; SMOKE of 1

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
7·28·16	0900	70362	75466	7804	350	17	—	1400	369.91	—	Ø	227220 / 94500	55 / 60	SET PSU FOR
10		↓	↓	7826					513.13		1900			QUICK OPENING.
		↓	↓	7864	——			1400			Ø	227320		LUBE N_2 OFF

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20	30
7·28·16	0900	7804	7864	60,000	15.2	473	7.6	-107.9 / 246 k°	ND	3.77	ND	FIELD JL	58	14.4	71.8	18.4	4.78	4.1	1.82	1.48

MPWMD ASR DATA SHEET

Well: ASR #3 ASR Period STORAGE Sheet ____

Test: FIELD PARAMETERS (MONTHLY) Weather COOL FOGGY of ____

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
9/1/16	9:45	70392	75571	7865	320	110	0	1400	371.34			229870 / 100800	98/45	7.25 @ 1150GPM
9/1/16	1040			7879					458.50		1150	230050 / 101700		TURN CUBE OFF
9/1/16	1115			7914										

20 MW

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	H_2S / $[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0	1	2	5	min after start 10	15	20
9/1/16	1030	7865	7914		17.6	551	7.06	+120.5 / 242.1	ND	2.21	ND	TC FIELD	59.9	13.2	10.5	17.9	2.62	3.66	6.85

MPWMD ASR DATA SHEET

Monterey Peninsula Water Management District

Well: ASR3 ASR Period STORAGE Sheet 1

Test: STORAGE S1,G1,DBP Weather SUN of 1

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
9.21.16	1230	70427	755.72	7915	320	45	Ø	1400	379.21	—	Ø	232580 / 102100	60 / 58	S1,G1,DBP JL,TC
				7927					464.13			232720 / 102100		
9/21/16	1348			7962										

10

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell (18.1 / 244)	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20	30
9.21.16	1300	7915	7962	47,000	17.3	588	7.07	-171	ND	4.67	ND	S1,G1,DBP	120	34.5	14.7	8.80	17.2	30.6	2.45	15.3

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR4 **ASR Period** STORAGE **Sheet** 1

Test: SSAP SAMPLING **Weather** SUN/COLD **of** 1

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
11-17-15	0930	22684	103526	001933	360	100+	ø	1300		ø	ø	0028641[0] G 00034086 G	
11-17-15	1605	—	—	2408	OFF	100+	ø	1250	—	—	—	002944[0] 000348[15]	BEGAN @ 1500 CHOKED DOWN TO 1350 @ 5 MIN XD IS NOT RECORDING CORRECTLY - NEED TO PULL AND SEND BACK FOR REPAIR.

SAMPLE VOLUME

	Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (μ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	NTU	~~Turbidity (NTU) min after start 1 2 5~~ 0.2 FILTERED VOLUME	~~10 15 20~~ 0.45 FILTERED VOLUME
0.01	11.17.15	0930	1933	—	—	15.9	814	7.66		—	ND	—	JLITL/JD MCCAMPBELL	27.5	—	—
0.067			1937	1947	14,000	16.1	936	7.74	-140	—	ND	—	↓	16.8	—	—
0.1			1947	1973	40,000	16.4	807	7.75	-147	—	ND	—		2.49	[.2] 9×500+100+750=4850	[.45] 5,690+1586 = 7546
0.5			1973	2015	82,000	19.4	928	7.67	-215	—	ND	—		1.36	6×500+550=3550	6,410+1086 = 7496
1			2015	2092	159,000	22.4	978	7.77	-235	—	ND	—		1.41	5×500+400=2900	10,750+250 = 11,000
2			2092	2255	322,000	23.5	954	7.81	-227	—	ND	—		1.90	2490+250=2740	6×500+100+250 = 3350
4			2255	2398	465,000	22.1	988	7.76	-209	—	ND	—		1.42	6×500+350=3350	9×500+125+586 = 5211
6			2398			22.9	979	7.67	-194	—	ND	—	↓	1.59	8×500+450=4450	4500+75+250 = 4825

SCANNED TO DROPBOX

JWG

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR-4 ASR Period WY 2016 Sheet

Test: Weather of

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
												↓ rm @0840		
1-20-16	0830	22881	105723	2408			Ø				Ø	29465		prior to line flushing JO
		22886	105872											prior to inj testing
1-21-16	0830	22886	105890		347	63	Ø	1150			Ø			CHECK w/ RM
	1650	22886	106072	2973	361	72	Ø				Ø			End of day from RM (JO)
1-22-16	0830	22886	106072	2973	355	74	Ø	925	347.9			35085	60/57	Beg day from RM
	1650	22886	106290	3212	360	82	Ø	850						End of day (RM)
3-14-16	1115	22950	108412*	3212					344.9		0	No activity - note		meter drift JO
3-17-16	0845	22950	108474	3212	352	-	Ø	700	342.1		0	40450	74/71	readings before BF JO
3-18-16	0750	22950	108976	3461	350	77	Ø	580	343.9			43080	57/56	readings before inj cond. JO
3-18-16	1650	washed	out in pm	3597	360 tank off	60	Ø		345.5		Ø	44100	OFF	end of last BF of day JO
3-19-16	1005	22950	109323	3597	350 tank off	50	Ø		346.3		Ø			no activity TL
3-20-16	0945	22950	109462*	3597	350 tank off	50	Ø		346.3		Ø	← MAG = 0 GPM		no activity JO
3-21-16	0820	22953*	109613*	3597	342 tank off	49	Ø				Ø	← MAG = -130GPM		no activity JO
3-23-16	0830	22953*	109811*	3597	330 tank off	53	Ø				Ø	← MAG = -126GPM		no activity JO
3-26-16	1200	- washed	out --	3597	320 tank off	62	Ø				Ø	44100		no activity JO

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0	1	2	5	min after start 10	15	20

* Indicates likely meter drift.

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR-4 ASR Period: Injection (WY16) Sheet 1 of 3

Test: "Conditioning" (Day 7) Weather: Clear

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments (RM)
3/17/16	9:00	22950	108474	3212	350	72	∅	700	342.1	— DDN	∅	40450	56/56	start BF @ 9:00
	9:10			3243					481.1	(139.0)				10-min Q/s: 3100/139.0
	9:20			3280										stop = [22.3]
	9:30	22950	108474	~~3280~~	350	54	0	700	348.3	—	∅			start Line Flush
	9:35	22950	108477	3263	362		20							~1150 gpm
	9:40			3271										~2000 gpm
	10:10	22950	108542	3322	364	78	68							stop
	10:20								343.8					start Inj.
	10:25	22950	108545	3322	220	46	46				1775			
	10:30								297.9	45.9	1800			Q/s ≈ 1800/45.9 = 39.2
	10:35													stop Inj
	10:45	22950	108564	3322	355	80	0		342.2	DDN	∅			start BF
	10:55			3353					480.7	(138.5)				Q/s = 3100/138.5 = [22.4]
	10:56			3357										stop
														SDI (ET Secs)

(Margin brackets: 10 beside 9:00–9:20; 10 beside 10:45–10:56)

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (μ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	~~Turbidity (NTU)~~ min after start 0	1	2	5	10	15	SDI
3/17	9:30												18	—	—	21	25	32	(2.9) ok

MPWMD ASR DATA SHEET

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR-4 ASR Period Injection (WY16) Sheet 2 of 3

Test: "Conditioning" (Day 7) Weather clear

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet) (180 max)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments (RM)
3/17/16	11:05	22950	108564	3357	360	82	ø	700	346.0		ø			start Inj
	11:15				218	43	44		298.5	47.5	1860			Q/s ≈ 39.2
	11:35								290.1	55.9				stop
	11:45	22950	108621	3357	356	84	0		341.5	DDN				start BF (60 Hz)
10	11:55			3388					493.9	(152.4)				Q/s = 3100/152.4 = 20.3
	11:56			3391										stop
														*Tiger Display "washed out"
	12:40	22950*	10862i*	3391	358	84	0		344.6		ø			start Inj.
	12:50				220	44	45		296.5	48.1	1850			Q/s ≈ 38.5
	13:40	Display	"washed" out						284.6	60.0				Stop
	13:55	unable	to read	3391	358	84	0		341.7	DDN				start BF
10	14:05			3423					501.0	(159.3)				Q/s = 3200/159.3 = 20.1
	14:06	"	"	3426										stop
	14:15	"	"	3426	358	82	0		345.8					start Inj
	14:25				220	43	45		293.3	52.5	1850			Q/s ≈ 35.2
	16:15								277.5					stop

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	(secs) Turbidity (NTU) — min after start — SDE						
													0	1	2	5	10	15	20
3/17	15:40												17	—	—	19	22	26	2.3

MPWMD ASR DATA SHEET

Well: ASR-4 ASR Period Injection (wy16) Sheet 3 of 3

Test: "conditioning" (Day 7) Weather

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
3/17/16	16:45	Display	washed out	3426	360	84	0	580	341.8	DOWN	∅			Start BF
10	16:55	unable	to Read	3458					505.9	164.1	—			Q/s = 3200/164.1 = 19.5
	16:56			3461										Stop

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0	1	2	5	min after start 10	15	20

MPWMD ASR DATA SHEET

Well: ASR-4 ASR Period Injection (wy16) Sheet 1

Test: "Conditioning" (Day 8) Weather Overcast of 2

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

	Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments (Rm)
	3/14/16	7:50	22950	108976	3461	350	77	0	580	343.9	DON	–	43080	57/56	start BF
10		8:00			3491					509.9	166.0				Q/s = 3000/166.0 = 18.1
		8:01			3494										stop
		10:45	22950	108977	3494	352	75	0		346.7					start Inj
		10:55				230	48	51		303.4	43.3	1525			Q/s = 35.2
		11:15								299.8	46.9				stop
		11:35	22950	109025	3494	360	78	0		344.1	DON				start BF
10		11:45			3525					500.9	156.8				Q/s = 3100/156.8 = 19.8
		11:46			3528										stop
		12:00	22950	109025	3528	360	78	0		346.8					start Inj
		12:10				231	63	52		304.6	42.2	1510			Q/s = 35.8
		13:00								298.1					stop
		13:10	22950	109113	3528	360	78	0		342.1	DON				start BF
10		13:20			3560					498.9	156.8				Q/s = 3200/156.8 = 20.4
		13:21			3564										stop
															ET Data

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Secs ~~Turbidity (NTU)~~ min after start 0	1	2	5	10	15	~~20~~ SDI
3/14	12:15												17	X	X	18	19	20	1.0

MPWMD ASR DATA SHEET

Well: ASR-4 ASR Period Injection (WY16) Sheet 2

Test: "Conditioning" (Day 8) Weather overcast of 2

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments (RM)
3/18/16	14^{20}	22950	109113	3564	361	67	0	500	344.7					start Inj
	14^{30}				220	36	38		302.3	42.4	1515			Q/s = 35.7
	15^{00}								297.1		1530			No Adj.
	16^{20}								293.5					stop
	16^{35}	unable to read		3564	361	63	0		340.5	DON				start BF
	16^{45}	"washed out"		3595					506.5	(166.0)				Q/s = 3100/166.0 = 18.7
	16^{46}			3597										stop

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0 1 2 5	min after start 10 15 20

SCANNED TO DROPBOX

JWD

MPWMD ASR DATA SHEET

Well: ASR-4 ASR Period WY 2016 Sheet ____

Test: ____ Weather ____ of ____

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
														4-20-16 0044102 ON (TL)
10-min SpC 4-27-16	1105	22753	11064	3597	211 closed	67	0	420	354.8			0047230	73 72	Prior to BF JO
	1115			3630	350				502.0	DDN 147.2				SpC = 3300 / 147.2 = 22.4
	1135			3660					359.3					
	1145			3691					506.2	DDN 146.9				SpC = 3100 / 146.9 = 21.1
	1155			3697					359.5					
	1205			3729					507.3	DDN 147.8				SpC = 3200 / 147.8 = 21.6
	1300	faded	out	3768	350 closed	76			356.02					
5-8-16	1300													
														Lube on
5-9-16	1045	–	–	3768	349	74	Ø	400	355.2			0049980	74 73	Prior to BF start JO/TL
	1055			3798					502.4	DDN 142.2				SpC = 3000 / 147.2 = 20.4
	1105			3832					359.1					
	1125			3864					505.7	DDN 146.6				SpC = 3200 / 146.6 = 21.8
	1135			3867					359.8					
	1145			3899					506.9	DDN 147.1				SpC = 3200 / 147.1 = 21.7
	1215			3984								0050210	OFF	Well off, shut FCV JO / TL

	Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0 min after start	1	2	5	10	15	20
RUN 1	4-21-16	1105	3597	3660	63,000						@ 24.8°C				271	43.0	12.9	1.98	2.05	1.76
RUN 2	↓	1135	3660	3697	37,000						@ 24.3°C			2.91	12.8	3.5	1.05	1.65		
RUN 3	↓	1155	3697	3768	71,000	24.8	740	7.4	260 / 234	ND	—	—		1.73	35.4	3.9	1.99			
RUN 1	5-9-16	1045	3768	3832	64,000									2.60	519	165	10.5	1.71	1.90	0.93
RUN 2		1105	3832	3864	32,000						@ 19.2°C			1.19	22.6	3.60	1.10	0.74		
RUN 3	↓	1135	3867	3984	117,000	23.8	752	7.5	227.4 / 241	ND	1.9			2.89	1.82	2.85	0.94	0.74		

SCANNED TO DROPBOX JWG

MPWMD ASR DATA SHEET

When FCV was opened press was 310 psi, so only minor psi loss since 5/9/16.

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Well: ASR-4 **ASR Period** WY 2016 **Sheet** ____ of ____

Test: ____ **Weather** ____

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
6-1-16	1700				shut 338							005256		lube line on TL
6-2-16	0950	Tx2 breaker off		3984	open 332	100+	85	2100	362.31			005461	96 94	BF well; collect continuous ORP JD
10-min SpC	1000			4010					472.8	DDN 110.5				SpC = 2600/110.5 = 23.5
|	1015			4050			35							At 23 min, check PSV – not fully engaged. Rate went from 2500 to 3000 gpm on dial after adjustment.
|	1050			4156					514.5					
V	1115			4215	shut 332							005482	OFF	

Date	Time	Pre-Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH @23.7°C	ORP / Zobell	[Cl_2] @34.2°C	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) min after start 0	1	2	5	10	15	20	30	60
6-2-16	1100	3984	4215	231,000	23.9	704	7.61	-197 / 211	ND	1.09			OR	205	59.6	42.7	2.87	1.76	1.57	2.03	0.79

OR = Outside Range of meter

MPWMD ASR DATA SHEET

Monterey Peninsula Water Management District

Well: ASR4 ASR Period STORAGE Sheet 1

Test: QUARTERLY SAMPLE SAP S-1,G1,DBP,F Weather FOG/PARTIAL SUN of 1

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
BF					prior to opening fcv									
7.13.16	0917	22953	11526	004215	173 355	100+	12	1850	36568	ø	ø	0057020 93193	102 100	TL, JL
ID —		↓	↓	4243					48538					SPECIFIC CAPACITY
				4309								57140	X	SAMPLED @ 30MIN
														LUBE @ 0.7 GPM
														FCV OFF
														LUBE OFF

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	$[Cl_2]$	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0	1	2	5	10	15	20 min after start
7.13.16	1000	4215	4309	94,000	21.4	426	8.06	218 330 @24.4 on orp meter	ND @21.8	1.75	ND	JL MBAS	OR	121	61	11.5	2.6	1.99	1.69	1.72 3F

MPWMD ASR DATA SHEET

Well: ASR #4 ASR Period STORAGE Sheet

Test: FIELD PARAMETERS Weather COOL of

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
9/1/16	1492/03	23039	112380	4309	340	110	0	2600	368.71			5974	110/110	
9/1/16				4337					486.35		2650			2650 GPM to PIT
9/1/16	1300			4390								5984 / 1013000		TURNED OFF LUIGE TC

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0 min after start	1	2	5	10	15	20
9/1/16	1230	4309	4390		23.9	852	7.18	-169.8 / 240.60 @ 8.50C	ND	0.56	0.02	TC / FIELD	141	470	118	17.2	4.82	3.11	2.90

MPWMD ASR DATA SHEET

Monterey Peninsula Water Management District

Well: ASR 4 **ASR Period** STORAGE **Sheet** 1 of 1

Test: 4TH QTR S1, G2, DBP **Weather** FOG/SUN

Date	Time	Tiger [F] (gal) ×1000	Tiger [R] (gal) ×1000	BF (gal) ×1000	FCV (psi)	Line (psi)	Well Head (psi)	N_2 (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Lube Pressure Up/Down	Comments
9-21-16	1010	23039	112895	4390	345	40	0	2000	374.25	—	0	06184	58/58	TC, JL, QUARTERLY SAMPLE.
9/21/16				4418					495.68		2700 GPM			2700 GPM 13F
9-21-16	1130	—	—	4502	—	—		2000				61960		N_2 OFF LUBE OFF.

10

Date	Time	Pre Purge Meter Read	Post Purge Meter Read	Purge Volume	Temp (°C)	Cond (µ/cm)	pH	ORP / Zobell	[Cl_2]	DO (mg/L)	H_2S (mg/L)	Sampler / Laboratory	Turbidity (NTU) 0	1	2	5	min after start 10	15	20	30
9/21/16	1030	4390	4502	112000	25.1	564	7.08	262.3 / 246	ND	0.97	0.01	S1, G1 DBP, MBAS, JL	220	126	60.8	11	11.9	3.77	2.43	1.44

APPENDIX B – WATER-QUALITY LABORATORY REPORTS

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS
www.MBASinc.com
ELAP Certification Number: 2385

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Monday, January 04, 2016

Lab Number: AB39634

Collection Date/Time:	12/15/2015	10:30	Sample Collector:	LEAR J	Client Sample #:
Submittal Date/Time:	12/18/2015	8:45	Sample ID		Coliform Designation:

Sample Description: ASR2

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Chloramines	SM4500-Cl G	mg/L	**Not Detected**	H	0.05		12/18/2015	LJ
Chloride	EPA300.0	mg/L	**126**		1	250	12/18/2015	MW
Haloacetic Acids	EPA552	µg/L	**Not Detected**	E		60	12/29/2015	BSK
Trihalomethanes	EPA524.2	µg/L	**Not Detected**	E		80	12/23/2015	BSK

Sample Comments:

Report Approved by:

David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

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ELAP Certification Number: 2385

Monday, January 04, 2016

Lab Number: AB39635

Collection Date/Time:	12/16/2015	10:30	Sample Collector:	LEAR J	Client Sample #:
Submittal Date/Time:	12/18/2015	8:45	Sample ID		Coliform Designation:

Sample Description: SMS(D)

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Chloramines	SM4500-Cl G	mg/L	**Not Detected**	H	0.05		12/18/2015	LJ
Chloride	EPA300.0	mg/L	**123**		1	250	12/18/2015	MW
Haloacetic Acids	EPA552	µg/L	**Not Detected**	E		60	12/29/2015	BSK
Trihalomethanes	EPA524.2	µg/L	**Not Detected**	E		80	12/23/2015	BSK

Sample Comments:

Report Approved by:

David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

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ELAP Certification Number: 2385

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Monday, January 04, 2016

Lab Number: AB39636

Collection Date/Time:	12/16/2015	10:30	Sample Collector:	LEAR J	Client Sample #:
Submittal Date/Time:	12/18/2015	8:45	Sample ID		Coliform Designation:

Sample Description: ASR3

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Chloramines	SM4500-Cl G	mg/L	**Not Detected**	H	0.05		12/18/2015	LJ
Chloride	EPA300.0	mg/L	**95**		1	250	12/18/2015	MW
Haloacetic Acids	EPA552	µg/L	**Not Detected**	E		60	12/29/2015	BSK
Trihalomethanes	EPA524.2	µg/L	**21**	E		80	12/23/2015	BSK

Sample Comments:

Report Approved by:

David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

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MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Monday, January 04, 2016

Lab Number: AB39637

Collection Date/Time:	12/15/2015	11:00	Sample Collector:	LEAR J	Client Sample #:
Submittal Date/Time:	12/18/2015	8:45	Sample ID		Coliform Designation:

Sample Description: MW1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Chloramines	SM4500-Cl G	mg/L	**Not Detected**	H	0.05		12/18/2015	LJ
Chloride	EPA300.0	mg/L	**161**		1	250	12/18/2015	MW
Haloacetic Acids	EPA552	µg/L	**Not Detected**	E		60	12/29/2015	BSK
Trihalomethanes	EPA524.2	µg/L	**Not Detected**	E		80	12/23/2015	BSK

Sample Comments:

Report Approved by:

David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

BSK Associates Fresno
1414 Stanislaus St
Fresno, CA93706
559-497-2888 (Main)
559-485-6935 (FAX)

A5L2014
1/04/2016
Invoice: A600072

David Holland
Monterey Bay Analytical
4 Justin Court Suite D
Monterey, CA 93940

RE: Report for A5L2014 MPWMD

Dear David Holland,

Thank you for using BSK Associates for your analytical testing needs. In the following pages, you will find the test results for the samples submitted to our laboratory on 12/22/2015. The results have been approved for release by our Laboratory Director as indicated by the authorizing signature below.

The samples were analyzed for the test(s) indicated on the Chain of Custody (see attached) and the results relate only to the samples analyzed. BSK certifies that the testing was performed in accordance with the quality system requirements specified in the 2009 TNI Standard. Any deviations from this standard or from the method requirements for each test procedure performed will be annotated alongside the analytical result or noted in the Case Narrative. Unless otherwise noted, the sample results are reported on an "as received" basis.

If additional clarification of any information is required, please contact your Project Manager, John Montierth , at (800) 877-8310 or (559) 497-2888 x201.

Thanks again for using BSK Associates. We value your business and appreciate your loyalty.

Sincerely,

John Montierth, Project Manager

Accredited in Accordance with NELAP
ORELAP #4021

Case Narrative

Project and Report Details		Invoice Details	
Client:	Monterey Bay Analytical	**Invoice To:**	Monterey Bay Analytical
Report To:	David Holland	**Invoice Attn:**	David Holland
Project #:	-	**Project PO#:**	-
Received:	12/22/2015 - 15:02		
Report Due:	1/06/2016		

Sample Receipt Conditions

Cooler: Default Cooler
Temperature on Receipt ºC: 4.4

Containers Intact
COC/Labels Agree
Received On Wet Ice
Received On Blue Ice
Packing Material - Bubble Wrap
Packing Material - Paper
Sample(s) were received in temperature range.
Initial receipt at BSK-FAL

Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

None applied

Report Distribution

Recipient(s)	Report Format	CC:
David Holland	FINAL.RPT	
Mason Weidner	FINAL.RPT	

Certificate of Analysis

Sample ID: A5L2014-01
Sampled By: Jonathan Lear
Sample Description: ASR2 // AB39634

Sample Date - Time: 12/15/15 - 10:30
Matrix: Water
Sample Type: Grab

BSK Associates Fresno

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Trihalomethanes by GC-MS									
Bromodichloromethane	EPA 524.2	ND	0.50	ug/L	1	A515034	12/23/15	12/23/15	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A515034	12/23/15	12/23/15	
Chloroform	EPA 524.2	ND	0.50	ug/L	1	A515034	12/23/15	12/23/15	
Dibromochloromethane	EPA 524.2	ND	0.50	ug/L	1	A515034	12/23/15	12/23/15	
Surrogate: Bromofluorobenzene	EPA 524.2	98 %	*Acceptable range: 70-130 %*						
Total Trihalomethanes, EPA 524.2		ND	0.50	ug/L					
Haloacetic Acids by GC-ECD, GC-MS									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A515258	12/28/15	12/29/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A515258	12/28/15	12/29/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A515258	12/28/15	12/29/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A515258	12/28/15	12/29/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A515258	12/28/15	12/29/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	97 %	*Acceptable range: 70-130 %*						
Total Haloacetic Acids, EPA 552.3		ND	2.0	ug/L					

Certificate of Analysis

Sample ID: A5L2014-02
Sampled By: Jonathan Lear
Sample Description: SMS (D) // AB39635

Sample Date - Time: 12/16/15 - 10:30
Matrix: Water
Sample Type: Grab

BSK Associates Fresno

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Trihalomethanes by GC-MS									
Bromodichloromethane	EPA 524.2	ND	0.50	ug/L	1	A515034	12/23/15	12/23/15	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A515034	12/23/15	12/23/15	
Chloroform	EPA 524.2	ND	0.50	ug/L	1	A515034	12/23/15	12/23/15	
Dibromochloromethane	EPA 524.2	ND	0.50	ug/L	1	A515034	12/23/15	12/23/15	
Surrogate: Bromofluorobenzene	EPA 524.2	100 %	*Acceptable range: 70-130 %*						
Total Trihalomethanes, EPA 524.2		ND	0.50	ug/L					
Haloacetic Acids by GC-ECD, GC-MS									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A515258	12/28/15	12/29/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A515258	12/28/15	12/29/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A515258	12/28/15	12/29/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A515258	12/28/15	12/29/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A515258	12/28/15	12/29/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	97 %	*Acceptable range: 70-130 %*						
Total Haloacetic Acids, EPA 552.3		ND	2.0	ug/L					

Certificate of Analysis

Sample ID: A5L2014-03
Sampled By: Jonathan Lear
Sample Description: ASR3 // AB39636

Sample Date - Time: 12/16/15 - 10:30
Matrix: Water
Sample Type: Grab

BSK Associates Fresno

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Trihalomethanes by GC-MS									
Bromodichloromethane	EPA 524.2	**6.2**	0.50	ug/L	1	A515034	12/23/15	12/23/15	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A515034	12/23/15	12/23/15	
Chloroform	EPA 524.2	**11**	0.50	ug/L	1	A515034	12/23/15	12/23/15	
Dibromochloromethane	EPA 524.2	**3.7**	0.50	ug/L	1	A515034	12/23/15	12/23/15	
Surrogate: Bromofluorobenzene	EPA 524.2	101 %	*Acceptable range: 70-130 %*						
Total Trihalomethanes, EPA 524.2		**21**	0.50	ug/L					
Haloacetic Acids by GC-ECD, GC-MS									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A515258	12/28/15	12/29/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A515258	12/28/15	12/29/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A515258	12/28/15	12/29/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A515258	12/28/15	12/29/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A515258	12/28/15	12/29/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	98 %	*Acceptable range: 70-130 %*						
Total Haloacetic Acids, EPA 552.3		ND	2.0	ug/L					

Certificate of Analysis

Sample ID: A5L2014-04
Sampled By: Jonathan Lear
Sample Description: MW1 // AB39637

Sample Date - Time: 12/15/15 - 11:00
Matrix: Water
Sample Type: Grab

BSK Associates Fresno

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Trihalomethanes by GC-MS									
Bromodichloromethane	EPA 524.2	ND	0.50	ug/L	1	A515034	12/23/15	12/23/15	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A515034	12/23/15	12/23/15	
Chloroform	EPA 524.2	ND	0.50	ug/L	1	A515034	12/23/15	12/23/15	
Dibromochloromethane	EPA 524.2	ND	0.50	ug/L	1	A515034	12/23/15	12/23/15	
Surrogate: Bromofluorobenzene	EPA 524.2	97 %	*Acceptable range: 70-130 %*						
Total Trihalomethanes, EPA 524.2		ND	0.50	ug/L					
Haloacetic Acids by GC-ECD, GC-MS									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A515258	12/28/15	12/29/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A515258	12/28/15	12/29/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A515258	12/28/15	12/29/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A515258	12/28/15	12/29/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A515258	12/28/15	12/29/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	97 %	*Acceptable range: 70-130 %*						
Total Haloacetic Acids, EPA 552.3		ND	2.0	ug/L					

BSK Associates Fresno
Organics Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
EPA 524.2 - Quality Control											
Batch: A515034										Prepared: 12/23/2015	
Prep Method: EPA 524.2										Analyst: ANM	
Blank (A515034-BLK1)											
Bromodichloromethane	ND	0.50	ug/L							12/23/15	
Bromoform	ND	0.50	ug/L							12/23/15	
Chloroform	ND	0.50	ug/L							12/23/15	
Dibromochloromethane	ND	0.50	ug/L							12/23/15	
Surrogate: Bromofluorobenzene	*48*			*50*		*97*	*70-130*			12/23/15	
Blank Spike (A515034-BS1)											
Bromodichloromethane	10	0.50	ug/L	10		104	70-130			12/23/15	
Bromoform	12	0.50	ug/L	10		116	70-130			12/23/15	
Chloroform	10	0.50	ug/L	10		102	70-130			12/23/15	
Dibromochloromethane	10	0.50	ug/L	10		105	70-130			12/23/15	
Surrogate: Bromofluorobenzene	*49*			*50*		*98*	*70-130*			12/23/15	
Blank Spike Dup (A515034-BSD1)											
Bromodichloromethane	10	0.50	ug/L	10		105	70-130	1	30	12/23/15	
Bromoform	11	0.50	ug/L	10		113	70-130	3	30	12/23/15	
Chloroform	10	0.50	ug/L	10		103	70-130	1	30	12/23/15	
Dibromochloromethane	10	0.50	ug/L	10		104	70-130	1	30	12/23/15	
Surrogate: Bromofluorobenzene	*50*			*50*		*100*	*70-130*			12/23/15	
Matrix Spike (A515034-MS1), Source: A5L2014-01											
Bromodichloromethane	12	0.50	ug/L	10	ND	115	47-151			12/23/15	
Bromoform	13	0.50	ug/L	10	ND	128	29-162			12/23/15	
Chloroform	12	0.50	ug/L	10	ND	116	52-148			12/23/15	
Dibromochloromethane	11	0.50	ug/L	10	ND	115	44-149			12/23/15	
Surrogate: Bromofluorobenzene	*49*			*50*		*98*	*70-130*			12/23/15	
EPA 552.3 - Quality Control											
Batch: A515258										Prepared: 12/28/2015	
Prep Method: EPA 552.3										Analyst: MTM	
Blank (A515258-BLK1)											
Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							12/29/15	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							12/29/15	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							12/29/15	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							12/29/15	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							12/29/15	
Surrogate: 2-Bromobutanoic Acid	*27*			*25*		*108*	*70-130*			12/29/15	
Blank Spike (A515258-BS1)											
Dibromoacetic Acid (DBAA)	10	1.0	ug/L	10		104	70-130			12/29/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		108	70-130			12/29/15	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		109	70-130			12/29/15	
Monochloroacetic Acid (MCAA)	23	2.0	ug/L	20		114	70-130			12/29/15	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		106	70-130			12/29/15	

BSK Associates Fresno
Organics Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
EPA 552.3 - Quality Control											
Batch: A515258										Prepared: 12/28/2015	
Prep Method: EPA 552.3										Analyst: MTM	
Blank Spike (A515258-BS1)											
Surrogate: 2-Bromobutanoic Acid	*25*			*25*		*100*	*70-130*			12/29/15	
Blank Spike Dup (A515258-BSD1)											
Dibromoacetic Acid (DBAA)	10	1.0	ug/L	10		103	70-130	1	30	12/29/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		108	70-130	0	30	12/29/15	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		106	70-130	3	30	12/29/15	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20		108	70-130	5	30	12/29/15	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		105	70-130	1	30	12/29/15	
Surrogate: 2-Bromobutanoic Acid	*25*			*25*		*101*	*70-130*			12/29/15	
Duplicate (A515258-DUP1), Source: A5L2187-03											
Dibromoacetic Acid (DBAA)	ND	1.0	ug/L		ND				30	12/29/15	
Dichloroacetic Acid (DCAA)	7.4	1.0	ug/L		7.2			3	30	12/29/15	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L		ND				30	12/29/15	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L		ND				30	12/29/15	
Trichloroacetic Acid (TCAA)	6.5	1.0	ug/L		6.4			3	30	12/29/15	
Surrogate: 2-Bromobutanoic Acid	*24*			*25*		*98*	*70-130*			12/29/15	
Matrix Spike (A515258-MS1), Source: A5L1839-01											
Dibromoacetic Acid (DBAA)	29	1.0	ug/L	10	17	112	70-130			12/29/15	
Dichloroacetic Acid (DCAA)	15	1.0	ug/L	10	6.2	93	70-130			12/29/15	
Monobromoacetic Acid (MBAA)	13	1.0	ug/L	10	1.9	107	70-130			12/29/15	
Monochloroacetic Acid (MCAA)	23	2.0	ug/L	20	ND	110	70-130			12/29/15	
Trichloroacetic Acid (TCAA)	12	1.0	ug/L	10	1.6	108	70-130			12/29/15	
Surrogate: 2-Bromobutanoic Acid	*25*			*25*		*102*	*70-130*			12/29/15	

Certificate of Analysis

Notes:

- The Chain of Custody document and Sample Integrity Sheet are part of the analytical report.
- Any remaining sample(s) for testing will be disposed of according to BSK's sample retention policy unless other arrangements are made in advance.
- All positive results for EPA Methods 504.1 and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed.
- Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.
- J-value is equivalent to DNQ (Detected, not quantified) which is a trace value. A trace value is an analyte detected between the MDL and the laboratory reporting limit. This result is of an unknown data quality and is only qualitative (estimated). Baseline noise, calibration curve extrapolation below the lowest calibrator, method blank detections, and integration artifacts can all produce apparent DNQ values, which contribute to the un-reliability of these values.
- (1) - Residual chlorine and pH analysis have a 15 minute holding time for both drinking and waste water samples as defined by the EPA and 40 CFR 136. Waste water and ground water (monitoring well) samples must be field filtered to meet the 15 minute holding time for dissolved metals.
- Summations of analytes (i.e. Total Trihalomethanes) may appear to add individual amounts incorrectly, due to rounding of analyte values occurring before or after the total value is calculated, as well as rounding of the total value.
- RL Multiplier is the factor used to adjust the reporting limit (RL) due to variations in sample preparation procedures and dilutions required for matrix interferences.
- Due to the subjective nature of the Threshold Odor Method, all characterizations of the detected odor are the opinion of the panel of analysts. The characterizations can be found in Standard Methods 2170B Figure 2170:1.
- The MCLs provided in this report (if applicable) represent the primary MCLs for that analyte.

Definitions

mg/L:	Milligrams/Liter (ppm)	MDL:	Method Detection Limit	MDA95:	Min. Detected Activity
mg/Kg:	Milligrams/Kilogram (ppm)	RL:	Reporting Limit: DL x Dilution	MPN:	Most Probable Number
µg/L:	Micrograms/Liter (ppb)	ND:	None Detected at RL	CFU:	Colony Forming Unit
µg/Kg:	Micrograms/Kilogram (ppb)	pCi/L:	Picocuries per Liter	Absent:	Less than 1 CFU/100mLs
%:	Percent Recovered (surrogates)	RL Mult:	RL Multiplier	Present:	1 or more CFU/100mLs
NR:	Non-Reportable	MCL:	Maximum Contaminant Limit		

Please see the individual Subcontract Lab's report for applicable certifications.

BSK is not accredited under the NELAC program for the following parameters: **NA**

Certifications: **Please refer to our website for a copy of our Accredited Fields of Testing under each certification.**

Fresno

State of California - ELAP	1180	State of Hawaii	4021
State of Nevada	CA000792016-1	State of Oregon - NELAC	4021
EPA - UCMR3	CA00079	State of Washington	C997-15

Sacramento

State of California - ELAP	2435

Vancouver

State of Oregon - NELAC	WA100008-007	State of Washington	C824-14a

A5L2014

12222015

Monte6227

Turnaround: Standard

Due Date: 1/6/2016

Monterey Bay Analytical

Printed: 12/22/2015 5:28:28PM

BSK Associates Engineers & Laboratories
1414 Stanislaus St., Fresno, CA 93706
(559) 497-2888 · Fax (559) 497-2893
www.bskassociates.com

4.4

Turnaround Time Request
- [X] Standard - 10 business days
- [ ] Rush (Surcharge may apply)
- [ ] Date needed:

A5L2014
Monte6227
12/22/2015
10
DY

*Required Fields

Temp:

Company/Client Name*:	Report Attention*:	Invoice To*:	Phone*:	Fax:
Monterey Bay Analytical Services	Mason Weidner-Holland Additional cc's: David Holland	David Holland PO#:	831-375-6227	831-641-0734

E-mail*: mweidner@mbasinc.com, dholland@mbasinc

Address*:	City*:	State*:	Zip*:
4 Justin Court, Suite D	Monterey	CA	93940

Project: MPWMD

Project #:

How would you like to receive your completed results?*
- [X] E-Mail
- [ ] Fax
- [ ] Mail

Reporting Options:
- [ ] Trace (J-Flag)
- [ ] Swamp
- [ ] EDD Type: _____

Sampler Name (Printed/Signature)*: Jonathan Lear

Regulatory Carbon Copies
- [ ] SWRCB (Drinking Water)
- [ ] Merced Co
- [ ] Fresno Co
- [ ] Madera Co
- [ ] Tulare Co
- [ ] Other: _____

Regulatory Compliance
- [ ] EDT to California SWRCB (Drinking Water)
  System Number*: _____
- [ ] Geotracker #: _____

Matrix Types: SW=Surface Water BW=Bottled Water GW=Ground Water WW=Waste Water STW=Storm Water DW=Drinking Water SO=Solid

#	Sample Description*	Sampled* Date	Sampled* Time	Matrix*	Comments / Station Code / WTRAX	HAA5	TTHM							
1.	ASR2	12/15/15	1030	GW	AB39634	X	X							
2.	SMS(D)	12/16/15	1030	GW	AB39635	X	X							
3.	ASR3	12/16/15	1030	GW	AB39636	X	X							
4.	MW1	12/15/15	1100	GW	AB39637	X	X							

Relinquished by: (Signature and Printed Name)	Company	Date	Time	Received by: (Signature and Printed Name)	Company
M. Holland	MBAS	12/21/15	1600		
Relinquished by: (Signature and Printed Name)	Company	Date	Time	Received by: (Signature and Printed Name)	Company
Received for Lab by: (Signature and Printed Name)		Date	Time	Payment Received at Delivery:	Check / Cash
Adelene White		12/22/15	1002	Date: Amount: PIA#:	Init.

Shipping Method: ONTRAC UPS GSO WALK-IN FED EX Courier: _____
Cooling Method: Wet Blue None

Custody Seal: Y N
Chilling Process Begun: Y N

Paper Bag

Sample Integrity

BSK Bottles: (Yes) No Page 1 of 1

COC Info

Was temperature within range? Chemistry ≤ 6°C Micro < 10°C	(Yes) No NA	Were correct containers and preservatives received for the tests requested?	(Yes) No NA
If samples were taken today, is there evidence that chilling has begun?	Yes No (NA)	Were there bubbles in the VOA vials? (Volatiles Only)	Yes No (NA)
Did all bottles arrive unbroken and intact?	(Yes) No	Was a sufficient amount of sample received?	(Yes) No
Did all bottle labels agree with COC?	(Yes) No	Do samples have a hold time <72 hours?	Yes (No)
Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes No (NA)	Was PM notified of discrepancies? PM: By/Time:	Yes No (NA)

Bottles Received — "I" means preservation/chlorine checks are either N/A or are performed in the lab

250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)	Checks	Passed?	1-4				
Bacti $Na_2S_2O_3$	—	—					
None (P) White Cap	—	—					
Cr6 (P) Br. Green Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **DW**	Cl, pH > 8	Y N					
Cr6 (P) Pink Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **WW**	pH 9.3-9.7	Y N					
Cr6 (P) Black Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **7199** ***24 HOUR HOLD TIME***	pH 9.0-9.5	Y N					
HNO_3 (P) Red Cap	—	—					
H_2SO_4 (P) or (AG) Yellow Cap/Label	pH < 2	Y N					
NaOH (P) Green Cap	Cl, pH >10	Y N					
NaOH + ZnAc (P)	pH > 9	Y N					
Dissolved Oxygen 300ml (g)	—	—					
None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270	—	—					
HCl (AG) Lt. Blue Label O&G, Diesel	—	—					
Na_2O_3S+HCl (AG) Lt. Pink Label 525	—	—					
$Na_2S_2O_3$ 1 Liter (Brown P) 549	—	—					
$Na_2S_2O_3$ (AG) Blue Label 547,515,548,THM,524	—	—	3V				
$Na_2S_2O_3$ (CG) Blue Label 504, 505	—	—					
$Na_2S_2O_3$ + MCAA (CG) Orange Label 531	pH < 3	Y N					
NH_4Cl (AG) Purple Label 552	—	—	1A				
EDA (AG) Brown Label DBPs	—	—					
HCL (CG) 524.2,BTEX,Gas, MTBE, 8260/624	—	—					
Buffer pH 4 (CG)	—	—					
None (CG)	—	—					
H_3PO_4 (CG) Salmon Label	—	—					
Other:							
Asbestos 1Liter Plastic w/ Foil	—	—					
Low Level Hg / Metals Double Baggie	—	—					
Bottled Water	—	—					
Clear Glass Jar: 250 / 500 / 1 Liter	—	—					
Soil Tube Brass / Steel / Plastic	—	—					
Tedlar Bag / Plastic Bag	—	—					

(CL) 12/22/15

Split

	Container	Preservative	Date/Time/Initials		Container	Preservative	Date/Time/Initials
S P				S P			
S P				S P			

Comments

Labeled by: NL @1640 Labels checked by: JHD @ 16:48 RUSH Paged by: _____ @ _____

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS
www.MBASinc.com
ELAP Certification Number: 2385

Tuesday, February 02, 2016

Lab Number: AB40665

Collection Date/Time:	1/11/2016	13:30	Sample Collector:	LINDBERG T	Client Sample #:
Submittal Date/Time:	1/11/2016	14:45	Sample ID		Coliform Designation:

Sample Description: ASR-1 INJECTATE

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**153**		10		1/15/2016	BS/LRH
Aluminum, Total	EPA200.8	µg/L	**Not Detected**		10	1000	1/14/2016	SM
Ammonia-N	SM4500NH3 D	mg/L	**Not Detected**		0.05		1/24/2016	DH
Arsenic, Total	EPA200.8	µg/L	**1**		1	10	1/14/2016	SM
Barium, Total	EPA200.8	µg/L	**70**		10	1000	1/14/2016	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	**187**		10		1/15/2016	LRH
Boron	EPA200.7	mg/L	**Not detected**		0.05		1/18/2016	MW
Bromide	EPA300.0	mg/L	**0.1**		0.1		1/12/2016	HM
Calcium	EPA200.7	mg/L	**47**		0.5		1/18/2016	MW
Carbonate as CaCO3	SM2320B	mg/L	**Not Detected**		10		1/15/2016	LRH
Chloramines	SM4500-Cl G	mg/L	**0.19**		0.05		1/11/2016	SM
Chloride	EPA300.0	mg/L	**34**		1	250	1/12/2016	HM
DOC	SM5310C	mg/L	**1.4**		0.2		1/15/2016	MW
Fluoride	EPA300.0	mg/L	**0.3**		0.1	2.0	1/12/2016	HM
Gross Alpha	EPA900.0	pCi/L	**1.72 ± 1.65**	E		15	1/21/2016	FGL
Haloacetic Acids	EPA552	µg/L	**12**	E		60	1/18/2016	BSK
Iron	EPA200.7	µg/L	**Not Detected**		10	300	1/18/2016	MW
Iron, Dissolved	EPA200.7	µg/L	**Not Detected**		10	300	1/18/2016	MW
Kjehldahl Nitrogen	SM4500-NH3 B,	mg/L	**Not Detected**		0.5		1/20/2016	LRH
Lithium	EPA200.8	µg/L	**7**		1		1/14/2016	SM
Magnesium	EPA200.7	mg/L	**15**		0.5		1/18/2016	MW
Manganese, Dissolved	EPA200.7	µg/L	**Not Detected**		10	50	1/18/2016	MW
Manganese, Total	EPA200.7	µg/L	**Not Detected**		10	50	1/18/2016	MW
Mercury, Total	EPA200.8	µg/L	**1**		0.5	2	1/14/2016	SM
Methane	EPA174/175	µg/L	**0.59**	E	0.1		1/14/2016	MCCAM
Molybdenum, Total	EPA200.8	µg/L	**3**		1	1000	1/14/2016	SM
Nickel, Total	EPA200.8	µg/L	**Not Detected**		10	100	1/14/2016	SM
Nitrate as NO3	EPA300.0	mg/L	**1**		1	45	1/12/2016	HM
Nitrate as NO3-N	EPA300.0	mg/L	**0.2**		0.1	10	1/12/2016	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	**0.5**		0.1		1/12/2016	HM
Nitrite as NO2-N	EPA300.0	mg/L	**0.3**		0.1	1.0	1/12/2016	HM
o-Phosphate-P	EPA300.0	mg/L	**0.3**		0.1		1/12/2016	HM

mg/L: Milligrams per liter ug/L : Micrograms per liter PQL : Practical Quantitation Limit MCL: Maximum Contamination Level
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See Report attachments. T = Temperature Exceedance

Lab Number: **AB40665**

Collection Date/Time: 1/11/2016 13:30 Sample Collector: LINDBERG T Client Sample #:

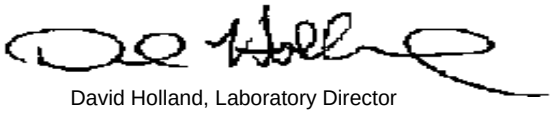
Submittal Date/Time: 1/11/2016 14:45 Sample ID Coliform Designation:

Sample Description: ASR-1 INJECTATE

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
pH (Laboratory)	SM4500-H+B	pH (H)	**7.6**		0.1		1/11/2016	LRH
Phosphorus, Total	HACH 8190	mg/L	**0.47**		0.03		1/12/2016	LRH
Potassium	EPA200.7	mg/L	**3.2**		0.5		1/18/2016	MW
QC Anion Sum x 100	Calculation	%	**98%**				1/15/2016	LRH
QC Anion-Cation Balance	Calculation	%	**0**				1/19/2016	MW
QC Cation Sum x 100	Calculation	%	**98%**				1/19/2016	MW
QC Ratio TDS/SEC	Calculation		**0.63**				1/15/2016	HM
Selenium, Total	EPA200.8	µg/L	**4**		2	50	1/14/2016	SM
Silica as SiO2, Total	EPA200.7	mg/L	**23**		0.5		1/18/2016	MW
Sodium	EPA200.7	mg/L	**52**		0.5		1/18/2016	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	**603**		1	900	1/14/2016	HM
Strontium, Total	EPA200.8	µg/L	**263**		5		1/14/2016	SM
Sulfate	EPA300.0	mg/L	**91**		1	250	1/12/2016	HM
TOC	SM5310C	mg/L	**1.4**		0.2		1/15/2016	MW
Total Diss. Solids	SM2540C	mg/L	**380**		10	500	1/13/2016	MP
Total Nitrogen	Calculation	mg/L	**0.5**		0.5		1/20/2016	LRH
Total Radium 226	EPA903.0	pCi/L	**0.036 ± 0.159**	E		3	1/27/2016	FGL
Trihalomethanes	EPA524.2	µg/L	**26**	E		80	1/15/2016	BSK
Uranium by ICP/MS	EPA200.8	µg/L	**1**		1	30	1/14/2016	SM
Vanadium, Total	EPA200.8	µg/L	**Not Detected**		5	1000	1/14/2016	SM
Zinc, Total	EPA200.8	µg/L	**318**		20	5000	1/14/2016	SM

Sample Comments:

Report Approved by:



David Holland, Laboratory Director

mg/L: Milligrams per liter ug/L : Micrograms per liter PQL : Practical Quantitation Limit MCL: Maximum Contamination Level

H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See Report attachments. T = Temperature Exceedance

BSK Associates Fresno
1414 Stanislaus St
Fresno, CA93706
559-497-2888 (Main)
559-485-6935 (FAX)

A6A1050
1/21/2016
Invoice: A601339

David Holland
Monterey Bay Analytical
4 Justin Court Suite D
Monterey, CA 93940

RE: Report for A6A1050 MPWMD

Dear David Holland,

Thank you for using BSK Associates for your analytical testing needs. In the following pages, you will find the test results for the samples submitted to our laboratory on 1/13/2016. The results have been approved for release by our Laboratory Director as indicated by the authorizing signature below.

The samples were analyzed for the test(s) indicated on the Chain of Custody (see attached) and the results relate only to the samples analyzed. BSK certifies that the testing was performed in accordance with the quality system requirements specified in the 2009 TNI Standard. Any deviations from this standard or from the method requirements for each test procedure performed will be annotated alongside the analytical result or noted in the Case Narrative. Unless otherwise noted, the sample results are reported on an "as received" basis.

If additional clarification of any information is required, please contact your Project Manager, John Montierth , at (800) 877-8310 or (559) 497-2888 x201.

Thanks again for using BSK Associates. We value your business and appreciate your loyalty.

Sincerely,

John Montierth, Project Manager

Accredited in Accordance with NELAP
ORELAP #4021

Case Narrative

Project and Report Details		Invoice Details	
Client:	Monterey Bay Analytical	**Invoice To:**	Monterey Bay Analytical
Report To:	David Holland	**Invoice Attn:**	David Holland
Project #:	MPWMD	**Project PO#:**	-
Received:	1/13/2016 - 12:00		
Report Due:	1/27/2016		

Sample Receipt Conditions

Cooler: Default Cooler
Temperature on Receipt ºC: 4.8

Containers Intact
COC/Labels Agree
Received On Wet Ice
Received On Blue Ice
Packing Material - Bubble Wrap
Sample(s) were received in temperature range.
Initial receipt at BSK-FAL

Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

None applied

Report Distribution

Recipient(s)	Report Format	CC:
David Holland	FINAL.RPT	
Mason Weidner	FINAL.RPT	

Certificate of Analysis

Sample ID: A6A1050-01
Sampled By: T Lindberg
Sample Description: ASR-1-Injectate // AB40665

Sample Date - Time: 01/11/16 - 13:30
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Trihalomethanes by GC-MS									
Bromodichloromethane	EPA 524.2	**8.8**	0.50	ug/L	1	A600497	01/14/16	01/15/16	
Bromoform	EPA 524.2	**1.7**	0.50	ug/L	1	A600497	01/14/16	01/15/16	
Chloroform	EPA 524.2	**6.9**	0.50	ug/L	1	A600497	01/14/16	01/15/16	
Dibromochloromethane	EPA 524.2	**8.4**	0.50	ug/L	1	A600497	01/14/16	01/15/16	
Surrogate: Bromofluorobenzene	EPA 524.2	102 %	*Acceptable range: 70-130 %*						
Total Trihalomethanes, EPA 524.2		**26**	0.50	ug/L					
Haloacetic Acids by GC-ECD, GC-MS									
Dibromoacetic Acid (DBAA)	EPA 552.3	**3.1**	1.0	ug/L	1	A600554	01/15/16	01/18/16	
Dichloroacetic Acid (DCAA)	EPA 552.3	**5.2**	1.0	ug/L	1	A600554	01/15/16	01/18/16	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A600554	01/15/16	01/18/16	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A600554	01/15/16	01/18/16	
Trichloroacetic Acid (TCAA)	EPA 552.3	**3.2**	1.0	ug/L	1	A600554	01/15/16	01/18/16	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	104 %	*Acceptable range: 70-130 %*						
Total Haloacetic Acids, EPA 552.3		**12**	2.0	ug/L					

BSK Associates Fresno
Organics Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
EPA 524.2 - Quality Control											
Batch: A600497										Prepared: 1/14/2016	
Prep Method: EPA 524.2										Analyst: ANM	
Blank (A600497-BLK1)											
Bromodichloromethane	ND	0.50	ug/L							01/15/16	
Bromoform	ND	0.50	ug/L							01/15/16	
Chloroform	ND	0.50	ug/L							01/15/16	
Dibromochloromethane	ND	0.50	ug/L							01/15/16	
Surrogate: Bromofluorobenzene	*45*			*50*		*91*	*70-130*			01/15/16	
Blank Spike (A600497-BS1)											
Bromodichloromethane	9.4	0.50	ug/L	10		94	70-130			01/14/16	
Bromoform	9.9	0.50	ug/L	10		99	70-130			01/14/16	
Chloroform	9.4	0.50	ug/L	10		94	70-130			01/14/16	
Dibromochloromethane	9.7	0.50	ug/L	10		97	70-130			01/14/16	
Surrogate: Bromofluorobenzene	*53*			*50*		*107*	*70-130*			01/14/16	
Blank Spike Dup (A600497-BSD1)											
Bromodichloromethane	9.0	0.50	ug/L	10		90	70-130	3	30	01/15/16	
Bromoform	8.2	0.50	ug/L	10		82	70-130	18	30	01/15/16	
Chloroform	8.4	0.50	ug/L	10		84	70-130	12	30	01/15/16	
Dibromochloromethane	9.0	0.50	ug/L	10		90	70-130	7	30	01/15/16	
Surrogate: Bromofluorobenzene	*45*			*50*		*90*	*70-130*			01/15/16	
Matrix Spike (A600497-MS1), Source: A6A0945-01											
Bromodichloromethane	10	0.50	ug/L	10	0.51	96	47-151			01/15/16	
Bromoform	9.5	0.50	ug/L	10	ND	91	29-162			01/15/16	
Chloroform	9.8	0.50	ug/L	10	0.69	92	52-148			01/15/16	
Dibromochloromethane	10	0.50	ug/L	10	ND	97	44-149			01/15/16	
Surrogate: Bromofluorobenzene	*45*			*50*		*90*	*70-130*			01/15/16	
EPA 552.3 - Quality Control											
Batch: A600554										Prepared: 1/15/2016	
Prep Method: EPA 552.3										Analyst: AAR	
Blank (A600554-BLK1)											
Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							01/18/16	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							01/18/16	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							01/18/16	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							01/18/16	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							01/18/16	
Surrogate: 2-Bromobutanoic Acid	*25*			*25*		*102*	*70-130*			01/18/16	
Blank Spike (A600554-BS1)											
Dibromoacetic Acid (DBAA)	10	1.0	ug/L	10		100	70-130			01/18/16	
Dichloroacetic Acid (DCAA)	10	1.0	ug/L	10		102	70-130			01/18/16	
Monobromoacetic Acid (MBAA)	9.9	1.0	ug/L	10		99	70-130			01/18/16	
Monochloroacetic Acid (MCAA)	19	2.0	ug/L	20		96	70-130			01/18/16	
Trichloroacetic Acid (TCAA)	10	1.0	ug/L	10		100	70-130			01/18/16	

BSK Associates Fresno
Organics Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
EPA 552.3 - Quality Control											
Batch: A600554										Prepared: 1/15/2016	
Prep Method: EPA 552.3										Analyst: AAR	
Blank Spike (A600554-BS1)											
Surrogate: 2-Bromobutanoic Acid	*26*			*25*		*103*	*70-130*			01/18/16	
Blank Spike Dup (A600554-BSD1)											
Dibromoacetic Acid (DBAA)	10	1.0	ug/L	10		101	70-130	1	30	01/18/16	
Dichloroacetic Acid (DCAA)	10	1.0	ug/L	10		103	70-130	1	30	01/18/16	
Monobromoacetic Acid (MBAA)	9.7	1.0	ug/L	10		97	70-130	1	30	01/18/16	
Monochloroacetic Acid (MCAA)	19	2.0	ug/L	20		96	70-130	0	30	01/18/16	
Trichloroacetic Acid (TCAA)	10	1.0	ug/L	10		102	70-130	2	30	01/18/16	
Surrogate: 2-Bromobutanoic Acid	*26*			*25*		*103*	*70-130*			01/18/16	
Duplicate (A600554-DUP1), Source: A6A1253-04											
Dibromoacetic Acid (DBAA)	ND	1.0	ug/L		ND				30	01/18/16	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L		ND				30	01/18/16	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L		ND				30	01/18/16	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L		ND				30	01/18/16	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L		ND				30	01/18/16	
Surrogate: 2-Bromobutanoic Acid	*26*			*25*		*102*	*70-130*			01/18/16	
Matrix Spike (A600554-MS1), Source: A6A0945-01											
Dibromoacetic Acid (DBAA)	10	1.0	ug/L	10	ND	103	70-130			01/18/16	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10	ND	104	70-130			01/18/16	
Monobromoacetic Acid (MBAA)	9.8	1.0	ug/L	10	ND	98	70-130			01/18/16	
Monochloroacetic Acid (MCAA)	19	2.0	ug/L	20	ND	96	70-130			01/18/16	
Trichloroacetic Acid (TCAA)	10	1.0	ug/L	10	ND	103	70-130			01/18/16	
Surrogate: 2-Bromobutanoic Acid	*25*			*25*		*102*	*70-130*			01/18/16	

Certificate of Analysis

Notes:

- The Chain of Custody document and Sample Integrity Sheet are part of the analytical report.
- Any remaining sample(s) for testing will be disposed of according to BSK's sample retention policy unless other arrangements are made in advance.
- All positive results for EPA Methods 504.1 and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed.
- Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.
- J-value is equivalent to DNQ (Detected, not quantified) which is a trace value. A trace value is an analyte detected between the MDL and the laboratory reporting limit. This result is of an unknown data quality and is only qualitative (estimated). Baseline noise, calibration curve extrapolation below the lowest calibrator, method blank detections, and integration artifacts can all produce apparent DNQ values, which contribute to the un-reliability of these values.
- (1) - Residual chlorine and pH analysis have a 15 minute holding time for both drinking and waste water samples as defined by the EPA and 40 CFR 136. Waste water and ground water (monitoring well) samples must be field filtered to meet the 15 minute holding time for dissolved metals.
- Summations of analytes (i.e. Total Trihalomethanes) may appear to add individual amounts incorrectly, due to rounding of analyte values occurring before or after the total value is calculated, as well as rounding of the total value.
- RL Multiplier is the factor used to adjust the reporting limit (RL) due to variations in sample preparation procedures and dilutions required for matrix interferences.
- Due to the subjective nature of the Threshold Odor Method, all characterizations of the detected odor are the opinion of the panel of analysts. The characterizations can be found in Standard Methods 2170B Figure 2170:1.
- The MCLs provided in this report (if applicable) represent the primary MCLs for that analyte.

Definitions

mg/L:	Milligrams/Liter (ppm)	MDL:	Method Detection Limit	MDA95:	Min. Detected Activity
mg/Kg:	Milligrams/Kilogram (ppm)	RL:	Reporting Limit: DL x Dilution	MPN:	Most Probable Number
µg/L:	Micrograms/Liter (ppb)	ND:	None Detected at RL	CFU:	Colony Forming Unit
µg/Kg:	Micrograms/Kilogram (ppb)	pCi/L:	Picocuries per Liter	Absent:	Less than 1 CFU/100mLs
%:	Percent Recovered (surrogates)	RL Mult:	RL Multiplier	Present:	1 or more CFU/100mLs
NR:	Non-Reportable	MCL:	Maximum Contaminant Limit		

Please see the individual Subcontract Lab's report for applicable certifications.

BSK is not accredited under the NELAC program for the following parameters: **NA**

Certifications: **Please refer to our website for a copy of our Accredited Fields of Testing under each certification.**

Fresno

State of California - ELAP	1180	State of Hawaii	4021
State of Nevada	CA000792016-1	State of Oregon - NELAC	4021
EPA - UCMR3	CA00079	State of Washington	C997-15

Sacramento

State of California - ELAP	2435

Vancouver

State of Oregon - NELAC	WA100008-007	State of Washington	C824-14a

A6A1050

01132016

Monte6227

Turnaround: Standard

Due Date: 1/27/2016

Monterey Bay Analytical

A6A1050 01/13/2016
Monte6227 10

BSK Associates Engineers & Laboratories

1414 Stanislaus St., Fresno, CA 93706
(559) 497-2888 · Fax (559) 497-2893
www.bskassociates.com

Turnaround Time Request
☒ Standard - 10 business days
☐ Rush (Surcharge may apply)
Date needed:

*Required Fields

Temp: 4.8

Company/Client Name*:	Report Attention*:	Invoice To*:	Phone*:	Fax:
Monterey Bay Analytical Services	Mason Weidner-Holland Additional cc's: David Holland	David Holland PO#:	831-375-6227	831-641-0734

E-mail*: mweidner@mbasinc.com, dholland@mbasinc

Address*:	City*:	State*:	Zip*:
4 Justin Court, Suite D	Monterey	CA	93940

Project: MPWMD

Project #:

How would you like to receive your completed results?* ☒ E-Mail ☐ Fax ☐ Mail

Reporting Options: ☐ Trace (J-Flag) ☐ Swamp ☐ EDD Type: _____

Sampler Name (Printed/Signature)*: T Lindberg

Regulatory Carbon Copies: ☐ SWRCB (Drinking Water) ☐ Merced Co ☐ Fresno Co ☐ Madera Co ☐ Tulare Co ☐ Other: _____

Regulatory Compliance: ☐ EDT to California SWRCB (Drinking Water) System Number*: _____ ☐ Geotracker #: _____

Matrix Types: SW=Surface Water BW=Bottled Water GW=Ground Water WW=Waste Water STW=Storm Water DW=Drinking Water SO=Solid

#	Sample Description*	Sampled* Date	Sampled* Time	Matrix*	Comments / Station Code / WTRAX	HAA5	TTHM
1.	ASR-1-Injectate	1/11/16	1330	GW	AB40665	X	X

Relinquished by: (Signature and Printed Name)	Company	Date	Time	Received by: (Signature and Printed Name)	Company
David Holland	MBAS	1/12/16	1600		
Relinquished by: (Signature and Printed Name)	Company	Date	Time	Received by: (Signature and Printed Name)	Company
Received for Lab by: (Signature and Printed Name) Samantha Zepeda		Date 1/13/16	Time 1200	Payment Received at Delivery: Date:	Check / Cash Amount: PIA#: Init.

Shipping Method: ONTRAC UPS GSO WALK-IN FED EX Courier: _____
Cooling Method: Wet Blue None
Custody Seal: Y / N
Chilling Process Begun: Y / N

Sample Integrity

BSK Bottles: (Yes) No Page 1 of 1

COC Info

Was temperature within range? Chemistry ≤ 6°C Micro < 10°C	(Yes) No NA	Were correct containers and preservatives received for the tests requested?	(Yes) No NA
If samples were taken today, is there evidence that chilling has begun?	Yes No (NA)	Were there bubbles in the VOA vials? (Volatiles Only)	Yes (No) NA
Did all bottles arrive unbroken and intact?	(Yes) No	Was a sufficient amount of sample received?	(Yes) No
Did all bottle labels agree with COC?	(Yes) No	Do samples have a hold time <72 hours?	Yes (No)
Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes No (NA)	Was PM notified of discrepancies? PM: By/Time:	Yes No (NA)

Bottles Received ("—" means preservation/chlorine checks are either N/A or are performed in the lab)

250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)	Checks	Passed?	
Bacti $Na_2S_2O_3$	—	—	
None (P) White Cap	—	—	
Cr6 (P) Br. Green Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **DW**	Cl, pH > 8	Y N	
Cr6 (P) Pink Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **WW**	pH 9.3-9.7	Y N	
Cr6 (P) Black Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **7199** ***24 HOUR HOLD TIME***	pH 9.0-9.5	Y N	
HNO_3 (P) Red Cap	—	—	
H_2SO_4 (P) or (AG) Yellow Cap/Label	pH < 2	Y N	
NaOH (P) Green Cap	Cl, pH >10	Y N	
NaOH + ZnAc (P)	pH > 9	Y N	
Dissolved Oxygen 300ml (g)	—	—	1/13/16
None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270	—	—	830
HCl (AG) Lt. Blue Label O&G, Diesel	—	—	
Na_2O_3S+HCl (AG) Lt. Pink Label 525	—	—	
$Na_2S_2O_3$ 1 Liter (Brown P) 549	—	—	
$Na_2S_2O_3$ (AG) Blue Label 547,515,548,THM,524	—	—	3
$Na_2S_2O_3$ (CG) Blue Label 504, 505	—	—	
$Na_2S_2O_3$ + MCAA (CG) Orange Label 531	pH < 3	Y N	
NH_4Cl (AG) Purple Label 552	—	—	1
EDA (AG) Brown Label DBPs	—	—	
HCL (CG) 524.2,BTEX,Gas, MTBE, 8260/624	—	—	
Buffer pH 4 (CG)	—	—	
None (CG)	—	—	
H_3PO_4 (CG) Salmon Label	—	—	
Other:			
Asbestos 1Liter Plastic w/ Foil	—	—	
Low Level Hg / Metals Double Baggie	—	—	
Bottled Water	—	—	
Clear Glass Jar: 250 / 500 / 1 Liter	—	—	
Soil Tube Brass / Steel / Plastic	—	—	
Tedlar Bag / Plastic Bag	—	—	

Split

	Container	Preservative	Date/Time/Initials		Container	Preservative	Date/Time/Initials
S P				S P			
S P				S P			

Comments

Labeled by: JH @ 16:24 Labels checked by: CW @ 16:39 RUSH Paged by: @

February 1, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1600393
Customer : 2-19144

Laboratory Report

Introduction: This report package contains total of 4 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(1 page)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
ASR-1-Injectate	01/11/2016	01/13/2016	SP 1600393-001	GW

Sampling and Receipt Information: All samples were received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. All samples arrived at room temperature. All samples were prepared and analyzed within the method specified hold time. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Radio QC

900.0	01/21/2016:201206 All analysis quality controls are within established criteria.
	01/20/2016:200656 All preparation quality controls are within established criteria, except: The following note applies to Gross Alpha: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
903.0	01/27/2016:201240 All analysis quality controls are within established criteria.
	01/24/2016:200830 All preparation quality controls are within established criteria.

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853 Corporation Street
Santa Paula, CA 93060
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CA ELAP Certification No. 2810

February 1, 2016 Lab ID : SP 1600393
Monterey Bay Analytical Services Customer : 2-19144

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-02-01

February 1, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : ASR-1-Injectate
Project : MPWMD

Lab ID : SP 1600393-001
Customer ID : 2-19144

Sampled On : January 11, 2016-13:30
Sampled By : T Lindberg
Received On : January 13, 2016-11:30
Matrix : Ground Water

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Radio Chemistry[P:1]								
Gross Alpha	1.72 ± 1.65	1.81	pCi/L		900.0	01/20/16-07:30 2P1600656	900.0	01/21/16-11:00 2A1601206
Total Alpha Radium (226)	0.036 ± 0.159	0.470	pCi/L		903.0	01/24/16-12:00 2P1600830	903.0	01/27/16-09:40 2A1601240

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: N/A * PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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CA ELAP Certification No. 2810

February 1, 2016 Lab ID : SP 1600393
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	01/21/16:201206caa	CCV	cpm	8757	41.5 %	38 - 46	
			CCB	cpm		0.100	0.18	
Gross Alpha	900.0	01/20/16:200656elc	Blank	pCi/L		0.17	3	
			LCS	pCi/L	107.4	118 %	75-125	
			MS	pCi/L	107.4	154 %	60-140	435
		(SP 1600393-001)	MSD	pCi/L	107.4	152 %	60-140	435
			MSRPD	pCi/L	107.4	1.3%	≤30	
Alpha	903.0	01/27/16:201240caa	CCV	cpm	8753	41.4 %	38 - 46	
			CCB	cpm		0.100	0.19	
Total Alpha Radium (226)	903.0	01/24/16:200830caa	RgBlk	pCi/L		0.01	2	
			LCS	pCi/L	21.59	102 %	52-107	
			BS	pCi/L	21.59	94.7 %	43-111	
			BSD	pCi/L	21.59	93.3 %	43-111	
			BSRPD	pCi/L	21.59	1.5%	≤35.5	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
BS	: Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
BSD	: Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
BSRPD	: BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

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ENVIRONMENTAL **www.FGLinc.com**

Analytical Chemists

CHAIN OF CUSTODY

AND ANALYSIS REQUEST FOR LABORATORY

Client: Monterey Bay Analytical Services Inc.
Address: 4 Justin Court Ste D
Monterey, CA 93940

Phone: 831-375-6227 Fax 831-641-0734
Contact Person: David Holland
Project Name: MPWMD
Purchase Order Number:
Quote Number:

Sampler(s): T Lindberg

Sampling Fee: _____ Pickup Fee: _____
Compositor Setup Date: 1/11/___ Time: 1600

Lab Number: 1600893

TEST DESCRIPTION - See Reverse side for Container, Preservative and Sampling information

Samp Num	Location Description	Date Sampled	Time Sampled	Type: Composite(C) Grab(G)	Number of Containers	Containers: (G)Glass (P)Plastic(V)VOA (MT)Metal Tube	(P)Potable (NP)Non-Potable	(SW)SurfaceWater (MW)MonitoringWell (GW)GroundWater (TB)TravelBank (WW)WasteWater (DW)Drinking Water	(S)Soil(SLG)Sludge (SLD)Solid (O)Oil	BacT: (Sys) System (Src)Source (W) Waste	BacT: Routine(ROUT) Repeat(RPT) Other(OTH) Replace(RPL)	(LT)Leaf Tissue (PET)Petiole Tissue (PRD)Produce	Preservative: (1)NaOH+ZnAc (2)NaOH,(3)HCL,(4)H2SO4(5)HNO3, (6)Na2S2O3,(7)Other_____	Gross Alpha	Radium 226					
	ASR-1-Injectate	1/11/16	1330	G	1	G	P	GW						X	X					

Remarks: AB40665

Relinquished	Date:	Time:	Relinquished	Date:	Time:	Relinquished	Date:	Time:
David Holland	1/12/16	1600	FED EX 530554257					
Received By:	Date	Time:	Received By:	Date:	Time:	Received By:	Date:	Time:
				1/13	1130			

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CA ELAP Certification No. 1562

FIELD OFFICE
Visalia, California
Tel: (559)734-9473
Mobile: (559)737-2399
FAX: (559)734-8435

Condition Upon Receipt (Attach to COC)

Sample Receipt at SP:

1. Number of ice chests/packages received: **1**
2. Shipper tracking numbers _____
3. Were samples received in a chilled condition?
   Temps: **RRT** / _____ / _____ / _____ / _____ / _____ / _____
4. Surface water (SWTR) bact samples: A sample that has a temperature upon reciept of >10C, whether iced or not, should be flagged unless the time since sample collection has been less than two hours.
5. Do the number of bottles received agree with the COC? **Yes** No N/A
6. Verify sample date, time, sampler **Yes** No N/A
7. Were the samples received intact? (i.e. no broken bottles, leaks, etc.) **Yes** No
8. Were sample custody seals intact? Yes No **N/A**

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? **Yes** No
2. Did bottle labels correspond with the client's ID's? **Yes** No
3. Were all bottles requiring sample preservation properly preserved? Yes No **N/A** **FGL**
   [Exception: Oil & Grease, VOA and CrVI verified in lab]
4. VOAs checked for Headspace? Yes No **N/A**
5. Were all analyses within holding times at time of reciept? **Yes** No
6. Have rush or project due dates been checked and accepted? Yes No **N/A**

Include a copy of the COC for lab delivery. (Bacti. Inorganics and Radio)

Sample Receipt, Login and Verification completed by:

Reviewed and Approved By **Nicole Parson** Digitally signed by Nicole Parson
Title: Sample Receiving
Date: 01/13/2016-11:50:51

Discrepency Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

2. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

(2019144)
Monterey Bay Analytical Services
SP 1600393
NMP-01/13/2016-11:50:51

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1601448

Report Created for: Monterey Bay Analytical

4 Justin Court, Suite D
Monterey, CA 93940

Project Contact: David Holland
Project P.O.:
Project Name: MPWMD

Project Received: 01/13/2016

Analytical Report reviewed & approved for release on 01/20/2016 by:

Angela Rydelius,
Laboratory Manager

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1601448

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Analytical Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1601448
Date Received:	1/13/16 20:03	**Extraction Method:**	RSK175
Date Prepared:	1/14/16	**Analytical Method:**	RSK175
Project:	MPWMD	**Unit:**	µg/L

Light Gases

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR-1-Injectate	**1601448-001A**	**Water**	**01/11/2016 13:30**	**GC26**	**115384**

Analytes	Result	RL	DF	Date Analyzed
Methane	**0.59**	0.10	1	01/14/2016 12:58

Analyst(s): AK

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Quality Control Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1601448
Date Prepared:	1/14/16	**BatchID:**	115384
Date Analyzed:	1/14/16	**Extraction Method:**	RSK175
Instrument:	GC26	**Analytical Method:**	RSK175
Matrix:	Air	**Unit:**	µL/L
Project:	MPWMD	**Sample ID:**	MB/LCS-115384

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	9.00	0.50	10	-	90	70-130

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1601448 **ClientCode: MBAS**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
David Holland
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940
831-375-6227 FAX: 831-641-0734

Email: mweidner@mbasinc.com; Dholland@mbas
cc/3rd Party:
PO:
ProjectNo: MPWMD

Bill to:
Accounts Payable
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940

Requested TAT: **5 days;**

Date Received: **01/13/2016**
Date Logged: **01/13/2016**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1601448-001	ASR-1-Injectate	Water	1/11/2016 13:30	☐	A											

Test Legend:

1	RSK175_W	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Briana Cutino

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL
QC Level: LEVEL 2
Work Order: 1601448
Project: MPWMD
Client Contact: David Holland
Date Logged: 1/13/2016
Comments:
Contact's Email: mweidner@mbasinc.com; Dholland@mbasinc.com; 4mbas@sbcglobal.net

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1601448-001A	ASR-1-Injectate	Water	RSK175 <Methane_4>	3	VOA w/ HCl	☐	1/11/2016 13:30	5 days	None	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

160127448

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

☐ GeoTracker EDF ☐ PDF ☐ Excel ☐ Write On (DW)

Report To: David Holland Bill To:

Company: Monterey Bay Analytical Services

4 Justin Ct. Suite D

Monterey, Ca 93940 E-Mail: mweidner@mbasinc.com

Tele: (831) 375 - 6227 Fax: (831) 641-0734

Project #: Project Name:

Project Location: MPWMD

Sampler Signature: T Lindberg

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	Analysis Request: MTBE / BTEX & TPH as Gas (602 / 8021 + 8015)	MTBE / BTEX ONLY (EPA 602 / 8021)	TPH as Diesel / Motor Oil (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)	Other: Methane	Other	Other	Comments
	ASR-1-Injectate	1/11/16	1330	3	G	X					X	X																		X			AB40665

Relinquished By: David Holland — Date: 1/11/16 — Time: 1600 — Received By:

Relinquished By: — Date: — Time: — Received By:

Relinquished By: — Date: — Time: — Received By:

ICE/t°_____ COMMENTS:
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

VOAS O&G METALS OTHER
PRESERVATION_____ pH<2_____

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Sample Receipt Checklist

Client Name:	**Monterey Bay Analytical**	Date and Time Received:	**1/13/2016 10:00**
Project Name:	**MPWMD**	Date Logged:	**1/13/2016**
WorkOrder №:	**1601448** Matrix: Water	Received by:	Briana Cutino
Carrier:	Golden State Overnight	Logged by:	Briana Cutino

Chain of Custody (COC) Information

Chain of custody present?	Yes	☑	No	☐	
Chain of custody signed when relinquished and received?	Yes	☑	No	☐	
Chain of custody agrees with sample labels?	Yes	☑	No	☐	
Sample IDs noted by Client on COC?	Yes	☑	No	☐	
Date and Time of collection noted by Client on COC?	Yes	☑	No	☐	
Sampler's name noted on COC?	Yes	☑	No	☐	

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	NA ☑
Shipping container/cooler in good condition?	Yes	☑	No	☐	
Samples in proper containers/bottles?	Yes	☑	No	☐	
Sample containers intact?	Yes	☑	No	☐	
Sufficient sample volume for indicated test?	Yes	☑	No	☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	
Sample/Temp Blank temperature	Temp: 1.2°C				NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes	☑	No	☐	NA ☐
Sample labels checked for correct preservation?	Yes	☑	No	☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA ☑
Samples Received on Ice?	Yes	☑	No	☐	
	(Ice Type: WET ICE)				

UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes	☐	No	☐	NA ☑
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes	☐	No	☐	NA ☑

** NOTE: If the "No" box is checked, see comments below.*

Comments:

Shipment Tracking Results

Shipment Details

Ship To Name:	MCCAMPBELL ANALYTICAL INC.		
Ship To Location:	PITTSBURG, CALIFORNIA		
Delivery Status:	DELIVERED	Tracking Number:	530554312
Ship Date:	1/12/2016	Reference:	
Delivery Date:	1/13/2016	Service:	PDS
Delivery Time:	12:55 PM	Signed For By:	Maria View Signature

Transit Notes

Date/Time	Note
01/12/16 09:08 PM	ARRIVAL SCAN - DELIVERY SCHED FOR 01/13/2016
01/13/16 07:44 AM	ON ROUTE FOR DELIVERY
01/13/16 12:55 PM	SHIPMENT DELIVERED

BACK

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS
www.MBASinc.com
ELAP Certification Number: 2385

Wednesday, March 16, 2016

Lab Number: AB41671

Collection Date/Time: 1/12/2016 11:00 Sample Collector: LEAR J Client Sample #:

Submittal Date/Time: 1/29/2016 11:30 Sample ID Coliform Designation:

Sample Description: SM MW-1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**175**		10		2/3/2016	LRH
Aluminum, Total	EPA200.8	µg/L	**Not Detected**		10	1000	2/17/2016	SM
Ammonia-N	SM4500NH3 D	mg/L	**Not Detected**		0.05		2/11/2016	MW
Arsenic, Total	EPA200.8	µg/L	**2**		1	10	2/17/2016	SM
Barium, Total	EPA200.8	µg/L	**37**		10	1000	2/17/2016	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	**214**		10		2/3/2016	LRH
Boron	EPA200.7	mg/L	**0.06**		0.05		2/3/2016	MW
Bromide	EPA300.0	mg/L	**0.2**		0.1		1/29/2016	HM
Calcium	EPA200.7	mg/L	**61**		0.5		2/3/2016	MW
Carbonate as CaCO3	SM2320B	mg/L	**Not Detected**		10		2/3/2016	LRH
Chloramines	SM4500-Cl G	mg/L	**Not Detected**	H	0.05		1/29/2016	LJ
Chloride	EPA300.0	mg/L	**63**		1	250	1/29/2016	HM
Dissolved Organic Carbon	SM5310-C	mg/L	**0.67**	E			2/5/2016	BSK
DOC	SM5310C	mg/L	**1.0**		0.2		2/15/2016	MW
Fluoride	EPA300.0	mg/L	**0.2**		0.1	2.0	1/29/2016	HM
Gross Alpha	EPA900.0	pCi/L	**2.53 ± 1.27**	E		15	2/16/2016	FGL
Haloacetic Acids	EPA552	µg/L	**Not Detected**	E		60	2/8/2016	BSK
Iron	EPA200.7	µg/L	**Not Detected**		10	300	2/3/2016	MW
Iron, Dissolved	EPA200.7	µg/L	**Not Detected**		10	300	2/3/2016	MW
Kjehldahl Nitrogen	SM4500-NH3 B,	mg/L	**Not Detected**		0.5		2/10/2016	LRH
Lithium	EPA200.8	µg/L	**19**		1		2/17/2016	SM
Magnesium	EPA200.7	mg/L	**14**		0.5		2/3/2016	MW
Manganese, Dissolved	EPA200.7	µg/L	**Not Detected**		10	50	2/3/2016	MW
Manganese, Total	EPA200.7	µg/L	**Not Detected**		10	50	2/3/2016	MW
Mercury, Total	EPA200.8	µg/L	**Not Detected**		0.5	2	2/17/2016	SM
Methane	EPA174/175	µg/L	**1.0**	E H	0.1		2/9/2016	MCCAM
Molybdenum, Total	EPA200.8	µg/L	**6**		1	1000	2/17/2016	SM
Nickel, Total	EPA200.8	µg/L	**Not Detected**		10	100	2/17/2016	SM
Nitrate as NO3	EPA300.0	mg/L	**1**		1	45	1/29/2016	HM
Nitrate as NO3-N	EPA300.0	mg/L	**0.2**		0.1	10	1/29/2016	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	**0.5**		0.1		1/29/2016	HM
Nitrite as NO2-N	EPA300.0	mg/L	**0.3**		0.1	1.0	1/29/2016	HM

mg/L: Milligrams per liter ug/L : Micrograms per liter PQL : Practical Quantitation Limit MCL: Maximum Contamination Level

H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See Report attachments. T = Temperature Exceedance

Lab Number: **AB41671**

Collection Date/Time: 1/12/2016 11:00 Sample Collector: LEAR J Client Sample #:

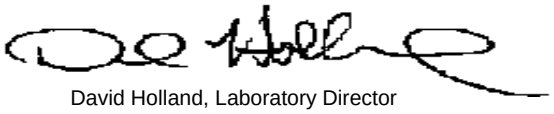
Submittal Date/Time: 1/29/2016 11:30 Sample ID Coliform Designation:

Sample Description: SM MW-1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P	EPA300.0	mg/L	**Not Detected**		0.1		1/29/2016	HM
pH (Laboratory)	SM4500-H+B	pH (H)	**7.5**		0.1		1/29/2016	LRH
Phosphorus, Total	HACH 8190	mg/L	**0.05**	HP	0.03		2/3/2016	LRH
Potassium	EPA200.7	mg/L	**3.5**		0.5		2/3/2016	MW
QC Anion Sum x 100	Calculation	%	**98%**				2/3/2016	LRH
QC Anion-Cation Balance	Calculation	%	**-2**				2/3/2016	MW
QC Cation Sum x 100	Calculation	%	**95%**				2/3/2016	MW
QC Ratio TDS/SEC	Calculation		**0.62**				2/3/2016	HM
Selenium, Total	EPA200.8	µg/L	**2**		2	50	2/17/2016	SM
Silica as SiO2, Total	EPA200.7	mg/L	**29**		0.5		2/3/2016	MW
Sodium	EPA200.7	mg/L	**57**		0.5		2/3/2016	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	**715**		1	900	2/2/2016	LJ
Strontium, Total	EPA200.8	µg/L	**226**		5		2/17/2016	SM
Sulfate	EPA300.0	mg/L	**83**		1	250	1/29/2016	HM
TOC	SM5310C	mg/L	**0.9**		0.2		2/15/2016	MW
Total Diss. Solids	SM2540C	mg/L	**446**		10	500	2/1/2016	MP
Total Nitrogen	Calculation	mg/L	**0.5**		0.5		2/10/2016	HM
Total Organic Carbon	SM5310C	mg/L	**0.67**	E	0.20		2/4/2016	BSK
Total Radium 226	EPA903.0	pCi/L	**0.000 ± 0.393**	E		3	2/11/2016	FGL
Trihalomethanes	EPA524.2	µg/L	**59**	E		80	2/3/2016	BSK
Uranium by ICP/MS	EPA200.8	µg/L	**2**		1	30	2/17/2016	SM
Vanadium, Total	EPA200.8	µg/L	**Not Detected**		5	1000	2/17/2016	SM
Zinc, Total	EPA200.8	µg/L	**23**		20	5000	2/17/2016	SM

Sample Comments: HP: Out of Hold time due preservative. Sample was preserved more than 48 hours a

Report Approved by:



David Holland, Laboratory Director

mg/L: Milligrams per liter ug/L : Micrograms per liter PQL : Practical Quantitation Limit MCL: Maximum Contamination Level

H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See Report attachments. T = Temperature Exceedance

BSK Associates Fresno
1414 Stanislaus St
Fresno, CA93706
559-497-2888 (Main)
559-485-6935 (FAX)

A6B0113
2/09/2016
Invoice: A602600

David Holland
Monterey Bay Analytical
4 Justin Court Suite D
Monterey, CA 93940

RE: Report for A6B0113 MPWMD

Dear David Holland,

Thank you for using BSK Associates for your analytical testing needs. In the following pages, you will find the test results for the samples submitted to our laboratory on 2/2/2016. The results have been approved for release by our Laboratory Director as indicated by the authorizing signature below.

The samples were analyzed for the test(s) indicated on the Chain of Custody (see attached) and the results relate only to the samples analyzed. BSK certifies that the testing was performed in accordance with the quality system requirements specified in the 2009 TNI Standard. Any deviations from this standard or from the method requirements for each test procedure performed will be annotated alongside the analytical result or noted in the Case Narrative. Unless otherwise noted, the sample results are reported on an "as received" basis.

If additional clarification of any information is required, please contact your Project Manager, John Montierth , at (800) 877-8310 or (559) 497-2888 x201.

Thanks again for using BSK Associates. We value your business and appreciate your loyalty.

Sincerely,

John Montierth, Project Manager

Accredited in Accordance with NELAP
ORELAP #4021

Case Narrative

Project and Report Details		Invoice Details	
Client:	Monterey Bay Analytical	**Invoice To:**	Monterey Bay Analytical
Report To:	David Holland	**Invoice Attn:**	David Holland
Project #:	-	**Project PO#:**	-
Received:	2/02/2016 - 11:13		
Report Due:	2/17/2016		

Sample Receipt Conditions

Cooler: Default Cooler
Temperature on Receipt ºC: 4.4

Containers Intact
COC/Labels Agree
Received On Wet Ice
Received On Blue Ice
Packing Material - Bubble Wrap
Sample(s) were received in temperature range.
Initial receipt at BSK-FAL

Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

B2.0	Analyte present in the method blank above the method detection limit (MDL). Laboratory does not determine batch acceptance on detections below the reporting limit (RL).
HT1.0	Holding time exceeded. Sample was received at the lab past holding time.

Report Distribution

Recipient(s)	Report Format	CC:
David Holland	FINAL.RPT	
Mason Weidner	FINAL.RPT	

Certificate of Analysis

Sample ID: A6B0113-01
Sampled By: Joe Oliver
Sample Description: SM MW-1 // AB41671

Sample Date - Time: 01/12/16 - 11:00
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno

General Chemistry

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Dissolved Organic Carbon	SM 5310C	**0.67**	0.20	mg/L	1	A601308	02/05/16	02/05/16	
Total Organic Carbon	SM 5310C	**0.67**	0.20	mg/L	1	A601307	02/04/16	02/04/16	

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Trihalomethanes by GC-MS								**Analysis Qualifier(s):**	**HT1.0**
Bromodichloromethane	EPA 524.2	**15**	0.50	ug/L	1	A601227	02/02/16	02/03/16	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A601227	02/02/16	02/03/16	
Chloroform	EPA 524.2	**41**	0.50	ug/L	1	A601227	02/02/16	02/03/16	
Dibromochloromethane	EPA 524.2	**2.8**	0.50	ug/L	1	A601227	02/02/16	02/03/16	
Surrogate: Bromofluorobenzene	EPA 524.2	105 %	*Acceptable range: 70-130 %*						
Total Trihalomethanes, EPA 524.2		**59**	0.50	ug/L					
Haloacetic Acids by GC-ECD, GC-MS								**Analysis Qualifier(s):**	**HT1.0**
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A601391	02/06/16	02/08/16	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A601391	02/06/16	02/08/16	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A601391	02/06/16	02/08/16	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A601391	02/06/16	02/08/16	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A601391	02/06/16	02/08/16	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	102 %	*Acceptable range: 70-130 %*						
Total Haloacetic Acids, EPA 552.3		ND	2.0	ug/L					

BSK Associates Fresno
General Chemistry Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
SM 5310C - Quality Control											
Batch: A601307										Prepared: 2/4/2016	
Prep Method: Method Specific Preparation										Analyst: CEG	
Blank (A601307-BLK1)											
Total Organic Carbon	ND	0.20	mg/L							02/04/16	
Blank Spike (A601307-BS1)											
Total Organic Carbon	10	0.20	mg/L	10		102	80-120			02/04/16	
Blank Spike Dup (A601307-BSD1)											
Total Organic Carbon	10	0.20	mg/L	10		103	80-120	1	20	02/04/16	
Matrix Spike (A601307-MS1), Source: A6B0216-02											
Total Organic Carbon	12	0.20	mg/L	10	1.4	102	80-120			02/04/16	
Matrix Spike (A601307-MS2), Source: A6B0360-04											
Total Organic Carbon	12	0.20	mg/L	10	1.4	101	80-120			02/05/16	
Matrix Spike Dup (A601307-MSD1), Source: A6B0216-02											
Total Organic Carbon	12	0.20	mg/L	10	1.4	102	80-120	0	20	02/04/16	
Matrix Spike Dup (A601307-MSD2), Source: A6B0360-04											
Total Organic Carbon	12	0.20	mg/L	10	1.4	102	80-120	1	20	02/05/16	
SM 5310C - Quality Control											
Batch: A601308										Prepared: 2/5/2016	
Prep Method: Method Specific Preparation										Analyst: CEG	
Blank (A601308-BLK1)											
Dissolved Organic Carbon	ND	0.20	mg/L							02/05/16	B2.0
Blank Spike (A601308-BS1)											
Dissolved Organic Carbon	10	0.20	mg/L	10		103	80-120			02/05/16	
Blank Spike Dup (A601308-BSD1)											
Dissolved Organic Carbon	10	0.20	mg/L	10		101	80-120	2	20	02/05/16	
Matrix Spike (A601308-MS1), Source: A6B0113-01											
Dissolved Organic Carbon	11	0.20	mg/L	10	0.67	100	80-120			02/05/16	
Matrix Spike Dup (A601308-MSD1), Source: A6B0113-01											
Dissolved Organic Carbon	11	0.20	mg/L	10	0.67	100	80-120	0	20	02/05/16	

BSK Associates Fresno
Organics Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
EPA 524.2 - Quality Control											
Batch: A601227										Prepared: 2/3/2016	
Prep Method: EPA 524.2										Analyst: ANM	
Blank (A601227-BLK1)											
Bromodichloromethane	ND	0.50	ug/L							02/03/16	
Bromoform	ND	0.50	ug/L							02/03/16	
Chloroform	ND	0.50	ug/L							02/03/16	
Dibromochloromethane	ND	0.50	ug/L							02/03/16	
Surrogate: Bromofluorobenzene	*50*			*50*		*100*	*70-130*			02/03/16	
Blank Spike (A601227-BS1)											
Bromodichloromethane	12	0.50	ug/L	10		117	70-130			02/03/16	
Bromoform	11	0.50	ug/L	10		110	70-130			02/03/16	
Chloroform	12	0.50	ug/L	10		117	70-130			02/03/16	
Dibromochloromethane	11	0.50	ug/L	10		115	70-130			02/03/16	
Surrogate: Bromofluorobenzene	*55*			*50*		*110*	*70-130*			02/03/16	
Blank Spike Dup (A601227-BSD1)											
Bromodichloromethane	11	0.50	ug/L	10		107	70-130	9	30	02/03/16	
Bromoform	10	0.50	ug/L	10		103	70-130	7	30	02/03/16	
Chloroform	11	0.50	ug/L	10		107	70-130	9	30	02/03/16	
Dibromochloromethane	11	0.50	ug/L	10		105	70-130	9	30	02/03/16	
Surrogate: Bromofluorobenzene	*51*			*50*		*102*	*70-130*			02/03/16	
Matrix Spike (A601227-MS1), Source: A6B0082-01											
Bromodichloromethane	10	0.50	ug/L	10		101	47-151			02/03/16	
Bromoform	9.1	0.50	ug/L	10		91	29-162			02/03/16	
Chloroform	11	0.50	ug/L	10		106	52-148			02/03/16	
Dibromochloromethane	9.6	0.50	ug/L	10		96	44-149			02/03/16	
Surrogate: Bromofluorobenzene	*50*			*50*		*101*	*70-130*			02/03/16	
EPA 552.3 - Quality Control											
Batch: A601391										Prepared: 2/6/2016	
Prep Method: EPA 552.3										Analyst: AAR	
Blank (A601391-BLK1)											
Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							02/08/16	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							02/08/16	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							02/08/16	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							02/08/16	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							02/08/16	
Surrogate: 2-Bromobutanoic Acid	*25*			*25*		*99*	*70-130*			02/08/16	
Blank Spike (A601391-BS1)											
Dibromoacetic Acid (DBAA)	9.7	1.0	ug/L	10		97	70-130			02/08/16	
Dichloroacetic Acid (DCAA)	10	1.0	ug/L	10		101	70-130			02/08/16	
Monobromoacetic Acid (MBAA)	10	1.0	ug/L	10		101	70-130			02/08/16	
Monochloroacetic Acid (MCAA)	20	2.0	ug/L	20		102	70-130			02/08/16	
Trichloroacetic Acid (TCAA)	10	1.0	ug/L	10		100	70-130			02/08/16	

BSK Associates Fresno
Organics Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
EPA 552.3 - Quality Control											
Batch: A601391										Prepared: 2/6/2016	
Prep Method: EPA 552.3										Analyst: AAR	
Blank Spike (A601391-BS1)											
Surrogate: 2-Bromobutanoic Acid	*25*			*25*		*102*	*70-130*			02/08/16	
Blank Spike Dup (A601391-BSD1)											
Dibromoacetic Acid (DBAA)	9.8	1.0	ug/L	10		98	70-130	1	30	02/08/16	
Dichloroacetic Acid (DCAA)	10	1.0	ug/L	10		101	70-130	1	30	02/08/16	
Monobromoacetic Acid (MBAA)	10	1.0	ug/L	10		101	70-130	1	30	02/08/16	
Monochloroacetic Acid (MCAA)	20	2.0	ug/L	20		102	70-130	0	30	02/08/16	
Trichloroacetic Acid (TCAA)	10	1.0	ug/L	10		100	70-130	0	30	02/08/16	
Surrogate: 2-Bromobutanoic Acid	*25*			*25*		*101*	*70-130*			02/08/16	
Duplicate (A601391-DUP1), Source: A6B0461-01											
Dibromoacetic Acid (DBAA)	ND	1.0	ug/L		ND				30	02/08/16	
Dichloroacetic Acid (DCAA)	12	1.0	ug/L		12			0	30	02/08/16	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L		ND				30	02/08/16	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L		ND				30	02/08/16	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L		11			0	30	02/08/16	
Surrogate: 2-Bromobutanoic Acid	*26*			*25*		*102*	*70-130*			02/08/16	
Matrix Spike (A601391-MS1), Source: A6A2238-01											
Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10	1.9	101	70-130			02/08/16	
Dichloroacetic Acid (DCAA)	45	1.0	ug/L	10	35	95	70-130			02/08/16	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10	ND	100	70-130			02/08/16	
Monochloroacetic Acid (MCAA)	23	2.0	ug/L	20	2.8	102	70-130			02/08/16	
Trichloroacetic Acid (TCAA)	46	1.0	ug/L	10	36	99	70-130			02/08/16	
Surrogate: 2-Bromobutanoic Acid	*26*			*25*		*102*	*70-130*			02/08/16	

Certificate of Analysis

Notes:

- The Chain of Custody document and Sample Integrity Sheet are part of the analytical report.
- Any remaining sample(s) for testing will be disposed of according to BSK's sample retention policy unless other arrangements are made in advance.
- All positive results for EPA Methods 504.1 and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed.
- Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.
- J-value is equivalent to DNQ (Detected, not quantified) which is a trace value. A trace value is an analyte detected between the MDL and the laboratory reporting limit. This result is of an unknown data quality and is only qualitative (estimated). Baseline noise, calibration curve extrapolation below the lowest calibrator, method blank detections, and integration artifacts can all produce apparent DNQ values, which contribute to the un-reliability of these values.
- (1) - Residual chlorine and pH analysis have a 15 minute holding time for both drinking and waste water samples as defined by the EPA and 40 CFR 136. Waste water and ground water (monitoring well) samples must be field filtered to meet the 15 minute holding time for dissolved metals.
- Summations of analytes (i.e. Total Trihalomethanes) may appear to add individual amounts incorrectly, due to rounding of analyte values occurring before or after the total value is calculated, as well as rounding of the total value.
- RL Multiplier is the factor used to adjust the reporting limit (RL) due to variations in sample preparation procedures and dilutions required for matrix interferences.
- Due to the subjective nature of the Threshold Odor Method, all characterizations of the detected odor are the opinion of the panel of analysts. The characterizations can be found in Standard Methods 2170B Figure 2170:1.
- The MCLs provided in this report (if applicable) represent the primary MCLs for that analyte.

Definitions

mg/L:	Milligrams/Liter (ppm)	MDL:	Method Detection Limit	MDA95:	Min. Detected Activity
mg/Kg:	Milligrams/Kilogram (ppm)	RL:	Reporting Limit: DL x Dilution	MPN:	Most Probable Number
µg/L:	Micrograms/Liter (ppb)	ND:	None Detected at RL	CFU:	Colony Forming Unit
µg/Kg:	Micrograms/Kilogram (ppb)	pCi/L:	Picocuries per Liter	Absent:	Less than 1 CFU/100mLs
%:	Percent Recovered (surrogates)	RL Mult:	RL Multiplier	Present:	1 or more CFU/100mLs
NR:	Non-Reportable	MCL:	Maximum Contaminant Limit		

Please see the individual Subcontract Lab's report for applicable certifications.

BSK is not accredited under the NELAC program for the following parameters: **NA**

Certifications: **Please refer to our website for a copy of our Accredited Fields of Testing under each certification.**

Fresno

State of California - ELAP	1180	State of Hawaii	4021
State of Nevada	CA000792016-1	State of Oregon - NELAC	4021
EPA - UCMR3	CA00079	State of Washington	C997-15

Sacramento

State of California - ELAP	2435

Vancouver

State of Oregon - NELAC	WA100008-007	State of Washington	C824-14a

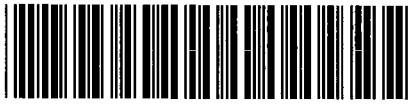
A6B0113

02022016

Monte6227

Turnaround: Standard

Due Date: 2/17/2016



Monterey Bay Analytical

BSK Associates Engineers & Laboratories

1414 Stanislaus St., Fresno, CA 93706
(559) 497-2888 · Fax (559) 497-2893
www.bskassociates.com

Turnaround Time Request
- [X] Standard - 10 business days
- [ ] Rush (Surcharge may apply)
- [ ] Date needed:

A6B0113 02/02/2016
Monte6227 10

*Required Fields

Temp: 4.4

Company/Client Name*:	Report Attention*:	Invoice To*:	Phone*:	Fax:
Monterey Bay Analytical Services	Mason Weidner-Holland Additional cc's: David Holland	David Holland PO#:	831-375-6227	831-641-0734

E-mail*: mweidner@mbasinc.com, dholland@mbasinc

Address*:	City*:	State*:	Zip*:
4 Justin Court, Suite D	Monterey	CA	93940

Project: MPWMD

Project #:

How would you like to receive your completed results?*
- [X] E-Mail
- [ ] Fax
- [ ] Mail

Reporting Options:
- [ ] Trace (J-Flag)
- [ ] Swamp
- [ ] EDD Type: _____

Regulatory Carbon Copies
- [ ] SWRCB (Drinking Water)
- [ ] Merced Co
- [ ] Fresno Co
- [ ] Madera Co
- [ ] Tulare Co
- [ ] Other: _____

Regulatory Compliance
- [ ] EDT to California SWRCB (Drinking Water)
  System Number*: _____
- [ ] Geotracker #: _____

Sampler Name (Printed/Signature)*:
Joe Oliver

Matrix Types: SW=Surface Water BW=Bottled Water GW=Ground Water WW=Waste Water STW=Storm Water DW=Drinking Water SO=Solid

#	Sample Description*	Sampled* Date	Sampled* Time	Matrix*	Comments / Station Code / WTRAX	HAA5	TTHM	TOC	1,4 Dioxane
1.	SM MW-1	1/12/16	1100	GW	AB41671	X	X	X	X

Relinquished by: (Signature and Printed Name)	Company	Date	Time	Received by: (Signature and Printed Name)	Company
David Holland	MBAS	2/1/16	1600		
Relinquished by: (Signature and Printed Name)	Company	Date	Time	Received by: (Signature and Printed Name)	Company
Received for Lab by: (Signature and Printed Name) John Hem		Date 2/2/16	Time 11:13	Payment Received at Delivery: Date: Amount: PIA#:	Check / Cash Init.

Shipping Method: (ONTRAC) UPS GSO WALK-IN FED EX Courier: _____
Cooling Method: (Wet) (Blue) None
Custody Seal: Y / (N)
Chilling Process Begun: (Y) / N BW

A6B0113
Monte6227

02/02/2016
10

BSK Associates SR-FL-0002-15

Sample Integrity

BSK Bottles: (Yes) No * Page 1 of 1

COC Info

Was temperature within range? Chemistry ≤ 6°C Micro < 10°C	(Yes) No NA	Were correct containers and preservatives received for the tests requested?	(Yes) No NA
If samples were taken today, is there evidence that chilling has begun?	Yes No (NA)	Were there bubbles in the VOA vials? (Volatiles Only)	Yes No (NA)
Did all bottles arrive unbroken and intact?	(Yes) No	Was a sufficient amount of sample received?	(Yes) No
Did all bottle labels agree with COC?	(Yes) No	Do samples have a hold time <72 hours?	Yes (No)
Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes (No) NA	Was PM notified of discrepancies? PM: By/Time:	Yes No (NA)

Bottles Received ("—" means preservation/chlorine checks are either N/A or are performed in the lab)

250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)	Checks	Passed?	
Bacti $Na_2S_2O_3$	—	—	
None (P) White Cap	—	—	
Cr6 (P) Br. Green Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **DW**	Cl, pH > 8	Y N	
Cr6 (P) Pink Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **WW**	pH 9.3-9.7	Y N	
Cr6 (P) Black Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **7199** ***24 HOUR HOLD TIME***	pH 9.0-9.5	Y N	
HNO_3 (P) Red Cap	—	—	
H_2SO_4 (P) or (AG) Yellow Label	pH < 2	Y N	1 1+
NaOH (P) Green Cap	Cl, pH >10	Y N	
NaOH + ZnAc (P)	pH > 9	Y N	2/2/16
Dissolved Oxygen 300ml (g)	—	—	
None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270	—	—	
HCl (AG) Lt. Blue Label O&G, Diesel	—	—	
Na_2O_3S+HCl (AG) Lt. Pink Label 525	—	—	
$Na_2S_2O_3$ 1 Liter (Brown P) 549	—	—	
$Na_2S_2O_3$ (AG) Blue Label 547,515,548,THM,524	—	—	3V
$Na_2S_2O_3$ (CG) Blue Label 504, 505	—	—	
$Na_2S_2O_3$ + MCAA (CG) Orange Label 531	pH < 3	Y N	
NH_4Cl (AG) Purple Label 552	—	—	1A
EDA (AG) Brown Label DBPs	—	—	
HCL (CG) 524.2,BTEX,Gas, MTBE, 8260/624	—	—	
Buffer pH 4 (CG)	—	—	
None (CG)	—	—	2V * Doc VOAs
H_3PO_4 (CG) Salmon Label	—	—	2V *
Other:			
Asbestos 1Liter Plastic w/ Foil	—	—	
Low Level Hg / Metals Double Baggie	—	—	
Bottled Water	—	—	
Clear Glass Jar: 250 / 500 / 1 Liter	—	—	
Soil Tube Brass / Steel / Plastic	—	—	
Tedlar Bag / Plastic Bag	—	—	

Split

	Container	Preservative	Date/Time/Initials		Container	Preservative	Date/Time/Initials
S P				S P			
S P				S P			

Comments

* Doc VOAs filtered and preserved
* Bottles E, F

Labeled by: _____ @ _____ Labels checked by: MN @ 1450 RUSH Paged by: _____ @

February 23, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1601180
Customer : 2-19144

Laboratory Report

Introduction: This report package contains total of 4 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(1 page)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
SM MW-1	01/12/2016	02/02/2016	SP 1601180-001	GW

Sampling and Receipt Information: All samples were received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. All samples arrived at room temperature. All samples were prepared and analyzed within the method specified hold time. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Radio QC

900.0	02/16/2016:202402 All analysis quality controls are within established criteria.
	02/15/2016:201742 All preparation quality controls are within established criteria, except: The following note applies to Gross Alpha: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
903.0	02/11/2016:201979 All analysis quality controls are within established criteria.
	02/08/2016:201483 All preparation quality controls are within established criteria.

Corporate Offices & Laboratory
853 Corporation Street
Santa Paula, CA 93060
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Env FAX: (805)525-4172 / Ag FAX: (805)392-2063
CA ELAP Certification No. 1573

Office & Laboratory
2500 Stagecoach Road
Stockton, CA 95215
TEL: (209)942-0182
FAX: (209)942-0423
CA ELAP Certification No. 1563

Office & Laboratory
563 E. Lindo Avenue
Chico, CA 95926
TEL: (530)343-5818
FAX: (530)343-3807
CA ELAP Certification No. 2670

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3442 Empresa Drive, Suite D
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TEL: (805)783-2940
FAX: (805)783-2912
CA ELAP Certification No. 2775

Office & Laboratory
9415 W. Goshen Avenue
Visalia, CA 93291
TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810

February 23, 2016 Lab ID : SP 1601180
Monterey Bay Analytical Services Customer : 2-19144

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-02-23

February 23, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : SM MW-1
Project : MPWMD

Lab ID : SP 1601180-001
Customer ID : 2-19144

Sampled On : January 12, 2016-11:00
Sampled By : Joe Oliver
Received On : February 2, 2016-13:00
Matrix : Ground Water

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Radio Chemistry[P:1'5]								
Gross Alpha	2.53 ± 1.27	1.21	pCi/L		900.0	02/15/16-07:50 2P1601742	900.0	02/16/16-13:00 2A1602402
Total Alpha Radium (226)	0.000 ± 0.393	0.752	pCi/L		903.0	02/08/16-19:30 2P1601483	903.0	02/11/16-11:00 2A1601979

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: HNO3 pH < 2 * PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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FAX: (559)734-8435
CA ELAP Certification No. 2810

February 23, 2016 Lab ID : SP 1601180
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	02/16/16:202402caa	CCV	cpm	8738	41.4 %	38 - 46	
			CCB	cpm		0.100	0.18	
Gross Alpha	900.0	02/15/16:201742caa	Blank	pCi/L		1.55	3	
			LCS	pCi/L	107.4	112 %	75-125	
			MS	pCi/L	107.4	151 %	60-140	435
		(SP 1601159-001)	MSD	pCi/L	107.4	129 %	60-140	
			MSRPD	pCi/L	107.4	15.3%	≤30	
Alpha	903.0	02/11/16:201979caa	CCV	cpm	8742	41.3 %	38 - 46	
			CCB	cpm		0.100	0.19	
Total Alpha Radium (226)	903.0	02/08/16:201483emv	RgBlk	pCi/L		0.17	2	
			LCS	pCi/L	21.59	76.1 %	52-107	
			BS	pCi/L	21.59	59.4 %	43-111	
			BSD	pCi/L	21.59	59.6 %	43-111	
			BSRPD	pCi/L	21.59	0.2%	≤35.5	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
BS	: Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
BSD	: Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
BSRPD	: BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

Corporate Offices & Laboratory
853 Corporation Street
Santa Paula, CA 93060
TEL: (805)392-2000
Env FAX: (805)525-4172 / Ag FAX: (805)392-2063
CA ELAP Certification No. 1573

Office & Laboratory
2500 Stagecoach Road
Stockton, CA 95215
TEL: (209)942-0182
FAX: (209)942-0423
CA ELAP Certification No. 1563

Office & Laboratory
563 E. Lindo Avenue
Chico, CA 95926
TEL: (530)343-5818
FAX: (530)343-3807
CA ELAP Certification No. 2670

Office & Laboratory
3442 Empresa Drive, Suite D
San Luis Obispo, CA 93401
TEL: (805)783-2940
FAX: (805)783-2912
CA ELAP Certification No. 2775

Office & Laboratory
9415 W. Goshen Avenue
Visalia, CA 93291
TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810

ENVIRONMENTAL **www.FGLinc.com** *CHAIN OF CUSTODY AND ANALYSIS REQUEST DOCUMENT*

Analytical Chemists

Client: Monterey Bay Analytical Services Inc.
Address: 4 Justin Court Ste D
Monterey, CA 93940
Phone: 831-375-6227 Fax: 831-641-0734
Contact Person: David Holland
Project Name: MPWMD
Purchase Order Number:
Quote Number:
Sampler(s): Joe Oliver
Sampling Fee: ______ Pickup Fee: ______
Compositer Setup Date: 2/1/16 Time: 1600
Lab Number: 1601190

TEST DESCRIPTION - See Reverse side for Container, Preservative and Sampling information

Samp Num	Location Description	Date Sampled	Time Sampled	Type: Composite(C) Grab(G)	Number of Containers	Containers: (G)Glass (P)Plastic (V)VOA (MT)Metal Tube	(P)Potable (NP)Non-Potable	(SW)SurfaceWater (MW)MonitoringWell (GW)GroundWater (TB)TravelBank (WW)WasteWater (DW)Drinking Water	(S)Soil (SLG)Sludge (SLD)Solid (O)Oil	BacT: (Sys) System (Src)Source (W) Waste	BacT: Routine(ROUT) Repeat(RPT) Other(OTH) Replace(RPL)	(LT)Leaf Tissue (PET)Petiole Tissue (PRD)Produce	Preservative: (1)NaOH+ZnAc (2)NaOH,(3)HCL,(4)H2SO4(5)HNO3, (6)Na2S2O3,(7)Other ____	Gross Alpha	Radium 226					
	SM MW-1	1/12/16	1100	G	1	G	P	GW						X	X					

Remarks: AB41671

530763912-/12°C

Relinquished	Date:	Time:	Relinquished	Date:	Time:	Relinquished	Date:	Time:
David Holland [signature]	2/1/16	1600	GSO					
Received By:	**Date:**	**Time:**	**Received By:**	**Date:**	**Time:**	**Received By:**	**Date:**	**Time:**
			[signature]	2/2/16	13:00			

Corporate Offices & Laboratory
P.O. Box 272 / 853 Corporation Street
Santa Paula, CA 93061-0272
TEL: 805/392-2000
FAX: 805/525-4172
CA NELAP Certification No. 01110CA
CA ELAP Certification No. 1573

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FAX: 209/942-0423
CA ELAP Certification No. 1563

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563 E. Lindo Avenue
Chico, CA 95926
TEL: 530/343-5818
FAX: 530/343-3807
CA ELAP Certification No. 1562

FIELD OFFICE
Visalia, California
Tel: (559)734-9473
Mobile: (559)737-2399
FAX: (559)734-8435

Condition Upon Receipt (Attach to COC)

Sample Receipt at SP:

1. Number of ice chests/packages received: **1**
2. Shipper tracking numbers _____
3. Were samples received in a chilled condition?
   Temps: **RRT** / _____ / _____ / _____ / _____ / _____ / _____
4. Surface water (SWTR) bact samples: A sample that has a temperature upon reciept of >10C, whether iced or not, should be flagged unless the time since sample collection has been less than two hours.
5. Do the number of bottles received agree with the COC? **Yes** No N/A
6. Verify sample date, time, sampler **Yes** No N/A
7. Were the samples received intact? (i.e. no broken bottles, leaks, etc.) **Yes** No
8. Were sample custody seals intact? Yes No **N/A**

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? **Yes** No
2. Did bottle labels correspond with the client's ID's? **Yes** No
3. Were all bottles requiring sample preservation properly preserved? Yes No **N/A** **FGL**
   [Exception: Oil & Grease, VOA and CrVI verified in lab]
4. VOAs checked for Headspace? Yes No **N/A**
5. Were all analyses within holding times at time of reciept? **Yes** No
6. Have rush or project due dates been checked and accepted? Yes No **N/A**

Include a copy of the COC for lab delivery. (Bacti. Inorganics and Radio)

Sample Receipt, Login and Verification completed by: Reviewed and Approved By **Alyssa P. Bavero** Digitally signed by Alyssa P. Bavero Title: Sample Receiving Date: 02/02/2016-13:15:49

Discrepency Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

2. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

(2019144)
Monterey Bay Analytical Services
SP 1601180
APB-02/02/2016-13:15:49

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1602047

Report Created for: Monterey Bay Analytical

4 Justin Court, Suite D
Monterey, CA 93940

Project Contact: David Holland
Project P.O.:
Project Name: MPWMD

Project Received: 02/02/2016

Analytical Report reviewed & approved for release on 02/09/2016 by:

Angela Rydelius,
Laboratory Manager

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1602047

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

Analytical Qualifiers

H	samples were analyzed out of holding time

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Analytical Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1602047
Date Received:	2/2/16 10:41	**Extraction Method:**	RSK175
Date Prepared:	2/9/16	**Analytical Method:**	RSK175
Project:	MPWMD	**Unit:**	µg/L

Dissolved Gases by RSK 175

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SM MW-1	1602047-001A	Water	01/12/2016 11:00	GC26	116435

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Methane	**1.0**	H	0.10	1	02/09/2016 10:08

Analyst(s): MW

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Quality Control Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1602047
Date Prepared:	2/9/16	**BatchID:**	116435
Date Analyzed:	2/9/16	**Extraction Method:**	RSK175
Instrument:	GC26	**Analytical Method:**	RSK175
Matrix:	Air	**Unit:**	µL/L
Project:	MPWMD	**Sample ID:**	MB/LCS-116435

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	10.8	0.50	10	-	108	70-130

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1602047 **ClientCode: MBAS**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
David Holland
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940
831-375-6227 FAX: 831-641-0734

Email: mweidner@mbasinc.com; Dholland@mbas
cc/3rd Party:
PO:
ProjectNo: MPWMD

Bill to:
Accounts Payable
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940

Requested TAT: **5 days;**

Date Received: **02/02/2016**
Date Logged: **02/02/2016**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1602047-001	SM MW-1	Water	1/12/2016 11:00	☐	A											

Test Legend:

1	RSK175_W	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Maria Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Analytical, Inc.
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WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL
QC Level: LEVEL 2
Work Order: 1602047
Project: MPWMD
Client Contact: David Holland
Date Logged: 2/2/2016
Comments:
Contact's Email: mweidner@mbasinc.com; Dholland@mbasinc.com; 4mbas@sbcglobal.net

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1602047-001A	SM MW-1	Water	RSK175 <Methane_4>	3	VOA w/ HCl	☐	1/12/2016 11:00	5 days	None	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

1602047

McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

☐ GeoTracker EDF ☐ PDF ☐ Excel ☐ Write On (DW)

Report To: David Holland Bill To:
Company: Monterey Bay Analytical Services
4 Justin Ct. Suite D
Monterey, Ca 93940 E-Mail: mweidner@mbasinc.com
Tele: (831) 375 - 6227 Fax: (831) 641-0734
Project #: Project Name:
Project Location: MPWMD
Sampler Signature: Joe Oliver

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	MTBE / BTEX & TPH as Gas (602 / 8021 + 8015)	MTBE / BTEX ONLY (EPA 602 / 8021)	TPH as Diesel / Motor Oil (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)	Other: Methane	Other	Other	Comments
	SM MW-1	1/12/16	1100	3	G	X					X	X																			X			AB41671

Analysis Request | Other | Comments

Filter Samples for Metals analysis: Yes / No

Relinquished By:	Date:	Time:	Received By:
David Holland	2/1/16	1600	GSO
GSO	2/2/16	1024	

ICE/t° 4.7 COMMENTS:
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

VOAS O&G METALS OTHER
PRESERVATION_____ pH<2_____

McCampbell Analytical, Inc.
"When Quality Counts"

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Sample Receipt Checklist

Client Name:	**Monterey Bay Analytical**	Date and Time Received:	**2/2/2016 10:24**
Project Name:	**MPWMD**	Date Logged:	**2/2/2016**
WorkOrder №:	**1602047** Matrix: Water	Received by:	Maria Venegas
Carrier:	Golden State Overnight	Logged by:	Maria Venegas

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☑	No ☐

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☐	No ☑	
Sample/Temp Blank temperature	Temp: 4.7°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☑	No ☐	NA ☐
Sample labels checked for correct preservation?	Yes ☑	No ☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes ☐	No ☐	NA ☑
Samples Received on Ice?	Yes ☑	No ☐	
	(Ice Type: WET/BLU)		

UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes ☐	No ☐	NA ☑
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes ☐	No ☐	NA ☑

** NOTE: If the "No" box is checked, see comments below.*

Comments: Method RSK175 was received passed its 14-day holding time.

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS
www.MBASinc.com
ELAP Certification Number: 2385

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Monday, March 14, 2016

Lab Number: AB42699

Collection Date/Time:	2/19/2016	11:30	Sample Collector:	LINDBERG T	Client Sample #:	
Submittal Date/Time:	2/19/2016	13:55	Sample ID		Coliform Designation:	

Sample Description: ASR-1 Injectate

Analyte	Method	Unit	**Result**	Qual	PQL	MCL	Date Analyzed	Analyst:
Chloramines	SM4500-Cl G	mg/L	**0.11**		0.05		2/19/2016	LJ
Haloacetic Acids	EPA552	µg/L	**14**	E		60	2/27/2016	BSK
Trihalomethanes	EPA524.2	µg/L	**30**	E		80	3/1/2016	BSK

Sample Comments:

Report Approved by:

David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

Monterey Bay Analytical Services
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ELAP Certification Number: 2385

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Monday, March 14, 2016

Lab Number: AB42700

Collection Date/Time:	2/19/2016	12:30	Sample Collector:	LINDBERG T	Client Sample #:	
Submittal Date/Time:	2/19/2016	13:55	Sample ID		Coliform Designation:	

Sample Description: SMS deep MW

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**142**		10		2/25/2016	BS
Aluminum, Total	EPA200.8	µg/L	**Not Detected**		10	1000	2/26/2016	SM
Ammonia-N	SM4500NH3 D	mg/L	**Not Detected**		0.05		2/23/2016	MW
Arsenic, Total	EPA200.8	µg/L	**16**		1	10	2/26/2016	SM
Barium, Total	EPA200.8	µg/L	**31**		10	1000	2/26/2016	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	**173**		10		2/26/2016	LRH
Boron	EPA200.7	mg/L	**Not Detected**		0.05		3/1/2016	MW
Bromide	EPA300.0	mg/L	**0.1**		0.1		2/20/2016	HM
Calcium	EPA200.7	mg/L	**46**		0.5		3/1/2016	MW
Carbonate as CaCO3	SM2320B	mg/L	**Not Detected**		10		2/26/2016	LRH
Chloramines	SM4500-Cl G	mg/L	**Not Detected**		0.05		2/19/2016	LJ
Chloride	EPA300.0	mg/L	**31**		1	250	2/20/2016	HM
Dissolved Organic Carbon	SM5310-C	mg/L	**1.3**	E			3/1/2016	BSK
DOC	SM5310C	mg/L	**1.1**		0.2		2/24/2016	MW
Fluoride	EPA300.0	mg/L	**0.3**		0.1	2.0	2/20/2016	HM
Gross Alpha	EPA900.0	pCi/L	**1.97 ± 1.64**	E		15	3/9/2016	FGL
Haloacetic Acids	EPA552	µg/L	**17**	E		60	3/2/2016	BSK
Iron	EPA200.7	µg/L	**Not Detected**		10	300	3/1/2016	MW
Iron, Dissolved	EPA200.7	µg/L	**Not Detected**		10	300	3/1/2016	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	**Not Detected**		0.5		2/29/2016	LRH
Lithium	EPA200.8	µg/L	**6**		1		2/26/2016	SM
Magnesium	EPA200.7	mg/L	**11**		0.5		3/1/2016	MW
Manganese, Dissolved	EPA200.7	µg/L	**Not Detected**		10	50	3/1/2016	MW
Manganese, Total	EPA200.7	µg/L	**Not Detected**		10	50	3/1/2016	MW
Mercury, Total	EPA200.8	µg/L	**Not Detected**		0.5	2	2/26/2016	SM
Methane	EPA174/175	µg/L	**0.52**	E	0.1		2/26/2016	MCCAM
Molybdenum, Total	EPA200.8	µg/L	**39**		1	1000	2/26/2016	SM
Nickel, Total	EPA200.8	µg/L	**Not Detected**		10	100	2/26/2016	SM
Nitrate as NO3	EPA300.0	mg/L	**1**		1	45	2/20/2016	HM
Nitrate as NO3-N	EPA300.0	mg/L	**0.2**		0.1	10	2/20/2016	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	**0.5**		0.1		2/20/2016	HM
Nitrite as NO2-N	EPA300.0	mg/L	**0.3**		0.1	1.0	2/20/2016	HM
o-Phosphate-P, Dissolved	EPA300.0	mg/L	**Not Detected**		0.1		2/20/2016	HM
pH (Laboratory)	SM4500-H+B	pH (H)	**7.6**		0.1		2/19/2016	BS
Phosphorus, Total	HACH 8190	mg/L	**0.12**		0.03		2/25/2016	LRH
Potassium	EPA200.7	mg/L	**2.8**		0.5		3/1/2016	MW
QC Anion Sum x 100	Calculation	%	**98%**				2/26/2016	LRH
QC Anion-Cation Balance	Calculation	%	**-2**				3/2/2016	MW
QC Cation Sum x 100	Calculation	%	**94%**				3/2/2016	MW
QC Ratio TDS/SEC	Calculation		**0.66**				2/25/2016	LRH
Selenium, Total	EPA200.8	µg/L	**12**		2	50	2/26/2016	SM
Silica as SiO2, Total	EPA200.7	mg/L	**23**		0.5		3/1/2016	MW

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS
www.MBASinc.com
ELAP Certification Number: 2385

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Monday, March 14, 2016

Lab Number: AB42700

Collection Date/Time:	2/19/2016	12:30	Sample Collector:	LINDBERG T	Client Sample #:	
Submittal Date/Time:	2/19/2016	13:55	Sample ID		Coliform Designation:	

Sample Description: SMS deep MW

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Sodium	EPA200.7	mg/L	**45**		0.5		3/1/2016	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	**554**		1	900	2/22/2016	HM
Strontium, Total	EPA200.8	µg/L	**287**		5		2/26/2016	SM
Sulfate	EPA300.0	mg/L	**81**		1	250	2/20/2016	HM
TOC	SM5310C	mg/L	**1.4**		0.2		2/24/2016	MW
Total Diss. Solids	SM2540C	mg/L	**366**		10	500	2/23/2016	MP
Total Nitrogen	Calculation	mg/L	**0.5**		0.5		3/1/2016	LRH
Total Organic Carbon	SM5310C	mg/L	**1.2**	E	0.20		3/1/2016	BSK
Total Radium 226	EPA903.0	pCi/L	**0.067± 0.228**	E		3	3/7/2016	FGL
Trihalomethanes	EPA524.2	µg/L	**100**	E		80	3/1/2016	BSK
Uranium by ICP/MS	EPA200.8	µg/L	**2**		1	30	2/26/2016	SM
Vanadium, Total	EPA200.8	µg/L	**Not Detected**		5	1000	2/26/2016	SM
Zinc, Total	EPA200.8	µg/L	**Not Detected**		20	5000	2/26/2016	SM

Sample Comments:

Report Approved by:

David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

Certificate of Analysis

Sample ID: A6B2056-01
Sampled By: T Lindberg
Sample Description: ASR-1 Injectate // AB42699

Sample Date - Time: 02/19/16 - 11:30
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Trihalomethanes by GC-MS									
Bromodichloromethane	EPA 524.2	**11**	0.50	ug/L	1	A602292	02/29/16	03/01/16	
Bromoform	EPA 524.2	**0.99**	0.50	ug/L	1	A602292	02/29/16	03/01/16	
Chloroform	EPA 524.2	**11**	0.50	ug/L	1	A602292	02/29/16	03/01/16	
Dibromochloromethane	EPA 524.2	**7.4**	0.50	ug/L	1	A602292	02/29/16	03/01/16	
Surrogate: Bromofluorobenzene	EPA 524.2	106 %	*Acceptable range: 70-130 %*						
Total Trihalomethanes, EPA 524.2		**30**	0.50	ug/L					
Haloacetic Acids by GC-ECD, GC-MS									
Dibromoacetic Acid (DBAA)	EPA 552.3	**2.6**	1.0	ug/L	1	A602219	02/25/16	02/27/16	
Dichloroacetic Acid (DCAA)	EPA 552.3	**6.8**	1.0	ug/L	1	A602219	02/25/16	02/27/16	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A602219	02/25/16	02/27/16	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A602219	02/25/16	02/27/16	
Trichloroacetic Acid (TCAA)	EPA 552.3	**4.5**	1.0	ug/L	1	A602219	02/25/16	02/27/16	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	111 %	*Acceptable range: 70-130 %*						
Total Haloacetic Acids, EPA 552.3		**14**	2.0	ug/L					

Certificate of Analysis

Sample ID: A6B2056-02
Sampled By: T Lindberg
Sample Description: SMS deep MW // AB42700

Sample Date - Time: 02/19/16 - 12:30
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Trihalomethanes by GC-MS									
Bromodichloromethane	EPA 524.2	**31**	0.50	ug/L	1	A602292	02/29/16	03/01/16	
Bromoform	EPA 524.2	**1.5**	0.50	ug/L	1	A602292	02/29/16	03/01/16	
Chloroform	EPA 524.2	**57**	0.50	ug/L	1	A602292	02/29/16	03/01/16	
Dibromochloromethane	EPA 524.2	**15**	0.50	ug/L	1	A602292	02/29/16	03/01/16	
Surrogate: Bromofluorobenzene	EPA 524.2	107 %	*Acceptable range: 70-130 %*						
Total Trihalomethanes, EPA 524.2		**100**	0.50	ug/L					
Haloacetic Acids by GC-ECD, GC-MS									
Dibromoacetic Acid (DBAA)	EPA 552.3	**1.1**	1.0	ug/L	1	A602385	03/01/16	03/02/16	
Dichloroacetic Acid (DCAA)	EPA 552.3	**4.3**	1.0	ug/L	1	A602385	03/01/16	03/02/16	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A602385	03/01/16	03/02/16	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A602385	03/01/16	03/02/16	
Trichloroacetic Acid (TCAA)	EPA 552.3	**12**	1.0	ug/L	1	A602385	03/01/16	03/02/16	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	101 %	*Acceptable range: 70-130 %*						
Total Haloacetic Acids, EPA 552.3		**17**	2.0	ug/L					

Certificate of Analysis

Sample ID: A6B2258-01
Sampled By: T Lindberg
Sample Description: SMS deep MW // AB42700

Sample Date - Time: 02/19/16 - 12:30
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno

General Chemistry

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Dissolved Organic Carbon	SM 5310C	**1.3**	0.20	mg/L	1	A602411	03/01/16	03/01/16	DQ1.1
Total Organic Carbon	SM 5310C	**1.2**	0.20	mg/L	1	A602410	03/01/16	03/01/16	DQ1.1

BSK Associates Fresno
Organics Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
EPA 524.2 - Quality Control											
Batch: A602292										Prepared: 2/29/2016	
Prep Method: EPA 524.2										Analyst: ANM	
Blank (A602292-BLK1)											
Bromodichloromethane	ND	0.50	ug/L							03/01/16	
Bromoform	ND	0.50	ug/L							03/01/16	
Chloroform	ND	0.50	ug/L							03/01/16	
Dibromochloromethane	ND	0.50	ug/L							03/01/16	
Surrogate: Bromofluorobenzene	*52*			*50*		*104*	*70-130*			03/01/16	
Blank Spike (A602292-BS1)											
Bromodichloromethane	11	0.50	ug/L	10		105	70-130			03/01/16	
Bromoform	9.7	0.50	ug/L	10		97	70-130			03/01/16	
Chloroform	11	0.50	ug/L	10		107	70-130			03/01/16	
Dibromochloromethane	10	0.50	ug/L	10		100	70-130			03/01/16	
Surrogate: Bromofluorobenzene	*52*			*50*		*104*	*70-130*			03/01/16	
Blank Spike Dup (A602292-BSD1)											
Bromodichloromethane	11	0.50	ug/L	10		105	70-130	0	30	03/01/16	
Bromoform	9.5	0.50	ug/L	10		95	70-130	2	30	03/01/16	
Chloroform	11	0.50	ug/L	10		108	70-130	1	30	03/01/16	
Dibromochloromethane	9.8	0.50	ug/L	10		98	70-130	2	30	03/01/16	
Surrogate: Bromofluorobenzene	*52*			*50*		*104*	*70-130*			03/01/16	
Matrix Spike (A602292-MS1), Source: A6B2201-01											
Bromodichloromethane	16	0.50	ug/L	10	5.0	114	47-151			03/01/16	
Bromoform	12	0.50	ug/L	10	ND	118	29-162			03/01/16	
Chloroform	74	0.50	ug/L	10	63	110	52-148			03/01/16	EC1.1
Dibromochloromethane	11	0.50	ug/L	10	ND	111	44-149			03/01/16	
Surrogate: Bromofluorobenzene	*52*			*50*		*104*	*70-130*			03/01/16	
EPA 552.3 - Quality Control											
Batch: A602219										Prepared: 2/25/2016	
Prep Method: EPA 552.3										Analyst: MTM	
Blank (A602219-BLK1)											
Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							02/26/16	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							02/26/16	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							02/26/16	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							02/26/16	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							02/26/16	
Surrogate: 2-Bromobutanoic Acid	*28*			*25*		*111*	*70-130*			02/26/16	
Blank Spike (A602219-BS1)											
Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10		117	70-130			02/26/16	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		112	70-130			02/26/16	
Monobromoacetic Acid (MBAA)	10	1.0	ug/L	10		104	70-130			02/26/16	
Monochloroacetic Acid (MCAA)	19	2.0	ug/L	20		95	70-130			02/26/16	
Trichloroacetic Acid (TCAA)	12	1.0	ug/L	10		116	70-130			02/26/16	

BSK Associates Fresno
Organics Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
EPA 552.3 - Quality Control											
Batch: A602219										Prepared: 2/25/2016	
Prep Method: EPA 552.3										Analyst: MTM	
Blank Spike (A602219-BS1)											
Surrogate: 2-Bromobutanoic Acid	*29*			*25*		*115*	*70-130*			02/26/16	
Blank Spike Dup (A602219-BSD1)											
Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10		110	70-130	6	30	02/27/16	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		107	70-130	4	30	02/27/16	
Monobromoacetic Acid (MBAA)	9.8	1.0	ug/L	10		98	70-130	5	30	02/27/16	
Monochloroacetic Acid (MCAA)	19	2.0	ug/L	20		94	70-130	1	30	02/27/16	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		108	70-130	6	30	02/27/16	
Surrogate: 2-Bromobutanoic Acid	*28*			*25*		*113*	*70-130*			02/27/16	
Duplicate (A602219-DUP1), Source: A6B2056-01											
Dibromoacetic Acid (DBAA)	2.6	1.0	ug/L		2.6			1	30	02/27/16	
Dichloroacetic Acid (DCAA)	6.9	1.0	ug/L		6.8			1	30	02/27/16	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L		ND				30	02/27/16	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L		ND				30	02/27/16	
Trichloroacetic Acid (TCAA)	4.5	1.0	ug/L		4.5			1	30	02/27/16	
Surrogate: 2-Bromobutanoic Acid	*28*			*25*		*110*	*70-130*			02/27/16	
Matrix Spike (A602219-MS1), Source: A6B1572-01											
Dibromoacetic Acid (DBAA)	40	1.0	ug/L	10	29	110	70-130			02/26/16	
Dichloroacetic Acid (DCAA)	23	1.0	ug/L	10	13	103	70-130			02/26/16	
Monobromoacetic Acid (MBAA)	13	1.0	ug/L	10	2.8	101	70-130			02/26/16	
Monochloroacetic Acid (MCAA)	21	2.0	ug/L	20	2.3	95	70-130			02/26/16	
Trichloroacetic Acid (TCAA)	15	1.0	ug/L	10	4.5	107	70-130			02/26/16	
Surrogate: 2-Bromobutanoic Acid	*28*			*25*		*111*	*70-130*			02/26/16	
EPA 552.3 - Quality Control											
Batch: A602385										Prepared: 3/1/2016	
Prep Method: EPA 552.3										Analyst: MTM	
Blank (A602385-BLK1)											
Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							03/02/16	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							03/02/16	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							03/02/16	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							03/02/16	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							03/02/16	
Surrogate: 2-Bromobutanoic Acid	*24*			*25*		*97*	*70-130*			03/02/16	
Blank Spike (A602385-BS1)											
Dibromoacetic Acid (DBAA)	10	1.0	ug/L	10		101	70-130			03/02/16	
Dichloroacetic Acid (DCAA)	10	1.0	ug/L	10		103	70-130			03/02/16	
Monobromoacetic Acid (MBAA)	10	1.0	ug/L	10		101	70-130			03/02/16	
Monochloroacetic Acid (MCAA)	20	2.0	ug/L	20		100	70-130			03/02/16	
Trichloroacetic Acid (TCAA)	10	1.0	ug/L	10		103	70-130			03/02/16	
Surrogate: 2-Bromobutanoic Acid	*25*			*25*		*100*	*70-130*			03/02/16	

BSK Associates Fresno
Organics Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
EPA 552.3 - Quality Control											
Batch: A602385										Prepared: 3/1/2016	
Prep Method: EPA 552.3										Analyst: MTM	
Blank Spike Dup (A602385-BSD1)											
Dibromoacetic Acid (DBAA)	10	1.0	ug/L	10		103	70-130	2	30	03/03/16	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		105	70-130	2	30	03/03/16	
Monobromoacetic Acid (MBAA)	10	1.0	ug/L	10		104	70-130	3	30	03/03/16	
Monochloroacetic Acid (MCAA)	21	2.0	ug/L	20		104	70-130	4	30	03/03/16	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		106	70-130	2	30	03/03/16	
Surrogate: 2-Bromobutanoic Acid	*26*			*25*		*103*	*70-130*			03/03/16	
Duplicate (A602385-DUP1), Source: A6B2294-01											
Dibromoacetic Acid (DBAA)	11	1.0	ug/L		11			0	30	03/03/16	
Dichloroacetic Acid (DCAA)	1.4	1.0	ug/L		1.4			3	30	03/03/16	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L		ND				30	03/03/16	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L		ND				30	03/03/16	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L		ND				30	03/03/16	
Surrogate: 2-Bromobutanoic Acid	*26*			*25*		*105*	*70-130*			03/03/16	
Matrix Spike (A602385-MS1), Source: A6B1967-02											
Dibromoacetic Acid (DBAA)	10	1.0	ug/L	10	ND	102	70-130			03/02/16	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10	ND	103	70-130			03/02/16	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10	ND	106	70-130			03/02/16	
Monochloroacetic Acid (MCAA)	21	2.0	ug/L	20	ND	106	70-130			03/02/16	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10	ND	105	70-130			03/02/16	
Surrogate: 2-Bromobutanoic Acid	*25*			*25*		*101*	*70-130*			03/02/16	

BSK Associates Fresno
General Chemistry Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
SM 5310C - Quality Control											
Batch: A602410										Prepared: 3/1/2016	
Prep Method: Method Specific Preparation										Analyst: CEG	
Blank (A602410-BLK1)											
Total Organic Carbon	ND	0.20	mg/L							03/01/16	
Blank Spike (A602410-BS1)											
Total Organic Carbon	10	0.20	mg/L	10		100	80-120			03/01/16	
Blank Spike Dup (A602410-BSD1)											
Total Organic Carbon	10	0.20	mg/L	10		102	80-120	1	20	03/01/16	
Matrix Spike (A602410-MS1), Source: A6C0011-01											
Total Organic Carbon	9.8	0.20	mg/L	10	ND	98	80-120			03/01/16	
Matrix Spike Dup (A602410-MSD1), Source: A6C0011-01											
Total Organic Carbon	10	0.20	mg/L	10	ND	101	80-120	3	20	03/01/16	
SM 5310C - Quality Control											
Batch: A602411										Prepared: 3/1/2016	
Prep Method: Method Specific Preparation										Analyst: CEG	
Blank (A602411-BLK1)											
Dissolved Organic Carbon	ND	0.20	mg/L							03/01/16	
Blank Spike (A602411-BS1)											
Dissolved Organic Carbon	10	0.20	mg/L	10		101	80-120			03/01/16	
Blank Spike Dup (A602411-BSD1)											
Dissolved Organic Carbon	10	0.20	mg/L	10		102	80-120	1	20	03/01/16	
Matrix Spike (A602411-MS1), Source: A6B2258-01											
Dissolved Organic Carbon	11	0.20	mg/L	10	1.3	101	80-120			03/01/16	
Matrix Spike Dup (A602411-MSD1), Source: A6B2258-01											
Dissolved Organic Carbon	12	0.20	mg/L	10	1.3	102	80-120	1	20	03/01/16	

March 11, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1602104
Customer : 2-19144

Laboratory Report

Introduction: This report package contains total of 4 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(1 page)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
SMS Deep MW	02/19/2016	02/24/2016	SP 1602104-001	GW

Sampling and Receipt Information: All samples were received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. All samples arrived at room temperature. All samples were prepared and analyzed within the method specified hold time. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Radio QC

900.0	03/09/2016:203478 All analysis quality controls are within established criteria
	03/07/2016:202615 All preparation quality controls are within established criteria
903.0	03/07/2016:203258 All analysis quality controls are within established criteria
	03/05/2016:202609 All preparation quality controls are within established criteria

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FAX: (559)734-8435
CA ELAP Certification No. 2810

March 11, 2016 Lab ID : SP 1602104
Monterey Bay Analytical Services Customer : 2-19144

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-03-11

March 11, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1602104-001
Customer ID : 2-19144

Sampled On : February 19, 2016-12:30
Sampled By : T. Lindberg
Received On : February 24, 2016-13:00
Matrix : Ground Water

Description : SMS Deep MW
Project : MPWMD

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Radio Chemistry[P]								
Gross Alpha	1.97 ± 1.64	1.56	pCi/L		900.0	03/07/16-07:44 2P1602615	900.0	03/09/16-08:00 2A1603478
Total Alpha Radium (226)	0.067 ± 0.228	0.363	pCi/L		903.0	03/05/16-15:00 2P1602609	903.0	03/07/16-12:40 2A1603258

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: N/A * PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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March 11, 2016 Lab ID : SP 1602104
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	03/09/16:203478caa	CCV	cpm	8722	41.5 %	38 - 47	
			CCB	cpm		0.100	0.14	
Gross Alpha	900.0	03/07/16:202615elc	Blank	pCi/L		1.72	3	
			LCS	pCi/L	107.4	102 %	75-125	
			MS	pCi/L	107.4	121 %	60-140	
		(SP 1602154-001)	MSD	pCi/L	107.4	115 %	60-140	
			MSRPD	pCi/L	107.4	5.3%	≤30	
Alpha	903.0	03/07/16:203258caa	CCV	cpm	8723	41.6 %	38 - 46	
			CCB	cpm		0.0800	0.16	
Total Alpha Radium (226)	903.0	03/05/16:202609caa	RgBlk	pCi/L		0.1	2	
			LCS	pCi/L	21.59	94.6 %	52-107	
			BS	pCi/L	21.59	91.6 %	43-111	
			BSD	pCi/L	21.59	85.9 %	43-111	
			BSRPD	pCi/L	21.59	6.4%	≤35.5	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
BS	: Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
BSD	: Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
BSRPD	: BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Corporate Offices & Laboratory
853 Corporation Street
Santa Paula, CA 93060
TEL: (805)392-2000
Env FAX: (805)525-4172 / Ag FAX: (805)392-2063
CA ELAP Certification No. 1573

Office & Laboratory
2500 Stagecoach Road
Stockton, CA 95215
TEL: (209)942-0182
FAX: (209)942-0423
CA ELAP Certification No. 1563

Office & Laboratory
563 E. Lindo Avenue
Chico, CA 95926
TEL: (530)343-5818
FAX: (530)343-3807
CA ELAP Certification No. 2670

Office & Laboratory
3442 Empresa Drive, Suite D
San Luis Obispo, CA 93401
TEL: (805)783-2940
FAX: (805)783-2912
CA ELAP Certification No. 2775

Office & Laboratory
9415 W. Goshen Avenue
Visalia, CA 93291
TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1602961
Date Received:	2/24/16 11:20	**Extraction Method:**	RSK175
Date Prepared:	2/26/16	**Analytical Method:**	RSK175
Project:	MPWMD	**Unit:**	µg/L

Dissolved Gases by RSK 175

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMS Deep MW	1602961-001A	Water	02/19/2016 12:30	GC26	117291

Analytes	Result	RL	DF	Date Analyzed
Methane	**0.52**	0.10	1	02/26/2016 14:44

Analyst(s): AK

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Quality Control Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1602961
Date Prepared:	2/26/16	**BatchID:**	117291
Date Analyzed:	2/26/16	**Extraction Method:**	RSK175
Instrument:	GC26	**Analytical Method:**	RSK175
Matrix:	Air	**Unit:**	µL/L
Project:	MPWMD	**Sample ID:**	MB/LCS-117291

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	11.8	0.50	10	-	118	70-130

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS
www.MBASinc.com
ELAP Certification Number: 2385

Wednesday, March 30, 2016

Lab Number: **AB44030**

Collection Date/Time:	3/16/2016	11:30	Sample Collector:	OLIVER J	Client Sample #:
Submittal Date/Time:	3/17/2016	10:31	Sample ID		Coliform Designation:

Sample Description: ASR-1 Injectate

Analyte	Method	Unit	**Result**	Qual	PQL	MCL	Date Analyzed	Analyst:
Chloramines	SM4500-Cl G	mg/L	**0.11**	H	0.05		3/17/2016	LJ
Haloacetic Acids	EPA552	µg/L	**13**	E		60	3/24/2016	BSK
Trihalomethanes	EPA524.2	µg/L	**27**	E		80	3/21/2016	BSK

Sample Comments:

Report Approved by:

David Holland, Laboratory Director

mg/L: Milligrams per liter ug/L : Micrograms per liter PQL : Practical Quantitation Limit MCL: Maximum Contamination Level
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See Report attachments. T = Temperature Exceedance

BSK Associates Fresno
1414 Stanislaus St
Fresno, CA93706
559-497-2888 (Main)
559-485-6935 (FAX)

A6C1956
3/30/2016
Invoice: A606540

David Holland
Monterey Bay Analytical
4 Justin Court Suite D
Monterey, CA 93940

RE: Report for A6C1956 MPWMD

Dear David Holland,

Thank you for using BSK Associates for your analytical testing needs. In the following pages, you will find the test results for the samples submitted to our laboratory on 3/18/2016. The results have been approved for release by our Laboratory Director as indicated by the authorizing signature below.

The samples were analyzed for the test(s) indicated on the Chain of Custody (see attached) and the results relate only to the samples analyzed. BSK certifies that the testing was performed in accordance with the quality system requirements specified in the 2009 TNI Standard. Any deviations from this standard or from the method requirements for each test procedure performed will be annotated alongside the analytical result or noted in the Case Narrative. Unless otherwise noted, the sample results are reported on an "as received" basis.

If additional clarification of any information is required, please contact your Project Manager, John Montierth , at (800) 877-8310 or (559) 497-2888 x201.

Thanks again for using BSK Associates. We value your business and appreciate your loyalty.

Sincerely,

John Montierth, Project Manager

Accredited in Accordance with NELAP
ORELAP #4021

Case Narrative

Project and Report Details		Invoice Details	
Client:	Monterey Bay Analytical	**Invoice To:**	Monterey Bay Analytical
Report To:	David Holland	**Invoice Attn:**	David Holland
Project #:	-	**Project PO#:**	-
Received:	3/18/2016 - 10:10		
Report Due:	4/01/2016		

Sample Receipt Conditions

Cooler: Default Cooler
Temperature on Receipt ºC: 3.8

Containers Intact
COC/Labels Agree
Received On Wet Ice
Received On Blue Ice
Packing Material - Bubble Wrap
Sample(s) were received in temperature range.
Initial receipt at BSK-FAL

Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

None applied

Report Distribution

Recipient(s)	Report Format	CC:
David Holland	FINAL.RPT	
Mason Weidner	FINAL.RPT	

Certificate of Analysis

Sample ID: A6C1956-01
Sampled By: J. Oliver
Sample Description: ASR-1 Injectate // AB44030

Sample Date - Time: 03/16/16 - 11:30
Matrix: Water
Sample Type: Grab

BSK Associates Fresno

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Trihalomethanes by GC-MS									
Bromodichloromethane	EPA 524.2	**9.5**	0.50	ug/L	1	A603299	03/18/16	03/21/16	
Bromoform	EPA 524.2	**0.73**	0.50	ug/L	1	A603299	03/18/16	03/21/16	
Chloroform	EPA 524.2	**11**	0.50	ug/L	1	A603299	03/18/16	03/21/16	
Dibromochloromethane	EPA 524.2	**6.0**	0.50	ug/L	1	A603299	03/18/16	03/21/16	
Surrogate: Bromofluorobenzene	EPA 524.2	95 %	*Acceptable range: 70-130 %*						
Total Trihalomethanes, EPA 524.2		**27**	0.50	ug/L					
Haloacetic Acids by GC-ECD, GC-MS									
Dibromoacetic Acid (DBAA)	EPA 552.3	**1.9**	1.0	ug/L	1	A603459	03/23/16	03/24/16	
Dichloroacetic Acid (DCAA)	EPA 552.3	**6.1**	1.0	ug/L	1	A603459	03/23/16	03/24/16	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A603459	03/23/16	03/24/16	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A603459	03/23/16	03/24/16	
Trichloroacetic Acid (TCAA)	EPA 552.3	**4.7**	1.0	ug/L	1	A603459	03/23/16	03/24/16	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	102 %	*Acceptable range: 70-130 %*						
Total Haloacetic Acids, EPA 552.3		**13**	2.0	ug/L					

BSK Associates Fresno
Organics Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
EPA 524.2 - Quality Control											
Batch: A603299										Prepared: 3/21/2016	
Prep Method: EPA 524.2										Analyst: ANM	
Blank (A603299-BLK1)											
Bromodichloromethane	ND	0.50	ug/L							03/21/16	
Bromoform	ND	0.50	ug/L							03/21/16	
Chloroform	ND	0.50	ug/L							03/21/16	
Dibromochloromethane	ND	0.50	ug/L							03/21/16	
Surrogate: Bromofluorobenzene	*47*			*50*		*94*	*70-130*			03/21/16	
Blank Spike (A603299-BS1)											
Bromodichloromethane	10	0.50	ug/L	10		100	70-130			03/21/16	
Bromoform	11	0.50	ug/L	10		106	70-130			03/21/16	
Chloroform	9.8	0.50	ug/L	10		98	70-130			03/21/16	
Dibromochloromethane	10	0.50	ug/L	10		102	70-130			03/21/16	
Surrogate: Bromofluorobenzene	*46*			*50*		*92*	*70-130*			03/21/16	
Blank Spike Dup (A603299-BSD1)											
Bromodichloromethane	11	0.50	ug/L	10		108	70-130	8	30	03/21/16	
Bromoform	11	0.50	ug/L	10		111	70-130	5	30	03/21/16	
Chloroform	11	0.50	ug/L	10		106	70-130	9	30	03/21/16	
Dibromochloromethane	11	0.50	ug/L	10		109	70-130	7	30	03/21/16	
Surrogate: Bromofluorobenzene	*49*			*50*		*98*	*70-130*			03/21/16	
Matrix Spike (A603299-MS1), Source: A6C1676-03											
Bromodichloromethane	22	0.50	ug/L	10	13	89	47-151			03/21/16	
Bromoform	11	0.50	ug/L	10	ND	114	29-162			03/21/16	
Dibromochloromethane	11	0.50	ug/L	10	1.2	102	44-149			03/21/16	
Surrogate: Bromofluorobenzene	*45*			*50*		*90*	*70-130*			03/21/16	
EPA 552.3 - Quality Control											
Batch: A603459										Prepared: 3/23/2016	
Prep Method: EPA 552.3										Analyst: MTM	
Blank (A603459-BLK1)											
Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							03/24/16	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							03/24/16	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							03/24/16	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							03/24/16	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							03/24/16	
Surrogate: 2-Bromobutanoic Acid	*25*			*25*		*100*	*70-130*			03/24/16	
Blank Spike (A603459-BS1)											
Dibromoacetic Acid (DBAA)	10	1.0	ug/L	10		105	70-130			03/24/16	
Dichloroacetic Acid (DCAA)	10	1.0	ug/L	10		102	70-130			03/24/16	
Monobromoacetic Acid (MBAA)	10	1.0	ug/L	10		104	70-130			03/24/16	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20		109	70-130			03/24/16	
Trichloroacetic Acid (TCAA)	10	1.0	ug/L	10		102	70-130			03/24/16	
Surrogate: 2-Bromobutanoic Acid	*26*			*25*		*105*	*70-130*			03/24/16	

BSK Associates Fresno
Organics Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
EPA 552.3 - Quality Control											
Batch: A603459										Prepared: 3/23/2016	
Prep Method: EPA 552.3										Analyst: MTM	
Blank Spike Dup (A603459-BSD1)											
Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10		112	70-130	7	30	03/24/16	
Dichloroacetic Acid (DCAA)	10	1.0	ug/L	10		103	70-130	1	30	03/24/16	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		108	70-130	4	30	03/24/16	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20		111	70-130	2	30	03/24/16	
Trichloroacetic Acid (TCAA)	10	1.0	ug/L	10		104	70-130	2	30	03/24/16	
Surrogate: 2-Bromobutanoic Acid	*27*			*25*		*107*	*70-130*			03/24/16	
Duplicate (A603459-DUP1), Source: A6C2092-04											
Dibromoacetic Acid (DBAA)	ND	1.0	ug/L		ND				30	03/24/16	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L		11			0	30	03/24/16	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L		ND				30	03/24/16	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L		ND				30	03/24/16	
Trichloroacetic Acid (TCAA)	13	1.0	ug/L		13			0	30	03/24/16	
Surrogate: 2-Bromobutanoic Acid	*29*			*25*		*117*	*70-130*			03/24/16	
Matrix Spike (A603459-MS1), Source: A6C1956-01											
Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10	1.9	106	70-130			03/24/16	
Dichloroacetic Acid (DCAA)	16	1.0	ug/L	10	6.1	100	70-130			03/24/16	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10	ND	103	70-130			03/24/16	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20	ND	111	70-130			03/24/16	
Trichloroacetic Acid (TCAA)	15	1.0	ug/L	10	4.7	100	70-130			03/24/16	
Surrogate: 2-Bromobutanoic Acid	*26*			*25*		*105*	*70-130*			03/24/16	

Certificate of Analysis

Notes:

- The Chain of Custody document and Sample Integrity Sheet are part of the analytical report.
- Any remaining sample(s) for testing will be disposed of according to BSK's sample retention policy unless other arrangements are made in advance.
- All positive results for EPA Methods 504.1 and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed.
- Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.
- J-value is equivalent to DNQ (Detected, not quantified) which is a trace value. A trace value is an analyte detected between the MDL and the laboratory reporting limit. This result is of an unknown data quality and is only qualitative (estimated). Baseline noise, calibration curve extrapolation below the lowest calibrator, method blank detections, and integration artifacts can all produce apparent DNQ values, which contribute to the un-reliability of these values.
- (1) - Residual chlorine and pH analysis have a 15 minute holding time for both drinking and waste water samples as defined by the EPA and 40 CFR 136. Waste water and ground water (monitoring well) samples must be field filtered to meet the 15 minute holding time for dissolved metals.
- Summations of analytes (i.e. Total Trihalomethanes) may appear to add individual amounts incorrectly, due to rounding of analyte values occurring before or after the total value is calculated, as well as rounding of the total value.
- RL Multiplier is the factor used to adjust the reporting limit (RL) due to variations in sample preparation procedures and dilutions required for matrix interferences.
- Due to the subjective nature of the Threshold Odor Method, all characterizations of the detected odor are the opinion of the panel of analysts. The characterizations can be found in Standard Methods 2170B Figure 2170:1.
- The MCLs provided in this report (if applicable) represent the primary MCLs for that analyte.

Definitions

mg/L:	Milligrams/Liter (ppm)	MDL:	Method Detection Limit	MDA95:	Min. Detected Activity
mg/Kg:	Milligrams/Kilogram (ppm)	RL:	Reporting Limit: DL x Dilution	MPN:	Most Probable Number
µg/L:	Micrograms/Liter (ppb)	ND:	None Detected at RL	CFU:	Colony Forming Unit
µg/Kg:	Micrograms/Kilogram (ppb)	pCi/L:	Picocuries per Liter	Absent:	Less than 1 CFU/100mLs
%:	Percent Recovered (surrogates)	RL Mult:	RL Multiplier	Present:	1 or more CFU/100mLs
NR:	Non-Reportable	MCL:	Maximum Contaminant Limit		

Please see the individual Subcontract Lab's report for applicable certifications.

BSK is not accredited under the NELAC program for the following parameters: **NA**

Certifications: **Please refer to our website for a copy of our Accredited Fields of Testing under each certification.**

Fresno

State of California - ELAP	1180	State of Hawaii	4021
State of Nevada	CA000792016-1	State of Oregon - NELAC	4021
EPA - UCMR3	CA00079	State of Washington	C997-15

Sacramento

State of California - ELAP	2435

Vancouver

State of Oregon - NELAC	WA100008-007	State of Washington	C824-14a

A6C1956

03182016

Monte6227

Turnaround: Standard

Due Date: 4/1/2016

Monterey Bay Analytical

Printed: 3/18/2016 4:29:25PM

BSK Associates Engineers & Laboratories
1414 Stanislaus St., Fresno, CA 93706
(559) 497-2888 · Fax (559) 497-2893
www.bskassociates.com

38

Turnaround Time Request
- [x] Standard - 10 business days
- [ ] Rush (Surcharge may apply)
- [ ] Date needed:

A6C1956 03/18/2016
Monte6227 10

*Required Fields Temp:

Company/Client Name*:	Report Attention*:	Invoice To*:	Phone*:	Fax:
Monterey Bay Analytical Services	Mason Weidner-Holland Additional cc's: David Holland	David Holland PO#:	831-375-6227	831-641-0734

E-mail*: mweidner@mbasinc.com, dholland@mbasinc

Address*:	City*:	State*:	Zip*:
4 Justin Court, Suite D	Monterey	CA	93940

Project: MPWMD

Project #:

How would you like to receive your completed results?* [x] E-Mail [ ] Fax [ ] Mail

Reporting Options: [ ] Trace (J-Flag) [ ] Swamp [ ] EDD Type: _____

Sampler Name (Printed/Signature)*: J. Oliver

Regulatory Carbon Copies: [ ] SWRCB (Drinking Water) [ ] Merced Co [ ] Fresno Co [ ] Madera Co [ ] Tulare Co [ ] Other: _____

Regulatory Compliance: [ ] EDT to California SWRCB (Drinking Water) System Number*: _____ [ ] Geotracker #: _____

Matrix Types: SW=Surface Water BW=Bottled Water GW=Ground Water WW=Waste Water STW=Storm Water DW=Drinking Water SO=Solid

#	Sample Description*	Sampled* Date	Sampled* Time	Matrix*	Comments / Station Code / WTRAX	HAA	THM
1.	ASR-1 Injectate	3/16/16	1130		AB44030	X	X

Relinquished by: (Signature and Printed Name)	Company	Date	Time	Received by: (Signature and Printed Name)	Company
David Holland	MBAS	3/17/16	1600		
Relinquished by: (Signature and Printed Name)	Company	Date	Time	Received by: (Signature and Printed Name)	Company
Received for Lab by: (Signature and Printed Name)		Date	Time	Payment Received at Delivery: Date:	Amount: Check / Cash PIA#: Init.
Carolyn White		3/18/16	10:10		

Shipping Method: ONTRAC UPS GSO WALK-IN FED EX Courier: _____ Custody Seal: Y N

Cooling Method: Wet Blue None Chilling Process Begun: Y N

Sample Integrity

BSK Bottles: Yes No Page 1 of 1

COC Info

Was temperature within range? Chemistry ≤ 6°C Micro < 10°C	Yes No NA	Were correct containers and preservatives received for the tests requested?	Yes No NA
If samples were taken today, is there evidence that chilling has begun?	Yes No NA	Were there bubbles in the VOA vials? (**Volatiles Only**)	Yes No NA
Did all bottles arrive unbroken and intact?	Yes No	Was a sufficient amount of sample received?	Yes No
Did all bottle labels agree with COC?	Yes No	Do samples have a hold time <72 hours?	Yes No
Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes No NA	Was PM notified of discrepancies? PM: By/Time:	Yes No NA

Bottles Received — "—" means preservation/chlorine checks are either N/A or are performed in the lab

250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)	Checks	Passed?
Bacti $Na_2S_2O_3$	—	—
None (P) White Cap	—	—
Cr6 (P) Br. Green Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **DW**	Cl, pH > 8	Y N
Cr6 (P) Pink Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **WW**	pH 9.3-9.7	Y N
Cr6 (P) Black Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **7199** ******24 HOUR HOLD TIME******	pH 9.0-9.5	Y N
HNO_3 (P) Red Cap	—	—
H_2SO_4 (P) or (AG) Yellow Cap/Label	pH < 2	Y N
NaOH (P) Green Cap	Cl, pH >10	Y N
NaOH + ZnAc (P)	pH > 9	Y N
Dissolved Oxygen 300ml (g)	—	—
None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270	—	—
HCl (AG) Lt. Blue Label O&G, Diesel	—	—
Na_2O_3S+HCl (AG) Lt. Pink Label 525	—	—
$Na_2S_2O_3$ 1 Liter (Brown P) 549	—	—
$Na_2S_2O_3$ (AG) Blue Label 547,515,548,THM,524	—	—
$Na_2S_2O_3$ (CG) Blue Label 504, 505	—	—
$Na_2S_2O_3$ + MCAA (CG) Orange Label 531	pH < 3	Y N
NH_4Cl (AG) Purple Label 552	—	—
EDA (AG) Brown Label DBPs	—	—
HCL (CG) 524.2,BTEX,Gas, MTBE, 8260/624	—	—
Buffer pH 4 (CG)	—	—
None (CG)	—	—
H_3PO_4 (CG) Salmon Label	—	—
Other:		
Asbestos 1Liter Plastic w/ Foil	—	—
Low Level Hg / Metals Double Baggie	—	—
Bottled Water	—	—
Clear Glass Jar: 250 / 500 / 1 Liter	—	—
Soil Tube Brass / Steel / Plastic	—	—
Tedlar Bag / Plastic Bag	—	—

3V

1A

3/8/16

Split

	Container	Preservative	Date/Time/Initials		Container	Preservative	Date/Time/Initials
S P				S P			
S P				S P			

Comments

Labeled by CW @ 1145 Labels checked by: SB @ 1324 RUSH Paged by: _____ @ _____

MPWMD
Joe Oliver
P.O. Box 85
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4 Justin Court Suite D, Monterey, CA 93940
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ELAP Certification Number: 2385

 Tuesday, July 12, 2016

Lab Number: AB49043

Collection Date/Time: 6/21/2016 10:00 Sample Collector: LINDBERG T Client Sample #:
Submittal Date/Time: 6/21/2016 12:30 Sample ID Coliform Designation:

Sample Description: ASR-2 backflush

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**129**		10		6/27/2016	BS
Aluminum, Total	EPA200.8	µg/L	**Not Detected**		10	1000	6/23/2016	SM
Ammonia-N	SM4500NH3 D	mg/L	**Not Detected**		0.05		7/6/2016	MW
Arsenic, Total	EPA200.8	µg/L	**1**		1	10	6/23/2016	SM
Barium, Total	EPA200.8	µg/L	**54**		10	1000	6/23/2016	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	**157**		10		6/28/2016	LRH
Boron	EPA200.7	mg/L	**Not Detected**		0.05		6/29/2016	MW
Bromide	EPA300.0	mg/L	**Not Detected**	LM	0.1		6/21/2016	HM
Calcium	EPA200.7	mg/L	**40**		0.5		6/29/2016	MW
Carbonate as CaCO3	SM2320B	mg/L	**Not Detected**		10		6/28/2016	LRH
Chloramines	SM4500-Cl G	mg/L	**0.05**		0.05		6/21/2016	LJ
Chloride	EPA300.0	mg/L	**29**		1	250	6/21/2016	HM
DOC	SM5310C	mg/L	**1.4**		0.2		6/28/2016	MW
Fluoride	EPA300.0	mg/L	**0.3**		0.1	2.0	6/21/2016	HM
Gross Alpha	EPA900.0	pCi/L	**0.550 ± 1.08**	E		15	7/6/2016	FGL
Haloacetic Acids	EPA552	µg/L	**12**	E		60	6/30/2016	FGL
Iron	EPA200.7	µg/L	**70**		10	300	6/29/2016	MW
Iron, Dissolved	EPA200.7	µg/L	**Not Detected**		10	300	6/29/2016	MW
Kjehldahl Nitrogen	SM4500-NH3 B,	mg/L	**Not Detected**		0.5		6/27/2016	LJ
Lithium	EPA200.8	µg/L	**6**		1		6/23/2016	SM
Magnesium	EPA200.7	mg/L	**13**		0.5		6/29/2016	MW
Manganese, Dissolved	EPA200.7	µg/L	**Not Detected**		10	50	6/29/2016	MW
Manganese, Total	EPA200.7	µg/L	**Not Detected**		10	50	6/29/2016	MW
Mercury, Total	EPA200.8	µg/L	**Not Detected**		0.5	2	6/23/2016	SM
Methane	EPA174/175	µg/L	**0.43**	E	0.1		6/28/2016	MCCAM
Molybdenum, Total	EPA200.8	µg/L	**5**		1	1000	6/23/2016	SM
Nickel, Total	EPA200.8	µg/L	**Not Detected**		10	100	6/23/2016	SM
Nitrate as NO3	EPA300.0	mg/L	**1**		1	45	6/21/2016	HM
Nitrate as NO3-N	EPA300.0	mg/L	**0.1**		0.1	10	6/21/2016	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	**0.1**		0.1		6/21/2016	HM
Nitrite as NO2-N	EPA300.0	mg/L	**Not Detected**	IA	0.1	1.0	6/21/2016	HM
o-Phosphate-P, Dissolved	EPA300.0	mg/L	**0.3**		0.1		6/21/2016	HM

mg/L: Milligrams per liter ug/L : Micrograms per liter PQL : Practical Quantitation Limit MCL: Maximum Contamination Level
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See Report attachments. T = Temperature Exceedance

Lab Number: **AB49043**

Collection Date/Time: 6/21/2016 10:00 Sample Collector: LINDBERG T Client Sample #:

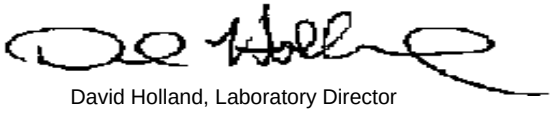
Submittal Date/Time: 6/21/2016 12:30 Sample ID Coliform Designation:

Sample Description: ASR-2 backflush

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
pH (Laboratory)	SM4500-H+B	pH (H)	**7.7**		0.1		6/21/2016	BS
Phosphorus, Total	HACH 8190	mg/L	**0.31**		0.03		7/5/2016	LRH
Potassium	EPA200.7	mg/L	**3.0**		0.5		6/29/2016	MW
QC Anion Sum x 100	Calculation	%	**101%**				6/28/2016	LRH
QC Anion-Cation Balance	Calculation	%	**1**				7/1/2016	MW
QC Cation Sum x 100	Calculation	%	**102%**				7/1/2016	MW
QC Ratio TDS/SEC	Calculation		**0.67**				6/26/2016	LRH
Selenium, Total	EPA200.8	µg/L	**6**		2	50	6/23/2016	SM
Silica as SiO2, Total	EPA200.7	mg/L	**24**		0.5		6/29/2016	MW
Sodium	EPA200.7	mg/L	**42**		0.5		6/29/2016	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	**487**		1	900	6/26/2016	LJ
Strontium, Total	EPA200.8	µg/L	**206**		5		6/23/2016	SM
Sulfate	EPA300.0	mg/L	**72**		1	250	6/21/2016	HM
TOC	SM5310C	mg/L	**1.4**		0.2		6/28/2016	MW
Total Diss. Solids	SM2540C	mg/L	**326**		10	500	6/21/2016	MP
Total Nitrogen	Calculation	mg/L	**Not Detected**		0.5		6/27/2016	LJ
Total Radium 226	EPA903.0	pCi/L	**0.000 ± 0.105**	E		3	7/6/2016	FGL
Trihalomethanes	EPA524.2	µg/L	**102**	E		80	6/27/2016	FGL
Uranium by ICP/MS	EPA200.8	µg/L	**Not Detected**		1	30	6/23/2016	SM
Vanadium, Total	EPA200.8	µg/L	**Not Detected**		5	1000	6/23/2016	SM
Zinc, Total	EPA200.8	µg/L	**228**		20	5000	6/23/2016	SM

Sample Comments: LM: MS and/or MSD above acceptance limits. IA: Results are valid even though CCV recovery outside of limits.

Report Approved by:



David Holland, Laboratory Director

mg/L: Milligrams per liter ug/L : Micrograms per liter PQL : Practical Quantitation Limit MCL: Maximum Contamination Level

H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See Report attachments. T = Temperature Exceedance

July 11, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1607216
Customer : 2-19144

Laboratory Report

Introduction: This report package contains total of 7 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(2 pages)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
ASR-2 Backflush	06/21/2016	06/24/2016	SP 1607216-001	W

Sampling and Receipt Information: All samples were received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. All samples arrived at 6 °C. All samples were prepared and analyzed within the method specified hold time. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Organic QC

551.1	06/27/2016:209152 All analysis quality controls are within established criteria.
	06/28/2016:209182 All analysis quality controls are within established criteria.
	06/24/2016:207472 All preparation quality controls are within established criteria.
552	06/29/2016:207632 All preparation quality controls are within established criteria, except: The following note applies to 2,3-Dibromopropionic Acid: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery. The following note applies to 2,3-Dibromopropionic Acid: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
552.2	06/30/2016:209306 All analysis quality controls are within established criteria.

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July 11, 2016 Lab ID : SP 1607216
Monterey Bay Analytical Services Customer : 2-19144

Organic QC

552.2	06/30/2016:209378 All analysis quality controls are within established criteria.

Radio QC

900.0	07/06/2016:209654 All analysis quality controls are within established criteria.
	07/05/2016:207797 All preparation quality controls are within established criteria.
903.0	07/06/2016:209610 All analysis quality controls are within established criteria.
	06/29/2016:207659 All preparation quality controls are within established criteria.

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-07-11

July 11, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1607216-001
Customer ID : 2-19144

Sampled On : June 21, 2016-10:00
Sampled By : T. Lindberg
Received On : June 24, 2016-12:15
Matrix : Water

Description : ASR-2 Backflush
Project : MPWMD

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
EPA 551.1[VOA:1'15]								
Decafluorobiphenyl‡	115	80-120	%		551.1	06/24/16:207472	551.1	06/27/16:209152
Bromodichloromethane	23.7	0.5	ug/L		551.1	06/24/16:207472	551.1	06/27/16:209152
Bromoform	1.0	0.5	ug/L		551.1	06/24/16:207472	551.1	06/27/16:209152
Chloroform	66.5	2.5*	ug/L		551.1	06/24/16:207472	551.1	06/28/16:209182
Dibromochloromethane	10.6	0.5	ug/L		551.1	06/24/16:207472	551.1	06/27/16:209152
Total Trihalomethanes	102	--	ug/L		551.1	06/24/16:207472	551.1	06/27/16:209152
EPA 552.2[AGT:1'12]								
2,3-Dibromopropionic Acid‡	101	70-130	%		552	06/29/16:207632	552.2	06/30/16:209306
Bromoacetic Acid	ND	1	ug/L		552	06/29/16:207632	552.2	06/30/16:209378
Chloroacetic Acid	ND	2	ug/L		552	06/29/16:207632	552.2	06/30/16:209306
Dibromoacetic Acid	1	1	ug/L		552	06/29/16:207632	552.2	06/30/16:209378
Dichloroacetic Acid	2	1	ug/L		552	06/29/16:207632	552.2	06/30/16:209306
Trichloroacetic Acid	9	1	ug/L		552	06/29/16:207632	552.2	06/30/16:209306
Haloacetic acids (five)	12	--	ug/L		552	06/29/16:207632	552.2	06/30/16:209378

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, Na2SO3
‡Surrogate. * PQL adjusted for dilution.

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July 11, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1607216-001
Customer ID : 2-19144

Sampled On : June 21, 2016-10:00
Sampled By : T. Lindberg
Received On : June 24, 2016-12:15
Matrix : Water

Description : ASR-2 Backflush
Project : MPWMD

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Radio Chemistry[P:1]								
Gross Alpha	0.550 ± 1.08	1.44	pCi/L	15/5	900.0	07/05/16-08:25 2P1607797	900.0	07/06/16-12:00 2A1609654
Total Alpha Radium (226)	0.000 ± 0.105	0.363	pCi/L	3	903.0	06/29/16-19:00 2P1607659	903.0	07/06/16-14:00 2A1609610

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, Na2SO3
* PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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July 11, 2016 Lab ID : SP 1607216
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Organic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Organic								
Bromodichloromethane	551.1	06/24/16:207472SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.852	111 %	80-120	
			MS	ug/L	9.875	106 %	80-120	
		(SP 1607234-001)	MSD	ug/L	9.646	110 %	80-120	
			MSRPD	ug/L	19.29	2.0%	≤20	
	551.1	06/27/16:209152SBL	CCV	ug/L	83.33	92.6 %	80-120	
			CCV	ug/L	166.7	112 %	80-120	
Bromoform	551.1	06/24/16:207472SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.852	107 %	80-120	
			MS	ug/L	9.875	96.3 %	80-120	
		(SP 1607234-001)	MSD	ug/L	9.646	104 %	80-120	
			MSRPD	ug/L	19.29	3.0%	≤20	
	551.1	06/27/16:209152SBL	CCV	ug/L	83.33	91.6 %	80-120	
			CCV	ug/L	166.7	108 %	80-120	
Chloroform	551.1	06/24/16:207472SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.852	120 %	80-120	
			MS	ug/L	9.875	118 %	80-120	
		(SP 1607234-001)	MSD	ug/L	9.646	118 %	80-120	
			MSRPD	ug/L	19.29	2.6%	≤20	
	551.1	06/28/16:209182SBL	CCV	ug/L	83.33	98.4 %	80-120	
			CCV	ug/L	166.7	120 %	80-120	
Decafluorobiphenyl	551.1	06/24/16:207472SBL	Blank	ug/L	18.98	91.1 %	80-120	
			LCS	ug/L	19.70	85.8 %	80-120	
			MS	ug/L	19.75	103 %	80-120	
		(SP 1607234-001)	MSD	ug/L	19.29	102 %	80-120	
			MSRPD	ug/L	19.29	3.6%	≤20.0	
	551.1	06/27/16:209152SBL	CCV	ug/L	166.7	81.2 %	80-120	
			CCV	ug/L	333.3	86.7 %	80-120	
Dibromochloromethane	551.1	06/24/16:207472SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.852	110 %	80-120	
			MS	ug/L	9.875	105 %	80-120	
		(SP 1607234-001)	MSD	ug/L	9.646	109 %	80-120	
			MSRPD	ug/L	19.29	1.0%	≤20	
	551.1	06/27/16:209152SBL	CCV	ug/L	83.33	91.5 %	80-120	
			CCV	ug/L	166.7	111 %	80-120	
2,3-Dibromopropionic Acid	552	06/29/16:207632SBL	Blank	ug/L	5.000	87.3 %	70-130	
			LCS	ug/L	5.000	107 %	70-130	
			MS	ug/L	5.000	133 %	70-130	435
		(SP 1607216-001)	MSD	ug/L	5.000	104 %	70-130	
			MSRPD	ug/L	5.000	23.9%	≤20.0	435
Dibromoacetic Acid	552	06/29/16:207632SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	106 %	70-130	
			MS	ug/L	10.00	111 %	70-130	
		(SP 1607216-001)	MSD	ug/L	10.00	118 %	70-130	
			MSRPD	ug/L	5.000	5.8%	≤20.0	
Dichloroacetic Acid	552	06/29/16:207632SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	108 %	70-130	
			MS	ug/L	10.00	102 %	70-130	
		(SP 1607216-001)	MSD	ug/L	10.00	119 %	70-130	
			MSRPD	ug/L	5.000	13.1%	≤20.0	
Monobromoacetic Acid	552	06/29/16:207632SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	111 %	70-130	
			MS	ug/L	10.00	104 %	70-130	
		(SP 1607216-001)	MSD	ug/L	10.00	120 %	70-130	
			MSRPD	ug/L	5.000	13.9%	≤20.0	

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July 11, 2016 Lab ID : SP 1607216

Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Organic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Organic								
Monochloroacetic Acid	552	06/29/16:207632SBL	Blank	ug/L		ND	<2	
			LCS	ug/L	10.00	113 %	70-130	
			MS	ug/L	10.00	101 %	70-130	
		(SP 1607216-001)	MSD	ug/L	10.00	119 %	70-130	
			MSRPD	ug/L	5.000	15.5%	≤20.0	
Trichloroacetic Acid	552	06/29/16:207632SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	89.4 %	70-130	
			MS	ug/L	10.00	88.0 %	70-130	
		(SP 1607216-001)	MSD	ug/L	10.00	111 %	70-130	
			MSRPD	ug/L	5.000	12.0%	≤20.0	
2,3-Dibromopropionic Acid	552.2	06/30/16:209306SBL	CCV	ug/L	75.00	110 %	70-130	
			CCV	ug/L	50.00	105 %	70-130	
Dibromoacetic Acid	552.2	06/30/16:209378SBL	CCV	ug/L	150.0	110 %	70-130	
			CCV	ug/L	100.0	109 %	70-130	
Dichloroacetic Acid	552.2	06/30/16:209306SBL	CCV	ug/L	150.0	116 %	70-130	
			CCV	ug/L	100.0	117 %	70-130	
Monobromoacetic Acid	552.2	06/30/16:209378SBL	CCV	ug/L	150.0	119 %	70-130	
			CCV	ug/L	100.0	108 %	70-130	
Monochloroacetic Acid	552.2	06/30/16:209306SBL	CCV	ug/L	150.0	114 %	70-130	
			CCV	ug/L	100.0	125 %	70-130	
Trichloroacetic Acid	552.2	06/30/16:209306SBL	CCV	ug/L	150.0	101 %	70-130	
			CCV	ug/L	100.0	97.8 %	70-130	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

July 11, 2016 Lab ID : SP 1607216

Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	07/06/16:209654caa	CCV	cpm	8634	42.0 %	40 - 49	
			CCB	cpm		0.10	0.2	
Gross Alpha	900.0	07/05/16:207797ELC	Blank	pCi/L		0.39	3	
			LCS	pCi/L	107.4	85.7 %	75-125	
			MS	pCi/L	107.4	106 %	60-140	
		(CC 1682211-001)	MSD	pCi/L	107.4	89.3 %	60-140	
			MSRPD	pCi/L	107.4	15.5%	≤30	
Alpha	903.0	07/06/16:209610caa	CCV	cpm	8634	42.2 %	38 - 47	
			CCB	cpm		0.100	0.16	
Total Alpha Radium (226)	903.0	06/29/16:207659emv	RgBlk	pCi/L		0.04	2	
			LCS	pCi/L	21.59	53.4 %	52-107	
			BS	pCi/L	21.59	50.8 %	43-111	
			BSD	pCi/L	21.59	51.8 %	43-111	
			BSRPD	pCi/L	21.59	1.8%	≤35.5	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
BS	: Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
BSD	: Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
BSRPD	: BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

FGL ENVIRONMENTAL AGRICULTURAL Analytical Chemists

www.fglinc.com

CHAIN OF CUSTODY
AND ANALYSIS REQUEST DOCUMENT

Client: Monterey Bay Analytical Services
Customer Number: 2019144
Address: 4 Justin Court
Monterey, CA 93940

Phone: (831)375-6227 Fax: (831)641-0734
Email Address: info@mbasinc.com
Contact Person: David Holland
Project Name: MPWMD
Purchase Order Number:
Quote Number:

Rush Analysis: ☐ 5 Day ☐ 4 Day ☐ 3 Day ☐ 2 Day ☐ 24 hour
Rush pre-approval by lab (initals): ____________
Electronic Data Transfer: ☐ No ☐ State ☐ Client Other: ____________

Sampler(s): T. Lindberg

Sampling Fee: ____________ Pickup Fee: ____________
Compositor Setup Date: ____________ Time: ____________

Lab Number: 1607216

TEST DESCRIPTION AND ANALYSES REQUESTED

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling: Composite (C) Grab (G)	Number of Containers	Type of Containers: (G)Glass (P)Plastic (V)VOA (MT)Metal Tube	Potable (P) Non-Potable (NP) Ag Water (AgW)	(SW) Surface Water (MW) Monitoring Well (GW) Ground Water (TB) Travel Blank (WW) Waste Water (DW) Drinking Water	(S) Soil (SLG) Sludge (SLD) Solid (O) Oil	BacT: (Sys) System (SRC) Source (W) Waste	BacT: (ROUT)Routine (RPT)Repeat (OTH)Other (RPL)Replace	(LT) Leaf Tissue (PET) Petiole Tissue (PRD) Produce	Preservative: (1) NaOH + ZnAc, (2) NaOH, (3) HCl (4) H2SO4, (5) HNO3, (6) Na2S2O3, (7) Other	Gross Alpha	Radium 226	HAA5	TTHM
	ASR-2 backflush	6/21/16	1000	G	2	P								X	X	X	X
					4	g											

Remarks
AB49043
53237037 2

Relinquished	Date:	Time:	Relinquished	Date:	Time:	Relinquished	Date:	Time:
[signature]								
Received By: [signature]	6/24/16	0925	Received By:			Received By:		

6C

Corporate Offices & Laboratory
853 Corporation Street
Santa Paula, CA 93060
TEL: (805)392-2000
Env FAX: (805)525-4172 / Ag FAX: (805)392-2063
CA ELAP Certification No.1573

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2500 Stagecoach Road
Stockton, CA 95215
TEL: (209)942-0182
FAX: (209)942-0423
CA ELAP Certification No. 1563

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563 E. Lindo Avenue
Chico, CA 95926
TEL: (530)343-5818
FAX: (530)343-3807
CA ELAP Certification No. 2670

Office & Laboratory
3442 Empresa Drive, Suite D
San Luis Obispo, CA 93401
TEL: (805)783-2940
FAX: (805)783-2912
CA ELAP Certification No. 2775

Office & Laboratory
9415 W. Goshen Avenue
Visalia, CA 93291
TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810

Condition Upon Receipt (Attach to COC)

Sample Receipt at SP:

1. Number of ice chests/packages received: **1**
2. Shipper tracking numbers **532370372**
3. Were samples received in a chilled condition?
   Temps: **6** / _____ / _____ / _____ / _____ / _____ / _____
4. Surface water (SWTR) bact samples: A sample that has a temperature upon receipt of >10C, whether iced or not, should be flagged unless the time since sample collection has been less than two hours.
5. Do the number of bottles received agree with the COC? **Yes** No N/A
6. Verify sample date, time, sampler **Yes** No N/A
7. Were the samples received intact? (i.e. no broken bottles, leaks, etc.) **Yes** No
8. Were sample custody seals intact? Yes No **N/A**

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? **Yes** No
2. Did bottle labels correspond with the client's ID's? **Yes** No
3. Were all bottles requiring sample preservation properly preserved? Yes No **N/A** **FGL**
   [Exception: Oil & Grease, VOA and CrVI verified in lab]
4. VOAs checked for Headspace? **Yes** No N/A
5. Were all analyses within holding times at time of receipt? **Yes** No
6. Have rush or project due dates been checked and accepted? Yes No **N/A**

Include a copy of the COC for lab delivery. (Bacti. Inorganics and Radio)

Sample Receipt, Login and Verification completed by:

Reviewed and Approved By **Shawn Peck** Digitally signed by Shawn Peck
Title: Sample Receiving
Date: 06/30/2016-09:30:37

Discrepency Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

2. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

(2019144)
Monterey Bay Analytical Services
SP 1607216
SRP-06/30/2016-09:30:37

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1606c29

Report Created for: Monterey Bay Analytical

4 Justin Court, Suite D
Monterey, CA 93940

Project Contact: David Holland
Project P.O.:
Project Name: MPWMD

Project Received: 06/24/2016

Analytical Report reviewed & approved for release on 06/30/2016 by:

Angela Rydelius,
Laboratory Manager

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1606C29

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1606C29
Date Received:	6/24/16 10:08	**Extraction Method:**	RSK175
Date Prepared:	6/28/16	**Analytical Method:**	RSK175
Project:	MPWMD	**Unit:**	µg/L

Dissolved Gases by RSK 175

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR-2 backflush	1606C29-001A	Water	06/21/2016 10:00	GC26	122965

Analytes	Result	RL	DF	Date Analyzed
Methane	**0.43**	0.10	1	06/28/2016 14:00

Analyst(s): AK

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
"When Quality Counts"

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Quality Control Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1606C29
Date Prepared:	6/28/16	**BatchID:**	122965
Date Analyzed:	6/28/16	**Extraction Method:**	RSK175
Instrument:	GC26	**Analytical Method:**	RSK175
Matrix:	Air	**Unit:**	µL/L
Project:	MPWMD	**Sample ID:**	MB/LCS-122965

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	11.4	0.50	10	-	113	70-130

QA/QC Officer

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1606C29 **ClientCode: MBAS**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
David Holland
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940
831-375-6227 FAX: 831-641-0734

Email: mweidner@mbasinc.com; Dholland@mbas
cc/3rd Party:
PO:
ProjectNo: MPWMD

Bill to:
Accounts Payable
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940

Requested TAT: 5 days;

Date Received: **06/24/2016**
Date Logged: **06/27/2016**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1606C29-001	ASR-2 backflush	Water	6/21/2016 10:00	☐	A											

Test Legend:

1	RSK175_W	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Maria Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Analytical, Inc.
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WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL
QC Level: LEVEL 2
Work Order: 1606C29
Project: MPWMD
Client Contact: David Holland
Date Logged: 6/27/2016
Comments:
Contact's Email: mweidner@mbasinc.com; Dholland@mbasinc.com; 4mbas@sbcglobal.net; info@mbasinc.com

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1606C29-001A	ASR-2 backflush	Water	RSK175 <Methane_4>	3	VOA w/ HCl	☐	6/21/2016 10:00	5 days	None	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

1606C29

McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY

☐ GeoTracker EDF ☐ PDF ☐ Excel ☐ Write On (DW)

Report To: David Holland	Bill To:
Company: Monterey Bay Analytical Services	
4 Justin Ct. Suite D	
Monterey, Ca 93940	E-Mail: info@mbasinc.com
Tele: (831) 375 - 6227	Fax: (831) 641-0734
Project #:	Project Name:
Project Location: MPWMD	
Sampler Signature:	

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	Analysis Request: MTBE / BTEX & TPH as Gas (602 / 8021 + 8015)	MTBE / BTEX ONLY (EPA 602 / 8021)	TPH as Diesel / Motor Oil (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)	Other: Methane	Comments
✓	ASR-2 backflush	6/21/16	1000	3	G	X					X	X																			X	AB49043

Relinquished By: David Holland	Date: 6/23/16	Time: 1600	Received By:
Relinquished By:	Date: 6/24	Time: 1008	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/t° 0.5 COMMENTS:
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

VOAS O&G METALS OTHER
PRESERVATION_____ pH<2_____

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"When Quality Counts"

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Sample Receipt Checklist

Client Name:	**Monterey Bay Analytical**	Date and Time Received:	**6/24/2016 10:08**
Project Name:	**MPWMD**	Date Logged:	**6/27/2016**
WorkOrder №:	**1606C29** Matrix: Water	Received by:	Agustina Venegas
Carrier:	OnTrac	Logged by:	Maria Venegas

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☐	No ☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Sample/Temp Blank temperature	Temp: 0.5°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☑	No ☐	NA ☐
Sample labels checked for correct preservation?	Yes ☑	No ☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes ☐	No ☐	NA ☑
Samples Received on Ice?	Yes ☑	No ☐	

(Ice Type: WET ICE)

UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes ☐	No ☐	NA ☑
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes ☐	No ☐	NA ☑

Comments:

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS
www.MBASinc.com
ELAP Certification Number: 2385

 Monday, July 18, 2016

Lab Number: AB49176

Collection Date/Time: 6/22/2016 10:30 Sample Collector: LINDBERG T Client Sample #:

Submittal Date/Time: 6/22/2016 15:20 Sample ID Coliform Designation:

Sample Description: ASR-3 backflush

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**129**		10		6/27/2016	BS
Aluminum, Total	EPA200.8	µg/L	**Not Detected**		10	1000	6/23/2016	SM
Ammonia-N	SM4500NH3 D	mg/L	**Not Detected**		0.05		7/6/2016	MW
Arsenic, Total	EPA200.8	µg/L	**16**		1	10	6/23/2016	SM
Barium, Total	EPA200.8	µg/L	**52**		10	1000	6/23/2016	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	**157**		10		6/28/2016	LRH
Boron	EPA200.7	mg/L	**Not detected**		0.05		6/29/2016	MW
Bromide	EPA300.0	mg/L	**Not Detected**	IA	0.1		6/22/2016	HM
Calcium	EPA200.7	mg/L	**38**		0.5		6/29/2016	MW
Carbonate as CaCO3	SM2320B	mg/L	**Not Detected**		10		6/28/2016	LRH
Chloramines	SM4500-Cl G	mg/L	**Not Detected**		0.05		6/22/2016	LRH
Chloride	EPA300.0	mg/L	**30**		1	250	6/22/2016	HM
DOC	SM5310C	mg/L	**1.5**		0.2		6/28/2016	MW
Fluoride	EPA300.0	mg/L	**0.3**		0.1	2.0	6/22/2016	HM
Gross Alpha	EPA900.0	pCi/L	**1.16 ± 1.41**	E		15	7/6/2016	FGL
Haloacetic Acids	EPA552	µg/L	**16**	E		60	6/30/2016	FGL
Iron	EPA200.7	µg/L	**53**		10	300	6/29/2016	MW
Iron, Dissolved	EPA200.7	µg/L	**Not Detected**		10	300	6/29/2016	MW
Kjehldahl Nitrogen	SM4500-NH3 B,	mg/L	**Not Detected**		0.5		6/27/2016	LJ
Lithium	EPA200.8	µg/L	**6**		1		6/23/2016	SM
Magnesium	EPA200.7	mg/L	**13**		0.5		6/29/2016	MW
Manganese, Dissolved	EPA200.7	µg/L	**Not Detected**		10	50	6/29/2016	MW
Manganese, Total	EPA200.7	µg/L	**Not Detected**		10	50	6/29/2016	MW
Mercury, Total	EPA200.8	µg/L	**Not Detected**		0.5	2	6/23/2016	SM
Methane	EPA174/175	µg/L	**0.52**	E	0.1		6/28/2016	MCCAM
Molybdenum, Total	EPA200.8	µg/L	**76**		1	1000	6/23/2016	SM
Nickel, Total	EPA200.8	µg/L	**Not Detected**		10	100	6/23/2016	SM
Nitrate as NO3	EPA300.0	mg/L	**1**		1	45	6/22/2016	HM
Nitrate as NO3-N	EPA300.0	mg/L	**0.1**		0.1	10	6/22/2016	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	**0.1**		0.1		6/22/2016	HM
Nitrite as NO2-N	EPA300.0	mg/L	**Not Detected**	IA	0.1	1.0	6/22/2016	HM
o-Phosphate-P, Dissolved	EPA300.0	mg/L	**0.3**		0.1		6/22/2016	HM

mg/L: Milligrams per liter ug/L : Micrograms per liter PQL : Practical Quantitation Limit MCL: Maximum Contamination Level

H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See Report attachments. T = Temperature Exceedance

Lab Number: **AB49176**

Collection Date/Time: 6/22/2016 10:30 Sample Collector: LINDBERG T Client Sample #:

Submittal Date/Time: 6/22/2016 15:20 Sample ID Coliform Designation:

Sample Description: ASR-3 backflush

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
pH (Laboratory)	SM4500-H+B	pH (H)	**7.6**		0.1		6/22/2016	LRH
Phosphorus, Total	HACH 8190	mg/L	**0.28**		0.03		7/5/2016	LRH
Potassium	EPA200.7	mg/L	**2.8**		0.5		6/29/2016	MW
QC Anion Sum x 100	Calculation	%	**99%**				6/28/2016	LRH
QC Anion-Cation Balance	Calculation	%	**-1**				7/1/2016	MW
QC Cation Sum x 100	Calculation	%	**96%**				7/1/2016	MW
QC Ratio TDS/SEC	Calculation		**0.61**				7/1/2016	MP
Selenium, Total	EPA200.8	µg/L	**9**		2	50	6/23/2016	SM
Silica as SiO2, Total	EPA200.7	mg/L	**24**		0.5		6/29/2016	MW
Sodium	EPA200.7	mg/L	**41**		0.5		6/29/2016	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	**501**		1	900	6/26/2016	LJ
Strontium, Total	EPA200.8	µg/L	**207**		5		6/23/2016	SM
Sulfate	EPA300.0	mg/L	**72**		1	250	6/22/2016	HM
TOC	SM5310C	mg/L	**1.4**		0.2		6/28/2016	MW
Total Diss. Solids	SM2540C	mg/L	**306**		10	500	6/28/2016	MP
Total Nitrogen	Calculation	mg/L	**Not Detected**		0.5		6/27/2016	LJ
Total Radium 226	EPA903.0	pCi/L	**0.835 ± 0.370**	E		3	7/13/2016	FGL
Trihalomethanes	EPA524.2	µg/L	**99.7**	E		80	6/27/2016	FGL
Uranium by ICP/MS	EPA200.8	µg/L	**1**		1	30	6/23/2016	SM
Vanadium, Total	EPA200.8	µg/L	**Not Detected**		5	1000	6/23/2016	SM
Zinc, Total	EPA200.8	µg/L	**231**		20	5000	6/23/2016	SM

Sample Comments:

Report Approved by:

David Holland, Laboratory Director

mg/L: Milligrams per liter ug/L : Micrograms per liter PQL : Practical Quantitation Limit MCL: Maximum Contamination Level

H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See Report attachments. T = Temperature Exceedance

July 18, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1607215
Customer : 2-19144

Laboratory Report

Introduction: This report package contains total of 7 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(2 pages)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
ASR-3 Backflush	06/22/2016	06/24/2016	SP 1607215-001	W

Sampling and Receipt Information: All samples were received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. All samples arrived at 6 °C. All samples were prepared and analyzed within the method specified hold time. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Organic QC

551.1	06/27/2016:209152 All analysis quality controls are within established criteria.
	06/28/2016:209182 All analysis quality controls are within established criteria.
	06/24/2016:207472 All preparation quality controls are within established criteria.
552	06/29/2016:207632 All preparation quality controls are within established criteria, except: The following note applies to 2,3-Dibromopropionic Acid: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery. The following note applies to 2,3-Dibromopropionic Acid: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
552.2	06/30/2016:209306 All analysis quality controls are within established criteria.

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July 18, 2016 Lab ID : SP 1607215
Monterey Bay Analytical Services Customer : 2-19144

Organic QC

552.2	06/30/2016:209378 All analysis quality controls are within established criteria.

Radio QC

900.0	07/06/2016:209651 All analysis quality controls are within established criteria.
	07/05/2016:207797 All preparation quality controls are within established criteria.
903.0	07/13/2016:209956 All analysis quality controls are within established criteria.
	07/10/2016:208051 All preparation quality controls are within established criteria.

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-07-18

July 18, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : ASR-3 Backflush
Project : MPWMD

Lab ID : SP 1607215-001
Customer ID : 2-19144

Sampled On : June 22, 2016-10:30
Sampled By : T. Lindberg
Received On : June 24, 2016-12:15
Matrix : Water

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
EPA 551.1[VOA:1'15]								
Decafluorobiphenyl‡	129	80-120	%		551.1	06/24/16:207472	551.1	06/27/16:209152
Bromodichloromethane	22.5	0.5	ug/L		551.1	06/24/16:207472	551.1	06/27/16:209152
Bromoform	1.1	0.5	ug/L		551.1	06/24/16:207472	551.1	06/27/16:209152
Chloroform	65.8	2.5*	ug/L		551.1	06/24/16:207472	551.1	06/28/16:209182
Dibromochloromethane	10.3	0.5	ug/L		551.1	06/24/16:207472	551.1	06/27/16:209152
Total Trihalomethanes	99.7	--	ug/L		551.1	06/24/16:207472	551.1	06/27/16:209152
EPA 552.2[AGT:1'12]								
2,3-Dibromopropionic Acid‡	110	70-130	%		552	06/29/16:207632	552.2	06/30/16:209306
Bromoacetic Acid	ND	1	ug/L		552	06/29/16:207632	552.2	06/30/16:209378
Chloroacetic Acid	ND	2	ug/L		552	06/29/16:207632	552.2	06/30/16:209306
Dibromoacetic Acid	1	1	ug/L		552	06/29/16:207632	552.2	06/30/16:209378
Dichloroacetic Acid	4	1	ug/L		552	06/29/16:207632	552.2	06/30/16:209306
Trichloroacetic Acid	11	1	ug/L		552	06/29/16:207632	552.2	06/30/16:209306
Haloacetic acids (five)	16	--	ug/L		552	06/29/16:207632	552.2	06/30/16:209378

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, Na2SO3
‡Surrogate. * PQL adjusted for dilution.

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July 18, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1607215-001
Customer ID : 2-19144

Sampled On : June 22, 2016-10:30
Sampled By : T. Lindberg
Received On : June 24, 2016-12:15
Matrix : Water

Description : ASR-3 Backflush
Project : MPWMD

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Radio Chemistry[P:1]								
Gross Alpha	1.16 ± 1.41	1.68	pCi/L	15/5	900.0	07/05/16-08:25 2P1607797	900.0	07/06/16-09:00 2A1609651
Total Alpha Radium (226)	0.835 ± 0.370	0.470	pCi/L	3	903.0	07/10/16-11:30 2P1608051	903.0	07/13/16-09:20 2A1609956

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, Na2SO3
* PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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July 18, 2016 Lab ID : SP 1607215
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Organic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Organic								
Bromodichloromethane	551.1	06/24/16:207472SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.852	111 %	80-120	
			MS	ug/L	9.875	106 %	80-120	
		(SP 1607234-001)	MSD	ug/L	9.646	110 %	80-120	
			MSRPD	ug/L	19.29	2.0%	≤20	
	551.1	06/27/16:209152SBL	CCV	ug/L	83.33	92.6 %	80-120	
			CCV	ug/L	166.7	112 %	80-120	
Bromoform	551.1	06/24/16:207472SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.852	107 %	80-120	
			MS	ug/L	9.875	96.3 %	80-120	
		(SP 1607234-001)	MSD	ug/L	9.646	104 %	80-120	
			MSRPD	ug/L	19.29	3.0%	≤20	
	551.1	06/27/16:209152SBL	CCV	ug/L	83.33	91.6 %	80-120	
			CCV	ug/L	166.7	108 %	80-120	
Chloroform	551.1	06/24/16:207472SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.852	120 %	80-120	
			MS	ug/L	9.875	118 %	80-120	
		(SP 1607234-001)	MSD	ug/L	9.646	118 %	80-120	
			MSRPD	ug/L	19.29	2.6%	≤20	
	551.1	06/28/16:209182SBL	CCV	ug/L	83.33	98.4 %	80-120	
			CCV	ug/L	166.7	120 %	80-120	
Decafluorobiphenyl	551.1	06/24/16:207472SBL	Blank	ug/L	18.98	91.1 %	80-120	
			LCS	ug/L	19.70	85.8 %	80-120	
			MS	ug/L	19.75	103 %	80-120	
		(SP 1607234-001)	MSD	ug/L	19.29	102 %	80-120	
			MSRPD	ug/L	19.29	3.6%	≤20.0	
	551.1	06/27/16:209152SBL	CCV	ug/L	166.7	81.2 %	80-120	
			CCV	ug/L	333.3	86.7 %	80-120	
Dibromochloromethane	551.1	06/24/16:207472SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.852	110 %	80-120	
			MS	ug/L	9.875	105 %	80-120	
		(SP 1607234-001)	MSD	ug/L	9.646	109 %	80-120	
			MSRPD	ug/L	19.29	1.0%	≤20	
	551.1	06/27/16:209152SBL	CCV	ug/L	83.33	91.5 %	80-120	
			CCV	ug/L	166.7	111 %	80-120	
2,3-Dibromopropionic Acid	552	06/29/16:207632SBL	Blank	ug/L	5.000	87.3 %	70-130	
			LCS	ug/L	5.000	107 %	70-130	
			MS	ug/L	5.000	133 %	70-130	435
		(SP 1607216-001)	MSD	ug/L	5.000	104 %	70-130	
			MSRPD	ug/L	5.000	23.9%	≤20.0	435
Dibromoacetic Acid	552	06/29/16:207632SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	106 %	70-130	
			MS	ug/L	10.00	111 %	70-130	
		(SP 1607216-001)	MSD	ug/L	10.00	118 %	70-130	
			MSRPD	ug/L	5.000	5.8%	≤20.0	
Dichloroacetic Acid	552	06/29/16:207632SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	108 %	70-130	
			MS	ug/L	10.00	102 %	70-130	
		(SP 1607216-001)	MSD	ug/L	10.00	119 %	70-130	
			MSRPD	ug/L	5.000	13.1%	≤20.0	
Monobromoacetic Acid	552	06/29/16:207632SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	111 %	70-130	
			MS	ug/L	10.00	104 %	70-130	
		(SP 1607216-001)	MSD	ug/L	10.00	120 %	70-130	
			MSRPD	ug/L	5.000	13.9%	≤20.0	

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July 18, 2016 Lab ID : SP 1607215

Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Organic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Organic								
Monochloroacetic Acid	552	06/29/16:207632SBL	Blank	ug/L		ND	<2	
			LCS	ug/L	10.00	113 %	70-130	
			MS	ug/L	10.00	101 %	70-130	
		(SP 1607216-001)	MSD	ug/L	10.00	119 %	70-130	
			MSRPD	ug/L	5.000	15.5%	≤20.0	
Trichloroacetic Acid	552	06/29/16:207632SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	89.4 %	70-130	
			MS	ug/L	10.00	88.0 %	70-130	
		(SP 1607216-001)	MSD	ug/L	10.00	111 %	70-130	
			MSRPD	ug/L	5.000	12.0%	≤20.0	
2,3-Dibromopropionic Acid	552.2	06/30/16:209306SBL	CCV	ug/L	75.00	110 %	70-130	
			CCV	ug/L	50.00	105 %	70-130	
Dibromoacetic Acid	552.2	06/30/16:209378SBL	CCV	ug/L	150.0	110 %	70-130	
			CCV	ug/L	100.0	109 %	70-130	
Dichloroacetic Acid	552.2	06/30/16:209306SBL	CCV	ug/L	150.0	116 %	70-130	
			CCV	ug/L	100.0	117 %	70-130	
Monobromoacetic Acid	552.2	06/30/16:209378SBL	CCV	ug/L	150.0	119 %	70-130	
			CCV	ug/L	100.0	108 %	70-130	
Monochloroacetic Acid	552.2	06/30/16:209306SBL	CCV	ug/L	150.0	114 %	70-130	
			CCV	ug/L	100.0	125 %	70-130	
Trichloroacetic Acid	552.2	06/30/16:209306SBL	CCV	ug/L	150.0	101 %	70-130	
			CCV	ug/L	100.0	97.8 %	70-130	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

July 18, 2016 Lab ID : SP 1607215

Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	07/06/16:209651caa	CCV	cpm	8634	43.5 %	38 - 47	
			CCB	cpm		0.1200	0.18	
Gross Alpha	900.0	07/05/16:207797ELC	Blank	pCi/L		0.39	3	
			LCS	pCi/L	107.4	85.7 %	75-125	
			MS	pCi/L	107.4	106 %	60-140	
		(CC 1682211-001)	MSD	pCi/L	107.4	89.3 %	60-140	
			MSRPD	pCi/L	107.4	15.5%	≤30	
Alpha	903.0	07/13/16:209956caa	CCV	cpm	8629	41.8 %	38 - 47	
			CCB	cpm		0.100	0.19	
Total Alpha Radium (226)	903.0	07/10/16:208051emv	RgBlk	pCi/L		0.01	2	
			LCS	pCi/L	21.58	88.5 %	52-107	
			BS	pCi/L	21.58	78.4 %	43-111	
			BSD	pCi/L	21.58	83.7 %	43-111	
			BSRPD	pCi/L	21.58	6.6%	≤35.5	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
BS	: Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
BSD	: Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
BSRPD	: BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

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AND ANALYSIS REQUEST DOCUMENT

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Customer Number: 2019144
Address: 4 Justin Court
Monterey, CA 93940

Phone: (831)375-6227 Fax: (831)641-0734
Email Address: info@mbasinc.com
Contact Person: David Holland
Project Name: MPWMD
Purchase Order Number:
Quote Number:

Rush Analysis: ☐ 5 Day ☐ 4 Day ☐ 3 Day ☐ 2 Day ☐ 24 hour
Rush pre-approval by lab (initals): ______
Electronic Data Transfer: ☐ No ☐ State ☐ Client Other: ______

Sampler(s): T. Lindberg

Sampling Fee: ______ Pickup Fee: ______
Compositor Setup Date: ______ Time: ______

Lab Number: 1107215

TEST DESCRIPTION AND ANALYSES REQUESTED

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling: Composite (C) Grab (G)	Number of Containers	Type of Containers: (G)Glass (P)Plastic (V)VOA (MT)Metal Tube	Potable (P) Non-Potable (NP) Ag Water (AgW)	(SW) Surface Water (MW) Monitoring Well (GW) Ground Water (TB) Travel Blank (WW) Waste Water (DW) Drinking Water	(S) Soil (SLG) Sludge (SLD) Solid (O) Oil	BacT: (Sys) System (SRC) Source (W) Waste	BacT: (ROUT)Routine (RPT)Repeat (OTH)Other (RPL)Replace	(LT) Leaf Tissue (PET) Petiole Tissue (PRD) Produce	Preservative: (1) NaOH + ZnAc, (2) NaOH, (3) HCl (4) H2SO4, (5) HNO3, (6) Na2S2O3, (7) Other	Gross Alpha	Radium 226	HAA5	TTHM
1.	ASR-3 backflush	6/22/16	1030	G	2	P								X	X	X	X
					4	g											

Remarks
AB49176
532370318

Relinquished	Date:	Time:	Relinquished	Date:	Time:	Relinquished	Date:	Time:
Received By:	Date: 6/24/16	Time: 10:15	Received By:	Date:	Time:	Received By:	Date:	Time:

6°C

Corporate Offices & Laboratory
853 Corporation Street
Santa Paula, CA 93060
TEL: (805)392-2000
Env FAX: (805)525-4172 / Ag FAX: (805)392-2063
CA ELAP Certification No.1573

Office & Laboratory
2500 Stagecoach Road
Stockton, CA 95215
TEL: (209)942-0182
FAX: (209)942-0423
CA ELAP Certification No. 1563

Office & Laboratory
563 E. Lindo Avenue
Chico, CA 95926
TEL: (530)343-5818
FAX: (530)343-3807
CA ELAP Certification No. 2670

Office & Laboratory
3442 Empresa Drive, Suite D
San Luis Obispo, CA 93401
TEL: (805)783-2940
FAX: (805)783-2912
CA ELAP Certification No. 2775

Office & Laboratory
9415 W. Goshen Avenue
Visalia, CA 93291
TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810

Condition Upon Receipt (Attach to COC)

Sample Receipt at SP:

1. Number of ice chests/packages received: **1**
2. Shipper tracking numbers **532370372**
3. Were samples received in a chilled condition?
   Temps: **6** / _____ / _____ / _____ / _____ / _____ / _____
4. Surface water (SWTR) bact samples: A sample that has a temperature upon receipt of >10C, whether iced or not, should be flagged unless the time since sample collection has been less than two hours.
5. Do the number of bottles received agree with the COC? **Yes** No N/A
6. Verify sample date, time, sampler **Yes** No N/A
7. Were the samples received intact? (i.e. no broken bottles, leaks, etc.) **Yes** No
8. Were sample custody seals intact? Yes No **N/A**

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? **Yes** No
2. Did bottle labels correspond with the client's ID's? **Yes** No
3. Were all bottles requiring sample preservation properly preserved? Yes No **N/A** **FGL**
   [Exception: Oil & Grease, VOA and CrVI verified in lab]
4. VOAs checked for Headspace? **Yes** No N/A
5. Were all analyses within holding times at time of receipt? **Yes** No
6. Have rush or project due dates been checked and accepted? Yes No **N/A**

Include a copy of the COC for lab delivery. (Bacti. Inorganics and Radio)

Sample Receipt, Login and Verification completed by:

Reviewed and Approved By **Shawn Peck** Digitally signed by Shawn Peck
Title: Sample Receiving
Date: 06/30/2016-09:33:59

Discrepancy Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

2. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

(2019144)
Monterey Bay Analytical Services
SP 1607215
SRP-06/30/2016-09:33:59

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1606C15

Report Created for: Monterey Bay Analytical

4 Justin Court, Suite D
Monterey, CA 93940

Project Contact: David Holland
Project P.O.:
Project Name: MPWMD

Project Received: 06/24/2016

Analytical Report reviewed & approved for release on 06/30/2016 by:

Angela Rydelius,
Laboratory Manager

McCampbell Analytical, Inc.
"When Quality Counts"
1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1606C15

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Analytical Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1606C15
Date Received:	6/24/16 10:08	**Extraction Method:**	RSK175
Date Prepared:	6/28/16	**Analytical Method:**	RSK175
Project:	MPWMD	**Unit:**	µg/L

Dissolved Gases by RSK 175

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR-3 backflush	1606C15-001A	Water	06/22/2016 10:08	GC26	122965

Analytes	Result	RL	DF	Date Analyzed
Methane	**0.52**	0.10	1	06/28/2016 14:17

Analyst(s): AK

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
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Quality Control Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1606C15
Date Prepared:	6/28/16	**BatchID:**	122965
Date Analyzed:	6/28/16	**Extraction Method:**	RSK175
Instrument:	GC26	**Analytical Method:**	RSK175
Matrix:	Air	**Unit:**	µL/L
Project:	MPWMD	**Sample ID:**	MB/LCS-122965

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	11.4	0.50	10	-	113	70-130

QA/QC Officer

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1606C15 **ClientCode: MBAS**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
David Holland
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940
831-375-6227 FAX: 831-641-0734

Email: mweidner@mbasinc.com; Dholland@mbas
cc/3rd Party:
PO:
ProjectNo: MPWMD

Bill to:
Accounts Payable
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940

Requested TAT: **5 days;**

Date Received: **06/24/2016**
Date Logged: **06/27/2016**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12
1606C15-001	ASR-3 backflush	Water	6/22/2016 10:30	☐	A											

Test Legend:

1	RSK175_W	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Maria Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL
QC Level: LEVEL 2
Work Order: 1606C15
Project: MPWMD
Client Contact: David Holland
Date Logged: 6/27/2016
Comments:
Contact's Email: mweidner@mbasinc.com; Dholland@mbasinc.com; 4mbas@sbcglobal.net; info@mbasinc.com

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1606C15-001A	ASR-3 backflush	Water	RSK175 <Methane_4>	3	VOA w/ HCl	☐	6/22/2016 10:30	5 days	None	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

1606C15

McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY

☐ GeoTracker EDF ☐ PDF ☐ Excel ☐ Write On (DW)

Report To: David Holland **Bill To:**
Company: Monterey Bay Analytical Services
4 Justin Ct. Suite D
Monterey, Ca 93940 E-Mail: info@mbasinc.com
Tele: (831) 375 - 6227 **Fax:** (831) 641-0734
Project #: **Project Name:** MPWMD
Project Location:
Sampler Signature:

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	Analysis Request: MTBE / BTEX & TPH as Gas (602 / 8021 + 8015)	MTBE / BTEX ONLY (EPA 602 / 8021)	TPH as Diesel / Motor Oil (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)	Other: Methane	Comments
✓	ASR-3 backflush	6/22/16	1030	3	G	X					X	X																			X	AB49176

Relinquished By:	Date:	Time:	Received By:
David Holland	6/23/16	1600	
Relinquished By:	Date: 6/24	Time: 1008	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/t° 05
GOOD CONDITION____
HEAD SPACE ABSENT____
DECHLORINATED IN LAB____
APPROPRIATE CONTAINERS____
PRESERVED IN LAB____

COMMENTS:

Tracking #: 532370334

VOAS O&G METALS OTHER
PRESERVATION____ pH<2____

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Sample Receipt Checklist

Client Name:	**Monterey Bay Analytical**	Date and Time Received:	**6/24/2016 10:08**
Project Name:	**MPWMD**	Date Logged:	**6/27/2016**
WorkOrder №:	**1606C15** Matrix: Water	Received by:	Alexandra Iniguez
Carrier:	Golden State Overnight	Logged by:	Maria Venegas

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☐	No ☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Sample/Temp Blank temperature	Temp: 0.5°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☑	No ☐	NA ☐
Sample labels checked for correct preservation?	Yes ☑	No ☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes ☑	No ☐	NA ☐
Samples Received on Ice?	Yes ☑	No ☐	
	(Ice Type: WET/BLU)		

UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes ☐	No ☐	NA ☑
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes ☐	No ☐	NA ☑

Comments:

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS
www.MBASinc.com
ELAP Certification Number: 2385

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Thursday, July 07, 2016

Lab Number: AB48896

Collection Date/Time:	6/16/2016	14:20	Sample Collector:	LINDBERG T	Client Sample #:
Submittal Date/Time:	6/16/2016	15:18	Sample ID		Coliform Designation:

Sample Description: MW-1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**138**		10		6/17/2016	BS
Aluminum, Total	EPA200.8	µg/L	**Not Detected**		10	1000	6/23/2016	SM
Ammonia-N	SM4500NH3 D	mg/L	**Not Detected**		0.05		7/6/2016	MW
Arsenic, Total	EPA200.8	µg/L	**2**		1	10	6/23/2016	SM
Barium, Total	EPA200.8	µg/L	**19**		10	1000	6/23/2016	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	**168**		10		6/17/2016	LRH
Boron	EPA200.7	mg/L	**Not detected**		0.05		6/20/2016	MW
Bromide	EPA300.0	mg/L	**Not Detected**		0.1		6/16/2016	HM
Calcium	EPA200.7	mg/L	**45**		0.5		6/20/2016	MW
Carbonate as CaCO3	SM2320B	mg/L	**Not Detected**		10		6/17/2016	LRH
Chloramines	SM4500-Cl G	mg/L	**Not Detected**		0.05		6/16/2016	SM
Chloride	EPA300.0	mg/L	**32**		1	250	6/16/2016	HM
DOC	SM5310C	mg/L	**1.3**		0.2		6/17/2016	MW
Fluoride	EPA300.0	mg/L	**0.2**		0.1	2.0	6/16/2016	HM
Gross Alpha	EPA900.0	pCi/L	**0.924 ± 1.32**	E		15	6/28/2016	FGL
Haloacetic Acids	EPA552	µg/L	**Not Detected**	E		60	6/28/2016	FGL
Iron	EPA200.7	µg/L	**Not Detected**		10	300	6/20/2016	MW
Iron, Dissolved	EPA200.7	µg/L	**Not Detected**		10	300	6/20/2016	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	**Not Detected**		0.5		6/27/2016	LJ
Lithium	EPA200.8	µg/L	**8**		1		6/23/2016	SM
Magnesium	EPA200.7	mg/L	**11**		0.5		6/20/2016	MW
Manganese, Dissolved	EPA200.7	µg/L	**Not Detected**		10	50	6/20/2016	MW
Manganese, Total	EPA200.7	µg/L	**Not Detected**		10	50	6/20/2016	MW
Mercury, Total	EPA200.8	µg/L	**Not Detected**		0.5	2	6/23/2016	SM
Methane	EPA174/175	µg/L	**0.57**	E	0.1		6/28/2016	MCCAM
Molybdenum, Total	EPA200.8	µg/L	**3**		1	1000	6/23/2016	SM
Nickel, Total	EPA200.8	µg/L	**Not Detected**		10	100	6/23/2016	SM
Nitrate as NO3	EPA300.0	mg/L	**Not Detected**		1	45	6/16/2016	HM
Nitrate as NO3-N	EPA300.0	mg/L	**0.1**		0.1	10	6/16/2016	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	**0.1**		0.1		6/16/2016	HM
Nitrite as NO2-N	EPA300.0	mg/L	**Not Detected**		0.1	1.0	6/16/2016	HM

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

MBAS
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ELAP Certification Number: 2385

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Thursday, July 07, 2016

Lab Number: AB48896

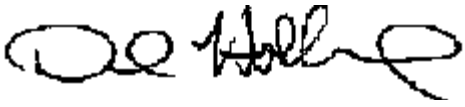
Collection Date/Time:	6/16/2016	14:20	Sample Collector:	LINDBERG T	Client Sample #:
Submittal Date/Time:	6/16/2016	15:18	Sample ID		Coliform Designation:

Sample Description: MW-1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P, Dissolved	EPA300.0	mg/L	**Not Detected**		0.1		6/16/2016	HM
pH (Laboratory)	SM4500-H+B	pH (H)	**7.6**		0.1		6/16/2016	HM
Phosphorus, Total	HACH 8190	mg/L	**0.04**		0.03		6/21/2016	LRH
Potassium	EPA200.7	mg/L	**2.9**		0.5		6/20/2016	MW
QC Anion Sum x 100	Calculation	%	**100%**				6/20/2016	LRH
QC Anion-Cation Balance	Calculation	%	**0**				6/21/2016	MW
QC Cation Sum x 100	Calculation	%	**100%**				6/21/2016	MW
QC Ratio TDS/SEC	Calculation		**0.62**				6/20/2016	HM
Selenium, Total	EPA200.8	µg/L	**4**		2	50	6/23/2016	SM
Silica as SiO2, Total	EPA200.7	mg/L	**26**		0.5		6/20/2016	MW
Sodium	EPA200.7	mg/L	**45**		0.5		6/20/2016	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	**520**		1	900	6/20/2016	HM
Strontium, Total	EPA200.8	µg/L	**242**		5		6/23/2016	SM
Sulfate	EPA300.0	mg/L	**73**		1	250	6/16/2016	HM
TOC	SM5310C	mg/L	**1.1**		0.2		6/17/2016	MW
Total Diss. Solids	SM2540C	mg/L	**323**		10	500	6/16/2016	MP
Total Nitrogen	Calculation	mg/L	**Not Detected**		0.5		6/27/2016	LJ
Total Radium 226	EPA903.0	pCi/L	**0.000 ± 0.389**	E		3	6/28/2016	FGL
Trihalomethanes	EPA524.2	µg/L	**82.1**	E		80	6/27/2016	FGL
Uranium by ICP/MS	EPA200.8	µg/L	**1**		1	30	6/23/2016	SM
Vanadium, Total	EPA200.8	µg/L	**Not Detected**		5	1000	6/23/2016	SM
Zinc, Total	EPA200.8	µg/L	**Not Detected**		20	5000	6/23/2016	SM

Sample Comments:

Report Approved by:



David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

Monterey Bay Analytical Services
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www.MBASinc.com
ELAP Certification Number: 2385

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Thursday, July 07, 2016

Lab Number: AB48897

Collection Date/Time:	6/16/2016	15:00	Sample Collector:	LINDBERG T	Client Sample #:
Submittal Date/Time:	6/16/2016	15:18	Sample ID		Coliform Designation:

Sample Description: SMSD

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**134**		10		6/17/2016	BS
Aluminum, Total	EPA200.8	µg/L	**Not Detected**		10	1000	6/23/2016	SM
Ammonia-N	SM4500NH3 D	mg/L	**Not Detected**		0.05		7/6/2016	MW
Arsenic, Total	EPA200.8	µg/L	**12**		1	10	6/23/2016	SM
Barium, Total	EPA200.8	µg/L	**35**		10	1000	6/23/2016	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	**163**		10		6/17/2016	LRH
Boron	EPA200.7	mg/L	**Not detected**		0.05		6/20/2016	MW
Bromide	EPA300.0	mg/L	**Not Detected**		0.1		6/16/2016	HM
Calcium	EPA200.7	mg/L	**43**		0.5		6/20/2016	MW
Carbonate as CaCO3	SM2320B	mg/L	**Not Detected**		10		6/17/2016	LRH
Chloramines	SM4500-Cl G	mg/L	**Not Detected**		0.05		6/16/2016	SM
Chloride	EPA300.0	mg/L	**29**		1	250	6/16/2016	HM
DOC	SM5310C	mg/L	**1.4**		0.2		6/17/2016	MW
Fluoride	EPA300.0	mg/L	**0.3**		0.1	2.0	6/16/2016	HM
Gross Alpha	EPA900.0	pCi/L	**1.20 ± 1.32**	E		15	6/28/2016	FGL
Haloacetic Acids	EPA552	µg/L	**9**	E		60	6/28/2016	FGL
Iron	EPA200.7	µg/L	**Not Detected**		10	300	6/20/2016	MW
Iron, Dissolved	EPA200.7	µg/L	**Not Detected**		10	300	6/20/2016	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	**Not Detected**		0.5		6/27/2016	LJ
Lithium	EPA200.8	µg/L	**7**		1		6/23/2016	SM
Magnesium	EPA200.7	mg/L	**11**		0.5		6/20/2016	MW
Manganese, Dissolved	EPA200.7	µg/L	**Not Detected**		10	50	6/20/2016	MW
Manganese, Total	EPA200.7	µg/L	**Not Detected**		10	50	6/20/2016	MW
Mercury, Total	EPA200.8	µg/L	**Not Detected**		0.5	2	6/23/2016	SM
Methane	EPA174/175	µg/L	**0.55**	E	0.1		6/28/2016	MCCAM
Molybdenum, Total	EPA200.8	µg/L	**43**		1	1000	6/23/2016	SM
Nickel, Total	EPA200.8	µg/L	**Not Detected**		10	100	6/23/2016	SM
Nitrate as NO3	EPA300.0	mg/L	**Not Detected**		1	45	6/16/2016	HM
Nitrate as NO3-N	EPA300.0	mg/L	**0.1**		0.1	10	6/16/2016	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	**0.1**		0.1		6/16/2016	HM
Nitrite as NO2-N	EPA300.0	mg/L	**Not Detected**		0.1	1.0	6/16/2016	HM

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

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MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Thursday, July 07, 2016

Lab Number: AB48897

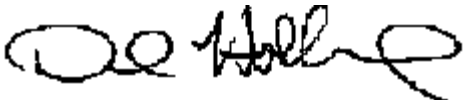
Collection Date/Time:	6/16/2016	15:00	Sample Collector:	LINDBERG T	Client Sample #:
Submittal Date/Time:	6/16/2016	15:18	Sample ID		Coliform Designation:

Sample Description: SMSD

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P, Dissolved	EPA300.0	mg/L	**0.2**		0.1		6/16/2016	HM
pH (Laboratory)	SM4500-H+B	pH (H)	**7.6**		0.1		6/16/2016	HM
Phosphorus, Total	HACH 8190	mg/L	**0.20**		0.03		6/21/2016	LRH
Potassium	EPA200.7	mg/L	**2.8**		0.5		6/20/2016	MW
QC Anion Sum x 100	Calculation	%	**99%**				6/20/2016	LRH
QC Anion-Cation Balance	Calculation	%	**-1**				6/21/2016	MW
QC Cation Sum x 100	Calculation	%	**98%**				6/21/2016	MW
QC Ratio TDS/SEC	Calculation		**0.65**				6/20/2016	HM
Selenium, Total	EPA200.8	µg/L	**13**		2	50	6/23/2016	SM
Silica as SiO2, Total	EPA200.7	mg/L	**24**		0.5		6/20/2016	MW
Sodium	EPA200.7	mg/L	**41**		0.5		6/20/2016	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	**501**		1	900	6/20/2016	HM
Strontium, Total	EPA200.8	µg/L	**267**		5		6/23/2016	SM
Sulfate	EPA300.0	mg/L	**70**		1	250	6/16/2016	HM
TOC	SM5310C	mg/L	**1.4**		0.2		6/17/2016	MW
Total Diss. Solids	SM2540C	mg/L	**328**		10	500	6/16/2016	MP
Total Nitrogen	Calculation	mg/L	**Not Detected**		0.5		6/27/2016	LJ
Total Radium 226	EPA903.0	pCi/L	**0.000 ± 0.316**	E		3	6/28/2016	FGL
Trihalomethanes	EPA524.2	µg/L	**84.2**	E		80	6/27/2016	FGL
Uranium by ICP/MS	EPA200.8	µg/L	**2**		1	30	6/23/2016	SM
Vanadium, Total	EPA200.8	µg/L	**Not Detected**		5	1000	6/23/2016	SM
Zinc, Total	EPA200.8	µg/L	**Not Detected**		20	5000	6/23/2016	SM

Sample Comments:

Report Approved by:



David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

July 1, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1607108
Customer : 2-19144

Laboratory Report

Introduction: This report package contains total of 9 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(4 pages)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
MW-1	06/16/2016	06/22/2016	SP 1607108-001	GW
SMSD	06/16/2016	06/22/2016	SP 1607108-002	GW

Sampling and Receipt Information: All samples were received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. All samples arrived at 5 °C. All samples were prepared and analyzed within the method specified hold time. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Organic QC

551.1	06/27/2016:209152 All analysis quality controls are within established criteria.
	06/28/2016:209182 All analysis quality controls are within established criteria.
	06/24/2016:207472 All preparation quality controls are within established criteria.
552	06/23/2016:207389 All preparation quality controls are within established criteria, except: The following note applies to Dibromoacetic Acid, Monobromoacetic Acid, Dichloroacetic Acid, Trichloroacetic Acid, Monochloroacetic Acid: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
552.2	06/28/2016:209035 All analysis quality controls are within established criteria.

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July 1, 2016 Lab ID : SP 1607108
Monterey Bay Analytical Services Customer : 2-19144

Radio QC

900.0	06/28/2016:209305 All analysis quality controls are within established criteria.
	06/28/2016:209307 All analysis quality controls are within established criteria.
	06/27/2016:207485 All preparation quality controls are within established criteria, except: The following note applies to Gross Alpha: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
903.0	06/28/2016:209227 All analysis quality controls are within established criteria.
	06/27/2016:207537 All preparation quality controls are within established criteria.

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-07-01

July 1, 2016

Lab ID : SP 1607108-001
Customer ID : 2-19144

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Sampled On : June 16, 2016-14:20
Sampled By : Tom Lindberg
Received On : June 22, 2016-13:00
Matrix : Ground Water

Description : MW-1
Project : MPWMD

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
EPA 551.1[VOA:1'15]								
Decafluorobiphenyl‡	116	80-120	%		551.1	06/24/16:207472	551.1	06/27/16:209152
Bromodichloromethane	15.9	0.5	ug/L		551.1	06/24/16:207472	551.1	06/27/16:209152
Bromoform	0.7	0.5	ug/L		551.1	06/24/16:207472	551.1	06/27/16:209152
Chloroform	58.8	2.5*	ug/L		551.1	06/24/16:207472	551.1	06/28/16:209182
Dibromochloromethane	6.7	0.5	ug/L		551.1	06/24/16:207472	551.1	06/27/16:209152
Total Trihalomethanes	82.1	--	ug/L		551.1	06/24/16:207472	551.1	06/27/16:209152
EPA 552.2[AGT:1'12]								
2,3-Dibromopropionic Acid‡	96.9	70-130	%		552	06/23/16:207389	552.2	06/28/16:209035
Bromoacetic Acid	ND	1	ug/L		552	06/23/16:207389	552.2	06/28/16:209035
Chloroacetic Acid	ND	2	ug/L		552	06/23/16:207389	552.2	06/28/16:209035
Dibromoacetic Acid	ND	1	ug/L		552	06/23/16:207389	552.2	06/28/16:209035
Dichloroacetic Acid	ND	1	ug/L		552	06/23/16:207389	552.2	06/28/16:209035
Trichloroacetic Acid	ND	1	ug/L		552	06/23/16:207389	552.2	06/28/16:209035
Haloacetic acids (five)	ND	--	ug/L		552	06/23/16:207389	552.2	06/28/16:209035

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, Na2SO3
‡Surrogate. * PQL adjusted for dilution.

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July 1, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : MW-1
Project : MPWMD

Lab ID : SP 1607108-001
Customer ID : 2-19144

Sampled On : June 16, 2016-14:20
Sampled By : Tom Lindberg
Received On : June 22, 2016-13:00
Matrix : Ground Water

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Radio Chemistry[P:1]								
Gross Alpha	0.924 ± 1.32	1.65	pCi/L		900.0	06/27/16-08:40 2P1607485	900.0	06/28/16-17:00 2A1609305
Total Alpha Radium (226)	0.000 ± 0.389	0.470	pCi/L		903.0	06/27/16-19:00 2P1607537	903.0	06/28/16-14:40 2A1609227

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, Na2SO3
* PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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July 1, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : SMSD
Project : MPWMD

Lab ID : SP 1607108-002
Customer ID : 2-19144

Sampled On : June 16, 2016-15:00
Sampled By : Tom Lindberg
Received On : June 22, 2016-13:00
Matrix : Ground Water

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
EPA 551.1[VOA:1'15]								
Decafluorobiphenyl‡	96.6	80-120	%		551.1	06/24/16:207472	551.1	06/27/16:209152
Bromodichloromethane	19.6	0.5	ug/L		551.1	06/24/16:207472	551.1	06/27/16:209152
Bromoform	1.0	0.5	ug/L		551.1	06/24/16:207472	551.1	06/27/16:209152
Chloroform	54.4	2.5*	ug/L		551.1	06/24/16:207472	551.1	06/28/16:209182
Dibromochloromethane	9.2	0.5	ug/L		551.1	06/24/16:207472	551.1	06/27/16:209152
Total Trihalomethanes	84.2	--	ug/L		551.1	06/24/16:207472	551.1	06/27/16:209152
EPA 552.2[AGT:1'12]								
2,3-Dibromopropionic Acid‡	103	70-130	%		552	06/23/16:207389	552.2	06/28/16:209035
Bromoacetic Acid	ND	1	ug/L		552	06/23/16:207389	552.2	06/28/16:209035
Chloroacetic Acid	ND	2	ug/L		552	06/23/16:207389	552.2	06/28/16:209035
Dibromoacetic Acid	1	1	ug/L		552	06/23/16:207389	552.2	06/28/16:209035
Dichloroacetic Acid	2	1	ug/L		552	06/23/16:207389	552.2	06/28/16:209035
Trichloroacetic Acid	6	1	ug/L		552	06/23/16:207389	552.2	06/28/16:209035
Haloacetic acids (five)	9	--	ug/L		552	06/23/16:207389	552.2	06/28/16:209035

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, Na2SO3
‡Surrogate. * PQL adjusted for dilution.

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July 1, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : SMSD
Project : MPWMD

Lab ID : SP 1607108-002
Customer ID : 2-19144

Sampled On : June 16, 2016-15:00
Sampled By : Tom Lindberg
Received On : June 22, 2016-13:00
Matrix : Ground Water

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Radio Chemistry[P:1]								
Gross Alpha	1.20 ± 1.32	1.48	pCi/L		900.0	06/27/16-08:40 2P1607485	900.0	06/28/16-18:00 2A1609307
Total Alpha Radium (226)	0.000 ± 0.316	0.470	pCi/L		903.0	06/27/16-19:00 2P1607537	903.0	06/28/16-15:00 2A1609227

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, Na2SO3
* PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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July 1, 2016 Lab ID : SP 1607108
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Organic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Organic								
Bromodichloromethane	551.1	06/24/16:207472SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.852	111 %	80-120	
			MS	ug/L	9.875	106 %	80-120	
		(SP 1607234-001)	MSD	ug/L	9.646	110 %	80-120	
			MSRPD	ug/L	19.29	2.0%	≤20	
	551.1	06/27/16:209152SBL	CCV	ug/L	83.33	92.6 %	80-120	
			CCV	ug/L	166.7	112 %	80-120	
Bromoform	551.1	06/24/16:207472SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.852	107 %	80-120	
			MS	ug/L	9.875	96.3 %	80-120	
		(SP 1607234-001)	MSD	ug/L	9.646	104 %	80-120	
			MSRPD	ug/L	19.29	3.0%	≤20	
	551.1	06/27/16:209152SBL	CCV	ug/L	83.33	91.6 %	80-120	
			CCV	ug/L	166.7	108 %	80-120	
Chloroform	551.1	06/24/16:207472SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.852	120 %	80-120	
			MS	ug/L	9.875	118 %	80-120	
		(SP 1607234-001)	MSD	ug/L	9.646	118 %	80-120	
			MSRPD	ug/L	19.29	2.6%	≤20	
	551.1	06/28/16:209182SBL	CCV	ug/L	83.33	98.4 %	80-120	
			CCV	ug/L	166.7	120 %	80-120	
Decafluorobiphenyl	551.1	06/24/16:207472SBL	Blank	ug/L	18.98	91.1 %	80-120	
			LCS	ug/L	19.70	85.8 %	80-120	
			MS	ug/L	19.75	103 %	80-120	
		(SP 1607234-001)	MSD	ug/L	19.29	102 %	80-120	
			MSRPD	ug/L	19.29	3.6%	≤20.0	
	551.1	06/27/16:209152SBL	CCV	ug/L	166.7	81.2 %	80-120	
			CCV	ug/L	333.3	86.7 %	80-120	
Dibromochloromethane	551.1	06/24/16:207472SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.852	110 %	80-120	
			MS	ug/L	9.875	105 %	80-120	
		(SP 1607234-001)	MSD	ug/L	9.646	109 %	80-120	
			MSRPD	ug/L	19.29	1.0%	≤20	
	551.1	06/27/16:209152SBL	CCV	ug/L	83.33	91.5 %	80-120	
			CCV	ug/L	166.7	111 %	80-120	
2,3-Dibromopropionic Acid	552	06/23/16:207389SBL	Blank	ug/L	5.000	123 %	70-130	
			LCS	ug/L	5.000	85.3 %	70-130	
			MS	ug/L	5.000	116 %	70-130	
		(SP 1606787-001)	MSD	ug/L	5.000	96.0 %	70-130	
			MSRPD	ug/L	5.000	19.0%	≤20.0	
Dibromoacetic Acid	552	06/23/16:207389SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	114 %	70-130	
			MS	ug/L	10.00	141 %	70-130	435
		(SP 1606787-001)	MSD	ug/L	10.00	129 %	70-130	
			MSRPD	ug/L	5.000	7.3%	≤20.0	
Dichloroacetic Acid	552	06/23/16:207389SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	111 %	70-130	
			MS	ug/L	10.00	150 %	70-130	435
		(SP 1606787-001)	MSD	ug/L	10.00	135 %	70-130	435
			MSRPD	ug/L	5.000	6.7%	≤20.0	
Monobromoacetic Acid	552	06/23/16:207389SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	113 %	70-130	
			MS	ug/L	10.00	149 %	70-130	435
		(SP 1606787-001)	MSD	ug/L	10.00	185 %	70-130	435
			MSRPD	ug/L	5.000	19.4%	≤20.0	

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853 Corporation Street
Santa Paula, CA 93060
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FAX: (209)942-0423
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FAX: (805)783-2912
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Office & Laboratory
9415 W. Goshen Avenue
Visalia, CA 93291
TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810

July 1, 2016 Lab ID : SP 1607108
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Organic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Organic								
Monochloroacetic Acid	552	06/23/16:207389SBL	Blank	ug/L		ND	<2	
			LCS	ug/L	10.00	120 %	70-130	
			MS	ug/L	10.00	142 %	70-130	435
		(SP 1606787-001)	MSD	ug/L	10.00	129 %	70-130	
			MSRPD	ug/L	5.000	8.4%	≤20.0	
Trichloroacetic Acid	552	06/23/16:207389SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	95.8 %	70-130	
			MS	ug/L	10.00	136 %	70-130	435
		(SP 1606787-001)	MSD	ug/L	10.00	126 %	70-130	
			MSRPD	ug/L	5.000	4.6%	≤20.0	
2,3-Dibromopropionic Acid	552.2	06/28/16:209035SBL	CCV	ug/L	75.00	84.3 %	70-130	
			CCV	ug/L	50.00	86.2 %	70-130	
			CCV	ug/L	75.00	87.0 %	70-130	
Dibromoacetic Acid	552.2	06/28/16:209035SBL	CCV	ug/L	150.0	111 %	70-130	
			CCV	ug/L	100.0	117 %	70-130	
			CCV	ug/L	150.0	115 %	70-130	
Dichloroacetic Acid	552.2	06/28/16:209035SBL	CCV	ug/L	150.0	106 %	70-130	
			CCV	ug/L	100.0	121 %	70-130	
			CCV	ug/L	150.0	111 %	70-130	
Monobromoacetic Acid	552.2	06/28/16:209035SBL	CCV	ug/L	150.0	107 %	70-130	
			CCV	ug/L	100.0	126 %	70-130	
			CCV	ug/L	150.0	112 %	70-130	
Monochloroacetic Acid	552.2	06/28/16:209035SBL	CCV	ug/L	150.0	114 %	70-130	
			CCV	ug/L	100.0	128 %	70-130	
			CCV	ug/L	150.0	119 %	70-130	
Trichloroacetic Acid	552.2	06/28/16:209035SBL	CCV	ug/L	150.0	88.8 %	70-130	
			CCV	ug/L	100.0	94.6 %	70-130	
			CCV	ug/L	150.0	92.0 %	70-130	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

July 1, 2016 Lab ID : SP 1607108
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	06/28/16:209305caa	CCV	cpm	8640	41.9 %	38 - 47	
			CCB	cpm		0.100	0.18	
	900.0	06/28/16:209307caa	CCV	cpm	8640	42.1 %	40 - 49	
			CCB	cpm		0.10	0.2	
Gross Alpha	900.0	06/27/16:207485caa	Blank	pCi/L		0.02	3	
			LCS	pCi/L	107.4	125 %	75-125	
			MS	pCi/L	107.4	166 %	60-140	435
		(SP 1606949-001)	MSD	pCi/L	107.4	167 %	60-140	435
			MSRPD	pCi/L	107.4	0.3%	≤30	
Alpha	903.0	06/28/16:209227caa	CCV	cpm	8640	42.1 %	38 - 47	
			CCB	cpm		0.100	0.19	
Total Alpha Radium (226)	903.0	06/27/16:207537caa	RgBlk	pCi/L		0.22	2	
			LCS	pCi/L	21.59	100 %	52-107	
			BS	pCi/L	21.59	73.9 %	43-111	
			BSD	pCi/L	21.59	69.3 %	43-111	
			BSRPD	pCi/L	21.59	6.4%	≤35.5	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
BS	: Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
BSD	: Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
BSRPD	: BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

www.fglinc.com

CHAIN OF CUSTODY
AND ANALYSIS REQUEST DOCUMENT

Client: Monterey Bay Analytical Services
Customer Number: 2019144
Address: 4 Justin Court
Monterey, CA 93940

Phone: (831)375-6227 Fax: (831)641-0734
Email Address: info@mbasinc.com
Contact Person: David Holland
Project Name: MPWMD
Purchase Order Number:
Quote Number:

Rush Analysis: ☐ 5 Day ☐ 4 Day ☐ 3 Day ☐ 2 Day ☐ 24 hour
Rush pre-approval by lab (initals): _____
Electronic Data Transfer: ☐ No ☐ State ☐ Client Other: _____

Sampler(s): Tom Lindberg

Sampling Fee: _____ Pickup Fee: _____
Compositor Setup Date: _____ Time: _____

Lab Number: 1607106

TEST DESCRIPTION AND ANALYSES REQUESTED

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling: Composite (C) Grab (G)	Number of Containers	Type of Containers: (G)Glass (P)Plastic (V)VOA (MT)Metal Tube	Potable (P) Non-Potable (NP) Ag Water (AgW)	(SW) Surface Water (MW) Monitoring Well (GW) Ground Water (TB) Travel Blank (WW) Waste Water (DW) Drinking Water	(S) Soil (SLG) Sludge (SLD) Solid (O) Oil	BacT: (Sys) System (SRC) Source (W) Waste	BacT: (ROUT)Routine (RPT)Repeat (OTH)Other (RPL)Replace	(LT) Leaf Tissue (PET) Petiole Tissue (PRD) Produce	Preservative: (1) NaOH + ZnAc, (2) NaOH, (3) HCl (4) H2SO4, (5) HNO3, (6) Na2S2O3, (7) Other_____	Gross Alpha	HAA	TTHM	Radium 226									
	MW-1	6/16/16	1420	G	4	G/P	P	GW						X	X	X	X								
	SMSD	6/16/16	1500	G	4	G/P	P	GW						X	X	X	X								

Remarks
AB48896
AB48897
5323376170

Relinquished	Date:	Time:	Relinquished	Date:	Time:	Relinquished	Date:	Time:
	6/21/16	1600						
Received By:	Date:	Time:	Received By:	Date:	Time:	Received By:	Date:	Time:
				6/21/16	1300			

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Visalia, CA 93291
TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810

Condition Upon Receipt (Attach to COC)

Sample Receipt at SP:

1. Number of ice chests/packages received: **1**
2. Shipper tracking numbers **532337670**
3. Were samples received in a chilled condition?
   Temps: **5** / _____ / _____ / _____ / _____ / _____ / _____
4. Surface water (SWTR) bact samples: A sample that has a temperature upon receipt of >10C, whether iced or not, should be flagged unless the time since sample collection has been less than two hours.
5. Do the number of bottles received agree with the COC? **Yes** No N/A
6. Verify sample date, time, sampler **Yes** No N/A
7. Were the samples received intact? (i.e. no broken bottles, leaks, etc.) **Yes** No
8. Were sample custody seals intact? Yes No **N/A**

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? **Yes** No
2. Did bottle labels correspond with the client's ID's? **Yes** No
3. Were all bottles requiring sample preservation properly preserved? Yes No **N/A** **FGL**
   [Exception: Oil & Grease, VOA and CrVI verified in lab]
4. VOAs checked for Headspace? **Yes** No N/A
5. Were all analyses within holding times at time of receipt? **Yes** No
6. Have rush or project due dates been checked and accepted? Yes No **N/A**

Include a copy of the COC for lab delivery. (Bacti. Inorganics and Radio)

Sample Receipt, Login and Verification completed by:

Reviewed and Approved By **Shawn Peck** FGL Digitally signed by Shawn Peck
Title: Sample Receiving
Date: 06/22/2016-15:45:02

Discrepency Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

2. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

(2019144)
Monterey Bay Analytical Services
SP 1607108
SRP-06/22/2016-15:45:02

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1606A34

Report Created for: Monterey Bay Analytical

4 Justin Court, Suite D
Monterey, CA 93940

Project Contact: David Holland
Project P.O.:
Project Name: MPWMD

Project Received: 06/22/2016

Analytical Report reviewed & approved for release on 06/29/2016 by:

Angela Rydelius,
Laboratory Manager

McCampbell Analytical, Inc.
"When Quality Counts"

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1606A34

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

McCampbell Analytical, Inc.
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Analytical Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1606A34
Date Received:	6/22/16 9:51	**Extraction Method:**	RSK175
Date Prepared:	6/28/16	**Analytical Method:**	RSK175
Project:	MPWMD	**Unit:**	µg/L

Dissolved Gases by RSK 175

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	1606A34-001A	Water	06/16/2016 14:20	GC26	122965

Analytes	Result	RL	DF	Date Analyzed
Methane	**0.57**	0.10	1	06/28/2016 13:37

Analyst(s): AK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMSD	1606A34-002A	Water	06/16/2016 15:00	GC26	122965

Analytes	Result	RL	DF	Date Analyzed
Methane	**0.55**	0.10	1	06/28/2016 13:49

Analyst(s): AK

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
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Quality Control Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1606A34
Date Prepared:	6/28/16	**BatchID:**	122965
Date Analyzed:	6/28/16	**Extraction Method:**	RSK175
Instrument:	GC26	**Analytical Method:**	RSK175
Matrix:	Air	**Unit:**	µL/L
Project:	MPWMD	**Sample ID:**	MB/LCS-122965

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	11.4	0.50	10	-	113	70-130

QA/QC Officer

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1606A34 **ClientCode: MBAS**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
David Holland
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940
831-375-6227 FAX: 831-641-0734

Email: mweidner@mbasinc.com; Dholland@mbas
cc/3rd Party:
PO:
ProjectNo: MPWMD

Bill to:
Accounts Payable
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940

Requested TAT: **5 days;**

Date Received: **06/22/2016**
Date Logged: **06/22/2016**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1606A34-001	MW-1	Water	6/16/2016 14:20	☐	A											
1606A34-002	SMSD	Water	6/16/2016 15:00	☐	A											

Test Legend:

1	RSK175_W	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Jena Alfaro

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL
QC Level: LEVEL 2
Work Order: 1606A34
Project: MPWMD
Client Contact: David Holland
Date Logged: 6/22/2016
Comments:
Contact's Email: mweidner@mbasinc.com; Dholland@mbasinc.com; 4mbas@sbcglobal.net; info@mbasinc.com

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1606A34-001A	MW-1	Water	RSK175 <Methane_4>	3	VOA w/ HCl	☐	6/16/2016 14:20	5 days	None	☐	
1606A34-002A	SMSD	Water	RSK175 <Methane_4>	3	VOA w/ HCl	☐	6/16/2016 15:00	5 days	None	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

1606A34

McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
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Telephone: (877) 252-9262 Fax: (925) 252-9269

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY

☐ GeoTracker EDF ☐ PDF ☐ Excel ☐ Write On (DW)

Report To: David Holland	**Bill To:**
Company: Monterey Bay Analytical Services	
4 Justin Ct. Suite D	
Monterey, Ca 93940	**E-Mail:** info@mbasinc.com
Tele: (831) 375 - 6227	**Fax:** (831) 641-0734
Project #:	**Project Name:**
Project Location: MPWMD	
Sampler Signature: Tom Lindberg	

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other
	MW-1	6/16/16	1420	3	G	X					X	X		
	SMSD	6/16/16	1500	3	G	X					X	X		

Analysis Request

MTBE / BTEX & TPH as Gas (602 / 8021 + 8015)	MTBE / BTEX ONLY (EPA 602 / 8021)	TPH as Diesel / Motor Oil (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)

Other

Methane		
X		
X		

Comments

Filter Samples for Metals analysis: Yes / No

AB48896

AB48897

Relinquished By: David Holland	**Date:** 6/21/16	**Time:** 1600
Relinquished By: GSO	**Date:** 6/22/16	**Time:** 0951
Relinquished By:	**Date:**	**Time:**

Received By: GSO

Received By:

Received By:

ICE/t°_____ **COMMENTS:**
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

VOAS O&G METALS OTHER
PRESERVATION_____ **pH<2**_____

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Sample Receipt Checklist

Client Name:	**Monterey Bay Analytical**	Date and Time Received:	**6/22/2016 09:51**
Project Name:	**MPWMD**	Date Logged:	**6/22/2016**
WorkOrder №:	**1606A34** Matrix: Water	Received by:	Jena Alfaro
Carrier:	Golden State Overnight	Logged by:	Jena Alfaro

Chain of Custody (COC) Information

Chain of custody present?	Yes	☑	No	☐	
Chain of custody signed when relinquished and received?	Yes	☑	No	☐	
Chain of custody agrees with sample labels?	Yes	☑	No	☐	
Sample IDs noted by Client on COC?	Yes	☑	No	☐	
Date and Time of collection noted by Client on COC?	Yes	☑	No	☐	
Sampler's name noted on COC?	Yes	☑	No	☐	

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	NA ☑
Shipping container/cooler in good condition?	Yes	☑	No	☐	
Samples in proper containers/bottles?	Yes	☑	No	☐	
Sample containers intact?	Yes	☑	No	☐	
Sufficient sample volume for indicated test?	Yes	☑	No	☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	
Sample/Temp Blank temperature	Temp: 4.8°C				NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes	☑	No	☐	NA ☐
Sample labels checked for correct preservation?	Yes	☑	No	☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA ☑
Samples Received on Ice?	Yes	☑	No	☐	
(Ice Type: BLUE ICE)					

UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes	☐	No	☐	NA ☑
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes	☐	No	☐	NA ☑

Comments:

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS
www.MBASinc.com
ELAP Certification Number: 2385

 Tuesday, August 02, 2016

Lab Number: AB50176

Collection Date/Time: 7/12/2016 11:30 Sample Collector: LINDBERG T Client Sample #:
Submittal Date/Time: 7/12/2016 12:30 Sample ID Coliform Designation:

Sample Description: ASR-1 Backflush

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**135**		10		7/13/2016	BS
Aluminum, Total	EPA200.8	µg/L	**Not Detected**		10	1000	7/14/2016	SM
Ammonia-N	SM4500NH3 D	mg/L	**Not Detected**		0.05		7/27/2016	MW
Arsenic, Total	EPA200.8	µg/L	**1**		1	10	7/14/2016	SM
Barium, Total	EPA200.8	µg/L	**56**		10	1000	7/14/2016	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	**165**		10		7/13/2016	LRH
Boron	EPA200.7	mg/L	**Not detected**		0.05		7/13/2016	MW
Bromide	EPA300.0	mg/L	**Not Detected**		0.4		7/12/2016	HM
Calcium	EPA200.7	mg/L	**41**		0.5		7/13/2016	MW
Carbonate as CaCO3	SM2320B	mg/L	**Not Detected**		10		7/13/2016	LRH
Chloramines	SM4500-Cl G	mg/L	**Not Detected**		0.05		7/12/2016	DH
Chloride	EPA300.0	mg/L	**28**		4.0	250	7/12/2016	HM
DOC	SM5310C	mg/L	**1.4**		0.2		7/19/2016	MW
Fluoride	EPA300.0	mg/L	**Not Detected**		0.4	2.0	7/12/2016	HM
Gross Alpha	EPA900.0	pCi/L	**1.76 ± 1.57**	E		15	7/22/2016	FGL
Haloacetic Acids	EPA552	µg/L	**6**	E		60	7/21/2016	FGL
Iron	EPA200.7	µg/L	**120**		10	300	7/13/2016	MW
Iron, Dissolved	EPA200.7	µg/L	**Not Detected**		10	300	7/13/2016	MW
Kjehldahl Nitrogen	SM4500-NH3 B,	mg/L	**Not Detected**		0.5		7/18/2016	LJ
Lithium	EPA200.8	µg/L	**6**		1		7/14/2016	SM
Magnesium	EPA200.7	mg/L	**13**		0.5		7/13/2016	MW
Manganese, Dissolved	EPA200.7	µg/L	**Not Detected**		10	50	7/13/2016	MW
Manganese, Total	EPA200.7	µg/L	**Not Detected**		10	50	7/13/2016	MW
Mercury, Total	EPA200.8	µg/L	**Not Detected**		0.5	2	7/14/2016	SM
Methane	EPA174/175	µg/L	**0.59**	E	0.1		7/20/2016	MCCAM
Molybdenum, Total	EPA200.8	µg/L	**3**		1	1000	7/14/2016	SM
Nickel, Total	EPA200.8	µg/L	**Not Detected**		10	100	7/14/2016	SM
Nitrate as NO3	EPA300.0	mg/L	**Not Detected**		4.0	45	7/12/2016	HM
Nitrate as NO3-N	EPA300.0	mg/L	**Not Detected**		0.4	10	7/12/2016	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	**Not Detected**		0.40		7/12/2016	HM
Nitrite as NO2-N	EPA300.0	mg/L	**Not Detected**		0.4	1.0	7/12/2016	HM
o-Phosphate-P, Dissolved	EPA300.0	mg/L	**Not Detected**		0.4		7/12/2016	HM

mg/L: Milligrams per liter ug/L : Micrograms per liter PQL : Practical Quantitation Limit MCL: Maximum Contamination Level
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See Report attachments. T = Temperature Exceedance

Lab Number: **AB50176**

Collection Date/Time: 7/12/2016 11:30 Sample Collector: LINDBERG T Client Sample #:

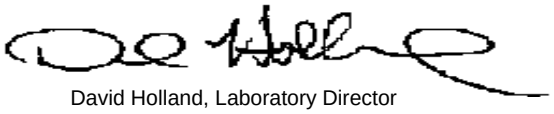
Submittal Date/Time: 7/12/2016 12:30 Sample ID Coliform Designation:

Sample Description: ASR-1 Backflush

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
pH (Laboratory)	SM4500-H+B	pH (H)	**7.4**		0.1		7/12/2016	BS
Phosphorus, Total	HACH 8190	mg/L	**0.26**		0.03		7/28/2016	LRH
Potassium	EPA200.7	mg/L	**2.9**		0.5		7/13/2016	MW
QC Anion Sum x 100	Calculation	%	**100%**				7/13/2016	LRH
QC Anion-Cation Balance	Calculation	%	**1**				7/15/2016	MW
QC Cation Sum x 100	Calculation	%	**102%**				7/15/2016	MW
QC Ratio TDS/SEC	Calculation		**0.64**				7/22/2016	HM
Selenium, Total	EPA200.8	µg/L	**4**		2	50	7/14/2016	SM
Silica as SiO2, Total	EPA200.7	mg/L	**24**		0.5		7/13/2016	MW
Sodium	EPA200.7	mg/L	**43**		0.5		7/13/2016	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	**496**		1	900	7/12/2016	LJ
Strontium, Total	EPA200.8	µg/L	**222**	BB	5		7/14/2016	SM
Sulfate	EPA300.0	mg/L	**70**		4.0	250	7/12/2016	HM
TOC	SM5310C	mg/L	**1.5**		0.2		7/19/2016	MW
Total Diss. Solids	SM2540C	mg/L	**317**		10	500	7/19/2016	MP
Total Nitrogen	Calculation	mg/L	**Not Detected**		0.5		7/18/2016	LJ
Total Radium 226	EPA903.0	pCi/L	**0.264 ± 0.245**	E		3	7/21/2016	FGL
Trihalomethanes	EPA524.2	µg/L	**93.0**	E		80	7/19/2016	FGL
Uranium by ICP/MS	EPA200.8	µg/L	**Not Detected**		1	30	7/14/2016	SM
Vanadium, Total	EPA200.8	µg/L	**Not Detected**		5	1000	7/14/2016	SM
Zinc, Total	EPA200.8	µg/L	**219**		20	5000	7/14/2016	SM

Sample Comments: BB: Sample > 4x spike concentration

Report Approved by:



David Holland, Laboratory Director

mg/L: Milligrams per liter ug/L : Micrograms per liter PQL : Practical Quantitation Limit MCL: Maximum Contamination Level

H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See Report attachments. T = Temperature Exceedance

August 2, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1607951
Customer : 2-19144

Laboratory Report

Introduction: This report package contains total of 7 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(2 pages)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
ASR-1 Backflush	07/12/2016	07/13/2016	SP 1607951-001	GW

Sampling and Receipt Information: All samples were received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. All samples arrived at 4 °C. All samples were prepared and analyzed within the method specified hold time. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Organic QC

551.1	07/19/2016:210293 All analysis quality controls are within established criteria.
	07/20/2016:210339 All analysis quality controls are within established criteria.
	07/18/2016:208385 All preparation quality controls are within established criteria, except: The following note applies to Chloroform, Decafluorobiphenyl: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
552	07/20/2016:208537 All preparation quality controls are within established criteria, except: The following note applies to Monobromoacetic Acid, Dichloroacetic Acid, Monochloroacetic Acid: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
552.2	07/21/2016:210277 All analysis quality controls are within established criteria.

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August 2, 2016 Lab ID : SP 1607951
Monterey Bay Analytical Services Customer : 2-19144

Organic QC

552.2	07/21/2016:210624 All analysis quality controls are within established criteria.

Radio QC

900.0	07/22/2016:210492 All analysis quality controls are within established criteria.
	07/19/2016:208460 All preparation quality controls are within established criteria.
903.0	07/21/2016:210453 All analysis quality controls are within established criteria.
	07/18/2016:208417 All preparation quality controls are within established criteria.

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-08-02

August 2, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : ASR-1 Backflush
Project : MPWMD

Lab ID : SP 1607951-001
Customer ID : 2-19144

Sampled On : July 12, 2016-11:30
Sampled By : T. Lindberg
Received On : July 13, 2016-13:15
Matrix : Ground Water

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
EPA 551.1[VOA:1'15]								
Decafluorobiphenyl‡	80.8	80-120	%		551.1	07/18/16:208385	551.1	07/19/16:210293
Bromodichloromethane	20.7	0.5	ug/L		551.1	07/18/16:208385	551.1	07/19/16:210293
Bromoform	0.9	0.5	ug/L		551.1	07/18/16:208385	551.1	07/19/16:210293
Chloroform	62.1	2.5*	ug/L		551.1	07/18/16:208385	551.1	07/20/16:210339
Dibromochloromethane	9.3	0.5	ug/L		551.1	07/18/16:208385	551.1	07/19/16:210293
Total Trihalomethanes	93.0	--	ug/L		551.1	07/18/16:208385	551.1	07/19/16:210293
EPA 552.2[AGT:1'12]								
2,3-Dibromopropionic Acid‡	109	70-130	%		552	07/20/16:208537	552.2	07/21/16:210624
Bromoacetic Acid	ND	1	ug/L		552	07/20/16:208537	552.2	07/21/16:210277
Chloroacetic Acid	ND	2	ug/L		552	07/20/16:208537	552.2	07/21/16:210277
Dibromoacetic Acid	1	1	ug/L		552	07/20/16:208537	552.2	07/21/16:210624
Dichloroacetic Acid	1	1	ug/L		552	07/20/16:208537	552.2	07/21/16:210277
Trichloroacetic Acid	4	1	ug/L		552	07/20/16:208537	552.2	07/21/16:210277
Haloacetic acids (five)	6	--	ug/L		552	07/20/16:208537	552.2	07/21/16:210277

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, Na2SO3
‡Surrogate. * PQL adjusted for dilution.

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August 2, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1607951-001
Customer ID : 2-19144

Sampled On : July 12, 2016-11:30
Sampled By : T. Lindberg
Received On : July 13, 2016-13:15
Matrix : Ground Water

Description : ASR-1 Backflush
Project : MPWMD

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Radio Chemistry[P:1]								
Gross Alpha	1.76 ± 1.57	1.62	pCi/L		900.0	07/19/16-15:07 2P1608460	900.0	07/22/16-13:00 2A1610492
Total Alpha Radium (226)	0.264 ± 0.245	0.470	pCi/L		903.0	07/18/16-19:15 2P1608417	903.0	07/21/16-11:00 2A1610453

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, Na2SO3
* PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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August 2, 2016 Lab ID : SP 1607951
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	07/22/16:210492caa	CCV	cpm	8622	42.2 %	40 - 49	
			CCB	cpm		0.10	0.2	
Gross Alpha	900.0	07/19/16:208460RMM	Blank	pCi/L		0.15	3	
			LCS	pCi/L	107.4	83.6 %	75-125	
			MS	pCi/L	107.4	73.0 %	60-140	
		(CH 1675390-001)	MSD	pCi/L	107.4	68.8 %	60-140	
			MSRPD	pCi/L	107.4	5.2%	≤30	
Alpha	903.0	07/21/16:210453caa	CCV	cpm	8623	41.9 %	38 - 47	
			CCB	cpm		0.0800	0.19	
Total Alpha Radium (226)	903.0	07/18/16:208417emv	RgBlk	pCi/L		0.01	2	
			LCS	pCi/L	21.58	73.1 %	52-107	
			BS	pCi/L	21.58	70.1 %	43-111	
			BSD	pCi/L	21.58	69.5 %	43-111	
			BSRPD	pCi/L	21.58	0.8%	≤35.5	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
BS	: Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
BSD	: Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
BSRPD	: BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

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August 2, 2016 Lab ID : SP 1607951
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Organic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Organic								
Bromodichloromethane	551.1	07/18/16:208385SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	10.33	104 %	80-120	
			MS	ug/L	9.960	96.1 %	80-120	
		(SP 1607849-010)	MSD	ug/L	9.785	108 %	80-120	
			MSRPD	ug/L	19.57	8.2%	≤20	
	551.1	07/19/16:210293SBL	CCV	ug/L	83.33	104 %	80-120	
			CCV	ug/L	166.7	103 %	80-120	
Bromoform	551.1	07/18/16:208385SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	10.33	99.0 %	80-120	
			MS	ug/L	9.960	89.1 %	80-120	
		(SP 1607849-010)	MSD	ug/L	9.785	109 %	80-120	
			MSRPD	ug/L	19.57	7.3%	≤20	
	551.1	07/19/16:210293SBL	CCV	ug/L	83.33	104 %	80-120	
			CCV	ug/L	166.7	103 %	80-120	
Chloroform	551.1	07/18/16:208385SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	10.33	114 %	80-120	
			MS	ug/L	9.960	112 %	80-120	
		(SP 1607849-010)	MSD	ug/L	9.785	121 %	80-120	435
			MSRPD	ug/L	19.57	5.8%	≤20	
	551.1	07/20/16:210339SBL	CCV	ug/L	83.33	110 %	80-120	
			CCV	ug/L	166.7	119 %	80-120	
Decafluorobiphenyl	551.1	07/18/16:208385SBL	Blank	ug/L	20.03	120 %	80-120	
			LCS	ug/L	20.67	117 %	80-120	
			MS	ug/L	19.92	109 %	80-120	
		(SP 1607849-010)	MSD	ug/L	19.57	122 %	80-120	435
			MSRPD	ug/L	19.57	9.0%	≤20.0	
	551.1	07/19/16:210293SBL	CCV	ug/L	166.7	112 %	80-120	
			CCV	ug/L	333.3	109 %	80-120	
Dibromochloromethane	551.1	07/18/16:208385SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	10.33	102 %	80-120	
			MS	ug/L	9.960	94.9 %	80-120	
		(SP 1607849-010)	MSD	ug/L	9.785	110 %	80-120	
			MSRPD	ug/L	19.57	7.7%	≤20	
	551.1	07/19/16:210293SBL	CCV	ug/L	83.33	103 %	80-120	
			CCV	ug/L	166.7	104 %	80-120	
2,3-Dibromopropionic Acid	552	07/20/16:208537SBL	Blank	ug/L	5.000	112 %	70-130	
			LCS	ug/L	5.000	128 %	70-130	
			MS	ug/L	5.000	106 %	70-130	
		(SP 1607951-001)	MSD	ug/L	5.000	127 %	70-130	
			MSRPD	ug/L	5.000	17.5%	≤20.0	
Dibromoacetic Acid	552	07/20/16:208537SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	93.6 %	70-130	
			MS	ug/L	10.00	108 %	70-130	
		(SP 1607951-001)	MSD	ug/L	10.00	119 %	70-130	
			MSRPD	ug/L	5.000	8.5%	≤20.0	
Dichloroacetic Acid	552	07/20/16:208537SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	92.8 %	70-130	
			MS	ug/L	10.00	119 %	70-130	
		(SP 1607951-001)	MSD	ug/L	10.00	131 %	70-130	435
			MSRPD	ug/L	5.000	8.5%	≤20.0	
Monobromoacetic Acid	552	07/20/16:208537SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	112 %	70-130	
			MS	ug/L	10.00	130 %	70-130	
		(SP 1607951-001)	MSD	ug/L	10.00	140 %	70-130	435
			MSRPD	ug/L	5.000	7.0%	≤20.0	

August 2, 2016 Lab ID : SP 1607951
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Organic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Organic								
Monochloroacetic Acid	552	07/20/16:208537SBL	Blank	ug/L		ND	<2	
			LCS	ug/L	10.00	113 %	70-130	
			MS	ug/L	10.00	125 %	70-130	
		(SP 1607951-001)	MSD	ug/L	10.00	139 %	70-130	435
			MSRPD	ug/L	5.000	9.6%	≤20.0	
Trichloroacetic Acid	552	07/20/16:208537SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	71.3 %	70-130	
			MS	ug/L	10.00	87.5 %	70-130	
		(SP 1607951-001)	MSD	ug/L	10.00	98.9 %	70-130	
			MSRPD	ug/L	5.000	8.7%	≤20.0	
2,3-Dibromopropionic Acid	552.2	07/21/16:210624SBL	CCV	ug/L	75.00	92.9 %	70-130	
			CCV	ug/L	50.00	91.7 %	70-130	
Dibromoacetic Acid	552.2	07/21/16:210624SBL	CCV	ug/L	150.0	113 %	70-130	
			CCV	ug/L	100.0	109 %	70-130	
Dichloroacetic Acid	552.2	07/21/16:210277SBL	CCV	ug/L	150.0	119 %	70-130	
			CCV	ug/L	100.0	123 %	70-130	
Monobromoacetic Acid	552.2	07/21/16:210277SBL	CCV	ug/L	150.0	130 %	70-130	
			CCV	ug/L	100.0	130 %	70-130	
Monochloroacetic Acid	552.2	07/21/16:210277SBL	CCV	ug/L	150.0	127 %	70-130	
			CCV	ug/L	100.0	128 %	70-130	
Trichloroacetic Acid	552.2	07/21/16:210277SBL	CCV	ug/L	150.0	103 %	70-130	
			CCV	ug/L	100.0	104 %	70-130	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

www.fglinc.com

CHAIN OF CUSTODY
AND ANALYSIS REQUEST DOCUMENT

Client: Monterey Bay Analytical Services
Customer Number: 2019144
Address: 4 Justin Court
Monterey, CA 93940

Phone: (831)375-6227 Fax: (831)641-0734
Email Address: info@mbasinc.com
Contact Person: David Holland
Project Name: MPWMD
Purchase Order Number:
Quote Number:

Rush Analysis: ☐ 5 Day ☐ 4 Day ☐ 3 Day ☐ 2 Day ☐ 24 hour
Rush pre-approval by lab (initals): _____
Electronic Data Transfer: ☐ No ☐ State ☐ Client Other: _____

Sampler(s): T. Lindberg

Sampling Fee: _____ Pickup Fee: _____
Compositor Setup Date: _____ Time: _____

Lab Number: 1607951

TEST DESCRIPTION AND ANALYSES REQUESTED

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling: Composite (C) Grab (G)	Number of Containers	Type of Containers: (G)Glass (P)Plastic (V)VOA (MT)Metal Tube	Potable (P) Non-Potable (NP) Ag Water (AgW)	(SW) Surface Water (MW) Monitoring Well (GW) Ground Water (TB) Travel Blank (WW) Waste Water (DW) Drinking Water	(S) Soil (SLG) Sludge (SLD) Solid (O) Oil	BacT: (Sys) System (SRC) Source (W) Waste	BacT: (ROUT)Routine (RPT)Repeat (OTH)Other (RPL)Replace	(LT) Leaf Tissue (PET) Petiole Tissue (PRD) Produce	Preservative: (1) NaOH + ZnAc, (2) NaOH, (3) HCl (4) H2SO4, (5) HNO3, (6) Na2S2O3, (7) Other_____	Gross Alpha	Radium 226	HAAs	TTHMs
1.	ASR-1 Backflush	7/12/16	1130	G	6	G/P	P	GW						X	X	X	X

Remarks
AB50176

5325033574

Relinquished	Date:	Time:
[signature]	7/12	1600
Received By:	Date:	Time:

Relinquished	Date:	Time:
[signature]		
Received By:	Date:	Time:
[signature]	7/13/16	1315

Relinquished	Date:	Time:
Received By:	Date:	Time:

Corporate Offices & Laboratory
853 Corporation Street
Santa Paula, CA 93060
TEL: (805)392-2000
Env FAX: (805)525-4172 / Ag FAX: (805)392-2063
CA ELAP Certification No.1573

Office & Laboratory
2500 Stagecoach Road
Stockton, CA 95215
TEL: (209)942-0182
FAX: (209)942-0423
CA ELAP Certification No. 1563

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563 E. Lindo Avenue
Chico, CA 95926
TEL: (530)343-5818
FAX: (530)343-3807
CA ELAP Certification No. 2670

Office & Laboratory
3442 Empresa Drive, Suite D
San Luis Obispo, CA 93401
TEL: (805)783-2940
FAX: (805)783-2912
CA ELAP Certification No. 2775

Office & Laboratory
9415 W. Goshen Avenue
Visalia, CA 93291
TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810

Condition Upon Receipt (Attach to COC)

Sample Receipt at SP:

1. Number of ice chests/packages received: **1**
2. Shipper tracking numbers **532563374**
3. Were samples received in a chilled condition?
   Temps: **4** / _____ / _____ / _____ / _____ / _____ / _____
4. Surface water (SWTR) bact samples: A sample that has a temperature upon receipt of >10C, whether iced or not, should be flagged unless the time since sample collection has been less than two hours.
5. Do the number of bottles received agree with the COC? **Yes** No N/A
6. Verify sample date, time, sampler **Yes** No N/A
7. Were the samples received intact? (i.e. no broken bottles, leaks, etc.) **Yes** No
8. Were sample custody seals intact? Yes No **N/A**

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? **Yes** No
2. Did bottle labels correspond with the client's ID's? **Yes** No
3. Were all bottles requiring sample preservation properly preserved? Yes No **N/A** **FGL**
   [Exception: Oil & Grease, VOA and CrVI verified in lab]
4. VOAs checked for Headspace? **Yes** No N/A
5. Were all analyses within holding times at time of receipt? **Yes** No
6. Have rush or project due dates been checked and accepted? Yes No **N/A**

Include a copy of the COC for lab delivery. (Bacti. Inorganics and Radio)

Sample Receipt, Login and Verification completed by:

Reviewed and Approved By **Shawn Peck** Digitally signed by Shawn Peck
Title: Sample Receiving
Date: 07/26/2016-09:15:38

Discrepency Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

2. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

(2019144)
Monterey Bay Analytical Services
SP 1607951
SRP-07/26/2016-09:15:38

McCampbell Analytical, Inc.
"When Quality Counts"

Analytical Report

WorkOrder: 1607491

Report Created for: Monterey Bay Analytical

4 Justin Court, Suite D
Monterey, CA 93940

Project Contact: David Holland
Project P.O.:
Project Name: MPWMD

Project Received: 07/13/2016

Analytical Report reviewed & approved for release on 07/20/2016 by:

Angela Rydelius,
Laboratory Manager

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1607491

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Analytical Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1607491
Date Received:	7/13/16 10:02	**Extraction Method:**	RSK175
Date Prepared:	7/20/16	**Analytical Method:**	RSK175
Project:	MPWMD	**Unit:**	µg/L

Dissolved Gases by RSK 175

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR-1 Backflush	**1607491-001A**	**Water**	**07/12/2016 11:30**	**GC26**	**124023**

Analytes	Result	RL	DF	Date Analyzed
Methane	**0.59**	0.10	1	07/20/2016 09:14

Analyst(s): AK

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
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http://www.mccampbell.com / E-mail: main@mccampbell.com

Quality Control Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1607491
Date Prepared:	7/20/16	**BatchID:**	124023
Date Analyzed:	7/20/16	**Extraction Method:**	RSK175
Instrument:	GC26	**Analytical Method:**	RSK175
Matrix:	Air	**Unit:**	µL/L
Project:	MPWMD	**Sample ID:**	MB/LCS-124023

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	10.3	0.50	10	-	103	70-130

QA/QC Officer

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1607491 **ClientCode: MBAS**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
David Holland
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940
831-375-6227 FAX: 831-641-0734

Email: mweidner@mbasinc.com; Dholland@mbas
cc/3rd Party:
PO:
ProjectNo: MPWMD

Bill to:
Accounts Payable
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940

Requested TAT: **5 days;**

Date Received: **07/13/2016**
Date Logged: **07/13/2016**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1607491-001	ASR-1 Backflush	Water	7/12/2016 11:30	☐	A											

Test Legend:

1	RSK175_W	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Maria Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Analytical, Inc.
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WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL
QC Level: LEVEL 2
Work Order: 1607491
Project: MPWMD
Client Contact: David Holland
Date Logged: 7/13/2016
Comments:
Contact's Email: mweidner@mbasinc.com; Dholland@mbasinc.com; 4mbas@sbcglobal.net; info@mbasinc.com

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1607491-001A	ASR-1 Backflush	Water	RSK175 <Methane_4>	3	VOA w/ HCl	☐	7/12/2016 11:30	5 days	None	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

1607491

McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY

☐ GeoTracker EDF ☐ PDF ☐ Excel ☐ Write On (DW)

Report To: David Holland	Bill To:
Company: Monterey Bay Analytical Services	
4 Justin Ct. Suite D	
Monterey, Ca 93940	E-Mail: info@mbasinc.com
Tele: (831) 375 - 6227	Fax: (831) 641-0734
Project #:	Project Name: MPWMD
Project Location:	
Sampler Signature: T. Lindberg	

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	Analysis Request: MTBE / BTEX & TPH as Gas (602 / 8021 + 8015)	MTBE / BTEX ONLY (EPA 602 / 8021)	TPH as Diesel / Motor Oil (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)	Other: Methane	Comments
✓	ASR-1 Backflush	7/12/16	1130	3	G	X					X	X																			X	AB50176

Relinquished By: David Holland	Date: 7/12/16	Time: 1600	Received By: GSO
Relinquished By: GSO	Date: 7/13/16	Time: 1002	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/t° 5.0
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

VOAS O&G METALS OTHER
PRESERVATION_____ pH<2_____

COMMENTS:
Tracking #: 532563427

McCampbell Analytical, Inc.
"When Quality Counts"

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Sample Receipt Checklist

Client Name:	**Monterey Bay Analytical**	Date and Time Received:	**7/13/2016 10:02**
Project Name:	**MPWMD**	Date Logged:	**7/13/2016**
WorkOrder №:	**1607491** Matrix: Water	Received by:	Maria Venegas
Carrier:	Golden State Overnight	Logged by:	Maria Venegas

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☑	No ☐

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Sample/Temp Blank temperature	Temp: 1°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☐	No ☑	NA ☐
Sample labels checked for correct preservation?	Yes ☑	No ☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes ☐	No ☐	NA ☑
Samples Received on Ice?	Yes ☑	No ☐	
	(Ice Type: WET ICE)		

UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes ☐	No ☐	NA ☑
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes ☐	No ☐	NA ☑

Comments: All Voas had headspace!

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS
www.MBASinc.com
ELAP Certification Number: 2385

 Tuesday, August 02, 2016

Lab Number: AB50269

Collection Date/Time: 7/13/2016 10:00 Sample Collector: LEAR J Client Sample #:

Submittal Date/Time: 7/13/2016 11:00 Sample ID Coliform Designation:

Sample Description: ASR-4 backflush

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**215**		10		7/18/2018	BS
Aluminum, Total	EPA200.8	µg/L	**Not Detected**		10	1000	7/14/2016	SM
Ammonia-N	SM4500NH3 D	mg/L	**Not Detected**		0.05		7/27/2016	MW
Arsenic, Total	EPA200.8	µg/L	**6**		1	10	7/14/2016	SM
Barium, Total	EPA200.8	µg/L	**52**		10	1000	7/14/2016	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	**262**		10		7/18/2016	LRH
Boron	EPA200.7	mg/L	**0.08**		0.05		7/22/2016	MW
Bromide	EPA300.0	mg/L	**Not Detected**		0.4		7/14/2016	HM
Calcium	EPA200.7	mg/L	**65**		0.5		7/22/2016	MW
Carbonate as CaCO3	SM2320B	mg/L	**Not Detected**		10		7/18/2016	LRH
Chloramines	SM4500-Cl G	mg/L	**Not Detected**		0.05		7/13/2016	LJ
Chloride	EPA300.0	mg/L	**109**	LN	4.0	250	7/14/2016	HM
DOC	SM5310C	mg/L	**0.8**		0.2		7/19/2016	MW
Fluoride	EPA300.0	mg/L	**Not Detected**	IA	0.4	2.0	7/14/2016	HM
Gross Alpha	EPA900.0	pCi/L	**2.76 ± 1.40**	E		15	7/25/2016	FGL
Haloacetic Acids	EPA552	µg/L	**1**	E		60	7/22/2016	FGL
Iron	EPA200.7	µg/L	**108**		10	300	7/22/2016	MW
Iron, Dissolved	EPA200.7	µg/L	**41**		10	300	7/22/2016	MW
Kjehldahl Nitrogen	SM4500-NH3 B,	mg/L	**Not Detected**		0.5		7/18/2016	LJ
Lithium	EPA200.8	µg/L	**28**		1		7/14/2016	SM
Magnesium	EPA200.7	mg/L	**14**		0.5		7/22/2016	MW
Manganese, Dissolved	EPA200.7	µg/L	**14**		10	50	7/22/2016	MW
Manganese, Total	EPA200.7	µg/L	**16**		10	50	7/22/2016	MW
Mercury, Total	EPA200.8	µg/L	**3**		0.5	2	7/14/2016	SM
Methane	EPA174/175	µg/L	**1.2**	E	0.1		7/20/2016	MCCAM
Molybdenum, Total	EPA200.8	µg/L	**7**		1	1000	7/14/2016	SM
Nickel, Total	EPA200.8	µg/L	**61**		10	100	7/14/2016	SM
Nitrate as NO3	EPA300.0	mg/L	**Not Detected**		4.0	45	7/14/2016	HM
Nitrate as NO3-N	EPA300.0	mg/L	**Not Detected**		0.4	10	7/14/2016	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	**Not Detected**		0.40		7/14/2016	HM
Nitrite as NO2-N	EPA300.0	mg/L	**Not Detected**	LN	0.4	1.0	7/14/2016	HM
o-Phosphate-P, Dissolved	EPA300.0	mg/L	**Not Detected**		0.4		7/14/2016	HM

mg/L: Milligrams per liter ug/L : Micrograms per liter PQL : Practical Quantitation Limit MCL: Maximum Contamination Level

H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See Report attachments. T = Temperature Exceedance

Lab Number: **AB50269**

Collection Date/Time: 7/13/2016 10:00 Sample Collector: LEAR J Client Sample #:

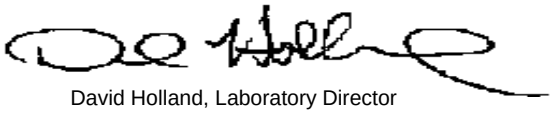
Submittal Date/Time: 7/13/2016 11:00 Sample ID Coliform Designation:

Sample Description: ASR-4 backflush

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
pH (Laboratory)	SM4500-H+B	pH (H)	**7.4**		0.1		7/13/2016	BS
Phosphorus, Total	HACH 8190	mg/L	**0.04**		0.03		7/28/2016	LRH
Potassium	EPA200.7	mg/L	**3.7**		0.5		7/22/2016	MW
QC Anion Sum x 100	Calculation	%	**99%**				7/18/2016	LRH
QC Anion-Cation Balance	Calculation	%	**-1**				7/25/2016	MW
QC Cation Sum x 100	Calculation	%	**98%**				7/25/2016	MW
QC Ratio TDS/SEC	Calculation		**0.62**				7/22/2016	HM
Selenium, Total	EPA200.8	µg/L	**3**		2	50	7/14/2016	SM
Silica as SiO2, Total	EPA200.7	mg/L	**42**		0.5		7/22/2016	MW
Sodium	EPA200.7	mg/L	**88**		0.5		7/22/2016	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	**850**		1	900	7/15/2016	LJ
Strontium, Total	EPA200.8	µg/L	**457**		5		7/14/2016	SM
Sulfate	EPA300.0	mg/L	**51**		4.0	250	7/14/2016	HM
TOC	SM5310C	mg/L	**0.7**		0.2		7/19/2016	MW
Total Diss. Solids	SM2540C	mg/L	**529**		10	500	7/19/2016	MP
Total Nitrogen	Calculation	mg/L	**Not Detected**		0.5		7/18/2016	LJ
Total Radium 226	EPA903.0	pCi/L	**0.596 ± 0.326**	E		3	7/21/2016	FGL
Trihalomethanes	EPA524.2	µg/L	**4.5**	E		80	7/22/2016	FGL
Uranium by ICP/MS	EPA200.8	µg/L	**2**		1	30	7/14/2016	SM
Vanadium, Total	EPA200.8	µg/L	**5**		5	1000	7/14/2016	SM
Zinc, Total	EPA200.8	µg/L	**28**		20	5000	7/14/2016	SM

Sample Comments: IA: Results are valid even though CCV recovery outside of limits; LN: MS and/or

Report Approved by:



David Holland, Laboratory Director

mg/L: Milligrams per liter ug/L : Micrograms per liter PQL : Practical Quantitation Limit MCL: Maximum Contamination Level

H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See Report attachments. T = Temperature Exceedance

August 2, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1608023
Customer : 2-19144

Laboratory Report

Introduction: This report package contains total of 7 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(2 pages)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
ASR-4 Backflush	07/13/2016	07/15/2016	SP 1608023-001	GW

Sampling and Receipt Information: All samples were received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. All samples arrived at 6 °C. All samples were prepared and analyzed within the method specified hold time. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Organic QC

551.1	07/19/2016:210293 All analysis quality controls are within established criteria.
	07/18/2016:208385 All preparation quality controls are within established criteria, except: The following note applies to Chloroform, Decafluorobiphenyl: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
552	07/21/2016:208591 All preparation quality controls are within established criteria, except: The following note applies to 2,3-Dibromopropionic Acid, Monobromoacetic Acid, Monochloroacetic Acid, Dichloroacetic Acid: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery. The following note applies to 2,3-Dibromopropionic Acid: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
552.2	07/22/2016:210683 All analysis quality controls are within established criteria.

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August 2, 2016 Lab ID : SP 1608023
Monterey Bay Analytical Services Customer : 2-19144

Radio QC

900.0	07/25/2016:210607 All analysis quality controls are within established criteria.
	07/22/2016:208625 All preparation quality controls are within established criteria.
903.0	07/21/2016:210453 All analysis quality controls are within established criteria.
	07/18/2016:208417 All preparation quality controls are within established criteria.

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-08-02

August 2, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : ASR-4 Backflush
Project : MPWMD

Lab ID : SP 1608023-001
Customer ID : 2-19144

Sampled On : July 13, 2016-10:00
Sampled By : J. Lear
Received On : July 15, 2016-12:30
Matrix : Ground Water

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
EPA 551.1[VOA:1'15]								
Decafluorobiphenyl‡	107	80-120	%		551.1	07/18/16:208385	551.1	07/19/16:210293
Bromodichloromethane	1.2	0.5	ug/L		551.1	07/18/16:208385	551.1	07/19/16:210293
Bromoform	ND	0.5	ug/L		551.1	07/18/16:208385	551.1	07/19/16:210293
Chloroform	2.6	0.5	ug/L		551.1	07/18/16:208385	551.1	07/19/16:210293
Dibromochloromethane	0.7	0.5	ug/L		551.1	07/18/16:208385	551.1	07/19/16:210293
Total Trihalomethanes	4.5	--	ug/L		551.1	07/18/16:208385	551.1	07/19/16:210293
EPA 552.2[AGT:1'12]								
2,3-Dibromopropionic Acid‡	118	70-130	%		552	07/21/16:208591	552.2	07/22/16:210683
Bromoacetic Acid	ND	1	ug/L		552	07/21/16:208591	552.2	07/22/16:210683
Chloroacetic Acid	ND	2	ug/L		552	07/21/16:208591	552.2	07/22/16:210683
Dibromoacetic Acid	1	1	ug/L		552	07/21/16:208591	552.2	07/22/16:210683
Dichloroacetic Acid	ND	1	ug/L		552	07/21/16:208591	552.2	07/22/16:210683
Trichloroacetic Acid	ND	1	ug/L		552	07/21/16:208591	552.2	07/22/16:210683
Haloacetic acids (five)	1	--	ug/L		552	07/21/16:208591	552.2	07/22/16:210683

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, Na2SO3
‡Surrogate. * PQL adjusted for dilution.

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August 2, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1608023-001
Customer ID : 2-19144

Sampled On : July 13, 2016-10:00
Sampled By : J. Lear
Received On : July 15, 2016-12:30
Matrix : Ground Water

Description : ASR-4 Backflush
Project : MPWMD

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Radio Chemistry[P:1]								
Gross Alpha	2.76 ± 1.40	1.29	pCi/L		900.0	07/22/16-07:05 2P1608625	900.0	07/25/16-12:00 2A1610607
Total Alpha Radium (226)	0.596 ± 0.326	0.470	pCi/L		903.0	07/18/16-19:15 2P1608417	903.0	07/21/16-13:00 2A1610453

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, Na2SO3
* PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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August 2, 2016 Lab ID : SP 1608023
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Organic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Organic								
Bromodichloromethane	551.1	07/18/16:208385SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	10.33	104 %	80-120	
			MS	ug/L	9.960	96.1 %	80-120	
		(SP 1607849-010)	MSD	ug/L	9.785	108 %	80-120	
			MSRPD	ug/L	19.57	8.2%	≤20	
	551.1	07/19/16:210293SBL	CCV	ug/L	83.33	104 %	80-120	
			CCV	ug/L	166.7	103 %	80-120	
Bromoform	551.1	07/18/16:208385SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	10.33	99.0 %	80-120	
			MS	ug/L	9.960	89.1 %	80-120	
		(SP 1607849-010)	MSD	ug/L	9.785	109 %	80-120	
			MSRPD	ug/L	19.57	7.3%	≤20	
	551.1	07/19/16:210293SBL	CCV	ug/L	83.33	104 %	80-120	
			CCV	ug/L	166.7	103 %	80-120	
Chloroform	551.1	07/18/16:208385SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	10.33	114 %	80-120	
			MS	ug/L	9.960	112 %	80-120	
		(SP 1607849-010)	MSD	ug/L	9.785	121 %	80-120	435
			MSRPD	ug/L	19.57	5.8%	≤20	
	551.1	07/19/16:210293SBL	CCV	ug/L	83.33	116 %	80-120	
			CCV	ug/L	166.7	113 %	80-120	
Decafluorobiphenyl	551.1	07/18/16:208385SBL	Blank	ug/L	20.03	120 %	80-120	
			LCS	ug/L	20.67	117 %	80-120	
			MS	ug/L	19.92	109 %	80-120	
		(SP 1607849-010)	MSD	ug/L	19.57	122 %	80-120	435
			MSRPD	ug/L	19.57	9.0%	≤20.0	
	551.1	07/19/16:210293SBL	CCV	ug/L	166.7	112 %	80-120	
			CCV	ug/L	333.3	109 %	80-120	
Dibromochloromethane	551.1	07/18/16:208385SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	10.33	102 %	80-120	
			MS	ug/L	9.960	94.9 %	80-120	
		(SP 1607849-010)	MSD	ug/L	9.785	110 %	80-120	
			MSRPD	ug/L	19.57	7.7%	≤20	
	551.1	07/19/16:210293SBL	CCV	ug/L	83.33	103 %	80-120	
			CCV	ug/L	166.7	104 %	80-120	
2,3-Dibromopropionic Acid	552	07/21/16:208591SBL	Blank	ug/L	5.000	104 %	70-130	
			LCS	ug/L	5.000	115 %	70-130	
			MS	ug/L	5.000	134 %	70-130	435
		(SP 1608023-001)	MSD	ug/L	5.000	103 %	70-130	
			MSRPD	ug/L	5.000	26.7%	≤20.0	435
Dibromoacetic Acid	552	07/21/16:208591SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	93.2 %	70-130	
			MS	ug/L	10.00	120 %	70-130	
		(SP 1608023-001)	MSD	ug/L	10.00	108 %	70-130	
			MSRPD	ug/L	5.000	9.7%	≤20.0	
Dichloroacetic Acid	552	07/21/16:208591SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	92.7 %	70-130	
			MS	ug/L	10.00	127 %	70-130	
		(SP 1608023-001)	MSD	ug/L	10.00	131 %	70-130	435
			MSRPD	ug/L	5.000	3.1%	≤20.0	
Monobromoacetic Acid	552	07/21/16:208591SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	105 %	70-130	
			MS	ug/L	10.00	135 %	70-130	435
		(SP 1608023-001)	MSD	ug/L	10.00	139 %	70-130	435
			MSRPD	ug/L	5.000	3.0%	≤20.0	

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August 2, 2016 Lab ID : SP 1608023
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Organic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Organic								
Monochloroacetic Acid	552	07/21/16:208591SBL	Blank	ug/L		ND	<2	
			LCS	ug/L	10.00	98.5 %	70-130	
			MS	ug/L	10.00	134 %	70-130	435
		(SP 1608023-001)	MSD	ug/L	10.00	139 %	70-130	435
			MSRPD	ug/L	5.000	3.5%	≤20.0	
Trichloroacetic Acid	552	07/21/16:208591SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	75.7 %	70-130	
			MS	ug/L	10.00	95.9 %	70-130	
		(SP 1608023-001)	MSD	ug/L	10.00	101 %	70-130	
			MSRPD	ug/L	5.000	4.8%	≤20.0	
2,3-Dibromopropionic Acid	552.2	07/22/16:210683SBL	CCV	ug/L	75.00	90.2 %	70-130	
			CCV	ug/L	50.00	88.3 %	70-130	
Dibromoacetic Acid	552.2	07/22/16:210683SBL	CCV	ug/L	150.0	101 %	70-130	
			CCV	ug/L	100.0	106 %	70-130	
Dichloroacetic Acid	552.2	07/22/16:210683SBL	CCV	ug/L	150.0	104 %	70-130	
			CCV	ug/L	100.0	105 %	70-130	
Monobromoacetic Acid	552.2	07/22/16:210683SBL	CCV	ug/L	150.0	114 %	70-130	
			CCV	ug/L	100.0	112 %	70-130	
Monochloroacetic Acid	552.2	07/22/16:210683SBL	CCV	ug/L	150.0	87.1 %	70-130	
			CCV	ug/L	100.0	111 %	70-130	
Trichloroacetic Acid	552.2	07/22/16:210683SBL	CCV	ug/L	150.0	84.9 %	70-130	
			CCV	ug/L	100.0	90.0 %	70-130	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

August 2, 2016 Lab ID : SP 1608023
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	07/25/16:210607caa	CCV	cpm	8620	42.0 %	40 - 49	
			CCB	cpm		0.10	0.2	
Gross Alpha	900.0	07/22/16:208625ELC	Blank	pCi/L		1.05	3	
			LCS	pCi/L	107.4	85.3 %	75-125	
			MS	pCi/L	107.4	108 %	60-140	
		(SP 1608123-001)	MSD	pCi/L	107.4	101 %	60-140	
			MSRPD	pCi/L	107.4	6.6%	≤30	
Alpha	903.0	07/21/16:210453caa	CCV	cpm	8623	41.9 %	38 - 47	
			CCB	cpm		0.0800	0.19	
Total Alpha Radium (226)	903.0	07/18/16:208417emv	RgBlk	pCi/L		0.01	2	
			LCS	pCi/L	21.58	73.1 %	52-107	
			BS	pCi/L	21.58	70.1 %	43-111	
			BSD	pCi/L	21.58	69.5 %	43-111	
			BSRPD	pCi/L	21.58	0.8%	≤35.5	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
BS	: Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
BSD	: Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
BSRPD	: BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

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AND ANALYSIS REQUEST DOCUMENT

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Customer Number: 2019144
Address: 4 Justin Court
Monterey, CA 93940

Phone: (831)375-6227 Fax: (831)641-0734
Email Address: info@mbasinc.com
Contact Person: David Holland
Project Name: MPWMD
Purchase Order Number:
Quote Number:

Rush Analysis: ☐ 5 Day ☐ 4 Day ☐ 3 Day ☐ 2 Day ☐ 24 hour
Rush pre-approval by lab (initals): _____
Electronic Data Transfer: ☐ No ☐ State ☐ Client Other: _____

Sampler(s): J. Lear

Sampling Fee: _____ Pickup Fee: _____
Compositor Setup Date: _____ Time: _____

Lab Number: 1607023

TEST DESCRIPTION AND ANALYSES REQUESTED

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling: Composite (C) Grab (G)	Number of Containers	Type of Containers: (G)Glass (P)Plastic (V)VOA (MT)Metal Tube	Potable (P) Non-Potable (NP) Ag Water (AgW)	(SW) Surface Water (MW) Monitoring Well (GW) Ground Water (TB) Travel Blank (WW) Waste Water (DW) Drinking Water	(S) Soil (SLG) Sludge (SLD) Solid (O) Oil	BacT: (Sys) System (SRC) Source (W) Waste	BacT: (ROUT)Routine (RPT)Repeat (OTH)Other (RPL)Replace	(LT) Leaf Tissue (PET) Petiole Tissue (PRD) Produce	Preservative: (1) NaOH + ZnAc, (2) NaOH, (3) HCl (4) H2SO4, (5) HNO3, (6) Na2S2O3, (7) Other _____	Gross Alpha	Radium 226	HAAs	TTHMs
1.	ASR-4 backflush	7/13/16	1000	G	6	G/P	P	GW						X	X	X	X

Remarks
AB20269
5325877211

Relinquished: Date: 7/14 Time: 1600
Received By: Date: Time:

Relinquished: Date: Time:
Received By: Date: 7/15/16 Time: 0830

Relinquished: Date: Time:
Received By: Date: Time:

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TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810

Condition Upon Receipt (Attach to COC)

Sample Receipt at SP:

1. Number of ice chests/packages received: **1**
2. Shipper tracking numbers **532587211**
3. Were samples received in a chilled condition?
   Temps: **6** / _____ / _____ / _____ / _____ / _____ / _____
4. Surface water (SWTR) bact samples: A sample that has a temperature upon receipt of >10C, whether iced or not, should be flagged unless the time since sample collection has been less than two hours.
5. Do the number of bottles received agree with the COC? **Yes** No N/A
6. Verify sample date, time, sampler **Yes** No N/A
7. Were the samples received intact? (i.e. no broken bottles, leaks, etc.) **Yes** No
8. Were sample custody seals intact? Yes No **N/A**

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? **Yes** No
2. Did bottle labels correspond with the client's ID's? **Yes** No
3. Were all bottles requiring sample preservation properly preserved? Yes No **N/A** **FGL**
   [Exception: Oil & Grease, VOA and CrVI verified in lab]
4. VOAs checked for Headspace? **Yes** No N/A
5. Were all analyses within holding times at time of receipt? **Yes** No
6. Have rush or project due dates been checked and accepted? Yes No **N/A**

Include a copy of the COC for lab delivery. (Bacti. Inorganics and Radio)

Sample Receipt, Login and Verification completed by:

Reviewed and Approved By **Shawn Peck** Digitally signed by Shawn Peck
Title: Sample Receiving
Date: 07/26/2016-08:58:58

Discrepency Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

2. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

(2019144)
Monterey Bay Analytical Services
SP 1608023
SRP-07/26/2016-08:58:58

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1607623

Report Created for: Monterey Bay Analytical

4 Justin Court, Suite D
Monterey, CA 93940

Project Contact: David Holland
Project P.O.:
Project Name: MPWMD

Project Received: 07/15/2016

Analytical Report reviewed & approved for release on 07/20/2016 by:

Angela Rydelius,
Laboratory Manager

McCampbell Analytical, Inc.
"When Quality Counts"

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1607623

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Analytical Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1607623
Date Received:	7/15/16 13:15	**Extraction Method:**	RSK175
Date Prepared:	7/20/16	**Analytical Method:**	RSK175
Project:	MPWMD	**Unit:**	µg/L

Dissolved Gases by RSK 175

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR-4 backflush	1607623-001A	Water	07/13/2016 10:00	GC26	124023

Analytes	Result	RL	DF	Date Analyzed
Methane	**1.2**	0.10	1	07/20/2016 09:27

Analyst(s): AK

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
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Quality Control Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1607623
Date Prepared:	7/20/16	**BatchID:**	124023
Date Analyzed:	7/20/16	**Extraction Method:**	RSK175
Instrument:	GC26	**Analytical Method:**	RSK175
Matrix:	Air	**Unit:**	µL/L
Project:	MPWMD	**Sample ID:**	MB/LCS-124023

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetylene	ND	9.47	0.50	10	-	95	70-130
Ethane	ND	12.0	0.50	10	-	120	70-130
Ethylene	ND	8.48	0.50	10	-	85	70-130
Methane	ND	10.3	0.50	10	-	103	70-130

QA/QC Officer

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1607623 **ClientCode: MBAS**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
David Holland
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940
831-375-6227 FAX: 831-641-0734

Email: mweidner@mbasinc.com; Dholland@mbas
cc/3rd Party:
PO:
ProjectNo: MPWMD

Bill to:
Accounts Payable
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940

Requested TAT: **5 days;**

Date Received: **07/15/2016**
Date Logged: **07/15/2016**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1607623-001	ASR-4 backflush	Water	7/13/2016 10:00	☐	A											

Test Legend:

1	RSK175_W	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Valerie Riva

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL
QC Level: LEVEL 2
Work Order: 1607623
Project: MPWMD
Client Contact: David Holland
Date Logged: 7/15/2016
Comments:
Contact's Email: mweidner@mbasinc.com; Dholland@mbasinc.com; 4mbas@sbcglobal.net; info@mbasinc.com

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1607623-001A	ASR-4 backflush	Water	RSK175 <Methane_4>	3	VOA w/ HCl	☐	7/13/2016 10:00	5 days	None	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

1607623

McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
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CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY

☐ GeoTracker EDF ☐ PDF ☐ Excel ☐ Write On (DW)

Report To: David Holland **Bill To:**

Company: Monterey Bay Analytical Services

4 Justin Ct. Suite D

Monterey, Ca 93940 **E-Mail:** info@mbasinc.com

Tele: (831) 375 - 6227 **Fax:** (831) 641-0734

Project #: **Project Name:** MPWMD

Project Location:

Sampler Signature: J. Lear

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	Analysis Request	Other	Comments
	ASR-4 backflush	7/13/16	1000	3	G	X					X	X				Methane: X	AB50269

Analysis Request columns: MTBE / BTEX & TPH as Gas (602 / 8021 + 8015); MTBE / BTEX ONLY (EPA 602 / 8021); TPH as Diesel / Motor Oil (8015); Total Petroleum Oil & Grease (1664 / 5520 E/B&F); Total Petroleum Hydrocarbons (418.1); EPA 502.2 / 601 / 8010 / 8021 (HVOCs); EPA 505/ 608 / 8081 (Cl Pesticides); EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners; EPA 507 / 8141 (NP Pesticides); EPA 515 / 8151 (Acidic Cl Herbicides); EPA 524.2 / 624 / 8260 (VOCs); EPA 525.2 / 625 / 8270 (SVOCs); EPA 8270 SIM / 8310 (PAHs / PNAs); CAM 17 Metals (200.7 / 200.8 / 6010 / 6020); LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020); Lead (200.7 / 200.8 / 6010 / 6020)

Relinquished By:	Date:	Time:	Received By:
David Holland	7/14/16	1600	
Relinquished By:	Date: 7/15/16	Time: 13:15	Received By: Valerie Rea
Relinquished By:	Date:	Time:	Received By:

ICE/t° 7.1 wet ice **COMMENTS:**

GOOD CONDITION_____

HEAD SPACE ABSENT_____

DECHLORINATED IN LAB_____

APPROPRIATE CONTAINERS_____

PRESERVED IN LAB_____

VOAS O&G METALS OTHER

PRESERVATION_____ pH<2_____

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Sample Receipt Checklist

Client Name:	**Monterey Bay Analytical**	Date and Time Received:	**7/15/2016 13:15**
Project Name:	**MPWMD**	Date Logged:	**7/15/2016**
WorkOrder №:	**1607623** Matrix: Water	Received by:	Valerie Riva
Carrier:	Golden State Overnight	Logged by:	Valerie Riva

Chain of Custody (COC) Information

Chain of custody present?	Yes	☑	No	☐	
Chain of custody signed when relinquished and received?	Yes	☑	No	☐	
Chain of custody agrees with sample labels?	Yes	☑	No	☐	
Sample IDs noted by Client on COC?	Yes	☑	No	☐	
Date and Time of collection noted by Client on COC?	Yes	☑	No	☐	
Sampler's name noted on COC?	Yes	☑	No	☐	

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	NA ☑
Shipping container/cooler in good condition?	Yes	☑	No	☐	
Samples in proper containers/bottles?	Yes	☑	No	☐	
Sample containers intact?	Yes	☑	No	☐	
Sufficient sample volume for indicated test?	Yes	☑	No	☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	
Sample/Temp Blank temperature	Temp: 7.1°C				NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes	☑	No	☐	NA ☐
Sample labels checked for correct preservation?	Yes	☑	No	☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA ☑
Samples Received on Ice?	Yes	☑	No	☐	
(Ice Type: WET ICE)					

UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes	☐	No	☐	NA ☑
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes	☐	No	☐	NA ☑

Comments: Method ASTM D1946-90 was received passed its 0.25-day holding time.

Monterey Bay Analytical Services
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831.375.MBAS
www.MBASinc.com
ELAP Certification Number: 2385

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Monday, August 08, 2016

Lab Number: **AB50922**

Collection Date/Time:	7/26/2016	11:00	Sample Collector:	LEAR, J	Client Sample #:	
Submittal Date/Time:	7/26/2016	13:43	Sample ID		Coliform Designation:	

Sample Description: PCA East Shallow

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**64**		10		7/28/2016	BS
Ammonia-N	SM4500NH3 D	mg/L	**Not Detected**		0.05		7/27/2016	MW
Barium, Total	EPA200.8	µg/L	**23**		10	1000	7/28/2016	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	**78**		10		8/1/2016	MP
Boron	EPA200.7	mg/L	**Not Detected**		0.05		8/1/2016	MW
Bromide	EPA300.0	mg/L	**Not Detected**	IA	0.4		7/26/2016	HM
Calcium	EPA200.7	mg/L	**16**	EUM	0.5		8/1/2016	MW
Carbonate as CaCO3	SM2320B	mg/L	**Not Detected**		10		8/1/2016	MP
Chloride	EPA300.0	mg/L	**51**		4.0	250	7/26/2016	HM
Fluoride	EPA300.0	mg/L	**Not Detected**		0.4	2.0	7/26/2016	HM
Hardness (as CaCO3)	SM2340B/Calc	mg/L	**56**		10		8/2/2016	MW
Iron	EPA200.7	µg/L	**224**		10	300	8/1/2016	MW
Iron, Dissolved	EPA200.7	µg/L	**Not Detected**		10	300	8/1/2016	MW
Magnesium	EPA200.7	mg/L	**4.0**	EUM	0.5		8/1/2016	MW
Manganese, Dissolved	EPA200.7	µg/L	**Not Detected**		10	50	8/1/2016	MW
Manganese, Total	EPA200.7	µg/L	**Not Detected**	EUM	10	50	8/1/2016	MW
Nitrate as NO3	EPA300.0	mg/L	**Not Detected**		4.0	45	7/26/2016	HM
Nitrate as NO3-N	EPA300.0	mg/L	**0.5**		0.4	10	7/26/2016	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	**0.5**		0.40		7/26/2016	HM
Nitrite as NO2-N	EPA300.0	mg/L	**Not Detected**	IA	0.4	1.0	7/26/2016	HM
o-Phosphate-P, Dissolved	EPA300.0	mg/L	**Not Detected**		0.4		7/26/2016	HM
pH (Laboratory)	SM4500-H+B	pH (H)	**7.7**		0.1		7/26/2016	BS
Potassium	EPA200.7	mg/L	**2.0**	EUM	0.5		8/1/2016	MW
QC Anion Sum x 100	Calculation	%	**95%**				8/1/2016	MP
QC Anion-Cation Balance	Calculation	%	**0**				8/2/2016	MW
QC Cation Sum x 100	Calculation	%	**95%**				8/2/2016	MW
QC Ratio TDS/SEC	Calculation		**0.70**				8/2/2016	MP
Sodium	EPA200.7	mg/L	**39**	EUM	0.5		8/1/2016	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	**304**		1	900	7/27/2016	LJ
Sulfate	EPA300.0	mg/L	**8**		4.0	250	7/26/2016	HM
TOC	SM5310C	mg/L	**1.6**		0.2		8/4/2016	HM
Total Diss. Solids	SM2540C	mg/L	**214**		10	500	7/28/2016	MP

Sample Comments: IA: Results are valid even though CCV recovery outside of limits.

Report Approved by:

David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

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MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Monday, August 08, 2016

Lab Number: AB50923

Collection Date/Time:	7/26/2016	11:00	Sample Collector:	LEAR, J	Client Sample #:	
Submittal Date/Time:	7/26/2016	13:43	Sample ID		Coliform Designation:	

Sample Description: PCA East Deep

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**148**		10		7/28/2016	BS
Ammonia-N	SM4500NH3 D	mg/L	**Not Detected**		0.05		7/27/2016	MW
Barium, Total	EPA200.8	µg/L	**65**		10	1000	7/28/2016	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	**181**		10		8/1/2016	MP
Boron	EPA200.7	mg/L	**0.06**		0.05		8/1/2016	MW
Bromide	EPA300.0	mg/L	**Not Detected**	IA	0.4		7/26/2016	HM
Calcium	EPA200.7	mg/L	**41**		0.5		8/1/2016	MW
Carbonate as CaCO3	SM2320B	mg/L	**Not Detected**		10		8/1/2016	MP
Chloride	EPA300.0	mg/L	**82**		4.0	250	7/26/2016	HM
Fluoride	EPA300.0	mg/L	**0.6**		0.4	2.0	7/26/2016	HM
Hardness (as CaCO3)	SM2340B/Calc	mg/L	**135**		10		8/2/2016	MW
Iron	EPA200.7	µg/L	**Not Detected**		10	300	8/1/2016	MW
Iron, Dissolved	EPA200.7	µg/L	**Not Detected**		10	300	8/1/2016	MW
Magnesium	EPA200.7	mg/L	**8**		0.5		8/1/2016	MW
Manganese, Dissolved	EPA200.7	µg/L	**Not Detected**		10	50	8/1/2016	MW
Manganese, Total	EPA200.7	µg/L	**Not Detected**		10	50	8/1/2016	MW
Nitrate as NO3	EPA300.0	mg/L	**Not Detected**		4.0	45	7/26/2016	HM
Nitrate as NO3-N	EPA300.0	mg/L	**Not Detected**		0.4	10	7/26/2016	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	**Not Detected**		0.40		7/26/2016	HM
Nitrite as NO2-N	EPA300.0	mg/L	**Not Detected**	IA	0.4	1.0	7/26/2016	HM
o-Phosphate-P, Dissolved	EPA300.0	mg/L	**Not Detected**		0.4		7/26/2016	HM
pH (Laboratory)	SM4500-H+B	pH (H)	**7.5**		0.1		7/26/2016	BS
Potassium	EPA200.7	mg/L	**3.5**		0.5		8/1/2016	MW
QC Anion Sum x 100	Calculation	%	**96%**				8/1/2016	MP
QC Anion-Cation Balance	Calculation	%	**4**				8/2/2016	MW
QC Cation Sum x 100	Calculation	%	**105%**				8/2/2016	MW
QC Ratio TDS/SEC	Calculation		**0.61**				8/2/2016	MP
Sodium	EPA200.7	mg/L	**79**		0.5		8/1/2016	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	**594**		1	900	7/27/2016	LJ
Sulfate	EPA300.0	mg/L	**22**		4.0	250	7/26/2016	HM
TOC	SM5310C	mg/L	**0.4**		0.2		8/4/2016	HM
Total Diss. Solids	SM2540C	mg/L	**360**		10	500	7/28/2016	MP

Sample Comments: IA: Results are valid even though CCV recovery outside of limits.

Report Approved by:

David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Monterey Bay Analytical Services
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831.375.MBAS
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ELAP Certification Number: 2385

Thursday, August 18, 2016

Lab Number: AB50921

Collection Date/Time: 7/26/2016 11:00 Sample Collector: LEAR, J Client Sample #:

Submittal Date/Time: 7/26/2016 13:43 Sample ID Coliform Designation:

Sample Description: PCA East Deep

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**148**		10		7/28/2016	BS
Aluminum, Total	EPA200.8	µg/L	**Not Detected**		10	1000	7/28/2016	SM
Ammonia-N	SM4500NH3 D	mg/L	**Not Detected**		0.05		7/27/2016	MW
Arsenic, Total	EPA200.8	µg/L	**6**		1	10	7/28/2016	SM
Barium, Total	EPA200.8	µg/L	**59**		10	1000	7/28/2016	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	**181**		10		8/1/2016	MP
Boron	EPA200.7	mg/L	**0.06**		0.05		8/1/2016	MW
Bromide	EPA300.0	mg/L	**Not Detected**	IA	0.4		7/26/2016	HM
Calcium	EPA200.7	mg/L	**38**		0.5		8/1/2016	MW
Carbonate as CaCO3	SM2320B	mg/L	**Not Detected**		10		8/1/2016	MP
Chloramines	SM4500-Cl G	mg/L	**Not Detected**	H	0.05		7/27/2016	LJ
Chloride	EPA300.0	mg/L	**82**		4.0	250	7/26/2016	HM
DOC	SM5310C	mg/L	**0.5**		0.2		8/4/2016	HM
Fluoride	EPA300.0	mg/L	**0.4**		0.4	2.0	7/26/2016	HM
Gross Alpha	EPA900.0	pCi/L	**1.27 ± 1.54**	E		15	8/3/2016	FGL
Haloacetic Acids	EPA552	µg/L	**1**	E		60	8/12/2016	FGL
Iron	EPA200.7	µg/L	**17**		10	300	8/1/2016	MW
Iron, Dissolved	EPA200.7	µg/L	**Not Detected**		10	300	8/1/2016	MW
Kjehldahl Nitrogen	SM4500-NH3 B,	mg/L	**Not Detected**		0.5		8/2/2016	BS/LJ
Lithium	EPA200.8	µg/L	**22**		1		7/28/2016	SM
Magnesium	EPA200.7	mg/L	**8.0**		0.5		8/1/2016	MW
Manganese, Dissolved	EPA200.7	µg/L	**Not Detected**		10	50	8/1/2016	MW
Manganese, Total	EPA200.7	µg/L	**Not Detected**		10	50	8/1/2016	MW
Mercury, Total	EPA200.8	µg/L	**Not Detected**		0.5	2	7/28/2016	SM
Methane	EPA174/175	µg/L	**0.19**	E	0.1		8/2/2016	WECK
Molybdenum, Total	EPA200.8	µg/L	**10**		1	1000	7/28/2016	SM
Nickel, Total	EPA200.8	µg/L	**36**		10	100	7/28/2016	SM
Nitrate as NO3	EPA300.0	mg/L	**Not Detected**		4.0	45	7/26/2016	HM
Nitrate as NO3-N	EPA300.0	mg/L	**Not Detected**		0.4	10	7/26/2016	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	**Not Detected**		0.40		7/26/2016	HM
Nitrite as NO2-N	EPA300.0	mg/L	**Not Detected**	IA	0.4	1.0	7/26/2016	HM
o-Phosphate-P, Dissolved	EPA300.0	mg/L	**Not Detected**		0.4		7/26/2016	HM

mg/L: Milligrams per liter ug/L : Micrograms per liter PQL : Practical Quantitation Limit MCL: Maximum Contamination Level

H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See Report attachments. T = Temperature Exceedance

Lab Number: **AB50921**

Collection Date/Time: 7/26/2016 11:00 Sample Collector: LEAR, J Client Sample #:

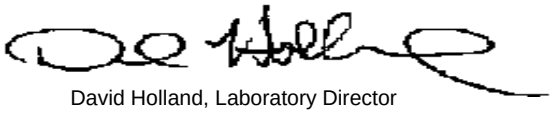
Submittal Date/Time: 7/26/2016 13:43 Sample ID Coliform Designation:

Sample Description: PCA East Deep

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
pH (Laboratory)	SM4500-H+B	pH (H)	**7.4**		0.1		7/26/2016	BS
Phosphorus, Total	HACH 8190	mg/L	**0.05**		0.03		7/28/2016	LRH
Potassium	EPA200.7	mg/L	**3.4**		0.5		8/1/2016	MW
QC Anion Sum x 100	Calculation	%	**98%**				8/1/2016	MP
QC Anion-Cation Balance	Calculation	%	**0**				8/2/2016	MW
QC Cation Sum x 100	Calculation	%	**98%**				8/2/2016	MW
QC Ratio TDS/SEC	Calculation		**0.63**				8/2/2016	MP
Selenium, Total	EPA200.8	µg/L	**Not Detected**		2	50	7/28/2016	SM
Silica as SiO2, Total	EPA200.7	mg/L	**48**		0.5		8/1/2016	MW
Sodium	EPA200.7	mg/L	**72**		0.5		8/1/2016	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	**587**		1	900	7/27/2016	LJ
Strontium, Total	EPA200.8	µg/L	**200**		5		7/28/2016	SM
Sulfate	EPA300.0	mg/L	**22**		4.0	250	7/26/2016	HM
TOC	SM5310C	mg/L	**0.4**		0.2		8/4/2016	HM
Total Diss. Solids	SM2540C	mg/L	**368**		10	500	7/28/2016	MP
Total Nitrogen	Calculation	mg/L	**Not Detected**		0.5		8/3/2016	MP
Total Radium 226	EPA903.0	pCi/L	**0.036 ± 0.470**	E		3	8/11/2016	FGL
Trihalomethanes	EPA524.2	µg/L	**Not Detected**	E		80	8/2/2016	FGL
Uranium by ICP/MS	EPA200.8	µg/L	**Not Detected**		1	30	7/28/2016	SM
Vanadium, Total	EPA200.8	µg/L	**Not Detected**		5	1000	7/28/2016	SM
Zinc, Total	EPA200.8	µg/L	**24**		20	5000	7/28/2016	SM

Sample Comments: IA: Results are valid even though CCV recovery outside of limits.

Report Approved by:



David Holland, Laboratory Director

mg/L: Milligrams per liter ug/L : Micrograms per liter PQL : Practical Quantitation Limit MCL: Maximum Contamination Level

H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See Report attachments. T = Temperature Exceedance

August 17, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1608596
Customer : 2-19144

Laboratory Report

Introduction: This report package contains total of 7 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(2 pages)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
PCA East Deep	07/26/2016	07/28/2016	SP 1608596-001	DW

Sampling and Receipt Information: All samples were received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. All samples arrived at 4 °C. All samples were prepared and analyzed within the method specified hold time. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Organic QC

551.1	08/02/2016:211074 All analysis quality controls are within established criteria
	08/02/2016:209099 All preparation quality controls are within established criteria
552	08/08/2016:209372 All preparation quality controls are within established criteria
552.2	08/12/2016:211537 All analysis quality controls are within established criteria

Radio QC

900.0	08/03/2016:211133 All analysis quality controls are within established criteria
	08/01/2016:209036 All preparation quality controls are within established criteria
Ra - 05	08/11/2016:211558 All analysis quality controls are within established criteria

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August 17, 2016 Lab ID : SP 1608596
Monterey Bay Analytical Services Customer : 2-19144

Radio QC

Ra - 05	08/08/2016:209064 All preparation quality controls are within established criteria

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-08-17

August 17, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : PCA East Deep
Project : MPWMD

Lab ID : SP 1608596-001
Customer ID : 2-19144

Sampled On : July 26, 2016-11:00
Sampled By : Jonathan Lear
Received On : July 28, 2016-11:30
Matrix : Drinking Water

Sample Result - Organic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
EPA 551.1[VOA:1'15]								
Decafluorobiphenyl‡	92.7	80-120	%		551.1	08/02/16:209099	551.1	08/02/16:211074
Bromodichloromethane	ND	0.5	ug/L		551.1	08/02/16:209099	551.1	08/02/16:211074
Bromoform	ND	0.5	ug/L		551.1	08/02/16:209099	551.1	08/02/16:211074
Chloroform	ND	0.5	ug/L		551.1	08/02/16:209099	551.1	08/02/16:211074
Dibromochloromethane	ND	0.5	ug/L		551.1	08/02/16:209099	551.1	08/02/16:211074
Total Trihalomethanes	ND	--	ug/L	80	551.1	08/02/16:209099	551.1	08/02/16:211074
EPA 552.2[AGT:1'12]								
2,3-Dibromopropionic Acid‡	87.1	70-130	%		552	08/08/16:209372	552.2	08/12/16:211537
Bromoacetic Acid	ND	1	ug/L		552	08/08/16:209372	552.2	08/12/16:211537
Chloroacetic Acid	ND	2	ug/L		552	08/08/16:209372	552.2	08/12/16:211537
Dibromoacetic Acid	1	1	ug/L		552	08/08/16:209372	552.2	08/12/16:211537
Dichloroacetic Acid	ND	1	ug/L		552	08/08/16:209372	552.2	08/12/16:211537
Trichloroacetic Acid	ND	1	ug/L		552	08/08/16:209372	552.2	08/12/16:211537
Haloacetic acids (five)	1	--	ug/L	60	552	08/08/16:209372	552.2	08/12/16:211537

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, HNO3 pH < 2, Na2SO3 ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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August 17, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1608596-001
Customer ID : 2-19144

Sampled On : July 26, 2016-11:00
Sampled By : Jonathan Lear
Received On : July 28, 2016-11:30
Matrix : Drinking Water

Description : PCA East Deep
Project : MPWMD

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Radio Chemistry[P:1'5]								
Gross Alpha	1.27 ± 1.54	1.84	pCi/L		900.0	08/01/16-11:11 2P1609036	900.0	08/03/16-07:00 2A1611133
Ra 228	0.036 ± 0.470	0.200	pCi/L		Ra - 05	08/08/16-18:00 2P1609064	Ra - 05	08/11/16-18:50 2A1611558

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, HNO3 pH < 2, Na2SO3 * PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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August 17, 2016 Lab ID : SP 1608596
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Organic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Organic								
Bromodichloromethane	551.1	08/02/16:209099SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.712	107 %	80-120	
			MS	ug/L	9.750	97.3 %	80-120	
		(CC 1682565-001)	MSD	ug/L	9.419	110 %	80-120	
			MSRPD	ug/L	9.419	8.6%	≤20	
	551.1	08/02/16:211074SBL	CCV	ug/L	83.33	83.6 %	80-120	
			CCV	ug/L	166.7	112 %	80-120	
Bromoform	551.1	08/02/16:209099SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.712	114 %	80-120	
			MS	ug/L	9.750	106 %	80-120	
		(CC 1682565-001)	MSD	ug/L	9.419	119 %	80-120	
			MSRPD	ug/L	9.419	8.8%	≤20	
	551.1	08/02/16:211074SBL	CCV	ug/L	83.33	86.3 %	80-120	
			CCV	ug/L	166.7	119 %	80-120	
Chloroform	551.1	08/02/16:209099SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.712	108 %	80-120	
			MS	ug/L	9.750	101 %	80-120	
		(CC 1682565-001)	MSD	ug/L	9.419	114 %	80-120	
			MSRPD	ug/L	9.419	8.1%	≤20	
	551.1	08/02/16:211074SBL	CCV	ug/L	83.33	84.6 %	80-120	
			CCV	ug/L	166.7	114 %	80-120	
Decafluorobiphenyl	551.1	08/02/16:209099SBL	Blank	ug/L	18.89	107 %	80-120	
			LCS	ug/L	19.42	107 %	80-120	
			MS	ug/L	19.50	115 %	80-120	
		(CC 1682565-001)	MSD	ug/L	18.84	117 %	80-120	
			MSRPD	ug/L	9.419	1.0%	≤20.0	
	551.1	08/02/16:211074SBL	CCV	ug/L	166.7	91.0 %	80-120	
			CCV	ug/L	333.3	93.5 %	80-120	
Dibromochloromethane	551.1	08/02/16:209099SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.712	108 %	80-120	
			MS	ug/L	9.750	99.7 %	80-120	
		(CC 1682565-001)	MSD	ug/L	9.419	113 %	80-120	
			MSRPD	ug/L	9.419	8.7%	≤20	
	551.1	08/02/16:211074SBL	CCV	ug/L	83.33	82.6 %	80-120	
			CCV	ug/L	166.7	112 %	80-120	
2,3-Dibromopropionic Acid	552	08/08/16:209372SBL	Blank	ug/L	5.000	106 %	70-130	
			LCS	ug/L	5.000	91.7 %	70-130	
			MS	ug/L	5.000	111 %	70-130	
		(SP 1608596-001)	MSD	ug/L	5.000	102 %	70-130	
			MSRPD	ug/L	5.000	9.2%	≤20.0	
Dibromoacetic Acid	552	08/08/16:209372SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	92.1 %	70-130	
			MS	ug/L	10.00	81.7 %	70-130	
		(SP 1608596-001)	MSD	ug/L	10.00	85.4 %	70-130	
			MSRPD	ug/L	5.000	3.9%	≤20.0	
Dichloroacetic Acid	552	08/08/16:209372SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	92.3 %	70-130	
			MS	ug/L	10.00	89.7 %	70-130	
		(SP 1608596-001)	MSD	ug/L	10.00	92.7 %	70-130	
			MSRPD	ug/L	5.000	3.3%	≤20.0	
Monobromoacetic Acid	552	08/08/16:209372SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	94.6 %	70-130	
			MS	ug/L	10.00	89.1 %	70-130	
		(SP 1608596-001)	MSD	ug/L	10.00	95.8 %	70-130	
			MSRPD	ug/L	5.000	7.1%	≤20.0	

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August 17, 2016 Lab ID : SP 1608596
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Organic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Organic								
Monochloroacetic Acid	552	08/08/16:209372SBL	Blank	ug/L		ND	<2	
			LCS	ug/L	10.00	109 %	70-130	
			MS	ug/L	10.00	106 %	70-130	
		(SP 1608596-001)	MSD	ug/L	10.00	113 %	70-130	
			MSRPD	ug/L	5.000	7.0%	≤20.0	
Trichloroacetic Acid	552	08/08/16:209372SBL	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	97.3 %	70-130	
			MS	ug/L	10.00	82.9 %	70-130	
		(SP 1608596-001)	MSD	ug/L	10.00	88.1 %	70-130	
			MSRPD	ug/L	5.000	5.9%	≤20.0	
2,3-Dibromopropionic Acid	552.2	08/12/16:211537SBL	CCV	ug/L	75.00	77.5 %	70-130	
			CCV	ug/L	50.00	84.5 %	70-130	
Dibromoacetic Acid	552.2	08/12/16:211537SBL	CCV	ug/L	150.0	97.4 %	70-130	
			CCV	ug/L	100.0	96.0 %	70-130	
Dichloroacetic Acid	552.2	08/12/16:211537SBL	CCV	ug/L	150.0	94.6 %	70-130	
			CCV	ug/L	100.0	93.9 %	70-130	
Monobromoacetic Acid	552.2	08/12/16:211537SBL	CCV	ug/L	150.0	97.7 %	70-130	
			CCV	ug/L	100.0	94.5 %	70-130	
Monochloroacetic Acid	552.2	08/12/16:211537SBL	CCV	ug/L	150.0	112 %	70-130	
			CCV	ug/L	100.0	113 %	70-130	
Trichloroacetic Acid	552.2	08/12/16:211537SBL	CCV	ug/L	150.0	94.9 %	70-130	
			CCV	ug/L	100.0	95.6 %	70-130	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

August 17, 2016 Lab ID : SP 1608596
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	08/03/16:211133caa	CCV	cpm	8614	42.1 %	38 - 47	
			CCB	cpm		0.100	0.18	
Gross Alpha	900.0	08/01/16:209036ELC	Blank	pCi/L		0.02	3	
			LCS	pCi/L	107.4	105 %	75-125	
			MS	pCi/L	107.4	121 %	60-140	
		(CH 1676278-001)	MSD	pCi/L	107.4	109 %	60-140	
			MSRPD	pCi/L	107.4	9.7%	≤30	
Beta	Ra - 05	08/11/16:211558emv	CCV	cpm	8994	99.2 %	88 - 108	
			CCB	cpm		0.4000	0.49	
Ra 228	Ra - 05	08/08/16:209064emv	RgBlk	pCi/L		-0.04	3	
			LRS	pCi/L	79.28	52.5 %	27-59	
			BS	pCi/L	79.28	89.9 %	75-125	
			BSD	pCi/L	79.28	99.5 %	75-125	
			BSRPD	pCi/L	79.28	10.1%	≤25	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
LRS	: Laboratory Recovery Standard - Prepared to establish the batch recovery factor used in result calculations.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
BS	: Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
BSD	: Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
BSRPD	: BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

www.fglinc.com

CHAIN OF CUSTODY
AND ANALYSIS REQUEST DOCUMENT

Client: Monterey Bay Analytical Services
Customer Number: 2019144
Address: 4 Justin Court
Monterey, CA 93940

Phone: (831)375-6227 Fax: (831)641-0734
Email Address: info@mbasinc.com
Contact Person: David Holland
Project Name: MPWMD
Purchase Order Number:
Quote Number:

Rush Analysis: ☐ 5 Day ☐ 4 Day ☐ 3 Day ☐ 2 Day ☐ 24 hour
Rush pre-approval by lab (initals): _____
Electronic Data Transfer: ☐ No ☐ State ☐ Client Other: _____

Sampler(s): Jonathan Lear

Sampling Fee: _____ Pickup Fee: _____
Compositor Setup Date: _____ Time: _____

Lab Number: 1608591C

TEST DESCRIPTION AND ANALYSES REQUESTED

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling: Composite (C) Grab (G)	Number of Containers	Type of Containers: (G)Glass (P)Plastic (V)VOA (MT)Metal Tube	Potable (P) Non-Potable (NP) Ag Water (AgW)	(SW) Surface Water (MW) Monitoring Well (GW) Ground Water (TB) Travel Blank (WW) Waste Water (DW) Drinking Water	(S) Soil (SLG) Sludge (SLD) Solid (O) Oil	BacT: (Sys) System (SRC) Source (W) Waste	BacT: (ROUT)Routine (RPT)Repeat (OTH)Other (RPL)Replace	(LT) Leaf Tissue (PET) Petiole Tissue (PRD) Produce	Preservative: (1) NaOH + ZnAc, (2) NaOH, (3) HCl (4) H2SO4, (5) HNO3, (6) Na2S2O3, (7) Other	Gross Alpha	Radium 226	HAAs	TTHMs
1.	PCA East Deep	7/26/16	1100	G	6	G/P	P	DW						X	X	X	X

Remarks
AB50921

Tracking #: 532736151

Relinquished	Date:	Time:
Mollie Woodworth	7/27/16	1600
Received By:	Date:	Time:

Relinquished	Date:	Time:
Goldenstate overnight		
Received By:	Date:	Time:
	7/28/16	1130

Relinquished	Date:	Time:
	7/08/16	1130.
Received By:	Date:	Time:

Corporate Offices & Laboratory
853 Corporation Street
Santa Paula, CA 93060
TEL: (805)392-2000
Env FAX: (805)525-4172 / Ag FAX: (805)392-2063
CA ELAP Certification No.1573

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2500 Stagecoach Road
Stockton, CA 95215
TEL: (209)942-0182
FAX: (209)942-0423
CA ELAP Certification No. 1563

Office & Laboratory
563 E. Lindo Avenue
Chico, CA 95926
TEL: (530)343-5818
FAX: (530)343-3807
CA ELAP Certification No. 2670

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3442 Empresa Drive, Suite D
San Luis Obispo, CA 93401
TEL: (805)783-2940
FAX: (805)783-2912
CA ELAP Certification No. 2775

Office & Laboratory
9415 W. Goshen Avenue
Visalia, CA 93291
TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810

Subject: RE: MPWMD (AB50921)
From: Monterey Bay Analytical Services <info@mbasinc.com>
Date: 07/28/2016 11:44
To: 'Inez Covarrubias' <inezc@fglinc.com>

It does not, thanks for checking.

Mason Weidner
Monterey Bay Analytical Services
4 Justin Court, Suite D
Monterey, Ca 93940
(831) 375-MBAS (6227)
(831) 641-0734 (Fax)
www.MBASinc.com
MWeidner@MBASinc.com

-----Original Message-----
From: Inez Covarrubias [mailto:inezc@fglinc.com]
Sent: Thursday, July 28, 2016 11:37 AM
To: MBAS
Subject: MPWMD (AB50921)

Does this project need state EDT reporting? If so please provide system # and sampler name.

Thanks,

Inez

Condition Upon Receipt (Attach to COC)

Sample Receipt at SP:

1. Number of ice chests/packages received: **1**
2. Shipper tracking numbers **532736151**
3. Were samples received in a chilled condition?
   Temps: **4** / _____ / _____ / _____ / _____ / _____ / _____
4. Surface water (SWTR) bact samples: A sample that has a temperature upon receipt of >10C, whether iced or not, should be flagged unless the time since sample collection has been less than two hours.
5. Do the number of bottles received agree with the COC? **Yes** No N/A
6. Verify sample date, time, sampler **Yes** No N/A
7. Were the samples received intact? (i.e. no broken bottles, leaks, etc.) **Yes** No
8. Were sample custody seals intact? **Yes** No N/A

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? **Yes** No
2. Did bottle labels correspond with the client's ID's? **Yes** No
3. Were all bottles requiring sample preservation properly preserved? Yes No **N/A** FGL
   [Exception: Oil & Grease, VOA and CrVI verified in lab]
4. VOAs checked for Headspace? **Yes** No N/A
5. Were all analyses within holding times at time of receipt? **Yes** No
6. Have rush or project due dates been checked and accepted? Yes No **N/A**

Include a copy of the COC for lab delivery. (Bacti. Inorganics and Radio)

Sample Receipt, Login and Verification completed by: Reviewed and Approved By **Inez Covarrubias** Digitally signed by Inez Covarrubias Title: Sample Receiving Date: 07/28/2016-12:18:39

Discrepancy Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

2. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

(2019144)
Monterey Bay Analytical Services
SP 1608596
IV-07/28/2016-12:18:39

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1607C53

Report Created for: Monterey Bay Analytical

4 Justin Court, Suite D
Monterey, CA 93940

Project Contact: David Holland
Project P.O.:
Project Name: PCA East Deep

Project Received: 07/28/2016

Analytical Report reviewed & approved for release on 08/03/2016 by:

Angela Rydelius,
Laboratory Manager

McCampbell Analytical, Inc.
"When Quality Counts"

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: PCA East Deep
WorkOrder: 1607C53

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Analytical Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1607C53
Date Received:	7/28/16 10:00	**Extraction Method:**	RSK175
Date Prepared:	8/2/16	**Analytical Method:**	RSK175
Project:	PCA East Deep	**Unit:**	µg/L

Dissolved Gases by RSK 175

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
PCA East Deep	1607C53-001A	Water	07/26/2016 11:00	GC26	124664

Analytes	Result	RL	DF	Date Analyzed
Methane	**0.19**	0.10	1	08/02/2016 13:27

Analyst(s): AK

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
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Quality Control Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1607C53
Date Prepared:	8/2/16	**BatchID:**	124664
Date Analyzed:	8/2/16	**Extraction Method:**	RSK175
Instrument:	GC26	**Analytical Method:**	RSK175
Matrix:	Air	**Unit:**	µL/L
Project:	PCA East Deep	**Sample ID:**	MB/LCS-124664

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	10.4	0.50	10	-	104	70-130

QA/QC Officer

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1607C53 **ClientCode: MBAS**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
David Holland
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940
831-375-6227 FAX: 831-641-0734

Email: mweidner@mbasinc.com; Dholland@mbas
cc/3rd Party:
PO:
ProjectNo: PCA East Deep

Bill to:
Accounts Payable
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940

Requested TAT: **5 days;**

Date Received: **07/28/2016**
Date Logged: **07/28/2016**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1607C53-001	PCA East Deep	Water	7/26/2016 11:00	☐	A											

Test Legend:

1	RSK175_W	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Briana Cutino

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Analytical, Inc.
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WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL
QC Level: LEVEL 2
Work Order: 1607C53
Project: PCA East Deep
Client Contact: David Holland
Date Logged: 7/28/2016
Comments:
Contact's Email: mweidner@mbasinc.com; Dholland@mbasinc.com; 4mbas@sbcglobal.net; info@mbasinc.com

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1607C53-001A	PCA East Deep	Water	RSK175 <Methane_4>	3	VOA w/ HCl	☐	7/26/2016 11:00	5 days	Trace	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

1160753

McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY

☐ GeoTracker EDF ☐ PDF ☐ Excel ☐ Write On (DW)

Report To: David Holland **Bill To:**

Company: Monterey Bay Analytical Services

4 Justin Ct. Suite D

Monterey, Ca 93940 **E-Mail:** info@mbasinc.com

Tele: (831) 375 - 6227 **Fax:** (831) 641-0734

Project #: **Project Name:**

Project Location:

Sampler Signature:

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other
	PCA East Deep	7/26/16	1100	3	G	X					X	X		

Analysis Request

MTBE / BTEX & TPH as Gas (602 / 8021 + 8015)	MTBE / BTEX ONLY (EPA 602 / 8021)	TPH as Diesel / Motor Oil (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)

Other

Methane		
X		

Comments

Filter Samples for Metals analysis: Yes / No

AB50921

Relinquished By:	Date:	Time:	Received By:
Mason Holland	7/27/16	1600	
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/t°_____ **COMMENTS:**

GOOD CONDITION_____

HEAD SPACE ABSENT_____

DECHLORINATED IN LAB_____

APPROPRIATE CONTAINERS_____

PRESERVED IN LAB_____

	VOAS	O&G	METALS	OTHER
PRESERVATION			pH<2	

McCampbell Analytical, Inc.
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Sample Receipt Checklist

Client Name:	**Monterey Bay Analytical**	Date and Time Received:	**7/28/2016 10:00**
Project Name:	**PCA East Deep**	Date Logged:	**7/28/2016**
WorkOrder №:	**1607C53** Matrix: Water	Received by:	Briana Cutino
Carrier:	FedEx	Logged by:	Briana Cutino

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☑	No ☐

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Sample/Temp Blank temperature	Temp: 3°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☑	No ☐	NA ☐
Sample labels checked for correct preservation?	Yes ☑	No ☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes ☐	No ☐	NA ☑
Samples Received on Ice?	Yes ☑	No ☐	
	(Ice Type: BLUE ICE)		

UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes ☐	No ☐	NA ☑
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes ☐	No ☐	NA ☑

Comments:

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS
www.MBASinc.com
ELAP Certification Number: 2385

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Wednesday, November 02, 2016

Lab Number: AB54457

Collection Date/Time: 9/21/2016 10:30 Sample Collector: LEAR J Client Sample #:
Submittal Date/Time: 9/28/2016 15:30 Sample ID Coliform Designation:

Sample Description: ASR4

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**234**		10		9/30/2016	BS
Aluminum, Total	EPA200.8	µg/L	**Not Detected**	LN	10	1000	10/11/2016	SM
Ammonia-N	SM4500NH3 D	mg/L	**Not Detected**	IH, PH	0.05		10/3/2016	MW
Arsenic, Total	EPA200.8	µg/L	**5**		1	10	10/11/2016	SM
Barium, Total	EPA200.8	µg/L	**54**		10	1000	10/11/2016	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	**285**		10		9/30/2016	MP
Boron	EPA200.7	mg/L	**0.11**		0.05		10/5/2016	MW
Bromide	EPA300.0	mg/L	**0.4**		0.1		9/29/2016	HM
Calcium	EPA200.7	mg/L	**76**		0.5		10/5/2016	MW
Carbonate as CaCO3	SM2320B	mg/L	**Not Detected**		10		9/30/2016	MP
Chloramines	SM4500-Cl G	mg/L	**Not Detected**		0.05		9/28/2016	LRH
Chloride	EPA300.0	mg/L	**121**		1	250	9/29/2016	HM
DOC	SM5310C	mg/L	**Not Collected**		0.2		9/21/2016	JL
Fluoride	EPA300.0	mg/L	**0.2**		0.1	2.0	9/29/2016	HM
Gross Alpha	EPA900.0	pCi/L	**3.01 ± 2.64**	E		15	10/7/2016	FGL
Haloacetic Acids	EPA552	µg/L	**Not Detected**	E		60	10/5/2016	FGL
Iron	EPA200.7	µg/L	**144**		10	300	10/5/2016	MW
Iron, Dissolved	EPA200.7	µg/L	**Not Detected**		10	300	10/5/2016	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	**0.5**		0.5		10/6/2016	BS
Lithium	EPA200.8	µg/L	**32**		1		10/11/2016	SM
Magnesium	EPA200.7	mg/L	**16**		0.5		10/5/2016	MW
Manganese, Dissolved	EPA200.7	µg/L	**21**		10	50	10/5/2016	MW
Manganese, Total	EPA200.7	µg/L	**21**		10	50	10/5/2016	MW
Mercury, Total	EPA200.8	µg/L	**1**		0.5	2	10/11/2016	SM
Methane	EPA174/175	µg/L	**1.7**	H E	0.1		10/6/2016	MCCAM
Molybdenum, Total	EPA200.8	µg/L	**6**		1	1000	10/11/2016	SM
Nickel, Total	EPA200.8	µg/L	**58**		10	100	10/11/2016	SM
Nitrate as NO3	EPA300.0	mg/L	**1**	H	1	45	9/29/2016	HM
Nitrate as NO3-N	EPA300.0	mg/L	**0.2**	H	0.1	10	9/29/2016	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	**0.5**	H	0.1		9/29/2016	HM
Nitrite as NO2-N	EPA300.0	mg/L	**0.3**	H	0.1	1.0	9/29/2016	HM
o-Phosphate-P, Dissolved	EPA300.0	mg/L	**Not Detected**	H	0.1		9/29/2016	HM

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS
www.MBASinc.com
ELAP Certification Number: 2385

Wednesday, November 02, 2016

Lab Number: AB54457

Collection Date/Time:	9/21/2016	10:30	Sample Collector:	LEAR J	Client Sample #:
Submittal Date/Time:	9/28/2016	15:30	Sample ID		Coliform Designation:

Sample Description: ASR4

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
pH (Laboratory)	SM4500-H+B	pH (H)	**7.5**		0.1		9/28/2016	BS
Phosphorus, Total	HACH 8190	mg/L	**Not Detected**	PH	0.03		10/4/2016	LRH
Potassium	EPA200.7	mg/L	**4.6**		0.5		10/5/2016	MW
QC Anion Sum x 100	Calculation	%	**100%**				9/30/2016	MP
QC Anion-Cation Balance	Calculation	%	**2**				10/7/2016	MW
QC Cation Sum x 100	Calculation	%	**105%**				10/7/2016	MW
QC Ratio TDS/SEC	Calculation		**0.61**				10/4/2016	MP
Selenium, Total	EPA200.8	µg/L	**2**		2	50	10/11/2016	SM
Silica as SiO2, Total	EPA200.7	mg/L	**46**		0.5		10/5/2016	MW
Sodium	EPA200.7	mg/L	**103**		0.5		10/5/2016	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	**924**		1	900	9/30/2016	HM
Strontium, Total	EPA200.8	µg/L	**444**		5		10/11/2016	SM
Sulfate	EPA300.0	mg/L	**55**		1	250	9/29/2016	HM
TOC	SM5310C	mg/L	**0.6**		0.2		10/19/2016	MW
Total Diss. Solids	SM2540C	mg/L	**563**	H	10	500	9/29/2016	MP
Total Nitrogen	Calculation	mg/L	**1.0**		0.5		10/6/2016	MP
Total Radium 226	EPA903.0	pCi/L	**0.760 ± 0.438**	E		3	10/12/2016	FGL
Trihalomethanes	EPA524.2	µg/L	**Not Detected**	E		80	10/3/2016	FGL
Uranium by ICP/MS	EPA200.8	µg/L	**1**		1	30	10/11/2016	SM
Vanadium, Total	EPA200.8	µg/L	**Not Detected**		5	1000	10/11/2016	SM
Zinc, Total	EPA200.8	µg/L	**Not Detected**		20	5000	10/11/2016	SM

Sample Comments: H: Analyzed outside of holding time. (Received at 7 days/5 hours) IH: ICV and/or CCV below acceptance limits
PH: Preserved after the reccomended time. (Pres at 7 days/5 hour
limits.

Report Approved by

David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

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ELAP Certification Number: 2385

Wednesday, November 02, 2016

Lab Number: AB54458

Collection Date/Time: 9/21/2016 9:30 Sample Collector: LEAR J Client Sample #:
Submittal Date/Time: 9/28/2016 15:30 Sample ID Coliform Designation:

Sample Description: ASR1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**180**		10		9/30/2016	BS
Aluminum, Total	EPA200.8	µg/L	**Not Detected**	LN	10	1000	10/11/2016	SM
Ammonia-N	SM4500NH3 D	mg/L	**Not Detected**	IH, PH	0.05		10/3/2016	MW
Arsenic, Total	EPA200.8	µg/L	**1**		1	10	10/11/2016	SM
Barium, Total	EPA200.8	µg/L	**55**		10	1000	10/11/2016	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	**220**		10		9/30/2016	MP
Boron	EPA200.7	mg/L	**0.08**		0.05		10/5/2016	MW
Bromide	EPA300.0	mg/L	**0.2**		0.1		9/29/2016	HM
Calcium	EPA200.7	mg/L	**68**		0.5		10/5/2016	MW
Carbonate as CaCO3	SM2320B	mg/L	**Not Detected**		10		9/30/2016	MP
Chloramines	SM4500-Cl G	mg/L	**Not Detected**		0.05		9/28/2016	LRH
Chloride	EPA300.0	mg/L	**72**		1	250	9/29/2016	HM
DOC	SM5310C	mg/L	**1.0**		0.2		10/19/2016	MW
Fluoride	EPA300.0	mg/L	**0.3**		0.1	2.0	9/29/2016	HM
Gross Alpha	EPA900.0	pCi/L	**2.52 ± 1.55**	E		15	10/10/2016	FGL
Haloacetic Acids	EPA552	µg/L	**Not Detected**	E		60	10/5/2016	FGL
Iron	EPA200.7	µg/L	**Not Detected**		10	300	10/5/2016	MW
Iron, Dissolved	EPA200.7	µg/L	**Not Detected**		10	300	10/5/2016	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	**Not Detected**		0.5		10/6/2016	BS
Lithium	EPA200.8	µg/L	**19**		1		10/11/2016	SM
Magnesium	EPA200.7	mg/L	**17**		0.5		10/5/2016	MW
Manganese, Dissolved	EPA200.7	µg/L	**Not Detected**		10	50	10/5/2016	MW
Manganese, Total	EPA200.7	µg/L	**Not Detected**		10	50	10/5/2016	MW
Mercury, Total	EPA200.8	µg/L	**Not Detected**		0.5	2	10/11/2016	SM
Methane	EPA174/175	µg/L	**2.2**	H E	0.1		10/6/2016	MCCAM
Molybdenum, Total	EPA200.8	µg/L	**6**		1	1000	10/11/2016	SM
Nickel, Total	EPA200.8	µg/L	**Not Detected**		10	100	10/11/2016	SM
Nitrate as NO3	EPA300.0	mg/L	**1**	H	1	45	9/29/2016	HM
Nitrate as NO3-N	EPA300.0	mg/L	**0.2**	H	0.1	10	9/29/2016	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	**0.4**	H	0.1		9/29/2016	HM
Nitrite as NO2-N	EPA300.0	mg/L	**0.3**	H	0.1	1.0	9/29/2016	HM
o-Phosphate-P, Dissolved	EPA300.0	mg/L	**0.1**	H	0.1		9/29/2016	HM

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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Wednesday, November 02, 2016

Lab Number: AB54458

Collection Date/Time: 9/21/2016 9:30 Sample Collector: LEAR J Client Sample #:
Submittal Date/Time: 9/28/2016 15:30 Sample ID Coliform Designation:

Sample Description: ASR1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
pH (Laboratory)	SM4500-H+B	pH (H)	**7.4**		0.1		9/28/2016	BS
Phosphorus, Total	HACH 8190	mg/L	**0.13**	PH	0.03		10/4/2016	LRH
Potassium	EPA200.7	mg/L	**4.0**		0.5		10/5/2016	MW
QC Anion Sum x 100	Calculation	%	**100%**				9/30/2016	MP
QC Anion-Cation Balance	Calculation	%	**2**				10/7/2016	MW
QC Cation Sum x 100	Calculation	%	**105%**				10/7/2016	MW
QC Ratio TDS/SEC	Calculation		**0.62**				10/4/2016	MP
Selenium, Total	EPA200.8	µg/L	**2**		2	50	10/11/2016	SM
Silica as SiO2, Total	EPA200.7	mg/L	**33**		0.5		10/5/2016	MW
Sodium	EPA200.7	mg/L	**71**		0.5		10/5/2016	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	**763**		1	900	9/30/2016	HM
Strontium, Total	EPA200.8	µg/L	**308**		5		10/11/2016	SM
Sulfate	EPA300.0	mg/L	**96**		1	250	9/29/2016	HM
TOC	SM5310C	mg/L	**1.0**		0.2		10/19/2016	MW
Total Diss. Solids	SM2540C	mg/L	**471**	H	10	500	9/29/2016	MP
Total Nitrogen	Calculation	mg/L	**0.5**		0.5		10/6/2016	MP
Total Radium 226	EPA903.0	pCi/L	**0.758 ± 0.437**	E		3	10/12/2016	FGL
Trihalomethanes	EPA524.2	µg/L	**28.9**	E		80	10/4/2016	FGL
Uranium by ICP/MS	EPA200.8	µg/L	**1**		1	30	10/11/2016	SM
Vanadium, Total	EPA200.8	µg/L	**Not Detected**		5	1000	10/11/2016	SM
Zinc, Total	EPA200.8	µg/L	**87**		20	5000	10/11/2016	SM

Sample Comments: H: Analyzed outside of holding time. (Received at 7 days/6 hours) IH: ICV and/or CCV below acceptance limits
PH: Preserved after the reccomended time. (Pres at 7 days/6 hour
limits.

Report Approved by

David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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Wednesday, November 02, 2016

Lab Number: AB54459

Collection Date/Time: 9/21/2016 13:00 Sample Collector: LEAR J Client Sample #:
Submittal Date/Time: 9/28/2016 15:30 Sample ID Coliform Designation:

Sample Description: ASR3

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**171**		10		9/30/2016	BS
Aluminum, Total	EPA200.8	µg/L	**13**	LN	10	1000	10/11/2016	SM
Ammonia-N	SM4500NH3 D	mg/L	**Not Detected**	IH, PH	0.05		10/3/2016	MW
Arsenic, Total	EPA200.8	µg/L	**6**		1	10	10/11/2016	SM
Barium, Total	EPA200.8	µg/L	**78**		10	1000	10/11/2016	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	**209**		10		9/30/2016	MP
Boron	EPA200.7	mg/L	**0.05**		0.05		10/5/2016	MW
Bromide	EPA300.0	mg/L	**0.2**		0.1		9/29/2016	HM
Calcium	EPA200.7	mg/L	**53**		0.5		10/5/2016	MW
Carbonate as CaCO3	SM2320B	mg/L	**Not Detected**		10		9/30/2016	MP
Chloramines	SM4500-Cl G	mg/L	**Not Detected**		0.05		9/28/2016	LRH
Chloride	EPA300.0	mg/L	**58**		1	250	9/29/2016	HM
DOC	SM5310C	mg/L	**0.9***		0.2		10/19/2016	MW
Fluoride	EPA300.0	mg/L	**0.3**		0.1	2.0	9/29/2016	HM
Gross Alpha	EPA900.0	pCi/L	**4.28 ± 1.73**	E		15	10/7/2016	FGL
Haloacetic Acids	EPA552	µg/L	**3**	E		60	10/5/2016	FGL
Iron	EPA200.7	µg/L	**56**		10	300	10/5/2016	MW
Iron, Dissolved	EPA200.7	µg/L	**Not Detected**		10	300	10/5/2016	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	**1**		2		10/6/2016	BS
Lithium	EPA200.8	µg/L	**14**		1		10/11/2016	SM
Magnesium	EPA200.7	mg/L	**17**		0.5		10/5/2016	MW
Manganese, Dissolved	EPA200.7	µg/L	**12**		10	50	10/5/2016	MW
Manganese, Total	EPA200.7	µg/L	**13**		10	50	10/5/2016	MW
Mercury, Total	EPA200.8	µg/L	**1**		0.5	2	10/11/2016	SM
Methane	EPA174/175	µg/L	**1.4**	H E	0.1		10/6/2016	MCCAM
Molybdenum, Total	EPA200.8	µg/L	**21**		1	1000	10/11/2016	SM
Nickel, Total	EPA200.8	µg/L	**Not Detected**		10	100	10/11/2016	SM
Nitrate as NO3	EPA300.0	mg/L	**1**	H	1	45	9/29/2016	HM
Nitrate as NO3-N	EPA300.0	mg/L	**0.2**	H	0.1	10	9/29/2016	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	**0.4**	H	0.1		9/29/2016	HM
Nitrite as NO2-N	EPA300.0	mg/L	**0.3**	H	0.1	1.0	9/29/2016	HM
o-Phosphate-P, Dissolved	EPA300.0	mg/L	**0.2**	H	0.1		9/29/2016	HM

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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ELAP Certification Number: 2385

Wednesday, November 02, 2016

Lab Number: AB54459

Collection Date/Time:	9/21/2016	13:00	Sample Collector:	LEAR J	Client Sample #:
Submittal Date/Time:	9/28/2016	15:30	Sample ID		Coliform Designation:

Sample Description: ASR3

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
pH (Laboratory)	SM4500-H+B	pH (H)	**7.5**		0.1		9/28/2016	BS
Phosphorus, Total	HACH 8190	mg/L	**0.27**	PH	0.03		10/4/2016	LRH
Potassium	EPA200.7	mg/L	**3.6**		0.5		10/5/2016	MW
QC Anion Sum x 100	Calculation	%	**100%**				9/30/2016	MP
QC Anion-Cation Balance	Calculation	%	**1**				10/7/2016	MW
QC Cation Sum x 100	Calculation	%	**102%**				10/7/2016	MW
QC Ratio TDS/SEC	Calculation		**0.65**				10/4/2016	MP
Selenium, Total	EPA200.8	µg/L	**3**		2	50	10/11/2016	SM
Silica as SiO2, Total	EPA200.7	mg/L	**29**		0.5		10/5/2016	MW
Sodium	EPA200.7	mg/L	**59**		0.5		10/5/2016	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	**657**		1	900	9/30/2016	HM
Strontium, Total	EPA200.8	µg/L	**281**		5		10/11/2016	SM
Sulfate	EPA300.0	mg/L	**72**		1	250	9/29/2016	HM
TOC	SM5310C	mg/L	**1.0**		0.2		10/19/2016	MW
Total Diss. Solids	SM2540C	mg/L	**426**	H	10	500	9/29/2016	MP
Total Nitrogen	Calculation	mg/L	**1.5**		0.5		10/6/2016	MP
Total Radium 226	EPA903.0	pCi/L	**0.178 ± 0.302**	E		3	10/12/2016	FGL
Trihalomethanes	EPA524.2	µg/L	**61.4**	E		80	10/3/2016	FGL
Uranium by ICP/MS	EPA200.8	µg/L	**3**		1	30	10/11/2016	SM
Vanadium, Total	EPA200.8	µg/L	**Not Detected**		5	1000	10/11/2016	SM
Zinc, Total	EPA200.8	µg/L	**266**		20	5000	10/11/2016	SM

Sample Comments: H: Analyzed outside of holding time. (Received at 7 days/2.5 hours) IH: ICV and/or CCV below acceptance limits
PH: Preserved after the reccomended time. (Pres at 7 days/2.5 ho
limits.

Report Approved by

David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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Wednesday, November 02, 2016

Lab Number: AB54460

Collection Date/Time: 9/27/2016 10:00 Sample Collector: LEAR J Client Sample #:
Submittal Date/Time: 9/28/2016 15:30 Sample ID Coliform Designation:

Sample Description: ASR2

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**180**		10		9/30/2016	BS
Aluminum, Total	EPA200.8	µg/L	**Not Detected**	LN	10	1000	10/11/2016	SM
Ammonia-N	SM4500NH3 D	mg/L	**Not Detected**	IH	0.05		10/3/2016	MW
Arsenic, Total	EPA200.8	µg/L	**1**		1	10	10/11/2016	SM
Barium, Total	EPA200.8	µg/L	**83**		10	1000	10/11/2016	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	**220**		10		9/30/2016	MP
Boron	EPA200.7	mg/L	**0.06**		0.05		10/5/2016	MW
Bromide	EPA300.0	mg/L	**0.2**		0.1		9/29/2016	HM
Calcium	EPA200.7	mg/L	**60**		0.5		10/5/2016	MW
Carbonate as CaCO3	SM2320B	mg/L	**Not Detected**		10		9/30/2016	MP
Chloramines	SM4500-Cl G	mg/L	**Not Detected**		0.05		9/28/2016	LRH
Chloride	EPA300.0	mg/L	**64**		1	250	9/29/2016	HM
DOC	SM5310C	mg/L	**Not Collected**		0.2		9/27/2016	JL
Fluoride	EPA300.0	mg/L	**0.3**		0.1	2.0	9/29/2016	HM
Gross Alpha	EPA900.0	pCi/L	**2.59 ± 2.16**	E		15	10/10/2016	FGL
Haloacetic Acids	EPA552	µg/L	**Not Detected**	E		60	10/6/2016	FGL
Iron	EPA200.7	µg/L	**66**		10	300	10/5/2016	MW
Iron, Dissolved	EPA200.7	µg/L	**Not Detected**		10	300	10/5/2016	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	**1**		2		10/6/2016	BS
Lithium	EPA200.8	µg/L	**14**		1		10/11/2016	SM
Magnesium	EPA200.7	mg/L	**19**		0.5		10/5/2016	MW
Manganese, Dissolved	EPA200.7	µg/L	**10**		10	50	10/5/2016	MW
Manganese, Total	EPA200.7	µg/L	**11**		10	50	10/5/2016	MW
Mercury, Total	EPA200.8	µg/L	**1**		0.5	2	10/11/2016	SM
Methane	EPA174/175	µg/L	**1.7**	H E	0.1		10/6/2016	MCCAM
Molybdenum, Total	EPA200.8	µg/L	**6**		1	1000	10/11/2016	SM
Nickel, Total	EPA200.8	µg/L	**Not Detected**		10	100	10/11/2016	SM
Nitrate as NO3	EPA300.0	mg/L	**1**		1	45	9/29/2016	HM
Nitrate as NO3-N	EPA300.0	mg/L	**0.2**		0.1	10	9/29/2016	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	**0.5**		0.1		9/29/2016	HM
Nitrite as NO2-N	EPA300.0	mg/L	**0.3**		0.1	1.0	9/29/2016	HM
o-Phosphate-P, Dissolved	EPA300.0	mg/L	**0.3**		0.1		9/29/2016	HM

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

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Wednesday, November 02, 2016

Lab Number: AB54460

Collection Date/Time: 9/27/2016 10:00 Sample Collector: LEAR J Client Sample #:
Submittal Date/Time: 9/28/2016 15:30 Sample ID Coliform Designation:

Sample Description: ASR2

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
pH (Laboratory)	SM4500-H+B	pH (H)	**7.5**		0.1		9/28/2016	BS
Phosphorus, Total	HACH 8190	mg/L	**0.25**		0.03		10/4/2016	LRH
Potassium	EPA200.7	mg/L	**3.8**		0.5		10/5/2016	MW
QC Anion Sum x 100	Calculation	%	**101%**				9/30/2016	MP
QC Anion-Cation Balance	Calculation	%	**2**				10/7/2016	MW
QC Cation Sum x 100	Calculation	%	**105%**				10/7/2016	MW
QC Ratio TDS/SEC	Calculation		**0.61**				10/4/2016	MP
Selenium, Total	EPA200.8	µg/L	**2**		2	50	10/11/2016	SM
Silica as SiO2, Total	EPA200.7	mg/L	**29**		0.5		10/5/2016	MW
Sodium	EPA200.7	mg/L	**64**		0.5		10/5/2016	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	**707**		1	900	9/30/2016	HM
Strontium, Total	EPA200.8	µg/L	**300**		5		10/11/2016	SM
Sulfate	EPA300.0	mg/L	**81**		1	250	9/29/2016	HM
TOC	SM5310C	mg/L	**1.1**		0.2		10/19/2016	MW
Total Diss. Solids	SM2540C	mg/L	**431**		10	500	9/29/2016	MP
Total Nitrogen	Calculation	mg/L	**1.5**		0.5		10/6/2016	MP
Total Radium 226	EPA903.0	pCi/L	**0.000 ± 0.246**	E		3	10/12/2016	FGL
Trihalomethanes	EPA524.2	µg/L	**47.9**	E		80	10/4/2016	FGL
Uranium by ICP/MS	EPA200.8	µg/L	**1**		1	30	10/11/2016	SM
Vanadium, Total	EPA200.8	µg/L	**Not Detected**		5	1000	10/11/2016	SM
Zinc, Total	EPA200.8	µg/L	**317**		20	5000	10/11/2016	SM

Sample Comments: IH: ICV and/or CCV below acceptance limits. LN: MS and/or MSD below acceptance limits

Report Approved by David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

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MPWMD
Joe Oliver
P.O. Box 85
Monterey, CA 93442-0085

Wednesday, November 02, 2016

Lab Number: AB54461

Collection Date/Time:	9/27/2016	11:00	Sample Collector:	LEAR J	Client Sample #:
Submittal Date/Time:	9/28/2016	15:30	Sample ID		Coliform Designation:

Sample Description: MW1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Chloramines	SM4500-Cl G	mg/L	**Not Detected**		0.05		9/28/2016	LRH
Chloride	EPA300.0	mg/L	**47**		1	250	9/29/2016	HM
Haloacetic Acids	EPA552	µg/L	**Not Detected**	E		60	10/6/2016	FGL
Trihalomethanes	EPA524.2	µg/L	**1.9**	E		80	10/3/2016	FGL

Sample Comments:

Report Approved by David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD T = Temperature Exceedance

October 14, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Lab ID : SP 1611647
Customer : 2-19144

Laboratory Report

Introduction: This report package contains total of 14 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(9 pages)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
ASR4	09/21/2016	09/30/2016	SP 1611647-001	W
ASR1	09/21/2016	09/30/2016	SP 1611647-002	W
ASR3	09/21/2016	09/30/2016	SP 1611647-003	W
ASR2	09/27/2016	09/30/2016	SP 1611647-004	W
MW1	09/27/2016	09/30/2016	SP 1611647-005	W

Sampling and Receipt Information: All samples were received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. All samples arrived at 6 °C. All samples were prepared and analyzed within the method specified hold time. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Organic QC

551.1	10/03/2016:214445 All analysis quality controls are within established criteria.
	10/04/2016:214446 All analysis quality controls are within established criteria.
	10/03/2016:211902 All preparation quality controls are within established criteria, except: The following note applies to Decafluorobiphenyl: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
552	10/04/2016:211980 All preparation quality controls are within established criteria, except: The following note applies to Monochloroacetic Acid: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

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October 14, 2016 Lab ID : SP 1611647
Monterey Bay Analytical Services Customer : 2-19144

Organic QC

552.2	10/05/2016:214521 All analysis quality controls are within established criteria.
	10/06/2016:214521 All analysis quality controls are within established criteria.

Radio QC

900.0	10/10/2016:214770 All analysis quality controls are within established criteria.
	10/07/2016:214771 All analysis quality controls are within established criteria.
	10/06/2016:212066 All preparation quality controls are within established criteria.
903.0	10/12/2016:214916 All analysis quality controls are within established criteria.
	10/10/2016:212044 All preparation quality controls are within established criteria.

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-10-14

October 14, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : ASR4
Project : MPWMD

Lab ID : SP 1611647-001
Customer ID : 2-19144

Sampled On : September 21, 2016-10:30
Sampled By : Jonathan Lear
Received On : September 30, 2016-12:00
Matrix : Water

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
EPA 551.1[VOA:1'15]								
Decafluorobiphenyl‡	101	80-120	%		551.1	10/03/16:211902	551.1	10/03/16:214445
Bromodichloromethane	ND	0.5	ug/L		551.1	10/03/16:211902	551.1	10/03/16:214445
Bromoform	ND	0.5	ug/L		551.1	10/03/16:211902	551.1	10/03/16:214445
Chloroform	ND	0.5	ug/L		551.1	10/03/16:211902	551.1	10/03/16:214445
Dibromochloromethane	ND	0.5	ug/L		551.1	10/03/16:211902	551.1	10/03/16:214445
Total Trihalomethanes	ND	--	ug/L		551.1	10/03/16:211902	551.1	10/03/16:214445
EPA 552.2[AGT:1'12]								
2,3-Dibromopropionic Acid‡	101	70-130	%		552	10/04/16:211980	552.2	10/05/16:214521
Bromoacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/05/16:214521
Chloroacetic Acid	ND	2	ug/L		552	10/04/16:211980	552.2	10/05/16:214521
Dibromoacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/05/16:214521
Dichloroacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/05/16:214521
Trichloroacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/05/16:214521
Haloacetic acids (five)	ND	--	ug/L		552	10/04/16:211980	552.2	10/05/16:214521

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, HNO3 pH < 2, Na2SO3 ‡Surrogate. * PQL adjusted for dilution.

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October 14, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : ASR4
Project : MPWMD

Lab ID : SP 1611647-001
Customer ID : 2-19144

Sampled On : September 21, 2016-10:30
Sampled By : Jonathan Lear
Received On : September 30, 2016-12:00
Matrix : Water

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Radio Chemistry[P:1'5]								
Gross Alpha	3.01 ± 2.64	2.78	pCi/L	15/5	900.0	10/06/16-09:04 2P1612066	900.0	10/07/16-13:00 2A1614771
Total Alpha Radium (226)	0.760 ± 0.438	0.470	pCi/L	3	903.0	10/10/16-17:00 2P1612044	903.0	10/12/16-10:40 2A1614916

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, HNO3 pH < 2, Na2SO3 * PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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October 14, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : ASR1
Project : MPWMD

Lab ID : SP 1611647-002
Customer ID : 2-19144

Sampled On : September 21, 2016-09:30
Sampled By : Jonathan Lear
Received On : September 30, 2016-12:00
Matrix : Water

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
EPA 551.1[VOA:1'15]								
Decafluorobiphenyl‡	116	80-120	%		551.1	10/03/16:211902	551.1	10/04/16:214446
Bromodichloromethane	7.6	0.5	ug/L		551.1	10/03/16:211902	551.1	10/04/16:214446
Bromoform	0.5	0.5	ug/L		551.1	10/03/16:211902	551.1	10/04/16:214446
Chloroform	18.8	0.5	ug/L		551.1	10/03/16:211902	551.1	10/04/16:214446
Dibromochloromethane	2.0	0.5	ug/L		551.1	10/03/16:211902	551.1	10/04/16:214446
Total Trihalomethanes	28.9	--	ug/L		551.1	10/03/16:211902	551.1	10/04/16:214446
EPA 552.2[AGT:1'12]								
2,3-Dibromopropionic Acid‡	106	70-130	%		552	10/04/16:211980	552.2	10/05/16:214521
Bromoacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/05/16:214521
Chloroacetic Acid	ND	2	ug/L		552	10/04/16:211980	552.2	10/05/16:214521
Dibromoacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/05/16:214521
Dichloroacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/05/16:214521
Trichloroacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/05/16:214521
Haloacetic acids (five)	ND	--	ug/L		552	10/04/16:211980	552.2	10/05/16:214521

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, HNO3 pH < 2, Na2SO3 ‡Surrogate. * PQL adjusted for dilution.

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October 14, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : ASR1
Project : MPWMD

Lab ID : SP 1611647-002
Customer ID : 2-19144

Sampled On : September 21, 2016-09:30
Sampled By : Jonathan Lear
Received On : September 30, 2016-12:00
Matrix : Water

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Radio Chemistry[P:1'5]								
Gross Alpha	2.52 ± 1.55	1.51	pCi/L	15/5	900.0	10/06/16-09:04 2P1612066	900.0	10/10/16-07:00 2A1614770
Total Alpha Radium (226)	0.758 ± 0.437	0.470	pCi/L	3	903.0	10/10/16-17:00 2P1612044	903.0	10/12/16-11:00 2A1614916

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, HNO3 pH < 2, Na2SO3 * PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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October 14, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : ASR3
Project : MPWMD

Lab ID : SP 1611647-003
Customer ID : 2-19144

Sampled On : September 21, 2016-13:00
Sampled By : Jonathan Lear
Received On : September 30, 2016-12:00
Matrix : Water

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
EPA 551.1[VOA:1'15]								
Decafluorobiphenyl‡	88.7	80-120	%		551.1	10/03/16:211902	551.1	10/03/16:214445
Bromodichloromethane	15.9	0.5	ug/L		551.1	10/03/16:211902	551.1	10/03/16:214445
Bromoform	0.8	0.5	ug/L		551.1	10/03/16:211902	551.1	10/03/16:214445
Chloroform	36.7	0.5	ug/L		551.1	10/03/16:211902	551.1	10/03/16:214445
Dibromochloromethane	8.0	0.5	ug/L		551.1	10/03/16:211902	551.1	10/03/16:214445
Total Trihalomethanes	61.4	--	ug/L		551.1	10/03/16:211902	551.1	10/03/16:214445
EPA 552.2[AGT:1'12]								
2,3-Dibromopropionic Acid‡	108	70-130	%		552	10/04/16:211980	552.2	10/05/16:214521
Bromoacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/05/16:214521
Chloroacetic Acid	ND	2	ug/L		552	10/04/16:211980	552.2	10/05/16:214521
Dibromoacetic Acid	1	1	ug/L		552	10/04/16:211980	552.2	10/05/16:214521
Dichloroacetic Acid	2	1	ug/L		552	10/04/16:211980	552.2	10/05/16:214521
Trichloroacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/05/16:214521
Haloacetic acids (five)	3	--	ug/L		552	10/04/16:211980	552.2	10/05/16:214521

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, HNO3 pH < 2, Na2SO3 ‡Surrogate. * PQL adjusted for dilution.

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October 14, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : ASR3
Project : MPWMD

Lab ID : SP 1611647-003
Customer ID : 2-19144

Sampled On : September 21, 2016-13:00
Sampled By : Jonathan Lear
Received On : September 30, 2016-12:00
Matrix : Water

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Radio Chemistry[P:1'5]								
Gross Alpha	4.28 ± 1.73	1.47	pCi/L	15/5	900.0	10/06/16-09:04 2P1612066	900.0	10/07/16-14:00 2A1614771
Total Alpha Radium (226)	0.178 ± 0.302	0.470	pCi/L	3	903.0	10/10/16-17:00 2P1612044	903.0	10/12/16-11:20 2A1614916

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, HNO3 pH < 2, Na2SO3 * PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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October 14, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : ASR2
Project : MPWMD

Lab ID : SP 1611647-004
Customer ID : 2-19144

Sampled On : September 27, 2016-10:00
Sampled By : Jonathan Lear
Received On : September 30, 2016-12:00
Matrix : Water

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
EPA 551.1[VOA:1'15]								
Decafluorobiphenyl‡	98.0	80-120	%		551.1	10/03/16:211902	551.1	10/04/16:214446
Bromodichloromethane	12.0	0.5	ug/L		551.1	10/03/16:211902	551.1	10/04/16:214446
Bromoform	0.6	0.5	ug/L		551.1	10/03/16:211902	551.1	10/04/16:214446
Chloroform	29.8	0.5	ug/L		551.1	10/03/16:211902	551.1	10/04/16:214446
Dibromochloromethane	5.5	0.5	ug/L		551.1	10/03/16:211902	551.1	10/04/16:214446
Total Trihalomethanes	47.9	--	ug/L		551.1	10/03/16:211902	551.1	10/04/16:214446
EPA 552.2[AGT:1'12]								
2,3-Dibromopropionic Acid‡	102	70-130	%		552	10/04/16:211980	552.2	10/06/16:214521
Bromoacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/06/16:214521
Chloroacetic Acid	ND	2	ug/L		552	10/04/16:211980	552.2	10/06/16:214521
Dibromoacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/06/16:214521
Dichloroacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/06/16:214521
Trichloroacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/06/16:214521
Haloacetic acids (five)	ND	--	ug/L		552	10/04/16:211980	552.2	10/06/16:214521

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, HNO3 pH < 2, Na2SO3 ‡Surrogate. * PQL adjusted for dilution.

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October 14, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : ASR2
Project : MPWMD

Lab ID : SP 1611647-004
Customer ID : 2-19144

Sampled On : September 27, 2016-10:00
Sampled By : Jonathan Lear
Received On : September 30, 2016-12:00
Matrix : Water

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Radio Chemistry[P:1'5]								
Gross Alpha	2.59 ± 2.16	2.05	pCi/L	15/5	900.0	10/06/16-09:04 2P1612066	900.0	10/10/16-09:00 2A1614770
Total Alpha Radium (226)	0.000 ± 0.246	0.470	pCi/L	3	903.0	10/10/16-17:00 2P1612044	903.0	10/12/16-11:40 2A1614916

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, HNO3 pH < 2, Na2SO3 * PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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October 14, 2016

Monterey Bay Analytical Services
4 Justin Court
Monterey, CA 93940

Description : MW1
Project : MPWMD

Lab ID : SP 1611647-005
Customer ID : 2-19144

Sampled On : September 27, 2016-11:00
Sampled By : Jonathan Lear
Received On : September 30, 2016-12:00
Matrix : Water

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
EPA 551.1[VOA:1'15]								
Decafluorobiphenyl‡	94.3	80-120	%		551.1	10/03/16:211902	551.1	10/03/16:214445
Bromodichloromethane	0.7	0.5	ug/L		551.1	10/03/16:211902	551.1	10/03/16:214445
Bromoform	ND	0.5	ug/L		551.1	10/03/16:211902	551.1	10/03/16:214445
Chloroform	1.2	0.5	ug/L		551.1	10/03/16:211902	551.1	10/03/16:214445
Dibromochloromethane	ND	0.5	ug/L		551.1	10/03/16:211902	551.1	10/03/16:214445
Total Trihalomethanes	1.9	--	ug/L		551.1	10/03/16:211902	551.1	10/03/16:214445
EPA 552.2[AGT:1'12]								
2,3-Dibromopropionic Acid‡	105	70-130	%		552	10/04/16:211980	552.2	10/06/16:214521
Bromoacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/06/16:214521
Chloroacetic Acid	ND	2	ug/L		552	10/04/16:211980	552.2	10/06/16:214521
Dibromoacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/06/16:214521
Dichloroacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/06/16:214521
Trichloroacetic Acid	ND	1	ug/L		552	10/04/16:211980	552.2	10/06/16:214521
Haloacetic acids (five)	ND	--	ug/L		552	10/04/16:211980	552.2	10/06/16:214521

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic, (VOA) VOA Preservatives: NH4Cl, HNO3 pH < 2, Na2SO3 ‡Surrogate. * PQL adjusted for dilution.

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October 14, 2016 Lab ID : SP 1611647
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Organic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Organic								
Bromodichloromethane	551.1	10/03/16:211902SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.706	116 %	80-120	
			MS	ug/L	9.983	104 %	80-120	
		(SP 1611385-001)	MSD	ug/L	10.35	105 %	80-120	
			MSRPD	ug/L	10.35	4.0%	≤20	
	551.1	10/03/16:214445SBL	CCV	ug/L	83.33	90.8 %	80-120	
			CCV	ug/L	166.7	119 %	80-120	
	551.1	10/04/16:214446SBL	CCV	ug/L	83.33	90.7 %	80-120	
			CCV	ug/L	166.7	90.2 %	80-120	
Bromoform	551.1	10/03/16:211902SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.706	119 %	80-120	
			MS	ug/L	9.983	102 %	80-120	
		(SP 1611385-001)	MSD	ug/L	10.35	104 %	80-120	
			MSRPD	ug/L	10.35	5.3%	≤20	
	551.1	10/03/16:214445SBL	CCV	ug/L	83.33	97.7 %	80-120	
			CCV	ug/L	166.7	120 %	80-120	
	551.1	10/04/16:214446SBL	CCV	ug/L	83.33	83.2 %	80-120	
			CCV	ug/L	166.7	94.2 %	80-120	
Chloroform	551.1	10/03/16:211902SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.706	116 %	80-120	
			MS	ug/L	9.983	99.1 %	80-120	
		(SP 1611385-001)	MSD	ug/L	10.35	101 %	80-120	
			MSRPD	ug/L	10.35	4.9%	≤20	
	551.1	10/03/16:214445SBL	CCV	ug/L	83.33	94.1 %	80-120	
			CCV	ug/L	166.7	116 %	80-120	
	551.1	10/04/16:214446SBL	CCV	ug/L	83.33	86.9 %	80-120	
			CCV	ug/L	166.7	88.9 %	80-120	
Decafluorobiphenyl	551.1	10/03/16:211902SBL	Blank	ug/L	18.72	83.3 %	80-120	
			LCS	ug/L	19.41	91.6 %	80-120	
			MS	ug/L	19.97	77.0 %	80-120	435
		(SP 1611385-001)	MSD	ug/L	20.70	89.0 %	80-120	
			MSRPD	ug/L	10.35	18.0%	≤20.0	
	551.1	10/03/16:214445SBL	CCV	ug/L	166.7	99.7 %	80-120	
			CCV	ug/L	333.3	93.3 %	80-120	
	551.1	10/04/16:214446SBL	CCV	ug/L	166.7	114 %	80-120	
			CCV	ug/L	333.3	80.1 %	80-120	
Dibromochloromethane	551.1	10/03/16:211902SBL	Blank	ug/L		ND	<0.5	
			LCS	ug/L	9.706	120 %	80-120	
			MS	ug/L	9.983	108 %	80-120	
		(SP 1611385-001)	MSD	ug/L	10.35	109 %	80-120	
			MSRPD	ug/L	10.35	3.9%	≤20	
	551.1	10/03/16:214445SBL	CCV	ug/L	83.33	98.2 %	80-120	
			CCV	ug/L	166.7	120 %	80-120	
	551.1	10/04/16:214446SBL	CCV	ug/L	83.33	94.8 %	80-120	
			CCV	ug/L	166.7	91.6 %	80-120	
2,3-Dibromopropionic Acid	552	10/04/16:211980sbl	Blank	ug/L	5.000	97.9 %	70-130	
			LCS	ug/L	5.000	117 %	70-130	
			MS	ug/L	5.000	109 %	70-130	
		(SP 1611647-001)	MSD	ug/L	5.000	104 %	70-130	
			MSRPD	ug/L	5.000	5.0%	≤20.0	
Dibromoacetic Acid	552	10/04/16:211980sbl	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	98.0 %	70-130	
			MS	ug/L	10.00	106 %	70-130	
		(SP 1611647-001)	MSD	ug/L	10.00	111 %	70-130	
			MSRPD	ug/L	5.000	4.7%	≤20.0	

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October 14, 2016 Lab ID : SP 1611647
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Organic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Organic								
Dichloroacetic Acid	552	10/04/16:211980sbl	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	103 %	70-130	
			MS	ug/L	10.00	111 %	70-130	
		(SP 1611647-001)	MSD	ug/L	10.00	119 %	70-130	
			MSRPD	ug/L	5.000	6.5%	≤20.0	
Monobromoacetic Acid	552	10/04/16:211980sbl	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	103 %	70-130	
			MS	ug/L	10.00	107 %	70-130	
		(SP 1611647-001)	MSD	ug/L	10.00	115 %	70-130	
			MSRPD	ug/L	5.000	7.8%	≤20.0	
Monochloroacetic Acid	552	10/04/16:211980sbl	Blank	ug/L		ND	<2	
			LCS	ug/L	10.00	109 %	70-130	
			MS	ug/L	10.00	117 %	70-130	
		(SP 1611647-001)	MSD	ug/L	10.00	132 %	70-130	435
			MSRPD	ug/L	5.000	12.5%	≤20.0	
Trichloroacetic Acid	552	10/04/16:211980sbl	Blank	ug/L		ND	<1	
			LCS	ug/L	10.00	73.9 %	70-130	
			MS	ug/L	10.00	84.6 %	70-130	
		(SP 1611647-001)	MSD	ug/L	10.00	92.9 %	70-130	
			MSRPD	ug/L	5.000	8.8%	≤20.0	
2,3-Dibromopropionic Acid	552.2	10/05/16:214521SBL	CCV	ug/L	50.00	95.6 %	70-130	
			CCV	ug/L	75.00	86.6 %	70-130	
			CCV	ug/L	75.00	89.8 %	70-130	
Dibromoacetic Acid	552.2	10/05/16:214521SBL	CCV	ug/L	100.0	106 %	70-130	
			CCV	ug/L	150.0	110 %	70-130	
			CCV	ug/L	150.0	111 %	70-130	
Dichloroacetic Acid	552.2	10/05/16:214521SBL	CCV	ug/L	100.0	116 %	70-130	
			CCV	ug/L	150.0	114 %	70-130	
			CCV	ug/L	150.0	111 %	70-130	
Monobromoacetic Acid	552.2	10/05/16:214521SBL	CCV	ug/L	100.0	111 %	70-130	
			CCV	ug/L	150.0	110 %	70-130	
			CCV	ug/L	150.0	107 %	70-130	
Monochloroacetic Acid	552.2	10/05/16:214521SBL	CCV	ug/L	100.0	130 %	70-130	
			CCV	ug/L	150.0	128 %	70-130	
			CCV	ug/L	150.0	97.9 %	70-130	
Trichloroacetic Acid	552.2	10/05/16:214521SBL	CCV	ug/L	100.0	91.4 %	70-130	
			CCV	ug/L	150.0	93.0 %	70-130	
			CCV	ug/L	150.0	96.6 %	70-130	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

October 14, 2016 Lab ID : SP 1611647
Monterey Bay Analytical Services Customer : 2-19144

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	10/07/16:214771caa	CCV	cpm	8566	42.3 %	39 - 47	
			CCB	cpm		0.100	0.18	
	900.0	10/10/16:214770caa	CCV	cpm	8566	42.3 %	39 - 48	
			CCB	cpm		0.100	0.14	
Gross Alpha	900.0	10/06/16:212066RMM	Blank	pCi/L		1.12	3	
			LCS	pCi/L	107.4	105 %	75-125	
			MS	pCi/L	107.4	113 %	60-140	
		(SP 1611632-001)	MSD	pCi/L	107.4	127 %	60-140	
			MSRPD	pCi/L	107.4	11.2%	≤30	
Alpha	903.0	10/12/16:214916caa	CCV	cpm	8562	42.3 %	38 - 47	
			CCB	cpm		0.1200	0.19	
Total Alpha Radium (226)	903.0	10/10/16:212044emv	RgBlk	pCi/L		0.09	2	
			LCS	pCi/L	21.86	102 %	52-107	
			BS	pCi/L	21.86	88.7 %	43-111	
			BSD	pCi/L	21.86	88.1 %	43-111	
			BSRPD	pCi/L	21.86	0.7%	≤35.5	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
BS	: Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
BSD	: Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
BSRPD	: BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

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AND ANALYSIS REQUEST DOCUMENT

Client: Monterey Bay Analytical Services
Customer Number: 2019144
Address: 4 Justin Court
Monterey, CA 93940

Phone: (831)375-6227 Fax: (831)641-0734
Email Address: info@mbasinc.com
Contact Person: David Holland
Project Name: MPWMD
Purchase Order Number:
Quote Number:

Rush Analysis: ☐ 5 Day ☐ 4 Day ☐ 3 Day ☐ 2 Day ☐ 24 hour
Rush pre-approval by lab (initals): _____
Electronic Data Transfer: ☐ No ☐ State ☐ Client Other: _____

Sampler(s): Jonathan Lear

Sampling Fee: _____ Pickup Fee: _____
Compositor Setup Date: _____ Time: _____

Lab Number: 16111647

TEST DESCRIPTION AND ANALYSES REQUESTED

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling: Composite (C) Grab (G)	Number of Containers	Type of Containers: (G)Glass (P)Plastic (V)VOA (MT)Metal Tube	Potable (P) Non-Potable (NP) Ag Water (AgW)	(SW) Surface Water (MW) Monitoring Well (GW) Ground Water (TB) Travel Blank (WW) Waste Water (DW) Drinking Water	(S) Soil (SLG) Sludge (SLD) Solid (O) Oil	BacT: (Sys) System (SRC) Source (W) Waste	BacT: (ROUT)Routine (RPT)Repeat (OTH)Other (RPL)Replace	(LT) Leaf Tissue (PET) Petiole Tissue (PRD) Produce	Preservative: (1) NaOH + ZnAc, (2) NaOH, (3) HCl (4) H2SO4, (5) HNO3, (6) Na2S2O3, (7) Other_____	Gross Alpha	HAA	Ra 226	THMS
1.	ASR4	9/21/16	10:30	G										X	X	X	X
2.	ASR1	9/21/16	09:30	G										X	X	X	X
3.	ASR3	9/21/16	13:00	G										X	X	X	X
4.	ASR2	9/27/16	10:00	G										X	X	X	X
5.	MW1	9/27/16	11:00	G											X		X

Remarks
AB54457,AB54458,AB54459,AB54460,AB54461
5334698971

Relinquished	Date:	Time:	Relinquished	Date:	Time:	Relinquished	Date:	Time:
	9/29	1600	GSO					
Received By:	**Date:**	**Time:**	**Received By:**	**Date:**	**Time:**	**Received By:**	**Date:**	**Time:**
				09-30-16	12:00			

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CA ELAP Certification No.1573

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2500 Stagecoach Road
Stockton, CA 95215
TEL: (209)942-0182
FAX: (209)942-0423
CA ELAP Certification No. 1563

Office & Laboratory
563 E. Lindo Avenue
Chico, CA 95926
TEL: (530)343-5818
FAX: (530)343-3807
CA ELAP Certification No. 2670

Office & Laboratory
3442 Empresa Drive, Suite D
San Luis Obispo, CA 93401
TEL: (805)783-2940
FAX: (805)783-2942
CA ELAP Certification No. 2775

Office & Laboratory
9415 W. Goshen Avenue
Visalia, CA 93291
TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810

Condition Upon Receipt (Attach to COC)

Sample Receipt at SP:

1. Number of ice chests/packages received: **1**
2. Shipper tracking numbers **533468971**
3. Were samples received in a chilled condition?
   Temps: **6** / _____ / _____ / _____ / _____ / _____ / _____
4. Surface water (SWTR) bact samples: A sample that has a temperature upon receipt of >10C, whether iced or not, should be flagged unless the time since sample collection has been less than two hours.
5. Do the number of bottles received agree with the COC? **Yes** No N/A
6. Verify sample date, time, sampler **Yes** No N/A
7. Were the samples received intact? (i.e. no broken bottles, leaks, etc.) **Yes** No
8. Were sample custody seals intact? Yes No **N/A**

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? **Yes** No
2. Did bottle labels correspond with the client's ID's? **Yes** No
3. Were all bottles requiring sample preservation properly preserved? Yes No **N/A** **FGL**
   [Exception: Oil & Grease, VOA and CrVI verified in lab]
4. VOAs checked for Headspace? **Yes** No N/A
5. Were all analyses within holding times at time of receipt? **Yes** No
6. Have rush or project due dates been checked and accepted? Yes No **N/A**

Include a copy of the COC for lab delivery. (Bacti. Inorganics and Radio)

Sample Receipt, Login and Verification completed by:

Reviewed and Approved By **Shawn Peck** Digitally signed by Shawn Peck
Title: Sample Receiving
Date: 10/04/2016-09:21:43

Discrepency Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

2. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

(2019144)
Monterey Bay Analytical Services
SP 1611647
SRP-10/04/2016-09:21:43

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1609D74

Report Created for: Monterey Bay Analytical

4 Justin Court, Suite D
Monterey, CA 93940

Project Contact: David Holland
Project P.O.:
Project Name: MPWMD

Project Received: 09/30/2016

Analytical Report reviewed & approved for release on 10/07/2016 by:

Angela Rydelius,
Laboratory Manager

1534 Willow Pass Rd. Pittsburg, CA 94565 ♦ TEL: (877) 252-9262 ♦ FAX: (925) 252-9269 ♦ www.mccampbell.com
CA ELAP 1644 ♦ NELAP 4033ORELAP

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Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1609D74

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

Analytical Qualifiers

H	samples were analyzed out of holding time

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Analytical Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1609D74
Date Received:	9/30/16 10:30	**Extraction Method:**	RSK175
Date Prepared:	10/6/16	**Analytical Method:**	RSK175
Project:	MPWMD	**Unit:**	µg/L

Dissolved Gases by RSK 175

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR4	1609D74-001A	Water	09/21/2016 10:30	GC26	127758

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Methane	**1.7**	H	0.10	1	10/06/2016 15:01

Analyst(s): AK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR1	1609D74-002A	Water	09/21/2016 09:30	GC26	127758

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Methane	**2.2**	H	0.10	1	10/06/2016 15:12

Analyst(s): AK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR3	1609D74-003A	Water	09/21/2016 13:00	GC26	127758

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Methane	**1.4**	H	0.10	1	10/06/2016 15:24

Analyst(s): AK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR2	1609D74-004A	Water	09/27/2016 10:00	GC26	127758

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Methane	**1.7**		0.10	1	10/06/2016 15:35

Analyst(s): AK

Angela Rydelius, Lab Manager

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Quality Control Report

Client:	Monterey Bay Analytical	**WorkOrder:**	1609D74
Date Prepared:	10/6/16	**BatchID:**	127758
Date Analyzed:	10/6/16	**Extraction Method:**	RSK175
Instrument:	GC26	**Analytical Method:**	RSK175
Matrix:	Air	**Unit:**	µL/L
Project:	MPWMD	**Sample ID:**	MB/LCS-127758

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetylene	ND	8.61	0.50	10	-	86	70-130
Ethane	ND	11.4	0.50	10	-	114	70-130
Ethylene	ND	8.37	0.50	10	-	84	70-130
Methane	ND	9.50	0.50	10	-	95	70-130

QA/QC Officer

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1609D74 **ClientCode: MBAS**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
David Holland
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940
831-375-6227 FAX: 831-641-0734

Email: mweidner@mbasinc.com; Dholland@mbas
cc/3rd Party:
PO:
ProjectNo: MPWMD

Bill to:
Accounts Payable
Monterey Bay Analytical
4 Justin Court, Suite D
Monterey, CA 93940

Requested TAT: **5 days;**

Date Received: **09/30/2016**
Date Logged: **09/30/2016**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1609D74-001	ASR4	Water	9/21/2016 10:30	☐	A											
1609D74-002	ASR1	Water	9/21/2016 09:30	☐	A											
1609D74-003	ASR3	Water	9/21/2016 13:00	☐	A											
1609D74-004	ASR2	Water	9/27/2016 10:00	☐	A											

Test Legend:

1	RSK175_W	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Maria Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL **Project:** MPWMD **Work Order:** 1609D74

Client Contact: David Holland **QC Level:** LEVEL 2

Contact's Email: mweidner@mbasinc.com; Dholland@mbasinc.com; 4mbas@sbcglobal.net; info@mbasinc.com **Comments:** **Date Logged:** 9/30/2016

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1609D74-001A	ASR4	Water	RSK175 <Methane_4>	3	VOA w/ HCl	☐	9/21/2016 10:30	5 days	None	☐	
1609D74-002A	ASR1	Water	RSK175 <Methane_4>	3	VOA w/ HCl	☐	9/21/2016 9:30	5 days	None	☐	
1609D74-003A	ASR3	Water	RSK175 <Methane_4>	3	VOA w/ HCl	☐	9/21/2016 13:00	5 days	None	☐	
1609D74-004A	ASR2	Water	RSK175 <Methane_4>	3	VOA w/ HCl	☐	9/27/2016 10:00	5 days	None	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

1609074

McCAMPBELL ANALYTICAL, INC.

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PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
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CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

☐ GeoTracker EDF ☐ PDF ☐ Excel ☐ Write On (DW)

Report To: David Holland	Bill To:
Company: Monterey Bay Analytical Services	
4 Justin Ct. Suite D	
Monterey, Ca 93940	E-Mail: info@mbasinc.com
Tele: (831) 375 - 6227	Fax: (831) 641-0734
Project #:	Project Name: MPWMD
Project Location:	
Sampler Signature: Jonathan Lear	

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	Analysis Request: MTBE / BTEX & TPH as Gas (602 / 8021 + 8015)	MTBE / BTEX ONLY (EPA 602 / 8021)	TPH as Diesel / Motor Oil (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)	Other: Methane	Other	Other	Comments
✓	ASR4	9/21/16	10:30	3	V	X					X	X																		X			AB54457
✓	ASR1	9/21/16	09:30	3	V	X					X	X																		X			AB54458
✓	ASR3 *	9/21/16	13:00	3	V	X					X	X																		X			AB54459
✓	ASR2	9/27/16	10:00	3	V	X					X	X																		X			AB54460

Relinquished By: David Holland	Date: 9/29	Time: 1600	Received By: GSO
Relinquished By: GSO	Date: 9/30/16	Time: 1030	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/t°_____
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

COMMENTS: * All VOAs had headspace.

VOAS O&G METALS OTHER
PRESERVATION_____ pH<2_____

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Sample Receipt Checklist

Client Name: **Monterey Bay Analytical**
Project Name: **MPWMD**

WorkOrder №: **1609D74** Matrix: Water
Carrier: Golden State Overnight

Date and Time Received **9/30/2016 10:30**
Date Logged: **9/30/2016**
Received by: Maria Venegas
Logged by: Maria Venegas

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☑	No ☐

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Sample/Temp Blank temperature	Temp: 10.2°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☐	No ☑	NA ☐
Sample labels checked for correct preservation?	Yes ☑	No ☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes ☐	No ☐	NA ☑
Samples Received on Ice?	Yes ☑	No ☐	
	(Ice Type: BLUE ICE)		

UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes ☐	No ☐	NA ☑
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes ☐	No ☐	NA ☑

Comments: