



SUMMARY OF OPERATIONS

MONTEREY PENINSULA ASR PROJECT

WATER YEAR 2015

Prepared for:



MAY 2018



May 16, 2018
Project No. 12-0043

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 2015 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 2015 (WY 2015). WY 2015 was a Dry Water Year on the on the Monterey Peninsula, and as a result a commensurately modest volume totaling 215 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. This contrasts with the over 1,100 af injected via ASR-1 and -2 in both WY 2010 and WY 2011, which were Above Normal Water Years. To date, a total volume of approximately 4,390 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.

A handwritten signature in black ink, appearing to read "R. Marks", written over the printed name of Robert C. Marks.

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

A handwritten signature in black ink, appearing to read "S.P. Tanner", written over the printed name of Stephen P. Tanner.

Stephen P. Tanner, P.E.
Principal Engineer

Copies submitted: 5 hard
1 digital (PDF)



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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 2015 (WY 2015)¹. During WY 2015, approximately 215 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 2015, 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 (a.k.a. Water Project 1) includes two ASR wells (SM ASR-1 and SM 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 right² maximum annual diversion limit of 2,426 acre-feet per year (afy) at a combined permitted injection rate of approximately 3,000 gallons per minute ([gpm])

¹ Water Year 2015 is the period of October 1, 2014 through September 30, 2015.

² SWRCB water right 20808A for the Phase 1 ASR Project is held jointly by MPWMD and CAW.



maximum diversion rate of 6.7 cubic feet per second [cfs]), with an average annual yield of approximately 920 afy. SM ASR-1 is designed for an injection capacity of 1,000 to 1,250 gpm and SM ASR-2 is designed for an injection capacity of 1,500 to 1,750 gpm. As-built schematics of SM ASR-1 and SM ASR-2 are presented on **Figures 2 and 3**, respectively.

The Phase 2 ASR Project (a.k.a. Water Project 2) includes two ASR wells (SMS ASR-3 and SMS 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 right³ 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 1,000 afy. SMS ASR-3 and SMS ASR-4 are both designed for injection capacities of 1,500 to 1,750 gpm. SMS ASR-3 was constructed in 2010, and WY 2012 was the first time injection occurred at this well. As-built schematics of SMS ASR-3 and SMS 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 2015. 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 (SM 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;
- 2) Aquifer response to injection, and;

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



- 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 Code⁴ and the existing General Waiver for Specific Types of Discharges (Resolution R3-2008-0010).

FINDINGS

WY 2015 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 flow 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 the well bore during injection. The procedure is similar to backwashing a media filter to remove accumulated material deposited during filtration.

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 trigger for backflushing is 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 a period of approximately 15 to 20 minutes, 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 2015 Injection Operations Summary

Well	Injection Season		Active Days	Injection Rate (gpm)			Total Vol (af)
	Start	End		Min	Max	Avg	
ASR-1	12/15/2014	2/17/2015	12	870	1,610	1,274	38.6
ASR-2	12/12/2014	2/17/2015	23	340	1,775	1,404	130.9
ASR-3	12/15/2014	2/15/2015	12	655	1,066	942	45.2
ASR-4	2/11/2015	2/13/2015	3	247	1,073	550	0.5
						Total	215.2

As shown in **Table 1**, recharge operations were performed intermittently in WY 2015 during the period of December 12, 2014 through February 17, 2015. WY 2015 was classified as a Dry Water Year⁵ on the Carmel River with only 23 days of active injection and a commensurately modest total volume of approximately 215 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 550 to 1,400 gpm (approximately 2.43 to 6.20 acre-feet per day [afd]). The combined total volume of injection during WY 2015 was approximately 215 af.

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

⁵ Based on 22,209 af of unimpaired Carmel River flow at the San Clemente Dam site in WY 2015.



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 SM ASR-1, SM ASR-2, SMS ASR-3 and SMS ASR-4 during WY 2015 are presented in **Figures 7 through 10**, respectively. The water-level data show the response of both SM ASR-1 and ASR-2 to injection, with maximum water-level drawups of approximately 51 and 95 feet, which were well below the maximum recommended drawup levels of approximately 100 and 130 feet, respectively. At SMS ASR-3 the maximum water-level drawup was approximately 113 feet, which was also well below its maximum recommended drawup level of approximately 170 feet. At ASR-4, the water-level transducer/datalogger malfunctioned and no data are available for WY 2015.

Recovery Operations Summary

As WY 2015 was the fourth consecutive Dry or Critically Dry Year on the Monterey Peninsula, a decision was made by the resource management agencies to not recover the water injected during this year, so that this water could be held over for recovery if needed in the following year, should dry conditions persist. Accordingly, as shown on **Figure 6**, no WY 2015 recharged water was recovered by CAW wells during WY 2015.

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. 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. It is anticipated, however, that recovery operations via the ASR wells will occur more extensively in the future, once all of the wells are permitted for production into the CAW distribution system.

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).



SM ASR-1. A summary of 24-hour specific injectivity for ASR-1 for WY 2002 through 2015 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	-67%	FCV not installed yet in WY2002. No recovery pumping performed.
Ending Period	1,164	199.8	6.4		
WY2003					
Beginning Period	1,070	70.0	15.5	+31%	Recovery pumping performed following WY2003 Injection
Ending Period	1,007	49.7	20.3		
WY2004					
Beginning Period	1,383	183.4	7.5	+112%	Recovery pumping performed following WY2004 Injection
Ending Period	1,072	67.4	15.9		
WY2005					
Beginning Period	1,045	46.6	22.4	-54%	Injectate dechlorinated in WY2005. No recovery pumping performed.
Ending Period	976	94.1	10.4		
WY2006					
Beginning Period	1,039	71.5	15.0	+17%	Injection procedures consistent and performance stable in WY2006. No recovery pumping performed.
Ending Period	1,008	62.2	17.5		
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	-17%	Formal rehabilitation performed prior to WY2008 injection
Ending Period	1,063	33.4	31.8		
WY 2009					
Beginning Period	1,119	56.1	19.9	+56%	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		
WY 2010					
Beginning Period	1,080	35.6	30.3	-19%	Observed decline in performance due to residual plugging.
Ending Period	1,326	54.0	24.6		



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	-10%	Observed decline in performance due to residual plugging.
Ending Period	1,454	63.7	22.8		
WY 2012					
Beginning Period	NA	NA	NA	NA	No injection at this well this year.
Ending Period	NA	NA	NA		
WY 2013					
Beginning Period	NA	NA	NA	NA	No injection at this well this year.
Ending Period	NA	NA	NA		
WY 2014					
Beginning Period	NA	NA	NA	NA	No injection at this well this year.
Ending Period	NA	NA	NA		
WY 2015					
Beginning Period	NA	NA	NA	NA	See discussion below.
Ending Period	1,018	40.7	25.0		

As shown in **Table 2**, there are no beginning period data for ASR-1 during WY 2015 because the water-level transducer / datalogger was non-operational; however, the ending period specific injectivity was 25.0 gpm/ft, which is slightly greater than the ending specific injectivity in WY 2011 (the last time data are available) of 22.8 gpm/ft, suggesting that little residual plugging likely occurred at this well during WY 2015.

ASR-2. A summary of the beginning and ending injection performance at ASR-2 for WY 2010 through WY 2015 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	-57%	Significant residual plugging.
Ending Period	237	85.0	2.8		
WY 2011					
Beginning Period	1,497	39.5	37.9	-0.5%	Significant improvement as a result of well rehabilitation. No residual plugging during year.
Ending Period	1,292	34.3	37.7		



Water Year	Injection Rate (gpm)	24-hour DUP (feet)	Specific Injectivity (gpm/ft)	Water Year Change	Comments
WY 2012					
Beginning Period	1,830	56.1	32.6	-12%	Observed decline in performance due to residual plugging.
Ending Period	1,817	63.4	28.7		
WY 2013					
Beginning Period	1,087	32.7	33.2	+3%	No residual plugging during year.
Ending Period	1,508	44.2	34.1		
WY 2014					
Beginning Period	NA	NA	NA	NA	No injection at this well this year.
Ending Period	NA	NA	NA		
WY 2015					
Beginning Period	1,456	38.9	37.4	-14%	See discussion below.
Ending Period	1,574	49.1	32.1		

As shown in **Table 3**, the 24-hour specific injectivity at the beginning of WY 2015 was 37.4 gpm/ft and at the end of WY 2015 it was 32.1 gpm/ft, representing a decrease of approximately 14 percent, indicating that slight residual plugging occurred at ASR-2 over the course of the WY 2015 injection season; however, the WY 2015 ending specific injectivity is only slightly lower than the value at the end of WY 2013 of 34.1 gpm/ft, suggesting that little residual plugging has occurred over the long-term at this well since it was rehabilitated in WY 2011.

ASR-3. A summary of the beginning and ending injection performance at ASR-3 for WY 2013 through WY 2015 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	-31%	See discussion below.
Ending Period	822	99.6	8.3		
WY 2014					
Beginning Period	NA	NA	NA	NA	No injection at this well this year.
Ending Period	NA	NA	NA		
WY 2015					
Beginning Period	NA	NA	NA	NA	See discussion below.
Ending Period	892	90.3	9.9		



As shown in **Table 4**, there are no beginning period data for ASR-3 during WY 2015 because the water-level transducer / datalogger was non-operational; however, the ending period specific injectivity was 9.9 gpm/ft, which is slightly greater than the ending specific injectivity in WY 2013⁶ of 9.9 gpm/ft; this suggests that little residual plugging likely occurred at this well during WY 2015.

ASR-4. Injection at ASR-4 during WY 2015 was limited to three days of well “conditioning” (0.49 af). This conditioning 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 ASR wells following their initial injection operations.

Initial injection was performed at a rate of approximately 280 gpm for 5 minutes, followed by backflushing. The injection rate and duration were incrementally increased over the course of three days, up to an injection rate of approximately 1,070 gpm for a maximum duration of 30 minutes, followed by backflushing. The specific injectivity during these operations was consistently approximately 50 gpm/ft (plus or minus 10 percent), indicating that no measureable residual plugging occurred. Additional well conditioning is planned for WY 2016 to achieve the design injection rate of 1,500 gpm.

Pumping Performance

Pumping performance has also been tracked at ASR-1 since the inception of the SMTIW testing program by measurement and comparison of specific capacity. 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.

ASR-1. A summary of injection season beginning and ending 10-minute specific capacities at ASR-1 for WY 2002 through 2015 is presented below in **Table 5**:

Table 5. Pumping Performance Summary - ASR-1

Water Year	Pumping Rate (gpm)	10-min DDN (feet)	Specific Capacity (gpm/ft)	Water Year Change	Comments
WY2002					
Pre-Injection	2,825	45.1	62.6	-53%	FCV not installed yet in WY2002
Post- Injection	2,800	95.3	29.4		

⁶ The last time data are available.



Water Year	Pumping Rate (gpm)	10-min DDN (feet)	Specific Capacity (gpm/ft)	Water Year Change	Comments
WY2003					
Pre-Injection	2,775	81.9	33.9	-16%	Recovery pumping performed following WY2003 Injection
Post- Injection	2,600	91.7	28.4		
WY2004					
Pre-Injection	2,000	51.8	38.6	-46%	Recovery pumping performed following WY2004 Injection
Post- Injection	1,700	81.2	20.9		
WY2005					
Pre-Injection	1,900	49.8	38.1	-55%	Injectate dechlorinated in WY2005. No recovery pumping performed.
Post- Injection	1,500	87.1	17.2		
WY2006					
Pre-Injection	1,500	82.4	18.2	+19%	Injection procedures consistent and performance stable in WY2006. No recovery pumping performed.
Post- Injection	1,600	74.1	21.6		
WY2007					
Pre-Injection	1,500	81.7	18.4	+3%	Only one injection period in WY2007. No recovery pumping performed.
Post- Injection	1,500	79.4	18.9		
WY2008					
Pre-Injection	1,980	31.0	63.8	-44%	Formal rehabilitation performed prior to WY2008 injection. No recovery pumping performed.
Post- Injection	2,000	55.6	36.0		
WY 2009					
Pre-Injection	2,000	52.0	38.5	-21%	No recovery pumping performed.
Post- Injection	1,900	62.7	30.3		
WY 2010					
Pre-Injection	1,900	62.5	30.4	+2%	Performance essentially stable.
Post- Injection	2,000	64.2	31.1		
WY 2011					
Pre-Injection	2,000	64.2	31.1	-3%	Performance essentially stable.
Post- Injection	2,000	64.6	30.1		
WY 2012					
Pre-Injection	2,400	74.7	32.1	NA	No injection during WY 2012. Datalogger damaged in June 2012.
Post-Injection	NA	NA	NA		



Water Year	Pumping Rate (gpm)	10-min DDN (feet)	Specific Capacity (gpm/ft)	Water Year Change	Comments
WY 2013					
Pre-Injection	NA	NA	NA	NA	No injection during WY 2013. Pump non-operational
Post- Injection	NA	NA	NA		
WY 2014					
Pre-Injection	NA	NA	NA	NA	No injection during WY 2014.
Post-Injection	NA	NA	NA		
WY 2015					
Pre-Injection	3,300	73.6	44.8	-5%	See discussion below.
Post- Injection	3,600	84.8	42.5		

As shown in **Table 5**, the pumping performance of ASR-1 declined significantly following initial injection in WY 2002. Performance improved significantly in WY 2008 compared to WY 2007 as a result of rehabilitation of the well prior to the WY 2008 injection season. During WY 2015, pumping performance declined slightly by approximately 5 percent.

ASR-2. A summary of injection season beginning and ending 10-minute specific capacities for ASR-2 is presented below in **Table 6**:

Table 6. Pumping Performance Summary - ASR-2

Water Year	Pumping Rate (gpm)	10-min DDN (feet)	Specific Capacity (gpm/ft)	Water Year Change	Comments
WY 2009					
Pre-Injection	3,200	72.3	44.3	-58%	Injection testing performed with source water from MCWD.
Post- Injection	2,200	117.7	18.7		
WY 2010					
Pre-Injection	2,200	117.7	18.7	-10%	Pre-injection is after MCWD testing (refer to WY 2009 Summary of Operation report)
Post- Injection	2,300	136.9	16.8		
WY 2011					
Pre-Injection	3,100	83.9	36.9	-10%	Formal rehabilitation performed prior to WY 2011 injection season. Relatively stable during season.
Post- Injection	3,100	93.5	33.2		
WY 2012					
Pre-Injection	2,800	84.5	33.1	-11%	Minor residual plugging occurred.
Post- Injection	2,700	92.3	29.3		



Water Year	Pumping Rate (gpm)	10-min DDN (feet)	Specific Capacity (gpm/ft)	Water Year Change	Comments
WY 2013					
Pre-Injection	2,700	92.3	29.3	+17%	Performance improved.
Post- Injection	3,000	87.7	34.2		
WY 2014					
Pre-Injection	NA	NA	NA	NA	No injection during WY 2014.
Post- Injection	NA	NA	NA		
WY 2015					
Pre-Injection	3,300	67.4	48.9	-34%	See discussion below.
Post- Injection	2,800	86.7	32.3		

As shown in **Table 6**, the pumping performance of ASR-2 declined significantly following initial injection in WY 2009, similar to the initial decline experienced at ASR-1. ASR-2 performance improved significantly in WY 2011 compared to WY 2010 as a result of rehabilitation of the well prior to the WY 2011 injection season. During WY 2015, pumping performance declined by approximately 34 percent. This compares with the injection performance results, which showed an approximate 14 percent decline in performance over the course of WY 2015. However, the WY 2015 ending specific capacity is only slightly lower than the value at the end of WY 2013 of 34.2 gpm/ft, again indicating that little residual plugging has occurred over the long-term at this well since it was rehabilitated in WY 2011.

ASR-3. A summary of injection season beginning and ending 10-minute specific capacities for ASR-3 is presented below in **Table 7**:

Table 7. Pumping Performance Summary - ASR-3

Water Year	Pumping Rate (gpm)	10-min DDN (feet)	Specific Capacity (gpm/ft)	Water Year Change	Comments
WY 2012					
Pre-Injection	3,200	107.1	29.9	-57%	Significant residual plugging occurred.
Post- Injection	2,400	186.4	12.9		
WY 2013					
Pre-Injection	2,400	186.4	12.9	-11%	Slight decline in performance
Post- Injection	2,000	174.3	11.5		
WY 2014					
Pre-Injection	NA	NA	NA	NA	No injection during WY 2014.
Post- Injection	NA	NA	NA		



Water Year	Pumping Rate (gpm)	10-min DDN (feet)	Specific Capacity (gpm/ft)	Water Year Change	Comments
WY 2015					
Pre-Injection	1,600	119.6	13.4	+4%	See discussion below.
Post- Injection	2,100	149.8	14.0		

As shown in **Table 7**, the pumping performance of ASR-3 declined significantly following initial injection in WY 2012, similar to the declines experienced at both SM ASR-1 and SM ASR-2 following initial injection. During WY 2015, performance was relatively stable, increasing very slightly by 4 percent.

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 (discussed previously in the Pumping Performance section on page 9). It is also noted that while ASR-3 has experienced a significant decline in performance following 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.

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 2015 injection



operations, SDI values at the beginning of the injection season were less than 3.0 and fell to approximately 1.0 after the first week of injection.

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 2015. Presented in **Table 8** below is a summary of the residual plugging calculations for the ASR wells during WY 2015.

Table 8. Residual Plugging Summary

Well	Test	Pumping Rate (gpm)	10-min Drawdown (ft)	10-min Q/s ¹ (gpm/ft)	Normalization Ratio ²	Normalized Drawdown ² (ft)	Residual Plugging (ft)
ASR-1	Pre-Injection	3,300	73.6	44.8	0.91	66.9	--
	Post-Injection	3,600	84.8	42.5	0.83	70.7	3.8
ASR-2	Pre-Injection	3,300	67.4	49.0	0.91	61.3	--
	Post-Injection	2,800	86.7	32.3	1.07	92.9	31.6
ASR-3	Pre-Injection	1,600	119.6	13.4	1.25	149.5	--
	Post-Injection	2,100	149.8	14.0	0.95	142.7	-6.8
ASR-4	Pre-Injection	2,900	105.8	27.4	1.03	109.4	--
	Post-Injection	3,000	103.5	29.0	1.00	103.5	-5.9
Notes:							
1 - Specific Capacity. Ratio of pumping rate to draw down.							
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 9**, injection water levels were maintained significantly below the recommended maximum available drawups at all three ASR wells during WY 2015. As shown in **Table 8**, the bulk the observed residual plugging during WY 2015 occurred at ASR-2 with 31.6 feet of residual plugging. The other three wells observed little to no residual plugging. The specific reason that ASR-2 experienced a relatively higher level of residual plugging compared to the other wells is unknown, but these results indicate that more intensive backflushing (e.g., multiple backflush cycles as opposed to a single cycle) should be implemented at ASR-2 during WY 2016 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 2015 are graphically presented on **Figures 11 through 19**. A summary of the regional water-level observations during the WY 2015 injection season is presented in **Table 9** below.

Table 9. Aquifer Response Summary

Well ID	Distance from Nearest Active ASR Well (feet)	Aquifer Monitored	Fig. No.	Pre-Injection DTW (ft. btoc)	Shallowest Injection DTW (ft. btoc)	Maximum Drawup Response (ft.)
SMS (Shallow)	25 (SMS ASR-3)	QTp	11	No Discernable Response		
SMS (Deep)		Tsm		363.7	321.9	41.8
SM MW-1	190 (SM ASR-2)	Tsm	12	354.1	330.7	23.4
Paralta Test	650 (SM ASR-2)	QTp & Tsm	13	365.3	356.8	8.5
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		491.9	485.3	6.6
FO-9 (Deep)	6,130 (SMS ASR-3)	Tsm	17	135.8	131.4	4.4
PCA East (Shallow)	6,200 (SMS ASR-3)	QTp	18	No Discernable Response		
PCA East (Deep)		Tsm		88.6	82.9	5.7
FO-8 (Deep)	6,450 (SMS ASR-3)	Tsm	19	398.2	393.1	5.1

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 2015 recharge season ranged between approximately 15 to 65 feet below sea level. Positive response to injection during WY 2015 was observed at 7 of the 9 monitoring wells completed in the Santa Margarita Sandstone aquifer, with apparent water-level responses ranging between approximately 4 to 42 feet, 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 2015 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 and water levels in this aquifer remained above the water levels in the underlying Tsm aquifer during WY 2015. 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 2015 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 2015 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 2015 is presented below.

Mixing and Dilution

To track the general mixing, dilution, and interaction between injected and native groundwaters, chloride ion (Cl⁻) has historically been used for the SGB ASR project as a natural tracer. Chloride ion is very stable, highly soluble and is present in both injected and native ground waters; albeit at a 400 percent concentration differential. The historical "native" Cl⁻ concentration of the groundwaters within the Tsm has averaged approximately 120 - 130 milligrams per liter (mg/L) in this area of the basin. Presented in **Table 10** below is a summary of the relative percentages of injection water at each of the monitored wells before WY 2015 injection operations and at the end of the WY 2015 storage period. Calculation of the injected versus native groundwater (NGW) contribution in a given sample is based on the historical NGW and injected water Cl⁻ concentrations.



Table 10. Percent Injectate at Wells

Well	Pre-Injection Conditions			End-Storage Conditions			WY 2015 Change (%)
	Sample Date	Cl (mg/l)	% Injectate in Water	Sample Date	Cl (mg/l)	% Injectate in Water	
ASR Wells							
ASR-1	12/4/14	142	0	9/22/15	141	0	0
ASR-2	12/4/14	107	14	9/22/15	110	11	-2
ASR-3	12/5/14	95	27	9/23/15	79	47	20
ASR-4	12/5/14	118	2	No Data			
Monitoring Wells							
SM MW-1	12/4/14	109	12	9/23/15	110	11	0
SMS Deep	12/5/15	92	30	9/23/15	124	0	-30
Paralta	7/28/14	76	47	7/14/15	112	9	-38
PCA-E Deep	12/10/14	80	43	7/23/15	82	43	1

Notes:

Based on 2001 Tsm NGW Cl⁻ content vs 2015 CAW Injectate Cl⁻

As shown in **Table 10**, prior to the WY 2015 injection season, all of the wells had different percentage mixes of injectate and native groundwater (NGW) and water from the multiple previous injection and recovery seasons. These results range from an estimated 0 percent injected water at ASR-1 to 47 percent at Paralta. By the end of the WY 2015 storage period, the concentrations of injected water at most wells were back to pre-injection levels, with the exception of ASR-3, which observed a net increase in the concentration of injected water of approximately 20 percent. Interestingly, SMS Deep, located approximately 25 feet from ASR-3, and Paralta both observed a net decrease of approximately 30 percent compared to pre-injection conditions (i.e., higher NGW influence) suggesting that the pool of injected water drifted away from the area during WY 2015 operations.

Injection Water Quality

Injection water quality from the CAW system during WY 2015 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.



Table 11. Summary of WY 2015 Water Quality Data – Injectate

Parameter	Unit	PQL	MCL	Results	
				CAW Injectate	
				12/13/14	2/11/15
Sample Description			Injectate		
Major Cations					
Calcium	mg/L	0.5		45	42
Magnesium	mg/L	0.5		15	13
Potassium	mg/L	0.5		2.9	2.9
Sodium	mg/L	0.5		46	46
Major Anions					
Alkalinity, Total (as CaCO3)	mg/L	2		153	135
Chloride	mg/L	1	250	35	30
Sulfate	mg/L	1	250	90	89
Nitrate (as NO3)	mg/L	1	45	1	ND
Nitrite (as Nitrogen)	mg/L	1	1	0.6	0.1
General Physical					
pH	Std Units			7.5	7.5
Specific Conductance (EC)	uS	1	900	611	542
Total Dissolved Solids	mg/L	10	500	374	331
Metals					
Arsenic (Total)	ug/L	1	10	ND	ND
Barium (Total)	ug/L	10	1000	78	61
Iron (Dissolved)	ug/L	10		ND	ND
Iron (Total)	ug/L	10	300	11	ND
Lithium	ug/L	1		6	5
Manganese (Dissolved)	ug/L	10		ND	ND
Manganese (Total)	ug/L	10	50	1	ND
Molybdenum	ug/L	1	1000	2	3
Nickel	ug/L	10	100	ND	ND
Selenium	ug/L	2	50	2	3
Strontium (Total)	ug/L	5		259	223
Uranium (by ICP/MS)	ug/L	1	30	1	ND
Vanadium (Total)	ug/L	1	1000	ND	ND
Zinc (Total)	ug/L	10	5000	284	271
Miscellaneous					
Ammonia-N	mg/L	0.05		ND	ND
Boron	mg/L	0.05		ND	ND
Chloramines	mg/L	0.05		ND	0.06
Gross Alpha	pCi/L		15	1.87 +/- 0.74	6.50 +/- 1.39
Kjeldahl Nitrogen (Total)	mg/L	0.5		0.7	ND
Methane	ug/L	0.1		0.53	0.66
Nitrogen (Total)	mg/L	0.5		1.5	ND
o-Phosphate-P	mg/L	0.05		0.2	0.4
Phosphorous (Total)	mg/L	0.03		0.39	0.44
Radium 226	pCi/L		3	0.56 +/- 0.5	5.41 +/- 0.69
Organic Analyses					
Haloacetic Acids (Total)	ug/L	1.0	60.0	9.2	12.2
<i>Dibromoacetic Acid</i>	ug/L	1.0		3.3	2.5
<i>Dichloroacetic Acid</i>	ug/L	1.0		3.4	5.7
<i>Monobromoacetic Acid</i>	ug/L	1.0		ND	ND
<i>Monochloroacetic Acid</i>	ug/L	2.0		ND	ND
<i>Trichloroacetic Acid</i>	ug/L	1.0		2.5	4.0
Organic Carbon (Dissolved)	mg/L	0.2		1.0	1.7
Organic Carbon (Total)	mg/L	0.2		1.0	1.4
Trihalomethanes (Total)	ug/L	1.0	80.0	24.8	25.9
<i>Bromodichloromethane</i>	ug/L	0.5		8.6	9.2
<i>Bromoform</i>	ug/L	0.5		1.7	0.9
<i>Chloroform</i>	ug/L	0.5		6.4	9.4
<i>Dibromochloromethane</i>	ug/L	0.5		8.1	6.4
Field Parameters					
Temperature	°C	0.1		15.9	18.1
Specific Conductance (EC)	uS	1.0	900	352	463
pH	Std Units	0.1	6.5 - 8.5	7.2	7.6
ORP	mV	1.0		573	608
Free Chlorine Residual	mg/L	0.1	2 - 5	1.3	0.5
Dissolved Oxygen	mg/L	0.01			
Silt Density Index	Std Units	0.1		2.4	1.3
Gas Volume	mL	2.0			
H ₂ S	mg/L	0.1			

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



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 2015 injection (end of WY 2013 Storage) and stored water quality (WY 2015 Storage) collected periodically from the aquifer after WY 2015 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 even in mixed NGW and injected waters.

Disinfection Byproducts (DBPs) parameters at the on-site wells during WY 2015 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 30-90 days after the cessation of injection, followed by a gradual decline during the storage period. After approximately 150 to 210 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 2015, with the exception of transiently elevated levels up to 95 and 94 ug/L at ASR-2 and ASR-3, respectively during the peak in-growth periods. These THM levels dropped to 13 and 38 ug/L, respectively, by the end of the storage season.



Table 12. Summary of WY 2015 Water-Quality Data - ASR-1

Parameter	Unit	PQL	MCL	Results					
				SM ASR-1					
				3/21/01	12/4/14	3/24/15	6/17/15	9/22/15	
Sample Description				NGW	WY 2013 Storage	WY 2015 Storage			
Elapsed Storage Time	Days			--	686	35	120	217	
Volume Purged at Sampling	1,000 gals			--					
Major Cations									
Calcium	mg/L	0.5		85	96	39	64	96	
Magnesium	mg/L	0.5		19	23	13	20	23	
Potassium	mg/L	0.5		5.3	5.5	2.9	3.7	5.7	
Sodium	mg/L	0.5		88	105	42	63	101	
Major Anions									
Alkalinity, Total (as CaCO3)	mg/L	2		224	250	133	180	237	
Chloride	mg/L	1	250	120	142	30	77	141	
Sulfate	mg/L	1	250	95	106	83	85	118	
Nitrate (as NO3)	mg/L	1	45	ND	ND	ND	1	ND	
Nitrite (as Nitrogen)	mg/L	1	1		0.6	0.3	0.3	0.3	
General Physical									
pH	Std Units			7.1	7.2	7.1	7.4	7.1	
Specific Conductance (EC)	uS	1	900	1015	1186	516	753	1141	
Total Dissolved Solids	mg/L	10	500	618	720	308	463	677	
Metals									
Arsenic (Total)	ug/L	1	10	ND	2	1	1	1	
Barium (Total)	ug/L	10	1000	52	80	59	85	84	
Iron (Dissolved)	ug/L	10			30	ND	ND	10	
Iron (Total)	ug/L	10	300	120	324	27	21	59	
Lithium	ug/L	1			38	6	20	41	
Manganese (Dissolved)	ug/L	10			41	ND	ND	20	
Manganese (Total)	ug/L	10	50	40	40	ND	ND	23	
Molybdenum	ug/L	1	1000		10	3	7	10	
Nickel	ug/L	10	100		ND	ND	ND	ND	
Selenium	ug/L	2	50	ND	2	4	2	2	
Strontium (Total)	ug/L	5			454	218	322	472	
Uranium (by ICP/MS)	ug/L	1	30		1	ND	1	1	
Vanadium (Total)	ug/L	1	1000		ND	ND	ND	ND	
Zinc (Total)	ug/L	10	5000	10	108	210	250	118	
Miscellaneous									
Ammonia-N	mg/L	0.05		0.33	0.23	ND	ND	0.19	
Boron	mg/L	0.05		0.14	0.12	ND	0.06	0.13	
Chloramines	mg/L	0.05			0.06	ND	ND	ND	
Gross Alpha	pCi/L		15		3.35 +/- 1.68	2.91 +/- 1.19	3.46 +/- 1.82	4.70 +/- 2.00	
Kjeldahl Nitrogen (Total)	mg/L	0.5			0.6	ND	ND	ND	
Methane	ug/L	0.1			3.3	0.34	2.1	0.4	
Nitrogen (Total)	mg/L	0.5			1.3	ND	ND	ND	
o-Phosphate-P	mg/L	0.05		0.46	0.2	0.3	0.2	0.2	
Phosphorous (Total)	mg/L	0.03			0.15	0.3	0.3	0.17	
Radium 226	pCi/L		3		2.82 +/- 1.26	0.26 +/- 0.40	0.71 +/- 0.48	1.28 +/- 0.34	
Organic Analyses									
Haloacetic Acids (Total)	ug/L	1.0	60.0		0.0	11.1	0.0	0.0	
<i>Dibromoacetic Acid</i>	ug/L	1.0			ND	ND	ND	ND	
<i>Dichloroacetic Acid</i>	ug/L	1.0			ND	2.2	ND	ND	
<i>Monobromoacetic Acid</i>	ug/L	1.0			ND	ND	ND	ND	
<i>Monochloroacetic Acid</i>	ug/L	2.0			ND	ND	ND	ND	
<i>Trichloroacetic Acid</i>	ug/L	1.0			ND	8.9	ND	ND	
Organic Carbon (Dissolved)	mg/L	0.2			0.7	1.2	1.5	1.5	
Organic Carbon (Total)	mg/L	0.2		6.3	0.8	1.2	1.1	1.3	
Trihalomethanes (Total)	ug/L	1.0	80.0		0.0	53.0	40.6	0.6	
<i>Bromodichloromethane</i>	ug/L	0.5			ND	17	12	ND	
<i>Bromoform</i>	ug/L	0.5			ND	0.79	0.75	ND	
<i>Chloroform</i>	ug/L	0.5			ND	27	22	0.6	
<i>Dibromochloromethane</i>	ug/L	0.5			ND	8.2	5.8	ND	
Field Parameters									
Temperature	°C	0.1			23.6	16.8	16.8	20.4	
Specific Conductance (EC)	uS	1.0	900	1015	560	476	789	1211	
pH	Std Units	0.1	6.5 - 8.5	7.1	7.1	7.8	7.2	7.3	
ORP	mV	1.0			-203	-63	-72	-147	
Free Chlorine Residual	mg/L	0.1	2 - 5		0.02	0.04	0.11	ND	
Dissolved Oxygen	mg/L	0.01					0.09	ND	
Silt Density Index	Std Units	0.1							
Gas Volume	mL	2.0							
H ₂ S	mg/L	0.1		1.5		ND	0.04	0.07	

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



Table 13. Summary of WY 2015 Water Quality Data – ASR-2

Parameter	Unit	PQL	MCL	Results							
				SM ASR-2							
				12/4/14	3/27/15	6/24/15	9/22/15				
Sample Description				WY 2013 Storage				WY 2015 Storage			
Elapsed Storage Time	Days			686	38	127	217				
Volume Purged at Sampling	1,000 gals										
Major Cations											
Calcium	mg/L	0.5		77	43	43	72				
Magnesium	mg/L	0.5		19	14	14	22				
Potassium	mg/L	0.5		5.3	2.9	2.8	4.6				
Sodium	mg/L	0.5		93	44	44	82				
Major Anions											
Alkalinity, Total (as CaCO3)	mg/L	2		245	132	139	225				
Chloride	mg/L	1	250	107	30	32	110				
Sulfate	mg/L	1	250	72	82	86	74				
Nitrate (as NO3)	mg/L	1	45	1.0	ND	ND	ND				
Nitrite (as Nitrogen)	mg/L	1	1	0.9	0.4	0.4	0.3				
General Physical											
pH	Std Units			7.8	7.5	7.5	7.3				
Specific Conductance (EC)	uS	1	900	990	566	550	950				
Total Dissolved Solids	mg/L	10	500	597	337	340	540				
Metals											
Arsenic (Total)	ug/L	1	10	2	1	1	1				
Barium (Total)	ug/L	10	1000	100	60	66	108				
Iron (Dissolved)	ug/L	10		ND	ND	ND	ND				
Iron (Total)	ug/L	10	300	91	113	35	145				
Lithium	ug/L	1		34	6	12	31				
Manganese (Dissolved)	ug/L	10		39	ND	ND	ND				
Manganese (Total)	ug/L	10	50	38	ND	ND	ND				
Molybdenum	ug/L	1	1000	10	3	4	10				
Nickel	ug/L	10	100	ND	ND	ND	ND				
Selenium	ug/L	2	50	2	5	5	2				
Strontium (Total)	ug/L	5		390	213	248	386				
Uranium (by ICP/MS)	ug/L	1	30	2	ND	ND	1				
Vanadium (Total)	ug/L	1	1000	ND	ND	ND	ND				
Zinc (Total)	ug/L	10	5000	206	208	250	396				
Miscellaneous											
Ammonia-N	mg/L	0.05		0.28	ND	ND	ND				
Boron	mg/L	0.05		0.09	ND	0.05	0.09				
Chloramines	mg/L	0.05		ND	ND	ND	ND				
Gross Alpha	pCi/L		15	2.62 +/- 1.46	3.48 +/- 2.19	0.273 +/- 1.08	1.16 +/- 0.76				
Kjehldahl Nitrogen (Total)	mg/L	0.5		0.6	ND	ND	ND				
Methane	ug/L	0.1		3.6	0.47	0.54	0.23				
Nitrogen (Total)	mg/L	0.5		1.5	ND	ND	ND				
o-Phosphate-P	mg/L	0.05		0.3	0.3	0.3	0.1				
Phosphorous (Total)	mg/L	0.03		0.22	0.37	0.26	0.27				
Radium 226	pCi/L		3	2.18 +/- 1.23	0.61 +/- 0.45	0.054 +/- 0.106	0.189 +/- 0.16				
Organic Analyses											
Haloacetic Acids (Total)	ug/L	1.0	60.0	0.0	16.7	1.1	0.0				
<i>Dibromoacetic Acid</i>	ug/L	1.0		ND	1.0	ND	ND				
<i>Dichloroacetic Acid</i>	ug/L	1.0		ND	2.7	1.1	ND				
<i>Monobromoacetic Acid</i>	ug/L	1.0		ND	ND	ND	ND				
<i>Monochloroacetic Acid</i>	ug/L	2.0		ND	ND	ND	ND				
<i>Trichloroacetic Acid</i>	ug/L	1.0		ND	13.0	ND	ND				
Organic Carbon (Dissolved)	mg/L	0.2		0.6	1.3	1.4	1.20				
Organic Carbon (Total)	mg/L	0.2		0.7	1.1	1.5	1.30				
Trihalomethanes (Total)	ug/L	1.0	80.0	0.0	84.3	95.1	13.0				
<i>Bromodichloromethane</i>	ug/L	0.5		ND	26.0	27.0	3.6				
<i>Bromoform</i>	ug/L	0.5		ND	1.3	2.1	ND				
<i>Chloroform</i>	ug/L	0.5		ND	44.0	52.0	7.4				
<i>Dibromochloromethane</i>	ug/L	0.5		ND	13.0	14.0	2.0				
Field Parameters											
Temperature	° C	0.1		24.3	16.5	17.6	19.8				
Specific Conductance (EC)	uS	1.0	900	550	512	550	971.0				
pH	Std Units	0.1	6.5 - 8.5	7.0	7.2	7.0	7.3				
ORP	mV	1.0		-73	-73	-57	-104				
Free Chlorine Residual	mg/L	0.1	2 - 5	ND	0.23	0.06	ND				
Dissolved Oxygen	mg/L	0.01			ND	0.05	ND				
Silt Density Index	Std Units	0.1									
Gas Volume	mL	2.0									
H ₂ S	mg/L	0.1			ND	ND	0.06				

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



Table 14. Summary of WY 2015 Water Quality Data – ASR-3

Parameter	Unit	PQL	MCL	Results				
				SMS ASR-3				
				10/22/2010	12/5/14	3/25/15	6/25/15	9/23/15
Sample Description				NGW	WY 2013 Storage	WY 2015 Storage		
Elapsed Storage Time	Days				687	36	128	218
Volume Purged at Sampling	1,000 gals							
Major Cations								
Calcium	mg/L	0.5		76	74	41	50	61
Magnesium	mg/L	0.5		18	21	13	17	18
Potassium	mg/L	0.5		5	5	3	3	4
Sodium	mg/L	0.5		102	98	45	52	73
Major Anions								
Alkalinity, Total (as CaCO3)	mg/L	2		304	228	133	166	200
Chloride	mg/L	1	250	107	95	31	55	79
Sulfate	mg/L	1	250	56	63	83	82	79
Nitrate (as NO3)	mg/L	1	45	1	1.0	ND	ND	ND
Nitrite (as Nitrogen)	mg/L	1	1	ND	0.3	0.2	0.4	0.3
General Physical								
pH	Std Units			7.7	7.3	7.1	7.4	7.3
Specific Conductance (EC)	uS	1	900	954	886	543	645	810
Total Dissolved Solids	mg/L	10	500	575	546	334	388	477
Metals								
Arsenic (Total)	ug/L	1	10	4	4	3	4	5
Barium (Total)	ug/L	10	1000	50	84	63	75	85
Iron (Dissolved)	ug/L	10		21	47	ND	ND	ND
Iron (Total)	ug/L	10	300	21	167	ND	156	116
Lithium	ug/L	1		36	29	5	18	27
Manganese (Dissolved)	ug/L	10		27	32	ND	21	12
Manganese (Total)	ug/L	10	50	27	32	ND	22	12
Molybdenum	ug/L	1	1000	--	8	14	20	9
Nickel	ug/L	10	100	ND	ND	ND	11	ND
Selenium	ug/L	2	50	ND	2	8	4	2
Strontium (Total)	ug/L	5		403	360	235	281	330
Uranium (by ICP/MS)	ug/L	1	30	--	2	1	2	2
Vanadium (Total)	ug/L	1	1000	--	ND	ND	ND	ND
Zinc (Total)	ug/L	10	5000	--	128	202	227	194
Miscellaneous								
Ammonia-N	mg/L	0.05		249	0.1	ND	ND	0.06
Boron	mg/L	0.05		ND	0.09	ND	0.05	0.08
Chloramines	mg/L	0.05		0.08	ND	ND	ND	ND
Gross Alpha	pCi/L		15	--	2.20 +/- 0.76	3.03 +/- 1.24	1.33 +/- 1.52	3.11 +/- 1.41
Kjeldahl Nitrogen (Total)	mg/L	0.5		ND	ND	0.6	ND	ND
Methane	ug/L	0.1		ND	1.20	0.47	1.10	0.22
Nitrogen (Total)	mg/L	0.5		ND	0.5	0.8	0.5	ND
o-Phosphate-P	mg/L	0.05		ND	0.2	0.2	0.2	ND
Phosphorous (Total)	mg/L	0.03		0.03	0.14	0.27	0.21	0.21
Radium 226	pCi/L		3	--	0.80 +/- 0.65	0.07 +/- 0.27	0.081 +/- 0.119	0.288 +/- 0.181
Organic Analyses								
Haloacetic Acids (Total)	ug/L	1.0	60.0	ND	0.0	19.9	8.7	3.2
<i>Dibromoacetic Acid</i>	ug/L	1.0		ND	ND	1.8	ND	ND
<i>Dichloroacetic Acid</i>	ug/L	1.0		ND	ND	7.1	3.8	1.1
<i>Monobromoacetic Acid</i>	ug/L	1.0		ND	ND	ND	ND	ND
<i>Monochloroacetic Acid</i>	ug/L	2.0		ND	ND	ND	ND	ND
<i>Trichloroacetic Acid</i>	ug/L	1.0		ND	ND	11	4.9	2.1
Organic Carbon (Dissolved)	mg/L	0.2		0.71	0.5	1.4	1.4	1.3
Organic Carbon (Total)	mg/L	0.2		0.70	0.7	1.2	1.2	1.3
Trihalomethanes (Total)	ug/L	1.0	80.0	ND	5.9	94.0	70.7	37.5
<i>Bromodichloromethane</i>	ug/L	0.5		ND	1.8	27.0	20.0	11.0
<i>Bromoform</i>	ug/L	0.5		ND	ND	0.98	1.7	1.0
<i>Chloroform</i>	ug/L	0.5		ND	3.0	54.0	38.0	19.0
<i>Dibromochloromethane</i>	ug/L	0.5		ND	1.1	12.0	11.0	6.5
Field Parameters								
Temperature	° C	0.1		26.2		17.2	16.9	20.4
Specific Conductance (EC)	uS	1.0	900	991		509	516	749
pH	Std Units	0.1	6.5 - 8.5	7.0		7.3	7.2	7.4
ORP	mV	1.0		-82		-62	-65	-65
Free Chlorine Residual	mg/L	0.1	2 - 5	ND		0.03	ND	ND
Dissolved Oxygen	mg/L	0.01		--		ND	0.02	0.04
Silt Density Index	Std Units	0.1		--				
Gas Volume	mL	2.0		--				
F ₂ S	mg/L	0.1		0.60		ND	ND	0.05

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



Table 15. Summary of WY 2015 Water Quality Data – ASR-4

Parameter	Unit	PQL	MCL	Results	
				SMS ASR-4	11/19/14
Sample Description				Pre-Injection	
Elapsed Storage Time	Days			671	
Volume Purged at Sampling	1,000 gals				
Major Cations					
Calcium	mg/L	0.5		68	
Magnesium	mg/L	0.5		15	
Potassium	mg/L	0.5		4	
Sodium	mg/L	0.5		94	
Major Anions					
Alkalinity, Total (as CaCO3)	mg/L	2		226	
Chloride	mg/L	1	250	118	
Sulfate	mg/L	1	250	55	
Nitrate (as NO3)	mg/L	1	45	1.0	
Nitrite (as Nitrogen)	mg/L	1	1	0.3	
General Physical					
pH	Std Units			7.4	
Specific Conductance (EC)	uS	1	900	911	
Total Dissolved Solids	mg/L	10	500	517	
Metals					
Arsenic (Total)	ug/L	1	10	4	
Barium (Total)	ug/L	10	1000	55	
Iron (Dissolved)	ug/L	10		37	
Iron (Total)	ug/L	10	300	71	
Lithium	ug/L	1		29	
Manganese (Dissolved)	ug/L	10		28	
Manganese (Total)	ug/L	10	50	34	
Molybdenum	ug/L	1	1000	7	
Nickel	ug/L	10	100	93	
Selenium	ug/L	2	50	2	
Strontium (Total)	ug/L	5		482	
Uranium (by ICP/MS)	ug/L	1	30	1	
Vanadium (Total)	ug/L	1	1000	ND	
Zinc (Total)	ug/L	10	5000	ND	
Miscellaneous					
Ammonia-N	mg/L	0.05		ND	
Boron	mg/L	0.05		0.1	
Chloramines	mg/L	0.05		ND	
Gross Alpha	pCi/L		15	3.41 +/- 1.68	
Kjeldahl Nitrogen (Total)	mg/L	0.5		ND	
Methane	ug/L	0.1		1.30	
Nitrogen (Total)	mg/L	0.5		0.5	
o-Phosphate-P	mg/L	0.05		ND	
Phosphorous (Total)	mg/L	0.03		0.04	
Radium 226	pCi/L		3	2.25 +/- 0.95	
Organic Analyses					
Haloacetic Acids (Total)	ug/L	1.0	60.0	0.0	
<i>Dibromoacetic Acid</i>	ug/L	1.0		ND	
<i>Dichloroacetic Acid</i>	ug/L	1.0		ND	
<i>Monobromoacetic Acid</i>	ug/L	1.0		ND	
<i>Monochloroacetic Acid</i>	ug/L	2.0		ND	
<i>Trichloroacetic Acid</i>	ug/L	1.0		ND	
Organic Carbon (Dissolved)	mg/L	0.2		0.4	
Organic Carbon (Total)	mg/L	0.2		0.6	
Trihalomethanes (Total)	ug/L	1.0	80.0	0.0	
<i>Bromodichloromethane</i>	ug/L	0.5		ND	
<i>Bromoform</i>	ug/L	0.5		ND	
<i>Chloroform</i>	ug/L	0.5		ND	
<i>Dibromochloromethane</i>	ug/L	0.5		ND	
Field Parameters					
Temperature	° C	0.1		23.3	
Specific Conductance (EC)	uS	1.0	900	960	
pH	Std Units	0.1	6.5 - 8.5	7.1	
ORP	mV	1.0		-188	
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 ₂ S	mg/L	0.1			

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



Table 16. Summary of WY 2015 Water Quality Data – SM MW-1

Parameter	Unit	PQL	MCL	Results				
				SM MW-1				
				12/4/14	12/23/14	3/27/15	6/24/15	9/23/15
Sample Description				WY 2013 Storage	WY 2015 Injection	WY 2015 Storage		
Elapsed Storage Time	Days			686	0	38	127	218
Volume Purged at Sampling	1,000 gals							
Major Cations								
Calcium	mg/L	0.5		68			50	81
Magnesium	mg/L	0.5		20			13	22
Potassium	mg/L	0.5		5			3.7	4.6
Sodium	mg/L	0.5		84			52	78
Major Anions								
Alkalinity, Total (as CaCO3)	mg/L	2		229			153	210
Chloride	mg/L	1	250	109			42	110
Sulfate	mg/L	1	250	61			88	83
Nitrate (as NO3)	mg/L	1	45	ND			ND	ND
Nitrite (as Nitrogen)	mg/L	1	1	0.7			0.3	0.3
General Physical								
pH	Std Units			7.3			7.5	7.1
Specific Conductance (EC)	uS	1	900	948			610	935
Total Dissolved Solids	mg/L	10	500	557			394	540
Metals								
Arsenic (Total)	ug/L	1	10	2			2	2
Barium (Total)	ug/L	10	1000	63			33	59
Iron (Dissolved)	ug/L	10		ND			ND	ND
Iron (Total)	ug/L	10	300	ND			ND	62
Lithium	ug/L	1		30			24	24
Manganese (Dissolved)	ug/L	10		24			ND	14
Manganese (Total)	ug/L	10	50	22			ND	15
Molybdenum	ug/L	1	1000	15			6	10
Nickel	ug/L	10	100	ND			ND	ND
Selenium	ug/L	2	50	2			5	ND
Strontium (Total)	ug/L	5		376			256	402
Uranium (by ICP/MS)	ug/L	1	30	1			1	2
Vanadium (Total)	ug/L	1	1000	ND			ND	ND
Zinc (Total)	ug/L	10	5000	43			ND	ND
Miscellaneous								
Ammonia-N	mg/L	0.05		ND			ND	ND
Boron	mg/L	0.05		0.08			0.05	0.08
Chloramines	mg/L	0.05		ND			ND	ND
Gross Alpha	pCi/L		15	2.16 +/- 0.67			2.81 +/- 1.27	4.82 +/- 1.81
Kjeldahl Nitrogen (Total)	mg/L	0.5		ND			ND	ND
Methane	ug/L	0.1		0.67			3.0	3.20
Nitrogen (Total)	mg/L	0.5		0.8			ND	ND
o-Phosphate-P	mg/L	0.05		0.2			ND	ND
Phosphorous (Total)	mg/L	0.03		0.12			0.08	0.08
Radium 226	pCi/L		3	1.70 +/- 1.01			0.514 +/- 0.243	0.762 +/- 0.265
Organic Analyses								
Haloacetic Acids (Total)	ug/L	1.0	60.0	0.0	0.0	0.0	0.0	0.0
<i>Dibromoacetic Acid</i>	ug/L	1.0		ND	ND	ND	ND	ND
<i>Dichloroacetic Acid</i>	ug/L	1.0		ND	ND	ND	ND	ND
<i>Monobromoacetic Acid</i>	ug/L	1.0		ND	ND	ND	ND	ND
<i>Monochloroacetic Acid</i>	ug/L	2.0		ND	ND	ND	ND	ND
<i>Trichloroacetic Acid</i>	ug/L	1.0		ND	ND	ND	ND	ND
Organic Carbon (Dissolved)	mg/L	0.2		0.6			1.2	1.2
Organic Carbon (Total)	mg/L	0.2		0.7			1.3	1.20
Trihalomethanes (Total)	ug/L	1.0	80.0	0.0	46.2	13.5	44.2	4.9
<i>Bromodichloromethane</i>	ug/L	0.5		ND	13.0	4.9	10.0	1.0
<i>Bromoform</i>	ug/L	0.5		ND	0.9	ND	0.7	ND
<i>Chloroform</i>	ug/L	0.5		ND	27.0	7.2	29.0	3.4
<i>Dibromochloromethane</i>	ug/L	0.5		ND	5.3	1.4	4.5	0.5
Field Parameters								
Temperature	° C	0.1		23.3	22.7	16.1	17.1	
Specific Conductance (EC)	uS	1.0	900	520	510	536	545	
pH	Std Units	0.1	6.5 - 8.5	6.8	7.1	7.2	7.1	
ORP	mV	1.0		-143	-37	-64	-84	
Free Chlorine Residual	mg/L	0.1	2 - 5	ND	ND	ND	0.08	
Dissolved Oxygen	mg/L	0.01				0.23	0.04	
Silt Density Index	Std Units	0.1						
Gas Volume	mL	2.0						
Fl ₂ S	mg/L	0.1				0.08	ND	

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



Table 17. Summary of WY 2015 Water Quality Data – SMS Deep

Parameter	Unit	PQL	MCL	Results				
				SMS Deep				
				12/5/14	12/23/14	3/25/15	6/25/15	9/23/15
Sample Description	WY 2013 Storage	WY 2015 Injection	WY 2015 Storage					
Elapsed Storage Time	Days			687		36	128	218
Volume Purged at Sampling	1,000 gals							
Major Cations								
Calcium	mg/L	0.5		69			56	84
Magnesium	mg/L	0.5		15			13	19
Potassium	mg/L	0.5		4.3			3	4.7
Sodium	mg/L	0.5		93			53	98
Major Anions								
Alkalinity, Total (as CaCO3)	mg/L	2		225			172	260
Chloride	mg/L	1	250	92			55	124
Sulfate	mg/L	1	250	50			80	73
Nitrate (as NO3)	mg/L	1	45	1.0			ND	ND
Nitrite (as Nitrogen)	mg/L	1	1	0.3			0.4	0.3
General Physical								
pH	Std Units			7.4			7.6	7.3
Specific Conductance (EC)	uS	1	900	850			656	1032
Total Dissolved Solids	mg/L	10	500	497			397	611
Metals								
Arsenic (Total)	ug/L	1	10	5			6	9
Barium (Total)	ug/L	10	1000	52			34	65
Iron (Dissolved)	ug/L	10		ND			ND	ND
Iron (Total)	ug/L	10	300	20			ND	32
Lithium	ug/L	1		23			19	41
Manganese (Dissolved)	ug/L	10		23			ND	14
Manganese (Total)	ug/L	10	50	23			ND	14
Molybdenum	ug/L	1	1000	7			10	8
Nickel	ug/L	10	100	ND			ND	ND
Selenium	ug/L	2	50	2			4	ND
Strontium (Total)	ug/L	5		421			383	552
Uranium (by ICP/MS)	ug/L	1	30	2			3	2
Vanadium (Total)	ug/L	1	1000	ND			ND	ND
Zinc (Total)	ug/L	10	5000	28			ND	ND
Miscellaneous								
Ammonia-N	mg/L	0.05		0.06			ND	0.06
Boron	mg/L	0.05		0.08			0.06	0.1
Chloramines	mg/L	0.05		ND		ND	ND	ND
Gross Alpha	pCi/L		15	1.95 +/- 0.72			3.17 +/- 1.29	1.24 +/- 1.42
Kjeldahl Nitrogen (Total)	mg/L	0.5		ND			ND	ND
Methane	ug/L	0.1		1.2			0.8	0.27
Nitrogen (Total)	mg/L	0.5		0.5			0.5	ND
o-Phosphate-P	mg/L	0.05		ND			ND	ND
Phosphorous (Total)	mg/L	0.03		0.05			0.1	0.13
Radium 226	pCi/L		3	1.19 +/- 0.77			0.244 +/- 0.176	0.268 +/- 0.176
Organic Analyses								
Haloacetic Acids (Total)	ug/L	1.0	60.0	0.0	21.1	17.5	6.9	0.0
<i>Dibromoacetic Acid</i>	ug/L	1.0		ND	3.6	1.2	ND	ND
<i>Dichloroacetic Acid</i>	ug/L	1.0		ND	9.8	4.3	2.3	ND
<i>Monobromoacetic Acid</i>	ug/L	1.0		ND	ND	ND	ND	ND
<i>Monochloroacetic Acid</i>	ug/L	2.0		ND	ND	ND	ND	ND
<i>Trichloroacetic Acid</i>	ug/L	1.0		ND	7.7	12	4.6	ND
Organic Carbon (Dissolved)	mg/L	0.2		0.4			1.2	1.2
Organic Carbon (Total)	mg/L	0.2		0.60			1.2	1.2
Trihalomethanes (Total)	ug/L	1.0	80.0	4.1	67.5	74.1	62.7	3.3
<i>Bromodichloromethane</i>	ug/L	0.5		1.2	22.0	22.0	18.0	0.7
<i>Bromoform</i>	ug/L	0.5		ND	2.5	1.1	1.7	ND
<i>Chloroform</i>	ug/L	0.5		2.3	29.0	40.0	33.0	2.6
<i>Dibromochloromethane</i>	ug/L	0.5		0.6	14.0	11.0	10.0	ND
Field Parameters								
Temperature	° C	0.1			18.4	17.7	17.5	19.8
Specific Conductance (EC)	uS	1.0	900		560	354	445	752
pH	Std Units	0.1	6.5 - 8.5		7.5	7.3	7.3	7.2
ORP	mV	1.0			16.2	-67	-68	
Free Chlorine Residual	mg/L	0.1	2 - 5		ND	0.08	ND	ND
Dissolved Oxygen	mg/L	0.01				ND	0.05	0.01
Silt Density Index	Std Units	0.1						
Gas Volume	mL	2.0						
H ₂ S	mg/L	0.1				ND	ND	0.04

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



Table 18. Summary of WY 2015 Water Quality Data – Off-Site Monitoring Wells

Parameter	Unit	PQL	MCL	Results			
				PCA-E Deep		Paralta	
				12/10/14	7/23/15	11/13/14	7/14/15
Sample Description	WY 2013 Storage	WY 2015 Storage	WY 2013 Storage	WY 2015 Storage			
Volume Pumped at Sampling	1,000 gals						
Major Cations							
Calcium	mg/L	0.5		44	43		77
Magnesium	mg/L	0.5		9	8		20
Potassium	mg/L	0.5		3.5	3.5		5
Sodium	mg/L	0.5		81	80		103
Major Anions							
Alkalinity, Total (as CaCO3)	mg/L	2		168	163		225
Chloride	mg/L	1	250	80	82		112
Sulfate	mg/L	1	250	25	24		70
Nitrate (as NO3)	mg/L	1	45	ND	ND		ND
Nitrite (as Nitrogen)	mg/L	1	1	0.7	0.3		
General Physical							
pH	Std Units			7.6	7.5		7.2
Specific Conductance (EC)	uS	1	900	664	628		909
Total Dissolved Solids	mg/L	10	500	388	394		502
Metals							
Arsenic (Total)	ug/L	1	10	7	7		ND
Barium (Total)	ug/L	10	1000	69	68		ND
Iron (Dissolved)	ug/L	10		ND	ND		
Iron (Total)	ug/L	10	300	ND	ND		ND
Lithium	ug/L	1		23	34		
Manganese (Dissolved)	ug/L	10		ND	ND		
Manganese (Total)	ug/L	10	50	ND	ND		24
Molybdenum	ug/L	1	1000	10	11		
Nickel	ug/L	10	100	ND	ND		
Selenium	ug/L	2	50	ND	ND		
Strontium (Total)	ug/L	5		239	228		
Uranium (by ICP/MS)	ug/L	1	30	ND	ND		
Vanadium (Total)	ug/L	1	1000	ND	ND		
Zinc (Total)	ug/L	10	5000	15	ND		
Miscellaneous							
Ammonia-N	mg/L	0.05		ND	ND		0.14
Boron	mg/L	0.05		0.08	0.08		103
Chloramines	mg/L	0.05		ND	ND		
Gross Alpha	pCi/L		15	0.79 +/- 0.78	2.04 +/- 1.86		
Kjehldahl Nitrogen (Total)	mg/L	0.5		ND	ND		
Methane	ug/L	0.1		ND	0.21		
Nitrogen (Total)	mg/L	0.5		0.8	ND		
o-Phosphate-P	mg/L	0.05		ND	ND		ND
Phosphorous (Total)	mg/L	0.03		0.06	0.05		
Radium 226	pCi/L		3	0.29 +/- 0.55	0.150 +/- 0.227		
Organic Analyses							
Haloacetic Acids (Total)	ug/L	1.0	60.0	0.0	0.0		
<i>Dibromoacetic Acid</i>	ug/L	1.0		ND	ND		
<i>Dichloroacetic Acid</i>	ug/L	1.0		ND	ND		
<i>Monobromoacetic Acid</i>	ug/L	1.0		ND	ND		
<i>Monochloroacetic Acid</i>	ug/L	2.0		ND	ND		
<i>Trichloroacetic Acid</i>	ug/L	1.0		ND	ND		
Organic Carbon (Dissolved)	mg/L	0.2		0.2	0.8		
Organic Carbon (Total)	mg/L	0.2		0.4	0.6		0.68
Trihalomethanes (Total)	ug/L	1.0	80.0	0.0	0.0	1.5	2.2
<i>Bromodichloromethane</i>	ug/L	0.5		ND	ND	ND	ND
<i>Bromoform</i>	ug/L	0.5		ND	ND	ND	ND
<i>Chloroform</i>	ug/L	0.5		ND	ND	1.5	2.2
<i>Dibromochloromethane</i>	ug/L	0.5		ND	ND	ND	ND
Field Parameters							
Temperature	° C	0.1			23.9		24.6
Specific Conductance (EC)	uS	1.0	900		552		
pH	Std Units	0.1	6.5 - 8.5		7.6		7.2
ORP	mV	1.0			-122		
Free Chlorine Residual	mg/L	0.1	2 - 5		ND		ND
Dissolved Oxygen	mg/L	0.01			0.02		
Silt Density Index	Std Units	0.1					
Gas Volume	mL	2.0					
H ₂ S	mg/L	0.1			0.06		

Notes:

Constituents exceeding MCLs denoted in **BOLD** type



Water Quality at Off-Site Monitor Wells

Water-quality data collected from off-site wells in WY 2015 data are presented in **Table 18**. Samples from PCA-E Deep were collected prior to and following the WY 2015 injection season. As discussed previously and as shown in **Table 10**, evaluation of chloride ion concentrations indicates that some previously injected water appears to have reached this well prior to the WY 2013 injection season. The well showed a slightly lower-than-historical chloride concentration; however, the absence of DBP's and the presence of hydrogen sulfide gas suggest that the influence of recharge operations is negligible to date at this location.

Data from the nearest CAW production well to the ASR wells (i.e., Paralta) show a trend similar to the SMS Deep MW, i.e., an increasing contribution of NGW water quality over the WY 2015 storage season.

Additional Water Quality Observations

At the commencement of WY 2013 recovery pumping of ASR-1, a sample collected by CAW⁷ 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 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.
- Other anthropogenic sources of Hg in well components or other off-site sources.

During WY 2015, a Supplemental Sampling and Analysis Plan (SSAP) was developed for additional investigation of the Hg occurrence. In addition to the collection of Hg samples

⁷ Collected on October 24, 2013.



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 2015 provided several initial findings:

- Samples of drill cuttings from ASR-1 (as well as nearby ASR-2) confirmed the low-level presence of Total Hg within the Tsm mineralogy. Methyl-Hg was essentially absent, confirming that inorganic Hg was the primary form of occurrence.
- Total Hg content of the samples collected is largely composed of insoluble (i.e., particulate) Hg as evidenced by the significantly lower Hg levels measured in the sub-micron filtered samples vs the unfiltered samples.
- Elevated Hg levels correlated strongly with turbidity levels, and both parameters dropped precipitously soon after the initiation of backflush pumping to the pit.
- Hg occurrence was found to be highly transient, and extended pumping of the well consistently showed Hg levels to be below MCL's under normal operational conditions for CAW recovery pumping.
- In all cases, Hg levels that did exceed MCL's occurred only within the first few minutes of turbid flush water discharges when the stagnant well casing water was discharged to the on-site percolation pit. Hg levels dropped to below the MCL and/or non-detect levels within the first 10-20 minutes of well flushing operations.

These findings suggested that the issue of sporadic elevated Hg occurrences was potentially a result of particulate Hg released from near-wellbore sediment accumulations when the well was initially started and well casing turbulence and velocity changes result in the release of fine particulate matter.

Additional samples were collected of sediments from the Backflush Pit at the Santa Margarita ASR Facility. Relevant findings from these sediment samples included the following:

- Confirmation that a significant portion of the total Hg content from the wells is insoluble / particulate Hg.
- The particulate Hg does not appear to be migrating beneath the surface of the pit to any measurable extent, but is rather sequestered with the surficial deposits from well backflushing operations.
- The concentration level of Hg in the accumulated surficial sediments is well below the California TTLC limit of 20 mg/kg.

Next Steps in the Investigation. The Hg investigation during WY 2015 has not yet conclusively established the origin of Hg detected at ASR-1; however, issues that will be investigated further in WY 2016 include the following:

- Determination of the origin of the suspected naturally-occurring, predominantly particulate Hg detected at the well as observed during initial well purging (i.e., from



native aquifer minerals within the Santa Margarita Sandstone formation and/or from the produced recharge waters in the Carmel Valley Aquifer System).

- Assessment of the character and cumulative long-term fate of sediments with Hg-detections within the Backflush Pit. This investigation will include further assessment of the Hg particulate matter and its physical and chemical mobility over time.
- Further assessment of the other ASR wells to determine if similar Hg occurrences and mechanisms exist at all ASR facilities.

As the Hg investigation continues, additional findings, conclusions, and recommendations will be documented in the WY 2016 Summary of Operations Report to facilitate ongoing operation of the ASR project.

Water Quality Summary

Overall, water-quality data from WY 2015 showed no significant deviations from previous years. The only deviation from the norm for the ASR program was the anomalous and transient occurrence of Hg detections as described for the ASR-1 well; however, as discussed above, additional investigation in WY 2016 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.



CONCLUSIONS

Based on the findings developed from operation of Monterey Peninsula ASR Project during WY 2015, we conclude the following:

WY 2015 Recharge Operations

WY 2015 was classified as a Dry Water Year on the Monterey Peninsula and as a result, a commensurately modest total volume of 215 af of water was recharged into the Seaside Groundwater Basin at the Santa Margarita and Seaside Middle Schools ASR Facilities during the WY 2015 injection season.

ASR Well Performance

ASR-1. Pertinent well performance conclusions for ASR-1 during WY 2015 are summarized below:

- Injection Rates: Ranged between approximately 870 to 1,610 gpm, averaging approximately 1,275 gpm.
- Water Levels: Generally maintained greater than 300 ft. bgs with 45 ft. of available “freeboard” remaining below the maximum recommended drawup level.
- Specific Injectivity: Although there are no initial specific injectivity data for WY 2015, the ending specific injectivity was approximately 25 gpm/ft, which is slightly great than the ending value in WY 2011 of approximately 23 gpm/ft.
- Residual Plugging: No residual plugging was observed.
- General Conclusions: ASR-1 performed very well during WY 2015 with no evidence of residual plugging. The positive trend in performance and available “freeboard” at injection rates ranging between 870 to 1,610 gpm suggests the design injection rate of 1,500 gpm can be maintained in WY 2016 without adversely affecting the well’s performance.

ASR-2. Pertinent well performance conclusions for ASR-2 during WY 2015 are summarized below:

- Injection Rates: Ranged between approximately 340 to 1,775 gpm, averaging approximately 1,400 gpm.
- Water Levels: Generally maintained greater than 280 ft. bgs with 30 ft. of available “freeboard” remaining below the maximum recommended drawup level.



- Specific Injectivity: Ranged between approximately 32 to 37 gpm/ft and overall trend in 24-hr specific injectivity slightly negative.
- Residual Plugging: Approximately 32 feet of residual plugging occurred.
- General Conclusions: ASR-2 performed well during WY 2015; however, the well did experience a moderate level residual plugging. The negative trend in performance at injection rates ranging up to 1,775 gpm suggests the injection rate at this well should be maintained at or below the design rate of 1,500 gpm in WY 2016.

ASR-3. Pertinent well performance conclusions for ASR-3 during WY 2015 are summarized below:

- Injection Rates: Ranged between approximately 655 to 1,070 gpm, averaging approximately 940 gpm.
- Water Levels: Generally maintained greater than 240 ft bgs with 50 ft of available “freeboard” remaining below the maximum recommended drawup level.
- Specific Injectivity: Although there are no initial specific injectivity data for WY 2015, the ending specific injectivity was approximately 10 gpm/ft, which is slightly greater than the ending value in WY 2013 of approximately 8 gpm/ft.
- Residual Plugging: No residual plugging was observed.
- 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 655 to 1,070 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 2015 was limited to three days of well “conditioning”. This conditioning 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 to 1,075 gpm for durations up to 30 minutes were achieved during WY 2015 without a measurable loss in performance. Further conditioning is planned for WY 2016 until the design injection rate of 1,500 gpm has been achieved.



Water Quality

Significant conclusions regarding the water-quality investigation during WY 2015 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 30 to 90 days after the cessation of injection, followed by a gradual decline over the next 120 to 150 days of storage.
- HAAs showed little “ingrowth” following the cessation of injection and degraded completely during aquifer storage.
- Hg exceedances of the MCL observed in WY 2015 samples are considered anomalous and will be subject to additional investigation in WY 2016.



RECOMMENDATIONS

Based on the WY 2015 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 lack of observed residual plugging during WY 2015, ASR-1 can be operated at an injection rate up to approximately **1,500 gpm** (6.6 afd) to avoid excessive plugging during injection. This represents a 50 percent increase in the design injection rate of 1,000 gpm.
- **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.

ASR-2 Well Operational Parameters

- **Injection Rate:** Based on the amount of residual plugging that occurred during WY 2015 with the well injecting up to 1,775 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.

ASR-3 Well Operational Parameters

- **Injection Rate:** Based on the lack of apparent residual plugging that occurred during WY 2015 with the well injecting up to 1,070 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.

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 should continue in WY 2016 in an effort to limit the amount of apparent residual plugging that has historically been observed at all three of the existing ASR wells following their initial injection operations. Once the design injection rate of 1,500 gpm has been achieved, a baseline injection testing program should be implemented that includes the following tests:

1. 8-hr variable rate injection test (combined with downhole velocity surveys);
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

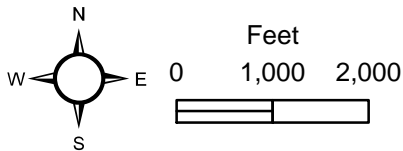
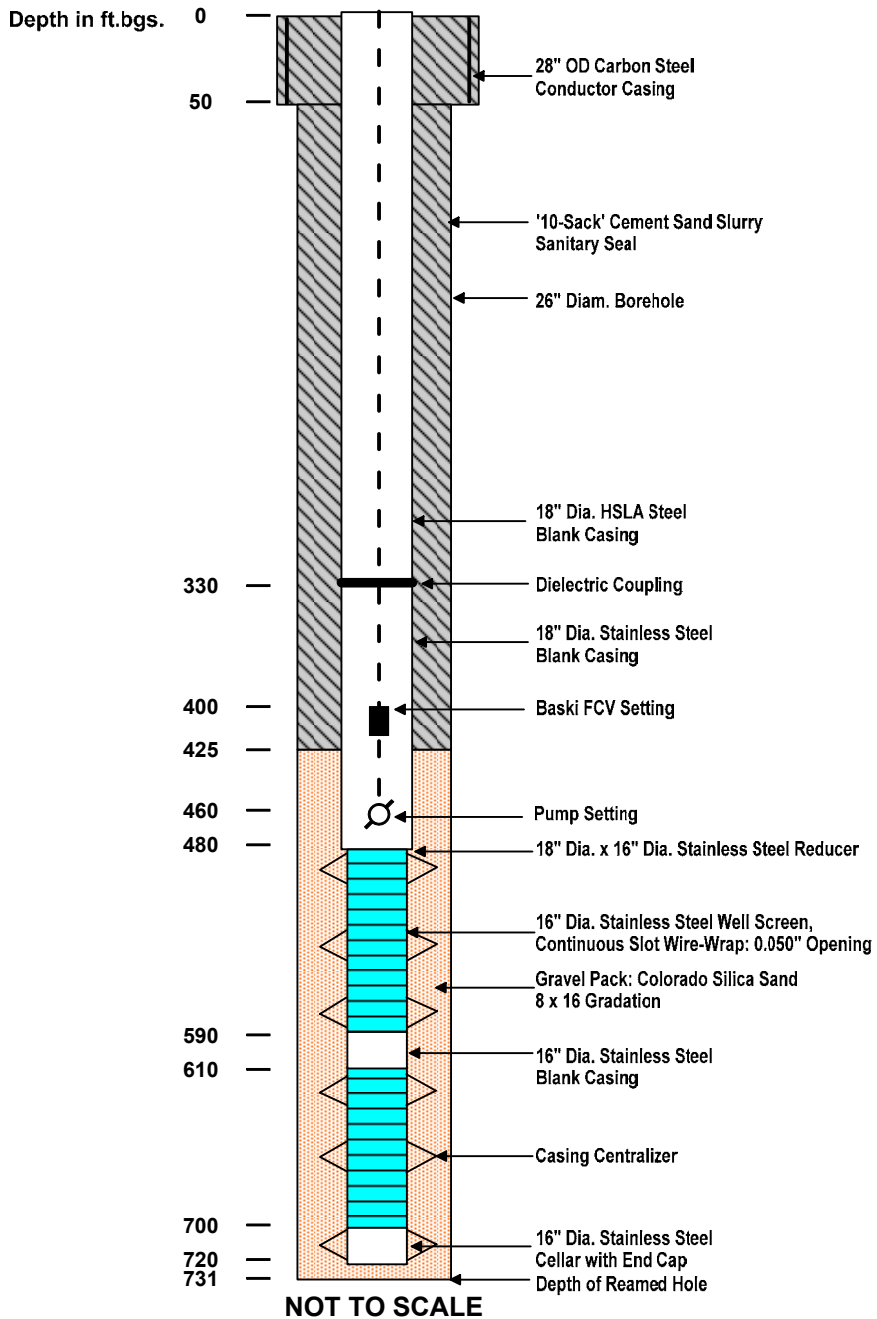
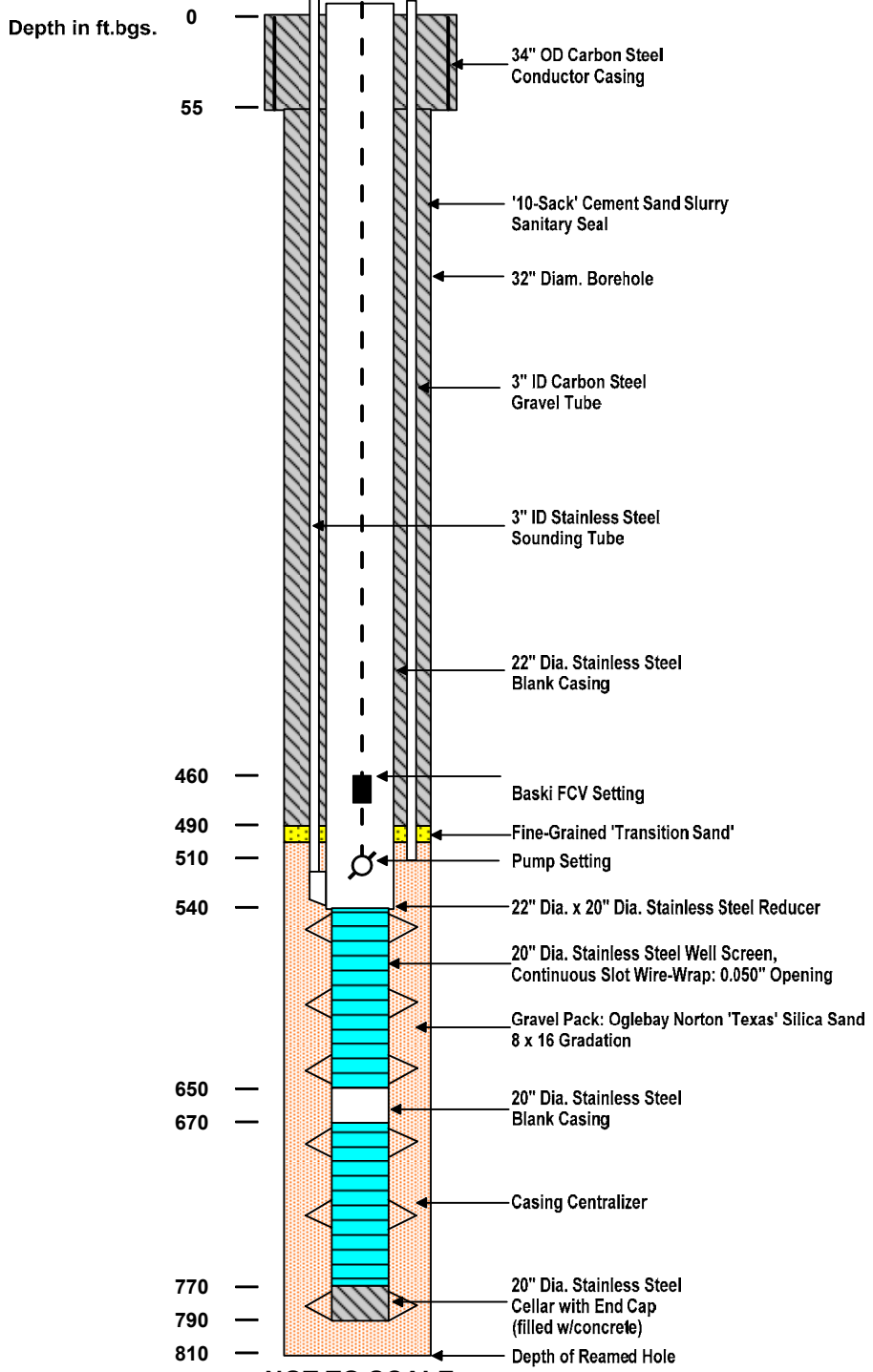


FIGURE 1. SITE LOCATION MAP
WY 2015 ASR Program
Monterey Peninsula Water Management District



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'



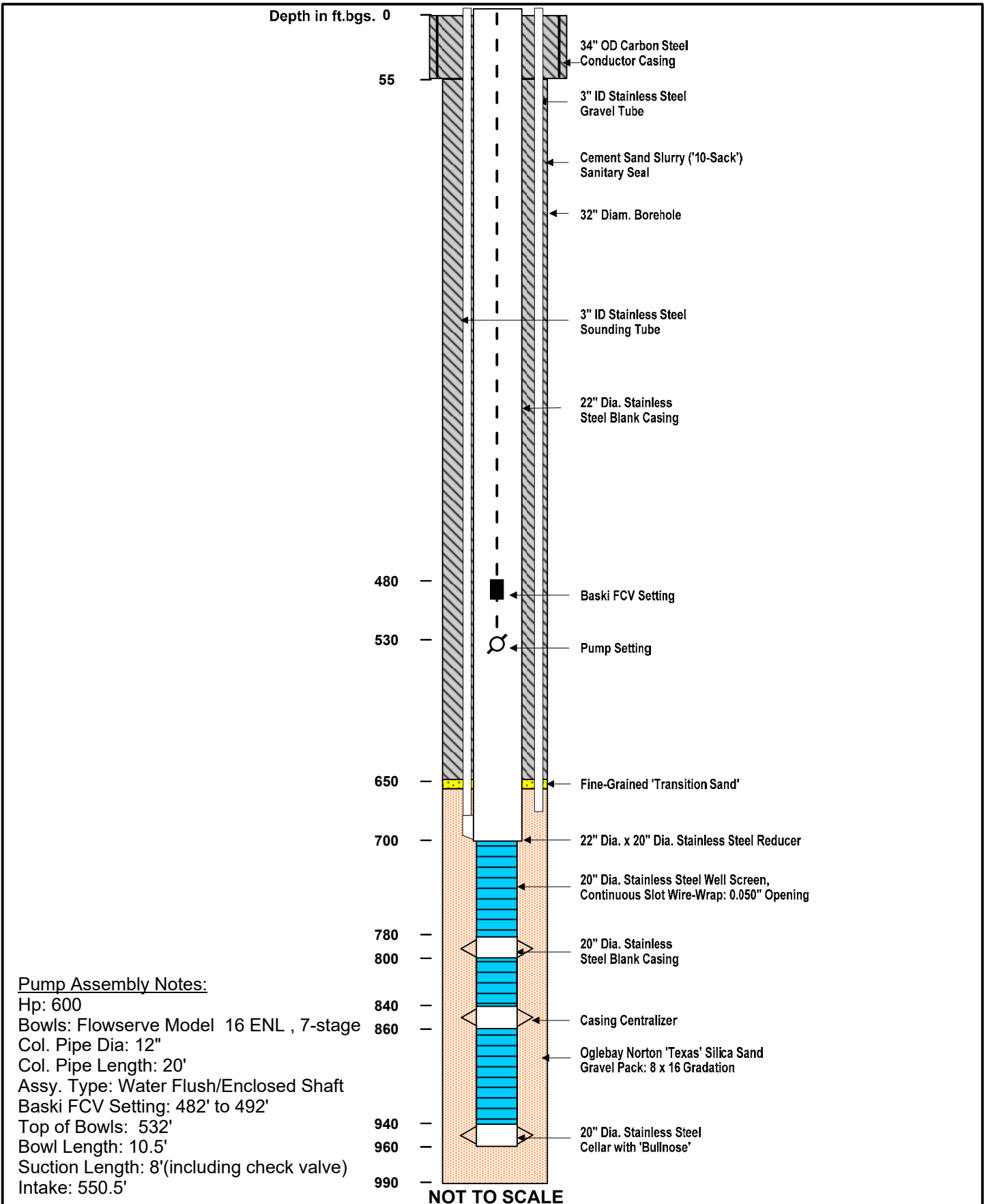
NOT TO SCALE

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'



FIGURE 3. ASR-2 AS-BUILT SCHEMATIC
 WY 2015 ASR Program
 Monterey Peninsula Water Management District

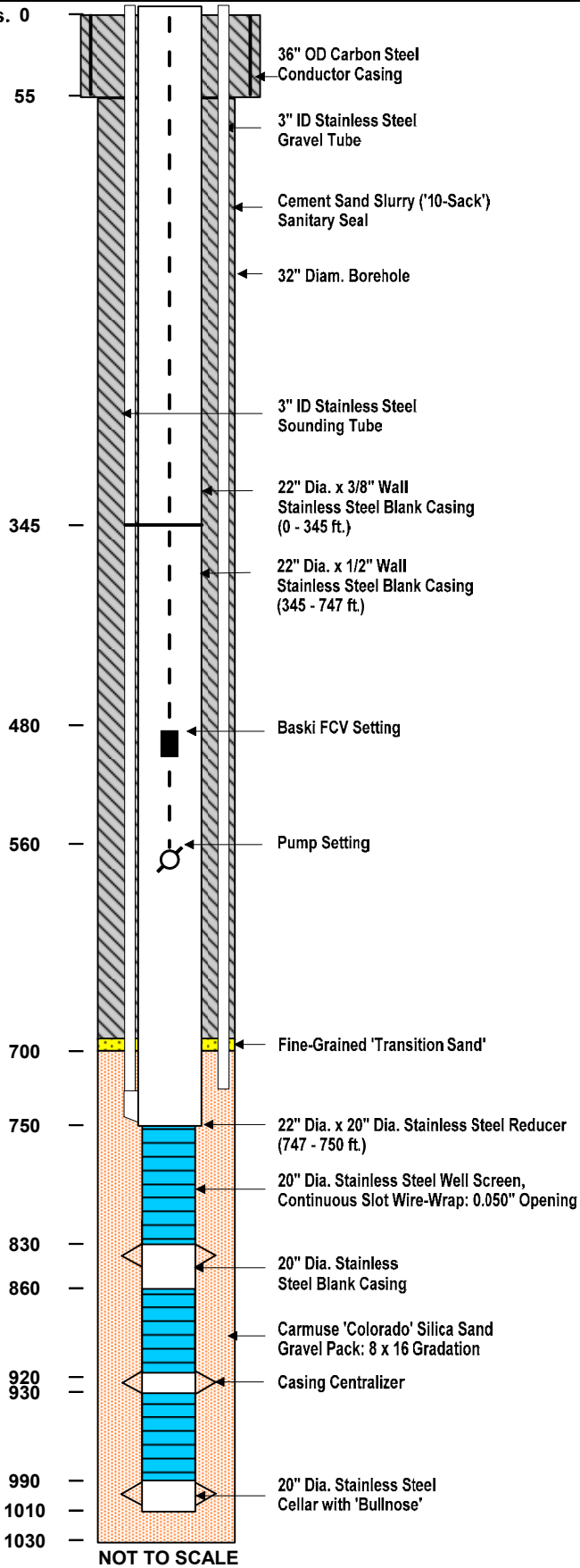


Pump Assembly Notes:

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'

FIGURE 4. ASR-3 AS-BUILT SCHEMATIC
 WY 2015 ASR Program
 Monterey Peninsula Water Management District

Depth in ft.bgs. 0



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'

NOT TO SCALE

**FIGURE 5. ASR-4 AS-BUILT SCHEMATIC
 WY 2015 ASR Program
 Monterey Peninsula Water Management District**

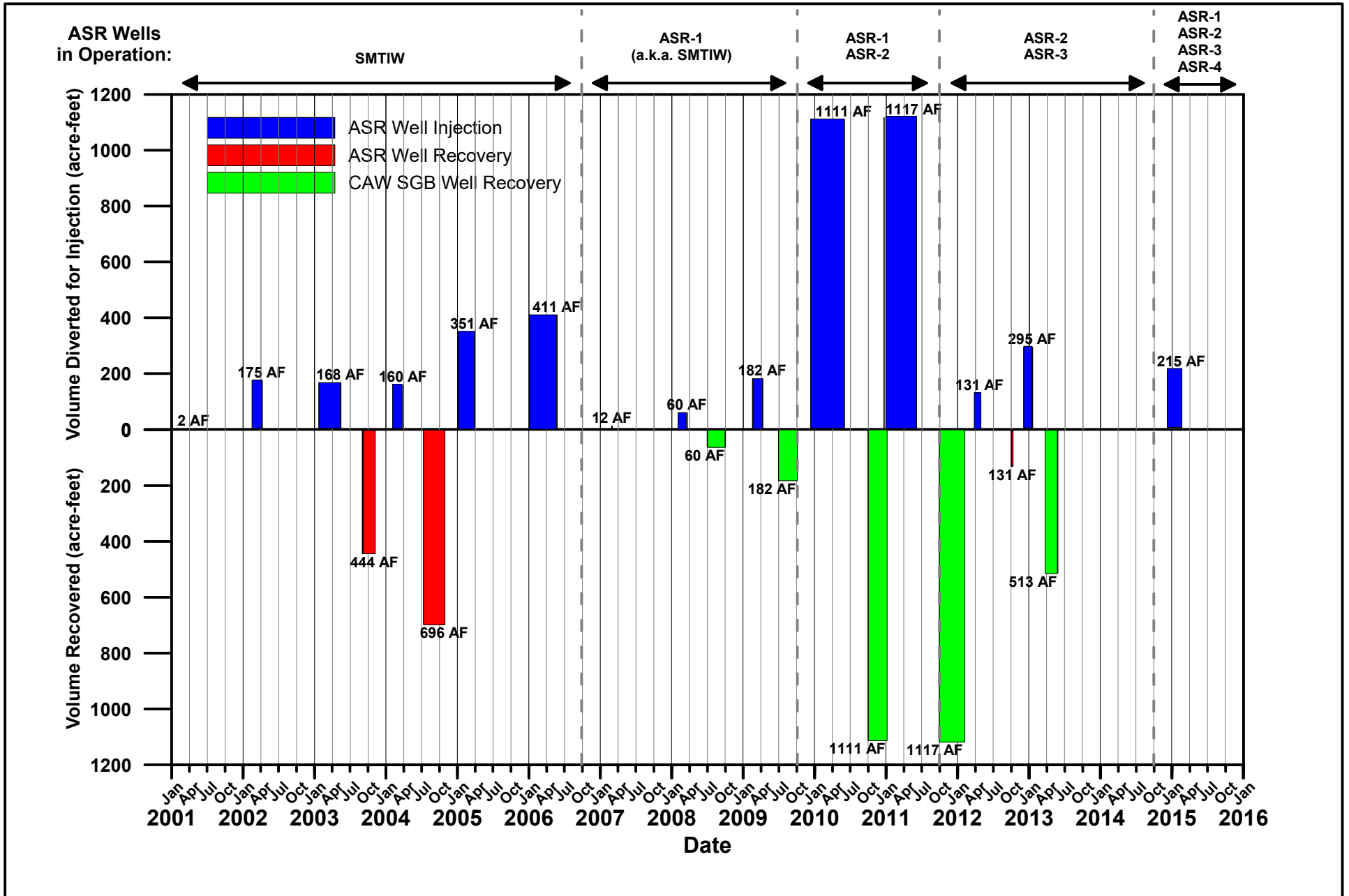


FIGURE 6. SUMMARY OF ASR OPERATIONS (WY 2001 - WY 2015)
 WY 2015 ASR Program
 Monterey Peninsula Water Management District

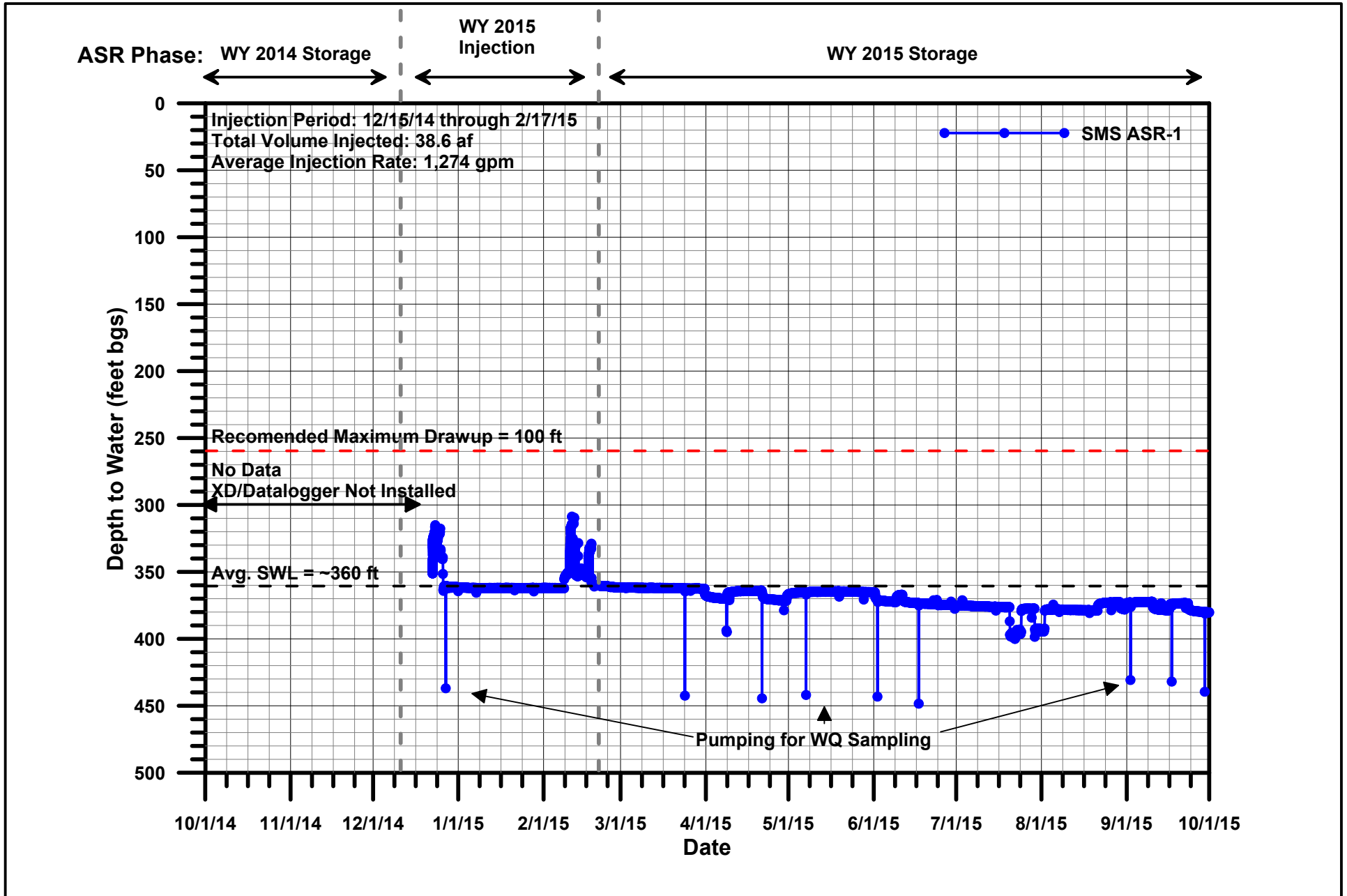


FIGURE 7. ASR-1 WATER-LEVEL DATA
WY 2015 ASR Program
Monterey Peninsula Water Management District

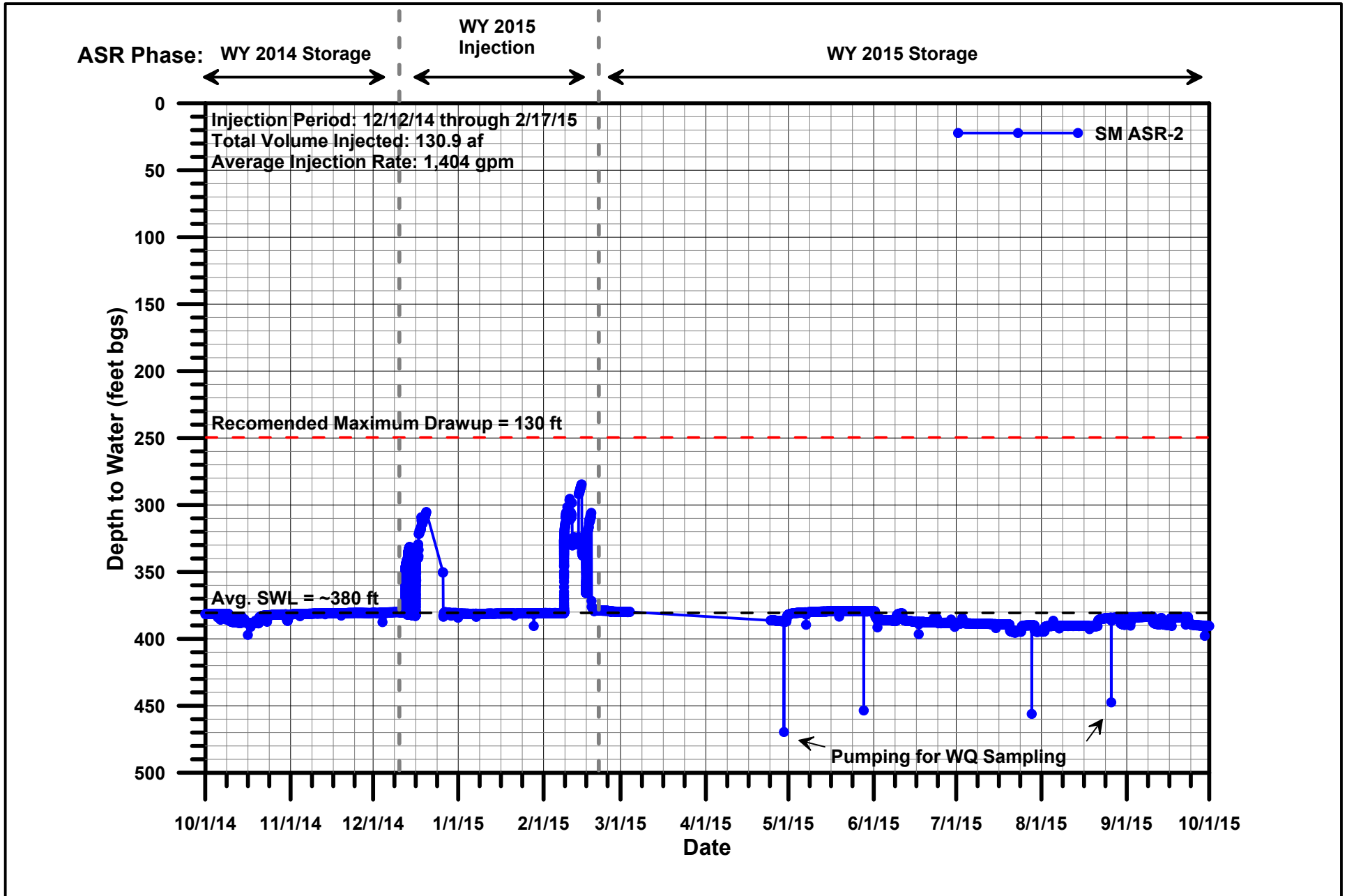


FIGURE 8. ASR-2 WATER-LEVEL DATA
WY 2015 ASR Program
Monterey Peninsula Water Management District

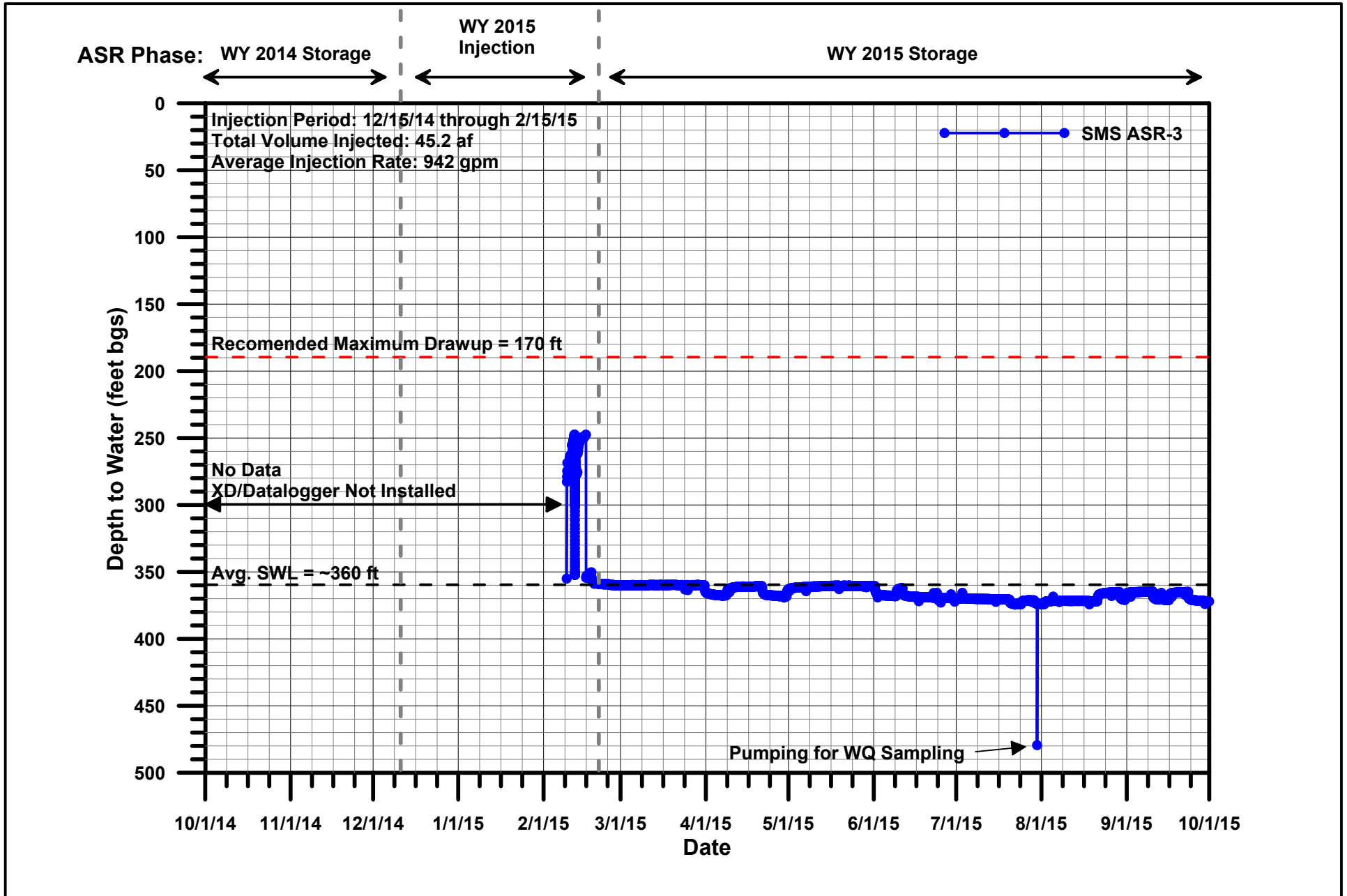


FIGURE 9. ASR-3 WATER-LEVEL DATA
WY 2015 ASR Program
Monterey Peninsula Water Management District

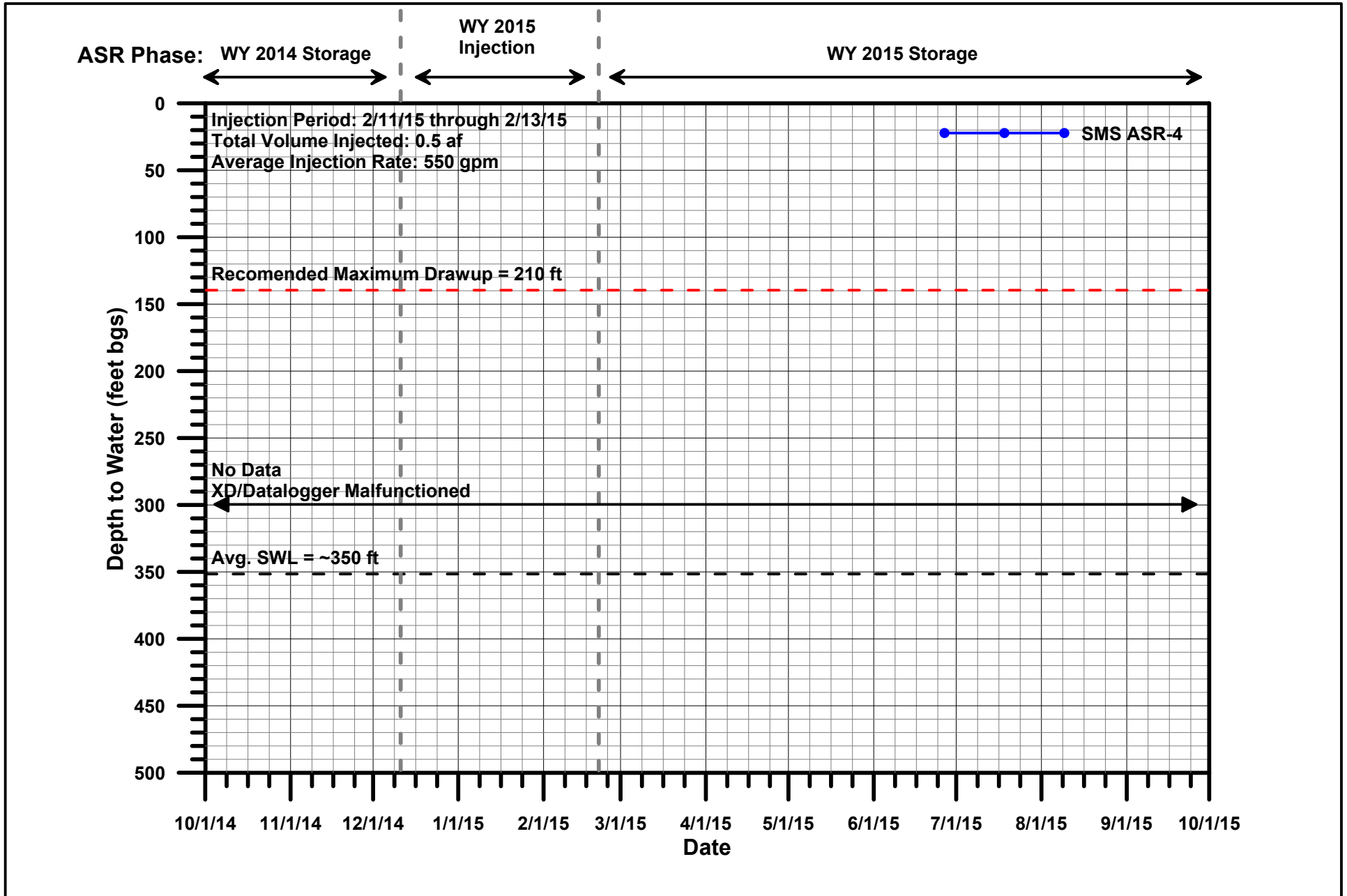


FIGURE 10. ASR-4 WATER-LEVEL DATA
WY 2015 ASR Program
Monterey Peninsula Water Management District

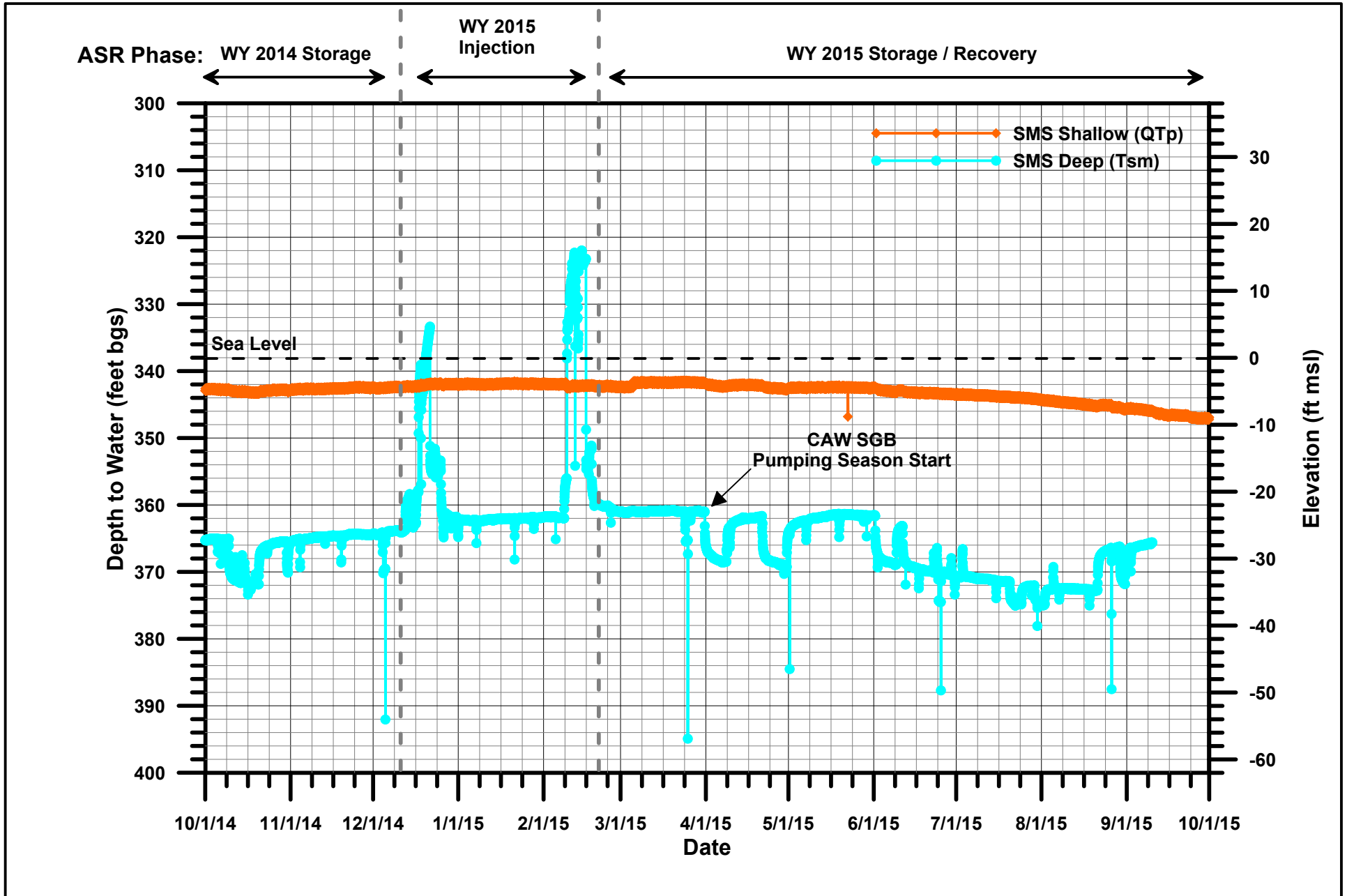


FIGURE 11. SMS MW WATER-LEVEL DATA
WY 2015 ASR Program
Monterey Peninsula Water Management District

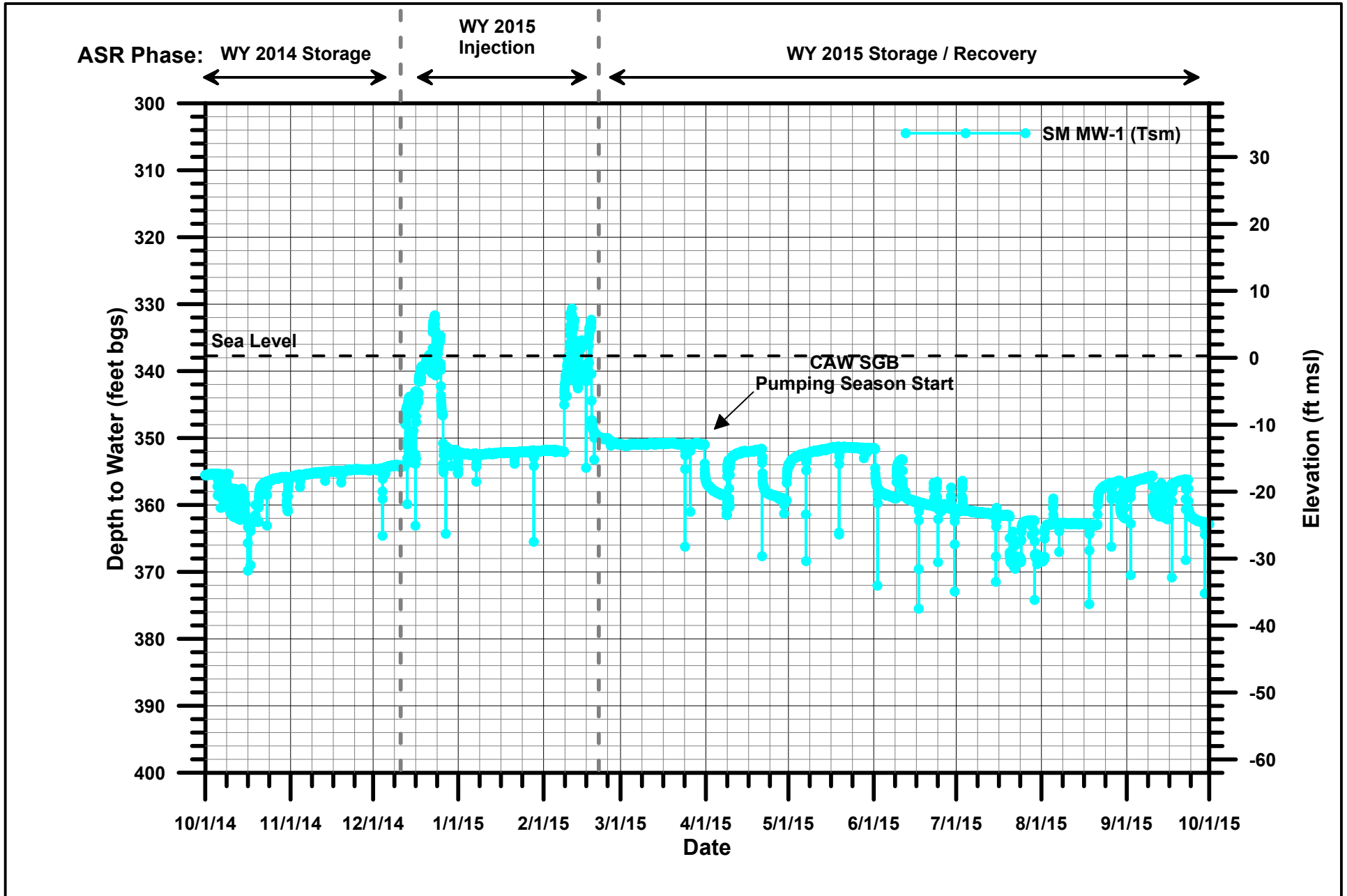


FIGURE 12. SM MW-1 WATER-LEVEL DATA
WY 2015 ASR Program
Monterey Peninsula Water Management District

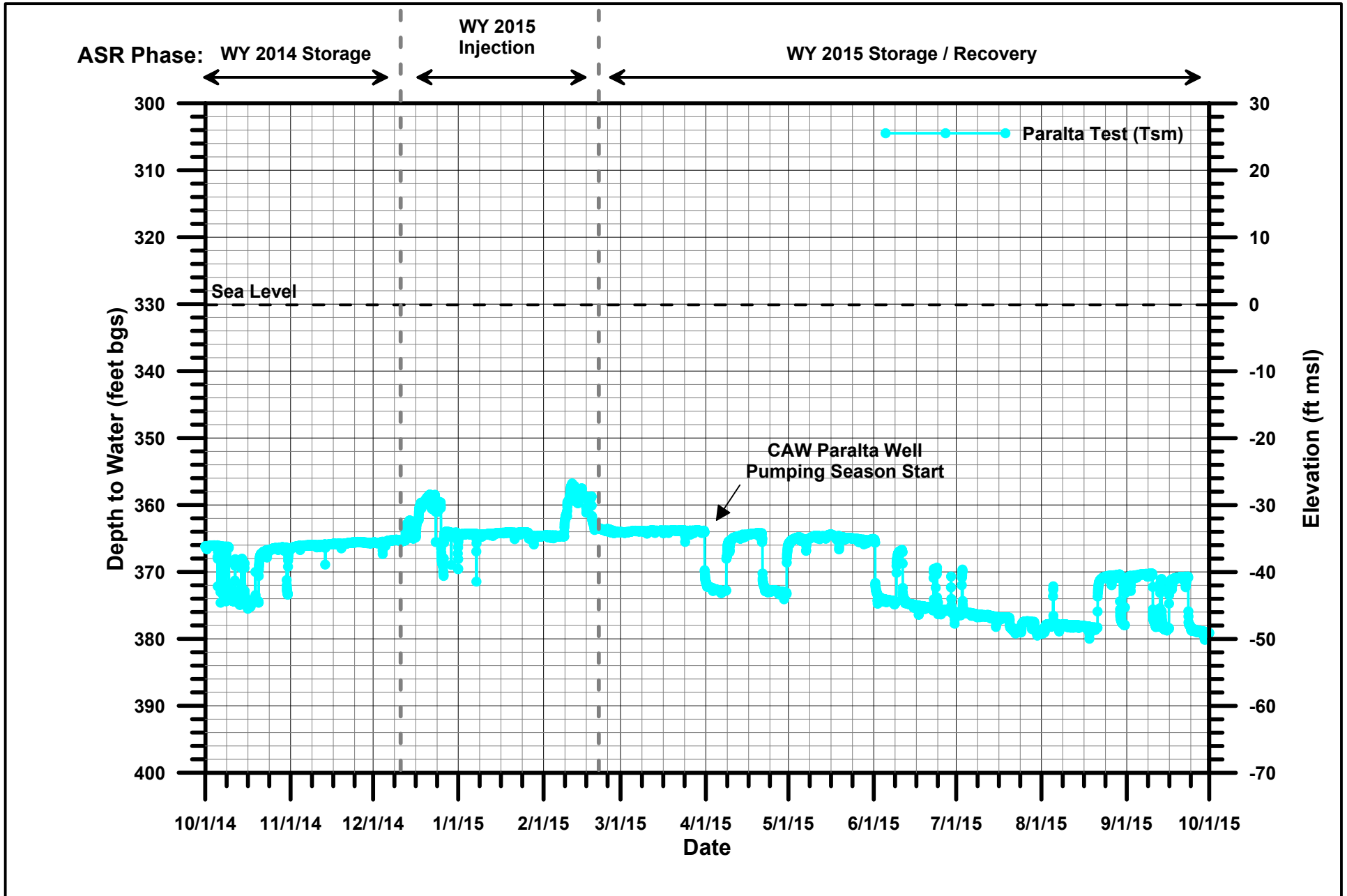


FIGURE 13. PARALTA TEST WATER-LEVEL DATA
WY 2015 ASR Program
Monterey Peninsula Water Management District

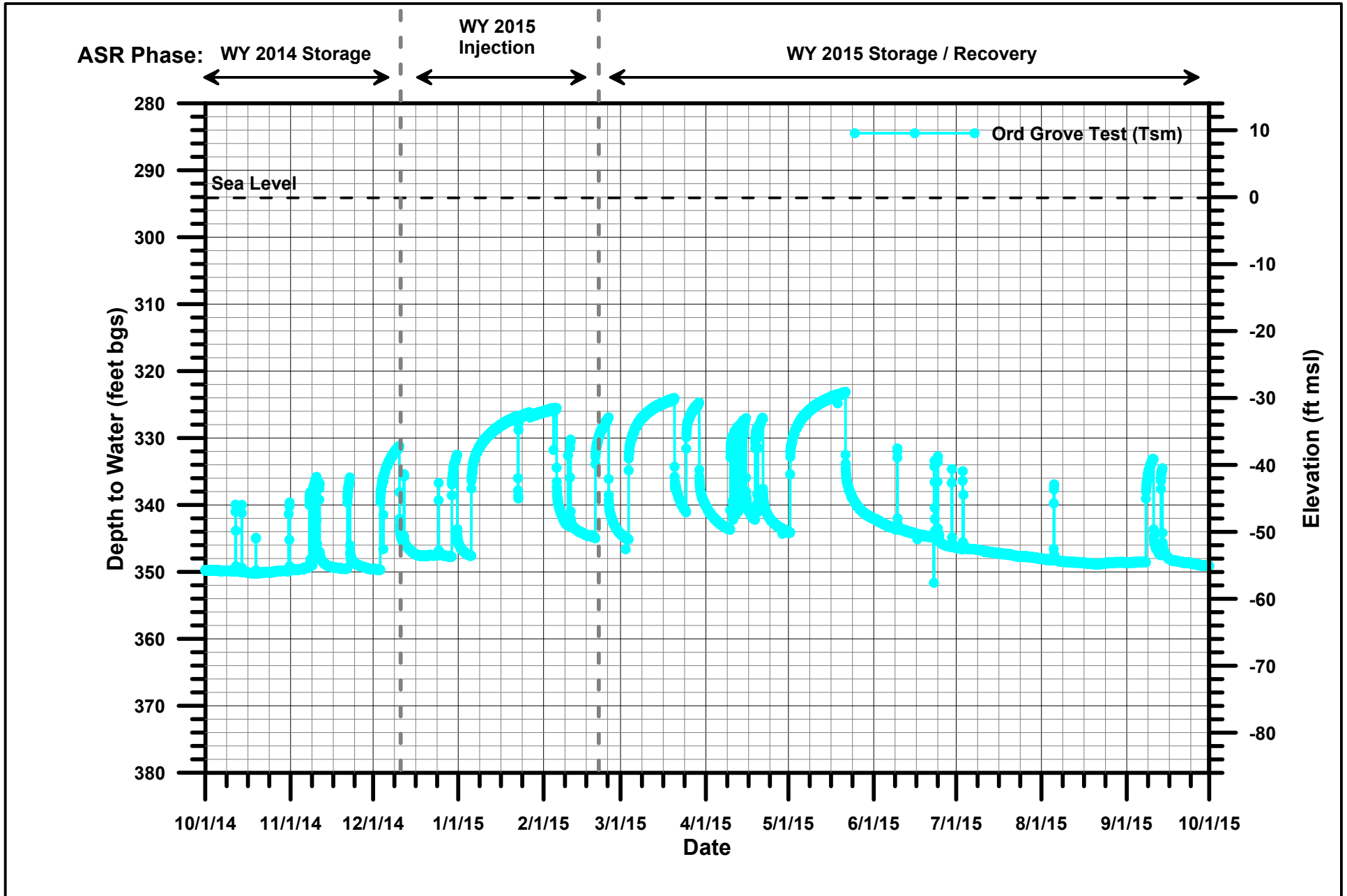


FIGURE 14. ORD GROVE TEST WATER-LEVEL DATA
WY 2015 ASR Program
Monterey Peninsula Water Management District

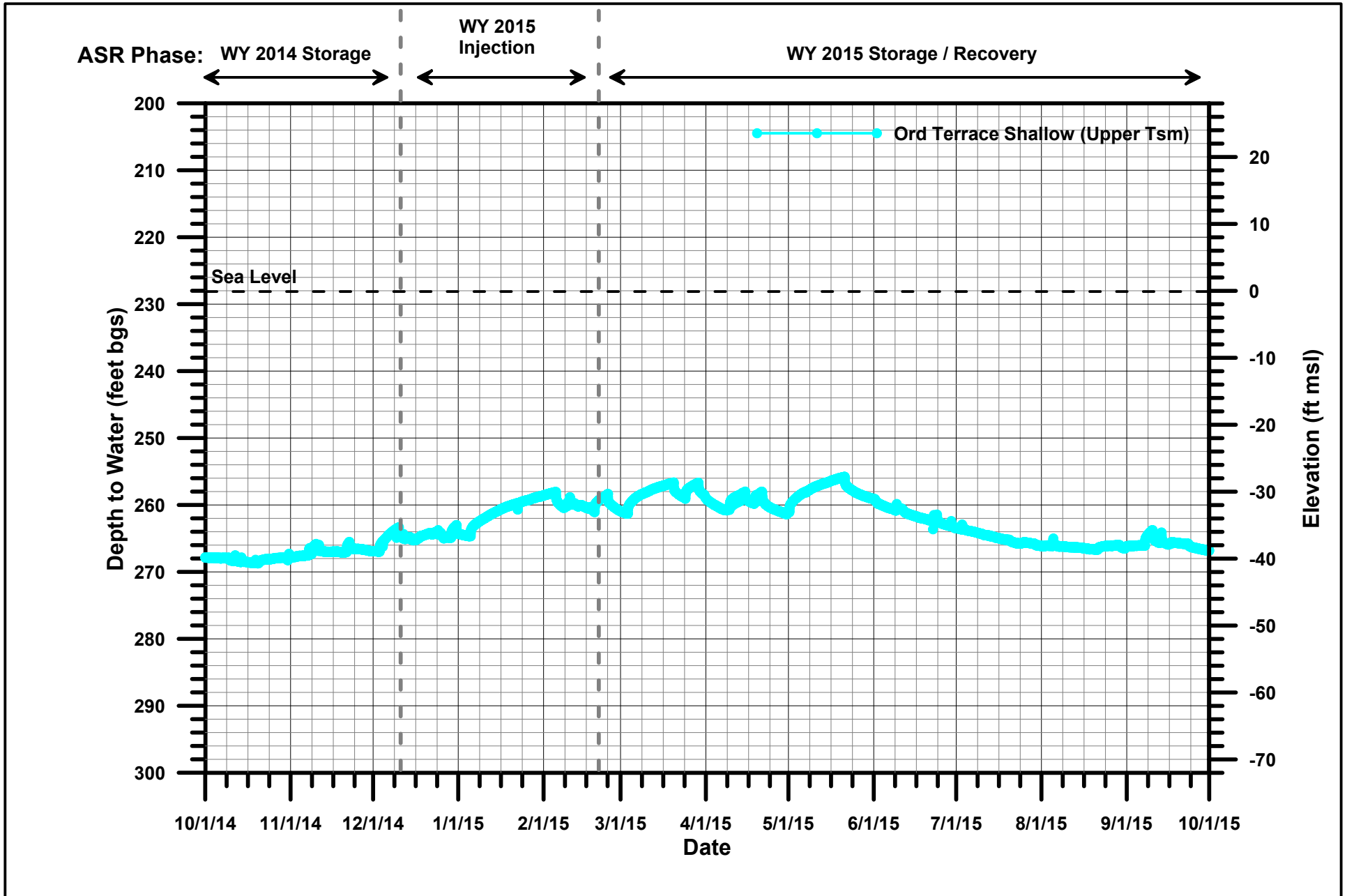


FIGURE 15. ORD TERRACE WATER-LEVEL DATA
WY 2015 ASR Program
Monterey Peninsula Water Management District

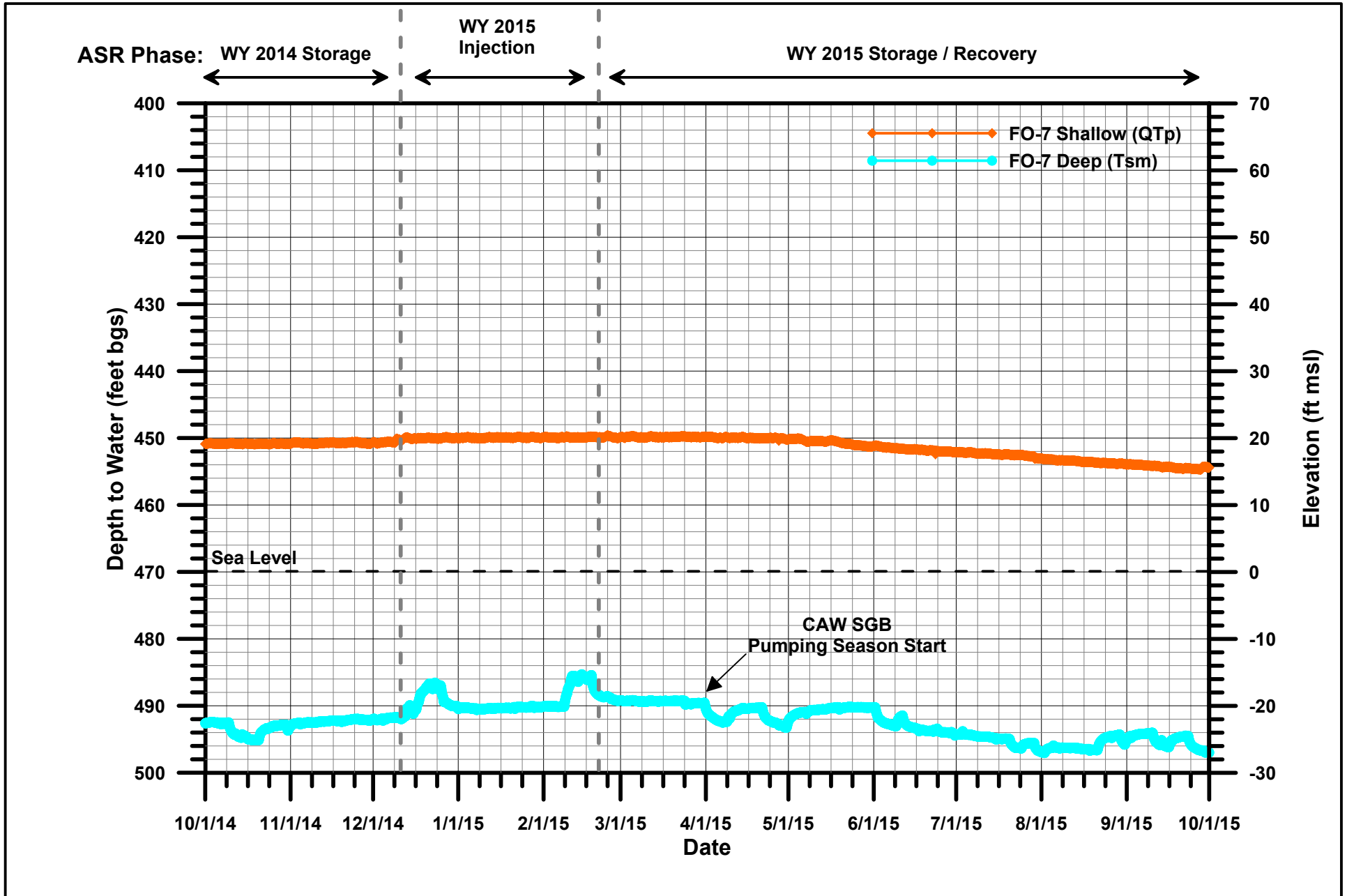


FIGURE 16. FO-7 WATER-LEVEL DATA
WY 2015 ASR Program
Monterey Peninsula Water Management District

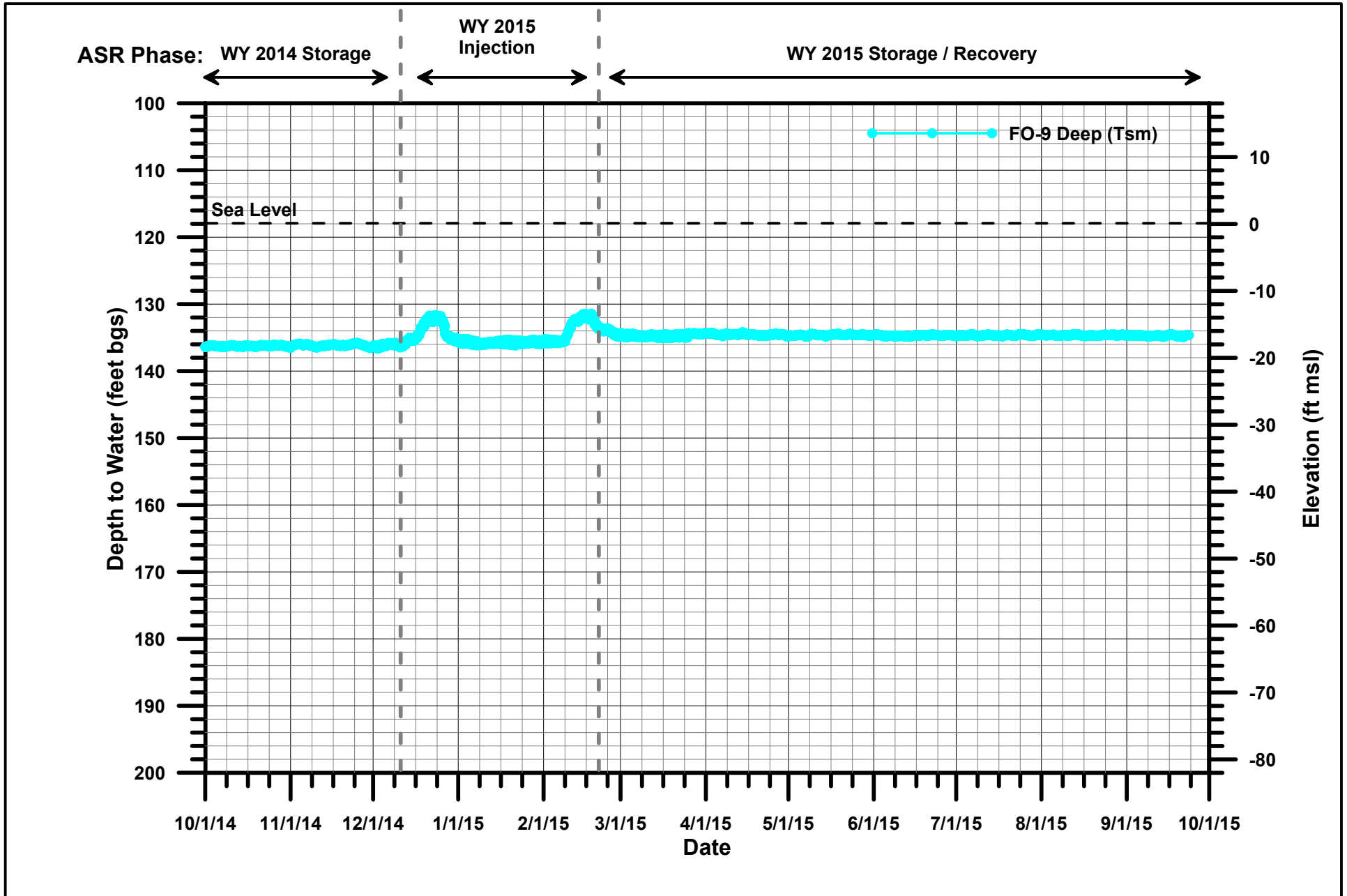


FIGURE 17. FO-9 WATER-LEVEL DATA
WY 2015 ASR Program
Monterey Peninsula Water Management District

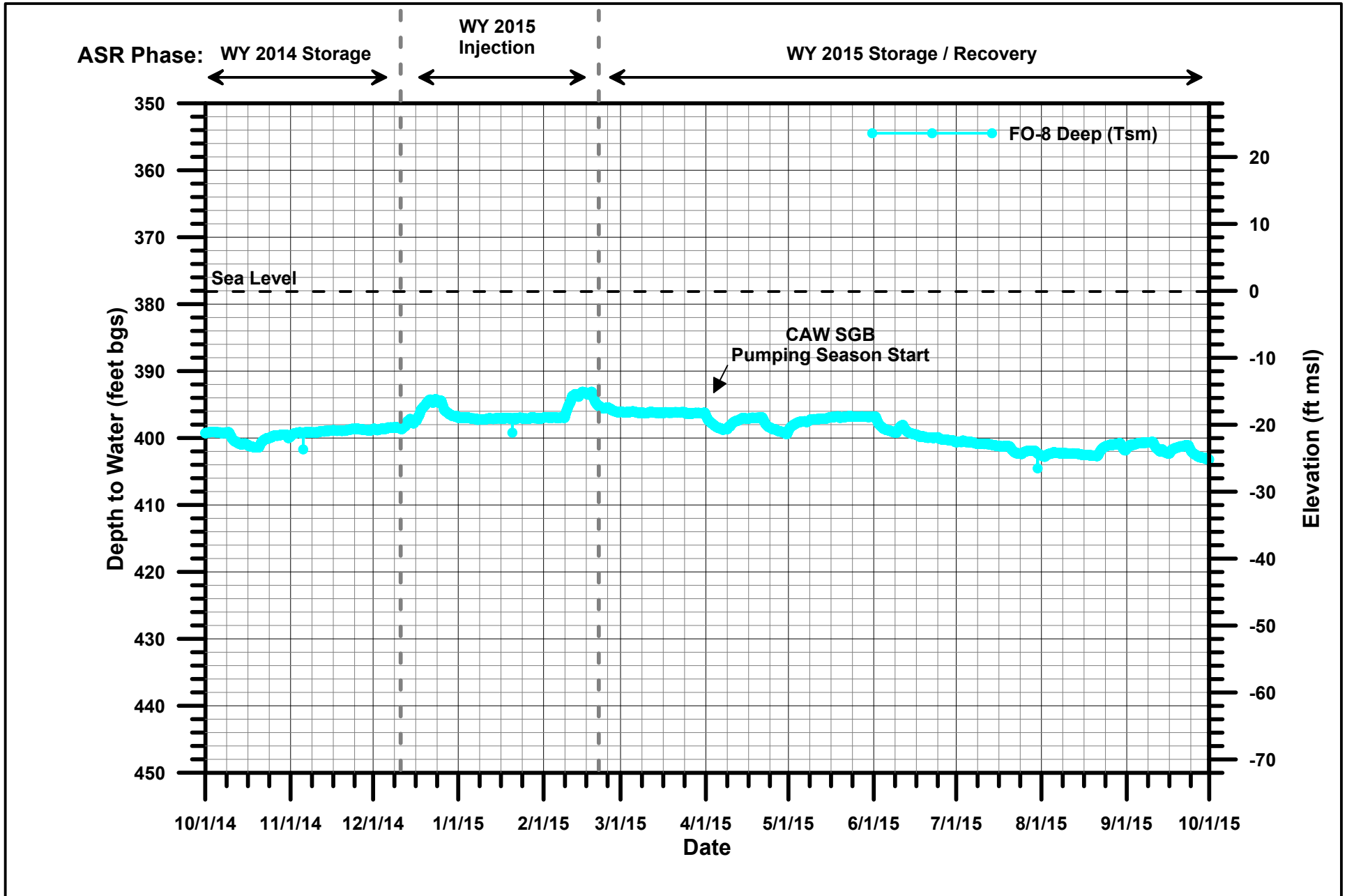


FIGURE 18. FO-8 WATER-LEVEL DATA
WY 2015 ASR Program
Monterey Peninsula Water Management District

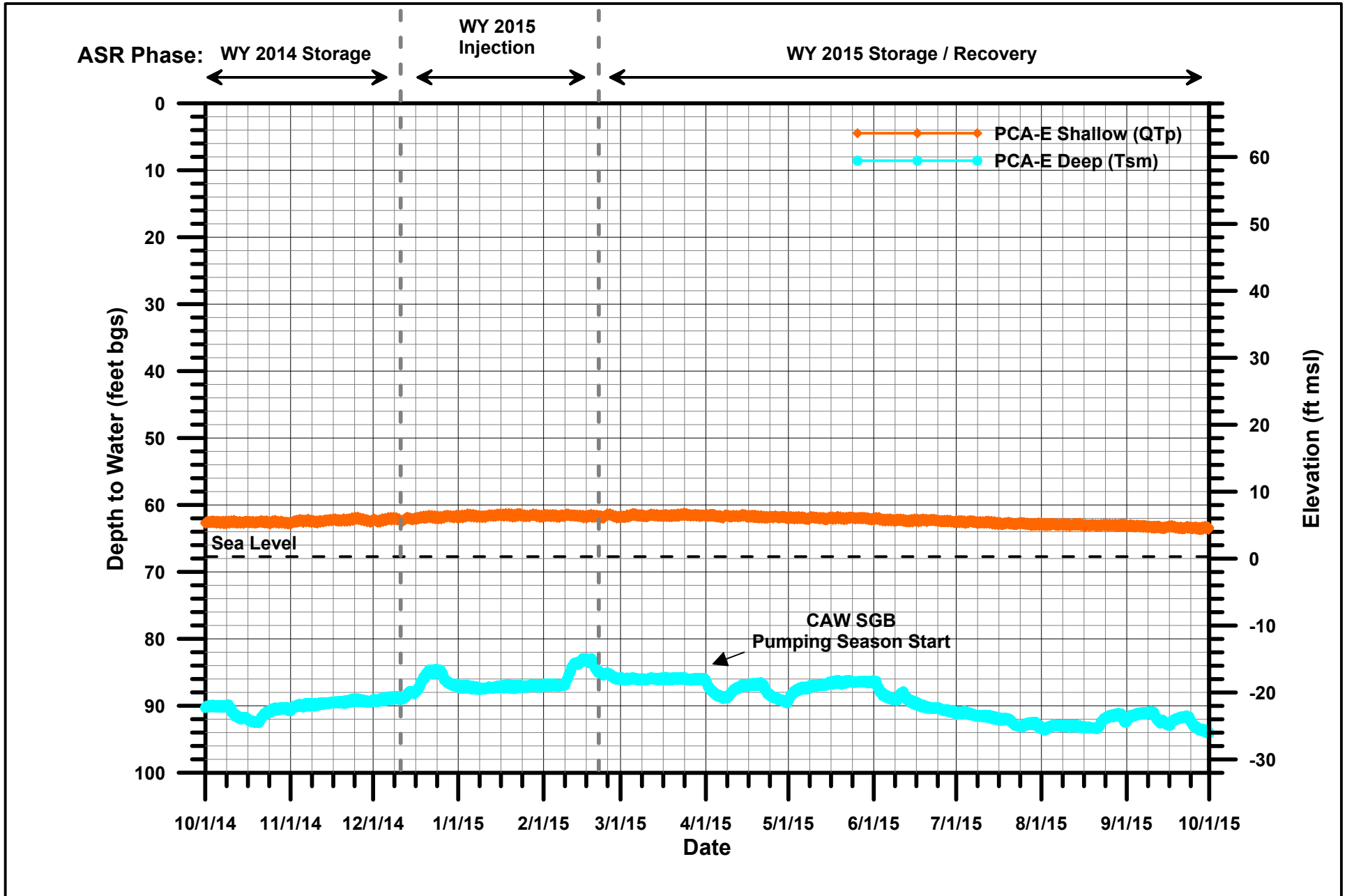


FIGURE 19. PCA-EAST WATER-LEVEL DATA
WY 2015 ASR Program
Monterey Peninsula Water Management District

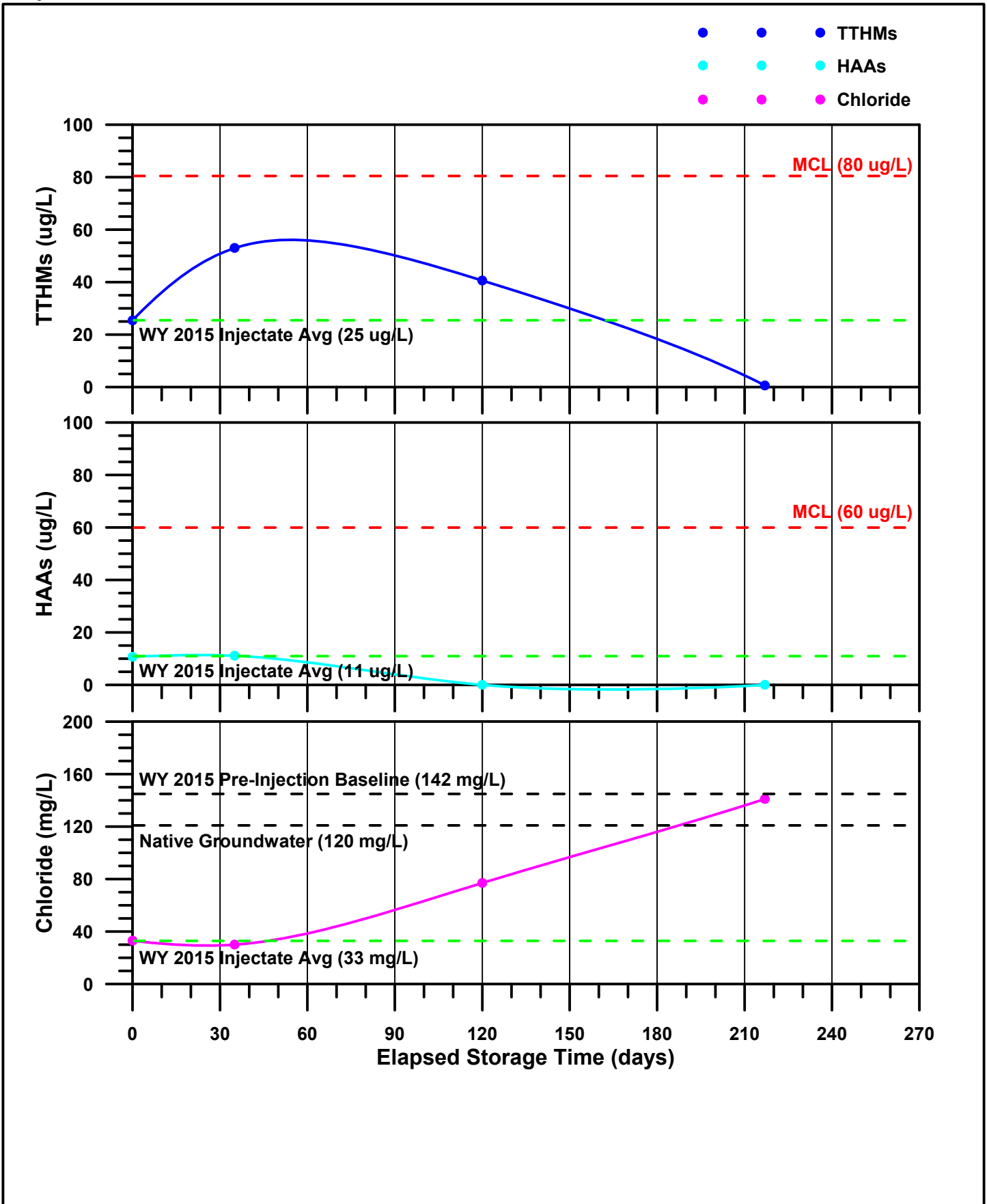


FIGURE 20. ASR-1 DISINFECTION BYPRODUCTS PARAMETERS
 WY 2015 ASR Program
 Monterey Peninsula Water Management District

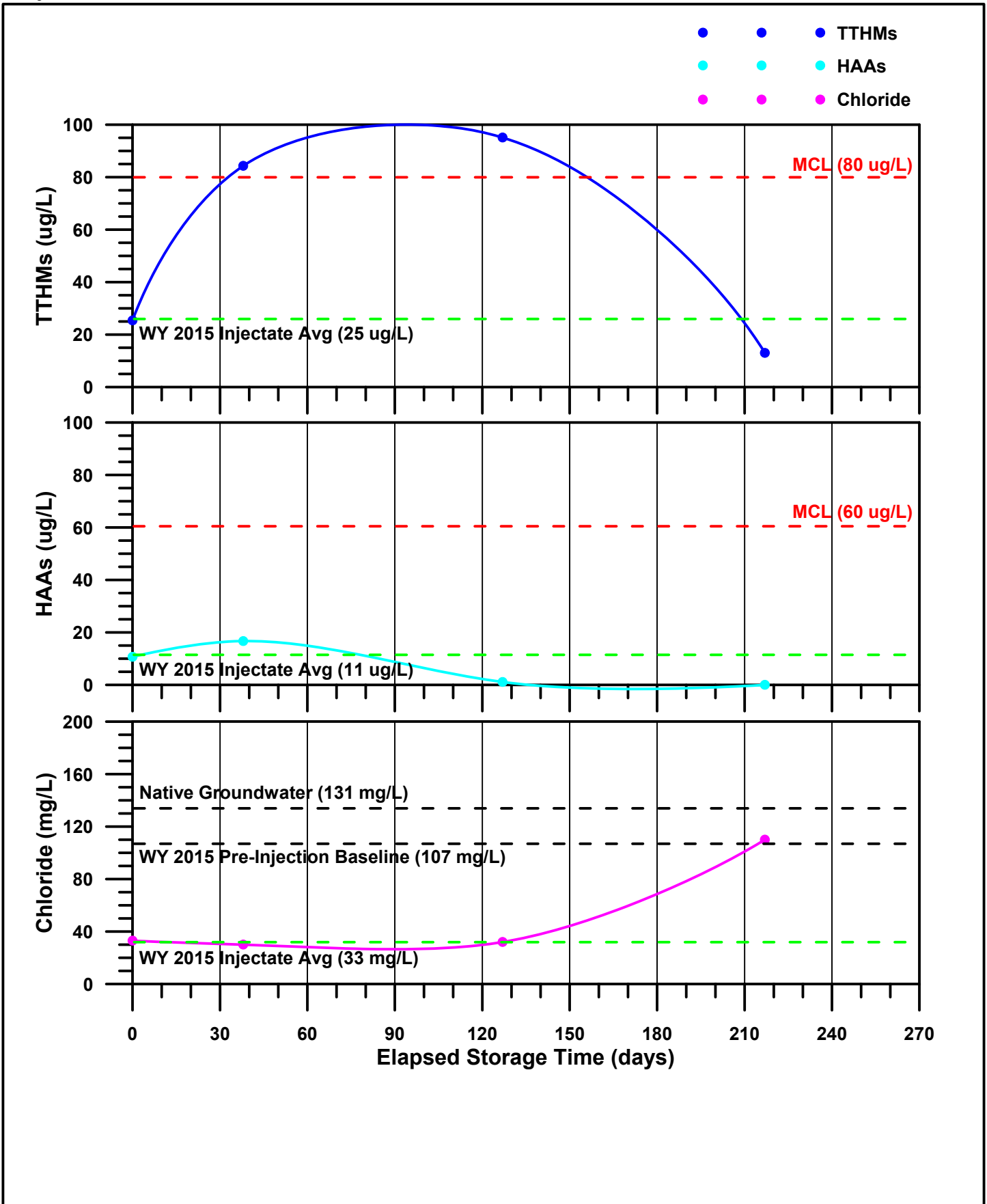


FIGURE 21. ASR-2 DISINFECTION BYPRODUCTS PARAMETERS
 WY 2015 ASR Program
 Monterey Peninsula Water Management District

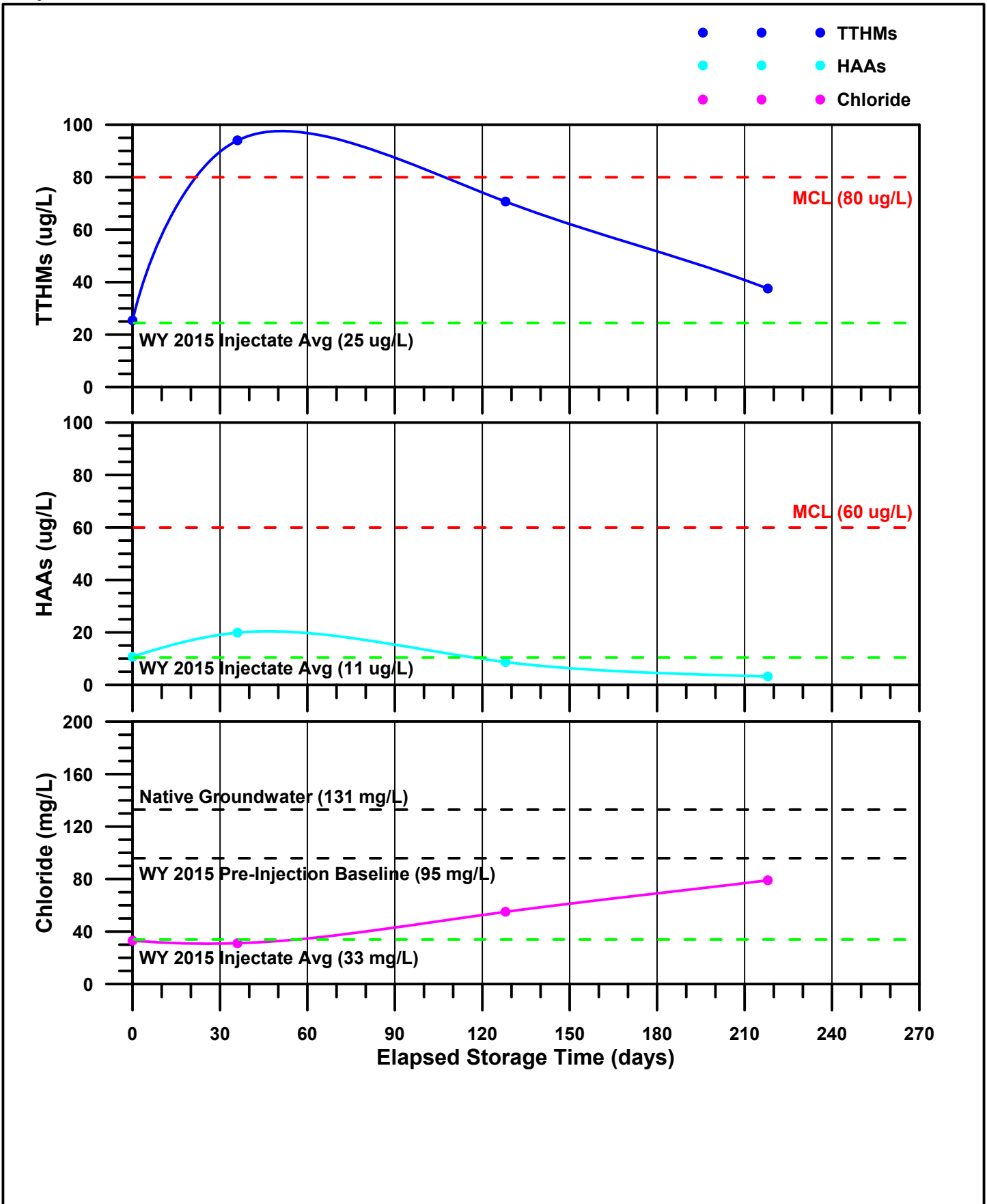


FIGURE 22. ASR-3 DISINFECTION BYPRODUCTS PARAMETERS
 WY 2015 ASR Program
 Monterey Peninsula Water Management District

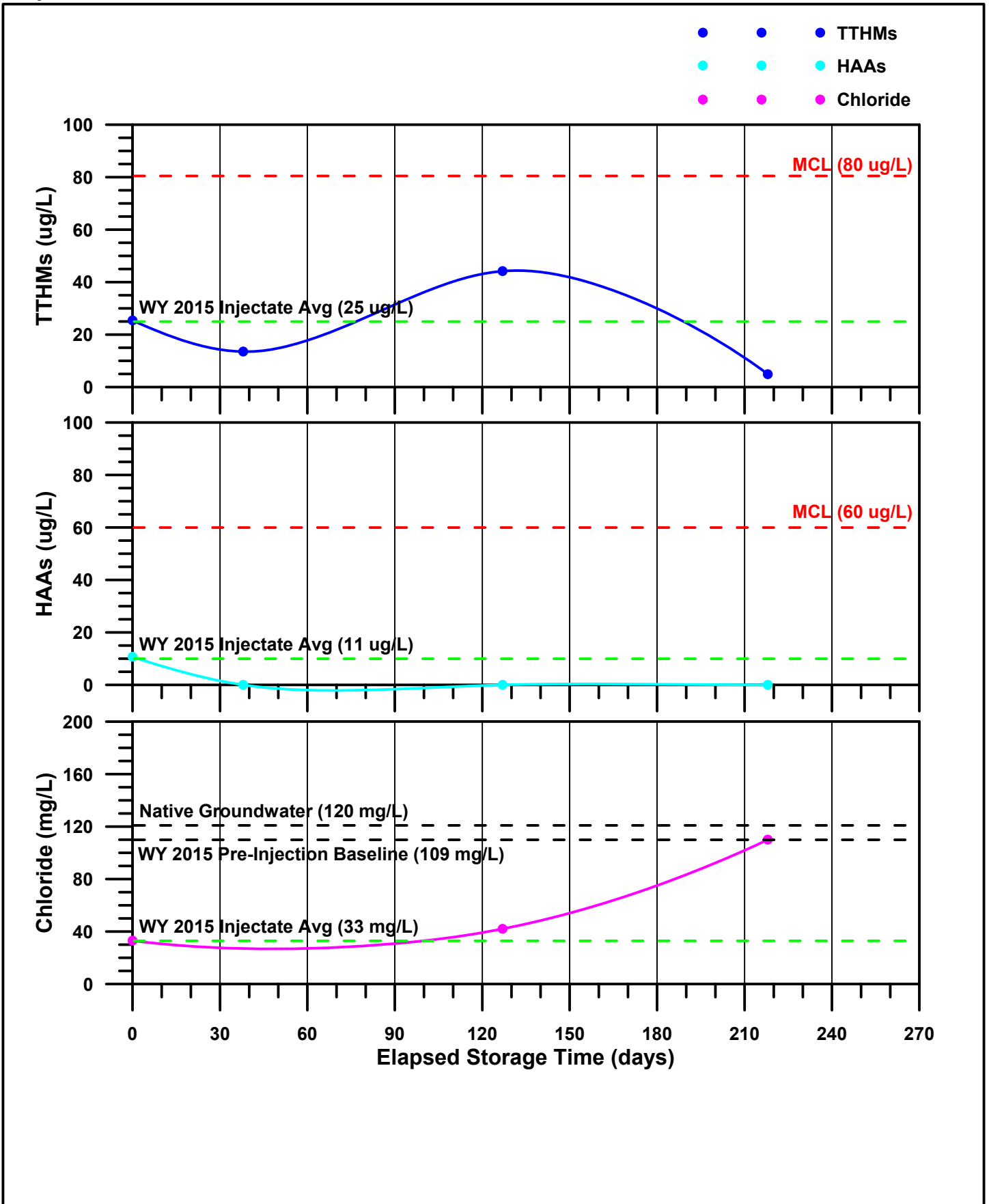


FIGURE 23. SM MW-1 DISINFECTION BYPRODUCTS PARAMETERS
 WY 2015 ASR Program
 Monterey Peninsula Water Management District

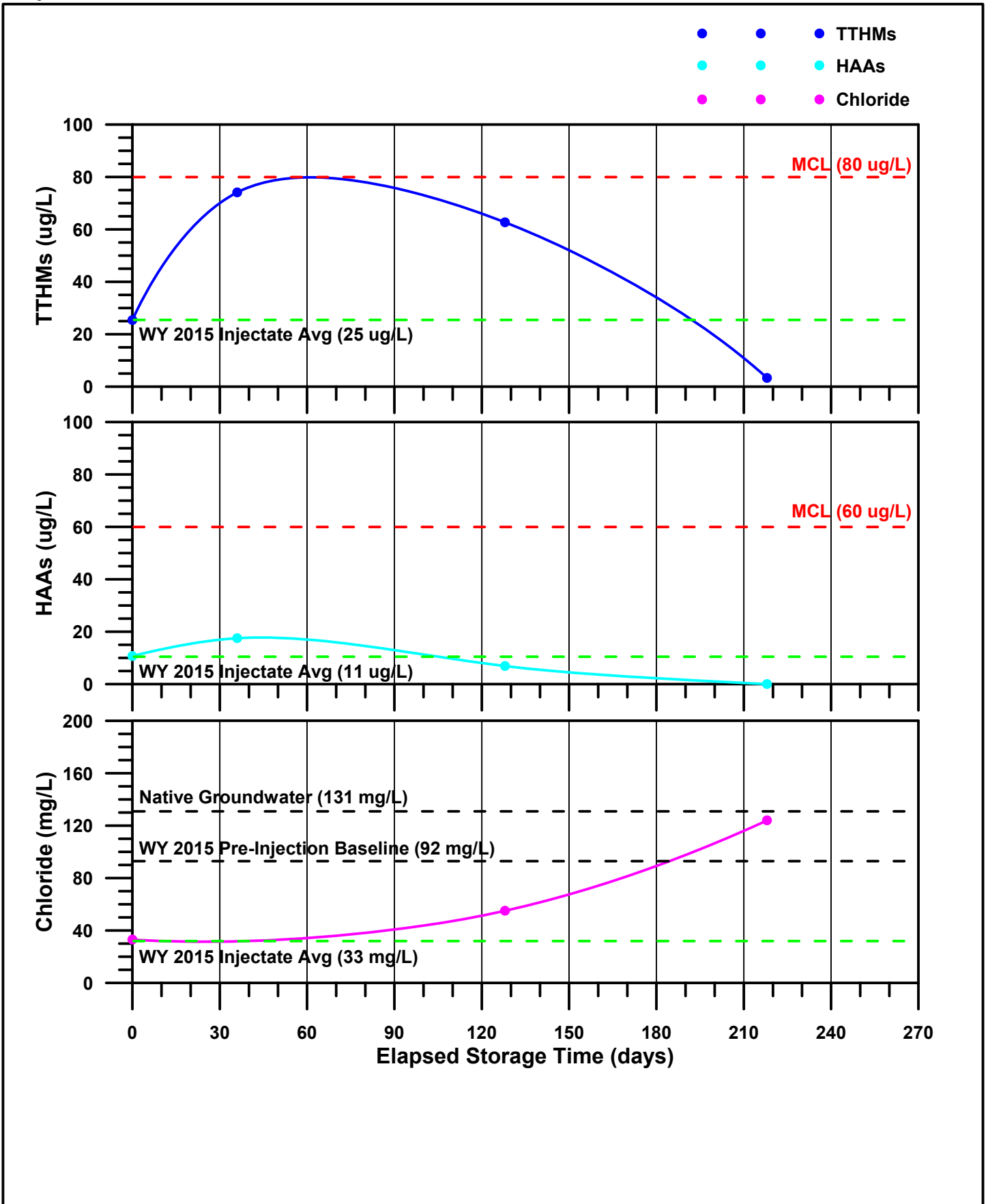


FIGURE 24. SMS DEEP DISINFECTION BYPRODUCTS PARAMETERS
 WY 2015 ASR Program
 Monterey Peninsula Water Management District

APPENDIX A - FIELD DATA

1315
1720
3035

JM
NICHOLS PERSONAL 224-4453

MPWMD ASR DATA SHEET



Well: ASR 1

Sheet 1

Test: 1

of

Date	Time	Tiger [F] (gal) x1000	Tiger [R] (gal) x1000	BF (gal) x1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
12/15/14	1430	263404	1150448	060332	300	102		1500	361.85	0	0	BEGIN LINE FLUSH; LUBE ON
	1500					40					1725	MAX FLUSH SYSTEM OPEN
12/16/14	1730	263404	1150711	060333	174	45	36	1500	333.8		1388	BEGIN INJ
12/16/14	0830	263404	1152146	060533	180	48	34	1550	325.03		1610	LUBE 0262170
	0920	263404	1152230	060533	300	110	—	1550	355.20		0	SHUT DOWN TO BF
				060533	—	—	—		357.27		3500	1 2 5 10 15 20 2.3 3.7 8.5 17 2.4 11.1 1.69 (O ₂) 1.14 mg/L
	10MIN			060569	—	—	—		430.91		3500	
	END FLUSH			060612	—	—	—					
1008			1152230	060612			105					LINE FLUSH TO SEE IF ↑ the Q
1030		263404	1152256	060637								END LF; LUBE OFF 0262600
12/17/14	1024	263404	1152256	60637	300	42	0	1450			0	testing of flow @
	1040	263404	1152259	60640							0	ASR 2 by @ 1670
												JO, TL, JL, DV, ST
12/22/14	1515	263404	1152259	060640	304	87	0	1150	351.40	0	0	shut inj. ~1530, installed
	1600	263404	1152269	060640	190	50	37				1270	transducer
		263404	1153566	060640	202	60	45	1100	352.98		1275	adj. closer to 1200
											1315	> 1.00 ADJ
12/23/14	0830				202							
					?							
12/24/14	0900	263404	1155474	0606160	232	89	79	1100	327.20	24.20	1270	rate dropped to 1230 after adj at ASR 2 - no ADS. here. TL
12/24/14	1445				220	78	67				1230	Made minor ADJ to FCV to lower press and bring rate back up to 1230 gpm after ASR-2 adjustment. JO

TEST Q TO SM SITE

12/15/14	1511	0	5	10	15							
		34	48	53	59	= 2.83	thick brown sludge					
	1600	58	66	69		= 1.07	↓ ↓					
	1615	43	48	49								

MPWMD ASR DATA SHEET

Well: ASR-1
 Test: _____

Sheet 2
 of _____



1450 turn down to
 1060 control = 1700
 SWD to TLL = 1145
 750

Date	Time	Tiger [F] (gal)	Tiger [R] (gal)	BF (gal)	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
12-25-14	0840	263404	1157258	060640	218	77	66	975	320.40	31.00	1305	no adj. to
	1200				212						1340	adj on way out ~ 0930
	1230	263404	1157561	060640	256	69	82!				1450	
12/26/14	0930	263404	1158621	060640	249	91	83!	950	339.01		860	multiple adj to both wells
"	1040	263404	1158656		269	95	93!		351.50		870	
"	1115	263404	1158669	060640	300	102	0				430	Reduce inj rate - CAW prod problem (per ES) JO
	1135	-	-	-							0	All inj off - rattle did not pass (per CH) JO
	1245	J. Nichols stops by site to give update on CAW system. JO										
12/27/14	1000	263404	1158669	60640	300	112	∅	850	351.19		∅	32.1 2 5 10 15 20 [C ₁₂] 0.91
	16 MIN			60672							∅	
	END	263404	1158669	60715							∅	Lube OFF 26760

BF

MPWMD ASR DATA SHEET



Well: ASR-1

Sheet _____

Test: _____

of _____

Date	Time	Tiger [F] (gal)	Tiger [R] (gal)	BF (gal)	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments	
2-8-15	1205h	263409	1159028	060856	332	58	0	1190		NA	0	Lubeline = 0271550g; turn on lube (Jo)	
2-9-15	0840	263409	1159028	060856	332			1150				LUBE LINE => 0275960g	
SAMPLE FOR CALAM													
2-9-15	1050	263409	1159028	060856	332	37	∅	1100	351.97	DP	SC	BACKFLUSH FOR CALAM COMPLIANCE	
2-9-15	1100			060891					416.23	64.26	54.6	(JL, TL, Jo)	
2-9-15	1150	263409	1159028	060988	0	37	∅	Well [PF]; deflate FCV to bend line			Cl ² = 0.07 @ 5miw	J. Nichols collected compliance sample at 1145 hrs	
													H ₂ S < 1mg/L
													DO - ND
													17.2°C
													527 us/cm
												7.70 pH	
												-57.1 mv	

1093 GPM

ADJ TO

~~160~~

920

277

FCV

1554 ASR 3 268.58 DTW

2-11-15

1,451,000 gal 4.45 AF

MPWMD ASR DATA SHEET



Well: ASR 1

Sheet _____

Test: _____

of _____

Date	Time	Tiger [F] (gal) X 1000	Tiger [R] (gal) X 1000	BF (gal) X 1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments											
2-10-15	1215	263409	1159028	060988	300	60	Ø	600	349.58	—	Ø	LUBE 027656 OFF STARTED TEST @ 12											
2-10-15	1300			060989	214	53	42	600			825	OSCILLATING BWN 800-850											
2-11-15	0800	263409	1160479	060989	187	55	50				1550	FCV LOST PRESSURE OVERNIGHT ADJ TO											
											200	HIGHGR FLOW BEGAN TO INCREASE TO 1600 OVERNIGHT, CG CALLED AT 0800 HRS TO INVESTIGATE											
2-11-15	1055				244	82	80	2200			790	SWAPED OUT LOW TANK WILL SEE IF INJ RATE INCREASES WITH NEW TANK PRV NOT WORKING - JL											
<div style="border: 1px dashed black; padding: 5px; width: fit-content; margin: auto;"> <p>TURBIDITY TAKEN FROM CALAM SAMPLE ON 2/9/15</p> <table border="1" style="font-size: small; border-collapse: collapse;"> <tr> <td></td> <td>2</td> <td>5</td> <td>10</td> <td>15</td> <td>20</td> </tr> <tr> <td>18.5</td> <td>4.77</td> <td>4.77</td> <td>1.04</td> <td>1.41</td> <td>1.14</td> </tr> </table> </div>													2	5	10	15	20	18.5	4.77	4.77	1.04	1.41	1.14
	2	5	10	15	20																		
18.5	4.77	4.77	1.04	1.41	1.14																		
2-11-15	1525	263409	1160832		211	72	40	2400			596	Adj PCV to reduce inj from 1000 gpm											
2-12-15	0814	263409	1161779		209	71	40	2200	332.98		800	Well cupt up to 1600 last night was adj by JN last night @ 0800											

MPWMD ASR DATA SHEET

Well: ASR1

NOTE: Regulator is set at 216 psi!
 When close & reopen, FCV pressure slowly rises from 202 to 207 psi.

Sheet _____ of _____

Test: _____

Date	Time	Tiger [F] (gal)	Tiger [R] (gal)	BF (gal)	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments	
2-12-15	1145	263409	1161957	060989	202	65	38	2390			865	ASR2 ON @ 1060 ASR3 ON @ 1060 ASR4 ON @ 500	
2-12-15	1200				210	67	38				740		
2-12-15	1630				fluttering → 211	68	39	2400			640		
2-12-15	1635	263409	1162147		330	81	44				0	Shut off inj for tonight - let system recover	
2-13-15	0830	263409	1162147	060989	330	73	43	2150			0		
2-13-15	1340	263409	1162147	060989	204	68	38	2400			703	inj for day	
2-13-15	1700	263409			200	68	37	2400			918	TURNED OFF FOR OVERNIGHT	
2-14-15	0954	263409	1162318	060989	300	95	46	1900	351.79		0	OFF	
2-15-15		263409	1162318	060989	306	95	↓	1900	432.24	80.49	3000 GPM	WBE 0279970 BERATE 3500 / 80.49 = 43.5	
				061024	306	95	↓	1900					
				061063	306	95	↓	1900					
1 2 5 10 15 20 3.18 5.19 5.2 2.85 2.12 1.80 FLARE @ WELLHEAD IS LEAKING													
[Cl ₂] = 0.09 mg/L AFTER SMELING CL 0.22 mg/L WBE end 0280060													

10

MPWMD ASR DATA SHEET



Well: ASR 1

Sheet 1

Test: MERCURY SAMPLING

of _____

Date	Time	Tiger [F] (gal) <small>x1000</small>	Tiger [R] (gal) <small>x1000</small>	BF (gal) <small>x1000</small>	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
												STARTED LUBE @ 1730 4/7/15-JL
4.8.15	0800	1163392	263409	061367	310	102	330	900	369.97	---	10	LUBE 0296210 GAL -JL
4.8.15	1100	↓	↓	061380	310	102			392.36		1200 FEET	SAMPLING ASR 1
												1300 / 22.39 = 58.1
4.8.15	1716	1163392	263409	<u>061855</u>	310	102						
				475000								Sampled @ 6min 13 BOTTLES
				- 240000								Sampled @ 30min 13 BOTTLES
				<u>205000</u>								Sampled @ 60min 13 BOTTLES
												Sampled @ 6hrs 13 BOTTLES
												0297970 GAL FINAL LUBE
												turned off well when pond reached lower pipe outlet
												* get STAFF PLATE FOR POND

MPWMD ASR DATA SHEET

Well: ASR1

Sheet 1

Test: CALAM DBP Bi WEEKLY SAMPLE

of 1

Date	Time	Tiger [F] (gal)	Tiger [R] (gal)	BF (gal) <small>x1000</small>	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
4-21-15	0800	1163430	263409	61855	310	102	Ø	800	344.15	Ø	Ø	LUBE 0301210
		↓	↓	61890	310	102	10	800	442.63	150	3400	71.1 25.8 5 10 15 20 2.56 11.2 4.51
	1100			62027	310	102	Ø	800				
												Cl ₂ => ND
												Cl ⁻ => 167 mg/L
												PH => 7.13
												ORP => -66.8mV
												COND => 568 µs/cm
												DO => 0.12 mg/L
												H ₂ S => 0.11 mg/L
												TEMP => 16.1°C
												CALAM SAMPLED ORP @ 1009
												LUBE 0301550

* CHARGE Cl₂ METER

MPWMD ASR DATA SHEET



Well: ASR 1

Sheet 1

Test: CALAM B1 - WEEKLY STORAGE SAMPLE

of 1

0 min

Date	Time	Tiger [F] (gal)	Tiger [R] (gal)	BF (gal)	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments												
5-7-15	0830	X1000 263409	X1000 1163430	X1000 062027	310	92	Ø	750	364.7			LUBE 0304930												
		↓	↓	062058	↓				422.7		3000 ^{BF}													
		NC ↓	NC ↓	062254	↓																			
												N ₂ TANK OFF - JL												
												<table border="1" style="font-size: small;"> <tr> <td>1</td><td>2</td><td>5</td><td>10</td><td>15</td><td>20</td> </tr> <tr> <td>624</td><td>197</td><td>101</td><td>347</td><td>19.8</td><td>3.24</td> </tr> </table>	1	2	5	10	15	20	624	197	101	347	19.8	3.24
1	2	5	10	15	20																			
624	197	101	347	19.8	3.24																			
												TEMP => 16.5 °C												
												PH => 7.31												
												COND => 557 us/cm												
												[Cl ₂] => ND												
												[H ₂ S] => 0.03 mg/L												
												ORP => -69.6 mV												
												[Cl ⁻] => 125 mg/L												
												DO => 0.19 mg/L												
												LURE OFF 3052710												
												CALAM SAMPLED ASR1 @												

837

MPWMD ASR DATA SHEET



Well: ASR 1

Sheet 1
of 1

Test: Bi WEEKLY CAL-AM STORAGE SAMPLE

Date	Time	Tiger [F] (gal) <small>X1000</small>	Tiger [R] (gal) <small>X1000</small>	BF (gal) <small>X1000</small>	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM) <small>BF</small>	Comments												
6/2/15		263409	1163430	62519	320	105	8	600	367.74		2800 GPM	LUBE 312810												
6/2/15	0900	↓	↓	62532					395.23															
				626199	8	100	8	600				<table border="1"> <tr> <td>1</td> <td>2</td> <td>5</td> <td>10</td> <td>15</td> <td>20</td> </tr> <tr> <td>5.8</td> <td>16.8</td> <td>11.5</td> <td>7.9</td> <td>4.2</td> <td>5.9</td> </tr> </table>	1	2	5	10	15	20	5.8	16.8	11.5	7.9	4.2	5.9
1	2	5	10	15	20																			
5.8	16.8	11.5	7.9	4.2	5.9																			
												PH 16.7°C TEMP 7.26 COND 552 us/cm ORP -63.4 mV [O ₂] 0.08 mg/L [Cl ₂] ND ND [Cl ⁻] 146 [H ₂ S] ND												
												LUBE OFF 313040												
												IN collected sample @ 1030												

MPWMD ASR DATA SHEET

Well: ASR 1

Test: 6.17.15 QUARTERLY SAMPLE + CALAM Bi WEEKLY SAMPLE

Sheet 1
of 1



Date	Time	Tiger [F] (gal) X1000	Tiger [R] (gal) X1000	BF (gal) X1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments												
6.17.15	900	263409	1163430	62699	320	97	∅	550	365.55		∅	LUBE 0316610 48psi = 49psi												
	1015	↓	↓	62731		97	20		440.98		3150													
				62948	OFF	97		550				<table border="1" style="font-size: small; margin-left: auto; margin-right: auto;"> <tr> <td>1</td><td>2</td><td>5</td><td>10</td><td>15</td><td>20</td> </tr> <tr> <td>37</td><td>73</td><td>24</td><td>17</td><td>8</td><td>12</td> </tr> </table>	1	2	5	10	15	20	37	73	24	17	8	12
1	2	5	10	15	20																			
37	73	24	17	8	12																			
												pH = 7.18 COND = 789 us/cm TEMP = 16.8°C ORP = -72 mV [O ₂] = 0.09 mg/L [Cl ₂] = 0.11 mg/L [Cl ⁻] = 778 mg/L [H ₂ S] = 0.04 mg/L												
												Sampled SI, GI, DBP - JL ARZELL SAMPLED DBP @ 1000												
												MARINA COAST [Cl ₂] = 0.69 mg/L												
												LUBE 0316930 gal												

MPWMD ASR DATA SHEET

Well: ASR 1

Sheet 1

Test: Recovery & Hg Sampling.

of _____

Date	Time	Tiger [F] (gal)	Tiger [R] (gal)	BF (gal)	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
05 7-15-15	830	X1000 263409	X1000 1163430	X1000 63161	320	89	∅	500	376.02	∅	∅	
7/17	1245	263409	1163439	063353	310	82	∅	2500	376.30	∅	∅	Swapped N ₂ tank 1500 ~ Aborted start up ~29gpm lube - 033306 []
												Lube on 7/19/15 @ 1620 033306 []
7/20/15	1000				310			2250				Terry L. testing controls 0.1 0.5 1.0 hr & 4'5" 4'45" 12'50" 5'30" 0.45µm 10'10" 0.3µm
7-21-15	0830	264681	1163446	63365	310	29	29	2075				Recovery 1018 340910 GAL LUBE 46 Hz 24 hr 24 hr
7-23-15	1030	267355	1163446	63390	315	35	35	1875				875 3'15" - 0.45µm 9'0" - 0.3µm LUBE 348530
22 7-23-15	0830	266001	1163446	63382				1950				7-21-15 FIELD SAMPLE 20.4°C (-133.2mV) 822 us/cm 7.14 0.23 mg/L DO H ₂ S ND Cl ⁻ ND NO ₂ ND 4'30" 4'20" LUBE 345060
7-24-15	0830	268412	1163446	63390	310	37	37	1750				873 5'34" - 0.3µm 8'10" - 45µm
7-27-15	0930	268856	1163446 1163457	63392	OFF	97	∅					∅ 352620 LUBE OFF - JUN ON FRI PM

1425
↑
OFF - JL
-122 mV

PCA EAST DEEP FIELD PARAM
 7-23-15 Do H₂S
 23.9°C 0.02 mg/L 552 us/cm 0.06 mg/L

MPWMD ASR DATA SHEET



Well: ASR-1

Sheet 1

Test: Hg cycle test, then pump to system

xD

of 1

Date	Time	Tiger [F] (gal)	Tiger [R] (gal)	BF (gal)	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
7-29-15	0900	268856	1163457	063392	329	99	0	1400	377.55	--	--	lube meter (20N) = 035624 ³⁵²⁶⁴⁰ up = 56 psi down = 57 psi (Jo)
7-29-15	1224			63497	329	99	∅	1400				ARREL COLLECTED Hg STEP SAMPLING & DBP (JL)
7-29-15		268856	1163457	63497	329	99	∅	1400				<u>START TO THE SYSTEM @ 1330</u> (JL)
7-29-15	1330			63520		10	10	1400			1250	flow to system CE changing volume in system. @ Hg 218 (JL)
7-30-15		269854	1163457	63520	326	40	40	1300			780 690 ^{20L}	361410 LUBE (JL)
7-31-15	1400	271073	1163457	63520	326	45	45	1250			745	36700 [lube @ 1545]; TL/JO install sound blankets (Jo)
8-1-15	1600							1150			749	Weld ON; blankets OK (TL)
8-2-15	0855	272732	1163457								0	Well OFF; note water nr [CL] station (Jo)
8-3-15	0930	272732	1163457	63522	323	92		975			0	Well OFF; talked w/ R. Hulbert - well went off due to system high press yesterday morning; no plan to immed restart. (Jo)
												38059 [lube OFF @ 1000]

9795

MPWMD ASR DATA SHEET

Well: ASR 1

Test: CALAM Hg STEPTEST

Sheet 1
of 1



THIS WAS LEFT OPEN ON ACCIDENT, CALCULATE THE LEAK RATE OF THE PRESSURE SYSTEM, COMPRESSOR?

Date	Time	Tiger [F] (gal) <small>x1000</small>	Tiger [R] (gal) <small>x1000</small>	BF (gal) <small>x1000</small>	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
8-7-15	1000	272732	1163457	63522	320	98	∅	600			∅	384340 LUBE 50-55 psi
8-7-15	1000	272732	1163457	63631	320	98		600			∅	384540 LUBE OFF
												ARZEL COLLECTED
												STEP Hg TEST REQUIRED By DDW
												TURNED OFF N ₂ , will need new tank if Calam mounts to use as source to system.

MPWMD ASR DATA SHEET



Well: ASR1

Sheet 1

Test: CALAM Bi WEEKLY DBP

of 1

Date	Time	Tiger [F] (gal) X1000	Tiger [R] (gal) X1000	BF (gal)	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments																																																																																																																														
8-18-15	0930	272732	1163457	063631	320	103	∅	500	376.55		∅	387600 LUBE																																																																																																																														
				063661					445.21			47-45 PSI																																																																																																																														
	1040	272732	1163457	063817	320	103	∅	500 ^{OFF-JL}																																																																																																																																		
												<table border="1" style="font-size: small; border-collapse: collapse; width: 100%;"> <tr><td>∅</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr> <tr><td>6.31</td><td>22.8</td><td>20.9</td><td>8.06</td><td>11.0</td><td>7.47</td><td>8.32</td><td>7.99</td><td>8.19</td></tr> <tr><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td></tr> <tr><td>8.68</td><td>7.89</td><td>6.03</td><td>2.7</td><td>10.8</td><td>8.10</td><td>2.86</td><td>6.7</td><td>11.1</td></tr> <tr><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td></tr> <tr><td>5.09</td><td>9.73</td><td>10.1</td><td>7.59</td><td>1.67</td><td>3.54</td><td>3.82</td><td>11.7</td><td>5.96</td></tr> <tr><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td></tr> <tr><td>11.7</td><td>2.2</td><td>16.6</td><td>11.8</td><td>8.62</td><td>10.4</td><td>15.6</td><td>8.74</td><td>11.1</td></tr> <tr><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td><td>41</td><td>42</td><td>43</td><td>44</td></tr> <tr><td>12.5</td><td>7.0</td><td>13.5</td><td>8.07</td><td>7.04</td><td>11.0</td><td>13.2</td><td>5.06</td><td>4.72</td></tr> <tr><td>45</td><td>47</td><td>48</td><td>49</td><td>50</td><td>51</td><td>52</td><td>53</td><td>54</td></tr> <tr><td>13.7</td><td>10.4</td><td>13.8</td><td>12.3</td><td>11.5</td><td>8.88</td><td>2.4</td><td>3.63</td><td>4.50</td></tr> <tr><td>55</td><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td><td></td><td></td><td></td></tr> <tr><td>7.0</td><td>8.40</td><td>7.03</td><td>5.82</td><td>7.52</td><td>11.5</td><td></td><td></td><td></td></tr> </table>	∅	1	2	3	4	5	6	7	8	6.31	22.8	20.9	8.06	11.0	7.47	8.32	7.99	8.19	9	10	11	12	13	14	15	16	17	8.68	7.89	6.03	2.7	10.8	8.10	2.86	6.7	11.1	18	19	20	21	22	23	24	25	26	5.09	9.73	10.1	7.59	1.67	3.54	3.82	11.7	5.96	27	28	29	30	31	32	33	34	35	11.7	2.2	16.6	11.8	8.62	10.4	15.6	8.74	11.1	36	37	38	39	40	41	42	43	44	12.5	7.0	13.5	8.07	7.04	11.0	13.2	5.06	4.72	45	47	48	49	50	51	52	53	54	13.7	10.4	13.8	12.3	11.5	8.88	2.4	3.63	4.50	55	56	57	58	59	60				7.0	8.40	7.03	5.82	7.52	11.5			
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13.7	10.4	13.8	12.3	11.5	8.88	2.4	3.63	4.50																																																																																																																																		
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7.0	8.40	7.03	5.82	7.52	11.5																																																																																																																																					
												* USED 20 MIN LABELED SAMPLE BOTTLE FOR THIS ANALYSIS - JL																																																																																																																														
												ARZEL COLLECTED DBP @ 25 MIN RUN TIME																																																																																																																														
												LUBE OFF @ 1100 387910 GAL																																																																																																																														

* NO FIELD PARAM TAKEN, 1 MIN TURBIDITY SAMPLING - JL

MPWMD ASR DATA SHEET



Well: 1

Sheet 1

Test: Bi-weekly DSP DDW SAMPLE

of 1

Date	Time	Tiger [F] (gal) <small>X1000</small>	Tiger [R] (gal) <small>X1000</small>	BF (gal) <small>X1000</small>	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments														
9.2.15																										
9.2.15	0900	272732	1163457	63817	320	80	✓	400	372.71	—	✓	U D LUSE 391210 44/46 Psi														
		272732		63842					429.44			391670														
			1163457	64101																						
												<table border="1" style="font-size: small; margin-left: auto; margin-right: auto;"> <tr> <td>0</td><td>1</td><td>2</td><td>5</td><td>10</td><td>15</td><td>20</td> </tr> <tr> <td>301</td><td>427</td><td>6.3</td><td>2.7</td><td>1.3</td><td>0.88</td><td>0.92</td> </tr> </table>	0	1	2	5	10	15	20	301	427	6.3	2.7	1.3	0.88	0.92
0	1	2	5	10	15	20																				
301	427	6.3	2.7	1.3	0.88	0.92																				
												PH 7.17 COND 557 TEMP 20.7 H ₂ S 0.07 mg/L DO = 0.55 mg/L Cl ₂ = ND CF => 124 mg/L ORP => -174														

MPWMD ASR DATA SHEET



Well: ASR 1

ASR Period: STORAGE

Sheet 1

Test: Bi-weekly DBP DDW

Weather: SUNNY

of 1

Date	Time	Tiger [F] (gal) x1000	Tiger [R] (gal) x1000	BF (gal) x1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
9.17.15	915	272732	1163457	64101	319	88	∅	400	373.96			394680 ∅	# JN-DBP
				64130			15		431.68	57.72	3100		
9.17.15		272732	1163457	64286	319	88	∅	400				394940 ∅	N ₂ TANK OFF LUBE OFF -JL
													Sampled after 1hr

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 ₂ S (mg/L)	Sampler / Laboratory	Turbidity (NTU)						min after start	
													0	1	2	5	10	15	20	
9.17.15	0915	64101	64286	185,000	20.4	582	7.44	-230 +237	ND	0.54	0.08	JL CALAM DBP	60.7	6.12	16.9	9.78	2.61	9.73	2.38	

ASR 3 6772 AFTER FLUSH
4110 BF ASR3

MPWMD ASR DATA SHEET



Well: ASR 2
Test: 1

Sheet 1
of 1

Date	Time	Tiger [F] (gal) X1000	Tiger [R] (gal) X1000	BF (gal) X1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
12-12-14	1344	18479	95766	279807	330	92	NA	2150	340.21	NA	NA	LINE FLUSHING SDI 1357
	1350											BEGAN FLUSHING 1500 GPM
	1450			LINE FLUSH								W- LUBE ON 11624 cf
												* NEED TO REPLACE LUBE FILTER
	1645	18496	95768	280048	330	92	28	2150	340.21	—	0	BEG INJECTION (NEW TEST)
					208		28				566	
					201	54	24		363.2		1250	
12-12-14	1700				198	39	22	2150	355.78		1503	left settings
	1715				197	39	23	2150	353.48		1520	after equalized to FCV
12-13-14	0830	18496	97151	280048	199		23	2100	341.48	40.4	1472	11877 LUBE
12-13-14	1015	18496	97289	280048	320	76	29	2120	379.14		0	Inj off; prepare for BF (swa)
	10MIN SC	—	97289	280080				[10-min Sp C=38.9]	461.39			res
	END BF 110	18560	97289	280113								1050 1-35
	LINE FLUSH	18560	97289	280113	320	90	0					LUBE OFF @ 1100 11914 ft ³
	1125					9	0					SAMPLED INJECTATE 51.62, DBP
												FLUSH 1900
												At moment, cannot increase > 1900 GPM
												0 5 10 15 @ 107psi
	1305	18560	97289	280304	320	92					0	Can't get PSV to shut; try opening FCV
	1345			280304	210	76					560	Finally able to shut PSV
	1430				194	25	14.5				1735	Can't sustain this due to low line psi
	1435				198	30	20				1670	This rate is borderline to sustain
	1440				199	32	23	2200	345.93		1650	Lower to this rate for safety. swa
	1510			280304							0	Restart after J. Nichols re-sets PRO valve
	1609			280304	197	30	21	1900	—		1700	JN - TURNED VALVE @ 0.06 GPM

1400	SDI	T ₀ 30	T ₅ 95	T ₁₀ 135	T ₁₅ 165	@ 28psi
1426		31	--	118	152	@ 29psi
1501		38	74	103	189	
1532		35	59	85	108	
1602		32	58	76	92	

$$[(1 - T_0/T_15) \times 100] : t = 5.45 \quad \text{2 Hours FLUSH}$$

$$= 5.33$$

$$= 5.33$$

$$= 4.63$$

$$= 4.35$$

17 TO SM
26 TO ASR3

ASR3

Done ✓ → need 1/4" corp stop for up press. line

MPWMD ASR DATA SHEET

Well: ASR-2 WY 2015

Sheet 2
of _____



Test: _____

Date	Time	Tiger [F] (gal)	Tiger [R] (gal)	BF (gal)	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
12-14-14	0820	18560	99064	280304	200	32	24	1850	331.50	50.7	1660	Adj FCV to 210, ACT CIRCUIT - automatically began going more to BF than well, ADJ FCV again to 250, 330 1750 gpm to pit, 0 to well.
	0825											
	0830	18560	99077	280315	332	88	∅	1800	376.4		∅	All shut in, minor leak at psi gga
12-16-14	1050	18560	99077	280315	332	74	∅	1850	381.42	NA	∅	Preparing to BF lube ON 1216Z of
	1108	start BF	99077	280345					461.52		3000	1 2 5 10 15 20 [CL ₂] 0.28
	10min								[10-min SpC = 37.4]			25.7 27.8 12.9 4.26 2.94 4.95
	OFF	18621	99077	280377								LUBE OFF @ 1133 12168
12/16/14	1400	18621	99077	280377		90						
	1413					14						
	1414											OPENING BARKI
	1700											
12/16/14	1700				199	29	22		381.52		-1672	TURNEO ON ASR 2
12/17/14	0811	18621	100852	280403	199	31	22	1800	330.03		-1670	
	1300				203	31	24	1800			-1485	ADJUSTED AFTER STARTING ASR3
12/18/14	0830	18621	103239	280403	204	31	31	1800	317.22		-1675	SLOW WENT DOWN, FCV UP

12/16/14
ASR3 74 Psi ↑
25Psi ↓ 157 GPM

1670-1640

381.42? STATE

MPWMD ASR DATA SHEET



Well: ASR-2

Sheet _____

Test: _____

of _____

Date	Time	Tiger [F] (gal) X1000	Tiger [R] (gal) X1000	BF (gal) X1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
12-19-14	0837	18621	105761	280400	206	62	32	1800	311.45		1710	
12-20-14	0930	18621	108363	280400	208	56	34	1800	305.88	76.14	1750	Lube = 12168
12-21-14	0930	18621	110882	280400	208	54	36	1850	300.55	80-87	1775	BF directly below 280399 Lube = 12168
12/21/14	1630	18621	111646	280400	205	73	30	1830			1740	No adj (note PRV is noisy) Jo
12/22/14	0900	18621	113360	280397	203	73	29	1800	302.38		1720	NO ADJ - JL
12/23/14	1000	18621	115967	280396	205	44	36	1800	289.92		1755	ON ADJ - JL
12/24	0900	18621	116817	280396	232	77	32	1800	358.80	22.62	340	
12-24	1000				221	75	32				500	ADJ, rate to
12/24/14	1440				217	64	31				1030	Increase rate per OK from E. Sabolsice via phone to Jo @ 1400 hr
12/25/14	0855	18621	118122	280396	218	64	32	1800	321.50	59.92	1055	Combust rate = 2360 - no adj. shell broken collapsed
"	1200	18621	118318								1060	
"	1230	18621	118344	280346	222	77	34	1850			705	Adj to comb. total 1565 gpm
12/26/14	0930	18621	119196	280396	224	77	31	1860	350.39		640	
"	1030	18621	119214	280396	300	87	0		378.34		0	Well inj off - LAW prod issue (per ES request) Jo
	1031	18621	119214	280396	530	85	∅	1900	377.85			JL - BACKFLUSH [Cl ₂] 1.1
	10MIN											DIRTY WATER 5MIN
	END	18664	119214	280441	330	85	∅	1900				1 2 5 10 15 20 38.8 23 15.5 9.4 5.5 4.3 Lube 12437

MPWMD ASR DATA SHEET



Well: ASR # 2

Sheet _____

Test: _____

of _____

Date	Time	Tiger [F] (gal)	Tiger [R] (gal)	BF (gal)	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
2-8-15	1015	18745	119214	280440	294	78	∅	2200	381.11	∅	∅	Prior to INS,
	1110	18750	119220	280525	193	46	16	2200	343.88	46	1650	Restart Test 1109
	1125	18750	119243	280525	183		8	2200	332.23	48.88	1760	
2-9-15	0830	18750	121509	280521	182	46	6	2190	309.22	71.89	1775	Read lube meter 12437 Pt ³ OFF
	1030	18750	121714	280521	190	25	13	2200			1755	Adj FCV and up hand valve after ASR3 start up
	↓											
	1600				207	33		2150			1917	ADJ TO 1850
2-10-15	0810	18750	123751	280521	205	61	29	2200	306.81	74.3	1450	FELL OFF OVERNIGHT
	↓											
	0820				202	61	29.5	2200	296.74		1680	
	1250				208	43	30					ADJ TO 1350 gpm
2-11-15	0830	18750	125680	280521	211	44	39				1350	
	↓											
	0900				241	54	54		330.6	50.51	880	REDUCED TO 880 - JL
2-12-15	0830	18750	126876	280521	220	58	32	2200	326.10	55.01	840	NO ADJ - JL
2-12-15	1645	18750	127285	280521	219	54	30				840	NO adj - (JO)
2-13-15	0800	18750	128064	280521	218	64	30	2200			840	RM adj MSR-3, NO ADJ. lube (TL)
2-13-15	1700				204	44	33	2150			1700	SET TO 1700 ASR1 OFF
2-14-15	0900	18750	130112	280521	204	44	33	2200	287.74	93.37	1667	NO ADJ - JL
2-15-15	0900	18750	131859	280521	224	74	31	2300	337.43	43.68	750	TURND UP TO 900
	↓											
	0915				219	74	31				890	
2-16-15	1030	18750	133236	280521	219	84	29	2300	329.11	STATS 373.75		LUBE 12672 CF
				280551					466.78			373.75 373.75 373.75 373.75 373.75 373.75

(JO)

10

2-16-15 1111 ↓ 18809 ↓ 133236 280581

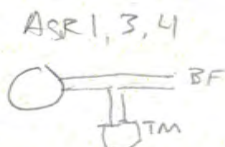
LUBE OFF @ 1120
12680 CF

STATS
S-DI 25

T0	T5	T10	T15	
25	26	27	30	

1-(25/30) = .17
x1000 = 1.7

MPWMD ASR DATA SHEET



Well: ASR2

Sheet _____ of _____

Test: 2-16-15

Date	Time	Tiger [F] (gal) x 1000	Tiger [R] (gal) x 1000	BF (gal) x 1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
2-16-15	1118	18809	133236	280587	330	32	100	2200	307.79	—	∅	STARTED NEW LOG CYCLE
2-16-15	1130	18809	133236	280587	205	29	73	2200	↓	—	1602	SOME LF TOGET INJ GOING
2-17-15	0840	18809	135314	280587	205	74	31	2100	317.25	50.54	1670	
"	2250	↓			202			2150			1670	
2-18-15	0805	↓	137702	280586	206	57	33	2100			1735	No Adj. FL
12-18-15	1000	18809	137876	280586	320	90	∅	2050	307.16		∅	STOPPED FLOWS < 90 SHW LUBE ON @ 1000 HRS 12681 CF
12-19-15	0930	18809	137876	280586	330	82	∅	2100	377.91	—		13030 CF
	↓	18837	137876	280614	↓	↓	↓	↓	464.61		2850	119 2 5 10 15 20 [1.2] 0.77
	↓	18866	137876	280614 280644	↓	↓	↓	↓				2800 / 86.7 => 32.29
												DECREASE IN SP ~ 10 GPM/ft
												LUBE OF @ 1000 hrs
												13038 CF

10

MPWMD ASR DATA SHEET



Well: ASR2

Sheet 1

Test: QUARTERLY SAMPLE

of 1

Date	Time	Tiger [F] (gal) x1000	Tiger [R] (gal) x1000	BF (gal) x1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments												
3-26-15	0830	18866	137876	286314	320	79	—		NA	—		LUBE 13281 NO LEVEL LOGGER IN WELL												
		↓	↓	286725	320	79			NA			<table border="1" style="font-size: small;"> <tr> <td>1</td><td>2</td><td>5</td><td>10</td><td>15</td><td>20</td> </tr> <tr> <td>137</td><td>103</td><td>13.2</td><td>6.5</td><td>2.8</td><td>3.67</td> </tr> </table>	1	2	5	10	15	20	137	103	13.2	6.5	2.8	3.67
1	2	5	10	15	20																			
137	103	13.2	6.5	2.8	3.67																			
												Cl ₂ => 0.23 Cl ⁻ => 102 pH => 7.18 ORP => -72.5 mV COND => 512 us/cm DO = ND H ₂ S => ND TEMP => 16.5°C												
—————																								
MW-1												Cl ₂ => ND mg/L Cl ⁻ => 52 mg/L pH => 7.18 ORP => -63.4 COND => 536 us/cm DO => 0.23 mg/L H ₂ S => 0.08 mg/L TEMP => 16.1°C												

MPWMD ASR DATA SHEET



Well: ASR 2

Sheet 1

Test: MERCURY SAMPLING

of 1

Date	Time	Tiger [F] (gal) X1000	Tiger [R] (gal) X1000	BF (gal) X1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
4.9.15	0830	18969	137876	280725	325	72	ø	1900		—	—	LUBE 13520 CF Sample for Hg
												* NO XD IN WELL
												Sampled 13 BOTTLES @ 6min
4.9.15	1500			281186								POND FULL TO OVRFLOW
				461,000								
4.9.15	1528	19410	137876	281224	327	72	ø	1900		—	—	13616 LUBE OFF @ 1530
												Sampled final sample @ 1530
												461,000 - 270,000 = 191,000 / 320 = 596 GPM

6 HOURS @ 1200 GPM ; TOTAL VOLUME 475,000 GAL } 360min x 1200GPM = 475,000 - X
 5 HRS 20MIN @ 1500 GPM ; TOTAL VOLUME 461,000 GAL } 320min x 1500GPM = 461,000 - X

MPWMD ASR DATA SHEET



Well: ASR2

Sheet 1

Test: MONTHLY STORAGE FIELD SAMPLE

of 1

Date	Time	Tiger [F] (gal) <small>x1000</small>	Tiger [R] (gal) <small>x1000</small>	BF (gal) <small>x1000</small>	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments												
5/28/15	0900	19494	137876	281310	340	78	Ø	1800	375.56		2750 ^{BF}	FIELD SAMPLE - MONTHLY STORAGE												
5/28/15				281338					465.37		↓	LUBE 14029												
5/28/15	8140	19546	137876	281363	OFF	78	Ø	OFF			↓	S2 - 50 PSI FILTER												
												<table border="1" style="font-size: small;"> <tr> <td>1</td><td>2</td><td>5</td><td>10</td><td>15</td><td>20</td> </tr> <tr> <td>37.5</td><td>15.2</td><td>9.1</td><td>4.8</td><td>6.2</td><td>3.5</td> </tr> </table>	1	2	5	10	15	20	37.5	15.2	9.1	4.8	6.2	3.5
1	2	5	10	15	20																			
37.5	15.2	9.1	4.8	6.2	3.5																			
												PH 7.28												
												COND 527 µS/cm												
												TEMP 17.1 °C												
												ORP 0.05 mg/L												
												DO - 75.4 MV												
												H ₂ S 0.06 mg/L												
												[Cl ₂] ND												
												[Cl ⁻] 62												
												[O ₂] 0.05 mg/L												
												lube off @ 1000												
												14036 CF												

10 {

MPWMD ASR DATA SHEET



Well: ASR 2

Sheet 1

Test: QUARTERLY SAMPLE

of 1

Date	Time	Tiger [F] (gal) x1000	Tiger [R] (gal) x1000	BF (gal) x1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments												
6-24-15	0930	19568	137876	281363	340	89	∅	1750	387.57	—	∅	LUBE 14276												
				281390	↓	↓			457.15		2550 ^{BF}	55psi ^{FILTER} 50psi												
		19681	137876	281487																				
												<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>1</td><td>2</td><td>5</td><td>10</td><td>15</td><td>20</td> </tr> <tr> <td>89.9</td><td>9.25</td><td>9.71</td><td>4.67</td><td>2.56</td><td>4.53</td> </tr> </table>	1	2	5	10	15	20	89.9	9.25	9.71	4.67	2.56	4.53
1	2	5	10	15	20																			
89.9	9.25	9.71	4.67	2.56	4.53																			
												<p>[Cl⁻] = 145 mg/L [Cl₂] => 0.06 mg/L PH => 6.96 ORP => -57.3 mv DO => 0.05 mg/L TEMP => 17.6°C H₂S => ND COND = 550 us/cm</p>												
												SAMPLED SI, GI, DBP, Hg 1028 - JL												
												LUBE 144291												

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MPWMD ASR DATA SHEET



Well: ASR 3
 Test: 1

Sheet 1
 of

Date	Time	Tiger [F] (gal) x1000	Tiger [R] (gal) x1000	BF (gal) x1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
12/12/14	1000	50737	6745	004084	360	∅		1800	360.13		∅	LUBE LINE FLUSHING JLTL JO 27 PSI @ ASR4 CALLED CE VINCE FROM CAL AM ON SITE TO OPEN VALVES
	1200											
12/14/14	1300	DRIFT 50984	6745	004085 (JD) 004405		100+		1850				LF B TEST FLOWS
	1315					15					308 LFR	
12/17/14	0845	50984	6772	004110	355	86	31	1800		NA	∅	Morning meter checking (Jo) Prepare to LF prior to injection (Jo) lube line turn ON 145680
	1110							356.98				started injection
	1246	50984	6863	4195	216	82	42	1800			740 740	
12/18/14	0830	50984	7863	4195	216	76	46	1800	295.41		887	flow increased overnight.
	1000	50984	7931	004195 004211 4238	330	87	45	1800	350.41		∅	014834 @ lube on BF well 250-260 steps flow 1700 gpm set at 7.5 am cc "dropped to 1500 gpm @ 49 Hz
	1100	50984	7931	4238	223	80	48	1800	356.15		630	after 20 min increase speed to 57 Hz = 2800 gpm, At 23 min down to 2500 gpm rate, T = 12.4 NTU WL drops to 528 ft. stop at 24 min

BF

SPi LINE FLUSH @ 1050 GPM

122	27	106	---	---	TEST ABORTED
	30	78	---	---	↓
1205	25	39	61	77	4.5 SPi
1230	22	25	31	38	

T1	18.8	20.1	37.1	11.1	3.8	4.74
Cl ₂	0.04					

3590	2080C	15.9	21.62 @ 2800
3000.7	2080A	13.3	

MPWMD ASR DATA SHEET



Well: ASR-3

Sheet 2

Test: 1

of

Date	Time	Tiger [F] (gal)	Tiger [R] (gal)	BF (gal)	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
12-19-14	0850	50984	8779	064238	223	78	48	1800	307.92		655	TL
	0910	50984	8794	4238	219	78	49	1800	303.91 @ 0924		730	Adj. flow/pressure TL, JD
12/20/14	0930	50984	9945	4238	219	77	48	1800	292.70	~58*	815	
12/21	0930	50984	11128	4238	219	77	48	1800	284.60	-66	875	
12/21/14	1625	50984	11501	4238	219/300	76/77					890/φ	Shut inj per C. Evans text request (1600 hr) To
12/22/14	1530	50984	11501	4238								Lube = 148480 gal. Turn on lube. To BF
SF [12/23/14	1100	50984	11561	4238	307	73	φ	1850	350.86	φ	1450 BF RATE	JL-TO BF
	10MIN	---	↓	4253					453.02			
	FINISH	50984	↓	4269	307	73					φ	LUBE 01509710 GAL

12-23-14
SMS(D)

PH 7.51

[Cl₂] ND

SAMPLED FOR DBP (MONTHLY SAMPLE)

*S/N 300151 on revised records
last supp site = MSR2

ORP 16.2 MV

18.4°C

H₂S NA

12/22/14
BF

1	2	5	10	15	20
27.2	18.5	20.2	10.0	3.60	2.86

0.14 [Cl₂]

560 us/cm

DO NA

MPWMD ASR DATA SHEET



Well: ASR-3

Sheet _____

Test: _____

160 maps of _____

Date	Time	Tiger [F] (gal) x1000	Tiger [R] (gal) x1000	BF (gal) x1000	FCV (psi) (159)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments												
9-15	0920	56987	11519	004269	300	72	170	1750	355.25	NA	NA	Well OFF - no water in wellhead piping												
	0940				330	34					1000 (line flush)	Open PRV to line flush before injection												
9-15	1010	56987	11550	004291	213	44	45	1750	355.25	—	990	CLIMED UP TO 1040												
	1023										1020	NEED TO FALL TREE												
10-15	0845	56987	12847	004291	217	63	48	1700	273.04	82.21	940	DID NOT CHANGE SETTINGS												
					219	63	48		271.64		945													
					217				266.90		1000	Adj FCV to get as close to 1000 gpm as can												
10-15	1100				217	56	45		263.5	91.75	1025	NO ADJ												
11-15	1000	56987	14339	004291	219	67	46	1680	254.79	100.46	1042	NO ADJ												
12-15	0845	56987	15779	004291	219	67	46	1700	250.97	104.28	1066	STOPPED FOR BF												
12-15	0917	56987	15797	004291	340	89	∅	1700	348.2	—	∅	LUBE 152900												
		56987	15787	004305	340	89	100	1700	453.0		1300 GPM	<table border="1"> <tr> <td>1</td> <td>2</td> <td>5</td> <td>10</td> <td>15</td> <td>20</td> </tr> <tr> <td>30.2</td> <td>12.8</td> <td>8.2</td> <td>39.3</td> <td>25.9</td> <td>19.1</td> </tr> </table>	1	2	5	10	15	20	30.2	12.8	8.2	39.3	25.9	19.1
1	2	5	10	15	20																			
30.2	12.8	8.2	39.3	25.9	19.1																			
												[Cl ₂] = 0.84 mg/L												
12-15	0954	56987	15797	004330								end of well BF												
12-15	1005	56987	15797	004331								end of line flush												
												14000 GAL / (453 - 348.2) / 10 ⇒ 13.3												

15 SDI (0) 28 sec, (5) 29 sec; (10) 30 sec; (15) 35 sec ⇒ SDI = 0.133

2776122 Ruy

ASR4

BEG
END

2-11-15	2-12-15
103193	103246
103246	103352

SMSD BEG (1240)
M(AD) 017426 x10 174780 x10
M(NEW) 00004 x100 00009 x100

MPWMD ASR DATA SHEET

Well: ASR-3
Test: _____

Sheet _____

OLD 1310
1971 NEW



0175570
0001870

MAX 160 of

Date	Time	Tiger [F] (gal)	Tiger [R] (gal)	BF (gal)	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
2-12-15	1010	X1000 56987	X1000 15797	X1000 4331	330	88	88	1700	352.4	—	∅	BEG NEW INJ CYCLE
2-12-15	1025	56987	15805	4331	216	67	46		290.50		1020	2" lube line OFF 0153050g
2-12-15	1650				215	64	47				1200	
2-12-15	1652				220	68	46				1000	Rm adj FCV to ↓ flow (50)
2-13-15	0810	56987	17037	4331	220	78	47	1700	278.8		860	815 Adj. C2 ↑ slightly Rm (TL for Rm)
	0820				216	78	47		263.3		1,000	(TL for Rm)
2-13-15	1600	56987	17510	004331	218	65	46	1700			-1013	
2-14-15	0924	56987	18573	004331	219	54	43	1750	251.98	100.42	-1018	NO ADJ
2-15-15	1000	56987	20085	004331	219	84	45	1775	249.92	102.48	-1020	NO ADJ 1530450
2-16-15	0800	56987	21516	004331	330	78	∅	1700	253.43		∅	TURND OFF LUBE ON 0800
2-17-15	0945	56990	21516	004331	347	87	∅	1650	353.01		∅	before BF Lube on = 0156010
2-17-15		↓	↓	004331	↓	↓	↓	↓				1 2 5 10 20
2-17-15												ABORT BF LINE TO PIT LEAKING IN ELECTRICAL BOX. SET UP SUMP. - JL
2-25-15	0930	57423	21539	004336	347	81	∅	1650	359.53	∅	BF	psi gauge by PSV not working
		↓	↓	004357	↓	↓	∅		509.34	1850 w/ HEE	∅	0-200 psi - need new one
	0950			004379	↓	↓	∅	1700			∅	85.9 27 42.2 9.16 5.35 3.27 Cl ₂ => 0.10 mg/L
												0161010 lube end off
												[Cl ⁻] => 107 mg/L

1371
400

MPWMD ASR DATA SHEET



Well: APR 3

Sheet 1
of 1

Test: QUARTLY SI, GI, DBP SAMPLE

Date	Time	Tiger [F] (gal) x1000	Tiger [R] (gal) x1000	BF (gal) x1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
3-25-15	0930	60485	21626	004378	345	76	0	1700	359.98	—	—	1 2 5 10 15 20 76.8 26 9.77 10.8 8.17 13.0
		↓	↓	004399	↓	↓	↓	↓	509.35		2	
				004439					—			
												TEMP => 17.2°C
												COND => 509 µs/cm
												DO => ND
												H ₂ S => ND
												Cl ₂ => 0.03
												CT => 75
												ORP => -61.9
												PH => 7.29
												JL -> SI, GI, DBP COLLECTED @ 1030 HRS
												LUBE 0163350 GAL
3-25-15		SEASIDE MIDDLE SCHOOL DEEP			INITIAL			FINAL				DO => ND
					000023 x100			000674 x100				H ₂ S => ND
												ORP => -67.3 mV
												Cl ₂ => 0.08
												Cl ⁻ => 147 mg/L
												PH => 7.34
												COND => 354 µs/cm
												TEMP => 17.7°C

MPWMD ASR DATA SHEET



Well: ASR 3

Sheet 1

Test: QUARTERLY SAMPLE

of 1

Date	Time	Tiger [F] (gal)	Tiger [R] (gal)	BF (gal) <small>X1000</small>	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
6/25/15	1000			004508	345	94	Ø	1800	371.21		Ø	
				004521					472.53		1350	1 2 5 10 15 20 6.7 12.5 9.8 3.12 4.7 6.3
	1035			004547	Ø	94	Ø	CLOSED				[Cl ₂] = ND [Cl ⁻] = 79 mg/L ORP = -65.3 mv COND = 516 µs/cm TEMP = 16.9°C PH = 7.22 DO = 0.02 mg/L [H ₂ S] = ND
												0170880 LUBE OFF
												SMSD) 001338865 GAL
												SKID METER 00004700 GAL

MPWMD ASR DATA SHEET



Well: ASR 3

ASR Period: STORAGE

Sheet 1

Test: QUARTLY SAMPLE

Weather: SUNNY, WARM

of 1

Date	Time	Tiger [F] (gal) x1000	Tiger [R] (gal) x1000	BF (gal) x1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Lube / Skid Meter (gal)	Comments
9-23-15	1000	67064	21644	4695	340	88	∅	1750	367.78	—	—	178460 111000	86-786 - ↓
				4713					474.41			BF 1500	* PSI GAGE ON BFLINE @ SAMPLE PORT IS BROKEN.
		67064	21644	4737	∅	88	∅	1750	—	—	—	178040 11238	SAMPLED S1, S1, DBP

10

ASR 3

SMS(D)

MW1

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 ₂ S (mg/L)	Sampler / Laboratory	Turbidity (NTU)						
													0	1	2	5	10	15	20
9-23-15	1000	4695	4737		20.4	749	7.37	445 245	ND	0.02	0.05	S1, S1, DBP JL-MEAS	157	47.9	22.4	69.1	5.39	9.88	10.52
9-23-15	1100		14010		19.8	752	7.24		ND	0.02	0.04	S1, S1, DBP JL-MEAS	—————						

MPWMD ASR DATA SHEET

Well: ASR4

Test: SAMPLE FOR CALAM

Sheet 1
of 1



Date	Time	Tiger [F] (gal) X1000	Tiger [R] (gal) X1000	BF (gal) X1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments														
1-21-15	905	22644	101321	000643	360	82	∅	2150	363.86	—	—	SAMPLE FOR CALAM 15180 GAL LUBE														
1-21-15	920	22644	101321	000662	368	82	15	2150	421.30	57.74	~1900	~1750														
1-21-15	1040	22644	101321	000787	360	82	∅	2150	—	—	∅															
												<table border="1" style="font-size: small;"> <tr> <td>1</td><td>2</td><td>5</td><td>10</td><td>15</td><td>20</td> </tr> <tr> <td>335</td><td>211</td><td>748</td><td>1598</td><td>10.5</td><td>7.9</td> </tr> </table>	1	2	5	10	15	20	335	211	748	1598	10.5	7.9		
1	2	5	10	15	20																					
335	211	748	1598	10.5	7.9																					
												* NO FLOW FROM LUBE ON SCADA														
												JL. SAMPLED FOR [Hg]														
												<table border="1" style="font-size: small;"> <tr> <td>[Cl₂]</td><td>COND</td><td>ORP</td><td>PH</td><td>°C</td><td>DO</td><td>H₂S</td> </tr> <tr> <td>ND</td><td>539</td><td>-153</td><td>7.3</td><td>37</td><td>ND</td><td>2</td> </tr> </table>	[Cl ₂]	COND	ORP	PH	°C	DO	H ₂ S	ND	539	-153	7.3	37	ND	2
[Cl ₂]	COND	ORP	PH	°C	DO	H ₂ S																				
ND	539	-153	7.3	37	ND	2																				
												* HOSSFELT SAMPLED @ 130														
												LUBE OFF @ 1040 15330 GAL														

MPWMD ASR DATA SHEET

Well: ASR-4

Sheet 3

Test: Conditioning (Day 1)

of 3

Date	Time	Tiger [F] (gal) x 1000	Tiger [R] (gal) x 1000	BF (gal) x 1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
2-11-15	14 ¹⁵	22684	103225	000977	383	61	0		355.3			open FCV/start Inj.
	14 ²⁵				268	57	52		350.3	5.0	255	Q/s ≈ 50 gpm/ft
	14 ³⁵	22684	103230						349.3			close FCV/stop Inj.
10 {	14 ⁴⁰	22684	103230	000977	383				352.9	00N		start BF
	14 ⁵⁰			001007					456.7	103.8		Q/s: 3000/103.8 = 28.9
	14 ⁵¹			001009								stop
10 {	15 ⁰⁰	22684	103230	001009	386	57	0	2100	354.9			open FCV/start Inj.
	15 ¹⁰				266	56	53		349.7	5.2	275	Q/s ≈ 63 gpm/ft
	15 ²⁵	22684	103238	001009	385	71						close FCV
10 {	15 ⁴⁰	22684	103238	001009	380	70	0		352.6	00N		start BF
	15 ⁵⁰			001040					456.0	103.4		Q/s: 3100/103.4 = 30.0
	15 ⁵¹			001042								stop
10 {	16 ⁰⁰	22684	103238	001042	386	69			355.2			open FCV/start Inj.
	16 ¹⁰				277	67	62		350.2	5.00	262	Q/s ≈ 52 gpm/ft
	16 ³⁰	22684	103246									close FCV
10 {	16 ⁴⁵	22684	103246	001042	385	72	0		352.9	00N		start BF
	16 ⁵⁵			001072					456.4	103.5		Q/s: 3000/103.5 = 29.0
	16 ⁵¹	22684	103246	001074	391	72	0					stop.

17⁰⁵ Leave Site (PM)

MPWMD ASR DATA SHEET



Well: ASR-4

Sheet 4
of 4

Test: Conditioning (Day 2)

Date	Time	Tiger [F] (gal) x1000	Tiger [R] (gal) x1000	BF (gal) x1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
2-12-15	8 ⁴⁵	22684	103246	001074	381	68	0	2000	351.6	000		H ₂ O-Lube = 1.7 gpm Start BF (57 Hz)
	8 ⁵⁵			001103					457.7	(106.1)		Q/s: 2900 / 106.1 = 27.3 gpm/ft
	8 ⁵⁶			001105								Stop (Note: Pause to BF ASR-3)
	10 ⁴⁵	22684	103246		390	68	0		353.7		∅	Start Inj
	10 ⁴⁷				250	57	49		344.8		518	
	10 ⁵⁰		103248									stop Inj (5-mins)
10	10 ⁵⁵	22684	103248	001105	380	67	0		353.1	000		start BF
	11 ⁰⁵			001135					456.4	(103.3)		Q/s: 3000 / 103.3 = 29.0
	11 ⁰⁶			001136								stop
	11 ¹⁰	22684	103248		382	66	64		356.2		∅	start Inj
	11 ¹⁵				255	57	53		345.3	10.9	547	
	11 ²⁰	22684	103253								∅	stop Inj (10 mins) Adj FCV setting slightly ↓
10	11 ³⁰			001136	370				353.1	000		start BF, (↑ VFD to 59 Hz)
	11 ⁴⁰			001167			22		462.7	(109.6)		Q/s: 3100 / 109.6 = 28.3
	11 ⁴¹			001169								stop BF
	11 ⁴⁵	22684	103253		370	66	63		356.5		∅	start Inj
	11 ⁵⁵				255	55	53		344.4	12.1	570	Q/s = ~47 gpm/ft
	12 ⁰⁰	22684	103262								∅	stop Inj (15 mins)

MPWMD ASR DATA SHEET



Well: ASR-4

Sheet 2
of 4

Test: Conditioning (Day 2)

Date	Time	Tiger [F] (gal) X1000	Tiger [R] (gal) X1000	BF (gal) X1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
10 { 2-12-15	12 ¹⁰			001169	355	68	0		353.1	000		start BF
	12 ²⁰			001201					463.7	110.6		Q/s: 3200/110.6 = 28.9 gpm/ft
	12 ²¹			001203								stop
	12 ⁵⁰	22684	103262		360	66	65		353.5		∅	start Inj.
	13 ⁰⁰				258	59	54		343.7	9.8	542	Q/s: ~55 gpm/ft
	13 ¹⁰	22684	103272		360	68	0				∅	stop (20 mins)
10 { 13	13 ²⁰			001203	360	68	0		352.5	000		start BF
	13 ³⁰			001235					463.9	111.4		Q/s: 3200/111.4 = 28.7
	13 ³¹			001237								stop
	13 ⁴⁰	22684	103272		366	67	60		355.2		∅	start Inj.
	13 ⁵⁰				260	58	54		344.8	10.4	510	Q/s: ~49
	14 ¹⁰	22684	103289		360	68	0				∅	stop (30 mins)
10 { 14	14 ²⁰			001237	360	68	0		352.5	000		start BF
	14 ³⁰			001270					466.4	113.9		Q/s: 3300/113.9 = 29.0
	14 ³¹			001272								stop
	14 ⁴⁰	22684	103289		370	67	65		355.3		∅	start Inj.
	14 ⁴³				245	53	47		340.8		720	
	14 ⁴⁵	22684	103292		358	70	0				∅	stop Inj (5 mins)

MPWMD ASR DATA SHEET

Well: ASR-4

Sheet 3

Test: Conditioning (Day 2)

of 4

Date	Time	Tiger [F] (gal)	Tiger [R] (gal)	BF (gal)	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
10 { 2-12-15	14 ⁵⁵	22684	103292	001272	357	69	0	1900	353.2	00N		Start BF
	15 ⁰⁵			001305					466.7	113.5		Q/s: 3300/113.5 = 29.1 gpm/ft
	15 ⁰⁶			001307								stop
	15 ¹⁵	22684	103292		360	68	66		355.6		∅	Start Inj
	15 ²⁰				245	52	48		340.8	14.8	768	Q/s: ~52
	15 ²⁵	22684	103301		350	68	0				∅	stop (10 mins) Adj FCV ↓
10 {	15 ³⁵			001307	350	68	0		353.1	00N		Start BF
	15 ⁴⁵			001340					466.0	112.9		Q/s: 3300/112.9 = 29.2
	15 ⁴⁶			001342								stop
	15 ⁵⁵	22684	103301		360	67	65		355.6		∅	Start Inj
	16 ⁰⁵				245	50	47		339.1	16.5	780	Q/s: ~47
	16 ¹⁰	22684	103313		350	67	0				∅	stop (15 mins)
10 {	16 ²⁰			001342	350	67	0		352.9	00N		Start BF
	16 ³⁰			001375					467.5	114.6		Q/s: 3300/114.6 = 28.8
	16 ³¹			001377								stop
	16 ⁴⁰	22684	103313		360	80	75		355.4		∅	Start Inj
	16 ⁵⁰				256	64	59		337.9	17.5	810	Q/s: 46.3
	17 ⁰⁰	22684	103329		354	84	0				∅	stop (20 mins)

MPWMD ASR DATA SHEET

Well: ASR-4

Sheet 4

Test: Conditioning (Day 2)

of 4

Date	Time	Tiger [F] (gal)	Tiger [R] (gal)	BF (gal)	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
2-12-15	17 ¹⁰	22684	103329	001377	354	84	0		353.2	DON		Start BF
	17 ²⁰			001409					470.8	117.6		Q/s: 3200/117.6 = 27.2 gpm/ft
	17 ²¹			001411								Stop
	17 ³⁰	22684	103329		360	84	63		356.1		∅	Start Inj
	17 ⁴⁰				255	70	59		339.5	16.6	800	Q/s: 481.2
	18 ⁰⁰	22684	103352		355	84					∅	Stop (30 min)
10 2-12-15	18 ¹⁰			001411	355	84	0		353.6	DON		Start BF
	18 ²⁰			001443					474.4	120.8		Q/s: 3200/120.8 = 26.5
	18 ²¹			001445								Stop
												18 ³⁰ Leave Site (Rm)

MPWMD ASR DATA SHEET



Well: ASR-4

Sheet 1

Test: Conditioning (Day 3)

of 2

Date	Time	Tiger [F] (gal) x1000	Tiger [R] (gal) x1000	BF (gal) x1000	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
2/13/15	8 ⁴⁰	22684	103352	001445	358	72	0	1700	354.5	DDN		H ₂ O-Lube = 1.7 gpm Start BF
	8 ⁵⁰			001476					475.6	(121.1)		Q/s: 3100/121.1 = 25.6 gpm/ft
	8 ⁵¹			001478								Stop
		22684	103352	001478	365	70	61					
	9 ⁰⁰	22684	103352	001478	365	70	61		357.0			Start Inj
	9 ¹⁰	22684	103358		245	53	46				995	
	9 ¹²											Stop (10-mins)
10	9 ²⁰			001478	360	72	0		354.6	DDN		Start BF
	9 ³⁰			001510					471.3	(116.7)		Q/s: 3200/116.7 = 27.4
	9 ³¹			001512								Stop
	9 ⁴⁰	22684	103358		367	72	62		357.3			Start Inj
	9 ⁵⁰				245	52	48		331.7	22.6	1040	Q/s ≈ 46
	9 ⁵⁵	22684	103373									Stop (15 mins)
10	10 ⁰⁵			001512	355	74	0		354.7			Start BF
	10 ¹⁵			001545					473.5	118.8		Q/s: 3300/118.8 = 27.8
	10 ¹⁶			001547								Stop
												Note! H ₂ O coming from pipeline in Access Rd. from Elec. Box in Front of Elec. Bldg.

MPWMD ASR DATA SHEET



Well: ASR-4

Sheet 2

Test: Conditioning (Day 3)

of 2

Date	Time	Tiger [F] (gal) <i>x1000</i>	Tiger [R] (gal) <i>x1000</i>	BF (gal) <i>x1000</i>	FCV (psi)	Line (psi)	Well Head (psi)	N ₂ (psi)	DTW (feet)	Draw Up (feet)	Inj Rate (GPM)	Comments
2/13/15	10 ⁴⁵	22684	103373	001547	365	74	70		355.5		∅	start Inj
	10 ⁵⁵				247	52	48		333.4	22.1	1073	q/s: ~49 gpm/ft
	11 ⁰⁵	22684	103395		350	82	0				∅	stop (20 min)
	11 ³⁵			001547	352	82	0		354.7	000		start BF
	11 ⁴⁵			001579					476.1	(121.4)		q/s: 3200/121.4 = 26.4 gpm/ft
	11 ⁴⁶			001581								stop
	11 ⁵⁰	22684	103395	001581	360	82	0	1680			∅	12 ⁰⁰ leave site (Rm)

10 {

APPENDIX B – WATER-QUALITY LABORATORY REPORTS



MPWMD
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831.375.MBAS
montereybayanalytical@usa.net
ELAP Certification Number: 2385

Page 1 of 1

Friday, October 24, 2014

Lab Number: AB22163

Collection Date/Time: 10/17/2014 11:00
Submittal Date/Time: 10/17/2014 12:24

Sample Collector: LINDBERG T
Sample ID

Coliform Designation:

Sample Description: ASR-1 Test

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Coliform E Coli - 18 Hour	Colitag	MPN/100mL	Absent		1		10/17/2014	MW
Coliform Total - 18 Hour		MPN/100mL	Present		1		10/17/2014	MW
Mercury, Total	EPA200.8	µg/L	4		0.5	2	10/23/2014	SM

Sample Comments:

Report Approved by:

David Holland, Laboratory Director



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 Monterey, CA 93442-0085

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 montereybayanalytical@usa.net
 ELAP Certification Number: 2385

Lab Number: AB22447

Collection Date/Time: 10/23/2014 11:30 Sample Collector: LEAR J
 Submittal Date/Time: 10/23/2014 12:57 Sample ID

Coliform Designation:

Sample Description: ARS1 Test

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Chlorine Residual (Field Test)	SM4500-Cl G	mg/L	Not Detected		0.05	4.00	10/23/2014	JL
Coliform, E. coli (Quantitray)	SM9223	MPN/100mL	<1		1	1	10/23/2014	MW
Coliform, Total (Quantitray)	SM9223	MPN/100mL	<1		1	1	10/23/2014	MW
Heterotrophic Plate Count	SimPlate	MPN/mL	90		2		10/23/2014	MW/TC

Sample Comments:

Lab Number: AB22448

Collection Date/Time: 10/23/2014 11:30 Sample Collector: LEAR J
 Submittal Date/Time: 10/23/2014 12:57 Sample ID

Coliform Designation:

Sample Description: ARS1 Test

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Mercury, Total	EPA200.8	µg/L	0.4		0.5	2	10/30/2014	SM

Sample Comments:

Report Approved by:

David Holland, Laboratory Director



MONTEREY BAY ANALYTICAL SERVICES

PRECISION • ACCURACY • DEPENDABILITY

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Page 1 of 1

Tuesday, November 11, 2014

Lab Number: AB23013

Collection Date/Time: 11/4/2014 11:00 Sample Collector: LEAR J

Submittal Date/Time: 11/4/2014 11:25 Sample ID Coliform Designation:

Sample Description: ASR4

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Coliform, E. coli (Quantitray)	SM9223	MPN/100mL	<1		1	1	11/4/2014	MW
Coliform, Total (Quantitray)	SM9223	MPN/100mL	<1		1	1	11/4/2014	MW
Heterotrophic Plate Count	SimPlate	MPN/mL	19		2		11/4/2014	MW
Mercury, Total	EPA200.8	µg/L	Not Detected		0.5	2	11/7/2014	SM

Sample Comments:

Report Approved by:

David Holland, Laboratory Director



Monterey Bay Analytical Services

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ELAP Certification Number: 2385

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Page 1 of 2

Monday, December 22, 2014

Lab Number: AB23686

Collection Date/Time: 11/19/2014 11:00 Sample Collector: LEAR J

Submittal Date/Time: 11/19/2014 11:45 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	226		2		11/20/2014	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	11/21/2014	SM
Ammonia-N	SM4500NH3 D	mg/L	Not Detected		0.05		11/25/2014	TC
Arsenic, Total	EPA200.8	µg/L	4		1	10	11/21/2014	SM
Barium, Total	EPA200.8	µg/L	55		10	1000	11/21/2014	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	276		10		11/20/2014	LRH
Boron	EPA200.7	mg/L	0.10		0.05		11/20/2014	MW
Bromide	EPA300.0	mg/L	0.3		0.1		11/20/2014	MW
Calcium	EPA200.7	mg/L	68		0.5		11/20/2014	MW
Carbonate as CaCO3	SM2320B	mg/L	Not Detected		10		11/20/2014	LRH
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		11/19/2014	LJ
Chloride	EPA300.0	mg/L	118		1	250	11/20/2014	MW
DOC		mg/L	0.4		0.2		12/17/2014	MW
Fluoride	EPA300.0	mg/L	0.2		0.1	2.0	11/20/2014	MW
Gross Alpha	EPA900.0	pCi/L	3.41 ± 1.68	E		15	11/26/2014	DAVI LA
Haloacetic Acids	EPA552	µg/L	Not Detected	E		60	12/3/2014	BSK
Iron	EPA200.7	µg/L	71		10	300	11/20/2014	MW
Iron, Dissolved	EPA200.7	µg/L	37		10	300	11/20/2014	MW
Kjeldahl Nitrogen	SM4500-NH3 B,	mg/L	Not Detected		0.5		12/4/2014	LJ
Lithium	EPA200.8	µg/L	29		1		11/21/2014	SM
Magnesium	EPA200.7	mg/L	15		0.5		11/20/2014	MW
Manganese, Dissolved	EPA200.7	µg/L	28		10	50	11/20/2014	MW
Manganese, Total	EPA200.7	µg/L	34		10	50	11/20/2014	MW
Methane	EPA174/175	µg/L	1.3	E	0.1		11/26/2014	MCCAM
Molybdenum, Total	EPA200.8	µg/L	7		1	1000	11/21/2014	SM
Nickel, Total	EPA200.8	µg/L	93		10	100	11/21/2014	SM
Nitrate as NO3	EPA300.0	mg/L	1		1	45	11/20/2014	MW
Nitrate as NO3-N	EPA300.0	mg/L	0.2		0.1	10	11/20/2014	MW
Nitrate+Nitrite as N	EPA300.0	mg/L	0.5		0.1		11/20/2014	MW
Nitrite as NO2-N	EPA300.0	mg/L	0.3		0.1	1.0	11/20/2014	MW
o-Phosphate-P	EPA300.0	mg/L	Not Detected		0.1		11/20/2014	MW
pH (Laboratory)	SM4500-H+B	pH (H)	7.4				11/19/2014	LRH

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

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

Lab Number: AB23686

Collection Date/Time: 11/19/2014 11:00

Sample Collector: LEAR J

Submittal Date/Time: 11/19/2014 11:45

Sample ID

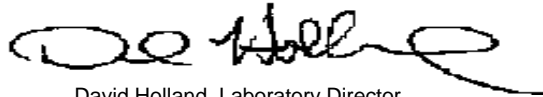
Coliform Designation:

Sample Description: ASR-4 Backflush

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
Phosphorus, Total	HACH 8190	mg/L	0.04		0.03		12/9/2014	SM
Potassium	EPA200.7	mg/L	4.3		0.5		11/20/2014	MW
QC Anion Sum x 100	Calculation	%	99%				11/21/2014	LRH
QC Anion-Cation Balance	Calculation	%	-1				11/21/2014	LRH
QC Cation Sum x 100	Calculation	%	97%				11/21/2014	LRH
QC Ratio TDS/SEC	Calculation		0.57				11/21/2014	MW
Selenium, Total	EPA200.8	µg/L	2		2	50	11/21/2014	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	43.0		0.5		11/20/2014	MW
Sodium	EPA200.7	mg/L	94		0.5		11/20/2014	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	911		1	900	11/20/2014	HM
Strontium, Total	EPA200.8	µg/L	482		5		11/21/2014	SM
Sulfate	EPA300.0	mg/L	55		1	250	11/20/2014	MW
TOC	SM5310C	mg/L	0.6		0.2		12/17/2014	MW
Total Diss. Solids	SM2540C	mg/L	517		10	500	11/21/2014	HM
Total Nitrogen	Calculation	mg/L	0.5		0.5		12/5/2014	LJ
Total Radium 226	EPA903.0	pCi/L	2.25 ± 0.95	E		3	11/26/2014	DAVI LA
Trihalomethanes	EPA524.2	µg/L	Not Detected	E		80	11/24/2014	BSK
Uranium by ICP/MS	EPA200.8	µg/L	1		1	30	11/21/2014	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	11/21/2014	SM
Zinc, Total	EPA200.8	µg/L	Not Detected		10	5000	11/21/2014	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 outside 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)

A4K1961

12/05/2014

Invoice: A426593

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

RE: Report for A4K1961 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 11/21/2014. 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.

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

Sincerely,

John Montieth, Project Manager

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



Accredited in Accordance with NELAP
ORELAP #4021

Case Narrative

Project and Report Details	Invoice Details
----------------------------	-----------------

Client: Monterey Bay Analytical Report To: David Holland Project #: - Received: 11/21/2014 - 12:21 Report Due: 12/09/2014	Invoice To: Monterey Bay Analytical Invoice Attn: David Holland Project PO#: -
--	---

Sample Receipt Conditions

Cooler: Default Cooler Temperature on Receipt °C: 0.4	Containers Intact COC/Labels Agree Received On Wet Ice Received On Blue Ice Packing Material - Bubble Wrap Packing Material - Paper Initial receipt at BSK-FAL
--	--

Data Qualifiers

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

- BS1.0 Blank spike recovery for this analyte was biased high; no material impact on reported result as sample is ND for this parameter.
- CV0.0 CCV recovery was above method acceptance limits; no material impact on reported result as sample is ND for this parameter.

Report Distribution

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

Certificate of Analysis

Sample ID: A4K1961-01
Sampled By: Jon Lear
Sample Description: ASR-4 Backflush // AB23686

Sample Date - Time: 11/19/14 - 11:00
Matrix: Waste Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	ND	0.50	ug/L	1	A415001	11/24/14	11/24/14	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A415001	11/24/14	11/24/14	
Chloroform	EPA 524.2	ND	0.50	ug/L	1	A415001	11/24/14	11/24/14	
Dibromochloromethane	EPA 524.2	ND	0.50	ug/L	1	A415001	11/24/14	11/24/14	
Surrogate: Bromofluorobenzene	EPA 524.2	101 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		ND	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A415224	12/01/14	12/03/14	BS1.0, CV0.0
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A415224	12/01/14	12/03/14	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A415224	12/01/14	12/03/14	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A415224	12/01/14	12/03/14	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A415224	12/01/14	12/03/14	BS1.0
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	118 %	<i>Acceptable range: 70-130 %</i>						
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: A415001

Prepared: 11/24/2014

Prep Method: EPA 524.2

Analyst: JGB

Blank (A415001-BLK1)

Bromodichloromethane	ND	0.50	ug/L							11/24/14	
Bromoform	ND	0.50	ug/L							11/24/14	
Chloroform	ND	0.50	ug/L							11/24/14	
Dibromochloromethane	ND	0.50	ug/L							11/24/14	
Surrogate: Bromofluorobenzene	54			50		108	70-130			11/24/14	

Blank Spike (A415001-BS1)

Bromodichloromethane	10	0.50	ug/L	10		103	70-130			11/24/14	
Bromoform	10	0.50	ug/L	10		104	70-130			11/24/14	
Chloroform	9.0	0.50	ug/L	10		90	70-130			11/24/14	
Dibromochloromethane	9.8	0.50	ug/L	10		98	70-130			11/24/14	
Surrogate: Bromofluorobenzene	51			50		101	70-130			11/24/14	

Blank Spike Dup (A415001-BSD1)

Bromodichloromethane	11	0.50	ug/L	10		107	70-130	4	30	11/24/14	
Bromoform	11	0.50	ug/L	10		112	70-130	7	30	11/24/14	
Chloroform	10	0.50	ug/L	10		102	70-130	12	30	11/24/14	
Dibromochloromethane	11	0.50	ug/L	10		107	70-130	8	30	11/24/14	
Surrogate: Bromofluorobenzene	53			50		105	70-130			11/24/14	

EPA 552.3 - Quality Control

Batch: A415224

Prepared: 12/01/2014

Prep Method: EPA 552.3

Analyst: KHH

Blank (A415224-BLK1)

Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							12/03/14	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							12/03/14	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							12/03/14	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							12/03/14	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							12/03/14	
Surrogate: 2-Bromobutanoic Acid	26			25		105	70-130			12/03/14	

Blank Spike (A415224-BS1)

Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10		114	70-130			12/03/14	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		106	70-130			12/03/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		109	70-130			12/03/14	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20		112	70-130			12/03/14	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		109	70-130			12/03/14	
Surrogate: 2-Bromobutanoic Acid	27			25		107	70-130			12/03/14	

Blank Spike Dup (A415224-BSD1)

Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10		115	70-130	1	30	12/04/14	
Dichloroacetic Acid (DCAA)	10	1.0	ug/L	10		102	70-130	4	30	12/04/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		107	70-130	2	30	12/04/14	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20		108	70-130	4	30	12/04/14	

**BSK Associates Fresno
Organics Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 552.3 - Quality Control

Batch: A415224

Prepared: 12/01/2014

Prep Method: EPA 552.3

Analyst: KHH

Blank Spike Dup (A415224-BSD1)

Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		107	70-130	2	30	12/04/14	
Surrogate: 2-Bromobutanoic Acid	27			25		106	70-130			12/04/14	

Matrix Spike (A415224-MS1), Source: A4K1966-01

Dibromoacetic Acid (DBAA)	23	1.0	ug/L	10	11	116	70-130			12/03/14	
Dichloroacetic Acid (DCAA)	13	1.0	ug/L	10	2.1	111	70-130			12/03/14	
Monobromoacetic Acid (MBAA)	12	1.0	ug/L	10	1.0	113	70-130			12/03/14	
Monochloroacetic Acid (MCAA)	23	2.0	ug/L	20	ND	112	70-130			12/03/14	
Trichloroacetic Acid (TCAA)	12	1.0	ug/L	10	ND	110	70-130			12/03/14	
Surrogate: 2-Bromobutanoic Acid	26			25		103	70-130			12/03/14	

Matrix Spike Dup (A415224-MSD1), Source: A4K1966-01

Dibromoacetic Acid (DBAA)	23	1.0	ug/L	10	11	118	70-130	1	30	12/03/14	
Dichloroacetic Acid (DCAA)	13	1.0	ug/L	10	2.1	108	70-130	2	30	12/03/14	
Monobromoacetic Acid (MBAA)	12	1.0	ug/L	10	1.0	112	70-130	1	30	12/03/14	
Monochloroacetic Acid (MCAA)	23	2.0	ug/L	20	ND	111	70-130	1	30	12/03/14	
Trichloroacetic Acid (TCAA)	12	1.0	ug/L	10	ND	108	70-130	2	30	12/03/14	
Surrogate: 2-Bromobutanoic Acid	26			25		104	70-130			12/03/14	

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		

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	CA000792014-1	State of Oregon - ORELAP	4021
EPA - UCMR3	CA00079	State of Washington	C997-14

Sacramento

State of California - ELAP	2435
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Vancouver

State of Oregon - ORELAP	WA100008	State of Washington	C824-13
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A4K1961



Monterey Bay Analytical

Monte6227



11212014

Turnaround: Standard
Due Date: 12/9/2014

Sample Integrity



BSK Bottles: Yes No Page 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$	<u>Yes</u> No NA	Were correct containers and preservatives received for the tests requested?	<u>Yes</u> No NA						
	If samples were taken today, is there evidence that chilling has begun?	Yes No <u>NA</u>	Were there bubbles in the VOA vials? (Volatiles Only)	Yes <u>No</u> NA						
	Did all bottles arrive unbroken and intact?	<u>Yes</u> No	Was a sufficient amount of sample received?	<u>Yes</u> No						
	Did all bottle labels agree with COC?	<u>Yes</u> No	Do samples have a hold time <72 hours?	Yes <u>No</u>						
	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes No <u>NA</u>	Was PM notified of discrepancies? PM: _____ By/Time: _____	Yes No <u>NA</u>						
Bottles Received <small>— means preservation/chlorine checks are either N/A or are performed in the lab</small>	250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)	Checks	Passed?							
	Bacti Na ₂ S ₂ O ₃	—	—							
	None (P) ^{White Cap}	—	—							
	Cr6 (P) ^{Br Green Label} NH ₄ OH/(NH ₄) ₂ SO ₄ DW	pH > 8	Y	N						
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer DW	pH 9-9.5	Y	N						
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer WW	pH 9.3-9.7	Y	N						
	HNO ₃ (P) ^{Red Cap}	—	—							
	H ₂ SO 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 ₂ O ₃ S+HCl (AG) ^{Lt. Pink Label} 525	—	—							
	Na ₂ S ₂ O ₃ 1 Liter (Brown P) 549	—	—							
	Na ₂ S ₂ O ₃ (AG) ^{Blue Label} 547,515,548,THM,524	—	—			3✓				
	Na ₂ S ₂ O ₃ (CG) ^{Blue Label} 504, 505	—	—							
	Na ₂ S ₂ O ₃ + MCAA (CG) ^{Orange Label} 531	pH < 3	Y	N						
	NH ₄ Cl (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 ₃ PO 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: JHD @ 7:15

Labels checked by: JW @ 17:24

RUSH Paged by: @



DAVI LABORATORIES, ENVIRONMENTAL ASSOCIATES
730 Alfred Nobel Dr, Hercules, CA 94547

ANALYTICAL RESULTS
REPORT

Company: Monterey Bay Analytical Services
Address: 4 Justin Court-Suite D
Monterey, CA 93940

Project Manager: David Holland
Report Date: November 28, 2014
Subcontract Order #: AB23686

TABLE I

Sample ID	Collection Date/Time	Matrix	EPA Method	Analyses	Results pCi/L	±	2 Sigma error	MDA
ASR-4 Backflush		Water						
	11/19/14 (1100)		900.0	Gross Alpha	3.41	±	1.68	0.88
			903.1	Radium 226	2.25	±	0.95	1.25

Analyses date : November 26, 2014

TABLE II QA/QC

Analyses	Spike Added	Detected Activity	% Agreement
Gross Alpha	571.11 pCi/L	536.29 pCi/L	98.63
Ra 226	2.88 pCi/L	2.81 pCi/L	97.49

Patricia Davi
Davi Laboratories
QA/QC Manager



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1411920

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: 11/21/2014

Analytical Report reviewed & approved for release on 12/01/2014 by:

Question about
your data?

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1411920

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
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
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
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
TEQ	Toxicity Equivalence



Analytical Report

Client: Monterey Bay Analytical
Project: MPWMD
Date Received: 11/21/14 14:04
Date Prepared: 11/26/14

WorkOrder: 1411920
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µg/L

Light Gases

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
ASR-4 backflush	1411920-001A	Water/DISS.	11/19/2014 11:00	GC26	98323

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Methane	1.3	0.10	1	11/26/2014 11:49

Analyst(s): KBO



Quality Control Report

Client: Monterey Bay Analytical
Date Prepared: 11/26/14
Date Analyzed: 11/26/14
Instrument: GC26
Matrix: Air
Project: MPWMD

WorkOrder: 1411920
BatchID: 98323
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µL/L
Sample ID: MB/LCS-98323

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	11.1	0.50	10	-	111	70-130



1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1411920

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: 4mbas@sbcglobal.net
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: 11/21/2014
Date Printed: 12/01/2014

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	
1411920-001	ASR-4 backflush	Water	11/19/2014 11:00	<input type="checkbox"/>	A												

Test Legend:

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

Prepared by: Shana Carter

Comments: Needs analysts initials for all reports per D.H. 4/5/13

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.



WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL

QC Level: LEVEL 2

Work Order: 1411920

Project: MPWMD

Client Contact: David Holland

Date Received: 11/21/2014

Comments: Needs analysts initials for all reports per D.H. 4/5/13

Contact's Email: 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
1411920-001A	ASR-4 backflush	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	11/19/2014 11:00	5 days	None	<input type="checkbox"/>	

*** NOTE: 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).**



Sample Receipt Checklist

Client Name: **Monterey Bay Analytical** Date and Time Received: **11/21/2014 2:04:50 PM**
 Project Name: **MPWMD** Login Reviewed by: **Shana Carter**
 WorkOrder No: **1411920** Matrix: Water Carrier: OnTrac

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

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

 Comments:



Monterey Bay Analytical Services

4 Justin Court Suite D, Monterey, CA 93940

831.375.MBAS

www.MBASinc.com

ELAP Certification Number: 2385

Thursday, January 15, 2015

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

Lab Number: AB24222

Collection Date/Time: 12/4/2014 11:00

Sample Collector: LEAR J

Submittal Date/Time: 12/4/2014 16:06

Sample ID

Coliform Designation:

Sample Description: ASR1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO ₃)	SM2320B	mg/L	250		2		12/8/2014	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	12/17/2014	SM
Ammonia-N	SM4500NH ₃ D	mg/L	0.23		0.05		12/9/2014	LRH
Arsenic, Total	EPA200.8	µg/L	2		1	10	12/17/2014	SM
Barium, Total	EPA200.8	µg/L	80		10	1000	12/17/2014	SM
Bicarbonate (as HCO ₃ ⁻)	SM2320B	mg/L	305		10		12/8/2014	HM
Boron	EPA200.7	mg/L	0.12		0.05		12/15/2014	MW
Bromide	EPA300.0	mg/L	0.5		0.1		12/5/2014	TC
Calcium	EPA200.7	mg/L	96		0.5		12/15/2014	MW
Carbonate as CaCO ₃	SM2320B	mg/L	Not Detected		10		12/8/2014	HM
Chloramines	SM4500-Cl G	mg/L	0.06	H	0.05		12/10/2014	LRH
Chloride	EPA300.0	mg/L	142		1	250	12/5/2014	TC
DOC		mg/L	0.7		0.2		12/17/2014	MW
Fluoride	EPA300.0	mg/L	0.4		0.1	2.0	12/5/2014	TC
Gross Alpha	EPA900.0	pCi/L	3.35 ± 1.68	E		15	12/13/2014	DAVI LA
Haloacetic Acids	EPA552	µg/L	Not Detected	E		60	12/12/2014	BSK
Iron	EPA200.7	µg/L	324		10	300	12/15/2014	MW
Iron, Dissolved	EPA200.7	µg/L	30		10	300	12/15/2014	MW
Kjehldahl Nitrogen	SM4500-NH ₃ B,C.	mg/L	0.6		0.5		12/12/2014	TC
Lithium	EPA200.8	µg/L	38		1		12/17/2014	SM
Magnesium	EPA200.7	mg/L	23		0.5		12/15/2014	MW
Manganese, Dissolved	EPA200.7	µg/L	41		10	50	12/15/2014	MW
Manganese, Total	EPA200.7	µg/L	40		10	50	12/15/2014	MW
Mercury, Total	EPA200.8	µg/L	0.6		0.5	2	12/17/2014	SM
Methane	EPA174/175	µg/L	3.3	E	0.1		12/12/2014	MCCAM
Molybdenum, Total	EPA200.8	µg/L	10		1	1000	12/17/2014	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	12/17/2014	SM
Nitrate as NO ₃	EPA300.0	mg/L	Not Detected		1	45	12/5/2014	TC
Nitrate as NO ₃ -N	EPA300.0	mg/L	0.1		0.1	10	12/5/2014	TC
Nitrate+Nitrite as N	EPA300.0	mg/L	0.8		0.1		12/5/2014	TC
Nitrite as NO ₂ -N	EPA300.0	mg/L	0.6		0.1	1.0	12/5/2014	TC

mg/L: Milligrams per liter (=ppm)

ug/L : Micrograms per liter (=ppb)

PQL : Practical Quantitation Limit

H = Analyzed outside 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

4 Justin Court Suite D, Monterey, CA 93940

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www.MBASinc.com

ELAP Certification Number: 2385

Thursday, January 15, 2015

Lab Number: AB24222

Collection Date/Time: 12/4/2014 11:00
 Submittal Date/Time: 12/4/2014 16:06

Sample Collector: LEAR J
 Sample ID

Coliform Designation:

Sample Description: ASR1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P	EPA300.0	mg/L	0.2		0.1		12/5/2014	TC
pH (Laboratory)	SM4500-H+B	pH (H)	7.2				12/4/2014	LRH
Phosphorus, Total	HACH 8190	mg/L	0.15		0.03		12/9/2014	SM
Potassium	EPA200.7	mg/L	5.5		0.5		12/15/2014	MW
QC Anion Sum x 100	Calculation	%	95%				12/8/2014	HM
QC Anion-Cation Balance	Calculation	%	1				12/16/2014	MW
QC Cation Sum x 100	Calculation	%	96%				12/16/2014	MW
QC Ratio TDS/SEC	Calculation		0.61				12/10/2014	HM
Selenium, Total	EPA200.8	µg/L	2		2	50	12/17/2014	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	40		0.5		12/15/2014	MW
Sodium	EPA200.7	mg/L	105		0.5		12/15/2014	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	1186		1	900	12/8/2014	LRH
Strontium, Total	EPA200.8	µg/L	454		5		12/17/2014	SM
Sulfate	EPA300.0	mg/L	106		1	250	12/5/2014	TC
TOC	SM5310C	mg/L	0.8		0.2		12/17/2014	MW
Total Diss. Solids	SM2540C	mg/L	720		10	500	12/8/2014	HM
Total Nitrogen	Calculation	mg/L	1.3		0.5		12/15/2014	TC
Total Radium 226	EPA903.0	pCi/L	2.82 ± 1.26	E		3	12/13/2014	DAVI LA
Trihalomethanes	EPA524.2	µg/L	Not Detected	E		80	12/11/2014	BSK
Uranium by ICP/MS	EPA200.8	µg/L	1		1	30	12/17/2014	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	12/17/2014	SM
Zinc, Total	EPA200.8	µg/L	108		10	5000	12/17/2014	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 outside 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

Thursday, January 15, 2015

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

Lab Number: AB24223

Collection Date/Time: 12/4/2014 11:30

Sample Collector: LEAR J

Submittal Date/Time: 12/4/2014 16:06

Sample ID

Coliform Designation:

Sample Description: ASR2

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	245		2		12/8/2014	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	12/17/2014	SM
Ammonia-N	SM4500NH3 D	mg/L	0.28		0.05		12/9/2014	LRH
Arsenic, Total	EPA200.8	µg/L	2		1	10	12/17/2014	SM
Barium, Total	EPA200.8	µg/L	100		10	1000	12/17/2014	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	299		10		12/8/2014	HM
Boron	EPA200.7	mg/L	0.09		0.05		12/15/2014	MW
Bromide	EPA300.0	mg/L	0.4		0.1		12/5/2014	TC
Calcium	EPA200.7	mg/L	77		0.5		12/15/2014	MW
Carbonate as CaCO3	SM2320B	mg/L	Not Detected		10		12/8/2014	HM
Chloramines	SM4500-Cl G	mg/L	Not Detected	H	0.05		12/10/2014	LRH
Chloride	EPA300.0	mg/L	107		1	250	12/5/2014	TC
DOC		mg/L	0.6		0.2		12/17/2014	MW
Fluoride	EPA300.0	mg/L	0.4		0.1	2.0	12/5/2014	TC
Gross Alpha	EPA900.0	pCi/L	2.62 ± 1.46	E		15	12/13/2014	DAVI LA
Haloacetic Acids	EPA552	µg/L	Not Detected	E		60	12/12/2014	BSK
Iron	EPA200.7	µg/L	91		10	300	12/15/2014	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	12/15/2014	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	0.6		0.5		12/12/2014	TC
Lithium	EPA200.8	µg/L	34		1		12/17/2014	SM
Magnesium	EPA200.7	mg/L	19		0.5		12/15/2014	MW
Manganese, Dissolved	EPA200.7	µg/L	39		10	50	12/15/2014	MW
Manganese, Total	EPA200.7	µg/L	38		10	50	12/15/2014	MW
Mercury, Total	EPA200.8	µg/L	6		0.5	2	12/17/2014	SM
Methane	EPA174/175	µg/L	3.6	E	0.1		12/12/2014	MCCAM
Molybdenum, Total	EPA200.8	µg/L	10		1	1000	12/17/2014	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	12/17/2014	SM
Nitrate as NO3	EPA300.0	mg/L	1		1	45	12/5/2014	TC
Nitrate as NO3-N	EPA300.0	mg/L	0.2		0.1	10	12/5/2014	TC
Nitrate+Nitrite as N	EPA300.0	mg/L	0.9		0.1		12/5/2014	TC
Nitrite as NO2-N	EPA300.0	mg/L	0.7		0.1	1.0	12/5/2014	TC

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ELAP Certification Number: 2385

Thursday, January 15, 2015

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

Lab Number: AB24223

Collection Date/Time: 12/4/2014 11:30
Submittal Date/Time: 12/4/2014 16:06

Sample Collector: LEAR J
Sample ID

Coliform Designation:

Sample Description: ASR2

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P	EPA300.0	mg/L	0.3		0.1		12/5/2014	TC
pH (Laboratory)	SM4500-H+B	pH (H)	7.8				12/4/2014	LRH
Phosphorus, Total	HACH 8190	mg/L	0.22		0.03		12/9/2014	SM
Potassium	EPA200.7	mg/L	5.3		0.5		12/15/2014	MW
QC Anion Sum x 100	Calculation	%	95%				12/8/2014	HM
QC Anion-Cation Balance	Calculation	%	1				12/16/2014	MW
QC Cation Sum x 100	Calculation	%	97%				12/16/2014	MW
QC Ratio TDS/SEC	Calculation		0.60				12/10/2014	HM
Selenium, Total	EPA200.8	µg/L	2		2	50	12/17/2014	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	41		0.5		12/15/2014	MW
Sodium	EPA200.7	mg/L	93		0.5		12/15/2014	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	990		1	900	12/8/2014	LRH
Strontium, Total	EPA200.8	µg/L	390		5		12/17/2014	SM
Sulfate	EPA300.0	mg/L	72		1	250	12/5/2014	TC
TOC	SM5310C	mg/L	0.7		0.2		12/17/2014	MW
Total Diss. Solids	SM2540C	mg/L	597		10	500	12/10/2014	HM
Total Nitrogen	Calculation	mg/L	1.5		0.5		12/15/2014	TC
Total Radium 226	EPA903.0	pCi/L	2.18 ± 1.23	E		3	12/13/2014	DAVI LA
Trihalomethanes	EPA524.2	µg/L	Not Detected	E		80	12/11/2014	BSK
Uranium by ICP/MS	EPA200.8	µg/L	2		1	30	12/17/2014	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	12/17/2014	SM
Zinc, Total	EPA200.8	µg/L	206		10	5000	12/17/2014	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 outside of hold time

E = Analysis performed by External Laboratory; See External Laboratory Report attachments.

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ELAP Certification Number: 2385

Thursday, January 15, 2015

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

Lab Number: AB24224

Collection Date/Time: 12/4/2014 12:00

Sample Collector: LEAR J

Submittal Date/Time: 12/4/2014 16:06

Sample ID

Coliform Designation:

Sample Description: MW1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO ₃)	SM2320B	mg/L	229		2		12/8/2014	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	12/17/2014	SM
Ammonia-N	SM4500NH3 D	mg/L	Not Detected		0.05		12/9/2014	LRH
Arsenic, Total	EPA200.8	µg/L	2		1	10	12/17/2014	SM
Barium, Total	EPA200.8	µg/L	63		10	1000	12/17/2014	SM
Bicarbonate (as HCO ₃ ⁻)	SM2320B	mg/L	279		10		12/8/2014	HM
Boron	EPA200.7	mg/L	0.08		0.05		12/15/2014	MW
Bromide	EPA300.0	mg/L	0.4		0.1		12/5/2014	TC
Calcium	EPA200.7	mg/L	68		0.5		12/15/2014	MW
Carbonate as CaCO ₃	SM2320B	mg/L	Not Detected		10		12/8/2014	HM
Chloramines	SM4500-Cl G	mg/L	Not Detected	H	0.05		12/10/2014	LRH
Chloride	EPA300.0	mg/L	109		1	250	12/5/2014	TC
DOC		mg/L	0.6		0.2		12/17/2014	MW
Fluoride	EPA300.0	mg/L	0.4		0.1	2.0	12/5/2014	TC
Gross Alpha	EPA900.0	pCi/L	2.16 ± 0.67	E		15	12/13/2014	DAVI LA
Haloacetic Acids	EPA552	µg/L	Not Detected	E		60	12/12/2014	BSK
Iron	EPA200.7	µg/L	Not Detected		10	300	12/15/2014	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	12/15/2014	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	Not Detected		0.5		12/12/2014	TC
Lithium	EPA200.8	µg/L	30		1		12/17/2014	SM
Magnesium	EPA200.7	mg/L	20		0.5		12/15/2014	MW
Manganese, Dissolved	EPA200.7	µg/L	24		10	50	12/15/2014	MW
Manganese, Total	EPA200.7	µg/L	22		10	50	12/15/2014	MW
Mercury, Total	EPA200.8	µg/L	0.8		0.5	2	12/17/2014	SM
Methane	EPA174/175	µg/L	0.67	E	0.1		12/12/2014	MCCAM
Molybdenum, Total	EPA200.8	µg/L	15		1	1000	12/17/2014	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	12/17/2014	SM
Nitrate as NO ₃	EPA300.0	mg/L	Not Detected		1	45	12/5/2014	TC
Nitrate as NO ₃ -N	EPA300.0	mg/L	0.1		0.1	10	12/5/2014	TC
Nitrate+Nitrite as N	EPA300.0	mg/L	0.8		0.1		12/5/2014	TC
Nitrite as NO ₂ -N	EPA300.0	mg/L	0.7		0.1	1.0	12/5/2014	TC

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ELAP Certification Number: 2385

Thursday, January 15, 2015

Lab Number: AB24224

Collection Date/Time: 12/4/2014 12:00
 Submittal Date/Time: 12/4/2014 16:06

Sample Collector: LEAR J
 Sample ID

Coliform Designation:

Sample Description: MW1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P	EPA300.0	mg/L	0.2		0.1		12/5/2014	TC
pH (Laboratory)	SM4500-H+B	pH (H)	7.3				12/4/2014	LRH
Phosphorus, Total	HACH 8190	mg/L	0.12		0.03		12/9/2014	SM
Potassium	EPA200.7	mg/L	5.0		0.5		12/15/2014	MW
QC Anion Sum x 100	Calculation	%	94%				12/8/2014	HM
QC Anion-Cation Balance	Calculation	%	-1				12/16/2014	MW
QC Cation Sum x 100	Calculation	%	93%				12/16/2014	MW
QC Ratio TDS/SEC	Calculation		0.59				12/10/2014	HM
Selenium, Total	EPA200.8	µg/L	2		2	50	12/17/2014	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	38		0.5		12/15/2014	MW
Sodium	EPA200.7	mg/L	84		0.5		12/15/2014	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	948		1	900	12/8/2014	LRH
Strontium, Total	EPA200.8	µg/L	376		5		12/17/2014	SM
Sulfate	EPA300.0	mg/L	61		1	250	12/5/2014	TC
TOC	SM5310C	mg/L	0.7		0.2		12/17/2014	MW
Total Diss. Solids	SM2540C	mg/L	557		10	500	12/10/2014	HM
Total Nitrogen	Calculation	mg/L	0.8		0.5		12/15/2014	TC
Total Radium 226	EPA903.0	pCi/L	1.70 ± 1.01	E		3	12/13/2014	DAVI LA
Trihalomethanes	EPA524.2	µg/L	Not Detected	E		80	12/11/2014	BSK
Uranium by ICP/MS	EPA200.8	µg/L	1		1	30	12/17/2014	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	12/17/2014	SM
Zinc, Total	EPA200.8	µg/L	43		10	5000	12/17/2014	SM

Sample Comments:

Report Approved by:

David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm)

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PQL : Practical Quantitation Limit

H = Analyzed outside 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)

A4L1173

12/22/2014

Invoice: A427882

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

RE: Report for A4L1173 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 12/10/2014. 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.

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

Sincerely,

John Montierth, Project Manager

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



Accredited in Accordance with NELAP
ORELAP #4021

Case Narrative

Project and Report Details	Invoice Details
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Client: Monterey Bay Analytical Report To: David Holland Project #: MPWMD Received: 12/10/2014 - 16:30 Report Due: 12/24/2014	Invoice To: Monterey Bay Analytical Invoice Attn: David Holland Project PO#: -
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Sample Receipt Conditions

Cooler: Default Cooler Temperature on Receipt °C: 1.5	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	

Certificate of Analysis

Sample ID: A4L1173-01
Sampled By: Jon Lear
Sample Description: ASR1 // AB24222

Sample Date - Time: 12/04/14 - 11:00
Matrix: Waste Water
Sample Type: Grab

**BSK Associates Fresno
Organics**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	ND	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Chloroform	EPA 524.2	ND	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Dibromochloromethane	EPA 524.2	ND	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Surrogate: Bromofluorobenzene	EPA 524.2	90 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		ND	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A415727	12/11/14	12/12/14	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	107 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		ND	2.0	ug/L					

Certificate of Analysis

Sample ID: A4L1173-02
Sampled By: Jon Lear
Sample Description: ASR2 // AB24223

Sample Date - Time: 12/04/14 - 11:30
Matrix: Waste Water
Sample Type: Grab

**BSK Associates Fresno
Organics**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	ND	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Chloroform	EPA 524.2	ND	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Dibromochloromethane	EPA 524.2	ND	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Surrogate: Bromofluorobenzene	EPA 524.2	88 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		ND	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A415727	12/11/14	12/12/14	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	105 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		ND	2.0	ug/L					

Certificate of Analysis

Sample ID: A4L1173-03
Sampled By: Jon Lear
Sample Description: MW1 // AB24224

Sample Date - Time: 12/04/14 - 12:00
Matrix: Waste Water
Sample Type: Grab

**BSK Associates Fresno
Organics**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	ND	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Chloroform	EPA 524.2	ND	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Dibromochloromethane	EPA 524.2	ND	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Surrogate: Bromofluorobenzene	EPA 524.2	86 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		ND	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A415727	12/11/14	12/12/14	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	107 %	<i>Acceptable range: 70-130 %</i>						
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
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EPA 524.2 - Quality Control

Batch: A415638

Prepared: 12/11/2014

Prep Method: EPA 524.2

Analyst: JGB

Blank (A415638-BLK1)

Bromodichloromethane	ND	0.50	ug/L							12/11/14	
Bromoform	ND	0.50	ug/L							12/11/14	
Chloroform	ND	0.50	ug/L							12/11/14	
Dibromochloromethane	ND	0.50	ug/L							12/11/14	
Surrogate: Bromofluorobenzene	43			50		85	70-130			12/11/14	

Blank Spike (A415638-BS1)

Bromodichloromethane	8.6	0.50	ug/L	10		86	70-130			12/11/14	
Bromoform	9.4	0.50	ug/L	10		94	70-130			12/11/14	
Chloroform	9.2	0.50	ug/L	10		92	70-130			12/11/14	
Dibromochloromethane	9.0	0.50	ug/L	10		90	70-130			12/11/14	
Surrogate: Bromofluorobenzene	46			50		92	70-130			12/11/14	

Blank Spike Dup (A415638-BSD1)

Bromodichloromethane	8.3	0.50	ug/L	10		83	70-130	3	30	12/11/14	
Bromoform	8.8	0.50	ug/L	10		88	70-130	7	30	12/11/14	
Chloroform	8.9	0.50	ug/L	10		89	70-130	3	30	12/11/14	
Dibromochloromethane	8.5	0.50	ug/L	10		85	70-130	6	30	12/11/14	
Surrogate: Bromofluorobenzene	45			50		90	70-130			12/11/14	

EPA 552.3 - Quality Control

Batch: A415727

Prepared: 12/11/2014

Prep Method: EPA 552.3

Analyst: KHH

Blank (A415727-BLK1)

Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							12/11/14	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							12/11/14	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							12/11/14	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							12/11/14	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							12/11/14	
Surrogate: 2-Bromobutanoic Acid	26			25		105	70-130			12/11/14	

Blank Spike (A415727-BS1)

Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10		119	70-130			12/11/14	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		105	70-130			12/11/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		110	70-130			12/11/14	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20		112	70-130			12/11/14	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		108	70-130			12/11/14	
Surrogate: 2-Bromobutanoic Acid	27			25		106	70-130			12/11/14	

Blank Spike Dup (A415727-BSD1)

Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10		123	70-130	3	30	12/11/14	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		108	70-130	3	30	12/11/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		114	70-130	4	30	12/11/14	
Monochloroacetic Acid (MCAA)	23	2.0	ug/L	20		114	70-130	2	30	12/11/14	

**BSK Associates Fresno
Organics Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 552.3 - Quality Control

Batch: A415727

Prepared: 12/11/2014

Prep Method: EPA 552.3

Analyst: KHH

Blank Spike Dup (A415727-BSD1)

Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		113	70-130	4	30	12/11/14	
Surrogate: 2-Bromobutanoic Acid	27			25		108	70-130			12/11/14	

Matrix Spike (A415727-MS1), Source: A4L0766-01

Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10	ND	117	70-130			12/11/14	
Dichloroacetic Acid (DCAA)	12	1.0	ug/L	10	2.1	104	70-130			12/11/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10	ND	107	70-130			12/11/14	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20	ND	108	70-130			12/11/14	
Trichloroacetic Acid (TCAA)	13	1.0	ug/L	10	2.9	106	70-130			12/11/14	
Surrogate: 2-Bromobutanoic Acid	25			25		100	70-130			12/11/14	

Matrix Spike Dup (A415727-MSD1), Source: A4L0766-01

Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10	ND	118	70-130	1	30	12/11/14	
Dichloroacetic Acid (DCAA)	12	1.0	ug/L	10	2.1	104	70-130	0	30	12/11/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10	ND	106	70-130	0	30	12/11/14	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20	ND	109	70-130	1	30	12/11/14	
Trichloroacetic Acid (TCAA)	14	1.0	ug/L	10	2.9	109	70-130	2	30	12/11/14	
Surrogate: 2-Bromobutanoic Acid	27			25		107	70-130			12/11/14	

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		

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	CA000792014-1	State of Oregon - ORELAP	4021
EPA - UCMR3	CA00079	State of Washington	C997-14

Sacramento

State of California - ELAP	2435
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Vancouver

State of Oregon - ORELAP	WA100008	State of Washington	C824-13
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A4L1173



Monterey Bay Analytical

Monte6227



12102014

Turnaround: Standard

Due Date: 12/24/2014



Sample Integrity

BSK Bottles: Yes No Page 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$	<input checked="" type="radio"/> Yes	No	NA	Were correct containers and preservatives received for the tests requested?	<input checked="" type="radio"/> Yes	No	NA
	If samples were taken today, is there evidence that chilling has begun?	Yes	No	<input checked="" type="radio"/> NA	Were there bubbles in the VOA vials? (Volatiles Only)	Yes	No	NA
	Did all bottles arrive unbroken and intact?	<input checked="" type="radio"/> Yes	No		Was a sufficient amount of sample received?	<input checked="" type="radio"/> Yes	No	
	Did all bottle labels agree with COC?	<input checked="" type="radio"/> Yes	No		Do samples have a hold time <72 hours?	Yes	<input checked="" type="radio"/> No	
	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes	No	<input checked="" type="radio"/> NA	Was PM notified of discrepancies? PM: _____ By/Time: _____	Yes	No	<input checked="" type="radio"/> 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?		1-3			
	Bacti $\text{Na}_2\text{S}_2\text{O}_3$	—	—					
	None (P) ^{White Cap}	—	—					
	Cr6 (P) ^{Br. Green Label} $\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ DW	pH > 8	Y	N				
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer DW	pH 9-9.5	Y	N				
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer WW	pH 9.3-9.7	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	—	—					
	$\text{Na}_2\text{O}_3\text{S}+\text{HCl}$ (AG) ^{Lt. Pink Label} 525	—	—					
	$\text{Na}_2\text{S}_2\text{O}_3$ 1 Liter (Brown P) 549	—	—					
	$\text{Na}_2\text{S}_2\text{O}_3$ (AG) ^{Blue Label} 547,515,548,THM,524	—	—		3V			
	$\text{Na}_2\text{S}_2\text{O}_3$ (CG) ^{Blue Label} 504, 505	—	—					
	$\text{Na}_2\text{S}_2\text{O}_3 + \text{MCAA}$ (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	—	—						
Split	Container	Preservative	Date/Time/Initials	Container	Preservative	Date/Time/Initials		
	S P			S P				
	S P			S P				
Comments								

12/10/14
New

Labeled by: NP @ 17:58

Labels checked by: JH @ 18:15

RUSH Paged by: _____ @ _____



DAVI LABORATORIES, ENVIRONMENTAL ASSOCIATES
 730 Alfred Nobel Dr, Hercules, CA 94547

ANALYTICAL RESULTS
 REPORT

Company: Monterey Bay Analytical Services
 Address: 4 Justin Court-Suite D
 Monterey, CA 93940

Project Manager: David Holland
 Report Date: December 16, 2014
 Subcontract Order #: AB24222 , AB24223, AB24224

TABLE I

Sample ID	Collection Date/Time	Matrix	EPA Method	Analyses	Results pCi/L	±	2 Sigma error	MDA
ASR1		WW						
AB24222	12/04/14 (1100)		900.0	Gross Alpha	3.35	±	1.68	0.67
			903.1	Radium 226	2.82	±	1.26	0.79
ASR2		WW						
AB24223	12/04/14 (1130)		900.0	Gross Alpha	2.62	±	1.46	1.04
			903.1	Radium 226	2.18	±	1.23	0.95
MW1		WW						
AB24224	12/04/14 (1200)		900.0	Gross Alpha	2.16	±	0.67	0.18
			903.1	Radium 226	1.70	±	1.01	0.81

Analyses Date: 12/13/14

TABLE II QA/QC

Analyses	Spike Added	Detected Activity	% Agreement
Gross Alpha	571.11 pCi/L	547.45 pCi/L	95.86
Radium 226	2.88 pCi/L	2.73 pCi/L	94.79

Patricia Davi
 Davi Laboratories
 QA/QC Manager



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1412433

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: 12/10/2014

Analytical Report reviewed & approved for release on 12/15/2014 by:

Question about
your data?

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1412433

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
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
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
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
TEQ	Toxicity Equivalence



Analytical Report

Client: Monterey Bay Analytical
Project: MPWMD
Date Received: 12/10/14 11:27
Date Prepared: 12/12/14

WorkOrder: 1412433
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µg/L

Light Gases

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
ASR1	1412433-001A	Water/DISS.	12/04/2014 11:00	GC26	98947

Analytes	Result	RL	DF	Date Analyzed
Methane	3.3	0.10	1	12/12/2014 11:01

Analyst(s): KBO

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
ASR2	1412433-002A	Water/DISS.	12/04/2014 11:30	GC26	98947

Analytes	Result	RL	DF	Date Analyzed
Methane	3.6	0.10	1	12/12/2014 11:36

Analyst(s): KBO

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
MW1	1412433-003A	Water/DISS.	12/04/2014 12:00	GC26	98947

Analytes	Result	RL	DF	Date Analyzed
Methane	0.67	0.10	1	12/12/2014 12:23

Analyst(s): KBO




Quality Control Report

Client: Monterey Bay Analytical
Date Prepared: 12/12/14
Date Analyzed: 12/12/14
Instrument: GC26
Matrix: Air
Project: MPWMD

WorkOrder: 1412433
BatchID: 98947
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µL/L
Sample ID: MB/LCS-98947

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	10.9	0.50	10	-	109	70-130

 1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1412433

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: 4mbas@sbcglobal.net
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: 12/10/2014

Date Printed: 12/10/2014

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	
1412433-001	ASR1	Water	12/4/2014 11:00	<input type="checkbox"/>	A												
1412433-002	ASR2	Water	12/4/2014 11:30	<input type="checkbox"/>	A												
1412433-003	MW1	Water	12/4/2014 12:00	<input type="checkbox"/>	A												

Test Legend:

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

Prepared by: Maria Venegas

Comments: Needs analysts initials for all reports per D.H. 4/5/13

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.



WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL

QC Level: LEVEL 2

Work Order: 1412433

Project: MPWMD

Client Contact: David Holland

Date Received: 12/10/2014

Comments: Needs analysts initials for all reports per D.H. 4/5/13

Contact's Email: 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
1412433-001A	ASR1	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	12/4/2014 11:00	5 days	None	<input type="checkbox"/>	
1412433-002A	ASR2	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	12/4/2014 11:30	5 days	None	<input type="checkbox"/>	
1412433-003A	MW1	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	12/4/2014 12:00	5 days	None	<input type="checkbox"/>	

*** NOTE: 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).**



Sample Receipt Checklist

Client Name: **Monterey Bay Analytical** Date and Time Received: **12/10/2014 11:27:48 AM**
 Project Name: **MPWMD** LogIn Reviewed by: **Maria Venegas**
 WorkOrder No: **1412433** Matrix: Water Carrier: OnTrac

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

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

Comments:



Monterey Bay Analytical Services

4 Justin Court Suite D, Monterey, CA 93940

831.375.MBAS

montereybayanalytical@usa.net

ELAP Certification Number: 2385

Monday, December 29, 2014

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

Lab Number: AB24234

Collection Date/Time: 12/5/2014 11:00

Sample Collector: LEAR J

Submittal Date/Time: 12/5/2014 12:30

Sample ID

Coliform Designation:

Sample Description: ASR-3

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO ₃)	SM2320B	mg/L	228		2		12/8/2014	LRH
Aluminum, Total	EPA200.8	µg/L	10		10	1000	12/17/2014	SM
Ammonia-N	SM4500NH3 D	mg/L	0.10		0.05		12/9/2014	LRH
Arsenic, Total	EPA200.8	µg/L	4		1	10	12/17/2014	SM
Barium, Total	EPA200.8	µg/L	84		10	1000	12/17/2014	SM
Bicarbonate (as HCO ₃ ⁻)	SM2320B	mg/L	278		10		12/8/2014	HM
Boron	EPA200.7	mg/L	0.09		0.05		12/15/2014	MW
Bromide	EPA300.0	mg/L	0.3		0.1		12/6/2014	MW
Calcium	EPA200.7	mg/L	74		0.5		12/15/2014	MW
Carbonate as CaCO ₃	SM2320B	mg/L	Not Detected		10		12/8/2014	HM
Chloramines	SM4500-Cl G	mg/L	Not Detected	H	0.05		12/10/2014	LRH
Chloride	EPA300.0	mg/L	95		1	250	12/6/2014	MW
DOC		mg/L	0.5		0.2		12/17/2014	MW
Fluoride	EPA300.0	mg/L	0.3		0.1	2.0	12/6/2014	MW
Gross Alpha	EPA900.0	pCi/L	2.20 ± 0.76	E		15	12/13/2014	DAVI LA
Haloacetic Acids	EPA552	µg/L	Not Detected	E		60	12/12/2014	BSK
Iron	EPA200.7	µg/L	167		10	300	12/15/2014	MW
Iron, Dissolved	EPA200.7	µg/L	47		10	300	12/15/2014	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	Not Detected		0.5		12/12/2014	TC
Lithium	EPA200.8	µg/L	29		1		12/17/2014	SM
Magnesium	EPA200.7	mg/L	21		0.5		12/15/2014	MW
Manganese, Dissolved	EPA200.7	µg/L	32		10	50	12/15/2014	MW
Manganese, Total	EPA200.7	µg/L	32		10	50	12/15/2014	MW
Mercury, Total	EPA200.8	µg/L	2		0.5	2	12/17/2014	SM
Methane	EPA174/175	µg/L	1.2	E	0.1		12/12/2014	BSK
Molybdenum, Total	EPA200.8	µg/L	8		1	1000	12/17/2014	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	12/17/2014	SM
Nitrate as NO ₃	EPA300.0	mg/L	1		1	45	12/6/2014	MW
Nitrate as NO ₃ -N	EPA300.0	mg/L	0.2		0.1	10	12/6/2014	MW
Nitrate+Nitrite as N	EPA300.0	mg/L	0.5		0.1		12/6/2014	MW
Nitrite as NO ₂ -N	EPA300.0	mg/L	0.3		0.1	1.0	12/6/2014	MW

mg/L: Milligrams per liter (=ppm)

ug/L : Micrograms per liter (=ppb)

PQL : Practical Quantitation Limit

H = Analyzed outside 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

montereybayanalytical@usa.net

ELAP Certification Number: 2385

Monday, December 29, 2014

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

Lab Number: AB24234

Collection Date/Time: 12/5/2014 11:00

Sample Collector: LEAR J

Submittal Date/Time: 12/5/2014 12:30

Sample ID

Coliform Designation:

Sample Description: ASR-3

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P	EPA300.0	mg/L	0.2		0.1		12/6/2014	MW
pH (Laboratory)	SM4500-H+B	pH (H)	7.3				12/5/2014	HM
Phosphorus, Total	HACH 8190	mg/L	0.14		0.03		12/9/2014	SM
Potassium	EPA200.7	mg/L	5.0		0.5		12/15/2014	MW
QC Anion Sum x 100	Calculation	%	97%				12/8/2014	HM
QC Anion-Cation Balance	Calculation	%	7				12/16/2014	MW
QC Cation Sum x 100	Calculation	%	111%				12/16/2014	MW
QC Ratio TDS/SEC	Calculation		0.62				12/10/2014	HM
Selenium, Total	EPA200.8	µg/L	2		2	50	12/17/2014	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	40		0.5		12/15/2014	MW
Sodium	EPA200.7	mg/L	98		0.5		12/15/2014	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	886		1	900	12/8/2014	LRH
Strontium, Total	EPA200.8	µg/L	360		5		12/17/2014	SM
Sulfate	EPA300.0	mg/L	63		1	250	12/6/2014	MW
TOC	SM5310C	mg/L	0.7		0.2		12/17/2014	MW
Total Diss. Solids	SM2540C	mg/L	546		10	500	12/10/2014	HM
Total Nitrogen	Calculation	mg/L	0.5		0.5		12/15/2014	TC
Total Radium 226	EPA903.0	pCi/L	0.80 ± 0.65	E		3	12/13/2014	DAVI LA
Trihalomethanes	EPA524.2	µg/L	5.9	E		80	12/11/2014	BSK
Uranium by ICP/MS	EPA200.8	µg/L	2		1	30	12/17/2014	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	12/17/2014	SM
Zinc, Total	EPA200.8	µg/L	128		10	5000	12/17/2014	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 outside 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

montereybayanalytical@usa.net

ELAP Certification Number: 2385

Monday, December 29, 2014

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

Lab Number: AB24235

Collection Date/Time: 12/5/2014 11:45

Sample Collector: LEAR J

Submittal Date/Time: 12/5/2014 12:30

Sample ID

Coliform Designation:

Sample Description: SMS Deep

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	225		2		12/8/2014	LRH
Aluminum, Total	EPA200.8	µg/L	19		10	1000	12/17/2014	SM
Ammonia-N	SM4500NH3 D	mg/L	0.06		0.05		12/9/2014	LRH
Arsenic, Total	EPA200.8	µg/L	5		1	10	12/17/2014	SM
Barium, Total	EPA200.8	µg/L	52		10	1000	12/17/2014	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	275		10		12/8/2014	HM
Boron	EPA200.7	mg/L	0.08		0.05		12/15/2014	MW
Bromide	EPA300.0	mg/L	0.3		0.1		12/6/2014	MW
Calcium	EPA200.7	mg/L	69		0.5		12/15/2014	MW
Carbonate as CaCO3	SM2320B	mg/L	Not Detected		10		12/8/2014	HM
Chloramines	SM4500-Cl G	mg/L	Not Detected	H	0.05		12/10/2014	LRH
Chloride	EPA300.0	mg/L	92		1	250	12/6/2014	MW
DOC		mg/L	0.4		0.2		12/17/2014	MW
Fluoride	EPA300.0	mg/L	0.3		0.1	2.0	12/6/2014	MW
Gross Alpha	EPA900.0	pCi/L	1.95 ± 0.72	E		15	12/13/2014	DAVI LA
Haloacetic Acids	EPA552	µg/L	Not Detected	E		60	12/12/2014	BSK
Iron	EPA200.7	µg/L	20		10	300	12/15/2014	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	12/15/2014	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	Not Detected		0.5		12/12/2014	TC
Lithium	EPA200.8	µg/L	23		1		12/17/2014	SM
Magnesium	EPA200.7	mg/L	15		0.5		12/15/2014	MW
Manganese, Dissolved	EPA200.7	µg/L	23		10	50	12/15/2014	MW
Manganese, Total	EPA200.7	µg/L	23		10	50	12/15/2014	MW
Mercury, Total	EPA200.8	µg/L	1		0.5	2	12/17/2014	SM
Methane	EPA174/175	µg/L	1.2	E	0.1		12/12/2014	BSK
Molybdenum, Total	EPA200.8	µg/L	7		1	1000	12/17/2014	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	12/17/2014	SM
Nitrate as NO3	EPA300.0	mg/L	1		1	45	12/6/2014	MW
Nitrate as NO3-N	EPA300.0	mg/L	0.2		0.1	10	12/6/2014	MW
Nitrate+Nitrite as N	EPA300.0	mg/L	0.4		0.1		12/6/2014	MW
Nitrite as NO2-N	EPA300.0	mg/L	0.3		0.1	1.0	12/6/2014	MW

mg/L: Milligrams per liter (=ppm)

ug/L : Micrograms per liter (=ppb)

PQL : Practical Quantitation Limit

H = Analyzed outside 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

4 Justin Court Suite D, Monterey, CA 93940
 831.375.MBAS

montereybayanalytical@usa.net
 ELAP Certification Number: 2385

Monday, December 29, 2014

Lab Number: AB24235

Collection Date/Time: 12/5/2014 11:45
 Submittal Date/Time: 12/5/2014 12:30

Sample Collector: LEAR J
 Sample ID

Coliform Designation:

Sample Description: SMS Deep

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P	EPA300.0	mg/L	Not Detected		0.1		12/6/2014	MW
pH (Laboratory)	SM4500-H+B	pH (H)	7.4				12/5/2014	HM
Phosphorus, Total	HACH 8190	mg/L	0.05		0.03		12/9/2014	SM
Potassium	EPA200.7	mg/L	4.3		0.5		12/15/2014	MW
QC Anion Sum x 100	Calculation	%	96%				12/8/2014	HM
QC Anion-Cation Balance	Calculation	%	4				12/16/2014	MW
QC Cation Sum x 100	Calculation	%	104%				12/16/2014	MW
QC Ratio TDS/SEC	Calculation		0.58				12/10/2014	HM
Selenium, Total	EPA200.8	µg/L	2		2	50	12/17/2014	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	39		0.5		12/15/2014	MW
Sodium	EPA200.7	mg/L	93		0.5		12/15/2014	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	850		1	900	12/8/2014	LRH
Strontium, Total	EPA200.8	µg/L	421		5		12/17/2014	SM
Sulfate	EPA300.0	mg/L	50		1	250	12/6/2014	MW
TOC	SM5310C	mg/L	0.6		0.2		12/17/2014	MW
Total Diss. Solids	SM2540C	mg/L	497		10	500	12/10/2014	HM
Total Nitrogen	Calculation	mg/L	0.5		0.5		12/15/2014	TC
Total Radium 226	EPA903.0	pCi/L	1.19 ± 0.77	E		3	12/13/2014	DAVI LA
Trihalomethanes	EPA524.2	µg/L	4.1	E		80	12/11/2014	BSK
Uranium by ICP/MS	EPA200.8	µg/L	2		1	30	12/17/2014	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	12/17/2014	SM
Zinc, Total	EPA200.8	µg/L	28		10	5000	12/17/2014	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 outside 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)

A4L1176

12/23/2014

Invoice: A427896

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

RE: Report for A4L1176 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 12/10/2014. 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.

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

Sincerely,

John Montierth, Project Manager

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



Accredited in Accordance with NELAP
ORELAP #4021

Case Narrative

Project and Report Details **Invoice Details**

Client: Monterey Bay Analytical
Report To: David Holland
Project #: MPWMD
Received: 12/10/2014 - 16:00
Report Due: 12/24/2014

Invoice To: Monterey Bay Analytical
Invoice Attn: David Holland
Project PO#: -

Sample Receipt Conditions

Cooler: Default Cooler
Temperature on Receipt °C: 1.5

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	

Certificate of Analysis

Sample ID: A4L1176-01
Sampled By: Jon Lear
Sample Description: ASR-3 // AB24234

Sample Date - Time: 12/05/14 - 11:00
Matrix: Waste Water
Sample Type: Grab

**BSK Associates Fresno
Organics**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	1.8	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Chloroform	EPA 524.2	3.0	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Dibromochloromethane	EPA 524.2	1.1	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Surrogate: Bromofluorobenzene	EPA 524.2	87 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		5.9	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A415727	12/11/14	12/12/14	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	107 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		ND	2.0	ug/L					

Certificate of Analysis

Sample ID: A4L1176-02
Sampled By: Jon Lear
Sample Description: SMS Deep // AB24235

Sample Date - Time: 12/05/14 - 11:45
Matrix: Waste Water
Sample Type: Grab

**BSK Associates Fresno
Organics**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	1.2	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Chloroform	EPA 524.2	2.3	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Dibromochloromethane	EPA 524.2	0.59	0.50	ug/L	1	A415638	12/11/14	12/11/14	
Surrogate: Bromofluorobenzene	EPA 524.2	89 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		4.1	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A415727	12/11/14	12/12/14	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A415727	12/11/14	12/12/14	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	106 %	<i>Acceptable range: 70-130 %</i>						
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
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EPA 524.2 - Quality Control

Batch: A415638

Prepared: 12/11/2014

Prep Method: EPA 524.2

Analyst: JGB

Blank (A415638-BLK1)

Bromodichloromethane	ND	0.50	ug/L							12/11/14	
Bromoform	ND	0.50	ug/L							12/11/14	
Chloroform	ND	0.50	ug/L							12/11/14	
Dibromochloromethane	ND	0.50	ug/L							12/11/14	
Surrogate: Bromofluorobenzene	43			50		85	70-130			12/11/14	

Blank Spike (A415638-BS1)

Bromodichloromethane	8.6	0.50	ug/L	10		86	70-130			12/11/14	
Bromoform	9.4	0.50	ug/L	10		94	70-130			12/11/14	
Chloroform	9.2	0.50	ug/L	10		92	70-130			12/11/14	
Dibromochloromethane	9.0	0.50	ug/L	10		90	70-130			12/11/14	
Surrogate: Bromofluorobenzene	46			50		92	70-130			12/11/14	

Blank Spike Dup (A415638-BSD1)

Bromodichloromethane	8.3	0.50	ug/L	10		83	70-130	3	30	12/11/14	
Bromoform	8.8	0.50	ug/L	10		88	70-130	7	30	12/11/14	
Chloroform	8.9	0.50	ug/L	10		89	70-130	3	30	12/11/14	
Dibromochloromethane	8.5	0.50	ug/L	10		85	70-130	6	30	12/11/14	
Surrogate: Bromofluorobenzene	45			50		90	70-130			12/11/14	

EPA 552.3 - Quality Control

Batch: A415727

Prepared: 12/11/2014

Prep Method: EPA 552.3

Analyst: KHH

Blank (A415727-BLK1)

Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							12/11/14	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							12/11/14	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							12/11/14	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							12/11/14	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							12/11/14	
Surrogate: 2-Bromobutanoic Acid	26			25		105	70-130			12/11/14	

Blank Spike (A415727-BS1)

Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10		119	70-130			12/11/14	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		105	70-130			12/11/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		110	70-130			12/11/14	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20		112	70-130			12/11/14	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		108	70-130			12/11/14	
Surrogate: 2-Bromobutanoic Acid	27			25		106	70-130			12/11/14	

Blank Spike Dup (A415727-BSD1)

Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10		123	70-130	3	30	12/11/14	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		108	70-130	3	30	12/11/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		114	70-130	4	30	12/11/14	
Monochloroacetic Acid (MCAA)	23	2.0	ug/L	20		114	70-130	2	30	12/11/14	

**BSK Associates Fresno
Organics Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 552.3 - Quality Control

Batch: A415727

Prepared: 12/11/2014

Prep Method: EPA 552.3

Analyst: KHH

Blank Spike Dup (A415727-BSD1)

Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		113	70-130	4	30	12/11/14	
Surrogate: 2-Bromobutanoic Acid	27			25		108	70-130			12/11/14	

Matrix Spike (A415727-MS1), Source: A4L0766-01

Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10	ND	117	70-130			12/11/14	
Dichloroacetic Acid (DCAA)	12	1.0	ug/L	10	2.1	104	70-130			12/11/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10	ND	107	70-130			12/11/14	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20	ND	108	70-130			12/11/14	
Trichloroacetic Acid (TCAA)	13	1.0	ug/L	10	2.9	106	70-130			12/11/14	
Surrogate: 2-Bromobutanoic Acid	25			25		100	70-130			12/11/14	

Matrix Spike Dup (A415727-MSD1), Source: A4L0766-01

Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10	ND	118	70-130	1	30	12/11/14	
Dichloroacetic Acid (DCAA)	12	1.0	ug/L	10	2.1	104	70-130	0	30	12/11/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10	ND	106	70-130	0	30	12/11/14	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20	ND	109	70-130	1	30	12/11/14	
Trichloroacetic Acid (TCAA)	14	1.0	ug/L	10	2.9	109	70-130	2	30	12/11/14	
Surrogate: 2-Bromobutanoic Acid	27			25		107	70-130			12/11/14	

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		

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	CA000792014-1	State of Oregon - ORELAP	4021
EPA - UCMR3	CA00079	State of Washington	C997-14

Sacramento

State of California - ELAP	2435
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Vancouver

State of Oregon - ORELAP	WA100008	State of Washington	C824-13
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A4L1176



Monterey Bay Analytical

Monte6227



12102014

Turnaround: Standard

Due Date: 12/24/2014



Sample Integrity

BSK Bottles: Yes No Page 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$	<u>Yes</u> No NA	Were correct containers and preservatives received for the tests requested?	<u>Yes</u> No NA						
	If samples were taken today, is there evidence that chilling has begun?	Yes No <u>NA</u>	Were there bubbles in the VOA vials? (Volatiles Only)	Yes <u>No</u> NA						
	Did all bottles arrive unbroken and intact?	<u>Yes</u> No	Was a sufficient amount of sample received?	<u>Yes</u> No						
	Did all bottle labels agree with COC?	<u>Yes</u> No	Do samples have a hold time <72 hours?	Yes <u>No</u>						
	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes No <u>NA</u>	Was PM notified of discrepancies? PM: _____ By/Time: _____	Yes No <u>NA</u>						
Bottles Received <small>"-" means preservation/chlorine checks are either N/A or are performed in the lab</small>	250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)	Checks	Passed?	1-2						
	Bacti $\text{Na}_2\text{S}_2\text{O}_3$	—	—							
	None (P) ^{White Cap}	—	—							
	Cr6 (P) ^{Br. Green Label} $\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ DW	pH > 8	Y	N						
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer DW	pH 9-9.5	Y	N						
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer WW	pH 9.3-9.7	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	—	—							
	$\text{Na}_2\text{O}_3\text{S}+\text{HCl}$ (AG) ^{Lt. Pink Label} 525	—	—							
	$\text{Na}_2\text{S}_2\text{O}_3$ 1 Liter (Brown P) 549	—	—							
	$\text{Na}_2\text{S}_2\text{O}_3$ (AG) ^{Blue Label} 547,515,548,THM,524	—	—		3V					
	$\text{Na}_2\text{S}_2\text{O}_3$ (CG) ^{Blue Label} 504, 505	—	—							
	$\text{Na}_2\text{S}_2\text{O}_3$ + 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	—	—								
Split	Container	Preservative	Date/Time/Initials	Container	Preservative	Date/Time/Initials				
	S P			S P						
	S P			S P						
Comments										

Labeled by: NR @ 1758

Labels checked by: JH @ 18:15

RUSH Paged by: @



DAVI LABORATORIES, ENVIRONMENTAL ASSOCIATES
730 Alfred Nobel Dr, Hercules, CA 94547

ANALYTICAL RESULTS
REPORT

Company: Monterey Bay Analytical Services
Address: 4 Justin Court-Suite D
Monterey, CA 93940

Project Manager: David Holland
Report Date: December 16, 2014
Subcontract Order #: AB24234 , AB24235

TABLE I

Sample ID	Collection Date/Time	Matrix	EPA Method	Analyses	Results pCi/L	±	2 Sigma error	MDA
ASR AB24234	12/05/14 (1100)	WW	900.0 903.1	Gross Alpha Radium 226	2.20 0.80	± ±	0.76 0.65	0.22 0.40
SMS Deep AB24235	12/05/14 (1145)	WW	900.0 903.1	Gross Alpha Radium 226	1.95 1.19	± ±	0.72 0.77	0.22 0.39

Analyses Date: 12/13/14

TABLE II QA/QC

Analyses	Spike Added	Detected Activity	% Agreement
Gross Alpha	571.11 pCi/L	547.45 pCi/L	95.86
Radium 226	2.88 pCi/L	2.73 pCi/L	94.79

Patricia Davi
Davi Laboratories
QA/QC Manager



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1412432

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: 12/10/2014

Analytical Report reviewed & approved for release on 12/15/2014 by:

*Question about
your data?*

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1412432

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
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
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
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
TEQ	Toxicity Equivalence



Analytical Report

Client: Monterey Bay Analytical
Project: MPWMD
Date Received: 12/10/14 11:26
Date Prepared: 12/12/14

WorkOrder: 1412432
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µg/L

Light Gases

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
ASR-3	1412432-001A	Water/DISS.	12/05/2014 11:00	GC26	98947

Analytes	Result	RL	DF	Date Analyzed
Methane	1.2	0.10	1	12/12/2014 10:28

Analyst(s): KBO

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SMS Deep	1412432-002A	Water/DISS.	12/05/2014 11:45	GC26	98947

Analytes	Result	RL	DF	Date Analyzed
Methane	0.62	0.10	1	12/12/2014 10:41

Analyst(s): KBO



Quality Control Report

Client: Monterey Bay Analytical
Date Prepared: 12/12/14
Date Analyzed: 12/12/14
Instrument: GC26
Matrix: Air
Project: MPWMD

WorkOrder: 1412432
BatchID: 98947
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µL/L
Sample ID: MB/LCS-98947

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	10.9	0.50	10	-	109	70-130



1534 Willow Pass Rd
 Pittsburg, CA 94565-1701
 (925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1412432

ClientCode: MBAS

- WaterTrax
 WriteOn
 EDF
 Excel
 EQulS
 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: 4mbas@sbcglobal.net
 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: 12/10/2014

Date Printed: 12/10/2014

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	
1412432-001	ASR-3	Water	12/5/2014 11:00	<input type="checkbox"/>	A												
1412432-002	SMS Deep	Water	12/5/2014 11:45	<input type="checkbox"/>	A												

Test Legend:

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

Prepared by: Maria Venegas

Comments: Needs analysts initials for all reports per D.H. 4/5/13

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.



WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL

QC Level: LEVEL 2

Work Order: 1412432

Project: MPWMD

Client Contact: David Holland

Date Received: 12/10/2014

Comments: Needs analysts initials for all reports per D.H. 4/5/13

Contact's Email: 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
1412432-001A	ASR-3	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	12/5/2014 11:00	5 days	None	<input type="checkbox"/>	
1412432-002A	SMS Deep	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	12/5/2014 11:45	5 days	None	<input type="checkbox"/>	

*** NOTE: 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).**



Sample Receipt Checklist

Client Name: **Monterey Bay Analytical** Date and Time Received: **12/10/2014 11:26:12 AM**
 Project Name: **MPWMD** LogIn Reviewed by: **Maria Venegas**
 WorkOrder No: **1412432** Matrix: Water Carrier: OnTrac

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

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

 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

Page 1 of 2

Tuesday, January 13, 2015

Lab Number: AB24456

Collection Date/Time: 12/10/2014 9:40

Sample Collector: LINDBERG T

Submittal Date/Time: 12/10/2014 13:45

Sample ID

Coliform Designation:

Sample Description: PCA E-D

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
Alkalinity, Total (as CaCO ₃)	SM2320B	mg/L	168		2		12/15/2014	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	12/17/2014	SM
Ammonia-N	SM4500NH3 D	mg/L	Not Detected		0.05		12/18/2014	TC
Arsenic, Total	EPA200.8	µg/L	7		1	10	12/17/2014	SM
Barium, Total	EPA200.8	µg/L	69		10	1000	12/17/2014	SM
Bicarbonate (as HCO ₃ ⁻)	SM2320B	mg/L	205		10		12/15/2014	HM
Boron	EPA200.7	mg/L	0.08		0.05		12/22/2014	MW
Bromide	EPA300.0	mg/L	0.3		0.1		12/10/2014	TC
Calcium	EPA200.7	mg/L	44		0.5		12/22/2014	MW
Carbonate as CaCO ₃	SM2320B	mg/L	Not Detected		10		12/15/2014	HM
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		12/10/2014	SM
Chloride	EPA300.0	mg/L	80		1	250	12/10/2014	TC
DOC		mg/L	0.2		0.2		12/17/2014	MW
Fluoride	EPA300.0	mg/L	0.4		0.1	2.0	12/10/2014	TC
Gross Alpha	EPA900.0	pCi/L	0.79 ± 0.78	E		15	12/13/2014	DAVI LA
Haloacetic Acids	EPA552	µg/L	Not Detected	E		60	12/16/2014	BSK
Iron	EPA200.7	µg/L	Not Detected		10	300	12/22/2014	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	12/29/2014	MW
Kjeldahl Nitrogen	SM4500-NH3 B,	mg/L	Not Detected		0.5		12/22/2014	TC
Lithium	EPA200.8	µg/L	23		1		12/17/2014	SM
Magnesium	EPA200.7	mg/L	9.0		0.5		12/22/2014	MW
Manganese, Dissolved	EPA200.7	µg/L	Not Detected		10	50	12/29/2014	MW
Manganese, Total	EPA200.7	µg/L	Not Detected		10	50	12/22/2014	MW
Mercury, Total	EPA200.8	µg/L	Not Detected		0.5	2	12/17/2014	SM
Methane	EPA174/175	µg/L	Not Detected	E	0.1		12/12/2014	MCCAM
Molybdenum, Total	EPA200.8	µg/L	10		1	1000	12/17/2014	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	12/17/2014	SM
Nitrate as NO ₃	EPA300.0	mg/L	Not Detected		1	45	12/10/2014	TC
Nitrate as NO ₃ -N	EPA300.0	mg/L	0.1		0.1	10	12/10/2014	TC
Nitrate+Nitrite as N	EPA300.0	mg/L	0.8		0.1		12/10/2014	TC
Nitrite as NO ₂ -N	EPA300.0	mg/L	0.7		0.1	1.0	12/10/2014	TC
o-Phosphate-P	EPA300.0	mg/L	Not Detected		0.1		12/10/2014	TC

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

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

Lab Number: AB24456

Collection Date/Time: 12/10/2014 9:40 Sample Collector: LINDBERG T

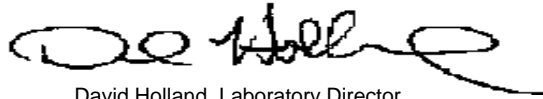
Submittal Date/Time: 12/10/2014 13:45 Sample ID Coliform Designation:

Sample Description: PCA E-D

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
pH (Laboratory)	SM4500-H+B	pH (H)	7.6				12/10/2014	HM
Phosphorus, Total	HACH 8190	mg/L	0.06		0.03		12/16/2014	SM
Potassium	EPA200.7	mg/L	3.5		0.5		12/22/2014	MW
QC Anion Sum x 100	Calculation	%	92%				12/15/2014	HM
QC Anion-Cation Balance	Calculation	%	3				12/23/2014	SM
QC Cation Sum x 100	Calculation	%	99%				12/23/2014	SM
QC Ratio TDS/SEC	Calculation		0.58				12/12/2014	HM
Selenium, Total	EPA200.8	µg/L	Not Detected		2	50	12/17/2014	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	46		0.5		12/22/2014	MW
Sodium	EPA200.7	mg/L	81		0.5		12/22/2014	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	664		1	900	12/11/2014	HM
Strontium, Total	EPA200.8	µg/L	239		5		12/17/2014	SM
Sulfate	EPA300.0	mg/L	25		1	250	12/10/2014	TC
TOC	SM5310C	mg/L	0.4		0.2		12/17/2014	MW
Total Diss. Solids	SM2540C	mg/L	388		10	500	12/10/2014	HM
Total Nitrogen	Calculation	mg/L	0.8		0.5		12/22/2014	HM
Total Radium 226	EPA903.0	pCi/L	0.29 ± 0.55	E		3	12/13/2014	DAVI LA
Trihalomethanes	EPA524.2	µg/L	Not Detected	E		80	12/13/2014	BSK
Uranium by ICP/MS	EPA200.8	µg/L	Not Detected		1	30	12/17/2014	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	12/17/2014	SM
Zinc, Total	EPA200.8	µg/L	15		10	5000	12/17/2014	SM

Sample Comments:

Report Approved by:



David Holland, Laboratory Director



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

A4L1290

12/23/2014

Invoice: A427932

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

RE: Report for A4L1290 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 12/11/2014. 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.

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

Sincerely,

John Montieth, Project Manager

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



Accredited in Accordance with NELAP
ORELAP #4021

Case Narrative

Project and Report Details **Invoice Details**

Client: Monterey Bay Analytical
Report To: David Holland
Project #: -
Received: 12/11/2014 - 12:00
Report Due: 12/29/2014

Invoice To: Monterey Bay Analytical
Invoice Attn: David Holland
Project PO#: -

Sample Receipt Conditions

Cooler: Default Cooler
Temperature on Receipt °C: 2.3

Containers Intact
COC/Labels Agree
Received On Blue Ice
Packing Material - Other
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:

MS1.0 Matrix spike recoveries exceed control limits.

Report Distribution

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

Certificate of Analysis

Sample ID: A4L1290-01
Sampled By: T. Lindberg
Sample Description: PCA E-D // AB24456

Sample Date - Time: 12/10/14 - 09:40
Matrix: Waste Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	ND	0.50	ug/L	1	A415797	12/12/14	12/13/14	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A415797	12/12/14	12/13/14	
Chloroform	EPA 524.2	ND	0.50	ug/L	1	A415797	12/12/14	12/13/14	
Dibromochloromethane	EPA 524.2	ND	0.50	ug/L	1	A415797	12/12/14	12/13/14	
Surrogate: Bromofluorobenzene	EPA 524.2	104 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		ND	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A415929	12/16/14	12/16/14	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A415929	12/16/14	12/16/14	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A415929	12/16/14	12/16/14	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A415929	12/16/14	12/16/14	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A415929	12/16/14	12/16/14	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	103 %	<i>Acceptable range: 70-130 %</i>						
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: A415797

Prepared: 12/12/2014

Prep Method: EPA 524.2

Analyst: JGB

Blank (A415797-BLK1)

Bromodichloromethane	ND	0.50	ug/L							12/12/14	
Bromoform	ND	0.50	ug/L							12/12/14	
Chloroform	ND	0.50	ug/L							12/12/14	
Dibromochloromethane	ND	0.50	ug/L							12/12/14	
Surrogate: Bromofluorobenzene	56			50		111	70-130			12/12/14	

Blank Spike (A415797-BS1)

Bromodichloromethane	10	0.50	ug/L	10		100	70-130			12/12/14	
Bromoform	9.5	0.50	ug/L	10		95	70-130			12/12/14	
Chloroform	10	0.50	ug/L	10		105	70-130			12/12/14	
Dibromochloromethane	9.6	0.50	ug/L	10		96	70-130			12/12/14	
Surrogate: Bromofluorobenzene	50			50		100	70-130			12/12/14	

Blank Spike Dup (A415797-BSD1)

Bromodichloromethane	11	0.50	ug/L	10		111	70-130	10	30	12/12/14	
Bromoform	10	0.50	ug/L	10		103	70-130	8	30	12/12/14	
Chloroform	12	0.50	ug/L	10		120	70-130	13	30	12/12/14	
Dibromochloromethane	10	0.50	ug/L	10		104	70-130	8	30	12/12/14	
Surrogate: Bromofluorobenzene	52			50		104	70-130			12/12/14	

EPA 552.3 - Quality Control

Batch: A415929

Prepared: 12/16/2014

Prep Method: EPA 552.3

Analyst: KHH

Blank (A415929-BLK1)

Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							12/16/14	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							12/16/14	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							12/16/14	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							12/16/14	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							12/16/14	
Surrogate: 2-Bromobutanoic Acid	25			25		102	70-130			12/16/14	

Blank Spike (A415929-BS1)

Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10		114	70-130			12/16/14	
Dichloroacetic Acid (DCAA)	10	1.0	ug/L	10		103	70-130			12/16/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		106	70-130			12/16/14	
Monochloroacetic Acid (MCAA)	21	2.0	ug/L	20		106	70-130			12/16/14	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		106	70-130			12/16/14	
Surrogate: 2-Bromobutanoic Acid	26			25		103	70-130			12/16/14	

Blank Spike Dup (A415929-BSD1)

Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10		116	70-130	1	30	12/16/14	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		105	70-130	2	30	12/16/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		110	70-130	3	30	12/16/14	
Monochloroacetic Acid (MCAA)	21	2.0	ug/L	20		106	70-130	0	30	12/16/14	

**BSK Associates Fresno
Organics Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 552.3 - Quality Control

Batch: A415929

Prepared: 12/16/2014

Prep Method: EPA 552.3

Analyst: KHH

Blank Spike Dup (A415929-BSD1)

Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		108	70-130	2	30	12/16/14	
Surrogate: 2-Bromobutanoic Acid	25			25		102	70-130			12/16/14	

Matrix Spike (A415929-MS1), Source: A4L1182-01

Dibromoacetic Acid (DBAA)	28	1.0	ug/L	10	17	113	70-130			12/16/14	
Dichloroacetic Acid (DCAA)	28	1.0	ug/L	10	12	158	70-130			12/16/14	MS1.0 High
Monobromoacetic Acid (MBAA)	13	1.0	ug/L	10	2.0	110	70-130			12/16/14	
Monochloroacetic Acid (MCAA)	25	2.0	ug/L	20	2.0	115	70-130			12/16/14	
Trichloroacetic Acid (TCAA)	16	1.0	ug/L	10	5.0	114	70-130			12/16/14	
Surrogate: 2-Bromobutanoic Acid	26			25		102	70-130			12/16/14	

Matrix Spike Dup (A415929-MSD1), Source: A4L1182-01

Dibromoacetic Acid (DBAA)	28	1.0	ug/L	10	17	114	70-130	0	30	12/16/14	
Dichloroacetic Acid (DCAA)	24	1.0	ug/L	10	12	121	70-130	14	30	12/16/14	
Monobromoacetic Acid (MBAA)	13	1.0	ug/L	10	2.0	106	70-130	4	30	12/16/14	
Monochloroacetic Acid (MCAA)	25	2.0	ug/L	20	2.0	116	70-130	1	30	12/16/14	
Trichloroacetic Acid (TCAA)	16	1.0	ug/L	10	5.0	110	70-130	2	30	12/16/14	
Surrogate: 2-Bromobutanoic Acid	26			25		103	70-130			12/16/14	

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		

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	CA000792014-1	State of Oregon - ORELAP	4021
EPA - UCMR3	CA00079	State of Washington	C997-14

Sacramento

State of California - ELAP 2435

Vancouver

State of Oregon - ORELAP WA100008 State of Washington C824-13

A4L1290



Monterey Bay Analytical

Monte6227



12112014

Turnaround: Standard
Due Date: 12/29/2014

BSK Associates

Engineers & Laboratories

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

2.3

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

A4L1290
 Monte6227
 12/11/2014
 10



Required Fields Temp.

Company/Client Name: **Monterey Bay Analytical Services** Report Attention: **David Holland** Invoice To: **Mason Weidner-Holland** Phone: **831-375-6227** Fax: **831-641-0734**
 Address: **4 Justin Court, Suite D** City: **Monterey** State: **CA** Zip: **93940** E-mail: **montereybayanalytical@usa.net**
 Additional Address: _____

Project: **MPWMD** Project # _____
 Reporting Options: (case of bag) Swamp 300 Type _____
 Sampler Name (Printed/Signature): **T. Lindberg** Regulatory Carbon Copies: SWRCB (Drinking Water) Fresno Co Madera Co Tulare Co Other _____
 Regulatory Compliance: EDT to California SWRCB (Drinking Water) System Number: _____
 Geotracker # _____

Matrix Types: **SW=Surface Water BW=Boiled Water GW=Ground Water WW=Wastewater STW=Storm Water DW=Drinking Water SO=Solid**
 # **1** Sample Description: **PCA E-D** Date: **12/10/14** Time: **0940** Matrix: **WW** Comments / Station Code / WTRAX: **AB24456**

#	Sample Description*	Date	Time	Matrix*	Comments / Station Code / WTRAX	TTHMs	HAA-5											
1	PCA E-D	12/10/14	0940	WW	AB24456	X	X											

Requisitioned by (Signature and Printed Name): **David Holland** Date: **12/10/14** Time: **1600** Received by (Signature and Printed Name): _____
 Requisitioned By (Signature and Printed Name): _____ Date: _____ Time: _____ Received by (Signature and Printed Name): _____
 Received for Lab by (Signature and Printed Name): _____ Date: _____ Time: _____ Payment Received at Delivery: _____

Shipping Method: OMTBAC UPS GSO WALK-IN FED EX Couriers _____
 Cooling Method: Wet Blue None
 Chilling Process Begun Y/N: _____ Amount: _____ Pkg: _____ Check: _____ Cash: _____

Payment for services rendered is not due until 30 days from the date provided. If not so paid, account balances are deemed delinquent. Delinquent balances are subject to penalty, interest charges, and interest specified in BSK's current Standard Terms and Conditions for Laboratory Services. The patron signing for the Client/Company as knowledgeable that signed above has read and authorized agent to the Client that the Client agrees to be responsible for payment for the services on this Client's terms and conditions for Laboratory Services unless specifically stated otherwise. BSK's current terms and conditions can be found at www.bskassociates.com/BSKLabServicesConditions.pdf



Sample Integrity

BSK Bottles: Yes No Page 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$		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 <small>* means preservation/chlorine checks are either N/A or are performed in the lab</small>	250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)		Checks	Passed?								
	Bacti $\text{Na}_2\text{S}_2\text{O}_3$		—	—								
	None (P) ^{White Cap}		—	—								
	Cr6 (P) ^{Br. Green Label} $\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ DW		pH > 8	Y	N							
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer DW		pH 9-9.5	Y	N							
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer WW		pH 9.3-9.7	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							
	$\text{NaOH} + \text{ZnAc}$ (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		—	—								
	$\text{Na}_2\text{O}_3\text{S} + \text{HCl}$ (AG) ^{Lt. Pink Label} 525		—	—								
	$\text{Na}_2\text{S}_2\text{O}_3$ 1 Liter (Brown P) 549		—	—								
	$\text{Na}_2\text{S}_2\text{O}_3$ (AG) ^{Blue Label} 547,515,548,THM,524		—	—								
	$\text{Na}_2\text{S}_2\text{O}_3$ (CG) ^{Blue Label} 504, 505		—	—		3V						
	$\text{Na}_2\text{S}_2\text{O}_3 + \text{MCAA}$ (CG) ^{Orange Label} 531		pH < 3	Y	N		CW					
	NH_4Cl (AG) ^{Purple Label} 552		—	—		1A						
	EDA (AG) ^{Brown Label} DBPs		—	—		12/11/14						
	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												



DAVI LABORATORIES, ENVIRONMENTAL ASSOCIATES
730 Alfred Nobel Dr, Hercules, CA 94547

ANALYTICAL RESULTS
REPORT

Company: Monterey Bay Analytical Services
Address: 4 Justin Court-Suite D
Monterey, CA 93940

Project Manager: David Holland
Report Date: December 16, 2014
Subcontract Order #: AB24456 ,

TABLE I

Sample ID	Collection Date/Time	Matrix	EPA Method	Analyses	Results pCi/L	±	2 Sigma error	MDA
PCA E-D		WW						
AB24456	12/10/14 (0940)		900.0	Gross Alpha	0.79	±	0.78	0.56
			903.1	Radium 226	0.29	±	0.55	0.85

Analyses Date: 12/13/14

TABLE II QA/QC

Analyses	Spike Added	Detected Activity	% Agreement
Gross Alpha	571.11 pCi/L	547.45 pCi/L	95.86
Radium 226	2.88 pCi/L	2.73 pCi/L	94.79

Patricia Davi
Davi Laboratories
QA/QC Manager



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1412488

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: 12/11/2014

Analytical Report reviewed & approved for release on 12/17/2014 by:

*Question about
your data?*

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1412488

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
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
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
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
TEQ	Toxicity Equivalence



Analytical Report

Client: Monterey Bay Analytical

WorkOrder: 1412488

Project: MPWMD

Extraction Method: RSK175

Date Received: 12/11/14 11:04

Analytical Method: RSK175

Date Prepared: 12/12/14

Unit: µg/L

Light Gases

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
PCA E-D	1412488-001A	Water/DISS.	12/10/2014 09:40	GC26	98947

Analytes	Result	RL	DF	Date Analyzed
Methane	ND	0.10	1	12/12/2014 12:36

Analyst(s): KBO



Quality Control Report

Client: Monterey Bay Analytical
Date Prepared: 12/12/14
Date Analyzed: 12/12/14
Instrument: GC26
Matrix: Air
Project: MPWMD

WorkOrder: 1412488
BatchID: 98947
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µL/L
Sample ID: MB/LCS-98947

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	10.9	0.50	10	-	109	70-130



1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1412488

ClientCode: MBAS

WaterTrax
 WriteOn
 EDF
 Excel
 EQulS
 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: 4mbas@sbcglobal.net
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: 12/11/2014

Date Printed: 12/12/2014

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		
1412488-001	PCA E-D	Water	12/10/2014 9:40	<input type="checkbox"/>	A													

Test Legend:

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

Prepared by: Maria Venegas

Comments: Needs analysts initials for all reports per D.H. 4/5/13

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.



WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL

QC Level: LEVEL 2

Work Order: 1412488

Project: MPWMD

Client Contact: David Holland

Date Received: 12/11/2014

Comments: Needs analysts initials for all reports per D.H. 4/5/13

Contact's Email: 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
1412488-001A	PCA E-D	Water	RSK175 <Methane_4>	2	VOA w/ HCl	<input type="checkbox"/>	12/10/2014 9:40	5 days	None	<input type="checkbox"/>	

*** NOTE: 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).**

1412488

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:** 4mbas@sbcglobal.net
Tele: (831) 375 - 6227 **Fax:** (831) 641-0734
Project #: **Project Name:**
Project Location: MPWMD
Sampler Signature: T. Lindberg

Analysis Request												Other	Comments
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Filter Samples for Metals analysis: Yes / No
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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SAMPLE ID	LOCATION/ Field Point Name	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED								
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO ₃	Other					
✓ PCA E-D		12/10/14	0940	2	G	X					X	X							
*2/3 vials submitted																			

REC'D SEALED & INTACT VIA OnTrac

Relinquished By:	Date: 12/10/14	Time: 1600	Received By:
Relinquished By:	Date: 12/11/14	Time: 0915	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/te 4.8

GOOD CONDITION _____

HEAD SPACE ABSENT _____

DECHLORINATED IN LAB _____

APPROPRIATE CONTAINERS _____

PRESERVED IN LAB _____

VOAS O&G METALS OTHER
PRESERVATION pH<2

COMMENTS:



Sample Receipt Checklist

Client Name: **Monterey Bay Analytical** Date and Time Received: **12/11/2014 11:04:00 AM**
 Project Name: **MPWMD** LogIn Reviewed by: **Maria Venegas**
 WorkOrder No: **1412488** Matrix: Water Carrier: OnTrac

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: 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:



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

Page 1 of 2

Thursday, January 15, 2015

Lab Number: AB24745

Collection Date/Time: 12/13/2014 11:00

Sample Collector: LEAR J

Submittal Date/Time: 12/15/2014 16:45

Sample ID

Coliform Designation:

Sample Description: Injectate

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	153		2		12/23/2014	LRH
Aluminum, Total	EPA200.8	µg/L	12		10	1000	12/17/2014	SM
Ammonia-N	SM4500NH3 D	mg/L	Not Detected		0.05		12/18/2014	TC
Arsenic, Total	EPA200.8	µg/L	Not Detected		1	10	12/17/2014	SM
Barium, Total	EPA200.8	µg/L	78		10	1000	12/17/2014	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	187		10		12/23/2014	HM
Boron	EPA200.7	mg/L	Not Detected		0.05		12/29/2014	MW
Bromide	EPA300.0	mg/L	Not Detected		0.1		12/17/2014	MW
Calcium	EPA200.7	mg/L	45		0.5		12/29/2014	MW
Carbonate as CaCO3	SM2320B	mg/L	Not Detected		10		12/23/2014	HM
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		12/15/2014	TC
Chloride	EPA300.0	mg/L	35		1	250	12/17/2014	MW
DOC		mg/L	1.0		0.2		12/17/2014	MW
Fluoride	EPA300.0	mg/L	0.3		0.1	2.0	12/17/2014	MW
Gross Alpha	EPA900.0	pCi/L	1.87±0.74	E		15	1/9/2015	DAVI
Haloacetic Acids	EPA552	µg/L	9.2	E		60	12/20/2014	BSK
Iron	EPA200.7	µg/L	11		10	300	12/29/2014	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	12/29/2014	MW
Kjeldahl Nitrogen	SM4500-NH3 B,	mg/L	0.7		0.5		1/6/2015	TC
Lithium	EPA200.8	µg/L	6		1		12/17/2014	SM
Magnesium	EPA200.7	mg/L	15		0.5		12/29/2014	MW
Manganese, Dissolved	EPA200.7	µg/L	Not Detected		10	50	12/29/2014	MW
Manganese, Total	EPA200.7	µg/L	1.0		10	50	12/29/2014	MW
Mercury, Total	EPA200.8	µg/L	Not Detected		0.5	2	12/17/2014	SM
Methane	EPA174/175	µg/L	0.53	E	0.1		12/23/2014	MCCAM
Molybdenum, Total	EPA200.8	µg/L	2		1	1000	12/17/2014	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	12/17/2014	SM
Nitrate as NO3	EPA300.0	mg/L	1		1	45	12/17/2014	MW
Nitrate as NO3-N	EPA300.0	mg/L	0.2		0.1	10	12/17/2014	MW
Nitrate+Nitrite as N	EPA300.0	mg/L	0.8		0.1		12/17/2014	MW
Nitrite as NO2-N	EPA300.0	mg/L	0.6		0.1	1.0	12/17/2014	MW
o-Phosphate-P	EPA300.0	mg/L	0.2		0.1		12/17/2014	MW

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

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

Lab Number: AB24745

Collection Date/Time: 12/13/2014 11:00

Sample Collector: LEAR J

Submittal Date/Time: 12/15/2014 16:45

Sample ID

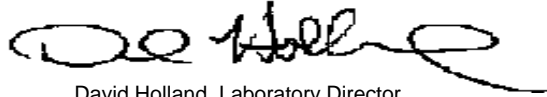
Coliform Designation:

Sample Description: Injectate

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
pH (Laboratory)	SM4500-H+B	pH (H)	7.5				12/15/2014	LRH
Phosphorus, Total	HACH 8190	mg/L	0.39		0.03		12/16/2014	SM
Potassium	EPA200.7	mg/L	2.9		0.5		12/29/2014	MW
QC Anion Sum x 100	Calculation	%	97%				12/23/2014	HM
QC Anion-Cation Balance	Calculation	%	-3				12/30/2014	MW
QC Cation Sum x 100	Calculation	%	91%				12/30/2014	MW
QC Ratio TDS/SEC	Calculation		0.61				12/18/2014	TC
Selenium, Total	EPA200.8	µg/L	2		2	50	12/17/2014	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	22		0.5		12/29/2014	MW
Sodium	EPA200.7	mg/L	46		0.5		12/29/2014	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	611		1	900	12/17/2014	HM
Strontium, Total	EPA200.8	µg/L	259		5		12/17/2014	SM
Sulfate	EPA300.0	mg/L	90		1	250	12/17/2014	MW
TOC	SM5310C	mg/L	1.0		0.2		12/17/2014	MW
Total Diss. Solids	SM2540C	mg/L	374		10	500	12/16/2014	HM
Total Nitrogen	Calculation	mg/L	1.5		0.5		1/6/2015	TC
Total Radium 226	EPA903.0	pCi/L	0.56±0.5	E		3	1/9/2015	DAVI
Trihalomethanes	EPA524.2	µg/L	25	E		80	12/18/2014	BSK
Uranium by ICP/MS	EPA200.8	µg/L	1		1	30	12/17/2014	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	12/17/2014	SM
Zinc, Total	EPA200.8	µg/L	284		10	5000	12/17/2014	SM

Sample Comments: Samples for TTHM were preserved in lab 12/15/14

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 outside 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)

A4L1809

1/06/2015

Invoice: A500156

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

RE: Report for A4L1809 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 12/17/2014. 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.

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

Sincerely,

Renea Rangell, Client Services Manager

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



Accredited in Accordance with NELAP
ORELAP #4021

Case Narrative

Project and Report Details	Invoice Details
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Client: Monterey Bay Analytical Report To: David Holland Project #: - Received: 12/17/2014 - 08:30 Report Due: 1/06/2015	Invoice To: Monterey Bay Analytical Invoice Attn: David Holland Project PO#: -
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Sample Receipt Conditions

Cooler: Default Cooler Temperature on Receipt °C: 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	

Certificate of Analysis

Sample ID: A4L1809-01
Sampled By: J Lear
Sample Description: Injectate // AB24745

Sample Date - Time: 12/13/14 - 11:00
Matrix: Waste Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	8.6	0.50	ug/L	1	A416052	12/18/14	12/18/14	
Bromoform	EPA 524.2	1.7	0.50	ug/L	1	A416052	12/18/14	12/18/14	
Chloroform	EPA 524.2	6.4	0.50	ug/L	1	A416052	12/18/14	12/18/14	
Dibromochloromethane	EPA 524.2	8.1	0.50	ug/L	1	A416052	12/18/14	12/18/14	
Surrogate: Bromofluorobenzene	EPA 524.2	101 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		25	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	3.3	1.0	ug/L	1	A416130	12/19/14	12/20/14	
Dichloroacetic Acid (DCAA)	EPA 552.3	3.4	1.0	ug/L	1	A416130	12/19/14	12/20/14	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A416130	12/19/14	12/20/14	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A416130	12/19/14	12/20/14	
Trichloroacetic Acid (TCAA)	EPA 552.3	2.5	1.0	ug/L	1	A416130	12/19/14	12/20/14	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	110 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		9.2	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
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EPA 524.2 - Quality Control

Batch: A416052

Prepared: 12/18/2014

Prep Method: EPA 524.2

Analyst: JGB

Blank (A416052-BLK1)

Bromodichloromethane	ND	0.50	ug/L							12/18/14	
Bromoform	ND	0.50	ug/L							12/18/14	
Chloroform	ND	0.50	ug/L							12/18/14	
Dibromochloromethane	ND	0.50	ug/L							12/18/14	
Surrogate: Bromofluorobenzene	50			50		99	70-130			12/18/14	

Blank Spike (A416052-BS1)

Bromodichloromethane	9.4	0.50	ug/L	10		94	70-130			12/18/14	
Bromoform	10	0.50	ug/L	10		102	70-130			12/18/14	
Chloroform	9.6	0.50	ug/L	10		96	70-130			12/18/14	
Dibromochloromethane	10	0.50	ug/L	10		100	70-130			12/18/14	
Surrogate: Bromofluorobenzene	51			50		101	70-130			12/18/14	

Blank Spike Dup (A416052-BSD1)

Bromodichloromethane	9.2	0.50	ug/L	10		92	70-130	3	30	12/18/14	
Bromoform	9.8	0.50	ug/L	10		98	70-130	5	30	12/18/14	
Chloroform	9.4	0.50	ug/L	10		94	70-130	3	30	12/18/14	
Dibromochloromethane	9.6	0.50	ug/L	10		96	70-130	3	30	12/18/14	
Surrogate: Bromofluorobenzene	50			50		99	70-130			12/18/14	

EPA 552.3 - Quality Control

Batch: A416130

Prepared: 12/19/2014

Prep Method: EPA 552.3

Analyst: KHH

Blank (A416130-BLK1)

Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							12/19/14	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							12/19/14	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							12/19/14	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							12/19/14	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							12/19/14	
Surrogate: 2-Bromobutanoic Acid	25			25		102	70-130			12/19/14	

Blank Spike (A416130-BS1)

Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10		115	70-130			12/19/14	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		106	70-130			12/19/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		113	70-130			12/19/14	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20		112	70-130			12/19/14	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		107	70-130			12/19/14	
Surrogate: 2-Bromobutanoic Acid	27			25		106	70-130			12/19/14	

Blank Spike Dup (A416130-BSD1)

Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10		120	70-130	4	30	12/19/14	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		109	70-130	3	30	12/19/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		112	70-130	1	30	12/19/14	
Monochloroacetic Acid (MCAA)	23	2.0	ug/L	20		114	70-130	1	30	12/19/14	

**BSK Associates Fresno
Organics Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 552.3 - Quality Control

Batch: A416130

Prepared: 12/19/2014

Prep Method: EPA 552.3

Analyst: KHH

Blank Spike Dup (A416130-BSD1)

Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		111	70-130	3	30	12/19/14	
Surrogate: 2-Bromobutanoic Acid	27			25		107	70-130			12/19/14	

Matrix Spike (A416130-MS1), Source: A4L1614-01

Dibromoacetic Acid (DBAA)	13	1.0	ug/L	10	1.3	119	70-130			12/19/14	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10	ND	107	70-130			12/19/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10	ND	107	70-130			12/19/14	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20	ND	110	70-130			12/19/14	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10	ND	107	70-130			12/19/14	
Surrogate: 2-Bromobutanoic Acid	26			25		104	70-130			12/19/14	

Matrix Spike Dup (A416130-MSD1), Source: A4L1614-01

Dibromoacetic Acid (DBAA)	14	1.0	ug/L	10	1.3	126	70-130	5	30	12/19/14	
Dichloroacetic Acid (DCAA)	12	1.0	ug/L	10	ND	113	70-130	5	30	12/19/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10	ND	108	70-130	1	30	12/19/14	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20	ND	112	70-130	1	30	12/19/14	
Trichloroacetic Acid (TCAA)	12	1.0	ug/L	10	ND	115	70-130	7	30	12/19/14	
Surrogate: 2-Bromobutanoic Acid	29			25		116	70-130			12/19/14	

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		

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	CA000792014-1	State of Oregon - ORELAP	4021
EPA - UCMR3	CA00079	State of Washington	C997-14

Sacramento

State of California - ELAP	2435
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Vancouver

State of Oregon - ORELAP	WA100008	State of Washington	C824-13
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A4L1809



Monterey Bay Analytical

Monte6227



12172014

Turnaround: Standard

Due Date: 1/6/2015

Sample Integrity



BSK Bottles: Yes No Page 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$			Were correct containers and preservatives received for the tests requested?		
		Yes	No	NA	Yes	No
COC Info	If samples were taken today, is there evidence that chilling has begun?			Were there bubbles in the VOA vials? (Volatiles Only)		
	Yes	No	NA	Yes	No	NA
	Did all bottles arrive unbroken and intact?			Was a sufficient amount of sample received?		
	Yes	No	NA	Yes	No	NA
	Did all bottle labels agree with COC?			Do samples have a hold time <72 hours?		
	Yes	No	NA	Yes	No	NA
COC Info	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?			Was PM notified of discrepancies? PM: _____ By/Time: _____		
	Yes	No	NA	Yes	No	NA
Bottles Received	250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)	Checks	Passed?			
	Bacti $\text{Na}_2\text{S}_2\text{O}_3$	—	—			
	None (P) ^{White Cap}	—	—			
	Cr6 (P) ^{Br. Green Label} $\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ DW	pH > 8	Y N			
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer DW	pH 9-9.5	Y N			
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer WW	pH 9.3-9.7	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			
	$\text{NaOH} + \text{ZnAc}$ (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	—	—			
	$\text{Na}_2\text{O}_3\text{S} + \text{HCl}$ (AG) ^{Lt. Pink Label} 525	—	—			
	$\text{Na}_2\text{S}_2\text{O}_3$ 1 Liter (Brown P) 549	—	—			
	$\text{Na}_2\text{S}_2\text{O}_3$ (AG) ^{Blue Label} 547, 515, 548, THM, 524	—	—			
	$\text{Na}_2\text{S}_2\text{O}_3$ (CG) ^{Blue Label} 504, 505	—	—	3V		
	$\text{Na}_2\text{S}_2\text{O}_3 + \text{MCAA}$ (CG) ^{Orange Label} 531	pH < 3	Y N			
	NH_4Cl (AG) ^{Purple Label} 552	—	—	1C		
	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		
Comments	S P			S P		

JH
 12/17/14



**ANALYTICAL RESULTS
 REPORT**

Company: Monterey Bay Analytical Services
 Address: 4 Justin Court, Suite D
 Monterey, CA 93940

Report Date: David Holland
 January 12, 2015

TABLE I

Sample ID	Collection Date/Time	Matrix	EPA	Analyses Method	Results pCi/L	±	2 Sigma error	MDA
AB24745								
Injectate		WW						
	12/13/14		900.0	Gross Alpha	1.87	±	0.74	0.23
			903.0	Radium-226	0.56	±	0.50	0.86

Analyses Date: 01/09/15

TABLE II QA/QC

Analyses	Spike Added	Detected Activity	% Agreement
Gross Alpha	492.43 pCi	474.20 pCi	96.30
Radium-226	2.88 pCi	2.69 pCi	93.24

Patricia Davi
 QA/QC Manager
 Davi Laboratories



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1412782

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: 12/17/2014

Analytical Report reviewed & approved for release on 12/23/2014 by:

Question about
your data?

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1412782

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
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
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
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
TEQ	Toxicity Equivalence



Analytical Report

Client: Monterey Bay Analytical

WorkOrder: 1412782

Project: MPWMD

Extraction Method: RSK175

Date Received: 12/17/14 13:10

Analytical Method: RSK175

Date Prepared: 12/23/14

Unit: µg/L

Light Gases

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
Injectate	1412782-001A	Water/DISS.	12/13/2014 11:00	GC26	99375

Analytes	Result	RL	DF	Date Analyzed
Methane	0.53	0.10	1	12/23/2014 14:08

Analyst(s): KBO



Quality Control Report

Client: Monterey Bay Analytical
Date Prepared: 12/23/14
Date Analyzed: 12/23/14
Instrument: GC26
Matrix: Air
Project: MPWMD

WorkOrder: 1412782
BatchID: 99375
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µL/L
Sample ID: MB/LCS-99375

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	10.7	0.50	10	-	107	70-130



1534 Willow Pass Rd
 Pittsburg, CA 94565-1701
 (925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1412782

ClientCode: MBAS

WaterTrax
 WriteOn
 EDF
 Excel
 EQulS
 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: 4mbas@sbcglobal.net
 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: 12/17/2014

Date Printed: 12/17/2014

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		
1412782-001	Injectate	Water	12/13/2014 11:00	<input type="checkbox"/>	A													

Test Legend:

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

Prepared by: Maria Venegas

Comments: Needs analysts initials for all reports per D.H. 4/5/13

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.



WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL
Project: MPWMD
Comments: Needs analysts initials for all reports per D.H. 4/5/13

QC Level: LEVEL 2
Client Contact: David Holland
Contact's Email: 4mbas@sbcglobal.net

Work Order: 1412782
Date Received: 12/17/2014

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
1412782-001A	Injectate	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	12/13/2014 11:00	5 days	None	<input type="checkbox"/>	

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.



Sample Receipt Checklist

Client Name: Monterey Bay Analytical Date and Time Received: 12/17/2014 1:10:03 PM
Project Name: MPWMD LogIn Reviewed by: Maria Venegas
WorkOrder No: 1412782 Matrix: Water Carrier: OnTrac

Chain of Custody (COC) Information

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

Sample Receipt Information

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

Sample Preservation and Hold Time (HT) Information

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

UCMR3 Samples:

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

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

Comments:



Monterey Bay Analytical Services

4 Justin Court Suite D, Monterey, CA 93940

831.375.MBAS

www.MBASinc.com

ELAP Certification Number: 2385

Tuesday, January 13, 2015

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

Lab Number: AB25072

Collection Date/Time: 12/23/2014 11:50

Sample Collector: LINDBERG T

Submittal Date/Time: 12/23/2014 12:30

Sample ID

Coliform Designation:

Sample Description: SMS-Deep

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Haloacetic Acids	EPA552	µg/L	21	E		60	12/31/2014	BSK
Trihalomethanes	EPA524.2	µg/L	68	E		80	12/30/2014	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 outside 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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831.375.MBAS

www.MBASinc.com

ELAP Certification Number: 2385

Tuesday, January 13, 2015

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

Lab Number: AB25073

Collection Date/Time: 12/23/2014 12:05

Sample Collector: LINDBERG T

Submittal Date/Time: 12/23/2014 12:30

Sample ID

Coliform Designation:

Sample Description: MW-1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Haloacetic Acids	EPA552	µg/L	Not Detected	E		60	1/6/2015	BSK
Trihalomethanes	EPA524.2	µg/L	46	E		80	12/30/2014	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 outside 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)

A4L2433

1/12/2015

Invoice: A500648

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

RE: Report for A4L2433 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 12/24/2014. 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.

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

Sincerely,

John Montieth, Project Manager

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



Accredited in Accordance with NELAP
ORELAP #4021

Case Narrative

Project and Report Details	Invoice Details
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Client: Monterey Bay Analytical Report To: David Holland Project #: MPWMD Received: 12/24/2014 - 09:00 Report Due: 1/13/2015	Invoice To: Monterey Bay Analytical Invoice Attn: David Holland Project PO#: -
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Sample Receipt Conditions

Cooler: Default Cooler Temperature on Receipt °C: 1.1	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
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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	

Certificate of Analysis

Sample ID: A4L2433-01
Sampled By: T. Lindberg
Sample Description: SMS-Deep // AB25072

Sample Date - Time: 12/23/14 - 11:50
Matrix: Waste Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	22	0.50	ug/L	1	A416354	12/29/14	12/30/14	
Bromoform	EPA 524.2	2.5	0.50	ug/L	1	A416354	12/29/14	12/30/14	
Chloroform	EPA 524.2	29	0.50	ug/L	1	A416354	12/29/14	12/30/14	
Dibromochloromethane	EPA 524.2	14	0.50	ug/L	1	A416354	12/29/14	12/30/14	
Surrogate: Bromofluorobenzene	EPA 524.2	110 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		68	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	3.6	1.0	ug/L	1	A416371	12/29/14	12/31/14	
Dichloroacetic Acid (DCAA)	EPA 552.3	9.8	1.0	ug/L	1	A416371	12/29/14	12/31/14	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A416371	12/29/14	12/31/14	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A416371	12/29/14	12/31/14	
Trichloroacetic Acid (TCAA)	EPA 552.3	7.7	1.0	ug/L	1	A416371	12/29/14	12/31/14	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	103 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		21	2.0	ug/L					

Certificate of Analysis

Sample ID: A4L2433-02
Sampled By: T. Lindberg
Sample Description: MW-1 // AB25073

Sample Date - Time: 12/23/14 - 12:05
Matrix: Waste Water
Sample Type: Grab

**BSK Associates Fresno
Organics**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	13	0.50	ug/L	1	A416354	12/29/14	12/30/14	
Bromoform	EPA 524.2	0.85	0.50	ug/L	1	A416354	12/29/14	12/30/14	
Chloroform	EPA 524.2	27	0.50	ug/L	1	A416354	12/29/14	12/30/14	
Dibromochloromethane	EPA 524.2	5.3	0.50	ug/L	1	A416354	12/29/14	12/30/14	
Surrogate: Bromofluorobenzene	EPA 524.2	105 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		46	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A500023	01/05/15	01/06/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	1.2	1.0	ug/L	1	A500023	01/05/15	01/06/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A500023	01/05/15	01/06/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A500023	01/05/15	01/06/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A500023	01/05/15	01/06/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	103 %	<i>Acceptable range: 70-130 %</i>						
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
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EPA 524.2 - Quality Control

Batch: A416354

Prepared: 12/29/2014

Prep Method: EPA 524.2

Analyst: JGB

Blank (A416354-BLK1)

Bromodichloromethane	ND	0.50	ug/L							12/29/14	
Bromoform	ND	0.50	ug/L							12/29/14	
Chloroform	ND	0.50	ug/L							12/29/14	
Dibromochloromethane	ND	0.50	ug/L							12/29/14	
Surrogate: Bromofluorobenzene	51			50		103	70-130			12/29/14	

Blank Spike (A416354-BS1)

Bromodichloromethane	11	0.50	ug/L	10		107	70-130			12/29/14	
Bromoform	10	0.50	ug/L	10		104	70-130			12/29/14	
Chloroform	11	0.50	ug/L	10		107	70-130			12/29/14	
Dibromochloromethane	11	0.50	ug/L	10		109	70-130			12/29/14	
Surrogate: Bromofluorobenzene	52			50		103	70-130			12/29/14	

Blank Spike Dup (A416354-BSD1)

Bromodichloromethane	11	0.50	ug/L	10		110	70-130	3	30	12/29/14	
Bromoform	10	0.50	ug/L	10		103	70-130	1	30	12/29/14	
Chloroform	11	0.50	ug/L	10		111	70-130	3	30	12/29/14	
Dibromochloromethane	11	0.50	ug/L	10		110	70-130	1	30	12/29/14	
Surrogate: Bromofluorobenzene	54			50		107	70-130			12/29/14	

EPA 552.3 - Quality Control

Batch: A416371

Prepared: 12/29/2014

Prep Method: EPA 552.3

Analyst: KHH

Blank (A416371-BLK1)

Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							12/30/14	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							12/30/14	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							12/30/14	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							12/30/14	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							12/30/14	
Surrogate: 2-Bromobutanoic Acid	25			25		100	70-130			12/30/14	

Blank Spike (A416371-BS1)

Dibromoacetic Acid (DBAA)	10	1.0	ug/L	10		103	70-130			12/30/14	
Dichloroacetic Acid (DCAA)	10	1.0	ug/L	10		105	70-130			12/30/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		107	70-130			12/30/14	
Monochloroacetic Acid (MCAA)	21	2.0	ug/L	20		105	70-130			12/30/14	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		105	70-130			12/30/14	
Surrogate: 2-Bromobutanoic Acid	26			25		102	70-130			12/30/14	

Blank Spike Dup (A416371-BSD1)

Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10		106	70-130	3	30	12/30/14	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		105	70-130	1	30	12/30/14	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		108	70-130	1	30	12/30/14	
Monochloroacetic Acid (MCAA)	21	2.0	ug/L	20		107	70-130	2	30	12/30/14	

**BSK Associates Fresno
Organics Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 552.3 - Quality Control

Batch: A416371

Prepared: 12/29/2014

Prep Method: EPA 552.3

Analyst: KHH

Blank Spike Dup (A416371-BSD1)

Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		109	70-130	3	30	12/30/14	
Surrogate: 2-Bromobutanoic Acid	25			25		101	70-130			12/30/14	

Matrix Spike (A416371-MS1), Source: A4L2263-01

Dibromoacetic Acid (DBAA)	32	1.0	ug/L	10	21	107	70-130			12/30/14	
Dichloroacetic Acid (DCAA)	20	1.0	ug/L	10	9.2	110	70-130			12/30/14	
Monobromoacetic Acid (MBAA)	13	1.0	ug/L	10	2.9	100	70-130			12/30/14	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20	ND	102	70-130			12/30/14	
Trichloroacetic Acid (TCAA)	15	1.0	ug/L	10	4.9	103	70-130			12/30/14	
Surrogate: 2-Bromobutanoic Acid	26			25		102	70-130			12/30/14	

Matrix Spike Dup (A416371-MSD1), Source: A4L2263-01

Dibromoacetic Acid (DBAA)	32	1.0	ug/L	10	21	106	70-130	0	30	12/30/14	
Dichloroacetic Acid (DCAA)	20	1.0	ug/L	10	9.2	110	70-130	0	30	12/30/14	
Monobromoacetic Acid (MBAA)	13	1.0	ug/L	10	2.9	103	70-130	2	30	12/30/14	
Monochloroacetic Acid (MCAA)	24	2.0	ug/L	20	ND	110	70-130	7	30	12/30/14	
Trichloroacetic Acid (TCAA)	15	1.0	ug/L	10	4.9	106	70-130	2	30	12/30/14	
Surrogate: 2-Bromobutanoic Acid	24			25		97	70-130			12/30/14	

EPA 552.3 - Quality Control

Batch: A500023

Prepared: 01/05/2015

Prep Method: EPA 552.3

Analyst: MTM

Blank (A500023-BLK1)

Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							01/06/15	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							01/06/15	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							01/06/15	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							01/06/15	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							01/06/15	
Surrogate: 2-Bromobutanoic Acid	25			25		102	70-130			01/06/15	

Blank Spike (A500023-BS1)

Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10		108	70-130			01/06/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		107	70-130			01/06/15	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		106	70-130			01/06/15	
Monochloroacetic Acid (MCAA)	21	2.0	ug/L	20		103	70-130			01/06/15	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		108	70-130			01/06/15	
Surrogate: 2-Bromobutanoic Acid	26			25		104	70-130			01/06/15	

Blank Spike Dup (A500023-BSD1)

Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10		111	70-130	2	30	01/06/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		106	70-130	1	30	01/06/15	
Monobromoacetic Acid (MBAA)	10	1.0	ug/L	10		104	70-130	1	30	01/06/15	
Monochloroacetic Acid (MCAA)	21	2.0	ug/L	20		103	70-130	1	30	01/06/15	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		110	70-130	1	30	01/06/15	

**BSK Associates Fresno
Organics Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 552.3 - Quality Control

Batch: A500023

Prepared: 01/05/2015

Prep Method: EPA 552.3

Analyst: MTM

Blank Spike Dup (A500023-BSD1)

<i>Surrogate: 2-Bromobutanoic Acid</i>	26			25		105	70-130			01/06/15	
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Matrix Spike (A500023-MS1), Source: A4L2433-02

Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10	ND	105	70-130			01/06/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10	1.2	102	70-130			01/06/15	
Monobromoacetic Acid (MBAA)	10	1.0	ug/L	10	ND	103	70-130			01/06/15	
Monochloroacetic Acid (MCAA)	21	2.0	ug/L	20	ND	104	70-130			01/06/15	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10	ND	104	70-130			01/06/15	
<i>Surrogate: 2-Bromobutanoic Acid</i>	25			25		98	70-130			01/06/15	

Matrix Spike Dup (A500023-MSD1), Source: A4L2433-02

Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10	ND	107	70-130	2	30	01/06/15	
Dichloroacetic Acid (DCAA)	12	1.0	ug/L	10	1.2	105	70-130	3	30	01/06/15	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10	ND	106	70-130	4	30	01/06/15	
Monochloroacetic Acid (MCAA)	20	2.0	ug/L	20	ND	102	70-130	1	30	01/06/15	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10	ND	106	70-130	2	30	01/06/15	
<i>Surrogate: 2-Bromobutanoic Acid</i>	25			25		102	70-130			01/06/15	

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		

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	CA000792014-1	State of Oregon - ORELAP	4021
EPA - UCMR3	CA00079	State of Washington	C997-14

Sacramento

State of California - ELAP	2435
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Vancouver

State of Oregon - ORELAP	WA100008	State of Washington	C824-13
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A4L2433

12242014



Turnaround: Standard

Due Date: 1/13/2015

Monte6227



Monterey Bay Analytical





Sample Integrity

BSK Bottles: Yes No Page 1 of 1

COC Info		Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>		Were correct containers and preservatives received for the tests requested?		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
		If samples were taken today, is there evidence that chilling has begun?		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA <input type="checkbox"/>		Were there bubbles in the VOA vials? (Volatiles Only)		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA <input type="checkbox"/>	
		Did all bottles arrive unbroken and intact?		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Was a sufficient amount of sample received?		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
		Did all bottle labels agree with COC?		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Do samples have a hold time <72 hours?		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
		Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA <input type="checkbox"/>		Was PM notified of discrepancies? PM: _____ By/Time: _____		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA <input type="checkbox"/>	
		250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)	Checks	Passed?	1-2				
		Bacti $\text{Na}_2\text{S}_2\text{O}_3$	—	—					
		None (P) ^{White Cap}	—	—					
		Cr6 (P) ^{Br Green Label} $\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ DW	pH > 8	Y N					
		Cr6 (P) ^{Pink Label} Hex Chrome Buffer DW	pH 9-9.5	Y N					
		Cr6 (P) ^{Pink Label} Hex Chrome Buffer WW	pH 9.3-9.7	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					
		$\text{NaOH} + \text{ZnAc}$ (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	—	—					
		$\text{Na}_2\text{O}_3\text{S} + \text{HCl}$ (AG) ^{Lt Pink Label} 525	—	—					
		$\text{Na}_2\text{S}_2\text{O}_3$ 1 Liter (Brown P) 549	—	—					
		$\text{Na}_2\text{S}_2\text{O}_3$ (AG) ^{Blue Label} 547, 515, 548, THM, 524	—	—					
		$\text{Na}_2\text{S}_2\text{O}_3$ (CG) ^{Blue Label} 504, 505	—	—	3V				
		$\text{Na}_2\text{S}_2\text{O}_3 + \text{MCAA}$ (CG) ^{Orange Label} 531	pH < 3	Y N					
		NH_4Cl (AG) ^{Purple Label} 552	—	—	HA				
		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	<p style="text-align: right; font-size: 2em; font-weight: bold;">Sharon 12/24/14</p>								



MBAS

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

Page 1 of 1

Friday, January 23, 2015

Lab Number: AB25915

Collection Date/Time: 1/21/2015 10:00 Sample Collector: LEAR J

Submittal Date/Time: 1/21/2015 12:36 Sample ID Coliform Designation:

Sample Description: ASR4

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
Mercury, Total	EPA200.8	µg/L	Not Detected		0.5	2	1/22/2015	SM
Nickel, Total	EPA200.8	µg/L	98		10	100	1/22/2015	SM

Sample Comments:

Report Approved by:

David Holland, Laboratory Director



Monterey Bay Analytical Services

4 Justin Court Suite D, Monterey, CA 93940

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www.MBASinc.com

ELAP Certification Number: 2385

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

Page 1 of 2

Monday, March 09, 2015

Lab Number: AB26828

Collection Date/Time: 2/11/2015 15:15 Sample Collector: LINDBERG T

Submittal Date/Time: 2/11/2015 15:35 Sample ID Coliform Designation:

Sample Description: ASR-3 Injectate

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	135		2		2/18/2015	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	2/20/2015	SM
Ammonia-N	SM4500NH3 D	mg/L	Not Detected	HP	0.05		2/23/2015	TC
Arsenic, Total	EPA200.8	µg/L	Not Detected		1	10	2/20/2015	SM
Barium, Total	EPA200.8	µg/L	61		10	1000	2/20/2015	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	165		10		2/18/2015	LRH
Boron	EPA200.7	mg/L	Not Detected		0.05		2/17/2015	MW
Bromide	EPA300.0	mg/L	Not Detected		0.1		2/12/2015	MW
Calcium	EPA200.7	mg/L	42		0.5		2/17/2015	MW
Carbonate as CaCO3	SM2320B	mg/L	Not Detected		10		2/18/2015	LRH
Chloramines	SM4500-Cl G	mg/L	0.06		0.05		2/12/2015	LJ
Chloride	EPA300.0	mg/L	30		1	250	2/12/2015	MW
DOC		mg/L	1.7		0.2		3/3/2015	MW
Fluoride	EPA300.0	mg/L	0.3		0.1	2.0	2/12/2015	MW
Gross Alpha	EPA900.0	pCi/L	6.50 ± 1.39	E		15	2/19/2015	DAVI
Haloacetic Acids	EPA552	µg/L	12	E		60	2/24/2015	BSK
Iron	EPA200.7	µg/L	Not Detected		10	300	2/17/2015	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	3/6/2015	MW
Kjeldahl Nitrogen	SM4500-NH3 B,	mg/L	Not Detected		0.5		2/24/2015	TC
Lithium	EPA200.8	µg/L	5		1		2/20/2015	SM
Magnesium	EPA200.7	mg/L	13		0.5		2/17/2015	MW
Manganese, Dissolved	EPA200.7	µg/L	Not Detected		10	50	3/6/2015	MW
Manganese, Total	EPA200.7	µg/L	Not Detected		10	50	2/17/2015	MW
Mercury, Total	EPA200.8	µg/L	Not Detected		0.5	2	2/20/2015	SM
Methane	EPA174/175	µg/L	0.66	E	0.1		2/19/2015	MCCAM
Molybdenum, Total	EPA200.8	µg/L	3		1	1000	2/20/2015	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	2/20/2015	SM
Nitrate as NO3	EPA300.0	mg/L	Not Detected		1	45	2/12/2015	MW
Nitrate as NO3-N	EPA300.0	mg/L	Not Detected		0.1	10	2/12/2015	MW
Nitrate+Nitrite as N	EPA300.0	mg/L	0.2		0.1		2/12/2015	MW
Nitrite as NO2-N	EPA300.0	mg/L	0.1		0.1	1.0	2/12/2015	MW
o-Phosphate-P	EPA300.0	mg/L	0.4		0.1		2/12/2015	MW

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

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

Lab Number: AB26828

Collection Date/Time: 2/11/2015 15:15 Sample Collector: LINDBERG T

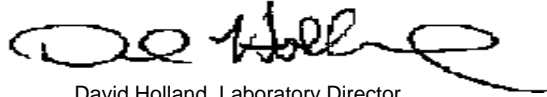
Submittal Date/Time: 2/11/2015 15:35 Sample ID Coliform Designation:

Sample Description: ASR-3 Injectate

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
pH (Laboratory)	SM4500-H+B	pH (H)	7.5				2/11/2015	TC
Phosphorus, Total	HACH 8190	mg/L	0.44		0.03		2/25/2015	LRH
Potassium	EPA200.7	mg/L	2.9		0.5		2/17/2015	MW
QC Anion Sum x 100	Calculation	%	100%				2/18/2015	LRH
QC Anion-Cation Balance	Calculation	%	-1				2/18/2015	LRH
QC Cation Sum x 100	Calculation	%	97%				2/18/2015	MW
QC Ratio TDS/SEC	Calculation		0.61				2/16/2015	HM
Selenium, Total	EPA200.8	µg/L	3		2	50	2/20/2015	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	23		0.5		2/17/2015	MW
Sodium	EPA200.7	mg/L	46		0.5		2/17/2015	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	542		1	900	2/12/2015	HM
Strontium, Total	EPA200.8	µg/L	223		5		2/20/2015	SM
Sulfate	EPA300.0	mg/L	89		1	250	2/12/2015	MW
TOC	SM5310C	mg/L	1.4		0.2		3/3/2015	MW
Total Diss. Solids	SM2540C	mg/L	331		10	500	2/12/2015	HM
Total Nitrogen	Calculation	mg/L	Not Detected		0.5		2/24/2015	HM
Total Radium 226	EPA903.0	pCi/L	5.41 ± 0.69	E		3	2/19/2015	DAVI
Trihalomethanes	EPA524.2	µg/L	26	E		80	2/18/2015	BSK
Uranium by ICP/MS	EPA200.8	µg/L	Not Detected		1	30	2/20/2015	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	2/20/2015	SM
Zinc, Total	EPA200.8	µg/L	271		20	5000	2/20/2015	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 outside 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)

A5B1179

2/24/2015

Invoice: A503904

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

RE: Report for A5B1179 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 2/13/2015. 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.

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

Sincerely,

John Montieth, Project Manager

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



Accredited in Accordance with NELAP
ORELAP #4021

Case Narrative

Project and Report Details	Invoice Details
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Client: Monterey Bay Analytical Report To: David Holland Project #: - Received: 2/13/2015 - 10:30 Report Due: 3/02/2015	Invoice To: Monterey Bay Analytical Invoice Attn: David Holland Project PO#: MPWMD
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Sample Receipt Conditions

Cooler: Default Cooler Temperature on Receipt °C: 2.0	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:

MS1.0 Matrix spike recoveries exceed control limits.

Report Distribution

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

Certificate of Analysis

Sample ID: A5B1179-01
Sampled By: T Lindberg
Sample Description: ASR-3 Injectate // AB26828

Sample Date - Time: 02/11/15 - 15:15
Matrix: Waste Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	9.2	0.50	ug/L	1	A501785	02/18/15	02/18/15	
Bromoform	EPA 524.2	0.88	0.50	ug/L	1	A501785	02/18/15	02/18/15	
Chloroform	EPA 524.2	9.4	0.50	ug/L	1	A501785	02/18/15	02/18/15	
Dibromochloromethane	EPA 524.2	6.4	0.50	ug/L	1	A501785	02/18/15	02/18/15	
Surrogate: Bromofluorobenzene	EPA 524.2	98 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		26	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	2.5	1.0	ug/L	1	A501926	02/20/15	02/24/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	5.7	1.0	ug/L	1	A501926	02/20/15	02/24/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A501926	02/20/15	02/24/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A501926	02/20/15	02/24/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	4.0	1.0	ug/L	1	A501926	02/20/15	02/24/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	114 %	<i>Acceptable range: 70-130 %</i>						
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
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EPA 524.2 - Quality Control

Batch: A501785

Prepared: 02/18/2015

Prep Method: EPA 524.2

Analyst: JGB

Blank (A501785-BLK1)

Bromodichloromethane	ND	0.50	ug/L							02/18/15	
Bromoform	ND	0.50	ug/L							02/18/15	
Chloroform	ND	0.50	ug/L							02/18/15	
Dibromochloromethane	ND	0.50	ug/L							02/18/15	
Surrogate: Bromofluorobenzene	50			50		99	70-130			02/18/15	

Blank Spike (A501785-BS1)

Bromodichloromethane	11	0.50	ug/L	10		106	70-130			02/18/15	
Bromoform	10	0.50	ug/L	10		100	70-130			02/18/15	
Chloroform	11	0.50	ug/L	10		108	70-130			02/18/15	
Dibromochloromethane	10	0.50	ug/L	10		104	70-130			02/18/15	
Surrogate: Bromofluorobenzene	51			50		101	70-130			02/18/15	

Blank Spike Dup (A501785-BSD1)

Bromodichloromethane	11	0.50	ug/L	10		106	70-130	0	30	02/18/15	
Bromoform	9.9	0.50	ug/L	10		99	70-130	0	30	02/18/15	
Chloroform	11	0.50	ug/L	10		107	70-130	1	30	02/18/15	
Dibromochloromethane	10	0.50	ug/L	10		104	70-130	1	30	02/18/15	
Surrogate: Bromofluorobenzene	49			50		99	70-130			02/18/15	

EPA 552.3 - Quality Control

Batch: A501926

Prepared: 02/20/2015

Prep Method: EPA 552.3

Analyst: KHH

Blank (A501926-BLK1)

Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							02/23/15	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							02/23/15	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							02/23/15	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							02/23/15	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							02/23/15	
Surrogate: 2-Bromobutanoic Acid	27			25		109	70-130			02/23/15	

Blank Spike (A501926-BS1)

Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10		110	70-130			02/23/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		108	70-130			02/23/15	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		108	70-130			02/23/15	
Monochloroacetic Acid (MCAA)	21	2.0	ug/L	20		103	70-130			02/23/15	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		110	70-130			02/23/15	
Surrogate: 2-Bromobutanoic Acid	28			25		111	70-130			02/23/15	

Blank Spike Dup (A501926-BSD1)

Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10		113	70-130	3	30	02/24/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		114	70-130	5	30	02/24/15	
Monobromoacetic Acid (MBAA)	12	1.0	ug/L	10		119	70-130	10	30	02/24/15	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20		111	70-130	8	30	02/24/15	

**BSK Associates Fresno
Organics Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 552.3 - Quality Control

Batch: A501926

Prepared: 02/20/2015

Prep Method: EPA 552.3

Analyst: KHH

Blank Spike Dup (A501926-BSD1)

Trichloroacetic Acid (TCAA)	12	1.0	ug/L	10		115	70-130	5	30	02/24/15	
Surrogate: 2-Bromobutanoic Acid	28			25		111	70-130			02/24/15	

Matrix Spike (A501926-MS1), Source: A5B1170-01

Dibromoacetic Acid (DBAA)	15	1.0	ug/L	10	3.4	111	70-130			02/23/15	
Dichloroacetic Acid (DCAA)	21	1.0	ug/L	10	6.2	145	70-130			02/23/15	MS1.0 High
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10	ND	108	70-130			02/23/15	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20	ND	102	70-130			02/23/15	
Trichloroacetic Acid (TCAA)	14	1.0	ug/L	10	2.4	112	70-130			02/23/15	
Surrogate: 2-Bromobutanoic Acid	27			25		109	70-130			02/23/15	

Matrix Spike Dup (A501926-MSD1), Source: A5B1170-01

Dibromoacetic Acid (DBAA)	15	1.0	ug/L	10	3.4	114	70-130	2	30	02/23/15	
Dichloroacetic Acid (DCAA)	19	1.0	ug/L	10	6.2	124	70-130	11	30	02/23/15	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10	ND	108	70-130	0	30	02/23/15	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20	ND	102	70-130	0	30	02/23/15	
Trichloroacetic Acid (TCAA)	14	1.0	ug/L	10	2.4	113	70-130	1	30	02/23/15	
Surrogate: 2-Bromobutanoic Acid	28			25		112	70-130			02/23/15	

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		

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	CA000792015-1	State of Oregon - NELAC	4021
EPA - UCMR3	CA00079	State of Washington	C997-14

Sacramento

State of California - ELAP 2435

Vancouver

State of Oregon - NELAC WA100008 State of Washington C824-13



A5B1179



02132015

Monte6227

Turnaround: Standard

Due Date: 3/2/2015



Monterey Bay Analytical





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:

A5B1179
 Montte6227



02/13/2011 10
 Page 8 of 9

Temp: 2.0

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

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

Additional cc's: **David Holland** PO#:

Project: **MPWMD** Project #:

Reporting Options: Trace (4-Flag) Swamp EDO Type: _____

Regulatory Carbon Copies: SWRCB (Drinking Water) Fresno Co Madera Co Tulare Co

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

Sampler Name (Printed/Signature)*: **T. Lindberg** Geotracker #: _____

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

#	Sample Description*	Sampled*		Matrix*	Comments / Station Code / WTRAX	I	T	H	M	S	A	A	A	A
		Date	Time											
1.	ASR-3 Injectate	2/11/15	1515	WW	AB26828	X	X	X	X	X	X	X	X	X

Relinquished by: (Signature and Printed Name) _____

Relinquished by: (Signature and Printed Name) _____

Received by: (Signature and Printed Name) _____

Received by: (Signature and Printed Name) _____

Payment Received at Delivery: _____

Shipping Method: **ONTIRAC** **UPS** **GSO** **WALK-IN** **FED EX** Counter: _____

Cooling Method: **Wei** **Blue** **None**

Amount: _____ PI/A#: _____

Custody Seal: **Y** **1AD** **DN**

Chilling Process Begun: **DN**

Company: _____

Check: **/** Init. _____

Cash: _____

Payment for services rendered as noted herein are due in full within 30 days from the date invoiced. If not so paid, account balances are deemed delinquent. Delinquent balances are subject to monthly service charges and interest specified in BSK's current Standard Terms and Conditions for Laboratory Services. The person signing for the Client/Company acknowledges that they are either the Client or an authorized agent to the Client, that the Client agrees to be responsible for payment for the services on this Chain of Custody, and agrees to BSK's terms and conditions for laboratory services unless contractually bound otherwise. BSK's current terms and conditions can be found at www.bskassociates.com/BSKLabTermsConditions.pdf

SF-FI-0012-06



Sample Integrity

BSK Bottles: Yes No Page 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$	<u>Yes</u> No NA	Were correct containers and preservatives received for the tests requested?	<u>Yes</u> No NA				
	If samples were taken today, is there evidence that chilling has begun?	Yes No <u>NA</u>	Were there bubbles in the VOA vials? (Volatiles Only)	Yes <u>No</u> NA				
	Did all bottles arrive unbroken and intact?	<u>Yes</u> No	Was a sufficient amount of sample received?	<u>Yes</u> No				
	Did all bottle labels agree with COC?	<u>Yes</u> No	Do samples have a hold time <72 hours?	Yes <u>No</u>				
	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes No <u>NA</u>	Was PM notified of discrepancies? PM: _____ By/Time: _____	Yes No <u>NA</u>				
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?	1				
	Bacti $\text{Na}_2\text{S}_2\text{O}_3$	—	—					
	None (P) ^{White Cap}	—	—					
	Cr6 (P) ^{Br. Green Label} $\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ DW	pH > 8	Y N					
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer DW	pH 9-9.5	Y N					
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer WW	pH 9.3-9.7	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					
	$\text{NaOH} + \text{ZnAc}$ (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	—	—					
	$\text{Na}_2\text{O}_3\text{S} + \text{HCl}$ (AG) ^{Lt. Pink Label} 525	—	—					
	$\text{Na}_2\text{S}_2\text{O}_3$ 1 Liter (Brown P) 549	—	—					
	$\text{Na}_2\text{S}_2\text{O}_3$ (AG) ^{Blue Label} 547, 515, 548, THM, 524	—	—	3V				
	$\text{Na}_2\text{S}_2\text{O}_3$ (CG) ^{Blue Label} 504, 505	—	—					
	$\text{Na}_2\text{S}_2\text{O}_3 + \text{MCAA}$ (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	—	—						
Split	Container	Preservative	Date/Time/Initials	Container	Preservative	Date/Time/Initials		
	S P			S P				
	S P			S P				
Comments								

2/13/15
MWW



**ANALYTICAL RESULTS
 REPORT**

Company: Monterey Bay Analytical Services
 Address: 4 Justin Court, Suite D
 Monterey, CA 93940

Report Date: David Holland
 February 24, 2015

TABLE I

Sample ID	Collection Date/Time	Matrix	EPA	Analyses Method	Results pCi/L	±	2 Sigma error	MDA
AB26828								
ASR- 3 Injectate		WW						
	02/11/15 (15:15)		900.0	Gross Alpha	6.50	±	1.39	1.95
			903.0	Radium-226	5.41	±	0.69	0.27

Analyses Date: 02/19/15

TABLE II QA/QC

Analyses	Spike Added	Detected Activity	% Agreement
Gross Alpha	492.43 pCi	457.71 pCi	92.95
Radium-226	2.88 pCi	2.74 pCi	95.13

Patricia Davi
 QA/QC Manager
 Davi Laboratories



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1502515

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: 02/13/2015

Analytical Report reviewed & approved for release on 02/20/2015 by:

Question about
your data?

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1502515

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
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
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
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
TEQ	Toxicity Equivalence



Analytical Report

Client: Monterey Bay Analytical
Project: MPWMD
Date Received: 2/13/15 10:00
Date Prepared: 2/19/15

WorkOrder: 1502515
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µg/L

Light Gases

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
ASR-3 Injectate	1502515-001A	Water/DISS.	02/11/2015 15:15	GC26	101403

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Methane	0.66	0.10	1	02/19/2015 13:47

Analyst(s): AK



Quality Control Report

Client: Monterey Bay Analytical
Date Prepared: 2/19/15
Date Analyzed: 2/19/15
Instrument: GC26
Matrix: Air
Project: MPWMD

WorkOrder: 1502515
BatchID: 101403
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µL/L
Sample ID: MB/LCS-101403

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	11.1	0.50	10	-	111	70-130



1534 Willow Pass Rd
 Pittsburg, CA 94565-1701
 (925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1502515

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: 02/13/2015

Date Printed: 02/20/2015

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		
1502515-001	ASR-3 Injectate	Water	2/11/2015 15:15	<input type="checkbox"/>	A													

Test Legend:

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

Prepared by: Maria Venegas

Comments: Needs analysts initials for all reports per D.H. 4/5/13

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.



WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL

QC Level: LEVEL 2

Work Order: 1502515

Project: MPWMD

Client Contact: David Holland

Date Received: 2/13/2015

Comments: Needs analysts initials for all reports per D.H. 4/5/13

Contact's Email: mweidner@mbasinc.com; Dholland@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
1502515-001A	ASR-3 Injectate	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	2/11/2015 15:15	5 days	None	<input type="checkbox"/>	

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.

1502515

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:	Analysis Request	Other	Comments
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		# Containers	Type Containers	MATRIX					METHOD PRESERVED				Methane		
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO ₃	Other			
✓ ASR-3 Injectate		2/11/15	1515	3	G	X					X	X				X	AB26828

REC'D SEALED & INTACT VIA OnTrac

Relinquished By: David Holland	Date: 2/11/15	Time: 1600	Received By:	COMMENTS: ICE/° 1.6 GOOD CONDITION _____ HEAD SPACE ABSENT _____ DECHLORINATED IN LAB _____ APPROPRIATE CONTAINERS _____ PRESERVED IN LAB _____ VOAS O&G METALS OTHER PRESERVATION pH<2
Relinquished By:	Date: 2/13/15	Time: 0920	Received By:	
Relinquished By:	Date:	Time:	Received By:	



Sample Receipt Checklist

Client Name: Monterey Bay Analytical

Date and Time Received: 2/13/2015 10:00:03 AM

Project Name: MPWMD

LogIn Reviewed by: Maria Venegas

WorkOrder No: 1502515 Matrix: Water

Carrier: OnTrac

Chain of Custody (COC) Information

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

Sample Receipt Information

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

Sample Preservation and Hold Time (HT) Information

- All samples received within holding time? Yes [checked] No []
Sample/Temp Blank temperature Temp: 1.6°C NA []
Water - VOA vials have zero headspace / no bubbles? Yes [checked] No [] NA []
Sample labels checked for correct preservation? Yes [checked] No []
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)? Yes [] No [] NA [checked]
Samples Received on Ice? Yes [checked] No []
(Ice Type: WET ICE)

UCMR3 Samples:

- Total Chlorine tested and acceptable upon receipt for EPA 522? Yes [] No [] NA [checked]
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539? Yes [] No [] NA [checked]

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

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

Page 1 of 2

Thursday, April 09, 2015

Lab Number: AB28385

Collection Date/Time: 3/24/2015 10:00 Sample Collector: LEAR J

Submittal Date/Time: 3/24/2015 12:13 Sample ID Coliform Designation:

Sample Description: ASR1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	133		2		3/26/2015	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	3/26/2015	SM
Ammonia-N	SM4500NH3 D	mg/L	Not Detected		0.05		4/1/2015	TC
Arsenic, Total	EPA200.8	µg/L	1		1	10	3/26/2015	SM
Barium, Total	EPA200.8	µg/L	59		10	1000	3/26/2015	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	162		10		3/27/2015	TC
Boron	EPA200.7	mg/L	Not detected		0.05		3/27/2015	MW
Bromide	EPA300.0	mg/L	Not Detected		0.1		3/25/2015	TC
Calcium	EPA200.7	mg/L	39		0.5		3/27/2015	MW
Carbonate as CaCO3	SM2320B	mg/L	Not Detected		10		3/27/2015	TC
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		3/24/2015	TC
Chloride	EPA300.0	mg/L	30		1	250	3/25/2015	TC
DOC		mg/L	1.2		0.2		3/27/2015	MW
Fluoride	EPA300.0	mg/L	0.3		0.1	2.0	3/25/2015	TC
Gross Alpha	EPA900.0	pCi/L	2.91 ± 1.19	E		15	3/31/2015	DAVI
Haloacetic Acids	EPA552	µg/L	11	E		60	4/2/2015	BSK
Iron	EPA200.7	µg/L	27		10	300	3/27/2015	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	4/2/2015	MW
Kjeldahl Nitrogen	SM4500-NH3 B,	mg/L	Not Detected		0.5		4/3/2015	TC
Lithium	EPA200.8	µg/L	6		1		3/26/2015	SM
Magnesium	EPA200.7	mg/L	13		0.5		3/27/2015	MW
Manganese, Dissolved	EPA200.7	µg/L	Not Detected		10	50	4/2/2015	MW
Manganese, Total	EPA200.7	µg/L	Not Detected		10	50	3/27/2015	MW
Mercury, Total	EPA200.8	µg/L	Not Detected		0.5	2	3/26/2015	SM
Methane	EPA174/175	µg/L	0.34	E	0.1		3/31/2015	MCCAM
Molybdenum, Total	EPA200.8	µg/L	3		1	1000	3/26/2015	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	3/26/2015	SM
Nitrate as NO3	EPA300.0	mg/L	Not Detected		1	45	3/25/2015	TC
Nitrate as NO3-N	EPA300.0	mg/L	Not Detected		0.1	10	3/25/2015	TC
Nitrate+Nitrite as N	EPA300.0	mg/L	0.4		0.1		3/25/2015	TC
Nitrite as NO2-N	EPA300.0	mg/L	0.3		0.1	1.0	3/25/2015	TC
o-Phosphate-P	EPA300.0	mg/L	0.3		0.1		3/25/2015	TC

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

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

Lab Number: AB28385

Collection Date/Time: 3/24/2015 10:00 Sample Collector: LEAR J

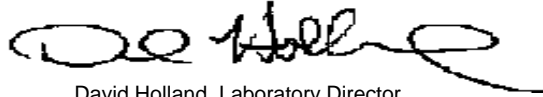
Submittal Date/Time: 3/24/2015 12:13 Sample ID Coliform Designation:

Sample Description: ASR1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
pH (Laboratory)	SM4500-H+B	pH (H)	7.1		0.1		3/24/2015	LRH
Phosphorus, Total	HACH 8190	mg/L	0.30		0.03		4/2/2015	SM
Potassium	EPA200.7	mg/L	2.9		0.5		3/27/2015	MW
QC Anion Sum x 100	Calculation	%	101%				3/27/2015	TC
QC Anion-Cation Balance	Calculation	%	-3				3/30/2015	MW
QC Cation Sum x 100	Calculation	%	95%				3/30/2015	MW
QC Ratio TDS/SEC	Calculation		0.60				3/30/2015	HM
Selenium, Total	EPA200.8	µg/L	4		2	50	3/26/2015	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	23		0.5		3/27/2015	MW
Sodium	EPA200.7	mg/L	42		0.5		3/27/2015	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	516		1	900	3/25/2015	HM
Strontium, Total	EPA200.8	µg/L	218		5		3/26/2015	SM
Sulfate	EPA300.0	mg/L	83		1	250	3/25/2015	TC
TOC	SM5310C	mg/L	1.2		0.2		3/27/2015	MW
Total Diss. Solids	SM2540C	mg/L	308		10	500	3/26/2015	HM
Total Nitrogen	Calculation	mg/L	Not Detected		0.5		4/3/2015	TC
Total Radium 226	EPA903.0	pCi/L	0.26 ± 0.40	E		3	3/31/2015	DAVI
Trihalomethanes	EPA524.2	µg/L	53	E		80	3/30/2015	BSK
Uranium by ICP/MS	EPA200.8	µg/L	Not Detected		1	30	3/26/2015	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	3/26/2015	SM
Zinc, Total	EPA200.8	µg/L	210		20	5000	3/26/2015	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 outside 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)

A5C2233

4/09/2015

Invoice: A507212

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

RE: Report for A5C2233 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 3/27/2015. 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.

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

Sincerely,

Kijuana Hartshorn, Project Coordinator

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



Accredited in Accordance with NELAP
ORELAP #4021

Case Narrative

Project and Report Details	Invoice Details
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Client: Monterey Bay Analytical
Report To: David Holland
Project #: -
Received: 3/27/2015 - 10:00
Report Due: 4/10/2015

Invoice To: Monterey Bay Analytical
Invoice Attn: David Holland
Project PO#: -

Sample Receipt Conditions

Cooler: Default Cooler	Containers Intact
Temperature on Receipt °C: 3.8	COC/Labels Agree
	Received On Wet 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:

- MS1.0 Matrix spike recoveries exceed control limits.
- MS1.3 Matrix spike recovery data unavailable or unreliable due to significant dilution required for matrix interferences.

Report Distribution

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

Certificate of Analysis

Sample ID: A5C2233-01
Sampled By: Jonathan Lear
Sample Description: ASR1 // AB28385

Sample Date - Time: 03/24/15 - 10:00
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	17	0.50	ug/L	1	A503470	03/30/15	03/30/15	
Bromoform	EPA 524.2	0.79	0.50	ug/L	1	A503470	03/30/15	03/30/15	
Chloroform	EPA 524.2	27	0.50	ug/L	1	A503470	03/30/15	03/30/15	
Dibromochloromethane	EPA 524.2	8.2	0.50	ug/L	1	A503470	03/30/15	03/30/15	
Surrogate: Bromofluorobenzene	EPA 524.2	91 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		53	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A503488	03/30/15	04/02/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	2.2	1.0	ug/L	1	A503488	03/30/15	04/02/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A503488	03/30/15	04/02/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A503488	03/30/15	04/02/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	8.9	1.0	ug/L	1	A503488	03/30/15	04/02/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	116 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		11	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
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EPA 524.2 - Quality Control

Batch: A503470

Prepared: 3/30/2015

Prep Method: EPA 524.2

Analyst: JGB

Blank (A503470-BLK1)

Bromodichloromethane	ND	0.50	ug/L							03/30/15	
Bromoform	ND	0.50	ug/L							03/30/15	
Chloroform	ND	0.50	ug/L							03/30/15	
Dibromochloromethane	ND	0.50	ug/L							03/30/15	
Surrogate: Bromofluorobenzene	46			50		92	70-130			03/30/15	

Blank Spike (A503470-BS1)

Bromodichloromethane	9.5	0.50	ug/L	10		95	70-130			03/30/15	
Bromoform	8.2	0.50	ug/L	10		82	70-130			03/30/15	
Chloroform	9.4	0.50	ug/L	10		94	70-130			03/30/15	
Dibromochloromethane	9.3	0.50	ug/L	10		93	70-130			03/30/15	
Surrogate: Bromofluorobenzene	47			50		93	70-130			03/30/15	

Blank Spike Dup (A503470-BSD1)

Bromodichloromethane	9.6	0.50	ug/L	10		96	70-130	2	30	03/30/15	
Bromoform	8.5	0.50	ug/L	10		85	70-130	4	30	03/30/15	
Chloroform	9.6	0.50	ug/L	10		96	70-130	2	30	03/30/15	
Dibromochloromethane	9.5	0.50	ug/L	10		95	70-130	2	30	03/30/15	
Surrogate: Bromofluorobenzene	47			50		95	70-130			03/30/15	

EPA 552.3 - Quality Control

Batch: A503488

Prepared: 3/30/2015

Prep Method: EPA 552.3

Analyst: KHH

Blank (A503488-BLK1)

Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							04/02/15	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							04/02/15	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							04/02/15	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							04/02/15	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							04/02/15	
Surrogate: 2-Bromobutanoic Acid	25			25		101	70-130			04/02/15	

Blank Spike (A503488-BS1)

Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10		113	70-130			04/02/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		107	70-130			04/02/15	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		107	70-130			04/02/15	
Monochloroacetic Acid (MCAA)	21	2.0	ug/L	20		103	70-130			04/02/15	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		109	70-130			04/02/15	
Surrogate: 2-Bromobutanoic Acid	26			25		105	70-130			04/02/15	

Blank Spike Dup (A503488-BSD1)

Dibromoacetic Acid (DBAA)	13	1.0	ug/L	10		130	70-130	14	30	04/02/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		112	70-130	5	30	04/02/15	
Monobromoacetic Acid (MBAA)	12	1.0	ug/L	10		117	70-130	9	30	04/02/15	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20		111	70-130	7	30	04/02/15	

**BSK Associates Fresno
Organics Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 552.3 - Quality Control

Batch: A503488

Prepared: 3/30/2015

Prep Method: EPA 552.3

Analyst: KHH

Blank Spike Dup (A503488-BSD1)

Trichloroacetic Acid (TCAA)	12	1.0	ug/L	10		117	70-130	8	30	04/02/15	
Surrogate: 2-Bromobutanoic Acid	29			25		116	70-130			04/02/15	

Matrix Spike (A503488-MS1), Source: A5C2222-01

Dibromoacetic Acid (DBAA)	26	1.0	ug/L	10	11	155	70-130			04/02/15	MS1.0 High
Dichloroacetic Acid (DCAA)	730	20	ug/L	10	710	244	70-130			04/02/15	MS1.3 High
Monobromoacetic Acid (MBAA)	13	1.0	ug/L	10	ND	121	70-130			04/02/15	
Monochloroacetic Acid (MCAA)	23	2.0	ug/L	20	ND	106	70-130			04/02/15	
Trichloroacetic Acid (TCAA)	260	20	ug/L	10	240	211	70-130			04/02/15	MS1.3 High
Surrogate: 2-Bromobutanoic Acid	31			25		122	70-130			04/02/15	

Matrix Spike Dup (A503488-MSD1), Source: A5C2222-01

Dibromoacetic Acid (DBAA)	25	1.0	ug/L	10	11	145	70-130	4	30	04/02/15	MS1.0 High
Dichloroacetic Acid (DCAA)	680	20	ug/L	10	710	NR	70-130	7	30	04/02/15	MS1.3 Low
Monobromoacetic Acid (MBAA)	12	1.0	ug/L	10	ND	117	70-130	3	30	04/02/15	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20	ND	104	70-130	2	30	04/02/15	
Trichloroacetic Acid (TCAA)	240	20	ug/L	10	240	NR	70-130	9	30	04/02/15	MS1.3 Low
Surrogate: 2-Bromobutanoic Acid	30			25		122	70-130			04/02/15	

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		

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	CA000792015-1	State of Oregon - NELAC	4021
EPA - UCMR3	CA00079	State of Washington	C997-14

Sacramento

State of California - ELAP 2435

Vancouver

State of Oregon - NELAC WA100008 State of Washington C824-13



A5C2233



03272015

Monte6227

Turnaround: Standard

Due Date: 4/10/2015



Monterey Bay Analytical



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

3.8

Turnaround Time Request

Standard - 10 business days
 Rush (Surcharge may apply)
 Date needed: _____

A5C2233
 Monte6227



03/27/2015
 10

Company/Client Name*: **Monterey Bay Analytical Services**

Report Attention*: **Mason Weidner-Holland**
 Additional cc's: **David Holland**

Invoice To*: **David Holland**
 PO#:

Phone*: **831-375-6227**

Fax: **831-641-0734**

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

Address*: **4 Justin Court, Suite D**

City*: **Monterey**

State*: **CA**

Zip*: **93940**

Project: **MPWMD**

Reporting Options:

Trace (J-Flag) Swamp EDD Type: _____

Project #: _____

Regulatory Carbon Copies

SWRCB (Drinking Water)

Merced Co

Madera Co

Other: _____

How would you like to receive your completed results?*

E-Mail Fax Mail

EDT to California SWRCB (Drinking Water)

System Number*: _____

Geotracker #: _____

Sampler Name (Printed/Signature)*: **Jonathan Lear**

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

1. ASR1

Sample Description*

Date **3/24/15**

Time **1000**

Matrix* **GW**

Comments / Station Code / WTRAX **AB28385**

HAA5
 TTHM

#	Sample Description*	Sampled*		Matrix*	Comments / Station Code / WTRAX	HAA5	TTHM	Amount:	Chilling Process Begun: Y / N	Company	PLA#:	Check / Int.
		Date	Time									
1. ASR1		3/24/15	1000	GW	AB28385	X	X		Y / N			Cash

Relinquished by: (Signature and Printed Name) **D. Holland**

Company **MBAS**

Date **3/26/15** Time **1600**

Received by: (Signature and Printed Name)

Company

Relinquished by: (Signature and Printed Name)

Seadewine West

Date **3/27/15** Time **10:00**

Payment Received at Delivery:

Amount: _____

Shipping Method: **W/Pack**

Color **Blue**

UPS

GSO

WALK-IN

FED EX

Courier: _____

Chilling Process Begun: Y / N

Check / Int.

Cash

Payment for services rendered as noted herein are due in full within 30 days from the date invoiced. If not so paid, account balances are deemed delinquent. Delinquent balances are subject to monthly service charges and interest specified in BSK's current Standard Terms and Conditions for Laboratory Services. The person signing for the Client/Company acknowledges that they are either the Client or an authorized agent to be responsible for payment for the services on this Chain of Custody, and agrees to BSK's terms and conditions for laboratory services unless contractually bound otherwise. BSK's current terms and conditions can be found at www.bskassociates.com/BSKLABTermsConditions.pdf



Sample Integrity

BSK Bottles: Yes No Page 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$			Were correct containers and preservatives received for the tests requested?				
		<u>Yes</u>	No	NA		<u>Yes</u>	No	NA
		Yes	No	<u>NA</u>		Yes	No	<u>NA</u>
		<u>Yes</u>	No			<u>Yes</u>	No	
		<u>Yes</u>	No			<u>Yes</u>	No	
COC Info	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?			Was PM notified of discrepancies? PM: _____ By/Time: _____				
		Yes	No	<u>NA</u>		Yes	No	<u>NA</u>
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 $\text{Na}_2\text{S}_2\text{O}_3$		—	—				
	None (P) ^{White Cap}		—	—				
	Cr6 (P) ^{Br. Green Label}	$\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ DW	pH > 8	Y	N			
	Cr6 (P) ^{Pink Label}	Hex Chrome Buffer DW	pH 9-9.5	Y	N			
	Cr6 (P) ^{Pink Label}	Hex Chrome Buffer WW	pH 9.3-9.7	Y	N			
	HNO ₃ (P) ^{Red Cap}		—	—				
	H ₂ SO 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			<u>ced</u>
	Dissolved Oxygen 300ml (g)		—	—				
	None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270		—	—				<u>3/27/15</u>
	HCl (AG) ^{Lt. Blue Label} O&G, Diesel		—	—				
	$\text{Na}_2\text{O}_3\text{S}+\text{HCl}$ (AG) ^{Lt. Pink Label} 525		—	—				
	$\text{Na}_2\text{S}_2\text{O}_3$ 1 Liter (Brown P) 549		—	—				
	$\text{Na}_2\text{S}_2\text{O}_3$ (AG) ^{Blue Label} 547, 515, 548, THM, 524		—	—	<u>3V</u>			
	$\text{Na}_2\text{S}_2\text{O}_3$ (CG) ^{Blue Label} 504, 505		—	—				
	$\text{Na}_2\text{S}_2\text{O}_3$ + MCAA (CG) ^{Orange Label} 531		pH < 3	Y	N			
	NH ₄ Cl (AG) ^{Purple Label} 552		—	—	<u>LA</u>			
	EDA (AG) ^{Brown Label} DBPs		—	—				
	HCL (CG) 524.2, BTEX, Gas, MTBE, 8260/624		—	—				
	Buffer pH 4 (CG)		—	—				
	None (CG)		—	—				
	H ₃ PO 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: ced @ 12:48 Labels checked by: MW @ 12:49



DAVI LABORATORIES, ENVIRONMENTAL ASSOCIATES
730 Alfred Nobel Dr, Hercules, CA 94547

**ANALYTICAL RESULTS
REPORT**

Company: Monterey Bay Analytical Services
Address: 4 Justin Court-Suite D
Monterey, CA 93940

Project Manager: David Holland
Report Date: March 31, 2015
Subcontract Order #: AB28385

TABLE I

Sample ID	Collection Date/Time	Matrix	EPA Method	Analyses	Results ± pCi/L	2 Sigma error	MDA
ASR1		Water					
	3/24/15 (1000)		900.0	Gross Alpha	2.91 ±	1.19	1.19
			903.0	Radium226	0.26 ±	0.40	0.69

Analyses completed on 3/31/15

TABLE II QA/QC

Analyses	Spike Added	Detected Activity	% Agreement
Gross Alpha	386.65 pCi/L	352.39 pCi/L	91.14
Ra 226	2.87 pCi/L	2.85 pCi/L	99.30

Patricia Davi
Davi Laboratories
QA/QC Manager



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1503B90

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: 03/27/2015

Analytical Report reviewed & approved for release on 04/02/2015 by:

Question about
your data?

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1503B90

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)
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.
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 Report

Client: Monterey Bay Analytical
Project: MPWMD
Date Received: 3/27/15 17:36
Date Prepared: 3/31/15

WorkOrder: 1503B90
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µg/L

Light Gases

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
ASR1	1503B90-001A	Water/DISS.	03/24/2015 10:00	GC26	103059

Analytes	Result	RL	DF	Date Analyzed
Methane	0.34	0.10	1	03/31/2015 14:29

Analyst(s): KBO




Quality Control Report

Client: Monterey Bay Analytical
Date Prepared: 3/31/15
Date Analyzed: 3/31/15
Instrument: GC26
Matrix: Air
Project: MPWMD

WorkOrder: 1503B90
BatchID: 103059
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µL/L
Sample ID: MB/LCS-103059

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	11.9	0.50	10	-	119	70-130

 1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1503B90

ClientCode: MBAS

WaterTrax
 WriteOn
 EDF
 Excel
 EQulS
 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: **03/27/2015**

Date Printed: **03/27/2015**

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		
1503B90-001	ASR1	Water	3/24/2015 10:00	<input type="checkbox"/>	A													

Test Legend:

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

Prepared by: Maria Venegas

Comments: Needs analysts initials for all reports per D.H. 4/5/13

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.



WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL

QC Level: LEVEL 2

Work Order: 1503B90

Project: MPWMD

Client Contact: David Holland

Date Received: 3/27/2015

Comments: Needs analysts initials for all reports per D.H. 4/5/13

Contact's Email: mweidner@mbasinc.com; Dholland@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
1503B90-001A	ASR1	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	3/24/2015 10:00	5 days	None	<input type="checkbox"/>	

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.



Sample Receipt Checklist

Client Name: **Monterey Bay Analytical** Date and Time Received: **3/27/2015 5:36:46 PM**
 Project Name: **MPWMD** LogIn Reviewed by: **Maria Venegas**
 WorkOrder No: **1503B90** Matrix: Water Carrier: OnTrac

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: 3.6°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:



Monterey Bay Analytical Services

4 Justin Court Suite D, Monterey, CA 93940

831.375.MBAS

www.MBASinc.com

ELAP Certification Number: 2385

Thursday, April 09, 2015

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

Lab Number: AB28487

Collection Date/Time: 3/25/2015 10:30

Sample Collector: LINDBERG T

Submittal Date/Time: 3/25/2015 16:00

Sample ID

Coliform Designation:

Sample Description: ASR-3

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO ₃)	SM2320B	mg/L	133		2		3/26/2015	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	3/26/2015	SM
Ammonia-N	SM4500NH3 D	mg/L	Not Detected		0.05		4/1/2015	TC
Arsenic, Total	EPA200.8	µg/L	3		1	10	3/26/2015	SM
Barium, Total	EPA200.8	µg/L	63		10	1000	3/26/2015	SM
Bicarbonate (as HCO ₃ ⁻)	SM2320B	mg/L	162		10		3/27/2015	TC
Boron	EPA200.7	mg/L	Not detected		0.05		4/2/2015	MW
Bromide	EPA300.0	mg/L	Not Detected		0.1		3/26/2015	TC
Calcium	EPA200.7	mg/L	41		0.5		4/2/2015	MW
Carbonate as CaCO ₃	SM2320B	mg/L	Not Detected		10		3/27/2015	TC
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		3/25/2015	LJ
Chloride	EPA300.0	mg/L	31		1	250	3/26/2015	TC
DOC		mg/L	1.4		0.2		3/27/2015	MW
Fluoride	EPA300.0	mg/L	0.2		0.1	2.0	3/26/2015	TC
Gross Alpha	EPA900.0	pCi/L	3.03 ± 1.24	E		15	3/31/2015	DAVI
Haloacetic Acids	EPA552	µg/L	20	E		60	4/2/2015	BSK
Iron	EPA200.7	µg/L	Not Detected		10	300	4/2/2015	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	4/2/2015	MW
Kjeldahl Nitrogen	SM4500-NH3 B,C.	mg/L	0.6		0.5		4/9/2015	TC
Lithium	EPA200.8	µg/L	5		1		3/26/2015	SM
Magnesium	EPA200.7	mg/L	13		0.5		4/2/2015	MW
Manganese, Dissolved	EPA200.7	µg/L	Not Detected		10	50	4/2/2015	MW
Manganese, Total	EPA200.7	µg/L	Not Detected		10	50	4/2/2015	MW
Mercury, Total	EPA200.8	µg/L	Not Detected		0.5	2	3/26/2015	SM
Methane	EPA174/175	µg/L	0.47	E	0.1		3/31/2015	MCCAM
Molybdenum, Total	EPA200.8	µg/L	14		1	1000	3/26/2015	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	3/26/2015	SM
Nitrate as NO ₃	EPA300.0	mg/L	Not Detected		1	45	3/26/2015	TC
Nitrate as NO ₃ -N	EPA300.0	mg/L	Not Detected		0.1	10	3/26/2015	TC
Nitrate+Nitrite as N	EPA300.0	mg/L	0.3		0.1		3/26/2015	TC
Nitrite as NO ₂ -N	EPA300.0	mg/L	0.2		0.1	1.0	3/26/2015	TC

mg/L: Milligrams per liter (=ppm)

µg/L : Micrograms per liter (=ppb)

PQL : Practical Quantitation Limit

H = Analyzed outside 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

4 Justin Court Suite D, Monterey, CA 93940
 831.375.MBAS
 www.MBASinc.com

ELAP Certification Number: 2385
 Thursday, April 09, 2015

Lab Number: AB28487

Collection Date/Time: 3/25/2015 10:30
 Submittal Date/Time: 3/25/2015 16:00

Sample Collector: LINDBERG T
 Sample ID

Coliform Designation:

Sample Description: ASR-3

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P	EPA300.0	mg/L	0.2		0.1		3/26/2015	TC
pH (Laboratory)	SM4500-H+B	pH (H)	7.1		0.1		3/25/2015	HM
Phosphorus, Total	HACH 8190	mg/L	0.27		0.03		4/2/2015	SM
Potassium	EPA200.7	mg/L	2.8		0.5		4/2/2015	MW
QC Anion Sum x 100	Calculation	%	97%				3/27/2015	TC
QC Anion-Cation Balance	Calculation	%	-1				4/3/2015	MW
QC Cation Sum x 100	Calculation	%	95%				4/3/2015	MW
QC Ratio TDS/SEC	Calculation		0.62				3/30/2015	HM
Selenium, Total	EPA200.8	µg/L	8		2	50	3/26/2015	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	24		0.5		4/2/2015	MW
Sodium	EPA200.7	mg/L	45		0.5		4/2/2015	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	543		1	900	3/26/2015	HM
Strontium, Total	EPA200.8	µg/L	235		5		3/26/2015	SM
Sulfate	EPA300.0	mg/L	83		1	250	3/26/2015	TC
TOC	SM5310C	mg/L	1.2		0.2		3/27/2015	MW
Total Diss. Solids	SM2540C	mg/L	334		10	500	3/26/2015	HM
Total Nitrogen	Calculation	mg/L	0.8		0.5		4/9/2015	TC
Total Radium 226	EPA903.0	pCi/L	0.07 ± 0.27	E		3	3/31/2015	DAVI
Trihalomethanes	EPA524.2	µg/L	94	E		80	3/31/2015	BSK
Uranium by ICP/MS	EPA200.8	µg/L	1		1	30	3/26/2015	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	3/26/2015	SM
Zinc, Total	EPA200.8	µg/L	202		20	5000	3/26/2015	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 outside 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

Thursday, April 09, 2015

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

Lab Number: AB28488

Collection Date/Time: 3/25/2015 11:30

Sample Collector: LINDBERG T

Submittal Date/Time: 3/25/2015 16:00

Sample ID

Coliform Designation:

Sample Description: SMS-Deep

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		3/25/2015	LJ
Haloacetic Acids	EPA552	µg/L	18	E		60	4/2/2015	BSK
Trihalomethanes	EPA524.2	µg/L	74	E		80	3/31/2015	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 outside 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



DAVI LABORATORIES, ENVIRONMENTAL ASSOCIATES
730 Alfred Nobel Dr, Hercules, CA 94547

**ANALYTICAL RESULTS
REPORT**

Company: Monterey Bay Analytical Services
Address: 4 Justin Court-Suite D
Monterey, CA 93940

Project Manager: David Holland
Report Date: March 31, 2015
Subcontract Order #: AB28487

TABLE I

Sample ID	Collection Date/Time	Matrix	EPA Method	Analyses	Results \pm pCi/L	2 Sigma error	MDA
ASR3		Water					
	3/25/15 (1030)		900.0 903.0	Gross Alpha Radium226	3.03 \pm 0.07 \pm	1.24 0.27	1.20 0.58

Analyses completed on 3/31/15

TABLE II QA/QC

Analyses	Spike Added	Detected Activity	% Agreement
Gross Alpha	386.65 pCi/L	352.39 pCi/L	91.14
Ra 226	2.87 pCi/L	2.85 pCi/L	99.30

Patricia Davi
Davi Laboratories
QA/QC Manager



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1503B91

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: 03/27/2015

Analytical Report reviewed & approved for release on 04/02/2015 by:

Question about
your data?

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1503B91

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)
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.
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 Report

Client: Monterey Bay Analytical
Project: MPWMD
Date Received: 3/27/15 17:45
Date Prepared: 3/31/15

WorkOrder: 1503B91
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µg/L

Light Gases

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
ASR-3	1503B91-001A	Water/DISS.	03/25/2015 10:30	GC26	103059

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Methane	0.47	0.10	1	03/31/2015 16:40

Analyst(s): KBO



Quality Control Report

Client: Monterey Bay Analytical
Date Prepared: 3/31/15
Date Analyzed: 3/31/15
Instrument: GC26
Matrix: Air
Project: MPWMD

WorkOrder: 1503B91
BatchID: 103059
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µL/L
Sample ID: MB/LCS-103059

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	11.9	0.50	10	-	119	70-130



1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1503B91

ClientCode: MBAS

WaterTrax
 WriteOn
 EDF
 Excel
 EQulS
 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: **03/27/2015**

Date Printed: **03/27/2015**

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		
1503B91-001	ASR-3	Water	3/25/2015 10:30	<input type="checkbox"/>	A													

Test Legend:

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

Prepared by: Maria Venegas

Comments: Needs analysts initials for all reports per D.H. 4/5/13

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.



WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL

QC Level: LEVEL 2

Work Order: 1503B91

Project: MPWMD

Client Contact: David Holland

Date Received: 3/27/2015

Comments: Needs analysts initials for all reports per D.H. 4/5/13

Contact's Email: mweidner@mbasinc.com; Dholland@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
1503B91-001A	ASR-3	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	3/25/2015 10:30	5 days	None	<input type="checkbox"/>	

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.



Sample Receipt Checklist

Client Name: **Monterey Bay Analytical** Date and Time Received: **3/27/2015 5:45:32 PM**
 Project Name: **MPWMD** LogIn Reviewed by: **Maria Venegas**
 WorkOrder No: **1503B91** Matrix: Water Carrier: OnTrac

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: 3.6°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:



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

A5C2235

4/09/2015

Invoice: A507223

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

RE: Report for A5C2235 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 3/27/2015. 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.

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

Sincerely,

Kijuana Hartshorn, Project Coordinator

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



Accredited in Accordance with NELAP
ORELAP #4021

Case Narrative

Project and Report Details	Invoice Details
----------------------------	-----------------

Client: Monterey Bay Analytical
Report To: David Holland
Project #: -
Received: 3/27/2015 - 10:00
Report Due: 4/10/2015

Invoice To: Monterey Bay Analytical
Invoice Attn: David Holland
Project PO#: -

Sample Receipt Conditions

Cooler: Default Cooler	Containers Intact
Temperature on Receipt °C: 3.8	COC/Labels Agree
	Received On Wet 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:

- MS1.0 Matrix spike recoveries exceed control limits.
- MS1.3 Matrix spike recovery data unavailable or unreliable due to significant dilution required for matrix interferences.

Report Distribution

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

Certificate of Analysis

Sample ID: A5C2235-01
Sampled By: T. Lindberg
Sample Description: ASR-3 // AB28487

Sample Date - Time: 03/25/15 - 10:30
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	27	0.50	ug/L	1	A503475	03/31/15	03/31/15	
Bromoform	EPA 524.2	0.98	0.50	ug/L	1	A503475	03/31/15	03/31/15	
Chloroform	EPA 524.2	54	0.50	ug/L	1	A503475	03/31/15	03/31/15	
Dibromochloromethane	EPA 524.2	12	0.50	ug/L	1	A503475	03/31/15	03/31/15	
Surrogate: Bromofluorobenzene	EPA 524.2	94 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		94	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	1.8	1.0	ug/L	1	A503488	03/30/15	04/02/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	7.1	1.0	ug/L	1	A503488	03/30/15	04/02/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A503488	03/30/15	04/02/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A503488	03/30/15	04/02/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	11	1.0	ug/L	1	A503488	03/30/15	04/02/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	114 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		20	2.0	ug/L					

Certificate of Analysis

Sample ID: A5C2235-02
Sampled By: T. Lindberg
Sample Description: SMS-Deep // AB28488

Sample Date - Time: 03/25/15 - 11:30
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	22	0.50	ug/L	1	A503475	03/31/15	03/31/15	
Bromoform	EPA 524.2	1.1	0.50	ug/L	1	A503475	03/31/15	03/31/15	
Chloroform	EPA 524.2	40	0.50	ug/L	1	A503475	03/31/15	03/31/15	
Dibromochloromethane	EPA 524.2	11	0.50	ug/L	1	A503475	03/31/15	03/31/15	
Surrogate: Bromofluorobenzene	EPA 524.2	95 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		74	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	1.2	1.0	ug/L	1	A503488	03/30/15	04/02/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	4.3	1.0	ug/L	1	A503488	03/30/15	04/02/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A503488	03/30/15	04/02/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A503488	03/30/15	04/02/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	12	1.0	ug/L	1	A503488	03/30/15	04/02/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	115 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		18	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: A503475

Prepared: 3/31/2015

Prep Method: EPA 524.2

Analyst: JGB

Blank (A503475-BLK1)

Bromodichloromethane	ND	0.50	ug/L							03/31/15	
Bromoform	ND	0.50	ug/L							03/31/15	
Chloroform	ND	0.50	ug/L							03/31/15	
Dibromochloromethane	ND	0.50	ug/L							03/31/15	
Surrogate: Bromofluorobenzene	47			50		93	70-130			03/31/15	

Blank Spike (A503475-BS1)

Bromodichloromethane	9.4	0.50	ug/L	10		94	70-130			03/31/15	
Bromoform	8.4	0.50	ug/L	10		84	70-130			03/31/15	
Chloroform	9.4	0.50	ug/L	10		94	70-130			03/31/15	
Dibromochloromethane	9.4	0.50	ug/L	10		94	70-130			03/31/15	
Surrogate: Bromofluorobenzene	49			50		98	70-130			03/31/15	

Blank Spike Dup (A503475-BSD1)

Bromodichloromethane	9.8	0.50	ug/L	10		98	70-130	4	30	03/31/15	
Bromoform	8.5	0.50	ug/L	10		85	70-130	1	30	03/31/15	
Chloroform	9.8	0.50	ug/L	10		98	70-130	4	30	03/31/15	
Dibromochloromethane	9.7	0.50	ug/L	10		97	70-130	3	30	03/31/15	
Surrogate: Bromofluorobenzene	49			50		99	70-130			03/31/15	

EPA 552.3 - Quality Control

Batch: A503488

Prepared: 3/30/2015

Prep Method: EPA 552.3

Analyst: KHH

Blank (A503488-BLK1)

Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							04/02/15	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							04/02/15	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							04/02/15	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							04/02/15	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							04/02/15	
Surrogate: 2-Bromobutanoic Acid	25			25		101	70-130			04/02/15	

Blank Spike (A503488-BS1)

Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10		113	70-130			04/02/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		107	70-130			04/02/15	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		107	70-130			04/02/15	
Monochloroacetic Acid (MCAA)	21	2.0	ug/L	20		103	70-130			04/02/15	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		109	70-130			04/02/15	
Surrogate: 2-Bromobutanoic Acid	26			25		105	70-130			04/02/15	

Blank Spike Dup (A503488-BSD1)

Dibromoacetic Acid (DBAA)	13	1.0	ug/L	10		130	70-130	14	30	04/02/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		112	70-130	5	30	04/02/15	
Monobromoacetic Acid (MBAA)	12	1.0	ug/L	10		117	70-130	9	30	04/02/15	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20		111	70-130	7	30	04/02/15	

**BSK Associates Fresno
Organics Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 552.3 - Quality Control

Batch: A503488

Prepared: 3/30/2015

Prep Method: EPA 552.3

Analyst: KHH

Blank Spike Dup (A503488-BSD1)

Trichloroacetic Acid (TCAA)	12	1.0	ug/L	10		117	70-130	8	30	04/02/15	
Surrogate: 2-Bromobutanoic Acid	29			25		116	70-130			04/02/15	

Matrix Spike (A503488-MS1), Source: A5C2222-01

Dibromoacetic Acid (DBAA)	26	1.0	ug/L	10	11	155	70-130			04/02/15	MS1.0 High
Dichloroacetic Acid (DCAA)	730	20	ug/L	10	710	244	70-130			04/02/15	MS1.3 High
Monobromoacetic Acid (MBAA)	13	1.0	ug/L	10	ND	121	70-130			04/02/15	
Monochloroacetic Acid (MCAA)	23	2.0	ug/L	20	ND	106	70-130			04/02/15	
Trichloroacetic Acid (TCAA)	260	20	ug/L	10	240	211	70-130			04/02/15	MS1.3 High
Surrogate: 2-Bromobutanoic Acid	31			25		122	70-130			04/02/15	

Matrix Spike Dup (A503488-MSD1), Source: A5C2222-01

Dibromoacetic Acid (DBAA)	25	1.0	ug/L	10	11	145	70-130	4	30	04/02/15	MS1.0 High
Dichloroacetic Acid (DCAA)	680	20	ug/L	10	710	NR	70-130	7	30	04/02/15	MS1.3 Low
Monobromoacetic Acid (MBAA)	12	1.0	ug/L	10	ND	117	70-130	3	30	04/02/15	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20	ND	104	70-130	2	30	04/02/15	
Trichloroacetic Acid (TCAA)	240	20	ug/L	10	240	NR	70-130	9	30	04/02/15	MS1.3 Low
Surrogate: 2-Bromobutanoic Acid	30			25		122	70-130			04/02/15	

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		

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	CA000792015-1	State of Oregon - NELAC	4021
EPA - UCMR3	CA00079	State of Washington	C997-14

Sacramento

State of California - ELAP	2435
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Vancouver

State of Oregon - NELAC	WA100008	State of Washington	C824-13
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A5C2235



03272015

Monte6227

Turnaround: Standard

Due Date: 4/10/2015



Monterey Bay Analytical



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

A5C2235
 Monte6227
 03/27/2015
 10



*Required Fields Temp:

Company/Client Name*: **Monterey Bay Analytical Services** Report Attention*: **Mason Weidner-Holland** Invoice To*: **David Holland** Phone*: **831-375-6227** Fax: **831-641-0734**
 Address*: **4 Justin Court, Suite D** City*: **Monterey** State*: **CA** Zip*: **93940** E-mail*: **mweidner@mbasinc.com, dholland@mbasinc.com**
 Project #: **MPWMD** Additional cc's: **David Holland** PG#:

Reporting Options: Trace (J-Flag) Swamp EDD Type: _____ Regulatory Carbon Copies: SWRCB (Drinking Water) Fresno Co Madera Co Tulare Co Other: _____
 How would you like to receive your completed results? E-Mail Fax Mail
 Regulatory Compliance: EDT to California SWRCB (Drinking Water) System Number*: _____
 Sampler Name (Printed/Signature)*: **T. Lindberg** Geotracker #: _____

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

#	Sample Description*	Sampled*		Matrix*	Comments / Station Code / WTRAX	HAA5	TTHM						
		Date	Time										
1.	ASR-3	3/25/15	1030	GW	AB28487	X	X						
2.	SMS-Deep	3/25/15	1130	GW	AB28488	X	X						

Relinquished by: (Signature and Printed Name) **D. Holland** Company: **MBAS** Date: **3/26/15** Time: **1600** Received by: (Signature and Printed Name) _____
 Relinquished by: (Signature and Printed Name) _____ Company: _____ Date: _____ Time: _____ Received by: (Signature and Printed Name) _____
 Received for Lab by: (Signature and Printed Name) _____ Date: _____ Time: _____ Payment Received at Delivery: _____
 Shipping Method: ONTRAK UPS GSO WALK-IN FED EX Counter: _____
 Cooling Method: Wet Blue None
 Custody Seal: Y / N P/L#: **BRJ** Check / Cash
 Chilling Process Begun: Y / N

Payment for services rendered as noted herein are due in full within 30 days from the date invoiced. If not so paid, account balances are deemed delinquent. Delinquent balances are subject to monthly service charges and interest specified in BSK's current Standard Terms and Conditions for Laboratory Services. The person signing for the Client/Company acknowledges that they are either the Client or an authorized agent to the Client, that the Client agrees to be responsible for payment for the services on this Chain of Custody, and agrees to BSK's terms and conditions for laboratory services unless contractually bound otherwise. BSK's current terms and conditions can be found at www.bskassociates.com/BSKLabTermsConditions.pdf



Sample Integrity

BSK Bottles: Yes No Page 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$		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?			1	2			
	Bacti $\text{Na}_2\text{S}_2\text{O}_3$	—	—							
	None (P) ^{White Cap}	—	—							
	Cr6 (P) ^{Br. Green Label} $\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ DW	pH > 8	Y	N						
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer DW	pH 9-9.5	Y	N						
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer WW	pH 9.3-9.7	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						
	$\text{NaOH} + \text{ZnAc}$ (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	—	—							
	$\text{Na}_2\text{O}_3\text{S} + \text{HCl}$ (AG) ^{Lt. Pink Label} 525	—	—							
	$\text{Na}_2\text{S}_2\text{O}_3$ 1 Liter (Brown P) 549	—	—							
	$\text{Na}_2\text{S}_2\text{O}_3$ (AG) ^{Blue Label} 547, 515, 548, THM, 524	—	—							
	$\text{Na}_2\text{S}_2\text{O}_3$ (CG) ^{Blue Label} 504, 505	—	—			3V	3V			
	$\text{Na}_2\text{S}_2\text{O}_3 + \text{MCAA}$ (CG) ^{Orange Label} 531	pH < 3	Y	N						
	NH_4Cl (AG) ^{Purple Label} 552	—	—			1A	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	—	—								
Split	Container	Preservative	Date/Time/Initials		Container	Preservative	Date/Time/Initials			
	S P				S P					
	S P				S P					
Comments										

ced
3/27/15



Monterey Bay Analytical Services

4 Justin Court Suite D, Monterey, CA 93940

831.375.MBAS

www.MBASinc.com

ELAP Certification Number: 2385

Monday, April 27, 2015

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

Lab Number: AB28550

Collection Date/Time: 3/27/2015 9:00

Sample Collector: LEAR J

Submittal Date/Time: 3/27/2015 8:48

Sample ID

Coliform Designation:

Sample Description: ASR2

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO ₃)	SM2320B	mg/L	132		2		4/9/2015	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	4/3/2015	SM
Ammonia-N	SM4500NH3 D	mg/L	Not Detected		0.05		4/1/2015	TC
Arsenic, Total	EPA200.8	µg/L	1		1	10	4/3/2015	SM
Barium, Total	EPA200.8	µg/L	60		10	1000	4/3/2015	SM
Bicarbonate (as HCO ₃ ⁻)	SM2320B	mg/L	161		10		4/9/2015	LRH
Boron	EPA200.7	mg/L	Not detected		0.05		4/2/2015	MW
Bromide	EPA300.0	mg/L	Not Detected		0.1		3/27/2015	HM
Calcium	EPA200.7	mg/L	43		0.5		4/2/2015	MW
Carbonate as CaCO ₃	SM2320B	mg/L	Not Detected		10		4/9/2015	LRH
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		3/27/2015	LJ
Chloride	EPA300.0	mg/L	30		1	250	3/27/2015	HM
DOC		mg/L	1.3		0.2		4/23/2015	MW
Fluoride	EPA300.0	mg/L	Not Detected		0.1	2.0	3/27/2015	HM
Gross Alpha	EPA900.0	pCi/L	3.48 ± 2.19	E		15	4/8/2015	DAVI
Haloacetic Acids	EPA552	µg/L	17	E		60	4/3/2015	BSK
Iron	EPA200.7	µg/L	113		10	300	4/2/2015	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	4/2/2015	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	Not Detected		0.5		4/9/2015	TC
Lithium	EPA200.8	µg/L	6		1		4/3/2015	SM
Magnesium	EPA200.7	mg/L	14		0.5		4/2/2015	MW
Manganese, Dissolved	EPA200.7	µg/L	Not Detected		10	50	4/2/2015	MW
Manganese, Total	EPA200.7	µg/L	Not Detected		10	50	4/2/2015	MW
Mercury, Total	EPA200.8	µg/L	Not Detected		0.5	2	4/3/2015	SM
Methane	EPA174/175	µg/L	0.47	E	0.1		4/3/2015	MCCAM
Molybdenum, Total	EPA200.8	µg/L	3		1	1000	4/3/2015	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	4/3/2015	SM
Nitrate as NO ₃	EPA300.0	mg/L	Not Detected		1	45	3/27/2015	HM
Nitrate as NO ₃ -N	EPA300.0	mg/L	Not Detected		0.1	10	3/27/2015	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	0.4		0.1		3/27/2015	HM
Nitrite as NO ₂ -N	EPA300.0	mg/L	0.3		0.1	1.0	3/27/2015	HM

mg/L: Milligrams per liter (=ppm)

ug/L : Micrograms per liter (=ppb)

PQL : Practical Quantitation Limit

H = Analyzed outside 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

Monday, April 27, 2015

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

Lab Number: AB28550

Collection Date/Time: 3/27/2015 9:00

Sample Collector: LEAR J

Submittal Date/Time: 3/27/2015 8:48

Sample ID

Coliform Designation:

Sample Description: ASR2

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P	EPA300.0	mg/L	0.3		0.1		3/27/2015	HM
pH (Laboratory)	SM4500-H+B	pH (H)	7.5		0.1		3/27/2015	HM
Phosphorus, Total	HACH 8190	mg/L	0.37		0.03		4/2/2015	SM
Potassium	EPA200.7	mg/L	2.9		0.5		4/2/2015	MW
QC Anion Sum x 100	Calculation	%	92%				4/9/2015	LRH
QC Anion-Cation Balance	Calculation	%	1				4/9/2015	LRH
QC Cation Sum x 100	Calculation	%	93%				4/3/2015	MW
QC Ratio TDS/SEC	Calculation		0.60				4/1/2015	HM
Selenium, Total	EPA200.8	µg/L	5		2	50	4/3/2015	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	25		0.5		4/2/2015	MW
Sodium	EPA200.7	mg/L	44		0.5		4/2/2015	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	566		1	900	3/27/2015	HM
Strontium, Total	EPA200.8	µg/L	213		5		4/3/2015	SM
Sulfate	EPA300.0	mg/L	82		1	250	3/27/2015	HM
TOC	SM5310C	mg/L	1.1		0.2		4/23/2015	MW
Total Diss. Solids	SM2540C	mg/L	337		10	500	3/30/2015	HM
Total Nitrogen	Calculation	mg/L	Not Detected		0.5		4/9/2015	TC
Total Radium 226	EPA903.0	pCi/L	0.61 ± 0.45	E		3	4/8/2015	DAVI
Trihalomethanes	EPA524.2	µg/L	84	E		80	4/3/2015	BSK
Uranium by ICP/MS	EPA200.8	µg/L	Not Detected		1	30	4/3/2015	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	4/3/2015	SM
Zinc, Total	EPA200.8	µg/L	208		20	5000	4/3/2015	SM

Sample Comments:

Report Approved by:

David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm)

µg/L : Micrograms per liter (=ppb)

PQL : Practical Quantitation Limit

H = Analyzed outside 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

4 Justin Court Suite D, Monterey, CA 93940

831.375.MBAS

www.MBASinc.com

ELAP Certification Number: 2385

Monday, April 27, 2015

Lab Number: AB28551

Collection Date/Time: 3/27/2015 9:20

Sample Collector: LEAR J

Submittal Date/Time: 3/27/2015 8:48

Sample ID

Coliform Designation:

Sample Description: MW1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Haloacetic Acids	EPA552	µg/L	Not Detected	E		60	4/3/2015	BSK
Mercury, Total	EPA200.8	µg/L	Not Detected		0.5	2	4/3/2015	SM
Trihalomethanes	EPA524.2	µg/L	14	E		80	4/3/2015	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 outside 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



DAVI LABORATORIES, ENVIRONMENTAL ASSOCIATES
730 Alfred Nobel Dr, Hercules, CA 94547

ANALYTICAL RESULTS
REPORT

Company: Monterey Bay Analytical Services
Address: 4 Justin Court-Suite D
Monterey, CA 93940

Project Manager: David Holland
Report Date: April 9, 2015
Subcontract Order #: AB28550

TABLE I

Sample ID	Collection Date/Time	Matrix	EPA Method	Analyses	Results pCi/L	±	2 Sigma error	MDA
ASR2	Water 3/25/15 (1030)		900.0	Gross Alpha	3.48	±	2.19	1.03
			903.0	Ra 226	0.61	±	0.45	0.90

Analyses Date: 04/08/2015

TABLE II QA/QC

Analyses	Spike Added	Detected Activity	% Agreement
Gross Alpha	271.52 pCi/L	247.16 pCi/L	100.97
Radium 226	119.20 pCi/L	108.01 pCi/L	90.61

Patricia Davi
Davi Laboratories
QA/QC Manager



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1504002

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: 04/01/2015

Analytical Report reviewed & approved for release on 04/07/2015 by:

*Question about
your data?*

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1504002

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)
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.
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 Report

Client: Monterey Bay Analytical
Project: MPWMD
Date Received: 4/1/15 9:46
Date Prepared: 4/3/15

WorkOrder: 1504002
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µg/L

Light Gases

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
ASR2	1504002-001A	Water/DISS.	03/26/2015 09:00	GC26	103212

Analytes	Result	RL	DF	Date Analyzed
Methane	0.47	0.10	1	04/03/2015 16:45

Analyst(s): KBO



Quality Control Report

Client: Monterey Bay Analytical
Date Prepared: 4/3/15
Date Analyzed: 4/3/15
Instrument: GC26
Matrix: Air
Project: MPWMD

WorkOrder: 1504002
BatchID: 103212
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µL/L
Sample ID: MB/LCS-103212

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	12.6	0.50	10	-	126	70-130



1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1504002

ClientCode: MBAS

WaterTrax
 WriteOn
 EDF
 Excel
 EQulS
 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: 04/01/2015

Date Printed: 04/01/2015

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	
1504002-001	ASR2	Water	3/26/2015 9:00	<input type="checkbox"/>	A												

Test Legend:

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

Prepared by: Maria Venegas

Comments: Needs analysts initials for all reports per D.H. 4/5/13

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.



WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL

QC Level: LEVEL 2

Work Order: 1504002

Project: MPWMD

Client Contact: David Holland

Date Received: 4/1/2015

Comments: Needs analysts initials for all reports per D.H. 4/5/13

Contact's Email: mweidner@mbasinc.com; Dholland@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
1504002-001A	ASR2	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	3/26/2015 9:00	5 days	None	<input type="checkbox"/>	

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.



Sample Receipt Checklist

Client Name: **Monterey Bay Analytical** Date and Time Received: **4/1/2015 9:46:41 AM**
 Project Name: **MPWMD** LogIn Reviewed by: **Maria Venegas**
 WorkOrder No: **1504002** Matrix: Water Carrier: OnTrac

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: 4.1°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/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:



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

A5D0055

4/13/2015

Invoice: A507403

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

RE: Report for A5D0055 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 4/1/2015. 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.

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

Sincerely,

Kijuana Hartshorn, Project Coordinator

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



Accredited in Accordance with NELAP
ORELAP #4021

Case Narrative

Project and Report Details	Invoice Details
----------------------------	-----------------

Client: Monterey Bay Analytical
Report To: David Holland
Project #: -
Received: 4/01/2015 - 08:30
Report Due: 4/15/2015

Invoice To: Monterey Bay Analytical
Invoice Attn: David Holland
Project PO#: -

Sample Receipt Conditions

Cooler: Default Cooler
Temperature on Receipt °C: 2.1

Containers Intact
 COC/Labels Agree
 Received On Wet 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: A5D0055-01
Sampled By: Jonathan Lear
Sample Description: ASR2 // AB28550

Sample Date - Time: 03/26/15 - 09:00
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	26	0.50	ug/L	1	A503664	04/03/15	04/03/15	
Bromoform	EPA 524.2	1.3	0.50	ug/L	1	A503664	04/03/15	04/03/15	
Chloroform	EPA 524.2	44	0.50	ug/L	1	A503664	04/03/15	04/03/15	
Dibromochloromethane	EPA 524.2	13	0.50	ug/L	1	A503664	04/03/15	04/03/15	
Surrogate: Bromofluorobenzene	EPA 524.2	98 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		84	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	1.0	1.0	ug/L	1	A503525	04/02/15	04/03/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	2.7	1.0	ug/L	1	A503525	04/02/15	04/03/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A503525	04/02/15	04/03/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A503525	04/02/15	04/03/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	13	1.0	ug/L	1	A503525	04/02/15	04/03/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	111 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		17	2.0	ug/L					

Certificate of Analysis

Sample ID: A5D0055-02
Sampled By: Jonathan Lear
Sample Description: MW1 // AB28551

Sample Date - Time: 03/26/15 - 09:20
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	4.9	0.50	ug/L	1	A503664	04/03/15	04/03/15	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A503664	04/03/15	04/03/15	
Chloroform	EPA 524.2	7.2	0.50	ug/L	1	A503664	04/03/15	04/03/15	
Dibromochloromethane	EPA 524.2	1.4	0.50	ug/L	1	A503664	04/03/15	04/03/15	
Surrogate: Bromofluorobenzene	EPA 524.2	97 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		14	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A503525	04/02/15	04/03/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A503525	04/02/15	04/03/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A503525	04/02/15	04/03/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A503525	04/02/15	04/03/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A503525	04/02/15	04/03/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	112 %	<i>Acceptable range: 70-130 %</i>						
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
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EPA 524.2 - Quality Control

Batch: A503664

Prepared: 4/3/2015

Prep Method: EPA 524.2

Analyst: JGB

Blank (A503664-BLK1)

Bromodichloromethane	ND	0.50	ug/L							04/03/15	
Bromoform	ND	0.50	ug/L							04/03/15	
Chloroform	ND	0.50	ug/L							04/03/15	
Dibromochloromethane	ND	0.50	ug/L							04/03/15	
Surrogate: Bromofluorobenzene	53			50		106	70-130			04/03/15	

Blank Spike (A503664-BS1)

Bromodichloromethane	10	0.50	ug/L	10		104	70-130			04/03/15	
Bromoform	9.3	0.50	ug/L	10		93	70-130			04/03/15	
Chloroform	10	0.50	ug/L	10		101	70-130			04/03/15	
Dibromochloromethane	10	0.50	ug/L	10		104	70-130			04/03/15	
Surrogate: Bromofluorobenzene	51			50		102	70-130			04/03/15	

Blank Spike Dup (A503664-BSD1)

Bromodichloromethane	10	0.50	ug/L	10		105	70-130	1	30	04/03/15	
Bromoform	9.1	0.50	ug/L	10		91	70-130	3	30	04/03/15	
Chloroform	10	0.50	ug/L	10		104	70-130	3	30	04/03/15	
Dibromochloromethane	10	0.50	ug/L	10		105	70-130	1	30	04/03/15	
Surrogate: Bromofluorobenzene	53			50		106	70-130			04/03/15	

EPA 552.3 - Quality Control

Batch: A503525

Prepared: 4/2/2015

Prep Method: EPA 552.3

Analyst: KHH

Blank (A503525-BLK1)

Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							04/03/15	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							04/03/15	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							04/03/15	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							04/03/15	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							04/03/15	
Surrogate: 2-Bromobutanoic Acid	27			25		110	70-130			04/03/15	

Blank Spike (A503525-BS1)

Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10		124	70-130			04/03/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		110	70-130			04/03/15	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		111	70-130			04/03/15	
Monochloroacetic Acid (MCAA)	20	2.0	ug/L	20		99	70-130			04/03/15	
Trichloroacetic Acid (TCAA)	12	1.0	ug/L	10		116	70-130			04/03/15	
Surrogate: 2-Bromobutanoic Acid	27			25		110	70-130			04/03/15	

Blank Spike Dup (A503525-BSD1)

Dibromoacetic Acid (DBAA)	13	1.0	ug/L	10		127	70-130	3	30	04/03/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		107	70-130	2	30	04/03/15	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		111	70-130	0	30	04/03/15	
Monochloroacetic Acid (MCAA)	20	2.0	ug/L	20		100	70-130	1	30	04/03/15	

**BSK Associates Fresno
 Organics Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 552.3 - Quality Control

Batch: A503525

Prepared: 4/2/2015

Prep Method: EPA 552.3

Analyst: KHH

Blank Spike Dup (A503525-BSD1)

Trichloroacetic Acid (TCAA)	12	1.0	ug/L	10		117	70-130	1	30	04/03/15	
Surrogate: 2-Bromobutanoic Acid	28			25		113	70-130			04/03/15	

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		

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	CA000792015-1	State of Oregon - NELAC	4021
EPA - UCMR3	CA00079	State of Washington	C997-14

Sacramento

State of California - ELAP	2435
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Vancouver

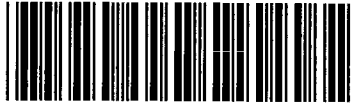
State of Oregon - NELAC	WA100008	State of Washington	C824-13
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A5D0055



04012015



Monte6227

Turnaround: Standard
Due Date: 4/15/2015



Monterey Bay Analytical




BSK Associates Engineers & Laboratories

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

2.15.0

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

ASD0055
 Monte6227
 04/01/2015
 10



*Required Fields Temp:

Company/Client Name: **Monterey Bay Analytical Services**
 Report Attention: **Mason Weidner-Holland**
 Invoice To: **David Holland**
 Additional cc's: **David Holland**
 PO#:
 Phone: **831-375-6227**
 Fax: **831-641-0734**
 E-mail: **mweidner@mbasin.com, dholland@mbasin**

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

Project: **MPWMD**
 Project #: _____

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

Sampler Name (Printed/Signature): **Jonathan Lear**
 Regulatory Carbon Copies:
 SWRCB (Drinking Water) Fresno Co
 Madera Co Tulare Co
 Other: _____
 How would you like to receive your completed results?
 E-Mail Fax Mail
 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*		Matrix*	Comments / Station Code / WTRAX	HAA5	TTHM
		Date	Time				
1.	ASR2	3/26/15	0900	GW	AB28550	X	X
2.	MW1	3/26/15	0920	GW	AB28551	X	X

Relinquished by: (Signature and Printed Name) **D. Holland**
 Company: **MBAS**
 Date: **3/31/15**
 Time: **1600**
 Received by: (Signature and Printed Name) _____
 Date: _____
 Company: _____

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

Amount: _____
 Chilling Process Bequn: **ON**
 Custody Seal: **Y/N**
 PLA#: _____
 Check: _____
 Init: _____
 Cash: _____

Payment for services rendered as noted herein are due in full within 30 days from the date invoice. If not to paid, account balances are deemed delinquent. Delinquent balances are subject to monthly service charges and interest specified in BSK's current Standard Terms and Conditions for Laboratory Services. The person signing for the Client/Company acknowledges that they are either the Client or an authorized agent to the Client, that the Client agrees to be responsible for payment for the services on this Chain of Custody, and agrees to BSK's terms and conditions for Laboratory Services unless contractually found otherwise. BSK's current terms and conditions can be found at: www.bskassociates.com/BSKLabTermsConditions.pdf

SR-FL-0012-06

Sample Integrity



BSK Bottles: Yes No Page 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$			Were correct containers and preservatives received for the tests requested?			
		Yes	No	NA	Yes	No	NA
COC Info	If samples were taken today, is there evidence that chilling has begun?			Were there bubbles in the VOA vials? (Volatiles Only)			
	Yes	No	NA	Yes	No	NA	
COC Info	Did all bottles arrive unbroken and intact?			Was a sufficient amount of sample received?			
	Yes	No	NA	Yes	No	NA	
COC Info	Did all bottle labels agree with COC?			Do samples have a hold time <72 hours?			
	Yes	No	NA	Yes	No	NA	
COC Info	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?			Was PM notified of discrepancies?			
	Yes	No	NA	Yes	No	NA	
COC Info				PM: By/Time:			
Bottles Received	250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)		Checks	Passed?			
					1-2		
Bottles Received	Bacti $\text{Na}_2\text{S}_2\text{O}_3$		-	-			
	None (P) ^{White Cap}		-	-			
Bottles Received	Cr6 (P) ^{Br. Green Label} $\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ DW		pH > 8	Y N			
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer DW		pH 9-9.5	Y N			
Bottles Received	Cr6 (P) ^{Pink Label} Hex Chrome Buffer WW		pH 9.3-9.7	Y N			
	HNO ₃ (P) ^{Red Cap}		-	-			
Bottles Received	H ₂ SO ₄ (P) or (AG) ^{Yellow Cap/Label}		pH < 2	Y N			
	NaOH (P) ^{Green Cap}		Cl, pH > 10	Y N			
Bottles Received	NaOH + ZnAc (P)		pH > 9	Y N			
	Dissolved Oxygen 300ml (g)		-	-			
Bottles Received	None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270		-	-			
	HCl (AG) ^{Lt. Blue Label} O&G, Diesel		-	-			
Bottles Received	Na ₂ O ₃ +HCl (AG) ^{Lt. Pink Label} 525		-	-			
	Na ₂ S ₂ O ₃ 1 Liter (Brown P) 549		-	-			
Bottles Received	Na ₂ S ₂ O ₃ (AG) ^{Blue Label} 547,515,548,THM,524		-	-	3V		
	Na ₂ S ₂ O ₃ (CG) ^{Blue Label} 504, 505		-	-			
Bottles Received	Na ₂ S ₂ O ₃ + MCAA (CG) ^{Orange Label} 531		pH < 3	Y N			
	NH ₄ Cl (AG) ^{Purple Label} 552		-	-	1C		
Bottles Received	EDA (AG) ^{Brown Label} DBPs		-	-			
	HCL (CG) 524.2,BTEX,Gas, MTBE, 8260/624		-	-			
Bottles Received	Buffer pH 4 (CG)		-	-			
	None (CG)		-	-			
Bottles Received	H ₃ PO ₄ (CG) ^{Salmon Label}		-	-			
	Other:						
Bottles Received	Asbestos 1Liter Plastic w/ Foil		-	-			
	Low Level Hg / Metals Double Baggie		-	-			
Bottles Received	Bottled Water		-	-			
	Clear Glass Jar: 250 / 500 / 1 Liter		-	-			
Bottles Received	Soil Tube Brass / Steel / Plastic		-	-			
	Tedlar Bag / Plastic Bag		-	-			
Split	Container	Preservative	Date/Time/Initials		Container	Preservative	Date/Time/Initials
	S P				S P		
Comments	S P				S P		

[Handwritten signature and initials]



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

Page 1 of 1

Friday, May 22, 2015

Lab Number: AB30775

Collection Date/Time: 5/19/2015 11:05 Sample Collector: OLIVER J

Submittal Date/Time: 5/19/2015 11:40 Sample ID Coliform Designation:

Sample Description: ASR1 Test - unfiltered

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Mercury, Total	EPA200.8	µg/L	1.2		0.5	2	5/21/2015	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	5/21/2015	SM

Sample Comments:

Lab Number: AB30776

Collection Date/Time: 5/19/2015 11:10 Sample Collector: OLIVER J

Submittal Date/Time: 5/19/2015 11:40 Sample ID Coliform Designation:

Sample Description: ASR1 Test - filtered

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Mercury, Total	EPA200.8	µg/L	0.9		0.5	2	5/21/2015	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	5/21/2015	SM

Sample Comments:

Report Approved by:

David Holland, Laboratory Director

Amended Report



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

Page 1 of 2

Wednesday, July 29, 2015

Lab Number: AB31955

Collection Date/Time: 6/17/2015 10:00 Sample Collector: LEAR J
Submittal Date/Time: 6/18/2015 9:17 Sample ID

Coliform Designation:

Sample Description: ASR1 Test

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	180		2		6/29/2015	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	6/25/2015	SM
Ammonia-N	SM4500NH3 D	mg/L	Not Detected		0.05		6/25/2015	TC
Arsenic, Total	EPA200.8	µg/L	1		1	10	6/25/2015	SM
Barium, Total	EPA200.8	µg/L	85		10	1000	6/25/2015	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	220		10		6/29/2015	LRH
Boron	EPA200.7	mg/L	0.06		0.05		6/19/2015	MW
Bromide	EPA300.0	mg/L	0.2		0.1		6/18/2015	MW
Calcium	EPA200.7	mg/L	64		0.5		6/19/2015	MW
Carbonate as CaCO3	SM2320B	mg/L	Not Detected		10		6/29/2015	LRH
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		6/18/2015	LJ
Chloride	EPA300.0	mg/L	77		1	250	6/18/2015	MW
DOC		mg/L	1.5		0.2		7/1/2015	MW
Fluoride	EPA300.0	mg/L	0.2		0.1	2.0	6/18/2015	MW
Gross Alpha	EPA900.0	pCi/L	3.46 ± 1.82	E		15	6/30/2015	DAVI
Haloacetic Acids	EPA552	µg/L	Not Detected	E		60	6/26/2015	BSK
Iron	EPA200.7	µg/L	21		10	300	6/19/2015	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	6/19/2015	MW
Kjeldahl Nitrogen	SM4500-NH3 B,	mg/L	Not Detected		0.5		7/1/2015	TC
Lithium	EPA200.8	µg/L	20		1		6/25/2015	SM
Magnesium	EPA200.7	mg/L	20		0.5		6/19/2015	MW
Manganese, Dissolved	EPA200.7	µg/L	Not Detected		10	50	6/19/2015	MW
Manganese, Total	EPA200.7	µg/L	Not Detected		10	50	6/19/2015	MW
Mercury, Total	EPA200.8	µg/L	1.6		0.5	2	6/25/2015	SM
Methane	EPA174/175	µg/L	2.1	E	0.1		6/26/2015	MCCAM
Molybdenum, Total	EPA200.8	µg/L	7		1	1000	6/25/2015	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	6/25/2015	SM
Nitrate as NO3	EPA300.0	mg/L	1		1	45	6/18/2015	MW
Nitrate as NO3-N	EPA300.0	mg/L	0.1		0.1	10	6/18/2015	MW
Nitrate+Nitrite as N	EPA300.0	mg/L	0.4		0.1		6/18/2015	MW
Nitrite as NO2-N	EPA300.0	mg/L	0.3		0.1	1.0	6/18/2015	MW
o-Phosphate-P	EPA300.0	mg/L	0.2		0.1		6/18/2015	MW
pH (Laboratory)	SM4500-H+B	pH (H)	7.4		0.1		6/18/2015	HM
Phosphorus, Total	HACH 8190	mg/L	0.30		0.03		7/1/2015	LRH
Potassium	EPA200.7	mg/L	3.7		0.5		6/19/2015	MW
QC Anion Sum x 100	Calculation	%	100%				6/29/2015	LRH
QC Anion-Cation Balance	Calculation	%	1				6/29/2015	LRH
QC Cation Sum x 100	Calculation	%	102%				6/19/2015	MW
QC Ratio TDS/SEC	Calculation		0.61				6/23/2015	HM
Selenium, Total	EPA200.8	µg/L	2		2	50	6/25/2015	SM
Silica as SiO2, Total	EPA200.7	mg/L	30		0.5		6/19/2015	MW
Sodium	EPA200.7	mg/L	63		0.5		6/19/2015	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	753		1	900	6/18/2015	HM

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

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

Lab Number: AB31955

Collection Date/Time: 6/17/2015 10:00

Sample Collector: LEAR J

Submittal Date/Time: 6/18/2015 9:17

Sample ID

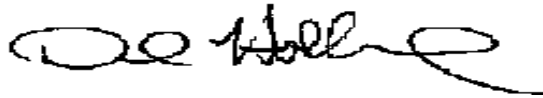
Coliform Designation:

Sample Description: ASR1 Test

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
Strontium, Total	EPA200.8	µg/L	322		5		6/25/2015	SM
Sulfate	EPA300.0	mg/L	85		1	250	6/18/2015	MW
TOC	SM5310C	mg/L	1.1		0.2		7/2/2015	MW
Total Diss. Solids	SM2540C	mg/L	463		10	500	6/18/2015	HM
Total Nitrogen	Calculation	mg/L	Not Detected		0.5		7/1/2015	HM
Total Radium 226	EPA903.0	pCi/L	0.71 ± 0.48	E		3	6/30/2015	DAVI
Trihalomethanes	EPA524.2	µg/L	41	E		80	6/24/2015	BSK
Uranium by ICP/MS	EPA200.8	µg/L	1		1	30	6/25/2015	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	6/25/2015	SM
Zinc, Total	EPA200.8	µg/L	250		20	5000	6/25/2015	SM

Sample Comments:

Report Approved by:



David Holland, Laboratory Director



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

A5F1825

6/30/2015

Invoice: A513620

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

RE: Report for A5F1825 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 6/19/2015. 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 Report To: David Holland Project #: - Received: 6/19/2015 - 09:30 Report Due: 7/06/2015	Invoice To: Monterey Bay Analytical Invoice Attn: David Holland Project PO#: -
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Sample Receipt Conditions

Cooler: Default Cooler Temperature on Receipt °C: 4.6	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:

CV0.0 CCV recovery was above method acceptance limits; no material impact on reported result as sample is ND for this parameter.

Report Distribution

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

Certificate of Analysis

Sample ID: A5F1825-01
Sampled By: Jonathan Lear
Sample Description: ASR1 Test // AB31955

Sample Date - Time: 06/17/15 - 10:00
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	12	0.50	ug/L	1	A506976	06/23/15	06/24/15	
Bromoform	EPA 524.2	0.75	0.50	ug/L	1	A506976	06/23/15	06/24/15	
Chloroform	EPA 524.2	22	0.50	ug/L	1	A506976	06/23/15	06/24/15	
Dibromochloromethane	EPA 524.2	5.8	0.50	ug/L	1	A506976	06/23/15	06/24/15	
Surrogate: Bromofluorobenzene	EPA 524.2	104 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		41	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A507092	06/25/15	06/26/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A507092	06/25/15	06/26/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A507092	06/25/15	06/26/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A507092	06/25/15	06/26/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A507092	06/25/15	06/26/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	101 %	<i>Acceptable range: 70-130 %</i>						
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
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EPA 524.2 - Quality Control

Batch: A506976

Prepared: 06/23/2015

Prep Method: no prep-volatiles

Analyst: JGB

Blank (A506976-BLK1)

Bromodichloromethane	ND	0.50	ug/L							06/24/15	
Bromoform	ND	0.50	ug/L							06/24/15	
Chloroform	ND	0.50	ug/L							06/24/15	
Dibromochloromethane	ND	0.50	ug/L							06/24/15	
Surrogate: Bromofluorobenzene	53			50		106	70-130			06/24/15	

Blank Spike (A506976-BS1)

Bromodichloromethane	11	0.50	ug/L	10		108	70-130			06/23/15	
Bromoform	8.8	0.50	ug/L	10		88	70-130			06/23/15	
Chloroform	11	0.50	ug/L	10		111	70-130			06/23/15	
Dibromochloromethane	9.6	0.50	ug/L	10		96	70-130			06/23/15	
Surrogate: Bromofluorobenzene	51			50		102	70-130			06/23/15	

Blank Spike Dup (A506976-BSD1)

Bromodichloromethane	11	0.50	ug/L	10		113	70-130	4	30	06/24/15	
Bromoform	9.4	0.50	ug/L	10		94	70-130	7	30	06/24/15	
Chloroform	11	0.50	ug/L	10		115	70-130	3	30	06/24/15	
Dibromochloromethane	10	0.50	ug/L	10		101	70-130	5	30	06/24/15	
Surrogate: Bromofluorobenzene	51			50		102	70-130			06/24/15	

Matrix Spike (A506976-MS1), Source: A5F1936-01

Bromodichloromethane	36	0.50	ug/L	10	27	89	70-130			06/24/15	
Bromoform	33	0.50	ug/L	10	22	107	70-130			06/24/15	
Chloroform	19	0.50	ug/L	10	8.0	106	70-130			06/24/15	
Dibromochloromethane	51	0.50	ug/L	10	41	94	70-130			06/24/15	
Surrogate: Bromofluorobenzene	50			50		101	70-130			06/24/15	

EPA 552.3 - Quality Control

Batch: A507092

Prepared: 06/25/2015

Prep Method: EPA 552.3

Analyst: MTM

Blank (A507092-BLK1)

Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							06/26/15	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							06/26/15	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							06/26/15	CV0.0
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							06/26/15	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							06/26/15	
Surrogate: 2-Bromobutanoic Acid	25			25		100	70-130			06/26/15	

Blank Spike (A507092-BS1)

Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10		109	70-130			06/26/15	
Dichloroacetic Acid (DCAA)	12	1.0	ug/L	10		116	70-130			06/26/15	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		111	70-130			06/26/15	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20		112	70-130			06/26/15	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		114	70-130			06/26/15	

**BSK Associates Fresno
Organics Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 552.3 - Quality Control

Batch: A507092

Prepared: 06/25/2015

Prep Method: EPA 552.3

Analyst: MTM

Blank Spike (A507092-BS1)

<i>Surrogate: 2-Bromobutanoic Acid</i>	25			25		98	70-130			06/26/15	
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Blank Spike Dup (A507092-BSD1)

Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10		112	70-130	3	30	06/27/15	
Dichloroacetic Acid (DCAA)	12	1.0	ug/L	10		116	70-130	0	30	06/27/15	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		115	70-130	3	30	06/27/15	
Monochloroacetic Acid (MCAA)	23	2.0	ug/L	20		116	70-130	4	30	06/27/15	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		114	70-130	0	30	06/27/15	
<i>Surrogate: 2-Bromobutanoic Acid</i>	26			25		103	70-130			06/27/15	

Matrix Spike (A507092-MS1), Source: A5F1735-02

Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10	ND	110	70-130			06/26/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10	ND	114	70-130			06/26/15	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10	ND	113	70-130			06/26/15	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20	ND	110	70-130			06/26/15	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10	ND	108	70-130			06/26/15	
<i>Surrogate: 2-Bromobutanoic Acid</i>	27			25		109	70-130			06/26/15	

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	CA000792015-1	State of Oregon - NELAC	4021
EPA - UCMR3	CA00079	State of Washington	C997-15

Sacramento

State of California - ELAP	2435
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Vancouver

State of Oregon - NELAC	WA100008	State of Washington	C824-14a
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A5F1825



06192015

Monte6227

Turnaround: Standard

Due Date: 7/6/2015



Monterey Bay Analytical





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:

Temp: 4.9

ASF1825
 Monte6227

 06/19/2015
 10
 Page 8 of 9

Company/Client Name: **Monterey Bay Analytical Services**
 Address: **4 Justin Court, Suite D**
 City: **Monterey** State: **CA** Zip: **93940**

Report Attention: **Mason Weidner-Holland**
 Additional cc's: **David Holland**
 Invoice To: **David Holland**
 PO#: _____

Phone: **831-375-6227** Fax: **831-641-0734**
 E-mail: **mweidner@mbasinc.com, dholland@mbasinc.com**

Project: **MPVWMD** Reporting Options:
 Trace (I-Flag) Swamp EDD Type: _____

Sampler Name (Printed/Signature): **Jonathan Lear**

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

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

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

#	Sample Description*	Sampled*		Matrix*	Comments / Station Code / WTRAX	HAA5	TTHM
		Date	Time				
11	ASR1 Test	6/17/15	1000	GW	AB31955	X	X

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

Relinquished by: (Signature and Printed Name) _____ Company: **MBAS**

Received by: (Signature and Printed Name) _____ Date: **6/18/15** Time: **1600**

Relinquished by: (Signature and Printed Name) _____ Date: _____ Time: _____

Received by: (Signature and Printed Name) _____ Date: _____ Time: _____

Payment Received at Delivery: _____ Date: _____

Shipping Method: **UPS** **GSO** **WALK-IN** **FED EX** **Courier**

Cooling Method: **None**

Chilling Process Begun: **Y**

Amount: **Y**

PIA#: **Y**

Check / Cash / Init. _____

Payment for services rendered is due within 30 days from the date invoiced. If not so paid, account balances are deemed delinquent. Delinquent balances are subject to monthly service charges and interest specified in BSK's current Standard Terms and Conditions for Laboratory Services. The person signing for the Client/Company acknowledges that they are either the Client or an authorized agent to the Client, that the Client agrees to be responsible for payment for the services on this Chain of Custody, and agrees to BSK's terms and conditions for Laboratory Services unless contractually bound otherwise. BSK's current terms and conditions can be found at www.bskassociates.com/BSK_LabTermsConditions.pdf

A5F1825
Monte6227

06/19/2015
10



Sample Integrity

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

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$			Were correct containers and preservatives received for the tests requested?		
		Yes	No	NA	Yes	No
	If samples were taken today, is there evidence that chilling has begun?			Were there bubbles in the VOA vials? (Volatiles Only)		
	Yes	No	NA	Yes	No	NA
	Did all bottles arrive unbroken and intact?			Was a sufficient amount of sample received?		
	Yes	No		Yes	No	
	Did all bottle labels agree with COC?			Do samples have a hold time <72 hours?		
	Yes	No		Yes	No	
	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?			Was PM notified of discrepancies? PM: _____ By/Time: _____		
	Yes	No	NA	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?	1		
	Bacti $\text{Na}_2\text{S}_2\text{O}_3$	—	—			
	None (P) ^{White Cap}	—	—			
	Cr6 (P) ^{Br. Green Label} $\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ DW	Cl, pH > 8	Y	N		
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer DW	pH 9-9.5	Y	N		
	Cr6 (P) ^{Pink Label} Hex Chrome Buffer WW	pH 9.3-9.7	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	—	—			
	$\text{Na}_2\text{O}_3\text{S}+\text{HCl}$ (AG) ^{Lt. Pink Label} 525	—	—			
	$\text{Na}_2\text{S}_2\text{O}_3$ 1 Liter (Brown P) 549	—	—			
	$\text{Na}_2\text{S}_2\text{O}_3$ (AG) ^{Blue Label} 547, 515, 548, THM, 524	—	—	3		
	$\text{Na}_2\text{S}_2\text{O}_3$ (CG) ^{Blue Label} 504, 505	—	—			
	$\text{Na}_2\text{S}_2\text{O}_3$ + 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		
Comments						



DAVI LABORATORIES, ENVIRONMENTAL ASSOCIATES
 730 Alfred Nobel Dr, Hercules, CA 94547

**ANALYTICAL RESULTS
 REPORT**

Company: Monterey Bay Analytical Services
 Address: 4 Justin Court-Suite D
 Monterey, CA 93940

Project Manager: David Holland
 Report Date: June 30, 2015
 Subcontract Order #: AB31955

TABLE I

Sample ID	Collection Date/Time	Matrix	EPA Method	Analyses	Results \pm pCi/L	2 Sigma error	MDA
ASR1 Test		GW					
	6/17/15 (1000)		903.0	Ra 226	0.71 \pm	0.48	0.07
			900.0	Gross Alpha	3.46 \pm	1.82	1.79

Analyses Date: 6/30/15

TABLE II QA/QC

Analyses	Spike Added	Detected Activity	% Agreement
Gross Alpha	170.19 pCi/L	164.80 pCi/L	96.83
Ra 226	577.79 pCi/L	571.11 pCi/L	98.84

Patricia Davi

Patricia Davi
 Davi Laboratories
 QA/QC Manager



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1506A67

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: 06/25/2015

Analytical Report reviewed & approved for release on 07/01/2015 by:

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1506A67

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)
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.
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 Report

Client: Monterey Bay Analytical

WorkOrder: 1506A67

Project: MPWMD

Extraction Method: RSK175

Date Received: 6/25/15 11:08

Analytical Method: RSK175

Date Prepared: 6/26/15

Unit: µg/L

Light Gases

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR1 Test	1506A67-001A	Water	06/17/2015 10:00	GC26	106997

Analytes	Result	RL	DF	Date Analyzed
Methane	2.1	0.10	1	06/26/2015 11:50

Analyst(s): KBO



Quality Control Report

Client: Monterey Bay Analytical
Date Prepared: 6/26/15
Date Analyzed: 6/26/15
Instrument: GC26
Matrix: Air
Project: MPWMD

WorkOrder: 1506A67
BatchID: 106997
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µL/L
Sample ID: MB/LCS-106997

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Ethane	ND	11.6	0.50	10	-	116	70-130
Ethylene	ND	8.38	0.50	10	-	84	70-130
Methane	ND	12.7	0.50	10	-	127	70-130

1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1506A67

ClientCode: MBAS

WaterTrax
 WriteOn
 EDF
 Excel
 EQulS
 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: 06/25/2015

Date Printed: 06/25/2015

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	
1506A67-001	ASR1 Test	Water	6/17/2015 10:00	<input type="checkbox"/>	A												

Test Legend:

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

Prepared by: Erika Santos

Comments: Needs analysts initials for all reports per D.H. 4/5/13

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.



WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL

QC Level: LEVEL 2

Work Order: 1506A67

Project: MPWMD

Client Contact: David Holland

Date Received: 6/25/2015

Comments: Needs analysts initials for all reports per D.H. 4/5/13

Contact's Email: mweidner@mbasinc.com; Dholland@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
1506A67-001A	ASR1 Test	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	6/17/2015 10:00	5 days	None	<input type="checkbox"/>	

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.



Sample Receipt Checklist

Client Name: **Monterey Bay Analytical** Date and Time Received: **6/25/2015 11:08:13 AM**
 Project Name: **MPWMD** LogIn Reviewed by: **Erika Santos**
 WorkOrder No: **1506A67** Matrix: Water Carrier: OnTrac

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: 3.9°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:



Monterey Bay Analytical Services

4 Justin Court Suite D, Monterey, CA 93940

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ELAP Certification Number: 2385

Tuesday, July 21, 2015

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

Lab Number: AB32315

Collection Date/Time: 6/24/2015 10:00

Sample Collector: LEAR J

Submittal Date/Time: 6/25/2015 11:25

Sample ID

Coliform Designation:

Sample Description: ASR2 Test

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	139		2		7/7/2015	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	7/2/2015	SM
Ammonia-N	SM4500NH3 D	mg/L	Not Detected		0.05		6/30/2015	TC
Arsenic, Total	EPA200.8	µg/L	1		1	10	7/2/2015	SM
Barium, Total	EPA200.8	µg/L	66		10	1000	7/2/2015	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	170		10		7/7/2015	LJ
Boron	EPA200.7	mg/L	0.05		0.05		7/1/2015	MW
Bromide	EPA300.0	mg/L	Not Detected		0.1		6/26/2015	MW
Calcium	EPA200.7	mg/L	43		0.5		7/1/2015	MW
Carbonate as CaCO3	SM2320B	mg/L	Not Detected		10		7/7/2015	LJ
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		6/25/2015	LJ
Chloride	EPA300.0	mg/L	32		1	250	6/26/2015	MW
DOC		mg/L	1.4		0.2		7/1/2015	MW
Fluoride	EPA300.0	mg/L	0.3		0.1	2.0	6/26/2015	MW
Gross Alpha	EPA900.0	pCi/L	0.273 ± 1.08	E		15	7/13/2015	FGL
Haloacetic Acids	EPA552	µg/L	Attached	E		60	7/1/2015	BSK
Iron	EPA200.7	µg/L	35		10	300	7/1/2015	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	7/1/2015	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	Not Detected		0.5		7/7/2015	TC
Lithium	EPA200.8	µg/L	12		1		7/2/2015	SM
Magnesium	EPA200.7	mg/L	14		0.5		7/1/2015	MW
Manganese, Dissolved	EPA200.7	µg/L	Not Detected		10	50	7/1/2015	MW
Manganese, Total	EPA200.7	µg/L	Not Detected		10	50	7/1/2015	MW
Mercury, Total	EPA200.8	µg/L	Not Detected		0.5	2	7/2/2015	SM
Methane	EPA174/175	µg/L	0.54	E	0.1		7/1/2015	MCCAM
Molybdenum, Total	EPA200.8	µg/L	4		1	1000	7/2/2015	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	7/2/2015	SM
Nitrate as NO3	EPA300.0	mg/L	Not Detected		1	45	6/26/2015	MW
Nitrate as NO3-N	EPA300.0	mg/L	0.1		0.1	10	6/26/2015	MW
Nitrate+Nitrite as N	EPA300.0	mg/L	0.4		0.1		6/26/2015	MW
Nitrite as NO2-N	EPA300.0	mg/L	0.3		0.1	1.0	6/26/2015	MW

mg/L: Milligrams per liter (=ppm)

ug/L : Micrograms per liter (=ppb)

PQL : Practical Quantitation Limit

H = Analyzed outside 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

Tuesday, July 21, 2015

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

Lab Number: AB32315

Collection Date/Time: 6/24/2015 10:00

Sample Collector: LEAR J

Submittal Date/Time: 6/25/2015 11:25

Sample ID

Coliform Designation:

Sample Description: ASR2 Test

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P	EPA300.0	mg/L	0.3		0.1		6/26/2015	MW
pH (Laboratory)	SM4500-H+B	pH (H)	7.5		0.1		6/25/2015	LRH
Phosphorus, Total	HACH 8190	mg/L	0.26		0.03		7/17/2015	LRH
Potassium	EPA200.7	mg/L	2.8		0.5		7/1/2015	MW
QC Anion Sum x 100	Calculation	%	100%				7/7/2015	LJ
QC Anion-Cation Balance	Calculation	%	-2				7/7/2015	LJ
QC Cation Sum x 100	Calculation	%	96%				7/6/2015	TC
QC Ratio TDS/SEC	Calculation		0.62				7/2/2015	HM
Selenium, Total	EPA200.8	µg/L	5		2	50	7/2/2015	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	25		0.5		7/1/2015	MW
Sodium	EPA200.7	mg/L	44		0.5		7/1/2015	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	550		1	900	6/30/2015	LJ
Strontium, Total	EPA200.8	µg/L	248		5		7/2/2015	SM
Sulfate	EPA300.0	mg/L	86		1	250	6/26/2015	MW
TOC	SM5310C	mg/L	1.5		0.2		7/1/2015	MW
Total Diss. Solids	SM2540C	mg/L	340		10	500	6/30/2015	HM
Total Nitrogen	Calculation	mg/L	Not Detected		0.5		7/7/2015	HM
Total Radium 226	EPA903.0	pCi/L	0.054 ± 0.106	E		3	7/17/2015	FGL
Trihalomethanes	EPA524.2	µg/L	95	E		80	6/30/2015	BSK
Uranium by ICP/MS	EPA200.8	µg/L	Not Detected		1	30	7/2/2015	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	7/2/2015	SM
Zinc, Total	EPA200.8	µg/L	250		20	5000	7/2/2015	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 outside 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
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 Monterey, CA 93442-0085

4 Justin Court Suite D, Monterey, CA 93940

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ELAP Certification Number: 2385

Tuesday, July 21, 2015

Lab Number: AB32316

Collection Date/Time: 6/24/2015 11:30
 Submittal Date/Time: 6/25/2015 11:25

Sample Collector: LEAR J
 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	153		2		7/7/2015	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	7/2/2015	SM
Ammonia-N	SM4500NH3 D	mg/L	Not Detected		0.05		6/30/2015	TC
Arsenic, Total	EPA200.8	µg/L	2		1	10	7/2/2015	SM
Barium, Total	EPA200.8	µg/L	33		10	1000	7/2/2015	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	187		10		7/7/2015	LJ
Boron	EPA200.7	mg/L	0.05		0.05		7/1/2015	MW
Bromide	EPA300.0	mg/L	0.1		0.1		6/26/2015	MW
Calcium	EPA200.7	mg/L	50		0.5		7/1/2015	MW
Carbonate as CaCO3	SM2320B	mg/L	Not Detected		10		7/7/2015	LJ
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		6/25/2015	LJ
Chloride	EPA300.0	mg/L	42		1	250	6/26/2015	MW
DOC		mg/L	1.2		0.2		7/1/2015	MW
Fluoride	EPA300.0	mg/L	0.3		0.1	2.0	6/26/2015	MW
Gross Alpha	EPA900.0	pCi/L	2.81 ± 1.27	E		15	7/13/2015	FGL
Haloacetic Acids	EPA552	µg/L	Not Detected	E		60	7/1/2015	BSK
Iron	EPA200.7	µg/L	Not Detected		10	300	7/1/2015	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	7/1/2015	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	Not Detected		0.5		7/7/2015	TC
Lithium	EPA200.8	µg/L	24		1		7/2/2015	SM
Magnesium	EPA200.7	mg/L	13		0.5		7/1/2015	MW
Manganese, Dissolved	EPA200.7	µg/L	Not Detected		10	50	7/1/2015	MW
Manganese, Total	EPA200.7	µg/L	Not Detected		10	50	7/1/2015	MW
Mercury, Total	EPA200.8	µg/L	Not Detected		0.5	2	7/2/2015	SM
Methane	EPA174/175	µg/L	3.0	E	0.1		7/1/2015	MCCAM
Molybdenum, Total	EPA200.8	µg/L	6		1	1000	7/2/2015	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	7/2/2015	SM
Nitrate as NO3	EPA300.0	mg/L	Not Detected		1	45	6/26/2015	MW
Nitrate as NO3-N	EPA300.0	mg/L	0.1		0.1	10	6/26/2015	MW
Nitrate+Nitrite as N	EPA300.0	mg/L	0.5		0.1		6/26/2015	MW
Nitrite as NO2-N	EPA300.0	mg/L	0.3		0.1	1.0	6/26/2015	MW

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Monterey Bay Analytical Services

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ELAP Certification Number: 2385

Tuesday, July 21, 2015

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

Lab Number: AB32316

Collection Date/Time: 6/24/2015 11:30

Sample Collector: LEAR J

Submittal Date/Time: 6/25/2015 11:25

Sample ID

Coliform Designation:

Sample Description: MW-1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
o-Phosphate-P	EPA300.0	mg/L	Not Detected		0.1		6/26/2015	MW
pH (Laboratory)	SM4500-H+B	pH (H)	7.5		0.1		6/25/2015	LRH
Phosphorus, Total	HACH 8190	mg/L	0.08		0.03		7/17/2015	LRH
Potassium	EPA200.7	mg/L	3.7		0.5		7/1/2015	MW
QC Anion Sum x 100	Calculation	%	100%				7/7/2015	LJ
QC Anion-Cation Balance	Calculation	%	-1				7/7/2015	LJ
QC Cation Sum x 100	Calculation	%	97%				7/6/2015	TC
QC Ratio TDS/SEC	Calculation		0.65				7/2/2015	HM
Selenium, Total	EPA200.8	µg/L	5		2	50	7/2/2015	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	31		0.5		7/1/2015	MW
Sodium	EPA200.7	mg/L	52		0.5		7/1/2015	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	610		1	900	6/30/2015	LJ
Strontium, Total	EPA200.8	µg/L	256		5		7/2/2015	SM
Sulfate	EPA300.0	mg/L	88		1	250	6/26/2015	MW
TOC	SM5310C	mg/L	1.3		0.2		7/2/2015	MW
Total Diss. Solids	SM2540C	mg/L	394		10	500	6/30/2015	HM
Total Nitrogen	Calculation	mg/L	Not Detected		0.5		7/7/2015	HM
Total Radium 226	EPA903.0	pCi/L	0.514 ± 0.243	E		3	7/17/2015	FGL
Trihalomethanes	EPA524.2	µg/L	44	E		80	6/30/2015	BSK
Uranium by ICP/MS	EPA200.8	µg/L	1		1	30	7/2/2015	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	7/2/2015	SM
Zinc, Total	EPA200.8	µg/L	Not Detected		20	5000	7/2/2015	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 outside 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

Tuesday, July 21, 2015

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

Lab Number: AB32317

Collection Date/Time: 6/25/2015 9:30
 Submittal Date/Time: 6/25/2015 11:25

Sample Collector: LEAR J
 Sample ID

Coliform Designation:

Sample Description: SMS(D)

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO ₃)	SM2320B	mg/L	172		2		7/7/2015	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	7/2/2015	SM
Ammonia-N	SM4500NH3 D	mg/L	Not Detected		0.05		6/30/2015	TC
Arsenic, Total	EPA200.8	µg/L	6		1	10	7/2/2015	SM
Barium, Total	EPA200.8	µg/L	34		10	1000	7/2/2015	SM
Bicarbonate (as HCO ₃ ⁻)	SM2320B	mg/L	210		10		7/7/2015	LJ
Boron	EPA200.7	mg/L	0.06		0.05		7/1/2015	MW
Bromide	EPA300.0	mg/L	0.2		0.1		6/26/2015	MW
Calcium	EPA200.7	mg/L	56		0.5		7/1/2015	MW
Carbonate as CaCO ₃	SM2320B	mg/L	Not Detected		10		7/7/2015	LJ
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		6/25/2015	LJ
Chloride	EPA300.0	mg/L	55		1	250	6/26/2015	MW
DOC		mg/L	1.2		0.2		7/2/2015	MW
Fluoride	EPA300.0	mg/L	0.2		0.1	2.0	6/26/2015	MW
Gross Alpha	EPA900.0	pCi/L	3.17 ± 1.29	E		15	7/13/2015	FGL
Haloacetic Acids	EPA552	µg/L	6.9	E		60	7/1/2015	BSK
Iron	EPA200.7	µg/L	Not Detected		10	300	7/1/2015	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	7/1/2015	MW
Kjeldahl Nitrogen	SM4500-NH3 B,C.	mg/L	Not Detected		0.5		7/7/2015	TC
Lithium	EPA200.8	µg/L	19		1		7/2/2015	SM
Magnesium	EPA200.7	mg/L	13		0.5		7/1/2015	MW
Manganese, Dissolved	EPA200.7	µg/L	Not Detected		10	50	7/1/2015	MW
Manganese, Total	EPA200.7	µg/L	Not Detected		10	50	7/1/2015	MW
Mercury, Total	EPA200.8	µg/L	1.6		0.5	2	7/2/2015	SM
Methane	EPA174/175	µg/L	0.80	E	0.1		7/1/2015	MCCAM
Molybdenum, Total	EPA200.8	µg/L	10		1	1000	7/2/2015	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	7/2/2015	SM
Nitrate as NO ₃	EPA300.0	mg/L	Not Detected		1	45	6/26/2015	MW
Nitrate as NO ₃ -N	EPA300.0	mg/L	0.1		0.1	10	6/26/2015	MW
Nitrate+Nitrite as N	EPA300.0	mg/L	0.5		0.1		6/26/2015	MW
Nitrite as NO ₂ -N	EPA300.0	mg/L	0.4		0.1	1.0	6/26/2015	MW

mg/L: Milligrams per liter (=ppm)

µg/L : Micrograms per liter (=ppb)

PQL : Practical Quantitation Limit

H = Analyzed outside 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

Tuesday, July 21, 2015

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

Lab Number: AB32317

Collection Date/Time: 6/25/2015 9:30
Submittal Date/Time: 6/25/2015 11:25

Sample Collector: LEAR J
Sample ID

Coliform Designation:

Sample Description: SMS(D)

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P	EPA300.0	mg/L	Not Detected		0.1		6/26/2015	MW
pH (Laboratory)	SM4500-H+B	pH (H)	7.6		0.1		6/25/2015	LRH
Phosphorus, Total	HACH 8190	mg/L	0.10		0.03		7/17/2015	LRH
Potassium	EPA200.7	mg/L	3.0		0.5		7/1/2015	MW
QC Anion Sum x 100	Calculation	%	101%				7/7/2015	LJ
QC Anion-Cation Balance	Calculation	%	-3				7/7/2015	LJ
QC Cation Sum x 100	Calculation	%	95%				7/6/2015	TC
QC Ratio TDS/SEC	Calculation		0.61				7/2/2015	HM
Selenium, Total	EPA200.8	µg/L	4		2	50	7/2/2015	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	27		0.5		7/1/2015	MW
Sodium	EPA200.7	mg/L	53		0.5		7/1/2015	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	656		1	900	6/30/2015	LJ
Strontium, Total	EPA200.8	µg/L	383		5		7/2/2015	SM
Sulfate	EPA300.0	mg/L	80		1	250	6/26/2015	MW
TOC	SM5310C	mg/L	1.2		0.2		7/2/2015	MW
Total Diss. Solids	SM2540C	mg/L	397		10	500	6/30/2015	HM
Total Nitrogen	Calculation	mg/L	0.5		0.5		7/7/2015	HM
Total Radium 226	EPA903.0	pCi/L	0.244 ± 0.176	E		3	7/17/2015	FGL
Trihalomethanes	EPA524.2	µg/L	63	E		80	6/30/2015	BSK
Uranium by ICP/MS	EPA200.8	µg/L	3		1	30	7/2/2015	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	7/2/2015	SM
Zinc, Total	EPA200.8	µg/L	Not Detected		20	5000	7/2/2015	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 outside of hold time

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D = Method deviates from standard method due to insufficient sample for MS/MSD

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www.MBASinc.com

ELAP Certification Number: 2385

Tuesday, July 21, 2015

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

Lab Number: AB32318

Collection Date/Time: 6/25/2015 10:30

Sample Collector: LEAR J

Submittal Date/Time: 6/25/2015 11:25

Sample ID

Coliform Designation:

Sample Description: ASR3 Test

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO ₃)	SM2320B	mg/L	166		2		7/7/2015	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	7/2/2015	SM
Ammonia-N	SM4500NH3 D	mg/L	Not Detected		0.05		6/30/2015	TC
Arsenic, Total	EPA200.8	µg/L	4		1	10	7/2/2015	SM
Barium, Total	EPA200.8	µg/L	75		10	1000	7/2/2015	SM
Bicarbonate (as HCO ₃ ⁻)	SM2320B	mg/L	203		10		7/7/2015	LJ
Boron	EPA200.7	mg/L	0.05		0.05		7/1/2015	MW
Bromide	EPA300.0	mg/L	0.2		0.1		6/26/2015	MW
Calcium	EPA200.7	mg/L	50		0.5		7/1/2015	MW
Carbonate as CaCO ₃	SM2320B	mg/L	Not Detected		10		7/7/2015	LJ
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		6/25/2015	LJ
Chloride	EPA300.0	mg/L	55		1	250	6/26/2015	MW
DOC		mg/L	1.4		0.2		7/2/2015	MW
Fluoride	EPA300.0	mg/L	0.3		0.1	2.0	6/26/2015	MW
Gross Alpha	EPA900.0	pCi/L	1.33 ± 1.52	E		15	7/13/2015	FGL
Haloacetic Acids	EPA552	µg/L	8.7	E		60	7/1/2015	BSK
Iron	EPA200.7	µg/L	156		10	300	7/1/2015	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	7/1/2015	MW
Kjeldahl Nitrogen	SM4500-NH3 B,C.	mg/L	Not Detected		0.5		7/7/2015	TC
Lithium	EPA200.8	µg/L	18		1		7/2/2015	SM
Magnesium	EPA200.7	mg/L	17		0.5		7/1/2015	MW
Manganese, Dissolved	EPA200.7	µg/L	21		10	50	7/1/2015	MW
Manganese, Total	EPA200.7	µg/L	22		10	50	7/1/2015	MW
Mercury, Total	EPA200.8	µg/L	1.1		0.5	2	7/2/2015	SM
Methane	EPA174/175	µg/L	1.1	E	0.1		7/1/2015	MCCAM
Molybdenum, Total	EPA200.8	µg/L	20		1	1000	7/2/2015	SM
Nickel, Total	EPA200.8	µg/L	11		10	100	7/2/2015	SM
Nitrate as NO ₃	EPA300.0	mg/L	Not Detected		1	45	6/26/2015	MW
Nitrate as NO ₃ -N	EPA300.0	mg/L	0.1		0.1	10	6/26/2015	MW
Nitrate+Nitrite as N	EPA300.0	mg/L	0.5		0.1		6/26/2015	MW
Nitrite as NO ₂ -N	EPA300.0	mg/L	0.4		0.1	1.0	6/26/2015	MW

mg/L: Milligrams per liter (=ppm)

µg/L : Micrograms per liter (=ppb)

PQL : Practical Quantitation Limit

H = Analyzed outside 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

4 Justin Court Suite D, Monterey, CA 93940
 831.375.MBAS
 www.MBASinc.com

ELAP Certification Number: 2385
 Tuesday, July 21, 2015

Lab Number: AB32318

Collection Date/Time: 6/25/2015 10:30
 Submittal Date/Time: 6/25/2015 11:25

Sample Collector: LEAR J
 Sample ID

Coliform Designation:

Sample Description: ASR3 Test

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P	EPA300.0	mg/L	0.2		0.1		6/26/2015	MW
pH (Laboratory)	SM4500-H+B	pH (H)	7.4		0.1		6/25/2015	LRH
Phosphorus, Total	HACH 8190	mg/L	0.21		0.03		7/17/2015	LRH
Potassium	EPA200.7	mg/L	3.2		0.5		7/1/2015	MW
QC Anion Sum x 100	Calculation	%	102%				7/7/2015	LJ
QC Anion-Cation Balance	Calculation	%	-3				7/7/2015	LJ
QC Cation Sum x 100	Calculation	%	97%				7/6/2015	TC
QC Ratio TDS/SEC	Calculation		0.60				7/2/2015	HM
Selenium, Total	EPA200.8	µg/L	4		2	50	7/2/2015	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	27		0.5		7/1/2015	MW
Sodium	EPA200.7	mg/L	52		0.5		7/1/2015	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	645		1	900	6/30/2015	LJ
Strontium, Total	EPA200.8	µg/L	281		5		7/2/2015	SM
Sulfate	EPA300.0	mg/L	82		1	250	6/26/2015	MW
TOC	SM5310C	mg/L	1.2		0.2		7/2/2015	MW
Total Diss. Solids	SM2540C	mg/L	388		10	500	6/30/2015	HM
Total Nitrogen	Calculation	mg/L	0.5		0.5		7/7/2015	HM
Total Radium 226	EPA903.0	pCi/L	0.081 ± 0.119	E		3	7/17/2015	FGL
Trihalomethanes	EPA524.2	µg/L	71	E		80	6/30/2015	BSK
Uranium by ICP/MS	EPA200.8	µg/L	2		1	30	7/2/2015	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	7/2/2015	SM
Zinc, Total	EPA200.8	µg/L	227		20	5000	7/2/2015	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 outside 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)

A5F2369

7/08/2015

Invoice: A514058

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

RE: Report for A5F2369 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 6/26/2015. 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
Report To: David Holland
Project #: -
Received: 6/26/2015 - 10:00
Report Due: 7/13/2015

Invoice To: Monterey Bay Analytical
Invoice Attn: David Holland
Project PO#: -

Sample Receipt Conditions

Cooler: Default Cooler
Temperature on Receipt °C: 4.3

Containers Intact
 COC/Labels Agree
 Received On Wet Ice
 Received On Blue Ice
 Packing Material - Bubble Wrap
 Packing Material - Foam
 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: A5F2369-01
Sampled By: Jonathan Lear
Sample Description: ASR2 Test // AB32315

Sample Date - Time: 06/24/15 - 10:00
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	27	0.50	ug/L	1	A507175	06/29/15	06/30/15	
Bromoform	EPA 524.2	2.1	0.50	ug/L	1	A507175	06/29/15	06/30/15	
Chloroform	EPA 524.2	52	0.50	ug/L	1	A507175	06/29/15	06/30/15	
Dibromochloromethane	EPA 524.2	14	0.50	ug/L	1	A507175	06/29/15	06/30/15	
Surrogate: Bromofluorobenzene	EPA 524.2	105 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		95	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A507222	06/30/15	07/01/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	1.1	1.0	ug/L	1	A507222	06/30/15	07/01/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A507222	06/30/15	07/01/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A507222	06/30/15	07/01/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A507222	06/30/15	07/01/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	106 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		ND	2.0	ug/L					

Certificate of Analysis

Sample ID: A5F2369-02
Sampled By: Jonathan Lear
Sample Description: MW-1 // AB32316

Sample Date - Time: 06/24/15 - 11:30
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	10	0.50	ug/L	1	A507175	06/29/15	06/30/15	
Bromoform	EPA 524.2	0.72	0.50	ug/L	1	A507175	06/29/15	06/30/15	
Chloroform	EPA 524.2	29	0.50	ug/L	1	A507175	06/29/15	06/30/15	
Dibromochloromethane	EPA 524.2	4.5	0.50	ug/L	1	A507175	06/29/15	06/30/15	
Surrogate: Bromofluorobenzene	EPA 524.2	105 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		44	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A507222	06/30/15	07/01/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A507222	06/30/15	07/01/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A507222	06/30/15	07/01/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A507222	06/30/15	07/01/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A507222	06/30/15	07/01/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	107 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		ND	2.0	ug/L					

Certificate of Analysis

Sample ID: A5F2369-03
Sampled By: Jonathan Lear
Sample Description: SMS (D) // AB32317

Sample Date - Time: 06/25/15 - 09:30
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	18	0.50	ug/L	1	A507175	06/29/15	06/30/15	
Bromoform	EPA 524.2	1.7	0.50	ug/L	1	A507175	06/29/15	06/30/15	
Chloroform	EPA 524.2	33	0.50	ug/L	1	A507175	06/29/15	06/30/15	
Dibromochloromethane	EPA 524.2	10	0.50	ug/L	1	A507175	06/29/15	06/30/15	
Surrogate: Bromofluorobenzene	EPA 524.2	112 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		63	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A507222	06/30/15	07/01/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	2.3	1.0	ug/L	1	A507222	06/30/15	07/01/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A507222	06/30/15	07/01/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A507222	06/30/15	07/01/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	4.6	1.0	ug/L	1	A507222	06/30/15	07/01/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	106 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		6.9	2.0	ug/L					

Certificate of Analysis

Sample ID: A5F2369-04
Sampled By: Jonathan Lear
Sample Description: ASR3 Test // AB32318

Sample Date - Time: 06/25/15 - 10:30
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	20	0.50	ug/L	1	A507175	06/29/15	06/30/15	
Bromoform	EPA 524.2	1.7	0.50	ug/L	1	A507175	06/29/15	06/30/15	
Chloroform	EPA 524.2	38	0.50	ug/L	1	A507175	06/29/15	06/30/15	
Dibromochloromethane	EPA 524.2	11	0.50	ug/L	1	A507175	06/29/15	06/30/15	
Surrogate: Bromofluorobenzene	EPA 524.2	103 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		71	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A507222	06/30/15	07/01/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	3.8	1.0	ug/L	1	A507222	06/30/15	07/01/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A507222	06/30/15	07/01/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A507222	06/30/15	07/01/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	4.9	1.0	ug/L	1	A507222	06/30/15	07/01/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	104 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		8.7	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
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EPA 524.2 - Quality Control

Batch: A507175

Prepared: 06/29/2015

Prep Method: no prep-volatiles

Analyst: JGB

Blank (A507175-BLK1)

Bromodichloromethane	ND	0.50	ug/L							06/29/15	
Bromoform	ND	0.50	ug/L							06/29/15	
Chloroform	ND	0.50	ug/L							06/29/15	
Dibromochloromethane	ND	0.50	ug/L							06/29/15	
Surrogate: Bromofluorobenzene	52			50		103	70-130			06/29/15	

Blank Spike (A507175-BS1)

Bromodichloromethane	11	0.50	ug/L	10		105	70-130			06/29/15	
Bromoform	12	0.50	ug/L	10		121	70-130			06/29/15	
Chloroform	10	0.50	ug/L	10		101	70-130			06/29/15	
Dibromochloromethane	11	0.50	ug/L	10		112	70-130			06/29/15	
Surrogate: Bromofluorobenzene	54			50		108	70-130			06/29/15	

Blank Spike Dup (A507175-BSD1)

Bromodichloromethane	10	0.50	ug/L	10		105	70-130	0	30	06/29/15	
Bromoform	11	0.50	ug/L	10		114	70-130	6	30	06/29/15	
Chloroform	10	0.50	ug/L	10		104	70-130	2	30	06/29/15	
Dibromochloromethane	11	0.50	ug/L	10		109	70-130	3	30	06/29/15	
Surrogate: Bromofluorobenzene	54			50		109	70-130			06/29/15	

Matrix Spike (A507175-MS1), Source: A5F2197-01

Bromodichloromethane	11	0.50	ug/L	10	ND	113	70-130			06/30/15	
Bromoform	12	0.50	ug/L	10	ND	120	70-130			06/30/15	
Chloroform	11	0.50	ug/L	10	ND	112	70-130			06/30/15	
Dibromochloromethane	12	0.50	ug/L	10	ND	116	70-130			06/30/15	
Surrogate: Bromofluorobenzene	55			50		109	70-130			06/30/15	

EPA 552.3 - Quality Control

Batch: A507222

Prepared: 06/30/2015

Prep Method: EPA 552.3

Analyst: MTM

Blank (A507222-BLK1)

Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							06/30/15	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							06/30/15	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							06/30/15	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							06/30/15	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							06/30/15	
Surrogate: 2-Bromobutanoic Acid	26			25		102	70-130			06/30/15	

Blank Spike (A507222-BS1)

Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10		107	70-130			06/30/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		109	70-130			06/30/15	
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		109	70-130			06/30/15	
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20		110	70-130			06/30/15	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		107	70-130			06/30/15	

**BSK Associates Fresno
Organics Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 552.3 - Quality Control

Batch: A507222

Prepared: 06/30/2015

Prep Method: EPA 552.3

Analyst: MTM

Blank Spike (A507222-BS1)

Surrogate: 2-Bromobutanoic Acid 26 25 104 70-130 06/30/15

Blank Spike Dup (A507222-BSD1)

Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10		113	70-130	5	30	07/01/15
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		111	70-130	2	30	07/01/15
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10		111	70-130	1	30	07/01/15
Monochloroacetic Acid (MCAA)	22	2.0	ug/L	20		108	70-130	2	30	07/01/15
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		110	70-130	3	30	07/01/15
Surrogate: 2-Bromobutanoic Acid	27			25		106	70-130			07/01/15

Matrix Spike (A507222-MS1), Source: A5F2316-01

Dibromoacetic Acid (DBAA)	11	1.0	ug/L	10	ND	104	70-130			06/30/15
Dichloroacetic Acid (DCAA)	12	1.0	ug/L	10	ND	108	70-130			06/30/15
Monobromoacetic Acid (MBAA)	11	1.0	ug/L	10	ND	106	70-130			06/30/15
Monochloroacetic Acid (MCAA)	21	2.0	ug/L	20	ND	106	70-130			06/30/15
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10	ND	106	70-130			06/30/15
Surrogate: 2-Bromobutanoic Acid	24			25		98	70-130			06/30/15

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	CA000792015-1	State of Oregon - NELAC	4021
EPA - UCMR3	CA00079	State of Washington	C997-15

Sacramento

State of California - ELAP	2435
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Vancouver

State of Oregon - NELAC	WA100008	State of Washington	C824-14a
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A5F2369



06262015

Monte6227

Turnaround: Standard

Due Date: 7/13/2015



Monterey Bay Analytical





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

*Required Fields

4.3

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

A5F2369
 Montie6227
 06/26/2015
 10



Company/Client Name: Monterey Bay Analytical Services
 Report Attention: Mason Weidner-Holland
 Additional cc's: David Holland
 Invoice To: David Holland
 PO#: _____

Address: 4 Justin Court, Suite D
 City: Monterey
 State: CA
 Zip: 93940
 Phone: 831-375-6227
 Fax: 831-641-0734
 E-mail: mweidner@mbasin.com, dholland@mbasin.com

Project: MPWMD
 Project #: _____
 How would you like to receive your completed results?
 E-Mail
 Fax
 Mail

Reporting Options:
 Trace (J-Flag)
 Swamp
 EDD Type: _____
 Regulatory Carbon Copies
 SWRCB (Drinking Water)
 Merced Co
 Madera Co
 Fresno Co
 Tulare Co
 Regulatory Compliance
 EDT to California SWRCB (Drinking Water)
 System Number: NO

Sampler Name (Printed/Signature): Jonathan Lear
 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*		Matrix*	Comments / Station Code / WTRAX
		Date	Time		
1.	ASR2 Test	6/24/15	1000	GW	HAA5 TTHM
2.	MW-1	6/24/15	1130	GW	
3.	SMS(D)	6/25/15	0930	GW	
4.	ASR3 Test	6/25/15	1030	GW	

Relinquished by: (Signature and Printed Name) D. Holland
 Company: MBAS
 Date: 6/25/15
 Time: 1600
 Received by: (Signature and Printed Name)
 Date: _____

Shipping Method: UPS
 Cooling Method: Blue
 Received for: (Signature and Printed Name)
 Date: _____
 Payment Received at Delivery: _____

Amount: _____
 PIA#: _____
 Check # _____
 Int: _____
 Cash: _____

Payment for services rendered as noted herein are due in full within 30 days from the date invoiced. If not so paid, account balances are deemed delinquent. Delinquent balances are subject to monthly service charges and interest specified in BSK's current Standard Terms and Conditions for Laboratory Services. The period of payment for the Client/Company acknowledges that they are either the Client or an authorized agent to the Client, that the Client agrees to be responsible for payment for the services on this Chain of Custody, and agrees to BSK's terms and conditions for laboratory services unless contractually bound otherwise. BSK's current terms and conditions can be found at www.bskassociates.com/BSK_Lab_Terms_Conditions.pdf



Sample Integrity

BSK Bottles: Yes No

Page 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$ <u>4.3</u>	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 <u>NA</u>	Were there bubbles in the VOA vials? (Volatiles Only)	Yes No NA
	Did all bottles arrive unbroken and intact?	<u>Yes</u> No	Was a sufficient amount of sample received?	<u>Yes</u> No
	Did all bottle labels agree with COC?	<u>Yes</u> No	Do samples have a hold time <72 hours?	Yes <u>No</u>
	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes No <u>NA</u>	Was PM notified of discrepancies? PM: <u>1-4</u> By/Time:	Yes No <u>NA</u>

Bottles Received	250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)	Checks	Passed?			
	Bacti Na ₂ S ₂ O ₃	—	—			
	None (P) ^{White Cap}	—	—			
	Cr6 (P) ^{Br. Green Label} NH ₄ OH(NH ₄) ₂ SO ₄ DW	Cl, pH > 8	Y N			
	Cr6 (P) ^{Pink Label} NH ₄ OH(NH ₄) ₂ SO ₄ WW	pH 9.3-9.7	Y N			
	Cr6 (P) ^{Pink Label} NH ₄ OH(NH ₄) ₂ SO ₄ 7199 ***24 HOUR HOLD TIME***	pH 9.0-9.5	Y N			
	HNO ₃ (P) ^{Red Cap}	—	—			
	H ₂ SO 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 ₂ O ₃ S+HCl (AG) ^{Lt. Pink Label} 525	—	—			
	Na ₂ S ₂ O ₃ 1 Liter (Brown P) 549	—	—			
	Na ₂ S ₂ O ₃ (AG) ^{Blue Label} 547, 515, 548, THM, 524	—	—	<u>3V</u>		
	Na ₂ S ₂ O ₃ (CG) ^{Blue Label} 504, 505	—	—			
	Na ₂ S ₂ O ₃ + MCAA (CG) ^{Orange Label} 531	pH < 3	Y N			
	NH ₄ Cl (AG) ^{Purple Label} 552	—	—	<u>1A</u>		
	EDA (AG) ^{Brown Label} DBPs	—	—			
	HCL (CG) 524.2, BTEX, Gas, MTBE, 8260/624	—	—			
	Buffer pH 4 (CG)	—	—			
	None (CG)	—	—			
	H ₃ PO 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	—	—			

J. P. 6/26/15

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

Comments

Labeled by: mw @ 13:12

Labels checked by: CW @ 14:37

RUSH Paged by: _____

July 21, 2015

Monterey Bay Analytical Services
 4 Justin Court
 Monterey, CA 93940

Lab ID : SP 1507364
 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 (4 pages) : 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
ASR2 Test	06/24/2015	07/02/2015	SP 1507364-001	GW
MW-1	06/24/2015	07/02/2015	SP 1507364-002	GW
SMS(D)	06/25/2015	07/02/2015	SP 1507364-003	GW
ASR3 Test	06/25/2015	07/02/2015	SP 1507364-004	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 3 °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:

Radio QC

900.0	07/13/2015:210315 All analysis quality controls are within established criteria
	07/13/2015:210317 All analysis quality controls are within established criteria
	07/13/2015:210319 All analysis quality controls are within established criteria
	07/10/2015:207958 All preparation quality controls are within established criteria
903.0	07/17/2015:210542 All analysis quality controls are within established criteria
	07/11/2015:208010 All preparation quality controls are within established criteria

July 21, 2015
Monterey Bay Analytical Services

Lab ID : SP 1507364
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: 2015-07-21



July 21, 2015

Lab ID : SP 1507364-001

Customer ID : 2-19144

Monterey Bay Analytical Services

4 Justin Court
Monterey, CA 93940

Sampled On : June 24, 2015-10:00

Sampled By : Jonathan Lear

Received On : July 2, 2015-11:20

Matrix : Ground Water

Description : ASR2 Test

Project : MPWMD

Sample Result - Radio

Table with 7 columns: Constituent, Result ± Error, MDA, Units, MCL/AL, Sample Preparation (Method, Date/ID), Sample Analysis (Method, Date/ID). Rows include Radio Chemistry, Gross Alpha, and Total Alpha Radium (226).

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.



July 21, 2015

Lab ID : SP 1507364-002

Customer ID : 2-19144

Monterey Bay Analytical Services

4 Justin Court
Monterey, CA 93940

Sampled On : June 24, 2015-11:30

Sampled By : Jonathan Lear

Received On : July 2, 2015-11:20

Matrix : Ground Water

Description : MW-1

Project : MPWMD

Sample Result - Radio

Table with 7 columns: Constituent, Result ± Error, MDA, Units, MCL/AL, Sample Preparation (Method, Date/ID), Sample Analysis (Method, Date/ID). Rows include Radio Chemistry, Gross Alpha, and Total Alpha Radium (226).

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.



July 21, 2015

Lab ID : SP 1507364-003

Customer ID : 2-19144

Monterey Bay Analytical Services

4 Justin Court
Monterey, CA 93940

Sampled On : June 25, 2015-09:30

Sampled By : Jonathan Lear

Received On : July 2, 2015-11:20

Matrix : Ground Water

Description : SMS(D)

Project : MPWMD

Sample Result - Radio

Table with 7 columns: Constituent, Result ± Error, MDA, Units, MCL/AL, Sample Preparation (Method, Date/ID), Sample Analysis (Method, Date/ID). Rows include Radio Chemistry, Gross Alpha, and Total Alpha Radium (226).

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.



July 21, 2015

Lab ID : SP 1507364-004

Customer ID : 2-19144

Monterey Bay Analytical Services

4 Justin Court
Monterey, CA 93940

Sampled On : June 25, 2015-10:30

Sampled By : Jonathan Lear

Received On : July 2, 2015-11:20

Matrix : Ground Water

Description : ASR3 Test

Project : MPWMD

Sample Result - Radio

Table with 7 columns: Constituent, Result ± Error, MDA, Units, MCL/AL, Sample Preparation (Method, Date/ID), Sample Analysis (Method, Date/ID). Rows include Radio Chemistry, Gross Alpha, and Total Alpha Radium (226).

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.



July 21, 2015
Monterey Bay Analytical Services

Lab ID : SP 1507364
Customer : 2-19144

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio Alpha	900.0	07/13/15:210315caa	CCV CCB	cpm cpm	8902	40.7 % 0.1200	38 - 46 0.14	
	900.0	07/13/15:210317caa	CCV CCB	cpm cpm	8902	40.4 % 0.100	37 - 45 0.18	
	900.0	07/13/15:210319caa	CCV CCB	cpm cpm	8902	41.1 % 0.100	37 - 45 0.18	
Gross Alpha	900.0	07/10/15:207958lalo (CC 1582283-001)	Blank	pCi/L		0.02	3	
			LCS	pCi/L	178.7	101 %	75-125	
			MS	pCi/L	178.7	137 %	60-140	
			MSD	pCi/L	178.7	129 %	60-140	
			MSRPD	pCi/L	178.7	5.3 %	≤30	
Alpha	903.0	07/17/15:210542caa	CCV CCB	cpm cpm	8899	40.5 % 0.100	37 - 45 0.19	
Total Alpha Radium (226)	903.0	07/11/15:208010caa	RgBlk	pCi/L		-0.01	2	
			LCS	pCi/L	21.59	74.7 %	52-107	
			BS	pCi/L	21.59	65.1 %	43-111	
			BSD	pCi/L	21.59	65.0 %	43-111	
			BSRPD	pCi/L	21.59	0.09%	≤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 analyte. 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.

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): Jonathan Lear Sampling Fee: _____ Pickup Fee: _____ Composer Setup Date: _____ Time: 1800 Lab Number: <u>1507304</u>				TEST DESCRIPTION - See Reverse side for Container, Preservative and Sampling information																				
				Type: Composite(C) Grab(G) Number of Containers	Containers: (G)Glass (P)Plastic(V)VOA (M)Metal Tube (P)Potable (NP)Non-Potable (SW)Surface Water (MW)Monitoring Well (GW)Ground Water (TB)TravelBark (WW)Waste Water (DW)Drinking Water (S)Soil(SL G)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	Ra226																	
Samp Num	Location Description	Date Sampled	Time Sampled																					
	ASR2 Test	6/24/15	1000	G 1 P P	GW								X	X										
	MW-1	6/24/15	1130	G 1 P P	GW								X	X										
	SMS(D)	6/25/15	0930	G 1 P P	GW								X	X										
	ASR3 Test	6/25/15	1030	G 1 P P	GW								X	X										
Remarks: AB32185-AB32318 <u>D100105805 044849</u>				Relinquished Date: _____ Time: _____ David Holland 6/25/15 1600		Relinquished Date: _____ Time: _____ 		Relinquished Date: _____ Time: _____																
				Received By: _____ Date: _____ Time: _____		Received By: _____ Date: _____ Time: _____ 7/15/15 1120		Received By: _____ Date: _____ Time: _____																

Corporate Offices & Laboratory
 P.O. Box 272 / 853 Corporation street
 Santa Paula, CA 93861-0272
 TEL: 805/362-2000
 FAX: 805/525-4172
 CA NELAP Certification No. 01110CA
 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. Linda Avenue
 Chico, CA 95926
 TEL: 530/343-5818
 FAX: 530/343-3607
 CA ELAP Certification No. 1562

FIELD OFFICE
 Visalia, California
 TEL: (559)734-8473
 Mobile: (559)737-2399
 FAX: (559)734-8435

3C

Condition Upon Receipt (Attach to COC)

Sample Receipt at SP:

- 1. Number of ice chests/packages received: 1
- 2. Shipper tracking numbers D10010805644849
- 3. Were samples received in a chilled condition?
Temps: 3 / / / / / /
- 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: 07/06/2015-13:40:18

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 1507364
SRP-07/06/2015-13:40:18



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1506B48

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: 06/26/2015

Analytical Report reviewed & approved for release on 07/06/2015 by:

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1506B48

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)
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.
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 Report

Client: Monterey Bay Analytical
Project: MPWMD
Date Received: 6/26/15 13:28
Date Prepared: 7/1/15

WorkOrder: 1506B48
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µg/L

Light Gases

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR2 Test	1506B48-001A	Water	06/24/2015 10:00	GC26	107118

Analytes	Result	RL	DF	Date Analyzed
Methane	0.54	0.10	1	07/01/2015 15:22

Analyst(s): KBO

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	1506B48-002A	Water	06/24/2015 11:30	GC26	107118

Analytes	Result	RL	DF	Date Analyzed
Methane	3.0	0.10	1	07/01/2015 15:40

Analyst(s): KBO

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMS (D)	1506B48-003A	Water	06/24/2015 09:30	GC26	107118

Analytes	Result	RL	DF	Date Analyzed
Methane	0.80	0.10	1	07/01/2015 16:23

Analyst(s): KBO

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR3 Test	1506B48-004A	Water	06/24/2015 10:30	GC26	107118

Analytes	Result	RL	DF	Date Analyzed
Methane	1.1	0.10	1	07/01/2015 16:39

Analyst(s): KBO



Quality Control Report

Client: Monterey Bay Analytical
Date Prepared: 7/1/15
Date Analyzed: 7/1/15
Instrument: GC26
Matrix: Air
Project: MPWMD

WorkOrder: 1506B48
BatchID: 107118
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µL/L
Sample ID: MB/LCS-107118

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	10.1	0.50	10	-	101	70-130

1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262



CHAIN-OF-CUSTODY RECORD

WorkOrder: 1506B48

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: 06/26/2015
Date Printed: 07/06/2015

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	
1506B48-001	ASR2 Test	Water	6/24/2015 10:00	<input type="checkbox"/>	A												
1506B48-002	MW-1	Water	6/24/2015 11:30	<input type="checkbox"/>	A												
1506B48-003	SMS (D)	Water	6/24/2015 9:30	<input type="checkbox"/>	A												
1506B48-004	ASR3 Test	Water	6/24/2015 10:30	<input type="checkbox"/>	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.



WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL

QC Level: LEVEL 2

Work Order: 1506B48

Project: MPWMD

Client Contact: David Holland

Date Received: 6/26/2015

Comments:

Contact's Email: mweidner@mbasinc.com; Dholland@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
1506B48-001A	ASR2 Test	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	6/24/2015 10:00	5 days	Trace	<input type="checkbox"/>	
1506B48-002A	MW-1	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	6/24/2015 11:30	5 days	None	<input type="checkbox"/>	
1506B48-003A	SMS (D)	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	6/24/2015 9:30	5 days	None	<input type="checkbox"/>	
1506B48-004A	ASR3 Test	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	6/24/2015 10:30	5 days	Trace	<input type="checkbox"/>	

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.



Sample Receipt Checklist

Client Name: **Monterey Bay Analytical** Date and Time Received: **6/26/2015 1:28:14 PM**
 Project Name: **MPWMD** Login Reviewed by: **Maria Venegas**
 WorkOrder No: **1506B48** Matrix: Water Carrier: OnTrac

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: 5.6°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:



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

Page 1 of 1

Monday, July 20, 2015

Lab Number: AB33179

Collection Date/Time: 7/15/2015 10:20 Sample Collector: LEAR J

Submittal Date/Time: 7/15/2015 14:15 Sample ID Coliform Designation:

Sample Description: ASR1 Test

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Mercury	EPA200.8	µg/L	0.74	E		2	7/17/2015	MCCAM
Mercury by EPA 245.2	EPA245.2	µg/L	0.88	E	0.20	2	7/17/2015	MCCAM

Sample Comments:

Report Approved by:

David Holland, Laboratory Director



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1507594

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: 07/16/2015

Analytical Report reviewed & approved for release on 07/20/2015 by:

Angela Rydelius,
Laboratory Manager

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Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1507594

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)
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.
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 Report

Client: Monterey Bay Analytical
Project: MPWMD
Date Received: 7/16/15 10:57
Date Prepared: 7/16/15

WorkOrder: 1507594
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L

Mercury

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR1 Test	1507594-001A	Water	07/15/2015 10:20	ICP-MS1	107688

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Mercury	0.74	0.025	1	07/17/2015 17:24

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	<u>Date Analyzed</u>
Terbium	95	70-130	07/17/2015 17:24

Analyst(s): DVH



Analytical Report

Client: Monterey Bay Analytical

WorkOrder: 1507594

Project: MPWMD

Extraction Method: E245.2

Date Received: 7/16/15 10:57

Analytical Method: E245.2

Date Prepared: 7/16/15

Unit: µg/L

Mercury by Cold Vapor Atomic Absorption

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR1 Test	1507594-001A	Water	07/15/2015 10:20	AA1	107740

Analytes	Result	RL	DF	Date Analyzed
Mercury	0.88	0.20	1	07/17/2015 11:52

Analyst(s): BBO



Quality Control Report

Client: Monterey Bay Analytical
Date Prepared: 7/15/15
Date Analyzed: 7/16/15
Instrument: ICP-MS1
Matrix: Water
Project: MPWMD

WorkOrder: 1507594
BatchID: 107688
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L
Sample ID: MB/LCS-107688
 1507544-001AMS/MSD

QC Summary Report for Mercury

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Mercury	ND	1.19	0.025	1.25	-	95	85-115

Surrogate Recovery

Terbium	754	733		750	100	98	70-130
---------	-----	-----	--	-----	-----	----	--------

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Mercury	NR	NR	1.25	ND<0.50	NR	NR	70-130	NR	20

Surrogate Recovery

Terbium	868	1050	750		116	140	70-130	18.9	20
---------	-----	------	-----	--	-----	-----	--------	------	----



Quality Control Report

Client: Monterey Bay Analytical
Date Prepared: 7/16/15
Date Analyzed: 7/17/15
Instrument: AA1
Matrix: Water
Project: MPWMD

WorkOrder: 1507594
BatchID: 107740
Extraction Method: E245.2
Analytical Method: E245.2
Unit: µg/L
Sample ID: MB/LCS-107740
 1507594-001AMS/MSD

QC Summary Report for Mercury

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Mercury	ND	2.13	0.20	2	-	106	80-120

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Mercury	2.84	2.95	2	0.8830	98	103	80-120	3.87	20

1534 Willow Pass Rd
 Pittsburg, CA 94565-1701
 (925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1507594

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: 2 days

Date Received: 07/16/2015
Date Printed: 07/20/2015

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	
1507594-001	ASR1 Test	Water	7/15/2015 10:20	<input type="checkbox"/>	A	A											

Test Legend:

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

Prepared by: Maria Venegas

Comments: 2 Day TAT

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.



WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL

QC Level: LEVEL 2

Work Order: 1507594

Project: MPWMD

Client Contact: David Holland

Date Received: 7/16/2015

Comments: 2 Day TAT

Contact's Email: mweidner@mbasinc.com; Dholland@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
1507594-001A	ASR1 Test	Water	E200.8 (Mercury)	1	250mL HDPE w/ HNO3	<input type="checkbox"/>	7/15/2015 10:20	2 days	None	<input type="checkbox"/>	
			E245.2 (Mercury)			<input type="checkbox"/>		2 days	None	<input type="checkbox"/>	

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.



Sample Receipt Checklist

Client Name: **Monterey Bay Analytical** Date and Time Received: **7/16/2015 10:57:38 AM**
 Project Name: **MPWMD** LogIn Reviewed by: **Maria Venegas**
 WorkOrder No: **1507594** Matrix: Water Carrier: Golden State Overnight

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: 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:



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

Page 1 of 2

Thursday, August 13, 2015

Lab Number: AB33421

Collection Date/Time: 7/23/2015 13:15

Sample Collector: LINDBERG T

Submittal Date/Time: 7/23/2015 16:15

Sample ID

Coliform Designation:

Sample Description: PCA-E (D)

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	163		2		7/31/2015	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	7/30/2015	SM
Ammonia-N	SM4500NH3 D	mg/L	Not Detected		0.05		7/24/2015	TC
Arsenic, Total	EPA200.8	µg/L	7		1	10	7/30/2015	SM
Barium, Total	EPA200.8	µg/L	68		10	1000	7/30/2015	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	199		10		7/31/2015	TC
Boron	EPA200.7	mg/L	0.08		0.05		8/4/2015	MW
Bromide	EPA300.0	mg/L	0.3		0.1		7/24/2015	HM
Calcium	EPA200.7	mg/L	43		0.5		8/4/2015	MW
Carbonate as CaCO3	SM2320B	mg/L	Not Detected		10		7/31/2015	TC
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		7/23/2015	DH
Chloride	EPA300.0	mg/L	82		1	250	7/24/2015	HM
DOC		mg/L	0.8		0.2		7/28/2015	MW
Fluoride	EPA300.0	mg/L	0.3		0.1	2.0	7/24/2015	HM
Gross Alpha	EPA900.0	pCi/L	2.04 ± 1.86	E		15	8/10/2015	FGL
Haloacetic Acids	EPA552	µg/L	Not Detected	E		60	8/6/2015	BSK
Iron	EPA200.7	µg/L	Not Detected		10	300	8/4/2015	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	8/4/2015	MW
Kjeldahl Nitrogen	SM4500-NH3 B,	mg/L	Not Detected		0.5		8/3/2015	TC
Lithium	EPA200.8	µg/L	34		1		7/30/2015	SM
Magnesium	EPA200.7	mg/L	8.0		0.5		8/4/2015	MW
Manganese, Dissolved	EPA200.7	µg/L	Not Detected		10	50	8/4/2015	MW
Manganese, Total	EPA200.7	µg/L	Not Detected		10	50	8/4/2015	MW
Mercury, Total	EPA200.8	µg/L	Not Detected		0.5	2	7/30/2015	SM
Methane	EPA174/175	µg/L	0.21	E	0.1		7/29/2015	MCCAM
Molybdenum, Total	EPA200.8	µg/L	11		1	1000	7/30/2015	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	7/30/2015	SM
Nitrate as NO3	EPA300.0	mg/L	Not Detected		1	45	7/24/2015	HM
Nitrate as NO3-N	EPA300.0	mg/L	0.1		0.1	10	7/24/2015	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	0.4		0.1		7/24/2015	HM
Nitrite as NO2-N	EPA300.0	mg/L	0.3		0.1	1.0	7/24/2015	HM
o-Phosphate-P	EPA300.0	mg/L	Not Detected		0.1		7/24/2015	HM

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

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

Lab Number: AB33421

Collection Date/Time: 7/23/2015 13:15 Sample Collector: LINDBERG T

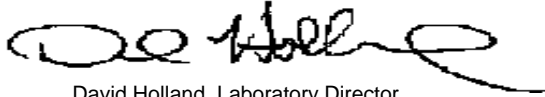
Submittal Date/Time: 7/23/2015 16:15 Sample ID Coliform Designation:

Sample Description: PCA-E (D)

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
pH (Laboratory)	SM4500-H+B	pH (H)	7.5		0.1		7/23/2015	HM
Phosphorus, Total	HACH 8190	mg/L	0.05		0.03		7/27/2015	LRH
Potassium	EPA200.7	mg/L	3.5		0.5		8/4/2015	MW
QC Anion Sum x 100	Calculation	%	97%				7/31/2015	TC
QC Anion-Cation Balance	Calculation	%	2				8/6/2015	MW
QC Cation Sum x 100	Calculation	%	101%				8/6/2015	MW
QC Ratio TDS/SEC	Calculation		0.63				7/30/2015	HM
Selenium, Total	EPA200.8	µg/L	Not Detected		2	50	7/30/2015	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	47		0.5		8/4/2015	MW
Sodium	EPA200.7	mg/L	80		0.5		8/4/2015	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	628		1	900	7/28/2015	HM
Strontium, Total	EPA200.8	µg/L	228		5		7/30/2015	SM
Sulfate	EPA300.0	mg/L	24		1	250	7/24/2015	HM
TOC	SM5310C	mg/L	0.6		0.2		7/28/2015	MW
Total Diss. Solids	SM2540C	mg/L	394		10	500	7/28/2015	HM
Total Nitrogen	Calculation	mg/L	Not Detected		0.5		8/3/2015	HM
Total Radium 226	EPA903.0	pCi/L	0.150 ± 0.227	E		3	8/8/2015	FGL
Trihalomethanes	EPA524.2	µg/L	Not Detected	E		80	7/31/2015	BSK
Uranium by ICP/MS	EPA200.8	µg/L	Not Detected		1	30	7/30/2015	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	7/30/2015	SM
Zinc, Total	EPA200.8	µg/L	Not Detected		20	5000	7/30/2015	SM

Sample Comments:

Report Approved by:



David Holland, Laboratory Director



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

A5G2657

8/11/2015

Invoice: A516690

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

RE: Report for A5G2657 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 7/29/2015. 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
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Client: Monterey Bay Analytical Report To: David Holland Project #: MPWMD Received: 7/29/2015 - 11:58 Report Due: 8/12/2015	Invoice To: Monterey Bay Analytical Invoice Attn: David Holland Project PO#: -
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Sample Receipt Conditions

Cooler: Default Cooler Temperature on Receipt °C: 1.4	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:

MS1.0 Matrix spike recoveries exceed control limits.

Report Distribution

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

Certificate of Analysis

Sample ID: A5G2657-01
Sampled By: T Lindberg
Sample Description: PCA-E (D) // AB33421

Sample Date - Time: 07/23/15 - 13:15
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	ND	0.50	ug/L	1	A508656	07/31/15	07/31/15	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A508656	07/31/15	07/31/15	
Chloroform	EPA 524.2	ND	0.50	ug/L	1	A508656	07/31/15	07/31/15	
Dibromochloromethane	EPA 524.2	ND	0.50	ug/L	1	A508656	07/31/15	07/31/15	
Surrogate: Bromofluorobenzene	EPA 524.2	92 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		ND	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A508696	08/03/15	08/06/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A508696	08/03/15	08/06/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A508696	08/03/15	08/06/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A508696	08/03/15	08/06/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A508696	08/03/15	08/06/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	103 %	<i>Acceptable range: 70-130 %</i>						
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
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EPA 524.2 - Quality Control

Batch: A508656

Prepared: 07/31/2015

Prep Method: no prep-volatiles

Analyst: JGB

Blank (A508656-BLK1)

Bromodichloromethane	ND	0.50	ug/L							07/31/15	
Bromoform	ND	0.50	ug/L							07/31/15	
Chloroform	ND	0.50	ug/L							07/31/15	
Dibromochloromethane	ND	0.50	ug/L							07/31/15	
Surrogate: Bromofluorobenzene	51			50		103	70-130			07/31/15	

Blank Spike (A508656-BS1)

Bromodichloromethane	10	0.50	ug/L	10		101	70-130			07/31/15	
Bromoform	10	0.50	ug/L	10		100	70-130			07/31/15	
Chloroform	11	0.50	ug/L	10		112	70-130			07/31/15	
Dibromochloromethane	10	0.50	ug/L	10		101	70-130			07/31/15	
Surrogate: Bromofluorobenzene	51			50		102	70-130			07/31/15	

Blank Spike Dup (A508656-BSD1)

Bromodichloromethane	9.2	0.50	ug/L	10		92	70-130	10	30	07/31/15	
Bromoform	8.8	0.50	ug/L	10		88	70-130	13	30	07/31/15	
Chloroform	10	0.50	ug/L	10		101	70-130	11	30	07/31/15	
Dibromochloromethane	9.2	0.50	ug/L	10		92	70-130	9	30	07/31/15	
Surrogate: Bromofluorobenzene	50			50		101	70-130			07/31/15	

Matrix Spike (A508656-MS1), Source: A5G2712-01

Bromodichloromethane	4.2	0.50	ug/L	10	ND	42	70-130			07/31/15	MS1.0 Low
Bromoform	3.9	0.50	ug/L	10	ND	39	70-130			07/31/15	MS1.0 Low
Chloroform	4.7	0.50	ug/L	10	ND	47	70-130			07/31/15	MS1.0 Low
Dibromochloromethane	4.2	0.50	ug/L	10	ND	42	70-130			07/31/15	MS1.0 Low
Surrogate: Bromofluorobenzene	51			50		103	70-130			07/31/15	

EPA 552.3 - Quality Control

Batch: A508696

Prepared: 08/03/2015

Prep Method: EPA 552.3

Analyst: MTM

Blank (A508696-BLK1)

Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							08/05/15	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							08/05/15	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							08/05/15	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							08/05/15	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							08/05/15	
Surrogate: 2-Bromobutanoic Acid	24			25		95	70-130			08/05/15	

Blank Spike (A508696-BS1)

Dibromoacetic Acid (DBAA)	9.0	1.0	ug/L	10		90	70-130			08/05/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		113	70-130			08/05/15	
Monobromoacetic Acid (MBAA)	9.3	1.0	ug/L	10		93	70-130			08/05/15	
Monochloroacetic Acid (MCAA)	20	2.0	ug/L	20		99	70-130			08/05/15	
Trichloroacetic Acid (TCAA)	10	1.0	ug/L	10		101	70-130			08/05/15	

**BSK Associates Fresno
Organics Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 552.3 - Quality Control

Batch: A508696

Prepared: 08/03/2015

Prep Method: EPA 552.3

Analyst: MTM

Blank Spike (A508696-BS1)

<i>Surrogate: 2-Bromobutanoic Acid</i>	25			25		99	70-130			08/05/15	
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Blank Spike Dup (A508696-BSD1)

Dibromoacetic Acid (DBAA)	9.6	1.0	ug/L	10		96	70-130	7	30	08/06/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		111	70-130	2	30	08/06/15	
Monobromoacetic Acid (MBAA)	9.4	1.0	ug/L	10		94	70-130	2	30	08/06/15	
Monochloroacetic Acid (MCAA)	20	2.0	ug/L	20		98	70-130	1	30	08/06/15	
Trichloroacetic Acid (TCAA)	10	1.0	ug/L	10		104	70-130	3	30	08/06/15	
<i>Surrogate: 2-Bromobutanoic Acid</i>	26			25		105	70-130			08/06/15	

Matrix Spike (A508696-MS1), Source: A5G2425-03

Dibromoacetic Acid (DBAA)	10	1.0	ug/L	10	ND	96	70-130			08/05/15	
Dichloroacetic Acid (DCAA)	16	1.0	ug/L	10	4.5	111	70-130			08/05/15	
Monobromoacetic Acid (MBAA)	9.5	1.0	ug/L	10	ND	95	70-130			08/05/15	
Monochloroacetic Acid (MCAA)	20	2.0	ug/L	20	ND	100	70-130			08/05/15	
Trichloroacetic Acid (TCAA)	20	1.0	ug/L	10	9.7	106	70-130			08/05/15	
<i>Surrogate: 2-Bromobutanoic Acid</i>	25			25		102	70-130			08/05/15	

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
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Vancouver

State of Oregon - NELAC	WA100008	State of Washington	C824-14a
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A5G2657



07292015

Monte6227

Turnaround: Standard
Due Date: 8/12/2015



Monterey Bay Analytical





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:

A5G2657
 Monte6227
 07/29/2015
 10

Required Fields

Company/Client Name: **Monterey Bay Analytical Services**
 Address: **4 Justin Court, Suite D**
 City: **Monterey** State: **CA** Zip: **93940**
 Report Attention: **Mason Weidner-Holland** Invoice To: **David Holland**
 Additional cc's: **David Holland** PO#: _____
 Phone: **831-375-6227** Fax: **831-641-0734**
 E-mail: **mweidner@mbasinco.com, dholland@mbasinco.com**

Project: **MPWMD** Project #: _____
 Reporting Options:
 Trace (J-Flag) Swamp EDO Type: _____
 Regulatory Carbon Copies
 SWRCB (Drinking Water) Fresno Co
 Merced Co Madera Co
 Other: _____
 EDT to California SWRCB (Drinking Water)
 System Number: _____
 E-Mail Fax Mail
 How would you like to receive your completed results?
 Geotracker #: _____
 Matrix Types: SW=Surface Water B/W=Bottled Water GW=Ground Water WW=Waste Water STW=Storm Water DW=Drinking Water SO=Solid

Sampler Name (Printed/Signature): **T. Lindberg**
 Matrix Types: SW=Surface Water B/W=Bottled Water GW=Ground Water WW=Waste Water STW=Storm Water DW=Drinking Water SO=Solid
 Comments / Station Code / WTRAX: **HAA5 TTHM**

Sample Description*	Date	Time	Matrix*	Comments / Station Code / WTRAX	Received by: (Signature and Printed Name)	Date	Time	Payment Received at Delivery Date:	Company	Check	Inil.	Cash
1. PCA-E (D)	7/23/15	1315	GW	AB33421	<i>[Signature]</i>	7/28/15	1600		MBAS			

Relinquished by: (Signature and Printed Name) **D. Holland**
 Relinquished by: (Signature and Printed Name) _____
 Relinquished by: (Signature and Printed Name) _____

Received for Lab by: (Signature and Printed Name) *[Signature]*
 Shipping Method: **ONTRAC** UPS
 Cooling Method: **Wal Blue** None
 Payment for services rendered is due in full within 30 days from the date invoice. If not to paid, account balances are deemed delinquent. Delinquent balances are subject to monthly service charges and interest specified in BSK's current Standard Terms and Conditions for Laboratory Services. The client/Company acknowledges that they are either the Client or an authorized agent to the Client, that the Client agrees to be responsible for payment for the services on this Chain of Custody, and agrees to BSK's terms and conditions for laboratory services unless contractually sound otherwise. BSK's current terms and conditions can be found at www.bskassociates.com/BSK%20Terms%20Conditions.pdf

Chilling Process Begun: *[Signature]*
 Amount: _____ Pkgs: *[Signature]*
 SR-FI-0012-06



Sample Integrity

BSK Bottles: Yes No Page 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$			Were correct containers and preservatives received for the tests requested?			
		Yes	No	NA	Yes	No	NA
	If samples were taken today, is there evidence that chilling has begun?			Were there bubbles in the VOA vials? (Volatiles Only)			
	Yes	No	NA	Yes	No	NA	
	Did all bottles arrive unbroken and intact?			Was a sufficient amount of sample received?			
	Yes	No		Yes	No		
	Did all bottle labels agree with COC?			Do samples have a hold time <72 hours?			
	Yes	No		Yes	No		
	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?			Was PM notified of discrepancies? PM: _____ By/Time: _____			
	Yes	No	NA	Yes	No	NA	
Bottles Received	250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)		Checks	Passed?			
	Bacti $\text{Na}_2\text{S}_2\text{O}_3$		—	—			
None (P) ^{White Cap}		—	—				
Cr6 (P) ^{Br. Green Label}	$\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ DW	Cl, pH > 8	Y	N			
Cr6 (P) ^{Pink Label}	$\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ WW	pH 9.3-9.7	Y	N			
Cr6 (P) ^{Pink Label}	$\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ 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			
$\text{NaOH} + \text{ZnAc}$ (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	—	—				
$\text{Na}_2\text{O}_3\text{S} + \text{HCl}$ (AG) ^{Lt. Pink Label}	525	—	—				
$\text{Na}_2\text{S}_2\text{O}_3$ 1 Liter (Brown P) 549		—	—				
$\text{Na}_2\text{S}_2\text{O}_3$ (AG) ^{Blue Label}	547, 515, 548, THM, 524	—	—		3V		
$\text{Na}_2\text{S}_2\text{O}_3$ (CG) ^{Blue Label}	504, 505	—	—				
$\text{Na}_2\text{S}_2\text{O}_3 + \text{MCAA}$ (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		—	—				
Split	Container	Preservative	Date/Time/Initials		Container	Preservative	Date/Time/Initials
	S P				S P		
	S P				S P		
Comments							

ce
7/29/15

Labeled by: JWS @ 15:41

Labels checked by: JH @ 15:57

RUSH Paged by: _____ @ _____

August 12, 2015

Monterey Bay Analytical Services
 4 Justin Court
 Monterey, CA 93940

Lab ID : SP 1508388
 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
PCA-E (D)	07/23/2015	07/29/2015	SP 1508388-001	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	08/10/2015:211796 All analysis quality controls are within established criteria
	08/07/2015:209143 All preparation quality controls are within established criteria
903.0	08/08/2015:211714 All analysis quality controls are within established criteria
	08/03/2015:208861 All preparation quality controls are within established criteria

August 12, 2015
Monterey Bay Analytical Services

Lab ID : SP 1508388
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: 2015-08-13



August 12, 2015

Lab ID : SP 1508388-001

Customer ID : 2-19144

Monterey Bay Analytical Services

4 Justin Court
Monterey, CA 93940

Sampled On : July 23, 2015-13:15

Sampled By : T. Lindberg

Received On : July 29, 2015-11:15

Matrix : Ground Water

Description : PCA-E (D)

Project : MPWMD

Sample Result - Radio

Table with 7 columns: Constituent, Result ± Error, MDA, Units, MCL/AL, Sample Preparation (Method, Date/ID), Sample Analysis (Method, Date/ID). Rows include Radio Chemistry, Gross Alpha, and Total Alpha Radium (226).

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.



August 12, 2015
Monterey Bay Analytical Services

Lab ID : SP 1508388
Customer : 2-19144

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	08/10/15:211796caa	CCV CCB	cpm cpm	8880	40.6 % 0.100	38 - 46 0.14	
Gross Alpha	900.0	08/07/15:209143elc (SP 1508433-001)	Blank LCS MS MSD MSRPD	pCi/L pCi/L pCi/L pCi/L pCi/L	180.6 180.6 180.6 180.6	1.52 92.5 % 100 % 98.9 % 1.1%	3 75-125 60-140 60-140 ≤30	
Alpha	903.0	08/08/15:211714caa	CCV CCB	cpm cpm	8882	40.9 % 0.100	37 - 45 0.19	
Total Alpha Radium (226)	903.0	08/03/15:208861emv	RgBlk LCS BS BSD BSRPD	pCi/L pCi/L pCi/L pCi/L pCi/L	21.59 21.59 21.59 21.59	0.08 76.4 % 72.2 % 102 % 34.6%	2 52-107 43-111 43-111 ≤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 analyte. 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.							

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): t. Lindberg Sampling Fee: _____ Pickup Fee: _____ Compositor Setup Date: <u>7/28/15</u> Time: <u>1600</u> Lab Number: <u>1508388</u>				TEST DESCRIPTION - See Reverse side for Container, Preservative and Sampling information																																																								
				Type: Composite(C) Grab(G)	Number of Containers	Containers: (G)Glass (P)Plastic (V)VOC (M)Metal Tube	(P) Potable (NP) Non-Potable	(SW) Surface Water (MW) Monitoring Well (GW) Ground Water (TB) Travel Bank (WW) Waste Water (DW) Drinking Water (S) Soil (SLG) Sludge (SLD) Solid (O) Oil	Bact: (Sya) 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	Ra226																																														
																								Sample Num	Location Description	Date Sampled	Time Sampled																																	
																									PCA-E (D)	7/23/15	1315	G	1	P	P	GW						X	X																					
Remarks: AB33421				Relinquished Date: Time:			Relinquished Date: Time:			Relinquished Date: Time:			Relinquished Date: Time:			Relinquished Date: Time:			Relinquished Date: Time:																																									
				David Holland 7/28/15 1600			<i>[Signature]</i>			<i>[Signature]</i>			<i>[Signature]</i>			<i>[Signature]</i>			<i>[Signature]</i>																																									
				Received By: Date: Time:			Received By: Date: Time:			Received By: Date: Time:			Received By: Date: Time:			Received By: Date: Time:			Received By: Date: Time:																																									

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 FAX: 530/343-3807
 CA GLAP Certification No. 1562

FIELD OFFICE
 Visalia, California
 Tel: (559)734-9473
 Mobile: (559)737-2399
 FAX: (559)734-6435

528 742441

[Handwritten Signature]

Subject: RE: AB33421 - Project: MPWMD (PCA-E) (D)
From: Mason Weidner-Holland <mweidner@mbasinc.com>
Date: 07/29/2015 14:08
To: 'Shawn Peck' <shawnp@fglinc.com>
CC: David Holland <d holland@mbasinc.com>

Shawn,
This is not for regulatory purposes, thanks for checking though.
Have a great day!

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: Shawn Peck [<mailto:shawnp@fglinc.com>]
Sent: Wednesday, July 29, 2015 12:28 PM
To: MBAS
Subject: AB33421 - Project: MPWMD (PCA-E) (D)

Hello,
Today we received a sample for Gross Alpha and Ra226 for the above project. Does this need the state EDT reporting? If so, could you please provide the system number?

Thanks,
Shawn Peck
Sample Receiving

This email is free from viruses and malware because avast! Antivirus protection is active.
<https://www.avast.com/antivirus>

Condition Upon Receipt (Attach to COC)

Sample Receipt at SP:

- 1. Number of ice chests/packages received: 1
- 2. Shipper tracking numbers 528742441
- 3. Were samples received in a chilled condition?
Temps: RRT / / / / / /
- 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: 07/29/2015-14:37:15

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 1508388
SRP-07/29/2015-14:37:15



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1507B68

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: 07/29/2015

Analytical Report reviewed & approved for release on 08/04/2015 by:

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1507B68

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)
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.
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 Report

Client: Monterey Bay Analytical
Date Received: 7/29/15 12:09
Date Prepared: 7/29/15
Project: MPWMD

WorkOrder: 1507B68
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µg/L

Light Gases

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
PCA-E (D)	1507B68-001A	Water	07/23/2015 10:00	GC26	108286

Analytes	Result	RL	DF	Date Analyzed
Methane	0.21	0.10	1	07/29/2015 13:14

Analyst(s): AK



Quality Control Report

Client: Monterey Bay Analytical
Date Prepared: 7/29/15
Date Analyzed: 7/29/15
Instrument: GC26
Matrix: Water
Project: MPWMD

WorkOrder: 1507B68
BatchID: 108286
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µg/L
Sample ID: MB/LCS-108286

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Ethane	ND	10.5	0.20	10	-	105	70-130
Ethylene	ND	7.21	0.30	10	-	72	70-130
Methane	ND	9.47	0.10	10	-	95	70-130



1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1507B68

ClientCode: MBAS

WaterTrax
 WriteOn
 EDF
 Excel
 EQulS
 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: 07/29/2015

Date Printed: 07/29/2015

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	
1507B68-001	PCA-E (D)	Water	7/23/2015 10:00	<input type="checkbox"/>	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.



WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL

QC Level: LEVEL 2

Work Order: 1507B68

Project: MPWMD

Client Contact: David Holland

Date Received: 7/29/2015

Comments:

Contact's Email: mweidner@mbasinc.com; Dholland@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
1507B68-001A	PCA-E (D)	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	7/23/2015 10:00	5 days	None	<input type="checkbox"/>	

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.



Sample Receipt Checklist

Client Name: **Monterey Bay Analytical** Date and Time Received: **7/29/2015 12:09:36 PM**
 Project Name: **MPWMD** LogIn Reviewed by: **Maria Venegas**
 WorkOrder No: **1507B68** Matrix: Water Carrier: Golden State Overnight

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: 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:



Monterey Bay Analytical Services

4 Justin Court Suite D, Monterey, CA 93940

831.375.MBAS

www.MBASinc.com

ELAP Certification Number: 2385

Thursday, October 15, 2015

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

Lab Number: AB35797

Collection Date/Time: 9/22/2015 11:45

Sample Collector: LEAR J

Submittal Date/Time: 9/23/2015 13:10

Sample ID

Coliform Designation:

Sample Description: ASR1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	237		10		9/28/2015	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	10/6/2015	SM
Ammonia-N	SM4500NH3 D	mg/L	0.19		0.05		10/5/2015	MW
Arsenic, Total	EPA200.8	µg/L	1		1	10	10/6/2015	SM
Barium, Total	EPA200.8	µg/L	84		10	1000	10/6/2015	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	289		10		9/30/2015	SM
Boron	EPA200.7	mg/L	0.13		0.05		10/2/2015	MW
Bromide	EPA300.0	mg/L	0.4		0.1		9/24/2015	HM
Calcium	EPA200.7	mg/L	96		0.5		10/2/2015	MW
Carbonate as CaCO3	SM2320B	mg/L	Not Detected		10		9/30/2015	SM
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		9/23/2015	LJ
Chloride	EPA300.0	mg/L	141		1	250	9/24/2015	HM
DOC		mg/L	1.5		0.2		9/28/2015	MW
Fluoride	EPA300.0	mg/L	0.3		0.1	2.0	9/24/2015	HM
Gross Alpha	EPA900.0	pCi/L	4.70 ± 2.00	E		15	10/5/2015	FGL
Haloacetic Acids	EPA552	µg/L	Not Detected	E		60	10/2/2015	BSK
Iron	EPA200.7	µg/L	59		10	300	10/2/2015	MW
Iron, Dissolved	EPA200.7	µg/L	10		10	300	10/2/2015	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	Not Detected		0.5		9/29/2015	LRH
Lithium	EPA200.8	µg/L	41		1		10/6/2015	SM
Magnesium	EPA200.7	mg/L	23		0.5		10/2/2015	MW
Manganese, Dissolved	EPA200.7	µg/L	20		10	50	10/2/2015	MW
Manganese, Total	EPA200.7	µg/L	20		10	50	10/2/2015	MW
Mercury, Total	EPA200.8	µg/L	1		0.5	2	10/6/2015	SM
Methane	EPA174/175	µg/L	0.40	E	0.1		10/5/2015	MCCAM
Molybdenum, Total	EPA200.8	µg/L	10		1	1000	10/6/2015	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	10/6/2015	SM
Nitrate as NO3	EPA300.0	mg/L	Not Detected		1	45	9/24/2015	HM
Nitrate as NO3-N	EPA300.0	mg/L	Not Detected		0.1	10	9/24/2015	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	0.4		0.1		9/24/2015	HM
Nitrite as NO2-N	EPA300.0	mg/L	0.3		0.1	1.0	9/24/2015	HM

mg/L: Milligrams per liter (=ppm)

ug/L : Micrograms per liter (=ppb)

PQL : Practical Quantitation Limit

H = Analyzed outside 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

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ELAP Certification Number: 2385

Thursday, October 15, 2015

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

Lab Number: AB35797

Collection Date/Time: 9/22/2015 11:45

Sample Collector: LEAR J

Submittal Date/Time: 9/23/2015 13:10

Sample ID

Coliform Designation:

Sample Description: ASR1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P	EPA300.0	mg/L	0.2		0.1		9/24/2015	HM
pH (Laboratory)	SM4500-H+B	pH (H)	7.1		0.1		9/23/2015	HM
Phosphorus, Total	HACH 8190	mg/L	0.17		0.03		9/30/2015	LRH
Potassium	EPA200.7	mg/L	5.7		0.5		10/2/2015	MW
QC Anion Sum x 100	Calculation	%	98%				9/30/2015	SM
QC Anion-Cation Balance	Calculation	%	0				10/5/2015	MW
QC Cation Sum x 100	Calculation	%	98%				10/5/2015	MW
QC Ratio TDS/SEC	Calculation		0.59				9/28/2015	HM
Selenium, Total	EPA200.8	µg/L	2		2	50	10/6/2015	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	42		0.5		10/2/2015	MW
Sodium	EPA200.7	mg/L	101		0.5		10/2/2015	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	1141		1	900	9/23/2015	LJ
Strontium, Total	EPA200.8	µg/L	472		5		10/6/2015	SM
Sulfate	EPA300.0	mg/L	118		1	250	9/24/2015	HM
TOC	SM5310C	mg/L	1.3		0.2		9/28/2015	MW
Total Diss. Solids	SM2540C	mg/L	677		10	500	9/23/2015	HM
Total Nitrogen	Calculation	mg/L	Not Detected		0.5		10/1/2015	HM
Total Radium 226	EPA903.0	pCi/L	1.28 ± 0.338	E		3	10/5/2015	FGL
Trihalomethanes	EPA524.2	µg/L	0.59	E		80	9/28/2015	BSK
Uranium by ICP/MS	EPA200.8	µg/L	1		1	30	10/6/2015	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	10/6/2015	SM
Zinc, Total	EPA200.8	µg/L	118		20	5000	10/6/2015	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 outside 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

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ELAP Certification Number: 2385

Thursday, October 15, 2015

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

Lab Number: AB35798

Collection Date/Time: 9/22/2015 11:45

Sample Collector: LEAR J

Submittal Date/Time: 9/23/2015 13:10

Sample ID

Coliform Designation:

Sample Description: ASR2

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	225		10		9/28/2015	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	10/6/2015	SM
Ammonia-N	SM4500NH3 D	mg/L	Not Detected		0.05		10/5/2015	MW
Arsenic, Total	EPA200.8	µg/L	1		1	10	10/6/2015	SM
Barium, Total	EPA200.8	µg/L	108		10	1000	10/6/2015	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	275		10		9/30/2015	SM
Boron	EPA200.7	mg/L	0.09		0.05		10/2/2015	MW
Bromide	EPA300.0	mg/L	0.3		0.1		9/24/2015	HM
Calcium	EPA200.7	mg/L	72		0.5		10/2/2015	MW
Carbonate as CaCO3	SM2320B	mg/L	Not Detected		10		9/30/2015	SM
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		9/23/2015	LJ
Chloride	EPA300.0	mg/L	110		1	250	9/24/2015	HM
DOC		mg/L	1.2		0.2		9/28/2015	MW
Fluoride	EPA300.0	mg/L	0.3		0.1	2.0	9/24/2015	HM
Gross Alpha	EPA900.0	pCi/L	1.16 ± 0.760	E		15	10/5/2015	FGL
Haloacetic Acids	EPA552	µg/L	Not Detected	E		60	10/2/2015	BSK
Iron	EPA200.7	µg/L	145		10	300	10/2/2015	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	10/2/2015	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	Not Detected		0.5		9/29/2015	LRH
Lithium	EPA200.8	µg/L	31		1		10/6/2015	SM
Magnesium	EPA200.7	mg/L	22		0.5		10/2/2015	MW
Manganese, Dissolved	EPA200.7	µg/L	Not Detected		10	50	10/2/2015	MW
Manganese, Total	EPA200.7	µg/L	Not Detected		10	50	10/2/2015	MW
Mercury, Total	EPA200.8	µg/L	2		0.5	2	10/6/2015	SM
Methane	EPA174/175	µg/L	0.23	E	0.1		10/5/2015	MCCAM
Molybdenum, Total	EPA200.8	µg/L	10		1	1000	10/6/2015	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	10/6/2015	SM
Nitrate as NO3	EPA300.0	mg/L	Not Detected		1	45	9/24/2015	HM
Nitrate as NO3-N	EPA300.0	mg/L	Not Detected		0.1	10	9/24/2015	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	0.4		0.1		9/24/2015	HM
Nitrite as NO2-N	EPA300.0	mg/L	0.3		0.1	1.0	9/24/2015	HM

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ug/L : Micrograms per liter (=ppb)

PQL : Practical Quantitation Limit

H = Analyzed outside 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

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ELAP Certification Number: 2385

Thursday, October 15, 2015

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

Lab Number: AB35798

Collection Date/Time: 9/22/2015 11:45

Sample Collector: LEAR J

Submittal Date/Time: 9/23/2015 13:10

Sample ID

Coliform Designation:

Sample Description: ASR2

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P	EPA300.0	mg/L	0.1		0.1		9/24/2015	HM
pH (Laboratory)	SM4500-H+B	pH (H)	7.3		0.1		9/23/2015	HM
Phosphorus, Total	HACH 8190	mg/L	0.27		0.03		9/30/2015	LRH
Potassium	EPA200.7	mg/L	4.6		0.5		10/2/2015	MW
QC Anion Sum x 100	Calculation	%	96%				9/30/2015	SM
QC Anion-Cation Balance	Calculation	%	0				10/5/2015	MW
QC Cation Sum x 100	Calculation	%	96%				10/5/2015	MW
QC Ratio TDS/SEC	Calculation		0.57				9/28/2015	HM
Selenium, Total	EPA200.8	µg/L	2		2	50	10/6/2015	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	37		0.5		10/2/2015	MW
Sodium	EPA200.7	mg/L	82		0.5		10/2/2015	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	950		1	900	9/23/2015	LJ
Strontium, Total	EPA200.8	µg/L	386		5		10/6/2015	SM
Sulfate	EPA300.0	mg/L	74		1	250	9/24/2015	HM
TOC	SM5310C	mg/L	1.3		0.2		9/28/2015	MW
Total Diss. Solids	SM2540C	mg/L	540		10	500	9/23/2015	HM
Total Nitrogen	Calculation	mg/L	Not Detected		0.5		10/1/2015	HM
Total Radium 226	EPA903.0	pCi/L	0.189 ± 0.160	E		3	10/5/2015	FGL
Trihalomethanes	EPA524.2	µg/L	13	E		80	9/28/2015	BSK
Uranium by ICP/MS	EPA200.8	µg/L	1		1	30	10/6/2015	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	10/6/2015	SM
Zinc, Total	EPA200.8	µg/L	396		20	5000	10/6/2015	SM

Sample Comments:

Report Approved by:

David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm)

ug/L : Micrograms per liter (=ppb)

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E = Analysis performed by External Laboratory; See External Laboratory Report attachments.

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Thursday, October 15, 2015

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

Lab Number: AB35799

Collection Date/Time: 9/23/2015 10:30

Sample Collector: LEAR J

Submittal Date/Time: 9/23/2015 13:10

Sample ID

Coliform Designation:

Sample Description: ASR3

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	200		10		9/28/2015	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	10/6/2015	SM
Ammonia-N	SM4500NH3 D	mg/L	0.06		0.05		10/5/2015	MW
Arsenic, Total	EPA200.8	µg/L	5		1	10	10/6/2015	SM
Barium, Total	EPA200.8	µg/L	85		10	1000	10/6/2015	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	244		10		9/30/2015	SM
Boron	EPA200.7	mg/L	0.08		0.05		10/2/2015	MW
Bromide	EPA300.0	mg/L	0.2		0.1		9/24/2015	HM
Calcium	EPA200.7	mg/L	61		0.5		10/2/2015	MW
Carbonate as CaCO3	SM2320B	mg/L	Not Detected		10		9/30/2015	SM
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		9/23/2015	LJ
Chloride	EPA300.0	mg/L	79		1	250	9/24/2015	HM
DOC		mg/L	1.3		0.2		9/28/2015	MW
Fluoride	EPA300.0	mg/L	0.3		0.1	2.0	9/24/2015	HM
Gross Alpha	EPA900.0	pCi/L	3.11 ± 1.41	E		15	10/5/2015	FGL
Haloacetic Acids	EPA552	µg/L	3.2	E		60	10/2/2015	BSK
Iron	EPA200.7	µg/L	116		10	300	10/2/2015	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	10/2/2015	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	Not Detected		0.5		10/6/2015	LRH
Lithium	EPA200.8	µg/L	27		1		10/6/2015	SM
Magnesium	EPA200.7	mg/L	18		0.5		10/2/2015	MW
Manganese, Dissolved	EPA200.7	µg/L	12		10	50	10/2/2015	MW
Manganese, Total	EPA200.7	µg/L	12		10	50	10/2/2015	MW
Mercury, Total	EPA200.8	µg/L	1		0.5	2	10/6/2015	SM
Methane	EPA174/175	µg/L	0.22	E	0.1		10/5/2015	MCCAM
Molybdenum, Total	EPA200.8	µg/L	9		1	1000	10/6/2015	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	10/6/2015	SM
Nitrate as NO3	EPA300.0	mg/L	Not Detected		1	45	9/24/2015	HM
Nitrate as NO3-N	EPA300.0	mg/L	0.1		0.1	10	9/24/2015	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	0.4		0.1		9/24/2015	HM
Nitrite as NO2-N	EPA300.0	mg/L	0.3		0.1	1.0	9/24/2015	HM

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Thursday, October 15, 2015

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

Lab Number: AB35799

Collection Date/Time: 9/23/2015 10:30

Sample Collector: LEAR J

Submittal Date/Time: 9/23/2015 13:10

Sample ID

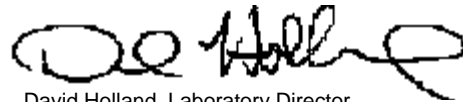
Coliform Designation:

Sample Description: ASR3

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
o-Phosphate-P	EPA300.0	mg/L	Not Detected		0.1		9/24/2015	HM
pH (Laboratory)	SM4500-H+B	pH (H)	7.3		0.1		9/23/2015	HM
Phosphorus, Total	HACH 8190	mg/L	0.21		0.03		9/30/2015	LRH
Potassium	EPA200.7	mg/L	4.0		0.5		10/2/2015	MW
QC Anion Sum x 100	Calculation	%	97%				9/30/2015	SM
QC Anion-Cation Balance	Calculation	%	0				10/5/2015	MW
QC Cation Sum x 100	Calculation	%	96%				10/5/2015	MW
QC Ratio TDS/SEC	Calculation		0.59				9/28/2015	HM
Selenium, Total	EPA200.8	µg/L	2		2	50	10/6/2015	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	33		0.5		10/2/2015	MW
Sodium	EPA200.7	mg/L	73		0.5		10/2/2015	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	810		1	900	9/23/2015	LJ
Strontium, Total	EPA200.8	µg/L	330		5		10/6/2015	SM
Sulfate	EPA300.0	mg/L	79		1	250	9/24/2015	HM
TOC	SM5310C	mg/L	1.3		0.2		9/28/2015	MW
Total Diss. Solids	SM2540C	mg/L	477		10	500	9/23/2015	HM
Total Nitrogen	Calculation	mg/L	Not Detected		0.5		10/8/2015	HM
Total Radium 226	EPA903.0	pCi/L	0.288 ± 0.181	E		3	10/6/2015	FGL
Trihalomethanes	EPA524.2	µg/L	38	E		80	9/28/2015	BSK
Uranium by ICP/MS	EPA200.8	µg/L	2		1	30	10/6/2015	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	10/6/2015	SM
Zinc, Total	EPA200.8	µg/L	194		20	5000	10/6/2015	SM

Sample Comments:

Report Approved by:



David Holland, Laboratory Director

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Thursday, October 15, 2015

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

Lab Number: AB35800

Collection Date/Time: 9/23/2015 11:00

Sample Collector: LEAR J

Submittal Date/Time: 9/23/2015 13:10

Sample ID

Coliform Designation:

Sample Description: SMS (D)

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	260		10		9/28/2015	LRH
Aluminum, Total	EPA200.8	µg/L	19		10	1000	10/6/2015	SM
Ammonia-N	SM4500NH3 D	mg/L	0.06		0.05		10/5/2015	MW
Arsenic, Total	EPA200.8	µg/L	9		1	10	10/6/2015	SM
Barium, Total	EPA200.8	µg/L	65		10	1000	10/6/2015	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	317		10		9/30/2015	SM
Boron	EPA200.7	mg/L	0.10		0.05		10/2/2015	MW
Bromide	EPA300.0	mg/L	0.3		0.1		9/24/2015	HM
Calcium	EPA200.7	mg/L	84		0.5		10/2/2015	MW
Carbonate as CaCO3	SM2320B	mg/L	Not Detected		10		9/30/2015	SM
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		9/23/2015	LJ
Chloride	EPA300.0	mg/L	124		1	250	9/24/2015	HM
DOC		mg/L	1.2		0.2		9/28/2015	MW
Fluoride	EPA300.0	mg/L	0.3		0.1	2.0	9/24/2015	HM
Gross Alpha	EPA900.0	pCi/L	1.24 ± 1.42	E		15	10/5/2015	FGL
Haloacetic Acids	EPA552	µg/L	Not Detected	E		60	10/2/2015	BSK
Iron	EPA200.7	µg/L	32		10	300	10/2/2015	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	10/2/2015	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	Not Detected		0.5		10/6/2015	LRH
Lithium	EPA200.8	µg/L	41		1		10/6/2015	SM
Magnesium	EPA200.7	mg/L	19		0.5		10/2/2015	MW
Manganese, Dissolved	EPA200.7	µg/L	14		10	50	10/2/2015	MW
Manganese, Total	EPA200.7	µg/L	14		10	50	10/2/2015	MW
Mercury, Total	EPA200.8	µg/L	1		0.5	2	10/6/2015	SM
Methane	EPA174/175	µg/L	0.27	E	0.1		10/5/2015	MCCAM
Molybdenum, Total	EPA200.8	µg/L	8		1	1000	10/6/2015	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	10/6/2015	SM
Nitrate as NO3	EPA300.0	mg/L	Not Detected		1	45	9/24/2015	HM
Nitrate as NO3-N	EPA300.0	mg/L	Not Detected		0.1	10	9/24/2015	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	0.4		0.1		9/24/2015	HM
Nitrite as NO2-N	EPA300.0	mg/L	0.3		0.1	1.0	9/24/2015	HM

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Thursday, October 15, 2015

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

Lab Number: AB35800

Collection Date/Time: 9/23/2015 11:00

Sample Collector: LEAR J

Submittal Date/Time: 9/23/2015 13:10

Sample ID

Coliform Designation:

Sample Description: SMS (D)

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P	EPA300.0	mg/L	Not Detected		0.1		9/24/2015	HM
pH (Laboratory)	SM4500-H+B	pH (H)	7.3		0.1		9/23/2015	HM
Phosphorus, Total	HACH 8190	mg/L	0.13		0.03		9/30/2015	LRH
Potassium	EPA200.7	mg/L	4.7		0.5		10/2/2015	MW
QC Anion Sum x 100	Calculation	%	99%				9/30/2015	SM
QC Anion-Cation Balance	Calculation	%	0				10/5/2015	MW
QC Cation Sum x 100	Calculation	%	98%				10/5/2015	MW
QC Ratio TDS/SEC	Calculation		0.59				9/28/2015	HM
Selenium, Total	EPA200.8	µg/L	Not Detected		2	50	10/6/2015	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	43		0.5		10/2/2015	MW
Sodium	EPA200.7	mg/L	98		0.5		10/2/2015	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	1032		1	900	9/23/2015	LJ
Strontium, Total	EPA200.8	µg/L	552		5		10/6/2015	SM
Sulfate	EPA300.0	mg/L	73		1	250	9/24/2015	HM
TOC	SM5310C	mg/L	1.2		0.2		9/28/2015	MW
Total Diss. Solids	SM2540C	mg/L	611		10	500	9/23/2015	HM
Total Nitrogen	Calculation	mg/L	Not Detected		0.5		10/8/2015	HM
Total Radium 226	EPA903.0	pCi/L	0.268 ± 0.176	E		3	10/6/2015	FGL
Trihalomethanes	EPA524.2	µg/L	3.3	E		80	9/28/2015	BSK
Uranium by ICP/MS	EPA200.8	µg/L	2		1	30	10/6/2015	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	10/6/2015	SM
Zinc, Total	EPA200.8	µg/L	Not Detected		20	5000	10/6/2015	SM

Sample Comments:

Report Approved by:

David Holland, Laboratory Director

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Thursday, October 15, 2015

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

Lab Number: AB35801

Collection Date/Time: 9/23/2015 12:00

Sample Collector: LEAR J

Submittal Date/Time: 9/23/2015 13:10

Sample ID

Coliform Designation:

Sample Description: MW1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	210		10		9/28/2015	LRH
Aluminum, Total	EPA200.8	µg/L	Not Detected		10	1000	10/6/2015	SM
Ammonia-N	SM4500NH3 D	mg/L	Not Detected		0.05		10/5/2015	MW
Arsenic, Total	EPA200.8	µg/L	2		1	10	10/6/2015	SM
Barium, Total	EPA200.8	µg/L	59		10	1000	10/6/2015	SM
Bicarbonate (as HCO3-)	SM2320B	mg/L	256		10		9/30/2015	SM
Boron	EPA200.7	mg/L	0.08		0.05		10/2/2015	MW
Bromide	EPA300.0	mg/L	0.3		0.1		9/24/2015	HM
Calcium	EPA200.7	mg/L	81		0.5		10/2/2015	MW
Carbonate as CaCO3	SM2320B	mg/L	Not Detected		10		9/30/2015	SM
Chloramines	SM4500-Cl G	mg/L	Not Detected		0.05		9/23/2015	LJ
Chloride	EPA300.0	mg/L	110		1	250	9/24/2015	HM
DOC		mg/L	1.2		0.2		9/28/2015	MW
Fluoride	EPA300.0	mg/L	0.3		0.1	2.0	9/24/2015	HM
Gross Alpha	EPA900.0	pCi/L	4.82 ± 1.81	E		15	10/5/2015	FGL
Haloacetic Acids	EPA552	µg/L	Not Detected	E		60	10/2/2015	BSK
Iron	EPA200.7	µg/L	62		10	300	10/2/2015	MW
Iron, Dissolved	EPA200.7	µg/L	Not Detected		10	300	10/2/2015	MW
Kjehldahl Nitrogen	SM4500-NH3 B,C.	mg/L	Not Detected		0.5		10/6/2015	LRH
Lithium	EPA200.8	µg/L	24		1		10/6/2015	SM
Magnesium	EPA200.7	mg/L	22		0.5		10/2/2015	MW
Manganese, Dissolved	EPA200.7	µg/L	14		10	50	10/2/2015	MW
Manganese, Total	EPA200.7	µg/L	15		10	50	10/2/2015	MW
Mercury, Total	EPA200.8	µg/L	Not Detected		0.5	2	10/6/2015	SM
Methane	EPA174/175	µg/L	3.2	E	0.1		10/5/2015	MCCAM
Molybdenum, Total	EPA200.8	µg/L	10		1	1000	10/6/2015	SM
Nickel, Total	EPA200.8	µg/L	Not Detected		10	100	10/6/2015	SM
Nitrate as NO3	EPA300.0	mg/L	Not Detected		1	45	9/24/2015	HM
Nitrate as NO3-N	EPA300.0	mg/L	0.1		0.1	10	9/24/2015	HM
Nitrate+Nitrite as N	EPA300.0	mg/L	0.4		0.1		9/24/2015	HM
Nitrite as NO2-N	EPA300.0	mg/L	0.3		0.1	1.0	9/24/2015	HM

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ug/L : Micrograms per liter (=ppb)

PQL : Practical Quantitation Limit

H = Analyzed outside 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

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Thursday, October 15, 2015

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

Lab Number: AB35801

Collection Date/Time: 9/23/2015 12:00

Sample Collector: LEAR J

Submittal Date/Time: 9/23/2015 13:10

Sample ID

Coliform Designation:

Sample Description: MW1

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed	Analyst:
o-Phosphate-P	EPA300.0	mg/L	Not Detected		0.1		9/24/2015	HM
pH (Laboratory)	SM4500-H+B	pH (H)	7.1		0.1		9/23/2015	HM
Phosphorus, Total	HACH 8190	mg/L	0.08		0.03		9/30/2015	LRH
Potassium	EPA200.7	mg/L	4.6		0.5		10/2/2015	MW
QC Anion Sum x 100	Calculation	%	97%				9/30/2015	SM
QC Anion-Cation Balance	Calculation	%	2				10/5/2015	MW
QC Cation Sum x 100	Calculation	%	100%				10/5/2015	MW
QC Ratio TDS/SEC	Calculation		0.58				9/28/2015	HM
Selenium, Total	EPA200.8	µg/L	Not Detected		2	50	10/6/2015	SM
Silica as SiO ₂ , Total	EPA200.7	mg/L	35		0.5		10/2/2015	MW
Sodium	EPA200.7	mg/L	78		0.5		10/2/2015	MW
Specific Conductance (E.C)	SM2510B	µmhos/cm	935		1	900	9/23/2015	LJ
Strontium, Total	EPA200.8	µg/L	402		5		10/6/2015	SM
Sulfate	EPA300.0	mg/L	83		1	250	9/24/2015	HM
TOC	SM5310C	mg/L	1.2		0.2		9/28/2015	MW
Total Diss. Solids	SM2540C	mg/L	540		10	500	9/23/2015	HM
Total Nitrogen	Calculation	mg/L	Not Detected		0.5		10/8/2015	HM
Total Radium 226	EPA903.0	pCi/L	0.762 ± 0.265	E		3	10/6/2015	FGL
Trihalomethanes	EPA524.2	µg/L	4.9	E		80	9/28/2015	BSK
Uranium by ICP/MS	EPA200.8	µg/L	2		1	30	10/6/2015	SM
Vanadium, Total	EPA200.8	µg/L	Not Detected		5	1000	10/6/2015	SM
Zinc, Total	EPA200.8	µg/L	Not Detected		20	5000	10/6/2015	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 outside 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)

A5I2311

10/07/2015

Invoice: A521308

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

RE: Report for A5I2311 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 9/25/2015. 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
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Client: Monterey Bay Analytical Report To: David Holland Project #: - Received: 9/25/2015 - 10:00 Report Due: 10/09/2015	Invoice To: Monterey Bay Analytical Invoice Attn: David Holland Project PO#: -
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Sample Receipt Conditions

Cooler: Default Cooler Temperature on Receipt °C: 3.9	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:

MS1.0 Matrix spike recoveries exceed control limits.

Report Distribution

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

Certificate of Analysis

Sample ID: A5I2311-01
Sampled By: Jonathan Lear
Sample Description: ASR1 // AB35797

Sample Date - Time: 09/22/15 - 11:45
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	ND	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Chloroform	EPA 524.2	0.59	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Dibromochloromethane	EPA 524.2	ND	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Surrogate: Bromofluorobenzene	EPA 524.2	120 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		0.59	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A511526	09/30/15	10/02/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	127 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		ND	2.0	ug/L					

Certificate of Analysis

Sample ID: A5I2311-02
Sampled By: Jonathan Lear
Sample Description: ASR2 // AB35798

Sample Date - Time: 09/22/15 - 11:45
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	3.6	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Chloroform	EPA 524.2	7.4	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Dibromochloromethane	EPA 524.2	2.0	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Surrogate: Bromofluorobenzene	EPA 524.2	120 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		13	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A511526	09/30/15	10/02/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	123 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		ND	2.0	ug/L					

Certificate of Analysis

Sample ID: A5I2311-03
Sampled By: Jonathan Lear
Sample Description: ASR3 // AB35799

Sample Date - Time: 09/23/15 - 10:30
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	11	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Bromoform	EPA 524.2	1.0	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Chloroform	EPA 524.2	19	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Dibromochloromethane	EPA 524.2	6.5	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Surrogate: Bromofluorobenzene	EPA 524.2	119 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		38	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	1.1	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A511526	09/30/15	10/02/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	2.1	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	125 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		3.2	2.0	ug/L					

Certificate of Analysis

Sample ID: A5I2311-04
Sampled By: Jonathan Lear
Sample Description: SMS(D) // AB35800

Sample Date - Time: 09/23/15 - 11:00
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	0.69	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Chloroform	EPA 524.2	2.6	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Dibromochloromethane	EPA 524.2	ND	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Surrogate: Bromofluorobenzene	EPA 524.2	121 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		3.3	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A511526	09/30/15	10/02/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	127 %	<i>Acceptable range: 70-130 %</i>						
Total Haloacetic Acids, EPA 552.3		ND	2.0	ug/L					

Certificate of Analysis

Sample ID: A5I2311-05
Sampled By: Jonathan Lear
Sample Description: MW1 // AB35801

Sample Date - Time: 09/23/15 - 12:00
Matrix: Ground Water
Sample Type: Grab

BSK Associates Fresno
Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
<u>Trihalomethanes by GC-MS</u>									
Bromodichloromethane	EPA 524.2	0.95	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Bromoform	EPA 524.2	ND	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Chloroform	EPA 524.2	3.4	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Dibromochloromethane	EPA 524.2	0.53	0.50	ug/L	1	A511249	09/28/15	09/28/15	
Surrogate: Bromofluorobenzene	EPA 524.2	120 %	<i>Acceptable range: 70-130 %</i>						
Total Trihalomethanes, EPA 524.2		4.9	0.50	ug/L					
<u>Haloacetic Acids by GC-ECD, GC-MS</u>									
Dibromoacetic Acid (DBAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Dichloroacetic Acid (DCAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Monobromoacetic Acid (MBAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Monochloroacetic Acid (MCAA)	EPA 552.3	ND	2.0	ug/L	1	A511526	09/30/15	10/02/15	
Trichloroacetic Acid (TCAA)	EPA 552.3	ND	1.0	ug/L	1	A511526	09/30/15	10/02/15	
Surrogate: 2-Bromobutanoic Acid	EPA 552.3	127 %	<i>Acceptable range: 70-130 %</i>						
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
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EPA 524.2 - Quality Control

Batch: A511249

Prepared: 9/24/2015

Prep Method: EPA 524.2

Analyst: ANM

Blank (A511249-BLK1)

Bromodichloromethane	ND	0.50	ug/L							09/28/15	
Bromoform	ND	0.50	ug/L							09/28/15	
Chloroform	ND	0.50	ug/L							09/28/15	
Dibromochloromethane	ND	0.50	ug/L							09/28/15	
Surrogate: Bromofluorobenzene	52			50		105	70-130			09/28/15	

Blank Spike (A511249-BS1)

Bromodichloromethane	11	0.50	ug/L	10		107	70-130			09/28/15	
Bromoform	11	0.50	ug/L	10		107	70-130			09/28/15	
Chloroform	11	0.50	ug/L	10		109	70-130			09/28/15	
Dibromochloromethane	11	0.50	ug/L	10		108	70-130			09/28/15	
Surrogate: Bromofluorobenzene	59			50		117	70-130			09/28/15	

Blank Spike Dup (A511249-BSD1)

Bromodichloromethane	11	0.50	ug/L	10		110	70-130	2	30	09/28/15	
Bromoform	11	0.50	ug/L	10		111	70-130	4	30	09/28/15	
Chloroform	11	0.50	ug/L	10		108	70-130	1	30	09/28/15	
Dibromochloromethane	11	0.50	ug/L	10		109	70-130	1	30	09/28/15	
Surrogate: Bromofluorobenzene	53			50		106	70-130			09/28/15	

Matrix Spike (A511249-MS1), Source: A512227-01

Bromodichloromethane	3.5	0.50	ug/L	10	ND	35	47-151			09/28/15	MS1.0 Low
Bromoform	3.5	0.50	ug/L	10	ND	35	29-162			09/28/15	
Chloroform	3.7	0.50	ug/L	10	ND	37	52-148			09/28/15	MS1.0 Low
Dibromochloromethane	3.5	0.50	ug/L	10	ND	35	44-149			09/28/15	MS1.0 Low
Surrogate: Bromofluorobenzene	60			50		119	70-130			09/28/15	

EPA 552.3 - Quality Control

Batch: A511526

Prepared: 9/30/2015

Prep Method: EPA 552.3

Analyst: MTM

Blank (A511526-BLK1)

Dibromoacetic Acid (DBAA)	ND	1.0	ug/L							10/02/15	
Dichloroacetic Acid (DCAA)	ND	1.0	ug/L							10/02/15	
Monobromoacetic Acid (MBAA)	ND	1.0	ug/L							10/02/15	
Monochloroacetic Acid (MCAA)	ND	2.0	ug/L							10/02/15	
Trichloroacetic Acid (TCAA)	ND	1.0	ug/L							10/02/15	
Surrogate: 2-Bromobutanoic Acid	29			25		118	70-130			10/02/15	

Blank Spike (A511526-BS1)

Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10		123	70-130			10/02/15	
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		106	70-130			10/02/15	
Monobromoacetic Acid (MBAA)	10	1.0	ug/L	10		102	70-130			10/02/15	
Monochloroacetic Acid (MCAA)	20	2.0	ug/L	20		98	70-130			10/02/15	
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		109	70-130			10/02/15	

**BSK Associates Fresno
Organics Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 552.3 - Quality Control

Batch: A511526

Prepared: 9/30/2015

Prep Method: EPA 552.3

Analyst: MTM

Blank Spike (A511526-BS1)

Surrogate: 2-Bromobutanoic Acid 29 25 116 70-130 10/02/15

Blank Spike Dup (A511526-BSD1)

Dibromoacetic Acid (DBAA)	12	1.0	ug/L	10		123	70-130	1	30	10/02/15
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10		108	70-130	2	30	10/02/15
Monobromoacetic Acid (MBAA)	10	1.0	ug/L	10		102	70-130	0	30	10/02/15
Monochloroacetic Acid (MCAA)	20	2.0	ug/L	20		101	70-130	3	30	10/02/15
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10		110	70-130	1	30	10/02/15
Surrogate: 2-Bromobutanoic Acid	29			25		118	70-130			10/02/15

Matrix Spike (A511526-MS1), Source: A5I2171-07

Dibromoacetic Acid (DBAA)	13	1.0	ug/L	10	ND	124	70-130			10/02/15
Dichloroacetic Acid (DCAA)	11	1.0	ug/L	10	ND	107	70-130			10/02/15
Monobromoacetic Acid (MBAA)	10	1.0	ug/L	10	ND	103	70-130			10/02/15
Monochloroacetic Acid (MCAA)	20	2.0	ug/L	20	ND	100	70-130			10/02/15
Trichloroacetic Acid (TCAA)	11	1.0	ug/L	10	ND	110	70-130			10/02/15
Surrogate: 2-Bromobutanoic Acid	29			25		116	70-130			10/02/15

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
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Vancouver

State of Oregon - NELAC	WA100008-007	State of Washington	C824-14a
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A5I2311



09252015

Monte6227

Turnaround: Standard

Due Date: 10/9/2015



Monterey Bay Analytical



Required Fields

Temp: 3.4

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

AS12311
 Monte6227
 09/25/2015
 10



Company/Client Name*: **Monterey Bay Analytical Services**
 Report Attention*: **Mason Weidner-Holland**
 Additional CC's: **David Holland**
 City*: **Monterey** State*: **CA** Zip*: **93940**
 Invoice To*: **David Holland** PO#:
 Phone*: **831-375-6227** Fax: **831-641-0734**
 E-mail*: **mweidner@mbasinc.com, dholland@mbasinc.com**

Address*: **4 Justin Court, Suite D**
 Project #: **MPWMD**
 Reporting Options:
 Trace (J-Flag) Swamp EDD Type: _____
 SWRCB (Drinking Water) Fresno Co
 Merced Co Tulare Co
 Madera Co Other: _____
 Geotracker # _____
 ED1 to California SWRCB (Drinking Water)
 System Number*: _____
 How would you like to receive your completed results?
 E-Mail Fax Mail

Sampler Name (Printed/Signature)*: **Jonathan Lear**
 Matrix Types: SW=Surface Water BW=Bottled Water GW=Ground Water VW=Waste Water STW=Storm Water DW=Drinking Water SO=Solid
 Regulatory Carbon Copies
 Regulatory Compliance
 Comments / Station Code / WTRAX: **HAA5 THM**

#	Sample Description*	Sampled*		Matrix*	Comments / Station Code / WTRAX
		Date	Time		
1.	ASR1	9/22/15	1145	GW	AB35797
2.	ASR2	9/22/15	1145	GW	AB35798
3.	ASR3	9/23/15	1030	GW	AB35799
4.	SMS(D)	9/23/15	1100	GW	AB35800
5.	MW1	9/23/15	1200	GW	AB35801

Relinquished by: (Signature and Printed Name) **D. Holland** Company: **MBAS**
 Date: **9/24/15** Time: **1600**
 Received by: (Signature and Printed Name) _____
 Date: _____ Time: _____
 Relinquished by: (Signature and Printed Name) _____
 Date: _____ Time: _____
 Received by: (Signature and Printed Name) _____
 Date: _____ Time: _____
 Payment Received at Delivery: _____
 Date: _____

Shipping Method: **ONTRAC** UPS **None** GSO **WALK-IN** FED EX **Courier**
 Cooling Method: **None**
 Chilling Process Begun: **Y/N**
 Amount: P/A#: Check Int. Cash

Payment for services rendered as noted herein are due in full within 30 days from the date invoiced. If not so paid, account balances are deemed delinquent. Delinquent balances are subject to monthly service charges and interest specified in BSK's current Standard Terms and Conditions for Laboratory Services. The person signing for the Client/Company acknowledges that they are either the Client or an authorized agent to the Client, that the Client agrees to be responsible for payment for the services on this Chain of Custody, and agrees to BSK's terms and conditions for laboratory services unless contractually bound otherwise. BSK's current terms and conditions can be found at www.bskassociates.com/BSKLabFormCondTerms.pdf

A512311
Monte6227

09/25/2015
10



Sample Integrity

BSK Bottles: Yes No Page 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$		<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NA		Were correct containers and preservatives received for the tests requested?		<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NA	
	If samples were taken today, is there evidence that chilling has begun?		Yes <input type="radio"/> No <input checked="" type="radio"/> NA		Were there bubbles in the VOA vials? (Volatiles Only)		Yes <input type="radio"/> No <input checked="" type="radio"/> NA	
	Did all bottles arrive unbroken and intact?		<input checked="" type="radio"/> Yes <input type="radio"/> No		Was a sufficient amount of sample received?		<input checked="" type="radio"/> Yes <input type="radio"/> No	
	Did all bottle labels agree with COC?		<input checked="" type="radio"/> Yes <input type="radio"/> No		Do samples have a hold time <72 hours?		Yes <input type="radio"/> No <input checked="" type="radio"/> NA	
Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?		Yes <input type="radio"/> No <input checked="" type="radio"/> NA		Was PM notified of discrepancies? PM: _____ By/Time: _____		Yes <input type="radio"/> No <input checked="" type="radio"/> 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?	1-5				
	Bacti Na ₂ S ₂ O ₃	—	—					
	None (P) ^{White Cap}	—	—					
	Cr6 (P) ^{Br. Green Label} NH ₄ OH(NH ₄) ₂ SO ₄ DW	Cl, pH > 8	Y	N				
	Cr6 (P) ^{Pink Label} NH ₄ OH(NH ₄) ₂ SO ₄ WW	pH 9.3-9.7	Y	N				
	Cr6 (P) ^{Pink Label} NH ₄ OH(NH ₄) ₂ SO ₄ 7199 ***24 HOUR HOLD TIME***	pH 9.0-9.5	Y	N				
	HNO ₃ (P) ^{Red Cap}	—	—					
	H ₂ SO 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 ₂ O ₃ S+HCl (AG) ^{Lt. Pink Label} 525	—	—					
	Na ₂ S ₂ O ₃ 1 Liter (Brown P) 549	—	—					
	Na ₂ S ₂ O ₃ (AG) ^{Blue Label} 547, 515, 548, THM, 524	—	—		3V			
	Na ₂ S ₂ O ₃ (CG) ^{Blue Label} 504, 505	—	—					
	Na ₂ S ₂ O ₃ + MCAA (CG) ^{Orange Label} 531	pH < 3	Y	N				
	NH ₄ Cl (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 ₃ PO 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				
Comments								

JH
9/25/15

Labeled by: SEA @ WPI

Labels checked by: CW @ 1504

RUSH Paged by: _____ @ _____

October 12, 2015

Monterey Bay Analytical Services
 4 Justin Court
 Monterey, CA 93940

Lab ID : SP 1510697
 Customer : 2-19144

Laboratory Report

Introduction: This report package contains total of 8 pages divided into 3 sections:

Case Narrative (2 pages) : An overview of the work performed at FGL.
 Sample Results (5 pages) : 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
ASR1	09/22/2015	09/25/2015	SP 1510697-001	GW
ASR2	09/22/2015	09/25/2015	SP 1510697-002	GW
ASR3	09/23/2015	09/25/2015	SP 1510697-003	GW
SMS(D)	09/23/2015	09/25/2015	SP 1510697-004	GW
MW1	09/23/2015	09/25/2015	SP 1510697-005	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 on ice. 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	10/05/2015:214617 All analysis quality controls are within established criteria.
	10/05/2015:214618 All analysis quality controls are within established criteria.
	10/05/2015:214619 All analysis quality controls are within established criteria.
	10/02/2015:211454 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. 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.

October 12, 2015
Monterey Bay Analytical Services

Lab ID : SP 1510697
Customer : 2-19144

Radio QC

903.0	10/05/2015:214589 All analysis quality controls are within established criteria.
	10/06/2015:214589 All analysis quality controls are within established criteria.
	09/26/2015:211216 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: 2015-10-13



October 12, 2015

Lab ID : SP 1510697-001

Customer ID : 2-19144

Monterey Bay Analytical Services

4 Justin Court
Monterey, CA 93940

Sampled On : September 22, 2015-11:45

Sampled By : Jonathan Lear

Received On : September 25, 2015-13:30

Matrix : Ground Water

Description : ASR1

Project : MPWMD

Sample Result - Radio

Table with 7 columns: Constituent, Result ± Error, MDA, Units, MCL/AL, Sample Preparation (Method, Date/ID), Sample Analysis (Method, Date/ID). Rows include Radio Chemistry, Gross Alpha, and Total Alpha Radium (226).

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.



October 12, 2015

Lab ID : SP 1510697-002

Customer ID : 2-19144

Monterey Bay Analytical Services

4 Justin Court
Monterey, CA 93940

Sampled On : September 22, 2015-11:45

Sampled By : Jonathan Lear

Received On : September 25, 2015-13:30

Matrix : Ground Water

Description : ASR2

Project : MPWMD

Sample Result - Radio

Table with 7 columns: Constituent, Result ± Error, MDA, Units, MCL/AL, Sample Preparation (Method, Date/ID), Sample Analysis (Method, Date/ID). Rows include Radio Chemistry, Gross Alpha, and Total Alpha Radium (226).

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.



October 12, 2015

Lab ID : SP 1510697-003
Customer ID : 2-19144

Monterey Bay Analytical Services

4 Justin Court
Monterey, CA 93940

Sampled On : September 23, 2015-10:30
Sampled By : Jonathan Lear
Received On : September 25, 2015-13:30
Matrix : Ground Water

Description : ASR3
Project : MPWMD

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Radio Chemistry^{P:1}								
Gross Alpha	3.11 ± 1.41	1.22	pCi/L		900.0	10/02/15-06:15 2P1511454	900.0	10/05/15-13:00 2A1514619
Total Alpha Radium (226)	0.288 ± 0.181	0.418	pCi/L		903.0	09/26/15-12:00 2P1511216	903.0	10/06/15-07:00 2A1514589

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.



October 12, 2015

Lab ID : SP 1510697-004

Customer ID : 2-19144

Monterey Bay Analytical Services

4 Justin Court
Monterey, CA 93940

Sampled On : September 23, 2015-11:00

Sampled By : Jonathan Lear

Received On : September 25, 2015-13:30

Matrix : Ground Water

Description : SMS(D)

Project : MPWMD

Sample Result - Radio

Table with 7 columns: Constituent, Result ± Error, MDA, Units, MCL/AL, Sample Preparation (Method, Date/ID), Sample Analysis (Method, Date/ID). Rows include Radio Chemistry, Gross Alpha, and Total Alpha Radium (226).

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.



October 12, 2015

Lab ID : SP 1510697-005

Customer ID : 2-19144

Monterey Bay Analytical Services

4 Justin Court
Monterey, CA 93940

Sampled On : September 23, 2015-12:00

Sampled By : Jonathan Lear

Received On : September 25, 2015-13:30

Matrix : Ground Water

Description : MW1

Project : MPWMD

Sample Result - Radio

Table with 7 columns: Constituent, Result ± Error, MDA, Units, MCL/AL, Sample Preparation (Method, Date/ID), Sample Analysis (Method, Date/ID). Rows include Radio Chemistry, Gross Alpha, and Total Alpha Radium (226).

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.



October 12, 2015
Monterey Bay Analytical Services

Lab ID : SP 1510697
Customer : 2-19144

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio Alpha	900.0	10/05/15:214617caa	CCV CCB	cpm cpm	8838	40.8 % 0.100	38 - 46 0.14	
	900.0	10/05/15:214618caa	CCV CCB	cpm cpm	8838	40.8 % 0.100	37 - 46 0.18	
	900.0	10/05/15:214619caa	CCV CCB	cpm cpm	8838	41.0 % 0.10	39 - 48 0.2	
Gross Alpha	900.0	10/02/15:211454elc (SP 1510632-001)	Blank	pCi/L		0.32	3	
			LCS	pCi/L	180.6	116 %	75-125	
			MS	pCi/L	180.6	243 %	60-140	435
			MSD	pCi/L	180.6	173 %	60-140	435
			MSRPD	pCi/L	180.6	33.4%	≤30	435
Alpha	903.0	10/06/15:214589caa	CCV CCB	cpm cpm	8838	41.0 % 0.100	37 - 46 0.19	
Total Alpha Radium (226)	903.0	09/26/15:211216emv	RgBlk	pCi/L		0.03	2	
			LCS	pCi/L	21.59	79.4 %	52-107	
			BS	pCi/L	21.59	80.9 %	43-111	
			BSD	pCi/L	21.59	79.9 %	43-111	
			BSRPD	pCi/L	21.59	1.2%	≤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 analyte. 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.								

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 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

Nicole Parson



Digitally signed by Nicole Parson
Title: Sample Receiving
Date: 09/25/2015-14:42:17

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 1510697
NMP-09/25/2015-14:42:17



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1509A02

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: 09/25/2015

Analytical Report reviewed & approved for release on 10/05/2015 by:

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Monterey Bay Analytical
Project: MPWMD
WorkOrder: 1509A02

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)
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.
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 Report

Client: Monterey Bay Analytical
Date Received: 9/25/15 11:50
Date Prepared: 10/5/15
Project: MPWMD

WorkOrder: 1509A02
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µg/L

Light Gases

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR1	1509A02-001A	Water	09/22/2015 11:45	GC26	111107

Analytes	Result	RL	DF	Date Analyzed
Methane	0.40	0.10	1	10/05/2015 09:41

Analyst(s): AK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR2	1509A02-002A	Water	09/23/2015 11:45	GC26	111107

Analytes	Result	RL	DF	Date Analyzed
Methane	0.23	0.10	1	10/05/2015 09:53

Analyst(s): AK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ASR3	1509A02-003A	Water	09/23/2015 10:30	GC26	111107

Analytes	Result	RL	DF	Date Analyzed
Methane	0.22	0.10	1	10/05/2015 10:17

Analyst(s): AK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMS(D)	1509A02-004A	Water	09/23/2015 11:00	GC26	111107

Analytes	Result	RL	DF	Date Analyzed
Methane	0.27	0.10	1	10/05/2015 10:30

Analyst(s): AK

(Cont.)



Analytical Report

Client: Monterey Bay Analytical
Date Received: 9/25/15 11:50
Date Prepared: 10/5/15
Project: MPWMD

WorkOrder: 1509A02
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µg/L

Light Gases

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW1	1509A02-005A	Water	09/23/2015 12:00	GC26	111107

Analytes	Result	RL	DF	Date Analyzed
Methane	3.2	0.10	1	10/05/2015 11:03

Analyst(s): AK



Quality Control Report

Client: Monterey Bay Analytical
Date Prepared: 10/5/15
Date Analyzed: 10/5/15
Instrument: GC26
Matrix: Water
Project: MPWMD

WorkOrder: 1509A02
BatchID: 111107
Extraction Method: RSK175
Analytical Method: RSK175
Unit: µg/L
Sample ID: MB/LCS-111107

QC Summary Report for RSK175

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Methane	ND	108	0.10	100	-	108	70-130

1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1509A02

ClientCode: MBAS

WaterTrax
 WriteOn
 EDF
 Excel
 EQulS
 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: 09/25/2015

Date Printed: 09/25/2015

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	
1509A02-001	ASR1	Water	9/22/2015 11:45	<input type="checkbox"/>	A												
1509A02-002	ASR2	Water	9/23/2015 11:45	<input type="checkbox"/>	A												
1509A02-003	ASR3	Water	9/23/2015 10:30	<input type="checkbox"/>	A												
1509A02-004	SMS(D)	Water	9/23/2015 11:00	<input type="checkbox"/>	A												
1509A02-005	MW1	Water	9/23/2015 12:00	<input type="checkbox"/>	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.



WORK ORDER SUMMARY

Client Name: MONTEREY BAY ANALYTICAL

QC Level: LEVEL 2

Work Order: 1509A02

Project: MPWMD

Client Contact: David Holland

Date Received: 9/25/2015

Comments:

Contact's Email: mweidner@mbasinc.com; Dholland@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
1509A02-001A	ASR1	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	9/22/2015 11:45	5 days	None	<input type="checkbox"/>	
1509A02-002A	ASR2	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	9/23/2015 11:45	5 days		<input type="checkbox"/>	
1509A02-003A	ASR3	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	9/23/2015 10:30	5 days		<input type="checkbox"/>	
1509A02-004A	SMS(D)	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	9/23/2015 11:00	5 days		<input type="checkbox"/>	
1509A02-005A	MW1	Water	RSK175 <Methane_4>	3	VOA w/ HCl	<input type="checkbox"/>	9/23/2015 12:00	5 days		<input type="checkbox"/>	

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.

1509A02

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

GeoTracker EDF PDF Excel Write On (DW)

RUSH 24 HR 48 HR 72 HR 5 DAY

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: Jonathan Lear

Analysis Request

Other

Comments

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				Methane																				
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO ₃	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 (CI Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic CI 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)		
ASR1		7/23/15	1145	3	G	X					X	X																					X		AB35797
ASR2		7/23/15	1145	3	G	X					X	X																				X		AB35798	
ASR3		7/23/15	1030	3	G	X					X	X																			X		AB35799		
SMS(D)		7/23/15	1100	3	G	X					X	X																		X		AB35800			
MW1		7/23/15	1200	3	G	X					X	X																	X		AB35801				
		9/23/15																																	

Relinquished By: David Holland *[Signature]* Date: 9/24/15 Time: 1600

Received By: *[Signature]* 9/25 9:30

Relinquished By: Date: Time: Received By:

Relinquished By: Date: Time: Received By:

ICE/t° _____

GOOD CONDITION _____

HEAD SPACE ABSENT _____

DECHLORINATED IN LAB _____

APPROPRIATE CONTAINERS _____

PRESERVED IN LAB _____

VOAS O&G METALS OTHER

PRESERVATION pH<2

COMMENTS: *Date changed per samples*



Sample Receipt Checklist

Client Name: **Monterey Bay Analytical** Date and Time Received: **9/25/2015 11:50:54 AM**
 Project Name: **MPWMD** LogIn Reviewed by: **Briana Cutino**
 WorkOrder No: **1509A02** Matrix: Water Carrier: FedEx

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: 2.2°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: