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Project 15-01587

Craig George
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Building Official
City of Malibu
23825 Stuart Ranch Road
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Subject: Second Quarter 2017 Baseline Groundwater and Surface Water Monitoring Report, Malibu Civic Center Wastewater Treatment Facility – City of Malibu, California

Dear Mr. George:

Rincon Consultants, Inc. has prepared the Second Quarter 2017 Baseline Groundwater and Surface Water Monitoring Report for the Malibu Civic Center Wastewater Treatment Facility located in Malibu, California. The objective of the study is to develop baseline groundwater and surface water quality conditions prior to the operation of the Wastewater Treatment Facility. Once the Wastewater Treatment Facility is operating, the baseline water quality conditions will be used to identify any potential impacts as a result of land disposal of treated wastewater via injection and landscape irrigation or percolation on the receiving water aquifers, Santa Monica Bay, Malibu Creek, and Malibu Lagoon.

Please contact us with any questions you may have regarding the results of the Second Quarter 2017 Baseline Groundwater and Surface Water Monitoring Report.

Sincerely,
RINCON CONSULTANTS, INC.

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

Executed on the 27 day of July at 2017


_____ Signature

Environmental Sustainability Title
Department Director



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1.0 INTRODUCTION

This report presents the results of the Second Quarter 2017 Baseline Groundwater and Surface Water Monitoring events for the Malibu Civic Center Wastewater Treatment Facility located in the City of Malibu, California (Figure 1). The objective of the work program is to implement and manage a basin-wide groundwater and surface water monitoring and reporting program. The monitoring program has been designed to identify potential impacts as a result of land disposal of treated wastewater via injection and landscape irrigation or percolation on the receiving water quality of the local groundwater aquifers, Santa Monica Bay, Malibu Creek, and Malibu Lagoon.

This report was prepared by Rincon Consultants, Inc. (Rincon) and presents the geologic and hydrogeologic setting, groundwater elevations and gradient, surface water sampling methodologies, water quality data results, and our conclusions.

2.0 BACKGROUND

On-site wastewater disposal systems (OWDS) have allegedly contributed to the non-point source pollution of Malibu Creek and Lagoon located in the Civic Center Area of the City of Malibu. As a result of regulatory actions taken by the Los Angeles Regional Water Quality Control Board (LARWQCB) and the State Water Resources Control Board (SWRCB) to prohibit discharges from OWDS in the Civic Center area, the City of Malibu has designed and begun constructing a new centralized wastewater treatment facility.

To establish baseline groundwater and surface water quality conditions prior to operation and discharge of treated wastewater, the LARWQCB requires basin-wide, baseline groundwater and surface water monitoring. The water quality monitoring program is driven by several factors:

- Timelines established through regulatory action
- Proposed programs to fulfill anticipated future regulatory requirements associated with the development of the Civic Center Wastewater Treatment Facility (CCWTF)
- The distribution of Title 22 Recycled Water in the Prohibition area
- Protection of the Malibu Valley Groundwater Basin, Malibu Creek, Malibu Lagoon, and the near shore environment of Santa Monica Bay.

At this time, the basin-wide monitoring program consists of five water quality monitoring tasks that occur in the Civic Center area of the City of Malibu. All five monitoring tasks have been designed to build upon one another to provide a comprehensive basin-wide groundwater and surface water monitoring program. Below is a general description of each task and a discussion of its key objective.

– *Task 1 – Baseline Groundwater and Surface Water Quality Monitoring of the Civic Center Area*

The baseline groundwater and surface water quality monitoring task involves monitoring groundwater in nine shallow and deep groundwater wells, and monitoring surface water quality at ten locations. The objective of the monitoring in this task is to develop baseline, ambient shallow and deep groundwater and surface water conditions prior to the implementation of the CCWTF, as required by the Monitoring and Reporting Program (MRP) No. CI 10042 issued by the LARWQCB (LARWQCB 2015).



– *Task II – Long-Term Monitoring of Groundwater and Surface Water Quality Monitoring of the Civic Center Area*

The long-term groundwater and surface water quality monitoring task involves monitoring groundwater in nine shallow and deep groundwater wells and monitoring surface water quality at ten locations. The objective of the long-term monitoring is to identify the impact that land disposal of recycled water, via injection and landscape irrigation or percolation, will have on the water quality of the receiving groundwater aquifers, Santa Monica Bay, Malibu Creek, and Malibu Lagoon. The nine groundwater monitoring wells and ten surface water sampling locations identified in Task II will be sampled on a quarterly basis once CCWTF operations commence. This sampling is required by the MRP No. CI 10042 issued by the LARWQCB (LARWQCB 2015).

– *Task III – Salt and Nutrient Management Plan Monitoring Program*

The Salt and Nutrient Management Plan (SNMP) monitoring program branches off from the baseline and long-term groundwater and surface water monitoring programs described above (Tasks I and II). Task III involves performing semi-annual groundwater monitoring at 16 groundwater monitoring wells (mix of shallow and deep) located in the Civic Center area of the City and in a small area in the unincorporated portion of Los Angeles County. The objective of the SNMP is to monitor the potential impacts that recycled water, introduced through irrigation and injection, will have on the Malibu Groundwater Basin. The SNMP will also provide data to assess the various phases of the CCWTF implementation during the time that the collection system and treatment plant connections increase, and as OWDS-related discharges cease (RMC Water 2015a).

– *Task IV – Memorandum of Understanding Compliance Monitoring*

Compliance with the Memorandum of Understanding (MOU) the City has entered into with the LARWQCB corresponds with baseline and long term groundwater and surface water monitoring programs described in Tasks I through III above. Task IV involves performing semi-annual monitoring at 14 groundwater wells located in the City's Civic Center area. The objective of the MOU is to monitor for potential impacts to the Shallow Alluvium as a result of CCTWF implementation (LARWQCB 2014).

– *Task V – Civic Center Groundwater Elevation Monitoring Program*

The groundwater elevation monitoring program has been designed to appraise the groundwater elevations in the Malibu Groundwater Basin and in Winter Canyon Groundwater Basin. The objective of this task is to provide a better understanding of the groundwater elevation conditions of the Civic Center Area, including elevation trends related to precipitation, tidal, and lagoon influences (LARWQCB 2015).

3.0 GEOLOGIC AND HYDROGEOLOGIC SETTING

3.1 HYDROLOGY

The project lies in the Los Angeles hydrologic region, as defined by the LARWQCB. The Los Angeles hydrologic region encompasses all coastal drainages flowing to the Pacific Ocean between Rincon Point and the eastern Los Angeles County line. The study area covers two watersheds: the Malibu Creek and Winter Canyon Creek watersheds. The majority of the study area addressed in this report is located within the 109-square-mile Malibu Creek watershed, which is the second largest watershed draining to the Santa Monica Bay. The Malibu Creek watershed contains mostly undeveloped mountain areas, large-acreage residential properties, and many natural stream reaches (Los Angeles RWQCB 2011). Malibu Lagoon is located at the terminus of the Malibu Creek watershed. Malibu Lagoon is a brackish estuary of approximately 13 acres but is one of the only two remaining coastal marshes in Los Angeles County.

3.2 GEOLOGY

The study area is located within the Santa Monica Mountains in the northwestern corner of the Los Angeles basin. The study area lies at the juncture of the Peninsular Ranges geomorphic province, consisting of a northwest-oriented structural grain, and the Transverse Ranges geomorphic province, which features a predominantly east-west-oriented structural grain.

The 45-mile-long Santa Monica Mountains range is part of the southernmost portion of the western Transverse Ranges province. It forms an east-west range of low mountains along the southern California Coast from the Oxnard Plain to Los Angeles. The Santa Monica Mountain range is characterized by long, south draining canyons on its south flank and short, north draining canyons on its north flank. The Malibu Canyon and Winter Canyon are two significant canyons within the study area that drain to the south.

3.3 HYDROGEOLOGY

The Malibu Valley Groundwater Basin (DWR groundwater basin no. 4-22) is a small alluvial basin, approximately 613 acres in size. The groundwater basin is bounded by the Pacific Ocean on the south, and by the Santa Monica Mountains, composed of non-water-bearing Tertiary age rocks to the north, east, and west.

Water bearing geologic formations in the Malibu Valley Groundwater Basin are comprised of Holocene alluvium, consisting of clays, silts, sands, and gravels, overlying impermeable bedrock. The unconsolidated alluvium in the Civic Center area by Malibu Creek and other small drainages is estimated to range in thickness from a thin layer near the valley walls to around 175 feet in the central part of the main body of the alluvium. The alluvium can be subdivided into three categories or zones: 1) a shallow zone of permeable alluvial sediments, 2) underlain by a sequence of fine-grained estuarine deposits, and 3) and underlying coarse-grained stratum commonly referred to as the "Civic Center Gravels" (GeoSoils 1989, Leighton 1994, ECI 200, Ambrose and Orme 2000, Fugro West, Inc. 2005, Geosyntec Consultants 2007). Depth to groundwater in the alluvium is typically 5 to 13 feet below grade and is deeper in the upland canyon areas.



4.0 ACTIVITIES COMPLETED DURING SECOND QUARTER 2017

The following activities were completed during the second quarter of 2017:

- Prepared and submitted the First Quarter 2017 Groundwater and Surface Water Monitoring Reports to the LARWQCB.
- Rincon collected and analyzed surface water samples for MRP compliance (Task I).
- Rincon measured depth to water in the groundwater monitoring wells (Task V) April 2017, May 2017, and June 2017.

5.0 GROUNDWATER ELEVATIONS AND GRADIENTS

Rincon measured the depth to water monthly in 43 groundwater monitoring wells using an electronic water level indicator on April 17, 2017, May 22, 2017, and June 20, 2017 (Table 1 and Appendix A). Of the 43 groundwater monitoring wells, seven of the wells do not have elevation data for the top of well casing. Therefore, groundwater elevations could not be calculated in these seven groundwater wells. Groundwater monitoring wells MCWP-MW07S, MCWP-MS07D, MCWP-MW05, MCWP-MW03, and SMBRP-16 were inaccessible during second quarter 2017 due to construction of Malibu CCWTF.

5.1 SHALLOW ZONE

Groundwater elevations ranged from 2.53 feet referenced to NAVD88 (feet NAVD88) in groundwater monitoring well MCWP-MW10 to 25.38 feet NAVD88 in groundwater monitoring well EC-RC-MW01 (Table 1). Groundwater elevation decreased a maximum of 2.38 feet NAVD88 in groundwater monitoring well CCW-4 and increased a maximum 2.90 feet NAVD88 in groundwater monitoring well SMBRP-2. In general, groundwater monitoring wells in close proximity to Malibu Creek and Lagoon observed increasing elevations during the second quarter of 2017.

Groundwater gradients for April 2017, May 2017, and June 2017 are 0.0041 feet per foot, 0.0048 feet per foot, 0.0048 feet per foot, respectively. Groundwater gradients were calculated using monthly groundwater elevation data from groundwater monitoring wells SMBRP-9, SMBRP-12, and SMBRP-2. The predominant direction of groundwater flow ranged from southeast to south, towards the coastline. Elevation data and flow direction are depicted in Figures 3 through 5.

5.2 DEEP ZONE

Groundwater elevations ranged from 4.44 feet NAVD88 in groundwater monitoring well MCWP-MW04D to 10.06 feet NAVD88 in groundwater monitoring well MCWP-MW09 (Table 1). Groundwater elevation decreased a maximum of 0.89 feet NAVD88 in groundwater monitoring well MCWP-MW09 and increased a maximum 1.48 feet NAVD88 in groundwater monitoring well MCWP-MW09 when comparing monthly groundwater elevations during the second quarter of 2017. All deep zone groundwater well elevations (except MCWP-MW05) increased between March 2017 and April 2017, decreased between April 2017 and May 2017, and increased between May 2017 and June 2017.



5.3 WINTER CANYON

Groundwater elevations ranged from 9.90 feet NAVD88 in groundwater monitoring well SMBRP-11 to 56.32 feet NAVD88 in groundwater monitoring well LAMW-5S (Table 1). Groundwater elevations decreased a maximum of 0.26 feet NAVD88 in groundwater monitoring well SMBRP-11 and increased a maximum 0.47 feet NAVD88 in groundwater monitoring well LAMW-5S when comparing monthly groundwater elevations during the second quarter of 2017. An increasing trend in groundwater elevation was observed in LAMW-5S since fourth quarter of 2016.

6.0 WATER QUALITY SAMPLING AND ANALYSIS

6.1 SURFACE WATER SAMPLING METHODOLOGY

During the second quarter of 2017 a total of ten surface water samples were collected. Six surface water samples were collected from the Malibu Lagoon and Creek and four ocean water samples were collected from the near shore area along Malibu Road. Surface water samples from nearshore were collected from each location at a depth of approximately 3-6 inches (ankle deep). Surface water samples from Malibu Lagoon and Creek were collected from each location at a depth of approximately twelve inches below the surface of the water. All surface water samples were collected up-current of the sampling person's body to minimize the potential for contaminating the surface water sample with bacteria that may originate from field personnel. Surface water samples were collected in a field sampling container and then transferred into preserved and non-preserved containers supplied by Fruit Growers Laboratory, Inc. (FGL) located in Santa Paula, California. The containers were capped, labeled, placed in Ziploc bags, and stored on ice in a cooler pending delivery to FGL. The surface water samples were analyzed for total and fecal coliform, phosphorous, nitrate (as nitrogen), nitrite (as nitrogen), ammonia, organic nitrogen, and total Kjeldahl nitrogen (TKN). All surface water monitoring locations and corresponding laboratory analyses are shown in the Surface Water Analysis Matrix (Table 2).

6.2 SURFACE WATER ANALYTICAL LABORATORY ANALYSIS

Surface water samples collected during the second quarter of 2017 were analyzed by FGL. The laboratory analytical results included constituents listed in Table 3. Laboratory reports are included as Appendix B of this report.

6.2.1 Total Coliform

During the second quarter of 2017 monitoring event, total coliform concentrations in the near shore ranged from less than 1.8 Most Probable Number per 100 milliliters (MPN/100 mL) at N-002 to 23 MPN/100 mL at N-001 with an average concentration of 12.9 MPN/100 mL. Total coliform concentrations in the surface water of Malibu Creek and Lagoon ranged from 33 MPN/100 mL at L-006 to 540 MPN/100 mL at L-002 and L-004 with an average concentration of 321 MPN/100 mL.



6.2.2 Fecal Coliform

During the second quarter of 2017 monitoring event, fecal coliform concentrations in the near shore ranged from less than 1.8 MPN/100 mL at N-002 and N-003 to 7.8 MPN/100 mL at N-001 and N-004 with an average concentration of 7.8 MPN/100 mL. Fecal coliform concentrations in the Malibu Creek and Lagoon surface water ranged from 7.8 MPN/100 mL at L-006 to 350 MPN/100 mL at L-004 with an average concentration of 116 MPN/100 mL.

6.2.3 Nitrogen

6.2.3.1 Nitrate as Nitrogen

Nitrate as nitrogen concentrations in all surface water samples collected at near shore sampling locations were less than 0.1 milligrams per liter (mg/L), the analytical practical quantification limit (reporting limit). Nitrate as nitrogen concentrations in surface water samples collected at Malibu Creek and Lagoon sampling locations ranged from less than 0.1 mg/L at L-003, L-004, L-005, and L-006 to 0.6 mg/L at L-001 with an average concentration of 0.4 mg/L.

6.2.3.2 Other Forms of Nitrogen

All nitrite as nitrogen concentrations in surface water samples collected at the near shore and Malibu Creek and Lagoon sampling locations were not detected above the reporting limit of 0.1 mg/L.

Ammonia (NH_3^+) is the primary form of nitrogen in OWDS effluent, and it is converted to nitrate during the leaching process through the vadose zone (Figure 6). All ammonia concentrations in surface water samples collected at the near shore and the Malibu Creek and Lagoon sampling locations during the second quarter of 2017 were not detected above the reporting limit of 0.2 mg/L.

TKN concentrations in surface water samples collected at near shore sampling locations during the second quarter of 2017 were detected above the reporting limit of 0.5 mg/L at N-001, N-002, and N-004 with concentrations of 0.596 mg/L, 2.25 mg/L, and 0.647 mg/L, respectively. TKN concentrations detected in surface water samples collected at Malibu Creek and Lagoon sampling locations during the second quarter of 2017 ranged from 0.604 mg/L at L-002 to 1.12 mg/L at sampling location L-006 with an average concentration of 0.849 mg/L.

Organic nitrogen concentrations in surface water samples collected at near shore sampling locations during the second quarter of 2017 were detected above the reporting limit of 0.5 mg/L at N-001, N-002, and N-004 with concentrations of 0.519 mg/L, 2.25 mg/L, and 0.647 mg/L, respectively. Organic nitrogen concentrations detected in surface water samples collected at the Malibu Creek and Lagoon sampling locations during the second quarter of 2017 ranged from less than 0.5 mg/L at sampling location L-002 to 1.12 mg/L at sampling locations L-006 with an average concentration of 0.897 mg/L.



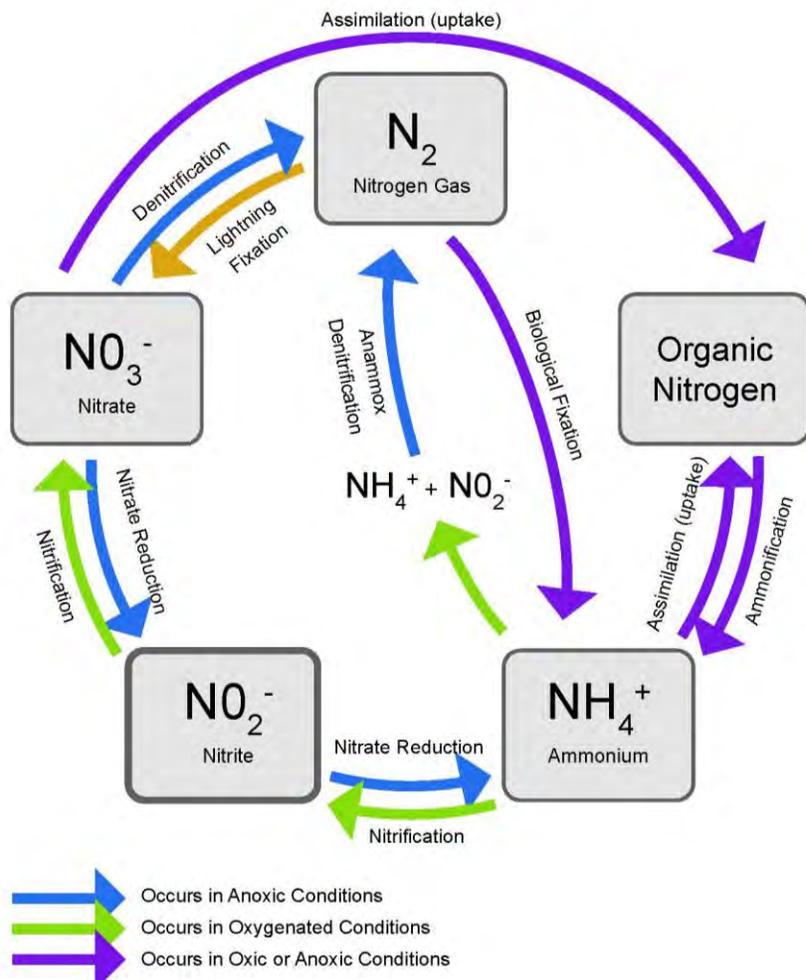


Figure 6. The Nitrogen Cycle

6.2.4 Total Phosphorus

Total phosphorus concentrations detected in surface water samples collected at near shore sampling locations during the second quarter of 2017 ranged from 0.474 mg/L at sampling location N-003 to 2.060 mg/L at sampling location N-001 with an average concentration of 1.451 mg/L. Total phosphorus concentrations detected in surface water samples collected at Malibu Creek and Lagoon during the second quarter of 2017 ranged from 0.387 mg/L at L-001 to 1.690 mg/L at L-003 with an average concentration of 0.772 mg/L.

6.2.5 Analytical Laboratory QA/QC

FGL performed QA/QC measures including the recovery of surrogates. FGL followed all QA procedures per method requirements. Any exceedances are indicated in the Case Narrative of the analytical laboratory report. The Data Qualifier Flag (DQF) column of the analytical reports also has the QC flags; definitions for the QC flags are below the analytical tables.

7.0 SCHEDULED ACTIVITIES FOR THIRD QUARTER 2017

The following activities will be completed during the third quarter of 2017:

- Prepare and submit the Second Quarter 2017 Groundwater and Surface Water Monitoring Report to the LARWQCB.
- Rincon will collect and analyze surface water samples for MRP compliance (Task I).
- Rincon will collect and analyze groundwater samples for MRP compliance (Task I).
- Rincon will collect and analyze groundwater samples for SNMP compliance (Task III).
- Rincon will collect and analyze groundwater samples for MOU compliance (Task IV).
- Rincon will measure depth to water in the groundwater monitoring wells in July, August, and September (Task V).

8.0 SUMMARY OF MONITORING ACTIVITIES

In general, groundwater elevations increased in several shallow groundwater monitoring wells located in close proximity to Malibu Creek and Lagoon during the second quarter of 2017. Malibu Lagoon closed to tidal influence in June 2017 due to sand accretion. Deep groundwater monitoring well elevations increased in April 2017, decreased in May 2017, and increased again in June 2017.

During the second quarter of 2017 monitoring event, total coliform concentrations in the near shore were detected above practical quantification limit in N-001 (23 MPN/100 mL), N-003 (7.8 MPN/100 mL), and N-004 (MPN/100 mL). Total coliform concentrations in the surface water of Malibu Creek and Lagoon ranged from 33 MPN/100 mL at L-006 to 540 MPN/100 mL at L-002 and L-004.

During the second quarter of 2017 monitoring event, fecal coliform concentrations in the near shore were detected above practical quantification limit at N-001 and N-004 with concentrations of 7.8 MPN/100 mL. Fecal coliform concentrations in the Malibu Creek and Lagoon surface water ranged from 7.8 MPN/100 mL at L-006 to 350 MPN/100 mL at L-004 with an average concentration of 116 MPN/100 mL.

Nitrate as nitrogen concentrations in all surface water samples collected at the near shore sampling locations were less than 0.1 milligrams per liter (mg/L), the analytical practical quantification limit (reporting limit). Nitrate as nitrogen concentrations in surface water samples collected at Malibu Creek and Lagoon sampling locations were less than 0.1 mg/L at all locations except L-001 (0.6 mg/L) and L-002 (0.2 mg/L).

9.0 LIMITATIONS

This report has been prepared for and is intended for the exclusive use of the City of Malibu. The contents of this report should not be relied upon by any other party without the written consent of Rincon Consultants, Inc.

Our conclusions regarding the site are based on observations of existing site conditions, our interpretation of site usage information, and the results of a limited subsurface sampling and chemical testing program. The concentrations of contaminants measured at any given location may not be representative of conditions at other locations intermediate to the locations sampled. Furthermore, conditions may change at any particular location as a function of time in response to natural conditions, chemical reactions, and other events. Conclusions regarding the condition of the site do not represent a warranty that all areas within the site are similar to those sampled.



10.0 REFERENCES

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- Los Angeles Regional Water Quality Control Board. 2015. Waste Discharge Requirements / Water Recycling Requirements for Malibu Civic Center Wastewater Treatment Facility - Phase I & II.
- RMC Water. 2015a. Draft Salt Nutrient and Management Plan Malibu Valley Groundwater Basin.
- RMC Water. 2015b. Draft Groundwater Management Plan Malibu Valley Groundwater Basin.

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
C-1	8/24/2015	11.47	N/A	-
	9/21/2015		N/A	-
	10/20/2015		N/A	-
	11/16/2015		5.07	6.40
	12/14/2015		4.12	7.35
	1/14/2016		6.65	4.82
	2/16/2016		6.65	4.82
	3/14/2016		6.80	4.67
	4/25/2016		5.72	5.75
	5/16/2016		4.59	6.88
	6/17/2016		4.72	6.75
	7/20/2016		5.32	6.15
	8/20/2016		5.42	6.05
	9/19/2016		5.47	6.00
	10/21/2016		5.64	5.83
	11/18/2016		4.71	6.76
	12/19/2016		6.75	4.72
	1/17/2017		6.89	4.58
	2/24/2017		7.28	4.19
	3/27/2017		6.66	4.81
4/17/2017	7.32	4.15		
5/22/2017	6.74	4.73		
6/20/2017	4.49	6.98		
C-2	8/24/2015	11.19	5.11	6.08
	9/21/2015		4.92	6.27
	10/20/2015		5.18	6.01
	11/16/2015		4.96	6.23
	12/14/2015		3.93	7.26
	1/14/2016		6.44	4.75
	2/16/2016		6.34	4.85
	3/14/2016		6.50	4.69
	4/25/2016		5.54	5.65
	5/16/2016		4.49	6.70
	6/17/2016		4.62	6.57
	7/20/2016		5.16	6.03
	8/20/2016		5.25	5.94
	9/19/2016		5.21	5.98
	10/21/2016		5.46	5.73
	11/18/2016		4.48	6.71
	12/19/2016		6.74	4.45
	1/17/2017		6.51	4.68
	2/24/2017		6.84	4.35
	3/27/2017		6.55	4.64
4/17/2017	7.05	4.14		
5/22/2017	6.54	4.65		
6/20/2017	3.81	7.38		

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
CCPE	8/24/2015	12.935	5.76	7.18
	9/21/2015		5.61	7.33
	10/20/2015		5.87	7.07
	11/16/2015		5.79	7.15
	12/14/2015		4.52	8.42
	1/14/2016		7.95	4.99
	2/16/2016		8.27	4.67
	3/14/2016		8.35	4.59
	4/25/2016		7.13	5.81
	5/16/2016		5.72	7.22
	6/17/2016		6.54	6.40
	7/20/2016		6.09	6.85
	8/20/2016		6.43	6.51
	9/19/2016		6.80	6.14
	10/21/2016		6.67	6.27
	11/18/2016		5.61	7.33
	12/19/2016		11.63	1.31
	1/17/2017		8.38	4.56
	2/24/2017		8.67	4.27
	3/27/2017		8.21	4.73
4/17/2017	8.9	4.04		
5/22/2017	8.25	4.69		
6/20/2017	5.73	7.21		
CCPNE	8/24/2015	13.675	6.44	7.24
	9/21/2015		6.27	7.41
	10/20/2015		6.54	7.14
	11/16/2015		6.74	6.94
	12/14/2015		5.28	8.40
	1/14/2016		8.51	5.17
	2/16/2016		8.65	5.03
	3/14/2016		8.65	5.03
	4/25/2016		7.79	5.89
	5/16/2016		6.39	7.29
	6/17/2016		5.83	7.85
	7/20/2016		6.79	6.89
	8/20/2016		7.16	6.52
	9/19/2016		7.52	6.16
	10/21/2016		7.4	6.28
	11/18/2016		6.32	7.36
	12/19/2016		8.82	4.86
	1/17/2017		8.66	5.02
	2/24/2017		8.8	4.88
	3/27/2017		9.37	4.31
4/17/2017	9.16	4.52		
5/22/2017	8.97	4.71		
6/20/2017	6.63	7.05		

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
CCPSW	8/24/2015	13.67	6.29	7.38
	9/21/2015		6.09	7.58
	10/20/2015		6.35	7.32
	11/16/2015		6.24	7.43
	12/14/2015		5.27	8.40
	1/14/2016		8.22	5.45
	2/16/2016		8.11	5.56
	3/14/2016		8.05	5.62
	4/25/2016		7.50	6.17
	5/16/2016		6.18	7.49
	6/17/2016		6.26	7.41
	7/20/2016		6.60	7.07
	8/20/2016		6.92	6.75
	9/19/2016		7.28	6.39
	10/21/2016		7.17	6.50
	11/18/2016		6.22	7.45
	12/19/2016		8.34	5.33
	1/17/2017		8.03	5.64
	2/24/2017		8.27	5.40
	3/27/2017		9.32	4.35
4/17/2017	8.64	5.03		
5/22/2017	8.86	4.81		
6/20/2017	6.59	7.08		
CCW-4	8/24/2015	15.765	6.50	9.27
	9/21/2015		6.71	9.06
	10/20/2015		6.90	8.87
	11/16/2015		7.02	8.75
	12/14/2015		7.05	8.72
	1/14/2016		6.19	9.58
	2/16/2016		6.17	9.60
	3/14/2016		5.72	10.05
	4/25/2016		5.28	10.49
	5/16/2016		6.45	9.32
	6/17/2016		6.70	9.07
	7/20/2016		7.07	8.70
	8/20/2016		7.33	8.44
	9/19/2016		7.56	8.21
	10/21/2016		7.68	8.09
	11/18/2016		7.84	7.93
	12/19/2016		7.09	8.68
	1/17/2017		4.97	10.80
	2/24/2017		2.04	13.73
	3/27/2017		2.92	12.85
4/17/2017	5.3	10.47		
5/22/2017	5.72	10.05		
6/20/2017	6.27	9.50		

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
GH6-M1	8/24/2015	-	28.92	-
	9/21/2015		29.11	-
	10/20/2015		29.24	-
	11/16/2015		29.32	-
	12/14/2015		29.43	-
	1/14/2016		29.43	-
	2/16/2016		29.56	-
	3/14/2016		29.44	-
	4/25/2016		29.46	-
	5/16/2016		29.35	-
	6/17/2016		29.20	-
	7/20/2016		29.49	-
	8/20/2016		29.58	-
	9/19/2016		29.69	-
	10/21/2016		29.85	-
	11/18/2016		29.95	-
	12/19/2016		30.05	-
	1/17/2017		29.9	-
	2/24/2017		28.74	-
	3/27/2017		27.63	-
4/17/2017	26.91	-		
5/22/2017	26.16	-		
6/20/2017	26.13	-		
GH8-M3	8/24/2015	-	28.37	-
	9/21/2015		28.54	-
	10/20/2015		28.69	-
	11/16/2015		28.75	-
	12/14/2015		28.78	-
	1/14/2016		28.92	-
	2/16/2016		28.96	-
	3/14/2016		28.79	-
	4/25/2016		28.78	-
	5/16/2016		28.63	-
	6/17/2016		28.67	-
	7/20/2016		28.90	-
	8/20/2016		29.08	-
	9/19/2016		29.19	-
	10/21/2016		29.36	-
	11/18/2016		29.36	-
	12/19/2016		29.44	-
	1/17/2017		29.27	-
	2/24/2017		27.8	-
	3/27/2017		26.22	-
4/17/2017	25.44	-		
5/22/2017	25.13	-		
6/20/2017	25.38	-		

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
GH9-M4	8/24/2015	-	30.31	-
	9/21/2015		30.54	-
	10/20/2015		30.66	-
	11/16/2015		30.75	-
	12/14/2015		30.86	-
	1/14/2016		34.54	-
	2/16/2016		31.12	-
	3/14/2016		31.07	-
	4/25/2016		34.32	-
	5/16/2016		32.80	-
	6/17/2016		30.56	-
	7/20/2016		30.90	-
	8/20/2016		31.09	-
	9/19/2016		31.18	-
	10/21/2016		31.29	-
	11/18/2016		30.87	-
	12/19/2016		31.11	-
	1/17/2017		30.79	-
	2/24/2017		30.53	-
	3/27/2017		24.94	-
4/17/2017	24.79	-		
5/22/2017	29.08	-		
6/20/2017	26.3	-		
M6-1	8/24/2015	-	6.61	-
	9/21/2015		6.43	-
	10/20/2015		6.72	-
	11/16/2015		6.68	-
	12/14/2015		6.35	-
	1/14/2016		6.63	-
	2/16/2016		7.03	-
	3/14/2016		6.45	-
	4/25/2016		7.15	-
	5/16/2016		6.85	-
	6/17/2016		7.04	-
	7/20/2016		7.34	-
	8/20/2016		7.61	-
	9/19/2016		7.87	-
	10/21/2016		7.83	-
	11/18/2016		7.19	-
	12/19/2016		7.26	-
	1/17/2017		5.81	-
	2/24/2017		4.96	-
	3/27/2017		7.17	-
4/17/2017	6.77	-		
5/22/2017	7.74	-		
6/20/2017	7.14	-		

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
M6-2	8/24/2015	-	5.76	-
	9/21/2015		5.75	-
	10/20/2015		6.08	-
	11/16/2015		6.17	-
	12/14/2015		6.12	-
	1/14/2016		4.69	-
	2/16/2016		5.46	-
	3/14/2016		4.27	-
	4/25/2016		5.51	-
	5/16/2016		5.74	-
	6/17/2016		5.94	-
	7/20/2016		6.21	-
	8/20/2016		6.42	-
	9/19/2016		6.61	-
	10/21/2016		6.82	-
	11/18/2016		6.96	-
	12/19/2016		5.93	-
	1/17/2017		3.05	-
	2/24/2017		1.75	-
	3/27/2017		3.87	-
4/17/2017	4.8	-		
5/22/2017	5.98	-		
6/20/2017	6.45	-		
M7-1	8/24/2015	-	8.09	-
	9/21/2015		8.12	-
	10/20/2015		8.40	-
	11/16/2015		8.48	-
	12/14/2015		8.30	-
	1/14/2016		8.04	-
	2/16/2016		8.36	-
	3/14/2016		7.83	-
	4/25/2016		8.46	-
	5/16/2016		8.17	-
	6/17/2016		8.22	-
	7/20/2016		8.54	-
	8/20/2016		8.74	-
	9/19/2016		8.88	-
	10/21/2016		9.01	-
	11/18/2016		8.98	-
	12/19/2016		8.68	-
	1/17/2017		6.94	-
	2/24/2017		5.13	-
	3/27/2017		6.71	-
4/17/2017	7.52	-		
5/22/2017	8.28	-		
6/20/2017	8.22	-		

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
M7-2	8/24/2015	-	7.78	-
	9/21/2015		7.91	-
	10/20/2015		8.15	-
	11/16/2015		8.27	-
	12/14/2015		8.28	-
	1/14/2016		7.34	-
	2/16/2016		7.74	-
	3/14/2016		7.03	-
	4/25/2016		7.84	-
	5/16/2016		7.70	-
	6/17/2016		7.77	-
	7/20/2016		8.05	-
	8/20/2016		8.26	-
	9/19/2016		8.42	-
	10/21/2016		8.64	-
	11/18/2016		8.88	-
	12/19/2016		8.21	-
	1/17/2017		5.91	-
	2/24/2017		3.56	-
	3/27/2017		5.29	-
4/17/2017	6.88	-		
5/22/2017	7.73	-		
6/20/2017	8.07	-		
MBCM7-7	8/24/2015	16.635	11.26	5.38
	9/21/2015		10.94	5.70
	10/20/2015		11.09	5.55
	11/16/2015		11.11	5.53
	12/14/2015		10.27	6.37
	1/14/2016		11.39	5.25
	2/16/2016		11.75	4.89
	3/14/2016		11.55	5.09
	4/25/2016		11.44	5.20
	5/16/2016		11.22	5.42
	6/17/2016		11.71	4.93
	7/20/2016		12.12	4.52
	8/20/2016		12.27	4.37
	9/19/2016		12.65	3.99
	10/21/2016		12.32	4.32
	11/18/2016		10.31	6.33
	12/19/2016		11.65	4.99
	1/17/2017		11.29	5.35
	2/24/2017		10.96	5.68
	3/27/2017		12.84	3.80
4/17/2017	11.89	4.75		
5/22/2017	12.56	4.08		
6/20/2017	11.57	5.07		

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
MBCMW-8	8/24/2015	16.53	9.11	7.42
	9/21/2015		9.13	7.40
	10/20/2015		9.44	7.09
	11/16/2015		9.58	6.95
	12/14/2015		9.59	6.94
	1/14/2016		8.05	8.48
	2/16/2016		8.66	7.87
	3/14/2016		7.36	9.17
	4/25/2016		8.54	7.99
	5/16/2016		8.89	7.64
	6/17/2016		9.16	7.37
	7/20/2016		9.46	7.07
	8/20/2016		9.73	6.80
	9/19/2016		9.99	6.54
	10/21/2016		10.02	6.51
	11/18/2016		10.11	6.42
	12/19/2016		9.61	6.92
	1/17/2017		7.03	9.50
	2/24/2017		4.41	12.12
	3/27/2017		6.13	10.40
4/17/2017	7.45	9.08		
5/22/2017	7.89	8.64		
6/20/2017	8.82	7.71		
MBCMW-9	8/24/2015	17.71	8.70	9.01
	9/21/2015		8.83	8.88
	10/20/2015		9.00	8.71
	11/16/2015		9.09	8.62
	12/14/2015		9.09	8.62
	1/14/2016		8.30	9.41
	2/16/2016		8.06	9.65
	3/14/2016		7.83	9.88
	4/25/2016		8.21	9.50
	5/16/2016		8.40	9.31
	6/17/2016		8.64	9.07
	7/20/2016		8.78	8.93
	8/20/2016		8.80	8.91
	9/19/2016		8.80	8.91
	10/21/2016		9.29	8.42
	11/18/2016		9.15	8.56
	12/19/2016		8.75	8.96
	1/17/2017		8.06	9.65
	2/24/2017		5.11	12.60
	3/27/2017		5.44	12.27
4/17/2017	5.99	11.72		
5/22/2017	6.28	11.43		
6/20/2017	6.76	10.95		

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
MBCMW-10	8/24/2015	17.74	8.63	9.11
	9/21/2015		8.20	9.54
	10/20/2015		8.40	9.34
	11/16/2015		8.35	9.39
	12/14/2015		7.34	10.40
	1/14/2016		8.82	8.92
	2/16/2016		9.34	8.40
	3/14/2016		8.97	8.77
	4/25/2016		9.22	8.52
	5/16/2016		8.75	8.99
	6/17/2016		8.58	9.16
	7/20/2016		9.29	8.45
	8/20/2016		9.52	8.22
	9/19/2016		9.85	7.89
	10/21/2016		9.67	8.07
	11/18/2016		8.31	9.43
	12/19/2016		8.97	8.77
	1/17/2017		8.67	9.07
	2/24/2017		8.55	9.19
	3/27/2017		10.12	7.62
4/17/2017	9.43	8.31		
5/22/2017	10.07	7.67		
6/20/2017	8.87	8.87		
MCWP-MW04S	8/24/2015	15.29	7.55	7.74
	9/21/2015		7.67	7.62
	10/20/2015		7.85	7.44
	11/16/2015		7.99	7.30
	12/14/2015		8.06	7.23
	1/14/2016		6.48	8.81
	2/16/2016		7.08	8.21
	3/14/2016		5.92	9.37
	4/25/2016		7.10	8.19
	5/16/2016		7.36	7.93
	6/17/2016		7.64	7.65
	7/20/2016		7.95	7.34
	8/20/2016		8.18	7.11
	9/19/2016		8.35	6.94
	10/21/2016		8.88	6.41
	11/18/2016		8.4	6.89
	12/19/2016		8.67	6.62
	1/17/2017		6.62	8.67
	2/24/2017		3.34	11.95
	3/27/2017		5.2	10.09
4/17/2017	6.19	9.10		
5/22/2017	6.73	8.56		
6/20/2017	7.41	7.88		

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
MCWP-MW07S	8/24/2015	13.72	6.76	6.96
	9/21/2015		7.13	6.59
	10/20/2015		6.44	7.28
	11/16/2015		6.74	6.98
	12/14/2015		6.56	7.16
	1/14/2016		6.19	7.53
	2/16/2016		6.75	6.97
	3/14/2016		5.85	7.87
	4/25/2016		6.49	7.23
	5/16/2016		6.73	6.99
	6/17/2016		N/A	-
	7/20/2016		6.18	7.54
	8/20/2016		6.25	7.47
	9/19/2016		6.48	7.24
	10/21/2016		6.61	7.11
	11/18/2016		6.7	7.02
	12/19/2016		6.67	7.05
	1/17/2017		6.11	7.61
	2/24/2017		N/A	-
	3/27/2017		N/A	-
4/17/2017	N/A	-		
5/22/2017	N/A	-		
6/20/2017	N/A	-		
MCWP-MW08	8/24/2015	12.21	7.64	4.57
	9/21/2015		7.42	4.79
	10/20/2015		7.61	4.60
	11/16/2015		7.40	4.81
	12/14/2015		6.62	5.59
	1/14/2016		8.46	3.75
	2/16/2016		8.27	3.94
	3/14/2016		7.96	4.25
	4/25/2016		7.83	4.38
	5/16/2016		6.87	5.34
	6/17/2016		6.97	5.24
	7/20/2016		7.76	4.45
	8/20/2016		7.77	4.44
	9/19/2016		7.74	4.47
	10/21/2016		8	4.21
	11/18/2016		7.27	4.94
	12/19/2016		8.57	3.64
	1/17/2017		8	4.21
	2/24/2017		8.77	3.44
	3/27/2017		8.81	3.40
4/17/2017	8.74	3.47		
5/22/2017	9.04	3.17		
6/20/2017	7.47	4.74		

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
MCWP-MW10	8/24/2015	11.11	5.70	5.41
	9/21/2015		5.55	5.56
	10/20/2015		5.81	5.30
	11/16/2015		5.74	5.37
	12/14/2015		4.59	6.52
	1/14/2016		8.09	3.02
	2/16/2016		7.98	3.13
	3/14/2016		8.04	3.07
	4/25/2016		7.07	4.04
	5/16/2016		5.63	5.48
	6/17/2016		5.73	5.38
	7/20/2016		6.02	5.09
	8/20/2016		6.34	4.77
	9/19/2016		6.70	4.41
	10/21/2016		6.61	4.50
	11/18/2016		5.57	5.54
	12/19/2016		N/A	-
	1/17/2017		8.11	3.00
	2/24/2017		8.45	2.66
	3/27/2017		8.7	2.41
4/17/2017	8.58	2.53		
5/22/2017	8.26	2.85		
6/20/2017	5.7	5.41		
P-4	8/24/2015	12.155	4.58	7.58
	9/21/2015		4.47	7.69
	10/20/2015		4.71	7.45
	11/16/2015		4.65	7.51
	12/14/2015		3.52	8.64
	1/14/2016		6.93	5.23
	2/16/2016		6.88	5.28
	3/14/2016		6.92	5.24
	4/25/2016		6.00	6.16
	5/16/2016		4.57	7.59
	6/17/2016		4.68	7.48
	7/20/2016		4.95	7.21
	8/20/2016		5.27	6.89
	9/19/2016		5.63	6.53
	10/21/2016		5.55	6.61
	11/18/2016		4.51	7.65
	12/19/2016		7.17	4.99
	1/17/2017		6.98	5.18
	2/24/2017		7.12	5.04
	3/27/2017		7.71	4.45
4/17/2017	7.48	4.68		
5/22/2017	7.22	4.94		
6/20/2017	4.72	7.44		

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
P-9	8/24/2015	12.165	5.07	7.10
	9/21/2015		4.90	7.27
	10/20/2015		5.18	6.99
	11/16/2015		5.08	7.09
	12/14/2015		3.92	8.25
	1/14/2016		7.49	4.68
	2/16/2016		7.53	4.64
	3/14/2016		7.66	4.51
	4/25/2016		6.49	5.68
	5/16/2016		5.02	7.15
	6/17/2016		5.09	7.08
	7/20/2016		5.34	6.83
	8/20/2016		5.70	6.47
	9/19/2016		6.06	6.11
	10/21/2016		6.01	6.16
	11/18/2016		4.91	7.26
	12/19/2016		7.81	4.36
	1/17/2017		7.68	4.49
	2/24/2017		7.82	4.35
	3/27/2017		8	4.17
4/17/2017	8.16	4.01		
5/22/2017	7.59	4.58		
6/20/2017	5.03	7.14		
SMBRP-2	8/24/2015	13.131	6.04	7.09
	9/21/2015		5.91	7.22
	10/20/2015		6.16	6.97
	11/16/2015		6.09	7.04
	12/14/2015		4.84	8.29
	1/14/2016		8.80	4.33
	2/16/2016		8.54	4.59
	3/14/2016		8.58	4.55
	4/25/2016		7.59	5.54
	5/16/2016		6.07	7.06
	6/17/2016		6.14	6.99
	7/20/2016		6.36	6.77
	8/20/2016		6.73	6.40
	9/19/2016		7.11	6.02
	10/21/2016		6.98	6.15
	11/18/2016		5.94	7.19
	12/19/2016		8.87	4.26
	1/17/2017		8.64	4.49
	2/24/2017		8.94	4.19
	3/27/2017		9.25	3.88
4/17/2017	9.15	3.98		
5/22/2017	8.68	4.45		
6/20/2017	5.78	7.35		

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
SMBRP-6	8/24/2015	26.875	16.49	10.39
	9/21/2015		15.95	10.93
	10/20/2015		16.66	10.22
	11/16/2015		16.47	10.41
	12/14/2015		14.78	12.10
	1/14/2016		14.68	12.20
	2/16/2016		15.22	11.66
	3/14/2016		14.43	12.45
	4/25/2016		16.60	10.28
	5/16/2016		16.81	10.07
	6/17/2016		17.87	9.01
	7/20/2016		18.52	8.36
	8/20/2016		19.01	7.87
	9/19/2016		19.61	7.27
	10/21/2016		18.13	8.75
	11/18/2016		16.12	10.76
	12/19/2016		14.46	12.42
	1/17/2017		14.14	12.74
	2/24/2017		13.14	13.74
	3/27/2017		15.01	11.87
4/17/2017	14.79	12.09		
5/22/2017	15.44	11.44		
6/20/2017	15.87	11.01		
SMBRP-7B	8/24/2015	18.985	10.69	8.30
	9/21/2015		10.62	8.37
	10/20/2015		10.77	8.22
	11/16/2015		10.78	8.21
	12/14/2015		10.60	8.39
	1/14/2016		10.83	8.16
	2/16/2016		11.08	7.91
	3/14/2016		10.84	8.15
	4/25/2016		11.23	7.76
	5/16/2016		11.04	7.95
	6/17/2016		11.08	7.91
	7/20/2016		11.31	7.68
	8/20/2016		11.54	7.45
	9/19/2016		11.68	7.31
	10/21/2016		11.81	7.18
	11/18/2016		11.49	7.50
	12/19/2016		11.33	7.66
	1/17/2017		10.18	8.81
	2/24/2017		8.13	10.86
	3/27/2017		9.68	9.31
4/17/2017	9.9	9.09		
5/22/2017	10.51	8.48		
6/20/2017	10.71	8.28		

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
EC-RC-MW01	8/24/2015	48.69	28.74	19.95
	9/21/2015		29.02	19.67
	10/20/2015		28.76	19.93
	11/16/2015		29.38	19.31
	12/14/2015		29.32	19.37
	1/14/2016		28.93	19.76
	2/16/2016		29.18	19.51
	3/14/2016		28.76	19.93
	4/25/2016		29.40	19.29
	5/16/2016		29.18	19.51
	6/17/2016		29.38	19.31
	7/20/2016		29.73	18.96
	8/20/2016		30.02	18.67
	9/19/2016		30.64	18.05
	10/21/2016		31.02	17.67
	11/18/2016		31.16	17.53
	12/19/2016		30.83	17.86
	1/17/2017		29.49	19.20
	2/24/2017		26.78	21.91
	3/27/2017		25.21	23.48
4/17/2017	24.34	24.35		
5/22/2017	23.31	25.38		
6/20/2017	23.54	25.15		
SMBRP-9	8/24/2015	50.32	38.24	12.08
	9/21/2015		38.46	11.86
	10/20/2015		38.62	11.70
	11/16/2015		N/A	-
	12/14/2015		38.86	11.46
	1/14/2016		38.95	11.37
	2/16/2016		39.03	11.29
	3/14/2016		38.97	11.35
	4/25/2016		38.82	11.50
	5/16/2016		38.82	11.50
	6/17/2016		38.86	11.46
	7/20/2016		39.06	11.26
	8/20/2016		39.17	11.15
	9/19/2016		39.33	10.99
	10/21/2016		39.55	10.77
	11/18/2016		39.67	10.65
	12/19/2016		39.79	10.53
	1/17/2017		39.82	10.50
	2/24/2017		38.75	11.57
	3/27/2017		37.59	12.73
4/17/2017	36.88	13.44		
5/22/2017	35.82	14.50		
6/20/2017	35.41	14.91		

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
SMBRP-10C	8/24/2015	16.25	7.37	8.88
	9/21/2015		7.64	8.61
	10/20/2015		7.96	8.29
	11/16/2015		8.16	8.09
	12/14/2015		8.06	8.19
	1/14/2016		6.11	10.14
	2/16/2016		6.57	9.68
	3/14/2016		4.80	11.45
	4/25/2016		6.59	9.66
	5/16/2016		6.86	9.39
	6/17/2016		6.90	9.35
	7/20/2016		7.72	8.53
	8/20/2016		8.12	8.13
	9/19/2016		8.54	7.71
	10/21/2016		8.78	7.47
	11/18/2016		8.89	7.36
	12/19/2016		7.95	8.30
	1/17/2017		2.72	13.53
	2/24/2017		0.99	15.26
	3/27/2017		2.06	14.19
4/17/2017	3.97	12.28		
5/22/2017	5.52	10.73		
6/20/2017	6.22	10.03		
SMBRP-12	8/24/2015	12.615	7.52	5.10
	9/21/2015		6.91	5.71
	10/20/2015		6.72	5.90
	11/16/2015		6.75	5.87
	12/14/2015		6.42	6.20
	1/14/2016		6.95	5.67
	2/16/2016		6.85	5.77
	3/14/2016		6.09	6.53
	4/25/2016		6.76	5.86
	5/16/2016		6.40	6.22
	6/17/2016		5.39	7.23
	7/20/2016		6.05	6.57
	8/20/2016		6.85	5.77
	9/19/2016		6.44	6.18
	10/21/2016		8.09	4.53
	11/18/2016		6.52	6.10
	12/19/2016		7.16	5.46
	1/17/2017		6.48	6.14
	2/24/2017		7.61	5.01
	3/27/2017		6.96	5.66
4/17/2017	7.29	5.33		
5/22/2017	7.63	4.99		
6/20/2017	7.19	5.43		

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
SMBRP-13	8/24/2015	13.58	8.32	5.26
	9/21/2015		7.98	5.60
	10/20/2015		8.20	5.38
	11/16/2015		7.87	5.71
	12/14/2015		6.85	6.73
	1/14/2016		8.24	5.34
	2/16/2016		8.00	5.58
	3/14/2016		7.61	5.97
	4/25/2016		7.66	5.92
	5/16/2016		6.92	6.66
	6/17/2016		7.52	6.06
	7/20/2016		8.30	5.28
	8/20/2016		8.03	5.55
	9/19/2016		7.45	6.13
	10/21/2016		8.33	5.25
	11/18/2016		7.14	6.44
	12/19/2016		8.34	5.24
	1/17/2017		7.48	6.10
	2/24/2017		9.32	4.26
	3/27/2017		7.83	5.75
4/17/2017	8.55	5.03		
5/22/2017	8.81	4.77		
6/20/2017	7.78	5.80		
SMBRP-15B	8/24/2015	16.765	dry	-
	9/21/2015		dry	-
	10/20/2015		dry	-
	11/16/2015		dry	-
	12/14/2015		dry	-
	1/14/2016		dry	-
	2/16/2016		dry	-
	3/14/2016		dry	-
	4/25/2016		dry	-
	5/16/2016		dry	-
	6/17/2016		dry	-
	7/20/2016		dry	-
	8/20/2016		dry	-
	9/19/2016		dry	-
	10/21/2016		dry	-
	11/18/2016		dry	-
	12/19/2016		dry	-
	1/17/2017		dry	-
	2/24/2017		dry	-
	3/27/2017		dry	-
4/17/2017	dry	-		
5/22/2017	dry	-		
6/20/2017	dry	-		

Table 1
Groundwater Elevations

Shallow Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
SMBRP-16	8/24/2015	14.5	4.95	9.55
	9/21/2015		4.96	9.54
	10/20/2015		5.34	9.16
	11/16/2015		5.55	8.95
	12/14/2015		5.59	8.91
	1/14/2016		3.79	10.71
	2/16/2016		4.60	9.90
	3/14/2016		5.27	9.23
	4/25/2016		4.65	9.85
	5/16/2016		4.92	9.58
	6/17/2016		5.15	9.35
	7/20/2016		5.49	9.01
	8/20/2016		5.72	8.78
	9/19/2016		5.92	8.58
	10/21/2016		6.18	8.32
	11/18/2016		6.02	8.48
	12/19/2016		5.23	9.27
	1/17/2017		2.54	11.96
	2/24/2017		0.51	13.99
	3/27/2017		2.61	11.89
4/17/2017	4.28	10.22		
5/22/2017	N/A	-		
6/20/2017	N/A	-		

Notes:

N/A: well not accessible

TOC: top of well casing

'-': no data available

ft bTOC: feet below top of well casing

TOC elevation referenced to NAVD88

Table 1
Groundwater Elevations

Deep Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
MCWP-MW01	8/24/2015	17.9	10.22	7.68
	9/21/2015		9.71	8.19
	10/20/2015		10.00	7.90
	11/16/2015		9.91	7.99
	12/14/2015		9.23	8.67
	1/14/2016		10.45	7.45
	2/16/2016		11.02	6.88
	3/14/2016		10.53	7.37
	4/25/2016		10.89	7.01
	5/16/2016		10.70	7.20
	6/17/2016		10.75	7.15
	7/20/2016		11.09	6.81
	8/20/2016		11.30	6.60
	9/19/2016		11.13	6.77
	10/21/2016		11.19	6.71
	11/18/2016		9.94	7.96
	12/19/2016		10.56	7.34
	1/17/2017		10.17	7.73
	2/24/2017		10.68	7.22
	3/27/2017		11.47	6.43
4/17/2017	11.33	6.57		
5/22/2017	11.83	6.07		
6/20/2017	10.47	7.43		
MCWP-MW02	8/24/2015	18.06	10.39	7.67
	9/21/2015		9.92	8.14
	10/20/2015		10.25	7.81
	11/16/2015		10.16	7.90
	12/14/2015		9.14	8.92
	1/14/2016		10.68	7.38
	2/16/2016		11.13	6.93
	3/14/2016		10.72	7.34
	4/25/2016		11.08	6.98
	5/16/2016		10.55	7.51
	6/17/2016		10.82	7.24
	7/20/2016		11.10	6.96
	8/20/2016		11.35	6.71
	9/19/2016		11.59	6.47
	10/21/2016		11.41	6.65
	11/18/2016		10.16	7.90
	12/19/2016		10.82	7.24
	1/17/2017		10.44	7.62
	2/24/2017		10.68	7.38
	3/27/2017		11.96	6.10
4/17/2017	11.35	6.71		
5/22/2017	12.03	6.03		
6/20/2017	10.74	7.32		

Table 1
Groundwater Elevations

Deep Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
MCWP-MW03	8/24/2015	15.31	7.65	7.66
	9/21/2015		7.52	7.79
	10/20/2015		7.78	7.53
	11/16/2015		7.34	7.97
	12/14/2015		6.75	8.56
	1/14/2016		8.38	6.93
	2/16/2016		8.43	6.88
	3/14/2016		8.05	7.26
	4/25/2016		8.63	6.68
	5/16/2016		8.35	6.96
	6/17/2016		8.50	6.81
	7/20/2016		8.30	7.01
	8/20/2016		8.87	6.44
	9/19/2016		8.23	7.08
	10/21/2016		8.94	6.37
	11/18/2016		7.64	7.67
	12/19/2016		8.09	7.22
	1/17/2017		7.63	7.68
	2/24/2017		N/A	-
	3/27/2017		N/A	-
4/17/2017	N/A	-		
5/22/2017	N/A	-		
6/20/2017	N/A	-		
MCWP-MW04D	8/24/2015	15.43	9.35	6.08
	9/21/2015		8.84	6.59
	10/20/2015		9.16	6.27
	11/16/2015		9.13	6.30
	12/14/2015		8.39	7.04
	1/14/2016		9.59	5.84
	2/16/2016		10.24	5.19
	3/14/2016		9.69	5.74
	4/25/2016		10.07	5.36
	5/16/2016		9.83	5.60
	6/17/2016		9.97	5.46
	7/20/2016		10.22	5.21
	8/20/2016		10.33	5.10
	9/19/2016		10.32	5.11
	10/21/2016		10.4	5.03
	11/18/2016		9.12	6.31
	12/19/2016		9.68	5.75
	1/17/2017		9.34	6.09
	2/24/2017		9.83	5.60
	3/27/2017		10.61	4.82
4/17/2017	10.51	4.92		
5/22/2017	10.99	4.44		
6/20/2017	9.62	5.81		

Table 1
Groundwater Elevations

Deep Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
MCWP-MW05	8/24/2015	13.92	7.62	6.30
	9/21/2015		7.30	6.62
	10/20/2015		7.47	6.45
	11/16/2015		7.42	6.50
	12/14/2015		6.39	7.53
	1/14/2016		7.82	6.10
	2/16/2016		8.37	5.55
	3/14/2016		7.96	5.96
	4/25/2016		8.27	5.65
	5/16/2016		7.78	6.14
	6/17/2016		8.05	5.87
	7/20/2016		8.41	5.51
	8/20/2016		8.69	5.23
	9/19/2016		8.98	4.94
	10/21/2016		N/A	-
	11/18/2016		N/A	-
	12/19/2016		N/A	-
	1/17/2017		N/A	-
	2/24/2017		N/A	-
	3/27/2017		8.39	5.53
4/17/2017	8.48	5.44		
5/22/2017	N/A	-		
6/20/2017	N/A	-		
MCWP-MW06	8/24/2015	16.05	9.87	6.18
	9/21/2015		9.40	6.65
	10/20/2015		9.71	6.34
	11/16/2015		9.61	6.44
	12/14/2015		8.64	7.41
	1/14/2016		10.12	5.93
	2/16/2016		10.58	5.47
	3/14/2016		10.14	5.91
	4/25/2016		10.49	5.56
	5/16/2016		10.06	5.99
	6/17/2016		10.27	5.78
	7/20/2016		10.60	5.45
	8/20/2016		10.86	5.19
	9/19/2016		11.07	4.98
	10/21/2016		10.9	5.15
	11/18/2016		9.62	6.43
	12/19/2016		10.2	5.85
	1/17/2017		9.87	6.18
	2/24/2017		10.05	6.00
	3/27/2017		11.41	4.64
4/17/2017	10.81	5.24		
5/22/2017	11.43	4.62		
6/20/2017	10.16	5.89		

Table 1
Groundwater Elevations

Deep Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
MCWP-MW07D	8/24/2015	13.21	7.51	5.70
	9/21/2015		7.44	5.77
	10/20/2015		7.67	5.54
	11/16/2015		7.27	5.94
	12/14/2015		6.59	6.62
	1/14/2016		8.32	4.89
	2/16/2016		8.32	4.89
	3/14/2016		7.92	5.29
	4/25/2016		8.47	4.74
	5/16/2016		8.26	4.95
	6/17/2016		8.45	4.76
	7/20/2016		8.18	5.03
	8/20/2016		8.77	4.44
	9/19/2016		8.12	5.09
	10/21/2016		8.81	4.40
	11/18/2016		7.54	5.67
	12/19/2016		7.99	5.22
	1/17/2017		7.52	5.69
	2/24/2017		N/A	-
	3/27/2017		N/A	-
4/17/2017	N/A	-		
5/22/2017	N/A	-		
6/20/2017	N/A	-		
MCWP-MW09	8/24/2015	16.3	5.69	10.61
	9/21/2015		5.42	10.88
	10/20/2015		5.68	10.62
	11/16/2015		5.50	10.80
	12/14/2015		4.75	11.55
	1/14/2016		6.37	9.93
	2/16/2016		6.42	9.88
	3/14/2016		6.04	10.26
	4/25/2016		6.38	9.92
	5/16/2016		5.85	10.45
	6/17/2016		5.96	10.34
	7/20/2016		6.44	9.86
	8/20/2016		6.54	9.76
	9/19/2016		6.26	10.04
	10/21/2016		6.71	9.59
	11/18/2016		5.68	10.62
	12/19/2016		6.31	9.99
	1/17/2017		5.79	10.51
	2/24/2017		6.78	9.52
	3/27/2017		7.12	9.18
4/17/2017	6.83	9.47		
5/22/2017	7.72	8.58		
6/20/2017	6.24	10.06		

Notes:

N/A: well not accessible

'-': no data available

TOC elevation referenced to NAVD88

TOC: top of well casing

ft bTOC: feet below top of well casing

Table 1
Groundwater Elevations

Winter Canyon Groundwater Monitoring Wells				
Well ID	Date	TOC Elevation (ft)	Depth to Water (ft bTOC)	Groundwater Elevation
LAMW-5S	8/24/2015	104.55	53.71	50.84
	9/21/2015		53.30	51.25
	10/20/2015		53.74	50.81
	11/16/2015		53.90	50.65
	12/14/2015		53.54	51.01
	1/14/2016		54.02	50.53
	2/16/2016		53.69	50.86
	3/14/2016		53.92	50.63
	4/25/2016		53.88	50.67
	5/16/2016		53.98	50.57
	6/17/2016		53.97	50.58
	7/20/2016		54.23	50.32
	8/20/2016		54.42	50.13
	9/19/2016		54.77	49.78
	10/21/2016		55	49.55
	11/18/2016		54.91	49.64
	12/19/2016		53.83	50.72
	1/17/2017		53.81	50.74
	2/24/2017		50.54	54.01
	3/27/2017		48.71	55.84
4/17/2017	48.24	56.31		
5/22/2017	48.23	56.32		
6/20/2017	48.39	56.16		
SMBRP-11	8/24/2015	18.35	8.88	9.47
	9/21/2015		8.70	9.65
	10/20/2015		8.36	9.99
	11/16/2015		8.64	9.71
	12/14/2015		8.35	10.00
	1/14/2016		8.00	10.35
	2/16/2016		8.30	10.05
	3/14/2016		7.89	10.46
	4/25/2016		8.63	9.72
	5/16/2016		8.62	9.73
	6/17/2016		8.39	9.96
	7/20/2016		8.00	10.35
	8/20/2016		8.44	9.91
	9/19/2016		8.56	9.79
	10/21/2016		8.71	9.64
	11/18/2016		8.47	9.88
	12/19/2016		8.71	9.64
	1/17/2017		7.81	10.54
	2/24/2017		7.22	11.13
	3/27/2017		7.97	10.38
4/17/2017	8.19	10.16		
5/22/2017	8.45	9.90		
6/20/2017	8.41	9.94		

Notes:

N/A: well not accessible

'-': no data available

TOC elevation referenced to NAVD88

TOC: top of well casing

ft bTOC: feet below top of well casing

Table 2
Baseline Surface Water Analysis Matrix
Second Quarter 2017

Surface Water	Location									
	N-001	N-002	N-003	N-004	L-001	L-002	L-003	L-004	L-005	L-006
<i>Laboratory Analysis</i>										
Total and Fecal Coliform	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Nitrate as Nitrogen	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Nitrite as Nitrogen	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ammonia Nitrogen	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Organic Nitrogen	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Kjeldahl Nitrogen	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Total Phosphorous	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes:

✓ : Laboratory analysis completed

- : Sampling & analysis not required

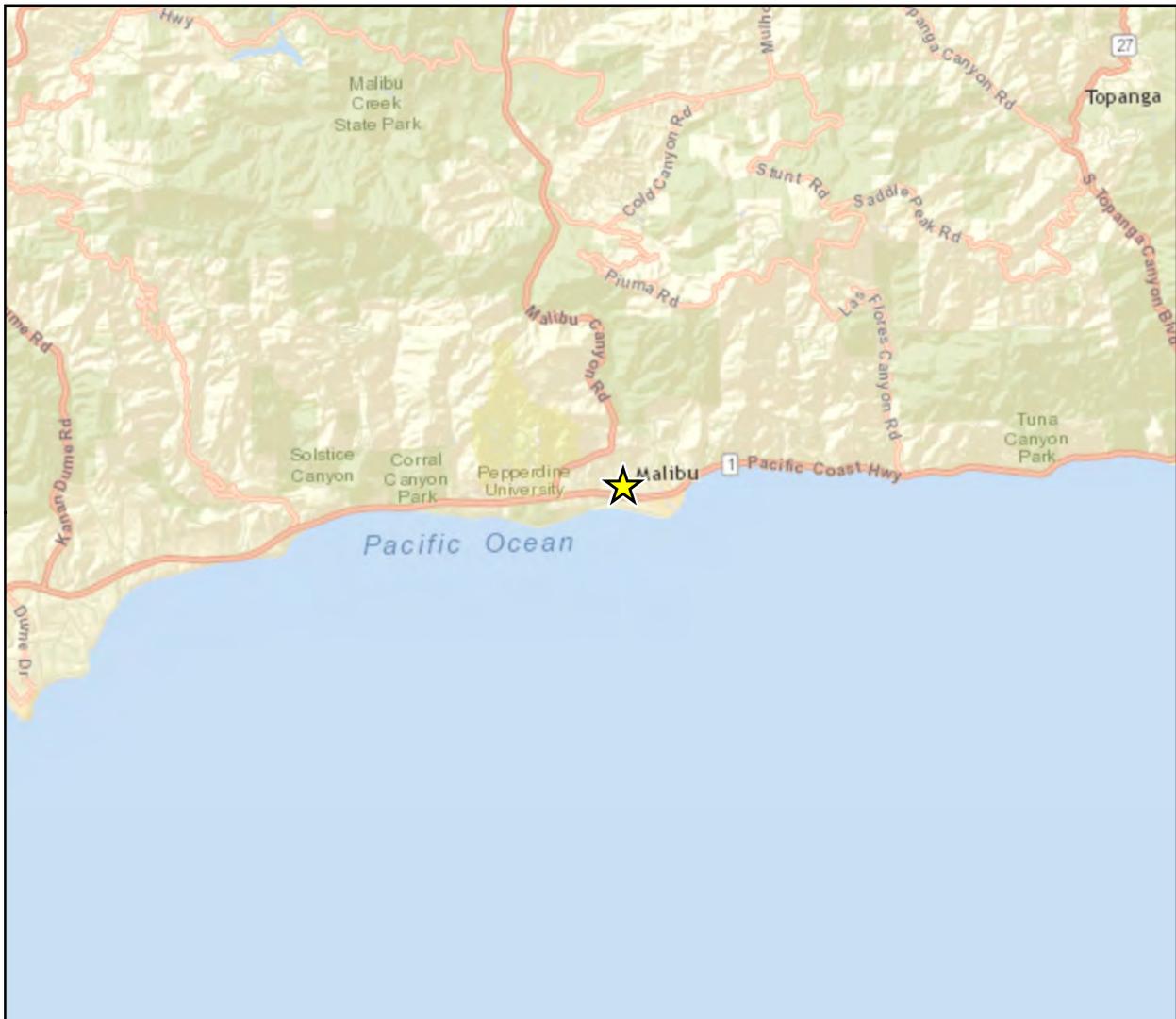
Table 3
Surface Water Quality Analytical Results

Location	Monitoring Depth	Well ID	Sample Date	Coliform Bacteria Analysis (MPN/100mL)		Inorganic Analysis (mg/L)					
				Total	Fecal	Nitrate Nitrogen	Nitrite Nitrogen	Nitrogen, Organic	Ammonia Nitrogen	Kjeldahl Nitrogen	Phosphorous, Total
Near Shore	Ankle Depth	N-001	9/25/2015	70	46	<0.1	<0.1	<0.5	<0.2	<0.5	1.760
			12/1/2015	<1.8	<1.8	<0.1	<0.1	<0.5	<0.2	<0.5	0.775
			3/18/2016	<1.8	<1.8	0.1	<0.1	0.937	<0.2	0.937	0.400
			6/16/2016	<1.8	<1.8	<0.1	<0.1	<0.5	<0.2	<0.5	0.658
			9/23/2016	<1.8	<1.8	<0.1	<0.1	<0.5	<0.2	<0.5	1.970
			12/20/2016	49	49	0.1	<0.1	<0.5	<0.2	<0.5	1.010
			3/31/2017	14	6.8	0.2	<0.1	<0.5	<0.2	<0.5	1.690
			6/19/2017	23	7.8	<0.1	<0.1	0.519	<0.2	0.596	2.060
		N-002	9/25/2015	13	13	<0.1	<0.1	<0.5	<0.2	<0.5	1.480
			12/1/2015	<1.8	<1.8	<0.1	<0.1	<0.5	<0.2	<0.5	1.380
			3/18/2016	<1.8	<1.8	0.1	<0.1	<0.5	<0.2	<0.5	1.420
			6/16/2016	<1.8	<1.8	<0.1	<0.1	<0.5	<0.2	<0.5	1.030
			9/23/2016	240	6.8	<0.1	<0.1	<0.5	<0.2	<0.5	1.300
			12/20/2016	<1.8	<1.8	0.1	<0.1	<0.5	<0.2	<0.5	1.350
			3/31/2017	13	<1.8	0.1	<0.1	<0.5	<0.2	<0.5	0.127
			6/19/2017	<1.8	<1.8	<0.1	<0.1	2.25	<0.2	2.25	2.030
		N-003	9/25/2015	11	4	<0.1	<0.1	<0.5	<0.2	<0.5	0.347
			12/1/2015	14	14	<0.1	<0.1	<0.5	<0.2	<0.5	1.460
			3/18/2016	13	<1.8	0.1	<0.1	0.865	<0.2	0.865	<0.1
			6/16/2016	<1.8	<1.8	<0.1	<0.1	<0.5	<0.2	<0.5	<0.1
			9/23/2016	2	2	<0.1	<0.1	<0.5	<0.2	<0.5	1.460
			12/20/2016	79	79	0.1	<0.1	<0.5	<0.2	<0.5	1.310
			3/31/2017	350	33	0.1	<0.1	10.8	<0.2	10.8	0.467
			6/19/2017	7.8	<1.8	<0.1	<0.1	<0.5	<0.2	<0.5	0.474
		N-004	9/25/2015	14	9.3	<0.1	<0.1	<0.5	<0.2	<0.5	0.288
			12/1/2015	2	<1.8	<0.1	<0.1	<0.5	<0.2	<0.5	1.010
			3/18/2016	2	<1.8	0.1	<0.1	<0.5	<0.2	<0.5	0.648
			6/16/2016	6.8	<1.8	<0.1	<0.1	<0.5	<0.2	<0.5	1.250
			9/23/2016	4.5	<1.8	<0.1	<0.1	<0.5	<0.2	<0.5	1.290
			12/20/2016	7.8	<1.8	<0.1	<0.1	<0.5	<0.2	<0.5	1.290
			3/31/2017	6.8	2	<0.1	0.153	<0.5	<0.2	<0.5	1.870
			6/19/2017	7.8	7.8	<0.1	<0.1	0.647	<0.2	0.647	1.240

Table 3
Surface Water Quality Analytical Results

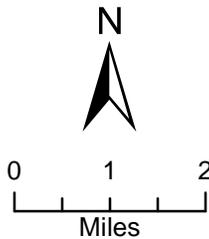
Location	Monitoring Depth	Well ID	Sample Date	Coliform Bacteria Analysis (MPN/100mL)		Inorganic Analysis (mg/L)					
				Total	Fecal	Nitrate Nitrogen	Nitrite Nitrogen	Nitrogen, Organic	Ammonia Nitrogen	Kjeldahl Nitrogen	Phosphorous, Total
Malibu Lagoon and Creek	1 foot BSW	L-001	9/25/2015	920	49	<0.1	<0.1	2.26	<0.2	2.26	0.558
			12/1/2015	350	33	<0.1	<0.1	0.837	<0.2	0.837	0.218
			3/18/2016	350	23	0.3	<0.1	1.99	<0.2	1.99	0.635
			6/16/2016	350	4.5	<0.1	<0.1	0.696	<0.2	0.696	0.178
			9/23/2016	540	79	<0.1	<0.1	1.04	<0.2	1.04	0.153
			12/20/2016	>1600	49	3.2	<0.1	<0.5	<0.2	<0.5	0.934
			3/31/2017	540	<1.8	1.5	<0.1	1.84	<0.2	1.84	0.577
		6/19/2017	350	49	0.6	<0.1	0.617	<0.2	0.617	0.387	
		L-002	9/25/2015	920	49	<0.1	<0.1	1.83	<0.2	1.83	0.404
			12/1/2015	540	33	<0.1	<0.1	0.591	<0.2	0.591	0.226
			3/18/2016	280	49	0.6	<0.1	0.852	<0.2	0.852	0.379
			6/16/2016	33	2	<0.1	<0.1	0.964	<0.2	0.964	<0.1
			9/23/2016	14	4.5	0.1	<0.1	0.77	<0.2	0.77	<0.1
			12/20/2016	>1600	240	1.6	<0.1	<0.5	<0.2	<0.5	0.621
			3/31/2017	130	33	1.5	<0.1	<0.5	<0.2	<0.5	0.464
		6/19/2017	540	33	0.2	<0.1	<0.5	<0.2	0.604	0.459	
		L-003	9/25/2015	540	70	<0.1	<0.1	2.35	<0.2	2.35	0.379
			12/1/2015	240	17	<0.1	<0.1	<0.5	<0.2	<0.5	0.213
			3/18/2016	240	23	0.6	<0.1	1.03	<0.2	1.03	0.397
			6/16/2016	79	4	<0.1	<0.1	<0.5	<0.2	<0.5	0.139
			9/23/2016	23	4.5	<0.1	<0.1	1.21	<0.2	1.21	<0.1
			12/20/2016	220	31	2.7	<0.1	<0.5	<0.2	<0.5	0.984
			3/31/2017	70	23	1.2	<0.1	0.511	<0.2	0.511	0.446
		6/19/2017	220	17	<0.1	<0.1	0.714	<0.2	0.714	1.690	
		L-004	9/25/2015	170	23	<0.1	<0.1	2.67	<0.2	2.67	0.266
			12/1/2015	170	130	<0.1	<0.1	0.583	<0.2	0.583	0.200
			3/18/2016	350	170	0.5	<0.1	0.798	<0.2	0.798	0.350
			6/16/2016	49	2	<0.1	<0.1	0.667	<0.2	0.667	0.114
			9/23/2016	17	4.5	<0.1	<0.1	0.627	<0.2	0.627	<0.1
			12/20/2016	540	79	2.4	<0.1	<0.5	<0.2	<0.5	0.833
			3/31/2017	540	170	0.4	<0.1	1.67	<0.2	1.67	0.394
		6/19/2017	540	350	<0.1	<0.1	1.06	<0.2	1.06	0.477	
		L-005	9/25/2015	350	49	<0.1	<0.1	3.8	<0.2	3.8	0.372
			12/1/2015	350	49	<0.1	<0.1	<0.5	<0.2	<0.5	0.123
			3/18/2016	540	350	1.6	<0.1	1.37	<0.2	1.37	0.661
			6/16/2016	26	6.8	<0.1	<0.1	1.16	<0.2	1.16	0.133
			9/23/2016	7.8	7.8	<0.1	<0.1	<0.5	<0.2	0.53	<0.1
			12/20/2016	350	49	2.5	<0.1	<0.5	<0.2	<0.5	0.865
			3/31/2017	170	22	0.2	<0.1	<0.5	<0.2	<0.5	0.104
		6/19/2017	240	240	<0.1	<0.1	0.976	<0.2	0.976	0.902	
		L-006	9/25/2015	170	170	<0.1	<0.1	3.59	<0.2	3.67	0.320
			12/1/2015	350	49	<0.1	<0.1	<0.5	<0.2	<0.5	0.168
			3/18/2016	920	130	0.4	<0.1	1.46	<0.2	1.46	0.366
			6/16/2016	17	7.8	<0.1	<0.1	1.18	<0.2	1.18	0.172
			9/23/2016	7.8	7.8	<0.1	<0.1	1.24	<0.2	1.24	<0.1
			12/20/2016	130	14	0.3	<0.1	<0.5	<0.2	<0.5	0.287
			3/31/2017	540	11	<0.1	<0.1	13.6	<0.2	13.6	3.500
		6/19/2017	33	7.8	<0.1	<0.1	1.12	<0.2	1.12	0.714	

Notes:
mg/L: milligrams per liter
MPN/100mL: Most Probable Number per 100 milliliters
BSW: below surface water
<: not detected above the Practical Quantitation Limit (PQL)



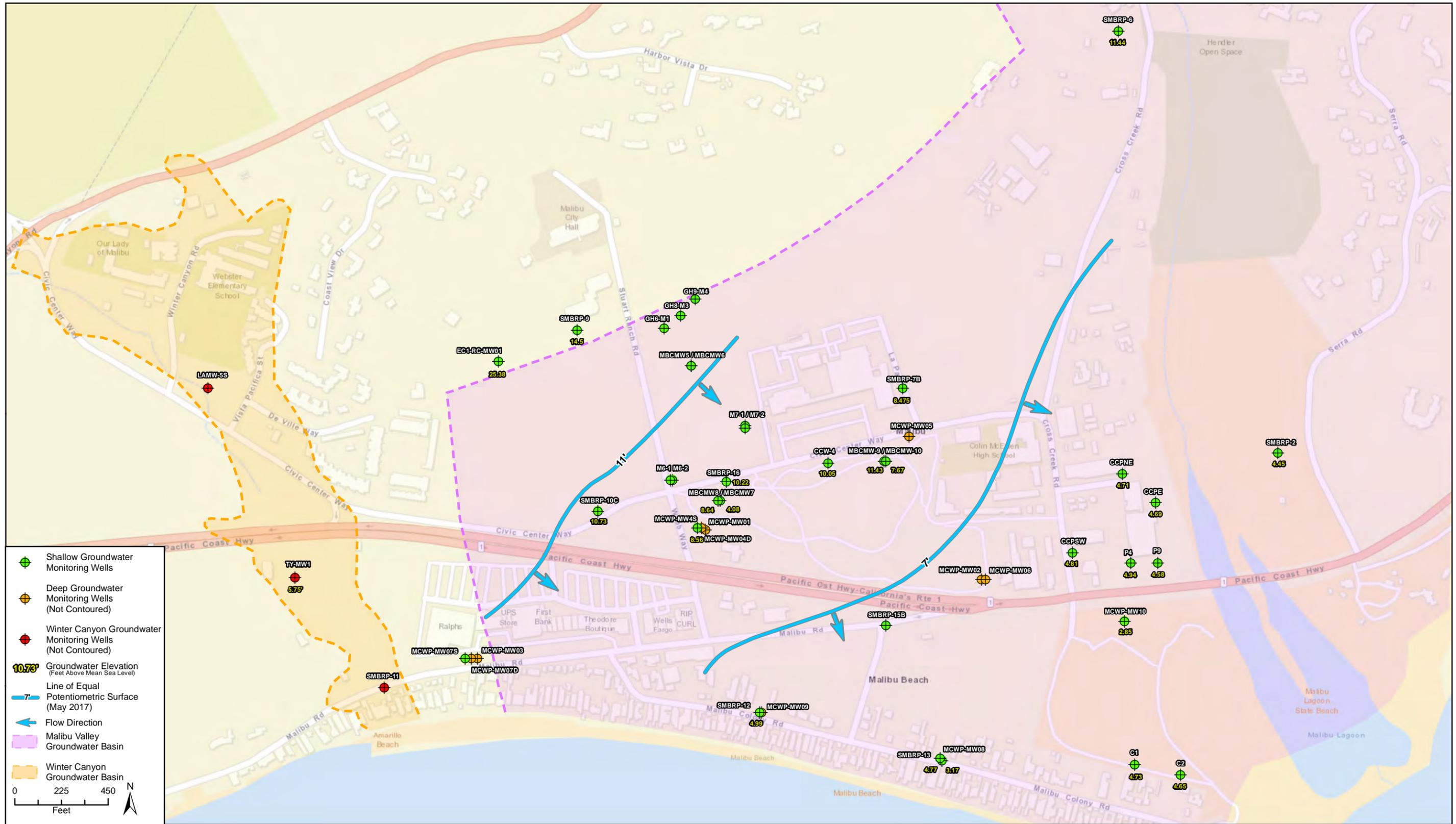
Imagery provided by National Geographic Society, ESRI and its licensors © 2016. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

★ Project Location



Vicinity Map

Figure 1



Imagery provided by ESRI and its licensors © 2017.

Shallow Groundwater Elevations
 May 2017

Appendix A

Groundwater and Surface Water Field Sheets

Malibu DTW
 Civic Center WWTP
 Monitoring Program

Arrive : 0845
 Depart : 1330

Peter Shellenbarger
 4-17-17

Malibu Creek Fall @ crossing Serra Retreat Bridge

Malibu Lagoon - tidal → Low water level (low stage)

Table 1

Groundwater Monitoring Well Construction

Well ID	Total Well Depth (ft bTOC)	Well Diameter (in)	TOC Elevation (ft amsl)	Depth to Water ^{4/17/17} 12/19/2016	Time	Depth to Water 8/24/2015 (ft bTOC)
1 C-1	14.5	n/a	11.47	7.32	1038	n/a
2 C-2	14.5	2	11.19	7.05	1033	5.11
3 CCPE	20	2	12.935	8.90	1109	5.76
4 CCPNE		2	13.675	9.06	1103	6.44
5 CCPSW		2	13.67	8.64	1116	6.29
6 CCW-4		1	15.765	5.30	0936	6.5
7 GH6-M1	35	2		26.91	1224	28.92
8 GH8-M3	40	2		25.44	1222	28.37
9 GH9-M4	45	2		24.79	1218	30.31
10 Lagoon		n/a		N/A	—	n/a
11 LAMW-5S	20	4	104.55	5.83 48.24	0949 0922	53.71
12 M6-1	45	2		6.77	1235	6.61
13 M6-2	20	2		4.80	1238	5.76
14 M7-1	40	2		7.52	1213	8.09
15 M7-2	25	2		6.88	1209	7.78
16 MBCMW-5	19.4	n/a	29.03	n/a	—	n/a
17 MBCMW-6	64.26	n/a	29.02	N/A	—	n/a
18 MBCMW-7	52.5	2	16.635	11.89	0933	11.26
19 MBCMW-8	10	2	16.53	7.45	0930	9.11
20 MBCMW-9	10	2	17.71	5.99	0949	8.7
21 MBCMW-10	53	2	17.74	9.43	0947	8.63
22 MCWP-MW01	148	6		11.33	1130	10.22
23 MCWP-MW02	145	6	18.06	11.35	1124	10.39
24 MCWP-MW03	134	6		N/A	—	7.65
25 MCWP-MW04D	148	4		10.51	1133	9.35
26 MCWP-MW04S	20	4		6.19	1137	7.55
27 MCWP-MW05	158	4		8.48	0944	7.62

breaux
 Adkinson
 House

28	MCWP-MW06	153	2		10.81	1122	9.87
29	MCWP-MW07D	134	2		NA	—	7.51
30	MCWP-MW07S	20	2		NA	—	6.76
31	MCWP-MW08	77	2		8.74	1256	7.64
32	MCWP-MW09	95	2	16.3	10.83	1303	7.52
33	MCWP-MW10	60	2		8.58	1017	5.7
34	P-4	12.5	4	12.155	7.48	1103	4.58
35	P-9	14.3	4	12.165	8.16	1107	5.07
36	SMBRP-2	25	2	13.131	9.15	0910 1003	6.04
37	SMBRP-6	25	2	26.875	14.79	0956	16.49
38	SMBRP-7b	45	2	18.985	9.90	0941	10.69
39	SMBRP-8 (EG-RC)	60	4		24.34	0911 0912	28.74
40	SMBRP-9	45	2	50.32	36.88	0849	38.24
41	SMBRP-10C	25	2	16.25	3.97	0918	7.37
42	SMBRP-11	20	2	18.35	8.19	1158	8.88
43	SMBRP-12	25	2	12.615	7.29	1259	5.69
44	SMBRP-13	20	2	13.58	8.55	1253	8.32
45	SMBRP-15b	25	1	16.765	Dry	—	dry, recorded depth 8.77
46	SMBRP-16	25	2	14.5	4.28	0927	4.95



u

Malibu Creek Stage Low @ SMBPP-6
↳ excessive algae growth noted

5-22-17

Malibu DTW
May 2017

Malibu Lagoon open (Berm) → tidal
Stage full

Time in: 0815
Time out: 1250

Table 1
Groundwater Monitoring Well Construction

Well ID	Total Well Depth (ft bTOC)	Well Diameter (in)	TOC Elevation (ft amsl)	5/22/17 Depth to Water 12/19/2016	Time	Depth to Water 8/24/2015 (ft bTOC)
1 C-1	14.5	n/a	11.47	6.74	1019	n/a
2 C-2	14.5	2	11.19	6.54	1016	5.11
3 CCPE	20	2	12.935	8.25	1043	5.76
4 CCPNE		2	13.675	8.97	1046	6.44
5 CCPSW		2	13.67	8.86	1050	6.29
6 CCW-4		1	15.765	5.72	0912	6.5
7 GH6-M1	35	2		26.16	1147	28.92
8 GH8-M3	40	2		25.13	1143	28.37
9 GH9-M4	45	2		29.08	1140	30.31
10 Lagoon		n/a		N/A	N/A	n/a
11 LAMW-5S	20	4	104.55	48.23	0828	53.71
12 M6-1	45	2		7.74	1153	6.61
13 M6-2	20	2		5.98	1156	5.76
14 M7-1	40	2		8.28	1133	8.09
15 M7-2	25	2		7.73	1130	7.78
16 MBCMW-5	19.4	n/a	29.03	NA	NA	n/a
17 MBCMW-6	64.26	n/a	29.02	NA	NA	n/a
18 MBCMW-7	52.5	2	16.635	12.56	0907	11.26
19 MBCMW-8	10	2	16.53	7.89	0905	9.11
20 MBCMW-9	10	2	17.71	6.28	0923	8.7
21 MBCMW-10	53	2	17.74	10.07	0921	8.63
22 MCWP-MW01	148	6		11.83	1105	10.22
23 MCWP-MW02	145	6	18.06	12.03	1058	10.39
24 MCWP-MW03	134	6		Civic Center WWTP Construction		7.65
25 MCWP-MW04D	148	4		10.99	1107	9.35
26 MCWP-MW04S	20	4		6.73	1111	7.55
27 MCWP-MW05	158	4		No access WWTP Construction		7.62
28 MCWP-MW06	153	2		11.43	1054	9.87

29	MCWP-MW07D	134	2			No Access WWTP	Constructed	7.51
30	MCWP-MW07S	20	2					6.76
31	MCWP-MW08	77	2			9.04	1234	7.64
32	MCWP-MW09	95	2	16.3		7.72	1240	7.52
33	MCWP-MW10	60	2			8.26	1008	5.7
34	P-4	12.5	4	12.155		7.22	1028	4.58
35	P-9	14.3	4	12.165		7.59	1031	5.07
36	SMBRP-2	25	2	13.131		8.68	0955	6.04
37	SMBRP-6	25	2	26.875		15.44	0932	16.49
38	SMBRP-7b	45	2	18.985		10.51	0918	10.69
39	SMBRP-8 (EG-RC)	60	4			23.31	0843	28.74
40	SMBRP-9	45	2	50.32		35.82	0838	38.24
41	SMBRP-10C	25	2	16.25		5.52	0932	7.37
42	SMBRP-11	20	2	18.35		8.45	1123	8.88
43	SMBRP-12	25	2	12.615		7.63	1244	5.69
44	SMBRP-13	20	2	13.58		8.81	1229	8.32
45	SMBRP-15b	25	1	16.765		—————	—————	dry, recorded depth 8.77
46	SMBRP-16	25	2	14.5		NO ACCESS WWTP	—————	4.95

No Access to many wells along Civic Center
 Why due to active construction for WWTP infrastructure

6.20.17

Malibu Civic Center DTW

Sampler: Peter Shellenbarger

Time In: 0745

Time Out: 1215

Malibu Creek @ Bridge → low water, algae mats dominate wetted width

Malibu Lagoon → full, clear Bern, high H₂O level

Table 1

Groundwater Monitoring Well Construction

Well ID	Total Well Depth (ft bTOC)	Well Diameter (in)	TOC Elevation (ft amsl)	Depth to Water 6/20/2017	Time	Depth to Water 8/24/2015 (ft bTOC)
1 C-1	14.5	n/a	11.47	4.49	0940	n/a
2 C-2	14.5	2	11.19	3.81	0935	5.11
3 CCPE	20	2	12.935	5.73	0956	5.76
4 CCPNE		2	13.675	6.63	0959	6.44
5 CCPSW		2	13.67	6.59	1003	6.29
6 CCW-4		1	15.765	6.27	0831	6.5
7 GH6-M1	35	2		26.13	1123	28.92
8 GH8-M3	40	2		29.38	1119	28.37
9 GH9-M4	45	2		26.30	1116	30.31
10 Lagoon		n/a				n/a
11 LAMW-5S	20	4	104.55	48.39	0749	53.71
12 M6-1	45	2		7.14	1132	6.61
13 M6-2	20	2		6.45	1135	5.76
14 M7-1	40	2		8.22	1105	8.09
15 M7-2	25	2		8.07	1101	7.78
16 MBCMW-5	19.4	n/a	29.03			n/a
17 MBCMW-6	64.26	n/a	29.02			n/a
18 MBCMW-7	52.5	2	16.635	11.57	0825	11.26
19 MBCMW-8	10	2	16.53	8.82	0828	9.11
20 MBCMW-9	10	2	17.71	6.76	0843	8.7
21 MBCMW-10	53	2	17.74	8.87	0840	8.63
22 MCWP-MW01	148	6		10.47	1029	10.22
23 MCWP-MW02	145	6	18.06	10.77	1010	10.39
24 MCWP-MW03	134	6		No access WWTP		7.65
25 MCWP-MW04D	148	4		9.62	1032	9.35
26 MCWP-MW04S	20	4		7.41	1035	7.55
27 MCWP-MW05	158	4		No Access WWTP Pump Station		7.62
28 MCWP-MW06	153	2		10.16	1007	9.87

29	MCWP-MW07D	134	2		wwTP - NO access		7.51
30	MCWP-MW07S	20	2		wwTP - NO access		6.76
31	MCWP-MW08	77	2		7.47	1149	7.64
32	MCWP-MW09	95	2	16.3	6.24	1200	7.52
33	MCWP-MW10	60	2		5.70	0924	5.7
34	P-4	12.5	4	12.155	4.72	0948	4.58
35	P-9	14.3	4	12.165	5.03	0953	5.07
36	SMBRP-2	25	2	13.131	5.78	0907	6.04
37	SMBRP-6	25	2	26.875	16.87	0856	16.49
38	SMBRP-7b	45	2	18.985	10.71	0836	10.69
39	SMBRP-8 (EG-RC)	60	4		23.54	0803	28.74
40	SMBRP-9	45	2	50.32	35.41	0759	38.24
41	SMBRP-10C	25	2	16.25	6.22	0754	7.37
42	SMBRP-11	20	2	18.35	8.41	1044	8.88
43	SMBRP-12	25	2	12.615	7.19	1154	5.69
44	SMBRP-13	20	2	13.58	7.78	1146	8.32
45	SMBRP-15b	25	1	16.765			dry, recorded depth 8.77
46	SMBRP-16	25	2	14.5	NO access wwTP Ramp Station		4.95

City of Malibu

P# 15-01587

Surface Water Sampling

Task 1B

Malibu Civic Center

6-19-17

Arrive: 1100 AM

Sampler: Peter Shellenbarger - Rincon Consultants, Inc.

L-001 @ 1315

L-002 @ 1430

L-003 @ 1325

L-004 @ 1220

L-005 @ 1350

L-006 @ 1235

N-001 @ 1135

N-002 @ 1150

N-003 @ 1400

N-004 @ 1115

Weather: light Fog AM. Fog burned off
@ 1130 AM. Light 5-10 mph NW wind
75-80°F, Sunny

Lagoon stage: High, closed Berm, Flooded

Malibu Creek: high → closed Berm

Sample Delivery to FGL @ ~~16~~ 1630

Peter Shellenbarger

PS



4053:06/05/2017				TEST DESCRIPTION - See Reverse side for Container, Preservative and Sampling information														
Client: Rincon Consultants, Inc. Address: Attn: Torin Snyder 180 N. Ashwood Ave. Ventura, CA 93003 Phone: (760)918-9444ext209 Fax: Contact Person: Torin Snyder Project Name: Malibu WWTP - SW Monitoring Purchase Order Number: Quote Number: SP 20150526-01				Method of Sampling: Composite(C) Grab(G) Type of Sample: **SEE REVERSE SIDE** Potable(P) Non-Potable(NP) Ag Water(AgW) Bacti Type: Other(O) System(SYS) Source(SR) Waste(W) Bacti Reason: Routine(ROUT) Repeat(RPT) Replace(RPL) Other(O) Special(SPL) Coliform-LTB-Series 15 Tube ***8 Hour Hold Time*** 120ml(PBa)-Na2S2O3 Wet Chemistry-NO3-N, NO2-N, N-Organic, Total P, NH3-N ***NO2-N, NO3-N-48 Hour Hold Time*** 16oz(P)-H2SO4	1 2 3 4 5 6 7 8 9 10													
Sampler(s) <i>Peter Shellenberg</i> Sampling Fee: _____ Pickup Fee: _____ Compositor Setup Date: ___/___/___ Time: ___/___																		
Lab Number: SP 2-25173																		
Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling	Type of Sample	Potable(P)	Non-Potable(NP)	Ag Water(AgW)	Bacti Type	Bacti Reason	Other(O)	Special(SPL)	Coliform-LTB-Series 15 Tube	***8 Hour Hold Time***	120ml(PBa)-Na2S2O3	Wet Chemistry-NO3-N, NO2-N, N-Organic, Total P, NH3-N	***NO2-N, NO3-N-48 Hour Hold Time***	16oz(P)-H2SO4
1	N-001	6/19/17	1130	G	SW								1				1,1	
2	N-002		1150	G	SW								1				1,1	
3	N-003		1400	G	SW								1				1,1	
4	N-004		1115	G	SW								1				1,1	
5	L-001		1315	G	SW								1				1,1	
6	L-002		1430	G	SW								1				1,1	
7	L-003		1325	G	SW								1				1,1	
8	L-004		1220	G	SW								1				1,1	
9	L-005		1350	G	SW								1				1,1	
10	L-006		1235	G	SW								1				1,1	
Remarks:				Relinquished	Date:	Time:	Relinquished	Date:	Time:	Relinquished	Date:	Time:						
				Received By:	Date:	Time:	Received By:	Date:	Time:	Received By:	Date:	Time:						

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 Santa Paula, CA 93060
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 Fax: (559) 734-8435

Appendix B

Analytical Laboratory Reports

July 3, 2017

Rincon Consultants, Inc.
 Attn: Torin Snyder
 180 N. Ashwood Ave.
 Ventura, CA 93003

Lab ID : SP 1707323
 Customer : 2-25173

Laboratory Report

Introduction: This report package contains total of 14 pages divided into 3 sections:

Case Narrative (2 pages) : An overview of the work performed at FGL.
 Sample Results (10 pages) : Results for each sample submitted.
 Quality Control (2 pages) : Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
N-001	06/19/2017	06/19/2017	SP 1707323-001	SW
N-002	06/19/2017	06/19/2017	SP 1707323-002	SW
N-003	06/19/2017	06/19/2017	SP 1707323-003	SW
N-004	06/19/2017	06/19/2017	SP 1707323-004	SW
L-001	06/19/2017	06/19/2017	SP 1707323-005	SW
L-002	06/19/2017	06/19/2017	SP 1707323-006	SW
L-003	06/19/2017	06/19/2017	SP 1707323-007	SW
L-004	06/19/2017	06/19/2017	SP 1707323-008	SW
L-005	06/19/2017	06/19/2017	SP 1707323-009	SW
L-006	06/19/2017	06/19/2017	SP 1707323-010	SW

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:

Inorganic - Wet Chemistry QC

351.2	06/29/2017:207699 All preparation quality controls are within established criteria
4500NH3G	06/21/2017:209106 All analysis quality controls are within established criteria
	06/21/2017:207295 All preparation quality controls are within established criteria
4500NO2F	06/20/2017:207165 All preparation quality controls are within established criteria

July 3, 2017
Rincon Consultants, Inc.

Lab ID : SP 1707323
Customer : 2-25173

Inorganic - Wet Chemistry QC

4500NO3F	06/20/2017:209068 All analysis quality controls are within established criteria
	06/20/2017:209086 All analysis quality controls are within established criteria
	06/20/2017:207276 All preparation quality controls are within established criteria
4500-P B	06/27/2017:207601 All preparation quality controls are within established criteria
4500PE	06/28/2017:209464 All analysis quality controls are within established criteria
EPA351.2	07/03/2017:209743 All analysis 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: 2017-07-05

July 3, 2017

Lab ID : SP 1707323-001
 Customer ID : 2-25173

Rincon Consultants, Inc.

Attn: Torin Snyder
 180 N. Ashwood Ave.
 Ventura, CA 93003

Sampled On : June 19, 2017-11:35
 Sampled By : Peter Shellenberger
 Received On : June 19, 2017-16:30
 Matrix : Surface Water

Description : N-001
 Project : Malibu WWTP - Surface Water Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	MDL	Units	Dilution	DQF	Sample Preparation			Sample Analysis		
							Method	ID	Time	Method	ID	Time
Wet Chemistry												
Nitrate Nitrogen	0.0400	0.1	0.032	mg/L	1	J	4500NO3F	207276	06/20/17 12:00	4500NO3F	209086-FI207	06/20/17-13:45JDD
Nitrite Nitrogen	ND	0.1	0.011	mg/L	1	U	4500NO2F	207165	06/20/17 12:00	4500NO3F	209068-FI207	06/20/17-13:43JDD
Nitrogen, Organic	0.519	0.5	0.072	mg/L	1	J	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-06:23AMB
Ammonia Nitrogen	0.0770	0.2	0.072	mg/L	1	J	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-06:23AMB
Kjeldahl Nitrogen	0.596	0.5	0.32	mg/L	1	J	351.2	207699	06/29/17 06:14	EPA351.2	209743-FI206	07/03/17-04:08AMB
Phosphorus, Total	2.06	0.2	0.020	mg/L	2		4500-P B	207601	06/27/17 14:35	4500PE	209464-UV205	06/28/17-16:38SJJN

DQF Flags Definition:

- U Constituent results were non-detect.
- J Reported value is estimated; detected at a concentration below the PQL and above the laboratory MDL.

ND=Non-Detected. PQL=Practical Quantitation Limit.



July 3, 2017

Lab ID : SP 1707323-002

Customer ID : 2-25173

Rincon Consultants, Inc.

Attn: Torin Snyder
180 N. Ashwood Ave.
Ventura, CA 93003

Sampled On : June 19, 2017-11:50

Sampled By : Peter Shellenberger

Received On : June 19, 2017-16:30

Matrix : Surface Water

Description : N-002

Project : Malibu WWTP - Surface Water Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	MDL	Units	Dilution	DQF	Sample Preparation			Sample Analysis		
							Method	ID	Time	Method	ID	Time
Wet Chemistry												
Nitrate Nitrogen	ND	0.1	0.032	mg/L	1	U	4500NO3F	207276	06/20/17 12:00	4500NO3F	209086-FI207	06/20/17-13:47JDD
Nitrite Nitrogen	ND	0.1	0.011	mg/L	1	U	4500NO2F	207165	06/20/17 12:00	4500NO3F	209068-FI207	06/20/17-13:45JDD
Nitrogen, Organic	2.25	0.5	0.072	mg/L	1		4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-06:46AMB
Ammonia Nitrogen	ND	0.2	0.072	mg/L	1	U	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-06:46AMB
Kjeldahl Nitrogen	2.25	0.5	0.32	mg/L	1		351.2	207699	06/29/17 06:14	EPA351.2	209743-FI206	07/03/17-04:09AMB
Phosphorus, Total	2.03	0.1	0.020	mg/L	1		4500-P B	207601	06/27/17 14:35	4500PE	209464-UV205	06/28/17-16:39SJN
DQF Flags Definition:												
U Constituent results were non-detect.												

ND=Non-Detected. PQL=Practical Quantitation Limit.

July 3, 2017

Lab ID : SP 1707323-003

Customer ID : 2-25173

Rincon Consultants, Inc.

Attn: Torin Snyder
 180 N. Ashwood Ave.
 Ventura, CA 93003

Sampled On : June 19, 2017-14:00

Sampled By : Peter Shellenberger

Received On : June 19, 2017-16:30

Matrix : Surface Water

Description : N-003

Project : Malibu WWTP - Surface Water Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	MDL	Units	Dilution	DQF	Sample Preparation			Sample Analysis		
							Method	ID	Time	Method	ID	Time
Wet Chemistry												
Nitrate Nitrogen	ND	0.1	0.032	mg/L	1	U	4500NO3F	207276	06/20/17 12:00	4500NO3F	209086-FI207	06/20/17-13:49JDD
Nitrite Nitrogen	ND	0.1	0.011	mg/L	1	U	4500NO2F	207165	06/20/17 12:00	4500NO3F	209068-FI207	06/20/17-13:47JDD
Nitrogen, Organic	0.378	0.5	0.072	mg/L	1	UJ	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-06:49AMB
Ammonia Nitrogen	ND	0.2	0.072	mg/L	1	U	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-06:49AMB
Kjeldahl Nitrogen	0.378	0.5	0.32	mg/L	1	J	351.2	207699	06/29/17 06:14	EPA351.2	209743-FI206	07/03/17-04:11AMB
Phosphorus, Total	0.474	0.1	0.020	mg/L	1		4500-P B	207601	06/27/17 14:35	4500PE	209464-UV205	06/28/17-16:40SJN
DQF Flags Definition:												
U Constituent results were non-detect.												
J Reported value is estimated; detected at a concentration below the PQL and above the laboratory MDL.												

ND=Non-Detected. PQL=Practical Quantitation Limit.

July 3, 2017

Lab ID : SP 1707323-004

Customer ID : 2-25173

Rincon Consultants, Inc.

Attn: Torin Snyder
 180 N. Ashwood Ave.
 Ventura, CA 93003

Sampled On : June 19, 2017-11:15

Sampled By : Peter Shellenberger

Received On : June 19, 2017-16:30

Matrix : Surface Water

Description : N-004

Project : Malibu WWTP - Surface Water Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	MDL	Units	Dilution	DQF	Sample Preparation			Sample Analysis		
							Method	ID	Time	Method	ID	Time
Wet Chemistry												
Nitrate Nitrogen	ND	0.1	0.032	mg/L	1	U	4500NO3F	207276	06/20/17 12:00	4500NO3F	209086-FI207	06/20/17-13:52JDD
Nitrite Nitrogen	ND	0.1	0.011	mg/L	1	U	4500NO2F	207165	06/20/17 12:00	4500NO3F	209068-FI207	06/20/17-13:49JDD
Nitrogen, Organic	0.647	0.5	0.072	mg/L	1	J	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-06:44AMB
Ammonia Nitrogen	ND	0.2	0.072	mg/L	1	U	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-06:44AMB
Kjeldahl Nitrogen	0.647	0.5	0.32	mg/L	1	J	351.2	207699	06/29/17 06:14	EPA351.2	209743-FI206	07/03/17-04:12AMB
Phosphorus, Total	1.24	0.1	0.020	mg/L	1		4500-P B	207601	06/27/17 14:35	4500PE	209464-UV205	06/28/17-16:43SJN
DQF Flags Definition:												
U Constituent results were non-detect.												
J Reported value is estimated; detected at a concentration below the PQL and above the laboratory MDL.												

ND=Non-Detected. PQL=Practical Quantitation Limit.

July 3, 2017

Lab ID : SP 1707323-005

Customer ID : 2-25173

Rincon Consultants, Inc.

Attn: Torin Snyder
 180 N. Ashwood Ave.
 Ventura, CA 93003

Sampled On : June 19, 2017-13:15

Sampled By : Peter Shellenberger

Received On : June 19, 2017-16:30

Matrix : Surface Water

Description : L-001

Project : Malibu WWTP - Surface Water Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	MDL	Units	Dilution	DQF	Sample Preparation			Sample Analysis		
							Method	ID	Time	Method	ID	Time
Wet Chemistry												
Nitrate Nitrogen	0.600	0.1	0.032	mg/L	1		4500NO3F	207276	06/20/17 12:00	4500NO3F	209086-FI207	06/20/17-13:54JDD
Nitrite Nitrogen	ND	0.1	0.011	mg/L	1	U	4500NO2F	207165	06/20/17 12:00	4500NO3F	209068-FI207	06/20/17-13:51JDD
Nitrogen, Organic	0.617	0.5	0.072	mg/L	1	J	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-06:39AMB
Ammonia Nitrogen	ND	0.2	0.072	mg/L	1	U	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-06:39AMB
Kjeldahl Nitrogen	0.617	0.5	0.32	mg/L	1	J	351.2	207699	06/29/17 06:14	EPA351.2	209743-FI206	07/03/17-04:13AMB
Phosphorus, Total	0.387	0.1	0.020	mg/L	1		4500-P B	207601	06/27/17 14:35	4500PE	209464-UV205	06/28/17-16:44SJN
DQF Flags Definition:												
U Constituent results were non-detect.												
J Reported value is estimated; detected at a concentration below the PQL and above the laboratory MDL.												

ND=Non-Detected. PQL=Practical Quantitation Limit.



July 3, 2017

Rincon Consultants, Inc.

Attn: Torin Snyder
180 N. Ashwood Ave.
Ventura, CA 93003

Description : L-002
Project : Malibu WWTP - Surface Water Monitoring

Lab ID : SP 1707323-006

Customer ID : 2-25173

Sampled On : June 19, 2017-14:30

Sampled By : Peter Shellenberger

Received On : June 19, 2017-16:30

Matrix : Surface Water

Sample Result - Inorganic

Constituent	Result	PQL	MDL	Units	Dilution	DQF	Sample Preparation			Sample Analysis		
							Method	ID	Time	Method	ID	Time
Wet Chemistry												
Nitrate Nitrogen	0.200	0.1	0.032	mg/L	1		4500NO3F	207276	06/20/17 12:00	4500NO3F	209086-FI207	06/20/17-13:56JDD
Nitrite Nitrogen	ND	0.1	0.011	mg/L	1	U	4500NO2F	207165	06/20/17 12:00	4500NO3F	209068-FI207	06/20/17-13:53JDD
Nitrogen, Organic	0.475	0.5	0.072	mg/L	1	J	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-05:48AMB
Ammonia Nitrogen	0.129	0.2	0.072	mg/L	1	J	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-05:48AMB
Kjeldahl Nitrogen	0.604	0.5	0.32	mg/L	1	J	351.2	207699	06/29/17 06:14	EPA351.2	209743-FI206	07/03/17-04:16AMB
Phosphorus, Total	0.459	0.1	0.020	mg/L	1		4500-P B	207601	06/27/17 14:35	4500PE	209464-UV205	06/28/17-16:45SJN
DQF Flags Definition:												
U Constituent results were non-detect.												
J Reported value is estimated; detected at a concentration below the PQL and above the laboratory MDL.												

ND=Non-Detected. PQL=Practical Quantitation Limit.

July 3, 2017

Lab ID : SP 1707323-007

Customer ID : 2-25173

Rincon Consultants, Inc.

Attn: Torin Snyder
 180 N. Ashwood Ave.
 Ventura, CA 93003

Sampled On : June 19, 2017-13:25

Sampled By : Peter Shellenberger

Received On : June 19, 2017-16:30

Matrix : Surface Water

Description : L-003

Project : Malibu WWTP - Surface Water Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	MDL	Units	Dilution	DQF	Sample Preparation			Sample Analysis		
							Method	ID	Time	Method	ID	Time
Wet Chemistry												
Nitrate Nitrogen	ND	0.1	0.032	mg/L	1	U	4500NO3F	207276	06/20/17 12:00	4500NO3F	209086-FI207	06/20/17-14:09JDD
Nitrite Nitrogen	ND	0.1	0.011	mg/L	1	U	4500NO2F	207165	06/20/17 12:00	4500NO3F	209068-FI207	06/20/17-14:07JDD
Nitrogen, Organic	0.714	0.5	0.072	mg/L	1	J	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-05:34AMB
Ammonia Nitrogen	ND	0.2	0.072	mg/L	1	U	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-05:34AMB
Kjeldahl Nitrogen	0.714	0.5	0.32	mg/L	1	J	351.2	207699	06/29/17 06:14	EPA351.2	209743-FI206	07/03/17-04:17AMB
Phosphorus, Total	1.69	0.1	0.020	mg/L	1		4500-P B	207601	06/27/17 14:35	4500PE	209464-UV205	06/28/17-16:46SJN
DQF Flags Definition:												
U Constituent results were non-detect.												
J Reported value is estimated; detected at a concentration below the PQL and above the laboratory MDL.												

ND=Non-Detected. PQL=Practical Quantitation Limit.



July 3, 2017

Lab ID : SP 1707323-008

Customer ID : 2-25173

Rincon Consultants, Inc.

Attn: Torin Snyder
180 N. Ashwood Ave.
Ventura, CA 93003

Sampled On : June 19, 2017-12:20

Sampled By : Peter Shellenberger

Received On : June 19, 2017-16:30

Matrix : Surface Water

Description : L-004

Project : Malibu WWTP - Surface Water Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	MDL	Units	Dilution	DQF	Sample Preparation			Sample Analysis		
							Method	ID	Time	Method	ID	Time
Wet Chemistry												
Nitrate Nitrogen	ND	0.1	0.032	mg/L	1	U	4500NO3F	207276	06/20/17 12:00	4500NO3F	209086-FI207	06/20/17-14:11JDD
Nitrite Nitrogen	ND	0.1	0.011	mg/L	1	U	4500NO2F	207165	06/20/17 12:00	4500NO3F	209068-FI207	06/20/17-14:08JDD
Nitrogen, Organic	1.06	0.5	0.072	mg/L	1		4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-05:39AMB
Ammonia Nitrogen	ND	0.2	0.072	mg/L	1	U	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-05:39AMB
Kjeldahl Nitrogen	1.06	0.5	0.32	mg/L	1		351.2	207699	06/29/17 06:14	EPA351.2	209743-FI206	07/03/17-04:18AMB
Phosphorus, Total	0.477	0.1	0.020	mg/L	1		4500-P B	207601	06/27/17 14:35	4500PE	209464-UV205	06/28/17-16:47SJN
DQF Flags Definition:												
U Constituent results were non-detect.												

ND=Non-Detected. PQL=Practical Quantitation Limit.

July 3, 2017

Lab ID : SP 1707323-009

Customer ID : 2-25173

Rincon Consultants, Inc.

Attn: Torin Snyder
 180 N. Ashwood Ave.
 Ventura, CA 93003

Sampled On : June 19, 2017-13:50

Sampled By : Peter Shellenberger

Received On : June 19, 2017-16:30

Matrix : Surface Water

Description : L-005

Project : Malibu WWTP - Surface Water Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	MDL	Units	Dilution	DQF	Sample Preparation			Sample Analysis		
							Method	ID	Time	Method	ID	Time
Wet Chemistry												
Nitrate Nitrogen	ND	0.1	0.032	mg/L	1	U	4500NO3F	207276	06/20/17 12:00	4500NO3F	209086-FI207	06/20/17-14:13JDD
Nitrite Nitrogen	ND	0.1	0.011	mg/L	1	U	4500NO2F	207165	06/20/17 12:00	4500NO3F	209068-FI207	06/20/17-14:10JDD
Nitrogen, Organic	0.976	0.5	0.072	mg/L	1	J	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-05:32AMB
Ammonia Nitrogen	ND	0.2	0.072	mg/L	1	U	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-05:32AMB
Kjeldahl Nitrogen	0.976	0.5	0.32	mg/L	1	J	351.2	207699	06/29/17 06:14	EPA351.2	209743-FI206	07/03/17-04:19AMB
Phosphorus, Total	0.902	0.1	0.020	mg/L	1		4500-P B	207601	06/27/17 14:35	4500PE	209464-UV205	06/28/17-16:48SJN
DQF Flags Definition:												
U Constituent results were non-detect.												
J Reported value is estimated; detected at a concentration below the PQL and above the laboratory MDL.												

ND=Non-Detected. PQL=Practical Quantitation Limit.

July 3, 2017

Lab ID : SP 1707323-010

Customer ID : 2-25173

Rincon Consultants, Inc.

Attn: Torin Snyder
 180 N. Ashwood Ave.
 Ventura, CA 93003

Sampled On : June 19, 2017-12:35

Sampled By : Peter Shellenberger

Received On : June 19, 2017-16:30

Matrix : Surface Water

Description : L-006

Project : Malibu WWTP - Surface Water Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	MDL	Units	Dilution	DQF	Sample Preparation			Sample Analysis		
							Method	ID	Time	Method	ID	Time
Wet Chemistry												
Nitrate Nitrogen	ND	0.1	0.032	mg/L	1	U	4500NO3F	207276	06/20/17 12:00	4500NO3F	209086-FI207	06/20/17-14:15JDD
Nitrite Nitrogen	ND	0.1	0.011	mg/L	1	U	4500NO2F	207165	06/20/17 12:00	4500NO3F	209068-FI207	06/20/17-14:13JDD
Nitrogen, Organic	1.12	0.5	0.072	mg/L	1		4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-05:41AMB
Ammonia Nitrogen	ND	0.2	0.072	mg/L	1	U	4500NH3G	207295	06/21/17 03:00	4500NH3G	209106-FI207	06/21/17-05:41AMB
Kjeldahl Nitrogen	1.12	0.5	0.32	mg/L	1		351.2	207699	06/29/17 06:14	EPA351.2	209743-FI206	07/03/17-04:21AMB
Phosphorus, Total	0.714	0.2	0.020	mg/L	2		4500-P B	207601	06/27/17 14:35	4500PE	209464-UV205	06/28/17-16:49SJN
DQF Flags Definition:												
U Constituent results were non-detect.												

ND=Non-Detected. PQL=Practical Quantitation Limit.

July 3, 2017
Rincon Consultants, Inc.

Lab ID : SP 1707323
Customer : 2-25173

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note	
Wet Chem									
Nitrogen, Total Kjeldahl	351.2	06/29/17:207699jmg (VI 1742753-003)	Blank	mg/L		ND	<1		
			LCS	mg/L	12.00	81.6 %	73-124		
			MS	mg/L	12.00	78.2 %	54-136		
			MSD	mg/L	12.00	80.3 %	54-136		
			MSRPD	mg/L	12.00	2.6%	≤27		
Ammonia Nitrogen	4500NH3G	(SP 1707302-001)	MS	mg/L	2.000	124 %	70-130		
			MSD	mg/L	2.000	128 %	70-130		
			MSRPD	mg/L	2.000	2.6%	≤20		
			MS	mg/L	2.000	84.4 %	70-130		
			MSD	mg/L	2.000	89.6 %	70-130		
				MSRPD	mg/L	2.000	0.9%	≤20	
	4500NH3G	06/21/17:209106AMB	CCB	mg/L		-0.157	0.2		
			CCV	mg/L	2.000	106 %	90-110		
			CCB	mg/L		-0.023	0.2		
			CCV	mg/L	2.000	99.9 %	90-110		
CCB			mg/L		-0.044	0.2			
CCV			mg/L	2.000	106 %	90-110			
CCB			mg/L		0.013	0.2			
			CCV	mg/L	2.000	106 %	90-110		
Nitrite as Nitrogen	4500NO2F	(SP 1707323-001)	MS	mg/L	1.218	97.7 %	50-150		
			MSD	mg/L	1.218	95.9 %	50-150		
			MSRPD	mg/L	1.218	1.9%	≤30		
Nitrate + Nitrite as N	4500NO3F	(SP 1707323-001)	MS	mg/L	28.04	37.7 %	5-285		
			MSD	mg/L	28.04	36.7 %	5-285		
			MSRPD	mg/L	28.04	2.6%	≤30.4		
	4500NO3F	06/20/17:209086JDD	CCB	mg/L		0.013	0.1		
			CCV	mg/L	11.22	100 %	90-110		
			CCB	mg/L		0.000	0.1		
			CCV	mg/L	11.22	99.4 %	90-110		
			CCB	mg/L		0.024	0.1		
			CCV	mg/L	11.22	100 %	90-110		
Nitrite as Nitrogen	4500NO3F	06/20/17:209068JDD	CCB	mg/L		0.00300	0.012		
			CCV	mg/L	1.218	103 %	90-110		
			CCB	mg/L		0.00200	0.012		
			CCB	mg/L		0.00200	0.012		
			CCV	mg/L	1.218	103 %	90-110		
			CCB	mg/L		0.00200	0.012		
			CCV	mg/L	1.218	103 %	90-110		
Phosphorus	4500-P B	06/27/17:207601sjn (SP 1707323-001)	Blank	mg/L		ND	<0.1		
			LCS	mg/L	0.5000	97.4 %	90-116		
			MS	mg/L	0.2800	21.8 %	<4		
			MSD	mg/L	0.2800	72.8 %	25-292		
			MSRPD	mg/L	0.2800	6.5%	≤13.2		
Total Phosphorus	4500PE	06/28/17:209464SJN	CCB	mg/L		-0.01	0.1		
			CCV	mg/L	0.5000	98.9 %	90-110		
			CCB	mg/L		-0.01	0.1		
			CCV	mg/L	0.5000	93.3 %	90-110		
			CCB	mg/L		-0.015	0.1		
			CCV	mg/L	0.5000	95.3 %	90-110		
Nitrogen, Total Kjeldahl	EPA351.2	07/03/17:209743AMB	ICB	mg/L		-0.008	0.5		
			ICV	mg/L	5.000	97.3 %	90-110		
			CCB	mg/L		-0.028	0.5		
			CCV	mg/L	5.000	94.3 %	90-110		
			CCB	mg/L		-0.052	0.5		

July 3, 2017
Rincon Consultants, Inc.

Lab ID : SP 1707323
 Customer : 2-25173

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Nitrogen, Total Kjeldahl	EPA351.2	07/03/17:209743AMB	CCV	mg/L	5.000	93.4 %	90-110	
Definition								
ICV	: Initial Calibration Verification - Analyzed to verify the instrument calibration is within criteria.							
ICB	: Initial Calibration Blank - Analyzed to verify the instrument baseline is within criteria.							
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.							
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.							
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.							
ND	: Non-detect - Result was below the DQO listed for the analyte.							
<4	: High Sample Background - Spike concentration was less than one fourth of the sample concentration.							
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.							

June 28, 2017

Rincon Consultants, Inc.
 Attn: Torin Snyder
 180 N. Ashwood Ave.
 Ventura, CA 93003

SP 1707323:1-10 COLIFORM BACTERIA ANALYSIS
 Customer ID : 2-25173

System Number :
 Project Name : Malibu WWTP - Surface Water Monitoring

Sample Handling Information

ID	Sample Number	Sample Description	Sample Type/Reason	Sampled By	Employed By	Sampled	Started	Finished
1	SP 1707323-001	N-001	Source-Other	Peter Shellenberger	Rincon Consultants,	06/19/2017 11:35	06/19/2017 16:49 lm	06/22/2017 lm
2	SP 1707323-002	N-002	Source-Other	Peter Shellenberger	Rincon Consultants,	06/19/2017 11:50	06/19/2017 16:51 lm	06/23/2017 lm
3	SP 1707323-003	N-003	Source-Other	Peter Shellenberger	Rincon Consultants,	06/19/2017 14:00	06/19/2017 16:53 lm	06/23/2017 lm
4	SP 1707323-004	N-004	Source-Other	Peter Shellenberger	Rincon Consultants,	06/19/2017 11:15	06/19/2017 16:55 lm	06/23/2017 lm
5	SP 1707323-005	L-001	Source-Other	Peter Shellenberger	Rincon Consultants,	06/19/2017 13:15	06/19/2017 16:57 lm	06/22/2017 lm
6	SP 1707323-006	L-002	Source-Other	Peter Shellenberger	Rincon Consultants,	06/19/2017 14:30	06/19/2017 17:01 lm	06/22/2017 lm
7	SP 1707323-007	L-003	Source-Other	Peter Shellenberger	Rincon Consultants,	06/19/2017 13:25	06/19/2017 17:03 lm	06/23/2017 lm
8	SP 1707323-008	L-004	Source-Other	Peter Shellenberger	Rincon Consultants,	06/19/2017 12:20	06/19/2017 17:05 lm	06/22/2017 lm
9	SP 1707323-009	L-005	Source-Other	Peter Shellenberger	Rincon Consultants,	06/19/2017 13:50	06/19/2017 16:47 lmm	06/21/2017 lmm
10	SP 1707323-010	L-006	Source-Other	Peter Shellenberger	Rincon Consultants,	06/19/2017 12:35	06/19/2017 16:49 lmm	06/22/2017 lmm

Analytical Results

ID	Sample Description	Chlorine Total/Free	Temp °C	Method	Units	Total	Fecal	E. Coli	Person Notified ‡	Date ‡ Notified	Time ‡ Notified	Foot Note
1	N-001	---	---	SM 9221B	MPN/100ml	23 PRESENT	7.8 PRESENT	---	N/R			
2	N-002	---	---	SM 9221B	MPN/100ml	<1.8 ABSENT	<1.8 ABSENT	---	N/R			
3	N-003	---	---	SM 9221B	MPN/100ml	7.8 PRESENT	<1.8 ABSENT	---	N/R			
4	N-004	---	---	SM 9221B	MPN/100ml	7.8 PRESENT	7.8 PRESENT	---	N/R			
5	L-001	---	---	SM 9221B	MPN/100ml	350 PRESENT	49 PRESENT	---	N/R			
6	L-002	---	---	SM 9221B	MPN/100ml	540 PRESENT	33 PRESENT	---	N/R			
7	L-003	---	---	SM 9221B	MPN/100ml	220 PRESENT	17 PRESENT	---	N/R			
8	L-004	---	---	SM 9221B	MPN/100ml	540 PRESENT	350 PRESENT	---	N/R			
9	L-005	---	---	SM 9221B	MPN/100ml	240 PRESENT	240 PRESENT	---	N/R			
10	L-006	---	---	SM 9221B	MPN/100ml	33 PRESENT	7.8 PRESENT	---	N/R			

N/R Not Required. MPN Most Probable Number A/P Absence/Presence

‡ Client Notification details.

June 28, 2017

SP 1707323:1-10 **COLIFORM BACTERIA ANALYSIS**
Customer ID : 2-25173

Rincon Consultants, Inc.

The sample(s) listed below failed drinking water standards for Total and/or Fecal Coliform as listed:

N-001 Total Coliform - Failure, Fecal Coliform - Failure.

N-003 Total Coliform - Failure.

N-004 Total Coliform - Failure, Fecal Coliform - Failure.

L-001 Total Coliform - Failure, Fecal Coliform - Failure.

L-002 Total Coliform - Failure, Fecal Coliform - Failure.

L-003 Total Coliform - Failure, Fecal Coliform - Failure.

L-004 Total Coliform - Failure, Fecal Coliform - Failure.

L-005 Total Coliform - Failure, Fecal Coliform - Failure.

L-006 Total Coliform - Failure, Fecal Coliform - Failure.

Analyses were performed using Standard Methods 21st edition. If you have any questions regarding your results, please call.

RRH:GMA

Reviewed and
Approved By

Raquel R. Harvey



Digitally signed by Raquel R. Harvey
Title: Tech Director Microbiology
Date: 2008-12-15