# APPENDIX

# DATA QUALIFIERS & ABBREVIATIONS

| | |
|---|---|
| **B** | **This compound was also detected in the method blank.** |
| **D** | **Dilution** |
| **E** | **The amount detected is above the High Calibration Limit.** |
| **P** | **The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.** |
| **H** | **The signal-to-noise ratio is greater than 10:1.** |
| **I** | **Chemical Interference** |
| **J** | **The amount detected is below the Low Calibration Limit.** |
| ***** | **See Cover Letter** |
| **Conc.** | **Concentration** |
| **DL** | **Sample-specific estimated detection limit** |
| **MDL** | **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.** |
| **EMPC** | **Estimated Maximum Possible Concentration** |
| **NA** | **Not applicable** |
| **RL** | **Reporting Limit – concentrations that correspond to low calibration point** |
| **ND** | **Not Detected** |
| **TEQ** | **Toxic Equivalency** |

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

# CERTIFICATIONS

| Accrediting Authority | Certificate Number |
|---|---|
| State of Alaska, DEC | CA413-2008 |
| State of Arizona | AZ0639 |
| State of Arkansas, DEQ | 08-043-0 |
| State of Arkansas, DOH | Reciprocity through CA |
| State of California – NELAP Primary AA | 02102CA |
| State of Colorado | N/A |
| State of Connecticut | PH-0182 |
| State of Florida, DEP | E87777 |
| State of Indiana Department of Health | C-CA-02 |
| Commonwealth of Kentucky | 90063 |
| State of Louisiana, Health and Hospitals | LA08000 |
| State of Louisiana, DEQ | 01977 |
| State of Maine | 2008024 |
| State of Michigan | 9932 |
| State of Mississippi | Reciprocity through CA |
| Naval Facilities Engineering Service Center | NFESC413 |
| State of Nevada | CA004132007A |
| State of New Jersey | CA003 |
| State of New Mexico | Reciprocity through CA |
| State of New York, DOH | 11411 |
| State of North Carolina | 06700 |
| State of North Dakota, DOH | R-078 |
| State of Oklahoma | D9919 |
| State of Oregon | CA200001-006 |
| State of Pennsylvania | 68-00490 |
| State of South Carolina | 87002001 |
| State of Tennessee | TN02996 |
| State of Texas | T104704189-08-TX |
| U.S. Army Corps of Engineers | N/A |
| State of Utah | CA16400 |
| Commonwealth of Virginia | 00013 |
| State of Washington | C1285 |
| State of Wisconsin | 998036160 |
| State of Wyoming | 8TMS-Q |

**SUBCONTRACT ORDER**

**TestAmerica Irvine**

**IRK2832**

31222

**SENDING LABORATORY:**

TestAmerica Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 260-3297
Project Manager: Joseph Doak

**RECEIVING LABORATORY:**

Vista Analytical Laboratory- SUB
1104 Windfield Way
El Dorado Hills, CA 95762
Phone :(916) 673-1520
Fax: (916) 673-0106
Project Location: CA - CALIFORNIA
Receipt Temperature: 1.9 °C Ice: (Y) N

| Analysis | Units | Due | Expires | Comments |
|---|---|---|---|---|
| **Sample ID: IRK2832-01** | **Water** | | Sampled: **11/26/08 09:15** | **Instant Nofication** |
| 1613-Dioxin-HR-Alta | ug/l | 12/09/08 | 12/03/08 09:15 | J flags,17 congeners,no TEQ,ug/L,sub=Vista |
| Level 4 Data Package - Out | N/A | 12/09/08 | 12/24/08 09:15 | |
| *Containers Supplied:* | | | | |
| 1 L Amber (C) | 1 L Amber (D) | | | |

Released By 11/28/08 1700 Date/Time

Received By 11/29/08 1046 Date/Time

Released By Date/Time

Received By Date/Time

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## SAMPLE LOG-IN CHECKLIST

Vista Analytical Laboratory

**Vista Project #:** 31222 **TAT** unspecified

| | | | |
|---|---|---|---|
| **Samples Arrival:** | **Date/Time** 11/29/08 0859 | **Initials:** DB | **Location:** WR-2 **Shelf/Rack:** N/A |
| **Logged In:** CJ 11/29/08 | **Date/Time** ~~11/29/08 1046~~ 12/1/08 0836 | **Initials:** CJ | **Location:** WR2 CJ 12/1/08 **Shelf/Rack:** ~~B-3~~ B1 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Delivered By:** | (FedEx) | UPS | Cal | DHL | Hand Delivered | Other |
| **Preservation:** | (Ice) | Blue Ice | Dry Ice | None | | |
| **Temp °C** 1.8 | **Time:** 0904 | | **Thermometer ID:** IR-1 | | | |

| | YES | NO | NA |
|---|---|---|---|
| Adequate Sample Volume Received? (A & B bottles) | ✓ | | |
| Holding Time Acceptable? | ✓ | | |
| Shipping Container(s) Intact? | ✓ | | |
| Shipping Custody Seals Intact? | ✓ | | |
| Shipping Documentation Present? | ✓ | | |
| Airbill — Trk # 7961 4775 5447 | ✓ | | |
| Sample Container Intact? | ✓ | | |
| Sample Custody Seals Intact? | | | ✓ |
| Chain of Custody / Sample Documentation Present? | ✓ | | |
| COC Anomaly/Sample Acceptance Form completed? | | ✓ | |
| If Chlorinated or Drinking Water Samples, Acceptable Preservation? | | | ✓ |

| | | | | | |
|---|---|---|---|---|---|
| $Na_2S_2O_3$ Preservation Documented? | COC | Sample Container | (None) | | |
| Shipping Container | Vista | (Client) | Retain | (Return) | Dispose |

*Comments:*

1105

# APPENDIX G

## Section 16

Outfall 010 - BMP Effectiveness, November 26, 2008

Test America Analytical Laboratory Report

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

# LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project: BMP Effectiveness
Monitoring Program

Sampled: 11/26/08
Received: 11/26/08
Issued: 12/09/08 15:01

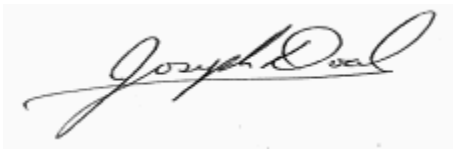
NELAP #01108CA California ELAP#2706 CSDLAC #10256 AZ #AZ0671 NV #CA01531



## SAMPLE CROSS REFERENCE

| LABORATORY ID | CLIENT ID | MATRIX |
|---|---|---|
| IRK2851-01 | 010 EFF-1 | Water |

Reviewed By:



**TestAmerica Irvine**

Joseph Doak
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: BMP Effectiveness Monitoring Program
Report Number: IRK2851

Sampled: 11/26/08
Received: 11/26/08

## INORGANICS

| Analyte | Method | Batch | MDL Limit | Reporting Limit | Sample Result | Dilution Factor | Date Extracted | Date Analyzed | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: IRK2851-01 (010 EFF-1 - Water)** | | | | | | | | | |
| **Reporting Units: g/cc** | | | | | | | | | |
| **Density** | Displacement | 8L09076 | N/A | NA | **0.99** | 1 | 12/09/08 | 12/09/08 | |
| **Sample ID: IRK2851-01 (010 EFF-1 - Water)** | | | | | | | | | |
| **Reporting Units: mg/l** | | | | | | | | | |
| Sediment | ASTM D3977 | 8L09085 | 10 | 10 | ND | 1 | 12/09/08 | 12/09/08 | |

**TestAmerica Irvine**

Joseph Doak
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: BMP Effectiveness Monitoring Program
Report Number: IRK2851

Sampled: 11/26/08
Received: 11/26/08

## METHOD BLANK/QC DATA

## INORGANICS

| Analyte | Result | Reporting Limit | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: 8L09076 Extracted: 12/09/08** | | | | | | | | | | | |
| **Duplicate Analyzed: 12/09/2008 (8L09076-DUP1)** | | | | | | **Source: IRK2873-01** | | | | | |
| Density | 1.01 | NA | N/A | g/cc | | 1.01 | | | 0 | 20 | |

**TestAmerica Irvine**

Joseph Doak
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

| | | |
|---|---|---|
| MWH-Pasadena/Boeing | Project ID: BMP Effectiveness Monitoring Program | |
| 618 Michillinda Avenue, Suite 200 | | Sampled: 11/26/08 |
| Arcadia, CA 91007 | Report Number: IRK2851 | Received: 11/26/08 |
| Attention: Bronwyn Kelly | | |

## DATA QUALIFIERS AND DEFINITIONS

**ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

**RPD** Relative Percent Difference

**TestAmerica Irvine**

Joseph Doak
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: BMP Effectiveness Monitoring Program
Report Number: IRK2851

Sampled: 11/26/08
Received: 11/26/08

## Certification Summary

**TestAmerica Irvine**

| Method | Matrix | Nelac | California |
|---|---|---|---|
| ASTM D3977 | Water | | |
| Displacement | Water | | |

*Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com*

**TestAmerica Irvine**

Joseph Doak
Project Manager

003

Test America Version 12/20/07

# CHAIN OF CUSTODY FORM



| Client Name/Address: | Project: **Boeing BMP Effectiveness Monitoring Program** |
|---|---|
| MWH-Arcadia<br>618 Michillinda Avenue, Suite 200<br>Arcadia, CA 91007<br><br>Test America Contact: Joseph Doak | |
| Project Manager: Bronwyn Kelly<br><br>Sampler: R. Banaga | Phone Number:<br>(626) 568-6691<br>Fax Number:<br>(626) 568-6515 |

| Sample Description | Sample Matrix | Container Type | # of Cont. | Sampling Date/Time | Preservative | Bottle # | ANALYSIS REQUIRED: Suspended Sediment Concentration (SSC, ASTM-D3977-1997) |
|---|---|---|---|---|---|---|---|
| 010 EFF-1 | W | 500 mL Poly | 1 | 11/26/08-0915 | None | 1 | X |
| 010 EFF-2 | W | 500 mL Poly | 1 | | None | 2 | X |
| 010 EFF-3 | W | 500 mL Poly | 1 | | None | 3 | X |
| 010 EFF-4 | W | 500 mL Poly | 1 | | None | 4 | X |
| 010 EFF-5 | W | 500 mL Poly | 1 | | None | 5 | X |
| 010 EFF-6 | W | 500 mL Poly | 1 | | None | 6 | X |
| 010 EFF-7 | W | 500 mL Poly | 1 | | None | 7 | X |
| 010 EFF-8 | W | 500 mL Poly | 1 | | None | 8 | X |
| 010 EFF-9 | W | 500 mL Poly | 1 | | None | 9 | X |
| 010 EFF-10 | W | 500 mL Poly | 1 | | None | 10 | X |
| 010 EFF-11 | W | 500 mL Poly | 1 | | None | 11 | X |
| 010 EFF-12 | W | 500 mL Poly | 1 | | None | 12 | X |
| 010 EFF-13 | W | 500 mL Poly | 1 | | None | 13 | X |
| 010 EFF-14 | W | 500 mL Poly | 1 | | None | 14 | X |
| 010 EFF-15 | W | 500 mL Poly | 1 | | None | 15 | X |
| 010 EFF-16 | W | 500 mL Poly | 1 | | None | 16 | X |
| 010 EFF-17 | W | 500 mL Poly | 1 | | None | 17 | X |
| 010 EFF-18 | W | 500 mL Poly | 1 | | None | 18 | X |
| 010 EFF-19 | W | 500 mL Poly | 1 | | None | 19 | X |
| 010 EFF-20 | W | 500 mL Poly | 1 | | None | 20 | X |
| 010 EFF-21 | W | 500 mL Poly | 1 | | None | 21 | X |
| 010 EFF-22 | W | 500 mL Poly | 1 | | None | 22 | X |
| 010 EFF-23 | W | 500 mL Poly | 1 | | None | 23 | X |
| 010 EFF-24 | W | 500 mL Poly | 1 | | None | 24 | X |

Field readings:

Temp = NA

pH = NA

Time of readings = NA

**Comments**

| Relinquished By | Date/Time: | Received By | Date/Time: |
|---|---|---|---|
| [signature] | 11-26-08 1420 | [signature] TAI | 11/26/08 1420 |
| [signature] TAI | 11/26/08 2045 | | |
| | | [signature] | 11-26-08 2045 |

Turn around Time: (check)
24 Hours _____ 5 Days _____
48 Hours _____ 10 Days _____
72 Hours _____ Normal X

Sample Integrity: (check)
Intact X On Ice: X

3.6 °C

EW

# APPENDIX G

## Section 17

Outfall 010, December 15, 2008

MEC$^X$ Data Validation Reports


# DATA VALIDATION REPORT

## Boeing SSFL NPDES

## SAMPLE DELIVERY GROUP: IRL1710

Prepared by

MEC$^{X}$, LP
12269 East Vassar Drive
Aurora, CO 80014

# I. INTRODUCTION

| | |
|---|---|
| Task Order Title: | Boeing SSFL NPDES |
| Contract Task Order: | 1261.100D.00 |
| Sample Delivery Group: | IRL1710 |
| Project Manager: | B. Kelly |
| Matrix: | Water |
| QC Level: | IV |
| No. of Samples: | 1 |
| No. of Reanalyses/Dilutions: | 0 |
| Laboratory: | TestAmerica-Irvine |

**Table 1. Sample Identification**

| Client ID | Laboratory ID | Sub-Laboratory ID | Matrix | Collected | Method |
|---|---|---|---|---|---|
| Outfall 010 | IRL1710-01 | D8L170248-001, 31264-001, F8L170170-001 | Water | 12/15/08 1050 | 245.1, 245.1 (Diss.), 900.0, 901.1, 903.0, 904.0, 905.0, 906.0, 908.0, 1613B |

# II. Sample Management

No anomalies were observed regarding sample management. The samples were received at TestAmerica-Irvine, TestAmerica-St. Louis, and Vista within the temperature limit of 4 ±2°C and received at TestAmerica-Denver below the control limit; however, the samples were not noted to be damaged or frozen. According to the case narrative for this SDG, the samples were received intact at all laboratories. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the sample was couriered to TestAmerica-Irvine, custody seals were not required. Custody seals were intact upon arrival at TestAmerica-Denver, TestAmerica-St. Louis, and Vista. If necessary, the client ID was added to the sample result summary by the reviewer.

## Data Qualifier Reference Table

| Qualifier | Organics | Inorganics |
|---|---|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins. | The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. | The associated value is an estimated quantity. |
| N | The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification." | Not applicable. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. | Not applicable. |
| UJ | The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. | The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise. |
| R | The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified. | The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified. |

## Qualification Code Reference Table

| Qualifier | Organics | Inorganics |
|---|---|---|
| H | Holding times were exceeded. | Holding times were exceeded. |
| S | Surrogate recovery was outside QC limits. | The sequence or number of standards used for the calibration was incorrect |
| C | Calibration %RSD or %D was noncompliant. | Correlation coefficient is <0.995. |
| R | Calibration RRF was <0.05. | %R for calibration is not within control limits. |
| B | Presumed contamination as indicated by the preparation (method) blank results. | Presumed contamination as indicated by the preparation (method) or calibration blank results. |
| L | Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits. | Laboratory Control Sample %R was not within control limits. |
| Q | MS/MSD recovery was poor or RPD high. | MS recovery was poor. |
| E | Not applicable. | Duplicates showed poor agreement. |
| I | Internal standard performance was unsatisfactory. | ICP ICS results were unsatisfactory. |
| A | Not applicable. | ICP Serial Dilution %D were not within control limits. |
| M | Tuning (BFB or DFTPP) was noncompliant. | Not applicable. |
| T | Presumed contamination as indicated by the trip blank results. | Not applicable. |
| + | False positive – reported compound was not present. | Not applicable. |
| - | False negative – compound was present but not reported. | Not applicable. |
| F | Presumed contamination as indicated by the FB or ER results. | Presumed contamination as indicated by the FB or ER results. |
| $ | Reported result or other information was incorrect. | Reported result or other information was incorrect. |
| ? | TIC identity or reported retention time has been changed. | Not applicable. |

## Qualification Code Reference Table Cont.

| | | |
|---|---|---|
| D | The analysis with this flag should not be used because another more technically sound analysis is available. | The analysis with this flag should not be used because another more technically sound analysis is available. |
| P | Instrument performance for pesticides was poor. | Post Digestion Spike recovery was not within control limits. |
| DNQ | The reported result is above the method detection limit but is less than the reporting limit. | The reported result is above the method detection limit but is less than the reporting limit. |
| *II, *III | Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found. | Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found. |

# III. Method Analyses

## A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: S. Dellamia
Date Reviewed: January 21, 2009

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC$^X$ Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0), USEPA Method 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review* (8/02).

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.

- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.

    - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.

    - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.

- Calibration: Calibration criteria were met.

    - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs $\leq$20% for the 16 native compounds (calibration by isotope dilution) and $\leq$35% for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.

    - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.

- Blanks: The method blank had no target compound detects above the EDL.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

- Internal Standards Performance: The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613.

- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.

- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits. Total HpCDD detected in sample Outfall010 below the laboratory lower calibration level were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. The EMPC value for Total HpCDF in sample Outfall 010 was qualified as an estimated nondetect, "UJ." Nondetects are valid to the estimated detection limit (EDL).

## B. EPA METHOD 245.1—Mercury

Reviewed By: P. Meeks
Date Reviewed: January 6, 2009

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC$^X$ Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Method 245.1,* and the *National Functional Guidelines for Inorganic Data Review* (10/04).

- Holding Times: The analytical holding time, 28 days for mercury, was met.

- Tuning: Not applicable to this method.

- Calibration: Calibration criteria were met. The mercury initial calibration $r^2$ value was ≥0.995 and all initial and continuing calibration recoveries were within 85-115%. The CRA and check standard were recovered within the control limit of 70-130%.

- Blanks: There were no applicable detects in the method blanks or CCBs.

- Interference Check Samples: Not applicable to this method.

- Blank Spikes and Laboratory Control Samples: The recovery was within the laboratory-established QC limits.

- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.

- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.

- Serial Dilution: No serial dilution analyses were performed on the sample in this SDG.

- Internal Standards Performance: Not applicable to this method.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summaries were verified against the raw data. No transcription errors or calculation errors were noted. Detects reported below the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

## C. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks
Date Reviewed: January 26, 2009

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.1, 904.0, 905.0, and 906.0, ASTM Method D-5174,* and the *National Functional Guidelines for Inorganic Data Review* (2/94).

- Holding Times: The tritium sample was analyzed within 180 days of collection. Aliquots for gross alpha, gross beta radium-226, radium-228, strontium-90, and total uranium were prepared within the five-day holding time for unpreserved samples. The aliquot for

gamma spectroscopy was prepared beyond the five-day holding time for unpreserved samples; therefore, the nondetected results for these analytes were qualified as estimated, "UJ."

- Calibration: The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

  The gross alpha detector efficiency was less than 20%; therefore, the nondetected gross alpha in the sample was qualified as estimated, "UJ." The gross beta detector efficiency was greater than 20%.

  The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. The tritium detector efficiency for the sample was at least 20% and was considered acceptable. The strontium chemical yield was marginally less than 60%, at 59%, but was considered acceptable. The strontium and radium-226 continuing calibration results were within the laboratory control limits. The radium-228 tracer, yttrium oxalate, yields were greater than 70%. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis. All KPA calibration check standard recoveries were within 90-110% and were deemed acceptable.

- Blanks: Radium-226 and radium-228 were detected in the method blanks but were not detected in the sample. There were no other analytes detected in the method blanks.

- Blank Spikes and Laboratory Control Samples: The radium-226 LCS recovery was 52%; therefore, the nondetected result for radium-226 was qualified as estimated, "UJ." The radium-226 and radium-228 LCS/LCSD RPDs were 53% and 38%, respectively; therefore, the nondetected results for radium-226 and radium-228 were qualified as estimated, "UJ." The remaining recoveries and the strontium-90 RPD were within laboratory-established control limits.

- Laboratory Duplicates: No duplicate analyses were performed on the sample in this SDG.

- Matrix Spike/Matrix Spike Duplicate: A matrix spike analysis was performed on the sample in this SDG for tritium. The recovery was within the laboratory established control limits.

- Sample Result Verification: An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Total uranium, normally reported in aqueous units, was converted to pCi/L using a conversion factor for naturally occurring uranium. Detects reported below the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDA.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC

data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

- Field Duplicates: There were no field duplicate samples identified for this SDG.

| Sample ID: | IRL1710-01 | | | | EPA Method 1613 |
|---|---|---|---|---|---|
| **Client Data** | | **Sample Data** | | **Laboratory Data** | |
| Name: | Test America-Irvine, CA | Matrix: | Aqueous | Lab Sample: | 31264-001 |
| Project: | IRL1710 | Sample Size: | 1.02 L | QC Batch No.: | 1770 |
| Date Collected: | 15-Dec-08 | | | Date Analyzed DB-5: | 18-Dec-08 |
| Time Collected: | 1050 | | | | |
| | | | | Date Received: | 17-Dec-08 |
| | | | | Date Extracted: | 17-Dec-08 |
| | | | | Date Analyzed DB-225: | NA |

| Analyte | Conc. (ug/L) | DL [a] | EMPC[b] | Qualifiers |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 0.000000544 | | |
| 1,2,3,7,8-PeCDD | ND | 0.00000167 | | |
| 1,2,3,4,7,8-HxCDD | ND | 0.00000288 | | |
| 1,2,3,6,7,8-HxCDD | ND | 0.00000257 | | |
| 1,2,3,7,8,9-HxCDD | ND | 0.00000252 | | |
| 1,2,3,4,6,7,8-HpCDD | ND | 0.0000123 | | |
| OCDD | 0.0000601 | | | |
| 2,3,7,8-TCDF | ND | 0.000000540 | | |
| 1,2,3,7,8-PeCDF | ND | 0.00000112 | | |
| 2,3,4,7,8-PeCDF | ND | 0.00000117 | | |
| 1,2,3,4,7,8-HxCDF | ND | 0.000000771 | | |
| 1,2,3,6,7,8-HxCDF | ND | 0.000000898 | | |
| 2,3,4,6,7,8-HxCDF | ND | 0.00000110 | | |
| 1,2,3,7,8,9-HxCDF | ND | 0.00000167 | | |
| 1,2,3,4,6,7,8-HpCDF | ND | 0.00000269 | | |
| 1,2,3,4,7,8,9-HpCDF | ND | 0.00000330 | | |
| OCDF | ND | 0.0000127 | | |

| | Labeled Standard | %R | LCL-UCL[d] | Qualifiers |
|---|---|---|---|---|
| IS | 13C-2,3,7,8-TCDD | 97.8 | 25 - 164 | |
| | 13C-1,2,3,7,8-PeCDD | 105 | 25 - 181 | |
| | 13C-1,2,3,4,7,8-HxCDD | 84.2 | 32 - 141 | |
| | 13C-1,2,3,6,7,8-HxCDD | 94.0 | 28 - 130 | |
| | 13C-1,2,3,4,6,7,8-HpCDD | 86.9 | 23 - 140 | |
| | 13C-OCDD | 71.2 | 17 - 157 | |
| | 13C-2,3,7,8-TCDF | 95.3 | 24 - 169 | |
| | 13C-1,2,3,7,8-PeCDF | 95.9 | 24 - 185 | |
| | 13C-2,3,4,7,8-PeCDF | 97.1 | 21 - 178 | |
| | 13C-1,2,3,4,7,8-HxCDF | 91.9 | 26 - 152 | |
| | 13C-1,2,3,6,7,8-HxCDF | 85.8 | 26 - 123 | |
| | 13C-2,3,4,6,7,8-HxCDF | 84.1 | 28 - 136 | |
| | 13C-1,2,3,7,8,9-HxCDF | 89.1 | 29 - 147 | |
| | 13C-1,2,3,4,6,7,8-HpCDF | 84.6 | 28 - 143 | |
| | 13C-1,2,3,4,7,8,9-HpCDF | 83.9 | 26 - 138 | |
| | 13C-OCDF | 73.2 | 17 - 157 | |
| CRS | 37Cl-2,3,7,8-TCDD | 90.6 | 35 - 197 | |

| Totals | | | | |
|---|---|---|---|---|
| Total TCDD | ND | 0.000000544 | | |
| Total PeCDD | ND | 0.00000167 | | |
| Total HxCDD | ND | 0.00000265 | | |
| Total HpCDD | 0.00000814 | J/DNQ | | |
| Total TCDF | ND | 0.000000540 | | |
| Total PeCDF | ND | 0.00000252 | | |
| Total HxCDF | ND | 0.00000107 | | |
| Total HpCDF | ND | UJ/ [illegible] | 0.00000427 | |

**Footnotes**

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit.

Analyst: MAS

Approved By: William J. Luksemburg 19-Dec-2008 11:18

LEVEL IV

TestAmerica
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MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 010
Report Number: IRL1710

Sampled: 12/15/08
Received: 12/15/08

## MCAWW 245.1

| Analyte | | Method | Batch | MDL Limit | Reporting Limit | Sample Result | Dilution Factor | Date Extracted | Date Analyzed | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: IRL1710-01 (Outfall 010 - Water) - cont.** | | | | | | | | | | |
| **Reporting Units: ug/L** | | | | | | | | | | |
| Mercury | U | MCAWW 245.1 | 8353495 | 0.027 | 0.2 | ND | 1 | 12/18/08 | 12/18/08 | |

LEVEL IV

**TestAmerica Irvine**

Joseph Doak
Project Manager

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 010
Report Number: IRL1710

Sampled: 12/15/08
Received: 12/15/08

## MCAWW 245.1-Diss

| Analyte | Method | Batch | MDL Limit | Reporting Limit | Sample Result | Dilution Factor | Date Extracted | Date Analyzed | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: IRL1710-01 (Outfall 010 - Water) - cont.** | | | | | | | | | |
| **Reporting Units: ug/L** | | | | | | | | | |
| Mercury-diss | MCAWW 245.1-Diss | 8353517 | 0.027 | 0.2 | ND | 1 | 12/18/08 | 12/18/08 | |

LEVEL IV

**TestAmerica Irvine**

Joseph Doak
Project Manager

Outfall 010

**TestAmerica Irvine**

## Client Sample ID: IRL1710-01

### Radiochemistry

Lab Sample ID: F8L170170-001
Work Order: K4VKX
Matrix: WATER

Date Collected: 12/15/08 1050
Date Received: 12/17/08 0930

| Parameter | Result | Qual | Total Uncert. (2 σ+/-) | RL | mdc | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|
| **Gamma Cs-137 & Hits by EPA 901.1 MOD** | | | | pCi/L | Batch # 8359107 | | Yld % |
| Cesium 137 UJ/H | -1.1 | U | 8.5 | 20.0 | 16 | 12/24/08 | 01/10/09 |
| Potassium 40 ↓ ↓ | -90 | U | 590 | | 250 | 12/24/08 | 01/10/09 |
| **Gross Alpha/Beta EPA 900** | | | | pCi/L | Batch # 8353165 | | Yld % |
| Gross Alpha UJ/R | 0.39 | U | 0.91 | 3.00 | 1.6 | 12/18/08 | 12/21/08 |
| Gross Beta | 4.51 | | 0.96 | 4.00 | 0.94 | 12/18/08 | 12/21/08 |
| **Radium 226 by EPA 903.0 MOD** | | | | pCi/L | Batch # 8352386 | | Yld % 86 |
| Radium (226) UJ/L, ~~III~~ | 0.048 | U | 0.046 | 1.00 | 0.070 | 12/17/08 | 01/12/09 |
| **Radium 228 by GFPC EPA 904 MOD** | | | | pCi/L | Batch # 8352387 | | Yld % 66 |
| Radium 228 UJ/~~III~~ | -0.07 | U | 0.26 | 1.00 | 0.48 | 12/17/08 | 01/09/09 |
| **TRITIUM (Distill) by EPA 906.0 MOD** | | | | pCi/L | Batch # 9012073 | | Yld % |
| Tritium U | 10 | U | 190 | 500 | 340 | 01/12/09 | 01/13/09 |
| **SR-90 BY GFPC EPA-905 MOD** | | | | pCi/L | Batch # 8352461 | | Yld % 53 |
| Strontium 90 U | 0.22 | U | 0.45 | 3.00 | 0.76 | 12/17/08 | 01/10/09 |
| **Total Uranium by KPA ASTM 5174-91** | | | | pCi/L | Batch # 8354127 | | Yld % |
| Total Uranium U | 0.156 | U | 0.016 | 0.693 | 0.21 | 12/19/08 | 12/21/08 |

LEVEL IV

**NOTE(S)**

**Data are incomplete without the case narrative.**

**MDC is determined by instrument performance only.**
**Bold results are greater than the MDC.**

**U Result is less than the sample detection limit.**

# APPENDIX G

## Section 18

Outfall 010, December 15, 2008

Test America Analytical Laboratory Report

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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# LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project: Routine Outfall 010

Sampled: 12/15/08
Received: 12/15/08
Issued: 01/29/09 14:05

NELAP #01108CA California ELAP#2706 CSDLAC #10256 AZ #AZ0671 NV #CA01531



## SAMPLE CROSS REFERENCE

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

ADDITIONAL INFORMATION: This report has been revised to correct the Total Uranium units to pCi/L per client request (the original incorrect report from TestAmerica St. Louis Laboratory has been removed).

| LABORATORY ID | CLIENT ID | MATRIX |
|---|---|---|
| IRL1710-01 | Outfall 010 | Water |

Reviewed By:

**TestAmerica Irvine**

Trupti Mistry For Joseph Doak
Project Manager

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MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 010
Report Number: IRL1710

Sampled: 12/15/08
Received: 12/15/08

## METALS

| Analyte | Method | Batch | MDL Limit | Reporting Limit | Sample Result | Dilution Factor | Date Extracted | Date Analyzed | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: IRL1710-01 (Outfall 010 - Water)** | | | | | | | | | |
| **Reporting Units: ug/l** | | | | | | | | | |
| **Antimony** | EPA 200.8 | 8L16092 | 0.20 | 2.0 | **0.36** | 1 | 12/16/08 | 12/17/08 | J |
| Cadmium | EPA 200.8 | 8L16092 | 0.11 | 1.0 | ND | 1 | 12/16/08 | 12/17/08 | |
| **Copper** | EPA 200.8 | 8L16092 | 0.75 | 2.0 | **1.5** | 1 | 12/16/08 | 12/17/08 | J |
| **Lead** | EPA 200.8 | 8L16092 | 0.30 | 1.0 | **0.53** | 1 | 12/16/08 | 12/17/08 | J |
| Thallium | EPA 200.8 | 8L16092 | 0.20 | 1.0 | ND | 1 | 12/16/08 | 12/17/08 | |

**TestAmerica Irvine**

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MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 010
Report Number: IRL1710

Sampled: 12/15/08
Received: 12/15/08

## DISSOLVED METALS

| Analyte | Method | Batch | MDL Limit | Reporting Limit | Sample Result | Dilution Factor | Date Extracted | Date Analyzed | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: IRL1710-01 (Outfall 010 - Water) - cont.** | | | | | | | | | |
| **Reporting Units: ug/l** | | | | | | | | | |
| **Antimony** | EPA 200.8-Diss | 8L17121 | 0.20 | 2.0 | **0.52** | 1 | 12/17/08 | 12/18/08 | B, J |
| Cadmium | EPA 200.8-Diss | 8L17121 | 0.11 | 1.0 | ND | 1 | 12/17/08 | 12/18/08 | |
| **Copper** | EPA 200.8-Diss | 8L17121 | 0.75 | 2.0 | **1.1** | 1 | 12/17/08 | 12/18/08 | B, J |
| Lead | EPA 200.8-Diss | 8L17121 | 0.30 | 1.0 | ND | 1 | 12/17/08 | 12/18/08 | |
| Thallium | EPA 200.8-Diss | 8L17121 | 0.20 | 1.0 | ND | 1 | 12/17/08 | 12/18/08 | |

**TestAmerica Irvine**

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618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 010
Report Number: IRL1710

Sampled: 12/15/08
Received: 12/15/08

## INORGANICS

| Analyte | Method | Batch | MDL Limit | Reporting Limit | Sample Result | Dilution Factor | Date Extracted | Date Analyzed | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: IRL1710-01 (Outfall 010 - Water) - cont.** | | | | | | | | | |
| **Reporting Units: mg/l** | | | | | | | | | |
| **Hexane Extractable Material (Oil & Grease)** | EPA 1664A | 8L19123 | 1.3 | 4.8 | **3.3** | 1 | 12/19/08 | 12/19/08 | B, J |
| **Chloride** | EPA 300.0 | 8L15075 | 2.5 | 5.0 | **32** | 10 | 12/15/08 | 12/16/08 | |
| **Nitrate/Nitrite-N** | EPA 300.0 | 8L16086 | 0.15 | 0.26 | **1.2** | 1 | 12/16/08 | 12/16/08 | |
| **Sulfate** | EPA 300.0 | 8L15075 | 0.20 | 0.50 | **24** | 1 | 12/15/08 | 12/16/08 | |
| **Total Dissolved Solids** | SM2540C | 8L16052 | 10 | 10 | **190** | 1 | 12/16/08 | 12/17/08 | |

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MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 010
Report Number: IRL1710

Sampled: 12/15/08
Received: 12/15/08

## DIOXIN (EPA 1613)

| Analyte | Method | Batch | MDL Limit | Reporting Limit | Sample Result | Dilution Factor | Date Extracted | Date Analyzed | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: IRL1710-01 (Outfall 010 - Water) - cont.** | | | | | | | | | |
| **Reporting Units: ug/L** | | | | | | | | | |
| 2,3,7,8-TCDD | 1613-Dioxin-HR Alta | 1770 | 0.00000054 | 0.00000488 | ND | 1 | 12/17/08 | 12/18/08 | |
| 1,2,3,7,8-PeCDD | 1613-Dioxin-HR Alta | 1770 | 0.00000167 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| 1,2,3,4,7,8-HxCDD | 1613-Dioxin-HR Alta | 1770 | 0.00000288 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| 1,2,3,6,7,8-HxCDD | 1613-Dioxin-HR Alta | 1770 | 0.00000257 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| 1,2,3,7,8,9-HxCDD | 1613-Dioxin-HR Alta | 1770 | 0.00000252 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| 1,2,3,4,6,7,8-HpCDD | 1613-Dioxin-HR Alta | 1770 | 0.0000123 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| **OCDD** | 1613-Dioxin-HR Alta | 1770 | 0.00000245 | 0.0000488 | **0.0000601** | 1 | 12/17/08 | 12/18/08 | |
| 2,3,7,8-TCDF | 1613-Dioxin-HR Alta | 1770 | 0.00000054 | 0.00000488 | ND | 1 | 12/17/08 | 12/18/08 | |
| 1,2,3,7,8-PeCDF | 1613-Dioxin-HR Alta | 1770 | 0.00000112 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| 2,3,4,7,8-PeCDF | 1613-Dioxin-HR Alta | 1770 | 0.00000117 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| 1,2,3,4,7,8-HxCDF | 1613-Dioxin-HR Alta | 1770 | 0.00000077 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| 1,2,3,6,7,8-HxCDF | 1613-Dioxin-HR Alta | 1770 | 0.00000089 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| 2,3,4,6,7,8-HxCDF | 1613-Dioxin-HR Alta | 1770 | 0.0000011 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| 1,2,3,7,8,9-HxCDF | 1613-Dioxin-HR Alta | 1770 | 0.00000167 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| 1,2,3,4,6,7,8-HpCDF | 1613-Dioxin-HR Alta | 1770 | 0.00000269 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| 1,2,3,4,7,8,9-HpCDF | 1613-Dioxin-HR Alta | 1770 | 0.0000033 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| OCDF | 1613-Dioxin-HR Alta | 1770 | 0.0000127 | 0.0000488 | ND | 1 | 12/17/08 | 12/18/08 | |
| Total TCDD | 1613-Dioxin-HR Alta | 1770 | .00000054 | 0.00000488 | ND | 1 | 12/17/08 | 12/18/08 | |
| Total PeCDD | 1613-Dioxin-HR Alta | 1770 | .00000167 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| Total HxCDD | 1613-Dioxin-HR Alta | 1770 | .00000252 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| **Total HpCDD** | 1613-Dioxin-HR Alta | 1770 | .0000123 | 0.0000244 | **0.00000814** | 1 | 12/17/08 | 12/18/08 | |
| Total TCDF | 1613-Dioxin-HR Alta | 1770 | .00000054 | 0.00000488 | ND | 1 | 12/17/08 | 12/18/08 | |
| Total PeCDF | 1613-Dioxin-HR Alta | 1770 | .00000112 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| Total HxCDF | 1613-Dioxin-HR Alta | 1770 | .00000077 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| Total HpCDF | 1613-Dioxin-HR Alta | 1770 | .00000269 | 0.0000244 | ND | 1 | 12/17/08 | 12/18/08 | |
| *Surrogate: 13C-2,3,7,8-TCDD (25-164%)* | | | | | *97.8 %* | | | | |
| *Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)* | | | | | *105 %* | | | | |
| *Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)* | | | | | *84.2 %* | | | | |
| *Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)* | | | | | *94 %* | | | | |
| *Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)* | | | | | *86.9 %* | | | | |
| *Surrogate: 13C-OCDD (17-157%)* | | | | | *71.2 %* | | | | |
| *Surrogate: 13C-2,3,7,8-TCDF (24-169%)* | | | | | *95.3 %* | | | | |
| *Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)* | | | | | *95.9 %* | | | | |
| *Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)* | | | | | *97.1 %* | | | | |
| *Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)* | | | | | *91.9 %* | | | | |
| *Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)* | | | | | *85.8 %* | | | | |
| *Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)* | | | | | *84.1 %* | | | | |
| *Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)* | | | | | *89.1 %* | | | | |
| *Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-143%)* | | | | | *84.6 %* | | | | |
| *Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)* | | | | | *83.9 %* | | | | |
| *Surrogate: 13C-OCDF (17-157%)* | | | | | *73.2 %* | | | | |

**TestAmerica Irvine**

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 010
Report Number: IRL1710

Sampled: 12/15/08
Received: 12/15/08

## DIOXIN (EPA 1613)

| Analyte | Method | Batch | MDL Limit | Reporting Limit | Sample Result | Dilution Factor | Date Extracted | Date Analyzed | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: IRL1710-01 (Outfall 010 - Water) - cont.** | | | | | | | | | |
| **Reporting Units: ug/L** | | | | | | | | | |
| *Surrogate: 37Cl-2,3,7,8-TCDD (35-197%)* | | | | | *90.6 %* | | | | |

**TestAmerica Irvine**

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 010
Report Number: IRL1710

Sampled: 12/15/08
Received: 12/15/08

## MCAWW 245.1

| Analyte | Method | Batch | MDL Limit | Reporting Limit | Sample Result | Dilution Factor | Date Extracted | Date Analyzed | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: IRL1710-01 (Outfall 010 - Water) - cont.** | | | | | | | | | |
| **Reporting Units: ug/L** | | | | | | | | | |
| Mercury | MCAWW 245.1 | 8353495 | 0.027 | 0.2 | ND | 1 | 12/18/08 | 12/18/08 | |

**TestAmerica Irvine**

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618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 010
Report Number: IRL1710

Sampled: 12/15/08
Received: 12/15/08

## MCAWW 245.1-Diss

| Analyte | Method | Batch | MDL Limit | Reporting Limit | Sample Result | Dilution Factor | Date Extracted | Date Analyzed | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: IRL1710-01 (Outfall 010 - Water) - cont.** | | | | | | | | | |
| **Reporting Units: ug/L** | | | | | | | | | |
| Mercury-diss | MCAWW 245.1-Diss | 8353517 | 0.027 | 0.2 | ND | 1 | 12/18/08 | 12/18/08 | |

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Report Number: IRL1710

Sampled: 12/15/08
Received: 12/15/08

## SHORT HOLD TIME DETAIL REPORT

| | Hold Time (in days) | Date/Time Sampled | Date/Time Received | Date/Time Extracted | Date/Time Analyzed |
|---|---|---|---|---|---|
| **Sample ID: Outfall 010 (IRL1710-01) - Water** | | | | | |
| EPA 300.0 | 2 | 12/15/2008 10:50 | 12/15/2008 18:15 | 12/16/2008 13:00 | 12/16/2008 14:18 |

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Report Number: IRL1710

Sampled: 12/15/08
Received: 12/15/08

## METHOD BLANK/QC DATA

## METALS

| Analyte | Result | Reporting Limit | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: 8L16092 Extracted: 12/16/08** | | | | | | | | | | | |
| **Blank Analyzed: 12/17/2008 (8L16092-BLK1)** | | | | | | | | | | | |
| Antimony | ND | 2.0 | 0.20 | ug/l | | | | | | | |
| Cadmium | ND | 1.0 | 0.11 | ug/l | | | | | | | |
| Copper | ND | 2.0 | 0.75 | ug/l | | | | | | | |
| Lead | ND | 1.0 | 0.30 | ug/l | | | | | | | |
| Thallium | ND | 1.0 | 0.20 | ug/l | | | | | | | |
| **LCS Analyzed: 12/17/2008 (8L16092-BS1)** | | | | | | | | | | | |
| Antimony | 83.1 | 2.0 | 0.20 | ug/l | 80.0 | | 104 | 85-115 | | | |
| Cadmium | 81.2 | 1.0 | 0.11 | ug/l | 80.0 | | 101 | 85-115 | | | |
| Copper | 78.8 | 2.0 | 0.75 | ug/l | 80.0 | | 99 | 85-115 | | | |
| Lead | 79.1 | 1.0 | 0.30 | ug/l | 80.0 | | 99 | 85-115 | | | |
| Thallium | 81.4 | 1.0 | 0.20 | ug/l | 80.0 | | 102 | 85-115 | | | |
| **Matrix Spike Analyzed: 12/17/2008 (8L16092-MS1)** | | | | | | **Source: IRL1721-01** | | | | | |
| Antimony | 82.4 | 2.0 | 0.20 | ug/l | 80.0 | 2.39 | 100 | 70-130 | | | |
| Cadmium | 79.8 | 1.0 | 0.11 | ug/l | 80.0 | 2.50 | 97 | 70-130 | | | |
| Copper | 81.9 | 2.0 | 0.75 | ug/l | 80.0 | 4.87 | 96 | 70-130 | | | |
| Lead | 81.9 | 1.0 | 0.30 | ug/l | 80.0 | 2.16 | 100 | 70-130 | | | |
| Thallium | 85.6 | 1.0 | 0.20 | ug/l | 80.0 | ND | 107 | 70-130 | | | |
| **Matrix Spike Analyzed: 12/17/2008 (8L16092-MS2)** | | | | | | **Source: IRL1706-01** | | | | | |
| Antimony | 84.1 | 2.0 | 0.20 | ug/l | 80.0 | 0.415 | 105 | 70-130 | | | |
| Cadmium | 81.1 | 1.0 | 0.11 | ug/l | 80.0 | ND | 101 | 70-130 | | | |
| Copper | 78.8 | 2.0 | 0.75 | ug/l | 80.0 | 0.930 | 97 | 70-130 | | | |
| Lead | 82.0 | 1.0 | 0.30 | ug/l | 80.0 | ND | 102 | 70-130 | | | |
| Thallium | 84.1 | 1.0 | 0.20 | ug/l | 80.0 | ND | 105 | 70-130 | | | |
| **Matrix Spike Dup Analyzed: 12/17/2008 (8L16092-MSD1)** | | | | | | **Source: IRL1721-01** | | | | | |
| Antimony | 86.2 | 2.0 | 0.20 | ug/l | 80.0 | 2.39 | 105 | 70-130 | 5 | 20 | |
| Cadmium | 82.8 | 1.0 | 0.11 | ug/l | 80.0 | 2.50 | 100 | 70-130 | 4 | 20 | |
| Copper | 84.2 | 2.0 | 0.75 | ug/l | 80.0 | 4.87 | 99 | 70-130 | 3 | 20 | |
| Lead | 86.4 | 1.0 | 0.30 | ug/l | 80.0 | 2.16 | 105 | 70-130 | 5 | 20 | |
| Thallium | 90.1 | 1.0 | 0.20 | ug/l | 80.0 | ND | 113 | 70-130 | 5 | 20 | |

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 010
Report Number: IRL1710

Sampled: 12/15/08
Received: 12/15/08

## METHOD BLANK/QC DATA

## DISSOLVED METALS

| Analyte | Result | Reporting Limit | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: 8L17121 Extracted: 12/17/08** | | | | | | | | | | | |
| **Blank Analyzed: 12/18/2008 (8L17121-BLK1)** | | | | | | | | | | | |
| Antimony | 0.481 | 2.0 | 0.20 | ug/l | | | | | | | *J* |
| Cadmium | ND | 1.0 | 0.11 | ug/l | | | | | | | |
| Copper | 1.97 | 2.0 | 0.75 | ug/l | | | | | | | *J* |
| Lead | ND | 1.0 | 0.30 | ug/l | | | | | | | |
| Thallium | ND | 1.0 | 0.20 | ug/l | | | | | | | |
| **LCS Analyzed: 12/18/2008 (8L17121-BS1)** | | | | | | | | | | | |
| Antimony | 82.2 | 2.0 | 0.20 | ug/l | 80.0 | | 103 | 85-115 | | | |
| Cadmium | 81.0 | 1.0 | 0.11 | ug/l | 80.0 | | 101 | 85-115 | | | |
| Copper | 81.1 | 2.0 | 0.75 | ug/l | 80.0 | | 101 | 85-115 | | | |
| Lead | 85.0 | 1.0 | 0.30 | ug/l | 80.0 | | 106 | 85-115 | | | |
| Thallium | 89.6 | 1.0 | 0.20 | ug/l | 80.0 | | 112 | 85-115 | | | |
| **Matrix Spike Analyzed: 12/18/2008 (8L17121-MS1)** | | | | | | **Source: IRL1362-01** | | | | | |
| Antimony | 79.1 | 2.0 | 0.20 | ug/l | 80.0 | 0.572 | 98 | 70-130 | | | |
| Cadmium | 74.4 | 1.0 | 0.11 | ug/l | 80.0 | ND | 93 | 70-130 | | | |
| Copper | 72.4 | 2.0 | 0.75 | ug/l | 80.0 | 1.31 | 89 | 70-130 | | | |
| Lead | 75.0 | 1.0 | 0.30 | ug/l | 80.0 | ND | 94 | 70-130 | | | |
| Thallium | 79.7 | 1.0 | 0.20 | ug/l | 80.0 | ND | 100 | 70-130 | | | |
| **Matrix Spike Dup Analyzed: 12/18/2008 (8L17121-MSD1)** | | | | | | **Source: IRL1362-01** | | | | | |
| Antimony | 88.0 | 2.0 | 0.20 | ug/l | 80.0 | 0.572 | 109 | 70-130 | 11 | 20 | |
| Cadmium | 82.4 | 1.0 | 0.11 | ug/l | 80.0 | ND | 103 | 70-130 | 10 | 20 | |
| Copper | 79.1 | 2.0 | 0.75 | ug/l | 80.0 | 1.31 | 97 | 70-130 | 9 | 20 | |
| Lead | 81.5 | 1.0 | 0.30 | ug/l | 80.0 | ND | 102 | 70-130 | 8 | 20 | |
| Thallium | 88.2 | 1.0 | 0.20 | ug/l | 80.0 | ND | 110 | 70-130 | 10 | 20 | |

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## METHOD BLANK/QC DATA

## INORGANICS

| Analyte | Result | Reporting Limit | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: 8L15075 Extracted: 12/15/08** | | | | | | | | | | | |
| **Blank Analyzed: 12/15/2008 (8L15075-BLK1)** | | | | | | | | | | | |
| Chloride | ND | 0.50 | 0.25 | mg/l | | | | | | | |
| Sulfate | ND | 0.50 | 0.20 | mg/l | | | | | | | |
| **LCS Analyzed: 12/15/2008 (8L15075-BS1)** | | | | | | | | | | | |
| Chloride | 4.94 | 0.50 | 0.25 | mg/l | 5.00 | | 99 | 90-110 | | | |
| Sulfate | 10.1 | 0.50 | 0.20 | mg/l | 10.0 | | 101 | 90-110 | | | |
| **Matrix Spike Analyzed: 12/15/2008 (8L15075-MS1)** | | | | | | **Source: IRL1621-01** | | | | | |
| Chloride | 116 | 20 | 10 | mg/l | 50.0 | 71.2 | 89 | 80-120 | | | |
| Sulfate | 845 | 20 | 8.0 | mg/l | 100 | 757 | 88 | 80-120 | | | *MHA* |
| **Matrix Spike Analyzed: 12/15/2008 (8L15075-MS2)** | | | | | | **Source: IRL1706-01** | | | | | |
| Chloride | 5.40 | 0.50 | 0.25 | mg/l | 5.00 | 0.625 | 95 | 80-120 | | | |
| Sulfate | 14.0 | 0.50 | 0.20 | mg/l | 10.0 | 4.57 | 95 | 80-120 | | | |
| **Matrix Spike Dup Analyzed: 12/15/2008 (8L15075-MSD1)** | | | | | | **Source: IRL1621-01** | | | | | |
| Chloride | 111 | 20 | 10 | mg/l | 50.0 | 71.2 | 80 | 80-120 | 4 | 20 | |
| Sulfate | 834 | 20 | 8.0 | mg/l | 100 | 757 | 77 | 80-120 | 1 | 20 | *MHA* |
| **Batch: 8L16052 Extracted: 12/16/08** | | | | | | | | | | | |
| **Blank Analyzed: 12/16/2008 (8L16052-BLK1)** | | | | | | | | | | | |
| Total Dissolved Solids | ND | 10 | 10 | mg/l | | | | | | | |
| **LCS Analyzed: 12/16/2008 (8L16052-BS1)** | | | | | | | | | | | |
| Total Dissolved Solids | 996 | 10 | 10 | mg/l | 1000 | | 100 | 90-110 | | | |

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Report Number: IRL1710

Sampled: 12/15/08
Received: 12/15/08

## METHOD BLANK/QC DATA

## INORGANICS

| Analyte | Result | Reporting Limit | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: 8L16052 Extracted: 12/16/08** | | | | | | | | | | | |
| **Duplicate Analyzed: 12/16/2008 (8L16052-DUP1)** | | | | | | **Source: IRL1707-01** | | | | | |
| Total Dissolved Solids | 569 | 10 | 10 | mg/l | | 577 | | | 1 | 10 | |
| **Batch: 8L16086 Extracted: 12/16/08** | | | | | | | | | | | |
| **Blank Analyzed: 12/16/2008 (8L16086-BLK1)** | | | | | | | | | | | |
| Nitrate/Nitrite-N | ND | 0.26 | 0.15 | mg/l | | | | | | | |
| **Batch: 8L19123 Extracted: 12/19/08** | | | | | | | | | | | |
| **Blank Analyzed: 12/19/2008 (8L19123-BLK1)** | | | | | | | | | | | |
| Hexane Extractable Material (Oil & Grease) | 3.50 | 5.0 | 1.4 | mg/l | | | | | | | *J* |
| **LCS Analyzed: 12/19/2008 (8L19123-BS1)** | | | | | | | | | | | **MNR1** |
| Hexane Extractable Material (Oil & Grease) | 21.4 | 5.0 | 1.4 | mg/l | 20.2 | | 106 | 78-114 | | | |
| **LCS Dup Analyzed: 12/19/2008 (8L19123-BSD1)** | | | | | | | | | | | |
| Hexane Extractable Material (Oil & Grease) | 21.9 | 5.0 | 1.4 | mg/l | 20.2 | | 108 | 78-114 | 2 | 11 | |

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## METHOD BLANK/QC DATA

## DIOXIN (EPA 1613)

| Analyte | Result | Reporting Limit | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: 1770 Extracted: 12/17/08** | | | | | | | | | | | |
| **Blank Analyzed: 12/18/2008 (MB001)** | | | | | | **Source:** | | | | | |
| 2,3,7,8-TCDD | ND | 0.00000500 | 0.000000958 | ug/L | | | | 50-150 | | 25 | |
| 1,2,3,7,8-PeCDD | ND | 0.0000250 | 0.0000025 | ug/L | | | | 50-150 | | 25 | |
| 1,2,3,4,7,8-HxCDD | ND | 0.0000250 | 0.00000182 | ug/L | | | | 50-150 | | 25 | |
| 1,2,3,6,7,8-HxCDD | ND | 0.0000250 | 0.00000171 | ug/L | | | | 50-150 | | 25 | |
| 1,2,3,7,8,9-HxCDD | ND | 0.0000250 | 0.00000164 | ug/L | | | | 50-150 | | 25 | |
| 1,2,3,4,6,7,8-HpCDD | ND | 0.0000250 | 0.00000279 | ug/L | | | | 50-150 | | 25 | |
| OCDD | ND | 0.0000500 | 0.0000043 | ug/L | | | | 50-150 | | 25 | |
| 2,3,7,8-TCDF | ND | 0.00000500 | 0.000000887 | ug/L | | | | 50-150 | | 25 | |
| 1,2,3,7,8-PeCDF | ND | 0.0000250 | 0.00000118 | ug/L | | | | 50-150 | | 25 | |
| 2,3,4,7,8-PeCDF | ND | 0.0000250 | 0.00000107 | ug/L | | | | 50-150 | | 25 | |
| 1,2,3,4,7,8-HxCDF | ND | 0.0000250 | 0.000000512 | ug/L | | | | 50-150 | | 25 | |
| 1,2,3,6,7,8-HxCDF | ND | 0.0000250 | 0.000000592 | ug/L | | | | 50-150 | | 25 | |
| 2,3,4,6,7,8-HxCDF | ND | 0.0000250 | 0.000000696 | ug/L | | | | 50-150 | | 25 | |
| 1,2,3,7,8,9-HxCDF | ND | 0.0000250 | 0.00000105 | ug/L | | | | 50-150 | | 25 | |
| 1,2,3,4,6,7,8-HpCDF | ND | 0.0000250 | 0.00000153 | ug/L | | | | 50-150 | | 25 | |
| 1,2,3,4,7,8,9-HpCDF | ND | 0.0000250 | 0.00000182 | ug/L | | | | 50-150 | | 25 | |
| OCDF | ND | 0.0000500 | 0.00000159 | ug/L | | | | 50-150 | | 25 | |
| Total TCDD | ND | 0.00000500 | .000000958 | ug/L | | | | 50-150 | | 25 | |
| Total PeCDD | ND | 0.0000250 | .0000025 | ug/L | | | | 50-150 | | 25 | |
| Total HxCDD | ND | 0.0000250 | .00000164 | ug/L | | | | 50-150 | | 25 | |
| Total HpCDD | ND | 0.0000250 | .00000279 | ug/L | | | | 50-150 | | 25 | |
| Total TCDF | ND | 0.00000500 | .000000887 | ug/L | | | | 50-150 | | 25 | |
| Total PeCDF | ND | 0.0000250 | .00000107 | ug/L | | | | 50-150 | | 25 | |
| Total HxCDF | ND | 0.0000250 | .000000512 | ug/L | | | | 50-150 | | 25 | |
| Total HpCDF | ND | 0.0000250 | .00000153 | ug/L | | | | 50-150 | | 25 | |
| *Surrogate: 13C-2,3,7,8-TCDD* | *0.00188* | | | *ug/L* | *2000* | | *94* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,7,8-PeCDD* | *0.00202* | | | *ug/L* | *2000* | | *101* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,4,7,8-HxCDD* | *0.00169* | | | *ug/L* | *2000* | | *84* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,6,7,8-HxCDD* | *0.00191* | | | *ug/L* | *2000* | | *96* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,4,6,7,8-HpCDD* | *0.00179* | | | *ug/L* | *2000* | | *90* | *50-150* | | | |
| *Surrogate: 13C-OCDD* | *0.00297* | | | *ug/L* | *4000* | | *74* | *50-150* | | | |
| *Surrogate: 13C-2,3,7,8-TCDF* | *0.00186* | | | *ug/L* | *2000* | | *93* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,7,8-PeCDF* | *0.00180* | | | *ug/L* | *2000* | | *90* | *50-150* | | | |
| *Surrogate: 13C-2,3,4,7,8-PeCDF* | *0.00194* | | | *ug/L* | *2000* | | *97* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,4,7,8-HxCDF* | *0.00182* | | | *ug/L* | *2000* | | *91* | *50-150* | | | |

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Received: 12/15/08

## METHOD BLANK/QC DATA

## DIOXIN (EPA 1613)

| Analyte | Result | Reporting Limit | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: 1770 Extracted: 12/17/08** | | | | | | | | | | | |
| **Blank Analyzed: 12/18/2008 (MB001)** | | | | | | **Source:** | | | | | |
| *Surrogate: 13C-1,2,3,6,7,8-HxCDF* | *0.00172* | | | *ug/L* | *2000* | | *86* | *50-150* | | | |
| *Surrogate: 13C-2,3,4,6,7,8-HxCDF* | *0.00174* | | | *ug/L* | *2000* | | *87* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,7,8,9-HxCDF* | *0.00180* | | | *ug/L* | *2000* | | *90* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,4,6,7,8-HpCDF* | *0.00160* | | | *ug/L* | *2000* | | *80* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,4,7,8,9-HpCDF* | *0.00166* | | | *ug/L* | *2000* | | *83* | *50-150* | | | |
| *Surrogate: 13C-OCDF* | *0.00312* | | | *ug/L* | *4000* | | *78* | *50-150* | | | |
| *Surrogate: 37Cl-2,3,7,8-TCDD* | *0.000760* | | | *ug/L* | *800* | | *95* | *50-150* | | | |
| **LCS Analyzed: 12/18/2008 (OPR001)** | | | | | | **Source:** | | | | | |
| 2,3,7,8-TCDD | 8.63 | 5.00 | 0.840 | ug/L | 10 | | 86 | 50-150 | | 25 | |
| 1,2,3,7,8-PeCDD | 47.8 | 25.0 | 1.59 | ug/L | 50 | | 96 | 50-150 | | 25 | |
| 1,2,3,4,7,8-HxCDD | 46.8 | 25.0 | 1.18 | ug/L | 50 | | 94 | 50-150 | | 25 | |
| 1,2,3,6,7,8-HxCDD | 46.3 | 25.0 | 1.69 | ug/L | 50 | | 93 | 50-150 | | 25 | |
| 1,2,3,7,8,9-HxCDD | 45.7 | 25.0 | 1.18 | ug/L | 50 | | 91 | 50-150 | | 25 | |
| 1,2,3,4,6,7,8-HpCDD | 46.3 | 25.0 | 2.01 | ug/L | 50 | | 93 | 50-150 | | 25 | |
| OCDD | 95.6 | 50.0 | 2.45 | ug/L | 100 | | 96 | 50-150 | | 25 | |
| 2,3,7,8-TCDF | 8.58 | 5.00 | 0.970 | ug/L | 10 | | 86 | 50-150 | | 25 | |
| 1,2,3,7,8-PeCDF | 46.7 | 25.0 | 1.09 | ug/L | 50 | | 93 | 50-150 | | 25 | |
| 2,3,4,7,8-PeCDF | 48.7 | 25.0 | 1.48 | ug/L | 50 | | 97 | 50-150 | | 25 | |
| 1,2,3,4,7,8-HxCDF | 45.2 | 25.0 | 1.06 | ug/L | 50 | | 90 | 50-150 | | 25 | |
| 1,2,3,6,7,8-HxCDF | 47.5 | 25.0 | 0.730 | ug/L | 50 | | 95 | 50-150 | | 25 | |
| 2,3,4,6,7,8-HxCDF | 45.7 | 25.0 | 1.26 | ug/L | 50 | | 91 | 50-150 | | 25 | |
| 1,2,3,7,8,9-HxCDF | 46.6 | 25.0 | 0.940 | ug/L | 50 | | 93 | 50-150 | | 25 | |
| 1,2,3,4,6,7,8-HpCDF | 45.0 | 25.0 | 1.70 | ug/L | 50 | | 90 | 50-150 | | 25 | |
| 1,2,3,4,7,8,9-HpCDF | 44.9 | 25.0 | 0.960 | ug/L | 50 | | 90 | 50-150 | | 25 | |
| OCDF | 89.5 | 50.0 | 3.66 | ug/L | 100 | | 90 | 50-150 | | 25 | |
| *Surrogate: 13C-2,3,7,8-TCDD* | *89.2* | | | *ug/L* | *100* | | *89* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,7,8-PeCDD* | *96.7* | | | *ug/L* | *100* | | *97* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,4,7,8-HxCDD* | *77.1* | | | *ug/L* | *100* | | *77* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,6,7,8-HxCDD* | *91.1* | | | *ug/L* | *100* | | *91* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,4,6,7,8-HpCDD* | *84.0* | | | *ug/L* | *100* | | *84* | *50-150* | | | |
| *Surrogate: 13C-OCDD* | *136* | | | *ug/L* | *200* | | *68* | *50-150* | | | |
| *Surrogate: 13C-2,3,7,8-TCDF* | *88.6* | | | *ug/L* | *100* | | *89* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,7,8-PeCDF* | *88.4* | | | *ug/L* | *100* | | *88* | *50-150* | | | |
| *Surrogate: 13C-2,3,4,7,8-PeCDF* | *91.1* | | | *ug/L* | *100* | | *91* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,4,7,8-HxCDF* | *88.6* | | | *ug/L* | *100* | | *89* | *50-150* | | | |

**TestAmerica Irvine**

Trupti Mistry For Joseph Doak
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 010
Report Number: IRL1710

Sampled: 12/15/08
Received: 12/15/08

## METHOD BLANK/QC DATA

## DIOXIN (EPA 1613)

| Analyte | Result | Reporting Limit | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: 1770 Extracted: 12/17/08** | | | | | | | | | | | |
| **LCS Analyzed: 12/18/2008 (OPR001)** | | | | | | **Source:** | | | | | |
| *Surrogate: 13C-1,2,3,6,7,8-HxCDF* | *81.1* | | | *ug/L* | *100* | | *81* | *50-150* | | | |
| *Surrogate: 13C-2,3,4,6,7,8-HxCDF* | *81.0* | | | *ug/L* | *100* | | *81* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,7,8,9-HxCDF* | *83.5* | | | *ug/L* | *100* | | *84* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,4,6,7,8-HpCDF* | *74.7* | | | *ug/L* | *100* | | *75* | *50-150* | | | |
| *Surrogate: 13C-1,2,3,4,7,8,9-HpCDF* | *79.5* | | | *ug/L* | *100* | | *80* | *50-150* | | | |
| *Surrogate: 13C-OCDF* | *146* | | | *ug/L* | *200* | | *73* | *50-150* | | | |
| *Surrogate: 37Cl-2,3,7,8-TCDD* | *33.6* | | | *ug/L* | *40* | | *84* | *50-150* | | | |

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## METHOD BLANK/QC DATA

## MCAWW 245.1

| Analyte | Result | Reporting Limit | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: 8353495 Extracted: 12/18/08** | | | | | | | | | | | |
| **Matrix Spike Dup Analyzed: 12/18/2008 (D8L170200001D)** | | | | | | **Source: D8L170200001** | | | | | |
| Mercury | 4.64 | 0.2 | 0.027 | ug/L | 5 | ND | 93 | 90-110 | 9 | 10 | |
| **Matrix Spike Analyzed: 12/18/2008 (D8L170200001S)** | | | | | | **Source: D8L170200001** | | | | | |
| Mercury | 4.24 | 0.2 | 0.027 | ug/L | 5 | ND | 85 | 90-110 | 9 | 10 | *N* |
| **Blank Analyzed: 12/18/2008 (D8L180000495B)** | | | | | | **Source:** | | | | | |
| Mercury | ND | 0.2 | 0.027 | ug/L | | | | - | | | |
| **LCS Analyzed: 12/18/2008 (D8L180000495C)** | | | | | | **Source:** | | | | | |
| Mercury | 4.59 | 0.2 | 0.027 | ug/L | 5 | | 92 | 90-110 | | | |

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Received: 12/15/08

## METHOD BLANK/QC DATA

## MCAWW 245.1-Diss

| Analyte | Result | Reporting Limit | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Data Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: 8353517 Extracted: 12/18/08** | | | | | | | | | | | |
| **Matrix Spike Dup Analyzed: 12/18/2008 (D8L170200001D)** | | | | | | **Source: D8L170200001** | | | | | |
| Mercury-diss | 4.37 | 0.2 | 0.027 | ug/L | 5 | ND | 87 | 90-110 | 9 | 10 | *N* |
| **Matrix Spike Analyzed: 12/18/2008 (D8L170200001S)** | | | | | | **Source: D8L170200001** | | | | | |
| Mercury-diss | 4.8 | 0.2 | 0.027 | ug/L | 5 | ND | 96 | 90-110 | 9 | 10 | |
| **Blank Analyzed: 12/18/2008 (D8L180000517B)** | | | | | | **Source:** | | | | | |
| Mercury-diss | ND | 0.2 | 0.027 | ug/L | | | | - | | | |
| **LCS Analyzed: 12/18/2008 (D8L180000517C)** | | | | | | **Source:** | | | | | |
| Mercury-diss | 4.63 | 0.2 | 0.027 | ug/L | 5 | | 93 | 90-110 | | | |

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## Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

| LabNumber | Analysis | Analyte | Units | Result | MRL | Compliance Limit |
|---|---|---|---|---|---|---|
| IRL1710-01 | 1664-HEM | Hexane Extractable Material (Oil & Greas | mg/l | 3.35 | 4.8 | 15 |
| IRL1710-01 | Antimony-200.8 | Antimony | ug/l | 0.36 | 2.0 | 6 |
| IRL1710-01 | Cadmium-200.8 | Cadmium | ug/l | 0.093 | 1.0 | 4 |
| IRL1710-01 | Chloride - 300.0 | Chloride | mg/l | 32 | 5.0 | 150 |
| IRL1710-01 | Copper-200.8 | Copper | ug/l | 1.52 | 2.0 | 14 |
| IRL1710-01 | Lead-200.8 | Lead | ug/l | 0.53 | 1.0 | 5.2 |
| IRL1710-01 | Nitrogen, NO3+NO2 -N | Nitrate/Nitrite-N | mg/l | 1.16 | 0.26 | 10 |
| IRL1710-01 | Sulfate-300.0 | Sulfate | mg/l | 24 | 0.50 | 250 |
| IRL1710-01 | TDS - SM 2540C | Total Dissolved Solids | mg/l | 193 | 10 | 850 |
| IRL1710-01 | Thallium-200.8 | Thallium | ug/l | 0.0025 | 1.0 | 2 |

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## DATA QUALIFIERS AND DEFINITIONS

| | |
|---|---|
| **B** | Analyte was detected in the associated Method Blank. |
| **J** | Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability. |
| **MHA** | Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS). |
| **MNR1** | There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate. |
| **N** | Spike sample recovery is outside control limits. |
| **ND** | Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified. |
| **RPD** | Relative Percent Difference |

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Sampled: 12/15/08
Received: 12/15/08

## Certification Summary

### TestAmerica Irvine

| Method | Matrix | Nelac | California |
|---|---|---|---|
| EPA 1664A | Water | X | X |
| EPA 200.8-Diss | Water | X | X |
| EPA 200.8 | Water | X | X |
| EPA 300.0 | Water | X | X |
| SM2540C | Water | X | |

*Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com*

### Subcontracted Laboratories

**Alta Analytical Perspectives**
2714 Exchange Drive - Wilmington, NC 28405
Method Performed: 1613-Dioxin-HR Alta
Samples: IRL1710-01

**Aquatic Testing Laboratories-SUB** *California Cert #1775*
4350 Transport Street, Unit 107 - Ventura, CA 93003
Analysis Performed: Bioassay-7 dy Chrnic
Samples: IRL1710-01

**TestAmerica Denver**
4955 Yarrow Street - Arvada, CO 80002
Method Performed: MCAWW 245.1
Samples: IRL1710-01

Method Performed: MCAWW 245.1-Diss
Samples: IRL1710-01

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Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 010
Report Number: IRL1710

Sampled: 12/15/08
Received: 12/15/08

**TestAmerica St. Louis**

13715 Rider Trail North - Earth City, MO 63045

Analysis Performed: Gamma Spec
Samples: IRL1710-01

Analysis Performed: Gross Alpha
Samples: IRL1710-01

Analysis Performed: Gross Beta
Samples: IRL1710-01

Analysis Performed: Radium, Combined
Samples: IRL1710-01

Analysis Performed: Strontium 90
Samples: IRL1710-01

Analysis Performed: Tritium
Samples: IRL1710-01

Analysis Performed: Uranium, Combined
Samples: IRL1710-01

**Vista Analytical** *NELAC Cert #02102CA, California Cert #1640, Nevada Cert #CA-413*

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR-Alta
Samples: IRL1710-01

**TestAmerica Irvine**

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