

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

**OFFSHORE MONITORING  
AND REPORTING PROGRAM**

**SEMI-ANNUAL EFFLUENT SAMPLING**

**CHEMICAL AND BIOASSAY  
ANALYSIS RESULTS**

**JULY 2015**



**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**

**CHEMICAL AND BIOASSAY**  
**ANALYSIS RESULTS**

**JULY 2015**

**Prepared by**  
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**August 2015**

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.



Mr. Bruce Keogh  
Wastewater Division Manager  
City of Morro Bay

Date 8-7-2015

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

7 August 2015

**Reference: Annual Effluent Self-Monitoring Report for 2015  
Semiannual Effluent Self-Monitoring Report for July through December 2015**

Dear Mr. Keogh:

This self-monitoring report documents the chemical and bioassay analysis results for effluent samples collected in July 2015 as required by NPDES discharge permit CA0047881.<sup>1</sup> Analyses of effluent samples collected on 15 and 22 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 15 July 2015;
- Phenolic and nutrient compounds measured in a grab sample collected on 15 July 2015;
- Chlorinated dioxins and furans measured in a composite sample collected on 16 July 2015; and
- Chronic bioassays conducted on a composite sample collected on 22 July 2015.

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 2015 augment data collected over the past two decades from the MBSCD<sup>2</sup> 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.<sup>3</sup> In July 2015, only 10 of these compounds were detected, and of those, only five had concentrations high enough to be reliably quantified above their respective MLs: copper, lead, selenium, zinc, and a non-chlorinated phenolic compound. The concentrations of the chemical compounds detected in the July 2015 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 may also enter the system through corrosion of household plumbing systems. Nevertheless, the concentrations of these compounds

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<sup>1</sup> 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.

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

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

that were detected in the July 2015 effluent were well below the levels deemed deleterious to marine organisms.

A small but quantifiable concentration of selenium was also detected within the July 2015 effluent sample. Selenium is similar to the commonly occurring metals because it occurs naturally in the mineralogy of the central California coast. Its concentration in the July effluent sample was three orders of magnitude below levels deemed deleterious to marine organisms.

Lastly, the non-chlorinated phenolic compound, 3-&4-methylphenol, that was detected at low levels in the July 2015 effluent grab sample is typically a precursor or synthetic intermediate to other compounds and materials, including plastics, pesticides, pharmaceuticals, and dyes. It is also a component of human sweat.

Chronic toxicity tests conducted on a July 2015 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,

A handwritten signature in blue ink that reads "Douglas A. Coats". The signature is written in a cursive style and is positioned above the printed name.

Douglas A. Coats  
Program Manager

*ATTACHMENT A*  
**MINIMUM LEVEL REPORTING**

**ATTACHMENT A**  
**Analytical Results for Effluent Samples Collected during July 2015**

| Chemical Compound or Parameter                              | Units | Method           | Detection Limit <sup>a</sup> | Practical <sup>b</sup> Quantification Limit | Minimum Level <sup>c</sup> | Permit <sup>d</sup> Limit | Reported Value                   |
|---|-------|------------------|------------------------------|---|----------------------------|---------------------------|----------------------------------|
| <b>Nutrients</b>  |       |                  |                              |   |                            |                           |                                  |
| Nitrate (as N)  | mg/L  | 300.0            | —                            | 1.  | — <sup>e</sup>             | — <sup>e</sup>            | ND                               |
| Urea (as N)   | mg/L  | Mulvenna & Savid | —                            | 0.01  | —                          | —                         | 0.108 as measured                |
| Ortho-Phosphate (as P)                                      | mg/L  | 300.0            | —                            | 0.10  | —                          | —                         | ND                               |
| Dissolved Silica (SiO <sub>2</sub> )                        | mg/L  | 200.7            | —                            | 0.5   | —                          | —                         | 11. as measured                  |
| <b>Objectives for the Protection of Marine Aquatic Life</b> |       |                  |                              |   |                            |                           |                                  |
| Arsenic   | mg/L  | 200.8            | 0.0007                       | 0.002                                       | 0.002                      | 0.67                      | DNQ 0.001 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                      | ND                               |
| Copper  | mg/L  | 200.7            | 0.0012                       | 0.01  | 0.01                       | 0.14                      | 0.018 as measured                |
| Lead  | mg/L  | 200.8            | 0.0001                       | 0.001                                       | 0.0005                     | 0.27                      | 0.00082 as measured <sup>f</sup> |
| Mercury   | µg/L  | 245.1            | 0.033                        | 0.2   | 0.2                        | 5.29                      | ND                               |
| Nickel  | mg/L  | 200.7            | 0.0023                       | 0.01  | 0.02                       | 0.67                      | DNQ 0.0051 Est. Conc.            |
| Selenium  | mg/L  | 200.8            | 0.00019                      | 0.002                                       | 0.002                      | 2.01                      | 0.0021 as measured               |
| 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                      | 0.087 as measured                |
| Cyanide   | mg/L  | 335.4            | 0.0014                       | 0.005                                       | 0.005                      | 0.13                      | ND                               |
| Toxicity-Chronic: <i>H. Rufescens</i>                       | TUc   | 600/R-95/136     | —                            | —   | —                          | 134.                      | 17.9 as measured                 |

<sup>a</sup> 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.

<sup>b</sup> 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).

<sup>c</sup> 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.

<sup>d</sup> 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.

<sup>e</sup> No minimum levels or permit limits have been established for nutrients.

<sup>f</sup> The reported concentration was below the PQL and was flagged “as estimated” by the chemistry laboratory (See Attachment C). However, in accordance with the guidance from the COP, the reported value is listed “as measured” herein, because the measured value exceeded the ML.

**Analytical Results for Effluent Samples Collected during July 2015**

| Chemical Compound or Parameter                                       | Units | Method   | Detection Limit <sup>a</sup> | Practical <sup>b</sup> Quantification Limit | Minimum Level <sup>c</sup> | Permit <sup>d</sup> Limit | Reported Value            |
|--|-------|----------|------------------------------|---|----------------------------|---------------------------|---------------------------|
| Nonchlorinated Phenolics   | mg/L  | 625      | 0.0016                       | 0.002                                       | 0.001                      | 4.02                      | 0.0025 as measured        |
| Chlorinated Phenolics  | mg/L  | 625      | 0.00031                      | 0.002                                       | 0.005                      | 0.13                      | ND                        |
| Endosulfan (Sum)   | µg/L  | 608      | 0.0014                       | 0.005                                       | 0.01                       | 1.21                      | ND                        |
| Endrin   | µg/L  | 608      | 0.00082                      | 0.005                                       | 0.01                       | 0.27                      | ND                        |
| HCH  | µg/L  | 608      | 0.00094                      | 0.005                                       | 0.02                       | 0.54                      | ND                        |
| Radioactivity Gross α  | pCi/L | SM-7110C | 0.01                         | ±0.111                                      | —                          | 15.                       | -0.178 as measured        |
| Radioactivity Gross β  | pCi/L | 900      | 1.526                        | ±1.931                                      | —                          | 50.                       | 16. as measured           |
| <b>Objectives for the Protection of Human Health: Noncarcinogens</b> |       |          |                              |   |                            |                           |                           |
| Acrolein   | mg/L  | 624      | 0.001                        | 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      | 0.0014                       | 0.01  | 0.024                      | 0.59                      | ND                        |
| Bis(2-chloroisopropyl) ether   | mg/L  | 625      | 0.0015                       | 0.01  | 0.0096                     | 160.8                     | ND                        |
| Chlorobenzene  | mg/L  | 624      | 0.00005                      | 0.0005                                      | 0.002                      | 76.4                      | ND                        |
| Chromium III <sup>g</sup>  | g/L   | 200.7    | 0.0000012                    | 0.00001                                     | 0.00001                    | 25.5                      | ND                        |
| Di-n-butyl phthalate   | mg/L  | 625      | 0.002                        | 0.01  | 0.048                      | 469.                      | ND                        |
| Dichlorobenzene  | mg/L  | 624      | 0.00005                      | 0.0005                                      | 0.002                      | 683.                      | ND                        |
| Diethyl phthalate  | mg/L  | 625      | 0.0016                       | 0.01  | 0.0096                     | 4,420.                    | ND                        |
| Dimethyl phthalate   | g/L   | 625      | 0.000002                     | 0.00001                                     | 0.0000096                  | 109.9                     | ND                        |
| 2-Methyl-4,6-dinitrophenol   | mg/L  | 625      | 0.0017                       | 0.05  | 0.024                      | 29.5                      | ND                        |
| 2,4-Dinitrophenol  | mg/L  | 625      | 0.001                        | 0.05  | 0.024                      | 0.54                      | ND                        |
| Ethylbenzene   | mg/L  | 624      | 0.00005                      | 0.0005                                      | 0.002                      | 549.                      | ND                        |
| Fluoranthene   | mg/L  | 625      | 0.001                        | 0.01  | 0.0048                     | 2.                        | ND                        |
| Hexachlorocyclopentadiene  | mg/L  | 625      | 0.0015                       | 0.01  | 0.024                      | 7.8                       | ND                        |
| Nitrobenzene   | mg/L  | 625      | 0.0013                       | 0.01  | 0.0048                     | 0.66                      | ND                        |
| Thallium   | mg/L  | 200.8    | 0.0001                       | 0.001                                       | 0.001                      | 0.27                      | ND                        |
| Toluene  | g/L   | 624      | 0.00000005                   | 0.0000005                                   | 0.000002                   | 11.4                      | DNQ 0.00000039 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                        |

<sup>g</sup> Total chromium concentration was reported rather than the concentration of the trivalent oxidation state alone.

**Analytical Results for Effluent Samples Collected during July 2015**

| Chemical Compound or Parameter                                    | Units | Method | Detection Limit <sup>a</sup> | Practical <sup>b</sup> Quantification Limit | Minimum Level <sup>c</sup> | Permit <sup>d</sup> Limit | Reported Value                      |
|---|-------|--------|------------------------------|---|----------------------------|---------------------------|-------------------------------------|
| <b>Objectives for the Protection of Human Health: Carcinogens</b> |       |        |                              |   |                            |                           |                                     |
| Acrylonitrile   | µg/L  | 624    | 0.62                         | 5.  | 2.                         | 13.4                      | ND                                  |
| Aldrin  | ng/L  | 608    | 1.3                          | 5.  | 5.                         | 2.95                      | ND                                  |
| Benzene   | µg/L  | 624    | 0.05                         | 0.5   | 2.                         | 791.                      | ND                                  |
| Benzidine   | ng/L  | 625    | 36,000.                      | 100,000.                                    | 24,000.                    | 9.25                      | ND                                  |
| Beryllium   | µg/L  | 200.7  | 0.77                         | 10.   | 2.                         | 4.42                      | ND                                  |
| Bis (2-chloroethyl) ether   | µg/L  | 625    | 3.4                          | 10.   | 4.8                        | 6.03                      | ND                                  |
| Bis(2-ethylhexyl) phthalate                                       | µg/L  | 625    | 15.                          | 25.   | 24.                        | 469.                      | ND                                  |
| Carbon Tetrachloride  | µg/L  | 624    | 0.066                        | 0.5   | 2.                         | 121.                      | ND                                  |
| Chlordane   | ng/L  | 608    | 380.                         | 500.  | 100.                       | 3.08                      | ND                                  |
| Dibromochloromethane  | µg/L  | 624    | 0.053                        | 0.5   | 2.                         | 1,152.                    | ND                                  |
| Chloroform  | mg/L  | 624    | 0.000063                     | 0.0005                                      | 0.002                      | 17.4                      | DNQ 0.00072 Est. Conc. <sup>h</sup> |
| DDT (Sum)   | ng/L  | 608    | 0.76                         | 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    | 41.                          | 50.   | 24.                        | 1.09                      | ND                                  |
| 1,2-Dichloroethane  | mg/L  | 624    | 0.000059                     | 0.0005                                      | 0.002                      | 3.75                      | ND                                  |
| 1,1-Dichloroethene  | mg/L  | 624    | 0.00005                      | 0.0005                                      | 0.002                      | 0.12                      | ND                                  |
| Dichlorobromomethane  | mg/L  | 624    | 0.00005                      | 0.0005                                      | 0.002                      | 0.83                      | ND                                  |
| Methylene chloride  | mg/L  | 624    | 0.00011                      | 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    | 1.2                          | 5.  | 10.                        | 5.36                      | ND                                  |
| 2,4-Dinitrotoluene  | µg/L  | 625    | 1.3                          | 10.   | 24.                        | 348.                      | ND                                  |
| 1,2-Diphenylhydrazine   | µg/L  | 625    | 1.7                          | 10.   | 4.8                        | 21.4                      | ND                                  |
| Halomethanes  | mg/L  | 624    | 0.00005                      | 0.0005                                      | 0.002                      | 17.4                      | ND                                  |
| Heptachlor  | pg/L  | 608    | 1,200.                       | 5,000.                                      | 10,000.                    | 6,700. <sup>i</sup>       | ND                                  |
| Heptachlor Epoxide  | pg/L  | 608    | 990.                         | 5,000.                                      | 10,000.                    | 2,680. <sup>i</sup>       | ND                                  |

<sup>h</sup> 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 limit (ML).

<sup>i</sup> 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 2015**

| Chemical Compound or Parameter | Units | Method | Detection Limit <sup>a</sup> | Practical <sup>b</sup> Quantification Limit | Minimum Level <sup>c</sup> | Permit <sup>d</sup> Limit | Reported Value                     |
|--------------------------------|-------|--------|------------------------------|---|----------------------------|---------------------------|------------------------------------|
| Hexachlorobenzene              | ng/L  | 625    | 1,000.                       | 10,000.                                     | 4,800.                     | 28.1                      | ND                                 |
| Hexachlorobutadiene            | mg/L  | 625    | 0.0012                       | 0.01  | 0.0048                     | 1.88                      | ND                                 |
| Hexachloroethane               | µg/L  | 625    | 1.6                          | 10.   | 4.8                        | 335.                      | ND                                 |
| Isophorone                     | mg/L  | 625    | 0.0016                       | 0.01  | 0.0048                     | 98.                       | ND                                 |
| N-Nitrosodimethylamine         | µg/L  | 625    | 3.                           | 10.   | 24.                        | 978.                      | ND                                 |
| N-Nitrosodi-n-propylamine      | µg/L  | 625    | 6.5                          | 10.   | 24.                        | 50.9                      | ND                                 |
| N-Nitrosodiphenylamine         | µg/L  | 625    | 2.2                          | 10.   | 4.8                        | 335.                      | ND                                 |
| PAHs                           | µg/L  | 625    | 1.                           | 10.   | 48.                        | 1.18                      | ND                                 |
| Total PCB's                    | ng/L  | 608    | 45.                          | 200.  | 500.                       | 2.55                      | ND                                 |
| Dioxin (TCDD equivalents)      | pg/L  | 1613B  | —                            | —   | —                          | 0.52                      | DNQ 0.0343 Est. Conc. <sup>j</sup> |
| 1,1,2,2-Tetrachloroethane      | mg/L  | 624    | 0.000076                     | 0.0005                                      | 0.002                      | 0.31                      | ND                                 |
| Tetrachloroethene              | µg/L  | 624    | 0.053                        | 0.5   | 2.                         | 268.                      | ND                                 |
| Toxaphene                      | ng/L  | 608    | 420.                         | 2,000.                                      | 500.                       | 28.1                      | ND                                 |
| Trichloroethene                | mg/L  | 624    | 0.000063                     | 0.0005                                      | 0.002                      | 3.62                      | ND                                 |
| 1,1,2-Trichloroethane          | mg/L  | 624    | 0.000085                     | 0.0005                                      | 0.002                      | 1.26                      | ND                                 |
| 2,4,6-Trichlorophenol          | mg/L  | 625    | 0.0006                       | 0.005                                       | 0.048                      | 0.039                     | ND                                 |
| Vinyl chloride                 | mg/L  | 624    | 0.000069                     | 0.0005                                      | 0.002                      | 4.82                      | ND                                 |

<sup>j</sup> The Toxic Equivalent Quotient (TEQ) reported here was flagged as estimated because it was based on the detection of only one isomer (OCDD) at a concentration “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

| Feature - LS: 001-S |     |       |                                | Monitoring Period: 07/01/2015 - 12/31/2015 |    |                            |                           |                                   |             |            |             |
|---------------------|-----|-------|--------------------------------|--|----|----------------------------|---------------------------|-----------------------------------|-------------|------------|-------------|
| 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 Maximum     |             |            |             |
| 1                   | 0   | 00955 | Silica, dissolved (as SiO2)    |  |    |                            |                           | 11.0 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 Maximum     |             |            |             |
| 1                   | 0   | 00981 | Selenium, total recoverable    |  |    | 0.0021 mg/L 6 Month Median | 0.0021 mg/L Daily Maximum | 0.0021 mg/L Instantaneous Maximum | 0           | Semiannual | COMP24      |
| 1                   | 0   | 01032 | Chromium, hexavalent (as Cr)   |  |    | NODI: B 6 Month Median     | NODI: B Daily Maximum     | NODI: B Instantaneous Maximum     |             |            |             |
| 1                   | 0   | 01074 | Nickel, total recoverable      |  |    | NODI: Q 6 Month Median     | NODI: Q Daily Maximum     | NODI: Q Instantaneous Maximum     |             |            |             |
| 1                   | 0   | 01079 | Silver total recoverable       |  |    | NODI: B 6 Month Median     | NODI: B Daily Maximum     | NODI: B Instantaneous Maximum     |             |            |             |
| 1                   | 0   | 01094 | Zinc, total recoverable        |  |    | 0.087 mg/L 6 Month Median  | 0.087 mg/L Daily Maximum  | 0.087 mg/L Instantaneous Maximum  | 0           | Semiannual | COMP24      |
| 1                   | 0   | 01113 | Cadmium, total recoverable     |  |    | NODI: B 6 Month Median     | NODI: B Daily Maximum     | NODI: B Instantaneous Maximum     |             |            |             |

| Feature - LS: 001-S |     |       |   | Monitoring Period: 07/01/2015 - 12/31/2015 |    |                                  |                                 |  |             |            |             |
|---------------------|-----|-------|---|--|----|----------------------------------|---------------------------------|--|-------------|------------|-------------|
| Loc                 | Sea | Param | Param Text  | Q1   | Q2 | C1                               | C2                              | C3                                       | Excur Count | Analy Freq | Sample Type |
| 1                   | 0   | 01114 | Lead, total recoverable                           |  |    | 8.2E-4 mg/L<br>6 Month<br>Median | 8.2E-4 mg/L<br>Daily<br>Maximum | 8.2E-4 mg/L<br>Instantaneou<br>s Maximum | 0           | Semiannual | COMP24      |
| 1                   | 0   | 01119 | Copper, total recoverable                         |  |    | 0.018 mg/L<br>6 Month<br>Median  | 0.018 mg/L<br>Daily<br>Maximum  | 0.018 mg/L<br>Instantaneou<br>s Maximum  | 0           | Semiannual | COMP24      |
| 1                   | 0   | 04175 | Phosphate, ortho (as P)                           |  |    |                                  |                                 | NODI: B<br>Daily<br>Maximum              |             |            |             |
| 1                   | 0   | 71800 | Urea  |  |    |                                  |                                 | 0.108 mg/L<br>Daily<br>Maximum           | 0           | Semiannual | GRAB        |
| 1                   | 0   | 71901 | Mercury, total recoverable                        |  |    | NODI: B<br>6 Month<br>Median     | NODI: B<br>Daily<br>Maximum     | NODI: B<br>Instantaneou<br>s Maximum     |             |            |             |
| 1                   | 0   | TTK1D | Static 48Hr<br>Chronic<br>Macrocystis<br>Pyrifera |  |    |                                  |                                 | NODI: 9<br>Daily<br>Maximum              |             |            |             |
| 1                   | 0   | TTK3R | Static 48Hr<br>Chronic Haliotis<br>Rufescens      |  |    |                                  |                                 | 17.9 tox<br>chronic<br>Daily<br>Maximum  | 0           | Semiannual | COMP24      |

# eSMR PDF Summary: DMR

NPDES Permit #: CA0047881

Facility: MORRO BAY/CAYUCOS WWTP

## DMR Parameters

| Feature - LS: 001-Y |     |       |  | Monitoring Period: 01/01/2015 - 12/31/2015 |    |    |                               |                                |             |            |             |
|---------------------|-----|-------|--|--|----|----|-------------------------------|--------------------------------|-------------|------------|-------------|
| Loc                 | Sea | Param | Param Text                               | Q1   | Q2 | C1 | C2                            | C3                             | Excur Count | Analy Freq | Sample Type |
| 1                   | 0   | 00189 | Radioactivity                            |  |    |    |                               | 16.0 pCi/L<br>Daily<br>Maximum | 0           | Annual     | COMP24      |
| 1                   | 0   | 00982 | Thallium, total recoverable              |  |    |    | NODI: B<br>Monthly<br>Average |                                |             |            |             |
| 1                   | 0   | 00998 | Beryllium, total recoverable (as Be)     |  |    |    | NODI: B<br>Monthly<br>Average |                                |             |            |             |
| 1                   | 0   | 01033 | Chromium, trivalent (as Cr)              |  |    |    | NODI: B<br>Monthly<br>Average |                                |             |            |             |
| 1                   | 0   | 01268 | Antimony, total recoverable              |  |    |    | NODI: B<br>Monthly<br>Average |                                |             |            |             |
| 1                   | 0   | 03615 | 2-Methyl-4,6-dinitrophenol               |  |    |    | NODI: B<br>Monthly<br>Average |                                |             |            |             |
| 1                   | 0   | 03824 | Tributyltin                              |  |    |    | NODI: B<br>Monthly<br>Average |                                |             |            |             |
| 1                   | 0   | 22456 | Polynuclear Aromatic Hydrocarbons (PAHs) |  |    |    | NODI: B<br>Monthly<br>Average |                                |             |            |             |
| 1                   | 0   | 32101 | Dichlorobromo methane                    |  |    |    | NODI: B<br>Monthly<br>Average |                                |             |            |             |
| 1                   | 0   | 32102 | Carbon tetrachloride                     |  |    |    | NODI: B<br>Monthly<br>Average |                                |             |            |             |

| Feature - LS: 001-Y |     |       |                                     | Monitoring Period: 01/01/2015 - 12/31/2015 |    |    |                               |    |             |            |             |
|---------------------|-----|-------|-------------------------------------|--|----|----|-------------------------------|----|-------------|------------|-------------|
| Loc                 | Sea | Param | Param Text                          | Q1   | Q2 | C1 | C2                            | C3 | Excur Count | Analy Freq | Sample Type |
| 1                   | 0   | 32103 | 1,2-Dichloroethane                  |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 32105 | Dibromochloro<br>methane            |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 32106 | Chloroform                          |  |    |    | NODI: Q<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34010 | Toluene                             |  |    |    | NODI: Q<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34030 | Benzene                             |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34210 | Acrolein                            |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34215 | Acrylonitrile                       |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34273 | Bis(2-<br>chloroethyl)<br>ether     |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34278 | Bis(2-<br>chloroethoxy)<br>methane  |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34283 | Bis(2-<br>chloroisopropyl)<br>ether |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34301 | Chlorobenzene                       |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34336 | Diethyl<br>phthalate                |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34341 | Dimethyl<br>phthalate               |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |

| Feature - LS: 001-Y |     |       |                               | Monitoring Period: 01/01/2015 - 12/31/2015 |    |    |                               |    |             |            |             |
|---------------------|-----|-------|-------------------------------|--|----|----|-------------------------------|----|-------------|------------|-------------|
| Loc                 | Sea | Param | Param Text                    | Q1   | Q2 | C1 | C2                            | C3 | Excur Count | Analy Freq | Sample Type |
| 1                   | 0   | 34346 | 1,2-Diphenylhydrazine         |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34371 | Ethylbenzene                  |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34376 | Fluoranthene                  |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34386 | Hexachlorocyclopentadiene     |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34391 | Hexachlorobutadiene           |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34396 | Hexachloroethane              |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34408 | Isophorone                    |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34423 | Methylene chloride            |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34428 | N-Nitrosodi-N-propylamine     |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34433 | N-Nitrosodiphenylamine        |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34438 | N-Nitrosodimethylamine (NDMA) |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34447 | Nitrobenzene                  |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |
| 1                   | 0   | 34475 | Tetrachloroethylene           |  |    |    | NODI: B<br>Monthly<br>Average |    |             |            |             |

| Feature - LS: 001-Y |     |       |                             | Monitoring Period: 01/01/2015 - 12/31/2015 |    |    |                            |    |             |            |             |
|---------------------|-----|-------|-----------------------------|--|----|----|----------------------------|----|-------------|------------|-------------|
| Loc                 | Sea | Param | Param Text                  | Q1   | Q2 | C1 | C2                         | C3 | Excur Count | Analy Freq | Sample Type |
| 1                   | 0   | 34501 | 1,1-Dichloroethylene        |  |    |    | NODI: B<br>Monthly Average |    |             |            |             |
| 1                   | 0   | 34506 | 1,1,1-Trichloroethane       |  |    |    | NODI: B<br>Monthly Average |    |             |            |             |
| 1                   | 0   | 34511 | 1,1,2-Trichloroethane       |  |    |    | NODI: B<br>Monthly Average |    |             |            |             |
| 1                   | 0   | 34516 | 1,1,2,2-Tetrachloroethane   |  |    |    | NODI: B<br>Monthly Average |    |             |            |             |
| 1                   | 0   | 34571 | 1,4-Dichlorobenzene         |  |    |    | NODI: B<br>Monthly Average |    |             |            |             |
| 1                   | 0   | 34611 | 2,4-Dinitrotoluene          |  |    |    | NODI: B<br>Monthly Average |    |             |            |             |
| 1                   | 0   | 34616 | 2,4-Dinitrophenol           |  |    |    | NODI: B<br>Monthly Average |    |             |            |             |
| 1                   | 0   | 34621 | 2,4,6-Trichlorophenol       |  |    |    | NODI: B<br>Monthly Average |    |             |            |             |
| 1                   | 0   | 34631 | 3,3'-Dichlorobenzidine      |  |    |    | NODI: B<br>Monthly Average |    |             |            |             |
| 1                   | 0   | 39100 | Bis(2-ethylhexyl) phthalate |  |    |    | NODI: B<br>Monthly Average |    |             |            |             |
| 1                   | 0   | 39110 | Di-n-butyl phthalate        |  |    |    | NODI: B<br>Monthly Average |    |             |            |             |
| 1                   | 0   | 39120 | Benzidine                   |  |    |    | NODI: B<br>Monthly Average |    |             |            |             |
| 1                   | 0   | 39175 | Vinyl chloride              |  |    |    | NODI: B<br>Monthly Average |    |             |            |             |

| Feature - LS: 001-Y |     |       |  | Monitoring Period: 01/01/2015 - 12/31/2015 |    |                              |                               |                                     |             |            |             |
|---------------------|-----|-------|--|--|----|------------------------------|-------------------------------|-------------------------------------|-------------|------------|-------------|
| Loc                 | Sea | Param | Param Text                                     | Q1   | Q2 | C1                           | C2                            | C3                                  | Excur Count | Analy Freq | Sample Type |
| 1                   | 0   | 39180 | Trichloroethylene                              |  |    |                              | NODI: B<br>Monthly<br>Average |                                     |             |            |             |
| 1                   | 0   | 39330 | Aldrin   |  |    |                              | NODI: B<br>Monthly<br>Average |                                     |             |            |             |
| 1                   | 0   | 39350 | Chlordane (tech<br>mix. and<br>metabolites)    |  |    |                              | NODI: B<br>Monthly<br>Average |                                     |             |            |             |
| 1                   | 0   | 39379 | DDT/DDD/DDE,<br>sum of p,p' & o,<br>p' isomers |  |    |                              | NODI: B<br>Monthly<br>Average |                                     |             |            |             |
| 1                   | 0   | 39380 | Dieldrin                                       |  |    |                              | NODI: B<br>Monthly<br>Average |                                     |             |            |             |
| 1                   | 0   | 39388 | Endosulfan,<br>total                           |  |    | NODI: B<br>6 Month<br>Median | NODI: B<br>Daily<br>Maximum   | NODI: B<br>Instantaneous<br>Maximum |             |            |             |
| 1                   | 0   | 39390 | Endrin   |  |    | NODI: B<br>6 Month<br>Median | NODI: B<br>Daily<br>Maximum   | NODI: B<br>Instantaneous<br>Maximum |             |            |             |
| 1                   | 0   | 39400 | Toxaphene                                      |  |    |                              | NODI: B<br>Monthly<br>Average |                                     |             |            |             |
| 1                   | 0   | 39410 | Heptachlor                                     |  |    |                              | NODI: B<br>Monthly<br>Average |                                     |             |            |             |
| 1                   | 0   | 39420 | Heptachlor<br>epoxide                          |  |    |                              | NODI: B<br>Monthly<br>Average |                                     |             |            |             |
| 1                   | 0   | 39516 | Polychlorinated<br>biphenyls<br>(PCBs)         |  |    |                              | NODI: B<br>Monthly<br>Average |                                     |             |            |             |
| 1                   | 0   | 39700 | Hexachlorobenzene                              |  |    |                              | NODI: B<br>Monthly<br>Average |                                     |             |            |             |
| 1                   | 0   | 74015 | Phenols,<br>chlorinated                        |  |    | NODI: B<br>6 Month<br>Median | NODI: B<br>Daily<br>Maximum   | NODI: B<br>Instantaneous<br>Maximum |             |            |             |

| Feature - LS: 001-Y |     |       |                                   | Monitoring Period: 01/01/2015 - 12/31/2015 |    |                                  |                                 |   |             |            |             |
|---------------------|-----|-------|-----------------------------------|--|----|----------------------------------|---------------------------------|---|-------------|------------|-------------|
| Loc                 | Sea | Param | Param Text                        | Q1   | Q2 | C1                               | C2                              | C3                                      | Excur Count | Analy Freq | Sample Type |
| 1                   | 0   | 77163 | 1,3-Dichloropropene               |  |    |                                  | NODI: B<br>Monthly<br>Average   |   |             |            |             |
| 1                   | 0   | 77835 | Hexachlorocyclohexane, total      |  |    | NODI: B<br>6 Month<br>Median     | NODI: B<br>Daily<br>Maximum     | NODI: B<br>Instantaneous<br>Maximum     |             |            |             |
| 1                   | 0   | 78218 | Phenolic compounds, unchlorinated |  |    | 0.0025 mg/L<br>6 Month<br>Median | 0.0025 mg/L<br>Daily<br>Maximum | 0.0025 mg/L<br>Instantaneous<br>Maximum | 0           | Annual     | GRAB        |
| 1                   | 0   | 78456 | Halomethanes                      |  |    |                                  | NODI: B<br>Monthly<br>Average   |   |             |            |             |
| 1                   | 0   | 81524 | Dichlorobenzene                   |  |    |                                  | NODI: B<br>Monthly<br>Average   |   |             |            |             |
| 1                   | 0   | 82698 | TCDD equivalents                  |  |    |                                  | NODI: Q<br>Monthly<br>Average   |   |             |            |             |

*ATTACHMENT C*  
**LABORATORY REPORTS**



Date of Report: 08/03/2015

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: 1517377  
Invoice ID: B209578

Enclosed are the results of analyses for samples received by the laboratory on 7/15/2015. 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

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

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15-17377

**BC Laboratories  
Chain of Custody Form  
Addendum**

**Analysis of Effluent Samples collected from the Morro Bay Wastewater  
Treatment Plant in July 2015**

| Analysis  | Sample    | Method       |
|---|-----------|--------------|
| Level IIA QC<br>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      |
| <b>13 Metals:</b>   |           |              |
| 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

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

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BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 1

Submission #: 15-17377

SHIPPING INFORMATION: Fed Ex, UPS, Ontrac, Hand Delivery, BC Lab Field Service. SHIPPING CONTAINER: Ice Chest, None, Box, Other. FREE LIQUID: YES, NO.

Refrigerant: Ice, Blue Ice, None, Other. Comments:

Custody Seals: Ice Chest, Containers, None. 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: 0.95. Container: Amber. Thermometer ID: 208. Date/Time: 7/15/15. Analyst Init: KIB.

Table with columns: SAMPLE CONTAINERS, SAMPLE NUMBERS (1-10). Rows include: QT PE UNPRES, 4oz / 8oz / 16oz PE UNPRES, 2oz Cr6, QT INORGANIC CHEMICAL METALS, INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz, PT CYANIDE, PT NITROGEN FORMS, PT TOTAL SULFIDE, 2oz. NITRATE / NITRITE, PT TOTAL ORGANIC CARBON, PT CHEMICAL OXYGEN DEMAND, PtA PHENOLICS, 40ml VOA VIAL TRAVEL BLANK, 40ml VOA VIAL, QT EPA 1664, PT ODOR, RADIOLOGICAL, BACTERIOLOGICAL, 40 ml VOA VIAL- 504, QT EPA 508/605/8080, QT EPA 515.1/8150, QT EPA 525 625, QT EPA 525 TRAVEL BLANK, 40ml EPA 547, 40ml EPA 531.1, 8oz Amber EPA 548, QT EPA 549, QT EPA 8015M, 8oz / 16oz / 32oz AMBER, 8oz / 16oz / 32oz JAR, SOIL SLEEVE, PCB VIAL, PLASTIC BAG, Tedlar Bag, FERROUS IRON, ENCORE, SMART KIT, Summa Canister.

Comments: Sample Numbering Completed By: KIB Date/Time: 7/15/15 2148 Rev. No. 19 05/06/2015



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

**Reported:** 08/03/2015 9:33  
**Project:** Semi-Annual Eff  
**Project Number:** [none]  
**Project Manager:** Doug Coats

### Laboratory / Client Sample Cross Reference

| Laboratory | Client Sample Information |              |                       |                  |
|------------|---------------------------|--------------|-----------------------|------------------|
| 1517377-01 | <b>COC Number:</b>        | ---          | <b>Receive Date:</b>  | 07/15/2015 20:35 |
|            | <b>Project Number:</b>    | ---          | <b>Sampling Date:</b> | 07/15/2015 09:00 |
|            | <b>Sampling Location:</b> | ---          | <b>Sample Depth:</b>  | ---              |
|            | <b>Sampling Point:</b>    | BC1 Grab ARS | <b>Lab Matrix:</b>    | Water            |
|            | <b>Sampled By:</b>        | ---          | <b>Sample Type:</b>   | Water            |
|            | <hr/>                     |              |                       |                  |
| 1517377-02 | <b>COC Number:</b>        | ---          | <b>Receive Date:</b>  | 07/15/2015 20:35 |
|            | <b>Project Number:</b>    | ---          | <b>Sampling Date:</b> | 07/15/2015 09:00 |
|            | <b>Sampling Location:</b> | ---          | <b>Sample Depth:</b>  | ---              |
|            | <b>Sampling Point:</b>    | BC2 Comp ARS | <b>Lab Matrix:</b>    | Water            |
|            | <b>Sampled By:</b>        | ---          | <b>Sample Type:</b>   | Water            |
|            | <hr/>                     |              |                       |                  |
| 1517377-03 | <b>COC Number:</b>        | ---          | <b>Receive Date:</b>  | 07/15/2015 20:35 |
|            | <b>Project Number:</b>    | ---          | <b>Sampling Date:</b> | 07/14/2015 00:00 |
|            | <b>Sampling Location:</b> | ---          | <b>Sample Depth:</b>  | ---              |
|            | <b>Sampling Point:</b>    | Trip Blank   | <b>Lab Matrix:</b>    | Water            |
|            | <b>Sampled By:</b>        | ---          | <b>Sample Type:</b>   | Blank Water      |
|            | <hr/>                     |              |                       |                  |

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

Reported: 08/03/2015 9:33  
Project: Semi-Annual Eff  
Project Number: [none]  
Project Manager: Doug Coats

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

|                                  |  |
|----------------------------------|--|
| <b>BCL Sample ID:</b> 1517377-01 | <b>Client Sample Name:</b> BC1 Grab ARS, 7/15/2015 9:00:00AM |
|----------------------------------|--|

| Constituent                      | Result     | Units       | PQL                  | MDL        | Method         | MB Bias | Lab Quals | Run # |
|----------------------------------|------------|-------------|----------------------|------------|----------------|---------|-----------|-------|
| 4-Chloro-3-methylphenol          | ND         | ug/L        | 5.0                  | 0.40       | EPA-625        | ND      |           | 1     |
| 2-Chlorophenol                   | ND         | ug/L        | 2.0                  | 0.37       | EPA-625        | ND      |           | 1     |
| 2,4-Dichlorophenol               | ND         | ug/L        | 2.0                  | 0.43       | EPA-625        | ND      |           | 1     |
| 2,4-Dimethylphenol               | ND         | ug/L        | 2.0                  | 0.20       | EPA-625        | ND      |           | 1     |
| 4,6-Dinitro-2-methylphenol       | ND         | ug/L        | 10                   | 0.34       | EPA-625        | ND      |           | 1     |
| 2,4-Dinitrophenol                | ND         | ug/L        | 10                   | 0.20       | EPA-625        | ND      |           | 1     |
| 2-Methylphenol                   | ND         | ug/L        | 2.0                  | 1.0        | EPA-625        | ND      |           | 1     |
| <b>3- &amp; 4-Methylphenol</b>   | <b>2.5</b> | <b>ug/L</b> | <b>2.0</b>           | <b>1.6</b> | <b>EPA-625</b> | ND      |           | 1     |
| 2-Nitrophenol                    | ND         | ug/L        | 2.0                  | 0.28       | EPA-625        | ND      |           | 1     |
| 4-Nitrophenol                    | ND         | ug/L        | 2.0                  | 0.73       | EPA-625        | ND      |           | 1     |
| Pentachlorophenol                | ND         | ug/L        | 10                   | 0.79       | EPA-625        | ND      |           | 1     |
| Phenol                           | ND         | ug/L        | 2.0                  | 0.20       | EPA-625        | ND      |           | 1     |
| 2,4,5-Trichlorophenol            | ND         | ug/L        | 5.0                  | 0.31       | EPA-625        | ND      |           | 1     |
| 2,4,6-Trichlorophenol            | ND         | ug/L        | 5.0                  | 0.60       | EPA-625        | ND      |           | 1     |
| 2-Fluorophenol (Surrogate)       | 36.5       | %           | 30 - 120 (LCL - UCL) |            | EPA-625        |         |           | 1     |
| Phenol-d5 (Surrogate)            | 16.8       | %           | 12 - 110 (LCL - UCL) |            | EPA-625        |         |           | 1     |
| Nitrobenzene-d5 (Surrogate)      | 87.8       | %           | 50 - 130 (LCL - UCL) |            | EPA-625        |         |           | 1     |
| 2-Fluorobiphenyl (Surrogate)     | 69.1       | %           | 55 - 125 (LCL - UCL) |            | EPA-625        |         |           | 1     |
| 2,4,6-Tribromophenol (Surrogate) | 46.2       | %           | 40 - 150 (LCL - UCL) |            | EPA-625        |         |           | 1     |
| p-Terphenyl-d14 (Surrogate)      | 53.1       | %           | 40 - 150 (LCL - UCL) |            | EPA-625        |         |           | 1     |

| Run # | Method  | Prep Date | Run Date/Time  | Analyst | Instrument | Dilution | QC Batch ID |
|-------|---------|-----------|----------------|---------|------------|----------|-------------|
| 1     | EPA-625 | 07/17/15  | 07/23/15 22:18 | VH1     | MS-B1      | 1        | BYG1875     |

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3140 Telegraph Road, Suite A  
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Ventura, CA 93003-3238

**Reported:** 08/03/2015 9:33  
**Project:** Semi-Annual Eff  
**Project Number:** [none]  
**Project Manager:** Doug Coats

### Organochlorine Pesticides and PCB's (EPA Method 608)

|                                  |  |
|----------------------------------|--|
| <b>BCL Sample ID:</b> 1517377-02 | <b>Client Sample Name:</b> BC2 Comp ARS, 7/15/2015 9:00:00AM |
|----------------------------------|--|

| Constituent                    | Result | Units | PQL                  | MDL     | Method  | MB Bias | Lab Quals | Run # |
|--------------------------------|--------|-------|----------------------|---------|---------|---------|-----------|-------|
| Aldrin                         | ND     | ug/L  | 0.0050               | 0.0013  | EPA-608 | ND      |           | 1     |
| alpha-BHC                      | ND     | ug/L  | 0.0050               | 0.0011  | EPA-608 | ND      |           | 1     |
| beta-BHC                       | ND     | ug/L  | 0.0050               | 0.0021  | EPA-608 | ND      |           | 1     |
| delta-BHC                      | ND     | ug/L  | 0.0050               | 0.0014  | EPA-608 | ND      |           | 1     |
| gamma-BHC (Lindane)            | ND     | ug/L  | 0.0050               | 0.00094 | EPA-608 | ND      |           | 1     |
| Chlordane (Technical)          | ND     | ug/L  | 0.50                 | 0.38    | EPA-608 | ND      |           | 1     |
| 4,4'-DDD                       | ND     | ug/L  | 0.0050               | 0.0017  | EPA-608 | ND      |           | 1     |
| 4,4'-DDE                       | ND     | ug/L  | 0.0050               | 0.0019  | EPA-608 | ND      |           | 1     |
| 4,4'-DDT                       | ND     | ug/L  | 0.0050               | 0.00076 | EPA-608 | ND      |           | 1     |
| Dieldrin                       | ND     | ug/L  | 0.0050               | 0.0012  | EPA-608 | ND      |           | 1     |
| Endosulfan I                   | ND     | ug/L  | 0.0050               | 0.0016  | EPA-608 | ND      |           | 1     |
| Endosulfan II                  | ND     | ug/L  | 0.0050               | 0.0014  | EPA-608 | ND      |           | 1     |
| Endosulfan sulfate             | ND     | ug/L  | 0.0050               | 0.0026  | EPA-608 | ND      |           | 1     |
| Endrin                         | ND     | ug/L  | 0.0050               | 0.00082 | EPA-608 | ND      |           | 1     |
| Endrin aldehyde                | ND     | ug/L  | 0.010                | 0.0032  | EPA-608 | ND      |           | 1     |
| Heptachlor                     | ND     | ug/L  | 0.0050               | 0.0012  | EPA-608 | ND      |           | 1     |
| Heptachlor epoxide             | ND     | ug/L  | 0.0050               | 0.00099 | EPA-608 | ND      |           | 1     |
| Methoxychlor                   | ND     | ug/L  | 0.0050               | 0.0011  | EPA-608 | ND      |           | 1     |
| Toxaphene                      | ND     | ug/L  | 2.0                  | 0.42    | EPA-608 | ND      |           | 1     |
| PCB-1016                       | ND     | ug/L  | 0.20                 | 0.045   | EPA-608 | ND      |           | 1     |
| PCB-1221                       | ND     | ug/L  | 0.20                 | 0.070   | EPA-608 | ND      |           | 1     |
| PCB-1232                       | ND     | ug/L  | 0.20                 | 0.081   | EPA-608 | ND      |           | 1     |
| PCB-1242                       | ND     | ug/L  | 0.20                 | 0.065   | EPA-608 | ND      |           | 1     |
| PCB-1248                       | ND     | ug/L  | 0.20                 | 0.085   | EPA-608 | ND      |           | 1     |
| PCB-1254                       | ND     | ug/L  | 0.20                 | 0.077   | EPA-608 | ND      |           | 1     |
| PCB-1260                       | ND     | ug/L  | 0.20                 | 0.060   | EPA-608 | ND      |           | 1     |
| Total PCB's (Summation)        | ND     | ug/L  | 0.20                 | 0.10    | EPA-608 | ND      |           | 1     |
| TCMX (Surrogate)               | 49.6   | %     | 40 - 140 (LCL - UCL) |         | EPA-608 |         |           | 1     |
| Decachlorobiphenyl (Surrogate) | 24.5   | %     | 40 - 130 (LCL - UCL) |         | EPA-608 |         | S09       | 1     |

| Run # | Method  | Prep Date | Run Date/Time  | Analyst | Instrument | Dilution | QC Batch ID |
|-------|---------|-----------|----------------|---------|------------|----------|-------------|
| 1     | EPA-608 | 07/20/15  | 07/22/15 02:32 | KEP     | GC-17      | 1        | BYG1713     |

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Ventura, CA 93003-3238

Reported: 08/03/2015 9:33  
Project: Semi-Annual Eff  
Project Number: [none]  
Project Manager: Doug Coats

### Volatile Organic Analysis (EPA Method 624)

|                                  |  |
|----------------------------------|--|
| <b>BCL Sample ID:</b> 1517377-02 | <b>Client Sample Name:</b> BC2 Comp ARS, 7/15/2015 9:00:00AM |
|----------------------------------|--|

| 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        | 0.050        | EPA-624        | ND      |           | 1     |
| Bromoform                             | ND          | ug/L        | 0.50        | 0.050        | EPA-624        | ND      |           | 1     |
| Bromomethane                          | ND          | ug/L        | 1.0         | 0.17         | EPA-624        | ND      |           | 1     |
| Carbon tetrachloride                  | ND          | ug/L        | 0.50        | 0.066        | EPA-624        | ND      |           | 1     |
| Chlorobenzene                         | ND          | ug/L        | 0.50        | 0.050        | EPA-624        | ND      |           | 1     |
| Chloroethane                          | ND          | ug/L        | 0.50        | 0.055        | EPA-624        | ND      |           | 1     |
| <b>Chloroform</b>                     | <b>0.72</b> | <b>ug/L</b> | <b>0.50</b> | <b>0.063</b> | <b>EPA-624</b> | ND      |           | 1     |
| Chloromethane                         | ND          | ug/L        | 0.50        | 0.050        | EPA-624        | ND      |           | 1     |
| Dibromochloromethane                  | ND          | ug/L        | 0.50        | 0.053        | EPA-624        | ND      |           | 1     |
| 1,2-Dichlorobenzene                   | ND          | ug/L        | 0.50        | 0.050        | 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        | 0.059        | EPA-624        | ND      |           | 1     |
| 1,1-Dichloroethene                    | ND          | ug/L        | 0.50        | 0.050        | EPA-624        | ND      |           | 1     |
| trans-1,2-Dichloroethene              | ND          | ug/L        | 0.50        | 0.060        | EPA-624        | ND      |           | 1     |
| 1,2-Dichloropropane                   | ND          | ug/L        | 0.50        | 0.072        | EPA-624        | ND      |           | 1     |
| cis-1,3-Dichloropropene               | ND          | ug/L        | 0.50        | 0.057        | EPA-624        | ND      |           | 1     |
| trans-1,3-Dichloropropene             | ND          | ug/L        | 0.50        | 0.050        | EPA-624        | ND      |           | 1     |
| Ethylbenzene                          | ND          | ug/L        | 0.50        | 0.050        | EPA-624        | ND      |           | 1     |
| Methylene chloride                    | ND          | ug/L        | 1.0         | 0.11         | EPA-624        | ND      |           | 1     |
| Methyl t-butyl ether                  | ND          | ug/L        | 0.50        | 0.055        | EPA-624        | ND      |           | 1     |
| 1,1,2,2-Tetrachloroethane             | ND          | ug/L        | 0.50        | 0.076        | EPA-624        | ND      |           | 1     |
| Tetrachloroethene                     | ND          | ug/L        | 0.50        | 0.053        | EPA-624        | ND      |           | 1     |
| <b>Toluene</b>                        | <b>0.39</b> | <b>ug/L</b> | <b>0.50</b> | <b>0.050</b> | <b>EPA-624</b> | ND      | <b>J</b>  | 1     |
| 1,1,1-Trichloroethane                 | ND          | ug/L        | 0.50        | 0.055        | EPA-624        | ND      |           | 1     |
| 1,1,2-Trichloroethane                 | ND          | ug/L        | 0.50        | 0.085        | EPA-624        | ND      |           | 1     |
| Trichloroethene                       | ND          | ug/L        | 0.50        | 0.063        | EPA-624        | ND      |           | 1     |
| Trichlorofluoromethane                | ND          | ug/L        | 0.50        | 0.074        | EPA-624        | ND      |           | 1     |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND          | ug/L        | 0.50        | 0.063        | EPA-624        | ND      |           | 1     |
| Vinyl chloride                        | ND          | ug/L        | 0.50        | 0.069        | EPA-624        | ND      |           | 1     |
| Total Xylenes                         | ND          | ug/L        | 0.50        | 0.15         | EPA-624        | ND      |           | 1     |

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**Reported:** 08/03/2015 9:33  
**Project:** Semi-Annual Eff  
**Project Number:** [none]  
**Project Manager:** Doug Coats

### Volatile Organic Analysis (EPA Method 624)

|                                  |  |
|----------------------------------|--|
| <b>BCL Sample ID:</b> 1517377-02 | <b>Client Sample Name:</b> BC2 Comp ARS, 7/15/2015 9:00:00AM |
|----------------------------------|--|

| Constituent                       | Result | Units | PQL                  | MDL   | Method  | MB Bias | Lab Quals | Run # |
|-----------------------------------|--------|-------|----------------------|-------|---------|---------|-----------|-------|
| Acrolein                          | ND     | ug/L  | 20                   | 1.0   | EPA-624 | ND      |           | 1     |
| Acrylonitrile                     | ND     | ug/L  | 5.0                  | 0.62  | 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                 | 0.050 | EPA-624 | ND      |           | 1     |
| 1,2-Dichloroethane-d4 (Surrogate) | 102    | %     | 75 - 125 (LCL - UCL) |       | EPA-624 |         |           | 1     |
| Toluene-d8 (Surrogate)            | 103    | %     | 80 - 120 (LCL - UCL) |       | EPA-624 |         |           | 1     |
| 4-Bromofluorobenzene (Surrogate)  | 103    | %     | 80 - 120 (LCL - UCL) |       | EPA-624 |         |           | 1     |

| Run # | Method  | Prep Date | Run Date/Time  | Analyst | Instrument | Dilution | QC Batch ID |
|-------|---------|-----------|----------------|---------|------------|----------|-------------|
| 1     | EPA-624 | 07/16/15  | 07/16/15 17:17 | MGC     | MS-V7      | 1        | BYG1322     |

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Ventura, CA 93003-3238

Reported: 08/03/2015 9:33  
Project: Semi-Annual Eff  
Project Number: [none]  
Project Manager: Doug Coats

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

|                                  |  |
|----------------------------------|--|
| <b>BCL Sample ID:</b> 1517377-02 | <b>Client Sample Name:</b> BC2 Comp ARS, 7/15/2015 9:00:00AM |
|----------------------------------|--|

| Constituent                  | Result     | Units       | PQL       | MDL        | Method         | MB Bias | Lab Quals    | Run # |
|------------------------------|------------|-------------|-----------|------------|----------------|---------|--------------|-------|
| Acenaphthene                 | ND         | ug/L        | 10        | 1.2        | EPA-625        | ND      | A10          | 1     |
| Acenaphthylene               | ND         | ug/L        | 10        | 1.4        | EPA-625        | ND      | A10          | 1     |
| Aldrin                       | ND         | ug/L        | 10        | 1.8        | EPA-625        | ND      | A10          | 1     |
| Aniline                      | ND         | ug/L        | 25        | 3.4        | EPA-625        | ND      | A10          | 1     |
| Anthracene                   | ND         | ug/L        | 10        | 1.5        | EPA-625        | ND      | A10          | 1     |
| Benzidine                    | ND         | ug/L        | 100       | 36         | EPA-625        | ND      | A10          | 1     |
| Benzo[a]anthracene           | ND         | ug/L        | 10        | 1.9        | EPA-625        | ND      | A10          | 1     |
| Benzo[b]fluoranthene         | ND         | ug/L        | 10        | 2.0        | EPA-625        | ND      | A10          | 1     |
| Benzo[k]fluoranthene         | ND         | ug/L        | 10        | 1.6        | EPA-625        | ND      | A10          | 1     |
| Benzo[a]pyrene               | ND         | ug/L        | 10        | 1.0        | EPA-625        | ND      | A10          | 1     |
| Benzo[g,h,i]perylene         | ND         | ug/L        | 10        | 1.1        | EPA-625        | ND      | A10          | 1     |
| <b>Benzoic acid</b>          | <b>300</b> | <b>ug/L</b> | <b>50</b> | <b>29</b>  | <b>EPA-625</b> | ND      | <b>A10</b>   | 1     |
| <b>Benzyl alcohol</b>        | <b>4.1</b> | <b>ug/L</b> | <b>10</b> | <b>1.7</b> | <b>EPA-625</b> | ND      | <b>J,A10</b> | 1     |
| Benzyl butyl phthalate       | ND         | ug/L        | 10        | 2.4        | EPA-625        | ND      | A10          | 1     |
| alpha-BHC                    | ND         | ug/L        | 10        | 1.4        | EPA-625        | ND      | A10          | 1     |
| beta-BHC                     | ND         | ug/L        | 10        | 1.4        | EPA-625        | ND      | A10          | 1     |
| delta-BHC                    | ND         | ug/L        | 10        | 1.5        | EPA-625        | ND      | A10          | 1     |
| gamma-BHC (Lindane)          | ND         | ug/L        | 10        | 1.1        | EPA-625        | ND      | A10          | 1     |
| bis(2-Chloroethoxy)methane   | ND         | ug/L        | 10        | 1.4        | EPA-625        | ND      | A10          | 1     |
| bis(2-Chloroethyl) ether     | ND         | ug/L        | 10        | 3.4        | EPA-625        | ND      | A10          | 1     |
| bis(2-Chloroisopropyl) ether | ND         | ug/L        | 10        | 1.5        | EPA-625        | ND      | A10          | 1     |
| bis(2-Ethylhexyl)phthalate   | ND         | ug/L        | 25        | 15         | EPA-625        | ND      | A10          | 1     |
| 4-Bromophenyl phenyl ether   | ND         | ug/L        | 10        | 1.2        | EPA-625        | ND      | A10          | 1     |
| 4-Chloroaniline              | ND         | ug/L        | 10        | 3.4        | EPA-625        | ND      | A10          | 1     |
| 2-Chloronaphthalene          | ND         | ug/L        | 10        | 1.7        | EPA-625        | ND      | A10          | 1     |
| 4-Chlorophenyl phenyl ether  | ND         | ug/L        | 10        | 1.2        | EPA-625        | ND      | A10          | 1     |
| Chrysene                     | ND         | ug/L        | 10        | 3.2        | EPA-625        | ND      | A10          | 1     |
| 4,4'-DDD                     | ND         | ug/L        | 10        | 2.4        | EPA-625        | ND      | A10          | 1     |
| 4,4'-DDE                     | ND         | ug/L        | 15        | 2.0        | EPA-625        | ND      | A10          | 1     |
| 4,4'-DDT                     | ND         | ug/L        | 10        | 2.2        | EPA-625        | ND      | A10          | 1     |
| Dibenzo[a,h]anthracene       | ND         | ug/L        | 15        | 1.3        | EPA-625        | ND      | A10          | 1     |
| Dibenzofuran                 | ND         | ug/L        | 10        | 1.0        | EPA-625        | ND      | A10          | 1     |
| 1,2-Dichlorobenzene          | ND         | ug/L        | 10        | 1.8        | EPA-625        | ND      | A10          | 1     |

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Ventura, CA 93003-3238

**Reported:** 08/03/2015 9:33  
Project: Semi-Annual Eff  
Project Number: [none]  
Project Manager: Doug Coats

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

|                                  |  |
|----------------------------------|--|
| <b>BCL Sample ID:</b> 1517377-02 | <b>Client Sample Name:</b> BC2 Comp ARS, 7/15/2015 9:00:00AM |
|----------------------------------|--|

| Constituent               | Result | Units | PQL | MDL | Method  | MB Bias | Lab Quals | Run # |
|---------------------------|--------|-------|-----|-----|---------|---------|-----------|-------|
| 1,3-Dichlorobenzene       | ND     | ug/L  | 10  | 1.8 | EPA-625 | ND      | A10       | 1     |
| 1,4-Dichlorobenzene       | ND     | ug/L  | 10  | 1.6 | EPA-625 | ND      | A10       | 1     |
| 3,3-Dichlorobenzidine     | ND     | ug/L  | 50  | 41  | EPA-625 | ND      | A10       | 1     |
| Dieldrin                  | ND     | ug/L  | 15  | 2.0 | EPA-625 | ND      | A10       | 1     |
| Diethyl phthalate         | ND     | ug/L  | 10  | 1.6 | EPA-625 | ND      | A10       | 1     |
| Dimethyl phthalate        | ND     | ug/L  | 10  | 2.0 | EPA-625 | ND      | A10       | 1     |
| Di-n-butyl phthalate      | ND     | ug/L  | 10  | 2.0 | EPA-625 | ND      | A10       | 1     |
| 2,4-Dinitrotoluene        | ND     | ug/L  | 10  | 1.3 | EPA-625 | ND      | A10       | 1     |
| 2,6-Dinitrotoluene        | ND     | ug/L  | 10  | 2.0 | EPA-625 | ND      | A10       | 1     |
| Di-n-octyl phthalate      | ND     | ug/L  | 10  | 2.3 | EPA-625 | ND      | A10       | 1     |
| 1,2-Diphenylhydrazine     | ND     | ug/L  | 10  | 1.7 | EPA-625 | ND      | A10       | 1     |
| Endosulfan I              | ND     | ug/L  | 50  | 8.5 | EPA-625 | ND      | A10       | 1     |
| Endosulfan II             | ND     | ug/L  | 50  | 6.0 | EPA-625 | ND      | A10       | 1     |
| Endosulfan sulfate        | ND     | ug/L  | 15  | 2.9 | EPA-625 | ND      | A10       | 1     |
| Endrin                    | ND     | ug/L  | 10  | 5.5 | EPA-625 | ND      | A10       | 1     |
| Endrin aldehyde           | ND     | ug/L  | 50  | 2.6 | EPA-625 | ND      | A10       | 1     |
| Fluoranthene              | ND     | ug/L  | 10  | 1.0 | EPA-625 | ND      | A10       | 1     |
| Fluorene                  | ND     | ug/L  | 10  | 1.4 | EPA-625 | ND      | A10       | 1     |
| Heptachlor                | ND     | ug/L  | 10  | 1.6 | EPA-625 | ND      | A10       | 1     |
| Heptachlor epoxide        | ND     | ug/L  | 10  | 1.4 | EPA-625 | ND      | A10       | 1     |
| Hexachlorobenzene         | ND     | ug/L  | 10  | 1.0 | EPA-625 | ND      | A10       | 1     |
| Hexachlorobutadiene       | ND     | ug/L  | 10  | 1.2 | EPA-625 | ND      | A10       | 1     |
| Hexachlorocyclopentadiene | ND     | ug/L  | 10  | 1.5 | EPA-625 | ND      | A10       | 1     |
| Hexachloroethane          | ND     | ug/L  | 10  | 1.6 | EPA-625 | ND      | A10       | 1     |
| Indeno[1,2,3-cd]pyrene    | ND     | ug/L  | 10  | 1.3 | EPA-625 | ND      | A10       | 1     |
| Isophorone                | ND     | ug/L  | 10  | 1.6 | EPA-625 | ND      | A10       | 1     |
| 2-Methylnaphthalene       | ND     | ug/L  | 10  | 1.4 | EPA-625 | ND      | A10       | 1     |
| Naphthalene               | ND     | ug/L  | 10  | 1.0 | EPA-625 | ND      | A10       | 1     |
| 2-Naphthylamine           | ND     | ug/L  | 100 | 24  | EPA-625 | ND      | A10       | 1     |
| 2-Nitroaniline            | ND     | ug/L  | 10  | 1.6 | EPA-625 | ND      | A10       | 1     |
| 3-Nitroaniline            | ND     | ug/L  | 10  | 3.3 | EPA-625 | ND      | A10       | 1     |
| 4-Nitroaniline            | ND     | ug/L  | 25  | 4.4 | EPA-625 | ND      | A10       | 1     |
| Nitrobenzene              | ND     | ug/L  | 10  | 1.3 | EPA-625 | ND      | A10       | 1     |

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Ventura, CA 93003-3238

Reported: 08/03/2015 9:33  
Project: Semi-Annual Eff  
Project Number: [none]  
Project Manager: Doug Coats

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

|                                  |  |
|----------------------------------|--|
| <b>BCL Sample ID:</b> 1517377-02 | <b>Client Sample Name:</b> BC2 Comp ARS, 7/15/2015 9:00:00AM |
|----------------------------------|--|

| Constituent                      | Result     | Units       | PQL                  | MDL        | Method         | MB Bias | Lab Quals  | Run # |
|----------------------------------|------------|-------------|----------------------|------------|----------------|---------|------------|-------|
| N-Nitrosodimethylamine           | ND         | ug/L        | 10                   | 3.0        | EPA-625        | ND      | A10        | 1     |
| N-Nitrosodi-N-propylamine        | ND         | ug/L        | 10                   | 6.5        | EPA-625        | ND      | A10        | 1     |
| N-Nitrosodiphenylamine           | ND         | ug/L        | 10                   | 2.2        | EPA-625        | ND      | A10        | 1     |
| Phenanthrene                     | ND         | ug/L        | 10                   | 1.0        | EPA-625        | ND      | A10        | 1     |
| Pyrene                           | ND         | ug/L        | 10                   | 1.3        | EPA-625        | ND      | A10        | 1     |
| 1,2,4-Trichlorobenzene           | ND         | ug/L        | 10                   | 1.4        | EPA-625        | ND      | A10        | 1     |
| 4-Chloro-3-methylphenol          | ND         | ug/L        | 25                   | 2.0        | EPA-625        | ND      | A10        | 1     |
| 2-Chlorophenol                   | ND         | ug/L        | 10                   | 1.8        | EPA-625        | ND      | A10        | 1     |
| 2,4-Dichlorophenol               | ND         | ug/L        | 10                   | 2.2        | EPA-625        | ND      | A10        | 1     |
| 2,4-Dimethylphenol               | ND         | ug/L        | 10                   | 1.0        | EPA-625        | ND      | A10        | 1     |
| 4,6-Dinitro-2-methylphenol       | ND         | ug/L        | 50                   | 1.7        | EPA-625        | ND      | A10        | 1     |
| 2,4-Dinitrophenol                | ND         | ug/L        | 50                   | 1.0        | EPA-625        | ND      | A10        | 1     |
| 2-Methylphenol                   | ND         | ug/L        | 10                   | 5.0        | EPA-625        | ND      | A10        | 1     |
| <b>3- &amp; 4-Methylphenol</b>   | <b>180</b> | <b>ug/L</b> | <b>10</b>            | <b>8.0</b> | <b>EPA-625</b> | ND      | <b>A10</b> | 1     |
| 2-Nitrophenol                    | ND         | ug/L        | 10                   | 1.4        | EPA-625        | ND      | A10        | 1     |
| 4-Nitrophenol                    | ND         | ug/L        | 10                   | 3.6        | EPA-625        | ND      | A10        | 1     |
| Pentachlorophenol                | ND         | ug/L        | 50                   | 4.0        | EPA-625        | ND      | A10        | 1     |
| <b>Phenol</b>                    | <b>220</b> | <b>ug/L</b> | <b>10</b>            | <b>1.0</b> | <b>EPA-625</b> | ND      | <b>A10</b> | 1     |
| 2,4,5-Trichlorophenol            | ND         | ug/L        | 25                   | 1.6        | EPA-625        | ND      | A10        | 1     |
| 2,4,6-Trichlorophenol            | ND         | ug/L        | 25                   | 3.0        | EPA-625        | ND      | A10        | 1     |
| 2-Fluorophenol (Surrogate)       | 47.2       | %           | 30 - 120 (LCL - UCL) |            | EPA-625        |         | A10        | 1     |
| Phenol-d5 (Surrogate)            | 43.5       | %           | 12 - 110 (LCL - UCL) |            | EPA-625        |         | A10        | 1     |
| Nitrobenzene-d5 (Surrogate)      | 79.3       | %           | 50 - 130 (LCL - UCL) |            | EPA-625        |         | A10        | 1     |
| 2-Fluorobiphenyl (Surrogate)     | 60.4       | %           | 55 - 125 (LCL - UCL) |            | EPA-625        |         | A10        | 1     |
| 2,4,6-Tribromophenol (Surrogate) | 60.2       | %           | 40 - 150 (LCL - UCL) |            | EPA-625        |         | A10        | 1     |
| p-Terphenyl-d14 (Surrogate)      | 52.7       | %           | 40 - 150 (LCL - UCL) |            | EPA-625        |         | A10        | 1     |

| Run # | Method  | Prep Date | Run Date/Time  | Analyst | Instrument | Dilution | QC Batch ID |
|-------|---------|-----------|----------------|---------|------------|----------|-------------|
| 1     | EPA-625 | 07/17/15  | 07/24/15 19:59 | VH1     | MS-B2      | 4.800    | BYG1875     |

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**Reported:** 08/03/2015 9:33  
**Project:** Semi-Annual Eff  
**Project Number:** [none]  
**Project Manager:** Doug Coats

### Water Analysis (General Chemistry)

|                                  |  |
|----------------------------------|--|
| <b>BCL Sample ID:</b> 1517377-02 | <b>Client Sample Name:</b> BC2 Comp ARS, 7/15/2015 9:00:00AM |
|----------------------------------|--|

| Constituent   | Result | Units | PQL    | MDL    | Method    | MB Bias | Lab Quals | Run # |
|---------------|--------|-------|--------|--------|-----------|---------|-----------|-------|
| Total Cyanide | ND     | mg/L  | 0.0050 | 0.0014 | EPA-335.4 | ND      |           | 1     |

| Run # | Method    | Prep Date | Run Date/Time  | Analyst | Instrument | Dilution | QC Batch ID |
|-------|-----------|-----------|----------------|---------|------------|----------|-------------|
| 1     | EPA-335.4 | 07/20/15  | 07/21/15 10:14 | TDC     | KONE-1     | 1        | BYG1615     |

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**Reported:** 08/03/2015 9:33  
**Project:** Semi-Annual Eff  
**Project Number:** [none]  
**Project Manager:** Doug Coats

### Metals Analysis

|                                  |  |
|----------------------------------|--|
| <b>BCL Sample ID:</b> 1517377-02 | <b>Client Sample Name:</b> BC2 Comp ARS, 7/15/2015 9:00:00AM |
|----------------------------------|--|

| Constituent                       | Result      | Units       | PQL        | MDL         | Method           | MB Bias | Lab Quals | Run # |
|-----------------------------------|-------------|-------------|------------|-------------|------------------|---------|-----------|-------|
| Total Mercury                     | ND          | ug/L        | 0.20       | 0.033       | EPA-245.1        | ND      |           | 1     |
| Total Recoverable Antimony        | ND          | ug/L        | 100        | 5.0         | EPA-200.7        | ND      |           | 2     |
| <b>Total Recoverable Arsenic</b>  | <b>1.0</b>  | <b>ug/L</b> | <b>2.0</b> | <b>0.70</b> | <b>EPA-200.8</b> | 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        | ND          | ug/L        | 10         | 1.2         | EPA-200.7        | ND      |           | 2     |
| <b>Total Recoverable Copper</b>   | <b>18</b>   | <b>ug/L</b> | <b>10</b>  | <b>1.2</b>  | <b>EPA-200.7</b> | ND      |           | 2     |
| <b>Total Recoverable Lead</b>     | <b>0.82</b> | <b>ug/L</b> | <b>1.0</b> | <b>0.10</b> | <b>EPA-200.8</b> | ND      | J         | 3     |
| <b>Total Recoverable Nickel</b>   | <b>5.1</b>  | <b>ug/L</b> | <b>10</b>  | <b>2.3</b>  | <b>EPA-200.7</b> | ND      | J         | 2     |
| <b>Total Recoverable Selenium</b> | <b>2.1</b>  | <b>ug/L</b> | <b>2.0</b> | <b>0.19</b> | <b>EPA-200.8</b> | ND      |           | 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     |
| <b>Total Recoverable Zinc</b>     | <b>87</b>   | <b>ug/L</b> | <b>50</b>  | <b>1.3</b>  | <b>EPA-200.7</b> | 1.7     |           | 2     |

| Run # | Method    | Prep Date | Run       |       | Analyst | Instrument | Dilution | QC       |
|-------|-----------|-----------|-----------|-------|---------|------------|----------|----------|
|       |           |           | Date/Time |       |         |            |          | Batch ID |
| 1     | EPA-245.1 | 07/21/15  | 07/21/15  | 13:52 | MEV     | CETAC1     | 1        | BYG1718  |
| 2     | EPA-200.7 | 07/22/15  | 07/24/15  | 22:33 | JRG     | PE-OP2     | 1        | BYG1885  |
| 3     | EPA-200.8 | 07/24/15  | 07/29/15  | 11:59 | GPD     | PE-EL2     | 1        | BYG2130  |

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Reported: 08/03/2015 9:33  
Project: Semi-Annual Eff  
Project Number: [none]  
Project Manager: Doug Coats

### Volatile Organic Analysis (EPA Method 624)

|                                  |   |
|----------------------------------|---|
| <b>BCL Sample ID:</b> 1517377-03 | <b>Client Sample Name:</b> Trip Blank, 7/14/2015 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       | 0.050       | EPA-624        | ND      |           | 1     |
| Bromoform                             | ND          | ug/L        | 0.50       | 0.050       | EPA-624        | ND      |           | 1     |
| Bromomethane                          | ND          | ug/L        | 1.0        | 0.17        | EPA-624        | ND      |           | 1     |
| Carbon tetrachloride                  | ND          | ug/L        | 0.50       | 0.066       | EPA-624        | ND      |           | 1     |
| Chlorobenzene                         | ND          | ug/L        | 0.50       | 0.050       | EPA-624        | ND      |           | 1     |
| Chloroethane                          | ND          | ug/L        | 0.50       | 0.055       | EPA-624        | ND      |           | 1     |
| Chloroform                            | ND          | ug/L        | 0.50       | 0.063       | EPA-624        | ND      |           | 1     |
| Chloromethane                         | ND          | ug/L        | 0.50       | 0.050       | EPA-624        | ND      |           | 1     |
| Dibromochloromethane                  | ND          | ug/L        | 0.50       | 0.053       | EPA-624        | ND      |           | 1     |
| 1,2-Dichlorobenzene                   | ND          | ug/L        | 0.50       | 0.050       | 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       | 0.059       | EPA-624        | ND      |           | 1     |
| 1,1-Dichloroethene                    | ND          | ug/L        | 0.50       | 0.050       | EPA-624        | ND      |           | 1     |
| trans-1,2-Dichloroethene              | ND          | ug/L        | 0.50       | 0.060       | EPA-624        | ND      |           | 1     |
| 1,2-Dichloropropane                   | ND          | ug/L        | 0.50       | 0.072       | EPA-624        | ND      |           | 1     |
| cis-1,3-Dichloropropene               | ND          | ug/L        | 0.50       | 0.057       | EPA-624        | ND      |           | 1     |
| trans-1,3-Dichloropropene             | ND          | ug/L        | 0.50       | 0.050       | EPA-624        | ND      |           | 1     |
| Ethylbenzene                          | ND          | ug/L        | 0.50       | 0.050       | EPA-624        | ND      |           | 1     |
| <b>Methylene chloride</b>             | <b>0.53</b> | <b>ug/L</b> | <b>1.0</b> | <b>0.11</b> | <b>EPA-624</b> | ND      | <b>J</b>  | 1     |
| Methyl t-butyl ether                  | ND          | ug/L        | 0.50       | 0.055       | EPA-624        | ND      |           | 1     |
| 1,1,2,2-Tetrachloroethane             | ND          | ug/L        | 0.50       | 0.076       | EPA-624        | ND      |           | 1     |
| Tetrachloroethene                     | ND          | ug/L        | 0.50       | 0.053       | EPA-624        | ND      |           | 1     |
| Toluene                               | ND          | ug/L        | 0.50       | 0.050       | EPA-624        | ND      |           | 1     |
| 1,1,1-Trichloroethane                 | ND          | ug/L        | 0.50       | 0.055       | EPA-624        | ND      |           | 1     |
| 1,1,2-Trichloroethane                 | ND          | ug/L        | 0.50       | 0.085       | EPA-624        | ND      |           | 1     |
| Trichloroethene                       | ND          | ug/L        | 0.50       | 0.063       | EPA-624        | ND      |           | 1     |
| Trichlorofluoromethane                | ND          | ug/L        | 0.50       | 0.074       | EPA-624        | ND      |           | 1     |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND          | ug/L        | 0.50       | 0.063       | EPA-624        | ND      |           | 1     |
| Vinyl chloride                        | ND          | ug/L        | 0.50       | 0.069       | EPA-624        | ND      |           | 1     |
| Total Xylenes                         | ND          | ug/L        | 0.50       | 0.15        | EPA-624        | ND      |           | 1     |

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**Project:** Semi-Annual Eff  
**Project Number:** [none]  
**Project Manager:** Doug Coats

### Volatile Organic Analysis (EPA Method 624)

|                                  |   |
|----------------------------------|---|
| <b>BCL Sample ID:</b> 1517377-03 | <b>Client Sample Name:</b> Trip Blank, 7/14/2015 12:00:00AM |
|----------------------------------|---|

| Constituent                       | Result | Units | PQL                  | MDL   | Method  | MB Bias | Lab Quals | Run # |
|-----------------------------------|--------|-------|----------------------|-------|---------|---------|-----------|-------|
| Acrolein                          | ND     | ug/L  | 20                   | 1.0   | EPA-624 | ND      |           | 1     |
| Acrylonitrile                     | ND     | ug/L  | 5.0                  | 0.62  | 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                 | 0.050 | EPA-624 | ND      |           | 1     |
| 1,2-Dichloroethane-d4 (Surrogate) | 112    | %     | 75 - 125 (LCL - UCL) |       | EPA-624 |         |           | 1     |
| Toluene-d8 (Surrogate)            | 102    | %     | 80 - 120 (LCL - UCL) |       | EPA-624 |         |           | 1     |
| 4-Bromofluorobenzene (Surrogate)  | 102    | %     | 80 - 120 (LCL - UCL) |       | EPA-624 |         |           | 1     |

| Run # | Method  | Prep Date | Run Date/Time  | Analyst | Instrument | Dilution | QC Batch ID |
|-------|---------|-----------|----------------|---------|------------|----------|-------------|
| 1     | EPA-624 | 07/16/15  | 07/16/15 17:41 | MGC     | MS-V7      | 1        | BYG1322     |

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**Reported:** 08/03/2015 9:33  
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 |
|---------------------------------------|---------------------|-------------|----------|-----------------------------|---------|-----------|
| <b>QC Batch ID: BYG1713</b>           |                     |             |          |                             |         |           |
| Aldrin                                | BYG1713-BLK1        | ND          | ug/L     | 0.0050                      | 0.0013  |           |
| alpha-BHC                             | BYG1713-BLK1        | ND          | ug/L     | 0.0050                      | 0.0011  |           |
| beta-BHC                              | BYG1713-BLK1        | ND          | ug/L     | 0.0050                      | 0.0021  |           |
| delta-BHC                             | BYG1713-BLK1        | ND          | ug/L     | 0.0050                      | 0.0014  |           |
| gamma-BHC (Lindane)                   | BYG1713-BLK1        | ND          | ug/L     | 0.0050                      | 0.00094 |           |
| Chlordane (Technical)                 | BYG1713-BLK1        | ND          | ug/L     | 0.50                        | 0.38    |           |
| 4,4'-DDD                              | BYG1713-BLK1        | ND          | ug/L     | 0.0050                      | 0.0017  |           |
| 4,4'-DDE                              | BYG1713-BLK1        | ND          | ug/L     | 0.0050                      | 0.0019  |           |
| 4,4'-DDT                              | BYG1713-BLK1        | ND          | ug/L     | 0.0050                      | 0.00076 |           |
| Dieldrin                              | BYG1713-BLK1        | ND          | ug/L     | 0.0050                      | 0.0012  |           |
| Endosulfan I                          | BYG1713-BLK1        | ND          | ug/L     | 0.0050                      | 0.0016  |           |
| Endosulfan II                         | BYG1713-BLK1        | ND          | ug/L     | 0.0050                      | 0.0014  |           |
| Endosulfan sulfate                    | BYG1713-BLK1        | ND          | ug/L     | 0.0050                      | 0.0026  |           |
| Endrin                                | BYG1713-BLK1        | ND          | ug/L     | 0.0050                      | 0.00082 |           |
| Endrin aldehyde                       | BYG1713-BLK1        | ND          | ug/L     | 0.010                       | 0.0032  |           |
| Heptachlor                            | BYG1713-BLK1        | ND          | ug/L     | 0.0050                      | 0.0012  |           |
| Heptachlor epoxide                    | BYG1713-BLK1        | ND          | ug/L     | 0.0050                      | 0.00099 |           |
| Methoxychlor                          | BYG1713-BLK1        | ND          | ug/L     | 0.0050                      | 0.0011  |           |
| Toxaphene                             | BYG1713-BLK1        | ND          | ug/L     | 2.0                         | 0.42    |           |
| PCB-1016                              | BYG1713-BLK1        | ND          | ug/L     | 0.20                        | 0.045   |           |
| PCB-1221                              | BYG1713-BLK1        | ND          | ug/L     | 0.20                        | 0.070   |           |
| PCB-1232                              | BYG1713-BLK1        | ND          | ug/L     | 0.20                        | 0.081   |           |
| PCB-1242                              | BYG1713-BLK1        | ND          | ug/L     | 0.20                        | 0.065   |           |
| PCB-1248                              | BYG1713-BLK1        | ND          | ug/L     | 0.20                        | 0.085   |           |
| PCB-1254                              | BYG1713-BLK1        | ND          | ug/L     | 0.20                        | 0.077   |           |
| PCB-1260                              | BYG1713-BLK1        | ND          | ug/L     | 0.20                        | 0.060   |           |
| Total PCB's (Summation)               | BYG1713-BLK1        | ND          | ug/L     | 0.20                        | 0.10    |           |
| <b>TCMX (Surrogate)</b>               | <b>BYG1713-BLK1</b> | <b>45.8</b> | <b>%</b> | <b>40 - 140 (LCL - UCL)</b> |         |           |
| <b>Decachlorobiphenyl (Surrogate)</b> | <b>BYG1713-BLK1</b> | <b>46.4</b> | <b>%</b> | <b>40 - 130 (LCL - UCL)</b> |         |           |

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**Reported:** 08/03/2015 9:33  
**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 |     |
| <b>QC Batch ID: BYG1713</b>    |              |      |          |             |       |                  |     |                  |     |     |
| Aldrin                         | BYG1713-BS1  | LCS  | 0.045500 | 0.15000     | ug/L  | 30.3             |     | 50 - 130         |     | L01 |
| gamma-BHC (Lindane)            | BYG1713-BS1  | LCS  | 0.14539  | 0.15000     | ug/L  | 96.9             |     | 60 - 130         |     |     |
| 4,4'-DDT                       | BYG1713-BS1  | LCS  | 0.14150  | 0.15000     | ug/L  | 94.3             |     | 60 - 130         |     |     |
| Dieldrin                       | BYG1713-BS1  | LCS  | 0.13792  | 0.15000     | ug/L  | 91.9             |     | 60 - 130         |     |     |
| Endrin                         | BYG1713-BS1  | LCS  | 0.16187  | 0.15000     | ug/L  | 108              |     | 60 - 130         |     |     |
| Heptachlor                     | BYG1713-BS1  | LCS  | 0.080290 | 0.15000     | ug/L  | 53.5             |     | 60 - 130         |     | L01 |
| TCMX (Surrogate)               | BYG1713-BS1  | LCS  | 0.13221  | 0.30000     | ug/L  | 44.1             |     | 40 - 140         |     |     |
| Decachlorobiphenyl (Surrogate) | BYG1713-BS1  | LCS  | 0.25860  | 0.60000     | ug/L  | 43.1             |     | 40 - 130         |     |     |

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Reported: 08/03/2015 9:33  
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 |                  | Lab      |     |
|--------------------------------|------|------------------|---------------|----------|-------------|-------|------|------------------|------------------|----------|-----|
|                                |      |                  |               |          |             |       |      | RPD              | Percent Recovery |          |     |
| <b>QC Batch ID: BYG1713</b>    |      |                  |               |          |             |       |      |                  |                  |          |     |
| Used client sample: N          |      |                  |               |          |             |       |      |                  |                  |          |     |
| Aldrin                         | MS   | 1516891-15       | ND            | 0.048690 | 0.15000     | ug/L  |      | 32.5             |                  | 50 - 130 | Q03 |
|                                | MSD  | 1516891-15       | ND            | 0.046320 | 0.15000     | ug/L  | 5.0  | 30.9             | 30               | 50 - 130 | Q03 |
| gamma-BHC (Lindane)            | MS   | 1516891-15       | ND            | 0.17502  | 0.15000     | ug/L  |      | 117              |                  | 60 - 130 |     |
|                                | MSD  | 1516891-15       | ND            | 0.15651  | 0.15000     | ug/L  | 11.2 | 104              | 30               | 60 - 130 |     |
| 4,4'-DDT                       | MS   | 1516891-15       | ND            | 0.16557  | 0.15000     | ug/L  |      | 110              |                  | 60 - 130 |     |
|                                | MSD  | 1516891-15       | ND            | 0.14113  | 0.15000     | ug/L  | 15.9 | 94.1             | 30               | 60 - 130 |     |
| Dieldrin                       | MS   | 1516891-15       | ND            | 0.16355  | 0.15000     | ug/L  |      | 109              |                  | 60 - 130 |     |
|                                | MSD  | 1516891-15       | ND            | 0.14236  | 0.15000     | ug/L  | 13.9 | 94.9             | 30               | 60 - 130 |     |
| Endrin                         | MS   | 1516891-15       | ND            | 0.19083  | 0.15000     | ug/L  |      | 127              |                  | 60 - 130 |     |
|                                | MSD  | 1516891-15       | ND            | 0.16366  | 0.15000     | ug/L  | 15.3 | 109              | 30               | 60 - 130 |     |
| Heptachlor                     | MS   | 1516891-15       | ND            | 0.088060 | 0.15000     | ug/L  |      | 58.7             |                  | 50 - 130 |     |
|                                | MSD  | 1516891-15       | ND            | 0.079730 | 0.15000     | ug/L  | 9.9  | 53.2             | 30               | 50 - 130 |     |
| TCMX (Surrogate)               | MS   | 1516891-15       | ND            | 0.18142  | 0.30000     | ug/L  |      | 60.5             |                  | 40 - 140 |     |
|                                | MSD  | 1516891-15       | ND            | 0.15400  | 0.30000     | ug/L  | 16.3 | 51.3             |                  | 40 - 140 |     |
| Decachlorobiphenyl (Surrogate) | MS   | 1516891-15       | ND            | 0.31338  | 0.60000     | ug/L  |      | 52.2             |                  | 40 - 130 |     |
|                                | MSD  | 1516891-15       | ND            | 0.36903  | 0.60000     | ug/L  | 16.3 | 61.5             |                  | 40 - 130 |     |

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Ventura, CA 93003-3238

Reported: 08/03/2015 9:33  
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 |
|---------------------------------------|--------------|-----------|-------|------|-------|-----------|
| <b>QC Batch ID: BYG1322</b>           |              |           |       |      |       |           |
| Benzene                               | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.050 |           |
| Bromodichloromethane                  | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.050 |           |
| Bromoform                             | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.050 |           |
| Bromomethane                          | BYG1322-BLK1 | ND        | ug/L  | 1.0  | 0.17  |           |
| Carbon tetrachloride                  | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.066 |           |
| Chlorobenzene                         | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.050 |           |
| Chloroethane                          | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.055 |           |
| Chloroform                            | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.063 |           |
| Chloromethane                         | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.050 |           |
| Dibromochloromethane                  | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.053 |           |
| 1,2-Dichlorobenzene                   | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.050 |           |
| 1,3-Dichlorobenzene                   | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.050 |           |
| 1,4-Dichlorobenzene                   | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.050 |           |
| 1,1-Dichloroethane                    | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.050 |           |
| 1,2-Dichloroethane                    | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.059 |           |
| 1,1-Dichloroethene                    | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.050 |           |
| trans-1,2-Dichloroethene              | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.060 |           |
| 1,2-Dichloropropane                   | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.072 |           |
| cis-1,3-Dichloropropene               | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.057 |           |
| trans-1,3-Dichloropropene             | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.050 |           |
| Ethylbenzene                          | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.050 |           |
| Methylene chloride                    | BYG1322-BLK1 | ND        | ug/L  | 1.0  | 0.11  |           |
| Methyl t-butyl ether                  | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.055 |           |
| 1,1,2,2-Tetrachloroethane             | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.076 |           |
| Tetrachloroethene                     | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.053 |           |
| Toluene                               | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.050 |           |
| 1,1,1-Trichloroethane                 | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.055 |           |
| 1,1,2-Trichloroethane                 | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.085 |           |
| Trichloroethene                       | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.063 |           |
| Trichlorofluoromethane                | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.074 |           |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.063 |           |
| Vinyl chloride                        | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.069 |           |
| Total Xylenes                         | BYG1322-BLK1 | ND        | ug/L  | 0.50 | 0.15  |           |
| Acrolein                              | BYG1322-BLK1 | ND        | ug/L  | 20   | 1.0   |           |

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**Reported:** 08/03/2015 9:33  
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 |
|--|---------------------|-------------|-------|-----------------------------|-------|-----------|
| <b>QC Batch ID: BYG1322</b>              |                     |             |       |                             |       |           |
| Acrylonitrile                            | BYG1322-BLK1        | ND          | ug/L  | 5.0                         | 0.62  |           |
| p- & m-Xylenes                           | BYG1322-BLK1        | ND          | ug/L  | 0.50                        | 0.10  |           |
| o-Xylene                                 | BYG1322-BLK1        | ND          | ug/L  | 0.50                        | 0.050 |           |
| <b>1,2-Dichloroethane-d4 (Surrogate)</b> | <b>BYG1322-BLK1</b> | <b>104</b>  | %     | <b>75 - 125 (LCL - UCL)</b> |       |           |
| <b>Toluene-d8 (Surrogate)</b>            | <b>BYG1322-BLK1</b> | <b>103</b>  | %     | <b>80 - 120 (LCL - UCL)</b> |       |           |
| <b>4-Bromofluorobenzene (Surrogate)</b>  | <b>BYG1322-BLK1</b> | <b>99.0</b> | %     | <b>80 - 120 (LCL - UCL)</b> |       |           |

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Reported: 08/03/2015 9:33  
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<br>Quals |
|---------------------------------------|--------------|------|--------|-------------|-------|------------------|-----|------------------|-----|--------------|
|                                       |              |      |        |             |       |                  |     | Percent Recovery | RPD |              |
| <b>QC Batch ID: BYG1322</b>           |              |      |        |             |       |                  |     |                  |     |              |
| Benzene                               | BYG1322-BS1  | LCS  | 25.740 | 25.000      | ug/L  | 103              |     | 79 - 120         |     |              |
| Bromodichloromethane                  | BYG1322-BS1  | LCS  | 28.490 | 25.000      | ug/L  | 114              |     | 79 - 125         |     |              |
| Bromoform                             | BYG1322-BS1  | LCS  | 27.830 | 25.000      | ug/L  | 111              |     | 66 - 130         |     |              |
| Bromomethane                          | BYG1322-BS1  | LCS  | 26.110 | 25.000      | ug/L  | 104              |     | 53 - 141         |     |              |
| Carbon tetrachloride                  | BYG1322-BS1  | LCS  | 27.030 | 25.000      | ug/L  | 108              |     | 72 - 136         |     |              |
| Chlorobenzene                         | BYG1322-BS1  | LCS  | 26.240 | 25.000      | ug/L  | 105              |     | 82 - 118         |     |              |
| Chloroethane                          | BYG1322-BS1  | LCS  | 27.040 | 25.000      | ug/L  | 108              |     | 60 - 138         |     |              |
| Chloroform                            | BYG1322-BS1  | LCS  | 28.890 | 25.000      | ug/L  | 116              |     | 79 - 124         |     |              |
| Chloromethane                         | BYG1322-BS1  | LCS  | 24.270 | 25.000      | ug/L  | 97.1             |     | 50 - 139         |     |              |
| Dibromochloromethane                  | BYG1322-BS1  | LCS  | 27.440 | 25.000      | ug/L  | 110              |     | 74 - 126         |     |              |
| 1,2-Dichlorobenzene                   | BYG1322-BS1  | LCS  | 26.400 | 25.000      | ug/L  | 106              |     | 80 - 119         |     |              |
| 1,3-Dichlorobenzene                   | BYG1322-BS1  | LCS  | 26.600 | 25.000      | ug/L  | 106              |     | 80 - 119         |     |              |
| 1,4-Dichlorobenzene                   | BYG1322-BS1  | LCS  | 25.950 | 25.000      | ug/L  | 104              |     | 79 - 118         |     |              |
| 1,1-Dichloroethane                    | BYG1322-BS1  | LCS  | 26.830 | 25.000      | ug/L  | 107              |     | 77 - 125         |     |              |
| 1,2-Dichloroethane                    | BYG1322-BS1  | LCS  | 28.150 | 25.000      | ug/L  | 113              |     | 73 - 128         |     |              |
| 1,1-Dichloroethene                    | BYG1322-BS1  | LCS  | 28.970 | 25.000      | ug/L  | 116              |     | 71 - 131         |     |              |
| trans-1,2-Dichloroethene              | BYG1322-BS1  | LCS  | 27.240 | 25.000      | ug/L  | 109              |     | 75 - 124         |     |              |
| 1,2-Dichloropropane                   | BYG1322-BS1  | LCS  | 26.720 | 25.000      | ug/L  | 107              |     | 78 - 122         |     |              |
| cis-1,3-Dichloropropene               | BYG1322-BS1  | LCS  | 27.860 | 25.000      | ug/L  | 111              |     | 75 - 124         |     |              |
| trans-1,3-Dichloropropene             | BYG1322-BS1  | LCS  | 28.860 | 25.000      | ug/L  | 115              |     | 73 - 127         |     |              |
| Ethylbenzene                          | BYG1322-BS1  | LCS  | 27.620 | 25.000      | ug/L  | 110              |     | 79 - 121         |     |              |
| Methylene chloride                    | BYG1322-BS1  | LCS  | 25.550 | 25.000      | ug/L  | 102              |     | 74 - 124         |     |              |
| Methyl t-butyl ether                  | BYG1322-BS1  | LCS  | 27.110 | 25.000      | ug/L  | 108              |     | 71 - 124         |     |              |
| 1,1,2,2-Tetrachloroethane             | BYG1322-BS1  | LCS  | 26.970 | 25.000      | ug/L  | 108              |     | 71 - 121         |     |              |
| Tetrachloroethene                     | BYG1322-BS1  | LCS  | 27.290 | 25.000      | ug/L  | 109              |     | 74 - 129         |     |              |
| Toluene                               | BYG1322-BS1  | LCS  | 26.660 | 25.000      | ug/L  | 107              |     | 80 - 121         |     |              |
| 1,1,1-Trichloroethane                 | BYG1322-BS1  | LCS  | 28.230 | 25.000      | ug/L  | 113              |     | 74 - 131         |     |              |
| 1,1,2-Trichloroethane                 | BYG1322-BS1  | LCS  | 26.320 | 25.000      | ug/L  | 105              |     | 80 - 119         |     |              |
| Trichloroethene                       | BYG1322-BS1  | LCS  | 27.750 | 25.000      | ug/L  | 111              |     | 79 - 123         |     |              |
| Trichlorofluoromethane                | BYG1322-BS1  | LCS  | 27.850 | 25.000      | ug/L  | 111              |     | 65 - 141         |     |              |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | BYG1322-BS1  | LCS  | 27.350 | 25.000      | ug/L  | 109              |     | 70 - 136         |     |              |
| Vinyl chloride                        | BYG1322-BS1  | LCS  | 26.370 | 25.000      | ug/L  | 105              |     | 58 - 137         |     |              |
| Total Xylenes                         | BYG1322-BS1  | LCS  | 79.250 | 75.000      | ug/L  | 106              |     | 79 - 121         |     |              |

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**Reported:** 08/03/2015 9:33  
**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 |     |
| <b>QC Batch ID: BYG1322</b>       |              |      |        |             |       |                  |     |                  |     |     |
| p- & m-Xylenes                    | BYG1322-BS1  | LCS  | 52.090 | 50.000      | ug/L  | 104              |     | 80 - 121         |     |     |
| o-Xylene                          | BYG1322-BS1  | LCS  | 27.160 | 25.000      | ug/L  | 109              |     | 78 - 122         |     |     |
| 1,2-Dichloroethane-d4 (Surrogate) | BYG1322-BS1  | LCS  | 10.780 | 10.000      | ug/L  | 108              |     | 75 - 125         |     |     |
| Toluene-d8 (Surrogate)            | BYG1322-BS1  | LCS  | 10.060 | 10.000      | ug/L  | 101              |     | 80 - 120         |     |     |
| 4-Bromofluorobenzene (Surrogate)  | BYG1322-BS1  | LCS  | 10.200 | 10.000      | ug/L  | 102              |     | 80 - 120         |     |     |

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Reported: 08/03/2015 9:33  
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 |           |
| <b>QC Batch ID: BYG1322</b> |      | Used client sample: N |               |        |             |       |     |                  |                  |           |
| Benzene                     | MS   | 1517362-03            | ND            | 24.970 | 25.000      | ug/L  |     | 99.9             |                  | 79 - 120  |
|                             | MSD  | 1517362-03            | ND            | 24.910 | 25.000      | ug/L  | 0.2 | 99.6             | 30               | 79 - 120  |
| Bromodichloromethane        | MS   | 1517362-03            | ND            | 27.940 | 25.000      | ug/L  |     | 112              |                  | 79 - 125  |
|                             | MSD  | 1517362-03            | ND            | 28.540 | 25.000      | ug/L  | 2.1 | 114              | 30               | 79 - 125  |
| Bromoform                   | MS   | 1517362-03            | ND            | 26.690 | 25.000      | ug/L  |     | 107              |                  | 66 - 130  |
|                             | MSD  | 1517362-03            | ND            | 26.390 | 25.000      | ug/L  | 1.1 | 106              | 30               | 66 - 130  |
| Bromomethane                | MS   | 1517362-03            | ND            | 25.630 | 25.000      | ug/L  |     | 103              |                  | 53 - 141  |
|                             | MSD  | 1517362-03            | ND            | 24.420 | 25.000      | ug/L  | 4.8 | 97.7             | 30               | 53 - 141  |
| Carbon tetrachloride        | MS   | 1517362-03            | ND            | 26.140 | 25.000      | ug/L  |     | 105              |                  | 72 - 136  |
|                             | MSD  | 1517362-03            | ND            | 26.120 | 25.000      | ug/L  | 0.1 | 104              | 30               | 72 - 136  |
| Chlorobenzene               | MS   | 1517362-03            | ND            | 24.980 | 25.000      | ug/L  |     | 99.9             |                  | 82 - 118  |
|                             | MSD  | 1517362-03            | ND            | 24.870 | 25.000      | ug/L  | 0.4 | 99.5             | 30               | 82 - 118  |
| Chloroethane                | MS   | 1517362-03            | ND            | 25.800 | 25.000      | ug/L  |     | 103              |                  | 60 - 138  |
|                             | MSD  | 1517362-03            | ND            | 25.770 | 25.000      | ug/L  | 0.1 | 103              | 30               | 60 - 138  |
| Chloroform                  | MS   | 1517362-03            | ND            | 27.770 | 25.000      | ug/L  |     | 111              |                  | 79 - 124  |
|                             | MSD  | 1517362-03            | ND            | 27.680 | 25.000      | ug/L  | 0.3 | 111              | 30               | 79 - 124  |
| Chloromethane               | MS   | 1517362-03            | ND            | 23.440 | 25.000      | ug/L  |     | 93.8             |                  | 50 - 139  |
|                             | MSD  | 1517362-03            | ND            | 23.130 | 25.000      | ug/L  | 1.3 | 92.5             | 30               | 50 - 139  |
| Dibromochloromethane        | MS   | 1517362-03            | ND            | 26.360 | 25.000      | ug/L  |     | 105              |                  | 74 - 126  |
|                             | MSD  | 1517362-03            | ND            | 27.120 | 25.000      | ug/L  | 2.8 | 108              | 30               | 74 - 126  |
| 1,2-Dichlorobenzene         | MS   | 1517362-03            | ND            | 24.800 | 25.000      | ug/L  |     | 99.2             |                  | 80 - 119  |
|                             | MSD  | 1517362-03            | ND            | 25.190 | 25.000      | ug/L  | 1.6 | 101              | 30               | 80 - 119  |
| 1,3-Dichlorobenzene         | MS   | 1517362-03            | ND            | 25.380 | 25.000      | ug/L  |     | 102              |                  | 80 - 119  |
|                             | MSD  | 1517362-03            | ND            | 25.390 | 25.000      | ug/L  | 0.0 | 102              | 30               | 80 - 119  |
| 1,4-Dichlorobenzene         | MS   | 1517362-03            | ND            | 24.460 | 25.000      | ug/L  |     | 97.8             |                  | 79 - 118  |
|                             | MSD  | 1517362-03            | ND            | 24.810 | 25.000      | ug/L  | 1.4 | 99.2             | 30               | 79 - 118  |
| 1,1-Dichloroethane          | MS   | 1517362-03            | ND            | 26.140 | 25.000      | ug/L  |     | 105              |                  | 77 - 125  |
|                             | MSD  | 1517362-03            | ND            | 26.190 | 25.000      | ug/L  | 0.2 | 105              | 30               | 77 - 125  |
| 1,2-Dichloroethane          | MS   | 1517362-03            | ND            | 27.080 | 25.000      | ug/L  |     | 108              |                  | 73 - 128  |
|                             | MSD  | 1517362-03            | ND            | 26.660 | 25.000      | ug/L  | 1.6 | 107              | 30               | 73 - 128  |
| 1,1-Dichloroethene          | MS   | 1517362-03            | ND            | 27.960 | 25.000      | ug/L  |     | 112              |                  | 71 - 131  |
|                             | MSD  | 1517362-03            | ND            | 28.020 | 25.000      | ug/L  | 0.2 | 112              | 30               | 71 - 131  |
| trans-1,2-Dichloroethene    | MS   | 1517362-03            | ND            | 25.770 | 25.000      | ug/L  |     | 103              |                  | 75 - 124  |
|                             | MSD  | 1517362-03            | ND            | 26.020 | 25.000      | ug/L  | 1.0 | 104              | 30               | 75 - 124  |
| 1,2-Dichloropropane         | MS   | 1517362-03            | ND            | 25.960 | 25.000      | ug/L  |     | 104              |                  | 78 - 122  |
|                             | MSD  | 1517362-03            | ND            | 26.580 | 25.000      | ug/L  | 2.4 | 106              | 30               | 78 - 122  |

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Reported: 08/03/2015 9:33
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 Quals. Includes QC Batch ID: BYG1322 and Used client sample: N.

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**Project Number:** [none]  
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## Volatile Organic Analysis (EPA Method 624)

### Quality Control Report - Precision & Accuracy

| Constituent                      | Type | Source<br>Sample ID   | Source<br>Result | Result | Spike<br>Added | Units | RPD | Percent<br>Recovery | Control Limits |                     | Lab<br>Quals |
|----------------------------------|------|-----------------------|------------------|--------|----------------|-------|-----|---------------------|----------------|---------------------|--------------|
|                                  |      |                       |                  |        |                |       |     |                     | RPD            | Percent<br>Recovery |              |
| <b>QC Batch ID: BYG1322</b>      |      | Used client sample: N |                  |        |                |       |     |                     |                |                     |              |
| Toluene-d8 (Surrogate)           | MS   | 1517362-03            | ND               | 9.9900 | 10.000         | ug/L  |     | 99.9                |                | 80 - 120            |              |
|                                  | MSD  | 1517362-03            | ND               | 10.240 | 10.000         | ug/L  | 2.5 | 102                 |                | 80 - 120            |              |
| 4-Bromofluorobenzene (Surrogate) | MS   | 1517362-03            | ND               | 10.410 | 10.000         | ug/L  |     | 104                 |                | 80 - 120            |              |
|                                  | MSD  | 1517362-03            | ND               | 10.330 | 10.000         | ug/L  | 0.8 | 103                 |                | 80 - 120            |              |

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**Reported:** 08/03/2015 9:33  
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 |
|-----------------------------|--------------|-----------|-------|-----|------|-----------|
| <b>QC Batch ID: BYG1875</b> |              |           |       |     |      |           |
| Acenaphthene                | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.24 |           |
| Acenaphthylene              | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.28 |           |
| Aldrin                      | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.35 |           |
| Aniline                     | BYG1875-BLK1 | ND        | ug/L  | 5.0 | 0.69 |           |
| Anthracene                  | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.30 |           |
| Benzidine                   | BYG1875-BLK1 | ND        | ug/L  | 20  | 7.1  |           |
| Benzo[a]anthracene          | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.38 |           |
| Benzo[b]fluoranthene        | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.41 |           |
| Benzo[k]fluoranthene        | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.31 |           |
| Benzo[a]pyrene              | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.20 |           |
| Benzo[g,h,i]perylene        | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.22 |           |
| Benzoic acid                | BYG1875-BLK1 | ND        | ug/L  | 10  | 5.8  |           |
| Benzyl alcohol              | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.34 |           |
| Benzyl butyl phthalate      | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.47 |           |
| alpha-BHC                   | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.27 |           |
| beta-BHC                    | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.27 |           |
| delta-BHC                   | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.30 |           |
| gamma-BHC (Lindane)         | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.22 |           |
| bis(2-Chloroethoxy)methane  | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.27 |           |
| bis(2-Chloroethyl) ether    | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.68 |           |
| bis(2-Chloroisopropyl)ether | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.30 |           |
| bis(2-Ethylhexyl)phthalate  | BYG1875-BLK1 | ND        | ug/L  | 5.0 | 3.0  |           |
| 4-Bromophenyl phenyl ether  | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.23 |           |
| 4-Chloroaniline             | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.69 |           |
| 2-Chloronaphthalene         | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.34 |           |
| 4-Chlorophenyl phenyl ether | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.23 |           |
| Chrysene                    | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.63 |           |
| 4,4'-DDD                    | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.48 |           |
| 4,4'-DDE                    | BYG1875-BLK1 | ND        | ug/L  | 3.0 | 0.41 |           |
| 4,4'-DDT                    | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.43 |           |
| Dibenzo[a,h]anthracene      | BYG1875-BLK1 | ND        | ug/L  | 3.0 | 0.26 |           |
| Dibenzofuran                | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.21 |           |
| 1,2-Dichlorobenzene         | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.37 |           |
| 1,3-Dichlorobenzene         | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.35 |           |

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**Reported:** 08/03/2015 9:33  
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 |
|-----------------------------|--------------|-----------|-------|-----|------|-----------|
| <b>QC Batch ID: BYG1875</b> |              |           |       |     |      |           |
| 1,4-Dichlorobenzene         | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.31 |           |
| 3,3-Dichlorobenzidine       | BYG1875-BLK1 | ND        | ug/L  | 10  | 8.2  |           |
| Dieldrin                    | BYG1875-BLK1 | ND        | ug/L  | 3.0 | 0.41 |           |
| Diethyl phthalate           | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.33 |           |
| Dimethyl phthalate          | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.39 |           |
| Di-n-butyl phthalate        | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.39 |           |
| 2,4-Dinitrotoluene          | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.26 |           |
| 2,6-Dinitrotoluene          | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.41 |           |
| Di-n-octyl phthalate        | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.46 |           |
| 1,2-Diphenylhydrazine       | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.34 |           |
| Endosulfan I                | BYG1875-BLK1 | ND        | ug/L  | 10  | 1.7  |           |
| Endosulfan II               | BYG1875-BLK1 | ND        | ug/L  | 10  | 1.2  |           |
| Endosulfan sulfate          | BYG1875-BLK1 | ND        | ug/L  | 3.0 | 0.58 |           |
| Endrin                      | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 1.1  |           |
| Endrin aldehyde             | BYG1875-BLK1 | ND        | ug/L  | 10  | 0.52 |           |
| Fluoranthene                | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.20 |           |
| Fluorene                    | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.28 |           |
| Heptachlor                  | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.32 |           |
| Heptachlor epoxide          | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.27 |           |
| Hexachlorobenzene           | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.20 |           |
| Hexachlorobutadiene         | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.24 |           |
| Hexachlorocyclopentadiene   | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.30 |           |
| Hexachloroethane            | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.32 |           |
| Indeno[1,2,3-cd]pyrene      | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.26 |           |
| Isophorone                  | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.31 |           |
| 2-Methylnaphthalene         | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.28 |           |
| Naphthalene                 | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.21 |           |
| 2-Naphthylamine             | BYG1875-BLK1 | ND        | ug/L  | 20  | 4.8  |           |
| 2-Nitroaniline              | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.33 |           |
| 3-Nitroaniline              | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.66 |           |
| 4-Nitroaniline              | BYG1875-BLK1 | ND        | ug/L  | 5.0 | 0.87 |           |
| Nitrobenzene                | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.26 |           |
| N-Nitrosodimethylamine      | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 0.61 |           |
| N-Nitrosodi-N-propylamine   | BYG1875-BLK1 | ND        | ug/L  | 2.0 | 1.3  |           |

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**Reported:** 08/03/2015 9:33  
**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 |
|---|---------------------|-------------|----------|-----------------------------|------|-----------|
| <b>QC Batch ID: BYG1875</b>             |                     |             |          |                             |      |           |
| N-Nitrosodiphenylamine                  | BYG1875-BLK1        | ND          | ug/L     | 2.0                         | 0.44 |           |
| Phenanthrene                            | BYG1875-BLK1        | ND          | ug/L     | 2.0                         | 0.20 |           |
| Pyrene                                  | BYG1875-BLK1        | ND          | ug/L     | 2.0                         | 0.26 |           |
| 1,2,4-Trichlorobenzene                  | BYG1875-BLK1        | ND          | ug/L     | 2.0                         | 0.27 |           |
| 4-Chloro-3-methylphenol                 | BYG1875-BLK1        | ND          | ug/L     | 5.0                         | 0.40 |           |
| 2-Chlorophenol                          | BYG1875-BLK1        | ND          | ug/L     | 2.0                         | 0.37 |           |
| 2,4-Dichlorophenol                      | BYG1875-BLK1        | ND          | ug/L     | 2.0                         | 0.43 |           |
| 2,4-Dimethylphenol                      | BYG1875-BLK1        | ND          | ug/L     | 2.0                         | 0.20 |           |
| 4,6-Dinitro-2-methylphenol              | BYG1875-BLK1        | ND          | ug/L     | 10                          | 0.34 |           |
| 2,4-Dinitrophenol                       | BYG1875-BLK1        | ND          | ug/L     | 10                          | 0.20 |           |
| 2-Methylphenol                          | BYG1875-BLK1        | ND          | ug/L     | 2.0                         | 1.0  |           |
| 3- & 4-Methylphenol                     | BYG1875-BLK1        | ND          | ug/L     | 2.0                         | 1.6  |           |
| 2-Nitrophenol                           | BYG1875-BLK1        | ND          | ug/L     | 2.0                         | 0.28 |           |
| 4-Nitrophenol                           | BYG1875-BLK1        | ND          | ug/L     | 2.0                         | 0.73 |           |
| Pentachlorophenol                       | BYG1875-BLK1        | ND          | ug/L     | 10                          | 0.79 |           |
| Phenol                                  | BYG1875-BLK1        | ND          | ug/L     | 2.0                         | 0.20 |           |
| 2,4,5-Trichlorophenol                   | BYG1875-BLK1        | ND          | ug/L     | 5.0                         | 0.31 |           |
| 2,4,6-Trichlorophenol                   | BYG1875-BLK1        | ND          | ug/L     | 5.0                         | 0.60 |           |
| <b>2-Fluorophenol (Surrogate)</b>       | <b>BYG1875-BLK1</b> | <b>57.4</b> | <b>%</b> | <b>30 - 120 (LCL - UCL)</b> |      |           |
| <b>Phenol-d5 (Surrogate)</b>            | <b>BYG1875-BLK1</b> | <b>36.8</b> | <b>%</b> | <b>12 - 110 (LCL - UCL)</b> |      |           |
| <b>Nitrobenzene-d5 (Surrogate)</b>      | <b>BYG1875-BLK1</b> | <b>88.2</b> | <b>%</b> | <b>50 - 130 (LCL - UCL)</b> |      |           |
| <b>2-Fluorobiphenyl (Surrogate)</b>     | <b>BYG1875-BLK1</b> | <b>76.2</b> | <b>%</b> | <b>55 - 125 (LCL - UCL)</b> |      |           |
| <b>2,4,6-Tribromophenol (Surrogate)</b> | <b>BYG1875-BLK1</b> | <b>75.7</b> | <b>%</b> | <b>40 - 150 (LCL - UCL)</b> |      |           |
| <b>p-Terphenyl-d14 (Surrogate)</b>      | <b>BYG1875-BLK1</b> | <b>105</b>  | <b>%</b> | <b>40 - 150 (LCL - UCL)</b> |      |           |

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Reported: 08/03/2015 9:33
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

Table with columns: Constituent, QC Sample ID, Type, Result, Spike Level, Units, Percent Recovery, RPD, Control Limits (Percent Recovery, RPD), Lab (Quals). Includes a sub-table for QC Batch ID: BYG1875.

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Reported: 08/03/2015 9:33
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

Table with columns: Constituent, Type, Source Sample ID, Source Result, Result, Spike Added, Units, RPD, Percent Recovery, Control Limits RPD, Control Limits Percent Recovery, Lab Quals. Includes QC Batch ID: BYG1875 and Used client sample: N.

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**Reported:** 08/03/2015 9:33  
**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 |           |
| <b>QC Batch ID: BYG1875</b>      |      | Used client sample: N |               |        |             |       |     |                  |                  |           |
| 2-Fluorophenol (Surrogate)       | MS   | 1516891-05            | ND            | 42.554 | 70.000      | ug/L  |     | 60.8             | 30 - 120         |           |
|                                  | MSD  | 1516891-05            | ND            | 39.897 | 70.000      | ug/L  | 6.4 | 57.0             | 30 - 120         |           |
| Phenol-d5 (Surrogate)            | MS   | 1516891-05            | ND            | 26.782 | 70.000      | ug/L  |     | 38.3             | 12 - 110         |           |
|                                  | MSD  | 1516891-05            | ND            | 25.730 | 70.000      | ug/L  | 4.0 | 36.8             | 12 - 110         |           |
| Nitrobenzene-d5 (Surrogate)      | MS   | 1516891-05            | ND            | 63.292 | 70.000      | ug/L  |     | 90.4             | 50 - 130         |           |
|                                  | MSD  | 1516891-05            | ND            | 60.142 | 70.000      | ug/L  | 5.1 | 85.9             | 50 - 130         |           |
| 2-Fluorobiphenyl (Surrogate)     | MS   | 1516891-05            | ND            | 63.399 | 85.000      | ug/L  |     | 74.6             | 55 - 125         |           |
|                                  | MSD  | 1516891-05            | ND            | 62.073 | 85.000      | ug/L  | 2.1 | 73.0             | 55 - 125         |           |
| 2,4,6-Tribromophenol (Surrogate) | MS   | 1516891-05            | ND            | 66.852 | 90.000      | ug/L  |     | 74.3             | 40 - 150         |           |
|                                  | MSD  | 1516891-05            | ND            | 61.657 | 90.000      | ug/L  | 8.1 | 68.5             | 40 - 150         |           |
| p-Terphenyl-d14 (Surrogate)      | MS   | 1516891-05            | ND            | 34.959 | 40.000      | ug/L  |     | 87.4             | 40 - 150         |           |
|                                  | MSD  | 1516891-05            | ND            | 37.422 | 40.000      | ug/L  | 6.8 | 93.6             | 40 - 150         |           |

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**Reported:** 08/03/2015 9:33  
**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 |
|-----------------------------|--------------|-----------|-------|--------|--------|-----------|
| <b>QC Batch ID: BYG1615</b> |              |           |       |        |        |           |
| Total Cyanide               | BYG1615-BLK1 | ND        | mg/L  | 0.0050 | 0.0014 |           |

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**Reported:** 08/03/2015 9:33  
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 |     |
| <b>QC Batch ID: BYG1615</b> |              |      |         |             |       |                  |     |                  |     |     |
| Total Cyanide               | BYG1615-BS1  | LCS  | 0.16308 | 0.15000     | mg/L  | 109              |     | 90 - 110         |     |     |

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**Reported:** 08/03/2015 9:33  
**Project:** Semi-Annual Eff  
**Project Number:** [none]  
**Project Manager:** Doug Coats

### Water Analysis (General Chemistry)

#### Quality Control Report - Precision & Accuracy

| Constituent                 | Type | Source<br>Sample ID   | Source<br>Result | Result   | Spike<br>Added | Units | RPD | Control Limits      |                     | Lab<br>Quals |
|-----------------------------|------|-----------------------|------------------|----------|----------------|-------|-----|---------------------|---------------------|--------------|
|                             |      |                       |                  |          |                |       |     | Percent<br>Recovery | Percent<br>Recovery |              |
| <b>QC Batch ID: BYG1615</b> |      | Used client sample: N |                  |          |                |       |     |                     |                     |              |
| Total Cyanide               | DUP  | 1517363-02            | ND               | ND       |                | mg/L  |     |                     | 10                  |              |
|                             | MS   | 1517363-02            | ND               | 0.097669 | 0.10000        | mg/L  |     | 97.7                | 90 - 110            |              |
|                             | MSD  | 1517363-02            | ND               | 0.096320 | 0.10000        | mg/L  | 1.4 | 96.3                | 10 90 - 110         |              |

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**Reported:** 08/03/2015 9:33  
**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 |
|-------------------------------|---------------------|---------------|-------------|-----------|------------|-----------|
| <b>QC Batch ID: BYG1718</b>   |                     |               |             |           |            |           |
| Total Mercury                 | BYG1718-BLK1        | ND            | ug/L        | 0.20      | 0.033      |           |
| <b>QC Batch ID: BYG1885</b>   |                     |               |             |           |            |           |
| Total Recoverable Antimony    | BYG1885-BLK1        | ND            | ug/L        | 100       | 5.0        |           |
| Total Recoverable Beryllium   | BYG1885-BLK1        | ND            | ug/L        | 10        | 0.77       |           |
| Total Recoverable Cadmium     | BYG1885-BLK1        | ND            | ug/L        | 10        | 1.1        |           |
| Total Recoverable Chromium    | BYG1885-BLK1        | ND            | ug/L        | 10        | 1.2        |           |
| Total Recoverable Copper      | BYG1885-BLK1        | ND            | ug/L        | 10        | 1.2        |           |
| Total Recoverable Nickel      | BYG1885-BLK1        | ND            | ug/L        | 10        | 2.3        |           |
| Total Recoverable Silver      | BYG1885-BLK1        | ND            | ug/L        | 10        | 1.3        |           |
| <b>Total Recoverable Zinc</b> | <b>BYG1885-BLK1</b> | <b>1.6786</b> | <b>ug/L</b> | <b>50</b> | <b>1.3</b> | <b>J</b>  |
| <b>QC Batch ID: BYG2130</b>   |                     |               |             |           |            |           |
| Total Recoverable Arsenic     | BYG2130-BLK1        | ND            | ug/L        | 2.0       | 0.70       |           |
| Total Recoverable Lead        | BYG2130-BLK1        | ND            | ug/L        | 1.0       | 0.10       |           |
| Total Recoverable Selenium    | BYG2130-BLK1        | ND            | ug/L        | 2.0       | 0.19       |           |
| Total Recoverable Thallium    | BYG2130-BLK1        | ND            | ug/L        | 1.0       | 0.10       |           |

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

**Reported:** 08/03/2015 9:33  
**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<br>Quals |
|-----------------------------|--------------|------|---------|-------------|-------|------------------|-----|------------------|-----|--------------|
|                             |              |      |         |             |       |                  |     | Percent Recovery | RPD |              |
| <b>QC Batch ID: BYG1718</b> |              |      |         |             |       |                  |     |                  |     |              |
| Total Mercury               | BYG1718-BS1  | LCS  | 0.86750 | 1.0000      | ug/L  | 86.8             |     | 85               | 115 |              |
| <b>QC Batch ID: BYG1885</b> |              |      |         |             |       |                  |     |                  |     |              |
| Total Recoverable Antimony  | BYG1885-BS1  | LCS  | 398.09  | 400.00      | ug/L  | 99.5             |     | 85               | 115 |              |
| Total Recoverable Beryllium | BYG1885-BS1  | LCS  | 208.90  | 200.00      | ug/L  | 104              |     | 85               | 115 |              |
| Total Recoverable Cadmium   | BYG1885-BS1  | LCS  | 213.87  | 200.00      | ug/L  | 107              |     | 85               | 115 |              |
| Total Recoverable Chromium  | BYG1885-BS1  | LCS  | 218.03  | 200.00      | ug/L  | 109              |     | 85               | 115 |              |
| Total Recoverable Copper    | BYG1885-BS1  | LCS  | 411.80  | 400.00      | ug/L  | 103              |     | 85               | 115 |              |
| Total Recoverable Nickel    | BYG1885-BS1  | LCS  | 440.87  | 400.00      | ug/L  | 110              |     | 85               | 115 |              |
| Total Recoverable Silver    | BYG1885-BS1  | LCS  | 102.65  | 100.00      | ug/L  | 103              |     | 85               | 115 |              |
| Total Recoverable Zinc      | BYG1885-BS1  | LCS  | 560.70  | 500.00      | ug/L  | 112              |     | 85               | 115 |              |
| <b>QC Batch ID: BYG2130</b> |              |      |         |             |       |                  |     |                  |     |              |
| Total Recoverable Arsenic   | BYG2130-BS1  | LCS  | 107.49  | 100.00      | ug/L  | 107              |     | 85               | 115 |              |
| Total Recoverable Lead      | BYG2130-BS1  | LCS  | 112.10  | 100.00      | ug/L  | 112              |     | 85               | 115 |              |
| Total Recoverable Selenium  | BYG2130-BS1  | LCS  | 105.26  | 100.00      | ug/L  | 105              |     | 85               | 115 |              |
| Total Recoverable Thallium  | BYG2130-BS1  | LCS  | 42.149  | 40.000      | ug/L  | 105              |     | 85               | 115 |              |

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

Reported: 08/03/2015 9:33
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 Quals. Includes sections for QC Batch ID: BYG1718, BYG1885, and BYG2130.

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

**Reported:** 08/03/2015 9:33  
**Project:** Semi-Annual Eff  
**Project Number:** [none]  
**Project Manager:** Doug Coats

## Metals Analysis

### Quality Control Report - Precision & Accuracy

| Constituent                 | Type | Source<br>Sample ID   | Source<br>Result | Result | Spike<br>Added | Units | RPD | Percent  |     | Lab<br>Quals |
|-----------------------------|------|-----------------------|------------------|--------|----------------|-------|-----|----------|-----|--------------|
|                             |      |                       |                  |        |                |       |     | Recovery | RPD |              |
| <b>QC Batch ID: BYG2130</b> |      | Used client sample: N |                  |        |                |       |     |          |     |              |
| Total Recoverable Thallium  | DUP  | 1517472-01            | ND               | ND     |                | ug/L  |     |          |     | 20           |
|                             | MS   | 1517472-01            | ND               | 40.595 | 40.000         | ug/L  |     | 101      |     | 70 - 130     |
|                             | MSD  | 1517472-01            | ND               | 40.290 | 40.000         | ug/L  | 0.8 | 101      | 20  | 70 - 130     |

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

**Reported:** 08/03/2015 9:33  
**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
- A10 Detection and quantitation limits were raised due to matrix interference.
- L01 The Laboratory Control Sample Water (LCSW) recovery is not within laboratory established control limits.
- 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

Dr. Doug Coats/Bonnie Luke  
Marine Research Specialists  
3140 Telegraph Road Suite A  
Ventura CA, 93003  
805.772.6272

Page 1 of 1

Monday, July 27, 2015

**Lab Number: AB33187**

Collection Date/Time: 7/15/2015 8:40 Sample Collector: LUNDY D

Submittal Date/Time: 7/16/2015 9:30 Sample ID H2 2015 Coliform Designation:

### Sample Description: ARS Grab M1-M3

| Analyte                            | Method         | Unit | Result       | Qual | PQL | MCL | Date Analyzed | Analyst: |
|------------------------------------|----------------|------|--------------|------|-----|-----|---------------|----------|
| Nitrate as NO <sub>3</sub> -N      | EPA300.0       | mg/L | Not Detected |      | 0.1 | 10  | 7/16/2015     | MW       |
| o-Phosphate-P                      | EPA300.0       | mg/L | Not Detected |      | 0.1 |     | 7/16/2015     | MW       |
| Silica as SiO <sub>2</sub> , Total | EPA200.7       | mg/L | 11           |      | 0.5 |     | 7/22/2015     | MW       |
| Urea-N                             | Mulvenna&Savid | µg/L | 108          |      | 10  |     | 7/27/2015     | MW       |

Sample Comments:

Report Approved by:

David Holland, Laboratory Director



4 Justin Court Ste D, Monterey, CA 93940  
 831.375.MBAS (6227), 831.641.0734 (Fax)  
 MontereyBayAnalytical@usa.net  
<http://www.MBASinc.com>

## Urea QC Summary

Date Analyzed: 7/27/2015

Time Analyzed: 10:00

|                           | Value<br>(µg/L) | Result<br>(µg/L) | % Rec | Duplicate<br>(µg/L) | % Rec | % RPD | Acceptance Criteria |      |
|---------------------------|-----------------|------------------|-------|---------------------|-------|-------|---------------------|------|
|                           |                 |                  |       |                     |       |       | % Rec               | %RPD |
| ICVB                      | ---             | 0                | ---   |                     | ---   | ---   | <10                 |      |
| LCSL                      | 10              | 10               | 100   |                     | 0     | 100   | 80-120              | 20   |
| QCS (Absolute<br>#051509) | 47              | 49               | 104.3 |                     | 0     | 100   | 85-115              | 20   |

| Spiked Sample ID | Sample<br>(µg/L) | Spiked<br>(µg/L) | MS<br>(µg/L) | MSD<br>(µg/L) | MS<br>% Rec | MSD<br>% Rec | MS-MSD<br>% RPD | Acceptance Criteria % |     |
|------------------|------------------|------------------|--------------|---------------|-------------|--------------|-----------------|-----------------------|-----|
|                  |                  |                  |              |               |             |              |                 | MS/MSD                | RPD |
| AB33187          | 108              | 100              | 207          | 218           | 99          | 110          | 5.2             | 80-120                | 20  |

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; SS = Second Source;

RPD = Relative Percent Difference; Rec = Recovery

4 Justin Court Ste D, Monterey, CA 93940

831.375.MBAS (6227), 831.641.0734 (Fax)

MontereyBayAnalytical@usa.net

<http://www.MBASinc.com>

All units expressed in mg/L

20150716

|                | <b>NO3-N</b> | <b>PO4-P</b> |
|----------------|--------------|--------------|
| Spike amount   | <b>2</b>     | <b>2</b>     |
| <b>ICVB</b>    | 0.00         | 0.00         |
| <b>ICV</b>     | 1.95         | 1.97         |
| Rec 90-110%    | 97.73        | 98.50        |
| <b>ICVL</b>    | 0.21         | 0.20         |
| Rec 50-150%    | 106.88       | 98.87        |
| Sample ID      |              |              |
| <b>AB33184</b> | 0.20         | 0.11         |
| <b>MS</b>      | 2.03         | 1.77         |
| Rec 80-120%    | 91.30        | 83.43        |
| <b>MSD</b>     | 2.03         | 1.84         |
| Rec 80-120%    | 91.17        | 86.76        |
| Diff 10%       | 0.13         | 3.68         |
| <b>CCV</b>     | 1.96         | 2.03         |
| Rec 90-110%    | 98.01        | 101.68       |
| Diff 10%       | 0.29         | 3.18         |
| <b>CCVB</b>    | 0.00         | 0.07         |

Batch # 20150722

| Analyte/   |            | IC    | Prep  | LCS   | %Rec    | LCSD  | %Rec    | %Diff | IC Verification |        |        | QCS (95-105%) |        |       |
|------------|------------|-------|-------|-------|---------|-------|---------|-------|-----------------|--------|--------|---------------|--------|-------|
| WL         | Range      | Blank | Blank | Value | 85-115% | Value | 85-115% |       | Value           | Result | %Rec   | Value         | Result | %Rec  |
| Si 251.611 | 0.5-200ppm | -0.03 | -0.14 | 50.0  | 100.1%  | 49.3  | 98.6%   | 1.4%  | 50              | 50.3   | 100.6% | 50            | 49.9   | 99.9% |
| Si 252.411 | 0.5-200ppm | 0.02  | -0.10 | 49.6  | 99.2%   | 49.0  | 97.9%   | 1.3%  | 50              | 49.9   | 99.9%  | 50            | 49.2   | 98.5% |

**Matrix Spikes**

Sample ID AB33214

| Analyte/   | Sample | MS    | %Rec    | MSD   | %Rec    | %Diff | CCV (90-110%) |        |        | %Diff | CC    |
|------------|--------|-------|---------|-------|---------|-------|---------------|--------|--------|-------|-------|
| WL         | Value  | Value | 70-130% | Value | 70-130% |       | Value         | Result | %Rec   | 10%   | Blank |
| Si 251.611 | 33.0   | 80.8  | 95.7%   | 80.0  | 94.2%   | 1.0%  | 50            | 50.4   | 100.7% | 0.2%  | -0.17 |
| Si 252.411 | 32.5   | 80.0  | 95.0%   | 78.7  | 92.5%   | 1.6%  | 50            | 49.3   | 98.7%  | 1.2%  | -0.13 |

# Monterey Bay Analytical Services Chain Of Custody / Analysis Request

4 Justin Ct. Suite D • Monterey, Ca 93940 • (831) 375-MBAS (6227) • (831) 641-0734 (Fax)



|  |                                      |
|--|--------------------------------------|
| Client/Company Name:<br><b>Marine Research Specialists</b>   | Attention:<br><b>Douglas A Coats</b> |
| Billing Address:<br>3140 Telegraph Rd. Suite A, Ventura, CA 93003  |                                      |
| E-Mail Address(es):<br><b>Marine@Rain.org</b>  |                                      |
| Contract/P.O. #:   |                                      |
| Turn Around Time:<br>STD (7-14 Days) <input checked="" type="checkbox"/> 48-Hour <input type="checkbox"/><br>5-Day <input type="checkbox"/> 24-Hour <input type="checkbox"/>   |                                      |
| Phone # <b>805.218.3662</b><br>Fax # <b>805.289.3935</b>   |                                      |
| Drinking water <input type="checkbox"/> Wastewater <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Soil <input type="checkbox"/> Sludge <input type="checkbox"/> Other <input type="checkbox"/> |                                      |

Project/System Information:  
**Morro Bay WWTP Semi Annual Effluent**

For Regulatory Compliance? YES  NO   
 For State or Local Health Department reporting:  
 Electronic Data Transfer (EDT)? YES  NO   
 System ID Number: \_\_\_\_\_

| Analysis Requested         |                           |                                |                         |  |
|----------------------------|---------------------------|--------------------------------|-------------------------|--|
| Nitrate as NO3 [EPA 300.0] | O-Phosphate-P [EPA 300.0] | Silica as SiO2 [EPA 4500-Si-E] | Urea [Mulvenna & Savid] |  |
| ✓                          | ✓                         | ✓                              | ✓                       |  |

| MBAS Lab # | Project ID or Source Code # | Sample Site / Description<br>(Well Name, APN#, Address, Stormdrain #) | Sampling |      | Receiving Temp. | CL2 Residual | Coliform Analysis |       |        |         |      | # Cont. | Container |   |   |  |
|------------|-----------------------------|---|----------|------|-----------------|--------------|-------------------|-------|--------|---------|------|---------|-----------|---|---|--|
|            |                             |   | Date     | Time |                 |              | Routine           | Other | Repeat | Special | Type |         | Size      |   |   |  |
| 33187      | H2 2015                     | M1 ARS Grab   | 7/15/15  | 0840 | 5°C             |              |                   |       |        |         | 1    |         |           | ✓ | ✓ |  |
| 1          | H2 2015                     | M2 ARS Grab*  | 7/15/15  | 0840 | )               |              |                   |       |        |         | 1    |         |           |   | ✓ |  |
|            | H2 2015                     | M3 ARS Grab   | 7/15/15  | 0840 |                 |              |                   |       |        |         |      | 1       |           |   | ✓ |  |
|            |                             |   |          |      |                 |              |                   |       |        |         |      |         |           |   |   |  |
|            |                             |   |          |      |                 |              |                   |       |        |         |      |         |           |   |   |  |
|            |                             |   |          |      |                 |              |                   |       |        |         |      |         |           |   |   |  |
|            |                             |   |          |      |                 |              |                   |       |        |         |      |         |           |   |   |  |
|            |                             |   |          |      |                 |              |                   |       |        |         |      |         |           |   |   |  |
|            |                             |   |          |      |                 |              |                   |       |        |         |      |         |           |   |   |  |
|            |                             |   |          |      |                 |              |                   |       |        |         |      |         |           |   |   |  |
|            |                             |   |          |      |                 |              |                   |       |        |         |      |         |           |   |   |  |
|            |                             |   |          |      |                 |              |                   |       |        |         |      |         |           |   |   |  |
|            |                             |   |          |      |                 |              |                   |       |        |         |      |         |           |   |   |  |

| Printed Name   | Signature | Date    | Time | Comments or Special Instructions:  |
|--|-----------|---------|------|--|
| Sampled by: <b>Dane Lundy</b>                        |           | 7-15-15 | 0840 | *Pour off 50 ml & freeze to hold for Urea test<br><br>+ 2 ml 1:1<br>HNO3 to 25ml<br>LJ 7/16/15 |
| Relinquished by: <b>Dane Lundy</b>                   |           | 7-15-15 | 1333 |  |
| Received by: _____                                   |           |         |      |  |
| Relinquished by: _____                               |           |         |      |  |
| Received by: <b>Monterey Bay Analytical Services</b> |           | 7/15/15 | 0930 |  |

|   |               |               |                 |             |
|---|---------------|---------------|-----------------|-------------|
| <input type="checkbox"/> Payment received | Check # _____ | Amount: _____ | Receipt # _____ | Date: _____ |
|---|---------------|---------------|-----------------|-------------|

MRS

# Sample Condition Upon Receipt

COC Info

Was temp acceptable? Chemistry  $\leq 6^{\circ}\text{C}$  Micro  $\leq 10^{\circ}\text{C}$

YES

NO

NA <2 Hr

Is there evidence of chilling?

YES

NO

NA

Did bottles arrive intact?

YES

NO

NA

Did bottle labels agree with COC?

YES

NO

NA

## Discrepancy Documentation:

Person Contacted: \_\_\_\_\_ Method: In Person/Phone/Email \_\_\_\_\_

Problem \_\_\_\_\_

Resolution \_\_\_\_\_

Person Contacted: \_\_\_\_\_ Method: In Person/Phone/Email \_\_\_\_\_

Problem \_\_\_\_\_

Resolution \_\_\_\_\_

Sample Split/Filtration

| Lab ID | Cont. Size | Pres | Date/Initials |
|--------|------------|------|---------------|
|        |            |      |               |
|        |            |      |               |
|        |            |      |               |
|        |            |      |               |
|        |            |      |               |
|        |            |      |               |

| Lab ID | Cont. Size | Pres | Date/Initials |
|--------|------------|------|---------------|
|        |            |      |               |
|        |            |      |               |
|        |            |      |               |
|        |            |      |               |
|        |            |      |               |
|        |            |      |               |

Comments

# LABORATORY REPORT



*"dedicated to providing quality aquatic toxicity testing"*

**Date:** July 27, 2015

**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-15072302-001  
**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: 07/22/15 (composite)  
Date Received: 07/23/15  
Temp. Received: 1.4°C  
Chlorine (TRC): 0.0 mg/l  
Dates Tested: 07/23/15 to 07/25/15

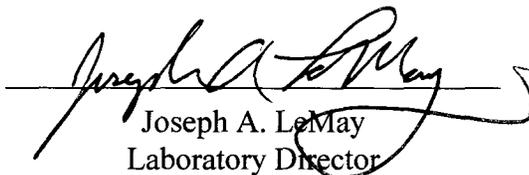
**Sample Analysis:** The following analyses were performed on your sample:  
Abalone Larval Development Short-Term Toxicity Test (EPA 600/R-95/136).

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-15072302-001  
Client/ID: Morro Bay WWTP

Date tested: 07/23/15 - 07/25/15

## 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-150723 (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)  | 97.0%                      |   |
| 3.2%  | 97.0%                      |   |
| 5.6%  | 96.6%                      |   |
| 10.0%   | 0%                         | * |
| 18.0%   | 0%                         | * |
| 32.0%   | 0%                         | * |
| * Statistically significantly less than control at P = 0.05 level |                            |   |

## CHRONIC TOXICITY

|                 |      |
|-----------------|------|
| NOEC            | 5.6% |
| TU <sub>c</sub> | 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-150723 report for additional test acceptability criteria. |                      |

**Abalone Larval Development Test-Proportion Normal**

Start Date: 7/23/2015 15:00 Test ID: 15072302ab Sample ID: Morro Bay  
 End Date: 7/25/2015 15:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: EFF1-POTW  
 Sample Date: 7/22/2015 09:20 Protocol: EPAW 95-EPA/600/R-95/13E Test Species: HR-Haliotis rufescens  
 Comments:

| Conc-%    | 1      | 2      | 3      | 4      | 5      |
|-----------|--------|--------|--------|--------|--------|
| B-Control | 0.9439 | 0.9714 | 0.9906 | 0.9810 | 0.9813 |
| D-Control | 0.9810 | 0.9636 | 0.9905 | 0.9528 | 0.9630 |
| 3.2       | 0.9905 | 0.9727 | 0.9714 | 0.9615 | 0.9545 |
| 5.6       | 0.9459 | 0.9813 | 0.9810 | 0.9815 | 0.9381 |
| 10        | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 18        | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 32        | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

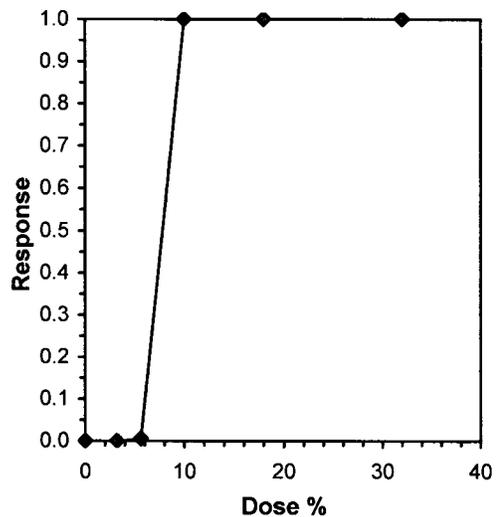
| Conc-%    | Mean   | N-Mean | Transform: Arcsin Square Root |        |        |       |      | N     | t-Stat | 1-Tailed Critical | MSD | Isotonic |        |
|-----------|--------|--------|-------------------------------|--------|--------|-------|------|-------|--------|-------------------|-----|----------|--------|
|           |        |        | Mean                          | Min    | Max    | CV%   | Mean |       |        |                   |     | N-Mean   |        |
| B-Control | 0.9736 | 1.0036 | 1.4144                        | 1.3317 | 1.4735 | 3.742 | 5    |       |        |                   |     |          |        |
| D-Control | 0.9702 | 1.0000 | 1.4027                        | 1.3519 | 1.4731 | 3.498 | 5    | *     |        |                   |     | 0.9700   | 1.0000 |
| 3.2       | 0.9701 | 1.0000 | 1.4016                        | 1.3559 | 1.4731 | 3.190 | 5    | 0.032 | 2.110  | 0.0680            |     | 0.9700   | 1.0000 |
| 5.6       | 0.9655 | 0.9952 | 1.3911                        | 1.3193 | 1.4343 | 4.185 | 5    | 0.357 | 2.110  | 0.0680            |     | 0.9651   | 0.9949 |
| 10        | 0.0000 | 0.0000 | 0.0500                        | 0.0500 | 0.0500 | 0.000 | 5    |       |        |                   |     | 0.0000   | 0.0000 |
| 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 ( $p > 0.05$ ) | 0.93407   | 0.881    | 0.11708 | -1.3513 |
| Bartlett's Test indicates equal variances ( $p = 0.88$ )         | 0.26296   | 9.21034  |         |         |
| The control means are not significantly different ( $p = 0.72$ ) | 0.36471   | 2.306    |         |         |

| Hypothesis Test (1-tail, 0.05)            | NOEC | LOEC | ChV     | TU      | MSDu    | MSDp    | MSB    | MSE    | F-Prob  | df    |
|---|------|------|---------|---------|---------|---------|--------|--------|---------|-------|
| Dunnett's Test<br>Treatments vs D-Control | 5.6  | 10   | 7.48331 | 17.8571 | 0.02674 | 0.02751 | 0.0002 | 0.0026 | 0.92511 | 2, 12 |

**Linear Interpolation (200 Resamples)**

| Point | %      | SD     | 95% CL(Exp) |        | Skew    |
|-------|--------|--------|-------------|--------|---------|
| IC05  | 5.7985 | 0.0361 | 5.6768      | 5.8265 | -1.0208 |
| IC10  | 6.0196 | 0.0342 | 5.9043      | 6.0461 | -1.0208 |
| IC15  | 6.2408 | 0.0323 | 6.1319      | 6.2658 | -1.0208 |
| IC20  | 6.4619 | 0.0304 | 6.3594      | 6.4854 | -1.0208 |
| IC25  | 6.6830 | 0.0285 | 6.5870      | 6.7051 | -1.0208 |
| IC40  | 7.3464 | 0.0228 | 7.2696      | 7.3641 | -1.0208 |
| IC50  | 7.7887 | 0.0190 | 7.7246      | 7.8034 | -1.0208 |



# ABALONE CHRONIC BIOASSAY



Lab No.: A-15072302-001

Client ID: MRS - Morro Bay Effluent

Start Date: 07/23/2015

## 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) | 15.5             | 7.9       | 8.2 | 34              | 14.6      | 8.2 | 14.6           | 7.7       | 8.2 | 34              |
| Control (lab)   | 15.3             | 7.8       | 8.2 | 34              | 14.7      | 8.2 | 14.6           | 7.7       | 8.2 | 34              |
| 3.2%            | 15.3             | 7.7       | 8.2 | 34              | 14.8      | 8.2 | 14.7           | 7.6       | 8.2 | 34              |
| 5.6%            | 15.4             | 7.7       | 8.2 | 34              | 14.6      | 8.2 | 14.7           | 7.6       | 8.2 | 34              |
| 10%             | 15.2             | 7.7       | 8.3 | 34              | 14.6      | 8.2 | 14.6           | 7.3       | 8.2 | 34              |
| 18%             | 15.2             | 7.6       | 8.3 | 34              | 14.6      | 8.3 | 14.7           | 7.2       | 8.2 | 34              |
| 32%             | 15.1             | 7.7       | 8.3 | 34              | 14.5      | 8.3 | 14.7           | 7.2       | 8.2 | 34              |

Sample as received: Chlorine: 0 mg/l; pH: 8.4; Salinity: 1 ppt; Temp: 1.4 °C; DO: 6.7 mg/l. NH<sub>3</sub>N<sub>~60</sub>

Initial readings: [Signature] Date/Time: 7-23-15 1500 Final readings: [Signature] Date/Time: 7-25-15 1500

## 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          | 32           | 0             | 100             | 13         | 18           | 0             | 100             | 25         | C            | 101           | 5               |
| 2          | BC           | 101           | 6               | 14         | BC           | 102           | 3               | 26         | 32           | 0             | 100             |
| 3          | 18           | 0             | 100             | 15         | 18           | 0             | 100             | 27         | 3.2          | 100           | 4               |
| 4          | C            | 103           | 2               | 16         | C            | 104           | 1               | 28         | BC           | 103           | 2               |
| 5          | 5.6          | 105           | 6               | 17         | 5.6          | 103           | 2               | 29         | C            | 104           | 4               |
| 6          | 10           | 0             | 100             | 18         | 10           | 0             | 100             | 30         | 5.6          | 106           | 7               |
| 7          | 3.2          | 104           | 1               | 19         | 3.2          | 102           | 3               | 31         | 10           | 0             | 100             |
| 8          | C            | 106           | 4               | 20         | 32           | 0             | 100             | 32         | BC           | 105           | 2               |
| 9          | 5.6          | 105           | 2               | 21         | BC           | 105           | 1               | 33         | 18           | 0             | 100             |
| 10         | 10           | 0             | 100             | 22         | 18           | 0             | 100             | 34         | 3.2          | 105           | 5               |
| 11         | 3.2          | 107           | 3               | 23         | 5.6          | 106           | 2               | 35         | 32           | 0             | 100             |
| 12         | 32           | 0             | 100             | 24         | 10           | 0             | 100             |            |              |               |                 |

Microscopic examination: Analyst: [Signature] Date: 7-27-15 Time: 1300





# ***CHAIN OF CUSTODY***

**CHAIN OF CUSTODY**

Client: City of Morro Bay

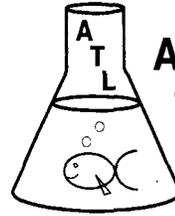
Address: Wastewater Treatment Plant  
160 Atascadero Road  
Morro Bay, CA 93442

Project Manager: Doug Coats - MRS

Phone: (805) 644-1180

Fax: (805) 289-3935

Purchase Order No: \_\_\_\_\_



**Aquatic  
Testing  
Laboratories**

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. | 22 July 15  | 0920        | E             | .01 mk           | 1<br>(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<br>(signature) | Received by<br>(signature) | Date<br>(mm/dd/yy) | Time<br>(hh:mm) | Sample Intact?<br>(Yes, No) | Temperature Received (°C) |
|--------------------------------|----------------------------|--------------------|-----------------|-----------------------------|---------------------------|
| <i>St. R. Daulton</i>          | <i>Fred Rex</i>            | 22 July 15         | 1430            | Yes                         | —                         |
| <i>Fred Rex</i>                | <i>[Signature]</i>         | 7-23-15            | 1000            | Yes                         | 1.4°                      |
|                                |                            |                    |                 |                             |                           |



***REFERENCE  
TOXICANT  
DATA***

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



QA/QC Batch No.: RT-150723

Date tested: 07/23/15 – 07/25/15

**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: ZnSO<sub>4</sub>(7H<sub>2</sub>O).

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   | 96.7%                      |
| 10 µg/l   | 97.0%                      |
| 18 µg/l   | 93.9%                      |
| 32 µg/l   | 24.5% *                    |
| 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 (96.7%)          |
| 56 µg/l treatment response significantly less than control response | Yes (NOEC = 18 µg/l) |
| %MSD <20% relative to control                                       | Yes (%MSD = 5.7%)    |



**Abalone Larval Development Test-Proportion Normal**

Start Date: 7/23/2015 15:00    Test ID: RT150723ab    Sample ID: REF-Ref Toxicant  
 End Date: 7/25/2015 15:00    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: ZNSO-Zinc sulfate  
 Sample Date: 7/23/2015    Protocol: EPAW 95-EPA/600/R-95/136    Test Species: HR-Haliotis rufescens  
 Comments:

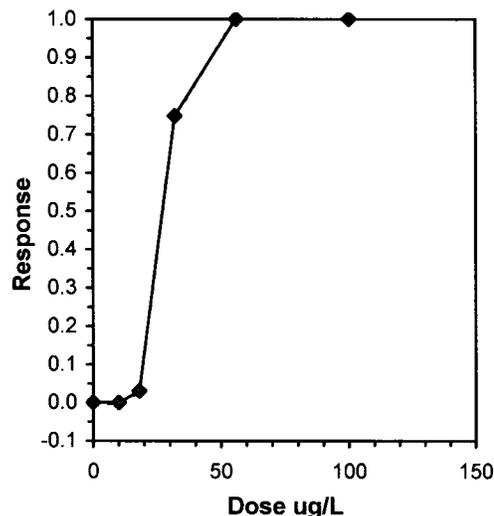
| Conc-ug/L | 1      | 2      | 3      | 4      | 5      |
|-----------|--------|--------|--------|--------|--------|
| D-Control | 0.9905 | 0.9444 | 0.9619 | 0.9643 | 0.9727 |
| 10        | 0.9717 | 0.9455 | 0.9810 | 0.9626 | 0.9906 |
| 18        | 0.9537 | 0.9455 | 0.9815 | 0.8952 | 0.9182 |
| 32        | 0.1509 | 0.3426 | 0.3945 | 0.1404 | 0.1944 |
| 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 | 1-Tailed |          |        | Isotonic |        |
|-----------|--------|--------|-------------------------------|--------|--------|--------|---|----------|----------|--------|----------|--------|
|           |        |        | Mean                          | Min    | Max    | CV%    |   | t-Stat   | Critical | MSD    | Mean     | N-Mean |
| D-Control | 0.9668 | 1.0000 | 1.3932                        | 1.3329 | 1.4731 | 3.707  | 5 |          |          |        | 0.9684   | 1.0000 |
| 10        | 0.9703 | 1.0036 | 1.4038                        | 1.3351 | 1.4735 | 3.763  | 5 | -0.197   | 2.230    | 0.1204 | 0.9684   | 1.0000 |
| 18        | 0.9388 | 0.9711 | 1.3290                        | 1.2412 | 1.4343 | 5.553  | 5 | 1.188    | 2.230    | 0.1204 | 0.9390   | 0.9697 |
| *32       | 0.2446 | 0.2530 | 0.5088                        | 0.3840 | 0.6791 | 26.534 | 5 | 16.385   | 2.230    | 0.1204 | 0.2440   | 0.2520 |
| 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) | 0.97436   | 0.905    | 0.46257 | -0.2559 |         |         |         |         |         |       |
| Bartlett's Test indicates equal variances (p = 0.18)         | 4.84354   | 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      |         | 0.05498 | 0.05675 | 0.94402 | 0.00728 | 2.0E-11 | 3, 16 |

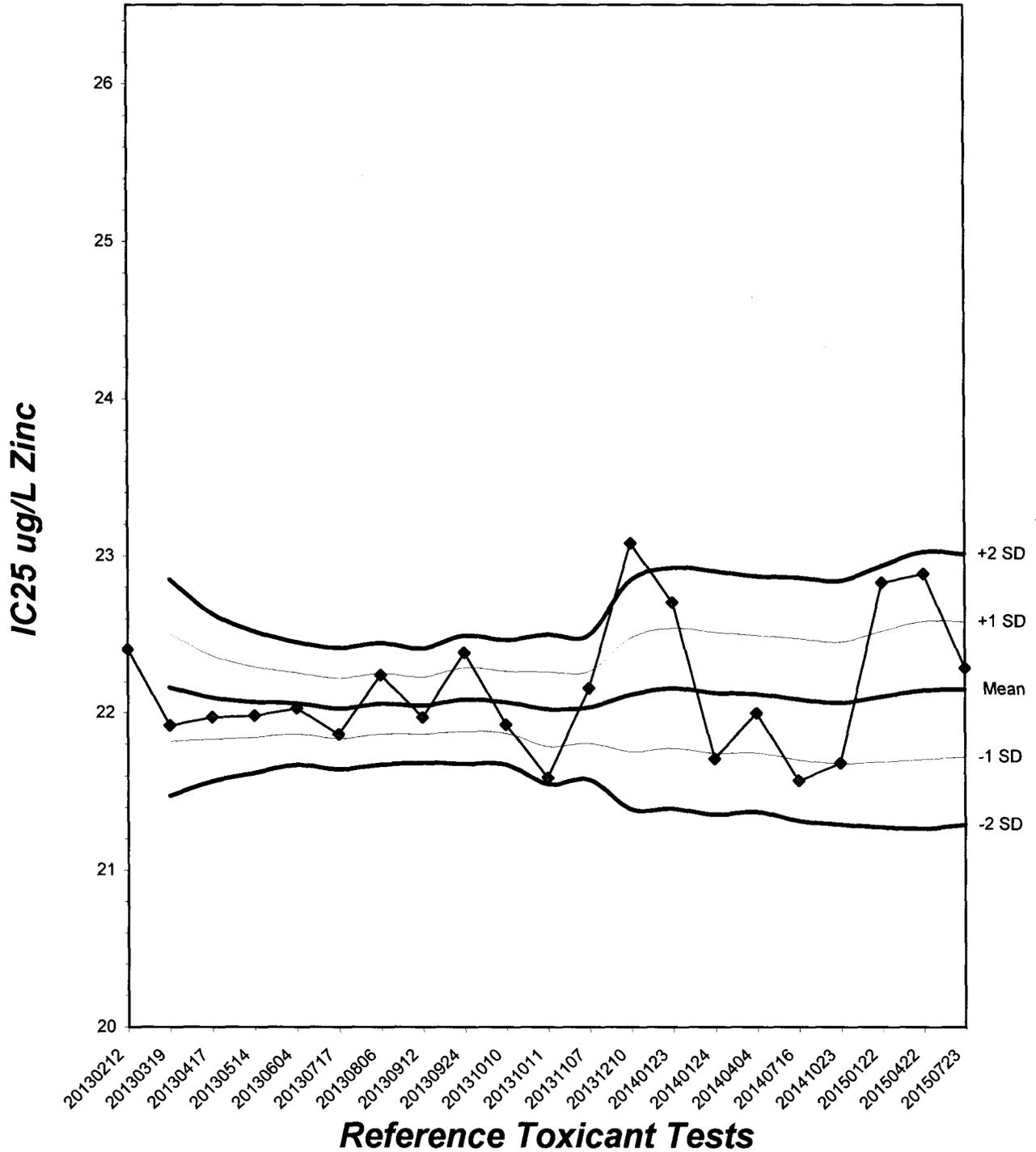
**Linear Interpolation (200 Resamples)**

| Point | ug/L   | SD    | 95% CL(Exp) |        | Skew    |
|-------|--------|-------|-------------|--------|---------|
| IC05  | 18.384 | 0.450 | 15.947      | 19.059 | -2.7769 |
| IC10  | 19.359 | 0.242 | 18.598      | 19.958 | -0.0158 |
| IC15  | 20.335 | 0.251 | 19.515      | 21.012 | 0.1071  |
| IC20  | 21.310 | 0.279 | 20.495      | 22.119 | 0.1857  |
| IC25  | 22.286 | 0.321 | 21.404      | 23.183 | 0.2309  |
| IC40  | 25.212 | 0.488 | 23.905      | 26.658 | 0.2908  |
| IC50  | 27.162 | 0.616 | 25.546      | 29.116 | 0.3097  |



# Abalone Larval Development Laboratory Control Chart

CV% = 1.94



**ABALONE CHRONIC BIOASSAY**  
Reference Toxicant - Zinc Sulfate



QA/QC No.: RT-150723

Start Date: 07/23/2015

**RANDOMIZATION WORKSHEET**

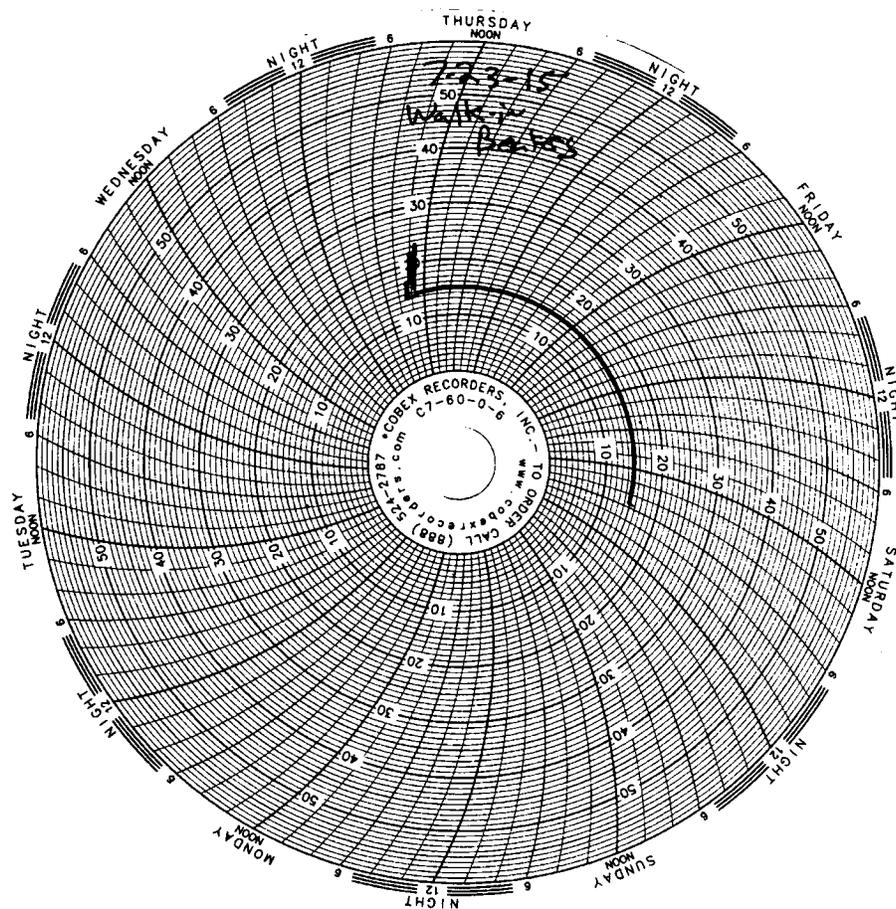
| Beaker No.   | Sample Conc. | Beaker No. | Sample Conc. | Beaker No. | Sample Conc. | Notes   |
|--|--------------|------------|--------------|------------|--------------|---|
| 1  | 32           | 11         | 18           | 21         | 32           | Number Males used: <u>4</u><br>Number females used: <u>6</u><br>Time H <sub>2</sub> O <sub>2</sub> added: <u>11:00</u><br>Time water changed: <u>1330</u><br>Time spawned: <u>♂ 1345, ♀ 1400</u><br>Time placed in test: <u>1500</u><br>Add 1600 fertilized eggs per 200 ml..<br>Time glutaraldehyde added: <u>1500</u> |
| 2  | 10           | 12         | 56           | 22         | C            |   |
| 3  | 56           | 13         | 10           | 23         | 10           |   |
| 4  | 18           | 14         | 56           | 24         | 18           |   |
| 5  | C            | 15         | 18           | 25         | C            |   |
| 6  | 10           | 16         | 10           | 26         | 56           |   |
| 7  | 10           | 17         | 32           | 27         | 10           |   |
| 8  | 32           | 18         | C            | 28         | 32           |   |
| 9  | 10           | 19         | 56           | 29         | 10           |   |
| 10   | C            | 20         | 10           | 30         | 18           |   |
| Analyst: <u>[Signature]</u> Date: <u>7-23-15</u> Time: <u>0820</u> |              |            |              |            |              |   |

# Test Temperature Chart

Test No: *RT-150723*

Date Tested: *07/23/15 to 07/25/15*

Acceptable Range: *15 +/- 1°C*



CERTIFICATE OF ANALYSIS

|  |                                      |
|--|--------------------------------------|
| <b>Client:</b> Marine Research Specialties<br>3140 Telegraph Road, Suite A<br>Ventura CA, 93003-3223 | <b>Report Date:</b> 07/28/15 16:01   |
| <b>Attention:</b> Doug Coats   | <b>Received Date:</b> 07/16/15 10:30 |
| <b>Phone:</b> (805) 644-1180   | <b>Turn Around:</b> Normal           |
| <b>Fax:</b>  | <b>Client Project:</b> MBCSD H2 2015 |
| <b>Work Order(s):</b> 5G16091  |                                      |

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 :

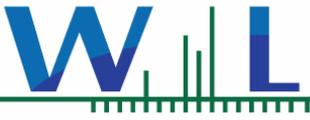
Enclosed are the results of analyses for samples received 07/16/15 10:30 with the Chain of Custody document. The samples were received in good condition, at 4.5 °C and on ice. All analysis met the method criteria except as noted below or in the report with data qualifiers.

Case Narrative:

Reviewed by:

Kim G Tu  
Project Manager





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

**Date Received:** 07/16/15 10:30  
**Date Reported:** 07/28/15 16:01

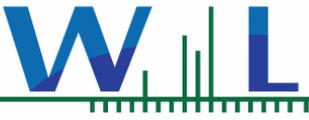
**ANALYTICAL REPORT FOR SAMPLES**

| Sample ID   | Sampled by: | Lab ID     | Matrix | Date Sampled   |
|-------------|-------------|------------|--------|----------------|
| W1 ARS Comp | Client      | 5G16091-01 | Water  | 07/15/15 08:55 |
| W2 ARS Comp | Client      | 5G16091-02 | Water  | 07/15/15 08:55 |

**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:** 07/16/15 10:30  
**Date Reported:** 07/28/15 16:01

**5G16091-01 W1 ARS Comp****Sampled:** 07/15/15 08:55**Sampled By:** Client**Matrix:** Water**Organo Tin by GC/MS**

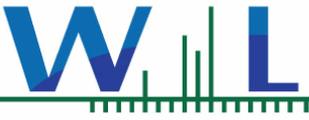
Method: Krone, et al, 1989

Batch: W5G1113

Prepared: 07/22/15 08:53

Analyst: Eric F Cull

| Analyte                   | Result | MRL        | Units  | Dil | Analyzed       | Qualifier |
|---------------------------|--------|------------|--------|-----|----------------|-----------|
| Tri-n-butyltin            | ND     | 0.0050     | ug/l   | 1   | 07/28/15 14:25 |           |
| <i>Surr: Tripentyltin</i> | 89 %   | Conc:0.177 | 43-179 | %   |                |           |



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

**Date Received:** 07/16/15 10:30  
**Date Reported:** 07/28/15 16:01

**5G16091-02 W2 ARS Comp**

**Sampled:** 07/15/15 08:55

**Sampled By:** Client

**Matrix:** Water

**Radiological Parameters by APHA/EPA Methods**

Method: EPA 900.0

Batch: W5G1092

Prepared: 07/20/15 10:32

Analyst: Shivangi Panchal

| Analyte | Result | MRL | Units | Dil | Analyzed | Qualifier |
|---------|--------|-----|-------|-----|----------|-----------|
|---------|--------|-----|-------|-----|----------|-----------|

|                   |           |  |       |   |                |  |
|-------------------|-----------|--|-------|---|----------------|--|
| <b>Gross Beta</b> | <b>16</b> |  | pCi/L | 1 | 07/21/15 16:57 |  |
|-------------------|-----------|--|-------|---|----------------|--|

Counting Error (+/-): 1.526

MDA: 1.931

Method: SM 7110C

Batch: W5G1020

Prepared: 07/20/15 15:15

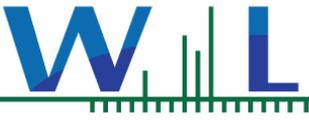
Analyst: Shivangi Panchal

| Analyte | Result | MRL | Units | Dil | Analyzed | Qualifier |
|---------|--------|-----|-------|-----|----------|-----------|
|---------|--------|-----|-------|-----|----------|-----------|

|                    |               |  |       |   |                |  |
|--------------------|---------------|--|-------|---|----------------|--|
| <b>Gross Alpha</b> | <b>-0.178</b> |  | pCi/L | 1 | 07/21/15 10:19 |  |
|--------------------|---------------|--|-------|---|----------------|--|

Counting Error (+/-): 0.111

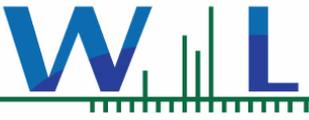
MDA: 0.01



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

**Date Received:** 07/16/15 10:30  
**Date Reported:** 07/28/15 16:01

# QUALITY CONTROL SECTION



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

**Date Received:** 07/16/15 10:30  
**Date Reported:** 07/28/15 16:01

### Organo Tin by GC/MS - Quality Control

#### Batch W5G1113 - Krone, et al, 1989

| Analyte  | Result | MRL    | Units | Spike Level | Source Result | %REC | % REC Limits | RPD | RPD Limit | Data Qualifiers |
|--|--------|--------|-------|-------------|---------------|------|--------------|-----|-----------|-----------------|
| <b>Blank (W5G1113-BLK1)</b> Analyzed: 07/28/15 11:42   |        |        |       |             |               |      |              |     |           |                 |
| Tri-n-butyltin   | ND     | 0.0050 | ug/l  |             |               |      |              |     |           |                 |
| <i>Surr: Triphenyltin</i>                              | 0.223  |        | ug/l  | 0.200       |               | 111  | 43-179       |     |           |                 |
| <b>LCS (W5G1113-BS1)</b> Analyzed: 07/28/15 12:03      |        |        |       |             |               |      |              |     |           |                 |
| Tri-n-butyltin   | 0.0593 | 0.0050 | ug/l  | 0.0500      |               | 119  | 40-181       |     |           |                 |
| <i>Surr: Triphenyltin</i>                              | 0.255  |        | ug/l  | 0.200       |               | 127  | 43-179       |     |           |                 |
| <b>LCS Dup (W5G1113-BSD1)</b> Analyzed: 07/28/15 12:23 |        |        |       |             |               |      |              |     |           |                 |
| Tri-n-butyltin   | 0.0586 | 0.0050 | ug/l  | 0.0500      |               | 117  | 40-181       | 1   | 30        |                 |
| <i>Surr: Triphenyltin</i>                              | 0.247  |        | ug/l  | 0.200       |               | 123  | 43-179       |     |           |                 |

### Radiological Parameters by APHA/EPA Methods - Quality Control

#### Batch W5G1020 - SM 7110C

| Analyte   | Result    | MRL | Units | Spike Level | Source Result | %REC | % REC Limits | RPD | RPD Limit | Data Qualifiers |
|---|-----------|-----|-------|-------------|---------------|------|--------------|-----|-----------|-----------------|
| <b>Blank (W5G1020-BLK1)</b> Analyzed: 07/21/15 10:19                        |           |     |       |             |               |      |              |     |           |                 |
| Gross Alpha   | -0.674    |     | pCi/L |             |               |      |              |     |           |                 |
| Counting Error (+/-): 0.01  | MDA: 0.01 |     |       |             |               |      |              |     |           |                 |
| <b>LCS (W5G1020-BS1)</b> Analyzed: 07/21/15 10:19                           |           |     |       |             |               |      |              |     |           |                 |
| Gross Alpha   | 3.76      |     | pCi/L | 4.80        |               | 78   | 55-149       |     |           |                 |
| Counting Error (+/-): 0.252   | MDA: 0.01 |     |       |             |               |      |              |     |           |                 |
| <b>Duplicate (W5G1020-DUP1)</b> Source: 5G15023-01 Analyzed: 07/21/15 10:19 |           |     |       |             |               |      |              |     |           |                 |
| Gross Alpha   | 1.73      |     | pCi/L |             | 1.68          |      |              | 3   | 30        |                 |
| Counting Error (+/-): 0.179   | MDA: 0.01 |     |       |             |               |      |              |     |           |                 |

#### Batch W5G1092 - EPA 900.0

| Analyte  | Result     | MRL | Units | Spike Level | Source Result | %REC | % REC Limits | RPD | RPD Limit | Data Qualifiers |
|--|------------|-----|-------|-------------|---------------|------|--------------|-----|-----------|-----------------|
| <b>Blank (W5G1092-BLK1)</b> Analyzed: 07/21/15 16:58   |            |     |       |             |               |      |              |     |           |                 |
| Gross Beta   | -0.33      |     | pCi/L |             |               |      |              |     |           |                 |
| Counting Error (+/-): 0.49                             | MDA: 0.819 |     |       |             |               |      |              |     |           |                 |
| <b>LCS (W5G1092-BS1)</b> Analyzed: 07/21/15 17:11      |            |     |       |             |               |      |              |     |           |                 |
| Gross Beta   | 14         |     | pCi/L | 15.0        |               | 93   | 77-138       |     |           |                 |
| Counting Error (+/-): 0.823                            | MDA: 0.817 |     |       |             |               |      |              |     |           |                 |
| <b>LCS Dup (W5G1092-BSD1)</b> Analyzed: 07/23/15 15:59 |            |     |       |             |               |      |              |     |           |                 |
| Gross Beta   | 14         |     | pCi/L | 15.0        |               | 96   | 77-138       | 3   | 30        |                 |
| Counting Error (+/-): 0.845                            | MDA: 0.829 |     |       |             |               |      |              |     |           |                 |



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

**Date Received:** 07/16/15 10:30  
**Date Reported:** 07/28/15 16:01

### Notes and Definitions

|              |   |
|--------------|---|
| <b>ND</b>    | NOT DETECTED at or above the Reporting Limit. If J-value reported, then NOT DETECTED at or above the Method Detection Limit (MDL) |
| <b>NR</b>    | Not Reportable  |
| <b>Dil</b>   | Dilution  |
| <b>dry</b>   | Sample results reported on a dry weight basis   |
| <b>RPD</b>   | Relative Percent Difference   |
| <b>% Rec</b> | Percent Recovery  |
| <b>Sub</b>   | Subcontracted analysis, original report available upon request  |
| <b>MDL</b>   | Method Detection Limit  |
| <b>MDA</b>   | Minimum Detectable Activity   |
| <b>MRL</b>   | 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, 2015

**Vista Project I.D.: 1500630**

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 17, 2015. This sample set was analyzed on a standard turn-around time, under your Project Name 'MBCSD H2 2015'.

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](mailto: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 NELAC 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. 1500630**

**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

| <b>Vista<br/>Sample ID</b> | <b>Client<br/>Sample ID</b> | <b>Sampled</b>  | <b>Received</b> | <b>Components/Containers</b> |
|----------------------------|-----------------------------|-----------------|-----------------|------------------------------|
| 1500630-01                 | V1 ARS COMP                 | 16-Jul-15 09:50 | 17-Jul-15 09:26 | Amber Glass NM Bottle, 1L    |
| 1500630-02                 | TRAVEL BLANK                | 16-Jul-15 00:00 | 17-Jul-15 09:26 | Amber Glass NM Bottle, 1L    |

## **ANALYTICAL RESULTS**

| Sample ID: Method Blank                |              |   |      |       | EPA Method 1613B   |   |      |          |            |
|--|--------------|---|------|-------|--|---|------|----------|------------|
| Matrix: Aqueous<br>Sample Size: 1.00 L |              | QC Batch: B5G0081<br>Date Extracted: 20-Jul-2015 8:26 |      |       | Lab Sample: B5G0081-BLK1<br>Date Analyzed: 22-Jul-15 12:25 Column: ZB-5MS Analyst: MAS |   |      |          |            |
| Analyte                                | Conc. (pg/L) | DL  | EMPC | MDL   | Qualifiers   | Labeled Standard                            | %R   | LCL-UCL  | Qualifiers |
| 2,3,7,8-TCDD                           | ND           | 0.814   |      | 1.08  |  | IS 13C-2,3,7,8-TCDD                         | 77.6 | 25 - 164 |            |
| 1,2,3,7,8-PeCDD                        | ND           | 1.25  |      | 3.94  |  | 13C-1,2,3,7,8-PeCDD                         | 81.1 | 25 - 181 |            |
| 1,2,3,4,7,8-HxCDD                      | ND           | 1.44  |      | 3.00  |  | 13C-1,2,3,4,7,8-HxCDD                       | 79.7 | 32 - 141 |            |
| 1,2,3,6,7,8-HxCDD                      | ND           | 1.52  |      | 4.20  |  | 13C-1,2,3,6,7,8-HxCDD                       | 85.3 | 28 - 130 |            |
| 1,2,3,7,8,9-HxCDD                      | ND           | 1.62  |      | 5.70  |  | 13C-1,2,3,7,8,9-HxCDD                       | 81.6 | 32 - 141 |            |
| 1,2,3,4,6,7,8-HpCDD                    | ND           | 2.13  |      | 3.51  |  | 13C-1,2,3,4,6,7,8-HpCDD                     | 72.2 | 23 - 140 |            |
| OCDD                                   | ND           | 3.32  |      | 6.94  |  | 13C-OCDD                                    | 69.6 | 17 - 157 |            |
| 2,3,7,8-TCDF                           | ND           | 1.03  |      | 0.902 |  | 13C-2,3,7,8-TCDF                            | 74.2 | 24 - 169 |            |
| 1,2,3,7,8-PeCDF                        | ND           | 1.08  |      | 3.43  |  | 13C-1,2,3,7,8-PeCDF                         | 71.6 | 24 - 185 |            |
| 2,3,4,7,8-PeCDF                        | ND           | 0.981   |      | 2.21  |  | 13C-2,3,4,7,8-PeCDF                         | 73.9 | 21 - 178 |            |
| 1,2,3,4,7,8-HxCDF                      | ND           | 1.15  |      | 2.96  |  | 13C-1,2,3,4,7,8-HxCDF                       | 66.9 | 26 - 152 |            |
| 1,2,3,6,7,8-HxCDF                      | ND           | 0.550   |      | 4.01  |  | 13C-1,2,3,6,7,8-HxCDF                       | 72.4 | 26 - 123 |            |
| 2,3,4,6,7,8-HxCDF                      | ND           | 0.581   |      | 2.61  |  | 13C-2,3,4,6,7,8-HxCDF                       | 75.6 | 28 - 136 |            |
| 1,2,3,7,8,9-HxCDF                      | ND           | 0.907   |      | 2.38  |  | 13C-1,2,3,7,8,9-HxCDF                       | 72.6 | 29 - 147 |            |
| 1,2,3,4,6,7,8-HpCDF                    | ND           | 2.03  |      | 2.64  |  | 13C-1,2,3,4,6,7,8-HpCDF                     | 66.0 | 28 - 143 |            |
| 1,2,3,4,7,8,9-HpCDF                    | ND           | 0.936   |      | 4.82  |  | 13C-1,2,3,4,7,8,9-HpCDF                     | 63.0 | 26 - 138 |            |
| OCDF                                   | ND           | 4.29  |      | 7.05  |  | 13C-OCDF                                    | 62.8 | 17 - 157 |            |
|  |              |   |      |       |  | CRS 37Cl-2,3,7,8-TCDD                       | 103  | 35 - 197 |            |
|  |              |   |      |       |  | <b>Toxic Equivalent Quotient (TEQ) Data</b> |      |          |            |
|  |              |   |      |       |  | TEQMinWHO2005Dioxin                         | 0.00 |          |            |
| <b>TOTALS</b>                          |              |   |      |       |  |   |      |          |            |
| Total TCDD                             | ND           | 0.814   |      |       |  |   |      |          |            |
| Total PeCDD                            | ND           | 1.25  |      |       |  |   |      |          |            |
| Total HxCDD                            | ND           | 2.63  |      |       |  |   |      |          |            |
| Total HpCDD                            | ND           | 2.13  |      |       |  |   |      |          |            |
| Total TCDF                             | ND           | 1.03  |      |       |  |   |      |          |            |
| Total PeCDF                            | ND           | 1.27  |      |       |  |   |      |          |            |
| Total HxCDF                            | ND           | 1.33  |      |       |  |   |      |          |            |
| Total HpCDF                            | ND           | 2.17  |      |       |  |   |      |          |            |

DL - Sample specific estimated detection limit

MDL - Method detection limit

LCL-UCL- Lower control limit - upper control limit

EMPC - Estimated maximum possible concentration

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

| Sample ID: OPR                         |                  |   |      |   | EPA Method 1613B        |      |          |
|--|------------------|---|------|---|-------------------------|------|----------|
| Matrix: Aqueous<br>Sample Size: 1.00 L |                  | QC Batch: B5G0081<br>Date Extracted: 20-Jul-2015 8:26 |      | Lab Sample: B5G0081-BS1<br>Date Analyzed: 22-Jul-15 10:01 Column: ZB-5MS Analyst: MAS |                         |      |          |
| Analyte                                | Amt Found (pg/L) | Spike Amt   | %R   | Limits  | Labeled Standard        | %R   | LCL-UCL  |
| 2,3,7,8-TCDD                           | 180              | 200   | 89.9 | 67 - 158  | IS 13C-2,3,7,8-TCDD     | 79.0 | 20 - 175 |
| 1,2,3,7,8-PeCDD                        | 917              | 1000  | 91.7 | 70 - 142  | 13C-1,2,3,7,8-PeCDD     | 80.5 | 21 - 227 |
| 1,2,3,4,7,8-HxCDD                      | 930              | 1000  | 93.0 | 70 - 164  | 13C-1,2,3,4,7,8-HxCDD   | 71.7 | 21 - 193 |
| 1,2,3,6,7,8-HxCDD                      | 935              | 1000  | 93.5 | 76 - 134  | 13C-1,2,3,6,7,8-HxCDD   | 75.8 | 25 - 163 |
| 1,2,3,7,8,9-HxCDD                      | 927              | 1000  | 92.7 | 64 - 162  | 13C-1,2,3,7,8,9-HxCDD   | 73.0 | 21 - 193 |
| 1,2,3,4,6,7,8-HpCDD                    | 901              | 1000  | 90.1 | 70 - 140  | 13C-1,2,3,4,6,7,8-HpCDD | 66.5 | 26 - 166 |
| OCDD                                   | 1780             | 2000  | 89.2 | 78 - 144  | 13C-OCDD                | 70.0 | 13 - 199 |
| 2,3,7,8-TCDF                           | 175              | 200   | 87.5 | 75 - 158  | 13C-2,3,7,8-TCDF        | 75.9 | 22 - 152 |
| 1,2,3,7,8-PeCDF                        | 964              | 1000  | 96.4 | 80 - 134  | 13C-1,2,3,7,8-PeCDF     | 68.5 | 21 - 192 |
| 2,3,4,7,8-PeCDF                        | 934              | 1000  | 93.4 | 68 - 160  | 13C-2,3,4,7,8-PeCDF     | 75.7 | 13 - 328 |
| 1,2,3,4,7,8-HxCDF                      | 939              | 1000  | 93.9 | 72 - 134  | 13C-1,2,3,4,7,8-HxCDF   | 63.9 | 19 - 202 |
| 1,2,3,6,7,8-HxCDF                      | 921              | 1000  | 92.1 | 84 - 130  | 13C-1,2,3,6,7,8-HxCDF   | 68.7 | 21 - 159 |
| 2,3,4,6,7,8-HxCDF                      | 920              | 1000  | 92.0 | 70 - 156  | 13C-2,3,4,6,7,8-HxCDF   | 72.4 | 22 - 176 |
| 1,2,3,7,8,9-HxCDF                      | 924              | 1000  | 92.4 | 78 - 130  | 13C-1,2,3,7,8,9-HxCDF   | 66.4 | 17 - 205 |
| 1,2,3,4,6,7,8-HpCDF                    | 939              | 1000  | 93.9 | 82 - 122  | 13C-1,2,3,4,6,7,8-HpCDF | 60.2 | 21 - 158 |
| 1,2,3,4,7,8,9-HpCDF                    | 932              | 1000  | 93.2 | 78 - 138  | 13C-1,2,3,4,7,8,9-HpCDF | 63.6 | 20 - 186 |
| OCDF                                   | 1810             | 2000  | 90.4 | 63 - 170  | 13C-OCDF                | 65.8 | 13 - 199 |
|  |                  |   |      |   | CRS 37Cl-2,3,7,8-TCDD   | 105  | 31 - 191 |

LCL-UCL - Lower control limit - upper control limit

**Sample ID: V1 ARS COMP** **EPA Method 1613B**

|                                   |                     |  |
|-----------------------------------|---------------------|--|
| <b>Client Data</b>                | <b>Sample Data</b>  | <b>Laboratory Data</b>   |
| Name: Marine Research Specialists | Matrix: Wastewater  | Lab Sample: 1500630-01      Date Received: 17-Jul-2015 9:26          |
| Project: MBCSD H2 2015            | Sample Size: 1.01 L | QC Batch: B5G0081      Date Extracted: 20-Jul-2015 8:26              |
| Date Collected: 16-Jul-2015 9:50  |                     | Date Analyzed: 22-Jul-15 14:49      Column: ZB-5MS      Analyst: MAS |

| Analyte             | Conc. (pg/L) | DL    | EMPC | MDL   | Qualifiers | Labeled Standard        | %R   | LCL-UCL  | Qualifiers |
|---------------------|--------------|-------|------|-------|------------|-------------------------|------|----------|------------|
| 2,3,7,8-TCDD        | ND           | 0.693 |      | 1.08  |            | IS 13C-2,3,7,8-TCDD     | 75.9 | 25 - 164 |            |
| 1,2,3,7,8-PeCDD     | ND           | 1.19  |      | 3.94  |            | 13C-1,2,3,7,8-PeCDD     | 74.3 | 25 - 181 |            |
| 1,2,3,4,7,8-HxCDD   | ND           | 2.70  |      | 3.00  |            | 13C-1,2,3,4,7,8-HxCDD   | 65.4 | 32 - 141 |            |
| 1,2,3,6,7,8-HxCDD   | ND           | 2.51  |      | 4.20  |            | 13C-1,2,3,6,7,8-HxCDD   | 75.6 | 28 - 130 |            |
| 1,2,3,7,8,9-HxCDD   | ND           | 2.81  |      | 5.70  |            | 13C-1,2,3,7,8,9-HxCDD   | 71.5 | 32 - 141 |            |
| 1,2,3,4,6,7,8-HpCDD | ND           |       | 3.33 | 3.51  |            | 13C-1,2,3,4,6,7,8-HpCDD | 60.6 | 23 - 140 |            |
| OCDD                | 34.3         |       |      | 6.94  | J          | 13C-OCDD                | 63.0 | 17 - 157 |            |
| 2,3,7,8-TCDF        | ND           | 2.61  |      | 0.902 |            | 13C-2,3,7,8-TCDF        | 77.1 | 24 - 169 |            |
| 1,2,3,7,8-PeCDF     | ND           | 1.59  |      | 3.43  |            | 13C-1,2,3,7,8-PeCDF     | 66.4 | 24 - 185 |            |
| 2,3,4,7,8-PeCDF     | ND           | 1.50  |      | 2.21  |            | 13C-2,3,4,7,8-PeCDF     | 71.0 | 21 - 178 |            |
| 1,2,3,4,7,8-HxCDF   | ND           | 0.696 |      | 2.96  |            | 13C-1,2,3,4,7,8-HxCDF   | 60.4 | 26 - 152 |            |
| 1,2,3,6,7,8-HxCDF   | ND           | 0.756 |      | 4.01  |            | 13C-1,2,3,6,7,8-HxCDF   | 64.3 | 26 - 123 |            |
| 2,3,4,6,7,8-HxCDF   | ND           | 0.739 |      | 2.61  |            | 13C-2,3,4,6,7,8-HxCDF   | 65.8 | 28 - 136 |            |
| 1,2,3,7,8,9-HxCDF   | ND           | 1.15  |      | 2.38  |            | 13C-1,2,3,7,8,9-HxCDF   | 62.3 | 29 - 147 |            |
| 1,2,3,4,6,7,8-HpCDF | ND           | 1.51  |      | 2.64  |            | 13C-1,2,3,4,6,7,8-HpCDF | 56.4 | 28 - 143 |            |
| 1,2,3,4,7,8,9-HpCDF | ND           | 0.846 |      | 4.82  |            | 13C-1,2,3,4,7,8,9-HpCDF | 55.2 | 26 - 138 |            |
| OCDF                | ND           | 3.88  |      | 7.05  |            | 13C-OCDF                | 55.6 | 17 - 157 |            |
|                     |              |       |      |       |            | CRS 37Cl-2,3,7,8-TCDD   | 102  | 35 - 197 |            |

| <b>Toxic Equivalent Quotient (TEQ) Data</b> |        |
|---|--------|
| TEQMinWHO2005Dioxin                         | 0.0103 |

| <b>TOTALS</b> |    |      |      |  |  |  |  |  |  |
|---------------|----|------|------|--|--|--|--|--|--|
| Total TCDD    | ND |      | 2.96 |  |  |  |  |  |  |
| Total PeCDD   | ND | 2.81 |      |  |  |  |  |  |  |
| Total HxCDD   | ND | 4.21 |      |  |  |  |  |  |  |
| Total HpCDD   | ND |      | 7.02 |  |  |  |  |  |  |
| Total TCDF    | ND | 2.61 |      |  |  |  |  |  |  |
| Total PeCDF   | ND | 2.72 |      |  |  |  |  |  |  |
| Total HxCDF   | ND | 1.69 |      |  |  |  |  |  |  |
| Total HpCDF   | ND | 1.66 |      |  |  |  |  |  |  |

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

## DATA QUALIFIERS & ABBREVIATIONS

|              |   |
|--------------|---|
| <b>B</b>     | <b>This compound was also detected in the method blank.</b>   |
| <b>D</b>     | <b>Dilution</b>   |
| <b>E</b>     | <b>The associated compound concentration exceeded the calibration range of the instrument.</b>  |
| <b>H</b>     | <b>Recovery and/or RPD was outside laboratory acceptance limits.</b>  |
| <b>I</b>     | <b>Chemical Interference</b>  |
| <b>J</b>     | <b>The amount detected is below the Lower Calibration Limit of the instrument.</b>  |
| <b>*</b>     | <b>See Cover Letter</b>   |
| <b>Conc.</b> | <b>Concentration</b>  |
| <b>DL</b>    | <b>Sample-specific estimated detection limit</b>  |
| <b>MDL</b>   | <b>The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.</b> |
| <b>EMPC</b>  | <b>Estimated Maximum Possible Concentration</b>   |
| <b>NA</b>    | <b>Not applicable</b>   |
| <b>RL</b>    | <b>Reporting Limit – concentrations that correspond to low calibration point</b>  |
| <b>ND</b>    | <b>Not Detected</b>   |
| <b>TEQ</b>   | <b>Toxic Equivalency</b>  |

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

## CERTIFICATIONS

| <b>Accrediting Authority</b>                        | <b>Certificate Number</b> |
|---|---------------------------|
| 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                   |
| Michigan Department of Natural Resources            | 9932                      |
| Nevada Division of Environmental Protection         | CA004132015-1             |
| New Jersey Department of Environmental Protection   | CA003                     |
| New York Department of Health                       | 11411                     |
| Oregon Laboratory Accreditation Program             | 4042-003                  |
| Pennsylvania Department of Environmental Protection | 012                       |
| South Carolina Department of Health                 | 87002001                  |
| Tennessee Department of Environment & Conservation  | TN02996                   |
| 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                 |

Submit by Email\*



FOR LABORATORY USE ONLY

Laboratory Project ID: 1500630 Temp: 0.3 °C  
Storage ID: WR-2 Storage Secured: Yes [X] No [ ]

# CHAIN OF CUSTODY RECORD

Project I.D.: MBCSD H2 2015 P.O. #: \_\_\_\_\_ Sampler: Dane Lundy  
(Name)

TAT: (Check One)  
Standard  21 days  
Rush (surcharge may apply)  
 14 days  7 days Specify: \_\_\_\_\_

Invoice to: Name Douglas A Coats Company Marine Research Specialists Address 3140 Telegraph Rd #A City Ventura State CA Zip 93003 Ph# 805.218.3662 Fax # 805.289.3935

Relinquished by: (Printed Name and Signature) Dane Lundy Date: 7-16-15 Time: 1300 Received by: (Signature and Printed Name) Billy Benedict Date: 07/17/15 Time: 0935  
Relinquished by: (Printed Name and Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

See "Sample Log-in Checklist" for additional sample information

|  |                                  |  |
|--|----------------------------------|--|
| SHIP TO: Vista Analytical Laboratory<br>1104 Windfield Way<br>El Dorado Hills, CA 95762<br>(916) 673-1520 • Fax (916) 673-0106 | Method of Shipment: <u>FedEx</u> | Add Analysis(es) Requested<br><u>EPA1613</u><br><u>EPA8290</u><br><u>EPA8280</u><br><u>EPA1668</u><br><u>EPA1614</u><br><u>CARB429</u> |
| ATTN: _____  | Tracking No.: _____              |  |

| Sample ID                 | Date           | Time        | Location/Sample Description | Quantity | Type      | Matrix | 2378-TCDD | 2378-TCDD/TCDF | PCDD/PCDF | 2378-TCDF | 2378-TCDD/TCDF | 2378-TCDF | PCDD/PCDF | TOTALS | COPLANAR PCBs | 209 CONGENERS | PBDE | PAH | WHO-29 |              |
|---------------------------|----------------|-------------|-----------------------------|----------|-----------|--------|-----------|----------------|-----------|-----------|----------------|-----------|-----------|--------|---------------|---------------|------|-----|--------|--------------|
| <u>V1 ARS Comp non-Tp</u> | <u>7/16/15</u> | <u>0950</u> | <u>V1 ARS Comp</u>          | <u>1</u> | <u>WW</u> |        |           |                |           |           |                |           |           |        |               |               |      |     |        | <u>1613B</u> |
|                           |                |             | <u>Travel Blank</u>         | <u>1</u> |           |        |           |                |           |           |                |           |           |        |               |               |      |     |        |              |
|                           |                |             |                             |          |           |        |           |                |           |           |                |           |           |        |               |               |      |     |        |              |
|                           |                |             |                             |          |           |        |           |                |           |           |                |           |           |        |               |               |      |     |        |              |
|                           |                |             |                             |          |           |        |           |                |           |           |                |           |           |        |               |               |      |     |        |              |
|                           |                |             |                             |          |           |        |           |                |           |           |                |           |           |        |               |               |      |     |        |              |
|                           |                |             |                             |          |           |        |           |                |           |           |                |           |           |        |               |               |      |     |        |              |
|                           |                |             |                             |          |           |        |           |                |           |           |                |           |           |        |               |               |      |     |        |              |
|                           |                |             |                             |          |           |        |           |                |           |           |                |           |           |        |               |               |      |     |        |              |
|                           |                |             |                             |          |           |        |           |                |           |           |                |           |           |        |               |               |      |     |        |              |

Special Instructions/Comments: Extract and analyze using EPA 1613B for tetra- through- octa chlorinated dioxins and furans.

SEND DOCUMENTATION AND RESULTS TO:

Name: Douglas A Coats  
Company: Marine Research Specialists  
Address: 3140 Telegraph Rd Ste A  
City: Ventura State: CA Zip: 93003  
Phone: 805.218.3662 Fax: 805.289.3935  
Email: Marine@Rain.org

Container Types: A = 1 Liter Amber, G = Glass Jar  
P = PUF, T = MM5 Train, O = Other \_\_\_\_\_

\*Bottle Preservative Type:  T = Thiosulfate,  
 O = Other \_\_\_\_\_

Matrix Types: DW = Drinking Water, EF = Effluent, PP = Pulp/Paper,  
SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B=Blood/Serum  
O = Other \_\_\_\_\_

**SAMPLE LOG-IN CHECKLIST**



Vista Project #: 1500630 TAT Std

|                                   |   |                                   |   |
|-----------------------------------|---|-----------------------------------|---|
| <b>Samples Arrival:</b>           | <b>Date/Time:</b><br>07/17/15 0926        | <b>Initials:</b><br>BAB           | <b>Location:</b> WR-2                   |
|                                   |   |                                   | <b>Shelf/Rack:</b> NA                   |
| <b>Logged In:</b>                 | <b>Date/Time:</b><br>07/17/15 1203        | <b>Initials:</b><br>UBAB          | <b>Location:</b> WR-2                   |
|                                   |   |                                   | <b>Shelf/Rack:</b> B2                   |
| <b>Delivered By:</b>              | <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            |                                   |   |
| <b>Preservation:</b>              | <input checked="" type="checkbox"/> Ice   | <input type="checkbox"/> Blue Ice | <input type="checkbox"/> Dry Ice        |
|                                   | <input type="checkbox"/> None             |                                   |   |
| <b>Temp °C:</b> 0.4 (uncorrected) | <b>Time:</b> 0935                         | <b>Thermometer ID:</b> IR-2       |   |
| <b>Temp °C:</b> 0.3 (corrected)   |   |                                   |   |

|  | YES                                 | NO   | NA                                       |
|--|-------------------------------------|--|--|
| Adequate Sample Volume Received? <u>1 Liter</u>                        | <input checked="" type="checkbox"/> |  |  |
| Holding Time Acceptable?   | <input checked="" type="checkbox"/> |  |  |
| Shipping Container(s) Intact?  | <input checked="" type="checkbox"/> |  |  |
| Shipping Custody Seals Intact?   | <input checked="" type="checkbox"/> |  |  |
| Shipping Documentation Present?  | <input checked="" type="checkbox"/> |  |  |
| Airbill  | <input checked="" type="checkbox"/> |  |  |
| Trk # <u>7809 9356 1736</u>  |                                     |  |  |
| Sample Container Intact?   | <input checked="" type="checkbox"/> |  |  |
| Sample Custody Seals Intact?   | <input checked="" type="checkbox"/> |  | <input checked="" type="checkbox"/>      |
| Chain of Custody / Sample Documentation Present?                       | <input checked="" type="checkbox"/> |  |  |
| COC Anomaly/Sample Acceptance Form completed?                          |                                     | <input checked="" type="checkbox"/>        |  |
| If Chlorinated or Drinking Water Samples, Acceptable Preservation?     |                                     |  | <input checked="" type="checkbox"/>      |
| Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented? | <input type="checkbox"/> COC        | <input type="checkbox"/> Sample Container  | <input checked="" type="checkbox"/> None |
| Shipping Container   | <input type="checkbox"/> Vista      | <input checked="" type="checkbox"/> Client | <input type="checkbox"/> Retain          |
|  | <input type="checkbox"/> Return     | <input type="checkbox"/> Dispose           |  |

Comments: