

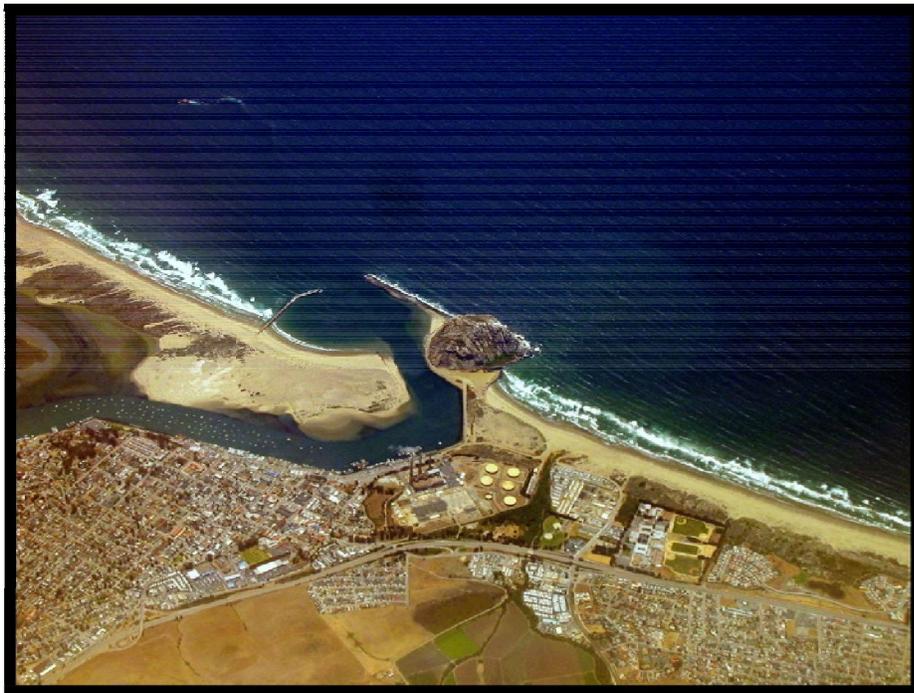
**City of Morro Bay and
Cayucos Sanitary District**

**OFFSHORE MONITORING
AND REPORTING PROGRAM**

SEMI-ANNUAL EFFLUENT SAMPLING

**CHEMICAL AND BIOASSAY
ANALYSIS RESULTS**

JULY 2016



Marine Research Specialists

**3140 Telegraph Rd., Suite A
Ventura, California 93003**

Report to
City of Morro Bay and
Cayucos Sanitary District

955 Shasta Avenue
Morro Bay, California 93442
(805) 772-6272

MONITORING
AND
REPORTING PROGRAM

SEMI-ANNUAL EFFLUENT REPORT

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ANALYSIS RESULTS

JULY 2016

Prepared by
Douglas A. Coats

Marine Research Specialists

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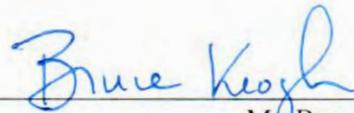
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August 2016

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

A handwritten signature in blue ink that reads "Bruce Keogh". The signature is written in a cursive style and is positioned above a horizontal line.

Mr. Bruce Keogh
Wastewater Division Manager
City of Morro Bay

Date August 15, 2016

Bruce Keogh
Wastewater Division Manager
City of Morro Bay
955 Shasta Avenue
Morro Bay, CA 93442

15 August 2016

**Reference: Annual Effluent Self-Monitoring Report for 2016
Semiannual Effluent Self-Monitoring Report for July through December 2016**

Dear Mr. Keogh:

This self-monitoring report documents the chemical and bioassay analysis results for effluent samples collected in July 2016 as required by NPDES discharge permit CA0047881.¹ Analyses of effluent samples collected on 13 and 19 July were conducted in accordance with the monitoring requirements specified in the permit, including:

- Chemical and radionuclide analyses conducted on a composite sample collected on 13 July 2016;
- Phenolic and nutrient compounds measured in a grab sample collected on 13 July 2016;
- Chlorinated dioxins and furans measured in a composite sample collected on 13 July 2016; and
- Chronic bioassays conducted on a composite sample collected on 19 July 2016.

Three attachments to this report demonstrate that all chemical concentrations, radioactivity, and toxicological endpoints were within the limitations specified in the discharge permit. Attachment A compares the results of the analyses with the limitations established for each of the effluent parameters specified in the permit. The comparisons are based on the minimum-level (ML) reporting requirements of the permit, and all units have been converted to those used in the discharge monitoring forms that were submitted under separate cover to the California Division of Water Quality (Attachment B). Attachment C collates the original laboratory reports, including raw data and results, pertinent QA/QC analyses, and chains of custody.

The comprehensive chemical and bioassay analyses of effluent samples collected in July 2016 augment data collected over the past two decades from the MBSCD² treatment plant. The general lack of toxicity and chemical contaminants within the effluent samples reflects the absence of heavy industry within the collection area and the high performance of the treatment process.

The concentrations of 78 chemical compounds are limited under the current permit.³ In July 2016, only 12 of these compounds were detected, and of those, only three had concentrations high enough to be reliably quantified above their respective MLs: copper, lead, and zinc. The concentrations of these three metallic compounds in the July 2016 samples were typical of wastewater derived from domestic sources, and were considerably below the limits specified in the NPDES discharge permit.

Copper, lead, and zinc are commonly occurring metals that enter the wastewater collection system through erosion of natural mineral deposits along the central California coast. They also enter the system through corrosion of household plumbing systems. Regardless of their provenance, the concentrations of these compounds in the July 2016 effluent were well below the levels deemed deleterious to marine organisms.

¹ Regional Water Quality Control Board (RWQCB) - Central Coast Region and the Environmental Protection Agency (EPA) – Region IX. 2009. Waste Discharge Requirements (Order No. R3-2008-0065) and National Pollutant Discharge Elimination System (Permit No. CA0047881) for the Morro Bay and Cayucos Wastewater Treatment Plant Discharges to the Pacific Ocean, Morro Bay, San Luis Obispo County. Effective 1 March 2009.

² City of Morro Bay and the Cayucos Sanitary District, joint owners of the wastewater treatment and disposal facility

³ In addition to these 78 chemical compounds, levels of nutrients, radionuclides, and chronic toxicity are also documented as part of the current permit requirements.

Mr. B. Keogh
15 August 2016

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Chronic toxicity tests conducted on a July 2016 composite effluent sample measured the effluent's potential to impact the development of larval red abalone (*Haliotis rufescens*) by exposing those organisms to a range of effluent dilutions in the laboratory. Although the larval abalone are highly sensitive to contaminants, adverse effects were not observed in effluent that was seven times more concentrated than that allowed by the discharge permit.

Please contact the undersigned if you have questions regarding these results.

Sincerely,



Douglas A. Coats
Program Manager

ATTACHMENT A
MINIMUM LEVEL REPORTING

ATTACHMENT A
Analytical Results for Effluent Samples Collected during July 2016

Chemical Compound or Parameter	Units	Method	Detection Limit ^a	Practical ^b Quantification Limit	Minimum Level ^c	Permit ^d Limit	Reported Value
Nutrients							
Nitrate (as N)	mg/L	300.0	0.28	0.4	— ^e	— ^e	ND
Urea (as N)	mg/L	Mulvenna & Savid	0.008	0.01	—	—	0.093 as measured
Ortho-Phosphate (as P)	mg/L	300.0	0.08	0.4	—	—	3.2 as measured
Dissolved Silica (SiO2)	mg/L	200.7	0.3	0.5	—	—	10. as measured
Objectives for the Protection of Marine Aquatic Life							
Arsenic	mg/L	200.8	0.0007	0.002	0.002	0.67	DNQ 0.0011 Est. Conc.
Cadmium	mg/L	200.7	0.0011	0.01	0.01	0.13	ND
Chromium VI	mg/L	200.7	0.0012	0.01	0.01	0.27	DNQ 0.0013 Est. Conc.
Copper	mg/L	200.7	0.0012	0.01	0.01	0.14	0.022 as measured
Lead	mg/L	200.8	0.0001	0.001	0.0005	0.27	0.0014 as measured
Mercury	µg/L	245.1	0.030	0.2	0.2	5.29	ND
Nickel	mg/L	200.7	0.0023	0.01	0.02	0.67	DNQ 0.0048 Est. Conc.
Selenium	mg/L	200.8	0.00019	0.002	0.002	2.01	DNQ 0.0015 Est. Conc.
Silver	mg/L	200.7	0.0013	0.01	0.01	0.07	ND
Zinc	mg/L	200.7	0.0013	0.05	0.02	1.62	0.07 as measured
Cyanide	mg/L	335.4	0.0031	0.005	0.005	0.13	ND
Toxicity-Chronic: <i>H. Rufescens</i>	TUc	600/R-95/136	—	—	—	134.	17.9 as measured

^a The Method Detection Limit (MDL) is the analysis- and instrument-specific minimum concentration at which the presence of a substance can be reported with 99% confidence. It is determined from an analysis of a sample in a matrix containing the analyte.

^b The Practical Quantification Limit (PQL) is the analysis- and instrument-specific minimum concentration of a substance that can be routinely determined with a high degree of certainty (>99.9% confidence).

^c The Minimum Level (ML) is the method-specific minimum concentration of a substance that can be quantitatively measured in a sample given the current analytical performance used by most certified laboratories within California, as specified in the 2005 Ocean Plan.

^d The Permit Limit is the lowest, most-stringent threshold that is associated with the longest-duration averaging period. For limits established to protect marine aquatic life, the six-month median is the most stringent threshold. For other constituents, limits are imposed only on monthly averages.

^e No minimum levels or permit limits have been established for nutrients.

Analytical Results for Effluent Samples Collected during July 2016

Chemical Compound or Parameter	Units	Method	Detection Limit ^a	Practical ^b Quantification Limit	Minimum Level ^c	Permit ^d Limit	Reported Value
Nonchlorinated Phenolics	mg/L	625	0.0036	0.01	0.024	4.02	DNQ 0.0068 Est. Conc.
Chlorinated Phenolics	mg/L	625	0.0022	0.01	0.024	0.13	ND
Endosulfan (Sum)	µg/L	608	0.0024	0.005	0.01	1.21	ND
Endrin	µg/L	608	0.0033	0.005	0.01	0.27	ND
HCH	µg/L	608	0.0017	0.005	0.02	0.54	ND
Radioactivity Gross α	pCi/L	SM-7110C	0.04	±0.143	—	15.	0.887 as measured
Radioactivity Gross β	pCi/L	900	2.459	±1.931	—	50.	22. as measured
Objectives for the Protection of Human Health: Noncarcinogens							
Acrolein	mg/L	624	0.0011	0.02	0.005	29.5	ND
Antimony	mg/L	200.7	0.005	0.1	0.05	160.8	ND
Bis(2-chloroethoxy) methane	mg/L	625	0.0022	0.01	0.025	0.59	ND
Bis(2-chloroisopropyl) ether	mg/L	625	0.0029	0.01	0.01	160.8	ND
Chlorobenzene	mg/L	624	0.00005	0.0005	0.002	76.4	ND
Chromium III ^f	g/L	200.7	0.0000012	0.00001	0.00001	25.5	DNQ 0.0000013 Est. Conc.
Di-n-butyl phthalate	mg/L	625	0.0016	0.01	0.05	469.	ND
Dichlorobenzene	mg/L	624	0.00005	0.0005	0.002	683.	ND
Diethyl phthalate	mg/L	625	0.0018	0.01	0.01	4,420.	ND
Dimethyl phthalate	g/L	625	0.000002	0.00001	0.00001	109.9	ND
2-Methyl-4,6-dinitrophenol	mg/L	625	0.009	0.05	0.025	29.5	ND
2,4-Dinitrophenol	mg/L	625	0.012	0.05	0.025	0.54	ND
Ethylbenzene	mg/L	624	0.000054	0.0005	0.002	549.	ND
Fluoranthene	mg/L	625	0.003	0.01	0.005	2.	ND
Hexachlorocyclopentadiene	mg/L	625	0.0026	0.01	0.025	7.8	ND
Nitrobenzene	mg/L	625	0.0018	0.01	0.005	0.66	ND
Thallium	mg/L	200.8	0.0001	0.001	0.001	0.27	ND
Toluene	g/L	624	0.00000007	0.0000005	0.000002	11.4	DNQ 0.0000023 Est. Conc.
Tributyltin	µg/L	GC/MS	0.005	—	0.1	0.188	ND
1,1,1-Trichloroethane	g/L	624	0.000000055	0.0000005	0.000002	72.4	ND

^f Total chromium concentration was reported rather than the concentration of the trivalent oxidation state alone.

Analytical Results for Effluent Samples Collected during July 2016

Chemical Compound or Parameter	Units	Method	Detection Limit ^a	Practical ^b Quantification Limit	Minimum Level ^c	Permit ^d Limit	Reported Value
Objectives for the Protection of Human Health: Carcinogens							
Acrylonitrile	µg/L	624	0.4	5.	2.	13.4	ND
Aldrin	ng/L	608	2.	5.	5.	2.95	ND
Benzene	µg/L	624	0.05	0.5	2.	791.	ND
Benzidine	ng/L	625	14,000.	100,000.	25,000.	9,25	ND
Beryllium	µg/L	200.7	0.77	10.	2.	4.42	ND
Bis (2-chloroethyl) ether	µg/L	625	4.3	10.	5.	6.03	ND
Bis(2-ethylhexyl) phthalate	µg/L	625	3.4	25.	25.	469.	ND
Carbon Tetrachloride	µg/L	624	0.05	0.5	2.	121.	ND
Chlordane	ng/L	608	85	500.	100.	3.08	ND
Dibromochloromethane	µg/L	624	0.077	0.5	2.	1,152.	ND
Chloroform	mg/L	624	0.00005	0.0005	0.002	17.4	DNQ 0.0008 Est. Conc. ^g
DDT (Sum)	ng/L	608	1.8	5.	10.	22.8	ND
1,4-Dichlorobenzene	mg/L	624	0.00005	0.0005	0.002	2.41	ND
3,3-Dichlorobenzidine	µg/L	625	3.2	50.	25.	1.09	ND
1,2-Dichloroethane	mg/L	624	0.00013	0.0005	0.002	3.75	ND
1,1-Dichloroethene	mg/L	624	0.000075	0.0005	0.002	0.12	ND
Dichlorobromomethane	mg/L	624	0.000081	0.0005	0.002	0.83	ND
Methylene chloride	mg/L	624	0.00041	0.001	0.002	60.3	ND
1,3-Dichloropropene	mg/L	624	0.00005	0.0005	5.	1.19	ND
Dieldrin	ng/L	608	2.5	5.	10.	5.36	ND
2,4-Dinitrotoluene	µg/L	625	3.8	10.	25.	348.	ND
1,2-Diphenylhydrazine	µg/L	625	2.2	10.	5.	21.4	ND
Halomethanes	mg/L	624	0.000077	0.0005	0.002	17.4	ND
Heptachlor	pg/L	608	3,200.	5,000.	10,000.	6,700. ^h	ND
Heptachlor Epoxide	pg/L	608	4,800.	5,000.	10,000.	2,680. ⁱ	ND

^g The reported concentration was above the PQL and accordingly, was not flagged “as estimated” by the chemistry laboratory (See Attachment C). However, in accordance with the guidance from the COP, the reported value is listed here as an estimated concentration (“Est. Conc.”) because the measured value was below the minimum level (ML).

^h The heptachlor and heptachlor epoxide limits listed in the discharge permit are incorrect; the correct limiting concentrations are shown here.

Analytical Results for Effluent Samples Collected during July 2016

Chemical Compound or Parameter	Units	Method	Detection Limit ^a	Practical ^b Quantification Limit	Minimum Level ^c	Permit ^d Limit	Reported Value
Hexachlorobenzene	ng/L	625	2,400.	10,000.	5,000.	28.1	ND
Hexachlorobutadiene	mg/L	625	0.0024	0.01	0.005	1.88	ND
Hexachloroethane	µg/L	625	4.5	10.	5.	335.	ND
Isophorone	mg/L	625	0.0016	0.01	0.005	98.	ND
N-Nitrosodimethylamine	µg/L	625	6.	10.	25.	978.	ND
N-Nitrosodi-n-propylamine	µg/L	625	2.9	10.	25.	50.9	ND
N-Nitrosodiphenylamine	µg/L	625	2.8	10.	5.	335.	ND
PAHs	µg/L	625	1.6	10.	50.	1.18	ND
Total PCB's	ng/L	608	51.	200.	500.	2.55	ND
Dioxin (TCDD equivalents)	pg/L	1613B	0.00694	0.0503	—	0.52	DNQ 0.0674 Est. Conc. ⁱ
1,1,2,2-Tetrachloroethane	mg/L	624	0.000096	0.0005	0.002	0.31	ND
Tetrachloroethene	µg/L	624	0.077	0.5	2.	268.	ND
Toxaphene	ng/L	608	200.	2,000.	500.	28.1	ND
Trichloroethene	mg/L	624	0.000087	0.0005	0.002	3.62	ND
1,1,2-Trichloroethane	mg/L	624	0.00014	0.0005	0.002	1.26	ND
2,4,6-Trichlorophenol	mg/L	625	0.0026	0.025	0.05	0.039	ND
Vinyl chloride	mg/L	624	0.000068	0.0005	0.002	4.82	ND

ⁱ The Toxic Equivalent Quotient (TEQ) reported here was flagged as estimated because it was based on the detection of only two isomers (OCDD and 1,2,3,4,6,7,8-HpCDD) at concentrations "below the Lower Calibration Limit" (See Data Qualifier J in the laboratory report contained in Attachment C).

ATTACHMENT B
DISCHARGE MONITORING REPORTS

eSMR PDF Summary: DMR

NPDES Permit #: CA0047881

Facility: MORRO BAY/CAYUCOS WWTP

DMR Parameters

Monitoring Period: 07/01/2016 - 12/31/2016											
Loc	Sea	Param	Param Text	Q1	Q2	C1	C2	C3	Excur Count	Analy Freq	Sample Type
1	0	00620	Nitrogen, nitrate total (as N)					NODI: B Daily Maximum			
1	0	00720	Cyanide, total (as CN)			NODI: B 6 Month Median	NODI: B Daily Maximum	NODI: B Instantaneous Maximums			
1	0	00955	Silica, dissolved (as SiO2)					10.0 mg/L Daily Maximum	0	Semiannual	GRAB
1	0	00978	Arsenic, total recoverable			NODI: Q 6 Month Median	NODI: Q Daily Maximum	NODI: Q Instantaneous Maximums			
1	0	00981	Selenium, total recoverable			NODI: Q 6 Month Median	NODI: Q Daily Maximum	NODI: Q Instantaneous Maximums			
1	0	01032	Chromium, hexavalent (as Cr)			NODI: Q 6 Month Median	NODI: Q Daily Maximum	NODI: Q Instantaneous Maximums			
1	0	01074	Nickel, total recoverable			NODI: Q 6 Month Median	NODI: Q Daily Maximum	NODI: Q Instantaneous Maximums			
1	0	01079	Silver total recoverable			NODI: B 6 Month Median	NODI: B Daily Maximum	NODI: B Instantaneous Maximums			
1	0	01094	Zinc, total recoverable			0.07 mg/L 6 Month Median	0.07 mg/L Daily Maximum	0.07 mg/L Instantaneous Maximums	0	Semiannual	COMP24
1	0	01113	Cadmium, total recoverable			NODI: B 6 Month Median	NODI: B Daily Maximum	NODI: B Instantaneous Maximums			

Feature - LS: 001-S Monitoring Period: 07/01/2016 - 12/31/2016											
Loc	Sea	Param	Param Text	Q1	Q2	C1	C2	C3	Excur Count	Analy Freq	Sample Type
1	0	01114	Lead, total recoverable			0.0014 mg/L 6 Month Median	0.0014 mg/L Daily Maximum	0.0014 mg/L Instantaneous Maximum	0	Semiannual	COMP24
1	0	01119	Copper, total recoverable			0.022 mg/L 6 Month Median	0.022 mg/L Daily Maximum	0.022 mg/L Instantaneous Maximum	0	Semiannual	COMP24
1	0	04175	Phosphate, ortho (as P)					3.2 mg/L Daily Maximum	0	Semiannual	GRAB
1	0	71800	Urea					0.093 mg/L Daily Maximum	0	Semiannual	GRAB
1	0	71901	Mercury, total recoverable			NODI: B 6 Month Median	NODI: B Daily Maximum	NODI: B Instantaneous Maximum			
1	0	TTK1D	Static 48Hr Chronic Macrocystis Pyrifera					NODI: 9 Daily Maximum			
1	0	TTK3R	Static 48Hr Chronic Haliotis Rufescens					17.9 tox chronic Daily Maximum	0	Semiannual	COMP24

eSMR PDF Summary: DMR

NPDES Permit #: CA0047881

Facility: MORRO BAY/CAYUCOS WWTP

DMR Parameters

Monitoring Period: 01/01/2016 - 12/31/2016											
Loc	Sea	Param	Param Text	Q1	Q2	C1	C2	C3	Excur Count	Analy Freq	Sample Type
1	0	00189	Radioactivity					22.0 pCi/L Daily Maximum	0	Annual	COMP24
1	0	00982	Thallium, total recoverable				NODI: B Monthly Average				
1	0	00998	Beryllium, total recoverable (as Be)				NODI: B Monthly Average				
1	0	01033	Chromium, trivalent (as Cr)				NODI: Q Monthly Average				
1	0	01268	Antimony, total recoverable				NODI: B Monthly Average				
1	0	03615	2-Methyl-4,6-dinitrophenol				NODI: B Monthly Average				
1	0	03824	Tributyltin				NODI: B Monthly Average				
1	0	22456	Polynuclear Aromatic Hydrocarbons (PAHs)				NODI: B Monthly Average				
1	0	32101	Dichlorobromo methane				NODI: B Monthly Average				
1	0	32102	Carbon tetrachloride				NODI: B Monthly Average				

Feature - LS: 001-Y Monitoring Period: 01/01/2016 - 12/31/2016											
Loc	Sea	Param	Param Text	Q1	Q2	C1	C2	C3	Excur Count	Analy Freq	Sample Type
1	0	32103	1,2-Dichloroethane				NODI: B Monthly Average				
1	0	32105	Dibromochloro methane				NODI: B Monthly Average				
1	0	32106	Chloroform				NODI: Q Monthly Average				
1	0	34010	Toluene				NODI: Q Monthly Average				
1	0	34030	Benzene				NODI: B Monthly Average				
1	0	34210	Acrolein				NODI: B Monthly Average				
1	0	34215	Acrylonitrile				NODI: B Monthly Average				
1	0	34273	Bis(2-chloroethyl) ether				NODI: B Monthly Average				
1	0	34278	Bis(2-chloroethoxy) methane				NODI: B Monthly Average				
1	0	34283	Bis(2-chloroisopropyl) ether				NODI: B Monthly Average				
1	0	34301	Chlorobenzene				NODI: B Monthly Average				
1	0	34336	Diethyl phthalate				NODI: B Monthly Average				
1	0	34341	Dimethyl phthalate				NODI: B Monthly Average				

Feature - LS: 001-Y Monitoring Period: 01/01/2016 - 12/31/2016											
Loc	Sea	Param	Param Text	Q1	Q2	C1	C2	C3	Excur Count	Analy Freq	Sample Type
1	0	34346	1,2-Diphenylhydrazine				NODI: B Monthly Average				
1	0	34371	Ethylbenzene				NODI: B Monthly Average				
1	0	34376	Fluoranthene				NODI: B Monthly Average				
1	0	34386	Hexachlorocyclopentadiene				NODI: B Monthly Average				
1	0	34391	Hexachlorobutadiene				NODI: B Monthly Average				
1	0	34396	Hexachloroethane				NODI: B Monthly Average				
1	0	34408	Isophorone				NODI: B Monthly Average				
1	0	34423	Methylene chloride				NODI: B Monthly Average				
1	0	34428	N-Nitrosodi-N-propylamine				NODI: B Monthly Average				
1	0	34433	N-Nitrosodiphenylamine				NODI: B Monthly Average				
1	0	34438	N-Nitrosodimethylamine (NDMA)				NODI: B Monthly Average				
1	0	34447	Nitrobenzene				NODI: B Monthly Average				
1	0	34475	Tetrachloroethene				NODI: B Monthly Average				

Feature - LS: 001-Y Monitoring Period: 01/01/2016 - 12/31/2016											
Loc	Sea	Param	Param Text	Q1	Q2	C1	C2	C3	Excur Count	Analy Freq	Sample Type
1	0	34501	1,1-Dichloroethylene				NODI: B Monthly Average				
1	0	34506	1,1,1-Trichloroethane				NODI: B Monthly Average				
1	0	34511	1,1,2-Trichloroethane				NODI: B Monthly Average				
1	0	34516	1,1,2,2-Tetrachloroethane				NODI: B Monthly Average				
1	0	34571	1,4-Dichlorobenzene				NODI: B Monthly Average				
1	0	34611	2,4-Dinitrotoluene				NODI: B Monthly Average				
1	0	34616	2,4-Dinitrophenol				NODI: B Monthly Average				
1	0	34621	2,4,6-Trichlorophenol				NODI: B Monthly Average				
1	0	34631	3,3'-Dichlorobenzidine				NODI: B Monthly Average				
1	0	39100	Bis(2-ethylhexyl)phthalate				NODI: B Monthly Average				
1	0	39110	Di-n-butylphthalate				NODI: B Monthly Average				
1	0	39120	Benzidine				NODI: B Monthly Average				
1	0	39175	Vinyl chloride				NODI: B Monthly Average				

Feature - LS: 001-Y Monitoring Period: 01/01/2016 - 12/31/2016											
Loc	Sea	Param	Param Text	Q1	Q2	C1	C2	C3	Excur Count	Analy Freq	Sample Type
1	0	39180	Trichloroethylene				NODI: B Monthly Average				
1	0	39330	Aldrin				NODI: B Monthly Average				
1	0	39350	Chlordane (tech mix. and metabolites)				NODI: B Monthly Average				
1	0	39379	DDT/DDD/DDE, sum of p,p' & o, p' isomers				NODI: B Monthly Average				
1	0	39380	Dieldrin				NODI: B Monthly Average				
1	0	39388	Endosulfan, total			NODI: B 6 Month Median	NODI: B Daily Maximum	NODI: B Instantaneous Maximums			
1	0	39390	Endrin			NODI: B 6 Month Median	NODI: B Daily Maximum	NODI: B Instantaneous Maximums			
1	0	39400	Toxaphene				NODI: B Monthly Average				
1	0	39410	Heptachlor				NODI: B Monthly Average				
1	0	39420	Heptachlor epoxide				NODI: B Monthly Average				
1	0	39516	Polychlorinated biphenyls (PCBs)				NODI: B Monthly Average				
1	0	39700	Hexachlorobenzene				NODI: B Monthly Average				
1	0	74015	Phenols, chlorinated			NODI: B 6 Month Median	NODI: B Daily Maximum	NODI: B Instantaneous Maximums			

Feature - LS: 001-Y Monitoring Period: 01/01/2016 - 12/31/2016											
Loc	Sea	Param	Param Text	Q1	Q2	C1	C2	C3	Excur Count	Analy Freq	Sample Type
1	0	77163	1,3-Dichloropropene				NODI: B Monthly Average				
1	0	77835	Hexachlorocyclohexane, total			NODI: B 6 Month Median	NODI: B Daily Maximum	NODI: B Instantaneous Maximums			
1	0	78218	Phenolic compounds, unchlorinated			NODI: Q 6 Month Median	NODI: Q Daily Maximum	NODI: Q Instantaneous Maximums			
1	0	78456	Halomethanes				NODI: B Monthly Average				
1	0	81524	Dichlorobenzenes				NODI: B Monthly Average				
1	0	82698	TCDD equivalents				NODI: Q Monthly Average				

ATTACHMENT C
LABORATORY REPORTS



Date of Report: 07/27/2016

Doug Coats

Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Client Project: [none]
BCL Project: Semi-Annual Eff
BCL Work Order: 1619377
Invoice ID: B241495

Enclosed are the results of analyses for samples received by the laboratory on 7/13/2016. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Tina Green
Client Services Manager

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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Chain of Custody Form

BC Laboratories, Inc. Environmental Testing Laboratory Since 1949.

Report To: Client: Marine Research Specialists Attn: Douglas A Coats Street Address: 3140 Telegraph Rd Ste A City, State, Zip: Ventura, CA 93003 Phone: 805.218.3662 Email Address: Marine@Rain.org Work Order# 16-19377		Project #: Project Name: MBCSD H2 2016 Global ID #: Sampler(s):		Analysis Requested EPA 625 (see comments) <input checked="" type="checkbox"/> EPA 625 (see comments) EPA 624 (see attachment) <input checked="" type="checkbox"/> EPA 608 <input checked="" type="checkbox"/> Cyanide: EPA 3353 <input checked="" type="checkbox"/> Metals: Ag, Be, Cd, Cr, Cu, Ni, Sb, Zn, As, Pb, Se, Ti, & Hg <input checked="" type="checkbox"/>		Comments: Grab 625: Total chlorinated & non-chlorinated phenolic compounds. Report only the phenolic compounds! Composite 625: full list of base neutral and acid-extractable congeners. See next page! Are there any tests with holding times less than or equal to 48 hours? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Notes Please see/read page 2 for additional instructions		
Sample #	Description	Date Sampled	Time Sampled	Soil	Drinking Water	Ground Water	Waste Water	Other
-1	BC1 Grab ARS	13 JUL 16	0930	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
-2	BC2 Comp ARS	13 JUL 16	0930	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
				CHK BY DISTRIBUTION SUB-CUT <input type="checkbox"/>				
Billing <input checked="" type="checkbox"/> Same as above		EDF Required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Send Copy to State of CA? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Sample Disposal <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposed by lab <input type="checkbox"/> Archived <input type="checkbox"/> Months		Special Reporting <input checked="" type="checkbox"/> QC <input type="checkbox"/> EDF <input type="checkbox"/> Raw Data		
Client: Address: City: State Zip Attn: PO#:		1. Requisitioned By: <u>James Keefe</u> Date: <u>7-13-16</u> Time: <u>13:41</u> 2. Requisitioned By: <u>John N</u> Date: <u>7-13-16</u> Time: <u>20:07</u> 3. Requisitioned By:		Requisitioned By: <u>John N</u> Date: <u>7-13-16</u> Time: <u>13:24</u> 2. Requisitioned By:		Date: <u>7-13-16</u> Time: <u>20:47</u>		



BC Laboratories
Chain of Custody Form
Addendum

Page 2 of 2

16-19377

Analysis of Effluent Samples collected from the Morro Bay Wastewater Treatment Plant in July 2016

Analysis	Sample	Method
Level IIA QC Report concentrations that are detected above the MDL, but are below the PQL		
Total Chlorinated and Total Non-Chlorinated Phenolic Compounds (Report only the phenolic compounds)	Grab	EPA-625
13 Metals:		
Ag Silver	Composite	EPA 200.7
As Arsenic	Composite	EPA 200.8
Be Beryllium	Composite	EPA 200.7
Cd Cadmium	Composite	EPA 200.7
Cr Chromium	Composite	EPA 200.7
Cu Copper	Composite	EPA 200.7
Hg Mercury	Composite	EPA 245.1
Ni Nickel	Composite	EPA 200.7
Pb Lead	Composite	EPA 200.8
Sb Antimony	Composite	EPA 200.7
Se Selenium	Composite	EPA 200.8
Tl Thallium	Composite	EPA 200.8
Zn Zinc	Composite	EPA 200.7
Volatile Organics - Low Level, Including Acrolein, and Acrylonitrile	Composite	EPA 624/8240
Organochlorine Pesticides and PCBs	Composite	EPA 608/8080
Phenolic Compounds: Full list of base-neutral and acid-extractable congeners	Composite	EPA 625/8270
Cyanide	Composite	EPA 335.3

Invoice and Report to be sent to: Doug Coats(Marine@Rain.org)
Marine Research Specialists
3140 Telegraph Rd., Suite A
Ventura, CA 93003
Telephone: (805) 218-3662

Samples to be collected from: Morro Bay Wastewater Treatment Plant
160 Atascadero Rd.
Morro Bay, CA 93442
Telephone: (805) 772-6272

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BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 1

Submission #: 16-19377

SHIPPING INFORMATION Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		SHIPPING CONTAINER Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		FREE LIQUID YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> (W) / S
--	--	--	--	---

Refrigerant: Ice Blue Ice None Other Comments: _____

Custody Seals Ice Chest Containers None Comments: _____
 Intact? Yes No Intact? Yes No

All samples received? Yes No All samples containers intact? Yes No Description(s) match COC? Yes No

COC Received
 YES NO

Emissivity: 0.97 Container: PE Thermometer ID: 208 Date/Time 7-13 2100
 Temperature: (A) 0.0 °C / (C) 0.1 °C Analyst Init ARL

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr ⁶										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz		D								
PT CYANIDE		E								
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK <u>094</u>			AB							
40ml VOA VIAL <u>096</u>		ABC								
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508 608 8080 <u>048</u>		FG								
QT EPA 515.1/8150										
QT EPA 525 625 <u>052</u>		AB	HJ							
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments: _____ Date/Time: 7-14-16 1852 Rev 21 05/23/2016
 Sample Numbering Completed By: ARL
 A = Actual / C = Corrected



Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1619377-01	COC Number:	—	Receive Date:	07/13/2016 20:47
	Project Number:	—	Sampling Date:	07/13/2016 09:30
	Sampling Location:	—	Sample Depth:	—
	Sampling Point:	BC1 Grab ARS	Lab Matrix:	Water
	Sampled By:	—	Sample Type:	Water
	<hr/>			
1619377-02	COC Number:	—	Receive Date:	07/13/2016 20:47
	Project Number:	—	Sampling Date:	07/13/2016 09:30
	Sampling Location:	—	Sample Depth:	—
	Sampling Point:	BC2 Comp ARS	Lab Matrix:	Water
	Sampled By:	—	Sample Type:	Water
	<hr/>			
1619377-03	COC Number:	—	Receive Date:	07/13/2016 20:47
	Project Number:	—	Sampling Date:	07/13/2016 00:00
	Sampling Location:	—	Sample Depth:	—
	Sampling Point:	Travel Blank	Lab Matrix:	Water
	Sampled By:	—	Sample Type:	Trip Blank
	<hr/>			

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 625)

BCL Sample ID: 1619377-01	Client Sample Name: BC1 Grab ARS, 7/13/2016 9:30:00AM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
4-Chloro-3-methylphenol	ND	ug/L	25	2.4	EPA-625	ND		1
2-Chlorophenol	ND	ug/L	10	2.2	EPA-625	ND		1
2,4-Dichlorophenol	ND	ug/L	10	3.2	EPA-625	ND		1
2,4-Dimethylphenol	ND	ug/L	10	3.0	EPA-625	ND		1
4,6-Dinitro-2-methylphenol	ND	ug/L	50	9.0	EPA-625	ND		1
2,4-Dinitrophenol	ND	ug/L	50	12	EPA-625	ND		1
2-Methylphenol	ND	ug/L	10	2.8	EPA-625	ND		1
3- & 4-Methylphenol	6.8	ug/L	10	3.6	EPA-625	ND	J	1
2-Nitrophenol	ND	ug/L	10	3.4	EPA-625	ND		1
4-Nitrophenol	ND	ug/L	10	9.5	EPA-625	ND		1
Pentachlorophenol	ND	ug/L	50	9.0	EPA-625	ND		1
Phenol	ND	ug/L	10	2.4	EPA-625	ND		1
2,4,5-Trichlorophenol	ND	ug/L	25	3.3	EPA-625	ND		1
2,4,6-Trichlorophenol	ND	ug/L	25	2.6	EPA-625	ND		1
2-Fluorophenol (Surrogate)	60.7	%	30 - 120 (LCL - UCL)		EPA-625			1
Phenol-d5 (Surrogate)	39.8	%	12 - 110 (LCL - UCL)		EPA-625			1
Nitrobenzene-d5 (Surrogate)	77.5	%	50 - 130 (LCL - UCL)		EPA-625			1
2-Fluorobiphenyl (Surrogate)	105	%	55 - 125 (LCL - UCL)		EPA-625			1
2,4,6-Tribromophenol (Surrogate)	76.8	%	40 - 150 (LCL - UCL)		EPA-625			1
p-Terphenyl-d14 (Surrogate)	73.5	%	40 - 150 (LCL - UCL)		EPA-625			1

Run #	Method	Prep Date	Run		Analyst	Instrument	Dilution	QC
			Date/Time					Batch ID
1	EPA-625	07/18/16	07/19/16	16:52	VH1	MS-B2	4.800	BZG1650

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Organochlorine Pesticides and PCB's (EPA Method 608)

BCL Sample ID: 1619377-02		Client Sample Name: BC2 Comp ARS, 7/13/2016 9:30:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Aldrin	ND	ug/L	0.0050	0.0020	EPA-608	ND		1
alpha-BHC	ND	ug/L	0.0050	0.0018	EPA-608	ND		1
beta-BHC	ND	ug/L	0.0050	0.0038	EPA-608	ND		1
delta-BHC	ND	ug/L	0.0050	0.0017	EPA-608	ND		1
gamma-BHC (Lindane)	ND	ug/L	0.0050	0.0019	EPA-608	ND		1
Chlordane (Technical)	ND	ug/L	0.50	0.085	EPA-608	ND		1
4,4'-DDD	ND	ug/L	0.0050	0.0018	EPA-608	ND		1
4,4'-DDE	ND	ug/L	0.0050	0.0018	EPA-608	ND		1
4,4'-DDT	ND	ug/L	0.0050	0.0018	EPA-608	ND		1
Dieldrin	ND	ug/L	0.0050	0.0025	EPA-608	ND		1
Endosulfan I	ND	ug/L	0.0050	0.0027	EPA-608	ND		1
Endosulfan II	ND	ug/L	0.0050	0.0025	EPA-608	ND		1
Endosulfan sulfate	ND	ug/L	0.0050	0.0024	EPA-608	ND		1
Endrin	ND	ug/L	0.0050	0.0033	EPA-608	ND		1
Endrin aldehyde	ND	ug/L	0.010	0.0036	EPA-608	ND		1
Heptachlor	ND	ug/L	0.0050	0.0032	EPA-608	ND		1
Heptachlor epoxide	ND	ug/L	0.0050	0.0048	EPA-608	ND		1
Heptachlor epoxide	ND	ug/L	0.0050	0.0048	EPA-608	ND		1
Methoxychlor	ND	ug/L	0.0050	0.0035	EPA-608	ND		1
Toxaphene	ND	ug/L	2.0	0.20	EPA-608	ND		1
PCB-1016	ND	ug/L	0.20	0.061	EPA-608	ND		1
PCB-1221	ND	ug/L	0.20	0.20	EPA-608	ND		1
PCB-1232	ND	ug/L	0.20	0.12	EPA-608	ND		1
PCB-1242	ND	ug/L	0.20	0.15	EPA-608	ND		1
PCB-1248	ND	ug/L	0.20	0.060	EPA-608	ND		1
PCB-1254	ND	ug/L	0.20	0.060	EPA-608	ND		1
PCB-1260	ND	ug/L	0.20	0.051	EPA-608	ND		1
Total PCB's (Summation)	ND	ug/L	0.20	0.10	EPA-608	ND		1
TCMX (Surrogate)	21.8	%	40 - 140 (LCL - UCL)		EPA-608		S09	1
TCMX (Surrogate)	21.8	%	40 - 140 (LCL - UCL)		EPA-608		S09	1
Decachlorobiphenyl (Surrogate)	12.4	%	40 - 130 (LCL - UCL)		EPA-608		S09	1
Decachlorobiphenyl (Surrogate)	12.4	%	40 - 130 (LCL - UCL)		EPA-608		S09	1

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Organochlorine Pesticides and PCB's (EPA Method 608)

BCL Sample ID: 1619377-02	Client Sample Name: BC2 Comp ARS, 7/13/2016 9:30:00AM
----------------------------------	--

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-608	07/20/16	07/21/16 18:36	HKS	GC-17	1	BZG1804

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 624)

BCL Sample ID: 1619377-02	Client Sample Name: BC2 Comp ARS, 7/13/2016 9:30:00AM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.050	EPA-624	ND		1
Bromodichloromethane	ND	ug/L	0.50	0.081	EPA-624	ND		1
Bromoform	ND	ug/L	0.50	0.11	EPA-624	ND		1
Bromomethane	ND	ug/L	1.0	0.16	EPA-624	ND		1
Carbon tetrachloride	ND	ug/L	0.50	0.050	EPA-624	ND		1
Chlorobenzene	ND	ug/L	0.50	0.050	EPA-624	ND		1
Chloroethane	ND	ug/L	0.50	0.063	EPA-624	ND		1
Chloroform	0.80	ug/L	0.50	0.050	EPA-624	ND		1
Chloromethane	ND	ug/L	0.50	0.090	EPA-624	ND		1
Dibromochloromethane	ND	ug/L	0.50	0.077	EPA-624	ND		1
1,2-Dichlorobenzene	ND	ug/L	0.50	0.072	EPA-624	ND		1
1,3-Dichlorobenzene	ND	ug/L	0.50	0.050	EPA-624	ND		1
1,4-Dichlorobenzene	ND	ug/L	0.50	0.050	EPA-624	ND		1
1,1-Dichloroethane	ND	ug/L	0.50	0.050	EPA-624	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	0.13	EPA-624	ND		1
1,1-Dichloroethene	ND	ug/L	0.50	0.075	EPA-624	ND		1
trans-1,2-Dichloroethene	ND	ug/L	0.50	0.075	EPA-624	ND		1
1,2-Dichloropropane	ND	ug/L	0.50	0.095	EPA-624	ND		1
cis-1,3-Dichloropropene	ND	ug/L	0.50	0.050	EPA-624	ND		1
trans-1,3-Dichloropropene	ND	ug/L	0.50	0.063	EPA-624	ND		1
Ethylbenzene	ND	ug/L	0.50	0.054	EPA-624	ND		1
Methylene chloride	ND	ug/L	1.0	0.41	EPA-624	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.095	EPA-624	ND		1
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	0.096	EPA-624	ND		1
Tetrachloroethene	ND	ug/L	0.50	0.077	EPA-624	ND		1
Toluene	0.23	ug/L	0.50	0.070	EPA-624	ND	J	1
1,1,1-Trichloroethane	ND	ug/L	0.50	0.072	EPA-624	ND		1
1,1,2-Trichloroethane	ND	ug/L	0.50	0.14	EPA-624	ND		1
Trichloroethene	ND	ug/L	0.50	0.087	EPA-624	ND		1
Trichlorofluoromethane	ND	ug/L	0.50	0.12	EPA-624	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ug/L	0.50	0.050	EPA-624	ND		1
Vinyl chloride	ND	ug/L	0.50	0.068	EPA-624	ND		1
Total Xylenes	ND	ug/L	0.50	0.16	EPA-624	ND		1

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 624)

BCL Sample ID: 1619377-02	Client Sample Name: BC2 Comp ARS, 7/13/2016 9:30:00AM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Acrolein	ND	ug/L	20	1.1	EPA-624	ND		1
Acrylonitrile	ND	ug/L	5.0	0.40	EPA-624	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.10	EPA-624	ND		1
o-Xylene	ND	ug/L	0.50	0.051	EPA-624	ND		1
1,2-Dichloroethane-d4 (Surrogate)	100	%	75 - 125 (LCL - UCL)		EPA-624			1
Toluene-d8 (Surrogate)	97.8	%	80 - 120 (LCL - UCL)		EPA-624			1
4-Bromofluorobenzene (Surrogate)	100	%	80 - 120 (LCL - UCL)		EPA-624			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-624	07/20/16	07/20/16 08:20	MGC	MS-V7	1	BZG1575

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 625)

BCL Sample ID: 1619377-02	Client Sample Name: BC2 Comp ARS, 7/13/2016 9:30:00AM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Acenaphthene	ND	ug/L	10	2.0	EPA-625	ND		1
Acenaphthylene	ND	ug/L	10	1.7	EPA-625	ND		1
Aldrin	ND	ug/L	10	2.2	EPA-625	ND		1
Aniline	ND	ug/L	25	3.6	EPA-625	ND		1
Anthracene	ND	ug/L	10	1.6	EPA-625	ND		1
Benzidine	ND	ug/L	100	14	EPA-625	ND		1
Benzo[a]anthracene	ND	ug/L	10	1.8	EPA-625	ND		1
Benzo[b]fluoranthene	ND	ug/L	10	4.4	EPA-625	ND		1
Benzo[k]fluoranthene	ND	ug/L	10	4.8	EPA-625	ND		1
Benzo[a]pyrene	ND	ug/L	10	4.4	EPA-625	ND		1
Benzo[g,h,i]perylene	ND	ug/L	10	6.0	EPA-625	ND		1
Benzoic acid	ND	ug/L	50	10	EPA-625	ND		1
Benzyl alcohol	ND	ug/L	10	2.2	EPA-625	ND		1
Benzyl butyl phthalate	ND	ug/L	10	3.8	EPA-625	ND		1
alpha-BHC	ND	ug/L	10	9.0	EPA-625	ND		1
beta-BHC	ND	ug/L	10	7.0	EPA-625	ND		1
delta-BHC	ND	ug/L	10	9.0	EPA-625	ND		1
gamma-BHC (Lindane)	ND	ug/L	10	6.0	EPA-625	ND		1
bis(2-Chloroethoxy)methane	ND	ug/L	10	2.2	EPA-625	ND		1
bis(2-Chloroethyl) ether	ND	ug/L	10	4.3	EPA-625	ND		1
bis(2-Chloroisopropyl) ether	ND	ug/L	10	2.9	EPA-625	ND		1
bis(2-Ethylhexyl)phthalate	ND	ug/L	25	3.4	EPA-625	ND		1
4-Bromophenyl phenyl ether	ND	ug/L	10	2.1	EPA-625	ND		1
4-Chloroaniline	ND	ug/L	10	2.0	EPA-625	ND		1
2-Chloronaphthalene	ND	ug/L	10	1.7	EPA-625	ND		1
4-Chlorophenyl phenyl ether	ND	ug/L	10	2.3	EPA-625	ND		1
Chrysene	ND	ug/L	10	2.1	EPA-625	ND		1
4,4'-DDD	ND	ug/L	10	3.7	EPA-625	ND		1
4,4'-DDE	ND	ug/L	15	6.0	EPA-625	ND		1
4,4'-DDT	ND	ug/L	10	5.5	EPA-625	ND		1
Dibenzo[a,h]anthracene	ND	ug/L	15	8.0	EPA-625	ND		1
Dibenzofuran	ND	ug/L	10	1.6	EPA-625	ND		1
1,2-Dichlorobenzene	ND	ug/L	10	2.0	EPA-625	ND		1

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3140 Telegraph Road, Suite A
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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 625)

BCL Sample ID: 1619377-02	Client Sample Name: BC2 Comp ARS, 7/13/2016 9:30:00AM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
1,3-Dichlorobenzene	ND	ug/L	10	2.5	EPA-625	ND		1
1,4-Dichlorobenzene	ND	ug/L	10	2.8	EPA-625	ND		1
3,3-Dichlorobenzidine	ND	ug/L	50	3.2	EPA-625	ND		1
Dieldrin	ND	ug/L	15	3.4	EPA-625	ND		1
Diethyl phthalate	ND	ug/L	10	1.8	EPA-625	ND		1
Dimethyl phthalate	ND	ug/L	10	2.0	EPA-625	ND		1
Di-n-butyl phthalate	ND	ug/L	10	1.6	EPA-625	ND		1
2,4-Dinitrotoluene	ND	ug/L	10	3.8	EPA-625	ND		1
2,6-Dinitrotoluene	ND	ug/L	10	2.8	EPA-625	ND		1
Di-n-octyl phthalate	ND	ug/L	10	3.0	EPA-625	ND		1
1,2-Diphenylhydrazine	ND	ug/L	10	2.2	EPA-625	ND		1
Endosulfan I	ND	ug/L	50	16	EPA-625	ND		1
Endosulfan II	ND	ug/L	50	16	EPA-625	ND		1
Endosulfan sulfate	ND	ug/L	15	12	EPA-625	ND		1
Endrin	ND	ug/L	10	7.0	EPA-625	ND		1
Endrin aldehyde	ND	ug/L	50	13	EPA-625	ND		1
Fluoranthene	ND	ug/L	10	3.0	EPA-625	ND		1
Fluorene	ND	ug/L	10	2.7	EPA-625	ND		1
Heptachlor	ND	ug/L	10	4.7	EPA-625	ND		1
Heptachlor epoxide	ND	ug/L	10	3.4	EPA-625	ND		1
Hexachlorobenzene	ND	ug/L	10	2.4	EPA-625	ND		1
Hexachlorobutadiene	ND	ug/L	10	2.4	EPA-625	ND		1
Hexachlorocyclopentadiene	ND	ug/L	10	2.6	EPA-625	ND		1
Hexachloroethane	ND	ug/L	10	4.5	EPA-625	ND		1
Indeno[1,2,3-cd]pyrene	ND	ug/L	10	6.0	EPA-625	ND		1
Isophorone	ND	ug/L	10	1.6	EPA-625	ND		1
2-Methylnaphthalene	ND	ug/L	10	1.9	EPA-625	ND		1
Naphthalene	ND	ug/L	10	1.4	EPA-625	ND		1
2-Naphthylamine	ND	ug/L	100	4.2	EPA-625	ND		1
2-Nitroaniline	ND	ug/L	10	3.0	EPA-625	ND		1
3-Nitroaniline	ND	ug/L	10	4.6	EPA-625	ND		1
4-Nitroaniline	ND	ug/L	25	6.5	EPA-625	ND		1
Nitrobenzene	ND	ug/L	10	1.8	EPA-625	ND		1

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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 625)

Table with 2 columns: BCL Sample ID (1619377-02) and Client Sample Name (BC2 Comp ARS, 7/13/2016 9:30:00AM)

Main data table with columns: Constituent, Result, Units, PQL, MDL, Method, MB Bias, Lab Quals, Run #. Lists various chemical compounds and their analysis results.

Summary table with columns: Run #, Method, Prep Date, Run Date/Time, Analyst, Instrument, Dilution, QC Batch ID. Shows details for Run #1.

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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Water Analysis (General Chemistry)

BCL Sample ID: 1619377-02	Client Sample Name: BC2 Comp ARS, 7/13/2016 9:30:00AM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Cyanide	ND	mg/L	0.0050	0.0031	EPA-335.4	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-335.4	07/20/16	07/21/16 13:37	RCC	KONE-1	1	BZG1624

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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Metals Analysis

BCL Sample ID: 1619377-02	Client Sample Name: BC2 Comp ARS, 7/13/2016 9:30:00AM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Mercury	ND	ug/L	0.20	0.030	EPA-245.1	ND		1
Total Recoverable Antimony	ND	ug/L	100	5.0	EPA-200.7	ND		2
Total Recoverable Arsenic	1.1	ug/L	2.0	0.70	EPA-200.8	ND	J	3
Total Recoverable Beryllium	ND	ug/L	10	0.77	EPA-200.7	ND		2
Total Recoverable Cadmium	ND	ug/L	10	1.1	EPA-200.7	ND		2
Total Recoverable Chromium	1.3	ug/L	10	1.2	EPA-200.7	ND	J	2
Total Recoverable Copper	22	ug/L	10	1.2	EPA-200.7	ND		2
Total Recoverable Lead	1.4	ug/L	1.0	0.10	EPA-200.8	ND		3
Total Recoverable Nickel	4.8	ug/L	10	2.3	EPA-200.7	ND	J	2
Total Recoverable Selenium	1.5	ug/L	2.0	0.19	EPA-200.8	ND	J	3
Total Recoverable Silver	ND	ug/L	10	1.3	EPA-200.7	ND		2
Total Recoverable Thallium	ND	ug/L	1.0	0.10	EPA-200.8	ND		3
Total Recoverable Zinc	70	ug/L	50	1.3	EPA-200.7	13		2

Run #	Method	Prep Date	Run		Analyst	Instrument	Dilution	QC
			Date/Time					Batch ID
1	EPA-245.1	07/25/16	07/26/16	09:57	MEV	CETAC2	1	BZG2070
2	EPA-200.7	07/20/16	07/20/16	18:32	JRG	PE-OP2	1	BZG1592
3	EPA-200.8	07/19/16	07/19/16	15:14	GPD	PE-EL3	1	BZG1469

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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 624)

BCL Sample ID:	1619377-03	Client Sample Name:	Travel Blank, 7/13/2016 12:00:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #	
Benzene	ND	ug/L	0.50	0.050	EPA-624	ND		1	
Bromodichloromethane	ND	ug/L	0.50	0.081	EPA-624	ND		1	
Bromoform	ND	ug/L	0.50	0.11	EPA-624	ND		1	
Bromomethane	ND	ug/L	1.0	0.16	EPA-624	ND		1	
Carbon tetrachloride	ND	ug/L	0.50	0.050	EPA-624	ND		1	
Chlorobenzene	ND	ug/L	0.50	0.050	EPA-624	ND		1	
Chloroethane	ND	ug/L	0.50	0.063	EPA-624	ND		1	
Chloroform	ND	ug/L	0.50	0.050	EPA-624	ND		1	
Chloromethane	ND	ug/L	0.50	0.090	EPA-624	ND		1	
Dibromochloromethane	ND	ug/L	0.50	0.077	EPA-624	ND		1	
1,2-Dichlorobenzene	ND	ug/L	0.50	0.072	EPA-624	ND		1	
1,3-Dichlorobenzene	ND	ug/L	0.50	0.050	EPA-624	ND		1	
1,4-Dichlorobenzene	ND	ug/L	0.50	0.050	EPA-624	ND		1	
1,1-Dichloroethane	ND	ug/L	0.50	0.050	EPA-624	ND		1	
1,2-Dichloroethane	ND	ug/L	0.50	0.13	EPA-624	ND		1	
1,1-Dichloroethene	ND	ug/L	0.50	0.075	EPA-624	ND		1	
trans-1,2-Dichloroethene	ND	ug/L	0.50	0.075	EPA-624	ND		1	
1,2-Dichloropropane	ND	ug/L	0.50	0.095	EPA-624	ND		1	
cis-1,3-Dichloropropene	ND	ug/L	0.50	0.050	EPA-624	ND		1	
trans-1,3-Dichloropropene	ND	ug/L	0.50	0.063	EPA-624	ND		1	
Ethylbenzene	ND	ug/L	0.50	0.054	EPA-624	ND		1	
Methylene chloride	ND	ug/L	1.0	0.41	EPA-624	ND		1	
Methyl t-butyl ether	ND	ug/L	0.50	0.095	EPA-624	ND		1	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	0.096	EPA-624	ND		1	
Tetrachloroethene	ND	ug/L	0.50	0.077	EPA-624	ND		1	
Toluene	ND	ug/L	0.50	0.070	EPA-624	ND		1	
1,1,1-Trichloroethane	ND	ug/L	0.50	0.072	EPA-624	ND		1	
1,1,2-Trichloroethane	ND	ug/L	0.50	0.14	EPA-624	ND		1	
Trichloroethene	ND	ug/L	0.50	0.087	EPA-624	ND		1	
Trichlorofluoromethane	ND	ug/L	0.50	0.12	EPA-624	ND		1	
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ug/L	0.50	0.050	EPA-624	ND		1	
Vinyl chloride	ND	ug/L	0.50	0.068	EPA-624	ND		1	
Total Xylenes	ND	ug/L	0.50	0.16	EPA-624	ND		1	

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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 624)

BCL Sample ID: 1619377-03	Client Sample Name: Travel Blank, 7/13/2016 12:00:00AM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Acrolein	ND	ug/L	20	1.1	EPA-624	ND		1
Acrylonitrile	ND	ug/L	5.0	0.40	EPA-624	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.10	EPA-624	ND		1
o-Xylene	ND	ug/L	0.50	0.051	EPA-624	ND		1
1,2-Dichloroethane-d4 (Surrogate)	101	%	75 - 125 (LCL - UCL)		EPA-624			1
Toluene-d8 (Surrogate)	102	%	80 - 120 (LCL - UCL)		EPA-624			1
4-Bromofluorobenzene (Surrogate)	97.9	%	80 - 120 (LCL - UCL)		EPA-624			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-624	07/20/16	07/20/16 08:44	MGC	MS-V7	1	BZG1575

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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Organochlorine Pesticides and PCB's (EPA Method 608)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZG1804						
Aldrin	BZG1804-BLK1	ND	ug/L	0.0050	0.0020	
alpha-BHC	BZG1804-BLK1	ND	ug/L	0.0050	0.0018	
beta-BHC	BZG1804-BLK1	ND	ug/L	0.0050	0.0038	
delta-BHC	BZG1804-BLK1	ND	ug/L	0.0050	0.0017	
gamma-BHC (Lindane)	BZG1804-BLK1	ND	ug/L	0.0050	0.0019	
Chlordane (Technical)	BZG1804-BLK1	ND	ug/L	0.50	0.085	
4,4'-DDD	BZG1804-BLK1	ND	ug/L	0.0050	0.0018	
4,4'-DDE	BZG1804-BLK1	ND	ug/L	0.0050	0.0018	
4,4'-DDT	BZG1804-BLK1	ND	ug/L	0.0050	0.0018	
Dieldrin	BZG1804-BLK1	ND	ug/L	0.0050	0.0025	
Endosulfan I	BZG1804-BLK1	ND	ug/L	0.0050	0.0027	
Endosulfan II	BZG1804-BLK1	ND	ug/L	0.0050	0.0025	
Endosulfan sulfate	BZG1804-BLK1	ND	ug/L	0.0050	0.0024	
Endrin	BZG1804-BLK1	ND	ug/L	0.0050	0.0033	
Endrin aldehyde	BZG1804-BLK1	ND	ug/L	0.010	0.0036	
Heptachlor	BZG1804-BLK1	ND	ug/L	0.0050	0.0032	
Heptachlor epoxide	BZG1804-BLK1	ND	ug/L	0.0050	0.0048	
Methoxychlor	BZG1804-BLK1	ND	ug/L	0.0050	0.0035	
Toxaphene	BZG1804-BLK1	ND	ug/L	2.0	0.20	
PCB-1016	BZG1804-BLK1	ND	ug/L	0.20	0.061	
PCB-1221	BZG1804-BLK1	ND	ug/L	0.20	0.20	
PCB-1232	BZG1804-BLK1	ND	ug/L	0.20	0.12	
PCB-1242	BZG1804-BLK1	ND	ug/L	0.20	0.15	
PCB-1248	BZG1804-BLK1	ND	ug/L	0.20	0.060	
PCB-1254	BZG1804-BLK1	ND	ug/L	0.20	0.060	
PCB-1260	BZG1804-BLK1	ND	ug/L	0.20	0.051	
Total PCB's (Summation)	BZG1804-BLK1	ND	ug/L	0.20	0.10	
TCMX (Surrogate)	BZG1804-BLK1	70.8	%	40 - 140 (LCL - UCL)		
Decachlorobiphenyl (Surrogate)	BZG1804-BLK1	71.7	%	40 - 130 (LCL - UCL)		

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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Organochlorine Pesticides and PCB's (EPA Method 608)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: BZG1804										
Aldrin	BZG1804-BS1	LCS	0.10723	0.15000	ug/L	71.5		50	130	
gamma-BHC (Lindane)	BZG1804-BS1	LCS	0.11734	0.15000	ug/L	78.2		60	130	
4,4'-DDT	BZG1804-BS1	LCS	0.12927	0.15000	ug/L	86.2		60	130	
Dieldrin	BZG1804-BS1	LCS	0.12925	0.15000	ug/L	86.2		60	130	
Endrin	BZG1804-BS1	LCS	0.14050	0.15000	ug/L	93.7		60	130	
Heptachlor	BZG1804-BS1	LCS	0.12143	0.15000	ug/L	81.0		60	130	
TCMX (Surrogate)	BZG1804-BS1	LCS	0.20798	0.30000	ug/L	69.3		40	140	
Decachlorobiphenyl (Surrogate)	BZG1804-BS1	LCS	0.42734	0.60000	ug/L	71.2		40	130	

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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Organochlorine Pesticides and PCB's (EPA Method 608)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		Lab Quals
									RPD	Percent Recovery	
QC Batch ID: BZG1804		Used client sample: N									
Aldrin	MS	1616196-72	ND	0.091980	0.15000	ug/L		61.3		50 - 130	
	MSD	1616196-72	ND	0.096360	0.15000	ug/L	4.7	64.2	30	50 - 130	
gamma-BHC (Lindane)	MS	1616196-72	ND	0.11171	0.15000	ug/L		74.5		60 - 130	
	MSD	1616196-72	ND	0.11719	0.15000	ug/L	4.8	78.1	30	60 - 130	
4,4'-DDT	MS	1616196-72	ND	0.10926	0.15000	ug/L		72.8		60 - 130	
	MSD	1616196-72	ND	0.13485	0.15000	ug/L	21.0	89.9	30	60 - 130	
Dieldrin	MS	1616196-72	ND	0.11118	0.15000	ug/L		74.1		60 - 130	
	MSD	1616196-72	ND	0.12910	0.15000	ug/L	14.9	86.1	30	60 - 130	
Endrin	MS	1616196-72	ND	0.11129	0.15000	ug/L		74.2		60 - 130	
	MSD	1616196-72	ND	0.13764	0.15000	ug/L	21.2	91.8	30	60 - 130	
Heptachlor	MS	1616196-72	ND	0.10739	0.15000	ug/L		71.6		50 - 130	
	MSD	1616196-72	ND	0.11225	0.15000	ug/L	4.4	74.8	30	50 - 130	
TCMX (Surrogate)	MS	1616196-72	ND	0.19817	0.30000	ug/L		66.1		40 - 140	
	MSD	1616196-72	ND	0.20796	0.30000	ug/L	4.8	69.3		40 - 140	
Decachlorobiphenyl (Surrogate)	MS	1616196-72	ND	0.36671	0.60000	ug/L		61.1		40 - 130	
	MSD	1616196-72	ND	0.42278	0.60000	ug/L	14.2	70.5		40 - 130	

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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 624)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZG1575						
Benzene	BZG1575-BLK1	ND	ug/L	0.50	0.050	
Bromodichloromethane	BZG1575-BLK1	ND	ug/L	0.50	0.081	
Bromoform	BZG1575-BLK1	ND	ug/L	0.50	0.11	
Bromomethane	BZG1575-BLK1	ND	ug/L	1.0	0.16	
Carbon tetrachloride	BZG1575-BLK1	ND	ug/L	0.50	0.050	
Chlorobenzene	BZG1575-BLK1	ND	ug/L	0.50	0.050	
Chloroethane	BZG1575-BLK1	ND	ug/L	0.50	0.063	
Chloroform	BZG1575-BLK1	ND	ug/L	0.50	0.050	
Chloromethane	BZG1575-BLK1	ND	ug/L	0.50	0.090	
Dibromochloromethane	BZG1575-BLK1	ND	ug/L	0.50	0.077	
1,2-Dichlorobenzene	BZG1575-BLK1	ND	ug/L	0.50	0.072	
1,3-Dichlorobenzene	BZG1575-BLK1	ND	ug/L	0.50	0.050	
1,4-Dichlorobenzene	BZG1575-BLK1	ND	ug/L	0.50	0.050	
1,1-Dichloroethane	BZG1575-BLK1	ND	ug/L	0.50	0.050	
1,2-Dichloroethane	BZG1575-BLK1	ND	ug/L	0.50	0.13	
1,1-Dichloroethene	BZG1575-BLK1	ND	ug/L	0.50	0.075	
trans-1,2-Dichloroethene	BZG1575-BLK1	ND	ug/L	0.50	0.075	
1,2-Dichloropropane	BZG1575-BLK1	ND	ug/L	0.50	0.095	
cis-1,3-Dichloropropene	BZG1575-BLK1	ND	ug/L	0.50	0.050	
trans-1,3-Dichloropropene	BZG1575-BLK1	ND	ug/L	0.50	0.063	
Ethylbenzene	BZG1575-BLK1	ND	ug/L	0.50	0.054	
Methylene chloride	BZG1575-BLK1	ND	ug/L	1.0	0.41	
Methyl t-butyl ether	BZG1575-BLK1	ND	ug/L	0.50	0.095	
1,1,2,2-Tetrachloroethane	BZG1575-BLK1	ND	ug/L	0.50	0.096	
Tetrachloroethene	BZG1575-BLK1	ND	ug/L	0.50	0.077	
Toluene	BZG1575-BLK1	ND	ug/L	0.50	0.070	
1,1,1-Trichloroethane	BZG1575-BLK1	ND	ug/L	0.50	0.072	
1,1,2-Trichloroethane	BZG1575-BLK1	ND	ug/L	0.50	0.14	
Trichloroethene	BZG1575-BLK1	ND	ug/L	0.50	0.087	
Trichlorofluoromethane	BZG1575-BLK1	ND	ug/L	0.50	0.12	
1,1,2-Trichloro-1,2,2-trifluoroethane	BZG1575-BLK1	ND	ug/L	0.50	0.050	
Vinyl chloride	BZG1575-BLK1	ND	ug/L	0.50	0.068	
Total Xylenes	BZG1575-BLK1	ND	ug/L	0.50	0.16	
Acrolein	BZG1575-BLK1	ND	ug/L	20	1.1	

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 624)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZG1575						
Acrylonitrile	BZG1575-BLK1	ND	ug/L	5.0	0.40	
p- & m-Xylenes	BZG1575-BLK1	ND	ug/L	0.50	0.10	
o-Xylene	BZG1575-BLK1	ND	ug/L	0.50	0.051	
1,2-Dichloroethane-d4 (Surrogate)	BZG1575-BLK1	102	%	75 - 125 (LCL - UCL)		
Toluene-d8 (Surrogate)	BZG1575-BLK1	98.7	%	80 - 120 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BZG1575-BLK1	99.0	%	80 - 120 (LCL - UCL)		

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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 624)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab Quals
								Percent Recovery	RPD	
QC Batch ID: BZG1575										
Benzene	BZG1575-BS1	LCS	25.140	25.000	ug/L	101		79 - 120		
Bromodichloromethane	BZG1575-BS1	LCS	25.610	25.000	ug/L	102		79 - 125		
Bromoform	BZG1575-BS1	LCS	26.380	25.000	ug/L	106		66 - 130		
Bromomethane	BZG1575-BS1	LCS	23.460	25.000	ug/L	93.8		53 - 141		
Carbon tetrachloride	BZG1575-BS1	LCS	25.990	25.000	ug/L	104		72 - 136		
Chlorobenzene	BZG1575-BS1	LCS	25.210	25.000	ug/L	101		82 - 118		
Chloroethane	BZG1575-BS1	LCS	23.690	25.000	ug/L	94.8		60 - 138		
Chloroform	BZG1575-BS1	LCS	24.910	25.000	ug/L	99.6		79 - 124		
Chloromethane	BZG1575-BS1	LCS	20.870	25.000	ug/L	83.5		50 - 139		
Dibromochloromethane	BZG1575-BS1	LCS	26.340	25.000	ug/L	105		74 - 126		
1,2-Dichlorobenzene	BZG1575-BS1	LCS	26.460	25.000	ug/L	106		80 - 119		
1,3-Dichlorobenzene	BZG1575-BS1	LCS	26.540	25.000	ug/L	106		80 - 119		
1,4-Dichlorobenzene	BZG1575-BS1	LCS	26.490	25.000	ug/L	106		79 - 118		
1,1-Dichloroethane	BZG1575-BS1	LCS	25.040	25.000	ug/L	100		77 - 125		
1,2-Dichloroethane	BZG1575-BS1	LCS	24.620	25.000	ug/L	98.5		73 - 128		
1,1-Dichloroethene	BZG1575-BS1	LCS	24.930	25.000	ug/L	99.7		71 - 131		
trans-1,2-Dichloroethene	BZG1575-BS1	LCS	25.260	25.000	ug/L	101		75 - 124		
1,2-Dichloropropane	BZG1575-BS1	LCS	24.800	25.000	ug/L	99.2		78 - 122		
cis-1,3-Dichloropropene	BZG1575-BS1	LCS	25.340	25.000	ug/L	101		75 - 124		
trans-1,3-Dichloropropene	BZG1575-BS1	LCS	25.490	25.000	ug/L	102		73 - 127		
Ethylbenzene	BZG1575-BS1	LCS	25.280	25.000	ug/L	101		79 - 121		
Methylene chloride	BZG1575-BS1	LCS	23.350	25.000	ug/L	93.4		74 - 124		
Methyl t-butyl ether	BZG1575-BS1	LCS	23.770	25.000	ug/L	95.1		71 - 124		
1,1,2,2-Tetrachloroethane	BZG1575-BS1	LCS	25.330	25.000	ug/L	101		71 - 121		
Tetrachloroethene	BZG1575-BS1	LCS	25.930	25.000	ug/L	104		74 - 129		
Toluene	BZG1575-BS1	LCS	25.190	25.000	ug/L	101		80 - 121		
1,1,1-Trichloroethane	BZG1575-BS1	LCS	25.750	25.000	ug/L	103		74 - 131		
1,1,2-Trichloroethane	BZG1575-BS1	LCS	24.230	25.000	ug/L	96.9		80 - 119		
Trichloroethene	BZG1575-BS1	LCS	25.540	25.000	ug/L	102		79 - 123		
Trichlorofluoromethane	BZG1575-BS1	LCS	25.250	25.000	ug/L	101		65 - 141		
1,1,2-Trichloro-1,2,2-trifluoroethane	BZG1575-BS1	LCS	25.490	25.000	ug/L	102		70 - 136		
Vinyl chloride	BZG1575-BS1	LCS	22.320	25.000	ug/L	89.3		58 - 137		
Total Xylenes	BZG1575-BS1	LCS	76.730	75.000	ug/L	102		79 - 121		

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Marine Research Specialists
3140 Telegraph Road, Suite A
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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 624)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: BZG1575										
p- & m-Xylenes	BZG1575-BS1	LCS	51.360	50.000	ug/L	103		80 - 121		
o-Xylene	BZG1575-BS1	LCS	25.370	25.000	ug/L	101		78 - 122		
1,2-Dichloroethane-d4 (Surrogate)	BZG1575-BS1	LCS	10.120	10.000	ug/L	101		75 - 125		
Toluene-d8 (Surrogate)	BZG1575-BS1	LCS	9.9800	10.000	ug/L	99.8		80 - 120		
4-Bromofluorobenzene (Surrogate)	BZG1575-BS1	LCS	9.7200	10.000	ug/L	97.2		80 - 120		

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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 624)

Quality Control Report - Precision & Accuracy

Table with columns: Constituent, Source Type, Source Sample ID, Source Result, Result, Spike Added, Units, RPD, Percent Recovery, Control Limits RPD, Control Limits Percent Recovery, Lab Qualls. Includes a sub-table for QC Batch ID: BZG1575.

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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 624)

Quality Control Report - Precision & Accuracy

Table with columns: Constituent, Source Type, Source Sample ID, Source Result, Result, Spike Added, Units, RPD, Percent Recovery, Control Limits RPD, Control Limits Percent Recovery, Lab Qualls. Includes data for various compounds like cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Ethylbenzene, etc.

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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 624)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab Quals
								Percent Recovery	Percent Recovery	
QC Batch ID: BZG1575		Used client sample: N								
Toluene-d8 (Surrogate)	MS	1619821-01	ND	9.7300	10.000	ug/L		97.3	80 - 120	
	MSD	1619821-01	ND	9.8600	10.000	ug/L	1.3	98.6	80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1619821-01	ND	10.330	10.000	ug/L		103	80 - 120	
	MSD	1619821-01	ND	10.120	10.000	ug/L	2.1	101	80 - 120	

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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 625)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZG1650						
Acenaphthene	BZG1650-BLK1	ND	ug/L	2.0	0.40	
Acenaphthylene	BZG1650-BLK1	ND	ug/L	2.0	0.34	
Aldrin	BZG1650-BLK1	ND	ug/L	2.0	0.45	
Aniline	BZG1650-BLK1	ND	ug/L	5.0	0.71	
Anthracene	BZG1650-BLK1	ND	ug/L	2.0	0.32	
Benzidine	BZG1650-BLK1	ND	ug/L	20	2.7	
Benzo[a]anthracene	BZG1650-BLK1	ND	ug/L	2.0	0.37	
Benzo[b]fluoranthene	BZG1650-BLK1	ND	ug/L	2.0	0.88	
Benzo[k]fluoranthene	BZG1650-BLK1	ND	ug/L	2.0	0.96	
Benzo[a]pyrene	BZG1650-BLK1	ND	ug/L	2.0	0.87	
Benzo[g,h,i]perylene	BZG1650-BLK1	ND	ug/L	2.0	1.2	
Benzoic acid	BZG1650-BLK1	ND	ug/L	10	2.0	
Benzyl alcohol	BZG1650-BLK1	ND	ug/L	2.0	0.44	
Benzyl butyl phthalate	BZG1650-BLK1	ND	ug/L	2.0	0.77	
alpha-BHC	BZG1650-BLK1	ND	ug/L	2.0	1.8	
beta-BHC	BZG1650-BLK1	ND	ug/L	2.0	1.4	
delta-BHC	BZG1650-BLK1	ND	ug/L	2.0	1.8	
gamma-BHC (Lindane)	BZG1650-BLK1	ND	ug/L	2.0	1.2	
bis(2-Chloroethoxy)methane	BZG1650-BLK1	ND	ug/L	2.0	0.45	
bis(2-Chloroethyl) ether	BZG1650-BLK1	ND	ug/L	2.0	0.86	
bis(2-Chloroisopropyl)ether	BZG1650-BLK1	ND	ug/L	2.0	0.58	
bis(2-Ethylhexyl)phthalate	BZG1650-BLK1	ND	ug/L	5.0	0.67	
4-Bromophenyl phenyl ether	BZG1650-BLK1	ND	ug/L	2.0	0.42	
4-Chloroaniline	BZG1650-BLK1	ND	ug/L	2.0	0.40	
2-Chloronaphthalene	BZG1650-BLK1	ND	ug/L	2.0	0.34	
4-Chlorophenyl phenyl ether	BZG1650-BLK1	ND	ug/L	2.0	0.46	
Chrysene	BZG1650-BLK1	ND	ug/L	2.0	0.42	
4,4'-DDD	BZG1650-BLK1	ND	ug/L	2.0	0.74	
4,4'-DDE	BZG1650-BLK1	ND	ug/L	3.0	1.2	
4,4'-DDT	BZG1650-BLK1	ND	ug/L	2.0	1.1	
Dibenzo[a,h]anthracene	BZG1650-BLK1	ND	ug/L	3.0	1.6	
Dibenzofuran	BZG1650-BLK1	ND	ug/L	2.0	0.32	
1,2-Dichlorobenzene	BZG1650-BLK1	ND	ug/L	2.0	0.39	
1,3-Dichlorobenzene	BZG1650-BLK1	ND	ug/L	2.0	0.50	

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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 625)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZG1650						
1,4-Dichlorobenzene	BZG1650-BLK1	ND	ug/L	2.0	0.55	
3,3-Dichlorobenzidine	BZG1650-BLK1	ND	ug/L	10	0.65	
Dieldrin	BZG1650-BLK1	ND	ug/L	3.0	0.68	
Diethyl phthalate	BZG1650-BLK1	ND	ug/L	2.0	0.35	
Dimethyl phthalate	BZG1650-BLK1	ND	ug/L	2.0	0.40	
Di-n-butyl phthalate	BZG1650-BLK1	ND	ug/L	2.0	0.33	
2,4-Dinitrotoluene	BZG1650-BLK1	ND	ug/L	2.0	0.75	
2,6-Dinitrotoluene	BZG1650-BLK1	ND	ug/L	2.0	0.56	
Di-n-octyl phthalate	BZG1650-BLK1	ND	ug/L	2.0	0.61	
1,2-Diphenylhydrazine	BZG1650-BLK1	ND	ug/L	2.0	0.43	
Endosulfan I	BZG1650-BLK1	ND	ug/L	10	3.2	
Endosulfan II	BZG1650-BLK1	ND	ug/L	10	3.1	
Endosulfan sulfate	BZG1650-BLK1	ND	ug/L	3.0	2.5	
Endrin	BZG1650-BLK1	ND	ug/L	2.0	1.4	
Endrin aldehyde	BZG1650-BLK1	ND	ug/L	10	2.6	
Fluoranthene	BZG1650-BLK1	ND	ug/L	2.0	0.61	
Fluorene	BZG1650-BLK1	ND	ug/L	2.0	0.54	
Heptachlor	BZG1650-BLK1	ND	ug/L	2.0	0.94	
Heptachlor epoxide	BZG1650-BLK1	ND	ug/L	2.0	0.69	
Hexachlorobenzene	BZG1650-BLK1	ND	ug/L	2.0	0.48	
Hexachlorobutadiene	BZG1650-BLK1	ND	ug/L	2.0	0.48	
Hexachlorocyclopentadiene	BZG1650-BLK1	ND	ug/L	2.0	0.52	
Hexachloroethane	BZG1650-BLK1	ND	ug/L	2.0	0.90	
Indeno[1,2,3-cd]pyrene	BZG1650-BLK1	ND	ug/L	2.0	1.2	
Isophorone	BZG1650-BLK1	ND	ug/L	2.0	0.31	
2-Methylnaphthalene	BZG1650-BLK1	ND	ug/L	2.0	0.38	
Naphthalene	BZG1650-BLK1	ND	ug/L	2.0	0.27	
2-Naphthylamine	BZG1650-BLK1	ND	ug/L	20	0.83	
2-Nitroaniline	BZG1650-BLK1	ND	ug/L	2.0	0.60	
3-Nitroaniline	BZG1650-BLK1	ND	ug/L	2.0	0.92	
4-Nitroaniline	BZG1650-BLK1	ND	ug/L	5.0	1.3	
Nitrobenzene	BZG1650-BLK1	ND	ug/L	2.0	0.37	
N-Nitrosodimethylamine	BZG1650-BLK1	ND	ug/L	2.0	1.2	
N-Nitrosodi-N-propylamine	BZG1650-BLK1	ND	ug/L	2.0	0.58	

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Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 625)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZG1650						
N-Nitrosodiphenylamine	BZG1650-BLK1	ND	ug/L	2.0	0.57	
Phenanthrene	BZG1650-BLK1	ND	ug/L	2.0	0.50	
Pyrene	BZG1650-BLK1	ND	ug/L	2.0	0.45	
1,2,4-Trichlorobenzene	BZG1650-BLK1	ND	ug/L	2.0	0.87	
4-Chloro-3-methylphenol	BZG1650-BLK1	ND	ug/L	5.0	0.48	
2-Chlorophenol	BZG1650-BLK1	ND	ug/L	2.0	0.44	
2,4-Dichlorophenol	BZG1650-BLK1	ND	ug/L	2.0	0.63	
2,4-Dimethylphenol	BZG1650-BLK1	ND	ug/L	2.0	0.60	
4,6-Dinitro-2-methylphenol	BZG1650-BLK1	ND	ug/L	10	1.8	
2,4-Dinitrophenol	BZG1650-BLK1	ND	ug/L	10	2.5	
2-Methylphenol	BZG1650-BLK1	ND	ug/L	2.0	0.55	
3- & 4-Methylphenol	BZG1650-BLK1	ND	ug/L	2.0	0.72	
2-Nitrophenol	BZG1650-BLK1	ND	ug/L	2.0	0.68	
4-Nitrophenol	BZG1650-BLK1	ND	ug/L	2.0	1.9	
Pentachlorophenol	BZG1650-BLK1	ND	ug/L	10	1.8	
Phenol	BZG1650-BLK1	ND	ug/L	2.0	0.49	
2,4,5-Trichlorophenol	BZG1650-BLK1	ND	ug/L	5.0	0.66	
2,4,6-Trichlorophenol	BZG1650-BLK1	ND	ug/L	5.0	0.51	
2-Fluorophenol (Surrogate)	BZG1650-BLK1	61.2	%	30 - 120 (LCL - UCL)		
Phenol-d5 (Surrogate)	BZG1650-BLK1	32.0	%	12 - 110 (LCL - UCL)		
Nitrobenzene-d5 (Surrogate)	BZG1650-BLK1	85.0	%	50 - 130 (LCL - UCL)		
2-Fluorobiphenyl (Surrogate)	BZG1650-BLK1	108	%	55 - 125 (LCL - UCL)		
2,4,6-Tribromophenol (Surrogate)	BZG1650-BLK1	89.1	%	40 - 150 (LCL - UCL)		
p-Terphenyl-d14 (Surrogate)	BZG1650-BLK1	114	%	40 - 150 (LCL - UCL)		

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 625)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab Quals
								Percent Recovery	RPD	
QC Batch ID: BZG1650										
Acenaphthene	BZG1650-BS1	LCS	42.019	50.000	ug/L	84.0		50 - 120		
1,4-Dichlorobenzene	BZG1650-BS1	LCS	44.362	50.000	ug/L	88.7		50 - 120		
2,4-Dinitrotoluene	BZG1650-BS1	LCS	42.797	50.000	ug/L	85.6		50 - 120		
Hexachlorobenzene	BZG1650-BS1	LCS	36.586	40.000	ug/L	91.5		60 - 120		
Hexachlorobutadiene	BZG1650-BS1	LCS	34.560	50.000	ug/L	69.1		40 - 110		
Hexachloroethane	BZG1650-BS1	LCS	33.773	50.000	ug/L	67.5		40 - 120		
Nitrobenzene	BZG1650-BS1	LCS	47.328	50.000	ug/L	94.7		50 - 120		
N-Nitrosodi-N-propylamine	BZG1650-BS1	LCS	39.475	50.000	ug/L	79.0		50 - 120		
Pyrene	BZG1650-BS1	LCS	43.757	50.000	ug/L	87.5		40 - 140		
1,2,4-Trichlorobenzene	BZG1650-BS1	LCS	41.894	50.000	ug/L	83.8		45 - 120		
4-Chloro-3-methylphenol	BZG1650-BS1	LCS	36.710	50.000	ug/L	73.4		50 - 120		
2-Chlorophenol	BZG1650-BS1	LCS	46.867	50.000	ug/L	93.7		50 - 120		
2-Methylphenol	BZG1650-BS1	LCS	37.363	50.000	ug/L	74.7		40 - 110		
3- & 4-Methylphenol	BZG1650-BS1	LCS	65.078	100.00	ug/L	65.1		40 - 110		
4-Nitrophenol	BZG1650-BS1	LCS	18.451	50.000	ug/L	36.9		10 - 110		
Pentachlorophenol	BZG1650-BS1	LCS	39.158	40.000	ug/L	97.9		30 - 130		
Phenol	BZG1650-BS1	LCS	16.896	50.000	ug/L	33.8		20 - 110		
2,4,6-Trichlorophenol	BZG1650-BS1	LCS	45.408	50.000	ug/L	90.8		54 - 120		
2-Fluorophenol (Surrogate)	BZG1650-BS1	LCS	30.067	50.000	ug/L	60.1		30 - 120		
Phenol-d5 (Surrogate)	BZG1650-BS1	LCS	15.677	50.000	ug/L	31.4		12 - 110		
Nitrobenzene-d5 (Surrogate)	BZG1650-BS1	LCS	38.294	50.000	ug/L	76.6		50 - 130		
2-Fluorobiphenyl (Surrogate)	BZG1650-BS1	LCS	45.043	40.000	ug/L	113		55 - 125		
2,4,6-Tribromophenol (Surrogate)	BZG1650-BS1	LCS	50.822	50.000	ug/L	102		40 - 150		
p-Terphenyl-d14 (Surrogate)	BZG1650-BS1	LCS	25.037	25.000	ug/L	100		40 - 150		

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 625)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab Quals
								Percent Recovery	Percent Recovery	
QC Batch ID: BZG1650		Used client sample: N								
Acenaphthene	MS	1616196-71	ND	43.538	50.000	ug/L		87.1		50 - 120
	MSD	1616196-71	ND	43.114	50.000	ug/L	1.0	86.2	30	50 - 120
1,4-Dichlorobenzene	MS	1616196-71	ND	43.890	50.000	ug/L		87.8		47 - 120
	MSD	1616196-71	ND	43.451	50.000	ug/L	1.0	86.9	30	47 - 120
2,4-Dinitrotoluene	MS	1616196-71	ND	47.367	50.000	ug/L		94.7		50 - 130
	MSD	1616196-71	ND	40.531	50.000	ug/L	15.6	81.1	30	50 - 130
Hexachlorobenzene	MS	1616196-71	ND	34.599	40.000	ug/L		86.5		50 - 120
	MSD	1616196-71	ND	36.976	40.000	ug/L	6.6	92.4	30	50 - 120
Hexachlorobutadiene	MS	1616196-71	ND	34.409	50.000	ug/L		68.8		40 - 110
	MSD	1616196-71	ND	33.007	50.000	ug/L	4.2	66.0	30	40 - 110
Hexachloroethane	MS	1616196-71	ND	34.362	50.000	ug/L		68.7		40 - 120
	MSD	1616196-71	ND	32.908	50.000	ug/L	4.3	65.8	30	40 - 120
Nitrobenzene	MS	1616196-71	ND	46.436	50.000	ug/L		92.9		50 - 120
	MSD	1616196-71	ND	48.005	50.000	ug/L	3.3	96.0	30	50 - 120
N-Nitrosodi-N-propylamine	MS	1616196-71	ND	39.112	50.000	ug/L		78.2		50 - 120
	MSD	1616196-71	ND	39.808	50.000	ug/L	1.8	79.6	30	50 - 120
Pyrene	MS	1616196-71	ND	42.018	50.000	ug/L		84.0		40 - 140
	MSD	1616196-71	ND	45.500	50.000	ug/L	8.0	91.0	30	40 - 140
1,2,4-Trichlorobenzene	MS	1616196-71	ND	41.990	50.000	ug/L		84.0		43 - 120
	MSD	1616196-71	ND	39.897	50.000	ug/L	5.1	79.8	30	43 - 120
4-Chloro-3-methylphenol	MS	1616196-71	ND	36.356	50.000	ug/L		72.7		50 - 120
	MSD	1616196-71	ND	35.581	50.000	ug/L	2.2	71.2	30	50 - 120
2-Chlorophenol	MS	1616196-71	ND	46.578	50.000	ug/L		93.2		50 - 120
	MSD	1616196-71	ND	47.411	50.000	ug/L	1.8	94.8	30	50 - 120
2-Methylphenol	MS	1616196-71	ND	35.710	50.000	ug/L		71.4		40 - 110
	MSD	1616196-71	ND	37.511	50.000	ug/L	4.9	75.0	30	40 - 110
3- & 4-Methylphenol	MS	1616196-71	ND	64.476	100.00	ug/L		64.5		40 - 110
	MSD	1616196-71	ND	67.864	100.00	ug/L	5.1	67.9	30	40 - 110
4-Nitrophenol	MS	1616196-71	ND	19.674	50.000	ug/L		39.3		10 - 110
	MSD	1616196-71	ND	17.305	50.000	ug/L	12.8	34.6	30	10 - 110
Pentachlorophenol	MS	1616196-71	ND	40.232	40.000	ug/L		101		30 - 120
	MSD	1616196-71	ND	39.719	40.000	ug/L	1.3	99.3	30	30 - 120
Phenol	MS	1616196-71	ND	16.520	50.000	ug/L		33.0		20 - 110
	MSD	1616196-71	ND	17.305	50.000	ug/L	4.6	34.6	30	20 - 110
2,4,6-Trichlorophenol	MS	1616196-71	ND	46.236	50.000	ug/L		92.5		50 - 150
	MSD	1616196-71	ND	47.688	50.000	ug/L	3.1	95.4	30	50 - 150

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 625)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		Lab Quals
									RPD	Percent Recovery	
QC Batch ID: BZG1650		Used client sample: N									
2-Fluorophenol (Surrogate)	MS	1616196-71	ND	30.980	50.000	ug/L		62.0		30 - 120	
	MSD	1616196-71	ND	30.334	50.000	ug/L	2.1	60.7		30 - 120	
Phenol-d5 (Surrogate)	MS	1616196-71	ND	15.675	50.000	ug/L		31.4		12 - 110	
	MSD	1616196-71	ND	15.860	50.000	ug/L	1.2	31.7		12 - 110	
Nitrobenzene-d5 (Surrogate)	MS	1616196-71	ND	38.332	50.000	ug/L		76.7		50 - 130	
	MSD	1616196-71	ND	38.689	50.000	ug/L	0.9	77.4		50 - 130	
2-Fluorobiphenyl (Surrogate)	MS	1616196-71	ND	45.970	40.000	ug/L		115		55 - 125	
	MSD	1616196-71	ND	46.411	40.000	ug/L	1.0	116		55 - 125	
2,4,6-Tribromophenol (Surrogate)	MS	1616196-71	ND	48.792	50.000	ug/L		97.6		40 - 150	
	MSD	1616196-71	ND	50.916	50.000	ug/L	4.3	102		40 - 150	
p-Terphenyl-d14 (Surrogate)	MS	1616196-71	ND	27.560	25.000	ug/L		110		40 - 150	
	MSD	1616196-71	ND	25.879	25.000	ug/L	6.3	104		40 - 150	

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZG1624						
Total Cyanide	BZG1624-BLK1	ND	mg/L	0.0050	0.0031	

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: BZG1624										
Total Cyanide	BZG1624-BS1	LCS	0.14280	0.15000	mg/L	95.2		90 - 110		

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		Lab Quals
									RPD	Percent Recovery	
QC Batch ID: BZG1624		Used client sample: N									
Total Cyanide	DUP	1619418-04	ND	ND		mg/L			10		
	MS	1619418-04	ND	0.11354	0.10000	mg/L		114		90 - 110	Q03
	MSD	1619418-04	ND	0.11094	0.10000	mg/L	2.3	111	10	90 - 110	Q03

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Metals Analysis

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZG1469						
Total Recoverable Arsenic	BZG1469-BLK1	ND	ug/L	2.0	0.70	
Total Recoverable Lead	BZG1469-BLK1	ND	ug/L	1.0	0.10	
Total Recoverable Selenium	BZG1469-BLK1	ND	ug/L	2.0	0.19	
Total Recoverable Thallium	BZG1469-BLK1	ND	ug/L	1.0	0.10	
QC Batch ID: BZG1592						
Total Recoverable Antimony	BZG1592-BLK1	ND	ug/L	100	5.0	
Total Recoverable Beryllium	BZG1592-BLK1	ND	ug/L	10	0.77	
Total Recoverable Cadmium	BZG1592-BLK1	ND	ug/L	10	1.1	
Total Recoverable Chromium	BZG1592-BLK1	ND	ug/L	10	1.2	
Total Recoverable Copper	BZG1592-BLK1	ND	ug/L	10	1.2	
Total Recoverable Nickel	BZG1592-BLK1	ND	ug/L	10	2.3	
Total Recoverable Silver	BZG1592-BLK1	ND	ug/L	10	1.3	
Total Recoverable Zinc	BZG1592-BLK1	12.794	ug/L	50	1.3	J
QC Batch ID: BZG2070						
Total Mercury	BZG2070-BLK1	ND	ug/L	0.20	0.030	

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Metals Analysis

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: BZG1469										
Total Recoverable Arsenic	BZG1469-BS1	LCS	99.673	100.00	ug/L	99.7		85 - 115		
Total Recoverable Lead	BZG1469-BS1	LCS	103.84	100.00	ug/L	104		85 - 115		
Total Recoverable Selenium	BZG1469-BS1	LCS	101.60	100.00	ug/L	102		85 - 115		
Total Recoverable Thallium	BZG1469-BS1	LCS	41.955	40.000	ug/L	105		85 - 115		
QC Batch ID: BZG1592										
Total Recoverable Antimony	BZG1592-BS1	LCS	390.24	400.00	ug/L	97.6		85 - 115		
Total Recoverable Beryllium	BZG1592-BS1	LCS	197.36	200.00	ug/L	98.7		85 - 115		
Total Recoverable Cadmium	BZG1592-BS1	LCS	203.78	200.00	ug/L	102		85 - 115		
Total Recoverable Chromium	BZG1592-BS1	LCS	206.14	200.00	ug/L	103		85 - 115		
Total Recoverable Copper	BZG1592-BS1	LCS	394.56	400.00	ug/L	98.6		85 - 115		
Total Recoverable Nickel	BZG1592-BS1	LCS	418.30	400.00	ug/L	105		85 - 115		
Total Recoverable Silver	BZG1592-BS1	LCS	99.522	100.00	ug/L	99.5		85 - 115		
Total Recoverable Zinc	BZG1592-BS1	LCS	526.52	500.00	ug/L	105		85 - 115		
QC Batch ID: BZG2070										
Total Mercury	BZG2070-BS1	LCS	0.98250	1.0000	ug/L	98.2		85 - 115		

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Metals Analysis

Quality Control Report - Precision & Accuracy

Table with columns: Constituent, Source Type, Source Sample ID, Source Result, Result, Spike Added, Units, RPD, Percent Recovery, Control Limits RPD, Percent Recovery, Lab Qualls. Includes sections for QC Batch ID: BZG1469, BZG1592, and BZG2070.

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Metals Analysis

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab Quals
								Percent Recovery	Percent Recovery	
QC Batch ID: BZG2070		Used client sample: N								
Total Mercury	DUP	1619728-01	ND	ND		ug/L			20	
	MS	1619728-01	ND	1.0000	1.0000	ug/L		100		70 - 130
	MSD	1619728-01	ND	1.0000	1.0000	ug/L	0	100	20	70 - 130

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Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 07/27/2016 10:09
Project: Semi-Annual Eff
Project Number: [none]
Project Manager: Doug Coats

Notes And Definitions

- J Estimated Value (CLP Flag)
- MDL Method Detection Limit
- ND Analyte Not Detected
- PQL Practical Quantitation Limit
- A02 The difference between duplicate readings is less than the quantitation limit.
- Q03 Matrix spike recovery(s) is(are) not within the control limits.
- S09 The surrogate recovery on the sample for this compound was not within the control limits.



MBAS

Monterey Bay Analytical Services

4 Justin Court Suite D, Monterey, CA 93940

831.375.MBAS

www.MBASinc.com

ELAP Certification Number: 2385

Tuesday, August 09, 2016

Dr. Doug Coats/Bonnie Luke
Marine Research Specialists
3140 Telegraph Road Suite A
Ventura CA, 93003

Lab Number: AB50346

Collection Date/Time: 7/13/2016 9:50

Sample Collector: ASCHENBRENER S

Client Sample #:

Submittal Date/Time: 7/14/2016 10:00

Sample ID H2 2016

Sample Description: ARS Grab M1-M3

Analyte	Method	Unit	Result	Dilution	Qual	PQL	MDL	Date Analyzed	Time Analyzed	Analyst:
Nitrate as NO3	EPA300.0	mg/L	Not Detected	4		4.0	0.28	7/15/2016	2:10 AM	HM
Nitrate as NO3-N	EPA300.0	mg/L	Not Detected	4		0.4	0.04	7/15/2016	2:10 AM	HM
o-Phosphate-P, Dissolved	EPA300.0	mg/L	3.2	4		0.4	0.08	7/15/2016	2:10 AM	HM
Silica as SiO2, Dissolved	EPA200.7	mg/L	10	1		0.5	0.3	7/22/2016	12:25 PM	MW
Urea-N	Mulvenna&S	µg/L	93	1		10	8	8/9/2016	9:00 AM	MP

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.

J = Result is less than PQL

T = Temperature Exceedance

50346

Sample Condition Upon Receipt

MRS

Was temp acceptable? Chemistry $\leq 6^{\circ}\text{C}$ Micro $\leq 10^{\circ}\text{C}$ YES NO NA

Is there evidence of chilling? YES NO NA

Did bottles arrive intact? YES NO NA

Did bottle labels agree with COC? YES NO NA

COC Info

Discrepancy Documentation:

Person Contacted: _____ Method: In Person/Phone/Email _____

Problem _____

Resolution _____

Person Contacted: _____ Method: In Person/Phone/Email _____

Problem _____

Resolution _____

Lab ID	Cont. Size	Pres	Date/Initials

Lab ID	Cont. Size	Pres	Date/Initials
50346	250	HNO3	7/14/10

Sample Split/Filtration

Comments

LABORATORY REPORT



"dedicated to providing quality aquatic toxicity testing"

Date: July 24, 2016
Client: Marine Research Specialists
3140 Telegraph Road, Suite A
Ventura, CA 93003
Attn: Doug Coats

4350 Transport Street, Unit 107
Ventura, CA 93003
(805) 650-0546 FAX (805) 650-0756
CA ELAP Cert. No.: 1775

Laboratory No.: A-16072001-001
Sample I.D.: Morro Bay Effluent

Sample Control: The sample was received by ATL within the recommended hold time, in a chilled state, and with the chain of custody record attached.

Date Sampled: 07/19/16 (composite)
Date Received: 07/20/16
Temp. Received: 2.1°C
Chlorine (TRC): 0.0 mg/l
Dates Tested: 07/20/16 to 07/22/16

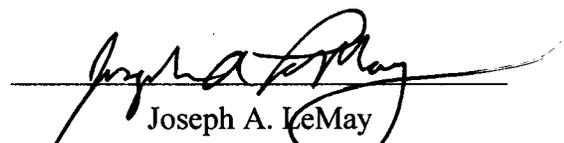
Sample Analysis: The following analyses were performed on your sample:
Abalone Larval Development Short-Term Toxicity Test (EPA 600/R-95/136).

Attached are the test data generated from the analysis of your sample.

Result Summary:

<u>Test</u>	<u>NOEC</u>	<u>TUc</u>
Abalone Development:	5.6%	17.9

Quality Control: Reviewed and approved by:


Joseph A. LeMay
Laboratory Director

ABALONE LARVAL DEVELOPMENT SHORT-TERM TOXICITY TEST



Lab No.: A-16072001-001
Client/ID: Morro Bay WWTP

Date tested: 07/20/16 - 07/22/16

TEST SUMMARY

Species: *Haliotis rufescens*.
Protocol: EPA/600/R-95/136.
Test type: Static.
Test chamber: glass beakers.
Temperature: 15 +/- 1°C.
Number of embryos per chamber: 1600 (approx.).
QA/QC Batch No.: RT-160720 (ran concurrently)

Source: Cultured Abalone Farms.
Dilution water: Lab seawater.
Endpoints: NOEC.
Test volume: 200 ml.
Aeration: None.
Number of replicates: 5.

RESULTS SUMMARY

Sample Concentration	Percent Normal Development	
Control (Brine)	97.4%	
Control (Dilution)	97.4%	
3.2%	97.0%	
5.6%	97.4%	
10.0%	1.3%	*
18.0%	0%	*
32.0%	0%	*
* Statistically significantly less than control at P = 0.05 level		

CHRONIC TOXICITY

NOEC	5.6%
TUc	17.9

QA/QC TEST ACCEPTABILITY

Parameter	Result
Average control normality ≥ 80%	PASSED (97.4%)
%MSD < 20% relative to control	PASSED (%MSD = 2.8%)
Please see RT-160720 report for additional test acceptability criteria.	

Abalone Larval Development Test-Proportion Normal

Start Date: 7/20/2016 14:00 Test ID: 16072001ab Sample ID: Morro Bay
 End Date: 7/22/2016 14:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: EFF1-POTW
 Sample Date: 7/19/2016 10:15 Protocol: EPAW 95-EPA/600/R-95/136 Test Species: HR-Haliotis rufescens

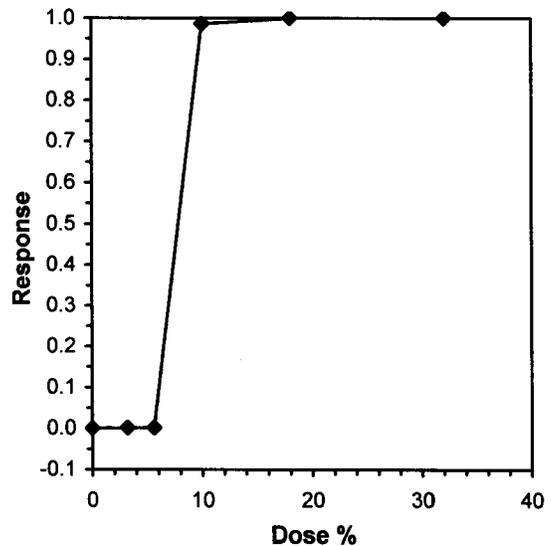
Comments:

Conc-%	1	2	3	4	5
B-Control	0.9815	0.9450	0.9811	0.9904	0.9720
D-Control	0.9810	0.9450	0.9714	0.9903	0.9811
3.2	0.9712	0.9806	0.9813	0.9636	0.9537
5.6	0.9907	0.9815	0.9813	0.9810	0.9364
10	0.0187	0.0190	0.0000	0.0000	0.0288
18	0.0000	0.0000	0.0000	0.0000	0.0000
32	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-%	Transform: Arcsin Square Root							1-Tailed			Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
B-Control	0.9740	1.0002	1.4153	1.3340	1.4726	3.660	5					
D-Control	0.9738	1.0000	1.4145	1.3340	1.4721	3.648	5	*			0.9735	1.0000
3.2	0.9701	0.9962	1.3995	1.3539	1.4336	2.438	5	0.461	2.230	0.0723	0.9719	0.9984
5.6	0.9742	1.0004	1.4180	1.3158	1.4740	4.216	5	-0.109	2.230	0.0723	0.9719	0.9984
*10	0.0133	0.0137	0.1093	0.0500	0.1707	50.998	5	40.269	2.230	0.0723	0.0136	0.0139
18	0.0000	0.0000	0.0500	0.0500	0.0500	0.000	5				0.0000	0.0000
32	0.0000	0.0000	0.0500	0.0500	0.0500	0.000	5				0.0000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.91508	0.905	-0.7719	-0.2977						
Bartlett's Test indicates equal variances (p = 0.76)	1.17521	11.3449								
The control means are not significantly different (p = 0.98)	0.02469	2.306								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	5.6	10	7.48331	17.8571	0.02712	0.02779	2.11739	0.00263	1.2E-17	3, 16
Treatments vs D-Control										

Linear Interpolation (200 Resamples)					
Point	%	SD	95% CL(Exp)		Skew
IC05	5.8163	0.0283	5.7018	5.8273	-1.6426
IC10	6.0398	0.0268	5.9307	6.0525	-1.6184
IC15	6.2633	0.0254	6.1596	6.2777	-1.5791
IC20	6.4867	0.0241	6.3884	6.5029	-1.5210
IC25	6.7102	0.0228	6.6173	6.7281	-1.4401
IC40	7.3806	0.0197	7.3023	7.4036	-1.0372
IC50	7.8276	0.0185	7.7618	7.8540	-0.6645



ABALONE CHRONIC BIOASSAY



Lab No.: A-16072001-001

Client ID: MRS - Morro Bay Effluent

Start Date: 07/20/2016

WATER QUALITY READINGS

Sample	Initial Readings				24 Hrs		Final Readings			
	Temp (°C)	DO (mg/l)	pH	Salinity (o/oo)	Temp (°C)	pH	Temp (°C)	DO (mg/l)	pH	Salinity (o/oo)
Control (brine)	14.4	8.2	8.1	34	14.9	8.0	14.7	8.1	8.1	34
Control (lab)	14.3	8.2	8.1	34	14.6	8.0	14.7	8.1	8.1	34
3.2%	14.3	8.2	8.1	34	14.5	8.0	14.6	8.1	8.1	34
5.6%	14.5	8.2	8.1	34	14.5	8.0	14.7	8.2	8.1	34
10%	14.4	8.2	8.1	34	14.5	8.0	14.6	8.2	8.1	34
18%	14.4	8.1	8.1	34	14.5	8.1	14.5	8.2	8.1	34
32%	14.7	8.1	8.1	34	14.5	8.1	14.6	8.2	8.1	34

Sample as received: Chlorine: 0 mg/l; pH: 8.2; Salinity: 1 ppt; Temp: 8.2 °C; DO: 6.6 mg/l.

Initial readings: ML Date/Time: 7-20-16 1400 Final readings: ML Date/Time: 7-22-16 1400

MICROSCOPIC EXAMINATION

Beaker No.	Sample Conc.	Number Normal	Number Abnormal	Beaker No.	Sample Conc.	Number Normal	Number Abnormal	Beaker No.	Sample Conc.	Number Normal	Number Abnormal
1	3.2	101	3	13	5.6	106	2	25	B	103	1
2	5.6	106	1	14	18	0	100	26	18	0	100
3	C	103	2	15	B	104	2	27	3.2	106	4
4	18	0	100	16	C	102	3	28	C	104	2
5	B	106	2	17	18	0	100	29	3.2	0	100
6	3.2	0	100	18	3.2	105	2	30	3.2	103	5
7	10	2	105	19	10	0	100	31	18	0	100
8	3.2	101	2	20	5.6	105	2	32	5.6	103	7
9	B	103	6	21	C	102	1	33	B	104	3
10	10	2	103	22	5.6	103	2	34	10	3	101
11	3.2	0	100	23	10	0	100	35	3.2	0	100
12	C	103	6	24	3.2	0	100				

Microscopic examination: Analyst: John Date: 7-24-16 Time: 0800



***CHAIN
OF
CUSTODY***

CHAIN OF CUSTODY

Client: City of Morro Bay
 Wastewater Treatment Plant
 Address: 160 Atascadero Road
 Morro Bay, CA 93442
 Project Manager: Doug Coats - MRS
 Phone: (805) 644-1180
 Fax: (805) 289-3935
 Purchase Order No:



4350 Transport Street, Unit 107
 Ventura, CA 93003
 (805) 650-0546 Fax (805) 650-0756

Sample ID	Sample Date	Sample Time	Sample Type *	Chlorine (TRC)**	Number of Containers	Testing Requested
Comp. Eff.	7-19-16	1015	E	<0.05	1 (one gallon)	Abalone Chronic

Special Instructions:

**** Note: Total residual chlorine must be taken immediately after sample collection if sample is a chlorinated effluent.**

* L - Liquid, S - Solid, SS - Semi-Solid/sludge, RW - Receiving Water, GW - Ground Water, E - Effluent

CUSTODY TRANSFERS

Relinquished by (signature)	Received by (signature)	Date (mm/dd/yy)	Time (hh:mm)	Sample Intact? (Yes, No)	Temperature Received (°C)
Bruce Keogh	[Signature]	7-19-16	1030	Yes	2.1°
Fel Ex	[Signature]	7-20-16	0930	Yes	2.1°



***REFERENCE
TOXICANT
DATA***

**ABALONE LARVAL DEVELOPMENT
SHORT-TERM TOXICITY TEST
* REFERENCE TOXICANT ***



QA/QC Batch No.: RT-160720

Date tested: 07/20/16 – 07/22/16

TEST SUMMARY

Species: *Haliotis rufescens*.
 Protocol: EPA/600/R-95/136.
 Test type: Static.
 Test chamber: Plastic beakers.
 Temperature: 15 +/- 1°C.
 Number of embryos per chamber: 1600 (approx.).
 Reference Toxicant: ZnSO₄(7H₂O).

Source: Cultured Abalone Farm.
 Dilution water: Lab seawater.
 Endpoints: NOEC, IC25 at 48 hrs.
 Test volume: 200 ml.
 Aeration: None.
 Number of replicates: 5.
 Ref. Tox. source: Mallinckrodt.
 Lot No.: 8872 KCXG

RESULTS SUMMARY

SAMPLE CONCENTRATION	PERCENT NORMAL DEVELOPMENT
Control	96.9%
10 µg/l	96.5%
18 µg/l	96.5%
32 µg/l	18.3% *
56 µg/l	0% *
100 µg/l	0% *

* Statistically significantly less than control at P = 0.05 level

CHRONIC TOXICITY

NOEC	18 µg/l
IC25	22.3 µg/l

QA/QC TEST ACCEPTABILITY

Parameter	Result
Average control normality ≥80%	Yes (96.9%)
56 µg/l treatment response significantly less than control response	Yes (NOEC = 18 µg/l)
%MSD <20% relative to control	Yes (%MSD = 4.1%)

Abalone Larval Development Test-Proportion Normal

Start Date: 7/20/2016 14:00 Test ID: RT160720ab Sample ID: REF-Ref Toxicant
 End Date: 7/22/2016 14:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: ZNSO-Zinc sulfate
 Sample Date: 7/20/2016 Protocol: EPAW 95-EPA/600/R-95/136 Test Species: HR-Haliotis rufescens
 Comments:

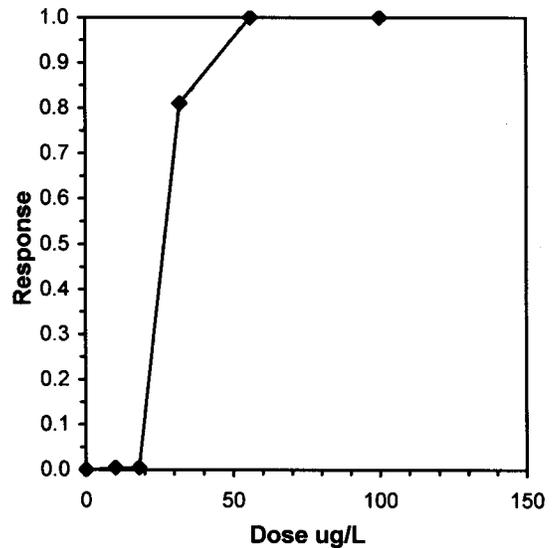
Conc-ug/L	1	2	3	4	5
D-Control	0.9554	0.9450	0.9906	0.9717	0.9810
10	0.9439	0.9709	0.9815	0.9905	0.9364
18	0.9811	0.9907	0.9619	0.9444	0.9450
32	0.1651	0.1509	0.2545	0.1111	0.2348
56	0.0000	0.0000	0.0000	0.0000	0.0000
100	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-ug/L	Mean	N-Mean	Transform: Arcsin Square Root					N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%	Mean					N-Mean	
D-Control	0.9687	1.0000	1.3999	1.3340	1.4735	4.007	5				0.9684	1.0000	
10	0.9646	0.9958	1.3908	1.3158	1.4731	4.803	5	0.216	2.230	0.0935	0.9644	0.9959	
18	0.9646	0.9958	1.3896	1.3329	1.4740	4.487	5	0.245	2.230	0.0935	0.9644	0.9959	
*32	0.1833	0.1892	0.4384	0.3398	0.5288	17.811	5	22.924	2.230	0.0935	0.1843	0.1903	
56	0.0000	0.0000	0.0500	0.0500	0.0500	0.000	5				0.0000	0.0000	
100	0.0000	0.0000	0.0500	0.0500	0.0500	0.000	5				0.0000	0.0000	

Auxiliary Tests	Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.92898	0.905	0.11004	-1.4097						
Bartlett's Test indicates equal variances (p = 0.93)	0.42531	11.3449								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	18	32	24		0.03939	0.04056	1.14026	0.0044	9.0E-14	3, 16
Treatments vs D-Control										

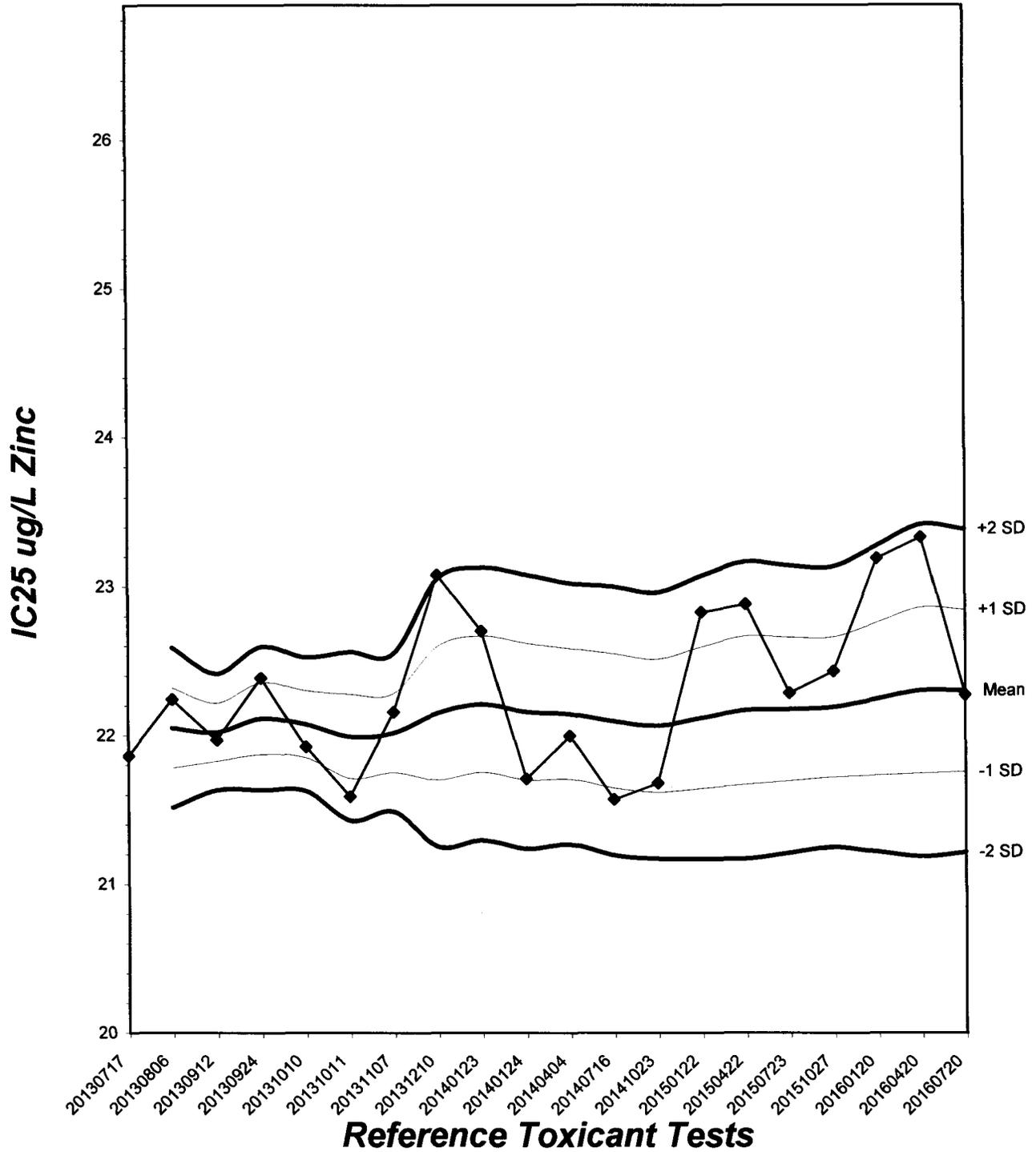
Linear Interpolation (200 Resamples)

Point	ug/L	SD	95% CL(Exp)		Skew
IC05	18.797	0.134	18.213	18.940	-0.8048
IC10	19.666	0.131	19.110	19.845	-0.6330
IC15	20.535	0.133	19.986	20.750	-0.3828
IC20	21.404	0.141	20.862	21.654	-0.1373
IC25	22.273	0.153	21.713	22.576	0.0451
IC40	24.880	0.208	24.210	25.391	0.2372
IC50	26.618	0.252	25.888	27.298	0.2411



Abalone Larval Development Laboratory Control Chart

CV% = 2.44



ABALONE CHRONIC BIOASSAY
Reference Toxicant - Zinc Sulfate



QA/QC No.: RT-160720

Start Date: 07/20/2016

RANDOMIZATION WORKSHEET

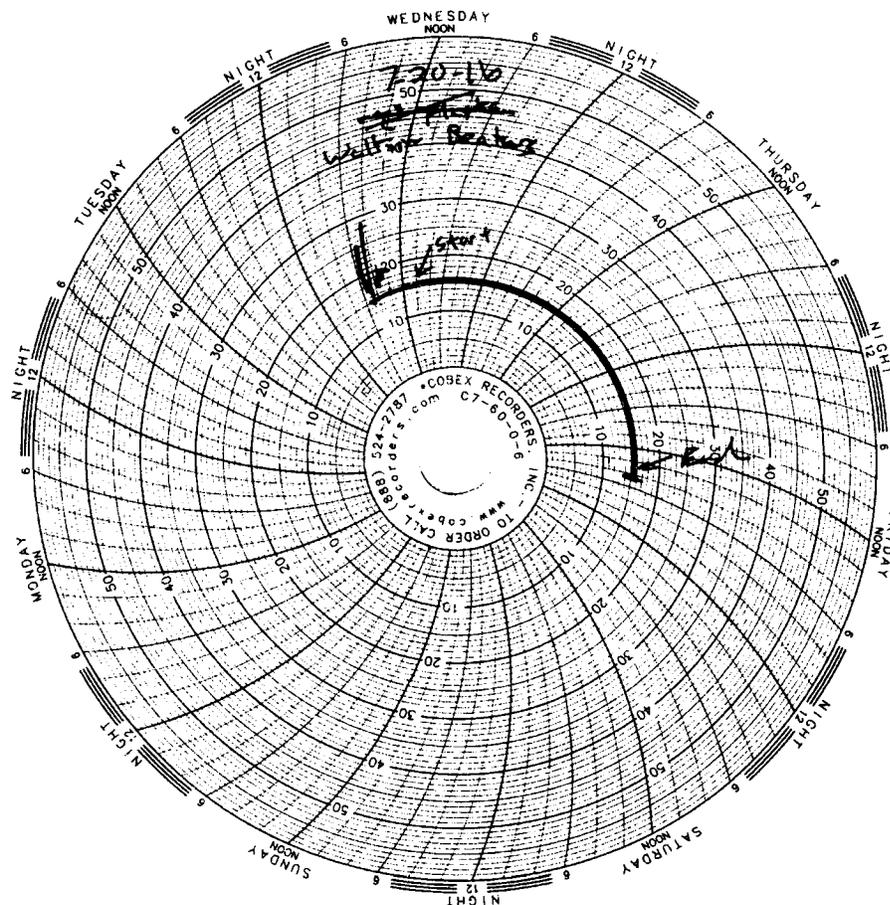
Beaker No.	Sample Conc.	Beaker No.	Sample Conc.	Beaker No.	Sample Conc.	Notes
1	32	11	18	21	32	Number Males used: <u>4</u> Number females used: <u>6</u> Time H ₂ O ₂ added: <u>10:30</u> Time water changed: <u>1300</u> Time spawned: <u>13:15</u> ⁰⁷ <u>13:30</u> Time placed in test: <u>1400</u> Add 1600 fertilized eggs per 200 ml.. Time glutaraldehyde added: <u>1430</u>
2	C	12	56	22	10	
3	18	13	C	23	10	
4	56	14	32	24	56	
5	10	15	18	25	10	
6	10	16	56	26	32	
7	10	17	10	27	10	
8	32	18	10	28	18	
9	10	19	C	29	56	
10	C	20	18	30	C	
Analyst: <u> </u> Date: <u>7-20-16</u> Time: <u>1000</u>						

Test Temperature Chart

Test No: **RT-160720**

Date Tested: **07/20/16 to 07/22/16**

Acceptable Range: **15 +/- 1°C**



CERTIFICATE OF ANALYSIS

Client: Marine Research Specialties 3140 Telegraph Road, Suite A Ventura CA, 93003-3223	Report Date: 08/02/16 14:35
Attention: Doug Coats	Received Date: 07/14/16 10:15
Phone: (805) 644-1180	Turn Around: Normal
Fax:	Client Project: MBCSD H2 2016
Work Order(s): 6G14011	

NELAC #4047-002 ORELAP ELAP#1132 NEVADA #CA211 HAWAII LACSD #10143

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. Weck Laboratories, Inc. certifies that the test results meet all NELAC requirements unless noted in the case narrative. This analytical report is confidential and is only intended for the use of Weck Laboratories, Inc. and its client. This report contains the Chain of Custody document, which is an integral part of it, and can only be reproduced in full with the authorization of Weck Laboratories, Inc.

Dear Doug Coats :

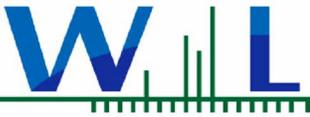
Enclosed are the results of analyses for samples received 07/14/16 10:15 with the Chain of Custody document. The samples were received in good condition, at 2.3 °C and on ice. All analysis met the method criteria except as noted below or in the report with data qualifiers.

Case Narrative:

Reviewed by:

Kim G. Tu
Project Manager





Marine Research Specialties
3140 Telegraph Road, Suite A
Ventura CA, 93003-3223

Date Received: 07/14/16 10:15
Date Reported: 08/02/16 14:35

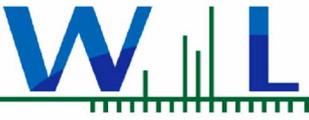
ANALYTICAL REPORT FOR SAMPLES

Sample ID	Sampled by:	Lab ID	Matrix	Date Sampled
W1 ARS Comp	Client	6G14011-01	Water	07/13/16 09:40
W2 ARS Comp	Client	6G14011-02	Water	07/12/16 09:40

ANALYSES

Organo Tin by GC/MS

Radiological Parameters by APHA/EPA Methods



Marine Research Specialties
3140 Telegraph Road, Suite A
Ventura CA, 93003-3223

Date Received: 07/14/16 10:15
Date Reported: 08/02/16 14:35

6G14011-01 W1 ARS Comp**Sampled:** 07/13/16 09:40**Sampled By:** Client**Matrix:** Water**Organo Tin by GC/MS**

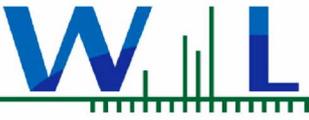
Method: Krone, et al, 1989

Batch: W6G1187

Prepared: 07/25/16 09:36

Analyst: EFC

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Tri-n-butyltin	ND	0.0050	ug/l	1	07/30/16 06:09	
<i>Surr: Tripentyltin</i>	91 %	Conc:0.181	43-179	%		



Marine Research Specialties
3140 Telegraph Road, Suite A
Ventura CA, 93003-3223

Date Received: 07/14/16 10:15
Date Reported: 08/02/16 14:35

6G14011-02 W2 ARS Comp**Sampled:** 07/12/16 09:40**Sampled By:** Client**Matrix:** Water**Radiological Parameters by APHA/EPA Methods**

Method: EPA 900.0

Batch: W6G0826

Prepared: 07/18/16 09:57

Analyst: sap

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
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Gross Beta	22		pCi/L	1	07/20/16 14:19	
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Counting Error (+/-): 1.968

MDA: 2.459

Method: SM 7110C

Batch: W6G0837

Prepared: 07/18/16 10:33

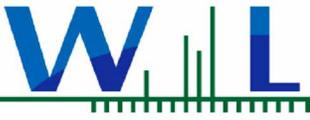
Analyst: sap

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
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Gross Alpha	0.887		pCi/L	1	07/19/16 09:19	
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Counting Error (+/-): 0.143

MDA: 0.04

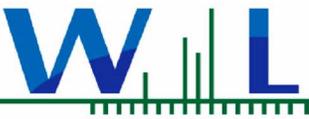


Marine Research Specialties
3140 Telegraph Road, Suite A
Ventura CA, 93003-3223

Date Received: 07/14/16 10:15

Date Reported: 08/02/16 14:35

QUALITY CONTROL SECTION



Marine Research Specialties
3140 Telegraph Road, Suite A
Ventura CA, 93003-3223

Date Received: 07/14/16 10:15
Date Reported: 08/02/16 14:35

Organo Tin by GC/MS - Quality Control

Batch W6G1187 - Krone, et al, 1989

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	% REC Limits	RPD	RPD Limit	Data Qualifiers
Blank (W6G1187-BLK1)				Analyzed: 07/30/16 04:49						
Tri-n-butyltin	ND	0.0050	ug/l							
<i>Surr: Tripentyltin</i>	0.240		ug/l	0.200		120	43-179			
LCS (W6G1187-BS1)				Analyzed: 07/30/16 05:09						
Tri-n-butyltin	0.0427	0.0050	ug/l	0.0500		85	40-181			
<i>Surr: Tripentyltin</i>	0.251		ug/l	0.200		126	43-179			
LCS Dup (W6G1187-BSD1)				Analyzed: 07/30/16 05:29						
Tri-n-butyltin	0.0447	0.0050	ug/l	0.0500		89	40-181	5	30	
<i>Surr: Tripentyltin</i>	0.288		ug/l	0.200		144	43-179			

Radiological Parameters by APHA/EPA Methods - Quality Control

Batch W6G0826 - EPA 900.0

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	% REC Limits	RPD	RPD Limit	Data Qualifiers
Blank (W6G0826-BLK1)				Analyzed: 07/20/16 14:19						
Gross Beta	0.17		pCi/L							
Counting Error (+/-): 0.514	MDA: 0.866									
LCS (W6G0826-BS1)				Analyzed: 07/20/16 14:19						
Gross Beta	14		pCi/L	15.4		92	77-138			
Counting Error (+/-): 0.896	MDA: 1.019									
LCS Dup (W6G0826-BSD1)				Analyzed: 07/20/16 14:19						
Gross Beta	16		pCi/L	15.4		107	77-138	15	30	
Counting Error (+/-): 0.933	MDA: 0.994									

Batch W6G0837 - SM 7110C

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	% REC Limits	RPD	RPD Limit	Data Qualifiers
Blank (W6G0837-BLK1)				Analyzed: 07/19/16 12:21						
Gross Alpha	0.0630		pCi/L							
Counting Error (+/-): 0.113	MDA: 0.04									
LCS (W6G0837-BS1)				Analyzed: 07/19/16 12:21						
Gross Alpha	5.62		pCi/L	4.79		117	55-149			
Counting Error (+/-): 0.314	MDA: 0.04									
LCS Dup (W6G0837-BSD1)				Analyzed: 07/19/16 12:21						
Gross Alpha	5.92		pCi/L	4.79		124	55-149	5	30	
Counting Error (+/-): 0.325	MDA: 0.04									



Marine Research Specialties
3140 Telegraph Road, Suite A
Ventura CA, 93003-3223

Date Received: 07/14/16 10:15
Date Reported: 08/02/16 14:35

Notes and Definitions

ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then not detected at or above the MDL.
NR	Not Reportable
Dil	Dilution
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Sub	Subcontracted analysis, original report available upon request
MDL	Method Detection Limit
MDA	Minimum Detectable Activity
MRL	Method Reporting Limit

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

An Absence of Total Coliform meets the drinking water standards as established by the California Department of Health Services.

The Reporting Limit (RL) is referenced as the Laboratory's Practical Quantitation Limit (PQL) or the Detection Limit for Reporting Purposes (DLR).

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

July 25, 2016

Vista Work Order No. 1600899

Dr. Douglas Coats
Marine Research Specialists
3140 Telegraph Rd., Ste A
Ventura, CA 93003-3238

Dear Dr. Coats,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on July 14, 2016. This sample set was analyzed on a standard turn-around time, under your Project Name 'MBCSD H2 2016'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,



Martha Maier
Laboratory Director



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Work Order No. 1600899

Case Narrative

Sample Condition on Receipt:

Two aqueous samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. As requested, the Travel Blank was placed on hold.

Analytical Notes:

EPA Method 1613

The wastewater sample was extracted and analyzed for tetra-through-octa chlorinated dioxins and furans by EPA Method 1613 using a ZB-5MS GC column.

Holding Times

The sample was extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank. The OPR recoveries were within the method acceptance criteria.

Labeled standard recoveries for all QC and field samples were within method acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1600899-01	V1 ARS Comp	13-Jul-16 10:00	14-Jul-16 09:05	Amber Glass NM Bottle, 1L
1600899-02	Travel Blank	13-Jul-16 10:00	14-Jul-16 09:05	Amber Glass NM Bottle, 1L

ANALYTICAL RESULTS

Sample ID: Method Blank			EPA Method 1613B						
Matrix: Aqueous Sample Size: 1.00 L	QC Batch: B6G0078 Date Extracted: 19-Jul-2016 8:35	Lab Sample: B6G0078-BLK1 Date Analyzed: 20-Jul-16 20:05	Column: ZB-5MS	Analyst: DB					
Analyte	Conc. (pg/L)	DL	EMPC	MDL	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.712		1.08		13C-2,3,7,8-TCDD	88.7	25 - 164	
1,2,3,7,8-PeCDD	ND	0.964		3.94		13C-1,2,3,7,8-PeCDD	74.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	1.05		3.00		13C-1,2,3,4,7,8-HxCDD	88.6	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.08		4.20		13C-1,2,3,6,7,8-HxCDD	86.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	1.26		5.70		13C-1,2,3,7,8,9-HxCDD	89.6	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.982		3.51		13C-1,2,3,4,6,7,8-HpCDD	70.7	23 - 140	
OCDD	ND	1.69		6.94		13C-OCDD	43.3	17 - 157	
2,3,7,8-TCDF	ND	0.747		0.902		13C-2,3,7,8-TCDF	89.1	24 - 169	
1,2,3,7,8-PeCDF	ND	0.910		3.43		13C-1,2,3,7,8-PeCDF	72.9	24 - 185	
2,3,4,7,8-PeCDF	ND	0.970		2.21		13C-2,3,4,7,8-PeCDF	70.7	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.343		2.96		13C-1,2,3,4,7,8-HxCDF	85.4	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.374		4.01		13C-1,2,3,6,7,8-HxCDF	80.6	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.387		2.61		13C-2,3,4,6,7,8-HxCDF	85.5	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.562		2.38		13C-1,2,3,7,8,9-HxCDF	91.1	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.635		2.64		13C-1,2,3,4,6,7,8-HpCDF	72.2	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.671		4.82		13C-1,2,3,4,7,8,9-HpCDF	68.5	26 - 138	
OCDF	ND	2.28		7.05		13C-OCDF	46.7	17 - 157	
TOTALS						CRS			
						37CL2,3,7,8-TCDD	87.7	35 - 197	
						Toxic Equivalent Quotient (TEQ) Data			
						TEQMinWHO2005Dioxin	0.00		
Total TCDD	ND	0.712							
Total PeCDD	ND	0.964							
Total HxCDD	ND	1.13							
Total HpCDD	ND	0.982							
Total TCDF	ND	0.747							
Total PeCDF	ND	0.941							
Total HxCDF	ND	0.411							
Total HpCDF	ND	0.653							

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration
MDL - Method detection limit
LCL-UCL - Lower control limit - upper control limit
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: OPR		EPA Method 1613B					
Matrix: Aqueous	QC Batch: B6G0078	Lab Sample: B6G0078-BS1	Date Analyzed: 20-Jul-16 18:28 Column: ZB-5MS Analyst: DB				
Sample Size: 1.00 L	Date Extracted: 19-Jul-2016 8:35						
Analyte	Amt Found (pg/L)	Spike Amt	%R	Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	194	200	97.2	67 - 158	IS	83.2	20 - 175
1,2,3,7,8-PeCDD	1020	1000	102	70 - 142		69.7	21 - 227
1,2,3,4,7,8-HxCDD	1020	1000	102	70 - 164		86.4	21 - 193
1,2,3,6,7,8-HxCDD	997	1000	99.7	76 - 134		85.5	25 - 163
1,2,3,7,8,9-HxCDD	1040	1000	104	64 - 162		84.9	21 - 193
1,2,3,4,6,7,8-HpCDD	1030	1000	103	70 - 140		72.0	26 - 166
OCDD	2080	2000	104	78 - 144		49.1	13 - 199
2,3,7,8-TCDF	196	200	98.1	75 - 158		78.9	22 - 152
1,2,3,7,8-PeCDF	997	1000	99.7	80 - 134		68.1	21 - 192
2,3,4,7,8-PeCDF	1010	1000	101	68 - 160		65.7	13 - 328
1,2,3,4,7,8-HxCDF	1040	1000	104	72 - 134		78.9	19 - 202
1,2,3,6,7,8-HxCDF	1020	1000	102	84 - 130		78.7	21 - 159
2,3,4,6,7,8-HxCDF	1010	1000	101	70 - 156		83.5	22 - 176
1,2,3,7,8,9-HxCDF	1020	1000	102	78 - 130		86.9	17 - 205
1,2,3,4,6,7,8-HpCDF	995	1000	99.5	82 - 122		69.7	21 - 158
1,2,3,4,7,8,9-HpCDF	1000	1000	100	78 - 138		69.2	20 - 186
OCDF	2020	2000	101	63 - 170		49.6	13 - 199
CRS							31 - 191

LCL-UCL - Lower control limit - upper control limit

Sample ID: V1 ARS Comp			EPA Method 1613B						
Client Data		Sample Data		Laboratory Data					
Name:	Marine Research Specialists	Matrix:	Wastewater	Lab Sample:	1600899-01				
Project:	MBCSD H2 2016	Sample Size:	0.994 L	QC Batch:	B6G0078				
Date Collected:	13-Jul-2016 10:00			Date Analyzed:	21-Jul-16 08:27				
				Column:	ZB-5MS				
				Analyst:	DB				
Analyte	Conc. (pg/L)	DL	EMPC	MDL	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.899		1.08		IS 13C-2,3,7,8-TCDD	56.5	25 - 164	
1,2,3,7,8-PeCDD	ND	1.81		3.94		13C-1,2,3,7,8-PeCDD	45.5	25 - 181	
1,2,3,4,7,8-HxCDD	ND	2.18		3.00		13C-1,2,3,4,7,8-HxCDD	54.4	32 - 141	
1,2,3,6,7,8-HxCDD	ND	1.96		4.20		13C-1,2,3,6,7,8-HxCDD	54.3	28 - 130	
1,2,3,7,8,9-HxCDD	ND	2.24		5.70		13C-1,2,3,7,8,9-HxCDD	57.3	32 - 141	
1,2,3,4,6,7,8-HpCDD	3.85			3.51	J	13C-1,2,3,4,6,7,8-HpCDD	45.9	23 - 140	
OCDD	28.9			6.94	J	13C-OCDD	31.4	17 - 157	
2,3,7,8-TCDF	ND	1.45		0.902		13C-2,3,7,8-TCDF	56.5	24 - 169	
1,2,3,7,8-PeCDF	ND	1.59		3.43		13C-1,2,3,7,8-PeCDF	44.8	24 - 185	
2,3,4,7,8-PeCDF	ND	1.49		2.21		13C-2,3,4,7,8-PeCDF	44.8	21 - 178	
1,2,3,4,7,8-HxCDF	ND	1.12		2.96		13C-1,2,3,4,7,8-HxCDF	51.4	26 - 152	
1,2,3,6,7,8-HxCDF	ND	1.12		4.01		13C-1,2,3,6,7,8-HxCDF	51.0	26 - 123	
2,3,4,6,7,8-HxCDF	ND	1.23		2.61		13C-2,3,4,6,7,8-HxCDF	53.3	28 - 136	
1,2,3,7,8,9-HxCDF	ND	1.94		2.38		13C-1,2,3,7,8,9-HxCDF	56.1	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	1.15		2.64		13C-1,2,3,4,6,7,8-HpCDF	45.0	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	1.07		4.82		13C-1,2,3,4,7,8,9-HpCDF	46.2	26 - 138	
OCDF	ND	3.53		7.05		13C-OCDF	31.5	17 - 157	
						CRS 37Cl-2,3,7,8-TCDD	80.7	35 - 197	
TOTALS						Toxic Equivalent Quotient (TEQ) Data			
						TEQMinWHO2005Dioxin			
						0.0472			
Total TCDD	3.70				J				
Total PeCDD	ND	1.81							
Total HxCDD	ND	2.12							
Total HpCDD	3.85				J				
Total TCDF	ND	1.45							
Total PeCDF	ND	1.54							
Total HxCDF	ND	1.33							
Total HpCDF	ND	1.11							

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration
MDL - Method detection limit
LCL-UCL - Lower control limit - upper control limit
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	Dilution
E	The associated compound concentration exceeded the calibration range of the instrument.
H	Recovery and/or RPD was outside laboratory acceptance limits.
I	Chemical Interference
J	The amount detected is below the Reporting Limit/LOQ.
*	See Cover Letter
Conc.	Concentration
NA	Not applicable
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2014022
Nevada Division of Environmental Protection	CA004132015-1
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-004
Pennsylvania Department of Environmental Protection	012
South Carolina Department of Health	87002001
Texas Commission on Environmental Quality	T104704189-15-6
Virginia Department of General Services	7923
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	Method
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23

MATRIX: Biological Tissue	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	Method
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

MATRIX: Non-Potable Water	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	Method
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B

Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

SAMPLE LOG-IN CHECKLIST



Vista Project #: 1600899 TAT STD

Samples Arrival:	Date/Time 7/14/16 0909	Initials: JP	Location: WR-2 Shelf/Rack: N/A
Logged In:	Date/Time 07/14/16 0940	Initials: BUB JP	Location: WR-2 Shelf/Rack: B3
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> On Trac
	<input type="checkbox"/> DHL	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Other
Preservation:	<input checked="" type="checkbox"/> Ice	<input checked="" type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
	<input type="checkbox"/> None		
Temp °C: 1.8 (uncorrected)	Time: 0920	Thermometer ID: IR-1	
Temp °C: 1.5 (corrected)			

	YES	NO	NA
Adequate Sample Volume Received? <u>1 Liter</u>	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓ JP 7/14/16		✓
Shipping Documentation Present?	✓		
Airbill Trk # <u>7835 8184 4184</u>	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na ₂ S ₂ O ₃ Preservation Documented?	COC	Sample Container	None
Shipping Container	<input checked="" type="checkbox"/> Vista	<input checked="" type="checkbox"/> Client	<input type="checkbox"/> Retain
	<input type="checkbox"/> Return	<input type="checkbox"/> Dispose	

Comments: