



Via FedEx

February 15, 2015  
In reply refer to SHEA-115147

Information Technology Unit  
Regional Water Quality Control Board, Los Angeles Region  
320 West 4th Street, Suite 200  
Los Angeles, California 90013

Attention: Information Technology Unit

Gentlemen:

Subject: Fourth Quarter 2014 NPDES Discharge Monitoring Report  
Compliance File CI-6027 and NPDES No. CA0001309  
Santa Susana Field Laboratory  
Ventura County, California

The Boeing Company (Boeing) hereby submits this Discharge Monitoring Report (DMR) for the Santa Susana Field Laboratory (Santa Susana Site) for the period of 1 October through 31 December 2014 (Fourth Quarter 2014). This DMR was prepared as required by and in accordance with National Pollutant Discharge Elimination System (NPDES) Permit No. CA0001309 (Permit) and under regulatory oversight of the Los Angeles Regional Water Quality Control Board (Regional Board). Included are summary tables of best management practices (BMPs), stormwater sample analytical results, rainfall quantities, liquid waste shipments, and laboratory analytical reports for stormwater samples.

Hard copies of this DMR are available to the public at California State University at Northridge Library; Simi Valley Library; and the Platt Branch of the Los Angeles Library. An electronic version of this DMR is located at:

[http://www.boeing.com/aboutus/environment/santa\\_susana/ents/monitoring\\_reports.html](http://www.boeing.com/aboutus/environment/santa_susana/ents/monitoring_reports.html)

#### **FOURTH QUARTER 2014 DMR CONTENTS**

This DMR includes the following sections and appendices:

- **Discharge Summary:** This section describes the number of rain events, number of samples collected, sample dates, and sample locations during Fourth Quarter 2014. Table I summarizes the Fourth Quarter 2014 sampling record by outfall, location, and sample type collected per the requirements of the NPDES Permit.
- **Fourth Quarter 2014 Summary of Compliance:** This section summarizes the sample results that exceeded NPDES Permit limits in Fourth Quarter 2014.
- **Fourth Quarter 2014 Santa Susana Site-wide Stormwater Pollution Prevention Plan (SWPPP)/BMP Activities:** This section presents the Santa Susana Site SWPPP activities and BMPs related to demolition, Interim Source Removal Actions (ISRA), the BMP Plan, Northern Drainage, and other activities implemented in Fourth Quarter 2014. Table II summarizes specific BMP activities by outfall location.

- **Data Validation and Quality Control:** This section discusses data validation results and any laboratory or field corrective actions.
- **Appendix A** summarizes measured Fourth Quarter 2014 precipitation at the Santa Susana Site.
- **Appendix B** tabulates liquid waste shipment details.
- **Appendix C** presents chemical analytical results of Fourth Quarter 2014 stormwater and/or receiving water samples in tabular form by outfall location, constituents evaluated (analytes), sample dates, and data validation qualifiers.
- **Appendix D** summarizes the NPDES Permit limit exceedances.
- **Appendix E** contains copies of laboratory analytical reports, chains of custody, and data validation reports.
- **Appendix F** tabulates the Reasonable Potential Analysis (RPA).

## DISCHARGE SUMMARY

The Santa Susana Site experienced four qualifying rain events that produced greater than 0.1 inches of rainfall within a 24-hour period and is preceded by at least 72 hours of dry weather during Fourth Quarter 2014 (see Appendix A). Three of the four qualifying rain events produced stormwater discharges. Onsite stormwater-related samples were collected at Outfall 002, Outfall 008 and Outfall 009; one quarterly offsite receiving water sample was collected at the Arroyo Simi – Frontier Park location in Simi Valley (RSW 002). Two additional offsite receiving water grab samples were collected at the Arroyo Simi – Frontier Park location following collection of routine stormwater samples at Outfall 009. Table I summarizes the Fourth Quarter 2014 sampling record by outfall, location and sample type collected, per NPDES Permit requirements.

**TABLE I: Sampling Record During Fourth Quarter 2014**

Date	Outfall/Location	Sample Frequency	Sample Type
12/12/14-12/13/14	Outfall 002 (South Slope)	Routine, Annual	Grab, Composite
12/17/14-12/18/14	Outfall 002 (South Slope)	Routine	Grab, Composite
12/12/14	Outfall 008 (Happy Valley Drainage)	Routine, Annual	Grab, Composite
12/2/14-12/3/14	Outfall 009 (WS-13 Drainage)	Routine	Grab, Composite
12/12/14-12/13/14	Outfall 009 (WS-13 Drainage)	Routine	Grab, Composite
12/17/14	Outfall 009 (WS-13 Drainage)	Routine	Grab, Composite
11/13/14	Arroyo Simi Frontier Park – (RSW-002)	Quarterly	Grab
12/12/14	Arroyo Simi Frontier Park – (RSW-002)	Routine	Grab
12/17/14	Arroyo Simi Frontier Park – (RSW-002)	Routine	Grab

The samples were submitted to and analyzed by TestAmerica Laboratories, Inc., a California-certified analytical laboratory in Irvine, per the NPDES Permit requirements.



## FOURTH QUARTER 2014 SUMMARY OF COMPLIANCE

As summarized in Appendix C, Fourth Quarter 2014 exceedances of Daily Maximum Permit Limit or receiving water limits included:

- Lead at Outfall 009; and
- Background dioxins (TCDD) toxic equivalent (TEQ) at Outfall 009.

### Outfall 009

#### Lead

On December 13 and 17, 2014, lead was detected in stormwater samples collected from Outfall 009 at concentrations of 8.8 and 13 micrograms per liter (ug/L), respectively, above the Daily Maximum Permit Limit of 5.2 ug/L.

Prior to this exceedance, Boeing had already been implementing corrective actions to address metals exceedances in Outfall 009. Specifically, soil removal within the Outfall 009 watershed was completed as part of ISRA activities during Fourth Quarter 2013, and lead was one of the targeted constituents of concern (COCs). Boeing believes that the lead concentrations in stormwater runoff in the Outfall 009 watershed were the result of the high intensity rain events causing erosion and total suspended solids (TSS) consisting of native sediments and soil from disturbed areas. TSS loading varies based on rainfall intensity, duration, and erosion characteristics. Based on discussions with the Santa Susana Stormwater Expert Panel (Expert Panel), freshly-applied asphalt is known to be a source of lead in surface water. A roadway along the Northern Drainage was repaved in Quarter 1 2014 and may be continuing to leach trace amounts of lead into surface runoff.

Boeing will continue to work with the Expert Panel to minimize future metals exceedances in Outfall 009. Boeing is evaluating additional corrective actions targeting localized areas along the repaved roadway (e.g., by increasing the settling time at culvert modification CM-1 which captures water from the repaved road). Boeing is committed to fulfilling the requirements of the NPDES Permit and actions taken during the Fourth Quarter 2014 to control sediment transport and minimize the occurrence of future permit exceedances are described in Table II and section Outfall 008/009 ISRA and BMP Plan-Related Activities below.

#### TCDD TEQ

On December 13 and 17, 2014, TCDD TEQ was detected above the Daily Max Permit Limit of 2.80E-08 ug/L in stormwater samples collected from Outfall 009 at 8.93E-08 and 7.50E-08 ug/L, respectively.

TCDD congeners have been frequently detected in soils determined by DTSC to have not been impacted by industrial activities and representative of background conditions at the Santa Susana Site (MWH, 2005). The presence of TCDD in both background soils and fire-related materials suggests the TCDD TEQ measured in surface water at the Santa Susana Site could originate primarily from wildfire combustion processes, regional and atmospheric deposition, and other naturally occurring sources (USEPA, 2000; MWH, 2005; MWH and Flow Science, 2006). In 2013, there were several fires in southern California, including the Springs Fire in Ventura County and the adjacent Santa Monica mountains which impacted over 24,000 acres. This fire most likely would have contributed to onsite deposition of ash. The fact that the 2,3,7,8-TCDD congener was not-detected in this sample also supports the explanation that the exceedance is not associated with a fresh anthropogenic source.

In addition, soil removal within the Outfall 009 watershed was completed as part of ISRA activities in Fourth Quarter 2013, with dioxins among the targeted COCs. Boeing believes that the dioxin concentrations in the



stormwater runoff in the Outfall 009 watershed were the result of the high intensity rain events causing erosion and TSS consisting of native sediments and soils from disturbed areas. TSS loading varies based on rainfall intensity, duration, and erosion characteristics.

Boeing is committed to fulfilling the requirements of the NPDES Permit and actions taken during Fourth Quarter 2014 to control sediment transport and minimize the occurrence of future permit exceedances are described in Table II and the section below describing Outfall 008/009 ISRA and BMP Plan-Related Activities.

**FOURTH QUARTER 2014 SANTA SUSANA SITE SWPPP/BMP ACTIVITIES**

Boeing implemented significant SWPPP- and BMP-related activities to assist in improving stormwater quality and compliance at the Santa Susana Site. Table II summarizes the activities that were completed during Fourth Quarter 2014 by outfall number. In addition to SWPPP-related activities, specific BMP projects included: demolition-related BMPs; Outfall 008/009 ISRA BMPs; BMP Plan-related BMPs; and Northern Drainage BMPs.

**TABLE II: Boeing's Fourth Quarter 2014 BMP Activities**

OUTFALL (Location)	BMP ACTIVITIES DURING FOURTH QUARTER 2014
<p>001            (South Slope below Perimeter Pond)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected outfall and flume for sediment/debris. Performed maintenance on wall behind flume. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis.</p>
<p>002            (South Slope below R-2 Ponds)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis. Replaced straw wattle behind autosamplers.</p> <p><i>Monitoring Well RS-40 Access Road BMPs:</i> Monitoring well RS-40 is within the watershed for Outfall 002. Completed replacement of gravel and installation of rolling dips, water bars and a riprap apron/berm along the access road.</p>
<p>003            (Radioactive Material Handling Facility)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis. Conducted maintenance inspections of structural BMPs, including the flow-through structure and stormwater conveyance and retention systems. Installed a jute mat and straw wattle on one side of the media bed in October.</p>



OUTFALL (Location)	BMP ACTIVITIES DURING FOURTH QUARTER 2014
<p>004            (Sodium Reactor Experiment)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected the outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis. Conducted maintenance inspections of the structural BMPs, including the flow-through structure and stormwater conveyance system. Performed a tank modification on the retention tank and installed backup batteries for the pump system.</p>
<p>005            (Former Sodium Disposal Facility - 1)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected the outfall for sediment/debris. Checked sample box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Conducted maintenance inspections of the stormwater conveyance and retention systems. Checked high level float switch in sedimentation basin.</p>
<p>006            (Former Sodium Disposal Facility - 2)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis. Conducted maintenance inspections of the structural BMPs, including the flow-through structure and stormwater and conveyance systems. Installed backup batteries for the pump system.</p>
<p>007            (Building 100)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected the outfall for sediment/debris. Checked sample box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Conducted maintenance inspections of the stormwater conveyance and retention systems. Checked high level float switch in sedimentation basin.</p>
<p>008            (Happy Valley)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected the outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis. Replaced old, worn fiber rolls near the outfall.</p>



OUTFALL (Location)	BMP ACTIVITIES DURING FOURTH QUARTER 2014
<p>009 (WS-13 Drainage)</p>	<p><i>Outfall BMPs:</i> Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis. Installed a riprap apron below autosamplers to reduce erosion.</p> <p><i>Restoration, Monitoring and Mitigation Plan (RMMP) BMPs:</i> No activities were conducted during Fourth Quarter 2014 due to the onset of the rainy season.</p> <p><i>Biofilter:</i> Inspected sedimentation basin, biofilter, and cistern. Affixed the slip cap in the biofilter discharge box with a screw to the pipe (cap previously came off during a high volume rain event). Conducted street sweeping to remove sediment washed out onto pavement near wooden retaining wall.</p> <p><i>Former B1436 Area:</i> Constructed two detention bioswales consisting of multiple Chambermaxx® structures. Installed asphalt curbs to divert surface water flow to concrete down chutes. Connected bioswale effluent piping to the biofilter. Placed topsoil and installed approximately 2,950 plantings in the bioswale surface area. Installed fiber rolls and hydroseeded contoured surface.</p> <p><i>B-1 Area:</i> Replaced worn sandbags along the top of the B-1 gunite slope. Placed sandbags at curb cuts above the B-1 media filter drainage prior to forecast rain events and removed sediment built up behind the sandbags following each rain event.</p> <p><i>Culvert modifications (CMs):</i> Removed sediment built up within basins and replaced fabric covering weir boards at CM-1, CM-2, CM-3, CM-4, CM-5, CM-6, CM-8, CM-9, CM-10, CM-11, and CM-12. Replaced old, worn fiber rolls on slope above CM-4. At CM-9, removed excess sediment and plant debris built up behind screened inlet to the perforated pipe along Area II Road, prior to and during rain events.</p>
<p>009 (WS-13 Drainage) Cont'd</p>	<p><i>NASA-led Activities:</i> Drained ELV storage tanks and removed sediment from collection basin during December rain events. Added straw wattles to ELV channel. Inspected temporary BMPs at LOX ISRA Areas and discharge points to Northern Drainage. Placed straw wattles at two new groundwater monitoring well locations near LOX and ELV.</p>
<p>010 (Building 203)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected the outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis. Conducted maintenance inspections of structural BMPs, including the flow-through structure and stormwater conveyance and retention systems.</p>



OUTFALL (Location)	BMP ACTIVITIES DURING FOURTH QUARTER 2014
011 (Perimeter Pond)	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected outfall and weir for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis. Conducted maintenance inspections of structural BMPs, including the flow-through structure and stormwater conveyance system. Installed new pond intake pipe in November.</p>
012 (Alfa Test Stand)	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected the outfall for sediment/debris. Checked sample box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Conducted maintenance inspections of the structural BMPs, including the flow-through structure and stormwater conveyance and retention systems. Observed condition of the sand bag berm.</p>
013 (Bravo Test Stand)	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected the outfall for sediment/debris. Checked sample box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Conducted maintenance inspections of the structural BMPs, including the flow-through structure and stormwater conveyance and retention systems. Observed condition of the sand bag berm.</p>
014 (Advanced Propulsion Test Facility)	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected the outfall for sediment/debris. Checked sample box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Conducted maintenance inspections of the liner and berm.</p>
018 (R-2 Spillway)	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis. Conducted maintenance inspections of the structural BMPs, including the flow-through structure and conveyance system.</p> <p><i>NASA-led Activities:</i> Placed sand bags around SPA impoundments to increase erosion control. Hydroseeded near Alfa-Bravo Skim Pond impoundment following trenching and installation of groundwater extraction pipeline at monitoring well HAR-20. Replaced gravel on road leading to former Bravo control center.</p>



OUTFALL (Location)	BMP ACTIVITIES DURING FOURTH QUARTER 2014
019 (Area I Groundwater Extraction [GET] System)	The GET system has not been in operation since April 2013 and no pumping or discharge has occurred. Therefore, no NPDES sampling was performed in Fourth Quarter 2014 at the Area I GET System. Conducted maintenance inspections of the structural BMPs. Cleaned dissipater screen as needed.
RSW-002 (Arroyo Simi – Frontier Park)	Collected quarterly and rain event receiving water samples at the Arroyo Simi – Frontier Park location. Conducted monthly receiving water inspections.

BMP inspections were completed in accordance with State of California Construction General Permit requirements. Monthly inspections of the Northern Drainage were discontinued in Second Quarter 2014. SWPPP inspections of ISRA areas were also discontinued in Second Quarter 2014 following the Regional Board’s April 2014 approval to terminate coverage under the Construction General Permit.

During Fourth Quarter 2014, two detention bioswales in the former Building 1436 area were constructed. In addition, BMPs installed in the area were inspected in accordance with the Construction General Permit.

#### **OUTFALL 008/009 ISRA AND BMP PLAN-RELATED ACTIVITIES**

ISRA soil removal within the Outfall 008 watershed was completed in 2009, and ISRA soil removal conducted within the Outfall 009 watershed was completed in Fourth Quarter 2013. In January 2014, the Phase III ISRA Implementation Report for 2011 to 2013 Activities was submitted to the Regional Board (MWH, 2014)<sup>1</sup>. Performance monitoring is being conducted at Phase III ISRA areas and the results and recommendations presented in annual rainy season summary reports. Since ISRA remedial activities are complete, progress reports have been provided to the Regional Board on a quarterly basis. In the Third Quarter 2014 Progress Report for June 21, 2014 – September 26, 2014 Activity, Interim Source Removal Action (ISRA) and Best Management Practices (BMP) Plan (Boeing, 2014a), Boeing requested a change from quarterly to annual ISRA/BMP progress reporting. The Regional Board approved this request in an October 10, 2014 letter to Boeing (Regional Board, 2014). Future ISRA/BMP progress will be reported in the annual rainy season reports.

The Expert Panel prepared BMP plans and submittals on behalf of NASA and Boeing to meet Outfall 008/009 permit limits/benchmarks established in the NPDES Permit (Order No. R4-2004-0090)<sup>2</sup>. These plans are considered conceptual designs and recommendations for BMPs identified based on an evaluation of NPDES Permit compliance and ISRA/BMP stormwater monitoring results. The following BMP plans were submitted to the Regional Board and are located on Boeing’s Santa Susana Site web page under Outfall 008/009 ISRA- and BMP-related activities<sup>3</sup>:

- 2010 BMP Plan Outfalls 008 and 009 BMP Watersheds (MWH et al., 2010);
- 2011 BMP Plan Addendum (Geosyntec and the Expert Panel, 2011);
- 2012 BMP Plan Addendum (Geosyntec and the Expert Panel, 2012);
- 2013 BMP Plan Addendum (Geosyntec and the Expert Panel, 2013); and
- 2014 BMP Plan Addendum (Geosyntec and the Expert Panel, 2014a).

<sup>1</sup> Available at: [http://www.boeing.com/boeing/aboutus/environment/santa\\_susana/isra.page](http://www.boeing.com/boeing/aboutus/environment/santa_susana/isra.page)

<sup>2</sup> Available at: [http://www.boeing.com/boeing/aboutus/environment/santa\\_susana/permits.page](http://www.boeing.com/boeing/aboutus/environment/santa_susana/permits.page)

<sup>3</sup> Available at: [http://www.boeing.com/boeing/aboutus/environment/santa\\_susana/isra.page](http://www.boeing.com/boeing/aboutus/environment/santa_susana/isra.page)



Completed Expert Panel-recommended BMPs are discussed in the ISRA Performance Monitoring and BMP Monitoring Report for Outfalls 008 and 009 Watersheds submitted to the Regional Board for each rainy season (MWH, 2010; MWH *et al.*, 2011; MWH *et al.*, 2012; MWH *et al.*, 2013; and MWH *et al.*, 2014).

The BMP activities discussed below were performed, commenced, or completed during Fourth Quarter 2014 in coordination with the Expert Panel.

#### Building 1436 Detention Bioswales

Construction of two detention bioswales, grading, and hydroseeding of the graded surface were completed in December.

#### Biofilter

The biofilter is a stormwater treatment BMP designed and built to capture, convey, and treat stormwater runoff from the lower parking lot and former Instrument and Equipment Laboratories (IEL) watershed. A treatment BMP at the lower parking lot was first proposed in the 2010 BMP Plan (MWH *et al.*, 2010). The biofilter consists of a 30,000-gallon cistern, a stormwater conveyance line, a sedimentation basin, and a media biofilter. Construction activities were completed on 15 March 2013; a Regional Board and public tour of the completed biofilter was conducted on 20 March 2013.

Fourth Quarter 2014 activities included inspections to verify that the sedimentation basin and biofilter were free of sediment and debris, checks of the cistern area and pump, and inspections of surrounding BMPs. A total of approximately 769,800 gallons of stormwater were pumped from the cistern to the sedimentation basin during the Fourth Quarter 2014 rain events.

#### CM-9 Area

In December, sediment and plant debris was observed to be clogging the screened inlet to the CM-9 perforated pipeline along Area II Road (BMP monitoring location 1LBMP0002). As a result, periodic removal of built up sediment and plant debris has been initiated at this inlet prior to and during rain events.

#### Fourth Quarter 2014 NASA and Boeing ISRA Activities

Boeing continues to submit progress reports to Regional Board staff<sup>4</sup>. In addition to activities performed in coordination with the Expert Panel, the ISRA activities performed for Outfalls 008/009 during Fourth Quarter 2014 included the following:

- ISRA Performance Monitoring and BMP performance monitoring in the following subareas:
  - B-1 Area;
  - Biofilter;
  - IEL ISRA areas;
  - Culvert modification (CM)-9;
  - Building 1436 detention bioswales;

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<sup>4</sup> Available at: [http://www.boeing.com/boeing/aboutus/environment/santa\\_susana/isra.page](http://www.boeing.com/boeing/aboutus/environment/santa_susana/isra.page)



- A2LF area;
  - CM-1 area;
  - ELV ISRA areas;
  - Ash Pile ISRA areas;
  - Helipad sandbag berm; and
  - ELV Treatment BMP.
- Inspection of BMPs at ISRA Performance Monitoring and BMP Monitoring locations and surrounding areas;
  - Inspection of temporary BMPs at the Area I Former Liquid Oxygen Plant (LOX) ISRA Areas and slope drain discharge points to the Northern Drainage; and
  - Placement of straw wattles at two new groundwater monitoring well locations near LOX and ELV.

### **NORTHERN DRAINAGE BMPS**

Boeing has actively worked to restore the Northern Drainage following cleanup activities performed under the oversight of the DTSC and in accordance with the requirements of Regional Board Cleanup and Abatement Order No. R4-2007-0054 (RWQCB, 2007). The restoration and mitigation activities proposed in the Northern Drainage Restoration, Mitigation, and Monitoring Plan (RMMP)<sup>5</sup> were implemented beginning in 2012.

Annual survey activities were conducted in the Northern Drainage during Second Quarter 2014, including a botanical survey and, in accordance with the Regional Board's Clean Water Act Section 401 Water Quality Certification issued to Boeing in 2012, a California Rapid Assessment Method (CRAM) survey. Plant and pole cutting monitoring, maintenance and watering ceased during Fourth Quarter 2014 due to the onset of the rainy season. Manual watering will resume during the dry season on a weekly basis or as needed until the plants are well established. In accordance with the RMMP, plant monitoring will continue for a minimum of five years from the 2012 planting depending on attaining the success criteria (i.e., performance standards) specified in California Department of Fish & Wildlife Streambed Alteration Agreement number 1600-2003-5052-R5 and incorporated into the RMMP (California Department of Fish and Game, 2003).

In accordance with the RMMP, an annual inspection of stabilization measures was conducted in the Northern Drainage during First Quarter 2014 and a technical memorandum recommending maintenance activities was submitted to Boeing in July 2014 (Geosyntec and the Expert Panel, 2014b). Recommendations made in the technical memorandum were implemented during Third Quarter 2014. The technical memorandum, CRAM survey results, and documentation of maintenance activities performed were included in the Northern Drainage 2014 Annual Report submitted to the Regional Board in December 2014 (Boeing, 2014b).

### **REASONABLE POTENTIAL ANALYSIS**

Stormwater discharges from the Santa Susana Site occurred at Outfalls 002, 008 and 009 during Fourth Quarter 2014. Analytical results from this quarter were added to the Reasonable Potential Analysis (RPA) dataset following the MWH and Flow Science RPA procedures for outfall monitoring group 009-010 (MWH and Flow Science, 2006). As shown in Appendix F, the analytical results for Fourth Quarter 2014 did not trigger reasonable potential for any other constituent not already regulated under the current NPDES Permit.

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<sup>5</sup> Available at: [http://www.boeing.com/aboutus/environment/santa\\_susana/tech\\_reports.html](http://www.boeing.com/aboutus/environment/santa_susana/tech_reports.html)



### Bacteria

Boeing notes that the water quality objectives for indicator bacteria were updated by the Regional Board on July 8, 2010 (Resolution No. 2010-005). This update eliminated water quality objectives for fecal coliform and added water quality objectives for *E. coli*. In response to this change to objectives, RPA was not conducted for fecal coliform.

On December 12, 2014, *E. coli* was detected in stormwater samples collected from Outfall 002 at 540 MPN/100mL and from Outfall 008 at  $\geq 1,600$  MPN/100mL. Boeing collects all sanitary waste generated at the Santa Susana site and transports it to an offsite facility for treatment and disposal. The discharges at these outfalls consist entirely of stormwater. Due to laboratory oversight, human-specific Bacteroides from samples collected on December 12, 2014 were not analyzed as the laboratory did not provide sterile bottles. On December 17, 2014, *E. coli* was detected in stormwater samples collected from Outfall 002 at 71 MPN/100mL. This sample was also analyzed for human-specific Bacteroides to confirm that the bacteria present in Outfall 002 samples were not from human sources. Based upon the results of the Bacteroides analysis, human-specific markers were not detected in the December 17 sample collected from Outfall 002 and it follows that the bacteria detected at Outfall 002 originated from non-human, natural sources. Outfalls 002 and 008 were previously sampled for *E. coli* in April 2012 and human-specific markers were not detected. Therefore, Boeing does not believe that reasonable potential has been demonstrated for bacteria at Outfall 002 or Outfall 008.

Boeing is implementing corrective action by revising the Standard Operating Procedure for collecting human-specific Bacteroides and will continue to monitor *E. coli*, fecal coliform and human-specific Bacteroides and monitor for any potentially contributing sources of bacteria to continue to confirm that any indicator bacteria detected at the outfalls are from non-human sources.

### **DATA VALIDATION AND QUALITY CONTROL**

In accordance with current federal and state Environmental Protection Agency guidelines and procedures, or as specified in the NPDES Monitoring and Reporting Program, chemical and radiological analyses of water samples were completed at a State of California-certified laboratory. Data validation was performed on the analytical results and quality control elements were found to be within acceptable limits for the analytical methods reported, except as noted on the analytical summary tables. Measures were implemented by the analytical laboratory to monitor and/or evaluate low level detections, analyze for interferences, and ensure that cross-contamination did not occur. Laboratory analytical reports, including validation reports and notes, are included in Appendix D.

Attachment H of the NPDES Permit presents the State Board's minimum levels (MLs) for use in reporting and determining compliance with NPDES Permit limits. The analytical laboratory achieved these MLs in the Fourth Quarter 2014 when technically possible. In cases where the NPDES Permit limit is less than the reporting limit (RL) and ML, the RL was used to determine compliance.

The laboratory RL for each constituent in the permit was less than the lowest applicable permit requirement with the following exceptions: 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, polychlorinated biphenyls (PCBs) [Aroclor congeners], bis(2-ethylhexyl)phthalate, chlordane, chlorpyrifos, cyanide, diazinon, dieldrin, mercury, silver, and toxaphene. The laboratory RL for these exceptions met their respective MLs. These compounds were not detected at concentrations equal to or greater than their RL in samples collected and analyzed during the Fourth Quarter 2014 or were not analyzed at Arroyo Simi sample location RSW-002 per the requirements of the NPDES Permit.



## CONCLUSIONS

Boeing continues to improve water quality at stormwater discharge locations at the Santa Susana Site through methods designed to preserve the natural conditions in the watershed to the maximum extent feasible by implementing sustainable erosion control/restoration measures and continuing with planned ISRA and BMP activities as detailed above.

## FACILITY CONTACT

If there are any questions regarding this report or its enclosures, you may contact Mr. Paul Costa of Boeing at (818) 466-8778.

## CERTIFICATION

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 a knowing violation.

Executed on the 15th of February 2015 at The Boeing Company, Santa Susana Site.

Sincerely,



Paul Costa  
Environmental Operations and Compliance Manager  
Santa Susana Field Laboratory  
The Boeing Company

## Enclosures:

References  
Figure 1 – Site Map with Drainages, Outfall Locations and SWTS Conveyance Piping  
Appendix A – Fourth Quarter 2014 Rainfall Data Summary  
Appendix B – Fourth Quarter 2014 Liquid Waste Shipment Summary Table  
Appendix C – Fourth Quarter 2014 Discharge Monitoring Data Summary Tables  
Appendix D – Fourth Quarter 2014 Summary of Permit Limit Exceedances  
Appendix E – Fourth Quarter 2014 Analytical Laboratory Report, Chain of Custody, and Validation Report  
Appendix F – Fourth Quarter 2014 Reasonable Potential Analysis (RPA) Summary Tables

cc: Ms. Cassandra Owens, RWQCB  
Mr. Mark Malinowski, DTSC  
California State University – Northridge, Library  
Simi Valley Library  
Los Angeles Library, Platt Branch



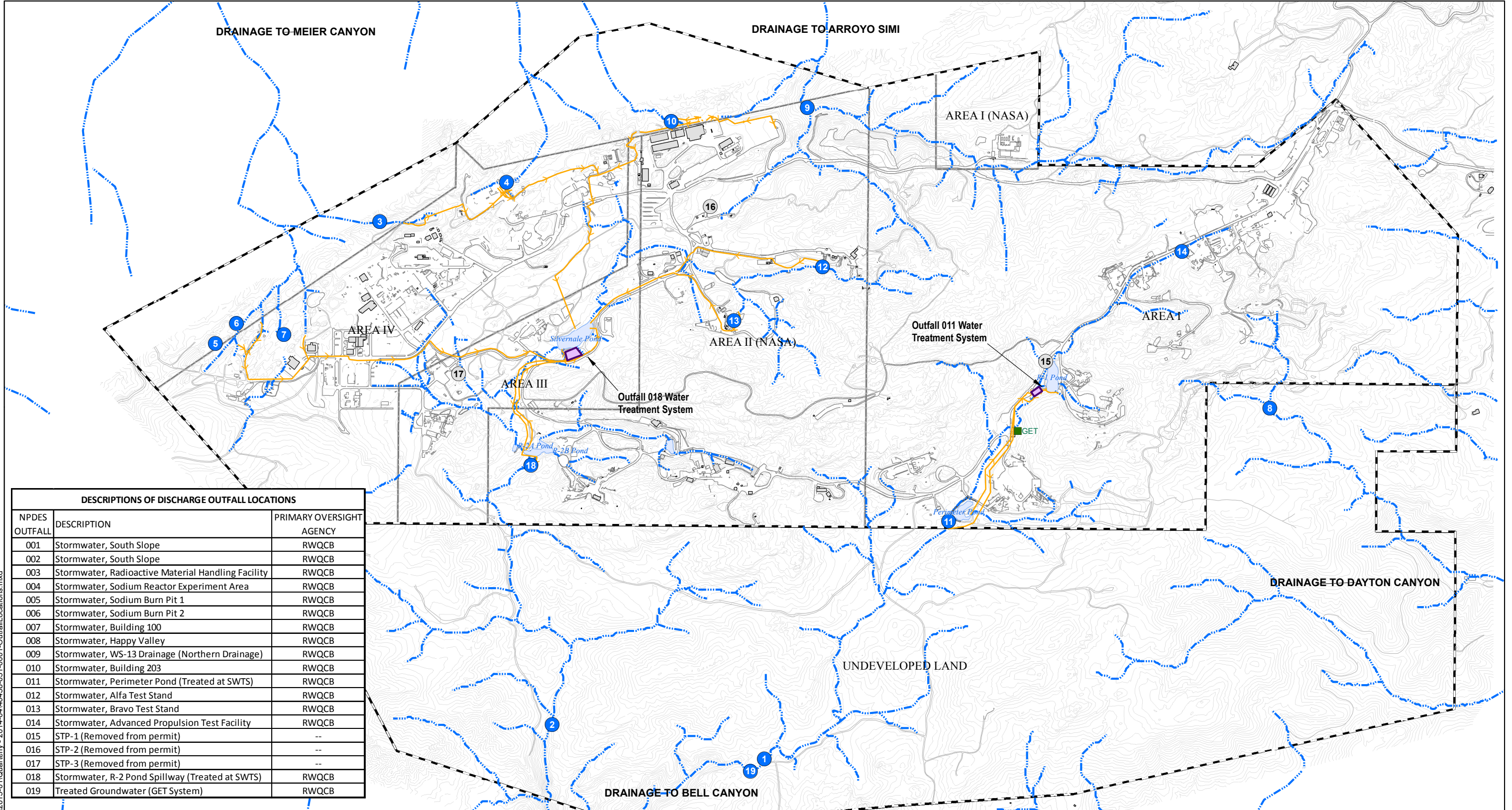
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7. Geosyntec and the Expert Panel, 2012. 2012 BMP Plan Addendum, The Boeing Company, Santa Susana Field Laboratory, Canoga Park, California (Order No. R4-2010-0090; NPDES No. CA0001309, CI No.6027). September 28.
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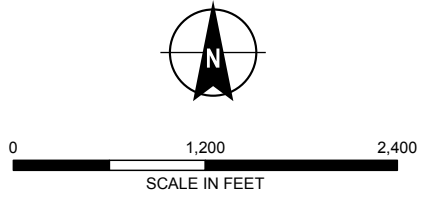


DESCRIPTIONS OF DISCHARGE OUTFALL LOCATIONS		
NPDES OUTFALL	DESCRIPTION	PRIMARY OVERSIGHT AGENCY
001	Stormwater, South Slope	RWQCB
002	Stormwater, South Slope	RWQCB
003	Stormwater, Radioactive Material Handling Facility	RWQCB
004	Stormwater, Sodium Reactor Experiment Area	RWQCB
005	Stormwater, Sodium Burn Pit 1	RWQCB
006	Stormwater, Sodium Burn Pit 2	RWQCB
007	Stormwater, Building 100	RWQCB
008	Stormwater, Happy Valley	RWQCB
009	Stormwater, WS-13 Drainage (Northern Drainage)	RWQCB
010	Stormwater, Building 203	RWQCB
011	Stormwater, Perimeter Pond (Treated at SWTS)	RWQCB
012	Stormwater, Alfa Test Stand	RWQCB
013	Stormwater, Bravo Test Stand	RWQCB
014	Stormwater, Advanced Propulsion Test Facility	RWQCB
015	STP-1 (Removed from permit)	--
016	STP-2 (Removed from permit)	--
017	STP-3 (Removed from permit)	--
018	Stormwater, R-2 Pond Spillway (Treated at SWTS)	RWQCB
019	Treated Groundwater (GET System)	RWQCB

**LEGEND**

- NPDES OUTFALL LOCATION
- FORMER NPDES OUTFALL LOCATION
- GROUNDWATER EXTRACTION TREATMENT (GET) SYSTEM
- - - DRAINAGE
- DIRT ROAD
- PAVED ROAD
- STORMWATER CONVEYANCE PIPELINE WITH FLOW DIRECTION
- STORMWATER TREATMENT SYSTEM
- ~ ELEVATION CONTOUR
- SURFACE WATER POND
- SSFL PROPERTY BOUNDARY
- ADMINISTRATIVE AREA BOUNDARY
- EXISTING BUILDING/STRUCTURE

**NOTES:**  
 1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE  
 2. SWTS = STORM WATER TREATMENT SYSTEM.



**HALEY ALDRICH**

NPDES PERMIT COMPLIANCE FOURTH QUARTER 2014  
 DISCHARGE MONITORING REPORT  
 THE BOING COMPANY  
 VENTURA COUNTY, CALIFORNIA

**SITE MAP WITH DRAINAGES,  
 OUTFALL LOCATIONS AND  
 SWTS CONVEYANCE PIPING**

SCALE: AS SHOWN  
 FEBRUARY 2015

**FIGURE 1**

G:\40458 - SSFL\Global\GIS\MapProjects\2015-01\Quarterly - 2014-04\40458-051-0001 - OutfallLocations.mxd



**APPENDIX A**

**Fourth Quarter 2014 Rainfall Data Summary**







**TABLE A  
DAILY RAINFALL SUMMARY**

**THE BOEING COMPANY  
NPDES PERMIT CA0001309**

Station: AREA 1  
Parameter: Rain  
Month/Year: November 2014

**HOUR OF THE DAY**

D A Y  O F  T H E  M O N T H	Day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Total		
	1	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	INV	INV	INV	INV	INV	0.00p <sup>1</sup>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00p	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
	14	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.11	0.06	0.00	0.06	0.03	0.08	0.12	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.06	0.59	

Flags: p<sup>1</sup> = Data not recorded due to intentional power shutdown after the storm to hook-up backup generator to contractors' trailers (including weather station)  
p = Power failure, invalid hour  
INV = Negative under range, invalid hour. Malfunction in the sensor produced an erroneous rainfall measurement of <0.



**TABLE A  
DAILY RAINFALL SUMMARY**

**THE BOEING COMPANY  
NPDES PERMIT CA0001309**

Station: AREA 1  
Parameter: Rain  
Month/Year: December 2014

**HOUR OF THE DAY**

Day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Weather Station Total	Validated Total	
1	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	
2	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.07	0.14	0.07	0.09	0.26	0.40	0.33	0.27	0.11	INV	0.03p	0.04	0.00	0.06	0.04	0.06	1.97	2.00	
3	0.07	0.05	0.02	0.01	0.04	0.02	0.01	0.00	0.01	0.02	0.02	0.02	0.02	0.05	0.06	0.05	0.07	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.57
4	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	INV	INV	INV	INV	INV	INV	INV	INV	0.00	0.09	0.09
12	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.53
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.04	0.04	0.04
16	0.01	0.00	0.00	0.05	0.02	0.01	0.01	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.15	0.15
17	0.02	0.05	0.33	0.31	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.72
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

D  
A  
Y  
  
O  
F  
  
T  
H  
E  
  
M  
O  
N  
T  
H

Flags: D = Marked down, valid hour  
p = Power failure, invalid hour  
INV = Negative under range, invalid hour. Malfunction in the sensor produced an erroneous rainfall measurement of <0.

Notes:

- The 0.03"p on 12/02/14 was not added to the daily total as defined by the software programming. As the power failure was less than one hour, the amount of 0.03" was added for a validated total of 2.0". This amount was confirmed by the Station 436 rain gauge.
- The 0.10" on 12/10/14 was invalidated as Station 436 confirmed 0.00" of rain for 12/10/14.
- Rain data collected from Station 436 was used for 12/11/14 through 12/12/14 due to Area 1 weather station malfunction. Rain totals used for those days are 0.09" on 12/11/14 and 2.53" on 12/12/14.
- Rain total for 12/01/14 through 12/10/14 using validated rain data is 2.61".  
Rain total for 12/11/14 through 12/12/14 using validated rain data is 2.62".  
Rain total for 12/13/14 through 12/31/14 (no data flags) is 0.91".  
The validated rain total for December is 6.14".

**APPENDIX B**

**Fourth Quarter 2014 Liquid Waste Shipment Summary Table**



**TABLE B  
LIQUID WASTE SHIPMENTS**

**FOURTH QUARTER 2014 REPORTING SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309**

DATE SHIPPED	MANIFEST TRACKING NUMBER	TYPE OF LIQUID	QTY.	UNITS	TRANSPORTER	DESTINATION
10/3/2014	010392733JJK	HAZARDOUS WASTE LIQUID (TRICHLOROETHYLENE)	22532	P	Clean Harbors Environmental Services Inc	Evoqua Water Technologies LLC 5375 South Boyle Avenue, Los Angeles, CA 90058
10/3/2014	013367507JJK	HAZARDOUS WASTE LIQUID (TRICHLOROETHYLENE)	4800	G		Evoqua Water Technologies LLC 5375 South Boyle Avenue, Los Angeles, CA 90058
10/14/2014	006898211FLE	HAZARDOUS WASTE LIQUID (TRICHLOROETHYLENE)	55	G		Evoqua Water Technologies LLC 5375 South Boyle Avenue, Los Angeles, CA 90058
10/15/2014	008070249FLE	HAZARDOUS WASTE LIQUID (TRICHLOROETHYLENE)	379	P		Clean Harbors - Aragonite LLC 11600 North Aptus Road, Grantsville, UT 34029
		HAZARDOUS WASTE LIQUID (TRICHLOROETHYLENE, MUD)	137	P		
		NON RCRA HAZARDOUS WASTE LIQUIDS (LATEX PAINTS)	41	P		
10/15/2014	Y3369	NON HAZARDOUS (WATER)	87	P		Clean Harbors - Grassy Mountain LLC
10/29/2014	008070476FLE	WASTE METHANOL (METHANOL)	14	P		Clean Harbors - Aragonite LLC 11600 North Aptus Road, Grantsville, UT 34029
		WASTE OXIDIZING LIQUID, CORROSIVE (NITRIC ACID)	37	P		
		WASTE SODIUM HYDROXIDE SOLUTION	8	P		
		WASTE CORROSIVE LIQUID, ACIDIC, INORGANIC (HYDROCHLORIC ACID)	148	P		
		HAZARDOUS WASTE LIQUID (TRICHLOROETHYLENE)	1233	P		
		NON RCRA HAZARDOUS WASTE LIQUIDS (POTASSIUM BROMIDE)	29	P		
		NON RCRA HAZARDOUS WASTE LIQUIDS (DEBRIS SULFURIC ACID)	6	P		
11/12/2014	Y3687	NON HAZARDOUS (WATER)	500	P	Clean Harbors - Grassy Mountain LLC 3 Miles East 7 Miles North of Knolls, Grantsville, UT 84029	
		NON HAZARDOUS, NON REGULATED (DECON WATER)	308	P		
11/12/2014	010392655JJK	NON RCRA HAZARDOUS WASTE LIQUIDS (DEBRIS SULFURIC ACID)	7	P	Clean Harbors - Aragonite LLC 11600 North Aptus Road, Grantsville, UT 34029	
		NON RCRA HAZARDOUS WASTE LIQUIDS (CALIBRATION WATER)	11	P		
11/12/2014	010392735JJK	WASTE CORROSIVE LIQUID, ACIDIC, INORGANIC (SULFURIC ACID)	11	P	Clean Harbors - Aragonite LLC 11600 North Aptus Road, Grantsville, UT 34029	
		HAZARDOUS WASTE LIQUID (TRICHLOROETHYLENE)	2025	P		
		WASTE ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID (WATER, ASCORBIC ACID)	13	P		
12/2/2014	010392656JJK	NON RCRA HAZARDOUS WASTE LIQUIDS (O-PHENANTHROLINE)	8	P	Clean Harbors - Aragonite LLC 11600 North Aptus Road, Grantsville, UT 34029	
		HAZARDOUS WASTE LIQUID (TRICHLOROETHYLENE)	497	P		
12/10/2014	010392657JJK	NON RCRA HAZARDOUS WASTE LIQUIDS (HYDREX)	752	P	Clean Harbors - Grassy Mountain LLC 3 Miles East 7 Miles North of Knolls, Grantsville, UT 84029	
12/10/2014	010392658JJK	WASTE CORROSIVE LIQUID, ACIDIC, INORGANIC (HYDROCHLORIC ACID, SULFURIC ACID)	11	P	Clean Harbors Environmental Services Inc	Clean Harbors - Aragonite LLC 11600 North Aptus Road, Grantsville, UT 34029
		HAZARDOUS WASTE LIQUID (TRICHLOROETHYLENE)	4377	P		
		NON RCRA HAZARDOUS WASTE LIQUIDS (POTASSIUM BROMIDE)	56	P		
		NON RCRA HAZARDOUS WASTE LIQUIDS (FORMALDEHYDE HYDROCHLORIC ACID)	42	P		
		NON RCRA HAZARDOUS WASTE LIQUIDS (DEBRIS SULFURIC ACID)	13	P		
12/17/2014	010392659JJK	HAZARDOUS WASTE LIQUID (TRICHLOROETHYLENE)	21047	P	Evoqua Water Technologies LLC 5375 South Boyle Avenue, Los Angeles, CA 90058	

**TABLE B  
LIQUID WASTE SHIPMENTS**

**FOURTH QUARTER 2014 REPORTING SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309**

DATE SHIPPED	MANIFEST TRACKING NUMBER	TYPE OF LIQUID	QTY.	UNITS	TRANSPORTER	DESTINATION
10/7/2014	35244	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G	Southwest Processors Inc. 4120 Bandini Blvd. Vernon, CA 90058	LACSD
10/7/2014	35245	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
10/7/2014	35246	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
10/14/2014	35277	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
10/14/2014	35278	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
10/14/2014	36009	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
10/21/2014	35313	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
10/21/2014	35314	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
10/28/2014	35345	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
10/28/2014	35346	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
10/28/2014	35347	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
11/4/2014	35375	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
11/4/2014	35376	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
11/4/2014	35377	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
11/11/2014	35411	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
11/11/2014	35412	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
11/11/2014	35413	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
11/25/2014	36167	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
11/25/2014	36168	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
11/25/2014	36169	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/2/2014	36199	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/2/2014	36201	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/2/2014	36202	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/3/2014	36142	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/5/2014	35419	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/5/2014	35420	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/5/2014	35421	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/9/2014	35435	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/9/2014	35436	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/9/2014	35437	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/16/2014	35472	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/16/2014	35473	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/16/2014	35474	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/23/2014	35506	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/23/2014	36215	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/23/2014	36216	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/30/2014	36246	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/30/2014	36247	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		
12/30/2014	36248	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT (STP #1)	5000	G		



**APPENDIX C**

**Fourth Quarter 2014 Discharge Monitoring Data Summary Tables**

**FOURTH QUARTER 2014  
REPORTING SUMMARY NOTES  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309**

**Notes:**

1. TCDD TEQs for the purpose of determining permit compliance are the sum of the products of the detected dioxin congener concentration multiplied by that congener's toxicity equivalency factor (TEF) and bioaccumulation equivalency factor (BEF). The resulting compliance TCDD TEQ does not include those congener concentrations that are reported as DNQ, as specified on Page 37 of the NPDES permit.
2. pH was determined with a field instrument and was noted as such. These results were not validated.
3. All of the following abbreviations and/or notes may not occur on every table.
4. J(DNQ) flagged results are included in the data charts; however, these results are considered to be estimated values and as such are not used to quantify the chemical concentration for compliance purposes. ND results are included in the data charts and are shown as zero. Refer to Appendix H for a list of reporting limits by constituent.
5. pH and temperature are identified on the table as daily maximum discharge limits. The NPDES permit limit has an instantaneous minimum (6.5) and maximum (8.5) for pH and an instantaneous maximum of 86°F for temperature.

- 92.9 +/-200 A negative radiochemical analytical result indicates the count rate of the sample was less than the background condition. Radiological results are presented as activity plus or minus counting uncertainty.
- \$ reported result or other information was incorrectly reported by the laboratory; result was corrected by the data validator
- based on validation of the data, a qualifier was not required
- /- no permit limit established for daily maximum or monthly average
- <(value) analyte not detected at a concentration greater than or equal to the DL, MDL, or RL (see laboratory report for specific detail)
- \* result not validated
- \*\* Flow for each outfall is calculated over the 24-hour period when the outfall autosampler is operating to collect the composite sample. See definition of "Daily Discharge" on page A-1 of Attachment A of the permit.
- \*1 improper preservation of sample
- \*2 the ICP/MS ppb check standard was recovered above the control limit; therefore, the constituent detected was qualified as estimated (J)
- \*3 initial and or continuing calibration recoveries were outside acceptable control limits



**FOURTH QUARTER 2014  
REPORTING SUMMARY NOTES  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309**

*5	blank spike/blank spike duplicate relative percent difference was outside the control limit
*10	value was estimated detect or estimated non detect (J,UJ) due to deficiencies in quantitation of the constituent including constituents reported by the laboratory as Estimated Maximum Possible Concentration (EMPC) values
*11	no calibration was performed for this compound; result is reported as a tentatively identified compound (TIC)
* II *III	Unusual problems found with the data that have been described in Section II, "sample management", or Section III, "method analysis". The number following the asterisk (*) will indicated the validation report section where a description of the problem can be found.
ANR	analysis not required; e.g., constituent or outfall was not required by the permit to be sampled and analyzed over the reporting period (annual, semi-annual, etc.)
B	laboratory method blank contamination
BA	relative percent difference out of control
BEF	bioaccumulation equivalency factor
BU	analyzed out of holding time
BV	sample received after holding time expired
C	calibration %RSD or %D were noncompliant
Comp	Composite sample type
C5	Calibration verification %R was outside method control limits
CEs/100 ml	cell equivalents per 100 milliliters
D	The analysis with this flag should not be used because another more technically sound analysis is available
%D	percent difference between the initial and continuing calibration relative response factors
deg F	degrees Fahrenheit
DL	detection limit
DNQ	detected but not quantified (constituent value greater than or equal to the laboratory method detection limit and less then the laboratory reporting limit)
E	duplicates show poor agreement
ft/sec	feet per second
H	holding time was exceeded
I	ICP interference check solution results were unsatisfactory
J	estimated value, result lower than the detection limit
J, DX	estimated value, value < lowest standard (MQL), but > than MDL
K	The sample dilution's set-up did not meet the oxygen depletion criteria of at least 2 mg/l. Therefore, the reported result is an estimated value only.

**FOURTH QUARTER 2014  
REPORTING SUMMARY NOTES  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309**

L2	the laboratory control sample %R was below the method control limits
L	laboratory control sample %R was outside control limits
lbs/day	Pounds per day
LOD	limit of detection
LQ	LCS/LCSD recovery above method control limits
M1	matrix spike (MS) and/or MS duplicate were above the acceptance limits due to sample matrix interference
M2	the MS and/or MS duplicate were below the acceptance limits due to sample matrix interference
MDA/MDC	minimum detectable activity/ minimum detectable concentration
MDL	method detection limit
Meas	Measure sample type
MFL	million fibers per liter
MGD	million gallons per day
MHA*	Due to high level of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information.
mg/L	milligrams per liter
mg/kg	milligrams per kilogram
ml/L/hr	milliliters per liter per hour
MPN/100 ml	most probable number per 100 milliliters
NA	not applicable; no permit limit established for the constituent and/or outfall
ND	analyte value less than the LOD or MDL
NM	not measured or determined
NTU	nephelometric turbidity unit
pCi/L	picocuries per liter
Q	matrix spike recovery outside of control limits
R	as a validation qualifier, results are rejected; the presence or absence of analyte cannot be verified
R	(reason code in parentheses) %R for calibration not within control limits
RL	laboratory reporting limit
RL-1	reporting limit raised due to sample matrix effects
%RSD	percent relative standard deviation
% survival	percent survival
S	surrogate recovery was outside control limits
TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin
TEQ	toxic equivalent
T	presumed contamination, as indicated by a detect in the trip blank
TU <sub>c</sub>	toxicity units (chronic)
U	result not detected
µg/L	micrograms per liter
µg/kg	micrograms per kilogram



**FOURTH QUARTER 2014  
REPORTING SUMMARY NOTES  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309**

UJ	result not detected at the estimated reporting limit
umhos/cm	micromhos per centimeter
WHO TEF	World Health Organization toxic equivalency factor
^	analysis not completed due to hold time exceedence or insufficient sample volume
#	Per ORDER NO. R4-2010-0090 page 23 Footnote 1. The effluent limitations for total suspended solids and settleable solids are not applicable for discharges during wet weather. During wet weather flow, a discharge event is greater than 0.1 inches of rainfall in a 24-hour period. No more than one sample per week need be obtained during extended periods of rainfall or the discharge of collected stormwater. A storm event must be preceded by at least 72 hours of dry weather.
(1)	Based on the permit, table E-3 footnote 2, receiving water samples for pH and hardness must be collected at the same time as effluent samples.
(2)	additional sample, not required by the permit
(4.0)3.1/-	Represents (Dry Weather Limit) Wet Weather Limit / Monthly Average Limit.

OUTFALL 002 (SOUTH SLOPE BELOW R-2 POND)

FOURTH QUARTER 2014 REPORTING SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309

October 1 through December 31, 2014

					12/12/2014 (Grab) - 12/13/2014 (Comp.)	
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Flow**	MGD	17.89/-	1/Discharge	Meas	0.089227	*
<b>CONVENTIONAL POLLUTANTS</b>						
Biochemical Oxygen Demand (BOD)(5-Day @ 20 deg. C)	mg/L	30/20	1/Discharge	Composite	3.7	--
Oil & Grease	mg/L	15/10	1/Discharge	Grab	ND < 1.4	*
pH (Field)	pH units	6.5-8.5/-	1/Discharge	Grab	6.89	*
Total Suspended Solids	mg/L	45/15	1/Discharge	Composite	4.3	--,#
<b>PRIORITY POLLUTANTS</b>						
1,1-Dichloroethene	ug/L	6.0/3.2	1/Discharge	Grab	ND < 0.25	*
1,2-Dichloroethane	ug/L	0.5/-	1/Discharge	Grab	ND < 0.25	*
2,4,6-Trichlorophenol	ug/L	13/6.5	1/Discharge	Composite	ND < 0.478	*
2,4-Dinitrotoluene	ug/L	18/9.1	1/Discharge	Composite	ND < 1.91	*
alpha-BHC	ug/L	0.03/0.01	1/Discharge	Composite	ND < 0.0024	*
Antimony	ug/L	6.0/-	1/Year	Composite	ND < 0.5	U
Arsenic	ug/L	10/-	1/Year	Composite	5.7	J (DNQ)
Beryllium	ug/L	4.0/-	1/Year	Composite	ND < 1	U
Bis (2-Ethylhexyl) Phthalate	ug/L	4.0/-	1/Discharge	Composite	ND < 1.91	*
Cadmium	ug/L	4.0/2.0	1/Discharge	Composite	ND < 0.25	U
Chromium VI	ug/L	16/8	1/Year	Composite	ND < 0.25	*
Copper	ug/L	14/7.1	1/Discharge	Composite	3.2	--
Cyanide	ug/L	8.5/4.3	1/Discharge	Composite	ND < 2.5	*
Lead	ug/L	5.2/2.6	1/Discharge	Composite	ND < 0.5	U (\$)
Mercury	ug/L	0.10/0.05	1/Discharge	Composite	ND < 0.1	*
Nickel	ug/L	96/35	1/Year	Composite	ND < 5	U
N-Nitrosodimethylamine	ug/L	16/8.1	1/Discharge	Composite	ND < 0.957	*
Pentachlorophenol	ug/L	16.5/8.2	1/Discharge	Composite	ND < 0.957	*
Selenium	ug/L	8.2/4.1	1/Discharge	Composite	ND < 0.5	UJ (I)
Silver	ug/L	4.1/2.0	1/Year	Composite	ND < 5	U
Thallium	ug/L	2.0/-	1/Year	Composite	ND < 0.5	U
Trichloroethene	ug/L	5.0/-	1/Discharge	Grab	ND < 0.25	*
Zinc	ug/L	119/54	1/Discharge	Composite	ND < 10	U
<b>NON-CONVENTIONAL POLLUTANTS</b>						
Acute Toxicity	% SURVIVAL	70-90/-	1/Year	Grab	100	*
Ammonia - N	mg/L	10.1/1.96	1/Discharge	Composite	0.206	J (R)
Barium	mg/L	1.0/-	1/Year	Composite	13	--
Chloride	mg/L	150/-	1/Discharge	Composite	5.3	--
Chlorine, Total Residual	mg/L	0.1/-	1/Year	Grab	0.042	*
Chronic Toxicity	TUC	1/-	1st & 2nd rain event/Year	Composite	1.0	*
Detergents (as MBAS)	mg/L	0.5/-	1/Discharge	Composite	0.063	J (DNQ)
Fluoride	mg/L	1.6/-	1/Year	Composite	0.18	--
Iron	mg/L	0.3/-	1/Year	Composite	0.3	--
Manganese	ug/L	50/-	1/Year	Composite	ND < 10	U
Nitrate - N	mg/L	8/-	1/Discharge	Composite	3.5	--
Nitrite - N	mg/L	1/-	1/Discharge	Composite	ND < 0.07	*
Nitrate + Nitrite as Nitrogen (N)	mg/L	8/-	1/Discharge	Composite	3.5	--
Perchlorate	ug/L	6.0/-	1/Discharge	Composite	ND < 0.95	*
Settleable Solids	ml/L/hr	0.3/0.1	1/Discharge	Grab	ND < 0.10	*,#
Sulfate	mg/L	300/-	1/Discharge	Composite	9.8	--
Temperature (Field)	deg. F	86/-	1/Discharge	Grab	65.5	*
Total Dissolved Solids	mg/L	950/-	1/Discharge	Composite	120	--

See attached notes for abbreviations, definitions,  
and other explanations for the data presented.



OUTFALL 002 (SOUTH SLOPE BELOW R-2 POND)

FOURTH QUARTER 2014 REPORTING SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/12/2014 (Grab) - 12/13/2014 (Comp.)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
<b>REMAINING PRIORITY POLLUTANTS</b>						
1,1,1-Trichloroethane	ug/L	-/-	1/Year	Grab	ND < 0.25	*
1,1,2,2-Tetrachloroethane	ug/L	-/-	1/Year	Grab	ND < 0.25	*
1,1,2-Trichloroethane	ug/L	-/-	1/Year	Grab	ND < 0.25	*
1,1-Dichloroethane	ug/L	-/-	1/Year	Grab	ND < 0.25	*
1,2,4-Trichlorobenzene	ug/L	-/-	1/Year	Composite	ND < 0.478	*
1,2-Dichlorobenzene	ug/L	-/-	1/Year	Composite	ND < 0.191	*
1,2-Dichloropropane	ug/L	-/-	1/Year	Grab	ND < 0.25	*
1,2-Diphenylhydrazine/Azobenzene	ug/L	-/-	1/Year	Composite	ND < 0.478	*
1,3-Dichlorobenzene	ug/L	-/-	1/Year	Composite	ND < 0.191	*
1,4-Dichlorobenzene	ug/L	-/-	1/Year	Composite	ND < 0.191	*
2,4-Dichlorophenol	ug/L	-/-	1/Year	Composite	ND < 0.957	*
2,4-Dimethylphenol	ug/L	-/-	1/Year	Composite	ND < 0.957	*
2,4-Dinitrophenol	ug/L	-/-	1/Year	Composite	ND < 1.91	*
2,6-Dinitrotoluene	ug/L	-/-	1/Year	Composite	ND < 1.91	*
2-Chloroethylvinylether	ug/L	-/-	1/Year	Grab	ND < 1	*
2-Chloronaphthalene	ug/L	-/-	1/Year	Composite	ND < 0.191	*
2-Chlorophenol	ug/L	-/-	1/Year	Composite	ND < 0.478	*
2-Methyl-4,6-Dinitrophenol	ug/L	-/-	1/Year	Composite	ND < 1.91	*
2-Nitrophenol	ug/L	-/-	1/Year	Composite	ND < 0.957	*
3,3'-Dichlorobenzidine	ug/L	-/-	1/Year	Composite	ND < 1.91	*
4,4'-DDD	ug/L	-/-	1/Year	Composite	ND < 0.0038	*
4,4'-DDE	ug/L	-/-	1/Year	Composite	ND < 0.0028	*
4,4'-DDT	ug/L	-/-	1/Year	Composite	ND < 0.0038	*
4-Bromophenylphenylether	ug/L	-/-	1/Year	Composite	ND < 0.478	*
4-Chloro-3-methylphenol	ug/L	-/-	1/Year	Composite	ND < 0.191	*
4-Chlorophenylphenylether	ug/L	-/-	1/Year	Composite	ND < 0.191	*
4-Nitrophenol	ug/L	-/-	1/Year	Composite	ND < 1.91	*
Acenaphthene	ug/L	-/-	1/Year	Composite	ND < 0.191	*
Acenaphthylene	ug/L	-/-	1/Year	Composite	ND < 0.191	*
Acrolein	ug/L	-/-	1/Year	Grab	ND < 2.5	*
Acrylonitrile	ug/L	-/-	1/Year	Grab	ND < 1	*
Aldrin	ug/L	-/-	1/Year	Composite	ND < 0.0014	*
Anthracene	ug/L	-/-	1/Year	Composite	ND < 0.191	*
Benzene	ug/L	-/-	1/Year	Grab	ND < 0.25	*
Benzidine	ug/L	-/-	1/Year	Composite	ND < 4.78	*
Benzo(a)anthracene	ug/L	-/-	1/Year	Composite	ND < 1.91	*
Benzo(a)pyrene	ug/L	-/-	1/Year	Composite	ND < 0.478	U
Benzo(b)fluoranthene	ug/L	-/-	1/Year	Composite	ND < 0.957	*
Benzo(g,h,i)Perylene	ug/L	-/-	1/Year	Composite	ND < 1.91	*
Benzo(k)fluoranthene	ug/L	-/-	1/Year	Composite	ND < 0.239	*
beta-BHC	ug/L	-/-	1/Year	Composite	ND < 0.0038	*
Bis (2-Chloroethoxy) Methane	ug/L	-/-	1/Year	Composite	ND < 0.191	*
Bis (2-Chloroethyl) Ether	ug/L	-/-	1/Year	Composite	ND < 0.191	*
Bis (2-Chloroisopropyl) Ether	ug/L	-/-	1/Year	Composite	ND < 0.191	U
Bromodichloromethane	ug/L	-/-	1/Year	Grab	ND < 0.25	*
Bromoform	ug/L	-/-	1/Year	Grab	ND < 0.4	*
Bromomethane	ug/L	-/-	1/Year	Grab	ND < 0.25	*
Butylbenzylphthalate	ug/L	-/-	1/Year	Composite	ND < 1.91	*
Carbon Tetrachloride	ug/L	-/-	1/Year	Grab	ND < 0.25	*
Chlordane	ug/L	-/-	1/Year	Composite	ND < 0.076	*

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NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/12/2014 (Grab) - 12/13/2014 (Comp.)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Chlorobenzene	ug/L	-/-	1/Year	Grab	ND < 0.25	*
Chloroethane	ug/L	-/-	1/Year	Grab	ND < 0.4	*
Chloroform	ug/L	-/-	1/Year	Grab	ND < 0.25	*
Chloromethane	ug/L	-/-	1/Year	Grab	ND < 0.25	*
Chromium	ug/L	-/-	1/Year	Composite	ND < 2.5	--
Chrysene	ug/L	-/-	1/Year	Composite	ND < 0.191	*
cis-1,3-Dichloropropene	ug/L	-/-	1/Year	Grab	ND < 0.25	*
delta-BHC	ug/L	-/-	1/Year	Composite	ND < 0.0033	*
Dibenzo(a,h)anthracene	ug/L	-/-	1/Year	Composite	ND < 0.239	*
Dibromochloromethane	ug/L	-/-	1/Year	Grab	ND < 0.25	*
Dieldrin	ug/L	-/-	1/Year	Composite	ND < 0.0019	*
Diethylphthalate	ug/L	-/-	1/Year	Composite	ND < 0.478	*
Dimethylphthalate	ug/L	-/-	1/Year	Composite	ND < 0.239	*
Di-n-butylphthalate	ug/L	-/-	1/Year	Composite	ND < 0.957	*
Di-n-octylphthalate	ug/L	-/-	1/Year	Composite	ND < 1.91	*
Endosulfan I	ug/L	-/-	1/Year	Composite	ND < 0.0028	*
Endosulfan II	ug/L	-/-	1/Year	Composite	ND < 0.0019	*
Endosulfan Sulfate	ug/L	-/-	1/Year	Composite	ND < 0.0028	*
Endrin	ug/L	-/-	1/Year	Composite	ND < 0.0019	*
Endrin Aldehyde	ug/L	-/-	1/Year	Composite	ND < 0.0019	*
Ethylbenzene	ug/L	-/-	1/Year	Grab	ND < 0.25	*
Fluoranthene	ug/L	-/-	1/Year	Composite	ND < 0.191	*
Fluorene	ug/L	-/-	1/Year	Composite	ND < 0.191	*
Heptachlor	ug/L	-/-	1/Year	Composite	ND < 0.0028	*
Heptachlor Epoxide	ug/L	-/-	1/Year	Composite	ND < 0.0024	*
Hexachlorobenzene	ug/L	-/-	1/Year	Composite	ND < 0.478	*
Hexachlorobutadiene	ug/L	-/-	1/Year	Composite	ND < 0.478	*
Hexachlorocyclopentadiene	ug/L	-/-	1/Year	Composite	ND < 1.91	*
Hexachloroethane	ug/L	-/-	1/Year	Composite	ND < 0.478	*
Indeno(1,2,3-cd)pyrene	ug/L	-/-	1/Year	Composite	ND < 0.957	*
Isophorone	ug/L	-/-	1/Year	Composite	ND < 0.478	*
Lindane (gamma-BHC)	ug/L	-/-	1/Year	Composite	ND < 0.0028	*
Methylene chloride	ug/L	-/-	1/Year	Grab	ND < 0.88	*
Naphthalene	ug/L	-/-	1/Year	Composite	ND < 0.478	*
Nitrobenzene	ug/L	-/-	1/Year	Composite	ND < 0.478	*
N-Nitroso-di-n-propylamine	ug/L	-/-	1/Year	Composite	ND < 0.957	*
N-Nitrosodiphenylamine	ug/L	-/-	1/Year	Composite	ND < 0.478	*
Phenanthrene	ug/L	-/-	1/Year	Composite	ND < 0.191	*
Phenol	ug/L	-/-	1/Year	Composite	ND < 0.478	*
Pyrene	ug/L	-/-	1/Year	Composite	ND < 0.191	*
Tetrachloroethene	ug/L	-/-	1/Year	Grab	ND < 0.25	*
Toluene	ug/L	-/-	1/Year	Grab	ND < 0.25	*
Toxaphene	ug/L	-/-	1/Year	Composite	ND < 0.24	*
trans-1,2-Dichloroethene	ug/L	-/-	1/Year	Grab	ND < 0.25	*
trans-1,3-Dichloropropene	ug/L	-/-	1/Year	Grab	ND < 0.25	*
Trichlorofluoromethane	ug/L	-/-	1/Year	Composite	ND < 0.25	*
Vinyl chloride	ug/L	-/-	1/Year	Grab	ND < 0.25	*
Xylenes (Total)	ug/L	-/-	1/Year	Grab	ND < 0.5	*



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NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/12/2014 (Grab) - 12/13/2014 (Comp.)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
<b>EFFLUENT MONITORING (NO LIMITATIONS) POLLUTANTS</b>						
1,2-Dichloro-1,1,2-trifluoroethane	ug/L	-/-	1/Year	Grab	ND < 1	*
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	-/-	1/Quarter	Grab	ND < 0.5	*
1,4-Dioxane	ug/L	-/-	1/Year	Composite	ND < 0.5	*
Aroclor 1016	ug/L	-/-	1/Year	Composite	ND < 0.24	*
Aroclor 1221	ug/L	-/-	1/Year	Composite	ND < 0.24	*
Aroclor 1232	ug/L	-/-	1/Year	Composite	ND < 0.24	*
Aroclor 1242	ug/L	-/-	1/Year	Composite	ND < 0.24	*
Aroclor 1248	ug/L	-/-	1/Year	Composite	ND < 0.24	*
Aroclor 1254	ug/L	-/-	1/Year	Composite	ND < 0.24	*
Aroclor 1260	ug/L	-/-	1/Year	Composite	ND < 0.24	*
Boron	mg/L	-/-	1/Year	Composite	0.059	--
cis-1,2-Dichloroethene	ug/L	-/-	1/Year	Grab	ND < 0.25	*
Cobalt	ug/L	-/-	1/Year	Composite	ND < 2.5	U
Conductivity at 25 °C	µmhos/cm	-/-	1/Discharge	Grab	210	--
Cyclohexane	ug/L	-/-	1/Year	Grab	ND < 1	*
Diesel Range Organics (DRO C13-C28)	mg/L	-/-	1/Year	Grab	ND < 0.025	U
Dissolved Oxygen (Field)	mg/L	-/-	1/Discharge	Grab	7.72	*
E. Coli	MPN/100mL	-/-	1/Year	Grab	540	--
Fecal Coliform	MPN/100mL	-/-	1/Year	Grab	540	--
Gasoline Range Organics (GRO C4-C12)	mg/L	-/-	1/Year	Grab	ND < 0.095	U
Hardness	mg/L	-/-	1/Year	Composite	52	--
Monomethyl hydrazine	ug/L	-/-	1/Year	Composite	ND < 0.25	*
Total organic carbon	mg/L	-/-	1/Year	Composite	23	--
Turbidity	NTU	-/-	1/Discharge	Grab	8.7	--
Vanadium	ug/L	-/-	1/Year	Composite	ND < 5	U
<b>ADDITIONAL POLLUTANTS</b>						
Antimony, dissolved	ug/L	-/-	Additional	Composite	ND < 0.5	U
Arsenic, dissolved	ug/L	-/-	Additional	Composite	ND < 5	U
Barium, dissolved	ug/L	-/-	Additional	Composite	12	--
Beryllium, dissolved	ug/L	-/-	Additional	Composite	ND < 1	U
Boron, dissolved	mg/L	-/-	Additional	Composite	0.061	--
Cadmium, dissolved	ug/L	-/-	Additional	Composite	ND < 0.25	U
Chromium, dissolved	ug/L	-/-	Additional	Composite	ND < 2.5	U
Cobalt, dissolved	ug/L	-/-	Additional	Composite	ND < 2.5	U
Copper, dissolved	ug/L	-/-	Additional	Composite	2.6	--
Hardness, dissolved	mg/L	-/-	Additional	Composite	50	--
Iron, dissolved	mg/L	-/-	Additional	Composite	0.05	--
Lead, dissolved	ug/L	-/-	Additional	Composite	ND < 0.5	U
Manganese, dissolved	ug/L	-/-	Additional	Composite	ND < 10	U
Mercury, dissolved	ug/L	-/-	Additional	Composite	ND < 0.1	*
Nickel, dissolved	ug/L	-/-	Additional	Composite	ND < 5	U
Selenium, dissolved	ug/L	-/-	Additional	Composite	ND < 0.5	UJ (I)
Silver, dissolved	ug/L	-/-	Additional	Composite	ND < 5	U
Thallium, dissolved	ug/L	-/-	Additional	Composite	ND < 0.5	U
Vanadium, dissolved	ug/L	-/-	Additional	Composite	ND < 5	U
Zinc, Dissolved	ug/L	-/-	Additional	Composite	ND < 10	U

OUTFALL 002 (SOUTH SLOPE BELOW R-2 POND)

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NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/17/2014 (Grab) - 12/18/2014 (Comp.)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Flow**	MGD	17.89/-	1/Discharge	Meas	0.063369	*
<b>CONVENTIONAL POLLUTANTS</b>						
Biochemical Oxygen Demand (BOD)(5-Day @ 20 deg. C)	mg/L	30/20	1/Discharge	Composite	1.4	J (DNQ)
Oil & Grease	mg/L	15/10	1/Discharge	Grab	ND < 1.3	*
pH (Field)	pH units	6.5-8.5/-	1/Discharge	Grab	7.11	*
Total Suspended Solids	mg/L	45/15	1/Discharge	Composite	2.1	-- #
<b>PRIORITY POLLUTANTS</b>						
1,1-Dichloroethene	ug/L	6.0/3.2	1/Discharge	Grab	ND < 0.25	*
1,2-Dichloroethane	ug/L	0.5/-	1/Discharge	Grab	ND < 0.25	*
2,4,6-Trichlorophenol	ug/L	13/6.5	1/Discharge	Composite	ND < 0.503	*
2,4-Dinitrotoluene	ug/L	18/9.1	1/Discharge	Composite	ND < 2.01	*
alpha-BHC	ug/L	0.03/0.01	1/Discharge	Composite	ND < 0.0026	*
Antimony	ug/L	6.0/-	1/Year	ANR	ANR	ANR
Arsenic	ug/L	10/-	1/Year	ANR	ANR	ANR
Beryllium	ug/L	4.0/-	1/Year	ANR	ANR	ANR
Bis (2-Ethylhexyl) Phthalate	ug/L	4.0/-	1/Discharge	Composite	ND < 2.01	*
Cadmium	ug/L	4.0/2.0	1/Discharge	Composite	ND < 0.25	U
Chromium VI	ug/L	16/8	1/Year	ANR	ANR	ANR
Copper	ug/L	14/7.1	1/Discharge	Composite	3.4	U (B)
Cyanide	ug/L	8.5/4.3	1/Discharge	Composite	ND < 2.5	*
Lead	ug/L	5.2/2.6	1/Discharge	Composite	ND < 0.5	U
Mercury	ug/L	0.10/0.05	1/Discharge	Composite	ND < 0.1	*
Nickel	ug/L	96/35	1/Year	ANR	ANR	ANR
N-Nitrosodimethylamine	ug/L	16/8.1	1/Discharge	Composite	ND < 1.01	*
Pentachlorophenol	ug/L	16.5/8.2	1/Discharge	Composite	ND < 1.01	*
Selenium	ug/L	8.2/4.1	1/Discharge	Composite	ND < 0.5	UJ (I)
Silver	ug/L	4.1/2.0	1/Year	ANR	ANR	ANR
Thallium	ug/L	2.0/-	1/Year	ANR	ANR	ANR
Trichloroethene	ug/L	5.0/-	1/Discharge	Grab	ND < 0.25	*
Zinc	ug/L	119/54	1/Discharge	Composite	5.8	J (DNQ)
<b>NON-CONVENTIONAL POLLUTANTS</b>						
Acute Toxicity	% SURVIVAL	70-90/-	1/Year	ANR	ANR	ANR
Ammonia - N	mg/L	10.1/1.96	1/Discharge	Composite	0.239	J (R)
Barium	mg/L	1.0/-	1/Year	ANR	ANR	ANR
Chloride	mg/L	150/-	1/Discharge	Composite	5.5	--
Chlorine, Total Residual	mg/L	0.1/-	1/Year	Grab	0.0	* (2)
Chronic Toxicity	TUC	1/-	1st & 2nd rain event/Year	Composite	1.0	*
Detergents (as MBAS)	mg/L	0.5/-	1/Discharge	Composite	0.053	J (DNQ)
Fluoride	mg/L	1.6/-	1/Year	ANR	ANR	ANR
Iron	mg/L	0.3/-	1/Year	Composite	0.27	-- (2)
Manganese	ug/L	50/-	1/Year	ANR	ANR	ANR
Nitrate - N	mg/L	8/-	1/Discharge	Composite	1.8	--
Nitrite - N	mg/L	1/-	1/Discharge	Composite	ND < 0.070	*
Nitrate + Nitrite as Nitrogen (N)	mg/L	8/-	1/Discharge	Composite	1.8	--
Perchlorate	ug/L	6.0/-	1/Discharge	Composite	ND < 0.95	*
Settleable Solids	ml/L/hr	0.3/0.1	1/Discharge	Composite	ND < 0	U, #
Sulfate	mg/L	300/-	1/Discharge	Composite	10	--
Temperature (Field)	deg. F	86/-	1/Discharge	Grab	49.57	*
Total Dissolved Solids	mg/L	950/-	1/Discharge	Composite	170	--

See attached notes for abbreviations, definitions,  
and other explanations for the data presented.

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				12/17/2014 (Grab) - 12/18/2014 (Comp.)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
<b>REMAINING PRIORITY POLLUTANTS</b>						
1,1,1-Trichloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,1,2,2-Tetrachloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,1,2-Trichloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,1-Dichloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2,4-Trichlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2-Dichlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2-Dichloropropane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2-Diphenylhydrazine/Azobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,3-Dichlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,4-Dichlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4-Dichlorophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4-Dimethylphenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4-Dinitrophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2,6-Dinitrotoluene	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Chloroethylvinylether	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Chloronaphthalene	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Chlorophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Methyl-4,6-Dinitrophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Nitrophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
3,3'-Dichlorobenzidine	ug/L	-/-	1/Year	ANR	ANR	ANR
4,4'-DDD	ug/L	-/-	1/Year	ANR	ANR	ANR
4,4'-DDE	ug/L	-/-	1/Year	ANR	ANR	ANR
4,4'-DDT	ug/L	-/-	1/Year	ANR	ANR	ANR
4-Bromophenylphenylether	ug/L	-/-	1/Year	ANR	ANR	ANR
4-Chloro-3-methylphenol	ug/L	-/-	1/Year	ANR	ANR	ANR
4-Chlorophenylphenylether	ug/L	-/-	1/Year	ANR	ANR	ANR
4-Nitrophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
Acenaphthene	ug/L	-/-	1/Year	ANR	ANR	ANR
Acenaphthylene	ug/L	-/-	1/Year	ANR	ANR	ANR
Acrolein	ug/L	-/-	1/Year	ANR	ANR	ANR
Acrylonitrile	ug/L	-/-	1/Year	ANR	ANR	ANR
Aldrin	ug/L	-/-	1/Year	ANR	ANR	ANR
Anthracene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzidine	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(a)anthracene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(a)pyrene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(b)fluoranthene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(g,h,i)Perylene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(k)fluoranthene	ug/L	-/-	1/Year	ANR	ANR	ANR
beta-BHC	ug/L	-/-	1/Year	ANR	ANR	ANR
Bis (2-Chloroethoxy) Methane	ug/L	-/-	1/Year	ANR	ANR	ANR
Bis (2-Chloroethyl) Ether	ug/L	-/-	1/Year	ANR	ANR	ANR
Bis (2-Chloroisopropyl) Ether	ug/L	-/-	1/Year	ANR	ANR	ANR
Bromodichloromethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Bromoform	ug/L	-/-	1/Year	ANR	ANR	ANR
Bromomethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Butylbenzylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Carbon Tetrachloride	ug/L	-/-	1/Year	ANR	ANR	ANR
Chlordane	ug/L	-/-	1/Year	ANR	ANR	ANR



OUTFALL 002 (SOUTH SLOPE BELOW R-2 POND)

FOURTH QUARTER 2014 REPORTING SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/17/2014 (Grab) - 12/18/2014 (Comp.)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Chlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
Chloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Chloroform	ug/L	-/-	1/Year	ANR	ANR	ANR
Chloromethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Chromium	ug/L	-/-	1/Year	ANR	ANR	ANR
Chrysene	ug/L	-/-	1/Year	ANR	ANR	ANR
cis-1,3-Dichloropropene	ug/L	-/-	1/Year	ANR	ANR	ANR
delta-BHC	ug/L	-/-	1/Year	ANR	ANR	ANR
Dibenzo(a,h)anthracene	ug/L	-/-	1/Year	ANR	ANR	ANR
Dibromochloromethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Dieldrin	ug/L	-/-	1/Year	ANR	ANR	ANR
Diethylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Dimethylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Di-n-butylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Di-n-octylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Endosulfan I	ug/L	-/-	1/Year	ANR	ANR	ANR
Endosulfan II	ug/L	-/-	1/Year	ANR	ANR	ANR
Endosulfan Sulfate	ug/L	-/-	1/Year	ANR	ANR	ANR
Endrin	ug/L	-/-	1/Year	ANR	ANR	ANR
Endrin Aldehyde	ug/L	-/-	1/Year	ANR	ANR	ANR
Ethylbenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
Fluoranthene	ug/L	-/-	1/Year	ANR	ANR	ANR
Fluorene	ug/L	-/-	1/Year	ANR	ANR	ANR
Heptachlor	ug/L	-/-	1/Year	ANR	ANR	ANR
Heptachlor Epoxide	ug/L	-/-	1/Year	ANR	ANR	ANR
Hexachlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
Hexachlorobutadiene	ug/L	-/-	1/Year	ANR	ANR	ANR
Hexachlorocyclopentadiene	ug/L	-/-	1/Year	ANR	ANR	ANR
Hexachloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Indeno(1,2,3-cd)pyrene	ug/L	-/-	1/Year	ANR	ANR	ANR
Isophorone	ug/L	-/-	1/Year	ANR	ANR	ANR
Lindane (gamma-BHC)	ug/L	-/-	1/Year	ANR	ANR	ANR
Methylene chloride	ug/L	-/-	1/Year	ANR	ANR	ANR
Naphthalene	ug/L	-/-	1/Year	ANR	ANR	ANR
Nitrobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
N-Nitroso-di-n-propylamine	ug/L	-/-	1/Year	ANR	ANR	ANR
N-Nitrosodiphenylamine	ug/L	-/-	1/Year	ANR	ANR	ANR
Phenanthrene	ug/L	-/-	1/Year	ANR	ANR	ANR
Phenol	ug/L	-/-	1/Year	ANR	ANR	ANR
Pyrene	ug/L	-/-	1/Year	ANR	ANR	ANR
Tetrachloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
Toluene	ug/L	-/-	1/Year	ANR	ANR	ANR
Toxaphene	ug/L	-/-	1/Year	ANR	ANR	ANR
trans-1,2-Dichloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
trans-1,3-Dichloropropene	ug/L	-/-	1/Year	ANR	ANR	ANR
Trichlorofluoromethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Vinyl chloride	ug/L	-/-	1/Year	ANR	ANR	ANR
Xylenes (Total)	ug/L	-/-	1/Year	ANR	ANR	ANR

OUTFALL 002 (SOUTH SLOPE BELOW R-2 POND)

FOURTH QUARTER 2014 REPORTING SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/17/2014 (Grab) - 12/18/2014 (Comp.)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
<b>EFFLUENT MONITORING (NO LIMITATIONS) POLLUTANTS</b>						
1,2-Dichloro-1,1,2-trifluoroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	-/-	1/Quarter	ANR	ANR	ANR
1,4-Dioxane	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1016	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1221	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1232	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1242	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1248	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1254	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1260	ug/L	-/-	1/Year	ANR	ANR	ANR
Boron	mg/L	-/-	1/Year	ANR	ANR	ANR
cis-1,2-Dichloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
Cobalt	ug/L	-/-	1/Year	ANR	ANR	ANR
Conductivity at 25 °C	µmhos/cm	-/-	1/Discharge	Grab	180	--
Cyclohexane	ug/L	-/-	1/Year	ANR	ANR	ANR
Diesel Range Organics (DRO C13-C28)	mg/L	-/-	1/Year	ANR	ANR	ANR
Dissolved Oxygen (Field)	mg/L	-/-	1/Discharge	Grab	4.90	*
E. Coli	MPN/100mL	-/-	1/Year	Grab	71	-- (2)
Fecal Coliform	MPN/100mL	-/-	1/Year	Grab	71	-- (2)
Gasoline Range Organics (GRO C4-C12)	mg/L	-/-	1/Year	ANR	ANR	ANR
Hardness	mg/L	-/-	1/Year	ANR	ANR	ANR
Monomethyl hydrazine	ug/L	-/-	1/Year	ANR	ANR	ANR
Total organic carbon	mg/L	-/-	1/Year	ANR	ANR	ANR
Turbidity	NTU	-/-	1/Discharge	Grab	8.7	--
Vanadium	ug/L	-/-	1/Year	ANR	ANR	ANR
<b>ADDITIONAL POLLUTANTS</b>						
Antimony, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Arsenic, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Barium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Beryllium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Boron, dissolved	mg/L	-/-	Additional	ANR	ANR	ANR
Cadmium, dissolved	ug/L	-/-	Additional	Composite	ND < 0.25	U
Chromium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Cobalt, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Copper, dissolved	ug/L	-/-	Additional	Composite	2.9	--
Hardness, dissolved	mg/L	-/-	Additional	ANR	ANR	ANR
Iron, dissolved	mg/L	-/-	Additional	Composite	26	U (B)
Lead, dissolved	ug/L	-/-	Additional	Composite	ND < 0.5	U
Manganese, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Mercury, dissolved	ug/L	-/-	Additional	Composite	ND < 0.1	*
Nickel, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Selenium, dissolved	ug/L	-/-	Additional	Composite	ND < 0.5	UJ (I)
Silver, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Thallium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Vanadium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Zinc, Dissolved	ug/L	-/-	Additional	Composite	3.7	J (DNQ)

OUTFALL 002 (SOUTH SLOPE BELOW R-2 POND)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

Sample Type Composite  
 Sample Date December 13, 2014

ANALYTE	SAMPLE FREQUENCY	LAB LOD (ug/L)	LAB RL (ug/L)	LAB RESULT (ug/L)	VALIDATION QUALIFIER	1998 WHO TEF	BEF Great Lakes Water Quality Initiative	TCDD Equivalent (w/out DNQ Values) (ug/L)
1,2,3,4,6,7,8-HpCDD	1/Discharge	6.00E-06	4.72E-05	ND	U	0.01	0.05	ND
1,2,3,4,6,7,8-HpCDF	1/Discharge	6.00E-06	4.72E-05	ND	U	0.01	0.01	ND
1,2,3,4,7,8,9-HpCDF	1/Discharge	6.00E-06	4.72E-05	ND	U	0.01	0.4	ND
1,2,3,4,7,8-HxCDD	1/Discharge	6.00E-06	4.72E-05	ND	U	0.1	0.3	ND
1,2,3,4,7,8-HxCDF	1/Discharge	6.00E-06	4.72E-05	ND	U	0.1	0.08	ND
1,2,3,6,7,8-HxCDD	1/Discharge	6.00E-06	4.72E-05	ND	U	0.1	0.1	ND
1,2,3,6,7,8-HxCDF	1/Discharge	6.00E-06	4.72E-05	ND	U	0.1	0.2	ND
1,2,3,7,8,9-HxCDD	1/Discharge	6.00E-06	4.72E-05	ND	U	0.1	0.1	ND
1,2,3,7,8,9-HxCDF	1/Discharge	6.00E-06	4.72E-05	ND	U	0.1	0.6	ND
1,2,3,7,8-PeCDD	1/Discharge	6.00E-06	4.72E-05	ND	U	1	0.9	ND
1,2,3,7,8-PeCDF	1/Discharge	6.00E-06	4.72E-05	ND	U	0.05	0.2	ND
2,3,4,6,7,8-HxCDF	1/Discharge	6.00E-06	4.72E-05	ND	U	0.1	0.7	ND
2,3,4,7,8-PeCDF	1/Discharge	6.00E-06	4.72E-05	ND	U	0.5	1.6	ND
2,3,7,8-TCDD	1/Discharge	6.00E-06	9.40E-06	ND	U	1	1	ND
2,3,7,8-TCDF	1/Discharge	6.00E-06	9.40E-06	ND	U	0.1	0.8	ND
OCDD	1/Discharge	1.20E-05	9.44E-05	2.02E-05	U (B)	0.0001	0.01	ND
OCDF	1/Discharge	1.20E-05	9.44E-05	9.00E-07	UJ (*III)	0.0001	0.02	ND
<b>TCDD TEQ w/out DNQ Values</b>								<b>ND</b>

TCDD TEQ (PRIORITY POLLUTANTS) PERMIT LIMIT = 2.80E-08



OUTFALL 002 (SOUTH SLOPE BELOW R-2 POND)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

Sample Type Composite  
 Sample Date December 18, 2014

ANALYTE	SAMPLE FREQUENCY	LAB LOD (ug/L)	LAB RL (ug/L)	LAB RESULT (ug/L)	VALIDATION QUALIFIER	1998 WHO TEF	BEF Great Lakes Water Quality Initiative	TCDD Equivalent (w/out DNQ Values) (ug/L)
1,2,3,4,6,7,8-HpCDD	1/Discharge	6.00E-06	5.19E-05	ND	U	0.01	0.05	ND
1,2,3,4,6,7,8-HpCDF	1/Discharge	6.00E-06	5.19E-05	ND	U	0.01	0.01	ND
1,2,3,4,7,8,9-HpCDF	1/Discharge	6.00E-06	5.19E-05	ND	U	0.01	0.4	ND
1,2,3,4,7,8-HxCDD	1/Discharge	6.00E-06	5.19E-05	ND	U	0.1	0.3	ND
1,2,3,4,7,8-HxCDF	1/Discharge	6.00E-06	5.19E-05	ND	U	0.1	0.08	ND
1,2,3,6,7,8-HxCDD	1/Discharge	6.00E-06	5.19E-05	ND	U	0.1	0.1	ND
1,2,3,6,7,8-HxCDF	1/Discharge	6.00E-06	5.19E-05	ND	U	0.1	0.2	ND
1,2,3,7,8,9-HxCDD	1/Discharge	6.00E-06	5.19E-05	ND	U	0.1	0.1	ND
1,2,3,7,8,9-HxCDF	1/Discharge	6.00E-06	5.19E-05	ND	U	0.1	0.6	ND
1,2,3,7,8-PeCDD	1/Discharge	6.00E-06	5.19E-05	ND	U	1	0.9	ND
1,2,3,7,8-PeCDF	1/Discharge	6.00E-06	5.19E-05	ND	U	0.05	0.2	ND
2,3,4,6,7,8-HxCDF	1/Discharge	6.00E-06	5.19E-05	ND	U	0.1	0.7	ND
2,3,4,7,8-PeCDF	1/Discharge	6.00E-06	5.19E-05	ND	U	0.5	1.6	ND
2,3,7,8-TCDD	1/Discharge	6.00E-06	1.04E-05	ND	U	1	1	ND
2,3,7,8-TCDF	1/Discharge	6.00E-06	1.04E-05	ND	U	0.1	0.8	ND
OCDD	1/Discharge	1.20E-05	1.04E-04	4.38E-06	U (B)	0.0001	0.01	ND
OCDF	1/Discharge	1.20E-05	1.04E-04	ND	U	0.0001	0.02	ND
<b>TCDD TEQ w/out DNQ Values</b>								<b>ND</b>

TCDD TEQ (PRIORITY POLLUTANTS) PERMIT LIMIT = 2.80E-08

OUTFALL 002 (SOUTH SLOPE BELOW R-2 POND)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	12/13/2014 (Composite)			12/18/2014 (Composite)		
				RESULT	MDA	VALIDATION QUALIFIER	RESULT	MDA	VALIDATION QUALIFIER
<b>NON-CONVENTIONAL POLLUTANTS</b>									
Gross Alpha	pCi/L	15/-	1/Discharge	-0.942 ± 0.943	2.05	UJ (C)	1.23 ± 1.12	1.74	UJ (C)
Gross Beta	pCi/L	50/-	1/Discharge	3.86 ± 0.915	0.980	J (DNQ)	2.69 ± 0.797	0.933	J (DNQ)
Strontium-90	pCi/L	8.0/-	1/Discharge	-0.0191 ± 0.435	0.775	U	-0.0343 ± 0.365	0.657	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	1/Discharge	0.394 ± 0.444	NA	UJ (C)	0.427 ± 0.284	NA	UJ (C)
Tritium	pCi/L	20000/-	1/Discharge	-40.5 ± 171	322	U	69.4 ± 184	321	U
<b>ADDITIONAL POLLUTANTS</b>									
Cesium 137	pCi/L	200/-	1/Discharge	-2.27 ± 7.6	13.5	U	-2.12 ± 7.48	13.4	U
Uranium, Total	pCi/L	20/-	1/Discharge	0.198 ± 0.47	0.902	U	0.110 ± 0.372	0.800	U
<b>ADDITIONAL POLLUTANTS WITHOUT LIMITS</b>									
Potassium-40	pCi/L	-/-	1/Discharge	-81.3 ± 3250	242	U	-79.6 ± 6790	202	U

OUTFALL 002 (SOUTH SLOPE BELOW R-2 POND)

FOURTH QUARTER 2014 REPORTING SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/12/2014 (Grab) - 12/13/2014 (Comp.)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Flow**	MGD	17.89/-	1/Discharge	Meas	0.089227	*
<b>CONVENTIONAL POLLUTANTS</b>						
Biochemical Oxygen Demand (BOD)(5-Day @ 20 deg. C)	LBS/DAY	40,032/26,700	1/Discharge	Composite	2.8	--
Oil & Grease	LBS/DAY	20,016/13,344	1/Discharge	Grab	ND	*
Total Suspended Solids	LBS/DAY	60,048	1/Discharge	Composite	3.2	--
<b>PRIORITY POLLUTANTS</b>						
1,1-Dichloroethene	LBS/DAY	8.0/4.3	1/Discharge	Grab	ND	*
1,2-Dichloroethane	LBS/DAY	0.67/-	1/Discharge	Grab	ND	*
2,4,6-Trichlorophenol	LBS/DAY	17/8.7	1/Discharge	Composite	ND	*
2,4-Dinitrotoluene	LBS/DAY	24/12	1/Discharge	Composite	ND	*
alpha-BHC	LBS/DAY	0.04/0.013	1/Discharge	Composite	ND	*
Bis (2-Ethylhexyl) Phthalate	LBS/DAY	5.3/-	1/Discharge	Composite	ND	*
Cadmium	LBS/DAY	5.3/2.7	1/Discharge	Composite	ND	U
Chromium VI	LBS/DAY	22/11	1/Year	Composite	ND	*
Copper	LBS/DAY	19/10	1/Discharge	Composite	0.0024	--
Cyanide	LBS/DAY	11/5.7	1/Discharge	Grab	ND	*
Lead	LBS/DAY	6.9/3.5	1/Discharge	Composite	ND	U (\$)
Mercury	LBS/DAY	0.13/0.07	1/Discharge	Composite	ND	*
Nickel	LBS/DAY	128/47	1/Year	Composite	ND	U
N-Nitrosodimethylamine	LBS/DAY	22/11	1/Discharge	Composite	ND	*
Pentachlorophenol	LBS/DAY	22/11	1/Discharge	Composite	ND	*
Selenium	LBS/DAY	11/5.5	1/Discharge	Composite	ND	UJ (I)
Silver	LBS/DAY	5.5/2.7	1/Year	Composite	ND	U
TCDD TEQ_NoDNQ	LBS/DAY	3.7E-08/1.9E-08	1/Discharge	Composite	ND	--
Thallium	LBS/DAY	2.7/-	1/Year	Composite	ND	U
Trichloroethene	LBS/DAY	6.7/-	1/Discharge	Grab	ND	*
Zinc	LBS/DAY	159/72	1/Discharge	Composite	ND	U
<b>NON-CONVENTIONAL POLLUTANTS</b>						
Ammonia - N	LBS/DAY	13,500/2,615	1/Discharge	Composite	0.153	J (R )
Barium	LBS/DAY	1,330/-	1/Year	Composite	9.7	--
Chloride	LBS/DAY	200,160/-	1/Discharge	Composite	3.9	--
Chlorine, Total Residual	LBS/DAY	133/-	1/Year	Grab	0.031	*
Detergents (as MBAS)	LBS/DAY	667/-	1/Discharge	Composite	0.047	J (DNQ)
Fluoride	LBS/DAY	2,135/-	1/Year	Composite	0.13	--
Iron	LBS/DAY	400/-	1/Year	Composite	0.22	--
Manganese	LBS/DAY	667	1/Year	Composite	ND	U
Nitrate - N	LBS/DAY	10,700/-	1/Discharge	Composite	2.6	--
Nitrite - N	LBS/DAY	1,334/-	1/Discharge	Composite	ND	*
Nitrate + Nitrite as Nitrogen (N)	LBS/DAY	10,700/-	1/Discharge	Composite	2.6	--
Perchlorate	LBS/DAY	8.0/-	1/Discharge	Composite	ND	*
Sulfate	LBS/DAY	400,320/-	1/Discharge	Composite	7.3	--
Total Dissolved Solids	LBS/DAY	1,270,000/-	1/Discharge	Composite	89.3	--



OUTFALL 002 (SOUTH SLOPE BELOW R-2 POND)

FOURTH QUARTER 2014 REPORTING SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/17//2014 (Grab) - 12/18/2014 (Comp.)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Flow**	MGD	17.89/-	1/Discharge	Meas	0.063369	*
<b>CONVENTIONAL POLLUTANTS</b>						
Biochemical Oxygen Demand (BOD)(5-Day @ 20 deg. C)	LBS/DAY	40,032/26,700	1/Discharge	Composite	0.74	J (DNQ)
Oil & Grease	LBS/DAY	20,016/13,344	1/Discharge	Grab	ND	*
Total Suspended Solids	LBS/DAY	60,048	1/Discharge	Composite	1.1	--
<b>PRIORITY POLLUTANTS</b>						
1,1-Dichloroethene	LBS/DAY	8.0/4.3	1/Discharge	Grab	ND	*
1,2-Dichloroethane	LBS/DAY	0.67/-	1/Discharge	Grab	ND	*
2,4,6-Trichlorophenol	LBS/DAY	17/8.7	1/Discharge	Composite	ND	*
2,4-Dinitrotoluene	LBS/DAY	24/12	1/Discharge	Composite	ND	*
alpha-BHC	LBS/DAY	0.04/0.013	1/Discharge	Composite	ND	*
Bis (2-Ethylhexyl) Phthalate	LBS/DAY	5.3/-	1/Discharge	Composite	ND	*
Cadmium	LBS/DAY	5.3/2.7	1/Discharge	Composite	ND	U
Chromium VI	LBS/DAY	22/11	1/Year	ANR	ANR	ANR
Copper	LBS/DAY	19/10	1/Discharge	Composite	0.0018	U (B)
Cyanide	LBS/DAY	11/5.7	1/Discharge	Composite	ND	*
Lead	LBS/DAY	6.9/3.5	1/Discharge	Composite	ND	U
Mercury	LBS/DAY	0.13/0.07	1/Discharge	Composite	ND	*
Nickel	LBS/DAY	128/47	1/Year	ANR	ANR	ANR
N-Nitrosodimethylamine	LBS/DAY	22/11	1/Discharge	Composite	ND	*
Pentachlorophenol	LBS/DAY	22/11	1/Discharge	Composite	ND	*
Selenium	LBS/DAY	11/5.5	1/Discharge	Composite	ND	UJ (I)
Silver	LBS/DAY	5.5/2.7	1/Year	ANR	ANR	ANR
TCDD TEQ_NoDNQ	LBS/DAY	3.7E-08/1.9E-08	1/Discharge	Composite	ND	--
Thallium	LBS/DAY	2.7/-	1/Year	ANR	ANR	ANR
Trichloroethene	LBS/DAY	6.7/-	1/Discharge	Grab	ND	*
Zinc	LBS/DAY	159/72	1/Discharge	Composite	0.0031	J (DNQ)
<b>NON-CONVENTIONAL POLLUTANTS</b>						
Ammonia - N	LBS/DAY	13,500/2,615	1/Discharge	Composite	0.126	J (R )
Barium	LBS/DAY	1,330/-	1/Year	ANR	ANR	ANR
Chloride	LBS/DAY	200,160/-	1/Discharge	Composite	2.9	--
Chlorine, Total Residual	LBS/DAY	133/-	1/Year	Grab	0.0	* (2)
Detergents (as MBAS)	LBS/DAY	667/-	1/Discharge	Composite	0.028	J (DNQ)
Fluoride	LBS/DAY	2,135/-	1/Year	ANR	ANR	ANR
Iron	LBS/DAY	400/-	1/Year	Composite	0.14	-- (2)
Manganese	LBS/DAY	667	1/Year	ANR	ANR	ANR
Nitrate - N	LBS/DAY	10,700/-	1/Discharge	Composite	1.0	--
Nitrite - N	LBS/DAY	1,334/-	1/Discharge	Composite	ND	*
Nitrate + Nitrite as Nitrogen (N)	LBS/DAY	10,700/-	1/Discharge	Composite	1.0	--
Perchlorate	LBS/DAY	8.0/-	1/Discharge	Composite	ND	*
Sulfate	LBS/DAY	400,320/-	1/Discharge	Composite	5.3	--
Total Dissolved Solids	LBS/DAY	1,270,000/-	1/Discharge	Composite	89.8	--

OUTFALL 008 (HAPPY VALLEY DRAINAGE)

FOURTH QUARTER 2014 REPORTING SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/12/2014 (Grab and Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Flow**	MGD	17.89/-	1/Discharge	Meas	0.060756	*
<b>CONVENTIONAL POLLUTANTS</b>						
Oil & Grease	mg/L	15/-	1/Discharge	Grab	ND < 1.4	U
pH (Field)	pH units	6.5-8.5/-	1/Discharge	Grab	6.61	*
<b>PRIORITY POLLUTANTS</b>						
Antimony	ug/L	6.0/-	1/Discharge	Composite	ND < 0.5	U
Cadmium	ug/L	(4.0)3.1/-	1/Discharge	Composite	ND < 0.25	U
Copper	ug/L	14/-	1/Discharge	Composite	5.2	--
Lead	ug/L	5.2/-	1/Discharge	Composite	2	--
Mercury	ug/L	0.13/-	1/Discharge	Composite	ND < 0.1	U
Nickel	ug/L	100/-	1/Year	Composite	ND < 5	U
Selenium	ug/L	5/-	1/Discharge	Composite	ND < 0.5	UJ (I)
Thallium	ug/L	2.0/-	1/Discharge	Composite	ND < 0.5	U
Total Cyanide	ug/L	9.5/-	1/Discharge	Composite	ND < 2.5	U
Zinc	ug/L	159/-	1/Discharge	Composite	31	--
<b>NON-CONVENTIONAL POLLUTANTS</b>						
Acute Toxicity	% SURVIVAL	70-90/-	1/Year	Grab	100	*
Ammonia-N	mg/L	10.1/-	1/Discharge	Composite	0.14	J (DNQ)
Boron	mg/L	1.0/-	1/Year	Composite	0.095	--
Chloride	mg/L	150/-	1/Discharge	Composite	4.9	--
Chronic Toxicity	TUC	1/-	1st & 2nd rain event/Year	Composite	1.0	*
Fluoride	mg/L	1.6/-	1/Year	Composite	0.15	--
Nitrate-N	mg/L	8/-	1/Discharge	Composite	4.3	--
Nitrite-N	mg/L	1/-	1/Discharge	Composite	ND < 0.07	U
Nitrate + Nitrite as Nitrogen (N)	mg/L	8/-	1/Discharge	Composite	4.3	--
Perchlorate	ug/L	6.0/-	1/Discharge	Composite	2.5	J (DNQ)
Sulfate	mg/L	300/-	1/Discharge	Composite	4.3	--
Temperature (Field)	deg. F	86/-	1/Discharge	Grab	53.11	*
Total Dissolved Solids	mg/L	950/-	1/Discharge	Composite	120	--
<b>REMAINING PRIORITY POLLUTANTS</b>						
1,1,1-Trichloroethane	ug/L	-/-	1/Year	Grab	ND < 0.25	U
1,1,2,2-Tetrachloroethane	ug/L	-/-	1/Year	Grab	ND < 0.25	U
1,1,2-Trichloroethane	ug/L	-/-	1/Year	Grab	ND < 0.25	U
1,1-Dichloroethane	ug/L	-/-	1/Year	Grab	ND < 0.25	U
1,1-Dichloroethene	ug/L	-/-	1/Year	Grab	ND < 0.25	U
1,2,4-Trichlorobenzene	ug/L	-/-	1/Year	Composite	ND < 0.478	U
1,2-Dichlorobenzene	ug/L	-/-	1/Year	Composite	ND < 0.191	U
1,2-Dichloroethane	ug/L	-/-	1/Year	Grab	ND < 0.25	U
1,2-Dichloropropane	ug/L	-/-	1/Year	Grab	ND < 0.25	U
1,2-Diphenylhydrazine/Azobenzene	ug/L	-/-	1/Year	Composite	ND < 0.478	U
1,3-Dichlorobenzene	ug/L	-/-	1/Year	Composite	ND < 0.191	U
1,4-Dichlorobenzene	ug/L	-/-	1/Year	Composite	ND < 0.191	U
2,4,6-Trichlorophenol	ug/L	-/-	1/Year	Composite	ND < 0.478	U
2,4-Dichlorophenol	ug/L	-/-	1/Year	Composite	ND < 0.957	U
2,4-Dimethylphenol	ug/L	-/-	1/Year	Composite	ND < 0.957	U
2,4-Dinitrophenol	ug/L	-/-	1/Year	Composite	ND < 1.91	U
2,4-Dinitrotoluene	ug/L	-/-	1/Year	Composite	ND < 1.91	U
2,6-Dinitrotoluene	ug/L	-/-	1/Year	Composite	ND < 1.91	U
2-Chloroethylvinylether	ug/L	-/-	1/Year	Grab	ND < 1	U
2-Chloronaphthalene	ug/L	-/-	1/Year	Composite	ND < 0.191	U

OUTFALL 008 (HAPPY VALLEY DRAINAGE)

FOURTH QUARTER 2014 REPORTING SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/12/2014 (Grab and Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
2-Chlorophenol	ug/L	-/-	1/Year	Composite	ND < 0.478	U
2-Methyl-4,6-Dinitrophenol	ug/L	-/-	1/Year	Composite	ND < 1.91	UJ ( C )
2-Nitrophenol	ug/L	-/-	1/Year	Composite	ND < 0.957	U
3,3'-Dichlorobenzidine	ug/L	-/-	1/Year	Composite	ND < 1.91	U
4,4'-DDD	ug/L	-/-	1/Year	Composite	ND < 0.0038	U
4,4'-DDE	ug/L	-/-	1/Year	Composite	ND < 0.0029	U
4,4'-DDT	ug/L	-/-	1/Year	Composite	ND < 0.0038	U
4-Bromophenylphenylether	ug/L	-/-	1/Year	Composite	ND < 0.478	U
4-Chloro-3-methylphenol	ug/L	-/-	1/Year	Composite	ND < 0.191	U
4-Chlorophenylphenylether	ug/L	-/-	1/Year	Composite	ND < 0.191	U
4-Nitrophenol	ug/L	-/-	1/Year	Composite	ND < 1.91	U
Acenaphthene	ug/L	-/-	1/Year	Composite	ND < 0.191	U
Acenaphthylene	ug/L	-/-	1/Year	Composite	ND < 0.191	U
Acrolein	ug/L	-/-	1/Year	Grab	ND < 2.5	U
Acrylonitrile	ug/L	-/-	1/Year	Grab	ND < 1	U
Aldrin	ug/L	-/-	1/Year	Composite	ND < 0.0014	U
alpha-BHC	ug/L	-/-	1/Year	Composite	ND < 0.0024	U
Anthracene	ug/L	-/-	1/Year	Composite	ND < 0.191	U
Aroclor 1016	ug/L	-/-	1/Year	Composite	ND < 0.24	U
Aroclor 1221	ug/L	-/-	1/Year	Composite	ND < 0.24	U
Aroclor 1232	ug/L	-/-	1/Year	Composite	ND < 0.24	U
Aroclor 1242	ug/L	-/-	1/Year	Composite	ND < 0.24	U
Aroclor 1248	ug/L	-/-	1/Year	Composite	ND < 0.24	U
Aroclor 1254	ug/L	-/-	1/Year	Composite	ND < 0.24	U
Aroclor 1260	ug/L	-/-	1/Year	Composite	ND < 0.24	U
Arsenic	ug/L	-/-	1/Year	Composite	ND < 5	U
Asbestos	MFL	-/-	1/Year	Composite	ND < 9.1	U
Benzene	ug/L	-/-	1/Year	Grab	ND < 0.25	U
Benzidine	ug/L	-/-	1/Year	Composite	ND < 4.78	UJ (C)
Benzo(a)anthracene	ug/L	-/-	1/Year	Composite	ND < 1.91	U
Benzo(a)pyrene	ug/L	-/-	1/Year	Composite	ND < 4.78	U
Benzo(b)fluoranthene	ug/L	-/-	1/Year	Composite	ND < 0.957	U
Benzo(g,h,i)Perylene	ug/L	-/-	1/Year	Composite	ND < 1.91	UJ (C)
Benzo(k)fluoranthene	ug/L	-/-	1/Year	Composite	ND < 0.239	U
Beryllium	ug/L	-/-	1/Year	Composite	ND < 1	U
beta-BHC	ug/L	-/-	1/Year	Composite	ND < 0.0038	U
Bis (2-Chloroethoxy) Methane	ug/L	-/-	1/Year	Composite	ND < 0.191	U
Bis (2-Chloroethyl) Ether	ug/L	-/-	1/Year	Composite	ND < 0.191	U
Bis (2-Chloroisopropyl) Ether	ug/L	-/-	1/Year	Composite	ND < 0.191	U
Bis (2-Ethylhexyl) Phthalate	ug/L	-/-	1/Year	Composite	ND < 1.91	U
Bromodichloromethane	ug/L	-/-	1/Year	Grab	ND < 0.25	U
Bromoform	ug/L	-/-	1/Year	Grab	ND < 0.4	U
Bromomethane	ug/L	-/-	1/Year	Grab	ND < 0.25	U
Butylbenzylphthalate	ug/L	-/-	1/Year	Composite	ND < 1.91	U
Carbon Tetrachloride	ug/L	-/-	1/Year	Grab	ND < 0.25	U
Chlordane	ug/L	-/-	1/Year	Composite	ND < 0.076	U
Chlorobenzene	ug/L	-/-	1/Year	Grab	ND < 0.25	U
Chloroethane	ug/L	-/-	1/Year	Grab	ND < 0.4	U
Chloroform	ug/L	-/-	1/Year	Grab	ND < 0.25	U
Chloromethane	ug/L	-/-	1/Year	Grab	ND < 0.25	U
Chromium	ug/L	-/-	1/Year	Composite	3.8	J (DNQ)

OUTFALL 008 (HAPPY VALLEY DRAINAGE)

FOURTH QUARTER 2014 REPORTING SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/12/2014 (Grab and Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Chromium VI	ug/L	-/-	1/Year	Grab	ND < 0.25	U
Chrysene	ug/L	-/-	1/Year	Composite	ND < 0.191	U
cis-1,2-Dichloroethene	ug/L	-/-	1/Year	Grab	ND < 0.25	U
cis-1,3-Dichloropropene	ug/L	-/-	1/Year	Grab	ND < 0.25	U
delta-BHC	ug/L	-/-	1/Year	Composite	ND < 0.0033	U
Dibenzo(a,h)anthracene	ug/L	-/-	1/Year	Composite	ND < 0.239	U
Dibromochloromethane	ug/L	-/-	1/Year	Grab	ND < 0.25	U
Dieldrin	ug/L	-/-	1/Year	Composite	ND < 0.0019	U
Diethylphthalate	ug/L	-/-	1/Year	Composite	ND < 0.478	U
Dimethylphthalate	ug/L	-/-	1/Year	Composite	ND < 0.239	U
Di-n-butylphthalate	ug/L	-/-	1/Year	Composite	ND < 0.957	U
Di-n-octylphthalate	ug/L	-/-	1/Year	Composite	ND < 1.91	U
Endosulfan I	ug/L	-/-	1/Year	Composite	ND < 0.0029	U
Endosulfan II	ug/L	-/-	1/Year	Composite	ND < 0.0019	U
Endosulfan Sulfate	ug/L	-/-	1/Year	Composite	ND < 0.0029	U
Endrin	ug/L	-/-	1/Year	Composite	ND < 0.0019	U
Endrin Aldehyde	ug/L	-/-	1/Year	Composite	ND < 0.0019	U
Ethylbenzene	ug/L	-/-	1/Year	Grab	ND < 0.25	U
Fluoranthene	ug/L	-/-	1/Year	Composite	ND < 0.191	U
Fluorene	ug/L	-/-	1/Year	Composite	ND < 0.191	U
Heptachlor	ug/L	-/-	1/Year	Composite	ND < 0.0029	U
Heptachlor Epoxide	ug/L	-/-	1/Year	Composite	ND < 0.0024	U
Hexachlorobenzene	ug/L	-/-	1/Year	Composite	ND < 0.478	U
Hexachlorobutadiene	ug/L	-/-	1/Year	Composite	ND < 0.478	U
Hexachlorocyclopentadiene	ug/L	-/-	1/Year	Composite	ND < 1.91	U
Hexachloroethane	ug/L	-/-	1/Year	Composite	ND < 0.478	U
Indeno(1,2,3-cd)pyrene	ug/L	-/-	1/Year	Composite	ND < 0.957	U
Isophorone	ug/L	-/-	1/Year	Composite	ND < 0.478	U
Lindane (gamma-BHC)	ug/L	-/-	1/Year	Composite	ND < 0.0029	U
Methylene chloride	ug/L	-/-	1/Year	Grab	ND < 0.88	U
Naphthalene	ug/L	-/-	1/Year	Composite	ND < 0.478	U
Nitrobenzene	ug/L	-/-	1/Year	Composite	ND < 0.478	U
N-Nitrosodimethylamine	ug/L	-/-	1/Year	Composite	ND < 0.957	U
N-Nitroso-di-n-propylamine	ug/L	-/-	1/Year	Composite	ND < 0.957	U
N-Nitrosodiphenylamine	ug/L	-/-	1/Year	Composite	ND < 0.478	U
Pentachlorophenol	ug/L	-/-	1/Year	Composite	ND < 0.957	U
Phenanthrene	ug/L	-/-	1/Year	Composite	ND < 0.191	U
Phenol	ug/L	-/-	1/Year	Composite	ND < 0.478	U
Pyrene	ug/L	-/-	1/Year	Composite	ND < 0.191	U
Silver	ug/L	-/-	1/Year	Composite	ND < 5	U
Tetrachloroethene	ug/L	-/-	1/Year	Grab	ND < 0.25	U
Toluene	ug/L	-/-	1/Year	Grab	ND < 0.25	U
Toxaphene	ug/L	-/-	1/Year	Composite	ND < 0.24	U
trans-1,2-Dichloroethene	ug/L	-/-	1/Year	Grab	ND < 0.25	U
trans-1,3-Dichloropropene	ug/L	-/-	1/Year	Grab	ND < 0.25	U
Trichloroethene	ug/L	-/-	1/Year	Grab	ND < 0.25	U
Trichlorofluoromethane	ug/L	-/-	1/Year	Composite	ND < 0.25	U
Vinyl chloride	ug/L	-/-	1/Year	Grab	ND < 0.25	U
Xylenes (Total)	ug/L	-/-	1/Year	Grab	ND < 0.5	U



OUTFALL 008 (HAPPY VALLEY DRAINAGE)

FOURTH QUARTER 2014 REPORTING SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/12/2014 (Grab and Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
<b>EFFLUENT MONITORING (NO LIMITATIONS) POLLUTANTS</b>						
Aluminum	ug/L	-/-	1/Year	Composite	3,100	--
Chlorpyrifos	ug/L	-/-	1/Year	Composite	ND < 0.48	U
Diazinon	ug/L	-/-	1/Year	Composite	ND < 0.12	UJ (H)
E. Coli	MPN/100mL	-/-	1/Year	Grab	>=1,600	--
Fecal Coliform	MPN/100mL	-/-	1/Year	Grab	>=1,600	--
Hardness	mg/L	-/-	1/Year	Composite	55	--
Iron	mg/L	-/-	1/Year	Composite	3	--
Total Suspended Solids	mg/L	-/-	1/Year	Composite	27	--
Vanadium	ug/L	-/-	1/Year	Composite	6.6	J (DNQ)
<b>ADDITIONAL POLLUTANTS</b>						
Aluminum, dissolved	ug/L	-/-	Additional	Composite	190	--
Antimony, dissolved	ug/L	-/-	Additional	Composite	ND < 0.5	U
Arsenic, dissolved	ug/L	-/-	Additional	Composite	ND < 5	U
Beryllium, dissolved	ug/L	-/-	Additional	Composite	ND < 1	U
Boron, dissolved	mg/L	-/-	Additional	Composite	0.095	--
Cadmium, dissolved	ug/L	-/-	Additional	Composite	ND < 0.25	U
Chromium, dissolved	ug/L	-/-	Additional	Composite	ND < 2.5	U
Copper, dissolved	ug/L	-/-	Additional	Composite	3.2	--
Hardness, dissolved	mg/L	-/-	Additional	Composite	48	--
Iron, dissolved	mg/L	-/-	Additional	Composite	0.16	--
Lead, dissolved	ug/L	-/-	Additional	Composite	ND < 0.5	U
Mercury, dissolved	ug/L	-/-	Additional	Composite	ND < 0.1	U
Nickel, dissolved	ug/L	-/-	Additional	Composite	ND < 5	U
Selenium, dissolved	ug/L	-/-	Additional	Composite	ND < 0.5	UJ (I)
Silver, dissolved	ug/L	-/-	Additional	Composite	ND < 5	U
Thallium, dissolved	ug/L	-/-	Additional	Composite	ND < 0.5	U
Vanadium, dissolved	ug/L	-/-	Additional	Composite	ND < 5	U
Zinc, Dissolved	ug/L	-/-	Additional	Composite	12	--

**OUTFALL 008 (HAPPY VALLEY DRAINAGE)**  
**FOURTH QUARTER 2014 REPORTING SUMMARY**  
**THE BOEING COMPANY**  
**SANTA SUSANA FIELD LABORATORY**  
**NPDES PERMIT CA0001309**

Sample Type Composite  
Sample Date December 12, 2014

ANALYTE	SAMPLE FREQUENCY	LAB LOD (ug/L)	LAB RL (ug/L)	LAB RESULT (ug/L)	VALIDATION QUALIFIER	1998 WHO TEF	BEF Great Lakes Water Quality Initiative	TCDD Equivalent (w/out DNQ Values) (ug/L)
1,2,3,4,6,7,8-HpCDD	1/Discharge	6.00E-06	4.75E-05	6.09E-06	UJ (*III)	0.01	0.05	ND
1,2,3,4,6,7,8-HpCDF	1/Discharge	6.00E-06	4.75E-05	2.44E-06	J (DNQ)	0.01	0.01	ND
1,2,3,4,7,8,9-HpCDF	1/Discharge	6.00E-06	4.75E-05	ND	U	0.01	0.4	ND
1,2,3,4,7,8-HxCDD	1/Discharge	6.00E-06	4.75E-05	ND	U	0.1	0.3	ND
1,2,3,4,7,8-HxCDF	1/Discharge	6.00E-06	4.75E-05	ND	U	0.1	0.08	ND
1,2,3,6,7,8-HxCDD	1/Discharge	6.00E-06	4.75E-05	ND	U	0.1	0.1	ND
1,2,3,6,7,8-HxCDF	1/Discharge	6.00E-06	4.75E-05	ND	U	0.1	0.2	ND
1,2,3,7,8,9-HxCDD	1/Discharge	6.00E-06	4.75E-05	ND	U	0.1	0.1	ND
1,2,3,7,8,9-HxCDF	1/Discharge	6.00E-06	4.75E-05	ND	U	0.1	0.6	ND
1,2,3,7,8-PeCDD	1/Discharge	6.00E-06	4.75E-05	ND	U	1	0.9	ND
1,2,3,7,8-PeCDF	1/Discharge	6.00E-06	4.75E-05	ND	U	0.05	0.2	ND
2,3,4,6,7,8-HxCDF	1/Discharge	6.00E-06	4.75E-05	ND	U	0.1	0.7	ND
2,3,4,7,8-PeCDF	1/Discharge	6.00E-06	4.75E-05	ND	U	0.5	1.6	ND
2,3,7,8-TCDD	1/Discharge	6.00E-06	9.40E-06	ND	U	1	1	ND
2,3,7,8-TCDF	1/Discharge	6.00E-06	9.40E-06	ND	U	0.1	0.8	ND
OCDD	1/Discharge	1.20E-05	9.50E-05	6.78E-05	U (B)	0.0001	0.01	ND
OCDF	1/Discharge	1.20E-05	9.50E-05	2.96E-06	UJ (*III)	0.0001	0.02	ND
<b>TCDD TEQ w/out DNQ Values</b>								<b>ND</b>

**TCDD TEQ (PRIORITY POLLUTANTS) PERMIT LIMIT = 2.80E-08**

OUTFALL 008 (HAPPY VALLEY DRAINAGE)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/12/2014 (Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	RESULT	MDA	VALIDATION QUALIFIER
<b>NON-CONVENTIONAL POLLUTANTS</b>						
Gross Alpha	pCi/L	15/-	1/Discharge	3.04 ± 1.37	1.59	J (C)
Gross Beta	pCi/L	50/-	1/Discharge	6.61 ± 1.24	1.06	--
Strontium-90	pCi/L	8.0/-	1/Discharge	-0.264 ± 0.378	0.725	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	1/Discharge	0.397 ± 0.405	NA	UJ (C)
Tritium	pCi/L	20000/-	1/Discharge	99.5 ± 184	313	U
<b>ADDITIONAL POLLUTANTS</b>						
Cesium 137	pCi/L	200/-	1/Discharge	0.000 ± 2.82	12.4	U
Uranium, Total	pCi/L	20/-	1/Discharge	0.556 ± 0.662	0.841	U
<b>ADDITIONAL POLLUTANTS WITHOUT LIMITS</b>						
Potassium-40	pCi/L	-/-	1/Discharge	-38.0 ± 188	171	U

OUTFALL 008 (HAPPY VALLEY DRAINAGE)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

					12/12/2014 (Grab & Composite)	
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	Sample Frequency	Sample Type	Result	Concentration Result Validation Qualifier
Flow**	MGD	17.89/-	1/Discharge	Meas	0.060756	*
<b>CONVENTIONAL POLLUTANTS</b>						
Oil & Grease	LBS/DAY	2,227/-	1/Discharge	Grab	ND	U
<b>PRIORITY POLLUTANTS</b>						
Antimony	LBS/DAY	0.89/-	1/Discharge	Composite	ND	U
Cadmium	LBS/DAY	0.59/-	1/Discharge	Composite	ND	U
Copper	LBS/DAY	2.1/-	1/Discharge	Composite	0.0026	--
Lead	LBS/DAY	0.77/-	1/Discharge	Composite	0.0010	--
Mercury	LBS/DAY	0.02/-	1/Discharge	Composite	ND	U
Nickel	LBS/DAY	14.9/-	1/Year	Composite	ND	U
Selenium	LBS/DAY	0.7/-	1/Discharge	Composite	ND	UJ (I)
TCDD TEQ_NoDNQ	LBS/DAY	4.20E-09/-	1/Discharge	Composite	ND	*
Thallium	LBS/DAY	0.3/-	1/Discharge	Composite	ND	U
Total Cyanide	LBS/DAY	1.4/-	1/Discharge	Composite	ND	U
Zinc	LBS/DAY	24/-	1/Discharge	Composite	0.016	--
<b>NON-CONVENTIONAL POLLUTANTS</b>						
Ammonia-N	LBS/DAY	15,000/-	1/Discharge	Composite	0.071	J (DNQ)
Boron	LBS/DAY	148/-	1/Year	Composite	0.048	--
Chloride	LBS/DAY	22,268/-	1/Discharge	Composite	2.5	*
Fluoride	LBS/DAY	238/-	1/Year	Composite	0.076	--
Nitrate-N	LBS/DAY	1,190/-	1/Discharge	Composite	2.2	--
Nitrite-N	LBS/DAY	148/-	1/Discharge	Composite	ND	U
Nitrate + Nitrite as Nitrogen (N)	LBS/DAY	1,485/-	1/Discharge	Composite	2.2	--
Perchlorate	LBS/DAY	0.89/-	1/Discharge	Composite	0.0013	J (DNQ)
Sulfate	LBS/DAY	37,113/-	1/Discharge	Composite	2.2	--
Total Dissolved Solids	LBS/DAY	126,184/-	1/Discharge	Composite	60.8	--



OUTFALL 009 (WS-13 Drainage)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

					12/02/2014 (Grab) - 12/03/2014 (Composite)	
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Flow**	MGD	17.89/-	1/Discharge	Meas	0.120982	*
<b>CONVENTIONAL POLLUTANTS</b>						
Oil & Grease	mg/L	15/-	1/Discharge	Grab	ND < 1.3	*
pH (Field)	pH units	6.5-8.5/-	1/Discharge	Grab	6.64	*
<b>PRIORITY POLLUTANTS</b>						
Antimony	ug/L	6.0/-	1/Discharge	Composite	0.59	J (DNQ)
Cadmium	ug/L	4.0/-	1/Discharge	Composite	ND < 0.25	U
Copper	ug/L	14/-	1/Discharge	Composite	8.2	--
Lead	ug/L	5.2/-	1/Discharge	Composite	3.5	--
Mercury	ug/L	0.13/-	1/Discharge	Composite	0.11	*
Nickel	ug/L	100/-	1/Year	ANR	ANR	ANR
Selenium	ug/L	-/-	1/Year	ANR	ANR	ANR
Thallium	ug/L	2.0/-	1/Discharge	Composite	ND < 0.5	U
Total Cyanide	ug/L	9.5/-	1/Discharge	Composite	ND < 2.5	*
Zinc	ug/L	-/-	1/Year	ANR	ANR	ANR
<b>NON-CONVENTIONAL POLLUTANTS</b>						
Acute Toxicity	% SURVIVAL	70-90/-	1/Year	ANR	ANR	ANR
Boron	mg/L	1.0/-	1/Year	ANR	ANR	ANR
Chloride	mg/L	150/-	1/Discharge	Composite	18	*
Chronic Toxicity	TUC	1/-	1st & 2nd rain event/Year	Composite	1	*
Fluoride	mg/L	1.6/-	1/Year	ANR	ANR	ANR
Nitrate + Nitrite as Nitrogen (N)	mg/L	10/-	1/Discharge	Composite	1.1	*
Perchlorate	ug/L	6.0/-	1/Semiannual	Composite	ND < 0.95	*
Sulfate	mg/L	250/-	1/Discharge	Composite	8.8	*
Temperature (Field)	deg. F	86/-	1/Discharge	Grab	55.63	*
Total Dissolved Solids	mg/L	850/-	1/Discharge	Composite	160	*
<b>REMAINING PRIORITY POLLUTANTS</b>						
1,1,1-Trichloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,1,2,2-Tetrachloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,1,2-Trichloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,1-Dichloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,1-Dichloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2,4-Trichlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2-Dichlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2-Dichloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2-Dichloropropane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2-Diphenylhydrazine/Azobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,3-Dichlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,4-Dichlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4,6-Trichlorophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4-Dichlorophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4-Dimethylphenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4-Dinitrophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4-Dinitrotoluene	ug/L	-/-	1/Year	ANR	ANR	ANR
2,6-Dinitrotoluene	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Chloroethylvinylether	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Chloronaphthalene	ug/L	-/-	1/Year	ANR	ANR	ANR

OUTFALL 009 (WS-13 Drainage)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/02/2014 (Grab) - 12/03/2014 (Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
2-Chlorophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Methyl-4,6-Dinitrophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Nitrophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
3,3'-Dichlorobenzidine	ug/L	-/-	1/Year	ANR	ANR	ANR
4,4'-DDD	ug/L	-/-	1/Year	ANR	ANR	ANR
4,4'-DDE	ug/L	-/-	1/Year	ANR	ANR	ANR
4,4'-DDT	ug/L	-/-	1/Year	ANR	ANR	ANR
4-Bromophenylphenylether	ug/L	-/-	1/Year	ANR	ANR	ANR
4-Chloro-3-methylphenol	ug/L	-/-	1/Year	ANR	ANR	ANR
4-Chlorophenylphenylether	ug/L	-/-	1/Year	ANR	ANR	ANR
4-Nitrophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
Acenaphthene	ug/L	-/-	1/Year	ANR	ANR	ANR
Acenaphthylene	ug/L	-/-	1/Year	ANR	ANR	ANR
Acrolein	ug/L	-/-	1/Year	ANR	ANR	ANR
Acrylonitrile	ug/L	-/-	1/Year	ANR	ANR	ANR
Aldrin	ug/L	-/-	1/Year	ANR	ANR	ANR
alpha-BHC	ug/L	-/-	1/Year	ANR	ANR	ANR
Anthracene	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1016	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1221	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1232	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1242	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1248	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1254	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1260	ug/L	-/-	1/Year	ANR	ANR	ANR
Arsenic	ug/L	-/-	1/Year	ANR	ANR	ANR
Asbestos	MFL	-/-	1/Year	ANR	ANR	ANR
Benzene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzidine	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(a)anthracene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(a)pyrene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(b)fluoranthene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(g,h,i)Perylene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(k)fluoranthene	ug/L	-/-	1/Year	ANR	ANR	ANR
Beryllium	ug/L	-/-	1/Year	ANR	ANR	ANR
beta-BHC	ug/L	-/-	1/Year	ANR	ANR	ANR
Bis (2-Chloroethoxy) Methane	ug/L	-/-	1/Year	ANR	ANR	ANR
Bis (2-Chloroethyl) Ether	ug/L	-/-	1/Year	ANR	ANR	ANR
Bis (2-Chloroisopropyl) Ether	ug/L	-/-	1/Year	ANR	ANR	ANR
Bis (2-Ethylhexyl) Phthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Bromodichloromethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Bromoform	ug/L	-/-	1/Year	ANR	ANR	ANR
Bromomethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Butylbenzylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Carbon Tetrachloride	ug/L	-/-	1/Year	ANR	ANR	ANR
Chlordane	ug/L	-/-	1/Year	ANR	ANR	ANR
Chlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
Chloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Chloroform	ug/L	-/-	1/Year	ANR	ANR	ANR

OUTFALL 009 (WS-13 Drainage)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/02/2014 (Grab) - 12/03/2014 (Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Chloromethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Chromium	ug/L	-/-	1/Year	ANR	ANR	ANR
Chromium VI	ug/L	-/-	1/Year	ANR	ANR	ANR
Chrysene	ug/L	-/-	1/Year	ANR	ANR	ANR
cis-1,2-Dichloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
cis-1,3-Dichloropropene	ug/L	-/-	1/Year	ANR	ANR	ANR
delta-BHC	ug/L	-/-	1/Year	ANR	ANR	ANR
Dibenzo(a,h)anthracene	ug/L	-/-	1/Year	ANR	ANR	ANR
Dibromochloromethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Dieldrin	ug/L	-/-	1/Year	ANR	ANR	ANR
Diethylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Dimethylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Di-n-butylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Di-n-octylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Endosulfan I	ug/L	-/-	1/Year	ANR	ANR	ANR
Endosulfan II	ug/L	-/-	1/Year	ANR	ANR	ANR
Endosulfan Sulfate	ug/L	-/-	1/Year	ANR	ANR	ANR
Endrin	ug/L	-/-	1/Year	ANR	ANR	ANR
Endrin Aldehyde	ug/L	-/-	1/Year	ANR	ANR	ANR
Ethylbenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
Fluoranthene	ug/L	-/-	1/Year	ANR	ANR	ANR
Fluorene	ug/L	-/-	1/Year	ANR	ANR	ANR
Heptachlor	ug/L	-/-	1/Year	ANR	ANR	ANR
Heptachlor Epoxide	ug/L	-/-	1/Year	ANR	ANR	ANR
Hexachlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
Hexachlorobutadiene	ug/L	-/-	1/Year	ANR	ANR	ANR
Hexachlorocyclopentadiene	ug/L	-/-	1/Year	ANR	ANR	ANR
Hexachloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Indeno(1,2,3-cd)pyrene	ug/L	-/-	1/Year	ANR	ANR	ANR
Isophorone	ug/L	-/-	1/Year	ANR	ANR	ANR
Lindane (gamma-BHC)	ug/L	-/-	1/Year	ANR	ANR	ANR
Methylene chloride	ug/L	-/-	1/Year	ANR	ANR	ANR
Naphthalene	ug/L	-/-	1/Year	ANR	ANR	ANR
Nitrobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
N-Nitrosodimethylamine	ug/L	-/-	1/Year	ANR	ANR	ANR
N-Nitroso-di-n-propylamine	ug/L	-/-	1/Year	ANR	ANR	ANR
N-Nitrosodiphenylamine	ug/L	-/-	1/Year	ANR	ANR	ANR
Pentachlorophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
Phenanthrene	ug/L	-/-	1/Year	ANR	ANR	ANR
Phenol	ug/L	-/-	1/Year	ANR	ANR	ANR
Pyrene	ug/L	-/-	1/Year	ANR	ANR	ANR
Silver	ug/L	-/-	1/Year	ANR	ANR	ANR
Tetrachloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
Toluene	ug/L	-/-	1/Year	ANR	ANR	ANR
Toxaphene	ug/L	-/-	1/Year	ANR	ANR	ANR
trans-1,2-Dichloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
trans-1,3-Dichloropropene	ug/L	-/-	1/Year	ANR	ANR	ANR
Trichloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
Vinyl chloride	ug/L	-/-	1/Year	ANR	ANR	ANR

OUTFALL 009 (WS-13 Drainage)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/02/2014 (Grab) - 12/03/2014 (Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Xylenes (Total)	ug/L	-/-	1/Year	ANR	ANR	ANR
<b>EFFLUENT MONITORING (NO LIMITATIONS) POLLUTANTS</b>						
Aluminum	ug/L	-/-	1/Year	ANR	ANR	ANR
Chlorpyrifos	ug/L	-/-	1/Year	ANR	ANR	ANR
Diazinon	ug/L	-/-	1/Year	ANR	ANR	ANR
E. Coli	MPN/100mL	-/-	1/Year	ANR	ANR	ANR
Fecal Coliform	MPN/100mL	-/-	1/Year	ANR	ANR	ANR
Hardness	mg/L	-/-	1/Year	ANR	ANR	ANR
Iron	mg/L	-/-	1/Year	ANR	ANR	ANR
Total Suspended Solids	mg/L	-/-	1/Year	Composite	21	--
Trichlorofluoromethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Vanadium	ug/L	-/-	1/Year	ANR	ANR	ANR
<b>ADDITIONAL POLLUTANTS</b>						
Aluminum, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Antimony, dissolved	ug/L	-/-	Additional	Composite	0.53	J (DNQ)
Arsenic, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Beryllium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Boron, dissolved	mg/L	-/-	Additional	ANR	ANR	ANR
Cadmium, dissolved	ug/L	-/-	Additional	Composite	ND < 0.25	U
Chromium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Copper, dissolved	ug/L	-/-	Additional	Composite	5.9	--
Hardness, dissolved	mg/L	-/-	Additional	ANR	ANR	ANR
Iron, dissolved	mg/L	-/-	Additional	ANR	ANR	ANR
Lead, dissolved	ug/L	-/-	Additional	Composite	0.85	J (DNQ)
Mercury, dissolved	ug/L	-/-	Additional	Composite	ND < 0.1	*
Nickel, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Selenium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Silver, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Thallium, dissolved	ug/L	-/-	Additional	Composite	ND < 0.5	U
Vanadium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Zinc, Dissolved	ug/L	-/-	Additional	ANR	ANR	ANR



OUTFALL 009 (WS-13 Drainage)

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 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
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October 1 through December 31, 2014

					12/12/2014 (Grab) - 12/13/2014 (Composite)	
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Flow**	MGD	17.89/-	1/Discharge	Meas	0.208623	*
<b>CONVENTIONAL POLLUTANTS</b>						
Oil & Grease	mg/L	15/-	1/Discharge	Grab	ND < 1.4	*
pH (Field)	pH units	6.5-8.5/-	1/Discharge	Grab	6.54	*
<b>PRIORITY POLLUTANTS</b>						
Antimony	ug/L	6.0/-	1/Discharge	Composite	0.74	J (DNQ)
Cadmium	ug/L	4.0/-	1/Discharge	Composite	0.31	J (DNQ)
Copper	ug/L	14/-	1/Discharge	Composite	9.0	--
Lead	ug/L	5.2/-	1/Discharge	Composite	8.8	--
Mercury	ug/L	0.13/-	1/Discharge	Composite	ND < 0.1	*
Nickel	ug/L	100/-	1/Year	ANR	ANR	ANR
Selenium	ug/L	-/-	1/Year	ANR	ANR	ANR
Thallium	ug/L	2.0/-	1/Discharge	Composite	ND < 0.5	U
Total Cyanide	ug/L	9.5/-	1/Discharge	Composite	ND < 2.5	*
Zinc	ug/L	-/-	1/Year	ANR	ANR	ANR
<b>NON-CONVENTIONAL POLLUTANTS</b>						
Acute Toxicity	% SURVIVAL	70-90/-	1/Year	ANR	ANR	ANR
Boron	mg/L	1.0/-	1/Year	ANR	ANR	ANR
Chloride	mg/L	150/-	1/Discharge	Composite	13	*
Chronic Toxicity	TUC	1/-	1st & 2nd rain event/Year	ANR	ANR	ANR
Fluoride	mg/L	1.6/-	1/Year	ANR	ANR	ANR
Nitrate + Nitrite as Nitrogen (N)	mg/L	10/-	1/Discharge	Composite	3.0	*
Perchlorate	ug/L	6.0/-	1/Semiannual	ANR	ANR	ANR
Sulfate	mg/L	250/-	1/Discharge	Composite	4.3	*
Temperature (Field)	deg. F	86/-	1/Discharge	Grab	52.56	*
Total Dissolved Solids	mg/L	850/-	1/Discharge	Composite	140	*
<b>REMAINING PRIORITY POLLUTANTS</b>						
1,1,1-Trichloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,1,2,2-Tetrachloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,1,2-Trichloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,1-Dichloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,1-Dichloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2,4-Trichlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2-Dichlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2-Dichloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2-Dichloropropane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2-Diphenylhydrazine/Azobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,3-Dichlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,4-Dichlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4,6-Trichlorophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4-Dichlorophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4-Dimethylphenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4-Dinitrophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4-Dinitrotoluene	ug/L	-/-	1/Year	ANR	ANR	ANR
2,6-Dinitrotoluene	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Chloroethylvinylether	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Chloronaphthalene	ug/L	-/-	1/Year	ANR	ANR	ANR

OUTFALL 009 (WS-13 Drainage)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/12/2014 (Grab) - 12/13/2014 (Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
2-Chlorophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Methyl-4,6-Dinitrophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Nitrophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
3,3'-Dichlorobenzidine	ug/L	-/-	1/Year	ANR	ANR	ANR
4,4'-DDD	ug/L	-/-	1/Year	ANR	ANR	ANR
4,4'-DDE	ug/L	-/-	1/Year	ANR	ANR	ANR
4,4'-DDT	ug/L	-/-	1/Year	ANR	ANR	ANR
4-Bromophenylphenylether	ug/L	-/-	1/Year	ANR	ANR	ANR
4-Chloro-3-methylphenol	ug/L	-/-	1/Year	ANR	ANR	ANR
4-Chlorophenylphenylether	ug/L	-/-	1/Year	ANR	ANR	ANR
4-Nitrophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
Acenaphthene	ug/L	-/-	1/Year	ANR	ANR	ANR
Acenaphthylene	ug/L	-/-	1/Year	ANR	ANR	ANR
Acrolein	ug/L	-/-	1/Year	ANR	ANR	ANR
Acrylonitrile	ug/L	-/-	1/Year	ANR	ANR	ANR
Aldrin	ug/L	-/-	1/Year	ANR	ANR	ANR
alpha-BHC	ug/L	-/-	1/Year	ANR	ANR	ANR
Anthracene	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1016	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1221	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1232	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1242	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1248	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1254	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1260	ug/L	-/-	1/Year	ANR	ANR	ANR
Arsenic	ug/L	-/-	1/Year	ANR	ANR	ANR
Asbestos	MFL	-/-	1/Year	ANR	ANR	ANR
Benzene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzidine	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(a)anthracene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(a)pyrene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(b)fluoranthene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(g,h,i)Perylene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(k)fluoranthene	ug/L	-/-	1/Year	ANR	ANR	ANR
Beryllium	ug/L	-/-	1/Year	ANR	ANR	ANR
beta-BHC	ug/L	-/-	1/Year	ANR	ANR	ANR
Bis (2-Chloroethoxy) Methane	ug/L	-/-	1/Year	ANR	ANR	ANR
Bis (2-Chloroethyl) Ether	ug/L	-/-	1/Year	ANR	ANR	ANR
Bis (2-Chloroisopropyl) Ether	ug/L	-/-	1/Year	ANR	ANR	ANR
Bis (2-Ethylhexyl) Phthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Bromodichloromethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Bromoform	ug/L	-/-	1/Year	ANR	ANR	ANR
Bromomethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Butylbenzylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Carbon Tetrachloride	ug/L	-/-	1/Year	ANR	ANR	ANR
Chlordane	ug/L	-/-	1/Year	ANR	ANR	ANR
Chlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
Chloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Chloroform	ug/L	-/-	1/Year	ANR	ANR	ANR

OUTFALL 009 (WS-13 Drainage)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/12/2014 (Grab) - 12/13/2014 (Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Chloromethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Chromium	ug/L	-/-	1/Year	ANR	ANR	ANR
Chromium VI	ug/L	-/-	1/Year	ANR	ANR	ANR
Chrysene	ug/L	-/-	1/Year	ANR	ANR	ANR
cis-1,2-Dichloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
cis-1,3-Dichloropropene	ug/L	-/-	1/Year	ANR	ANR	ANR
delta-BHC	ug/L	-/-	1/Year	ANR	ANR	ANR
Dibenzo(a,h)anthracene	ug/L	-/-	1/Year	ANR	ANR	ANR
Dibromochloromethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Dieldrin	ug/L	-/-	1/Year	ANR	ANR	ANR
Diethylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Dimethylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Di-n-butylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Di-n-octylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Endosulfan I	ug/L	-/-	1/Year	ANR	ANR	ANR
Endosulfan II	ug/L	-/-	1/Year	ANR	ANR	ANR
Endosulfan Sulfate	ug/L	-/-	1/Year	ANR	ANR	ANR
Endrin	ug/L	-/-	1/Year	ANR	ANR	ANR
Endrin Aldehyde	ug/L	-/-	1/Year	ANR	ANR	ANR
Ethylbenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
Fluoranthene	ug/L	-/-	1/Year	ANR	ANR	ANR
Fluorene	ug/L	-/-	1/Year	ANR	ANR	ANR
Heptachlor	ug/L	-/-	1/Year	ANR	ANR	ANR
Heptachlor Epoxide	ug/L	-/-	1/Year	ANR	ANR	ANR
Hexachlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
Hexachlorobutadiene	ug/L	-/-	1/Year	ANR	ANR	ANR
Hexachlorocyclopentadiene	ug/L	-/-	1/Year	ANR	ANR	ANR
Hexachloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Indeno(1,2,3-cd)pyrene	ug/L	-/-	1/Year	ANR	ANR	ANR
Isophorone	ug/L	-/-	1/Year	ANR	ANR	ANR
Lindane (gamma-BHC)	ug/L	-/-	1/Year	ANR	ANR	ANR
Methylene chloride	ug/L	-/-	1/Year	ANR	ANR	ANR
Naphthalene	ug/L	-/-	1/Year	ANR	ANR	ANR
Nitrobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
N-Nitrosodimethylamine	ug/L	-/-	1/Year	ANR	ANR	ANR
N-Nitroso-di-n-propylamine	ug/L	-/-	1/Year	ANR	ANR	ANR
N-Nitrosodiphenylamine	ug/L	-/-	1/Year	ANR	ANR	ANR
Pentachlorophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
Phenanthrene	ug/L	-/-	1/Year	ANR	ANR	ANR
Phenol	ug/L	-/-	1/Year	ANR	ANR	ANR
Pyrene	ug/L	-/-	1/Year	ANR	ANR	ANR
Silver	ug/L	-/-	1/Year	ANR	ANR	ANR
Tetrachloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
Toluene	ug/L	-/-	1/Year	ANR	ANR	ANR
Toxaphene	ug/L	-/-	1/Year	ANR	ANR	ANR
trans-1,2-Dichloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
trans-1,3-Dichloropropene	ug/L	-/-	1/Year	ANR	ANR	ANR
Trichloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
Vinyl chloride	ug/L	-/-	1/Year	ANR	ANR	ANR

OUTFALL 009 (WS-13 Drainage)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/12/2014 (Grab) - 12/13/2014 (Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Xylenes (Total)	ug/L	-/-	1/Year	ANR	ANR	ANR
<b>EFFLUENT MONITORING (NO LIMITATIONS) POLLUTANTS</b>						
Aluminum	ug/L	-/-	1/Year	ANR	ANR	ANR
Chlorpyrifos	ug/L	-/-	1/Year	ANR	ANR	ANR
Diazinon	ug/L	-/-	1/Year	ANR	ANR	ANR
E. Coli	MPN/100mL	-/-	1/Year	ANR	ANR	ANR
Fecal Coliform	MPN/100mL	-/-	1/Year	ANR	ANR	ANR
Hardness	mg/L	-/-	1/Year	ANR	ANR	ANR
Iron	mg/L	-/-	1/Year	ANR	ANR	ANR
Total Suspended Solids	mg/L	-/-	1/Year	Composite	78	-- (2)
Trichlorofluoromethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Vanadium	ug/L	-/-	1/Year	ANR	ANR	ANR
<b>ADDITIONAL POLLUTANTS</b>						
Aluminum, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Antimony, dissolved	ug/L	-/-	Additional	Composite	ND < 0.5	U
Arsenic, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Beryllium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Boron, dissolved	mg/L	-/-	Additional	ANR	ANR	ANR
Cadmium, dissolved	ug/L	-/-	Additional	Composite	ND < 0.25	U
Chromium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Copper, dissolved	ug/L	-/-	Additional	Composite	4.6	--
Hardness, dissolved	mg/L	-/-	Additional	ANR	ANR	ANR
Iron, dissolved	mg/L	-/-	Additional	ANR	ANR	ANR
Lead, dissolved	ug/L	-/-	Additional	Composite	1.1	--
Mercury, dissolved	ug/L	-/-	Additional	^	^	^
Nickel, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Selenium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Silver, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Thallium, dissolved	ug/L	-/-	Additional	Composite	ND < 0.5	U
Vanadium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Zinc, Dissolved	ug/L	-/-	Additional	ANR	ANR	ANR

OUTFALL 009 (WS-13 Drainage)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/17/2014 (Grab & Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Flow**	MGD	17.89/-	1/Discharge	Meas	0.573008	*
<b>CONVENTIONAL POLLUTANTS</b>						
Oil & Grease	mg/L	15/-	1/Discharge	Grab	ND < 1.4	*
pH (Field)	pH units	6.5-8.5/-	1/Discharge	Grab	6.64	*
<b>PRIORITY POLLUTANTS</b>						
Antimony	ug/L	6.0/-	1/Discharge	Composite	0.83	J (DNQ)
Cadmium	ug/L	4.0/-	1/Discharge	Composite	ND < 0.25	U
Copper	ug/L	14/-	1/Discharge	Composite	8.8	J+ (I)
Lead	ug/L	5.2/-	1/Discharge	Composite	13	--
Mercury	ug/L	0.13/-	1/Discharge	Composite	ND < 0.1	*
Nickel	ug/L	100/-	1/Year	ANR	ANR	ANR
Selenium	ug/L	-/-	1/Year	ANR	ANR	ANR
Thallium	ug/L	2.0/-	1/Discharge	Composite	ND < 0.5	U
Total Cyanide	ug/L	9.5/-	1/Discharge	Composite	ND < 2.5	*
Zinc	ug/L	-/-	1/Year	ANR	ANR	ANR
<b>NON-CONVENTIONAL POLLUTANTS</b>						
Acute Toxicity	% SURVIVAL	70-90/-	1/Year	ANR	ANR	ANR
Boron	mg/L	1.0/-	1/Year	ANR	ANR	ANR
Chloride	mg/L	150/-	1/Discharge	Composite	6.1	*
Chronic Toxicity	TUC	1/-	1st & 2nd rain event/Year	ANR	ANR	ANR
Fluoride	mg/L	1.6/-	1/Year	ANR	ANR	ANR
Nitrate + Nitrite as Nitrogen (N)	mg/L	10/-	1/Discharge	Composite	1.9	*
Perchlorate	ug/L	6.0/-	1/Semiannual	ANR	ANR	ANR
Sulfate	mg/L	250/-	1/Discharge	Composite	3.9	*
Temperature (Field)	deg. F	86/-	1/Discharge	Grab	47.14	*
Total Dissolved Solids	mg/L	850/-	1/Discharge	Composite	120	*
<b>REMAINING PRIORITY POLLUTANTS</b>						
1,1,1-Trichloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,1,1,2-Tetrachloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,1,2-Trichloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,1-Dichloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,1-Dichloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2,4-Trichlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2-Dichlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2-Dichloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2-Dichloropropane	ug/L	-/-	1/Year	ANR	ANR	ANR
1,2-Diphenylhydrazine/Azobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,3-Dichlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
1,4-Dichlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4,6-Trichlorophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4-Dichlorophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4-Dimethylphenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4-Dinitrophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2,4-Dinitrotoluene	ug/L	-/-	1/Year	ANR	ANR	ANR
2,6-Dinitrotoluene	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Chloroethylvinylether	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Chloronaphthalene	ug/L	-/-	1/Year	ANR	ANR	ANR



OUTFALL 009 (WS-13 Drainage)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/17/2014 (Grab & Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
2-Chlorophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Methyl-4,6-Dinitrophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
2-Nitrophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
3,3'-Dichlorobenzidine	ug/L	-/-	1/Year	ANR	ANR	ANR
4,4'-DDD	ug/L	-/-	1/Year	ANR	ANR	ANR
4,4'-DDE	ug/L	-/-	1/Year	ANR	ANR	ANR
4,4'-DDT	ug/L	-/-	1/Year	ANR	ANR	ANR
4-Bromophenylphenylether	ug/L	-/-	1/Year	ANR	ANR	ANR
4-Chloro-3-methylphenol	ug/L	-/-	1/Year	ANR	ANR	ANR
4-Chlorophenylphenylether	ug/L	-/-	1/Year	ANR	ANR	ANR
4-Nitrophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
Acenaphthene	ug/L	-/-	1/Year	ANR	ANR	ANR
Acenaphthylene	ug/L	-/-	1/Year	ANR	ANR	ANR
Acrolein	ug/L	-/-	1/Year	ANR	ANR	ANR
Acrylonitrile	ug/L	-/-	1/Year	ANR	ANR	ANR
Aldrin	ug/L	-/-	1/Year	ANR	ANR	ANR
alpha-BHC	ug/L	-/-	1/Year	ANR	ANR	ANR
Anthracene	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1016	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1221	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1232	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1242	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1248	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1254	ug/L	-/-	1/Year	ANR	ANR	ANR
Aroclor 1260	ug/L	-/-	1/Year	ANR	ANR	ANR
Arsenic	ug/L	-/-	1/Year	ANR	ANR	ANR
Asbestos	MFL	-/-	1/Year	ANR	ANR	ANR
Benzene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzidine	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(a)anthracene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(a)pyrene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(b)fluoranthene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(g,h,i)Perylene	ug/L	-/-	1/Year	ANR	ANR	ANR
Benzo(k)fluoranthene	ug/L	-/-	1/Year	ANR	ANR	ANR
Beryllium	ug/L	-/-	1/Year	ANR	ANR	ANR
beta-BHC	ug/L	-/-	1/Year	ANR	ANR	ANR
Bis (2-Chloroethoxy) Methane	ug/L	-/-	1/Year	ANR	ANR	ANR
Bis (2-Chloroethyl) Ether	ug/L	-/-	1/Year	ANR	ANR	ANR
Bis (2-Chloroisopropyl) Ether	ug/L	-/-	1/Year	ANR	ANR	ANR
Bis (2-Ethylhexyl) Phthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Bromodichloromethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Bromoform	ug/L	-/-	1/Year	ANR	ANR	ANR
Bromomethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Butylbenzylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Carbon Tetrachloride	ug/L	-/-	1/Year	ANR	ANR	ANR
Chlordane	ug/L	-/-	1/Year	ANR	ANR	ANR
Chlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
Chloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Chloroform	ug/L	-/-	1/Year	ANR	ANR	ANR

OUTFALL 009 (WS-13 Drainage)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/17/2014 (Grab & Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Chloromethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Chromium	ug/L	-/-	1/Year	ANR	ANR	ANR
Chromium VI	ug/L	-/-	1/Year	ANR	ANR	ANR
Chrysene	ug/L	-/-	1/Year	ANR	ANR	ANR
cis-1,2-Dichloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
cis-1,3-Dichloropropene	ug/L	-/-	1/Year	ANR	ANR	ANR
delta-BHC	ug/L	-/-	1/Year	ANR	ANR	ANR
Dibenzo(a,h)anthracene	ug/L	-/-	1/Year	ANR	ANR	ANR
Dibromochloromethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Dieldrin	ug/L	-/-	1/Year	ANR	ANR	ANR
Diethylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Dimethylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Di-n-butylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Di-n-octylphthalate	ug/L	-/-	1/Year	ANR	ANR	ANR
Endosulfan I	ug/L	-/-	1/Year	ANR	ANR	ANR
Endosulfan II	ug/L	-/-	1/Year	ANR	ANR	ANR
Endosulfan Sulfate	ug/L	-/-	1/Year	ANR	ANR	ANR
Endrin	ug/L	-/-	1/Year	ANR	ANR	ANR
Endrin Aldehyde	ug/L	-/-	1/Year	ANR	ANR	ANR
Ethylbenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
Fluoranthene	ug/L	-/-	1/Year	ANR	ANR	ANR
Fluorene	ug/L	-/-	1/Year	ANR	ANR	ANR
Heptachlor	ug/L	-/-	1/Year	ANR	ANR	ANR
Heptachlor Epoxide	ug/L	-/-	1/Year	ANR	ANR	ANR
Hexachlorobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
Hexachlorobutadiene	ug/L	-/-	1/Year	ANR	ANR	ANR
Hexachlorocyclopentadiene	ug/L	-/-	1/Year	ANR	ANR	ANR
Hexachloroethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Indeno(1,2,3-cd)pyrene	ug/L	-/-	1/Year	ANR	ANR	ANR
Isophorone	ug/L	-/-	1/Year	ANR	ANR	ANR
Lindane (gamma-BHC)	ug/L	-/-	1/Year	ANR	ANR	ANR
Methylene chloride	ug/L	-/-	1/Year	ANR	ANR	ANR
Naphthalene	ug/L	-/-	1/Year	ANR	ANR	ANR
Nitrobenzene	ug/L	-/-	1/Year	ANR	ANR	ANR
N-Nitrosodimethylamine	ug/L	-/-	1/Year	ANR	ANR	ANR
N-Nitroso-di-n-propylamine	ug/L	-/-	1/Year	ANR	ANR	ANR
N-Nitrosodiphenylamine	ug/L	-/-	1/Year	ANR	ANR	ANR
Pentachlorophenol	ug/L	-/-	1/Year	ANR	ANR	ANR
Phenanthrene	ug/L	-/-	1/Year	ANR	ANR	ANR
Phenol	ug/L	-/-	1/Year	ANR	ANR	ANR
Pyrene	ug/L	-/-	1/Year	ANR	ANR	ANR
Silver	ug/L	-/-	1/Year	ANR	ANR	ANR
Tetrachloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
Toluene	ug/L	-/-	1/Year	ANR	ANR	ANR
Toxaphene	ug/L	-/-	1/Year	ANR	ANR	ANR
trans-1,2-Dichloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
trans-1,3-Dichloropropene	ug/L	-/-	1/Year	ANR	ANR	ANR
Trichloroethene	ug/L	-/-	1/Year	ANR	ANR	ANR
Vinyl chloride	ug/L	-/-	1/Year	ANR	ANR	ANR

OUTFALL 009 (WS-13 Drainage)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/17/2014 (Grab & Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
Xylenes (Total)	ug/L	-/-	1/Year	ANR	ANR	ANR
<b>EFFLUENT MONITORING (NO LIMITATIONS) POLLUTANTS</b>						
Aluminum	ug/L	-/-	1/Year	ANR	ANR	ANR
Chlorpyrifos	ug/L	-/-	1/Year	ANR	ANR	ANR
Diazinon	ug/L	-/-	1/Year	ANR	ANR	ANR
E. Coli	MPN/100mL	-/-	1/Year	ANR	ANR	ANR
Fecal Coliform	MPN/100mL	-/-	1/Year	ANR	ANR	ANR
Hardness	mg/L	-/-	1/Year	ANR	ANR	ANR
Iron	mg/L	-/-	1/Year	ANR	ANR	ANR
Total Suspended Solids	mg/L	-/-	1/Year	Composite	78	-- (2)
Trichlorofluoromethane	ug/L	-/-	1/Year	ANR	ANR	ANR
Vanadium	ug/L	-/-	1/Year	ANR	ANR	ANR
<b>ADDITIONAL POLLUTANTS</b>						
Aluminum, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Antimony, dissolved	ug/L	-/-	Additional	Composite	0.54	J (DNQ)
Arsenic, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Beryllium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Boron, dissolved	mg/L	-/-	Additional	ANR	ANR	ANR
Cadmium, dissolved	ug/L	-/-	Additional	Composite	ND < 0.25	U
Chromium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Copper, dissolved	ug/L	-/-	Additional	Composite	4.4	J+ (I)
Hardness, dissolved	mg/L	-/-	Additional	ANR	ANR	ANR
Iron, dissolved	mg/L	-/-	Additional	ANR	ANR	ANR
Lead, dissolved	ug/L	-/-	Additional	Composite	1.3	--
Mercury, dissolved	ug/L	-/-	Additional	Composite	ND < 0.1	*
Nickel, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Selenium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Silver, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Thallium, dissolved	ug/L	-/-	Additional	Composite	ND < 0.5	U
Vanadium, dissolved	ug/L	-/-	Additional	ANR	ANR	ANR
Zinc, Dissolved	ug/L	-/-	Additional	ANR	ANR	ANR

**OUTFALL 009 (WS-13 DRAINAGE)**  
**FOURTH QUARTER 2014 REPORTING SUMMARY**  
**THE BOEING COMPANY**  
**SANTA SUSANA FIELD LABORATORY**  
**NPDES PERMIT CA0001309**

Sample Type Composite  
Sample Date December 03, 2014

ANALYTE	SAMPLE FREQUENCY	LAB LOD (ug/L)	LAB RL (ug/L)	LAB RESULT (ug/L)	VALIDATION QUALIFIER	1998 WHO TEF	BEF Great Lakes Water Quality Initiative	TCDD Equivalent (w/out DNQ Values) (ug/L)
1,2,3,4,6,7,8-HpCDD	1/Discharge	6.00E-06	4.77E-05	1.74E-05	J (DNQ)	0.01	0.05	ND
1,2,3,4,6,7,8-HpCDF	1/Discharge	6.00E-06	4.77E-05	5.13E-06	UJ (*III)	0.01	0.01	ND
1,2,3,4,7,8,9-HpCDF	1/Discharge	6.00E-06	4.77E-05	ND	U	0.01	0.4	ND
1,2,3,4,7,8-HxCDD	1/Discharge	6.00E-06	4.77E-05	ND	U	0.1	0.3	ND
1,2,3,4,7,8-HxCDF	1/Discharge	6.00E-06	4.77E-05	ND	U	0.1	0.08	ND
1,2,3,6,7,8-HxCDD	1/Discharge	6.00E-06	4.77E-05	ND	U	0.1	0.1	ND
1,2,3,6,7,8-HxCDF	1/Discharge	6.00E-06	4.77E-05	ND	U	0.1	0.2	ND
1,2,3,7,8,9-HxCDD	1/Discharge	6.00E-06	4.77E-05	ND	U	0.1	0.1	ND
1,2,3,7,8,9-HxCDF	1/Discharge	6.00E-06	4.77E-05	ND	U	0.1	0.6	ND
1,2,3,7,8-PeCDD	1/Discharge	6.00E-06	4.77E-05	ND	U	1	0.9	ND
1,2,3,7,8-PeCDF	1/Discharge	6.00E-06	4.77E-05	ND	U	0.05	0.2	ND
2,3,4,6,7,8-HxCDF	1/Discharge	6.00E-06	4.77E-05	ND	U	0.1	0.7	ND
2,3,4,7,8-PeCDF	1/Discharge	6.00E-06	4.77E-05	ND	U	0.5	1.6	ND
2,3,7,8-TCDD	1/Discharge	6.00E-06	9.50E-06	ND	U	1	1	ND
2,3,7,8-TCDF	1/Discharge	6.00E-06	9.50E-06	ND	U	0.1	0.8	ND
OCDD	1/Discharge	1.20E-05	9.54E-05	1.33E-04	--	0.0001	0.01	1.33E-10
OCDF	1/Discharge	1.20E-05	9.54E-05	1.35E-05	U (B)	0.0001	0.02	ND
<b>TCDD TEQ w/out DNQ Values</b>								<b>1.33E-10</b>

TCDD TEQ (PRIORITY POLLUTANTS) PERMIT LIMIT = 2.80E-08

**OUTFALL 009 (WS-13 DRAINAGE)**

**FOURTH QUARTER 2014 REPORTING SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309**

Sample Type Composite  
Sample Date December 13, 2014

ANALYTE	SAMPLE FREQUENCY	LAB LOD (ug/L)	LAB RL (ug/L)	LAB RESULT (ug/L)	VALIDATION QUALIFIER	1998 WHO TEF	BEF Great Lakes Water Quality Initiative	TCDD Equivalent (w/out DNQ Values) (ug/L)
1,2,3,4,6,7,8-HpCDD	1/Discharge	6.00E-06	5.05E-05	1.75E-04	--	0.01	0.05	8.75E-08
1,2,3,4,6,7,8-HpCDF	1/Discharge	6.00E-06	5.05E-05	3.30E-05	UJ (*III)	0.01	0.01	ND
1,2,3,4,7,8,9-HpCDF	1/Discharge	6.00E-06	5.05E-05	ND	U	0.01	0.4	ND
1,2,3,4,7,8-HxCDD	1/Discharge	6.00E-06	5.05E-05	ND	U	0.1	0.3	ND
1,2,3,4,7,8-HxCDF	1/Discharge	6.00E-06	5.05E-05	ND	U	0.1	0.08	ND
1,2,3,6,7,8-HxCDD	1/Discharge	6.00E-06	5.05E-05	9.57E-06	J (DNQ)	0.1	0.1	ND
1,2,3,6,7,8-HxCDF	1/Discharge	6.00E-06	5.05E-05	3.40E-06	UJ (*III)	0.1	0.2	ND
1,2,3,7,8,9-HxCDD	1/Discharge	6.00E-06	5.05E-05	8.01E-06	J (DNQ)	0.1	0.1	ND
1,2,3,7,8,9-HxCDF	1/Discharge	6.00E-06	5.05E-05	ND	U	0.1	0.6	ND
1,2,3,7,8-PeCDD	1/Discharge	6.00E-06	5.05E-05	ND	U	1	0.9	ND
1,2,3,7,8-PeCDF	1/Discharge	6.00E-06	5.05E-05	ND	U	0.05	0.2	ND
2,3,4,6,7,8-HxCDF	1/Discharge	6.00E-06	5.05E-05	ND	U	0.1	0.7	ND
2,3,4,7,8-PeCDF	1/Discharge	6.00E-06	5.05E-05	ND	U	0.5	1.6	ND
2,3,7,8-TCDD	1/Discharge	6.00E-06	1.01E-05	ND	U	1	1	ND
2,3,7,8-TCDF	1/Discharge	6.00E-06	1.01E-05	ND	U	0.1	0.8	ND
OCDD	1/Discharge	1.20E-05	1.01E-04	1.80E-03	--	0.0001	0.01	1.80E-09
OCDF	1/Discharge	1.20E-05	1.01E-04	9.78E-05	J (DNQ)	0.0001	0.02	ND
<b>TCDD TEQ w/out DNQ Values</b>								<b>8.93E-08</b>

TCDD TEQ (PRIORITY POLLUTANTS) PERMIT LIMIT = 2.80E-08



**OUTFALL 009 (WS-13 DRAINAGE)**

**FOURTH QUARTER 2014 REPORTING SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309**

Sample Type Composite  
Sample Date December 17, 2014

ANALYTE	SAMPLE FREQUENCY	LAB LOD (ug/L)	LAB RL (ug/L)	LAB RESULT (ug/L)	VALIDATION QUALIFIER	1998 WHO TEF	BEF Great Lakes Water Quality Initiative	TCDD Equivalent (w/out DNQ Values) (ug/L)
1,2,3,4,6,7,8-HpCDD	1/Discharge	6.00E-06	5.02E-05	1.46E-04	--	0.01	0.05	7.30E-08
1,2,3,4,6,7,8-HpCDF	1/Discharge	6.00E-06	5.02E-05	2.34E-05	J (DNQ)	0.01	0.01	ND
1,2,3,4,7,8,9-HpCDF	1/Discharge	6.00E-06	5.02E-05	ND	U	0.01	0.4	ND
1,2,3,4,7,8-HxCDD	1/Discharge	6.00E-06	5.02E-05	ND	U	0.1	0.3	ND
1,2,3,4,7,8-HxCDF	1/Discharge	6.00E-06	5.02E-05	1.64E-06	UJ (*III)	0.1	0.08	ND
1,2,3,6,7,8-HxCDD	1/Discharge	6.00E-06	5.02E-05	8.46E-06	J (DNQ)	0.1	0.1	ND
1,2,3,6,7,8-HxCDF	1/Discharge	6.00E-06	5.02E-05	4.66E-06	UJ (*III)	0.1	0.2	ND
1,2,3,7,8,9-HxCDD	1/Discharge	6.00E-06	5.02E-05	6.10E-06	J (DNQ)	0.1	0.1	ND
1,2,3,7,8,9-HxCDF	1/Discharge	6.00E-06	5.02E-05	ND	U	0.1	0.6	ND
1,2,3,7,8-PeCDD	1/Discharge	6.00E-06	5.02E-05	1.61E-06	UJ (*III)	1	0.9	ND
1,2,3,7,8-PeCDF	1/Discharge	6.00E-06	5.02E-05	ND	U	0.05	0.2	ND
2,3,4,6,7,8-HxCDF	1/Discharge	6.00E-06	5.02E-05	ND	U	0.1	0.7	ND
2,3,4,7,8-PeCDF	1/Discharge	6.00E-06	5.02E-05	ND	U	0.5	1.6	ND
2,3,7,8-TCDD	1/Discharge	6.00E-06	1.00E-05	ND	U	1	1	ND
2,3,7,8-TCDF	1/Discharge	6.00E-06	1.00E-05	ND	U	0.1	0.8	ND
OCDD	1/Discharge	1.20E-05	1.00E-04	1.98E-03	--	0.0001	0.01	1.98E-09
OCDF	1/Discharge	1.20E-05	1.00E-04	5.93E-05	J (DNQ)	0.0001	0.02	ND
<b>TCDD TEQ w/out DNQ Values</b>								<b>7.50E-08</b>

TCDD TEQ (PRIORITY POLLUTANTS) PERMIT LIMIT = 2.80E-08

OUTFALL 009 (WS-13 Drainage)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/03/2014 (Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	RESULT	MDA	VALIDATION QUALIFIER
<b>NON-CONVENTIONAL POLLUTANTS</b>						
Gross Alpha	pCi/L	15/-	1/Discharge	2.73 ± 1.41	1.86	J (C)
Gross Beta	pCi/L	50/-	1/Discharge	3.15 ± 0.834	0.883	J (DNQ)
Strontium-90	pCi/L	8.0/-	1/Discharge	0.251 ± 0.271	0.443	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	1/Discharge	0.156 ± 0.330	NA	UJ (C)
Tritium	pCi/L	20000/-	1/Discharge	91.9 ± 192	329	U
<b>ADDITIONAL POLLUTANTS</b>						
Cesium 137	pCi/L	200/-	1/Discharge	0.0266 ± 6.77	12.5	U
Uranium, Total	pCi/L	20/-	1/Discharge	0.347 ± 0.658	1.01	U
<b>ADDITIONAL POLLUTANTS WITHOUT LIMITS</b>						
Potassium-40	pCi/L	-/-	1/Discharge	-92.7 ± 551	224	U

OUTFALL 009 (WS-13 Drainage)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/13/2014 (Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	RESULT	MDA	VALIDATION QUALIFIER
<b>NON-CONVENTIONAL POLLUTANTS</b>						
Gross Alpha	pCi/L	15/-	1/Discharge	2.53 ± 1.35	1.75	J (C)
Gross Beta	pCi/L	50/-	1/Discharge	9.90 ± 1.55	1.05	--
Strontium-90	pCi/L	8.0/-	1/Discharge	-0.175 ± 0.614	1.14	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	1/Discharge	0.848 ± 0.479	NA	J (C)
Tritium	pCi/L	20000/-	1/Discharge	91.0 ± 182	310	U
<b>ADDITIONAL POLLUTANTS</b>						
Cesium 137	pCi/L	200/-	1/Discharge	1.06 ± 5.14	9.94	U
Uranium, Total	pCi/L	20/-	1/Discharge	0.529 ± 0.652	1.00	U
<b>ADDITIONAL POLLUTANTS WITHOUT LIMITS</b>						
Potassium-40	pCi/L	-/-	1/Discharge	-73.0 ± 536	244	U

OUTFALL 009 (WS-13 Drainage)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

				12/17/2014 (Composite)		
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	RESULT	MDA	VALIDATION QUALIFIER
<b>NON-CONVENTIONAL POLLUTANTS</b>						
Gross Alpha	pCi/L	15/-	1/Discharge	5.82 ± 1.75	1.48	J (C)
Gross Beta	pCi/L	50/-	1/Discharge	6.73 ± 1.25	1.02	--
Strontium-90	pCi/L	8.0/-	1/Discharge	-0.192 ± 0.616	1.14	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	1/Discharge	0.616 ± 0.523	NA	UJ (C)
Tritium	pCi/L	20000/-	1/Discharge	-15.8 ± 183	346	U
<b>ADDITIONAL POLLUTANTS</b>						
Cesium 137	pCi/L	200/-	1/Discharge	0.000 ± 2.37	16.0	U
Uranium, Total	pCi/L	20/-	1/Discharge	0.551 ± 0.378	0.405	J (DNQ)
<b>ADDITIONAL POLLUTANTS WITHOUT LIMITS</b>						
Potassium-40	pCi/L	-/-	1/Discharge	2.92 ± 69.3	170	U

OUTFALL 009 (WS\_13 DRAINAGE)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA 0001309

October 1 through December 31, 2014

					12/02/2014 (Grab) - 12/03/2014 (Composite)	
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	Sample Frequency	Sample Type	Result	Concentration Result Validation Qualifier
Flow**	MGD	17.89/-	1/Discharge	Meas	0.120982	*
<b>CONVENTIONAL POLLUTANTS</b>						
Oil & Grease	LBS/DAY	2,227/-	1/Discharge	Grab	ND	*
<b>PRIORITY POLLUTANTS</b>						
Antimony	LBS/DAY	0.89/-	1/Discharge	Composite	0.0006	J (DNQ)
Cadmium	LBS/DAY	0.59/-	1/Discharge	Composite	ND	U
Copper	LBS/DAY	2.1/-	1/Discharge	Composite	0.0083	--
Lead	LBS/DAY	0.77/-	1/Discharge	Composite	0.0035	--
Mercury	LBS/DAY	0.02/-	1/Discharge	Composite	0.0001	*
Nickel	LBS/DAY	14.9/-	1/Year	ANR	ANR	ANR
TCDD TEQ_NoDNQ	LBS/DAY	4.20E-09/-	1/Discharge	Composite	1.34E-13	*
Thallium	LBS/DAY	0.3/-	1/Discharge	Composite	ND	U
Total Cyanide	LBS/DAY	1.4/-	1/Discharge	Composite	ND	*
<b>NON-CONVENTIONAL POLLUTANTS</b>						
Boron	LBS/DAY	148/-	1/Year	ANR	ANR	ANR
Chloride	LBS/DAY	22,268/-	1/Discharge	Composite	18.16	*
Fluoride	LBS/DAY	238/-	1/Year	ANR	ANR	ANR
Nitrate + Nitrite as Nitrogen (N)	LBS/DAY	1,485/-	1/Discharge	Composite	1.11	*
Perchlorate	LBS/DAY	0.89/-	1/Semiannual	Composite	ND	*
Sulfate	LBS/DAY	37,113/-	1/Discharge	Composite	8.88	*
Total Dissolved Solids	LBS/DAY	126,184/-	1/Discharge	Composite	161.44	*



OUTFALL 009 (WS\_13 DRAINAGE)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA 0001309

October 1 through December 31, 2014

					12/12/2014 (Grab) - 12/13/2014 (Composite)	
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	Sample Frequency	Sample Type	Result	Concentration Result Validation Qualifier
Flow**	MGD	17.89/-	1/Discharge	Meas	0.208623	*
<b>CONVENTIONAL POLLUTANTS</b>						
Oil & Grease	LBS/DAY	2,227/-	1/Discharge	Grab	ND	*
<b>PRIORITY POLLUTANTS</b>						
Antimony	LBS/DAY	0.89/-	1/Discharge	Composite	0.0013	J (DNQ)
Cadmium	LBS/DAY	0.59/-	1/Discharge	Composite	0.00054	J (DNQ)
Copper	LBS/DAY	2.1/-	1/Discharge	Composite	0.016	--
Lead	LBS/DAY	0.77/-	1/Discharge	Composite	0.015	--
Mercury	LBS/DAY	0.02/-	1/Discharge	Composite	ND	*
Nickel	LBS/DAY	14.9/-	1/Year	ANR	ANR	ANR
TCDD TEQ_NoDNQ	LBS/DAY	4.20E-09/-	1/Discharge	Composite	1.55E-10	*
Thallium	LBS/DAY	0.3/-	1/Discharge	Composite	ND	U
Total Cyanide	LBS/DAY	1.4/-	1/Discharge	Composite	ND	*
<b>NON-CONVENTIONAL POLLUTANTS</b>						
Boron	LBS/DAY	148/-	1/Year	ANR	ANR	ANR
Chloride	LBS/DAY	22,268/-	1/Discharge	Composite	23	*
Fluoride	LBS/DAY	238/-	1/Year	ANR	ANR	ANR
Nitrate + Nitrite as Nitrogen (N)	LBS/DAY	1,485/-	1/Discharge	Composite	5.2	*
Perchlorate	LBS/DAY	0.89/-	1/Semiannual	ANR	ANR	ANR
Sulfate	LBS/DAY	37,113/-	1/Discharge	Composite	7.5	*
Total Dissolved Solids	LBS/DAY	126,184/-	1/Discharge	Composite	244	*

OUTFALL 009 (WS\_13 DRAINAGE)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA 0001309

October 1 through December 31, 2014

					12/17/2014 (Grab & Composite)	
ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	Sample Frequency	Sample Type	Result	Concentration Result Validation Qualifier
Flow**	MGD	17.89/-	1/Discharge	Meas	0.573008	*
<b>CONVENTIONAL POLLUTANTS</b>						
Oil & Grease	LBS/DAY	2,227/-	1/Discharge	Grab	ND	*
<b>PRIORITY POLLUTANTS</b>						
Antimony	LBS/DAY	0.89/-	1/Discharge	Composite	0.004	J (DNQ)
Cadmium	LBS/DAY	0.59/-	1/Discharge	Composite	ND	U
Copper	LBS/DAY	2.1/-	1/Discharge	Composite	0.04	J+ (I)
Lead	LBS/DAY	0.77/-	1/Discharge	Composite	0.06	--
Mercury	LBS/DAY	0.02/-	1/Discharge	Composite	ND	*
Nickel	LBS/DAY	14.9/-	1/Year	ANR	ANR	ANR
TCDD TEQ_NoDNQ	LBS/DAY	4.20E-09/-	1/Discharge	Composite	3.58E-10	--
Thallium	LBS/DAY	0.3/-	1/Discharge	Composite	ND	U
Total Cyanide	LBS/DAY	1.4/-	1/Discharge	Composite	ND	*
<b>NON-CONVENTIONAL POLLUTANTS</b>						
Boron	LBS/DAY	148/-	1/Year	ANR	ANR	ANR
Chloride	LBS/DAY	22,268/-	1/Discharge	Composite	29.15	*
Fluoride	LBS/DAY	238/-	1/Year	ANR	ANR	ANR
Nitrate + Nitrite as Nitrogen (N)	LBS/DAY	1,485/-	1/Discharge	Composite	9.08	*
Perchlorate	LBS/DAY	0.89/-	1/Semiannual	ANR	ANR	ANR
Sulfate	LBS/DAY	37,113/-	1/Discharge	Composite	18.64	*
Total Dissolved Solids	LBS/DAY	126,184/-	1/Discharge	Composite	573.47	*

ARROYO SIMI (FRONTIER PARK RECEIVING WATER)

FOURTH QUARTER 2014 REPORTING SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309

October 1 through December 31, 2014

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	11/13/2014			12/3/2014		
				SAMPLE TYPE	RESULT	VALIDATION QUALIFIER	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
<b>POLLUTANTS WITH LIMITS</b>									
4,4'-DDD	ug/L	0.0014/-	1/Quarter	Grab	ND < 0.0035	*	ANR	ANR	ANR
4,4'-DDE	ug/L	0.001/-	1/Quarter	Grab	ND < 0.0026	*	ANR	ANR	ANR
4,4'-DDT	ug/L	0.001/-	1/Quarter	Grab	ND < 0.0035	*	ANR	ANR	ANR
Aroclor 1016	ug/L	0.0003/-	1/Quarter	Grab	ND < 0.22	*	ANR	ANR	ANR
Aroclor 1221	ug/L	0.0003/-	1/Quarter	Grab	ND < 0.22	*	ANR	ANR	ANR
Aroclor 1232	ug/L	0.0003/-	1/Quarter	Grab	ND < 0.22	*	ANR	ANR	ANR
Aroclor 1242	ug/L	0.0003/-	1/Quarter	Grab	ND < 0.22	*	ANR	ANR	ANR
Aroclor 1248	ug/L	0.0003/-	1/Quarter	Grab	ND < 0.22	*	ANR	ANR	ANR
Aroclor 1254	ug/L	0.0003/-	1/Quarter	Grab	ND < 0.22	*	ANR	ANR	ANR
Aroclor 1260	ug/L	0.0003/-	1/Quarter	Grab	ND < 0.22	*	ANR	ANR	ANR
Chlordane	ug/L	0.001/-	1/Quarter	Grab	ND < 0.070	*	ANR	ANR	ANR
Chlorpyrifos	ug/L	0.02/-	1/Quarter	Grab	ND < 0.49	*	ANR	ANR	ANR
Diazinon	ug/L	0.16/-	1/Quarter	Grab	ND < 0.12	*	ANR	ANR	ANR
Dieldrin	ug/L	0.0002/-	1/Quarter	Grab	ND < 0.0017	*	ANR	ANR	ANR
E. Coli	MPN/100 ml	235/-	1/Year	ANR	ANR	ANR	ANR	ANR	ANR
Fecal Coliform	MPN/100 ml	400/-	1/Year	ANR	ANR	ANR	ANR	ANR	ANR
pH (Field)	pH Units	6.5-8.5/-	1/Quarter <sup>(1)</sup>	Grab	6.91	*	Grab	6.74	*
Toxaphene	ug/L	0.0003/-	1/Quarter	Grab	ND < 0.22	*	ANR	ANR	ANR
<b>POLLUTANTS WITHOUT LIMITS</b>									
Hardness	mg/L	-/-	1/Quarter <sup>(1)</sup>	Grab	710	--	Grab	220	--
Temperature (Field)	deg F	-/-	1/Quarter	Grab	56.43	*	ANR	ANR	ANR
Total Suspended Solids	mg/L	-/-	1/Year	ANR	ANR	ANR	ANR	ANR	ANR
Water Velocity	ft/sec	-/-	1/Quarter	Meas	0.00	*	Meas	0.1	*

See attached notes for abbreviations, definitions,  
and other explanations for the data presented.

ARROYO SIMI (FRONTIER PARK RECEIVING WATER)

FOURTH QUARTER 2014 REPORTING SUMMARY  
 THE BOEING COMPANY  
 SANTA SUSANA FIELD LABORATORY  
 NPDES PERMIT CA0001309

October 1 through December 31, 2014

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	SAMPLE FREQUENCY	12/12/2014			12/17/2014		
				SAMPLE TYPE	RESULT	VALIDATION QUALIFIER	SAMPLE TYPE	RESULT	VALIDATION QUALIFIER
<b>POLLUTANTS WITH LIMITS</b>									
4,4'-DDD	ug/L	0.0014/-	1/Quarter	ANR	ANR	ANR	ANR	ANR	ANR
4,4'-DDE	ug/L	0.001/-	1/Quarter	ANR	ANR	ANR	ANR	ANR	ANR
4,4'-DDT	ug/L	0.001/-	1/Quarter	ANR	ANR	ANR	ANR	ANR	ANR
Aroclor 1016	ug/L	0.0003/-	1/Quarter	ANR	ANR	ANR	ANR	ANR	ANR
Aroclor 1221	ug/L	0.0003/-	1/Quarter	ANR	ANR	ANR	ANR	ANR	ANR
Aroclor 1232	ug/L	0.0003/-	1/Quarter	ANR	ANR	ANR	ANR	ANR	ANR
Aroclor 1242	ug/L	0.0003/-	1/Quarter	ANR	ANR	ANR	ANR	ANR	ANR
Aroclor 1248	ug/L	0.0003/-	1/Quarter	ANR	ANR	ANR	ANR	ANR	ANR
Aroclor 1254	ug/L	0.0003/-	1/Quarter	ANR	ANR	ANR	ANR	ANR	ANR
Aroclor 1260	ug/L	0.0003/-	1/Quarter	ANR	ANR	ANR	ANR	ANR	ANR
Chlordane	ug/L	0.001/-	1/Quarter	ANR	ANR	ANR	ANR	ANR	ANR
Chlorpyrifos	ug/L	0.02/-	1/Quarter	ANR	ANR	ANR	ANR	ANR	ANR
Diazinon	ug/L	0.16/-	1/Quarter	ANR	ANR	ANR	ANR	ANR	ANR
Dieldrin	ug/L	0.0002/-	1/Quarter	ANR	ANR	ANR	ANR	ANR	ANR
E. Coli	MPN/100 ml	235/-	1/Year	ANR	ANR	ANR	ANR	ANR	ANR
Fecal Coliform	MPN/100 ml	400/-	1/Year	ANR	ANR	ANR	ANR	ANR	ANR
pH (Field)	pH Units	6.5-8.5/-	1/Quarter <sup>(1)</sup>	Grab	7.30	*	Grab	7.18	*
Toxaphene	ug/L	0.0003/-	1/Quarter	ANR	ANR	ANR	ANR	ANR	ANR
<b>POLLUTANTS WITHOUT LIMITS</b>									
Hardness	mg/L	-/-	1/Quarter <sup>(1)</sup>	Grab	290	--	Grab	280	--
Temperature (Field)	deg F	-/-	1/Quarter	ANR	ANR	ANR	Grab	51.1	*
Total Suspended Solids	mg/L	-/-	1/Year	ANR	ANR	ANR	ANR	ANR	ANR
Water Velocity	ft/sec	-/-	1/Quarter	Meas	0.6	*	Meas	0.20	*

See attached notes for abbreviations, definitions,  
 and other explanations for the data presented.

**APPENDIX D**

**Fourth Quarter 2014 Summary of Permit Limit Exceedances**

**SUMMARY OF PERMIT LIMIT EXCEEDANCES**

**FOURTH QUARTER 2014 REPORTING SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309**

October 1 through December 31, 2014

<b>DAILY MAX PERMIT LIMIT EXCEEDANCES</b>								
<b>OUTFALL</b>	<b>LOCATIONS</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TYPE</b>	<b>ANALYTE</b>	<b>PERMIT LIMIT DAILY MAX</b>	<b>DAILY MAX RESULT</b>	<b>UNITS</b>	<b>VALIDATION QUALIFIER</b>
Outfall 009	WS-13 Drainage	12/13/2014	Comp	Lead	5.2/-	8.8	ug/L	--
Outfall 009	WS-13 Drainage	12/13/2014	Comp	TCDD TEQ w/out DNQ Values	2.80E-08	8.93E-08	ug/L	--
Outfall 009	WS-13 Drainage	12/17/2014	Comp	Lead	5.2/-	13	ug/L	--
Outfall 009	WS-13 Drainage	12/17/2014	Comp	TCDD TEQ w/out DNQ Values	2.80E-08	7.50E-08	ug/L	--



**APPENDIX E**

**Fourth Quarter 2014 Analytical Laboratory Report,  
Chain of Custody, and Validation Report**

## APPENDIX E

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4	Outfall 002 – December 17 & 18, 2014 - Test America Analytical Laboratory Report
5	Outfall 008 – December 12, 2014 - MEC <sup>X</sup> Data Validation Report
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# DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-96448-1

Prepared by

MEC<sup>x</sup>  
12269 East Vassar Drive  
Aurora, CO 80014

## I. INTRODUCTION

Task Order Title: Haley & Aldrich Boeing SSFL Stormwater  
 Contract Task Order: 1272.003H.01 001  
 Sample Delivery Group: 440-96448-1  
 Project Manager: K. Miller  
 Matrix: Water  
 QC Level: IV  
 No. of Samples: 2  
 No. of Reanalyses/Dilutions: 0  
 Laboratory: TestAmerica Irvine

**Table 1. Sample Identification**

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix</i>	<i>Collection</i>	<i>Method</i>
Outfall002_20141212_ Grab	440-96448-1, 440-96482-1	N/A	Water	12/12/2014 11:15:00 AM	E120.1, SM9221E, SM9221F, 8015B GRO, 8015B DRO
Outfall002_20141213_ Comp	440-96594-1	N/A	Water	12/13/2014 12:44:00 PM	E1613B, E180.1, E200.7, E200.8, E300, E300-28Day, E900, E901.1, E903.0, E904.0, E905.0, E906.0, HASL-300 U Mod, SM2540C/D, SM4500F-C, SM4500- NH3G, SM5210B, SM5310B, SM5540

## II. Sample Management

No anomalies were observed regarding sample management. The receipt temperature for one cooler was noted to be 0.5°C. As the samples were not noted to be frozen or damaged, no qualification was required. The remaining samples were received within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the sample containers were received on ice, intact and properly preserved. No COC transferring the samples to TestAmerica-St. Louis was provided. The COCs were appropriately signed and dated by field and laboratory personnel. The samples were transferred to TestAmerica-Irvine via courier. Custody seals were intact at the remaining laboratories.

Upon receipt at TestAmerica-Irvine, the laboratory prepared the radionuclide samples and a blank that accompanied the samples to TestAmerica-St. Louis.

### 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 or PCB congeners.	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 analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+	Not applicable	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential positive bias.
J-	Not applicable	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential negative bias.
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.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.

---

Qualifier	Organics	Inorganics
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.
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.
L1	LCS/LCSD RPD was outside control limits.	LSC/LSCD RPD was outside control limits.
Q	MS/MSD recovery was poor.	MS recovery was poor.
Q1	MS/MSD RPD was outside control limits.	MS/MSD RPD was outside control limits.
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.	ICPMS tune was not compliant.
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.

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Qualifier	Organics	Inorganics
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 1613B—Dioxin/Furans

Reviewed By: L. Calvin

Date Reviewed: January 16, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613B*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review (2011)*.

- 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 analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. 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 15 native compounds (calibration by isotope dilution) and  $\leq 35\%$  for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613B control limits for all standards.
  - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of the analytical sequence. The VER was acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613B. The ion abundance ratios and relative retention times were within the method control limits.
- Blanks: The method blank had a detect below the reporting limit for OCDD at 0.0000276  $\mu\text{g/L}$ . The sample result for OCDD was qualified as nondetected, "U," at the level of contamination. The method blank had no other detects above the estimated detection limit (EDL).

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613B.
- 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: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613B.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613B. Isomer 2,3,7,8-TCDF was not detected in the initial analysis of the sample; therefore, confirmation analysis was not necessary.
- 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. Any detects below the laboratory lower calibration level were qualified as estimated, “J.” Any detects between the EDL and the reporting limit (RL) were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Nondetects are valid to the EDL.

The result for OCDF reported as an EMPC was qualified as an estimated nondetect, “UJ,” at the level of the EMPC. The sample had no other reportable detects.

## **B. EPA METHODS 200.8, 200.7 and SM2340B—Metals and Hardness**

Reviewed By: M. Cherny & P. Meeks

Date Reviewed: January 19 and 21, 2015

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC<sup>x</sup> Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *EPA Method 200.7, Standard Method for the Examination of Water and Wastewater Method 2340B*, and the *National Functional Guidelines for Inorganic Data Review (2014)*.

- Holding Times: The analytical holding time, six months, was met.

- Tuning: Mass calibrations were within 0.1 atomic mass units of the true value and the %RSDs were  $\leq 5\%$ .
- Calibration: The ICV and CCV recoveries were within the control limits of 90-110%. The CRI recoveries were within the control limits of 70-130%.
- Blanks: The method blank and CCBs had no detects affecting sample results.
- Interference Check Samples: Recoveries were within 80-120%. Although there were detects for boron in the ICSAs, no qualifications were deemed necessary as the site sample concentrations of the interferents was  $< 50\%$  of the ICSA concentrations. Selenium was reported in the ICSA at -1.06 and -1.04  $\mu\text{g/L}$ ; therefore, nondetected total and dissolved selenium in the sample was qualified as estimated, "UJ." There were no other ICSA results affecting sample results.
- Blank Spikes and Laboratory Control Samples: The recoveries were within the method control limits of 85-115% and the RPDs for the total 200.8 analytes were within the laboratory control limit of  $\leq 20\%$ .
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for the dissolved analytes. The recoveries were within control limits of 70-130% and the RPDs were within the laboratory control limit of  $\leq 20\%$ .
- Serial Dilution: No serial dilution analyses were performed on the sample in this SDG.
- Internal Standards: Sample internal standard recoveries were within 60-125% of the calibration blank.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-," otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and 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.

The laboratory reported lead as detected at the MDL of 0.5  $\mu\text{g/L}$ . During the review of the raw data, the reviewer noted the actual result was below the MDL, at 0.495  $\mu\text{g/L}$ . The reviewer changed the result to a nondetect, "U," at 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 16, 2015

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.0, 904.0, 905.0, and 906.0, HASL-300*, and the *National Functional Guidelines for Inorganic Data Review (2014)*.

- Holding Times: The tritium sample was analyzed within 180 days of collection. Aliquots for the remaining analytes were preserved within the five-day holding time.
- Calibration: The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

The gross alpha and radium-226 detector efficiencies were less than 20%; therefore, gross alpha and radium-226 in the sample, both nondetects, were qualified as estimated, "UJ." The remaining detector efficiencies were greater than 20%.

All initial and annual calibration verifications were acceptable with mean recoveries within 90-110%. All carrier recoveries were within 40-110%. The gamma spectroscopy analytes were determined at the maximum photopeak energy.

- Blanks: There were no analytes detected in the method blanks. Total uranium was detected in the blank prepared by TestAmerica-Irvine, but was not detected in the site sample. There were no other detects in the blank prepared by TestAmerica-Irvine.
- Blank Spikes and Laboratory Control Samples: The recoveries and the radium-228 relative error ration (RER) were within laboratory-established control limits.
- Laboratory Duplicates: Laboratory duplicate analyses were performed on Outfall002\_20141213\_Comp for cesium-137, potassium-40, gross alpha, and gross beta. The RERs were within the laboratory control limit of  $\leq 1$ .
- Matrix Spike/Matrix Spike Duplicate: Matrix spike analyses were performed on Outfall002\_20141213\_Comp for gross alpha and gross beta. The recoveries were within



the laboratory control limits. For the remaining methods, accuracy was evaluated based on LCS results.

- **Sample Result Verification:** An EPA Level IV review was performed for the sample in this data package. The sample results and MDCs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDC and the reporting limit (RL) were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDC.
- **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.

#### **D. EPA METHOD 8015B—Purgeable and Extractable Total Fuel Hydrocarbons (TFHs)**

Reviewed By: L. Calvin

Date Reviewed: January 19, 2015

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC<sup>x</sup> Data Validation Procedure for Total Fuel Hydrocarbons (DVP-8, Rev. 0)*, *EPA Method 8015B*, and the *National Functional Guidelines for Organic Methods Data Review (2014)*.

- **Holding Times:** Extraction and analytical holding times were met. The sample for GRO was analyzed within 14 days of collection. The sample was extracted for DRO within 14 days of collection and analyzed within 40 days of extraction.
- **Calibration:** Calibration criteria were met. Initial calibration %RSDs were  $\leq 20\%$  and continuing calibration %Ds  $\leq 15\%$ .
- **Blanks:** The method blanks had no target range detects above the MDL.
- **Blank Spikes and Laboratory Control Samples:** Recoveries for both GRO and DRO and DRO RPDs were within laboratory-established QC limits.
- **Surrogate Recovery:** Recoveries were within laboratory-established QC limits.
- **Matrix Spike/Matrix Spike Duplicate:** Batch MS/MSD analyses were performed for GRO;

however, none were performed on the sample from this SDG. Evaluation of method accuracy for GRO and accuracy and precision for DRO was based on the respective LCS and LCS/LCSD results.

- 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:
  - Trip Blanks: This SDG had no identified trip blank for the GRO analysis.
  - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
  - Field Duplicates: This SDG had no identified field duplicate samples.
- Compound Identification: Compound identification was verified. The laboratory reported two hydrocarbon ranges by Method 8015B: C4-C12 (GRO) and C13-C28 (DRO). The hydrocarbon ranges were reported on the electronic data deliverable (EDD) as follows: PHC as Unknown/Waste Product, Light Range C4-C12, and Total Petroleum Hydrocarbons (C13-C28) (DRO). Review of the sample chromatograms and retention times indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibrations and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the reporting limit.

## E. Various Methods—General Chemistry

Reviewed By: P. Meeks

Date Reviewed: January 16 and 21, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *EPA Methods 120.1 and 180.1, 300.0, Standard Method for the Examination of Water and Wastewater Methods, 2540C, 2540D, 4500F-C, 4500-NH3 G, 5210B, 5310B, 5540, 9221E, and 9221F*, and the *National Functional Guidelines for Inorganic Data Review (2014)*.

- Holding Times: The analytical holding times, as listed below, were met.
  - MBAS, turbidity, nitrate, nitrite – 48 hours
  - BOD – 48 hours to prepare the sample
  - TDS, TSS – 7 days

- Chloride, sulfate, conductivity, TOC, ammonia, fluoride – 28 days

The e. coli and fecal coliform analytical holding times are listed as immediate. As the sample was prepared on the day they were collected, no qualifications were required.

- Calibration: The closing ammonia CCV was recovered at 111%; therefore, ammonia detected in the sample was qualified as estimated, “J.” The remaining Initial and continuing calibration recoveries were within the control limits of 90-110%. Calibration is not applicable to the e. coli and fecal coliform methods.
- Blanks: The method blanks and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: The recoveries were within the laboratory control limits. The LCS is not applicable to the e. coli and fecal coliform methods.
- Laboratory Duplicates: Laboratory duplicate analysis was performed on the sample in this SDG for conductivity and turbidity. The RPDs were within the laboratory control limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for chloride and sulfate. The recoveries and RPD were within the laboratory control limits of 80-120% and  $\leq 20\%$ , respectively. Accuracy for the remaining methods was evaluated based on the LCS results
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-,” otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and 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.

Due to automation of the laboratory systems, there was no raw data for BOD, conductivity or turbidity. These methods were reviewed at Level III.

- 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.

# Validated Sample Result Forms: 440964481

## Analysis Method E120.1

Sample Name Matrix Type: WM Result Type: TRG

Sample Date: 12/12/2014 11:15:00 AM Validation Level: 3

Lab Sample Name: 440-96482-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Specific Conductance	N	CONDSPEC	210	1.0	0	umhos/c			

## Analysis Method E1613B

Sample Name Matrix Type: WM Result Type: TRG

Sample Date: 12/13/2014 12:44:00 PM Validation Level: 3

Lab Sample Name: 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	N	39001-02-0	0.00000900	0.0000944	0.0	ug/L	QJ	UJ	*III
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	N	3268-87-9	0.0000202	0.0000944	0.0	ug/L	BJ	U	B
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	N	67562-39-4		0.0000472	0.0	ug/L	U	U	
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	N	35822-46-9		0.0000472	0.0	ug/L	U	U	
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	N	55673-89-7		0.0000472	0.0	ug/L	U	U	
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	N	70648-26-9		0.0000472	0.0	ug/L	U	U	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	N	39227-28-6		0.0000472	0.0	ug/L	U	U	
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	N	57117-44-9		0.0000472	0.0	ug/L	U	U	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	N	57653-85-7		0.0000472	0.0	ug/L	U	U	
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	N	72918-21-9		0.0000472	0.0	ug/L	U	U	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	N	19408-74-3		0.0000472	0.0	ug/L	U	U	
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	N	57117-41-6		0.0000472	0.0	ug/L	U	U	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	N	40321-76-4		0.0000472	0.0	ug/L	U	U	
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	N	60851-34-5		0.0000472	0.0	ug/L	U	U	
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	N	57117-31-4		0.0000472	0.0	ug/L	U	U	
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	N	51207-31-9		0.0000094	0.0	ug/L	U	U	

**Analysis Method E1613B**

2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	N	1746-01-6	0.0000094	0.0	ug/L	U	U
Total Heptachlorodibenzofuran (HpCDF)	N	38998-75-3	0.0000472	0.0	ug/L	U	U
Total Heptachlorodibenzo-p-dioxin (HpCDD)	N	37871-00-4	0.0000472	0.0	ug/L	U	U
Total Hexachlorodibenzofuran (HxCDF)	N	55684-94-1	0.0000472	0.0	ug/L	U	U
Total Hexachlorodibenzo-p-dioxin (HxCDD)	N	34465-46-8	0.0000472	0.0	ug/L	U	U
Total Pentachlorodibenzofuran (PeCDF)	N	30402-15-4	0.0000472	0.0	ug/L	U	U
Total Pentachlorodibenzo-p-dioxin (PeCDD)	N	36088-22-9	0.0000472	0.0	ug/L	U	U
Total Tetrachlorodibenzofuran (TCDF)	N	55722-27-5	0.0000094	0.0	ug/L	U	U
Total Tetrachlorodibenzo-p-dioxin (TCDD)	N	41903-57-5	0.0000094	0.0	ug/L	U	U

**Analysis Method E180.1**

**Sample Name** Matrix Type: WM Result Type: TRG

**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3

**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Turbidity	N	TURBIDITY	8.7	0.10	0.040	NTU			

**Analysis Method E200.7**

**Sample Name** Matrix Type: WM Result Type: TRG

**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3

**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Arsenic	N	7440-38-2	5.7	10	5.0	ug/L	J,DX	J	DNQ
Arsenic	D	7440-38-2		10	5.0	ug/L	UQP	U	
Barium	N	7440-39-3	13	10	5.0	ug/L			
Barium	D	7440-39-3	12	10	5.0	ug/L	QP		
Beryllium	N	7440-41-7		2.0	1.0	ug/L	U	U	
Beryllium	D	7440-41-7		2.0	1.0	ug/L	UQP	U	
Boron	N	7440-42-8	0.059	0.050	0.010	mg/L			
Boron	D	7440-42-8	0.061	0.050	0.010	mg/L	QP		
Chromium	N	7440-47-3		5.0	2.5	ug/L	U	U	
Chromium	D	7440-47-3		5.0	2.5	ug/L	UQP	U	
Cobalt	D	7440-48-4		10	2.5	ug/L	UQP	U	
Cobalt	N	7440-48-4		10	2.5	ug/L	U	U	

**Analysis Method E200.7**

Hardness as CaCO3	D	HARDNESSCA50 CO3	0.33	0.17	mg/L	QP		
Hardness as CaCO3	N	HARDNESSCA52 CO3	0.33	0.17	mg/L			
Iron	D	7439-89-6	0.050	0.040	0.010	mg/L	QP	
Iron	N	7439-89-6	0.30	0.040	0.010	mg/L	MB	
Manganese	D	7439-96-5		20	10	ug/L	UQP	U
Manganese	N	7439-96-5		20	10	ug/L	U	U
Nickel	D	7440-02-0		10	5.0	ug/L	UQP	U
Nickel	N	7440-02-0		10	5.0	ug/L	U	U
Silver	D	7440-22-4		10	5.0	ug/L	UQP	U
Silver	N	7440-22-4		10	5.0	ug/L	U	U
Vanadium	N	7440-62-2		10	5.0	ug/L	U	U
Vanadium	D	7440-62-2		10	5.0	ug/L	UQP	U
Zinc	N	7440-66-6		20	10	ug/L	U	U
Zinc	D	7440-66-6		20	10	ug/L	UQP	U

**Analysis Method E200.8****Sample Name** Matrix Type: WM Result Type: TRG

Sample Date: 12/13/2014 12:44:00 PM Validation Level: 3

Lab Sample Name: 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	D	7440-36-0		2.0	0.50	ug/L	UQP	U	
Antimony	N	7440-36-0		2.0	0.50	ug/L	U	U	
Cadmium	N	7440-43-9		1.0	0.25	ug/L	U	U	
Cadmium	D	7440-43-9		1.0	0.25	ug/L	UQP	U	
Copper	D	7440-50-8	2.6	2.0	0.50	ug/L	QP		
Copper	N	7440-50-8	3.2	2.0	0.50	ug/L			
Lead	N	7439-92-1	0.50	1.0	0.50	ug/L	J,DX	U	\$
Lead	D	7439-92-1		1.0	0.50	ug/L	UQP	U	
Selenium	N	7782-49-2		2.0	0.50	ug/L	U	UJ	I
Selenium	D	7782-49-2		2.0	0.50	ug/L	UQP	UJ	I
Thallium	N	7440-28-0		1.0	0.50	ug/L	U	U	
Thallium	D	7440-28-0		1.0	0.50	ug/L	UQP	U	

**Analysis Method E300****Sample Name** Matrix Type: WM Result Type: TRG

Sample Date: 12/13/2014 12:44:00 PM Validation Level: 3

Lab Sample Name: 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Nitrate (as N)	N	14797-55-8	3.5	0.11	0.055	mg/L			

**Analysis Method** E300

Nitrite/Nitrate N NO2NO3 3.5 0.15 0.070 mg/L

**Analysis Method** E300-28DAY**Sample Name** **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Chloride	N	16887-00-6	5.3	0.50	0.25	mg/L			
Sulfate	N	14808-79-8	9.8	0.50	0.25	mg/L			

**Analysis Method** E900**Sample Name** **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha Analytes	N	GROSSALPHA-0.942	3.00	2.05	2.05	pCi/L	U	UJ	C
Gross Beta Analytes	N	GROSSBETA	3.86	4.00	0.980	pCi/L		J	DNQ

**Analysis Method** E901.1**Sample Name** **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	N	10045-97-3	-2.27	20.0	13.5	pCi/L	U	U	
Potassium-40	N	13966-00-2	-81.3		242	pCi/L	U	U	

**Analysis Method** E903.0**Sample Name** **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	N	13982-63-3	0.0573	1.00	0.239	pCi/L	U	UJ	C



**Analysis Method** E904.0**Sample Name** Matrix Type: WM Result Type: TRG**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	N	15262-20-1	0.337	1.00	0.699	pCi/L	U	U	

**Analysis Method** E905.0**Sample Name** Matrix Type: WM Result Type: TRG**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	N	10098-97-2	-0.0191	3.00	0.775	pCi/L	U	U	

**Analysis Method** E906.0**Sample Name** Matrix Type: WM Result Type: TRG**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	N	10028-17-8	-40.5	500	322	pCi/L	U	U	

**Analysis Method** HASL-300 U Mod**Sample Name** Matrix Type: WM Result Type: TRG**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Uranium	N	7440-61-1	0.198	1.00	0.902	pCi/L	U	U	

**Analysis Method** SM2540C**Sample Name** Matrix Type: WM Result Type: TRG**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Dissolved Solids (TDS)	N	TDS	120	10	5.0	mg/L			

**Analysis Method** SM2540D**Sample Name** Matrix Type: WM Result Type: TRG**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids (TSS)	N	TSS	4.3	1.3	0.63	mg/L			

**Analysis Method** SM4500F-C**Sample Name** Matrix Type: WM Result Type: TRG**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Fluoride	N	16984-48-8	0.18	0.10	0.050	mg/L			

**Analysis Method** SM4500-NH3G**Sample Name** Matrix Type: WM Result Type: TRG**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Ammonia	N	7664-41-7	0.206	0.200	0.100	mg/L		J	R

**Analysis Method** SM5210B**Sample Name** Matrix Type: WM Result Type: TRG**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Biochemical Oxygen Demand (BOD)	N	BOD	3.7	2.0	0.50	mg/L			

**Analysis Method** SM5310B**Sample Name** Matrix Type: WM Result Type: TRG**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Organic Carbon (TOC)	N	TOC	23	1.0	0.65	mg/L			

**Analysis Method** SM5540**Sample Name** Matrix Type: WM Result Type: TRG**Sample Date:** 12/13/2014 12:44:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96594-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Surfactants as MBAS	N	SURFASMBAS0.063	0.10	0.050	mg/L	J,DX	J	DNQ	

**Analysis Method** SM9221E**Sample Name** Matrix Type: WM Result Type: TRG**Sample Date:** 12/12/2014 11:15:00 AM **Validation Level:** 3**Lab Sample Name:** 440-96448-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Fecal Coliform Bacteria	N	COLIFORMFE640 AL	1.8	0	mpn/100				

**Analysis Method** SM9221F**Sample Name** Matrix Type: WM Result Type: TRG**Sample Date:** 12/12/2014 11:15:00 AM **Validation Level:** 3**Lab Sample Name:** 440-96448-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	N	ECOLI	540	1.8	0	mpn/100			

**Analysis Method** SW8015D**Sample Name** Matrix Type: WM Result Type: TRG**Sample Date:** 12/12/2014 11:15:00 AM **Validation Level:** 3**Lab Sample Name:** 440-96482-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Petroleum Hydrocarbons (C13- C28)(DRO)	N	PHC1328	0.47	0.095	mg/L	U	U		

**Analysis Method** SW8015V**Sample Name** Matrix Type: WM Result Type: TRG**Sample Date:** 12/12/2014 11:15:00 AM **Validation Level:** 3**Lab Sample Name:** 440-96482-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
PHC as Unknown/Waste Product, Light Range C4-C12	N	PHCML	0.050	0.025	mg/L	U	U		

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

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Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-96448-1

Client Project/Site: Boeing SSFL NPDES Annual and Routine  
002

Revision: 3

For:

Haley & Aldrich, Inc.

5333 Mission Center Road

Suite 300

San Diego, California 92108

Attn: Nancy Gardiner



Authorized for release by:

1/30/2015 4:56:36 PM

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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I certify under penalty of perjury that the information contained in this report and all attachments was produced in accordance with the indicated methods and laboratory standard operating procedures, except as noted, and are complete and accurate to the best of my knowledge and belief. Subcontract laboratory reports that are attached have been evaluated for completeness and quality control acceptability.



---

Debby Wilson  
Manager of Project Management  
1/30/2015 4:56:36 PM



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# Sample Summary

Client: Haley & Aldrich, Inc.

TestAmerica Job ID: 440-96448-1

Project/Site: Boeing SSFL NPDES Annual and Routine 002

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-96448-1	Outfall002_20141212_Grab	Water	12/12/14 11:15	12/12/14 13:45
440-96482-1	Outfall002_20141212_Grab	Water	12/12/14 11:15	12/12/14 16:12
440-96482-3	TB-20141212	Water	12/12/14 11:15	12/12/14 16:12
440-96594-1	Outfall002_20141213_Comp	Water	12/13/14 00:44	12/13/14 12:25
440-96594-2	Trip_Blank	Water	12/13/14 12:25	12/13/14 12:25



# Case Narrative

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

**Job ID: 440-96448-1**

**Laboratory: TestAmerica Irvine**

## Narrative

### Job Narrative 440-96448-1

#### Comments:

Revised report 01/28/2015 to add benzo(a)pyrene which is a part of the priority pollutant list.

#### Receipt

The samples were received on 12/12/2014 1:45 PM, 12/12/2014 4:39 PM and 12/13/2014 12:25 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 0.5° C, 2.0° C, 2.6° C, 3.6° C and 5.0° C.

#### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### GC/MS Semi VOA

Method(s) 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 224726. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 625: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch 224726 recovered outside control limits for dimethylphthalate. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### HPLC/IC

Method(s) 300.0: Due to the high concentration of nitrate, the matrix spike / matrix spike duplicate (MS/MSD) for batch 224498 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### GC Semi VOA

Method(s) 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 225106. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 8015B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 225515. The LCS was performed in duplicate to provide precision for the batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### RAD

Method(s) ExtChrom: Uranium (165361): The samples are a dark yellow-brown color. A reduced aliquot of 100 mL was used to prevent matrix interference. (440-96594-1), Outfall002\_20141213\_Comp (440-96594-1)

Method(s) PrecSep-7: strontium-90: The following samples in batch #165620 were prepped at a reduced aliquot due to the presence of sediment: (440-96594-1), Outfall002\_20141213\_Comp (440-96594-1).

Method(s) PrecSep-21: radium-228 batch #164116 and radium-226 batch #164103: The following samples were reduced to 500 mL due to sediment: (440-96594-1), Outfall002\_20141213\_Comp (440-96594-1).

Method(s) 905: Prep Batch 165620: The strontium-90 sample has negative activity greater than the 3 sigma uncertainty. The sample cannot be recounted to verify activity due to the rapid decay rate of the yttrium carrier. The data have been qualified and reported.

# Case Narrative

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

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## Job ID: 440-96448-1 (Continued)

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### Laboratory: TestAmerica Irvine (Continued)

(440-96594-2), Trip\_Blank (440-96594-2)

Method(s) PrecSep\_0: radium-228 batch #168188: The following samples were reduced to 500 mL because they were orange and contained sediment: (440-96594-1), Outfall002\_20141213\_Comp (440-96594-1).

Method(s) PrecSep\_0: radium-228 batch #168188: Insufficient volume of the following samples was available to perform a sample duplicate associated with this batch: (440-96594-1), (440-96594-2), Outfall002\_20141213\_Comp (440-96594-1), Trip\_Blank (440-96594-2). A LCSD was performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### General Chemistry

Method(s) DV-WC-0077: The following sample was received outside of holding time for the hydrazine filtration and preservation: (440-96594-1), Outfall002\_20141213\_Comp (440-96594-1). The analysis holding time was met. Hydrazine analysis batch 258679, filtration and preservation batch 257747.

Method(s) SM 4500 CN E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 224827 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recovery were within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### Biology

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### Subcontract non-Sister

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### Organic Prep

Method(s) 1664A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 226034. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### Subcontract Work

Methods Acute FH minnow, EPA/821-R02-012, Chronic Cerio, EPA/821-R02-013: These methods were subcontracted to Aquatic Testing Laboratories. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method 1613 dioxin: This method was subcontracted to TestAmerica Knoxville. The subcontract laboratory certification is different from that of the facility issuing the final report. Refer to case narrative in appended report.

# Client Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

**Client Sample ID: Outfall002\_20141212\_Grab**

**Lab Sample ID: 440-96448-1**

**Date Collected: 12/12/14 11:15**

**Matrix: Water**

**Date Received: 12/12/14 13:45**

**Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation)**

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	540		1.8	1.8	MPN/100mL			12/12/14 15:56	1

**Method: SM 9221F - E.Coli (Multiple-Tube Fermentation; EC-MUG)**

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	540		1.8	1.8	MPN/100mL			12/12/14 15:56	1

**Client Sample ID: Outfall002\_20141212\_Grab**

**Lab Sample ID: 440-96482-1**

**Date Collected: 12/12/14 11:15**

**Matrix: Water**

**Date Received: 12/12/14 16:12**

**Method: 624 - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chloroethyl vinyl ether	ND		2.0	1.0	ug/L			12/14/14 17:13	1
Acrolein	ND		5.0	2.5	ug/L			12/14/14 17:13	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/14/14 17:13	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/15/14 13:09	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/15/14 13:09	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/15/14 13:09	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/15/14 13:09	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 13:09	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	1.0	ug/L			12/15/14 13:09	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/15/14 13:09	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/15/14 13:09	1
Benzene	ND		0.50	0.25	ug/L			12/15/14 13:09	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/15/14 13:09	1
Bromoform	ND		1.0	0.40	ug/L			12/15/14 13:09	1
Bromomethane	ND		0.50	0.25	ug/L			12/15/14 13:09	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/15/14 13:09	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/15/14 13:09	1
Chloroethane	ND		1.0	0.40	ug/L			12/15/14 13:09	1
Chloroform	ND		0.50	0.25	ug/L			12/15/14 13:09	1
Chloromethane	ND		0.50	0.25	ug/L			12/15/14 13:09	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 13:09	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/15/14 13:09	1
Cyclohexane	ND		2.0	1.0	ug/L			12/15/14 13:09	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/15/14 13:09	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/15/14 13:09	1
Methylene Chloride	ND		1.0	0.88	ug/L			12/15/14 13:09	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/15/14 13:09	1
Toluene	ND		0.50	0.25	ug/L			12/15/14 13:09	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 13:09	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/15/14 13:09	1
Trichloroethene	ND		0.50	0.25	ug/L			12/15/14 13:09	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/15/14 13:09	1
Trichlorotrifluoroethane(F-113)	ND		2.0	0.50	ug/L			12/15/14 13:09	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/15/14 13:09	1
Xylenes, Total	ND		1.0	0.50	ug/L			12/15/14 13:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		80 - 120		12/15/14 13:09	1

TestAmerica Irvine

# Client Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

**Client Sample ID: Outfall002\_20141212\_Grab**

**Lab Sample ID: 440-96482-1**

Date Collected: 12/12/14 11:15

Matrix: Water

Date Received: 12/12/14 16:12

**Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	89		76 - 132		12/15/14 13:09	1
Toluene-d8 (Surr)	105		80 - 128		12/15/14 13:09	1
Toluene-d8 (Surr)	109		80 - 128		12/14/14 17:13	1
Dibromofluoromethane (Surr)	100		76 - 132		12/14/14 17:13	1

**Method: 8015B - Gasoline Range Organics - (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		0.050	0.025	mg/L			12/23/14 08:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		65 - 140		12/23/14 08:47	1

**Method: 8015B - Diesel Range Organics (DRO) (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.47	0.095	mg/L		12/18/14 09:38	12/19/14 11:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	72		45 - 120	12/18/14 09:38	12/19/14 11:52	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		4.9	1.4	mg/L		12/21/14 14:30	12/21/14 17:01	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	210		1.0	1.0	umhos/cm			12/30/14 18:32	1
Settleable Solids	ND		0.10	0.10	mL/L/Hr			12/13/14 07:53	1

**Client Sample ID: TB-20141212**

**Lab Sample ID: 440-96482-3**

Date Collected: 12/12/14 11:15

Matrix: Water

Date Received: 12/12/14 16:12

**Method: 624 - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chloroethyl vinyl ether	ND		2.0	1.0	ug/L			12/14/14 17:42	1
Acrolein	ND		5.0	2.5	ug/L			12/14/14 17:42	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/14/14 17:42	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/15/14 13:38	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/15/14 13:38	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/15/14 13:38	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/15/14 13:38	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 13:38	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	1.0	ug/L			12/15/14 13:38	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/15/14 13:38	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/15/14 13:38	1
Benzene	ND		0.50	0.25	ug/L			12/15/14 13:38	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/15/14 13:38	1
Bromoform	ND		1.0	0.40	ug/L			12/15/14 13:38	1
Bromomethane	ND		0.50	0.25	ug/L			12/15/14 13:38	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/15/14 13:38	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/15/14 13:38	1
Chloroethane	ND		1.0	0.40	ug/L			12/15/14 13:38	1

TestAmerica Irvine

# Client Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

**Client Sample ID: TB-20141212**

**Lab Sample ID: 440-96482-3**

**Date Collected: 12/12/14 11:15**

**Matrix: Water**

**Date Received: 12/12/14 16:12**

**Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		0.50	0.25	ug/L			12/15/14 13:38	1
Chloromethane	ND		0.50	0.25	ug/L			12/15/14 13:38	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 13:38	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/15/14 13:38	1
Cyclohexane	ND		2.0	1.0	ug/L			12/15/14 13:38	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/15/14 13:38	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/15/14 13:38	1
Methylene Chloride	ND		1.0	0.88	ug/L			12/15/14 13:38	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/15/14 13:38	1
Toluene	ND		0.50	0.25	ug/L			12/15/14 13:38	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 13:38	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/15/14 13:38	1
Trichloroethene	ND		0.50	0.25	ug/L			12/15/14 13:38	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/15/14 13:38	1
Trichlorotrifluoroethane(F-113)	ND		2.0	0.50	ug/L			12/15/14 13:38	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/15/14 13:38	1
Xylenes, Total	ND		1.0	0.50	ug/L			12/15/14 13:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		80 - 120					12/15/14 13:38	1
Dibromofluoromethane (Surr)	91		76 - 132					12/15/14 13:38	1
Toluene-d8 (Surr)	103		80 - 128					12/15/14 13:38	1
Toluene-d8 (Surr)	110		80 - 128					12/14/14 17:42	1
Dibromofluoromethane (Surr)	103		76 - 132					12/14/14 17:42	1

**Client Sample ID: Outfall002\_20141213\_Comp**

**Lab Sample ID: 440-96594-1**

**Date Collected: 12/13/14 00:44**

**Matrix: Water**

**Date Received: 12/13/14 12:25**

**Method: 8260B SIM - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		2.0	0.50	ug/L			12/17/14 15:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	99		80 - 120					12/17/14 15:21	1

**Method: 625 - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 22:54	1
1,2-Dichlorobenzene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 22:54	1
1,3-Dichlorobenzene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1
1,4-Dichlorobenzene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1
2,4,6-Trichlorophenol	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 22:54	1
2,4-Dichlorophenol	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 22:54	1
2,4-Dimethylphenol	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 22:54	1
2,4-Dinitrophenol	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 22:54	1
2,4-Dinitrotoluene	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 22:54	1
2,6-Dinitrotoluene	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 22:54	1
2-Chloronaphthalene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1

TestAmerica Irvine

# Client Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

**Client Sample ID: Outfall002\_20141213\_Comp**

**Lab Sample ID: 440-96594-1**

**Date Collected: 12/13/14 00:44**

**Matrix: Water**

**Date Received: 12/13/14 12:25**

**Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 22:54	1
2-Nitrophenol	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 22:54	1
3,3'-Dichlorobenzidine	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 22:54	1
4,6-Dinitro-2-methylphenol	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 22:54	1
4-Bromophenyl phenyl ether	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 22:54	1
4-Chloro-3-methylphenol	ND		1.91	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1
4-Chlorophenyl phenyl ether	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1
4-Nitrophenol	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 22:54	1
Acenaphthene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1
Acenaphthylene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1
Anthracene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1
Benzidine	ND		9.57	4.78	ug/L		12/15/14 12:32	12/22/14 22:54	1
Benzo[a]anthracene	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 22:54	1
Benzo[a]pyrene	ND		1.91	0.478	ug/L		12/15/14 12:32	12/22/14 22:54	1
Benzo[b]fluoranthene	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 22:54	1
Benzo[g,h,i]perylene	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 22:54	1
Benzo[k]fluoranthene	ND		0.478	0.239	ug/L		12/15/14 12:32	12/22/14 22:54	1
bis(2-chloroisopropyl) ether	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1
Bis(2-chloroethoxy)methane	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1
Bis(2-chloroethyl)ether	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1
Bis(2-ethylhexyl) phthalate	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 22:54	1
Butyl benzyl phthalate	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 22:54	1
Chrysene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1
Dibenz(a,h)anthracene	ND		0.478	0.239	ug/L		12/15/14 12:32	12/22/14 22:54	1
Diethyl phthalate	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 22:54	1
Dimethyl phthalate	ND	LQ	0.478	0.239	ug/L		12/15/14 12:32	12/22/14 22:54	1
Di-n-butyl phthalate	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 22:54	1
Di-n-octyl phthalate	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 22:54	1
Fluoranthene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1
Fluorene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1
Hexachlorobenzene	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 22:54	1
Hexachlorobutadiene	ND		1.91	0.478	ug/L		12/15/14 12:32	12/22/14 22:54	1
Hexachlorocyclopentadiene	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 22:54	1
Hexachloroethane	ND		2.87	0.478	ug/L		12/15/14 12:32	12/22/14 22:54	1
Indeno[1,2,3-cd]pyrene	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 22:54	1
Isophorone	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 22:54	1
Naphthalene	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 22:54	1
Nitrobenzene	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 22:54	1
N-Nitrosodimethylamine	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 22:54	1
N-Nitrosodi-n-propylamine	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 22:54	1
N-Nitrosodiphenylamine	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 22:54	1
Pentachlorophenol	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 22:54	1
Phenanthrene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1
Phenol	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 22:54	1
Pyrene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 22:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	63		50 - 120	12/15/14 12:32	12/22/14 22:54	1
2-Fluorophenol	59		30 - 120	12/15/14 12:32	12/22/14 22:54	1
2,4,6-Tribromophenol	75		40 - 120	12/15/14 12:32	12/22/14 22:54	1

TestAmerica Irvine

# Client Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

**Client Sample ID: Outfall002\_20141213\_Comp**

**Lab Sample ID: 440-96594-1**

Date Collected: 12/13/14 00:44

Matrix: Water

Date Received: 12/13/14 12:25

**Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	73		45 - 120	12/15/14 12:32	12/22/14 22:54	1
Terphenyl-d14	81		37 - 144	12/15/14 12:32	12/22/14 22:54	1
Phenol-d6	66		35 - 120	12/15/14 12:32	12/22/14 22:54	1

**Method: 608 PCB LL - Polychlorinated Biphenyls (PCBs) Low level**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.47	0.24	ug/L		12/16/14 16:47	12/17/14 21:40	1
Aroclor 1221	ND		0.47	0.24	ug/L		12/16/14 16:47	12/17/14 21:40	1
Aroclor 1232	ND		0.47	0.24	ug/L		12/16/14 16:47	12/17/14 21:40	1
Aroclor 1242	ND		0.47	0.24	ug/L		12/16/14 16:47	12/17/14 21:40	1
Aroclor 1248	ND		0.47	0.24	ug/L		12/16/14 16:47	12/17/14 21:40	1
Aroclor 1254	ND		0.47	0.24	ug/L		12/16/14 16:47	12/17/14 21:40	1
Aroclor 1260	ND		0.47	0.24	ug/L		12/16/14 16:47	12/17/14 21:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	65		29 - 115	12/16/14 16:47	12/17/14 21:40	1

**Method: 608 Pesticides - Organochlorine Pesticides Low level**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0047	0.0014	ug/L		12/16/14 16:47	12/18/14 04:30	1
alpha-BHC	ND		0.0047	0.0024	ug/L		12/16/14 16:47	12/18/14 04:30	1
beta-BHC	ND		0.0095	0.0038	ug/L		12/16/14 16:47	12/18/14 04:30	1
Chlordane (technical)	ND		0.095	0.076	ug/L		12/16/14 16:47	12/18/14 04:30	1
delta-BHC	ND		0.0047	0.0033	ug/L		12/16/14 16:47	12/18/14 04:30	1
Dieldrin	ND		0.0047	0.0019	ug/L		12/16/14 16:47	12/18/14 04:30	1
Endosulfan I	ND		0.0047	0.0028	ug/L		12/16/14 16:47	12/18/14 04:30	1
Endosulfan II	ND		0.0047	0.0019	ug/L		12/16/14 16:47	12/18/14 04:30	1
Endosulfan sulfate	ND		0.0095	0.0028	ug/L		12/16/14 16:47	12/18/14 04:30	1
Endrin	ND		0.0047	0.0019	ug/L		12/16/14 16:47	12/18/14 04:30	1
Endrin aldehyde	ND		0.0095	0.0019	ug/L		12/16/14 16:47	12/18/14 04:30	1
gamma-BHC (Lindane)	ND		0.0095	0.0028	ug/L		12/16/14 16:47	12/18/14 04:30	1
Heptachlor	ND		0.0095	0.0028	ug/L		12/16/14 16:47	12/18/14 04:30	1
Heptachlor epoxide	ND		0.0047	0.0024	ug/L		12/16/14 16:47	12/18/14 04:30	1
Toxaphene	ND		0.47	0.24	ug/L		12/16/14 16:47	12/18/14 04:30	1
4,4'-DDD	ND		0.0047	0.0038	ug/L		12/16/14 16:47	12/18/14 04:30	1
4,4'-DDE	ND		0.0047	0.0028	ug/L		12/16/14 16:47	12/18/14 04:30	1
4,4'-DDT	ND		0.0095	0.0038	ug/L		12/16/14 16:47	12/18/14 04:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	48		10 - 139	12/16/14 16:47	12/18/14 04:30	1

**Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		1.0	0.25	ug/L			12/13/14 14:07	1

**Method: 300.0 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.3		0.50	0.25	mg/L			12/13/14 14:45	1
Nitrate as N	3.5		0.11	0.055	mg/L			12/13/14 14:45	1
Nitrite as N	ND		0.15	0.070	mg/L			12/13/14 14:45	1

TestAmerica Irvine



# Client Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

**Client Sample ID: Outfall002\_20141213\_Comp**

**Lab Sample ID: 440-96594-1**

Date Collected: 12/13/14 00:44

Matrix: Water

Date Received: 12/13/14 12:25

**Method: 300.0 - Anions, Ion Chromatography (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	9.8		0.50	0.25	mg/L			12/13/14 14:45	1

**Method: 314.0 - Perchlorate (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			12/20/14 11:18	1

**Method: NO3NO2 Calc - Nitrogen, Nitrate-Nitrite**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	3.5		0.15	0.070	mg/L			12/29/14 14:04	1

**Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B)**

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000094	0.00000274	ug/L		12/17/14 23:30	01/12/15 12:00	1
Total TCDD	ND		0.0000094	0.00000274	ug/L		12/17/14 23:30	01/12/15 12:00	1
1,2,3,7,8-PeCDD	ND		0.0000472	0.00000117	ug/L		12/17/14 23:30	01/12/15 12:00	1
Total PeCDD	ND		0.0000472	0.00000117	ug/L		12/17/14 23:30	01/12/15 12:00	1
1,2,3,4,7,8-HxCDD	ND		0.0000472	0.000000800	ug/L		12/17/14 23:30	01/12/15 12:00	1
1,2,3,6,7,8-HxCDD	ND		0.0000472	0.000000860	ug/L		12/17/14 23:30	01/12/15 12:00	1
1,2,3,7,8,9-HxCDD	ND		0.0000472	0.000000770	ug/L		12/17/14 23:30	01/12/15 12:00	1
Total HxCDD	ND		0.0000472	0.000000800	ug/L		12/17/14 23:30	01/12/15 12:00	1
1,2,3,4,6,7,8-HpCDD	ND		0.0000472	0.00000144	ug/L		12/17/14 23:30	01/12/15 12:00	1
Total HpCDD	ND		0.0000472	0.00000144	ug/L		12/17/14 23:30	01/12/15 12:00	1
<b>OCDD</b>	<b>0.0000202</b>	<b>B J</b>	0.0000944	0.00000132	ug/L		12/17/14 23:30	01/12/15 12:00	1
2,3,7,8-TCDF	ND		0.0000094	0.00000164	ug/L		12/17/14 23:30	01/12/15 12:00	1
Total TCDF	ND		0.0000094	0.00000164	ug/L		12/17/14 23:30	01/12/15 12:00	1
1,2,3,7,8-PeCDF	ND		0.0000472	0.000000850	ug/L		12/17/14 23:30	01/12/15 12:00	1
2,3,4,7,8-PeCDF	ND		0.0000472	0.000000780	ug/L		12/17/14 23:30	01/12/15 12:00	1
Total PeCDF	ND		0.0000472	0.000000810	ug/L		12/17/14 23:30	01/12/15 12:00	1
1,2,3,4,7,8-HxCDF	ND		0.0000472	0.000000600	ug/L		12/17/14 23:30	01/12/15 12:00	1
1,2,3,6,7,8-HxCDF	ND		0.0000472	0.000000590	ug/L		12/17/14 23:30	01/12/15 12:00	1
2,3,4,6,7,8-HxCDF	ND		0.0000472	0.000000560	ug/L		12/17/14 23:30	01/12/15 12:00	1
1,2,3,7,8,9-HxCDF	ND		0.0000472	0.000000700	ug/L		12/17/14 23:30	01/12/15 12:00	1
Total HxCDF	ND		0.0000472	0.000000610	ug/L		12/17/14 23:30	01/12/15 12:00	1
1,2,3,4,6,7,8-HpCDF	ND		0.0000472	0.000000960	ug/L		12/17/14 23:30	01/12/15 12:00	1
1,2,3,4,7,8,9-HpCDF	ND		0.0000472	0.00000115	ug/L		12/17/14 23:30	01/12/15 12:00	1
Total HpCDF	ND		0.0000472	0.00000104	ug/L		12/17/14 23:30	01/12/15 12:00	1
<b>OCDF</b>	<b>0.00000900</b>	<b>Q J</b>	0.0000944	0.00000118	ug/L		12/17/14 23:30	01/12/15 12:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	103		35 - 197	12/17/14 23:30	01/12/15 12:00	1

Internal Standard	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	87		25 - 164	12/17/14 23:30	01/12/15 12:00	1
13C-1,2,3,7,8-PeCDD	99		25 - 181	12/17/14 23:30	01/12/15 12:00	1
13C-1,2,3,4,7,8-HxCDD	82		32 - 141	12/17/14 23:30	01/12/15 12:00	1
13C-1,2,3,6,7,8-HxCDD	93		28 - 130	12/17/14 23:30	01/12/15 12:00	1
13C-1,2,3,4,6,7,8-HpCDD	85		23 - 140	12/17/14 23:30	01/12/15 12:00	1

TestAmerica Irvine

# Client Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

**Client Sample ID: Outfall002\_20141213\_Comp**

**Lab Sample ID: 440-96594-1**

Date Collected: 12/13/14 00:44

Matrix: Water

Date Received: 12/13/14 12:25

**Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B) (Continued)**

Internal Standard	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDD	95		17 - 157	12/17/14 23:30	01/12/15 12:00	1
13C-2,3,7,8-TCDF	82		24 - 169	12/17/14 23:30	01/12/15 12:00	1
13C-1,2,3,7,8-PeCDF	92		24 - 185	12/17/14 23:30	01/12/15 12:00	1
13C-2,3,4,7,8-PeCDF	89		21 - 178	12/17/14 23:30	01/12/15 12:00	1
13C-1,2,3,4,7,8-HxCDF	75		26 - 152	12/17/14 23:30	01/12/15 12:00	1
13C-1,2,3,6,7,8-HxCDF	77		26 - 123	12/17/14 23:30	01/12/15 12:00	1
13C-2,3,4,6,7,8-HxCDF	86		28 - 136	12/17/14 23:30	01/12/15 12:00	1
13C-1,2,3,7,8,9-HxCDF	91		29 - 147	12/17/14 23:30	01/12/15 12:00	1
13C-1,2,3,4,6,7,8-HpCDF	78		28 - 143	12/17/14 23:30	01/12/15 12:00	1
13C-1,2,3,4,7,8,9-HpCDF	86		26 - 138	12/17/14 23:30	01/12/15 12:00	1
13C-OCDF	95		17 - 157	12/17/14 23:30	01/12/15 12:00	1

**Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.7	J,DX	10	5.0	ug/L		12/24/14 10:59	12/29/14 13:33	1
Boron	0.059		0.050	0.010	mg/L		12/24/14 10:59	12/24/14 17:26	1
Beryllium	ND		2.0	1.0	ug/L		12/24/14 10:59	12/24/14 17:26	1
Chromium	ND		5.0	2.5	ug/L		12/24/14 10:59	12/24/14 17:26	1
Iron	0.30	MB	0.040	0.010	mg/L		12/24/14 10:59	12/24/14 17:26	1
Nickel	ND		10	5.0	ug/L		12/24/14 10:59	12/24/14 17:26	1
Vanadium	ND		10	5.0	ug/L		12/24/14 10:59	12/24/14 17:26	1
Zinc	ND		20	10	ug/L		12/24/14 10:59	12/24/14 17:26	1
Hardness, as CaCO3	52		0.33	0.17	mg/L		12/24/14 10:59	12/24/14 17:26	1
Silver	ND		10	5.0	ug/L		12/24/14 10:59	12/24/14 17:26	1
Barium	13		10	5.0	ug/L		12/24/14 10:59	12/24/14 17:26	1
Cobalt	ND		10	2.5	ug/L		12/24/14 10:59	12/24/14 17:26	1
Manganese	ND		20	10	ug/L		12/24/14 10:59	12/24/14 17:26	1

**Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	QP	10	5.0	ug/L		12/24/14 09:43	12/30/14 09:45	1
Boron	0.061	QP	0.050	0.010	mg/L		12/24/14 09:43	12/30/14 09:45	1
Beryllium	ND	QP	2.0	1.0	ug/L		12/24/14 09:43	12/30/14 09:45	1
Chromium	ND	QP	5.0	2.5	ug/L		12/24/14 09:43	12/30/14 09:45	1
Iron	0.050	QP	0.040	0.010	mg/L		12/24/14 09:43	12/30/14 09:45	1
Nickel	ND	QP	10	5.0	ug/L		12/24/14 09:43	12/30/14 09:45	1
Vanadium	ND	QP	10	5.0	ug/L		12/24/14 09:43	12/30/14 09:45	1
Zinc	ND	QP	20	10	ug/L		12/24/14 09:43	12/30/14 09:45	1
Hardness, as CaCO3	50	QP	0.33	0.17	mg/L		12/24/14 09:43	12/30/14 09:45	1
Silver	ND	QP	10	5.0	ug/L		12/24/14 09:43	12/30/14 09:45	1
Barium	12	QP	10	5.0	ug/L		12/24/14 09:43	12/30/14 09:45	1
Cobalt	ND	QP	10	2.5	ug/L		12/24/14 09:43	12/30/14 09:45	1
Manganese	ND	QP	20	10	ug/L		12/24/14 09:43	12/30/14 09:45	1

**Method: 200.8 - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.25	ug/L		12/23/14 09:41	12/23/14 16:53	1
Copper	3.2		2.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:53	1
Lead	0.50	J,DX	1.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:53	1
Antimony	ND		2.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:53	1

TestAmerica Irvine

# Client Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

**Client Sample ID: Outfall002\_20141213\_Comp**

**Lab Sample ID: 440-96594-1**

Date Collected: 12/13/14 00:44

Matrix: Water

Date Received: 12/13/14 12:25

**Method: 200.8 - Metals (ICP/MS) - Total Recoverable (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		2.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:53	1
Thallium	ND		1.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:53	1

**Method: 200.8 - Metals (ICP/MS) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	QP	1.0	0.25	ug/L		12/19/14 12:50	12/19/14 21:48	1
<b>Copper</b>	<b>2.6</b>	<b>QP</b>	2.0	0.50	ug/L		12/19/14 12:50	12/19/14 21:48	1
Lead	ND	QP	1.0	0.50	ug/L		12/19/14 12:50	12/19/14 21:48	1
Antimony	ND	QP	2.0	0.50	ug/L		12/19/14 12:50	12/19/14 21:48	1
Selenium	ND	QP	2.0	0.50	ug/L		12/19/14 12:50	12/19/14 21:48	1
Thallium	ND	QP	1.0	0.50	ug/L		12/19/14 12:50	12/19/14 21:48	1

**Method: 245.1 - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		12/17/14 09:30	12/17/14 17:44	1

**Method: 245.1 - Mercury (CVAA) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	QP	0.20	0.10	ug/L		12/17/14 13:01	12/18/14 13:32	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Turbidity</b>	<b>8.7</b>		0.10	0.040	NTU			12/13/14 15:21	1
Monomethyl Hydrazine	ND	BU	10	0.25	ug/L		12/18/14 16:47	12/30/14 02:04	1
<b>Total Dissolved Solids</b>	<b>120</b>		10	5.0	mg/L			12/18/14 10:49	1
<b>Total Suspended Solids</b>	<b>4.3</b>		1.3	0.63	mg/L			12/20/14 07:26	1
Cyanide, Total	ND		5.0	2.5	ug/L		12/15/14 15:08	12/15/14 17:51	1
<b>Fluoride</b>	<b>0.18</b>		0.10	0.050	mg/L			12/24/14 09:44	1
<b>Ammonia (as N)</b>	<b>0.206</b>		0.200	0.100	mg/L			01/05/15 16:37	1
<b>Total Organic Carbon</b>	<b>23</b>		1.0	0.65	mg/L			01/07/15 02:56	1
<b>Methylene Blue Active Substances</b>	<b>0.063</b>	<b>J,DX</b>	0.10	0.050	mg/L			12/14/14 09:01	1
<b>Biochemical Oxygen Demand</b>	<b>3.7</b>		2.0	0.50	mg/L			12/13/14 15:48	1

**Method: 900.0 - Gross Alpha and Gross Beta Radioactivity**

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Gross Alpha	-0.942	U	0.937	0.943	2.05	pCi/L	12/22/14 10:58	12/31/14 08:29	1
<b>Gross Beta</b>	<b>3.86</b>		0.829	0.915	0.980	pCi/L	12/22/14 10:58	12/31/14 08:29	1

**Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Cesium-137	-2.27	U	7.60	7.60	13.5	pCi/L	12/19/14 11:40	12/21/14 22:49	1
Potassium-40	-81.3	U	3250	3250	242	pCi/L	12/19/14 11:40	12/21/14 22:49	1

# Client Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

**Client Sample ID: Outfall002\_20141213\_Comp**

**Lab Sample ID: 440-96594-1**

Date Collected: 12/13/14 00:44

Matrix: Water

Date Received: 12/13/14 12:25

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0573	U	0.135	0.135	0.239	pCi/L	12/18/14 00:17	01/13/15 07:18	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	90.0		40 - 110				12/18/14 00:17	01/13/15 07:18	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.337	U	0.422	0.423	0.699	pCi/L	01/13/15 12:50	01/16/15 11:17	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	97.9		40 - 110				01/13/15 12:50	01/16/15 11:17	1
Y Carrier	87.1		40 - 110				01/13/15 12:50	01/16/15 11:17	1

**Method: 905 - Strontium-90 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.0191	U	0.435	0.435	0.775	pCi/L	12/29/14 18:01	01/07/15 15:56	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Sr Carrier	72.6		40 - 110				12/29/14 18:01	01/07/15 15:56	1
Y Carrier	92.3		40 - 110				12/29/14 18:01	01/07/15 15:56	1

**Method: 906.0 - Tritium, Total (LSC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-40.5	U	170	171	322	pCi/L	01/02/15 09:02	01/02/15 17:16	1

**Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.198	U	0.470	0.470	0.902	pCi/L	12/24/14 10:49	12/31/14 14:22	1

**Client Sample ID: Trip\_Blank**

**Lab Sample ID: 440-96594-2**

Date Collected: 12/13/14 12:25

Matrix: Water

Date Received: 12/13/14 12:25

**Method: 900.0 - Gross Alpha and Gross Beta Radioactivity**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.121	U	0.707	0.707	1.43	pCi/L	12/22/14 10:58	12/31/14 17:54	1
Gross Beta	0.0159	U	0.537	0.537	0.960	pCi/L	12/22/14 10:58	12/31/14 17:54	1

TestAmerica Irvine

# Client Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

**Client Sample ID: Trip\_Blank**

**Lab Sample ID: 440-96594-2**

Date Collected: 12/13/14 12:25

Matrix: Water

Date Received: 12/13/14 12:25

**Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Cesium-137	0.000	U	6.28	6.28	16.0	pCi/L	12/19/14 11:40	12/22/14 14:05	1
Potassium-40	-47.5	U	298	298	198	pCi/L	12/19/14 11:40	12/22/14 14:05	1

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Radium-226	0.0881	U	0.0664	0.0669	0.0983	pCi/L	12/18/14 00:17	01/13/15 07:19	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	102		40 - 110				12/18/14 00:17	01/13/15 07:19	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Radium-228	0.247	U	0.222	0.223	0.356	pCi/L	01/13/15 12:50	01/16/15 11:18	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	97.9		40 - 110				01/13/15 12:50	01/16/15 11:18	1
Y Carrier	88.2		40 - 110				01/13/15 12:50	01/16/15 11:18	1

**Method: 905 - Strontium-90 (GFPC)**

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Strontium-90	-0.255	U	0.148	0.149	0.308	pCi/L	12/29/14 18:01	01/07/15 15:56	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Sr Carrier	89.1		40 - 110				12/29/14 18:01	01/07/15 15:56	1
Y Carrier	92.7		40 - 110				12/29/14 18:01	01/07/15 15:56	1

**Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)**

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Total Uranium	1.47		0.413	0.422	0.237	pCi/L	12/24/14 10:49	01/13/15 13:57	1

# Method Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

Method	Method Description	Protocol	Laboratory
624	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL IRV
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
625	Semivolatile Organic Compounds (GC/MS)	EPA	TAL IRV
8015B	Gasoline Range Organics - (GC)	SW846	TAL IRV
608 PCB LL	Polychlorinated Biphenyls (PCBs) Low level	40CFR136A	TAL IRV
608 Pesticides	Organochlorine Pesticides Low level	40CFR136A	TAL IRV
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL IRV
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	TAL IRV
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
314.0	Perchlorate (IC)	EPA	TAL IRV
NO3NO2 Calc	Nitrogen, Nitrate-Nitrite	EPA	TAL IRV
1613B	Dioxins/Furans, HRGC/HRMS (1613B)	EPA-5	TAL KNX
200.7 Rev 4.4	Metals (ICP)	EPA	TAL IRV
200.8	Metals (ICP/MS)	EPA	TAL IRV
245.1	Mercury (CVAA)	EPA	TAL IRV
120.1	Conductivity, Specific Conductance	MCAWW	TAL IRV
1664A	HEM and SGT-HEM	1664A	TAL IRV
180.1	Turbidity, Nephelometric	MCAWW	TAL IRV
DV-WC-0077	Hydrazine, Ion Chromatography	TAL-DEN	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL IRV
SM 2540F	Solids, Settleable	SM	TAL IRV
SM 4500 CN E	Cyanide, Total (Low Level)	SM	TAL IRV
SM 4500 F C	Fluoride	SM	TAL IRV
SM 4500 NH3 G	Ammonia	SM	TAL IRV
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL IRV
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	TAL IRV
SM5210B	BOD, 5 Day	SM	TAL IRV
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	TAL SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	TAL SL
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
905	Strontium-90 (GFPC)	EPA	TAL SL
906.0	Tritium, Total (LSC)	EPA	TAL SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	TAL SL
SM 9221E	Coliforms, Fecal (Multiple-Tube Fermentation)	SM	TAL IRV
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL IRV
Acute FH minnow, EPA/821-R02-012	Bioassay	NONE	SC0127
Chronic Cerio, EPA/821-R02-013	Bioassay	NONE	SC0127

# Method Summary

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

Method	Method Description	Protocol	Laboratory
<b>Protocol References:</b>			
	1664A = EPA-821-98-002		
	40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.		
	DOE = U.S. Department of Energy		
	EPA = US Environmental Protection Agency		
	EPA-5 = EPA-5		
	MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.		
	NONE = NONE		
	SM = "Standard Methods For The Examination Of Water And Wastewater",		
	SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.		
	TAL-DEN = TestAmerica Laboratories, Denver, Facility Standard Operating Procedure.		
<b>Laboratory References:</b>			
	SC0127 = Aquatic Testing Laboratories, 4350 Transport #107, Ventura, CA 93003		
	TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100		
	TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022		
	TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000		
	TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566		



# Lab Chronicle

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Client Sample ID: Outfall002\_20141212\_Grab

Date Collected: 12/12/14 11:15

Date Received: 12/12/14 13:45

## Lab Sample ID: 440-96448-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	225038	(Start) 12/12/14 15:56 (End) 12/14/14 14:04	AMH	TAL IRV
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	225040	(Start) 12/12/14 15:56 (End) 12/14/14 14:04	AMH	TAL IRV

## Client Sample ID: Outfall002\_20141212\_Grab

Date Collected: 12/12/14 11:15

Date Received: 12/12/14 16:12

## Lab Sample ID: 440-96482-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	224609	12/15/14 13:09	TN	TAL IRV
Total/NA	Analysis	624		1	10 mL	10 mL	224555	12/14/14 17:13	TN	TAL IRV
Total/NA	Analysis	8015B		1	10 mL	10 mL	226243	12/23/14 08:47	MP	TAL IRV
Total/NA	Prep	3510C			1055 mL	1 mL	225515	12/18/14 09:38	BB	TAL IRV
Total/NA	Analysis	8015B		1	1055 mL	1 mL	225779	12/19/14 11:52	KW	TAL IRV
Total/NA	Analysis	120.1		1			227467	12/30/14 18:32	NTN	TAL IRV
Total/NA	Prep	1664A			1030 mL	1000 mL	226034	12/21/14 14:30	JMB	TAL IRV
Total/NA	Analysis	1664A		1	1030 mL	1000 mL	226039	12/21/14 17:01	JMB	TAL IRV
Total/NA	Analysis	SM 2540F		1	1000 mL	1000 mL	224493	12/13/14 07:53	EN	TAL IRV

## Client Sample ID: TB-20141212

Date Collected: 12/12/14 11:15

Date Received: 12/12/14 16:12

## Lab Sample ID: 440-96482-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	224609	12/15/14 13:38	TN	TAL IRV
Total/NA	Analysis	624		1	10 mL	10 mL	224555	12/14/14 17:42	TN	TAL IRV

## Client Sample ID: Outfall002\_20141213\_Comp

Date Collected: 12/13/14 00:44

Date Received: 12/13/14 12:25

## Lab Sample ID: 440-96594-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	10 mL	10 mL	225295	12/17/14 15:21	GK	TAL IRV
Total/NA	Prep	625			1045 mL	2 mL	224726	12/15/14 12:32	AK	TAL IRV
Total/NA	Analysis	625		1	1045 mL	2 mL	226134	12/22/14 22:54	DF	TAL IRV
Total/NA	Prep	608			1055 mL	2 mL	225106	12/16/14 16:47	QCT	TAL IRV
Total/NA	Analysis	608 PCB LL		1	1055 mL	2 mL	225341	12/17/14 21:40	JM	TAL IRV
Total/NA	Prep	608			1055 mL	2 mL	225106	12/16/14 16:47	QCT	TAL IRV
Total/NA	Analysis	608 Pesticides		1	1055 mL	2 mL	225351	12/18/14 04:30	KS	TAL IRV

TestAmerica Irvine

# Lab Chronicle

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

**Client Sample ID: Outfall002\_20141213\_Comp**

**Lab Sample ID: 440-96594-1**

**Date Collected: 12/13/14 00:44**

**Matrix: Water**

**Date Received: 12/13/14 12:25**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	218.6		1	10 mL		224489	12/13/14 14:07	RW	TAL IRV
Total/NA	Analysis	300.0		1	5 mL		224498	12/13/14 14:45	JRA	TAL IRV
Total/NA	Analysis	300.0		1	5 mL		224499	12/13/14 14:45	JRA	TAL IRV
Total/NA	Analysis	314.0		1	1 mL		225937	12/20/14 11:18	CH	TAL IRV
Total/NA	Analysis	NO3NO2 Calc		1			227116	12/29/14 14:04	TN	TAL IRV
Total	Prep	1613			1059 mL	20 uL	4351027_P	12/17/14 23:30		TAL KNX
Total	Analysis	1613B		1			4351027	01/12/15 12:00	KBL	TAL KNX
Dissolved	Filtration	FILTRATION			250 mL	250 mL	226565	12/23/14 18:56	APS	TAL IRV
Dissolved	Prep	200.2			25 mL	25 mL	226697	12/24/14 09:43	ND	TAL IRV
Dissolved	Analysis	200.7 Rev 4.4		1	25 mL	25 mL	227313	12/30/14 09:45	VS	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	226721	12/24/14 10:59	APS	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1	25 mL	25 mL	226974	12/24/14 17:26	EN	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	226721	12/24/14 10:59	APS	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1	25 mL	25 mL	227114	12/29/14 13:33	EN	TAL IRV
Dissolved	Filtration	FILTRATION			250 mL	250 mL	224533	12/13/14 14:35	EN	TAL IRV
Dissolved	Prep	200.2			25 mL	25 mL	225821	12/19/14 12:50	ND	TAL IRV
Dissolved	Analysis	200.8		1	25 mL	25 mL	226111	12/19/14 21:48	NH	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	226388	12/23/14 09:41	ND	TAL IRV
Total Recoverable	Analysis	200.8		1	25 mL	25 mL	226568	12/23/14 16:53	YS	TAL IRV
Dissolved	Filtration	FILTRATION			250 mL	250 mL	224533	12/13/14 14:35	EN	TAL IRV
Dissolved	Prep	245.1			20 mL	20 mL	225300	12/17/14 13:01	JS1	TAL IRV
Dissolved	Analysis	245.1		1	20 mL	20 mL	225596	12/18/14 13:32	DB	TAL IRV
Total/NA	Prep	245.1			20 mL	20 mL	225232	12/17/14 09:30	JS1	TAL IRV
Total/NA	Analysis	245.1		1	20 mL	20 mL	225520	12/17/14 17:44	DB	TAL IRV
Total/NA	Analysis	180.1		1		20 mL	224538	12/13/14 15:21	EN	TAL IRV
Total/NA	Prep	Filtration			50 mL	50 mL	257747	12/18/14 16:47	MPS	TAL DEN
Total/NA	Analysis	DV-WC-0077		1	50 mL	50 mL	258679	12/30/14 02:04	MPS	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	225438	12/18/14 10:49	XL	TAL IRV
Total/NA	Analysis	SM 2540D		1	800 mL	1000 mL	225928	12/20/14 07:26	NTN	TAL IRV
Total/NA	Prep	Distill/CN			50 mL	50 mL	224778	12/15/14 15:08	BS	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1	50 mL	50 mL	224827	12/15/14 17:51	BS	TAL IRV
Total/NA	Analysis	SM 4500 F C		1		25 mL	226709	12/24/14 09:44	MN	TAL IRV
Total/NA	Analysis	SM 4500 NH3 G		1	0.8 mL	8 mL	228130	01/05/15 16:37	BS	TAL IRV
Total/NA	Analysis	SM 5310B		1		100 mL	228441	01/07/15 02:56	YZ	TAL IRV
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	224557	12/14/14 09:01	MSM	TAL IRV
Total/NA	Analysis	SM5210B		1		300 mL	224527	12/13/14 15:48	NTN	TAL IRV
Total/NA	Prep	Evaporation			200 mL	1.0 g	164748	12/22/14 10:58	MJS	TAL SL
Total/NA	Analysis	900.0		1	200 mL		166175	12/31/14 08:29	MLK	TAL SL
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	164475	12/19/14 11:40	MRB	TAL SL
Total/NA	Analysis	901.1		1	1000 mL		164596	12/21/14 22:49	RTM	TAL SL
Total/NA	Prep	PrecSep-21			502.58 g	1.0 g	164103	12/18/14 00:17	JH	TAL SL
Total/NA	Analysis	903.0		1	502.58 g		168078	01/13/15 07:18	RTM	TAL SL
Total/NA	Prep	PrecSep_0			500.16 mL	1.0 g	168188	01/13/15 12:50	LEM	TAL SL

TestAmerica Irvine

## Lab Chronicle

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

**Client Sample ID: Outfall002\_20141213\_Comp**

**Lab Sample ID: 440-96594-1**

**Date Collected: 12/13/14 00:44**

**Matrix: Water**

**Date Received: 12/13/14 12:25**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	904.0		1	500.16 mL		168923	01/16/15 11:17	RTM	TAL SL
Total/NA	Prep	PrecSep-7			508.84 mL	1.0 g	165620	12/29/14 18:01	CMC	TAL SL
Total/NA	Analysis	905		1	508.84 mL		167123	01/07/15 15:56	RTM	TAL SL
Total/NA	Prep	LSC_Dist_Susp			100.20 mL	1.0 g	166399	01/02/15 09:02	JDL	TAL SL
Total/NA	Analysis	906.0		1	100.20 mL		166478	01/02/15 17:16	RTM	TAL SL
Total/NA	Prep	ExtChrom			99.65 mL	1.0 mL	165361	12/24/14 10:49	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	99.65 mL		166359	12/31/14 14:22	MLK	TAL SL

**Client Sample ID: Trip\_Blank**

**Lab Sample ID: 440-96594-2**

**Date Collected: 12/13/14 12:25**

**Matrix: Water**

**Date Received: 12/13/14 12:25**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200 mL	1.0 g	164748	12/22/14 10:58	MJS	TAL SL
Total/NA	Analysis	900.0		1	200 mL		166172	12/31/14 17:54	RTM	TAL SL
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	164475	12/19/14 11:40	MRB	TAL SL
Total/NA	Analysis	901.1		1	1000 mL		164819	12/22/14 14:05	SMP	TAL SL
Total/NA	Prep	PrecSep-21			968.41 g	1.0 g	164103	12/18/14 00:17	JH	TAL SL
Total/NA	Analysis	903.0		1	968.41 g		168078	01/13/15 07:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			984.36 mL	1.0 g	168188	01/13/15 12:50	LEM	TAL SL
Total/NA	Analysis	904.0		1	984.36 mL		168923	01/16/15 11:18	RTM	TAL SL
Total/NA	Prep	PrecSep-7			997.79 mL	1.0 g	165620	12/29/14 18:01	CMC	TAL SL
Total/NA	Analysis	905		1	997.79 mL		167123	01/07/15 15:56	RTM	TAL SL
Total/NA	Prep	ExtChrom			499.70 mL	1.0 mL	165361	12/24/14 10:49	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	499.70 mL		168315	01/13/15 13:57	MLK	TAL SL

**Laboratory References:**

- SC0127 = Aquatic Testing Laboratories, 4350 Transport #107, Ventura, CA 93003
- TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
- TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
- TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000
- TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 624 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-224555/3**

**Matrix: Water**

**Analysis Batch: 224555**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chloroethyl vinyl ether	ND		2.0	1.0	ug/L			12/14/14 10:48	1
Acrolein	ND		5.0	2.5	ug/L			12/14/14 10:48	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/14/14 10:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	111		80 - 128		12/14/14 10:48	1
Dibromofluoromethane (Surr)	93		76 - 132		12/14/14 10:48	1

**Lab Sample ID: LCS 440-224555/4**

**Matrix: Water**

**Analysis Batch: 224555**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Chloroethyl vinyl ether	25.0	27.0		ug/L		108	37 - 150
Acrolein	25.0	23.5		ug/L		94	10 - 145
Acrylonitrile	250	249		ug/L		100	48 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	109		80 - 128
Dibromofluoromethane (Surr)	96		76 - 132

**Lab Sample ID: LCSD 440-224555/5**

**Matrix: Water**

**Analysis Batch: 224555**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
2-Chloroethyl vinyl ether	25.0	27.0		ug/L		108	37 - 150	0	25
Acrolein	25.0	23.4		ug/L		94	10 - 145	0	30
Acrylonitrile	250	256		ug/L		102	48 - 140	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	107		80 - 128
Dibromofluoromethane (Surr)	95		76 - 132

**Lab Sample ID: 550-36708-D-2 MS**

**Matrix: Water**

**Analysis Batch: 224555**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Chloroethyl vinyl ether	ND		25.0	26.3		ug/L		105	10 - 140
Acrolein	ND		25.0	ND	LN	ug/L		0	10 - 147
Acrylonitrile	ND		250	240		ug/L		96	38 - 144

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	108		80 - 128
Dibromofluoromethane (Surr)	95		76 - 132

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 550-36708-D-2 MSD**

**Matrix: Water**

**Analysis Batch: 224555**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
2-Chloroethyl vinyl ether	ND		25.0	28.7		ug/L		115	10 - 140	9	25
Acrolein	ND		25.0	ND	LN	ug/L		0	10 - 147	NC	40
Acrylonitrile	ND		250	261		ug/L		104	38 - 144	8	40
<b>MSD MSD</b>											
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
Toluene-d8 (Surr)	107		80 - 128								
Dibromofluoromethane (Surr)	95		76 - 132								

**Lab Sample ID: MB 440-224609/6**

**Matrix: Water**

**Analysis Batch: 224609**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	1.0	ug/L			12/15/14 10:02	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Benzene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Bromoform	ND		1.0	0.40	ug/L			12/15/14 10:02	1
Bromomethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Chloroethane	ND		1.0	0.40	ug/L			12/15/14 10:02	1
Chloroform	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Chloromethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Cyclohexane	ND		2.0	1.0	ug/L			12/15/14 10:02	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Methylene Chloride	ND		1.0	0.88	ug/L			12/15/14 10:02	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Toluene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Trichloroethene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Trichlorotrifluoroethane(F-113)	ND		2.0	0.50	ug/L			12/15/14 10:02	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Xylenes, Total	ND		1.0	0.50	ug/L			12/15/14 10:02	1

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-224609/6**

**Matrix: Water**

**Analysis Batch: 224609**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	95		80 - 120		12/15/14 10:02	1
Dibromofluoromethane (Surr)	87		76 - 132		12/15/14 10:02	1
Toluene-d8 (Surr)	105		80 - 128		12/15/14 10:02	1

**Lab Sample ID: LCS 440-224609/5**

**Matrix: Water**

**Analysis Batch: 224609**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
1,1,1-Trichloroethane	25.0	23.7		ug/L		95	70 - 130
1,1,2,2-Tetrachloroethane	25.0	24.8		ug/L		99	63 - 130
1,1,2-Trichloroethane	25.0	24.0		ug/L		96	70 - 130
1,1-Dichloroethane	25.0	25.1		ug/L		100	64 - 130
1,1-Dichloroethene	25.0	24.0		ug/L		96	70 - 130
1,2-Dichloroethane	25.0	22.5		ug/L		90	57 - 138
1,2-Dichloropropane	25.0	25.4		ug/L		102	67 - 130
Benzene	25.0	24.1		ug/L		96	68 - 130
Bromodichloromethane	25.0	23.4		ug/L		94	70 - 132
Bromoform	25.0	21.3		ug/L		85	60 - 148
Bromomethane	25.0	23.4		ug/L		94	64 - 139
Carbon tetrachloride	25.0	23.9		ug/L		96	60 - 150
Chlorobenzene	25.0	23.4		ug/L		93	70 - 130
Chloroethane	25.0	23.7		ug/L		95	64 - 135
Chloroform	25.0	23.8		ug/L		95	70 - 130
Chloromethane	25.0	26.2		ug/L		105	47 - 140
cis-1,2-Dichloroethene	25.0	23.7		ug/L		95	70 - 133
cis-1,3-Dichloropropene	25.0	24.4		ug/L		97	70 - 133
Cyclohexane	25.0	24.3		ug/L		97	
Dibromochloromethane	25.0	23.8		ug/L		95	69 - 145
Ethylbenzene	25.0	22.7		ug/L		91	70 - 130
Methylene Chloride	25.0	23.7		ug/L		95	52 - 130
Tetrachloroethene	25.0	24.0		ug/L		96	70 - 130
Toluene	25.0	22.6		ug/L		90	70 - 130
trans-1,2-Dichloroethene	25.0	26.2		ug/L		105	70 - 130
trans-1,3-Dichloropropene	25.0	26.0		ug/L		104	70 - 132
Trichloroethene	25.0	24.0		ug/L		96	70 - 130
Trichlorofluoromethane	25.0	23.6		ug/L		94	60 - 150
Vinyl chloride	25.0	23.0		ug/L		92	59 - 133
Xylenes, Total	50.0	48.2		ug/L		96	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	89		76 - 132
Toluene-d8 (Surr)	94		80 - 128

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-96455-D-3 MS**

**Matrix: Water**

**Analysis Batch: 224609**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
1,1,1-Trichloroethane	ND		25.0	24.5		ug/L		98	70 - 130	
1,1,2,2-Tetrachloroethane	ND		25.0	25.8		ug/L		103	63 - 130	
1,1,2-Trichloroethane	ND		25.0	26.8		ug/L		107	70 - 130	
1,1-Dichloroethane	ND		25.0	25.7		ug/L		103	65 - 130	
1,1-Dichloroethene	ND		25.0	24.7		ug/L		99	70 - 130	
1,2-Dichloroethane	ND		25.0	23.3		ug/L		93	56 - 146	
1,2-Dichloropropane	ND		25.0	25.8		ug/L		103	69 - 130	
Benzene	ND		25.0	24.9		ug/L		99	66 - 130	
Bromodichloromethane	ND		25.0	24.3		ug/L		97	70 - 138	
Bromoform	ND		25.0	22.9		ug/L		92	59 - 150	
Bromomethane	ND		25.0	22.5		ug/L		90	62 - 131	
Carbon tetrachloride	ND		25.0	24.8		ug/L		99	60 - 150	
Chlorobenzene	ND		25.0	25.3		ug/L		101	70 - 130	
Chloroethane	ND		25.0	23.3		ug/L		93	68 - 130	
Chloroform	ND		25.0	24.6		ug/L		98	70 - 130	
Chloromethane	ND		25.0	24.2		ug/L		97	39 - 144	
cis-1,2-Dichloroethene	ND		25.0	24.2		ug/L		97	70 - 130	
cis-1,3-Dichloropropene	ND		25.0	26.3		ug/L		105	70 - 133	
Cyclohexane	ND		25.0	25.1		ug/L		100		
Dibromochloromethane	ND		25.0	25.9		ug/L		104	70 - 148	
Ethylbenzene	ND		25.0	25.1		ug/L		101	70 - 130	
Methylene Chloride	ND		25.0	24.3		ug/L		97	52 - 130	
Tetrachloroethene	ND		25.0	26.4		ug/L		106	70 - 137	
Toluene	ND		25.0	24.6		ug/L		98	70 - 130	
trans-1,2-Dichloroethene	ND		25.0	26.2		ug/L		105	70 - 130	
trans-1,3-Dichloropropene	ND		25.0	27.6		ug/L		110	70 - 138	
Trichloroethene	ND		25.0	24.6		ug/L		98	70 - 130	
Trichlorofluoromethane	ND		25.0	23.9		ug/L		96	60 - 150	
Vinyl chloride	ND		25.0	21.9		ug/L		88	50 - 137	
Xylenes, Total	ND		50.0	52.6		ug/L		105	70 - 133	

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	89		76 - 132
Toluene-d8 (Surr)	100		80 - 128

**Lab Sample ID: 440-96455-D-3 MSD**

**Matrix: Water**

**Analysis Batch: 224609**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
1,1,1-Trichloroethane	ND		25.0	25.6		ug/L		102	70 - 130	4	20	
1,1,2,2-Tetrachloroethane	ND		25.0	25.3		ug/L		101	63 - 130	2	30	
1,1,2-Trichloroethane	ND		25.0	25.6		ug/L		102	70 - 130	5	25	
1,1-Dichloroethane	ND		25.0	26.0		ug/L		104	65 - 130	1	20	
1,1-Dichloroethene	ND		25.0	24.7		ug/L		99	70 - 130	0	20	
1,2-Dichloroethane	ND		25.0	23.1		ug/L		92	56 - 146	1	20	
1,2-Dichloropropane	ND		25.0	25.7		ug/L		103	69 - 130	0	20	

TestAmerica Irvine



# QC Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-96455-D-3 MSD

Matrix: Water

Analysis Batch: 224609

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits			
Benzene	ND		25.0	24.9		ug/L		99	66 - 130	0	20	
Bromodichloromethane	ND		25.0	24.5		ug/L		98	70 - 138	0	20	
Bromoform	ND		25.0	22.7		ug/L		91	59 - 150	1	25	
Bromomethane	ND		25.0	22.5		ug/L		90	62 - 131	0	25	
Carbon tetrachloride	ND		25.0	25.7		ug/L		103	60 - 150	3	25	
Chlorobenzene	ND		25.0	25.0		ug/L		100	70 - 130	1	20	
Chloroethane	ND		25.0	23.8		ug/L		95	68 - 130	2	25	
Chloroform	ND		25.0	24.6		ug/L		98	70 - 130	0	20	
Chloromethane	ND		25.0	24.1		ug/L		96	39 - 144	0	25	
cis-1,2-Dichloroethene	ND		25.0	24.3		ug/L		97	70 - 130	0	20	
cis-1,3-Dichloropropene	ND		25.0	26.2		ug/L		105	70 - 133	0	20	
Cyclohexane	ND		25.0	26.1		ug/L		104		4		
Dibromochloromethane	ND		25.0	25.1		ug/L		100	70 - 148	3	25	
Ethylbenzene	ND		25.0	24.7		ug/L		99	70 - 130	2	20	
Methylene Chloride	ND		25.0	24.2		ug/L		97	52 - 130	0	20	
Tetrachloroethene	ND		25.0	26.4		ug/L		106	70 - 137	0	20	
Toluene	ND		25.0	24.2		ug/L		97	70 - 130	2	20	
trans-1,2-Dichloroethene	ND		25.0	27.1		ug/L		108	70 - 130	3	20	
trans-1,3-Dichloropropene	ND		25.0	27.1		ug/L		108	70 - 138	2	25	
Trichloroethene	ND		25.0	25.1		ug/L		100	70 - 130	2	20	
Trichlorofluoromethane	ND		25.0	24.3		ug/L		97	60 - 150	2	25	
Vinyl chloride	ND		25.0	22.3		ug/L		89	50 - 137	2	30	
Xylenes, Total	ND		50.0	51.5		ug/L		103	70 - 133	2	20	

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	90		76 - 132
Toluene-d8 (Surr)	99		80 - 128

## Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-225295/2

Matrix: Water

Analysis Batch: 225295

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	ND		2.0	0.50	ug/L			12/17/14 13:50	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Dibromofluoromethane (Surr)	97		80 - 120		12/17/14 13:50	1

Lab Sample ID: LCS 440-225295/3

Matrix: Water

Analysis Batch: 225295

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
1,4-Dioxane	10.0	11.2		ug/L		112	70 - 125

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 8260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-225295/3**  
**Matrix: Water**  
**Analysis Batch: 225295**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	94		80 - 120

**Lab Sample ID: 440-96594-1 MS**  
**Matrix: Water**  
**Analysis Batch: 225295**

**Client Sample ID: Outfall002\_20141213\_Comp**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier		Result	Qualifier					
1,4-Dioxane	ND		10.0	11.1		ug/L		111		70 - 130

Surrogate	MS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	97		80 - 120

**Lab Sample ID: 440-96594-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 225295**

**Client Sample ID: Outfall002\_20141213\_Comp**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier							
1,4-Dioxane	ND		10.0	11.9		ug/L		119		70 - 130	6	30

Surrogate	MSD		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	100		80 - 120

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-224726/1-A**  
**Matrix: Water**  
**Analysis Batch: 226134**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 224726**

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,4-Trichlorobenzene	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
1,2-Dichlorobenzene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
1,3-Dichlorobenzene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
1,4-Dichlorobenzene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
2,4,6-Trichlorophenol	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
2,4-Dichlorophenol	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
2,4-Dimethylphenol	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
2,4-Dinitrophenol	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
2,4-Dinitrotoluene	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
2,6-Dinitrotoluene	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
2-Chloronaphthalene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
2-Chlorophenol	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
2-Nitrophenol	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
3,3'-Dichlorobenzidine	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
4,6-Dinitro-2-methylphenol	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
4-Bromophenyl phenyl ether	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-224726/1-A

Matrix: Water

Analysis Batch: 226134

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 224726

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloro-3-methylphenol	ND		2.00	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
4-Chlorophenyl phenyl ether	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
4-Nitrophenol	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Acenaphthene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Acenaphthylene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Anthracene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Benzidine	ND		10.0	5.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Benzo[a]anthracene	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Benzo[a]pyrene	ND		2.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Benzo[b]fluoranthene	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Benzo[g,h,i]perylene	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Benzo[k]fluoranthene	ND		0.500	0.250	ug/L		12/15/14 12:32	12/22/14 15:20	1
bis(2-chloroisopropyl) ether	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Bis(2-chloroethoxy)methane	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Bis(2-chloroethyl)ether	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Bis(2-ethylhexyl) phthalate	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Butyl benzyl phthalate	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Chrysene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Dibenz(a,h)anthracene	ND		0.500	0.250	ug/L		12/15/14 12:32	12/22/14 15:20	1
Diethyl phthalate	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Dimethyl phthalate	ND		0.500	0.250	ug/L		12/15/14 12:32	12/22/14 15:20	1
Di-n-butyl phthalate	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Di-n-octyl phthalate	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Fluoranthene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Fluorene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Hexachlorobenzene	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Hexachlorobutadiene	ND		2.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Hexachlorocyclopentadiene	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Hexachloroethane	ND		3.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Indeno[1,2,3-cd]pyrene	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Isophorone	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Naphthalene	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Nitrobenzene	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
N-Nitrosodimethylamine	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
N-Nitrosodi-n-propylamine	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
N-Nitrosodiphenylamine	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Pentachlorophenol	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Phenanthrene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Phenol	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Pyrene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	93		50 - 120	12/15/14 12:32	12/22/14 15:20	1
2-Fluorophenol	76		30 - 120	12/15/14 12:32	12/22/14 15:20	1
2,4,6-Tribromophenol	89		40 - 120	12/15/14 12:32	12/22/14 15:20	1
Nitrobenzene-d5	88		45 - 120	12/15/14 12:32	12/22/14 15:20	1
Terphenyl-d14	94		37 - 144	12/15/14 12:32	12/22/14 15:20	1
Phenol-d6	83		35 - 120	12/15/14 12:32	12/22/14 15:20	1

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-224726/2-A**

**Matrix: Water**

**Analysis Batch: 226134**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 224726**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trichlorobenzene	10.0	7.326		ug/L		73	32 - 140
1,2-Dichlorobenzene	10.0	6.976		ug/L		70	25 - 141
1,2-Diphenylhydrazine(as Azobenzene)	10.0	8.118		ug/L		81	47 - 116
1,3-Dichlorobenzene	10.0	6.825		ug/L		68	10 - 150
1,4-Dichlorobenzene	10.0	6.922		ug/L		69	10 - 108
2,4,6-Trichlorophenol	10.0	7.929		ug/L		79	10 - 150
2,4-Dichlorophenol	10.0	8.161		ug/L		82	12 - 150
2,4-Dimethylphenol	10.0	7.205		ug/L		72	21 - 150
2,4-Dinitrophenol	10.0	7.651		ug/L		77	10 - 150
2,4-Dinitrotoluene	10.0	8.969		ug/L		90	10 - 103
2,6-Dinitrotoluene	10.0	8.677		ug/L		87	29 - 111
2-Chloronaphthalene	10.0	7.212		ug/L		72	53 - 126
2-Chlorophenol	10.0	7.739		ug/L		77	10 - 150
2-Nitrophenol	10.0	7.960		ug/L		80	10 - 150
3,3'-Dichlorobenzidine	10.0	4.741	J,DX	ug/L		47	10 - 77
4,6-Dinitro-2-methylphenol	10.0	7.802		ug/L		78	10 - 150
4-Bromophenyl phenyl ether	10.0	7.924		ug/L		79	31 - 124
4-Chloro-3-methylphenol	10.0	8.017		ug/L		80	10 - 150
4-Chlorophenyl phenyl ether	10.0	8.911		ug/L		89	37 - 150
4-Nitrophenol	10.0	9.095		ug/L		91	10 - 150
Acenaphthene	10.0	7.925		ug/L		79	64 - 132
Acenaphthylene	10.0	8.054		ug/L		81	48 - 144
Anthracene	10.0	8.151		ug/L		82	45 - 128
Benzidine	10.0	ND		ug/L		23	5 - 66
Benzo[a]anthracene	10.0	8.466		ug/L		85	37 - 127
Benzo[a]pyrene	10.0	7.535		ug/L		75	10 - 150
Benzo[b]fluoranthene	10.0	8.085		ug/L		81	10 - 150
Benzo[g,h,i]perylene	10.0	10.17		ug/L		102	10 - 150
Benzo[k]fluoranthene	10.0	7.938		ug/L		79	10 - 142
bis (2-chloroisopropyl) ether	10.0	7.249		ug/L		72	47 - 103
Bis(2-chloroethoxy)methane	10.0	7.958		ug/L		80	10 - 150
Bis(2-chloroethyl)ether	10.0	7.865		ug/L		79	10 - 133
Bis(2-ethylhexyl) phthalate	10.0	7.862		ug/L		79	10 - 150
Butyl benzyl phthalate	10.0	8.646		ug/L		86	10 - 135
Chrysene	10.0	8.615		ug/L		86	18 - 148
Dibenz(a,h)anthracene	10.0	9.411		ug/L		94	10 - 150
Diethyl phthalate	10.0	9.505		ug/L		95	10 - 126
Dimethyl phthalate	10.0	8.806	LQ	ug/L		88	10 - 85
Di-n-butyl phthalate	10.0	8.645		ug/L		86	10 - 144
Di-n-octyl phthalate	10.0	6.958		ug/L		70	10 - 150
Fluoranthene	10.0	8.588		ug/L		86	44 - 140
Fluorene	10.0	8.688		ug/L		87	47 - 133
Hexachlorobenzene	10.0	7.746		ug/L		77	10 - 150
Hexachlorobutadiene	10.0	6.370		ug/L		64	10 - 111
Hexachlorocyclopentadiene	10.0	3.747	J,DX	ug/L		37	10 - 67
Hexachloroethane	10.0	6.192		ug/L		62	18 - 111
Indeno[1,2,3-cd]pyrene	10.0	8.808		ug/L		88	10 - 115

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-224726/2-A**

**Matrix: Water**

**Analysis Batch: 226134**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 224726**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Isophorone	10.0	9.195		ug/L		92	18 - 150
Naphthalene	10.0	7.558		ug/L		76	41 - 142
Nitrobenzene	10.0	8.097		ug/L		81	22 - 135
N-Nitrosodimethylamine	10.0	7.511		ug/L		75	26 - 117
N-Nitrosodi-n-propylamine	10.0	7.573		ug/L		76	10 - 115
N-Nitrosodiphenylamine	10.0	7.787		ug/L		78	54 - 110
Pentachlorophenol	10.0	6.897		ug/L		69	10 - 150
Phenanthrene	10.0	8.417		ug/L		84	49 - 124
Phenol	10.0	8.272		ug/L		83	10 - 117
Pyrene	10.0	9.896		ug/L		99	45 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	74		50 - 120
2-Fluorophenol	69		30 - 120
2,4,6-Tribromophenol	87		40 - 120
Nitrobenzene-d5	82		45 - 120
Terphenyl-d14	101		37 - 144
Phenol-d6	76		35 - 120

**Lab Sample ID: LCSD 440-224726/3-A**

**Matrix: Water**

**Analysis Batch: 226134**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 224726**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	10.0	7.249		ug/L		72	32 - 140	1	35
1,2-Dichlorobenzene	10.0	7.324		ug/L		73	25 - 141	5	35
1,2-Diphenylhydrazine(as Azobenzene)	10.0	8.322		ug/L		83	47 - 116	2	35
1,3-Dichlorobenzene	10.0	6.903		ug/L		69	10 - 150	1	35
1,4-Dichlorobenzene	10.0	7.022		ug/L		70	10 - 108	1	35
2,4,6-Trichlorophenol	10.0	7.373		ug/L		74	10 - 150	7	35
2,4-Dichlorophenol	10.0	7.902		ug/L		79	12 - 150	3	35
2,4-Dimethylphenol	10.0	6.974		ug/L		70	21 - 150	3	35
2,4-Dinitrophenol	10.0	8.703		ug/L		87	10 - 150	13	35
2,4-Dinitrotoluene	10.0	9.342		ug/L		93	10 - 103	4	35
2,6-Dinitrotoluene	10.0	9.174		ug/L		92	29 - 111	6	35
2-Chloronaphthalene	10.0	6.992		ug/L		70	53 - 126	3	35
2-Chlorophenol	10.0	7.905		ug/L		79	10 - 150	2	35
2-Nitrophenol	10.0	8.160		ug/L		82	10 - 150	2	35
3,3'-Dichlorobenzidine	10.0	5.295		ug/L		53	10 - 77	11	35
4,6-Dinitro-2-methylphenol	10.0	8.325		ug/L		83	10 - 150	6	35
4-Bromophenyl phenyl ether	10.0	7.854		ug/L		79	31 - 124	1	35
4-Chloro-3-methylphenol	10.0	7.949		ug/L		79	10 - 150	1	35
4-Chlorophenyl phenyl ether	10.0	9.048		ug/L		90	37 - 150	2	35
4-Nitrophenol	10.0	9.370		ug/L		94	10 - 150	3	35
Acenaphthene	10.0	7.874		ug/L		79	64 - 132	1	35
Acenaphthylene	10.0	8.015		ug/L		80	48 - 144	0	35
Anthracene	10.0	8.116		ug/L		81	45 - 128	0	35

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 440-224726/3-A

Matrix: Water

Analysis Batch: 226134

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 224726

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
Benzidine	10.0	ND		ug/L		18	5 - 66	24	35	
Benzo[a]anthracene	10.0	8.356		ug/L		84	37 - 127	1	35	
Benzo[a]pyrene	10.0	7.117		ug/L		71	10 - 150	6	35	
Benzo[b]fluoranthene	10.0	7.623		ug/L		76	10 - 150	6	35	
Benzo[g,h,i]perylene	10.0	11.01		ug/L		110	10 - 150	8	35	
Benzo[k]fluoranthene	10.0	7.413		ug/L		74	10 - 142	7	35	
bis (2-chloroisopropyl) ether	10.0	7.270		ug/L		73	47 - 103	0	35	
Bis(2-chloroethoxy)methane	10.0	7.646		ug/L		76	10 - 150	4	35	
Bis(2-chloroethyl)ether	10.0	7.760		ug/L		78	10 - 133	1	35	
Bis(2-ethylhexyl) phthalate	10.0	8.552		ug/L		86	10 - 150	8	35	
Butyl benzyl phthalate	10.0	8.327		ug/L		83	10 - 135	4	35	
Chrysene	10.0	8.492		ug/L		85	18 - 148	1	35	
Dibenz(a,h)anthracene	10.0	9.670		ug/L		97	10 - 150	3	35	
Diethyl phthalate	10.0	9.406		ug/L		94	10 - 126	1	35	
Dimethyl phthalate	10.0	8.717	LQ	ug/L		87	10 - 85	1	35	
Di-n-butyl phthalate	10.0	8.662		ug/L		87	10 - 144	0	35	
Di-n-octyl phthalate	10.0	8.755		ug/L		88	10 - 150	23	35	
Fluoranthene	10.0	8.803		ug/L		88	44 - 140	2	35	
Fluorene	10.0	8.979		ug/L		90	47 - 133	3	35	
Hexachlorobenzene	10.0	7.708		ug/L		77	10 - 150	0	35	
Hexachlorobutadiene	10.0	6.492		ug/L		65	10 - 111	2	35	
Hexachlorocyclopentadiene	10.0	3.634	J,DX	ug/L		36	10 - 67	3	35	
Hexachloroethane	10.0	6.582		ug/L		66	18 - 111	6	35	
Indeno[1,2,3-cd]pyrene	10.0	10.01		ug/L		100	10 - 115	13	35	
Isophorone	10.0	8.480		ug/L		85	18 - 150	8	35	
Naphthalene	10.0	7.566		ug/L		76	41 - 142	0	35	
Nitrobenzene	10.0	8.167		ug/L		82	22 - 135	1	35	
N-Nitrosodimethylamine	10.0	7.570		ug/L		76	26 - 117	1	35	
N-Nitrosodi-n-propylamine	10.0	7.186		ug/L		72	10 - 115	5	35	
N-Nitrosodiphenylamine	10.0	7.671		ug/L		77	54 - 110	2	35	
Pentachlorophenol	10.0	8.519		ug/L		85	10 - 150	21	35	
Phenanthrene	10.0	8.214		ug/L		82	49 - 124	2	35	
Phenol	10.0	8.247		ug/L		82	10 - 117	0	35	
Pyrene	10.0	8.654		ug/L		87	45 - 120	13	35	

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	69		50 - 120
2-Fluorophenol	68		30 - 120
2,4,6-Tribromophenol	88		40 - 120
Nitrobenzene-d5	82		45 - 120
Terphenyl-d14	88		37 - 144
Phenol-d6	75		35 - 120

# QC Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 8015B - Gasoline Range Organics - (GC)

**Lab Sample ID: MB 440-226243/36**

**Matrix: Water**

**Analysis Batch: 226243**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		0.050	0.025	mg/L			12/23/14 01:05	1
Surrogate	%Recovery	MB Qualifier	Limits			D	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		65 - 140					12/23/14 01:05	1

**Lab Sample ID: LCS 440-226243/35**

**Matrix: Water**

**Analysis Batch: 226243**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
GRO (C4-C12)	0.800	0.709		mg/L		89	80 - 120
Surrogate	%Recovery	LCS Qualifier	Limits			D	%Rec. Limits
4-Bromofluorobenzene (Surr)	112		65 - 140				

**Lab Sample ID: 440-96667-E-1 MS**

**Matrix: Water**

**Analysis Batch: 226243**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
GRO (C4-C12)	ND		0.800	0.697		mg/L		87	65 - 140
Surrogate	%Recovery	MS Qualifier	Limits			D	%Rec	%Rec. Limits	
4-Bromofluorobenzene (Surr)	111		65 - 140						

**Lab Sample ID: 440-96667-E-1 MSD**

**Matrix: Water**

**Analysis Batch: 226243**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)	ND		0.800	0.693		mg/L		87	65 - 140	1	20
Surrogate	%Recovery	MSD Qualifier	Limits			D	%Rec	%Rec. Limits	RPD	RPD Limit	
4-Bromofluorobenzene (Surr)	113		65 - 140								

## Method: 608 PCB LL - Polychlorinated Biphenyls (PCBs) Low level

**Lab Sample ID: MB 440-225106/1-A**

**Matrix: Water**

**Analysis Batch: 225341**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 225106**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.50	0.25	ug/L		12/16/14 16:47	12/17/14 19:04	1
Aroclor 1221	ND		0.50	0.25	ug/L		12/16/14 16:47	12/17/14 19:04	1
Aroclor 1232	ND		0.50	0.25	ug/L		12/16/14 16:47	12/17/14 19:04	1
Aroclor 1242	ND		0.50	0.25	ug/L		12/16/14 16:47	12/17/14 19:04	1
Aroclor 1248	ND		0.50	0.25	ug/L		12/16/14 16:47	12/17/14 19:04	1

TestAmerica Irvine



# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 608 PCB LL - Polychlorinated Biphenyls (PCBs) Low level (Continued)

**Lab Sample ID: MB 440-225106/1-A**  
**Matrix: Water**  
**Analysis Batch: 225341**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 225106**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1254	ND		0.50	0.25	ug/L		12/16/14 16:47	12/17/14 19:04	1
Aroclor 1260	ND		0.50	0.25	ug/L		12/16/14 16:47	12/17/14 19:04	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	63		29 - 115				12/16/14 16:47	12/17/14 19:04	1

**Lab Sample ID: LCS 440-225106/4-A**  
**Matrix: Water**  
**Analysis Batch: 225341**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 225106**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	4.00	3.13		ug/L		78	39 - 145
Aroclor 1260	4.00	3.20		ug/L		80	37 - 137
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
DCB Decachlorobiphenyl (Surr)	73		29 - 115				

**Lab Sample ID: LCSD 440-225106/5-A**  
**Matrix: Water**  
**Analysis Batch: 225341**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 225106**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	4.00	3.03		ug/L		76	39 - 145	2	30
Aroclor 1260	4.00	3.11		ug/L		78	37 - 137	3	25
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
DCB Decachlorobiphenyl (Surr)	71		29 - 115						

## Method: 608 Pesticides - Organochlorine Pesticides Low level

**Lab Sample ID: MB 440-225106/1-A**  
**Matrix: Water**  
**Analysis Batch: 225351**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 225106**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0050	0.0015	ug/L		12/16/14 16:47	12/17/14 20:39	1
alpha-BHC	ND		0.0050	0.0025	ug/L		12/16/14 16:47	12/17/14 20:39	1
beta-BHC	ND		0.010	0.0040	ug/L		12/16/14 16:47	12/17/14 20:39	1
Chlordane (technical)	ND		0.10	0.080	ug/L		12/16/14 16:47	12/17/14 20:39	1
delta-BHC	ND		0.0050	0.0035	ug/L		12/16/14 16:47	12/17/14 20:39	1
Dieldrin	ND		0.0050	0.0020	ug/L		12/16/14 16:47	12/17/14 20:39	1
Endosulfan I	ND		0.0050	0.0030	ug/L		12/16/14 16:47	12/17/14 20:39	1
Endosulfan II	ND		0.0050	0.0020	ug/L		12/16/14 16:47	12/17/14 20:39	1
Endosulfan sulfate	ND		0.010	0.0030	ug/L		12/16/14 16:47	12/17/14 20:39	1
Endrin	ND		0.0050	0.0020	ug/L		12/16/14 16:47	12/17/14 20:39	1
Endrin aldehyde	ND		0.010	0.0020	ug/L		12/16/14 16:47	12/17/14 20:39	1
gamma-BHC (Lindane)	ND		0.010	0.0030	ug/L		12/16/14 16:47	12/17/14 20:39	1

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 608 Pesticides - Organochlorine Pesticides Low level (Continued)

**Lab Sample ID: MB 440-225106/1-A**

**Matrix: Water**

**Analysis Batch: 225351**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 225106**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	ND		0.010	0.0030	ug/L		12/16/14 16:47	12/17/14 20:39	1
Heptachlor epoxide	ND		0.0050	0.0025	ug/L		12/16/14 16:47	12/17/14 20:39	1
Toxaphene	ND		0.50	0.25	ug/L		12/16/14 16:47	12/17/14 20:39	1
4,4'-DDD	ND		0.0050	0.0040	ug/L		12/16/14 16:47	12/17/14 20:39	1
4,4'-DDE	ND		0.0050	0.0030	ug/L		12/16/14 16:47	12/17/14 20:39	1
4,4'-DDT	ND		0.010	0.0040	ug/L		12/16/14 16:47	12/17/14 20:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	58		10 - 139	12/16/14 16:47	12/17/14 20:39	1

**Lab Sample ID: LCS 440-225106/2-A**

**Matrix: Water**

**Analysis Batch: 225351**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 225106**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.250	0.129		ug/L		52	18 - 122
alpha-BHC	0.250	0.185		ug/L		74	32 - 128
beta-BHC	0.250	0.197		ug/L		79	29 - 123
delta-BHC	0.250	0.202		ug/L		81	33 - 135
Dieldrin	0.250	0.204		ug/L		82	32 - 139
Endosulfan I	0.250	0.189		ug/L		76	32 - 132
Endosulfan II	0.250	0.161		ug/L		64	35 - 130
Endosulfan sulfate	0.250	0.213		ug/L		85	34 - 141
Endrin	0.250	0.207		ug/L		83	33 - 135
Endrin aldehyde	0.250	0.192		ug/L		77	27 - 144
gamma-BHC (Lindane)	0.250	0.189		ug/L		76	32 - 129
Heptachlor	0.250	0.195		ug/L		78	30 - 133
Heptachlor epoxide	0.250	0.195		ug/L		78	25 - 142
4,4'-DDD	0.250	0.216		ug/L		86	37 - 142
4,4'-DDE	0.250	0.205		ug/L		82	33 - 139
4,4'-DDT	0.250	0.209		ug/L		84	36 - 145

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	69		10 - 139

**Lab Sample ID: LCSD 440-225106/3-A**

**Matrix: Water**

**Analysis Batch: 225351**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 225106**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.250	0.140		ug/L		56	18 - 122	9	35
alpha-BHC	0.250	0.201		ug/L		80	32 - 128	8	35
beta-BHC	0.250	0.212		ug/L		85	29 - 123	5	35
delta-BHC	0.250	0.216		ug/L		87	33 - 135	7	35
Dieldrin	0.250	0.218		ug/L		87	32 - 139	7	35
Endosulfan I	0.250	0.203		ug/L		81	32 - 132	7	34
Endosulfan II	0.250	0.171		ug/L		68	35 - 130	6	35
Endosulfan sulfate	0.250	0.228		ug/L		91	34 - 141	7	35

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 608 Pesticides - Organochlorine Pesticides Low level (Continued)

**Lab Sample ID: LCSD 440-225106/3-A**  
**Matrix: Water**  
**Analysis Batch: 225351**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 225106**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Endrin	0.250	0.222		ug/L		89	33 - 135	7	35
Endrin aldehyde	0.250	0.206		ug/L		82	27 - 144	7	35
gamma-BHC (Lindane)	0.250	0.206		ug/L		83	32 - 129	9	35
Heptachlor	0.250	0.210		ug/L		84	30 - 133	7	35
Heptachlor epoxide	0.250	0.208		ug/L		83	25 - 142	7	35
4,4'-DDD	0.250	0.230		ug/L		92	37 - 142	6	35
4,4'-DDE	0.250	0.219		ug/L		88	33 - 139	4	35
4,4'-DDT	0.250	0.224		ug/L		90	36 - 145	7	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Tetrachloro-m-xylene	72		10 - 139

## Method: 8015B - Diesel Range Organics (DRO) (GC)

**Lab Sample ID: MB 440-225515/1-A**  
**Matrix: Water**  
**Analysis Batch: 225588**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 225515**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.50	0.10	mg/L		12/18/14 09:38	12/18/14 19:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	87		45 - 120	12/18/14 09:38	12/18/14 19:56	1

**Lab Sample ID: LCS 440-225515/2-A**  
**Matrix: Water**  
**Analysis Batch: 225588**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 225515**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C28	1.00	0.827		mg/L		83	40 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
n-Octacosane	85		45 - 120

**Lab Sample ID: LCSD 440-225515/3-A**  
**Matrix: Water**  
**Analysis Batch: 225588**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 225515**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C28	1.00	0.819		mg/L		82	40 - 115	1	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
n-Octacosane	90		45 - 120

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

**Lab Sample ID: MB 440-224489/3**  
**Matrix: Water**  
**Analysis Batch: 224489**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		1.0	0.25	ug/L			12/13/14 08:18	1

**Lab Sample ID: LCS 440-224489/2**  
**Matrix: Water**  
**Analysis Batch: 224489**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	50.0	51.9		ug/L		104	90 - 110

**Lab Sample ID: MRL 440-224489/8**  
**Matrix: Water**  
**Analysis Batch: 224489**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	1.00	1.16		ug/L		116	50 - 150

**Lab Sample ID: 440-96594-1 MS**  
**Matrix: Water**  
**Analysis Batch: 224489**

**Client Sample ID: Outfall002\_20141213\_Comp**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	ND		50.0	52.0		ug/L		104	90 - 110

**Lab Sample ID: 440-96594-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 224489**

**Client Sample ID: Outfall002\_20141213\_Comp**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chromium, hexavalent	ND		50.0	50.8		ug/L		102	90 - 110	2	10

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 440-224498/4**  
**Matrix: Water**  
**Analysis Batch: 224498**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.055	mg/L			12/13/14 09:11	1
Nitrite as N	ND		0.15	0.070	mg/L			12/13/14 09:11	1

**Lab Sample ID: LCS 440-224498/6**  
**Matrix: Water**  
**Analysis Batch: 224498**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	1.13	1.13		mg/L		100	90 - 110
Nitrite as N	1.52	1.59		mg/L		104	90 - 110

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 440-96594-1 MS**  
**Matrix: Water**  
**Analysis Batch: 224498**

**Client Sample ID: Outfall002\_20141213\_Comp**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	ND		1.52	1.44		mg/L		94	80 - 120
Nitrite as N	ND		1.52	1.44		mg/L		94	80 - 120

**Lab Sample ID: 440-96594-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 224498**

**Client Sample ID: Outfall002\_20141213\_Comp**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrite as N	ND		1.52	1.48		mg/L		97	80 - 120	3	20
Nitrite as N	ND		1.52	1.48		mg/L		97	80 - 120	3	20

**Lab Sample ID: MB 440-224499/4**  
**Matrix: Water**  
**Analysis Batch: 224499**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.25	mg/L			12/13/14 09:11	1
Sulfate	ND		0.50	0.25	mg/L			12/13/14 09:11	1

**Lab Sample ID: LCS 440-224499/6**  
**Matrix: Water**  
**Analysis Batch: 224499**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.97		mg/L		99	90 - 110
Sulfate	5.00	5.19		mg/L		104	90 - 110

**Lab Sample ID: 440-96594-1 MS**  
**Matrix: Water**  
**Analysis Batch: 224499**

**Client Sample ID: Outfall002\_20141213\_Comp**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.3		5.00	10.1		mg/L		96	80 - 120
Sulfate	9.8		5.00	14.9		mg/L		101	80 - 120

**Lab Sample ID: 440-96594-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 224499**

**Client Sample ID: Outfall002\_20141213\_Comp**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	5.3		5.00	10.1		mg/L		96	80 - 120	0	20
Sulfate	9.8		5.00	14.9		mg/L		101	80 - 120	0	20

# QC Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 314.0 - Perchlorate (IC)

**Lab Sample ID: MB 440-225937/3**  
**Matrix: Water**  
**Analysis Batch: 225937**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			12/20/14 08:48	1

**Lab Sample ID: LCS 440-225937/2**  
**Matrix: Water**  
**Analysis Batch: 225937**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	25.0	22.1		ug/L		88	85 - 115

**Lab Sample ID: MRL 440-225937/5**  
**Matrix: Water**  
**Analysis Batch: 225937**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	4.00	3.72	J,DX	ug/L		93	75 - 125

**Lab Sample ID: 440-96709-F-11 MS**  
**Matrix: Water**  
**Analysis Batch: 225937**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	3.5	J,DX	25.0	30.2		ug/L		107	80 - 120

**Lab Sample ID: 440-96709-F-11 MSD**  
**Matrix: Water**  
**Analysis Batch: 225937**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	3.5	J,DX	25.0	29.8		ug/L		105	80 - 120	1	20

## Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B)

**Lab Sample ID: H4L17000027B**  
**Matrix: Water**  
**Analysis Batch: 4351027**

**Client Sample ID: Method Blank**  
**Prep Type: Total**  
**Prep Batch: 4351027\_P**

Analyte	MB Result	MB Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000100	0.00000589	ug/L		12/17/14 23:30	01/10/15 05:43	1
Total TCDD	ND		0.0000100	0.00000589	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,7,8-PeCDD	ND		0.0000500	0.00000301	ug/L		12/17/14 23:30	01/10/15 05:43	1
Total PeCDD	ND		0.0000500	0.00000301	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,4,7,8-HxCDD	ND		0.0000500	0.00000263	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,6,7,8-HxCDD	ND		0.0000500	0.00000268	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,7,8,9-HxCDD	ND		0.0000500	0.00000247	ug/L		12/17/14 23:30	01/10/15 05:43	1
Total HxCDD	ND		0.0000500	0.00000259	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,4,6,7,8-HpCDD	ND		0.0000500	0.00000302	ug/L		12/17/14 23:30	01/10/15 05:43	1
Total HpCDD	ND		0.0000500	0.00000302	ug/L		12/17/14 23:30	01/10/15 05:43	1
OCDD	0.0000276	J	0.000100	0.00000427	ug/L		12/17/14 23:30	01/10/15 05:43	1
2,3,7,8-TCDF	ND		0.0000100	0.00000442	ug/L		12/17/14 23:30	01/10/15 05:43	1

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B) (Continued)

**Lab Sample ID: H4L17000027B**

**Matrix: Water**

**Analysis Batch: 4351027**

**Client Sample ID: Method Blank**

**Prep Type: Total**

**Prep Batch: 4351027\_P**

Analyte	MB Result	MB Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TCDF	ND		0.0000100	0.00000442	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,7,8-PeCDF	ND		0.0000500	0.00000249	ug/L		12/17/14 23:30	01/10/15 05:43	1
2,3,4,7,8-PeCDF	ND		0.0000500	0.00000223	ug/L		12/17/14 23:30	01/10/15 05:43	1
Total PeCDF	ND		0.0000500	0.00000235	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,4,7,8-HxCDF	ND		0.0000500	0.00000157	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,6,7,8-HxCDF	ND		0.0000500	0.00000170	ug/L		12/17/14 23:30	01/10/15 05:43	1
2,3,4,6,7,8-HxCDF	ND		0.0000500	0.00000148	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,7,8,9-HxCDF	ND		0.0000500	0.00000202	ug/L		12/17/14 23:30	01/10/15 05:43	1
Total HxCDF	ND		0.0000500	0.00000167	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,4,6,7,8-HpCDF	ND		0.0000500	0.00000229	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,4,7,8,9-HpCDF	ND		0.0000500	0.00000302	ug/L		12/17/14 23:30	01/10/15 05:43	1
Total HpCDF	ND		0.0000500	0.00000261	ug/L		12/17/14 23:30	01/10/15 05:43	1
OCDF	ND		0.000100	0.00000307	ug/L		12/17/14 23:30	01/10/15 05:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	104		35 - 197	12/17/14 23:30	01/10/15 05:43	1

Internal Standard	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	92		25 - 164	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,7,8-PeCDD	87		25 - 181	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,4,7,8-HxCDD	92		32 - 141	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,6,7,8-HxCDD	94		28 - 130	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,4,6,7,8-HpCDD	93		23 - 140	12/17/14 23:30	01/10/15 05:43	1
13C-OCDD	96		17 - 157	12/17/14 23:30	01/10/15 05:43	1
13C-2,3,7,8-TCDF	77		24 - 169	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,7,8-PeCDF	80		24 - 185	12/17/14 23:30	01/10/15 05:43	1
13C-2,3,4,7,8-PeCDF	78		21 - 178	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,4,7,8-HxCDF	72		26 - 152	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,6,7,8-HxCDF	75		26 - 123	12/17/14 23:30	01/10/15 05:43	1
13C-2,3,4,6,7,8-HxCDF	84		28 - 136	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,7,8,9-HxCDF	79		29 - 147	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,4,6,7,8-HpCDF	79		28 - 143	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,4,7,8,9-HpCDF	86		26 - 138	12/17/14 23:30	01/10/15 05:43	1
13C-OCDF	93		17 - 157	12/17/14 23:30	01/10/15 05:43	1

**Lab Sample ID: H4L17000027C**

**Matrix: Water**

**Analysis Batch: 4351027**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total**

**Prep Batch: 4351027\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	0.000200	0.000200		ug/L		100	67 - 158
1,2,3,7,8-PeCDD	0.00100	0.00100		ug/L		100	70 - 142
1,2,3,4,7,8-HxCDD	0.00100	0.000953		ug/L		95	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000949		ug/L		95	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000976		ug/L		98	64 - 162
1,2,3,4,6,7,8-HpCDD	0.00100	0.000934		ug/L		93	70 - 140
OCDD	0.00200	0.00179	B	ug/L		90	78 - 144

TestAmerica Irvine



# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B) (Continued)

**Lab Sample ID: H4L170000027C**

**Matrix: Water**

**Analysis Batch: 4351027**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total**

**Prep Batch: 4351027\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2,3,7,8-TCDF	0.000200	0.000200		ug/L		100	75 - 158
1,2,3,7,8-PeCDF	0.00100	0.000912		ug/L		91	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000949		ug/L		95	68 - 160
1,2,3,4,7,8-HxCDF	0.00100	0.000952		ug/L		95	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000956		ug/L		96	84 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000946		ug/L		95	70 - 156
1,2,3,7,8,9-HxCDF	0.00100	0.000936		ug/L		94	78 - 130
1,2,3,4,6,7,8-HpCDF	0.00100	0.000924		ug/L		92	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000951		ug/L		95	78 - 138
OCDF	0.00200	0.00187		ug/L		93	63 - 170

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	105		31 - 191

Internal Standard	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	91		20 - 175
13C-1,2,3,7,8-PeCDD	95		21 - 227
13C-1,2,3,4,7,8-HxCDD	93		21 - 193
13C-1,2,3,6,7,8-HxCDD	88		25 - 163
13C-1,2,3,4,6,7,8-HpCDD	90		26 - 166
13C-OCDD	91		13 - 199
13C-2,3,7,8-TCDF	83		22 - 152
13C-1,2,3,7,8-PeCDF	88		21 - 192
13C-2,3,4,7,8-PeCDF	85		13 - 328
13C-1,2,3,4,7,8-HxCDF	78		19 - 202
13C-1,2,3,6,7,8-HxCDF	79		21 - 159
13C-2,3,4,6,7,8-HxCDF	84		22 - 176
13C-1,2,3,7,8,9-HxCDF	85		17 - 205
13C-1,2,3,4,6,7,8-HpCDF	80		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	83		20 - 186
13C-OCDF	83		13 - 199

## Method: 200.7 Rev 4.4 - Metals (ICP)

**Lab Sample ID: MB 440-226721/1-A**

**Matrix: Water**

**Analysis Batch: 226974**

**Client Sample ID: Method Blank**

**Prep Type: Total Recoverable**

**Prep Batch: 226721**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	0.010	mg/L		12/24/14 10:59	12/24/14 17:12	1
Beryllium	ND		2.0	1.0	ug/L		12/24/14 10:59	12/24/14 17:12	1
Chromium	ND		5.0	2.5	ug/L		12/24/14 10:59	12/24/14 17:12	1
Iron	0.0134	J,DX	0.040	0.010	mg/L		12/24/14 10:59	12/24/14 17:12	1
Nickel	ND		10	5.0	ug/L		12/24/14 10:59	12/24/14 17:12	1
Vanadium	ND		10	5.0	ug/L		12/24/14 10:59	12/24/14 17:12	1
Zinc	ND		20	10	ug/L		12/24/14 10:59	12/24/14 17:12	1
Hardness, as CaCO3	ND		0.33	0.17	mg/L		12/24/14 10:59	12/24/14 17:12	1

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

**Lab Sample ID: MB 440-226721/1-A**  
**Matrix: Water**  
**Analysis Batch: 226974**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 226721**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		10	5.0	ug/L		12/24/14 10:59	12/24/14 17:12	1
Barium	ND		10	5.0	ug/L		12/24/14 10:59	12/24/14 17:12	1
Cobalt	ND		10	2.5	ug/L		12/24/14 10:59	12/24/14 17:12	1
Manganese	ND		20	10	ug/L		12/24/14 10:59	12/24/14 17:12	1

**Lab Sample ID: MB 440-226721/1-A**  
**Matrix: Water**  
**Analysis Batch: 227114**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 226721**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		10	5.0	ug/L		12/24/14 10:59	12/29/14 13:20	1

**Lab Sample ID: LCS 440-226721/2-A**  
**Matrix: Water**  
**Analysis Batch: 226974**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 226721**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.500	0.497		mg/L		99	85 - 115
Beryllium	500	493		ug/L		99	85 - 115
Chromium	500	500		ug/L		100	85 - 115
Iron	0.500	0.497		mg/L		99	85 - 115
Nickel	500	507		ug/L		101	85 - 115
Vanadium	500	499		ug/L		100	85 - 115
Zinc	500	498		ug/L		100	85 - 115
Silver	250	246		ug/L		99	85 - 115
Barium	500	501		ug/L		100	85 - 115
Cobalt	500	502		ug/L		100	85 - 115
Manganese	500	499		ug/L		100	85 - 115

**Lab Sample ID: LCS 440-226721/2-A**  
**Matrix: Water**  
**Analysis Batch: 227114**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 226721**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	500	499		ug/L		100	85 - 115

**Lab Sample ID: 440-96646-A-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 226974**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 226721**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	ND		0.500	0.482		mg/L		96	70 - 130
Beryllium	ND		500	482		ug/L		96	70 - 130
Chromium	ND		500	498		ug/L		100	70 - 130
Iron	0.30	MB	0.500	0.787		mg/L		98	70 - 130
Nickel	ND		500	492		ug/L		98	70 - 130
Vanadium	ND		500	490		ug/L		98	70 - 130
Zinc	140		500	620		ug/L		96	70 - 130
Silver	ND		250	241		ug/L		97	70 - 130

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 440-96646-A-1-B MS

Matrix: Water

Analysis Batch: 226974

Client Sample ID: Matrix Spike

Prep Type: Total Recoverable

Prep Batch: 226721

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier		Result	Qualifier					
Barium	7.2	J,DX	500	496		ug/L		98		70 - 130
Cobalt	ND		500	491		ug/L		98		70 - 130
Manganese	14	J,DX	500	501		ug/L		97		70 - 130

Lab Sample ID: 440-96646-A-1-B MS

Matrix: Water

Analysis Batch: 227114

Client Sample ID: Matrix Spike

Prep Type: Total Recoverable

Prep Batch: 226721

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier		Result	Qualifier					
Arsenic	ND		500	501		ug/L		100		70 - 130

Lab Sample ID: 440-96646-A-1-C MSD

Matrix: Water

Analysis Batch: 226974

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total Recoverable

Prep Batch: 226721

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	RPD
	Result	Qualifier		Result	Qualifier						RPD	Limit
Boron	ND		0.500	0.484		mg/L		97		70 - 130	1	20
Beryllium	ND		500	480		ug/L		96		70 - 130	0	20
Chromium	ND		500	493		ug/L		99		70 - 130	1	20
Iron	0.30	MB	0.500	0.780		mg/L		97		70 - 130	1	20
Nickel	ND		500	493		ug/L		99		70 - 130	0	20
Vanadium	ND		500	489		ug/L		98		70 - 130	0	20
Zinc	140		500	619		ug/L		96		70 - 130	0	20
Silver	ND		250	242		ug/L		97		70 - 130	0	20
Barium	7.2	J,DX	500	495		ug/L		98		70 - 130	0	20
Cobalt	ND		500	492		ug/L		98		70 - 130	0	20
Manganese	14	J,DX	500	498		ug/L		97		70 - 130	1	20

Lab Sample ID: 440-96646-A-1-C MSD

Matrix: Water

Analysis Batch: 227114

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total Recoverable

Prep Batch: 226721

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	RPD
	Result	Qualifier		Result	Qualifier						RPD	Limit
Arsenic	ND		500	503		ug/L		101		70 - 130	0	20

Lab Sample ID: MB 440-226565/1-C

Matrix: Water

Analysis Batch: 227313

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 226697

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier								
Arsenic	ND		10	5.0	ug/L		12/24/14 09:43	12/30/14 09:39		1
Boron	ND		0.050	0.010	mg/L		12/24/14 09:43	12/30/14 09:39		1
Beryllium	ND		2.0	1.0	ug/L		12/24/14 09:43	12/30/14 09:39		1
Chromium	ND		5.0	2.5	ug/L		12/24/14 09:43	12/30/14 09:39		1
Iron	ND		0.040	0.010	mg/L		12/24/14 09:43	12/30/14 09:39		1
Nickel	ND		10	5.0	ug/L		12/24/14 09:43	12/30/14 09:39		1
Vanadium	ND		10	5.0	ug/L		12/24/14 09:43	12/30/14 09:39		1
Zinc	ND		20	10	ug/L		12/24/14 09:43	12/30/14 09:39		1
Hardness, as CaCO3	ND		0.33	0.17	mg/L		12/24/14 09:43	12/30/14 09:39		1

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

**Lab Sample ID: MB 440-226565/1-C**  
**Matrix: Water**  
**Analysis Batch: 227313**

**Client Sample ID: Method Blank**  
**Prep Type: Dissolved**  
**Prep Batch: 226697**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		10	5.0	ug/L		12/24/14 09:43	12/30/14 09:39	1
Barium	ND		10	5.0	ug/L		12/24/14 09:43	12/30/14 09:39	1
Cobalt	ND		10	2.5	ug/L		12/24/14 09:43	12/30/14 09:39	1
Manganese	ND		20	10	ug/L		12/24/14 09:43	12/30/14 09:39	1

**Lab Sample ID: LCS 440-226565/2-C**  
**Matrix: Water**  
**Analysis Batch: 227313**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Dissolved**  
**Prep Batch: 226697**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	500	499		ug/L		100	85 - 115
Boron	0.500	0.501		mg/L		100	85 - 115
Beryllium	500	488		ug/L		98	85 - 115
Chromium	500	471		ug/L		94	85 - 115
Iron	0.500	0.487		mg/L		97	85 - 115
Nickel	500	509		ug/L		102	85 - 115
Vanadium	500	507		ug/L		101	85 - 115
Zinc	500	491		ug/L		98	85 - 115
Silver	250	223		ug/L		89	85 - 115
Barium	500	499		ug/L		100	85 - 115
Cobalt	500	500		ug/L		100	85 - 115
Manganese	500	510		ug/L		102	85 - 115

**Lab Sample ID: 440-96594-1 MS**  
**Matrix: Water**  
**Analysis Batch: 227313**

**Client Sample ID: Outfall002\_20141213\_Comp**  
**Prep Type: Dissolved**  
**Prep Batch: 226697**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND	QP	500	509		ug/L		102	70 - 130
Boron	0.061	QP	0.500	0.581		mg/L		104	70 - 130
Beryllium	ND	QP	500	507		ug/L		101	70 - 130
Chromium	ND	QP	500	481		ug/L		96	70 - 130
Iron	0.050	QP	0.500	0.546		mg/L		99	70 - 130
Nickel	ND	QP	500	519		ug/L		104	70 - 130
Vanadium	ND	QP	500	525		ug/L		105	70 - 130
Zinc	ND	QP	500	512		ug/L		102	70 - 130
Silver	ND	QP	250	256		ug/L		102	70 - 130
Barium	12	QP	500	523		ug/L		102	70 - 130
Cobalt	ND	QP	500	508		ug/L		102	70 - 130
Manganese	ND	QP	500	522		ug/L		104	70 - 130

**Lab Sample ID: 440-96594-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 227313**

**Client Sample ID: Outfall002\_20141213\_Comp**  
**Prep Type: Dissolved**  
**Prep Batch: 226697**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	ND	QP	500	504		ug/L		101	70 - 130	1	20
Boron	0.061	QP	0.500	0.576		mg/L		103	70 - 130	1	20
Beryllium	ND	QP	500	499		ug/L		100	70 - 130	2	20

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 440-96594-1 MSD  
 Matrix: Water  
 Analysis Batch: 227313

Client Sample ID: Outfall002\_20141213\_Comp  
 Prep Type: Dissolved  
 Prep Batch: 226697

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Chromium	ND	QP	500	476		ug/L		95	70 - 130	1	20
Iron	0.050	QP	0.500	0.547		mg/L		99	70 - 130	0	20
Nickel	ND	QP	500	514		ug/L		103	70 - 130	1	20
Vanadium	ND	QP	500	520		ug/L		104	70 - 130	1	20
Zinc	ND	QP	500	508		ug/L		102	70 - 130	1	20
Silver	ND	QP	250	253		ug/L		101	70 - 130	1	20
Barium	12	QP	500	516		ug/L		101	70 - 130	1	20
Cobalt	ND	QP	500	502		ug/L		100	70 - 130	1	20
Manganese	ND	QP	500	519		ug/L		104	70 - 130	1	20

## Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 440-226388/1-A  
 Matrix: Water  
 Analysis Batch: 226568

Client Sample ID: Method Blank  
 Prep Type: Total Recoverable  
 Prep Batch: 226388

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cadmium	ND		1.0	0.25	ug/L		12/23/14 09:41	12/23/14 16:39	1
Copper	ND		2.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:39	1
Lead	ND		1.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:39	1
Antimony	ND		2.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:39	1
Selenium	ND		2.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:39	1
Thallium	ND		1.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:39	1

Lab Sample ID: LCS 440-226388/2-A  
 Matrix: Water  
 Analysis Batch: 226568

Client Sample ID: Lab Control Sample  
 Prep Type: Total Recoverable  
 Prep Batch: 226388

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
Cadmium	80.0	81.6		ug/L		102	85 - 115
Copper	80.0	81.6		ug/L		102	85 - 115
Lead	80.0	81.4		ug/L		102	85 - 115
Antimony	80.0	83.9		ug/L		105	85 - 115
Selenium	80.0	80.6		ug/L		101	85 - 115
Thallium	80.0	78.7		ug/L		98	85 - 115

Lab Sample ID: LCSD 440-226388/3-A  
 Matrix: Water  
 Analysis Batch: 226568

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total Recoverable  
 Prep Batch: 226388

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.	RPD	Limit
							Limits		
Cadmium	80.0	82.0		ug/L		103	85 - 115	1	20
Copper	80.0	81.3		ug/L		102	85 - 115	0	20
Lead	80.0	82.7		ug/L		103	85 - 115	2	20
Antimony	80.0	84.4		ug/L		106	85 - 115	1	20
Selenium	80.0	82.7		ug/L		103	85 - 115	3	20
Thallium	80.0	81.8		ug/L		102	85 - 115	4	20

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

**Lab Sample ID: 440-96605-A-1-C MS**

**Matrix: Water**

**Analysis Batch: 226568**

**Client Sample ID: Matrix Spike**

**Prep Type: Total Recoverable**

**Prep Batch: 226388**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	
	Result	Qualifier	Added	Result	Qualifier				Limits	Limits
Cadmium	0.31	J,DX	80.0	81.9		ug/L		102	70 - 130	
Copper	9.0		80.0	85.8		ug/L		96	70 - 130	
Lead	8.8		80.0	91.8		ug/L		104	70 - 130	
Antimony	0.74	J,DX	80.0	80.6		ug/L		100	70 - 130	
Selenium	ND		80.0	77.5		ug/L		97	70 - 130	
Thallium	ND		80.0	81.4		ug/L		102	70 - 130	

**Lab Sample ID: 440-96605-A-1-D MSD**

**Matrix: Water**

**Analysis Batch: 226568**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total Recoverable**

**Prep Batch: 226388**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.		RPD	
	Result	Qualifier	Added	Result	Qualifier				Limits	Limits	RPD	Limit
Cadmium	0.31	J,DX	80.0	82.9		ug/L		103	70 - 130	1	20	
Copper	9.0		80.0	88.3		ug/L		99	70 - 130	3	20	
Lead	8.8		80.0	93.3		ug/L		106	70 - 130	2	20	
Antimony	0.74	J,DX	80.0	81.2		ug/L		101	70 - 130	1	20	
Selenium	ND		80.0	78.5		ug/L		98	70 - 130	1	20	
Thallium	ND		80.0	81.6		ug/L		102	70 - 130	0	20	

**Lab Sample ID: MB 440-224533/1-D**

**Matrix: Water**

**Analysis Batch: 226111**

**Client Sample ID: Method Blank**

**Prep Type: Dissolved**

**Prep Batch: 225821**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier								
Cadmium	ND		1.0	0.25	ug/L		12/19/14 12:50	12/19/14 21:10	1	
Copper	ND		2.0	0.50	ug/L		12/19/14 12:50	12/19/14 21:10	1	
Lead	ND		1.0	0.50	ug/L		12/19/14 12:50	12/19/14 21:10	1	
Antimony	ND		2.0	0.50	ug/L		12/19/14 12:50	12/19/14 21:10	1	
Selenium	ND		2.0	0.50	ug/L		12/19/14 12:50	12/19/14 21:10	1	
Thallium	ND		1.0	0.50	ug/L		12/19/14 12:50	12/19/14 21:10	1	

**Lab Sample ID: LCS 440-224533/2-D**

**Matrix: Water**

**Analysis Batch: 226111**

**Client Sample ID: Lab Control Sample**

**Prep Type: Dissolved**

**Prep Batch: 225821**

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.	
							Added	Result
Cadmium	80.0	80.4		ug/L		101	85 - 115	
Copper	80.0	76.7		ug/L		96	85 - 115	
Lead	80.0	78.2		ug/L		98	85 - 115	
Antimony	80.0	80.3		ug/L		100	85 - 115	
Selenium	80.0	78.2		ug/L		98	85 - 115	
Thallium	80.0	79.3		ug/L		99	85 - 115	

**Lab Sample ID: 440-96594-1 MS**

**Matrix: Water**

**Analysis Batch: 226111**

**Client Sample ID: Outfall002\_20141213\_Comp**

**Prep Type: Dissolved**

**Prep Batch: 225821**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	
	Result	Qualifier	Added	Result	Qualifier				Limits	Limits
Cadmium	ND	QP	80.0	78.7		ug/L		98	70 - 130	

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 440-96594-1 MS

Matrix: Water

Analysis Batch: 226111

Client Sample ID: Outfall002\_20141213\_Comp

Prep Type: Dissolved

Prep Batch: 225821

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
Copper	2.6	QP	80.0	77.5		ug/L		94	70 - 130
Lead	ND	QP	80.0	77.1		ug/L		96	70 - 130
Antimony	ND	QP	80.0	79.6		ug/L		100	70 - 130
Selenium	ND	QP	80.0	77.4		ug/L		97	70 - 130
Thallium	ND	QP	80.0	77.6		ug/L		97	70 - 130

Lab Sample ID: 440-96594-1 MSD

Matrix: Water

Analysis Batch: 226111

Client Sample ID: Outfall002\_20141213\_Comp

Prep Type: Dissolved

Prep Batch: 225821

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Cadmium	ND	QP	80.0	80.2		ug/L		100	70 - 130	2	20
Copper	2.6	QP	80.0	79.5		ug/L		96	70 - 130	3	20
Lead	ND	QP	80.0	78.6		ug/L		98	70 - 130	2	20
Antimony	ND	QP	80.0	80.7		ug/L		101	70 - 130	1	20
Selenium	ND	QP	80.0	78.3		ug/L		98	70 - 130	1	20
Thallium	ND	QP	80.0	80.9		ug/L		101	70 - 130	4	20

## Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 440-225232/1-A

Matrix: Water

Analysis Batch: 225520

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 225232

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil
	Result	Qualifier							
Mercury	ND		0.20	0.10	ug/L		12/17/14 09:30	12/17/14 17:17	1

Lab Sample ID: LCS 440-225232/2-A

Matrix: Water

Analysis Batch: 225520

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 225232

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Mercury	8.00	8.12		ug/L		102	85 - 115

Lab Sample ID: 440-96890-D-1-B MS

Matrix: Water

Analysis Batch: 225520

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 225232

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
Mercury	ND		8.00	8.03		ug/L		100	70 - 130

Lab Sample ID: 440-96890-D-1-C MSD

Matrix: Water

Analysis Batch: 225520

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 225232

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Mercury	ND		8.00	8.32		ug/L		104	70 - 130	4	20

TestAmerica Irvine



# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 245.1 - Mercury (CVAA) (Continued)

**Lab Sample ID: MB 440-224533/1-C**  
**Matrix: Water**  
**Analysis Batch: 225596**

**Client Sample ID: Method Blank**  
**Prep Type: Dissolved**  
**Prep Batch: 225300**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		12/17/14 13:01	12/18/14 12:53	1

**Lab Sample ID: LCS 440-224533/2-C**  
**Matrix: Water**  
**Analysis Batch: 225596**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Dissolved**  
**Prep Batch: 225300**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	8.00	8.09		ug/L		101	85 - 115

**Lab Sample ID: 440-96476-A-1-F MS**  
**Matrix: Water**  
**Analysis Batch: 225596**

**Client Sample ID: Matrix Spike**  
**Prep Type: Dissolved**  
**Prep Batch: 225300**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		8.00	8.12		ug/L		101	70 - 130

**Lab Sample ID: 440-96476-A-1-G MSD**  
**Matrix: Water**  
**Analysis Batch: 225596**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Dissolved**  
**Prep Batch: 225300**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		8.00	7.94		ug/L		99	70 - 130	2	20

## Method: 120.1 - Conductivity, Specific Conductance

**Lab Sample ID: MB 440-227467/3**  
**Matrix: Water**  
**Analysis Batch: 227467**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			12/30/14 18:32	1

**Lab Sample ID: LCS 440-227467/4**  
**Matrix: Water**  
**Analysis Batch: 227467**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Specific Conductance	765	743		umhos/cm		97	90 - 110

**Lab Sample ID: 440-96482-1 DU**  
**Matrix: Water**  
**Analysis Batch: 227467**

**Client Sample ID: Outfall002\_20141212\_Grab**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Specific Conductance	210		217		umhos/cm		3	5

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 440-226034/1-A  
 Matrix: Water  
 Analysis Batch: 226039

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 226034

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		5.0	1.4	mg/L		12/21/14 14:30	12/21/14 17:01	1

Lab Sample ID: LCS 440-226034/2-A  
 Matrix: Water  
 Analysis Batch: 226039

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 226034

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	20.0	18.5		mg/L		93	78 - 114

Lab Sample ID: LCSD 440-226034/3-A  
 Matrix: Water  
 Analysis Batch: 226039

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 226034

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
HEM	20.0	19.0		mg/L		95	78 - 114	3	11

## Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 440-224538/5  
 Matrix: Water  
 Analysis Batch: 224538

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	ND		0.10	0.040	NTU			12/13/14 15:21	1

Lab Sample ID: 440-96594-1 DU  
 Matrix: Water  
 Analysis Batch: 224538

Client Sample ID: Outfall002\_20141213\_Comp  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Turbidity	8.7		8.72		NTU		0.1	20

## Method: DV-WC-0077 - Hydrazine, Ion Chromatography

Lab Sample ID: 280-63246-A-1-B MS  
 Matrix: Water  
 Analysis Batch: 258679

Client Sample ID: Matrix Spike  
 Prep Type: Total/NA  
 Prep Batch: 255890

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Monomethyl Hydrazine	ND		20.0	24.5	LM	ug/L		122	81 - 121

Lab Sample ID: 280-63246-A-1-C MSD  
 Matrix: Water  
 Analysis Batch: 258679

Client Sample ID: Matrix Spike Duplicate  
 Prep Type: Total/NA  
 Prep Batch: 255890

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Monomethyl Hydrazine	ND		20.0	24.2		ug/L		121	81 - 121	1	20

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: DV-WC-0077 - Hydrazine, Ion Chromatography (Continued)

**Lab Sample ID: MB 280-258679/27**  
**Matrix: Water**  
**Analysis Batch: 258679**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Monomethyl Hydrazine	ND		10	0.25	ug/L			12/30/14 00:13	1

**Lab Sample ID: LCS 280-258679/23**  
**Matrix: Water**  
**Analysis Batch: 258679**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Monomethyl Hydrazine	50.1	55.5		ug/L		111	82 - 122

**Lab Sample ID: LCSD 280-258679/25**  
**Matrix: Water**  
**Analysis Batch: 258679**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Monomethyl Hydrazine	50.1	57.1		ug/L		114	82 - 122	3	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 440-225438/1**  
**Matrix: Water**  
**Analysis Batch: 225438**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	5.0	mg/L			12/18/14 05:37	1

**Lab Sample ID: LCS 440-225438/2**  
**Matrix: Water**  
**Analysis Batch: 225438**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	978		mg/L		98	90 - 110

**Lab Sample ID: 440-96682-G-14 DU**  
**Matrix: Water**  
**Analysis Batch: 225438**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	620		631		mg/L		2	5

## Method: SM 2540D - Solids, Total Suspended (TSS)

**Lab Sample ID: MB 440-225928/2**  
**Matrix: Water**  
**Analysis Batch: 225928**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.50	mg/L			12/20/14 07:26	1

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

**Lab Sample ID:** LCS 440-225928/1  
**Matrix:** Water  
**Analysis Batch:** 225928

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	1000	1030		mg/L		103	85 - 115

**Lab Sample ID:** 440-96877-B-1 DU  
**Matrix:** Water  
**Analysis Batch:** 225928

**Client Sample ID:** Duplicate  
**Prep Type:** Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	44		46.0		mg/L		4	10

## Method: SM 4500 CN E - Cyanide, Total (Low Level)

**Lab Sample ID:** MB 440-224778/1-A  
**Matrix:** Water  
**Analysis Batch:** 224827

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 224778

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L		12/15/14 15:08	12/15/14 17:50	1

**Lab Sample ID:** LCS 440-224778/2-A  
**Matrix:** Water  
**Analysis Batch:** 224827

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA  
**Prep Batch:** 224778

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	99.8		ug/L		100	90 - 110

**Lab Sample ID:** LCSD 440-224778/3-A  
**Matrix:** Water  
**Analysis Batch:** 224827

**Client Sample ID:** Lab Control Sample Dup  
**Prep Type:** Total/NA  
**Prep Batch:** 224778

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	100	99.0		ug/L		99	90 - 110	1	10

**Lab Sample ID:** 440-96113-A-5-B MS  
**Matrix:** Water  
**Analysis Batch:** 224827

**Client Sample ID:** Matrix Spike  
**Prep Type:** Total/NA  
**Prep Batch:** 224778

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	ND		100	2.54	J,DX LN	ug/L		3	70 - 115

**Lab Sample ID:** 440-96113-A-5-C MSD  
**Matrix:** Water  
**Analysis Batch:** 224827

**Client Sample ID:** Matrix Spike Duplicate  
**Prep Type:** Total/NA  
**Prep Batch:** 224778

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	ND		100	ND	LN	ug/L		0	70 - 115	NC	15

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 440-226709/10  
 Matrix: Water  
 Analysis Batch: 226709

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.050	mg/L			12/24/14 09:36	1

Lab Sample ID: LCS 440-226709/9  
 Matrix: Water  
 Analysis Batch: 226709

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.00	1.04		mg/L		104	90 - 110

Lab Sample ID: 440-96965-A-1 MS  
 Matrix: Water  
 Analysis Batch: 226709

Client Sample ID: Matrix Spike  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.68		1.00	1.64		mg/L		96	80 - 120

Lab Sample ID: 440-96965-A-1 MSD  
 Matrix: Water  
 Analysis Batch: 226709

Client Sample ID: Matrix Spike Duplicate  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.68		1.00	1.64		mg/L		96	80 - 120	0	20

## Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 440-228130/9  
 Matrix: Water  
 Analysis Batch: 228130

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.200	0.100	mg/L			01/05/15 15:53	1

Lab Sample ID: LCS 440-228130/10  
 Matrix: Water  
 Analysis Batch: 228130

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	5.01	5.000		mg/L		100	90 - 110

Lab Sample ID: 440-98014-W-30 MS  
 Matrix: Water  
 Analysis Batch: 228130

Client Sample ID: Matrix Spike  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	0.562		5.01	6.850	LM	mg/L		126	90 - 110

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: SM 4500 NH3 G - Ammonia (Continued)

Lab Sample ID: 440-98014-W-30 MSD

Matrix: Water

Analysis Batch: 228130

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	0.562		5.01	6.890	LM	mg/L		126	90 - 110	1	15

## Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 440-228441/11

Matrix: Water

Analysis Batch: 228441

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.65	mg/L			01/06/15 19:30	1

Lab Sample ID: LCS 440-228441/10

Matrix: Water

Analysis Batch: 228441

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.85		mg/L		99	90 - 110

Lab Sample ID: 440-97541-L-2 MS

Matrix: Water

Analysis Batch: 228441

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	2.3		5.00	7.36		mg/L		102	80 - 120

Lab Sample ID: 440-97541-L-2 MSD

Matrix: Water

Analysis Batch: 228441

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	2.3		5.00	7.23		mg/L		99	80 - 120	2	20

## Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 440-224557/25

Matrix: Water

Analysis Batch: 224557

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Blue Active Substances	ND		0.10	0.050	mg/L			12/14/14 09:00	1

Lab Sample ID: LCS 440-224557/29

Matrix: Water

Analysis Batch: 224557

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Blue Active Substances	0.250	0.235		mg/L		94	90 - 110

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: SM 5540C - Methylene Blue Active Substances (MBAS) (Continued)

**Lab Sample ID: 440-96599-B-1 MS**  
**Matrix: Water**  
**Analysis Batch: 224557**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Blue Active Substances	0.13		0.250	0.265		mg/L		54	50 - 125

**Lab Sample ID: 440-96599-B-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 224557**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methylene Blue Active Substances	0.13		0.250	0.271		mg/L		57	50 - 125	2	20

## Method: SM5210B - BOD, 5 Day

**Lab Sample ID: USB 440-224527/1**  
**Matrix: Water**  
**Analysis Batch: 224527**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	0.50	mg/L			12/13/14 11:18	1

**Lab Sample ID: LCS 440-224527/4**  
**Matrix: Water**  
**Analysis Batch: 224527**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	199	193		mg/L		97	85 - 115

**Lab Sample ID: LCSD 440-224527/5**  
**Matrix: Water**  
**Analysis Batch: 224527**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand	199	197		mg/L		99	85 - 115	2	20

## Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

**Lab Sample ID: MB 160-164748/1-A**  
**Matrix: Water**  
**Analysis Batch: 166173**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 164748**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.2181	U	0.804	0.805	1.60	pCi/L	12/22/14 10:58	12/31/14 08:26	1
Gross Beta	0.6397	U	0.588	0.591	0.952	pCi/L	12/22/14 10:58	12/31/14 08:26	1

TestAmerica Irvine



# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 900.0 - Gross Alpha and Gross Beta Radioactivity (Continued)

**Lab Sample ID: LCS 160-164748/2-A**  
**Matrix: Water**  
**Analysis Batch: 166173**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 164748**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Gross Alpha	50.1	51.89		7.52	2.37	pCi/L	104	73 - 133

**Lab Sample ID: LCSB 160-164748/3-A**  
**Matrix: Water**  
**Analysis Batch: 166173**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 164748**

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Gross Beta	95.9	97.40		10.3	0.936	pCi/L	102	75 - 125

**Lab Sample ID: 440-96594-1 MS**  
**Matrix: Water**  
**Analysis Batch: 166172**

**Client Sample ID: Outfall002\_20141213\_Comp**  
**Prep Type: Total/NA**  
**Prep Batch: 164748**

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Gross Alpha	-0.942	U	50.1	41.79		6.16	1.47	pCi/L	83	35 - 150

**Lab Sample ID: 440-96594-1 MSBT**  
**Matrix: Water**  
**Analysis Batch: 166172**

**Client Sample ID: Outfall002\_20141213\_Comp**  
**Prep Type: Total/NA**  
**Prep Batch: 164748**

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Gross Beta	3.86		95.9	103.3		10.9	1.01	pCi/L	104	89 - 143

**Lab Sample ID: 440-96594-1 DU**  
**Matrix: Water**  
**Analysis Batch: 166172**

**Client Sample ID: Outfall002\_20141213\_Comp**  
**Prep Type: Total/NA**  
**Prep Batch: 164748**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
Gross Alpha	-0.942	U	0.4884	U	0.954	1.68	pCi/L	0.75	1
Gross Beta	3.86		2.472		0.803	1.01	pCi/L	0.81	1

## Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

**Lab Sample ID: MB 160-164475/1-A**  
**Matrix: Water**  
**Analysis Batch: 164603**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 164475**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.528	U	6.99	7.00	13.0	pCi/L	12/19/14 11:40	12/21/14 22:44	1
Potassium-40	-17.38	U	169	169	224	pCi/L	12/19/14 11:40	12/21/14 22:44	1

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS) (Continued)

**Lab Sample ID: LCS 160-164475/2-A**  
**Matrix: Water**  
**Analysis Batch: 164814**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 164475**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits	
Americium-241	137000	132000		15300	465	pCi/L	96	90 - 111	
Cesium-137	49400	48080		4820	149	pCi/L	97	90 - 111	
Cobalt-60	52800	50140		4960	116	pCi/L	95	89 - 110	

**Lab Sample ID: 440-96594-1 DU**  
**Matrix: Water**  
**Analysis Batch: 164822**

**Client Sample ID: Outfall002\_20141213\_Comp**  
**Prep Type: Total/NA**  
**Prep Batch: 164475**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit	
Cesium-137	-2.27	U	-0.3150	U	5.09	9.60	pCi/L	0.15	1	
Potassium-40	-81.3	U	-95.09	U	3800	173	pCi/L	0	1	

## Method: 903.0 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-164103/1-A**  
**Matrix: Water**  
**Analysis Batch: 168026**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 164103**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		40 - 110	12/18/14 00:17	01/12/15 20:12	1

**Lab Sample ID: LCS 160-164103/2-A**  
**Matrix: Water**  
**Analysis Batch: 168026**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 164103**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits	
Radium-226	11.2	8.867		0.920	0.104	pCi/L	79	68 - 137	

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	96.5		40 - 110

**Lab Sample ID: 160-9831-E-8-B DU**  
**Matrix: Water**  
**Analysis Batch: 168078**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 164103**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit	
Radium-226	-0.0295	U	0.04535	U	0.0690	0.117	pCi/L	0.58	1	

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# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 903.0 - Radium-226 (GFPC) (Continued)

**Lab Sample ID: 160-9831-E-8-B DU**  
**Matrix: Water**  
**Analysis Batch: 168078**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 164103**

	DU	DU	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	109		40 - 110

## Method: 904.0 - Radium-228 (GFPC)

**Lab Sample ID: MB 160-168188/1-A**  
**Matrix: Water**  
**Analysis Batch: 168922**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 168188**

Analyte	MB MB		Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)					
Radium-228	0.2395	U	0.189	0.191	0.299	pCi/L	01/13/15 12:50	01/16/15 11:14	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110	01/13/15 12:50	01/16/15 11:14	1
Y Carrier	89.0		40 - 110	01/13/15 12:50	01/16/15 11:14	1

**Lab Sample ID: LCS 160-168188/2-A**  
**Matrix: Water**  
**Analysis Batch: 168922**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 168188**

Analyte	Spike Added	LCS LCS		Total	MDC	Unit	%Rec	%Rec.
		Result	Qual	Uncert. (2σ+/-)				Limits
Radium-228	3.56	3.966		0.557	0.324	pCi/L	111	56 - 140

Carrier	%Yield	Qualifier	Limits
Ba Carrier	105		40 - 110
Y Carrier	85.6		40 - 110

**Lab Sample ID: LCSD 160-168188/3-A**  
**Matrix: Water**  
**Analysis Batch: 168923**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 168188**

Analyte	Spike Added	LCSD LCSD		Total	MDC	Unit	%Rec	%Rec.	RER
		Result	Qual	Uncert. (2σ+/-)				Limits	RER
Radium-228	3.56	2.968		0.459	0.317	pCi/L	83	56 - 140	0.98

Carrier	%Yield	Qualifier	Limits
Ba Carrier	104		40 - 110
Y Carrier	87.9		40 - 110

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-165620/1-A

Matrix: Water

Analysis Batch: 167123

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 165620

Analyte	MB MB		Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert.	Uncert.					
Strontium-90	-0.04484	U	0.176	0.176	0.321	pCi/L	12/29/14 18:01	01/07/15 15:55	1
Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier							
Sr Carrier	90.0		40 - 110		12/29/14 18:01	01/07/15 15:55	1		
Y Carrier	89.3		40 - 110		12/29/14 18:01	01/07/15 15:55	1		

Lab Sample ID: LCS 160-165620/2-A

Matrix: Water

Analysis Batch: 167123

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 165620

Analyte	Spike Added	LCS Result	LCS Qual	Total	MDC	Unit	%Rec	%Rec. Limits
				Uncert.				
Strontium-90	8.95	8.768		0.905	0.298	pCi/L	98	90 - 134
Carrier	LCS LCS		Limits		Prepared	Analyzed	Dil Fac	
	%Yield	Qualifier						
Sr Carrier	88.6		40 - 110					
Y Carrier	92.7		40 - 110					

Lab Sample ID: 440-96594-2 DU

Matrix: Water

Analysis Batch: 167123

Client Sample ID: Trip\_Blank

Prep Type: Total/NA

Prep Batch: 165620

Analyte	Sample Sample		DU DU		Total	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual	Uncert.				
Strontium-90	-0.255	U	-0.01446	U	0.155	0.281	pCi/L	0.79	1
Carrier	DU DU		Limits		Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier							
Sr Carrier	88.2		40 - 110						
Y Carrier	90.8		40 - 110						

## Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-166399/1-A

Matrix: Water

Analysis Batch: 166478

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 166399

Analyte	MB MB		Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert.	Uncert.					
Tritium	158.1	U	187	187	304	pCi/L	01/02/15 08:35	01/02/15 14:05	1

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# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: LCS 160-166399/2-A  
 Matrix: Water  
 Analysis Batch: 166478

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 166399

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Tritium	3440	3383		509	306	pCi/L	98	74 - 114

Lab Sample ID: 280-63961-C-3-B MS  
 Matrix: Water  
 Analysis Batch: 166478

Client Sample ID: Matrix Spike  
 Prep Type: Total/NA  
 Prep Batch: 166399

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Tritium	1050		3450	4424		603	306	pCi/L	98	67 - 130

Lab Sample ID: 280-63670-A-3-D DU  
 Matrix: Water  
 Analysis Batch: 166478

Client Sample ID: Duplicate  
 Prep Type: Total/NA  
 Prep Batch: 166399

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
Tritium	2030		1865		366	307	pCi/L	0.22	1

## Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-165361/1-A  
 Matrix: Water  
 Analysis Batch: 166357

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 165361

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.03958	U	0.06314	0.06318	0.0995	pCi/L	12/24/14 10:49	12/31/14 14:22	1

Lab Sample ID: LCS 160-165361/2-A  
 Matrix: Water  
 Analysis Batch: 166358

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 165361

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Uranium-234	12.7	13.13		1.57	0.0712	pCi/L	103	84 - 120
Uranium-238	13.0	14.40		1.68	0.108	pCi/L	111	83 - 121

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	83.7		30 - 110

Lab Sample ID: 440-97211-A-2-D DU  
 Matrix: Water  
 Analysis Batch: 166370

Client Sample ID: Duplicate  
 Prep Type: Total/NA  
 Prep Batch: 165361

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
Total Uranium	0.0479	U	0.2654	U	0.274	0.343	pCi/L	0.62	1

TestAmerica Irvine

# QC Association Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## GC/MS VOA

### Analysis Batch: 224555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96482-1	Outfall002_20141212_Grab	Total/NA	Water	624	
440-96482-3	TB-20141212	Total/NA	Water	624	
550-36708-D-2 MS	Matrix Spike	Total/NA	Water	624	
550-36708-D-2 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
LCS 440-224555/4	Lab Control Sample	Total/NA	Water	624	
LCSD 440-224555/5	Lab Control Sample Dup	Total/NA	Water	624	
MB 440-224555/3	Method Blank	Total/NA	Water	624	

### Analysis Batch: 224609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96455-D-3 MS	Matrix Spike	Total/NA	Water	624	
440-96455-D-3 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
440-96482-1	Outfall002_20141212_Grab	Total/NA	Water	624	
440-96482-3	TB-20141212	Total/NA	Water	624	
LCS 440-224609/5	Lab Control Sample	Total/NA	Water	624	
MB 440-224609/6	Method Blank	Total/NA	Water	624	

### Analysis Batch: 225295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	8260B SIM	
440-96594-1 MS	Outfall002_20141213_Comp	Total/NA	Water	8260B SIM	
440-96594-1 MSD	Outfall002_20141213_Comp	Total/NA	Water	8260B SIM	
LCS 440-225295/3	Lab Control Sample	Total/NA	Water	8260B SIM	
MB 440-225295/2	Method Blank	Total/NA	Water	8260B SIM	

## GC/MS Semi VOA

### Prep Batch: 224726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	625	
LCS 440-224726/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 440-224726/3-A	Lab Control Sample Dup	Total/NA	Water	625	
MB 440-224726/1-A	Method Blank	Total/NA	Water	625	

### Analysis Batch: 226134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	625	224726
LCS 440-224726/2-A	Lab Control Sample	Total/NA	Water	625	224726
LCSD 440-224726/3-A	Lab Control Sample Dup	Total/NA	Water	625	224726
MB 440-224726/1-A	Method Blank	Total/NA	Water	625	224726

## GC VOA

### Analysis Batch: 226243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96482-1	Outfall002_20141212_Grab	Total/NA	Water	8015B	
440-96667-E-1 MS	Matrix Spike	Total/NA	Water	8015B	
440-96667-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	
LCS 440-226243/35	Lab Control Sample	Total/NA	Water	8015B	
MB 440-226243/36	Method Blank	Total/NA	Water	8015B	

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# QC Association Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## GC Semi VOA

### Prep Batch: 225106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	608	
LCS 440-225106/2-A	Lab Control Sample	Total/NA	Water	608	
LCS 440-225106/4-A	Lab Control Sample	Total/NA	Water	608	
LCSD 440-225106/3-A	Lab Control Sample Dup	Total/NA	Water	608	
LCSD 440-225106/5-A	Lab Control Sample Dup	Total/NA	Water	608	
MB 440-225106/1-A	Method Blank	Total/NA	Water	608	

### Analysis Batch: 225341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	608 PCB LL	225106
LCS 440-225106/4-A	Lab Control Sample	Total/NA	Water	608 PCB LL	225106
LCSD 440-225106/5-A	Lab Control Sample Dup	Total/NA	Water	608 PCB LL	225106
MB 440-225106/1-A	Method Blank	Total/NA	Water	608 PCB LL	225106

### Analysis Batch: 225351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	608 Pesticides	225106
LCS 440-225106/2-A	Lab Control Sample	Total/NA	Water	608 Pesticides	225106
LCSD 440-225106/3-A	Lab Control Sample Dup	Total/NA	Water	608 Pesticides	225106
MB 440-225106/1-A	Method Blank	Total/NA	Water	608 Pesticides	225106

### Prep Batch: 225515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96482-1	Outfall002_20141212_Grab	Total/NA	Water	3510C	
LCS 440-225515/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 440-225515/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 440-225515/1-A	Method Blank	Total/NA	Water	3510C	

### Analysis Batch: 225588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-225515/2-A	Lab Control Sample	Total/NA	Water	8015B	225515
LCSD 440-225515/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	225515
MB 440-225515/1-A	Method Blank	Total/NA	Water	8015B	225515

### Analysis Batch: 225779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96482-1	Outfall002_20141212_Grab	Total/NA	Water	8015B	225515

## HPLC/IC

### Analysis Batch: 224489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	218.6	
440-96594-1 MS	Outfall002_20141213_Comp	Total/NA	Water	218.6	
440-96594-1 MSD	Outfall002_20141213_Comp	Total/NA	Water	218.6	
LCS 440-224489/2	Lab Control Sample	Total/NA	Water	218.6	
MB 440-224489/3	Method Blank	Total/NA	Water	218.6	
MRL 440-224489/8	Lab Control Sample	Total/NA	Water	218.6	



# QC Association Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## HPLC/IC (Continued)

### Analysis Batch: 224498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	300.0	
440-96594-1 MS	Outfall002_20141213_Comp	Total/NA	Water	300.0	
440-96594-1 MSD	Outfall002_20141213_Comp	Total/NA	Water	300.0	
LCS 440-224498/6	Lab Control Sample	Total/NA	Water	300.0	
MB 440-224498/4	Method Blank	Total/NA	Water	300.0	

### Analysis Batch: 224499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	300.0	
440-96594-1 MS	Outfall002_20141213_Comp	Total/NA	Water	300.0	
440-96594-1 MSD	Outfall002_20141213_Comp	Total/NA	Water	300.0	
LCS 440-224499/6	Lab Control Sample	Total/NA	Water	300.0	
MB 440-224499/4	Method Blank	Total/NA	Water	300.0	

### Analysis Batch: 225937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	314.0	
440-96709-F-11 MS	Matrix Spike	Total/NA	Water	314.0	
440-96709-F-11 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	
LCS 440-225937/2	Lab Control Sample	Total/NA	Water	314.0	
MB 440-225937/3	Method Blank	Total/NA	Water	314.0	
MRL 440-225937/5	Lab Control Sample	Total/NA	Water	314.0	

### Analysis Batch: 227116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	NO3NO2 Calc	

## Specialty Organics

### Analysis Batch: 4351027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total	Water	1613B	
H4L170000027B	Method Blank	Total	Water	1613B	
H4L170000027C	Lab Control Sample	Total	Water	1613B	

### Prep Batch: 4351027\_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total	Water	1613	
H4L170000027B	Method Blank	Total	Water	1613	
H4L170000027C	Lab Control Sample	Total	Water	1613	

## Metals

### Filtration Batch: 224533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96476-A-1-F MS	Matrix Spike	Dissolved	Water	FILTRATION	
440-96476-A-1-G MSD	Matrix Spike Duplicate	Dissolved	Water	FILTRATION	
440-96594-1	Outfall002_20141213_Comp	Dissolved	Water	FILTRATION	
440-96594-1 MS	Outfall002_20141213_Comp	Dissolved	Water	FILTRATION	
440-96594-1 MSD	Outfall002_20141213_Comp	Dissolved	Water	FILTRATION	

TestAmerica Irvine

# QC Association Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Metals (Continued)

### Filtration Batch: 224533 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-224533/2-C	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 440-224533/2-D	Lab Control Sample	Dissolved	Water	FILTRATION	
MB 440-224533/1-C	Method Blank	Dissolved	Water	FILTRATION	
MB 440-224533/1-D	Method Blank	Dissolved	Water	FILTRATION	

### Prep Batch: 225232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	245.1	
440-96890-D-1-B MS	Matrix Spike	Total/NA	Water	245.1	
440-96890-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	
LCS 440-225232/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 440-225232/1-A	Method Blank	Total/NA	Water	245.1	

### Prep Batch: 225300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96476-A-1-F MS	Matrix Spike	Dissolved	Water	245.1	224533
440-96476-A-1-G MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	224533
440-96594-1	Outfall002_20141213_Comp	Dissolved	Water	245.1	224533
LCS 440-224533/2-C	Lab Control Sample	Dissolved	Water	245.1	224533
MB 440-224533/1-C	Method Blank	Dissolved	Water	245.1	224533

### Analysis Batch: 225520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	245.1	225232
440-96890-D-1-B MS	Matrix Spike	Total/NA	Water	245.1	225232
440-96890-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	225232
LCS 440-225232/2-A	Lab Control Sample	Total/NA	Water	245.1	225232
MB 440-225232/1-A	Method Blank	Total/NA	Water	245.1	225232

### Analysis Batch: 225596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96476-A-1-F MS	Matrix Spike	Dissolved	Water	245.1	225300
440-96476-A-1-G MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	225300
440-96594-1	Outfall002_20141213_Comp	Dissolved	Water	245.1	225300
LCS 440-224533/2-C	Lab Control Sample	Dissolved	Water	245.1	225300
MB 440-224533/1-C	Method Blank	Dissolved	Water	245.1	225300

### Prep Batch: 225821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Dissolved	Water	200.2	224533
440-96594-1 MS	Outfall002_20141213_Comp	Dissolved	Water	200.2	224533
440-96594-1 MSD	Outfall002_20141213_Comp	Dissolved	Water	200.2	224533
LCS 440-224533/2-D	Lab Control Sample	Dissolved	Water	200.2	224533
MB 440-224533/1-D	Method Blank	Dissolved	Water	200.2	224533

### Analysis Batch: 226111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Dissolved	Water	200.8	225821
440-96594-1 MS	Outfall002_20141213_Comp	Dissolved	Water	200.8	225821
440-96594-1 MSD	Outfall002_20141213_Comp	Dissolved	Water	200.8	225821
LCS 440-224533/2-D	Lab Control Sample	Dissolved	Water	200.8	225821

TestAmerica Irvine

# QC Association Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Metals (Continued)

### Analysis Batch: 226111 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-224533/1-D	Method Blank	Dissolved	Water	200.8	225821

### Prep Batch: 226388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total Recoverable	Water	200.2	
440-96605-A-1-C MS	Matrix Spike	Total Recoverable	Water	200.2	
440-96605-A-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
LCS 440-226388/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
LCSD 440-226388/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.2	
MB 440-226388/1-A	Method Blank	Total Recoverable	Water	200.2	

### Filtration Batch: 226565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Dissolved	Water	FILTRATION	
440-96594-1 MS	Outfall002_20141213_Comp	Dissolved	Water	FILTRATION	
440-96594-1 MSD	Outfall002_20141213_Comp	Dissolved	Water	FILTRATION	
LCS 440-226565/2-C	Lab Control Sample	Dissolved	Water	FILTRATION	
MB 440-226565/1-C	Method Blank	Dissolved	Water	FILTRATION	

### Analysis Batch: 226568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total Recoverable	Water	200.8	226388
440-96605-A-1-C MS	Matrix Spike	Total Recoverable	Water	200.8	226388
440-96605-A-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	226388
LCS 440-226388/2-A	Lab Control Sample	Total Recoverable	Water	200.8	226388
LCSD 440-226388/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	226388
MB 440-226388/1-A	Method Blank	Total Recoverable	Water	200.8	226388

### Prep Batch: 226697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Dissolved	Water	200.2	226565
440-96594-1 MS	Outfall002_20141213_Comp	Dissolved	Water	200.2	226565
440-96594-1 MSD	Outfall002_20141213_Comp	Dissolved	Water	200.2	226565
LCS 440-226565/2-C	Lab Control Sample	Dissolved	Water	200.2	226565
MB 440-226565/1-C	Method Blank	Dissolved	Water	200.2	226565

### Prep Batch: 226721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total Recoverable	Water	200.2	
440-96646-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.2	
440-96646-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
LCS 440-226721/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-226721/1-A	Method Blank	Total Recoverable	Water	200.2	

### Analysis Batch: 226974

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total Recoverable	Water	200.7 Rev 4.4	226721
440-96646-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	226721
440-96646-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	226721
LCS 440-226721/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	226721
MB 440-226721/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	226721

TestAmerica Irvine

# QC Association Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Metals (Continued)

### Analysis Batch: 227114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total Recoverable	Water	200.7 Rev 4.4	226721
440-96646-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	226721
440-96646-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	226721
LCS 440-226721/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	226721
MB 440-226721/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	226721

### Analysis Batch: 227313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Dissolved	Water	200.7 Rev 4.4	226697
440-96594-1 MS	Outfall002_20141213_Comp	Dissolved	Water	200.7 Rev 4.4	226697
440-96594-1 MSD	Outfall002_20141213_Comp	Dissolved	Water	200.7 Rev 4.4	226697
LCS 440-226565/2-C	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	226697
MB 440-226565/1-C	Method Blank	Dissolved	Water	200.7 Rev 4.4	226697

## General Chemistry

### Analysis Batch: 224493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96482-1	Outfall002_20141212_Grab	Total/NA	Water	SM 2540F	

### Analysis Batch: 224527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	SM5210B	
LCS 440-224527/4	Lab Control Sample	Total/NA	Water	SM5210B	
LCS 440-224527/5	Lab Control Sample Dup	Total/NA	Water	SM5210B	
USB 440-224527/1	Method Blank	Total/NA	Water	SM5210B	

### Analysis Batch: 224538

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	180.1	
440-96594-1 DU	Outfall002_20141213_Comp	Total/NA	Water	180.1	
MB 440-224538/5	Method Blank	Total/NA	Water	180.1	

### Analysis Batch: 224557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	SM 5540C	
440-96599-B-1 MS	Matrix Spike	Total/NA	Water	SM 5540C	
440-96599-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5540C	
LCS 440-224557/29	Lab Control Sample	Total/NA	Water	SM 5540C	
MB 440-224557/25	Method Blank	Total/NA	Water	SM 5540C	

### Prep Batch: 224778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96113-A-5-B MS	Matrix Spike	Total/NA	Water	Distill/CN	
440-96113-A-5-C MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/CN	
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	Distill/CN	
LCS 440-224778/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
LCS 440-224778/3-A	Lab Control Sample Dup	Total/NA	Water	Distill/CN	
MB 440-224778/1-A	Method Blank	Total/NA	Water	Distill/CN	

# QC Association Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## General Chemistry (Continued)

### Analysis Batch: 224827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96113-A-5-B MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	224778
440-96113-A-5-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	224778
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	SM 4500 CN E	224778
LCS 440-224778/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	224778
LCSD 440-224778/3-A	Lab Control Sample Dup	Total/NA	Water	SM 4500 CN E	224778
MB 440-224778/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	224778

### Analysis Batch: 225438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	SM 2540C	
440-96682-G-14 DU	Duplicate	Total/NA	Water	SM 2540C	
LCS 440-225438/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 440-225438/1	Method Blank	Total/NA	Water	SM 2540C	

### Analysis Batch: 225928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	SM 2540D	
440-96877-B-1 DU	Duplicate	Total/NA	Water	SM 2540D	
LCS 440-225928/1	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 440-225928/2	Method Blank	Total/NA	Water	SM 2540D	

### Prep Batch: 226034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96482-1	Outfall002_20141212_Grab	Total/NA	Water	1664A	
LCS 440-226034/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-226034/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 440-226034/1-A	Method Blank	Total/NA	Water	1664A	

### Analysis Batch: 226039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96482-1	Outfall002_20141212_Grab	Total/NA	Water	1664A	226034
LCS 440-226034/2-A	Lab Control Sample	Total/NA	Water	1664A	226034
LCSD 440-226034/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	226034
MB 440-226034/1-A	Method Blank	Total/NA	Water	1664A	226034

### Analysis Batch: 226709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	SM 4500 F C	
440-96965-A-1 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
440-96965-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
LCS 440-226709/9	Lab Control Sample	Total/NA	Water	SM 4500 F C	
MB 440-226709/10	Method Blank	Total/NA	Water	SM 4500 F C	

### Analysis Batch: 227467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96482-1	Outfall002_20141212_Grab	Total/NA	Water	120.1	
440-96482-1 DU	Outfall002_20141212_Grab	Total/NA	Water	120.1	
LCS 440-227467/4	Lab Control Sample	Total/NA	Water	120.1	
MB 440-227467/3	Method Blank	Total/NA	Water	120.1	

# QC Association Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## General Chemistry (Continued)

### Analysis Batch: 228130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	SM 4500 NH3 G	
440-98014-W-30 MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 G	
440-98014-W-30 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 G	
LCS 440-228130/10	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	
MB 440-228130/9	Method Blank	Total/NA	Water	SM 4500 NH3 G	

### Analysis Batch: 228441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	SM 5310B	
440-97541-L-2 MS	Matrix Spike	Total/NA	Water	SM 5310B	
440-97541-L-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	
LCS 440-228441/10	Lab Control Sample	Total/NA	Water	SM 5310B	
MB 440-228441/11	Method Blank	Total/NA	Water	SM 5310B	

### Prep Batch: 255890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-63246-A-1-B MS	Matrix Spike	Total/NA	Water	Filtration	
280-63246-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	Filtration	

### Prep Batch: 257747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	Filtration	

### Analysis Batch: 258679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-63246-A-1-B MS	Matrix Spike	Total/NA	Water	DV-WC-0077	255890
280-63246-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	DV-WC-0077	255890
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	DV-WC-0077	257747
LCS 280-258679/23	Lab Control Sample	Total/NA	Water	DV-WC-0077	
LCSD 280-258679/25	Lab Control Sample Dup	Total/NA	Water	DV-WC-0077	
MB 280-258679/27	Method Blank	Total/NA	Water	DV-WC-0077	

## Rad

### Prep Batch: 164103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9831-E-8-B DU	Duplicate	Total/NA	Water	PrecSep-21	
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	PrecSep-21	
440-96594-2	Trip_Blank	Total/NA	Water	PrecSep-21	
LCS 160-164103/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-164103/1-A	Method Blank	Total/NA	Water	PrecSep-21	

### Prep Batch: 164475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	Fill_Geo-0	
440-96594-1 DU	Outfall002_20141213_Comp	Total/NA	Water	Fill_Geo-0	
440-96594-2	Trip_Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-164475/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
MB 160-164475/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	

TestAmerica Irvine

# QC Association Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Rad (Continued)

### Prep Batch: 164748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	Evaporation	
440-96594-1 DU	Outfall002_20141213_Comp	Total/NA	Water	Evaporation	
440-96594-1 MS	Outfall002_20141213_Comp	Total/NA	Water	Evaporation	
440-96594-1 MSBT	Outfall002_20141213_Comp	Total/NA	Water	Evaporation	
440-96594-2	Trip_Blank	Total/NA	Water	Evaporation	
LCS 160-164748/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-164748/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
MB 160-164748/1-A	Method Blank	Total/NA	Water	Evaporation	

### Prep Batch: 165361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	ExtChrom	
440-96594-2	Trip_Blank	Total/NA	Water	ExtChrom	
440-97211-A-2-D DU	Duplicate	Total/NA	Water	ExtChrom	
LCS 160-165361/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
MB 160-165361/1-A	Method Blank	Total/NA	Water	ExtChrom	

### Prep Batch: 165620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	PrecSep-7	
440-96594-2	Trip_Blank	Total/NA	Water	PrecSep-7	
440-96594-2 DU	Trip_Blank	Total/NA	Water	PrecSep-7	
LCS 160-165620/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
MB 160-165620/1-A	Method Blank	Total/NA	Water	PrecSep-7	

### Prep Batch: 166399

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-63670-A-3-D DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	
280-63961-C-3-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	LSC_Dist_Susp	
LCS 160-166399/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
MB 160-166399/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	

### Prep Batch: 168188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-1	Outfall002_20141213_Comp	Total/NA	Water	PrecSep_0	
440-96594-2	Trip_Blank	Total/NA	Water	PrecSep_0	
LCS 160-168188/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSB 160-168188/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	
MB 160-168188/1-A	Method Blank	Total/NA	Water	PrecSep_0	

## Biology

### Analysis Batch: 225038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96448-1	Outfall002_20141212_Grab	Total/NA	Water	SM 9221E	

### Analysis Batch: 225040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96448-1	Outfall002_20141212_Grab	Total/NA	Water	SM 9221F	

TestAmerica Irvine



# Definitions/Glossary

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)

### GC/MS Semi VOA

Qualifier	Qualifier Description
LQ	LCS/LCSD recovery above method control limits
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

### HPLC/IC

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

### DIOXIN

Qualifier	Qualifier Description
Q	Estimated maximum possible concentration (EMPC).
J	Estimated result. Result is less than the reporting limit.
B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.

### Metals

Qualifier	Qualifier Description
QP	Holding time Immediate. Analyzed as close to receipt as possible
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

### General Chemistry

Qualifier	Qualifier Description
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)
BU	Sample was prepped beyond the specified holding time

### Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control



## Definitions/Glossary

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

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### Glossary (Continued)

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Abbreviation	These commonly used abbreviations may or may not be present in this report.
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Certification Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-16 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-15 *
Hawaii	State Program	9	N/A	01-29-16
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15 *
Northern Mariana Islands	State Program	9	MP0002	01-29-15 *
Oregon	NELAP	10	4005	01-29-16
USDA	Federal		P330-09-00080	06-06-15
USEPA UCMR	Federal	1	CA01531	01-31-15

## Laboratory: TestAmerica Denver

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-15
A2LA	ISO/IEC 17025		2907.01	10-31-15
Alabama	State Program	4	40730	09-30-12 *
Alaska (UST)	State Program	10	UST-30	04-05-15
Arizona	State Program	9	AZ0713	12-19-15 *
Arkansas DEQ	State Program	6	88-0687	06-01-15
California	State Program	9	2513	08-31-16
Connecticut	State Program	1	PH-0686	09-30-16
Florida	NELAP	4	E87667	06-30-15
Georgia	State Program	4	N/A	01-09-15 *
Illinois	NELAP	5	200017	04-30-15
Iowa	State Program	7	370	11-30-16
Kansas	NELAP	7	E-10166	04-30-15
Louisiana	NELAP	6	02096	06-30-15
Maine	State Program	1	CO0002	03-03-15 *
Minnesota	NELAP	5	8-999-405	12-31-15
Nevada	State Program	9	CO0026	07-31-15
New Hampshire	NELAP	1	205310	04-28-15
New Jersey	NELAP	2	CO004	06-30-15
New Mexico	State Program	6	CO00026	01-09-15
New York	NELAP	2	11964	03-31-15
North Carolina (WW/SW)	State Program	4	358	12-31-15
North Dakota	State Program	8	R-034	01-09-15 *
Oklahoma	State Program	6	8614	08-31-15
Oregon	NELAP	10	4025	01-09-16
Pennsylvania	NELAP	3	68-00664	07-30-15
Texas	NELAP	6	TX104704183-08-TX	09-30-09 *
USDA	Federal		P330-13-00202	07-02-16
Utah	NELAP	8	CO00026	07-31-15
Virginia	NELAP	3	460232	06-14-15
Washington	State Program	10	C583	08-03-15
West Virginia DEP	State Program	3	354	11-30-15
Wisconsin	State Program	5	999615430	08-31-15

\* Certification renewal pending - certification considered valid.

TestAmerica Irvine

## Certification Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

### Laboratory: TestAmerica Denver (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wyoming (UST)	A2LA	8	2907.01	10-31-15

### Laboratory: TestAmerica Knoxville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0688	06-17-15
California	State Program	9	2423	06-30-16
Colorado	State Program	8	N/A	02-28-15
Connecticut	State Program	1	PH-0223	09-30-15
Florida	NELAP	4	E87177	06-30-15
Georgia	State Program	4	906	04-13-17
Hawaii	State Program	9	N/A	04-13-15
Kentucky (DW)	State Program	4	90101	12-31-15
L-A-B	DoD ELAP		L2311	02-13-16
Louisiana	NELAP	6	83979	06-30-15
Louisiana	NELAP	6	LA110001	12-31-15
Maryland	State Program	3	277	03-31-15
Michigan	State Program	5	9933	04-13-17
Nevada	State Program	9	TN00009	07-31-15
New Jersey	NELAP	2	TN001	06-30-15
New York	NELAP	2	10781	03-31-15
North Carolina (DW)	State Program	4	21705	07-31-15
North Carolina (WW/SW)	State Program	4	64	12-31-15
Ohio VAP	State Program	5	CL0059	03-26-15
Oklahoma	State Program	6	9415	08-31-15
Pennsylvania	NELAP	3	68-00576	12-31-15
South Carolina	State Program	4	84001	06-30-15
Tennessee	State Program	4	2014	04-13-17
Texas	NELAP	6	T104704380-TX	08-31-15
USDA	Federal		P330-13-00260	08-29-16
Utah	NELAP	8	QUAN3	07-31-15
Virginia	NELAP	3	460176	09-14-15
Virginia	State Program	3	165	06-30-15
Washington	State Program	10	C593	01-19-16
West Virginia (DW)	State Program	3	9955C	12-31-14
West Virginia DEP	State Program	3	345	04-30-15
Wisconsin	State Program	5	998044300	08-31-15

### Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-15
California	NELAP	9	2886	03-31-15
Connecticut	State Program	1	PH-0241	03-31-15
Florida	NELAP	4	E87689	06-30-15
Illinois	NELAP	5	200023	11-30-15
Iowa	State Program	7	373	12-01-14 *
Kansas	NELAP	7	E-10236	03-31-15 *
Kentucky (DW)	State Program	4	90125	12-31-14 *

\* Certification renewal pending - certification considered valid.

TestAmerica Irvine

# Certification Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
L-A-B	DoD ELAP		L2305	01-10-16
Louisiana	NELAP	6	LA150017	12-31-16
Maryland	State Program	3	310	09-30-15
Missouri	State Program	7	780	06-30-15
Nevada	State Program	9	MO000542013-1	07-31-15
New Jersey	NELAP	2	MO002	06-30-15
New Mexico	State Program	6		06-30-10 *
New York	NELAP	2	11616	03-31-15 *
North Dakota	State Program	8	R207	06-30-15
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-15
Pennsylvania	NELAP	3	68-00540	02-28-15 *
South Carolina	State Program	4	85002001	06-30-15
Texas	NELAP	6	T104704193-13-6	07-31-15
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542013-5	07-31-15
Virginia	NELAP	3	460230	06-14-15
Washington	State Program	10	C592	08-30-15
West Virginia DEP	State Program	3	381	08-31-15

\* Certification renewal pending - certification considered valid.



# LABORATORY REPORT



**Aquatic  
Testing  
Laboratories**

*"dedicated to providing quality aquatic toxicity testing"*

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

**Date:** December 17, 2014

**Client:** Test America – Irvine  
17461 Derian Ave., Suite 100  
Irvine, CA 92614  
Attn: Debby Wilson

**Laboratory No.:** A-14121303-001  
**Job No.:** 440-96448-1  
**Sample ID.:** 440-96482-1

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

Date Sampled: 12/12/14  
Date Received: 12/13/14  
Temp. Received: 0.7°C  
Chlorine (TRC): 0.0 mg/l  
Date Tested: 12/13/14 to 12/17/14

**Sample Analysis:** The following analyses were performed on your sample:


Fathead Minnow 96hr Percent Survival Bioassay (EPA Method 2000.0).

Attached are the test data generated from the analysis of your sample. All testing was conducted under the direct supervision of Joseph A. LeMay. Daily test readings were taken by Joseph A. LeMay (initialed: JAL) and Jacob LeMay (initialed: J).

## Result Summary:

<u>Sample ID.</u>	<u>Results</u>
440-96482-1	100% Survival (TU <sub>a</sub> = 0.0)

**Quality Control:** Reviewed and approved by:

  
Joseph A. LeMay  
Laboratory Director

**FATHEAD MINNOW PERCENT SURVIVAL TEST**  
**EPA Method 2000.0**



Lab No.: A-14121303-001

Client/ID: TestAmerica - Boeing Outfall 002  
 440-96482-1

Start Date: 12/13/2014

**TEST SUMMARY**

Species: *Pimephales promelas*.  
 Age: 11 (1-14) days.  
 Regulations: NPDES.  
 Test solution volume: 250 ml.  
 Feeding: prior to renewal at 48 hrs.  
 Number of replicates: 4.  
 Control water: Moderately hard reconstituted water.  
 Photoperiod: 16/8 hrs light/dark.

Source: In-laboratory Culture.  
 Test type: Static-Renewal.  
 Test Protocol: EPA-821-R-02-012.  
 Endpoints: Percent Survival at 96 hrs.  
 Test chamber: 600 ml beakers.  
 Temperature: 20 +/- 1°C.  
 Number of fish per chamber: 10.  
 QA/QC No.: RT-141203.

**TEST DATA**

		°C	DO	pH	# Dead				Analyst & Time of Readings
					A	B	C	D	
INITIAL	Control	12.7	8.6	7.9	0	0	0	0	J 12-13-14 1220
	100%	12.8	9.0	7.8	0	0	0	0	
24 Hr	Control	20.0	8.5	7.9	0	0	0	0	J 12-14-14 1230
	100%	20.0	8.6	7.9	0	0	0	0	
48 Hr	Control	19.4	8.3	8.0	0	0	0	0	J 12-15-14 1200
	100%	19.4	8.2	7.9	0	0	0	0	
Renewal	Control	19.7	8.9	8.1	0	0	0	0	J 12-15-14 1200
	100%	19.5	9.0	7.9	0	0	0	0	
72 Hr	Control	20.1	8.1	7.7	0	0	0	0	J 12-16-14 1200
	100%	20.0	7.8	7.7	0	0	0	0	
96 Hr	Control	17.9	7.8	7.8	0	0	0	0	J 12-17-14 1200
	100%	17.8	7.6	7.7	0	0	0	0	

**Comments:**

Sample as received: Chlorine: 0.0 mg/l; pH: 7.6; Conductivity: 202 umho; Temp: 0.7°C;  
 DO: 10.9 mg/l; Alkalinity: 46 mg/l; Hardness: 71 mg/l; NH<sub>3</sub>-N: 0.2 mg/l.  
 Sample aerated moderately (approx. 500 ml/min) to raise or lower DO? Yes / No.  
 Control: Alkalinity: 55 mg/l; Hardness: 93 mg/l; Conductivity: 324 umho.  
 Test solution aerated (not to exceed 100 bubbles/min) to maintain DO > 4.0 mg/l? No.  
 Sample used for renewal is the original sample kept at 0-6°C with minimal headspace.  
 Dissolved Oxygen (DO) readings in mg/l O<sub>2</sub>.

**RESULTS**

Percent Survival In: Control: 100 %    100% Sample: 100 %





# ***REFERENCE TOXICANT DATA***

1
2
3
4
5
6
7
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10
11
12
13
14
15



# FATHEAD MINNOW ACUTE Reference Toxicant - SDS



QA/QC Batch No.: RT-141203

## TEST SUMMARY

Species: *Pimephales promelas*.

Age: 12 days old.

Regulations: NPDES.

Test chamber volume: 250 ml.

Feeding: Prior to renewal at 48 hrs.

Temperature: 20 +/- 1°C.

Number of replicates: 2.

Dilution water: MHSF.

Source: In-lab culture.

Test type: Static-Renewal.

Test Protocol: EPA-821-R-02-012.

Endpoints: LC50 at 96 hrs.

Test chamber: 600 ml beakers.

Aeration: None.

Number of organisms per chamber: 10.

Photoperiod: 16/8 hrs light/dark.

## TEST DATA

Date/Time:	INITIAL			24 Hr						48 Hr				
	<u>12-3-14 1115</u>			<u>12-4-14</u>			<u>1100</u>			<u>12-5-14</u>			<u>1130</u>	
	<u>J</u>			<u>J</u>						<u>J</u>				
	°C	DO	pH	°C	DO	pH	# Dead		°C	DO	pH	# Dead		
A							B	A				B		
Control	<u>20.6</u>	<u>7.9</u>	<u>7.7</u>	<u>20.7</u>	<u>7.2</u>	<u>7.6</u>	<u>0</u>	<u>0</u>	<u>20.6</u>	<u>7.7</u>	<u>7.8</u>	<u>0</u>	<u>0</u>	
1.0 mg/l	<u>20.5</u>	<u>8.1</u>	<u>7.7</u>	<u>20.6</u>	<u>7.5</u>	<u>7.7</u>	<u>0</u>	<u>0</u>	<u>20.7</u>	<u>7.6</u>	<u>7.9</u>	<u>0</u>	<u>0</u>	
2.0 mg/l	<u>20.5</u>	<u>8.2</u>	<u>7.8</u>	<u>20.5</u>	<u>8.0</u>	<u>7.7</u>	<u>0</u>	<u>0</u>	<u>20.6</u>	<u>7.7</u>	<u>7.8</u>	<u>0</u>	<u>0</u>	
4.0 mg/l	<u>20.6</u>	<u>8.3</u>	<u>7.8</u>	<u>20.6</u>	<u>8.1</u>	<u>7.7</u>	<u>5</u>	<u>1</u>	<u>20.7</u>	<u>7.6</u>	<u>7.9</u>	<u>1</u>	<u>3</u>	
8.0 mg/l	<u>20.6</u>	<u>8.1</u>	<u>7.8</u>	<u>20.6</u>	<u>7.8</u>	<u>7.7</u>	<u>10</u>	<u>10</u>	-	-	-	-	-	
16.0 mg/l	<u>20.5</u>	<u>8.2</u>	<u>7.8</u>	<u>20.6</u>	<u>7.5</u>	<u>7.7</u>	<u>10</u>	<u>10</u>	-	-	-	-	-	

Date/Time:	RENEWAL			72 Hr						96 Hr				
	<u>12-5-14 1130</u>			<u>12-6-14</u>			<u>1200</u>			<u>12-7-14</u>			<u>1100</u>	
	<u>J</u>			<u>J</u>						<u>J</u>				
	°C	DO	pH	°C	DO	pH	# Dead		°C	DO	pH	# Dead		
A							B	A				B		
Control	<u>20.6</u>	<u>8.0</u>	<u>7.8</u>	<u>20.5</u>	<u>8.0</u>	<u>8.0</u>	<u>0</u>	<u>0</u>	<u>20.2</u>	<u>8.0</u>	<u>7.8</u>	<u>0</u>	<u>0</u>	
1.0 mg/l	<u>20.7</u>	<u>8.2</u>	<u>7.9</u>	<u>20.6</u>	<u>7.5</u>	<u>8.0</u>	<u>0</u>	<u>0</u>	<u>20.2</u>	<u>8.2</u>	<u>7.9</u>	<u>0</u>	<u>0</u>	
2.0 mg/l	<u>20.6</u>	<u>8.3</u>	<u>7.9</u>	<u>20.6</u>	<u>7.7</u>	<u>8.0</u>	<u>0</u>	<u>0</u>	<u>20.2</u>	<u>8.2</u>	<u>7.8</u>	<u>0</u>	<u>0</u>	
4.0 mg/l	<u>20.7</u>	<u>8.3</u>	<u>7.7</u>	<u>20.6</u>	<u>7.8</u>	<u>8.0</u>	<u>0</u>	<u>0</u>	<u>20.1</u>	<u>8.1</u>	<u>7.8</u>	<u>0</u>	<u>0</u>	
8.0 mg/l	-	-	-	-	-	-	-	-	-	-	-	-	-	
16.0 mg/l	-	-	-	-	-	-	-	-	-	-	-	-	-	

Comments: Control: Alkalinity: 54 mg/l; Hardness: 93 mg/l; Conductivity: 298 umho.  
 SDS: Alkalinity: 55 mg/l; Hardness: 93 mg/l; Conductivity: 305 umho.

Concentration-response relationship acceptable? (see attached computer analysis):

Yes (response curve normal)

No (dose interrupted indicated or non-normal)

**Acute Fish Test-96 Hr Survival**

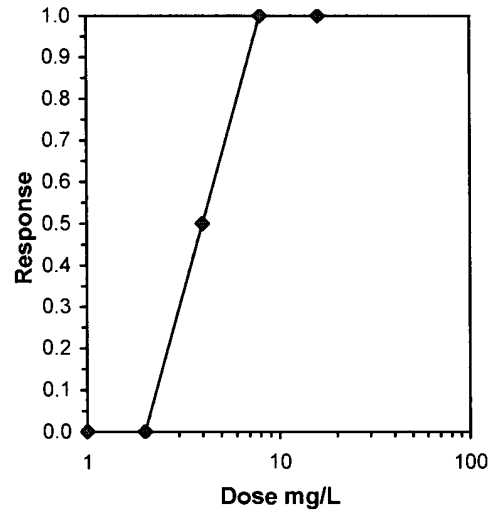
Start Date: 12/3/2014 11:15 Test ID: RT141203 Sample ID: REF-Ref Toxicant  
 End Date: 12/7/2014 11:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SDS-Sodium dodecyl sulfate  
 Sample Date: 12/3/2014 Protocol: EPAAW02-EPA/821/R-02-01 Test Species: PP-Pimephales promelas  
 Comments:

Conc-mg/L	1	2
D-Control	1.0000	1.0000
1	1.0000	1.0000
2	1.0000	1.0000
4	0.4000	0.6000
8	0.0000	0.0000
16	0.0000	0.0000

Conc-mg/L	Transform: Arcsin Square Root							N	Number Resp	Total Number
	Mean	N-Mean	Mean	Min	Max	CV%				
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20	
1	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20	
2	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20	
4	0.5000	0.5000	0.7854	0.6847	0.8861	18.129	2	10	20	
8	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20	
16	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20	

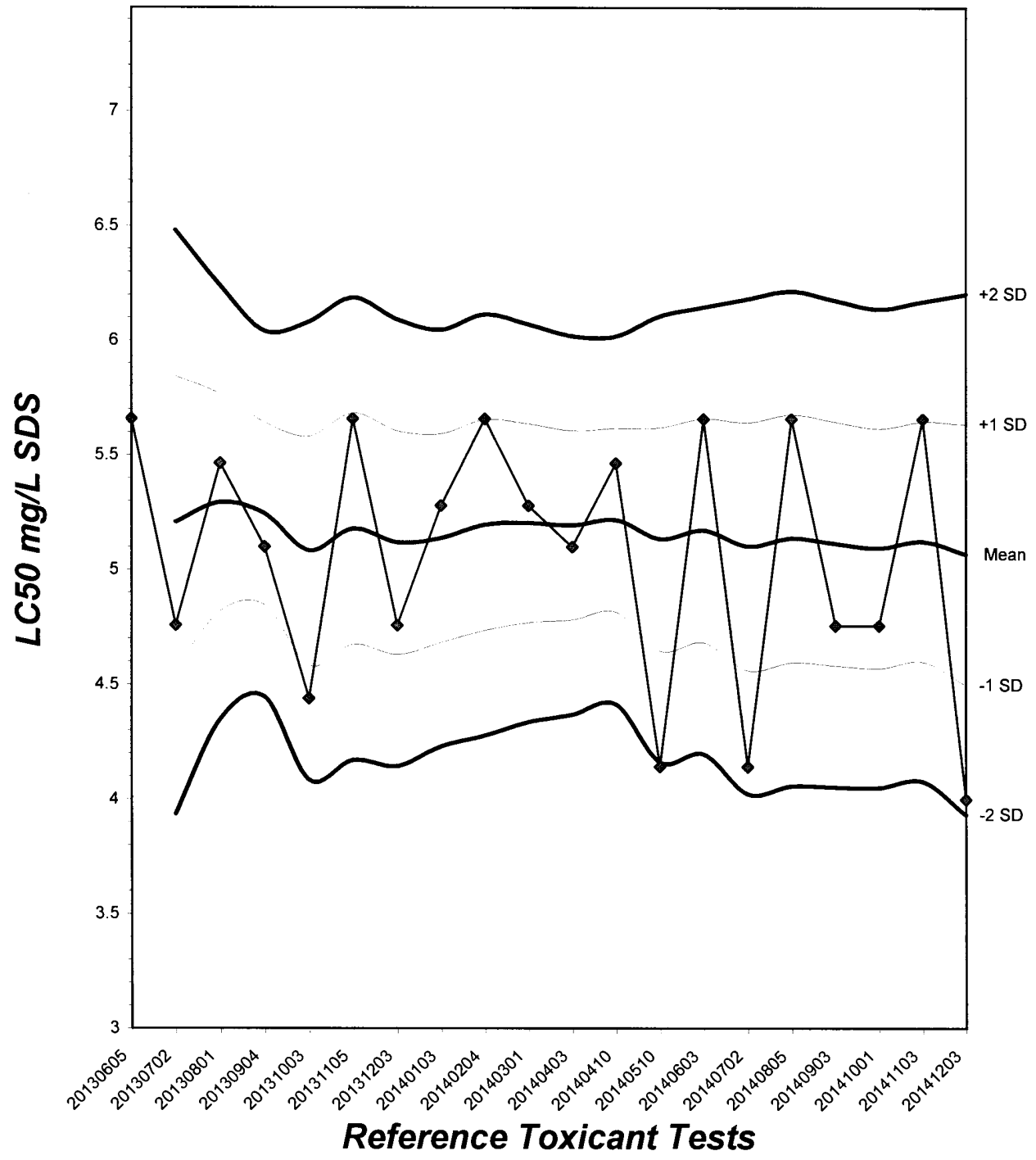
Auxiliary Tests	Statistic	Critical	Skew	Kurt
Normality of the data set cannot be confirmed				
Equality of variance cannot be confirmed				

Trim Level	Trimmed Spearman-Kärber			
	EC50	95% CL		
0.0%	4.0000	3.4257	4.6706	
5.0%	4.0000	3.3672	4.7517	
10.0%	4.0000	3.2955	4.8551	
20.0%	4.0000	3.0894	5.1790	
Auto-0.0%	4.0000	3.4257	4.6706	



# Fathead Minnow Acute Laboratory Control Chart

CV% = 11.2



**TEST ORGANISM LOG**  
**FATHEAD MINNOW - LARVAL**  
*(Pimephales promelas)*



QA/QC BATCH NO.: RT-141203

SOURCE: In-Lab Culture

DATE HATCHED: 11-21-14

APPROXIMATE QUANTITY: 400

GENERAL APPEARANCE: good

# MORTALITIES 48 HOURS PRIOR TO  
TO USE IN TESTING: 0

DATE USED IN LAB: 12/3/14

AVERAGE FISH WEIGHT: 0.006 gm

LOADING LIMITS: 0.65 gm/liter @ 20°C, 0.40 gm/liter @ 25°C

Approximately 1000 fish per 10 liters limit if held overnight for acclimation without filtration @ 20°C for fish with a mean weight of 0.006 gm.

Approximately 650 fish per 10 liters limit if held overnight for acclimation without filtration @ 25°C for fish with a mean weight of 0.006 gm.

200 ml test solution volume = 0.013 gm mean fish weight limit @ 20°C; 0.008 @ 25°C

250 ml test solution volume = 0.016 gm mean fish weight limit @ 20°C; 0.010 @ 25°C

ACCLIMATION WATER QUALITY:

Temp.: 20.8 °C

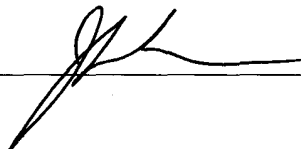
pH: 7.7 Ammonia: 0 mg/l NH<sub>3</sub>-N

DO: 7.9 mg/l

Alkalinity: 54 mg/l

Hardness: 93 mg/l

READINGS RECORDED BY: \_\_\_\_\_



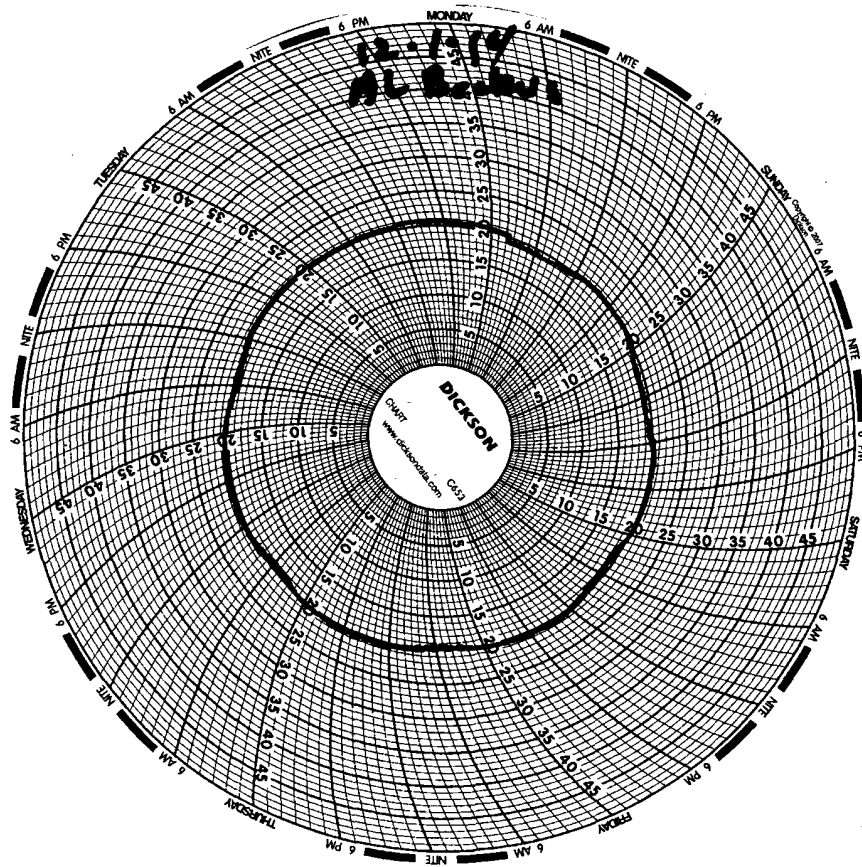
DATE: 12-4-14

# Test Temperature Chart

Test No: RT-141202

Date Tested: 12/03/14 to 12/07/14

Acceptable Range: 20 +/- 1°C



# LABORATORY REPORT



**Aquatic  
Testing  
Laboratories**

*"dedicated to providing quality aquatic toxicity testing"*

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

**Date:** December 22, 2014

**Client:** TestAmerica, Irvine  
17461 Derian Ave., Suite 100  
Irvine, CA 92614  
Attn: Debby Wilson

**Laboratory No.:** A-14121305-001  
**Job No.:** 440-96448-1  
**Sample I.D.:** Outfall\_002\_20141213\_Comp (440-96594-1)

**Sample Control:** The sample was received by ATL chilled, within the recommended hold time and with the chain of custody record attached. Testing conducted on only one sample per client instruction.

Date Sampled: 12/13/14  
Date Received: 12/13/14  
Temp. Received: 2.2°C  
Chlorine (TRC): 0.0 mg/l  
Date Tested: 12/13/14 to 12/20/14

**Sample Analysis:** The following analyses were performed on your sample:

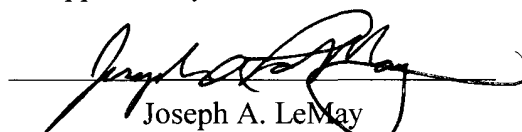
*Ceriodaphnia dubia* Survival and Reproduction Test (EPA Method 1002).

Attached are the test data generated from the analysis of your sample. All testing was conducted under the direct supervision of Joseph A. LeMay. Daily test readings were taken by Joseph A. LeMay (initialed: JAL) and Jacob LeMay (initialed: J).

## Result Summary:

<b>Chronic:</b>	<b>NOEC</b>	<b>TUc</b>
<i>Ceriodaphnia</i> Survival:	100%	1.0
<i>Ceriodaphnia</i> Reproduction:	100%	1.0

**Quality Control:** Reviewed and approved by:

  
Joseph A. LeMay  
Laboratory Director

**CERIODAPHNIA CHRONIC BIOASSAY  
EPA METHOD 1002.0**



Lab No.: A-14121305-001  
Client/ID: TestAmerica – Outfall 002

Date Tested: 12/13/14 to 12/20/14

**TEST SUMMARY**

Test type: Daily static-renewal.	Endpoints: Survival and Reproduction.
Species: <i>Ceriodaphnia dubia</i> .	Source: In-laboratory culture.
Age: < 24 hrs; all released within 8 hrs.	Food: .1 ml YTC, algae per day.
Test vessel size: 30 ml.	Test solution volume: 15 ml.
Number of test organisms per vessel: 1.	Number of replicates: 10.
Temperature: 25 +/- 1°C.	Photoperiod: 16/8 hrs. light/dark cycle.
Dilution water: Mod. hard reconstituted (MHRW).	Test duration: 7 days.
QA/QC Batch No.: RT-141203.	Statistics: ToxCalc computer program.

**RESULTS SUMMARY**

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	28.9
100% Sample	100%	33.3
Sample not statistically significantly less than Control for either endpoint.		

**CHRONIC TOXICITY**

Survival NOEC	100%
Survival TUc	1.0
Reproduction NOEC	100%
Reproduction TUc	1.0

**QA/QC TEST ACCEPTABILITY**

Parameter	Result
Control survival ≥80%	Pass (100% survival)
≥ 15 young per surviving control female	Pass (28.9 young)
≥60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 9.4%)
Statistically significantly different concentrations relative difference >13%	Pass (no concentration significantly different)
Concentration response relationship acceptable	Pass (no significant response at concentration tested)

**Ceriodaphnia Survival and Reproduction Test-7 Day Survival**

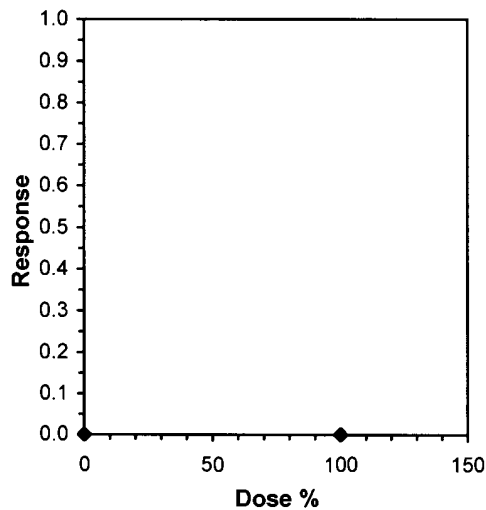
Start Date: 12/13/2014 14:00 Test ID: 14121305c Sample ID: Outfall 002  
 End Date: 12/20/2014 14:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 12/13/2014 00:44 Protocol: EPAFW02-821-R-02-013 Test Species: CD-Ceriodaphnia dubia  
 Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Conc-%	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Isotonic Mean	N-Mean
D-Control	1.0000	1.0000	0	10	10	10			1.0000	1.0000
100	1.0000	1.0000	0	10	10	10	1.0000	0.0500	1.0000	1.0000

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	100	>100		1
Treatments vs D-Control				

Linear Interpolation (200 Resamples)				
Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			





**Ceriodaphnia Survival and Reproduction Test-Reproduction**

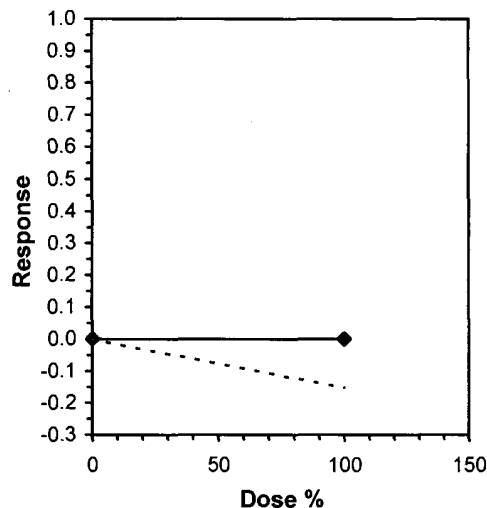
Start Date: 12/13/2014 14:00 Test ID: 14121305c Sample ID: Outfall 002  
 End Date: 12/20/2014 14:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 12/13/2014 00:44 Protocol: EPAFW02-821-R-02-013 Test Species: CD-Ceriodaphnia dubia  
 Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	34.000	30.000	27.000	26.000	26.000	34.000	30.000	28.000	27.000	27.000
100	38.000	34.000	31.000	33.000	32.000	33.000	24.000	37.000	36.000	35.000

Conc-%	Mean	N-Mean	Transform: Untransformed				N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%					Mean	N-Mean
D-Control	28.900	1.0000	28.900	26.000	34.000	10.502	10				31.100	1.0000
100	33.300	1.1522	33.300	24.000	38.000	11.848	10	-2.795	1.734	2.730	31.100	1.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt		
Shapiro-Wilk's Test indicates normal distribution ( $p > 0.05$ )	0.9278	0.905	-0.6421	1.5925		
F-Test indicates equal variances ( $p = 0.45$ )	1.68999	6.54109				
Hypothesis Test (1-tail, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates no significant differences Treatments vs D-Control	2.72958	0.09445	96.8	12.3889	0.01196	1, 18

Linear Interpolation (200 Resamples)				
Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



# CERIODAPHNIA DUBIA CHRONIC BIOASSAY

## EPA METHOD 1002.0 Raw Data Sheet



Lab No.: A-14121305-001

Client ID: TestAmerica - Outfall 002

Start Date: 12/13/2014

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr
Analyst Initials:		Z		Z		Z		Z		Z		Z		Z	
Time of Readings:		14w		14w		13w		14w		14w		14w		14w	
Control	DO	8.1	29	8.2	8.2	8.2	29	8.1	8.3	8.2	28	8.1	8.0	8.3	8.3
	pH	8.0	8.1	8.1	8.0	8.1	29	8.2	8.0	8.0	8.1	29	8.1	8.0	8.0
	Temp	24.9	24.9	24.9	24.7	24.9	24.8	24.8	24.8	24.8	24.9	24.9	24.7	24.9	24.8
100%	DO	8.3	8.1	8.0	7.9	8.3	8.0	8.3	8.1	8.4	8.1	8.3	8.1	8.4	8.1
	pH	29	8.0	29	8.1	8.1	28	28	8.0	8.0	8.0	29	8.0	8.1	8.1
	Temp	24.8	24.9	24.8	24.8	24.8	24.7	24.8	24.8	24.8	24.8	24.8	24.7	24.7	24.7

Additional Parameters	Control	100% Sample
Conductivity (umohms)	338	335
Alkalinity (mg/l CaCO <sub>3</sub> )	55	50
Hardness (mg/l CaCO <sub>3</sub> )	92	68
Ammonia (mg/l NH <sub>3</sub> -N)	0.1	0.2

Source of Neonates											
Replicate:	A	B	C	D	E	F	G	H	I	J	
Brood ID:	1A	1B	2D	1L	3G	2H	3H	4D	5D	6G	

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials	
		A	B	C	D	E	F	G	H	I	J				
Control	1	0	0	0	0	0	0	0	0	0	0	0	0	10	Z
	2	0	0	0	0	0	0	0	0	0	0	0	0	10	Z
	3	0	5	0	0	4	4	4	3	0	0	20	10	Z	
	4	5	0	2	3	0	0	0	0	4	3	17	10	Z	
	5	10	9	7	9	8	10	9	7	6	7	82	10	Z	
	6	0	16	0	14	0	0	17	0	17	0	64	10	Z	
	7	19	15	18	0	14	20	0	18	0	17	106	10	Z	
	Total	34	30	27	26	26	34	30	28	27	27	289	10	Z	
100%	1	0	0	0	0	0	0	0	0	0	0	0	0	10	Z
	2	0	0	0	0	0	0	0	0	0	0	0	0	10	Z
	3	0	5	0	0	0	4	0	0	0	0	9	10	Z	
	4	4	0	5	4	4	0	3	4	5	4	33	10	Z	
	5	10	9	7	9	10	8	7	10	7	9	86	10	Z	
	6	24	20	19	20	18	21	14	23	24	22	205	10	Z	
	7	0	18	19	19	0	18	17	0	18	16	0	10	Z	
	Total	38	34	31	33	32	33	24	37	36	25	333	10	Z	

Circled fourth brood not used in statistical analysis.

7<sup>th</sup> day only used if <60% of the surviving control females have produced their third brood.



CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 9040 Friars Road Suite 220 San Diego, CA 92108-5860		Project: Boeing-SSFL NPDES Annual and Routine Outfall 002 COMPOSITE		R/Q R/Q R/Q R/Q A A A A A A A		ANALYSIS REQUIRED												
Sample Description	Sample Matrix	Container Type	# of Cont.	Sample I.D.	Sampling Date/Time	Preservative	Bottle #	Total Dissolved Metals: Cu, Pb, Hg, Cd, Se, Zn, Fe	Gross Alpha(900.0), Gross Beta(900.0), Tritium (1-3) (906.0), Sr-90 (905.0), Total Radium 226 (903.0 or 903.1) & 40, CS-137 (901.0 or 901.1)	Chronic Toxicity	Cyanide	1,4-Dioxane	Total Organic Carbon	PCBs	Monomethyl Hydrazine	Cr (VI) (216)	Total Dissolved Metals: Cu, Pb, Hg, B, Ba, Fe, Mn, Sb, As, Be, Cd, Cr, Ni, Se, Ag, Ti, Zn, Co, V, Hardness as CaCO <sub>3</sub>	Comments
Outfall 002	W	1L Poly	1			None	16 /	X									X	Filter w/in 24hrs of receipt at lab. If R and A meals overlap, analyze once
Outfall 002	W	2.5 Gal Cube	1			None	17A /											Unfiltered and unpreserved analysis
Outfall 002	W	500 mL Amber	1			None	17B /											Only test if first or second rain events of the year
Outfall 002	W	1 Gal Cube	1			None	18 /	X										
Outfall 002	W	500 mL Poly	1	Outfall 002_2014_12_13_11:45		NaOH	19 /			X								
Outfall 002	W	VOAs	3			HCl	20A, 20B, 20C /					X						
Outfall 002	W	250 mL Glass	1			HCl	25 /					X						
Outfall 002	W	1L Amber	2			None	27A, 27B /						X					
Outfall 002	W	1L Amber	2			None	28A, 28B /							X				
Outfall 002	W	500 mL Poly	1			None	31 /									X		

COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 002 for this storm event. These must be added to the same work order for COC Page 1 of 3 for Outfall 002 for the same event.

Legend: R=Routine, A=Annual, Q=Quarterly

Relinquished By: <i>Shafiq</i>	Date/Time: 12/13/14 10:26	Received By: <i>Shafiq NABI</i>	Date/Time: 12/13/14 10:26
Relinquished By: <i>Shafiq NABI</i>	Date/Time: 12/13/14 11:00	Received By: <i>Shafiq</i>	Date/Time: 12/13/14 10:45
Relinquished By: <i>Shafiq</i>	Date/Time: 12/13/14 11:45	Received By: <i>Shafiq</i>	Date/Time: 12-13-14 11:45

UTC Shafiq NABI *AK*





# ***REFERENCE TOXICANT DATA***

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

**CERIODAPHNIA CHRONIC BIOASSAY**  
**EPA METHOD 1002.0**  
**REFERENCE TOXICANT - NaCl**



QA/QC Batch No.: RT-141203

Date Tested: 12/03/14 to 12/10/14

**TEST SUMMARY**

Test type: Daily static-renewal.

Species: *Ceriodaphnia dubia*.

Age: <24 hrs; all released within 8 hrs.

Test vessel size: 30 ml.

Number of test organisms per vessel: 1.

Temperature: 25 +/- 1°C.

Dilution water: Mod. hard reconstituted (MHRW).

Reference Toxicant: Sodium chloride (NaCl).

Endpoints: Survival and Reproduction.

Source: In-laboratory culture.

Food: .1 ml YTC, algae per day.

Test solution volume: 20 ml.

Number of replicates: 10.

Photoperiod: 16/8 hrs. light/dark cycle.

Test duration: 7 days.

Statistics: ToxCalc computer program.

**RESULTS SUMMARY**

Sample Concentration	Percent Survival		Mean Number of Young Per Female	
Control	100%		26.9	
0.25 g/L	100%		28.1	
0.5 g/L	100%		27.0	
1.0 g/L	100%		18.0	*
2.0 g/L	90%		2.3	*
4.0 g/L	0%	*	0	**

\* Statistically significantly less than control at P = 0.05 level  
 \*\* Reproduction data from concentrations greater than survival NOEC are excluded from statistical analysis.

**CHRONIC TOXICITY**

Survival LC50	2.6 g/l
Reproduction IC25	0.85 g/l

**QA/QC TEST ACCEPTABILITY**

Parameter	Result
Control survival ≥ 80%	Pass (100% Survival)
≥ 15 young per surviving control female	Pass (26.9 young)
≥ 60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD < 47% for reproduction	Pass (PMSD = 8.0%)
Stat. sig. diff. conc. relative difference > 13%	Pass (Stat. sig. diff. conc. Relative difference = 33.1%)
Concentration response relationship acceptable	Pass (Response curve normal)

**Ceriodaphnia Survival and Reproduction Test-7 Day Survival**

Start Date: 12/3/2014 14:00    Test ID: RT141203c    Sample ID: REF-Ref Toxicant  
 End Date: 12/10/2014 13:30    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: NACL-Sodium chloride  
 Sample Date: 12/3/2014    Protocol: EPAFW02-821-R-02-013    Test Species: CD-Ceriodaphnia dubia  
 Comments:

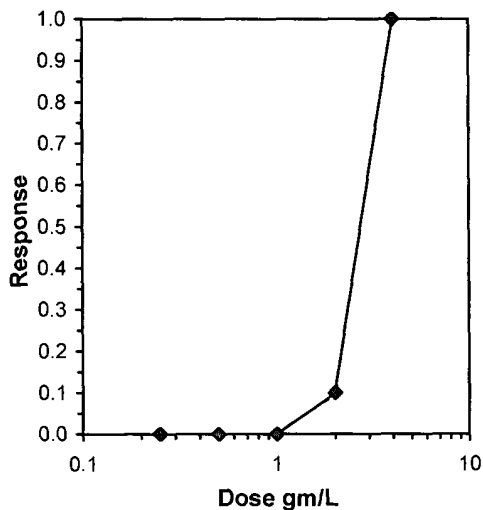
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Number Resp	Total Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
2	0.9000	0.9000	1	9	10	10	0.5000	0.0500	1	10
4	0.0000	0.0000	10	0	10	10			10	10

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	2	4	2.82843	
Treatments vs D-Control				

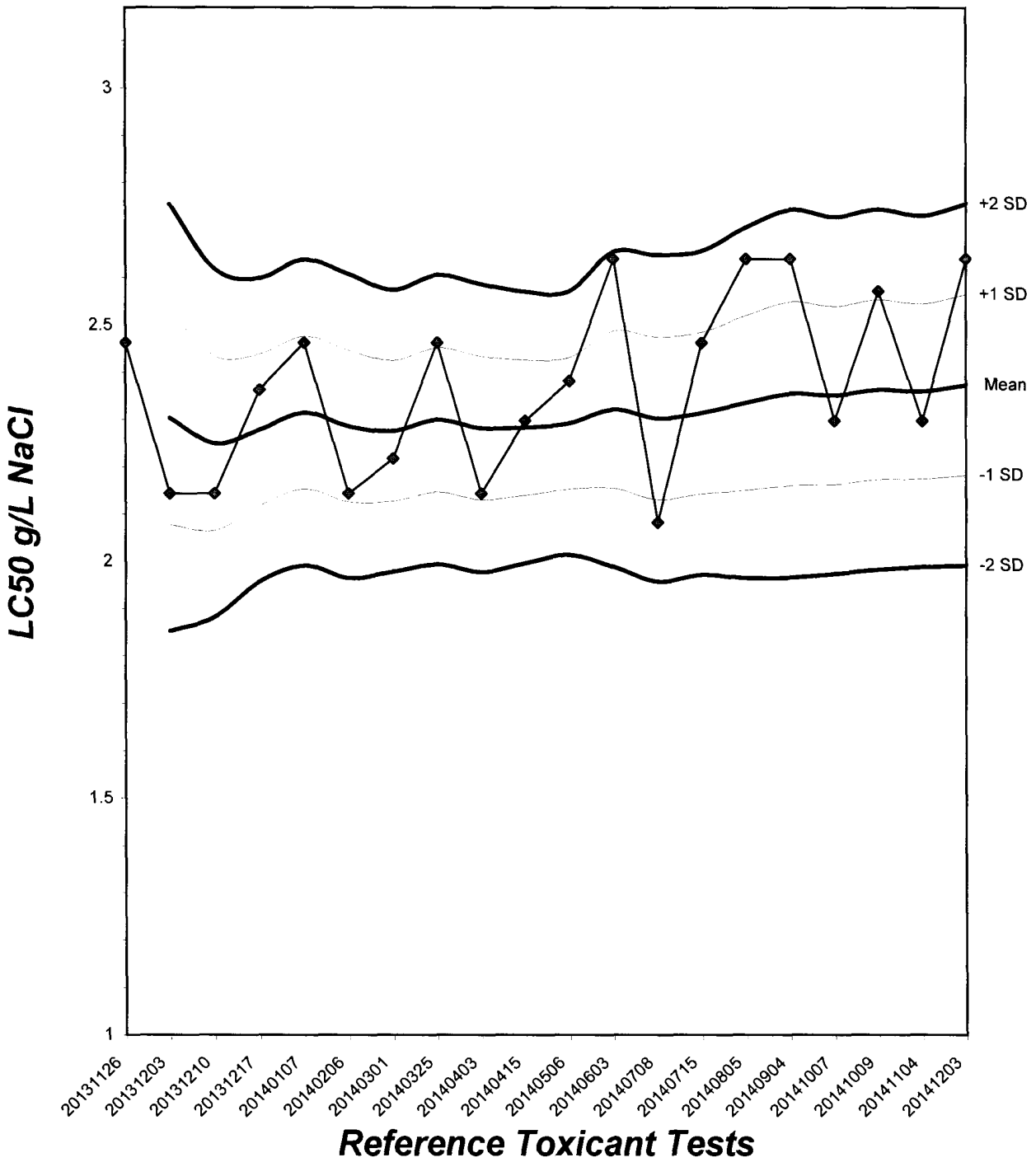
**Trimmed Spearman-Kärber**

Trim Level	EC50	95% CL	
0.0%	2.6390	2.3138	3.0099
5.0%	2.6984	2.2899	3.1798
10.0%	2.7216	2.5094	2.9517
20.0%	2.7216	2.5094	2.9517
Auto-0.0%	2.6390	2.3138	3.0099



# Ceriodaphnia Chronic Survival Laboratory Control Chart

CV% = 8.03



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



**Ceriodaphnia Survival and Reproduction Test-Reproduction**

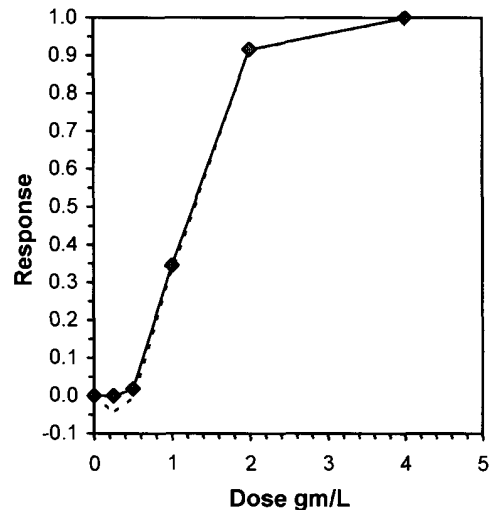
Start Date: 12/3/2014 14:00 Test ID: RT141203c Sample ID: REF-Ref Toxicant  
 End Date: 12/10/2014 13:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NACL-Sodium chloride  
 Sample Date: 12/3/2014 Protocol: EPAFW02-821-R-02-013 Test Species: CD-Ceriodaphnia dubia  
 Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	29.000	26.000	28.000	26.000	27.000	25.000	26.000	22.000	27.000	33.000
0.25	25.000	30.000	29.000	28.000	30.000	30.000	28.000	30.000	26.000	25.000
0.5	28.000	27.000	30.000	27.000	24.000	27.000	29.000	27.000	28.000	23.000
1	18.000	19.000	18.000	17.000	21.000	15.000	18.000	19.000	19.000	16.000
2	0.000	2.000	2.000	2.000	6.000	2.000	2.000	2.000	0.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-gm/L	Transform: Untransformed							t-Stat	1-Tailed Critical	MSD	Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N				Mean	N-Mean
D-Control	26.900	1.0000	26.900	22.000	33.000	10.580	10				27.500	1.0000
0.25	28.100	1.0446	28.100	25.000	30.000	7.399	10	-1.242	2.223	2.147	27.500	1.0000
0.5	27.000	1.0037	27.000	23.000	30.000	7.808	10	-0.104	2.223	2.147	27.000	0.9818
*1	18.000	0.6691	18.000	15.000	21.000	9.443	10	9.215	2.223	2.147	18.000	0.6545
*2	2.300	0.0855	2.300	0.000	6.000	82.111	10	25.469	2.223	2.147	2.300	0.0836
4	0.000	0.0000	0.000	0.000	0.000	0.000	10				0.000	0.0000

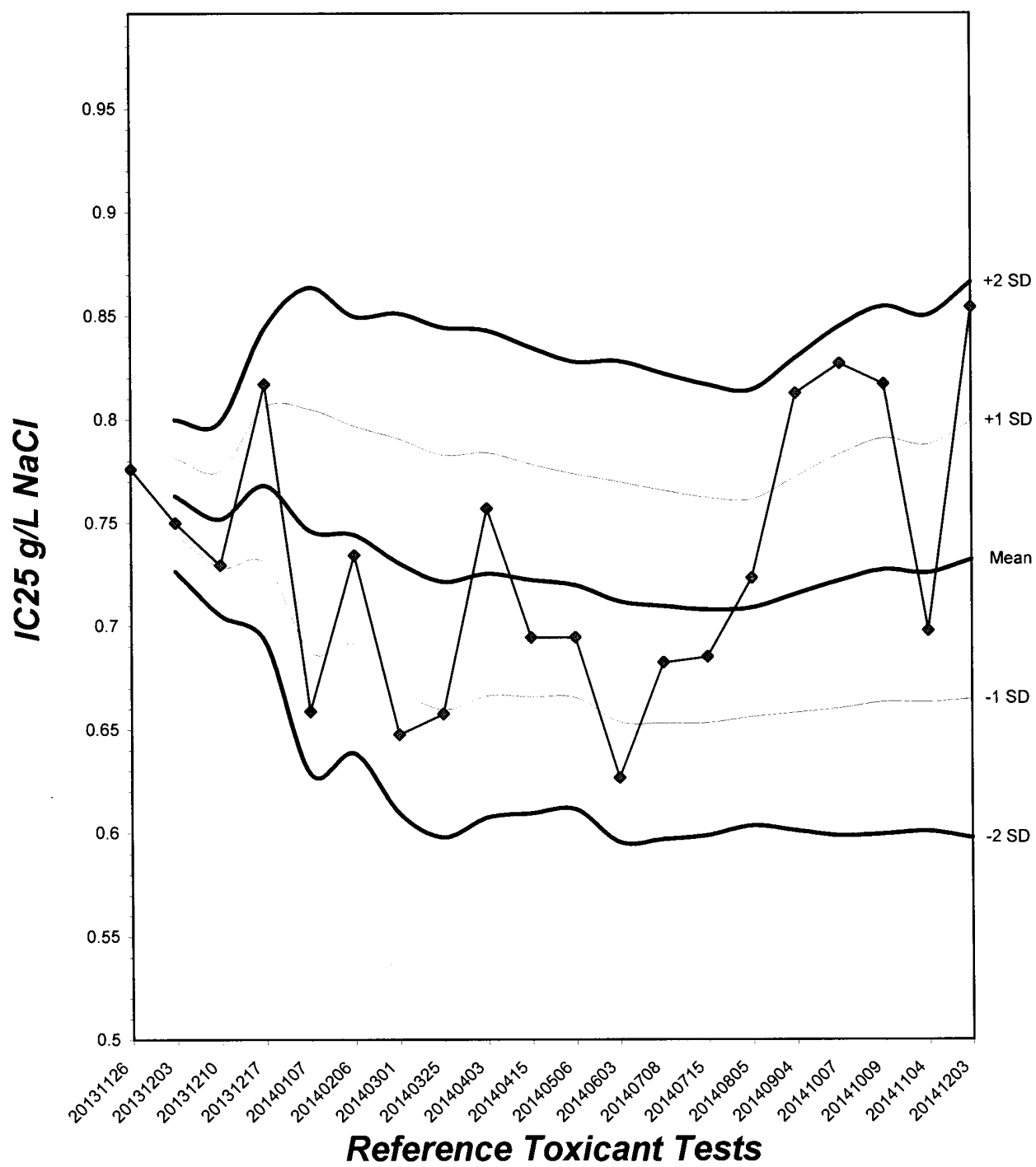
Auxiliary Tests	Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.97547	0.947	0.13437	0.79031						
Bartlett's Test indicates equal variances (p = 0.60)	2.75789	13.2767								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs D-Control	0.5	1	0.70711		2.14743	0.07983	1196.13	4.66444	2.4E-30	4, 45

Point	Linear Interpolation (200 Resamples)				
	gm/L	SD	95% CL		Skew
IC05	0.5486	0.0565	0.4009	0.5821	-3.1255
IC10	0.6250	0.0323	0.5424	0.6654	-0.9276
IC15	0.7014	0.0307	0.6298	0.7507	-0.6185
IC20	0.7778	0.0309	0.7171	0.8343	-0.2564
IC25	0.8542	0.0327	0.7943	0.9179	0.0400
IC40	1.0955	0.0399	1.0217	1.1692	-0.1435
IC50	1.2707	0.0342	1.2093	1.3340	-0.1116



# Ceriodaphnia Chronic Reproduction Laboratory Control Chart

CV% = 9.16



**CERIODAPHNIA DUBIA CHRONIC BIOASSAY**  
**Reference Toxicant - NaCl**  
**Reproduction and Survival Raw Data Sheet**



QA/QC No.: RT-141203

Start Date: 12/03/2014

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	h
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	5	4	4	3	3	3	5	2	3	0	32	10	
	4	8	8	7	6	8	8	6	0	6	5	62	10	
	5	0	14	0	0	0	0	0	6	0	12	32	10	
	6	16	0	17	0	0	14	15	0	0	0	62	10	
	7	18	19	17	17	16	16	18	14	18	16	81	10	
	Total	29	26	28	26	27	25	26	22	27	33	269	10	
0.25 g/l	1	0	0	0	0	0	0	0	0	0	0	10	h	
	2	0	0	0	0	0	0	0	0	0	0	10		
	3	5	4	3	5	3	5	3	5	4	2	39		10
	4	8	10	9	7	9	8	7	9	8	9	84		10
	5	0	16	0	0	0	0	0	16	0	14	46		10
	6	12	0	17	16	18	17	18	0	14	0	112		10
	7	17	18	19	0	19	0	19	19	0	15	0		10
	Total	25	30	29	28	30	30	28	30	26	25	281		10
0.5 g/l	1	0	0	0	0	0	0	0	0	0	0	10	h	
	2	0	0	0	0	0	0	0	0	0	0	10		
	3	4	3	5	4	4	3	4	4	3	2	36		10
	4	8	9	10	9	8	8	10	7	8	7	84		10
	5	0	0	0	0	0	0	0	16	0	14	30		10
	6	16	15	15	14	12	16	15	0	17	0	120		10
	7	14	16	18	17	16	19	18	16	15	0	0		10
	Total	28	27	30	27	24	27	29	27	28	23	270		10

Circled fourth brood not used in statistical analysis.  
 7<sup>th</sup> day only used if <60% of the surviving control females have produced their third brood.

**CERIODAPHNIA DUBIA CHRONIC BIOASSAY**  
**Reference Toxicant - NaCl**  
**Reproduction and Survival Raw Data Sheet**



QA/QC No.: RT-141203

Start Date: 12/03/2014

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
1.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	JK
	2	0	0	0	0	0	0	0	0	0	0	0	10	JK
	3	3	2	5	4	2	0	3	2	4	0	25	10	JK
	4	6	7	6	6	5	3	5	5	7	3	53	10	JK
	5	0	10	0	0	0	0	0	12	0	6	28	10	JK
	6	0	0	0	0	0	0	0	0	0	0	0	10	JK
	7	9	(6)	7	7	14	12	10	(6)	8	7	74	10	JK
	Total	18	19	18	17	21	15	18	19	19	16	180	10	JK
2.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	JK
	2	0	0	0	0	0	0	0	0	0	0	0	10	JK
	3	0	0	2	2	0	0	0	0	0	0	4	10	JK
	4	0	0	0	0	0	0	0	2	0	2	4	10	JK
	5	0	0	0	0	0	0	0	0	0	3	3	10	JK
	6	0	0	0	0	2	2	0	0	0	0	4	10	JK
	7	X	2	0	0	4	0	2	0	0	0	8	9	JK
	Total	0	2	2	2	6	2	2	2	0	5	23	9	JK
4.0 g/l	1	X	X	X	X	X	X	X	X	X	X	0	0	JK
	2	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	-	-	-	-	-	-	-	-	-	-	-
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	0	0	0	0	0	0	0	0	0	0	0	0	JK

Circled fourth brood not used in statistical analysis.  
 7<sup>th</sup> day only used if <60% of the surviving control females have produced their third brood.

# CERIODAPHNIA DUBIA CHRONIC BIOASSAY

## Reference Toxicant - NaCl

### Water Chemistries Raw Data Sheet



QA/QC No.: RT-141203

Start Date: 12/03/2014

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Analyst Initials:		Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Time of Readings:		1400	1400	1400	1400	1400	1400	1400	1400	1400	1330	1330	1330	1330	1330
Control	DO	8.1	8.0	8.3	8.1	8.1	8.0	8.1	8.0	8.2	8.2	8.6	8.1	8.2	8.0
	pH	7.9	7.9	7.8	8.1	8.0	8.0	8.1	8.1	8.1	8.1	8.1	8.0	8.0	8.1
	Temp	25.1	25.0	25.1	25.0	25.1	24.8	25.0	24.9	24.9	25.0	25.1	25.0	25.0	25.1
0.25 g/l	DO	8.2	8.0	8.2	8.1	8.0	8.0	8.1	8.0	8.1	8.2	8.7	8.0	8.2	8.1
	pH	7.8	7.9	7.8	8.0	7.9	8.0	7.9	8.0	8.0	8.1	8.1	8.0	7.8	8.1
	Temp	25.1	25.0	25.1	25.0	25.1	24.9	25.0	24.8	25.0	25.0	25.0	24.9	25.0	25.0
0.5 g/l	DO	8.2	8.1	8.3	8.1	8.2	8.0	8.0	8.0	8.2	8.7	8.3	7.9	8.0	
	pH	7.9	7.9	7.8	8.0	7.9	7.1	8.0	8.1	8.1	8.1	8.0	8.0	7.7	8.0
	Temp	25.1	25.1	25.1	25.0	25.0	24.9	25.0	24.9	25.0	25.0	24.9	24.8	24.8	25.0
1.0 g/l	DO	8.3	8.1	7.8	8.0	8.1	7.6	7.8	7.8	8.0	8.2	8.6	8.2	8.4	8.1
	pH	7.9	7.9	7.9	8.0	7.9	7.9	8.0	8.1	8.0	8.0	8.1	8.0	7.9	8.1
	Temp	25.1	25.0	25.1	24.9	25.0	25.0	25.0	24.9	24.9	25.2	25.0	24.8	25.0	25.0
2.0 g/l	DO	8.4	8.1	8.3	8.0	8.1	7.7	8.1	7.9	8.3	8.0	8.4	8.1	7.8	8.0
	pH	7.9	7.8	7.8	7.8	8.0	8.1	8.0	8.1	8.0	8.0	8.1	8.1	7.8	8.1
	Temp	25.0	25.1	25.1	24.9	25.0	24.8	25.0	24.9	25.0	25.2	24.6	24.8	24.7	25.0
4.0 g/l	DO	8.4	7.8	8.4	-	-	-	-	-	-	-	-	-	-	-
	pH	7.9	7.8	7.8	-	-	-	-	-	-	-	-	-	-	-
	Temp	25.1	25.1	25.2	-	-	-	-	-	-	-	-	-	-	-

Dissolved Oxygen (DO) readings are in mg/l O<sub>2</sub>; Temperature (Temp) readings are in °C.

Additional Parameters	Control			High Concentration		
	Day 1	Day 3	Day 5	Day 1	Day 3	Day 5
Conductivity (µS)	295	310	309	6541	3471	3349
Alkalinity (mg/l CaCO <sub>3</sub> )	56	56	55	56	56	56
Hardness (mg/l CaCO <sub>3</sub> )	93	92	92	92	92	92

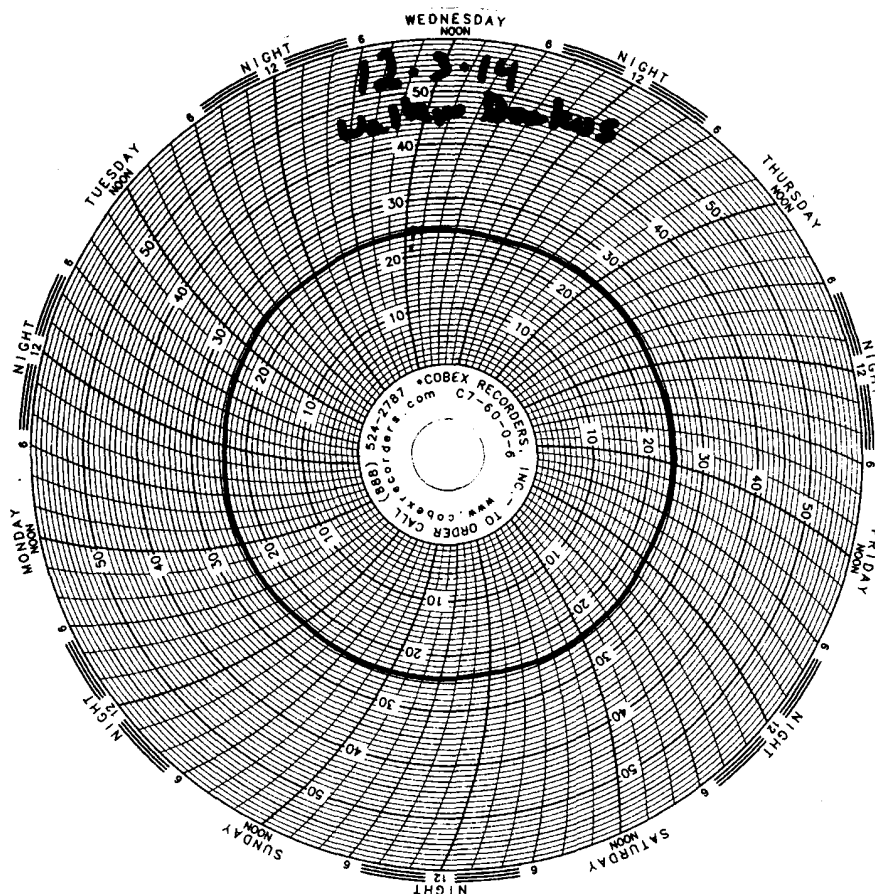
Source of Neonates										
Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	1A	3A	2B	3B	1C	3C	1D	1E	3E	2G

# Test Temperature Chart

Test No: RT-141203

Date Tested: 12/03/14 to 12/10/14

Acceptable Range: 25 +/- 1°C



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THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

### ANALYTICAL REPORT

PROJECT NO. 440-96594-1

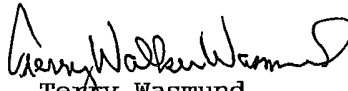
Boeing SSFL Outfall 002

Lot #: H4L160430

Debby Wilson

TestAmerica Irvine  
17461 Derian Ave  
Suite 100  
Irvine, CA 92614-5817

TESTAMERICA LABORATORIES, INC.

  
Terry Wasmund  
Project Manager

January 13, 2015





# ANALYTICAL METHODS SUMMARY

H4L160430

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Dioxins/Furans, HRGC/HRMS	EPA-5 1613B

**References:**

EPA-5 "Method 1613: Tetra- through Octa- Chlorinated Dioxins and Furans by Isotope Dilution, HRGC/HRMS, Revision B", EPA, OCTOBER 1994

**SAMPLE SUMMARY**

H4L160430

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
M5Q2D	001	OUTFALL_002_20141213_COMP	12/13/14	00:44

**NOTE (S) :**

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

## PROJECT NARRATIVE H4L160430

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

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**The original chain of custody documentation is included with this report.**

### Sample Receipt

There were no problems with the condition of the samples received.

### Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

The following flags are used to qualify results for chlorinated dioxin and furan results:

**J** – The reported result is an estimate. The amount reported is below the Minimum Level (ML). The qualitative definition of the ML is “the lowest level at which the analytical system must give a reliable signal and an acceptable calibration point”. The ML was introduced in EPA Methods 1624 and 1625 in 1980 and was promulgated in these methods in 1984 at 40 CFR Part 136, Appendix A. For the purposes of this report, the ML is qualitatively defined as described above, and quantitatively defined as follows:

**Minimum Level:** The concentration or mass of analyte in the sample that corresponds to the lowest calibration level in the initial calibration. It represents a concentration (in the sample extract) equivalent to that of the lowest calibration standard, after corrections for method-specified sample weights, volumes and cleanup procedures has been employed.

Example: The lowest calibration level for TCDD in the initial calibration is 0.5 pg/uL. A mass of 10 pg of 2,3,7,8-TCDD in the sample would result in a concentration of 0.5 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the lowest calibration standard, the 10 pg mass in the sample components is the ML. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The ML for 2,3,7,8-TCDD becomes 100 pg rather than the default of 10 pg.

**E** – The reported result is an estimate. The amount reported is above the Upper Calibration Level (UCL) described below. The quantitative definition of the UCL is listed below:

**Upper Calibration Level:** The concentration or mass of analyte in the sample that corresponds to the highest calibration level in the initial calibration. It is equivalent to the

## PROJECT NARRATIVE H4L160430

concentration of the highest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

Example: The maximum calibration level for TCDD in the initial calibration is 200 pg/uL. A mass of 4000 pg of 2,3,7,8-TCDD in the sampling components would result in a concentration of 200 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the highest calibration standard, the 4000 pg mass in the sample components is the UCL. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The UCL for 2,3,7,8-TCDD becomes 40,000 pg rather than the default of 4000 pg. In this example, all positive 2,3,7,8-TCDD results above 40,000 pg are flagged with an E.

**B** – The analyte is present in the associated method blank at a detectable level. For this analysis, there is no method specified reporting level other than the qualitative criterion that peaks must exhibit a signal-to-noise ratio of  $\geq 2.5$  to 1. Therefore, the presence of any reportable amount of the analyte in the blank will result in a B qualifier on all associated samples.

**Q** – Estimated maximum possible concentration. This qualifier is used when the result is generated from chromatographic data that does not meet all the qualitative criteria for a positive identification given in the method. These criteria include the following:

- Ion abundance ratios must be within specified limits ( $\pm 15\%$  of theoretical ion abundance ratio).
- Retention time criteria (relative to the method-specified isotope labeled retention time standard).
- Co-maximization criterion. The two quantitation ion peaks must reach their maxima within 2 seconds of each other.
- Polychlorinated dibenzofuran purity. No peak can be identified as a polychlorinated dibenzofuran if a polychlorinated diphenyl ether peak maximizes within  $\pm 2$  seconds of the furan candidate.

**S** – Ion suppression evident. The trace indicating the signal from the lock mass of the calibration compound shows a deflection at the retention time of the analyte. This may indicate a temporary suppression of the instrument sensitivity due to a matrix-borne interference.

**C** – Coeluting Isomer. The isomer is known to coelute with another member of its homologue group, or the peak shape is shouldered, indicating the likelihood of a coeluting isomer.

**X** – Other. See explanation in narrative.

Laboratory studies supporting risk assessment and Total Maximum Daily Load (TMDL) evaluations, frequently use qualified data reported as low as the Method Detection Limit (MDL), or the Estimated Detection Limit (EDL). Several of EPA's isotope dilution methods employ the EDL.<sup>1,2,3</sup> The EDL is based on a direct measurement of the signal-to-noise (S/N) ratio acquired

## PROJECT NARRATIVE H4L160430

during sample analysis. This S/N measurement is used to calculate the concentration in the sample corresponding to the minimum intensity of the smallest quantifiable peak. The EDL reflects the amount of the particular analyte which would be required to cause a positive result for the particular analysis. Because the S/N obtained covaries with recovery, instrument sensitivity and sample-specific cleanup efficacy, the EDL is a more valid measure of the sensitivity of the entire analytical process for the specific sample than is an MDL run periodically on a reference matrix.

The EDL is typically calculated according to the following equation:

$$\text{Estimated Detection Limit} = \frac{N \times 2.5 \times Q_{is}}{H_{is} \times RRF \times W \times S}$$

Where:

- N = peak to peak noise of quantitation ion signal in the region of the ion chromatogram where the compound of interest is expected to elute
- H<sub>is</sub> = peak height of quantitation ion for appropriate internal standard
- Q<sub>is</sub> = ng of internal standard added to sample
- RRF = mean relative response factor of compound obtained during initial calibration
- W = amount of sample extracted (grams or liters)
- S = percent solids (optional, if results are requested to be reported on dry weight basis)

(The area of the internal standard is sometimes used instead of height, along with an area-to-height conversion factor.)

This method of estimating the detection limit differs from the MDL in that it does not carry the requirement that the sample be statistically distinguished as being from a contaminated population. As results approach the EDL, the risk of false positives and the analytical uncertainty increase significantly. However, a low false positive well below the ML or MDL is often closer to the true value than an assumption that the target analyte is present at the detection or reporting limits. For relatively clean samples, MDL studies may give an elevated estimate of the detection limit. Additionally, on contaminated samples, the MDL may give a falsely low estimate of the detection limit.

$$\text{Analyte Concentration} = \frac{A_s \times Q_{is}}{A_{is} \times RRF \times W \times S}$$

Where:

- A<sub>s</sub> = Sum of areas of the target peaks
- Q<sub>is</sub> = ng of internal standard added to sample
- A<sub>is</sub> = Sum of areas of the internal standard peaks
- RRF = mean relative response factor of compound obtained during initial calibration
- W = amount of sample extracted (grams or liters)
- S = percent solids (optional, if results are requested to be reported on dry weight basis)

## PROJECT NARRATIVE H4L160430

In sample data, peaks must have an intensity of  $\geq 2.5$  times the height of the background noise in order to be considered. Careful examination of the two equations above reveals that for the concentration of the smallest peak detectable (per the EDL equation) to exactly equal the smallest peaks that are calculated, requires that the average height to area ratio obtained during the calibration must equal the area to height ratio for every peak obtained near 2.5 times the noise. When the area to height ratio on a peak in a sample is less than the average obtained during calibration, the calculated result will correspond to a peak that would have been less than 2.5 times the noise on the calibration. This is the result of normal variability. Because the source methods for the EDL (SW-846 8290 and 8280A) do not provide for censoring of results by any other magnitude standard than being 2.5 times the noise, the laboratory does not censor at the calculated EDL. Hence, detections may be reported below the estimated detection limits.

### Footnotes:

1. Code of Federal Regulations, Part 136, Chapter 1, Appendix 1, October 1994: Method 1613 Tetra- Through Octa-Chlorinated Dioxins and Furans by Isotope Dilution High Resolution Gas Chromatography/High Resolution Mass Spectrometry.
2. U.S. EPA. Test Methods for Evaluating Solid Waste, Volume II, SW-846, Update III, December 1996. Method 8280A: The Analysis of Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/Low Resolution Mass Spectrometry.
3. U.S. EPA. Test Methods for Evaluating Solid Waste, SW-846. Third Edition. March 1995 Method 8290: Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/High Resolution Mass Spectrometry.

## CERTIFICATION SUMMARY

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Knoxville	L-A-B	DoD ELAP		L2311
TestAmerica Knoxville	Arkansas DEQ	State Program	6	88-0688
TestAmerica Knoxville	California	State Program	9	2423
TestAmerica Knoxville	Colorado	State Program	8	N/A
TestAmerica Knoxville	Connecticut	State Program	1	PH-0223
TestAmerica Knoxville	Florida	NELAC	4	E87177
TestAmerica Knoxville	Georgia	State Program	4	906
TestAmerica Knoxville	Hawaii	State Program	9	N/A
TestAmerica Knoxville	Indiana	State Program	5	C-TN-02
TestAmerica Knoxville	Iowa	State Program	7	375
TestAmerica Knoxville	Kansas	NELAC	7	E-10349
TestAmerica Knoxville	Kentucky	State Program	4	90101
TestAmerica Knoxville	Louisiana DOHH	State Program	6	LA110001
TestAmerica Knoxville	Louisiana DEQ	NELAC	6	83979
TestAmerica Knoxville	Maryland	State Program	3	277
TestAmerica Knoxville	Michigan	State Program	5	9933
TestAmerica Knoxville	Minnesota	NELAC	5	047-999-429
TestAmerica Knoxville	Nevada	State Program	9	TN00009
TestAmerica Knoxville	New Jersey	NELAC	2	TN001
TestAmerica Knoxville	New York	NELAC	2	10781
TestAmerica Knoxville	North Carolina DENR	State Program	4	64
TestAmerica Knoxville	North Carolina DHHS	State Program	4	21705
TestAmerica Knoxville	Ohio	OVAP	5	CL0059
TestAmerica Knoxville	Oklahoma	State Program	6	9415
TestAmerica Knoxville	Pennsylvania	NELAC	3	68-00576
TestAmerica Knoxville	South Carolina	State Program	4	84001
TestAmerica Knoxville	Tennessee	State Program	4	2014
TestAmerica Knoxville	Texas	NELAC	6	T104704380-TX
TestAmerica Knoxville	Federal	USDA		P330-11-00035
TestAmerica Knoxville	Utah	NELAC	8	QUAN3
TestAmerica Knoxville	Virginia	NELAC	3	460176
TestAmerica Knoxville	Virginia	State Program	3	165
TestAmerica Knoxville	Washington	State Program	10	C593
TestAmerica Knoxville	West Virginia DEP	State Program	3	345
TestAmerica Knoxville	West Virginia DHHR	State Program	3	9955C

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

# Sample Data Summary



**TestAmerica Irvine**  
**Sample ID: OUTFALL\_008\_20141212**  
**Trace Level Organic Compounds**

<b>Lot - Sample #....:</b> H4L160432 - 001	<b>Work Order #....:</b> M5Q2F1AA	<b>Matrix....:</b> WATER
<b>Date Sampled....:</b> 12/12/14	<b>Date Received....:</b> 12/16/14	<b>Dilution Factor:</b> 1
<b>Prep Date....:</b> 12/17/14	<b>Analysis Date....:</b> 01/12/15	
<b>Prep Batch # ....:</b> 4351027		
<b>Initial Wgt/Vol :</b> 1053 mL	<b>Instrument ID....:</b> M2A	<b>Method:</b> EPA-5 1613B
<b>Analyst ID....:</b> Kathryn B. Lay		

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		0.0000949	0.0000220	ug/L
Total TCDD	ND		0.0000949	0.0000220	ug/L
1,2,3,7,8-PeCDD	ND		0.0000475	0.0000128	ug/L
Total PeCDD	ND		0.0000475	0.0000128	ug/L
1,2,3,4,7,8-HxCDD	ND		0.0000475	0.0000114	ug/L
1,2,3,6,7,8-HxCDD	ND		0.0000475	0.0000121	ug/L
1,2,3,7,8,9-HxCDD	ND		0.0000475	0.0000109	ug/L
Total HxCDD	ND		0.0000475	0.0000115	ug/L
<b>1,2,3,4,6,7,8-HpCDD</b>	<b>0.0000609</b>	<b>Q J</b>	<b>0.0000475</b>	<b>0.0000136</b>	<b>ug/L</b>
<b>Total HpCDD</b>	<b>0.0000139</b>	<b>Q J</b>	<b>0.0000475</b>	<b>0.0000136</b>	<b>ug/L</b>
<b>OCDD</b>	<b>0.0000678</b>	<b>B J</b>	<b>0.0000950</b>	<b>0.0000145</b>	<b>ug/L</b>
2,3,7,8-TCDF	ND		0.0000949	0.0000163	ug/L
Total TCDF	ND		0.0000949	0.0000163	ug/L
1,2,3,7,8-PeCDF	ND		0.0000475	0.00000870	ug/L
2,3,4,7,8-PeCDF	ND		0.0000475	0.00000780	ug/L
Total PeCDF	ND		0.0000475	0.00000820	ug/L
1,2,3,4,7,8-HxCDF	ND		0.0000475	0.00000660	ug/L
1,2,3,6,7,8-HxCDF	ND		0.0000475	0.00000620	ug/L
2,3,4,6,7,8-HxCDF	ND		0.0000475	0.00000570	ug/L
1,2,3,7,8,9-HxCDF	ND		0.0000475	0.00000780	ug/L
<b>Total HxCDF</b>	<b>0.0000173</b>	<b>Q J</b>	<b>0.0000475</b>	<b>0.00000650</b>	<b>ug/L</b>
<b>1,2,3,4,6,7,8-HpCDF</b>	<b>0.0000244</b>	<b>J</b>	<b>0.0000475</b>	<b>0.00000960</b>	<b>ug/L</b>
1,2,3,4,7,8,9-HpCDF	ND		0.0000475	0.0000119	ug/L
<b>Total HpCDF</b>	<b>0.0000244</b>	<b>J</b>	<b>0.0000475</b>	<b>0.0000106</b>	<b>ug/L</b>
<b>OCDF</b>	<b>0.0000296</b>	<b>Q J</b>	<b>0.0000950</b>	<b>0.0000109</b>	<b>ug/L</b>

**TestAmerica Irvine**  
**Sample ID: OUTFALL\_008\_20141212**  
**Trace Level Organic Compounds**

<b>Lot - Sample #....:</b>	H4L160432 - 001	<b>Work Order #....:</b>	M5Q2F1AA	<b>Matrix....:</b>	WATER
<b>Date Sampled....:</b>	12/12/14	<b>Date Received....:</b>	12/16/14	<b>Dilution Factor:</b>	1
<b>Prep Date....:</b>	12/17/14	<b>Analysis Date....:</b>	01/12/15		
<b>Prep Batch # ....:</b>	4351027				
<b>Initial Wgt/Vol :</b>	1053 mL	<b>Instrument ID....:</b>	M2A	<b>Method:</b>	EPA-5 1613B
<b>Analyst ID....:</b>	Kathryn B. Lay				

<u>INTERNAL STANDARDS</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C-2,3,7,8-TCDD	86	25 - 164
13C-1,2,3,7,8-PeCDD	95	25 - 181
13C-1,2,3,4,7,8-HxCDD	85	32 - 141
13C-1,2,3,6,7,8-HxCDD	91	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	94	23 - 140
13C-OCDD	100	17 - 157
13C-2,3,7,8-TCDF	76	24 - 169
13C-1,2,3,7,8-PeCDF	87	24 - 185
13C-2,3,4,7,8-PeCDF	84	21 - 178
13C-1,2,3,4,7,8-HxCDF	74	26 - 152
13C-1,2,3,6,7,8-HxCDF	80	26 - 123
13C-2,3,4,6,7,8-HxCDF	89	28 - 136
13C-1,2,3,7,8,9-HxCDF	89	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	81	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	88	26 - 138
13C-OCDF	100	17 - 157

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
37Cl4-2,3,7,8-TCDD	97	35 - 197

**QUALIFIERS**

- B Method blank contamination. The associated method blank contains the target analyte at a reportable level.  
 J Estimated Result.  
 Q Estimated maximum possible concentration (EMPC).

**Method Blank Report**  
**Trace Level Organic Compounds**

Lot - Sample #....: H4L170000 - 027B      Work Order #....: M5RCM1AA      Matrix....: WATER  
 Dilution Factor: 1  
 Prep Date....: 12/17/14      Analysis Date....: 01/10/15  
 Prep Batch # ....: 4351027  
 Initial Wgt/Vol : 1000 mL      Instrument ID....: M2A      Method: EPA-5 1613B  
 Analyst ID....: Patricia(Trish) M. Parsly

PARAMETER	RESULT	MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND	0.0000100	0.00000589	ug/L
Total TCDD	ND	0.0000100	0.00000589	ug/L
1,2,3,7,8-PeCDD	ND	0.0000500	0.00000301	ug/L
Total PeCDD	ND	0.0000500	0.00000301	ug/L
1,2,3,4,7,8-HxCDD	ND	0.0000500	0.00000263	ug/L
1,2,3,6,7,8-HxCDD	ND	0.0000500	0.00000268	ug/L
1,2,3,7,8,9-HxCDD	ND	0.0000500	0.00000247	ug/L
Total HxCDD	ND	0.0000500	0.00000259	ug/L
1,2,3,4,6,7,8-HpCDD	ND	0.0000500	0.00000302	ug/L
Total HpCDD	ND	0.0000500	0.00000302	ug/L
<b>OCDD</b>	<b>0.0000276      J</b>	<b>0.000100</b>	<b>0.00000427</b>	<b>ug/L</b>
2,3,7,8-TCDF	ND	0.0000100	0.00000442	ug/L
Total TCDF	ND	0.0000100	0.00000442	ug/L
1,2,3,7,8-PeCDF	ND	0.0000500	0.00000249	ug/L
2,3,4,7,8-PeCDF	ND	0.0000500	0.00000223	ug/L
Total PeCDF	ND	0.0000500	0.00000235	ug/L
1,2,3,4,7,8-HxCDF	ND	0.0000500	0.00000157	ug/L
1,2,3,6,7,8-HxCDF	ND	0.0000500	0.00000170	ug/L
2,3,4,6,7,8-HxCDF	ND	0.0000500	0.00000148	ug/L
1,2,3,7,8,9-HxCDF	ND	0.0000500	0.00000202	ug/L
Total HxCDF	ND	0.0000500	0.00000167	ug/L
1,2,3,4,6,7,8-HpCDF	ND	0.0000500	0.00000229	ug/L
1,2,3,4,7,8,9-HpCDF	ND	0.0000500	0.00000302	ug/L
Total HpCDF	ND	0.0000500	0.00000261	ug/L
OCDF	ND	0.000100	0.00000307	ug/L

**Method Blank Report**  
**Trace Level Organic Compounds**

<b>Lot - Sample #....:</b> H4L170000 - 027B	<b>Work Order #....:</b> M5RCM1AA	<b>Matrix....:</b> WATER
<b>Dilution Factor:</b> 1		
<b>Prep Date....:</b> 12/17/14	<b>Analysis Date....:</b> 01/10/15	
<b>Prep Batch # ....:</b> 4351027		
<b>Initial Wgt/Vol :</b> 1000 mL	<b>Instrument ID....:</b> M2A	<b>Method:</b> EPA-5 1613B
<b>Analyst ID....:</b> Patricia(Trish) M. Parsly		

<u>INTERNAL STANDARDS</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C-2,3,7,8-TCDD	92	25 - 164
13C-1,2,3,7,8-PeCDD	87	25 - 181
13C-1,2,3,4,7,8-HxCDD	92	32 - 141
13C-1,2,3,6,7,8-HxCDD	94	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	93	23 - 140
13C-OCDD	96	17 - 157
13C-2,3,7,8-TCDF	77	24 - 169
13C-1,2,3,7,8-PeCDF	80	24 - 185
13C-2,3,4,7,8-PeCDF	78	21 - 178
13C-1,2,3,4,7,8-HxCDF	72	26 - 152
13C-1,2,3,6,7,8-HxCDF	75	26 - 123
13C-2,3,4,6,7,8-HxCDF	84	28 - 136
13C-1,2,3,7,8,9-HxCDF	79	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	79	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	86	26 - 138
13C-OCDF	93	17 - 157

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
37Cl4-2,3,7,8-TCDD	104	35 - 197

**QUALIFIERS**  
J Estimated Result.

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot # ...: H4L160432      Work Order # ...: M5RCM1AC-LCS      Matrix .....: WATER  
 LCS Lot-Sample# : H4L170000 - 027  
 Prep Date .....: 12/17/14      Analysis Date ..: 01/07/15  
 Prep Batch # ...: 4351027  
 Dilution Factor : 1  
 Analyst ID.....: Patricia(Trish) M. Parsl      Instrument ID.: M2A      Method.....: EPA-5 1613B  
 Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RECOVERY LIMITS
2,3,7,8-TCDD	0.0002	0.0002	ug/L	100	(67 - 158)
1,2,3,7,8-PeCDD	0.0010	0.0010	ug/L	100	(70 - 142)
1,2,3,4,7,8-HxCDD	0.0010	0.0009	ug/L	95	(70 - 164)
1,2,3,6,7,8-HxCDD	0.0010	0.0009	ug/L	95	(76 - 134)
1,2,3,7,8,9-HxCDD	0.0010	0.0009	ug/L	98	(64 - 162)
1,2,3,4,6,7,8-HpCDD	0.0010	0.0009	ug/L	93	(70 - 140)
OCDD	0.0020	0.0017	ug/L	90 B	(78 - 144)
2,3,7,8-TCDF	0.0002	0.0002	ug/L	100	(75 - 158)
1,2,3,7,8-PeCDF	0.0010	0.0009	ug/L	91	(80 - 134)
2,3,4,7,8-PeCDF	0.0010	0.0009	ug/L	95	(68 - 160)
1,2,3,4,7,8-HxCDF	0.0010	0.0009	ug/L	95	(72 - 134)
1,2,3,6,7,8-HxCDF	0.0010	0.0009	ug/L	96	(84 - 130)
2,3,4,6,7,8-HxCDF	0.0010	0.0009	ug/L	95	(70 - 156)
1,2,3,7,8,9-HxCDF	0.0010	0.0009	ug/L	94	(78 - 130)
1,2,3,4,6,7,8-HpCDF	0.0010	0.0009	ug/L	92	(82 - 122)
1,2,3,4,7,8,9-HpCDF	0.0010	0.0009	ug/L	95	(78 - 138)
OCDF	0.0020	0.0018	ug/L	93	(63 - 170)

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	91	(20 - 175)
13C-1,2,3,7,8-PeCDD	95	(21 - 227)
13C-1,2,3,4,7,8-HxCDD	93	(21 - 193)
13C-1,2,3,6,7,8-HxCDD	88	(25 - 163)
13C-1,2,3,4,6,7,8-HpCDD	90	(26 - 166)
13C-OCDD	91	(13 - 199)
13C-2,3,7,8-TCDF	83	(22 - 152)
13C-1,2,3,7,8-PeCDF	88	(21 - 192)
13C-2,3,4,7,8-PeCDF	85	(13 - 328)
13C-1,2,3,4,7,8-HxCDF	78	(19 - 202)
13C-1,2,3,6,7,8-HxCDF	79	(21 - 159)
13C-2,3,4,6,7,8-HxCDF	84	(22 - 176)
13C-1,2,3,7,8,9-HxCDF	85	(17 - 205)
13C-1,2,3,4,6,7,8-HpCDF	80	(21 - 158)
13C-1,2,3,4,7,8,9-HpCDF	83	(20 - 186)
13C-OCDF	83	(13 - 199)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	105	(31 - 191)



### LABORATORY CONTROL SAMPLE DATA REPORT

#### Trace Level Organic Compounds

**Notes:**

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Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

**B** Method blank contamination. The associated method blank contains the target analyte at a reportable level.

# Sample Receipt Documentation





TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Lot Number: 14-160130

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Do sample container labels match COC? (IDs, Dates, Times)				<input type="checkbox"/> 1a Do not match COC <input type="checkbox"/> 1b Incomplete information <input type="checkbox"/> 1c Marking smeared <input type="checkbox"/> 1d Label torn <input type="checkbox"/> 1e No label <input type="checkbox"/> 1f COC not received <input type="checkbox"/> 1g Other:	
2. Is the cooler temperature within limits? (> freezing temp. of water to 6°C, VOST: 10°C) Thermometer ID : <u>5C57</u> Correction factor: <u>-0.1</u>	✓			<input type="checkbox"/> 2a Temp Blank = _____ <input type="checkbox"/> 2b Cooler Temp = _____ <input type="checkbox"/> 2c Cooling initiated for recently collected samples, ice present. <input type="checkbox"/> 3a See box 3A for pH Preservation <input type="checkbox"/> 3b Other:	
3. Were samples received with correct chemical preservative (excluding Encore)?			✓		
4. Were custody seals present/intact on cooler and/or containers?	✓			<input type="checkbox"/> 4a Not present <input type="checkbox"/> 4b Not intact <input type="checkbox"/> 4c Other:	
5. Were all of the samples listed on the COC received?	✓			<input type="checkbox"/> 5a Samples received-not on COC <input type="checkbox"/> 5b Samples not received-on COC	
6. Were all of the sample containers received intact?	✓			<input type="checkbox"/> 6a Leaking <input type="checkbox"/> 6b Broken	
7. Were VOA samples received without headspace?	✓			<input type="checkbox"/> 7a Headspace (VOA only)	
8. Were samples received in appropriate containers?	✓		✓	<input type="checkbox"/> 8a Improper container	
9. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number: <u>4252 2017/07</u>	✓			<input type="checkbox"/> 9a Could not be determined due to matrix interference	
10. Were samples received within holding time?	✓			<input type="checkbox"/> 10a Holding time expired	
11. For rad samples, was sample activity info. provided?			✓	<input type="checkbox"/> Incomplete information	
12. For 1613B water samples is pH<9?	✓			If no, was pH adjusted to pH 7 - 9 with sulfuric acid? _____	pH test strip lot number: <u>HC425511</u>
13. Are the shipping containers intact?	✓			<input type="checkbox"/> 13a Leaking <input type="checkbox"/> 13b Other:	Box 3A: pH Preservation Box 9A: Residual Chlorine
14. Was COC relinquished? (Signed/Dated/Timed)	✓			<input type="checkbox"/> 14a Not relinquished	Preservative: _____
15. Are tests/parameters listed for each sample?	✓			<input type="checkbox"/> 15a Incomplete information	Lot Number: _____
16. Is the matrix of the samples noted?	✓			<input type="checkbox"/> 15a Incomplete information	Exp Date: _____
17. Is the date/time of sample collection noted?	✓			<input type="checkbox"/> 15a Incomplete information	Analyst: _____
18. Is the client and project name/# identified?	✓			<input type="checkbox"/> 15a Incomplete information	Date: _____
19. Was the sampler identified on the COC?	✓			<input type="checkbox"/> 19a Other	Time: _____
Quote #: _____				PM Instructions: _____	

Sample Receiving Associate: Ryan Healy Date: 12/16/14





CHAIN OF CUSTODY FORM

<p>Client Name/Address: Haley &amp; Aldrich 9040 Friars Road Suite 220 San Diego, CA 92108-5860</p>		<p>Project: Boeing-SSF/NPDES Annual and Routine Outfall 002 GRAB</p>		<p>Field Readings Field readings: (include units) <b>U44VAADK</b> Time of readings <b>1115</b></p>		<p>Meter serial # <b>U44VAADK</b></p>	
<p>Test America Contact: Debby Wilson</p>		<p>Barcode: 440-96482 Chain of Custody</p>		<p>DO: <b>7.72</b> mg/L pH: <b>6.87</b> pH unit Temp: <b>13.6</b> C/F</p>		<p>Field readings QC Checked by: <b>JL Anitua-Rice</b> Date/Time: <b>12-12-2014 / 12:40</b></p>	
<p>Project Manager: Nancy Gardiner Phone Number: 619.285.7132, 858.337.4081 (cell)</p>		<p>Field Manager: Jeff Bannon 818.350.7340, 818.414.5608 (cell)</p>		<p>TRC: <b>0.042</b> mg/L</p>		<p>Comments</p>	
<p>Sample Description</p>		<p>Container Type</p>		<p>Sample I.D.</p>		<p>Sampling Date/Time</p>	
<p>Outfall 002</p>		<p>W VOA 5</p>		<p>Outfall 002_2014</p>		<p>12-12-14 / 0855</p>	
<p>Outfall 002</p>		<p>W 1L Amber 2</p>		<p>Outfall 002_2014</p>		<p>12-12-14 / 1115</p>	
<p>Outfall 002</p>		<p>W 1L Poly 1</p>		<p>Outfall 002_2014</p>		<p>12-12-14 / 1115</p>	
<p>Outfall 002</p>		<p>W 500 mL Poly 2</p>		<p>Outfall 002_2014</p>		<p>12-12-14 / 1115</p>	
<p>Outfall 002</p>		<p>W VOA 3</p>		<p>Outfall 002_2014</p>		<p>12-12-14 / 1115</p>	
<p>Outfall 002</p>		<p>W VOA 1</p>		<p>Outfall 002_2014</p>		<p>12-12-14 / 1115</p>	
<p>Outfall 002</p>		<p>W 1L Amber 1</p>		<p>Outfall 002_2014</p>		<p>12-12-14 / 1115</p>	
<p>Outfall 002</p>		<p>W 125mL Poly 1</p>		<p>Outfall 002_2014</p>		<p>12-12-14 / 1115</p>	
<p>Outfall 002</p>		<p>W 125mL Poly 1</p>		<p>Outfall 002_2014</p>		<p>12-12-14 / 1115</p>	
<p>Outfall 002</p>		<p>W 1 Gal Cube</p>		<p>Outfall 002_2014</p>		<p>12-12-14 / 1115</p>	
<p>Outfall 002 Dup</p>		<p>W 1L Amber 1</p>		<p>Outfall 002_2014</p>		<p>12-12-14 / 1115</p>	
<p>Trip Blanks</p>		<p>W VOA 3</p>		<p>Trip Blanks</p>		<p>12-12-14 / 1115</p>	
<p>Trip Blanks</p>		<p>W VOA 3</p>		<p>Trip Blanks</p>		<p>12-12-14 / 1115</p>	

These Samples are the Grab Portion of Outfall 002 for this storm event. Composite samples will follow and are to be added to this work order.

Legend: R=Routine, A=Annual, Q=Quarterly  
 Received By: **Shahid Nabi** Date/Time: **12/12/14 16:30**  
 Relinquished By: **Debra Benson** Date/Time: **12/12/14 1440**  
 Relinquished By: **Shahid Nabi** Date/Time: **12/12/14 16:30**



4.41/3.6 #73  
1-31/05

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 9040 Friars Road Suite 220 San Diego, CA 92108-5860		Project: Boeing-SSFL NPDES Annual and Routine Outfall 002 COMPOSITE		Phone Number: 619.285.7132, 858.337.4061 (cell) Field Manager: Jeff Bamton 818.350.7340, 818.414.5608 (cell)		Project Manager: Nancy Gardiner Sampler: <b>B. Benson</b> <b>C. Johnson</b>		Test America Contact: Debby Wilson																					
Sample Description	Sample Matrix	Container Type	# of Cont.	Sample ID	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Cu, Pb, Hg, Cd, Se, Zn, Fe	TCDD (and all congeners)	BOD <sub>5</sub> (20 degrees C)	Surfactants (MBAS)	Cr, SO <sub>4</sub> , NO <sub>3</sub> -NO <sub>2</sub> -N, Perchlorate	Nitrate N, Nitrite-N	Turbidity, TDS	TSS	Ammonia-N (3502)	Alpha BHC (608)	2,4,6 TCP, 2,4 Dinitrotoleune, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs 625)	Total Recoverable Metals: Cu, Pb, Hg, Ag, Tl, Fe, Mn, Sb, As, Be, Cd, Cr, Ni, Se, Ag, Tl, Zn, Co, V, Hardness as CaCO <sub>3</sub>	Fluoride	Pesticides + PP	PP	Comments						
Outfall 002	W	1L Poly	1	Outfall 002_2014 12.13_Comp	12/13/14/0014	HNO <sub>3</sub>	6A	X																					
Outfall 002	W	1L Amber	2			None	7A, 7B				X																		
Outfall 002	W	1L Poly	1			None	8				X																		
Outfall 002	W	500 mL Poly	2			None	9A, 9B					X																	
Outfall 002	W	500 mL Poly	2			None	10A, 10B						X																
Outfall 002	W	500 mL Poly	1			None	11							X															
Outfall 002	W	500 mL Poly	1			None	12A-12B								X														
Outfall 002	W	500 mL Poly	1			H <sub>2</sub> SO <sub>4</sub>	13									X													
Outfall 002	W	1L Amber	2			None	14A, 14B										X												
Outfall 002	W	1L Amber	2			None	15A, 15B													X									
Outfall 002	W	1L Poly	1			None	12A, 12B																						

COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 002 for this storm event.  
These must be added to the same work order for COC Page 1 of 3 for Outfall 002 for the same event.

Legend: R=Routine, A=Annual, Q=Quarterly

Relinquished By: <i>Shafiq Nabi</i>	Date/Time: 12/13/14 10:26	Received By: <i>Shafiq Nabi</i>	Date/Time: 12/13/14 12:13
Relinquished By: <i>Shafiq Nabi</i>	Date/Time: 12/13/14 12:13	Received By: <i>Shafiq Nabi</i>	Date/Time: 12/13/14 12:13

Turn-around time (Check): 24 Hour  72 Hour  10 Day   
 Sample Integrity (Check): Intact  On Ice  Normal

Data Requirement (Check): No Level IV  All Level IV  NPDES Level IV

WTC Shafiq Nabi APR

RG4 = 3.4/2.6°C  
= 2.8/2.0°C



440-96594 Chain of Custody



CHAIN OF CUSTODY FORM

Client Name/Address:		Project:		R/Q		R/A/Q		A		A		A		A		A			
Sample Description		Sample Matrix	Container Type	# of Cont.	Sample I.D.	Sampling Date/Time	Preservative	Bottle #	Zn, Fe	Total Dissolved Metals: Cu, Pb, Hg, Cd, Se	Chromium Toxicity	Cyanide	1,4-Dioxane	Total Organic Carbon	PbCs	Monomethyl Hydrazine	Cr (VI) (218 g)	Total Dissolved Metals: Cu, Pb, Hg, B, Ba, Fe, Mn, Sb, As, Be, Cd, Cr, Ni, Se, Ag, Tl, Zn, Co, V, Hardness as CaCO <sub>3</sub>	Comments
Outfall 002		W	1L Poly	1			None	16 /	X									X	Filtr win 24hrs of receipt at lab, if R and A metals overlap, analyze once
Outfall 002		W	2.5 Gal Cube	1			None	17A ✓											Unfiltered and unpreserved analysis
Outfall 002		W	500 mL Amber	1			None	17B ✓											Only test if first or second rain events of the year
Outfall 002		W	1 Gal Cube	1			None	18 ✓			X								
Outfall 002		W	500 mL Poly	1			NaOH	19 ✓											
Outfall 002		W	VOCs	3			HCl	24A, 24B, 24C ✓					X						
Outfall 002		W	250 mL Glass	1			HCl	25 ✓					X						
Outfall 002		W	1L Amber	2			None	27A, 27B ✓						X					
Outfall 002		W	1L Amber	2			None	28A, 28B ✓							X				
Outfall 002		W	500 mL Poly	1			None	31 ✓									X		

Outfall 002\_2014 1213 - Comp  
2/12/14/0014

Received By: Shahid NABI Date/Time: 12/13/14 10:26  
 Received By: Shahid NABI Date/Time: 12/13/14 12:25  
 Received By: Shahid NABI Date/Time: 12/13/14 12:25

Legend: R-Routine, A-Annual, Q-Quarterly

Turn-around time (Check)  
 24 Hour \_\_\_ 48 Hour \_\_\_ 72 Hour \_\_\_ 10 Day \_\_\_  
 Sample Integrity (Check)  
 Intact  On Ice   
 Date Requirements (Check)  
 No Level IV \_\_\_ All Level IV \_\_\_ NPDES Level IV \_\_\_

WTC Shahid NABI AF

IR 6A = 3.4/9.6°C  
2.8/2.0°C



## Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-96448-1

**Login Number: 96448**

**List Source: TestAmerica Irvine**

**List Number: 1**

**Creator: Blocker, Kristina M**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	Refer to Job Narrative for details.
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-96448-1

**Login Number: 96482**

**List Number: 1**

**Creator: Blocker, Kristina M**

**List Source: TestAmerica Irvine**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-96448-1

**Login Number: 96594**

**List Number: 1**

**Creator: Kim, Guerry**

**List Source: TestAmerica Irvine**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-96448-1

**Login Number: 96594**

**List Number: 3**

**Creator: Conquest, Tyler W**

**List Source: TestAmerica Denver**

**List Creation: 12/17/14 11:55 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	False	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-96448-1

**Login Number: 96594**

**List Number: 2**

**Creator: Clarke, Jill C**

**List Source: TestAmerica St. Louis**

**List Creation: 12/16/14 01:33 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.4, 4.6, 5.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

### Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (40-110)		
160-9831-E-8-B DU	Duplicate	109		
440-96594-1	Outfall002_20141213_Comp	90.0		
440-96594-2	Trip_Blank	102		
LCS 160-164103/2-A	Lab Control Sample	96.5		
MB 160-164103/1-A	Method Blank	96.2		

#### Tracer/Carrier Legend

Ba = Ba Carrier

## Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

### Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)		
440-96594-1	Outfall002_20141213_Comp	97.9	87.1		
440-96594-2	Trip_Blank	97.9	88.2		
LCS 160-168188/2-A	Lab Control Sample	105	85.6		
LCSD 160-168188/3-A	Lab Control Sample Dup	104	87.9		
MB 160-168188/1-A	Method Blank	102	89.0		

#### Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

## Method: 905 - Strontium-90 (GFPC)

Matrix: Water

Prep Type: Total/NA

### Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Sr (C) (40-110)	Y (40-110)		
440-96594-1	Outfall002_20141213_Comp	72.6	92.3		
440-96594-2	Trip_Blank	89.1	92.7		
440-96594-2 DU	Trip_Blank	88.2	90.8		
LCS 160-165620/2-A	Lab Control Sample	88.6	92.7		
MB 160-165620/1-A	Method Blank	90.0	89.3		

#### Tracer/Carrier Legend

Sr (C) = Sr Carrier

Y = Y Carrier

## Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water

Prep Type: Total/NA

### Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	U-232 (30-110)		
440-97211-A-2-D DU	Duplicate	31.1		
LCS 160-165361/2-A	Lab Control Sample	83.7		
MB 160-165361/1-A	Method Blank	87.1		

TestAmerica Irvine

# Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.

Project/Site: Boeing SSFL NPDES Annual and Routine 002

TestAmerica Job ID: 440-96448-1

## Tracer/Carrier Legend

U-232 = Uranium-232

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# DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-97209-1

Prepared by

MEC<sup>x</sup>  
12269 East Vassar Drive  
Aurora, CO 80014

## I. INTRODUCTION

Task Order Title: Haley & Aldrich Boeing SSFL Stormwater  
 Contract Task Order: 1272.003H.01 001  
 Sample Delivery Group: 440-97209-1  
 Project Manager: K. Miller  
 Matrix: Water  
 QC Level: IV  
 No. of Samples: 2  
 No. of Reanalyses/Dilutions: 0  
 Laboratory: TestAmerica Irvine

**Table 1. Sample Identification**

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix</i>	<i>Collection</i>	<i>Method</i>
Outfall002_20141217_ Grab	440-97227-1	N/A	Water	12/17/2014 8:02:00 AM	E120.1, SM2540F, SM9221E, SM9221F
Outfall002_20141218_ Comp	440-97209-1	N/A	Water	12/18/2014 1:16:00 PM	E1613B, E180.1, E200.8, E300, E300- 28Day, E900, E901.1, E903.0, E904.0, E905.0, E906, HASL- 300 U Mod, SM2540C/D, SM4500- NH3G, SM5210B, SM5540

## II. Sample Management

No anomalies were observed regarding sample management. A portion of the samples were received below the temperature limits; however, as the case narrative did not note the samples were frozen or damaged, no qualifications were applied. The remaining samples were received within the temperature limits of 4°C ±2°C. The samples in this SDG were received at the laboratory on ice. According to the case narrative for this SDG, the sample containers were received intact and properly preserved, as applicable. No COC transferring the samples to TestAmerica-St. Louis was provided. The COCs were appropriately signed and dated by field and laboratory personnel. The samples were transferred to TestAmerica-Irvine via courier. The laboratory receipt information indicated a custody seal was not present on the cooler received at TestAmerica Knoxville. Custody seals were intact at the remaining laboratories.

Upon receipt at TestAmerica-Irvine, the laboratory prepared the radionuclide samples and a blank that accompanied the samples to TestAmerica-St. Louis.

### 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 or PCB congeners.	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 analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+	Not applicable	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential positive bias.
J-	Not applicable	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential negative bias.
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.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.

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Qualifier	Organics	Inorganics
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.
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.

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### 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.
L1	LCS/LCSD RPD was outside control limits.	LSC/LSCD RPD was outside control limits.
Q	MS/MSD recovery was poor.	MS recovery was poor.
Q1	MS/MSD RPD was outside control limits.	MS/MSD RPD was outside control limits.
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.	ICPMS tune was not compliant.
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.

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Qualifier	Organics	Inorganics
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 1613B—Dioxin/Furans

Reviewed By: L. Calvin

Date Reviewed: January 23, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613B*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review (2011)*.

- 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 analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. 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 15 native compounds (calibration by isotope dilution) and  $\leq 35\%$  for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613B control limits for all standards.
  - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of the analytical sequence. The VER was acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613B. The ion abundance ratios and relative retention times were within the method control limits.
- Blanks: The method blank had a detect below the reporting limit for OCDD at 0.00000202  $\mu\text{g/L}$ . The sample result for OCDD was qualified as nondetected, "U," at the level of contamination. The method blank had no other detects above the estimated detection limit (EDL).

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613B.
- 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: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613B.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613B. Isomer 2,3,7,8-TCDF was not detected in the initial analysis of the sample; therefore, confirmation analysis was not necessary.
- 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. Any detects below the laboratory lower calibration level were qualified as estimated, “J.” Any detects between the EDL and the reporting limit (RL) were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Nondetects are valid to the EDL.

## B. EPA METHOD 200.8—Metals

Reviewed By: M. Cherny

Date Reviewed: January 19, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *EPA Method 200.8* and the *National Functional Guidelines for Inorganic Data Review (2014)*.

- Holding Times: The analytical holding time, six months, was met.
- Calibration: The initial and continuing calibration recoveries were within 90-110% and the CRI recoveries were within the control limits of 70-130%.
- Blanks: Dissolved iron was detected in a bracketing CCB at 8.22 µg/L; therefore, dissolved iron detected in the sample was qualified as nondetected, “U,” at the level of

contamination. Total recoverable copper was detected in the method blank at 1.27 µg/L; therefore, total recoverable copper detected in the sample was qualified as nondetected, "U," at the level of contamination. Method blanks and CCBs had no other detects.

- Interference Check Samples: Recoveries were within 80-120%. Analytes in the table below were qualified as estimated, "UJ", for nondetects. There were no other detects in the ICSA above the certified impurity levels.

Analyte	Detect amount (µg/L)
Dissolved selenium	-0.848
Total recoverable selenium	-0.779

- Blank Spikes and Laboratory Control Samples: Recoveries were within the method control limits of 85-115% and the RPDs were ≤20%.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for the total analytes. The recoveries were within method control limits of 70-130% and the RPDs were within the laboratory control limit of ≤20%.
- Serial Dilution: No serial dilution analyses were performed on the sample in this SDG.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and 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 19, 2015

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.0, 904.0, 905.0, and 906.0, HASL-300*, and the *National Functional Guidelines for Inorganic Data Review (2014)*.

- **Holding Times:** The tritium sample was analyzed within 180 days of collection. Aliquots for the remaining analytes were preserved within the five-day holding time.
- **Calibration:** The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

The gross alpha and radium-226 detector efficiencies were less than 20%; therefore, gross alpha and radium-226 in the sample, both nondetects, were qualified as estimated, "UJ." The remaining detector efficiencies were greater than 20%.

All initial and annual calibration verifications were acceptable with mean recoveries within 90-110%. All carrier recoveries were within 40-110%. The gamma spectroscopy analytes were determined at the maximum photopeak energy.

- **Blanks:** There were no analytes detected in the method blanks or the blank prepared by TestAmerica-Irvine.
- **Blank Spikes and Laboratory Control Samples:** The recoveries were within laboratory-established control limits.
- **Laboratory Duplicates:** Laboratory duplicate analyses were performed on the sample in this SDG for cesium-137, potassium-40, gross alpha and gross beta. The relative error ratios (RERs) were within the laboratory control limit of  $\leq 1$ .
- **Matrix Spike/Matrix Spike Duplicate:** Matrix spike analyses were performed on the sample in this SDG for gross alpha and gross beta. The recoveries were within the laboratory control limits. For the remaining methods, accuracy was evaluated based on LCS results.
- **Sample Result Verification:** An EPA Level IV review was performed for the sample in this data package. The sample results and MDCs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDC and the reporting limit (RL) were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDC.
- **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.

#### **D. Standard Method SM9221E, SM9221F - Fecal Coliform and e-Coli**

Reviewed By: P. Meeks

Date Reviewed: January 19, 2015

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC<sup>x</sup> Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *Standard Method for the Examination of Water and Wastewater Method SM9221E and SM9221F*, and the *National Functional Guidelines for Inorganic Data Review (2014)*.

- Holding Times: The e. coli and fecal coliform analytical holding times are listed as immediate. As the sample was prepared on the day they were collected, no qualifications were required.
- Calibration: Calibration is not applicable to these methods.
- Blanks: Blanks are not applicable to these methods.
- Blank Spikes and Laboratory Control Samples: The LCS is not applicable to these methods.
- Laboratory Duplicates: The sample in this SDG was analyzed in duplicate. The laboratory reported the average of the two sets of results.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses are not applicable to these methods.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-,” otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and 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.

## E. VARIOUS EPA METHODS—General Chemistry

Reviewed By: M. Cherny and P. Meeks  
Date Reviewed: January 19 & 21, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in *EPA Methods 120.1, 180.1 and 300.0, Standard Methods for the Examination of Water and Wastewater Methods 2540C, 2540D, 2540F, 4500 NH3 G, 5210B, and 5540*, and the *National Functional Guidelines for Inorganic Data Review (2014)*.

- Holding Times: The BOD analysis was started within 48 hours of collection. The remaining analyses were performed within the holding times, as listed below.
  - Turbidity, settleable solids, MBAS, nitrate, nitrite – 48 hours
  - Conductivity, ammonia– 28 days
  - TDS, TSS – 7 days
- Calibration: Linear regression r values were within the control limit of  $\geq 0.995$ . The closing ammonia CCV was recovered at 111%; therefore, ammonia detected in the sample was qualified as estimated, “J.” The remaining ICV and CCV recoveries were within the control limits of 90-110%. The daily mass calibration log was acceptable.
- Blanks: The method blanks and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: The recoveries were within the method or laboratory control limits for all analytes. The RPD for BOD was  $\leq 20\%$ .
- Laboratory Duplicates: A laboratory duplicate analysis was performed on the sample for turbidity. The RPD was  $\leq 20\%$ .
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for MBAS. Recoveries and the RPD were within the control limits of 50-125% and  $\leq 20\%$ , respectively.



- **Sample Result Verification:** Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-,” otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and 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.

Due to automation of the laboratory system, there was no raw data for conductivity or BOD. These methods were validated at Level III.

- **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.

# Validated Sample Result Forms: 440972091

## Analysis Method E120.1

**Sample Name** Outfall002\_20141217\_Gra **Matrix Type:** WM **Result Type:** TRG

**Sample Date:** 12/17/2014 8:02:00 AM **Validation Level:** 3

**Lab Sample Name:** 440-97227-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Specific Conductance	N	CONDSPEC	180	1.0	0	umhos/c			

## Analysis Method E1613B

**Sample Name** Outfall002\_20141218\_Co **Matrix Type:** WM **Result Type:** TRG

**Sample Date:** 12/18/2014 1:16:00 PM **Validation Level:** 3

**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	N	39001-02-0		0.000104	0.0	ug/L	U	U	
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	N	3268-87-9	0.00000438	0.000104	0.0	ug/L	QBJ	U	B
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	N	67562-39-4		0.0000519	0.0	ug/L	U	U	
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	N	35822-46-9		0.0000519	0.0	ug/L	U	U	
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	N	55673-89-7		0.0000519	0.0	ug/L	U	U	
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	N	70648-26-9		0.0000519	0.0	ug/L	U	U	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	N	39227-28-6		0.0000519	0.0	ug/L	U	U	
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	N	57117-44-9		0.0000519	0.0	ug/L	U	U	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	N	57653-85-7		0.0000519	0.0	ug/L	U	U	
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	N	72918-21-9		0.0000519	0.0	ug/L	U	U	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	N	19408-74-3		0.0000519	0.0	ug/L	U	U	
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	N	57117-41-6		0.0000519	0.0	ug/L	U	U	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	N	40321-76-4		0.0000519	0.0	ug/L	U	U	
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	N	60851-34-5		0.0000519	0.0	ug/L	U	U	
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	N	57117-31-4		0.0000519	0.0	ug/L	U	U	
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	N	51207-31-9		0.0000104	0.0	ug/L	U	U	

**Analysis Method E1613B**

2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	N	1746-01-6	0.0000104	0.0	ug/L	U	U
Total Heptachlorodibenzofuran (HpCDF)	N	38998-75-3	0.0000519	0.0	ug/L	U	U
Total Heptachlorodibenzo-p-dioxin (HpCDD)	N	37871-00-4	0.0000519	0.0	ug/L	U	U
Total Hexachlorodibenzofuran (HxCDF)	N	55684-94-1	0.0000519	0.0	ug/L	U	U
Total Hexachlorodibenzo-p-dioxin (HxCDD)	N	34465-46-8	0.0000519	0.0	ug/L	U	U
Total Pentachlorodibenzofuran (PeCDF)	N	30402-15-4	0.0000519	0.0	ug/L	U	U
Total Pentachlorodibenzo-p-dioxin (PeCDD)	N	36088-22-9	0.0000519	0.0	ug/L	U	U
Total Tetrachlorodibenzofuran (TCDF)	N	55722-27-5	0.0000104	0.0	ug/L	U	U
Total Tetrachlorodibenzo-p-dioxin (TCDD)	N	41903-57-5	0.0000104	0.0	ug/L	U	U

**Analysis Method E180.1**

**Sample Name** Outfall002\_20141218\_Co **Matrix Type:** WM **Result Type:** TRG

**Sample Date:** 12/18/2014 1:16:00 PM **Validation Level:** 3

**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Turbidity	N	TURBIDITY	8.7	0.10	0.040	NTU			

**Analysis Method E200.8**

**Sample Name** Outfall002\_20141218\_Co **Matrix Type:** WM **Result Type:** TRG

**Sample Date:** 12/18/2014 1:16:00 PM **Validation Level:** 3

**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cadmium	N	7440-43-9		1.0	0.25	ug/L	U	U	
Cadmium	D	7440-43-9		1.0	0.25	ug/L	UQP	U	
Copper	D	7440-50-8	2.9	2.0	0.50	ug/L	QP		
Copper	N	7440-50-8	3.4	2.0	0.50	ug/L	MB	U	B
Iron	N	7439-89-6	270	20	8.0	ug/L	MB		
Iron	D	7439-89-6	26	20	8.0	ug/L	QP	U	B
Lead	D	7439-92-1		1.0	0.50	ug/L	UQP	U	
Lead	N	7439-92-1		1.0	0.50	ug/L	U	U	
Selenium	D	7782-49-2		2.0	0.50	ug/L	UQP	UJ	I
Selenium	N	7782-49-2		2.0	0.50	ug/L	U	UJ	I
Zinc	D	7440-66-6	3.7	20	2.5	ug/L	J,DXQP	J	DNQ
Zinc	N	7440-66-6	5.8	20	2.5	ug/L	J,DX	J	DNQ

**Analysis Method E300****Sample Name** Outfall002\_20141218\_Co **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/18/2014 1:16:00 PM **Validation Level:** 3**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Nitrate (as N)	N	14797-55-8	1.8	0.11	0.055	mg/L			
Nitrite/Nitrate	N	NO2NO3	1.8	0.15	0.070	mg/L			

**Analysis Method E300-28DAY****Sample Name** Outfall002\_20141218\_Co **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/18/2014 1:16:00 PM **Validation Level:** 3**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Chloride	N	16887-00-6	5.5	0.50	0.25	mg/L			
Sulfate	N	14808-79-8	10	0.50	0.25	mg/L			

**Analysis Method E900****Sample Name** Outfall002\_20141218\_Co **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/18/2014 1:16:00 PM **Validation Level:** 3**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha Analytes	N	GROSSALPHA1.23	3.00	1.74	1.74	pCi/L	U	UJ	C
Gross Alpha Analytes	N	GROSSALPHA1.23	3.00	1.74	1.74	pCi/L	U	UJ	C
Gross Beta Analytes	N	GROSSBETA	2.69	4.00	0.933	pCi/L			
Gross Beta Analytes	N	GROSSBETA	2.69	4.00	0.933	pCi/L		J	DNQ

**Analysis Method E901.1****Sample Name** Outfall002\_20141218\_Co **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/18/2014 1:16:00 PM **Validation Level:** 3**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	N	10045-97-3	-2.12	20.0	13.4	pCi/L	U	U	
Cesium-137	N	10045-97-3	-2.12	20.0	13.4	pCi/L	U	U	
Potassium-40	N	13966-00-2	-79.6		202	pCi/L	U	U	
Potassium-40	N	13966-00-2	-79.6		202	pCi/L	U	U	

*Analysis Method E903.0*

**Sample Name** Outfall002\_20141218\_Co **Matrix Type:** WM **Result Type:** TRG

**Sample Date:** 12/18/2014 1:16:00 PM **Validation Level:** 3

**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	N	13982-63-3	0.00721	1.00	0.126	pCi/L	U	UJ	C

*Analysis Method E904.0*

**Sample Name** Outfall002\_20141218\_Co **Matrix Type:** WM **Result Type:** TRG

**Sample Date:** 12/18/2014 1:16:00 PM **Validation Level:** 3

**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	N	15262-20-1	0.420	1.00	0.422	pCi/L	U	U	

*Analysis Method E905.0*

**Sample Name** Outfall002\_20141218\_Co **Matrix Type:** WM **Result Type:** TRG

**Sample Date:** 12/18/2014 1:16:00 PM **Validation Level:** 3

**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	N	10098-97-2	-0.0343	3.00	0.657	pCi/L	U	U	
Strontium-90	N	10098-97-2	-0.0343	3.00	0.657	pCi/L	U	U	

*Analysis Method E906.0*

**Sample Name** Outfall002\_20141218\_Co **Matrix Type:** WM **Result Type:** TRG

**Sample Date:** 12/18/2014 1:16:00 PM **Validation Level:** 3

**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	N	10028-17-8	69.4	500	321	pCi/L	U	U	
Tritium	N	10028-17-8	69.4	500	321	pCi/L	U	U	

*Analysis Method HASL-300 U Mod*

**Sample Name** Outfall002\_20141218\_Co **Matrix Type:** WM **Result Type:** TRG

**Sample Date:** 12/18/2014 1:16:00 PM **Validation Level:** 3

**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Uranium	N	URANIUM	0.110	1.00	0.800	pCi/L	U	U	

**Analysis Method** SM2540C**Sample Name** Outfall002\_20141218\_Co **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/18/2014 1:16:00 PM **Validation Level:** 3**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Dissolved Solids (TDS)	N	TDS	170	10	5.0	mg/L			

**Analysis Method** SM2540D**Sample Name** Outfall002\_20141218\_Co **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/18/2014 1:16:00 PM **Validation Level:** 3**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids (TSS)	N	TSS	2.1	1.0	0.50	mg/L			

**Analysis Method** SM2540F**Sample Name** Outfall002\_20141217\_Gra **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/17/2014 8:02:00 AM **Validation Level:** 3**Lab Sample Name:** 440-97227-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Settleable solids	N	SETTLEABL SO LIDS		0.10	0	ml/l/hr	U	U	

**Analysis Method** SM4500-NH3G**Sample Name** Outfall002\_20141218\_Co **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/18/2014 1:16:00 PM **Validation Level:** 3**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Ammonia	N	7664-41-7	0.239	0.200	0.100	mg/L		J	R

**Analysis Method** SM5210B**Sample Name** Outfall002\_20141218\_Co **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/18/2014 1:16:00 PM **Validation Level:** 3**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Biochemical Oxygen Demand (BOD)	N	BOD	1.4	2.0	0.50	mg/L	J,DX	J	DNQ

*Analysis Method*    **SM5540**

**Sample Name**    Outfall002\_20141218\_Co **Matrix Type:** WM    **Result Type:** TRG

**Sample Date:** 12/18/2014 1:16:00 PM    **Validation Level:** 3

**Lab Sample Name:** 440-97209-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Surfactants as MBAS	N	SURFASMBAS0.053	0.10	0.050	mg/L	J,DX	J	DNQ	

*Analysis Method*    **SM9221E**

**Sample Name**    Outfall002\_20141217\_Gra **Matrix Type:** WM    **Result Type:** TRG

**Sample Date:** 12/17/2014 8:02:00 AM    **Validation Level:** 3

**Lab Sample Name:** 440-97227-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Fecal Coliform Bacteria	N	COLIFORMFEÇ1 AL	1.8	0	mpn/100				

*Analysis Method*    **SM9221F**

**Sample Name**    Outfall002\_20141217\_Gra **Matrix Type:** WM    **Result Type:** TRG

**Sample Date:** 12/17/2014 8:02:00 AM    **Validation Level:** 3

**Lab Sample Name:** 440-97227-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	N	ECOLI	71	1.8	0	mpn/100			

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-97209-1

Client Project/Site: Boeing SSFL NPDES Routine Outfall 002

Revision: 1

For:

Haley & Aldrich, Inc.

5333 Mission Center Road

Suite 300

San Diego, California 92108

Attn: Nancy Gardiner



Authorized for release by:

1/19/2015 6:22:31 PM

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*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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I certify under penalty of perjury that the information contained in this report and all attachments was produced in accordance with the indicated methods and laboratory standard operating procedures, except as noted, and are complete and accurate to the best of my knowledge and belief. Subcontract laboratory reports that are attached have been evaluated for completeness and quality control acceptability.



---

Debby Wilson  
Manager of Project Management  
1/19/2015 6:22:31 PM



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# Sample Summary

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-97209-1	Outfall002_20141218_Comp	Water	12/18/14 01:16	12/18/14 17:20
440-97209-2	Trip Blank	Water	12/18/14 17:20	12/18/14 17:20
440-97227-1	Outfall002_20141217_Grab	Water	12/17/14 08:02	12/17/14 13:36
440-97227-2	TB-2014	Water	12/17/14 00:01	12/17/14 13:36

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# Case Narrative

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

**Job ID: 440-97209-1**

**Laboratory: TestAmerica Irvine**

## Narrative

### Job Narrative 440-97209-1

#### Receipt

The samples were received on 12/17/2014 1:36 PM and 12/18/2014 5:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.5° C, 2.1° C, 2.4° C and 3.0° C.

#### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### GC/MS Semi VOA

Method(s) 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 225816. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 625: One of the surrogate recoveries, terphenyl-d14, for the following samples was outside the upper control limit: Outfall002\_20141218\_Comp (440-97209-1). The samples did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### GC Semi VOA

Method(s) 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 226994. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch. (LCS 440-226994/2-A)

Method(s) 608: Due to laboratory oversight, the following sample(s) was extracted outside the method holding time: Outfall002\_20141218\_Comp (440-97209-1) for alpha BHC.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### RAD

Method(s) ExtChrom: Uranium (165361): The samples are a dark yellow-brown color. A reduced aliquot of 100 mL was used to prevent matrix interference. (440-97209-1), Outfall002\_20141218\_Comp (440-97209-1)

Method(s) PrecSep-7: strontium-90: The following samples in batch #165620 were prepped at a reduced aliquot due to the presence of sediment: (440-97209-1), Outfall002\_20141218\_Comp (440-97209-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method(s) 245.1: The continuing calibration verification (CCV) associated with analytical batch 227057 recovered above the upper control limit for mercury. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: Outfall002\_20141218\_Comp (440-97209-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### Biology

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Case Narrative

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

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## Job ID: 440-97209-1 (Continued)

---

### Laboratory: TestAmerica Irvine (Continued)

#### Subcontract non-Sister

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### Organic Prep

Method(s) 1664A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 228680. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Subcontract Work

Method Chronic Cerio, EPA/821-R02-013: This method was subcontracted to Aquatic Testing Laboratories. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method DNA-human bacteriodes; EMSL: This method was subcontracted to EMSL Analytical, Inc.. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method 1613 dioxin: This method was subcontracted to TestAmerica Knoxville. The subcontract laboratory certification is different from that of the facility issuing the final report. Refer to case narrative in the appended report.



# Client Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

**Client Sample ID: Outfall002\_20141218\_Comp**

**Lab Sample ID: 440-97209-1**

**Date Collected: 12/18/14 01:16**

**Matrix: Water**

**Date Received: 12/18/14 17:20**

**Method: 625 - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		5.03	2.01	ug/L		12/19/14 12:28	12/24/14 01:19	1
2,4-Dinitrotoluene	ND		5.03	2.01	ug/L		12/19/14 12:28	12/24/14 01:19	1
N-Nitrosodimethylamine	ND		2.01	1.01	ug/L		12/19/14 12:28	12/24/14 01:19	1
Pentachlorophenol	ND		2.01	1.01	ug/L		12/19/14 12:28	12/24/14 01:19	1
2,4,6-Trichlorophenol	ND		1.01	0.503	ug/L		12/19/14 12:28	12/24/14 01:19	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
2-Fluorobiphenyl	99		50 - 120				12/19/14 12:28	12/24/14 01:19	1
2-Fluorophenol	76		30 - 120				12/19/14 12:28	12/24/14 01:19	1
2,4,6-Tribromophenol	106		40 - 120				12/19/14 12:28	12/24/14 01:19	1
Nitrobenzene-d5	89		45 - 120				12/19/14 12:28	12/24/14 01:19	1
Terphenyl-d14	152	LH	37 - 144				12/19/14 12:28	12/24/14 01:19	1
Phenol-d6	82		35 - 120				12/19/14 12:28	12/24/14 01:19	1

**Method: 608 Pesticides - Organochlorine Pesticides Low level**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND	BU	0.0051	0.0026	ug/L		12/29/14 08:22	12/30/14 05:36	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Tetrachloro-m-xylene	53		10 - 139				12/29/14 08:22	12/30/14 05:36	1

**Method: 300.0 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.5		0.50	0.25	mg/L			12/18/14 22:32	1
Nitrate as N	1.8		0.11	0.055	mg/L			12/18/14 22:32	1
Nitrite as N	ND		0.15	0.070	mg/L			12/18/14 22:32	1
Sulfate	10		0.50	0.25	mg/L			12/18/14 22:32	1

**Method: 314.0 - Perchlorate (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			12/30/14 12:12	1

**Method: NO3NO2 Calc - Nitrogen, Nitrate-Nitrite**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	1.8		0.15	0.070	mg/L			01/05/15 12:32	1

**Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B)**

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000104	0.00000362	ug/L		12/30/14 14:30	01/15/15 04:41	1
Total TCDD	ND		0.0000104	0.00000362	ug/L		12/30/14 14:30	01/15/15 04:41	1
1,2,3,7,8-PeCDD	ND		0.0000519	0.00000169	ug/L		12/30/14 14:30	01/15/15 04:41	1
Total PeCDD	ND		0.0000519	0.00000169	ug/L		12/30/14 14:30	01/15/15 04:41	1
1,2,3,4,7,8-HxCDD	ND		0.0000519	0.00000143	ug/L		12/30/14 14:30	01/15/15 04:41	1
1,2,3,6,7,8-HxCDD	ND		0.0000519	0.00000145	ug/L		12/30/14 14:30	01/15/15 04:41	1
1,2,3,7,8,9-HxCDD	ND		0.0000519	0.00000134	ug/L		12/30/14 14:30	01/15/15 04:41	1
Total HxCDD	ND		0.0000519	0.00000134	ug/L		12/30/14 14:30	01/15/15 04:41	1
1,2,3,4,6,7,8-HpCDD	ND		0.0000519	0.00000198	ug/L		12/30/14 14:30	01/15/15 04:41	1
Total HpCDD	ND		0.0000519	0.00000198	ug/L		12/30/14 14:30	01/15/15 04:41	1
<b>OCDD</b>	<b>0.00000438</b>	<b>Q B J</b>	0.000104	0.00000223	ug/L		12/30/14 14:30	01/15/15 04:41	1
2,3,7,8-TCDF	ND		0.0000104	0.00000250	ug/L		12/30/14 14:30	01/15/15 04:41	1

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# Client Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

**Client Sample ID: Outfall002\_20141218\_Comp**

**Lab Sample ID: 440-97209-1**

Date Collected: 12/18/14 01:16

Matrix: Water

Date Received: 12/18/14 17:20

**Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B) (Continued)**

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TCDF	ND		0.0000104	0.00000250	ug/L		12/30/14 14:30	01/15/15 04:41	1
1,2,3,7,8-PeCDF	ND		0.0000519	0.00000128	ug/L		12/30/14 14:30	01/15/15 04:41	1
2,3,4,7,8-PeCDF	ND		0.0000519	0.00000128	ug/L		12/30/14 14:30	01/15/15 04:41	1
Total PeCDF	ND		0.0000519	0.00000128	ug/L		12/30/14 14:30	01/15/15 04:41	1
1,2,3,4,7,8-HxCDF	ND		0.0000519	0.000000900	ug/L		12/30/14 14:30	01/15/15 04:41	1
1,2,3,6,7,8-HxCDF	ND		0.0000519	0.000000850	ug/L		12/30/14 14:30	01/15/15 04:41	1
2,3,4,6,7,8-HxCDF	ND		0.0000519	0.000000850	ug/L		12/30/14 14:30	01/15/15 04:41	1
1,2,3,7,8,9-HxCDF	ND		0.0000519	0.00000106	ug/L		12/30/14 14:30	01/15/15 04:41	1
Total HxCDF	ND		0.0000519	0.000000850	ug/L		12/30/14 14:30	01/15/15 04:41	1
1,2,3,4,6,7,8-HpCDF	ND		0.0000519	0.00000121	ug/L		12/30/14 14:30	01/15/15 04:41	1
1,2,3,4,7,8,9-HpCDF	ND		0.0000519	0.00000185	ug/L		12/30/14 14:30	01/15/15 04:41	1
Total HpCDF	ND		0.0000519	0.00000121	ug/L		12/30/14 14:30	01/15/15 04:41	1
OCDF	ND		0.000104	0.00000186	ug/L		12/30/14 14:30	01/15/15 04:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	92		35 - 197	12/30/14 14:30	01/15/15 04:41	1

Internal Standard	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	78		25 - 164	12/30/14 14:30	01/15/15 04:41	1
13C-1,2,3,7,8-PeCDD	85		25 - 181	12/30/14 14:30	01/15/15 04:41	1
13C-1,2,3,4,7,8-HxCDD	82		32 - 141	12/30/14 14:30	01/15/15 04:41	1
13C-1,2,3,6,7,8-HxCDD	91		28 - 130	12/30/14 14:30	01/15/15 04:41	1
13C-1,2,3,4,6,7,8-HpCDD	87		23 - 140	12/30/14 14:30	01/15/15 04:41	1
13C-OCDD	85		17 - 157	12/30/14 14:30	01/15/15 04:41	1
13C-2,3,7,8-TCDF	73		24 - 169	12/30/14 14:30	01/15/15 04:41	1
13C-1,2,3,7,8-PeCDF	79		24 - 185	12/30/14 14:30	01/15/15 04:41	1
13C-2,3,4,7,8-PeCDF	70		21 - 178	12/30/14 14:30	01/15/15 04:41	1
13C-1,2,3,4,7,8-HxCDF	72		26 - 152	12/30/14 14:30	01/15/15 04:41	1
13C-1,2,3,6,7,8-HxCDF	77		26 - 123	12/30/14 14:30	01/15/15 04:41	1
13C-2,3,4,6,7,8-HxCDF	80		28 - 136	12/30/14 14:30	01/15/15 04:41	1
13C-1,2,3,7,8,9-HxCDF	81		29 - 147	12/30/14 14:30	01/15/15 04:41	1
13C-1,2,3,4,6,7,8-HpCDF	88		28 - 143	12/30/14 14:30	01/15/15 04:41	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138	12/30/14 14:30	01/15/15 04:41	1
13C-OCDF	73		17 - 157	12/30/14 14:30	01/15/15 04:41	1

**Method: 200.8 - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.25	ug/L		12/29/14 14:01	12/30/14 10:45	1
Copper	3.4	MB	2.0	0.50	ug/L		12/29/14 14:01	12/30/14 10:45	1
Lead	ND		1.0	0.50	ug/L		12/29/14 14:01	12/30/14 10:45	1
Selenium	ND		2.0	0.50	ug/L		12/29/14 14:01	12/30/14 10:45	1
Iron	270	MB	20	8.0	ug/L		12/29/14 14:01	12/30/14 10:45	1
Zinc	5.8	J,DX	20	2.5	ug/L		12/29/14 14:01	12/30/14 10:45	1

**Method: 200.8 - Metals (ICP/MS) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	QP	1.0	0.25	ug/L		12/24/14 09:59	12/24/14 17:26	1
Copper	2.9	QP	2.0	0.50	ug/L		12/24/14 09:59	12/24/14 17:26	1
Lead	ND	QP	1.0	0.50	ug/L		12/24/14 09:59	12/24/14 17:26	1
Selenium	ND	QP	2.0	0.50	ug/L		12/24/14 09:59	12/24/14 17:26	1

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# Client Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

**Client Sample ID: Outfall002\_20141218\_Comp**

**Lab Sample ID: 440-97209-1**

Date Collected: 12/18/14 01:16

Matrix: Water

Date Received: 12/18/14 17:20

**Method: 200.8 - Metals (ICP/MS) - Dissolved (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	26	QP	20	8.0	ug/L		12/24/14 09:59	12/24/14 17:26	1
Zinc	3.7	J,DX QP	20	2.5	ug/L		12/24/14 09:59	12/24/14 17:26	1

**Method: 245.1 - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		12/19/14 14:51	12/19/14 18:29	1

**Method: 245.1 - Mercury (CVAA) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	IB LQ QP	0.20	0.10	ug/L		12/24/14 06:37	12/24/14 16:01	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	8.7		0.10	0.040	NTU			12/19/14 14:23	1
Total Dissolved Solids	170		10	5.0	mg/L			12/23/14 16:53	1
Total Suspended Solids	2.1		1.0	0.50	mg/L			12/23/14 12:32	1
Cyanide, Total	ND		5.0	2.5	ug/L		12/23/14 20:02	12/24/14 13:37	1
Ammonia (as N)	0.239		0.200	0.100	mg/L			01/05/15 16:42	1
Methylene Blue Active Substances	0.053	J,DX	0.10	0.050	mg/L			12/19/14 19:50	1
Biochemical Oxygen Demand	1.4	J,DX	2.0	0.50	mg/L			12/19/14 17:35	1

**Method: 900.0 - Gross Alpha and Gross Beta Radioactivity**

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Gross Alpha	1.23	U	1.11	1.12	1.74	pCi/L	12/29/14 14:42	01/06/15 07:05	1
Gross Beta	2.69		0.751	0.797	0.933	pCi/L	12/29/14 14:42	01/06/15 07:05	1

**Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Cesium-137	-2.12	U	7.47	7.48	13.4	pCi/L	01/02/15 14:33	01/05/15 21:04	1
Potassium-40	-79.6	U	6790	6790	202	pCi/L	01/02/15 14:33	01/05/15 21:04	1

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Radium-226	0.00721	U	0.0669	0.0669	0.126	pCi/L	12/22/14 13:06	01/13/15 18:47	1
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Ba Carrier	87.9		40 - 110				12/22/14 13:06	01/13/15 18:47	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Radium-228	0.420	U	0.273	0.276	0.422	pCi/L	12/22/14 13:41	01/08/15 11:09	1

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# Client Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

**Client Sample ID: Outfall002\_20141218\_Comp**

**Lab Sample ID: 440-97209-1**

Date Collected: 12/18/14 01:16

Matrix: Water

Date Received: 12/18/14 17:20

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	87.9		40 - 110	12/22/14 13:41	01/08/15 11:09	1
Y Carrier	87.1		40 - 110	12/22/14 13:41	01/08/15 11:09	1

**Method: 905 - Strontium-90 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.0343	U	0.365	0.365	0.657	pCi/L	12/29/14 18:01	01/07/15 15:58	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	80.5		40 - 110	12/29/14 18:01	01/07/15 15:58	1
Y Carrier	92.3		40 - 110	12/29/14 18:01	01/07/15 15:58	1

**Method: 906.0 - Tritium, Total (LSC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	69.4	U	184	184	321	pCi/L	01/02/15 09:02	01/02/15 17:40	1

**Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.110	U	0.372	0.372	0.800	pCi/L	12/24/14 10:49	12/31/14 14:22	1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-97209-2**

Date Collected: 12/18/14 17:20

Matrix: Water

Date Received: 12/18/14 17:20

**Method: 900.0 - Gross Alpha and Gross Beta Radioactivity**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.438	U	0.805	0.806	1.40	pCi/L	12/29/14 14:42	01/06/15 11:08	1
Gross Beta	-0.384	U	0.401	0.402	0.797	pCi/L	12/29/14 14:42	01/06/15 11:08	1

**Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.25	U	5.42	5.42	9.86	pCi/L	01/02/15 14:33	01/05/15 21:05	1
Potassium-40	-42.6	U	217	217	192	pCi/L	01/02/15 14:33	01/05/15 21:05	1

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0359	U	0.0610	0.0611	0.105	pCi/L	12/22/14 13:06	01/13/15 18:47	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.9		40 - 110	12/22/14 13:06	01/13/15 18:47	1

TestAmerica Irvine

# Client Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-97209-2**

Date Collected: 12/18/14 17:20

Matrix: Water

Date Received: 12/18/14 17:20

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0872	U	0.247	0.247	0.427	pCi/L	12/22/14 13:41	01/08/15 11:09	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	90.9		40 - 110				12/22/14 13:41	01/08/15 11:09	1
Y Carrier	87.1		40 - 110				12/22/14 13:41	01/08/15 11:09	1

**Method: 905 - Strontium-90 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.107	U	0.172	0.172	0.290	pCi/L	12/29/14 18:01	01/07/15 15:58	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Sr Carrier	85.2		40 - 110				12/29/14 18:01	01/07/15 15:58	1
Y Carrier	93.5		40 - 110				12/29/14 18:01	01/07/15 15:58	1

**Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.0471	U	0.08650	0.08660	0.127	pCi/L	12/24/14 10:49	01/14/15 13:17	1

**Client Sample ID: Outfall002\_20141217\_Grab**

**Lab Sample ID: 440-97227-1**

Date Collected: 12/17/14 08:02

Matrix: Water

Date Received: 12/17/14 13:36

**Method: 624 - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/20/14 16:53	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/20/14 16:53	1
Trichloroethene	ND		0.50	0.25	ug/L			12/20/14 16:53	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	102		80 - 120					12/20/14 16:53	1
Dibromofluoromethane (Surr)	115		76 - 132					12/20/14 16:53	1
Toluene-d8 (Surr)	105		80 - 128					12/20/14 16:53	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		4.8	1.3	mg/L		01/08/15 06:39	01/08/15 12:47	1
<b>Specific Conductance</b>	<b>180</b>		1.0	1.0	umhos/cm			12/30/14 18:32	1
Settleable Solids	ND		0.10	0.10	mL/L/Hr			12/18/14 18:54	1

**Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation)**

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	71		1.8	1.8	MPN/100mL			12/17/14 15:20	1

TestAmerica Irvine

# Client Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

**Client Sample ID: Outfall002\_20141217\_Grab**

**Lab Sample ID: 440-97227-1**

Date Collected: 12/17/14 08:02

Matrix: Water

Date Received: 12/17/14 13:36

**Method: SM 9221F - E.Coli (Multiple-Tube Fermentation; EC-MUG)**

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	71		1.8	1.8	MPN/100mL			12/17/14 15:20	1

**Client Sample ID: TB-2014**

**Lab Sample ID: 440-97227-2**

Date Collected: 12/17/14 00:01

Matrix: Water

Date Received: 12/17/14 13:36

**Method: 624 - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/20/14 17:19	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/20/14 17:19	1
Trichloroethene	ND		0.50	0.25	ug/L			12/20/14 17:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		12/20/14 17:19	1
Dibromofluoromethane (Surr)	115		76 - 132		12/20/14 17:19	1
Toluene-d8 (Surr)	104		80 - 128		12/20/14 17:19	1

# Method Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

Method	Method Description	Protocol	Laboratory
624	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL IRV
625	Semivolatile Organic Compounds (GC/MS)	EPA	TAL IRV
608 Pesticides	Organochlorine Pesticides Low level	40CFR136A	TAL IRV
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
314.0	Perchlorate (IC)	EPA	TAL IRV
NO3NO2 Calc	Nitrogen, Nitrate-Nitrite	EPA	TAL IRV
1613B	Dioxins/Furans, HRGC/HRMS (1613B)	EPA-5	TAL KNX
200.8	Metals (ICP/MS)	EPA	TAL IRV
245.1	Mercury (CVAA)	EPA	TAL IRV
120.1	Conductivity, Specific Conductance	MCAWW	TAL IRV
1664A	HEM and SGT-HEM	1664A	TAL IRV
180.1	Turbidity, Nephelometric	MCAWW	TAL IRV
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL IRV
SM 2540F	Solids, Settleable	SM	TAL IRV
SM 4500 CN E	Cyanide, Total (Low Level)	SM	TAL IRV
SM 4500 NH3 G	Ammonia	SM	TAL IRV
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	TAL IRV
SM5210B	BOD, 5 Day	SM	TAL IRV
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	TAL SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	TAL SL
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
905	Strontium-90 (GFPC)	EPA	TAL SL
906.0	Tritium, Total (LSC)	EPA	TAL SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	TAL SL
SM 9221E	Coliforms, Fecal (Multiple-Tube Fermentation)	SM	TAL IRV
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL IRV
Chronic Cerio, EPA/821-R02-013	Bioassay	NONE	SC0127

**Protocol References:**

- 1664A = EPA-821-98-002
- 40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
- DOE = U.S. Department of Energy
- EPA = US Environmental Protection Agency
- EPA-5 = EPA-5
- MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
- NONE = NONE
- SM = "Standard Methods For The Examination Of Water And Wastewater",

**Laboratory References:**

- SC0127 = Aquatic Testing Laboratories, 4350 Transport #107, Ventura, CA 93003
- TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
- TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000
- TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

# Lab Chronicle

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

**Client Sample ID: Outfall002\_20141218\_Comp**

**Lab Sample ID: 440-97209-1**

**Date Collected: 12/18/14 01:16**

**Matrix: Water**

**Date Received: 12/18/14 17:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			995 mL	2 mL	225816	12/19/14 12:28	AK	TAL IRV
Total/NA	Analysis	625		1	995 mL	2 mL	226427	12/24/14 01:19	DF	TAL IRV
Total/NA	Prep	608			980 mL	2 mL	226994	12/29/14 08:22	BB	TAL IRV
Total/NA	Analysis	608 Pesticides		1	980 mL	2 mL	227136	12/30/14 05:36	KS	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	225476	12/18/14 22:32	JRA	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	225477	12/18/14 22:32	JRA	TAL IRV
Total/NA	Analysis	314.0		1	1 mL		227303	12/30/14 12:12	CH	TAL IRV
Total/NA	Analysis	NO3NO2 Calc		1			228046	01/05/15 12:32	TN	TAL IRV
Total	Prep	1613			963 mL	20 uL	4364015_P	12/30/14 14:30		TAL KNX
Total	Analysis	1613B		1			4364015	01/15/15 04:41	PMP	TAL KNX
Dissolved	Filtration	FILTRATION			125 mL	125 mL	226565	12/23/14 18:56	APS	TAL IRV
Dissolved	Prep	200.2			25 mL	25 mL	226703	12/24/14 09:59	ND	TAL IRV
Dissolved	Analysis	200.8		1	25 mL	25 mL	226988	12/24/14 17:26	NH	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	227112	12/29/14 14:01	APS	TAL IRV
Total Recoverable	Analysis	200.8		1	25 mL	25 mL	227345	12/30/14 10:45	NH	TAL IRV
Dissolved	Filtration	FILTRATION			125 mL	125 mL	226565	12/23/14 18:56	APS	TAL IRV
Dissolved	Prep	245.1			20 mL	20 mL	226624	12/24/14 06:37	JS1	TAL IRV
Dissolved	Analysis	245.1		1	20 mL	20 mL	227057	12/24/14 16:01	DB	TAL IRV
Total/NA	Prep	245.1			20 mL	20 mL	225851	12/19/14 14:51	JS1	TAL IRV
Total/NA	Analysis	245.1		1	20 mL	20 mL	225915	12/19/14 18:29	DB	TAL IRV
Total/NA	Analysis	180.1		1		20 mL	225847	12/19/14 14:23	EN	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	226535	12/23/14 16:53	NTN	TAL IRV
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	226425	12/23/14 12:32	NTN	TAL IRV
Total/NA	Prep	Distill/CN			50 mL	50 mL	226574	12/23/14 20:02	BS	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1	50 mL	50 mL	226768	12/24/14 13:37	BS	TAL IRV
Total/NA	Analysis	SM 4500 NH3 G		1	0.8 mL	8 mL	228130	01/05/15 16:42	BS	TAL IRV
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	225921	12/19/14 19:50	MSM	TAL IRV
Total/NA	Analysis	SM5210B		1		300 mL	225754	12/19/14 17:35	JRA	TAL IRV
Total/NA	Prep	Evaporation			200 mL	1.0 g	165591	12/29/14 14:42	MJS	TAL SL
Total/NA	Analysis	900.0		1	200 mL		166748	01/06/15 07:05	RTM	TAL SL
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 mL	166424	01/02/15 14:33	MRB	TAL SL
Total/NA	Analysis	901.1		1	1000 mL		166597	01/05/15 21:04	JLW	TAL SL
Total/NA	Prep	PrecSep-21			994.20 mL	1.0 g	164776	12/22/14 13:06	LEM	TAL SL
Total/NA	Analysis	903.0		1	994.20 mL		168077	01/13/15 18:47	RTM	TAL SL
Total/NA	Prep	PrecSep_0			994.20 mL	1.0 g	164779	12/22/14 13:41	LEM	TAL SL
Total/NA	Analysis	904.0		1	994.20 mL		167475	01/08/15 11:09	MLK	TAL SL
Total/NA	Prep	PrecSep-7			495.99 mL	1.0 g	165620	12/29/14 18:01	CMC	TAL SL
Total/NA	Analysis	905		1	495.99 mL		167353	01/07/15 15:58	RTM	TAL SL
Total/NA	Prep	LSC_Dist_Susp			100.31 mL	1.0 g	166399	01/02/15 09:02	JDL	TAL SL
Total/NA	Analysis	906.0		1	100.31 mL		166478	01/02/15 17:40	RTM	TAL SL
Total/NA	Prep	ExtChrom			100.09 mL	1.0 mL	165361	12/24/14 10:49	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	100.09 mL		166366	12/31/14 14:22	MLK	TAL SL

# Lab Chronicle

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Client Sample ID: Trip Blank

Lab Sample ID: 440-97209-2

Date Collected: 12/18/14 17:20

Matrix: Water

Date Received: 12/18/14 17:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200 mL	1.0 g	165591	12/29/14 14:42	MJS	TAL SL
Total/NA	Analysis	900.0		1	200 mL		166871	01/06/15 11:08	RTM	TAL SL
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 mL	166424	01/02/15 14:33	MRB	TAL SL
Total/NA	Analysis	901.1		1	1000 mL		166600	01/05/15 21:05	SMP	TAL SL
Total/NA	Prep	PrecSep-21			951.71 mL	1.0 g	164776	12/22/14 13:06	LEM	TAL SL
Total/NA	Analysis	903.0		1	951.71 mL		168077	01/13/15 18:47	RTM	TAL SL
Total/NA	Prep	PrecSep_0			951.71 mL	1.0 g	164779	12/22/14 13:41	LEM	TAL SL
Total/NA	Analysis	904.0		1	951.71 mL		167475	01/08/15 11:09	MLK	TAL SL
Total/NA	Prep	PrecSep-7			993.92 mL	1.0 g	165620	12/29/14 18:01	CMC	TAL SL
Total/NA	Analysis	905		1	993.92 mL		167353	01/07/15 15:58	RTM	TAL SL
Total/NA	Prep	ExtChrom			500.43 mL	1.0 mL	165361	12/24/14 10:49	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	500.43 mL		168454	01/14/15 13:17	MLK	TAL SL

## Client Sample ID: Outfall002\_20141217\_Grab

Lab Sample ID: 440-97227-1

Date Collected: 12/17/14 08:02

Matrix: Water

Date Received: 12/17/14 13:36

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	225970	12/20/14 16:53	AT	TAL IRV
Total/NA	Analysis	120.1		1			227467	12/30/14 18:32	NTN	TAL IRV
Total/NA	Prep	1664A			1045 mL	1000 mL	228680	01/08/15 06:39	AMR	TAL IRV
Total/NA	Analysis	1664A		1	1045 mL	1000 mL	228778	01/08/15 12:47	AMR	TAL IRV
Total/NA	Analysis	SM 2540F		1	1000 mL	1000 mL	225664	12/18/14 18:54	EN	TAL IRV
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	225994	(Start) 12/17/14 15:20 (End) 12/20/14 12:03	AMH	TAL IRV
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	225995	(Start) 12/17/14 15:20 (End) 12/20/14 12:03	AMH	TAL IRV

## Client Sample ID: TB-2014

Lab Sample ID: 440-97227-2

Date Collected: 12/17/14 00:01

Matrix: Water

Date Received: 12/17/14 13:36

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	225970	12/20/14 17:19	AT	TAL IRV

**Laboratory References:**

- SC0127 = Aquatic Testing Laboratories, 4350 Transport #107, Ventura, CA 93003
- TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
- TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000
- TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

# QC Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 624 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-225970/4**

**Matrix: Water**

**Analysis Batch: 225970**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/20/14 11:09	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/20/14 11:09	1
Trichloroethene	ND		0.50	0.25	ug/L			12/20/14 11:09	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		12/20/14 11:09	1
Dibromofluoromethane (Surr)	113		76 - 132		12/20/14 11:09	1
Toluene-d8 (Surr)	104		80 - 128		12/20/14 11:09	1

**Lab Sample ID: LCS 440-225970/5**

**Matrix: Water**

**Analysis Batch: 225970**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	25.0	22.9		ug/L		91	70 - 130
1,2-Dichloroethane	25.0	26.0		ug/L		104	57 - 138
Trichloroethene	25.0	27.8		ug/L		111	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	114		76 - 132
Toluene-d8 (Surr)	102		80 - 128

**Lab Sample ID: LCSD 440-225970/6**

**Matrix: Water**

**Analysis Batch: 225970**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	25.0	22.5		ug/L		90	70 - 130	2	20
1,2-Dichloroethane	25.0	25.1		ug/L		100	57 - 138	4	20
Trichloroethene	25.0	27.6		ug/L		110	70 - 130	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	114		76 - 132
Toluene-d8 (Surr)	102		80 - 128

**Lab Sample ID: 550-37110-N-1 MS**

**Matrix: Water**

**Analysis Batch: 225970**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	ND		25.0	22.9		ug/L		92	70 - 130
1,2-Dichloroethane	ND		25.0	24.1		ug/L		96	56 - 146
Trichloroethene	ND		25.0	27.0		ug/L		108	70 - 130

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-37110-N-1 MS

Matrix: Water

Analysis Batch: 225970

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	111		76 - 132
Toluene-d8 (Surr)	104		80 - 128

Lab Sample ID: 550-37110-N-1 MSD

Matrix: Water

Analysis Batch: 225970

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	ND		25.0	22.7		ug/L		91	70 - 130	1	20
1,2-Dichloroethane	ND		25.0	24.3		ug/L		97	56 - 146	1	20
Trichloroethene	ND		25.0	27.1		ug/L		108	70 - 130	0	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		80 - 120
Dibromofluoromethane (Surr)	110		76 - 132
Toluene-d8 (Surr)	104		80 - 128

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-225816/1-A

Matrix: Water

Analysis Batch: 226427

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 225816

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		5.00	2.00	ug/L		12/19/14 12:28	12/23/14 15:01	1
2,4-Dinitrotoluene	ND		5.00	2.00	ug/L		12/19/14 12:28	12/23/14 15:01	1
N-Nitrosodimethylamine	ND		2.00	1.00	ug/L		12/19/14 12:28	12/23/14 15:01	1
Pentachlorophenol	ND		2.00	1.00	ug/L		12/19/14 12:28	12/23/14 15:01	1
2,4,6-Trichlorophenol	ND		1.00	0.500	ug/L		12/19/14 12:28	12/23/14 15:01	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	87		50 - 120	12/19/14 12:28	12/23/14 15:01	1
2-Fluorophenol	74		30 - 120	12/19/14 12:28	12/23/14 15:01	1
2,4,6-Tribromophenol	105		40 - 120	12/19/14 12:28	12/23/14 15:01	1
Nitrobenzene-d5	82		45 - 120	12/19/14 12:28	12/23/14 15:01	1
Terphenyl-d14	94		37 - 144	12/19/14 12:28	12/23/14 15:01	1
Phenol-d6	80		35 - 120	12/19/14 12:28	12/23/14 15:01	1

Lab Sample ID: LCS 440-225816/2-A

Matrix: Water

Analysis Batch: 226427

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 225816

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bis(2-ethylhexyl) phthalate	10.0	10.04		ug/L		100	10 - 150
2,4-Dinitrotoluene	10.0	8.859		ug/L		89	10 - 103
N-Nitrosodimethylamine	10.0	7.249		ug/L		72	26 - 117

TestAmerica Irvine



# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-225816/2-A**

**Matrix: Water**

**Analysis Batch: 226427**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 225816**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	10.0	7.293		ug/L		73	10 - 150
2,4,6-Trichlorophenol	10.0	8.883		ug/L		89	10 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	87		50 - 120
2-Fluorophenol	68		30 - 120
2,4,6-Tribromophenol	89		40 - 120
Nitrobenzene-d5	79		45 - 120
Terphenyl-d14	93		37 - 144
Phenol-d6	74		35 - 120

**Lab Sample ID: LCSD 440-225816/3-A**

**Matrix: Water**

**Analysis Batch: 226427**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 225816**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate	10.0	10.42		ug/L		104	10 - 150	4	35
2,4-Dinitrotoluene	10.0	9.124		ug/L		91	10 - 103	3	35
N-Nitrosodimethylamine	10.0	7.434		ug/L		74	26 - 117	3	35
Pentachlorophenol	10.0	8.146		ug/L		81	10 - 150	11	35
2,4,6-Trichlorophenol	10.0	9.463		ug/L		95	10 - 150	6	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorobiphenyl	92		50 - 120
2-Fluorophenol	67		30 - 120
2,4,6-Tribromophenol	96		40 - 120
Nitrobenzene-d5	83		45 - 120
Terphenyl-d14	101		37 - 144
Phenol-d6	76		35 - 120

## Method: 608 Pesticides - Organochlorine Pesticides Low level

**Lab Sample ID: MB 440-226994/1-A**

**Matrix: Water**

**Analysis Batch: 227136**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 226994**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0050	0.0025	ug/L		12/29/14 08:22	12/30/14 01:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	67		10 - 139	12/29/14 08:22	12/30/14 01:26	1

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 608 Pesticides - Organochlorine Pesticides Low level (Continued)

**Lab Sample ID:** LCS 440-226994/2-A  
**Matrix:** Water  
**Analysis Batch:** 227136

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA  
**Prep Batch:** 226994

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
alpha-BHC	0.250	0.239		ug/L		95	32 - 128
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
Tetrachloro-m-xylene	73		10 - 139				

**Lab Sample ID:** LCSD 440-226994/3-A  
**Matrix:** Water  
**Analysis Batch:** 227136

**Client Sample ID:** Lab Control Sample Dup  
**Prep Type:** Total/NA  
**Prep Batch:** 226994

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
alpha-BHC	0.250	0.243		ug/L		97	32 - 128	2	35
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
Tetrachloro-m-xylene	71		10 - 139						

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID:** MB 440-225476/4  
**Matrix:** Water  
**Analysis Batch:** 225476

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.055	mg/L			12/18/14 09:35	1
Nitrite as N	ND		0.15	0.070	mg/L			12/18/14 09:35	1

**Lab Sample ID:** LCS 440-225476/6  
**Matrix:** Water  
**Analysis Batch:** 225476

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	1.13	1.05		mg/L		93	90 - 110
Nitrite as N	1.52	1.52		mg/L		100	90 - 110

**Lab Sample ID:** 320-10924-D-2 MS  
**Matrix:** Water  
**Analysis Batch:** 225476

**Client Sample ID:** Matrix Spike  
**Prep Type:** Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	1.9		1.13	2.87	LN	mg/L		75	80 - 120
Nitrite as N	ND		1.52	1.78		mg/L		117	80 - 120

**Lab Sample ID:** 320-10924-D-2 MSD  
**Matrix:** Water  
**Analysis Batch:** 225476

**Client Sample ID:** Matrix Spike Duplicate  
**Prep Type:** Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	1.9		1.13	2.96		mg/L		83	80 - 120	3	20
Nitrite as N	ND		1.52	1.94	LM	mg/L		127	80 - 120	8	20

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 440-225477/4  
 Matrix: Water  
 Analysis Batch: 225477

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.25	mg/L			12/18/14 09:35	1
Sulfate	ND		0.50	0.25	mg/L			12/18/14 09:35	1

Lab Sample ID: LCS 440-225477/6  
 Matrix: Water  
 Analysis Batch: 225477

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.58		mg/L		92	90 - 110
Sulfate	5.00	4.78		mg/L		96	90 - 110

Lab Sample ID: 320-10924-D-2 MS  
 Matrix: Water  
 Analysis Batch: 225477

Client Sample ID: Matrix Spike  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	12		5.00	16.0		mg/L		83	80 - 120
Sulfate	20		5.00	24.3		mg/L		93	80 - 120

Lab Sample ID: 320-10924-D-2 MSD  
 Matrix: Water  
 Analysis Batch: 225477

Client Sample ID: Matrix Spike Duplicate  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	12		5.00	16.1		mg/L		84	80 - 120	0	20
Sulfate	20		5.00	23.8		mg/L		83	80 - 120	2	20

## Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 440-227303/3  
 Matrix: Water  
 Analysis Batch: 227303

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			12/30/14 10:20	1

Lab Sample ID: LCS 440-227303/2  
 Matrix: Water  
 Analysis Batch: 227303

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	25.0	24.6		ug/L		98	85 - 115

Lab Sample ID: MRL 440-227303/5  
 Matrix: Water  
 Analysis Batch: 227303

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	4.00	4.12		ug/L		103	75 - 125

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 314.0 - Perchlorate (IC) (Continued)

**Lab Sample ID: 440-97476-K-1 MS**  
**Matrix: Water**  
**Analysis Batch: 227303**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	ND		25.0	25.0		ug/L		100	80 - 120

**Lab Sample ID: 440-97476-K-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 227303**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	ND		25.0	24.9		ug/L		100	80 - 120	0	20

## Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B)

**Lab Sample ID: H4L30000015B**  
**Matrix: Water**  
**Analysis Batch: 4364015**

**Client Sample ID: Method Blank**  
**Prep Type: Total**  
**Prep Batch: 4364015\_P**

Analyte	MB Result	MB Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000100	0.00000222	ug/L		12/30/14 14:30	01/15/15 03:43	1
Total TCDD	ND		0.0000100	0.00000222	ug/L		12/30/14 14:30	01/15/15 03:43	1
1,2,3,7,8-PeCDD	ND		0.0000500	0.00000105	ug/L		12/30/14 14:30	01/15/15 03:43	1
Total PeCDD	ND		0.0000500	0.00000105	ug/L		12/30/14 14:30	01/15/15 03:43	1
1,2,3,4,7,8-HxCDD	ND		0.0000500	0.000000850	ug/L		12/30/14 14:30	01/15/15 03:43	1
1,2,3,6,7,8-HxCDD	ND		0.0000500	0.000000890	ug/L		12/30/14 14:30	01/15/15 03:43	1
1,2,3,7,8,9-HxCDD	ND		0.0000500	0.000000810	ug/L		12/30/14 14:30	01/15/15 03:43	1
Total HxCDD	ND		0.0000500	0.000000810	ug/L		12/30/14 14:30	01/15/15 03:43	1
1,2,3,4,6,7,8-HpCDD	ND		0.0000500	0.00000113	ug/L		12/30/14 14:30	01/15/15 03:43	1
Total HpCDD	ND		0.0000500	0.00000113	ug/L		12/30/14 14:30	01/15/15 03:43	1
OCDD	0.00000202	Q J	0.000100	0.000000970	ug/L		12/30/14 14:30	01/15/15 03:43	1
2,3,7,8-TCDF	ND		0.0000100	0.00000144	ug/L		12/30/14 14:30	01/15/15 03:43	1
Total TCDF	ND		0.0000100	0.00000144	ug/L		12/30/14 14:30	01/15/15 03:43	1
1,2,3,7,8-PeCDF	ND		0.0000500	0.000000820	ug/L		12/30/14 14:30	01/15/15 03:43	1
2,3,4,7,8-PeCDF	ND		0.0000500	0.000000710	ug/L		12/30/14 14:30	01/15/15 03:43	1
Total PeCDF	ND		0.0000500	0.000000710	ug/L		12/30/14 14:30	01/15/15 03:43	1
1,2,3,4,7,8-HxCDF	ND		0.0000500	0.000000500	ug/L		12/30/14 14:30	01/15/15 03:43	1
1,2,3,6,7,8-HxCDF	ND		0.0000500	0.000000490	ug/L		12/30/14 14:30	01/15/15 03:43	1
2,3,4,6,7,8-HxCDF	ND		0.0000500	0.000000500	ug/L		12/30/14 14:30	01/15/15 03:43	1
1,2,3,7,8,9-HxCDF	ND		0.0000500	0.000000600	ug/L		12/30/14 14:30	01/15/15 03:43	1
Total HxCDF	ND		0.0000500	0.000000490	ug/L		12/30/14 14:30	01/15/15 03:43	1
1,2,3,4,6,7,8-HpCDF	ND		0.0000500	0.000000680	ug/L		12/30/14 14:30	01/15/15 03:43	1
1,2,3,4,7,8,9-HpCDF	ND		0.0000500	0.000000960	ug/L		12/30/14 14:30	01/15/15 03:43	1
Total HpCDF	ND		0.0000500	0.000000680	ug/L		12/30/14 14:30	01/15/15 03:43	1
OCDF	ND		0.000100	0.00000103	ug/L		12/30/14 14:30	01/15/15 03:43	1

Surrogate	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	94		35 - 197	12/30/14 14:30	01/15/15 03:43	1

Internal Standard	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	83		25 - 164	12/30/14 14:30	01/15/15 03:43	1

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B) (Continued)

**Lab Sample ID: H4L30000015B**  
**Matrix: Water**  
**Analysis Batch: 4364015**

**Client Sample ID: Method Blank**  
**Prep Type: Total**  
**Prep Batch: 4364015\_P**

Internal Standard	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C-1,2,3,7,8-PeCDD	89		25 - 181	12/30/14 14:30	01/15/15 03:43	1
13C-1,2,3,4,7,8-HxCDD	86		32 - 141	12/30/14 14:30	01/15/15 03:43	1
13C-1,2,3,6,7,8-HxCDD	94		28 - 130	12/30/14 14:30	01/15/15 03:43	1
13C-1,2,3,4,6,7,8-HpCDD	91		23 - 140	12/30/14 14:30	01/15/15 03:43	1
13C-OCDD	89		17 - 157	12/30/14 14:30	01/15/15 03:43	1
13C-2,3,7,8-TCDF	84		24 - 169	12/30/14 14:30	01/15/15 03:43	1
13C-1,2,3,7,8-PeCDF	83		24 - 185	12/30/14 14:30	01/15/15 03:43	1
13C-2,3,4,7,8-PeCDF	79		21 - 178	12/30/14 14:30	01/15/15 03:43	1
13C-1,2,3,4,7,8-HxCDF	77		26 - 152	12/30/14 14:30	01/15/15 03:43	1
13C-1,2,3,6,7,8-HxCDF	79		26 - 123	12/30/14 14:30	01/15/15 03:43	1
13C-2,3,4,6,7,8-HxCDF	86		28 - 136	12/30/14 14:30	01/15/15 03:43	1
13C-1,2,3,7,8,9-HxCDF	89		29 - 147	12/30/14 14:30	01/15/15 03:43	1
13C-1,2,3,4,6,7,8-HpCDF	84		28 - 143	12/30/14 14:30	01/15/15 03:43	1
13C-1,2,3,4,7,8,9-HpCDF	87		26 - 138	12/30/14 14:30	01/15/15 03:43	1
13C-OCDF	81		17 - 157	12/30/14 14:30	01/15/15 03:43	1

**Lab Sample ID: H4L30000015C**  
**Matrix: Water**  
**Analysis Batch: 4364015**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total**  
**Prep Batch: 4364015\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits
1,2,3,7,8-PeCDD	0.00100	0.000995		ug/L		99	70 - 142	
1,2,3,4,7,8-HxCDD	0.00100	0.000966		ug/L		97	70 - 164	
1,2,3,6,7,8-HxCDD	0.00100	0.000937		ug/L		94	76 - 134	
1,2,3,7,8,9-HxCDD	0.00100	0.000941		ug/L		94	64 - 162	
1,2,3,4,6,7,8-HpCDD	0.00100	0.000921		ug/L		92	70 - 140	
OCDD	0.00200	0.00179	B	ug/L		90	78 - 144	
2,3,7,8-TCDF	0.000200	0.000216		ug/L		108	75 - 158	
1,2,3,7,8-PeCDF	0.00100	0.000951		ug/L		95	80 - 134	
2,3,4,7,8-PeCDF	0.00100	0.000991		ug/L		99	68 - 160	
1,2,3,4,7,8-HxCDF	0.00100	0.000982		ug/L		98	72 - 134	
1,2,3,6,7,8-HxCDF	0.00100	0.000993		ug/L		99	84 - 130	
2,3,4,6,7,8-HxCDF	0.00100	0.000987		ug/L		99	70 - 156	
1,2,3,7,8,9-HxCDF	0.00100	0.000982		ug/L		98	78 - 130	
1,2,3,4,6,7,8-HpCDF	0.00100	0.000932		ug/L		93	82 - 122	
1,2,3,4,7,8,9-HpCDF	0.00100	0.000956		ug/L		96	78 - 138	
OCDF	0.00200	0.00179		ug/L		89	63 - 170	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
37Cl4-2,3,7,8-TCDD	82		31 - 191

Internal Standard	LCS LCS		Limits
	%Recovery	Qualifier	
13C-2,3,7,8-TCDD	79		20 - 175
13C-1,2,3,7,8-PeCDD	85		21 - 227
13C-1,2,3,4,7,8-HxCDD	82		21 - 193
13C-1,2,3,6,7,8-HxCDD	90		25 - 163

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B) (Continued)

**Lab Sample ID:** H4L30000015C  
**Matrix:** Water  
**Analysis Batch:** 4364015

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total  
**Prep Batch:** 4364015\_P

Internal Standard	LCS LCS		Limits
	%Recovery	Qualifier	
13C-1,2,3,4,6,7,8-HpCDD	87		26 - 166
13C-OCDD	65		13 - 199
13C-2,3,7,8-TCDF	71		22 - 152
13C-1,2,3,7,8-PeCDF	80		21 - 192
13C-2,3,4,7,8-PeCDF	76		13 - 328
13C-1,2,3,4,7,8-HxCDF	77		19 - 202
13C-1,2,3,6,7,8-HxCDF	84		21 - 159
13C-2,3,4,6,7,8-HxCDF	80		22 - 176
13C-1,2,3,7,8,9-HxCDF	67		17 - 205
13C-1,2,3,4,6,7,8-HpCDF	74		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	58		20 - 186
13C-OCDF	49		13 - 199

## Method: 200.8 - Metals (ICP/MS)

**Lab Sample ID:** MB 440-227112/1-A  
**Matrix:** Water  
**Analysis Batch:** 227345

**Client Sample ID:** Method Blank  
**Prep Type:** Total Recoverable  
**Prep Batch:** 227112

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cadmium	ND		1.0	0.25	ug/L		12/29/14 14:01	12/30/14 09:38	1
Copper	1.27	J,DX	2.0	0.50	ug/L		12/29/14 14:01	12/30/14 09:38	1
Lead	ND		1.0	0.50	ug/L		12/29/14 14:01	12/30/14 09:38	1
Selenium	ND		2.0	0.50	ug/L		12/29/14 14:01	12/30/14 09:38	1
Iron	19.4	J,DX	20	8.0	ug/L		12/29/14 14:01	12/30/14 09:38	1
Zinc	ND		20	2.5	ug/L		12/29/14 14:01	12/30/14 09:38	1

**Lab Sample ID:** LCS 440-227112/2-A  
**Matrix:** Water  
**Analysis Batch:** 227345

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total Recoverable  
**Prep Batch:** 227112

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Cadmium	80.0	78.6		ug/L		98	85 - 115
Copper	80.0	79.5		ug/L		99	85 - 115
Lead	80.0	78.2		ug/L		98	85 - 115
Selenium	80.0	77.7		ug/L		97	85 - 115
Iron	800	794		ug/L		99	85 - 115
Zinc	80.0	79.4		ug/L		99	85 - 115

**Lab Sample ID:** LCSD 440-227112/3-A  
**Matrix:** Water  
**Analysis Batch:** 227345

**Client Sample ID:** Lab Control Sample Dup  
**Prep Type:** Total Recoverable  
**Prep Batch:** 227112

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec. Limits	RPD	Limit
		Result	Qualifier						
Cadmium	80.0	78.3		ug/L		98	85 - 115	0	20
Copper	80.0	80.2		ug/L		100	85 - 115	1	20
Lead	80.0	79.5		ug/L		99	85 - 115	2	20
Selenium	80.0	78.8		ug/L		99	85 - 115	1	20

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

**Lab Sample ID: LCSD 440-227112/3-A**  
**Matrix: Water**  
**Analysis Batch: 227345**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total Recoverable**  
**Prep Batch: 227112**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	800	875		ug/L		109	85 - 115	10	20
Zinc	80.0	80.9		ug/L		101	85 - 115	2	20

**Lab Sample ID: 440-97209-1 MS**  
**Matrix: Water**  
**Analysis Batch: 227345**

**Client Sample ID: Outfall002\_20141218\_Comp**  
**Prep Type: Total Recoverable**  
**Prep Batch: 227112**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	ND		80.0	79.7		ug/L		100	70 - 130
Copper	3.4	MB	80.0	81.8		ug/L		98	70 - 130
Lead	ND		80.0	82.7		ug/L		103	70 - 130
Selenium	ND		80.0	77.3		ug/L		97	70 - 130
Iron	270	MB	800	1090		ug/L		102	70 - 130
Zinc	5.8	J,DX	80.0	84.3		ug/L		98	70 - 130

**Lab Sample ID: 440-97209-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 227345**

**Client Sample ID: Outfall002\_20141218\_Comp**  
**Prep Type: Total Recoverable**  
**Prep Batch: 227112**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	ND		80.0	78.6		ug/L		98	70 - 130	1	20
Copper	3.4	MB	80.0	80.9		ug/L		97	70 - 130	1	20
Lead	ND		80.0	81.6		ug/L		102	70 - 130	1	20
Selenium	ND		80.0	76.8		ug/L		96	70 - 130	1	20
Iron	270	MB	800	1060		ug/L		100	70 - 130	2	20
Zinc	5.8	J,DX	80.0	83.0		ug/L		96	70 - 130	2	20

**Lab Sample ID: MB 440-226565/1-D**  
**Matrix: Water**  
**Analysis Batch: 226988**

**Client Sample ID: Method Blank**  
**Prep Type: Dissolved**  
**Prep Batch: 226703**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.25	ug/L		12/24/14 09:59	12/24/14 16:39	1
Copper	ND		2.0	0.50	ug/L		12/24/14 09:59	12/24/14 16:39	1
Lead	ND		1.0	0.50	ug/L		12/24/14 09:59	12/24/14 16:39	1
Selenium	ND		2.0	0.50	ug/L		12/24/14 09:59	12/24/14 16:39	1
Iron	ND		20	8.0	ug/L		12/24/14 09:59	12/24/14 16:39	1
Zinc	ND		20	2.5	ug/L		12/24/14 09:59	12/24/14 16:39	1

**Lab Sample ID: LCS 440-226565/2-D**  
**Matrix: Water**  
**Analysis Batch: 226988**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Dissolved**  
**Prep Batch: 226703**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	80.0	79.5		ug/L		99	85 - 115
Copper	80.0	83.3		ug/L		104	85 - 115
Lead	80.0	79.3		ug/L		99	85 - 115
Selenium	80.0	76.4		ug/L		95	85 - 115
Iron	800	791		ug/L		99	85 - 115

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

**Lab Sample ID:** LCS 440-226565/2-D  
**Matrix:** Water  
**Analysis Batch:** 226988

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Dissolved  
**Prep Batch:** 226703

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	80.0	77.3		ug/L		97	85 - 115

**Lab Sample ID:** LCSD 440-226565/3-B  
**Matrix:** Water  
**Analysis Batch:** 226988

**Client Sample ID:** Lab Control Sample Dup  
**Prep Type:** Dissolved  
**Prep Batch:** 226703

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Cadmium	80.0	81.2		ug/L		101	85 - 115	2	20
Copper	80.0	83.7		ug/L		105	85 - 115	0	20
Lead	80.0	80.4		ug/L		100	85 - 115	1	20
Selenium	80.0	78.2		ug/L		98	85 - 115	2	20
Iron	800	803		ug/L		100	85 - 115	1	20
Zinc	80.0	77.6		ug/L		97	85 - 115	0	20

**Lab Sample ID:** 440-96606-R-1-G MS  
**Matrix:** Water  
**Analysis Batch:** 226988

**Client Sample ID:** Matrix Spike  
**Prep Type:** Dissolved  
**Prep Batch:** 226703

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	ND	QP	80.0	80.2		ug/L		100	70 - 130
Copper	3.2	QP	80.0	84.0		ug/L		101	70 - 130
Lead	ND	QP	80.0	80.5		ug/L		101	70 - 130
Selenium	ND	QP	80.0	78.8		ug/L		98	70 - 130
Iron	120	QP	800	919		ug/L		100	70 - 130
Zinc	10	J,DX QP	80.0	89.3		ug/L		99	70 - 130

**Lab Sample ID:** 440-96606-R-1-H MSD  
**Matrix:** Water  
**Analysis Batch:** 226988

**Client Sample ID:** Matrix Spike Duplicate  
**Prep Type:** Dissolved  
**Prep Batch:** 226703

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Cadmium	ND	QP	80.0	79.8		ug/L		100	70 - 130	1	20
Copper	3.2	QP	80.0	83.7		ug/L		101	70 - 130	0	20
Lead	ND	QP	80.0	80.1		ug/L		100	70 - 130	1	20
Selenium	ND	QP	80.0	76.1		ug/L		95	70 - 130	3	20
Iron	120	QP	800	915		ug/L		100	70 - 130	1	20
Zinc	10	J,DX QP	80.0	85.8		ug/L		95	70 - 130	4	20

## Method: 245.1 - Mercury (CVAA)

**Lab Sample ID:** MB 440-225851/1-A  
**Matrix:** Water  
**Analysis Batch:** 225915

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 225851

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		12/19/14 14:51	12/19/14 18:09	1

TestAmerica Irvine



# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 245.1 - Mercury (CVAA) (Continued)

**Lab Sample ID: LCS 440-225851/2-A**  
**Matrix: Water**  
**Analysis Batch: 225915**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 225851**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	8.00	8.24		ug/L		103	85 - 115

**Lab Sample ID: 440-96316-G-1-F MS**  
**Matrix: Water**  
**Analysis Batch: 225915**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 225851**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		8.00	8.40		ug/L		105	70 - 130

**Lab Sample ID: 440-96316-G-1-G MSD**  
**Matrix: Water**  
**Analysis Batch: 225915**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 225851**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		8.00	8.36		ug/L		104	70 - 130	0	20

**Lab Sample ID: MB 440-226565/1-B**  
**Matrix: Water**  
**Analysis Batch: 227057**

**Client Sample ID: Method Blank**  
**Prep Type: Dissolved**  
**Prep Batch: 226624**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	IB	0.20	0.10	ug/L		12/24/14 06:37	12/24/14 15:22	1

**Lab Sample ID: LCS 440-226565/2-B**  
**Matrix: Water**  
**Analysis Batch: 227057**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Dissolved**  
**Prep Batch: 226624**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	8.00	10.0	LQ IB	ug/L		125	85 - 115

**Lab Sample ID: 440-96606-R-1-C MS**  
**Matrix: Water**  
**Analysis Batch: 227057**

**Client Sample ID: Matrix Spike**  
**Prep Type: Dissolved**  
**Prep Batch: 226624**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND	LQ IB	8.00	10.2	IB	ug/L		128	70 - 130

**Lab Sample ID: 440-96606-R-1-D MSD**  
**Matrix: Water**  
**Analysis Batch: 227057**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Dissolved**  
**Prep Batch: 226624**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND	LQ IB	8.00	10.0	IB	ug/L		126	70 - 130	2	20

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 120.1 - Conductivity, Specific Conductance

Lab Sample ID: MB 440-227467/3  
 Matrix: Water  
 Analysis Batch: 227467

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			12/30/14 18:32	1

Lab Sample ID: LCS 440-227467/4  
 Matrix: Water  
 Analysis Batch: 227467

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Specific Conductance	765	743		umhos/cm		97	90 - 110

Lab Sample ID: 440-96482-O-1 DU  
 Matrix: Water  
 Analysis Batch: 227467

Client Sample ID: Duplicate  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Specific Conductance	210		217		umhos/cm		3	5

## Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 440-228680/1-A  
 Matrix: Water  
 Analysis Batch: 228778

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 228680

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		5.0	1.4	mg/L		01/08/15 06:39	01/08/15 12:47	1

Lab Sample ID: LCS 440-228680/2-A  
 Matrix: Water  
 Analysis Batch: 228778

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 228680

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	20.0	19.0		mg/L		95	78 - 114

Lab Sample ID: LCSD 440-228680/3-A  
 Matrix: Water  
 Analysis Batch: 228778

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 228680

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
HEM	20.0	19.4		mg/L		97	78 - 114	2	11

## Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 440-225847/5  
 Matrix: Water  
 Analysis Batch: 225847

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	ND		0.10	0.040	NTU			12/19/14 14:23	1

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 180.1 - Turbidity, Nephelometric (Continued)

Lab Sample ID: 440-97209-1 DU  
 Matrix: Water  
 Analysis Batch: 225847

Client Sample ID: Outfall002\_20141218\_Comp  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Turbidity	8.7		8.67		NTU		0.1	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 440-226535/1  
 Matrix: Water  
 Analysis Batch: 226535

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	5.0	mg/L			12/23/14 16:53	1

Lab Sample ID: LCS 440-226535/2  
 Matrix: Water  
 Analysis Batch: 226535

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	970		mg/L		97	90 - 110

Lab Sample ID: 440-97184-E-2 DU  
 Matrix: Water  
 Analysis Batch: 226535

Client Sample ID: Duplicate  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1400		1380		mg/L		0	5

## Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 440-226425/2  
 Matrix: Water  
 Analysis Batch: 226425

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.50	mg/L			12/23/14 12:32	1

Lab Sample ID: LCS 440-226425/1  
 Matrix: Water  
 Analysis Batch: 226425

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	1000	1020		mg/L		102	85 - 115

Lab Sample ID: 440-97171-A-1 DU  
 Matrix: Water  
 Analysis Batch: 226425

Client Sample ID: Duplicate  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	240		232		mg/L		3	10

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: SM 4500 CN E - Cyanide, Total (Low Level)

**Lab Sample ID: MB 440-226574/1-A**  
**Matrix: Water**  
**Analysis Batch: 226768**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 226574**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L		12/23/14 20:02	12/24/14 13:36	1

**Lab Sample ID: LCS 440-226574/2-A**  
**Matrix: Water**  
**Analysis Batch: 226768**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 226574**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	99.6		ug/L		100	90 - 110

**Lab Sample ID: 440-97518-O-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 226768**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 226574**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	ND		100	108		ug/L		108	70 - 115

**Lab Sample ID: 440-97518-O-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 226768**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 226574**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	ND		100	99.5		ug/L		100	70 - 115	8	15

## Method: SM 4500 NH3 G - Ammonia

**Lab Sample ID: MB 440-228130/9**  
**Matrix: Water**  
**Analysis Batch: 228130**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.200	0.100	mg/L			01/05/15 15:53	1

**Lab Sample ID: LCS 440-228130/10**  
**Matrix: Water**  
**Analysis Batch: 228130**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	5.01	5.000		mg/L		100	90 - 110

**Lab Sample ID: 440-98014-W-30 MS**  
**Matrix: Water**  
**Analysis Batch: 228130**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	0.562		5.01	6.850	LM	mg/L		126	90 - 110

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: SM 4500 NH3 G - Ammonia (Continued)

**Lab Sample ID: 440-98014-W-30 MSD**  
**Matrix: Water**  
**Analysis Batch: 228130**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	0.562		5.01	6.890	LM	mg/L		126	90 - 110	1	15

## Method: SM 5540C - Methylene Blue Active Substances (MBAS)

**Lab Sample ID: MB 440-225921/9**  
**Matrix: Water**  
**Analysis Batch: 225921**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Blue Active Substances	ND		0.10	0.050	mg/L			12/19/14 19:50	1

**Lab Sample ID: LCS 440-225921/10**  
**Matrix: Water**  
**Analysis Batch: 225921**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Blue Active Substances	0.250	0.238		mg/L		95	90 - 110

**Lab Sample ID: 440-97209-1 MS**  
**Matrix: Water**  
**Analysis Batch: 225921**

**Client Sample ID: Outfall002\_20141218\_Comp**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Blue Active Substances	0.053	J,DX	0.250	0.235		mg/L		73	50 - 125

**Lab Sample ID: 440-97209-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 225921**

**Client Sample ID: Outfall002\_20141218\_Comp**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methylene Blue Active Substances	0.053	J,DX	0.250	0.242		mg/L		76	50 - 125	3	20

## Method: SM5210B - BOD, 5 Day

**Lab Sample ID: USB 440-225754/1**  
**Matrix: Water**  
**Analysis Batch: 225754**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	0.50	mg/L			12/19/14 08:44	1

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: SM5210B - BOD, 5 Day (Continued)

Lab Sample ID: LCS 440-225754/4  
 Matrix: Water  
 Analysis Batch: 225754

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	199	182		mg/L		92	85 - 115

Lab Sample ID: LCSD 440-225754/5  
 Matrix: Water  
 Analysis Batch: 225754

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand	199	188		mg/L		95	85 - 115	3	20

## Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-165591/1-A  
 Matrix: Water  
 Analysis Batch: 166749

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 165591

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.8022	U	0.881	0.886	1.43	pCi/L	12/29/14 14:42	01/06/15 07:08	1
Gross Beta	0.7705	U	0.602	0.606	0.935	pCi/L	12/29/14 14:42	01/06/15 07:08	1

Lab Sample ID: LCS 160-165591/2-A  
 Matrix: Water  
 Analysis Batch: 166749

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 165591

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Gross Alpha	50.1	54.04		7.72	1.68	pCi/L	108	73 - 133

Lab Sample ID: LCSB 160-165591/3-A  
 Matrix: Water  
 Analysis Batch: 166749

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 165591

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Gross Beta	95.9	98.18		10.4	1.03	pCi/L	102	75 - 125

Lab Sample ID: 440-97209-1 MS  
 Matrix: Water  
 Analysis Batch: 166748

Client Sample ID: Outfall002\_20141218\_Comp  
 Prep Type: Total/NA  
 Prep Batch: 165591

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Gross Alpha	1.23	U	50.1	45.66		6.60	1.38	pCi/L	91	35 - 150

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 900.0 - Gross Alpha and Gross Beta Radioactivity (Continued)

**Lab Sample ID: 440-97209-1 MSBT**  
**Matrix: Water**  
**Analysis Batch: 166748**

**Client Sample ID: Outfall002\_20141218\_Comp**  
**Prep Type: Total/NA**  
**Prep Batch: 165591**

Analyte	Sample	Sample	Spike Added	MSBT		Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
	Result	Qual		Result	Qual					
Gross Beta	2.69		95.9	99.59		10.5	0.893	pCi/L	101	89 - 143

**Lab Sample ID: 440-97209-1 DU**  
**Matrix: Water**  
**Analysis Batch: 166748**

**Client Sample ID: Outfall002\_20141218\_Comp**  
**Prep Type: Total/NA**  
**Prep Batch: 165591**

Analyte	Sample	Sample	DU		Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual					
Gross Alpha	1.23	U	0.3675	U	0.994	1.79	pCi/L	0.41	1
Gross Beta	2.69		2.410		0.773	0.954	pCi/L	0.18	1

## Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

**Lab Sample ID: MB 160-166424/1-A**  
**Matrix: Water**  
**Analysis Batch: 166598**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 166424**

Analyte	MB	MB	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cesium-137	-1.386	U	9.43	9.43	17.2	pCi/L	01/02/15 14:33	01/05/15 20:30	1
Potassium-40	-68.28	U	427	427	237	pCi/L	01/02/15 14:33	01/05/15 20:30	1

**Lab Sample ID: LCS 160-166424/2-A**  
**Matrix: Water**  
**Analysis Batch: 166598**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 166424**

Analyte	Spike Added	LCS		Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
		Result	Qual					
Americium-241	137000	134900		15600	552	pCi/L	99	90 - 111
Cesium-137	49400	48130		4830	215	pCi/L	97	90 - 111
Cobalt-60	52500	51470		5090	118	pCi/L	98	89 - 110

**Lab Sample ID: 440-97209-1 DU**  
**Matrix: Water**  
**Analysis Batch: 166594**

**Client Sample ID: Outfall002\_20141218\_Comp**  
**Prep Type: Total/NA**  
**Prep Batch: 166424**

Analyte	Sample	Sample	DU		Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual					
Cesium-137	-2.12	U	0.0000	U	1.79	9.30	pCi/L	0.23	1
Potassium-40	-79.6	U	-32.82	U	164	171	pCi/L	0.01	1

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-164776/1-A

Matrix: Water

Analysis Batch: 168077

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 164776

Analyte	MB MB		Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)					
Radium-226	0.02365	U	0.0573	0.0574	0.102	pCi/L	12/22/14 13:06	01/13/15 18:46	1
Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier	Limits						
Ba Carrier	89.7		40 - 110		12/22/14 13:06	01/13/15 18:46	1		

Lab Sample ID: LCS 160-164776/2-A

Matrix: Water

Analysis Batch: 168077

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 164776

Analyte	Spike Added	LCS Result	LCS Qual	Total	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)				
Radium-226	11.2	10.62		1.06	0.112	pCi/L	95	68 - 137
Carrier	LCS LCS		Limits		Prepared	Analyzed	Dil Fac	
Ba Carrier	%Yield	Qualifier	Limits					
Ba Carrier	94.7		40 - 110		12/22/14 13:06	01/13/15 18:46	1	

Lab Sample ID: 480-73271-AA-5-A DU

Matrix: Water

Analysis Batch: 168078

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 164776

Analyte	Sample		DU DU		Total	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual	Uncert. (2σ+/-)				
Radium-226	0.692		0.6244		0.139	0.113	pCi/L	0.24	1
Carrier	DU DU		Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier	Limits						
Ba Carrier	89.4		40 - 110		12/22/14 13:41	01/08/15 11:09	1		

## Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-164779/1-A

Matrix: Water

Analysis Batch: 167475

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 164779

Analyte	MB MB		Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)					
Radium-228	0.1131	U	0.254	0.254	0.434	pCi/L	12/22/14 13:41	01/08/15 11:09	1
Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier	Limits						
Ba Carrier	89.7		40 - 110		12/22/14 13:41	01/08/15 11:09	1		
Y Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac		
Y Carrier	%Yield	Qualifier	Limits						
Y Carrier	88.6		40 - 110		12/22/14 13:41	01/08/15 11:09	1		

TestAmerica Irvine



# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 904.0 - Radium-228 (GFPC) (Continued)

**Lab Sample ID:** LCS 160-164779/2-A  
**Matrix:** Water  
**Analysis Batch:** 167475

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA  
**Prep Batch:** 164779

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits	
Radium-228	3.57	3.923		0.599	0.428	pCi/L	110	56 - 140	
<b>Carrier</b>	<b>LCS %Yield</b>	<b>LCS Qualifier</b>	<b>Limits</b>						
Ba Carrier	94.7		40 - 110						
Y Carrier	84.1		40 - 110						

**Lab Sample ID:** 480-73271-AA-5-B DU  
**Matrix:** Water  
**Analysis Batch:** 167476

**Client Sample ID:** Duplicate  
**Prep Type:** Total/NA  
**Prep Batch:** 164779

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
Radium-228	0.255	U	0.1179	U	0.229	0.391	pCi/L	0.29	1
<b>Carrier</b>	<b>DU %Yield</b>	<b>DU Qualifier</b>	<b>Limits</b>						
Ba Carrier	89.4		40 - 110						
Y Carrier	86.4		40 - 110						

## Method: 905 - Strontium-90 (GFPC)

**Lab Sample ID:** MB 160-165620/1-A  
**Matrix:** Water  
**Analysis Batch:** 167123

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 165620

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.04484	U	0.176	0.176	0.321	pCi/L	12/29/14 18:01	01/07/15 15:55	1
<b>Carrier</b>	<b>MB %Yield</b>	<b>MB Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Sr Carrier	90.0		40 - 110				12/29/14 18:01	01/07/15 15:55	1
Y Carrier	89.3		40 - 110				12/29/14 18:01	01/07/15 15:55	1

**Lab Sample ID:** LCS 160-165620/2-A  
**Matrix:** Water  
**Analysis Batch:** 167123

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA  
**Prep Batch:** 165620

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Strontium-90	8.95	8.768		0.905	0.298	pCi/L	98	90 - 134
<b>Carrier</b>	<b>LCS %Yield</b>	<b>LCS Qualifier</b>	<b>Limits</b>					
Sr Carrier	88.6		40 - 110					
Y Carrier	92.7		40 - 110					

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: 440-96594-A-2-G DU  
 Matrix: Water  
 Analysis Batch: 167123

Client Sample ID: Duplicate  
 Prep Type: Total/NA  
 Prep Batch: 165620

Analyte	Sample	Sample	DU	DU	Total	MDC	Unit	Prepared	Analyzed	Dil Fac	RER	Limit
	Result	Qual	Result	Qual	Uncert. (2σ+/-)							
Strontium-90	-0.255	U	-0.01446	U	0.155	0.281	pCi/L				0.79	1

Carrier	%Yield	DU	DU	Qualifier	Limits
Sr Carrier	88.2				40 - 110
Y Carrier	90.8				40 - 110

## Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-166399/1-A  
 Matrix: Water  
 Analysis Batch: 166478

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 166399

Analyte	MB	MB	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)					
Tritium	158.1	U	187	187	304	pCi/L	01/02/15 08:35	01/02/15 14:05	1

Lab Sample ID: LCS 160-166399/2-A  
 Matrix: Water  
 Analysis Batch: 166478

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 166399

Analyte	Spike	LCS	LCS	Total	MDC	Unit	%Rec	%Rec.	Limits
	Added	Result	Qual	Uncert. (2σ+/-)					
Tritium	3440	3383		509	306	pCi/L	98	74 - 114	

Lab Sample ID: 280-63961-C-3-B MS  
 Matrix: Water  
 Analysis Batch: 166478

Client Sample ID: Matrix Spike  
 Prep Type: Total/NA  
 Prep Batch: 166399

Analyte	Sample	Sample	Spike	MS	MS	Total	MDC	Unit	%Rec	%Rec.	Limits
	Result	Qual	Added	Result	Qual	Uncert. (2σ+/-)					
Tritium	1050		3450	4424		603	306	pCi/L	98	67 - 130	

Lab Sample ID: 280-63670-A-3-D DU  
 Matrix: Water  
 Analysis Batch: 166478

Client Sample ID: Duplicate  
 Prep Type: Total/NA  
 Prep Batch: 166399

Analyte	Sample	Sample	DU	DU	Total	MDC	Unit	Prepared	Analyzed	Dil Fac	RER	Limit
	Result	Qual	Result	Qual	Uncert. (2σ+/-)							
Tritium	2030		1865		366	307	pCi/L				0.22	1

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

**Lab Sample ID: MB 160-165361/1-A**  
**Matrix: Water**  
**Analysis Batch: 166357**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 165361**

Analyte	MB	MB	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert.	Uncert.					
Total Uranium	0.03958	U	0.06314	0.06318	0.0995	pCi/L	12/24/14 10:49	12/31/14 14:22	1

**Lab Sample ID: LCS 160-165361/2-A**  
**Matrix: Water**  
**Analysis Batch: 166358**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 165361**

Analyte	Spike Added	LCS	LCS	Total	MDC	Unit	%Rec	%Rec. Limits
		Result	Qual	Uncert.				
Uranium-234	12.7	13.13		1.57	0.0712	pCi/L	103	84 - 120
Uranium-238	13.0	14.40		1.68	0.108	pCi/L	111	83 - 121

Tracer	LCS %Yield	LCS Qualifier	LCS Limits
Uranium-232	83.7		30 - 110

**Lab Sample ID: 440-97211-A-2-D DU**  
**Matrix: Water**  
**Analysis Batch: 166370**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 165361**

Analyte	Sample	Sample	DU	DU	Total	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual	Uncert.				
Total Uranium	0.0479	U	0.2654	U	0.274	0.343	pCi/L	0.62	1

# QC Association Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## GC/MS VOA

### Analysis Batch: 225970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97227-1	Outfall002_20141217_Grab	Total/NA	Water	624	
440-97227-2	TB-2014	Total/NA	Water	624	
550-37110-N-1 MS	Matrix Spike	Total/NA	Water	624	
550-37110-N-1 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
LCS 440-225970/5	Lab Control Sample	Total/NA	Water	624	
LCSD 440-225970/6	Lab Control Sample Dup	Total/NA	Water	624	
MB 440-225970/4	Method Blank	Total/NA	Water	624	

## GC/MS Semi VOA

### Prep Batch: 225816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	625	
LCS 440-225816/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 440-225816/3-A	Lab Control Sample Dup	Total/NA	Water	625	
MB 440-225816/1-A	Method Blank	Total/NA	Water	625	

### Analysis Batch: 226427

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	625	225816
LCS 440-225816/2-A	Lab Control Sample	Total/NA	Water	625	225816
LCSD 440-225816/3-A	Lab Control Sample Dup	Total/NA	Water	625	225816
MB 440-225816/1-A	Method Blank	Total/NA	Water	625	225816

## GC Semi VOA

### Prep Batch: 226994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	608	
LCS 440-226994/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 440-226994/3-A	Lab Control Sample Dup	Total/NA	Water	608	
MB 440-226994/1-A	Method Blank	Total/NA	Water	608	

### Analysis Batch: 227136

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	608 Pesticides	226994
LCS 440-226994/2-A	Lab Control Sample	Total/NA	Water	608 Pesticides	226994
LCSD 440-226994/3-A	Lab Control Sample Dup	Total/NA	Water	608 Pesticides	226994
MB 440-226994/1-A	Method Blank	Total/NA	Water	608 Pesticides	226994

## HPLC/IC

### Analysis Batch: 225476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-10924-D-2 MS	Matrix Spike	Total/NA	Water	300.0	
320-10924-D-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	300.0	
LCS 440-225476/6	Lab Control Sample	Total/NA	Water	300.0	
MB 440-225476/4	Method Blank	Total/NA	Water	300.0	

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# QC Association Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## HPLC/IC (Continued)

### Analysis Batch: 225477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-10924-D-2 MS	Matrix Spike	Total/NA	Water	300.0	
320-10924-D-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	300.0	
LCS 440-225477/6	Lab Control Sample	Total/NA	Water	300.0	
MB 440-225477/4	Method Blank	Total/NA	Water	300.0	

### Analysis Batch: 227303

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	314.0	
440-97476-K-1 MS	Matrix Spike	Total/NA	Water	314.0	
440-97476-K-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	
LCS 440-227303/2	Lab Control Sample	Total/NA	Water	314.0	
MB 440-227303/3	Method Blank	Total/NA	Water	314.0	
MRL 440-227303/5	Lab Control Sample	Total/NA	Water	314.0	

### Analysis Batch: 228046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	NO3NO2 Calc	

## Specialty Organics

### Analysis Batch: 4364015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total	Water	1613B	
H4L300000015B	Method Blank	Total	Water	1613B	
H4L300000015C	Lab Control Sample	Total	Water	1613B	

### Prep Batch: 4364015\_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total	Water	1613	
H4L300000015B	Method Blank	Total	Water	1613	
H4L300000015C	Lab Control Sample	Total	Water	1613	

## Metals

### Prep Batch: 225851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96316-G-1-F MS	Matrix Spike	Total/NA	Water	245.1	
440-96316-G-1-G MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	245.1	
LCS 440-225851/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 440-225851/1-A	Method Blank	Total/NA	Water	245.1	

### Analysis Batch: 225915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96316-G-1-F MS	Matrix Spike	Total/NA	Water	245.1	225851
440-96316-G-1-G MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	225851
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	245.1	225851
LCS 440-225851/2-A	Lab Control Sample	Total/NA	Water	245.1	225851
MB 440-225851/1-A	Method Blank	Total/NA	Water	245.1	225851

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# QC Association Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Metals (Continued)

### Filtration Batch: 226565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-R-1-C MS	Matrix Spike	Dissolved	Water	FILTRATION	
440-96606-R-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	FILTRATION	
440-96606-R-1-G MS	Matrix Spike	Dissolved	Water	FILTRATION	
440-96606-R-1-H MSD	Matrix Spike Duplicate	Dissolved	Water	FILTRATION	
440-97209-1	Outfall002_20141218_Comp	Dissolved	Water	FILTRATION	
LCS 440-226565/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 440-226565/2-D	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 440-226565/3-B	Lab Control Sample Dup	Dissolved	Water	FILTRATION	
MB 440-226565/1-B	Method Blank	Dissolved	Water	FILTRATION	
MB 440-226565/1-D	Method Blank	Dissolved	Water	FILTRATION	

### Prep Batch: 226624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-R-1-C MS	Matrix Spike	Dissolved	Water	245.1	226565
440-96606-R-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	226565
440-97209-1	Outfall002_20141218_Comp	Dissolved	Water	245.1	226565
LCS 440-226565/2-B	Lab Control Sample	Dissolved	Water	245.1	226565
MB 440-226565/1-B	Method Blank	Dissolved	Water	245.1	226565

### Prep Batch: 226703

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-R-1-G MS	Matrix Spike	Dissolved	Water	200.2	226565
440-96606-R-1-H MSD	Matrix Spike Duplicate	Dissolved	Water	200.2	226565
440-97209-1	Outfall002_20141218_Comp	Dissolved	Water	200.2	226565
LCS 440-226565/2-D	Lab Control Sample	Dissolved	Water	200.2	226565
LCS 440-226565/3-B	Lab Control Sample Dup	Dissolved	Water	200.2	226565
MB 440-226565/1-D	Method Blank	Dissolved	Water	200.2	226565

### Analysis Batch: 226988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-R-1-G MS	Matrix Spike	Dissolved	Water	200.8	226703
440-96606-R-1-H MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	226703
440-97209-1	Outfall002_20141218_Comp	Dissolved	Water	200.8	226703
LCS 440-226565/2-D	Lab Control Sample	Dissolved	Water	200.8	226703
LCS 440-226565/3-B	Lab Control Sample Dup	Dissolved	Water	200.8	226703
MB 440-226565/1-D	Method Blank	Dissolved	Water	200.8	226703

### Analysis Batch: 227057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-R-1-C MS	Matrix Spike	Dissolved	Water	245.1	226624
440-96606-R-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	226624
440-97209-1	Outfall002_20141218_Comp	Dissolved	Water	245.1	226624
LCS 440-226565/2-B	Lab Control Sample	Dissolved	Water	245.1	226624
MB 440-226565/1-B	Method Blank	Dissolved	Water	245.1	226624

### Prep Batch: 227112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total Recoverable	Water	200.2	
440-97209-1 MS	Outfall002_20141218_Comp	Total Recoverable	Water	200.2	
440-97209-1 MSD	Outfall002_20141218_Comp	Total Recoverable	Water	200.2	
LCS 440-227112/2-A	Lab Control Sample	Total Recoverable	Water	200.2	

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# QC Association Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Metals (Continued)

### Prep Batch: 227112 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 440-227112/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.2	
MB 440-227112/1-A	Method Blank	Total Recoverable	Water	200.2	

### Analysis Batch: 227345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total Recoverable	Water	200.8	227112
440-97209-1 MS	Outfall002_20141218_Comp	Total Recoverable	Water	200.8	227112
440-97209-1 MSD	Outfall002_20141218_Comp	Total Recoverable	Water	200.8	227112
LCS 440-227112/2-A	Lab Control Sample	Total Recoverable	Water	200.8	227112
LCSD 440-227112/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	227112
MB 440-227112/1-A	Method Blank	Total Recoverable	Water	200.8	227112

## General Chemistry

### Analysis Batch: 225664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97227-1	Outfall002_20141217_Grab	Total/NA	Water	SM 2540F	

### Analysis Batch: 225754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	SM5210B	
LCS 440-225754/4	Lab Control Sample	Total/NA	Water	SM5210B	
LCSD 440-225754/5	Lab Control Sample Dup	Total/NA	Water	SM5210B	
USB 440-225754/1	Method Blank	Total/NA	Water	SM5210B	

### Analysis Batch: 225847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	180.1	
440-97209-1 DU	Outfall002_20141218_Comp	Total/NA	Water	180.1	
MB 440-225847/5	Method Blank	Total/NA	Water	180.1	

### Analysis Batch: 225921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	SM 5540C	
440-97209-1 MS	Outfall002_20141218_Comp	Total/NA	Water	SM 5540C	
440-97209-1 MSD	Outfall002_20141218_Comp	Total/NA	Water	SM 5540C	
LCS 440-225921/10	Lab Control Sample	Total/NA	Water	SM 5540C	
MB 440-225921/9	Method Blank	Total/NA	Water	SM 5540C	

### Analysis Batch: 226425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97171-A-1 DU	Duplicate	Total/NA	Water	SM 2540D	
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	SM 2540D	
LCS 440-226425/1	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 440-226425/2	Method Blank	Total/NA	Water	SM 2540D	

### Analysis Batch: 226535

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97184-E-2 DU	Duplicate	Total/NA	Water	SM 2540C	
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	SM 2540C	

TestAmerica Irvine

# QC Association Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## General Chemistry (Continued)

### Analysis Batch: 226535 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-226535/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 440-226535/1	Method Blank	Total/NA	Water	SM 2540C	

### Prep Batch: 226574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	Distill/CN	
440-97518-O-1-B MS	Matrix Spike	Total/NA	Water	Distill/CN	
440-97518-O-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/CN	
LCS 440-226574/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
MB 440-226574/1-A	Method Blank	Total/NA	Water	Distill/CN	

### Analysis Batch: 226768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	SM 4500 CN E	226574
440-97518-O-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	226574
440-97518-O-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	226574
LCS 440-226574/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	226574
MB 440-226574/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	226574

### Analysis Batch: 227467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96482-O-1 DU	Duplicate	Total/NA	Water	120.1	
440-97227-1	Outfall002_20141217_Grab	Total/NA	Water	120.1	
LCS 440-227467/4	Lab Control Sample	Total/NA	Water	120.1	
MB 440-227467/3	Method Blank	Total/NA	Water	120.1	

### Analysis Batch: 228130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	SM 4500 NH3 G	
440-98014-W-30 MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 G	
440-98014-W-30 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 G	
LCS 440-228130/10	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	
MB 440-228130/9	Method Blank	Total/NA	Water	SM 4500 NH3 G	

### Prep Batch: 228680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97227-1	Outfall002_20141217_Grab	Total/NA	Water	1664A	
LCS 440-228680/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-228680/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 440-228680/1-A	Method Blank	Total/NA	Water	1664A	

### Analysis Batch: 228778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97227-1	Outfall002_20141217_Grab	Total/NA	Water	1664A	228680
LCS 440-228680/2-A	Lab Control Sample	Total/NA	Water	1664A	228680
LCSD 440-228680/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	228680
MB 440-228680/1-A	Method Blank	Total/NA	Water	1664A	228680



# QC Association Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Rad

### Prep Batch: 164776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	PrecSep-21	
440-97209-2	Trip Blank	Total/NA	Water	PrecSep-21	
480-73271-AA-5-A DU	Duplicate	Total/NA	Water	PrecSep-21	
LCS 160-164776/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-164776/1-A	Method Blank	Total/NA	Water	PrecSep-21	

### Prep Batch: 164779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	PrecSep_0	
440-97209-2	Trip Blank	Total/NA	Water	PrecSep_0	
480-73271-AA-5-B DU	Duplicate	Total/NA	Water	PrecSep_0	
LCS 160-164779/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-164779/1-A	Method Blank	Total/NA	Water	PrecSep_0	

### Prep Batch: 165361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	ExtChrom	
440-97209-2	Trip Blank	Total/NA	Water	ExtChrom	
440-97211-A-2-D DU	Duplicate	Total/NA	Water	ExtChrom	
LCS 160-165361/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
MB 160-165361/1-A	Method Blank	Total/NA	Water	ExtChrom	

### Prep Batch: 165591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	Evaporation	
440-97209-1 DU	Outfall002_20141218_Comp	Total/NA	Water	Evaporation	
440-97209-1 MS	Outfall002_20141218_Comp	Total/NA	Water	Evaporation	
440-97209-1 MSBT	Outfall002_20141218_Comp	Total/NA	Water	Evaporation	
440-97209-2	Trip Blank	Total/NA	Water	Evaporation	
LCS 160-165591/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-165591/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
MB 160-165591/1-A	Method Blank	Total/NA	Water	Evaporation	

### Prep Batch: 165620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-A-2-G DU	Duplicate	Total/NA	Water	PrecSep-7	
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	PrecSep-7	
440-97209-2	Trip Blank	Total/NA	Water	PrecSep-7	
LCS 160-165620/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
MB 160-165620/1-A	Method Blank	Total/NA	Water	PrecSep-7	

### Prep Batch: 166399

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-63670-A-3-D DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	
280-63961-C-3-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	LSC_Dist_Susp	
LCS 160-166399/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
MB 160-166399/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	

# QC Association Summary

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Rad (Continued)

### Prep Batch: 166424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97209-1	Outfall002_20141218_Comp	Total/NA	Water	Fill_Geo-0	
440-97209-1 DU	Outfall002_20141218_Comp	Total/NA	Water	Fill_Geo-0	
440-97209-2	Trip Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-166424/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
MB 160-166424/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	

## Biology

### Analysis Batch: 225994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97227-1	Outfall002_20141217_Grab	Total/NA	Water	SM 9221E	

### Analysis Batch: 225995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-97227-1	Outfall002_20141217_Grab	Total/NA	Water	SM 9221F	

# Definitions/Glossary

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Qualifiers

### GC/MS Semi VOA

Qualifier	Qualifier Description
LH	Surrogate Recoveries were higher than QC limits

### GC Semi VOA

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time

### HPLC/IC

Qualifier	Qualifier Description
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)

### DIOXIN

Qualifier	Qualifier Description
Q	Estimated maximum possible concentration (EMPC).
B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J	Estimated result. Result is less than the reporting limit.

### Metals

Qualifier	Qualifier Description
IB	CCV recovery above limit; analyte not detected
QP	Holding time Immediate. Analyzed as close to receipt as possible
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LQ	LCS/LCSD recovery above method control limits
MB	Analyte present in the method blank

### General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)

### Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control

## Definitions/Glossary

Client: Haley & Aldrich, Inc.  
Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

### Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Certification Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-15 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-15 *
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15 *
Northern Mariana Islands	State Program	9	MP0002	01-29-15 *
Oregon	NELAP	10	4005	01-29-15 *
USDA	Federal		P330-09-00080	06-06-15
USEPA UCMR	Federal	1	CA01531	01-31-15

## Laboratory: TestAmerica Knoxville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0688	06-17-15
California	State Program	9	2423	06-30-16
Colorado	State Program	8	N/A	02-28-15
Connecticut	State Program	1	PH-0223	09-30-15
Florida	NELAP	4	E87177	06-30-15
Georgia	State Program	4	906	04-13-17
Hawaii	State Program	9	N/A	04-13-15
Kentucky (DW)	State Program	4	90101	12-31-15
L-A-B	DoD ELAP		L2311	02-13-16
Louisiana	NELAP	6	83979	06-30-15
Louisiana	NELAP	6	LA110001	12-31-15
Maryland	State Program	3	277	03-31-15
Michigan	State Program	5	9933	04-13-17
Nevada	State Program	9	TN00009	07-31-15
New Jersey	NELAP	2	TN001	06-30-15
New York	NELAP	2	10781	03-31-15
North Carolina (DW)	State Program	4	21705	07-31-15
North Carolina (WW/SW)	State Program	4	64	12-31-15
Ohio VAP	State Program	5	CL0059	03-26-15
Oklahoma	State Program	6	9415	08-31-15
Pennsylvania	NELAP	3	68-00576	12-31-15
South Carolina	State Program	4	84001	06-30-15
Tennessee	State Program	4	2014	04-13-17
Texas	NELAP	6	T104704380-TX	08-31-15
USDA	Federal		P330-13-00260	08-29-16
Utah	NELAP	8	QUAN3	07-31-15
Virginia	NELAP	3	460176	09-14-15
Virginia	State Program	3	165	06-30-15
Washington	State Program	10	C593	01-19-16
West Virginia (DW)	State Program	3	9955C	12-31-14
West Virginia DEP	State Program	3	345	04-30-15
Wisconsin	State Program	5	998044300	08-31-15

## Laboratory: TestAmerica St. Louis

\* Certification renewal pending - certification considered valid.

TestAmerica Irvine

# Certification Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

## Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-15
California	NELAP	9	2886	03-31-15
Connecticut	State Program	1	PH-0241	03-31-15
Florida	NELAP	4	E87689	06-30-15
Illinois	NELAP	5	200023	11-30-15
Iowa	State Program	7	373	12-01-14 *
Kansas	NELAP	7	E-10236	03-31-15 *
Kentucky (DW)	State Program	4	90125	12-31-14 *
L-A-B	DoD ELAP		L2305	01-10-16
Louisiana	NELAP	6	LA150017	12-31-16
Maryland	State Program	3	310	09-30-15
Missouri	State Program	7	780	06-30-15
Nevada	State Program	9	MO000542013-1	07-31-15
New Jersey	NELAP	2	MO002	06-30-15
New Mexico	State Program	6		06-30-10 *
New York	NELAP	2	11616	03-31-15 *
North Dakota	State Program	8	R207	06-30-15
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-15
Pennsylvania	NELAP	3	68-00540	02-28-15 *
South Carolina	State Program	4	85002001	06-30-15
Texas	NELAP	6	T104704193-13-6	07-31-15
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542013-5	07-31-15
Virginia	NELAP	3	460230	06-14-15
Washington	State Program	10	C592	08-30-15
West Virginia DEP	State Program	3	381	08-31-15

\* Certification renewal pending - certification considered valid.



# LABORATORY REPORT



"dedicated to providing quality aquatic toxicity testing"

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

**Date:** December 26, 2014

**Client:** TestAmerica, Irvine  
17461 Derian Ave., Suite 100  
Irvine, CA 92614  
Attn: Debby Wilson

**Laboratory No.:** A-14121808-001  
**Job No.:** 440-97209-1  
**Sample I.D.:** Outfall\_002\_20141218\_Comp (400-97209-1)

**Sample Control:** The sample was received by ATL chilled, within the recommended hold time and with the chain of custody record attached. Testing conducted on only one sample per client instruction.

Date Sampled: 12/18/14  
Date Received: 12/18/14  
Temp. Received: 2.2°C  
Chlorine (TRC): 0.0 mg/l  
Date Tested: 12/18/14 to 12/25/14

**Sample Analysis:** The following analyses were performed on your sample:

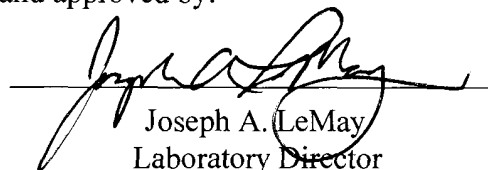
*Ceriodaphnia dubia* Survival and Reproduction Test (EPA Method 1002).

Attached are the test data generated from the analysis of your sample. All testing was conducted under the direct supervision of Joseph A. LeMay. Daily test readings were taken by Joseph A. LeMay (initialed: JAL) and Jacob LeMay (initialed: J).

## Result Summary:

<b>Chronic:</b>	<b>NOEC</b>	<b>TUc</b>
<i>Ceriodaphnia</i> Survival:	100%	1.0
<i>Ceriodaphnia</i> Reproduction:	100%	1.0

**Quality Control:** Reviewed and approved by:

  
Joseph A. LeMay  
Laboratory Director



**CERIODAPHNIA CHRONIC BIOASSAY  
EPA METHOD 1002.0**



Lab No.: A-14121808-001  
Client/ID: TestAmerica – Outfall 002

Date Tested: 12/18/14 to 12/25/14

**TEST SUMMARY**

Test type: Daily static-renewal.	Endpoints: Survival and Reproduction.
Species: <i>Ceriodaphnia dubia</i> .	Source: In-laboratory culture.
Age: < 24 hrs; all released within 8 hrs.	Food: .1 ml YTC, algae per day.
Test vessel size: 30 ml.	Test solution volume: 15 ml.
Number of test organisms per vessel: 1.	Number of replicates: 10.
Temperature: 25 +/- 1°C.	Photoperiod: 16/8 hrs. light/dark cycle.
Dilution water: Mod. hard reconstituted (MHRW).	Test duration: 7 days.
QA/QC Batch No.: RT-141203.	Statistics: ToxCalc computer program.

**RESULTS SUMMARY**

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	29.8
100% Sample	100%	31.0
Sample not statistically significantly less than Control for either endpoint.		

**CHRONIC TOXICITY**

Survival NOEC	100%
Survival TUc	1.0
Reproduction NOEC	100%
Reproduction TUc	1.0

**QA/QC TEST ACCEPTABILITY**

Parameter	Result
Control survival ≥80%	Pass (100% survival)
≥15 young per surviving control female	Pass (29.8 young)
≥60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 7.2%)
Statistically significantly different concentrations relative difference >13%	Pass (no concentration significantly different)
Concentration response relationship acceptable	Pass (no significant response at concentration tested)

**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 12/18/2014 14:00 Test ID: 14121808c Sample ID: Outfall 002  
 End Date: 12/25/2014 13:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 12/18/2014 01:16 Protocol: EPAFW02-821-R-02-013 Test Species: CD-Ceriodaphnia dubia  
 Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	30.000	33.000	23.000	33.000	31.000	27.000	32.000	31.000	27.000	31.000
100	32.000	33.000	34.000	28.000	32.000	29.000	33.000	31.000	31.000	27.000

Conc-%	Mean	N-Mean	Transform: Untransformed				N	t-Stat	1-Tailed	
			Mean	Min	Max	CV%			Critical	MSD
D-Control	29.800	1.0000	29.800	23.000	33.000	10.706	10			
100	31.000	1.0403	31.000	27.000	34.000	7.450	10	-0.964	1.730	2.155

Auxiliary Tests	Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.90168	0.905	-0.9718	0.43304						
F-Test indicates equal variances (p = 0.35)	1.90833	6.54109								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	100	>100		1	2.1546	0.0723	7.2	7.75556	0.34805	1, 18
Treatments vs D-Control										

**Ceriodaphnia Survival and Reproduction Test-7 Day Survival**

Start Date: 12/18/2014 14:00 Test ID: 14121808c Sample ID: Outfall 002  
 End Date: 12/25/2014 13:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 12/18/2014 01:16 Protocol: EPAFW02-821-R-02-013 Test Species: CD-Ceriodaphnia dubia  
 Comments:

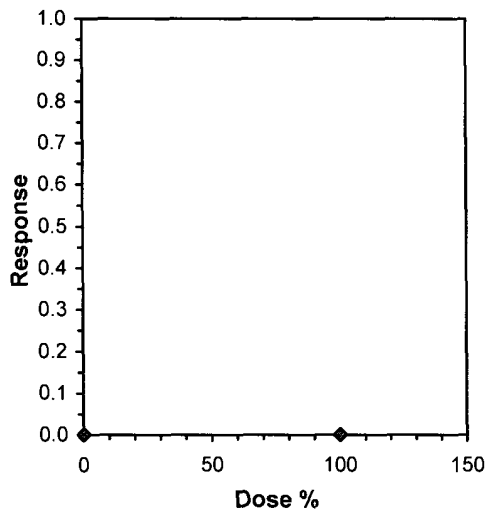
Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Conc-%	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's 1-Tailed		Isotonic	
							Exact P	Critical	Mean	N-Mean
D-Control	1.0000	1.0000	0	10	10	10			1.0000	1.0000
100	1.0000	1.0000	0	10	10	10	1.0000	0.0500	1.0000	1.0000

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	100	>100		1
Treatments vs D-Control				

**Linear Interpolation (200 Resamples)**

Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 12/18/2014 14:00 Test ID: 14121808c Sample ID: Outfall 002  
 End Date: 12/25/2014 13:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 12/18/2014 01:16 Protocol: EPAFW02-821-R-02-013 Test Species: CD-Ceriodaphnia dubia  
 Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	30.000	33.000	23.000	33.000	31.000	27.000	32.000	31.000	27.000	31.000
100	32.000	33.000	34.000	28.000	32.000	29.000	33.000	31.000	31.000	27.000

Conc-%	Mean	N-Mean	Transform: Untransformed					Rank Sum	1-Tailed Critical	Isotonic	
			Mean	Min	Max	CV%	N			Mean	N-Mean
D-Control	29.800	1.0000	29.800	23.000	33.000	10.706	10			30.400	1.0000
100	31.000	1.0403	31.000	27.000	34.000	7.450	10	117.00	82.00	30.400	1.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.90168	0.905	-0.9718	0.43304
F-Test indicates equal variances (p = 0.35)	1.90833	6.54109		

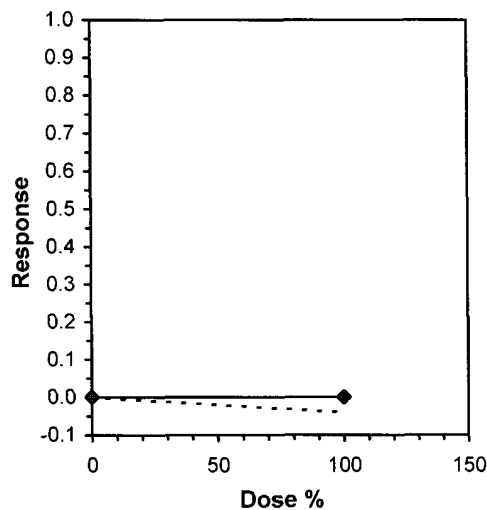
**Hypothesis Test (1-tail, 0.05)**

Wilcoxon Two-Sample Test indicates no significant differences

Treatments vs D-Control

**Linear Interpolation (200 Resamples)**

Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



# CERIODAPHNIA DUBIA CHRONIC BIOASSAY

## EPA METHOD 1002.0 Raw Data Sheet



Lab No.: A-14121808-001

Client ID: TestAmerica - Outfall 002

Start Date: 12/18/2014

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr
Analyst Initials:		[Signature]		[Signature]		[Signature]		[Signature]		[Signature]		[Signature]		[Signature]	
Time of Readings:		1400 1400		1400 1400		1400 1330		1300 1300		1300 1400		1400 1400		1400 1330	
Control	DO	8.3	8.0	8.3	8.1	8.6	8.3	8.3	8.4	8.2	8.0	8.2	8.2	8.2	8.0
	pH	7.9	8.0	8.0	8.1	8.1	8.1	8.0	8.1	8.1	8.1	8.0	8.0	8.1	8.0
	Temp	24.0	24.7	24.9	24.8	24.8	24.7	24.7	24.3	24.8	24.8	24.9	24.9	24.8	24.7
100%	DO	9.1	8.1	8.4	8.1	8.9	8.5	8.7	8.3	8.3	8.1	8.1	8.1	8.1	7.7
	pH	7.6	8.0	8.1	8.0	8.0	8.1	8.0	8.2	8.1	8.0	8.3	8.2	8.2	8.1
	Temp	24.5	24.7	24.8	24.8	24.8	24.8	24.8	24.3	24.7	24.8	24.9	24.9	24.8	24.7

Additional Parameters	Control	100% Sample
Conductivity (umohms)	330	241
Alkalinity (mg/l CaCO <sub>3</sub> )	59	85
Hardness (mg/l CaCO <sub>3</sub> )	92	80
Ammonia (mg/l NH <sub>3</sub> -N)	0	0.4

Source of Neonates											
Replicate:	A	B	C	D	E	F	G	H	I	J	
Brood ID:	1A	2C	3Z	3E	2I	3I	1J	2J	4A	5B	

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	[Signature]
	2	0	0	0	0	0	0	0	0	0	0	0	10	[Signature]
	3	0	0	0	0	0	0	0	4	0	0	4	10	[Signature]
	4	5	4	3	5	4	3	3	0	4	3	34	10	[Signature]
	5	9	12	0	11	12	10	11	10	0	11	86	10	[Signature]
	6	16	0	6	0	15	14	0	0	6	17	74	10	[Signature]
	7	0	17	14	17	0	0	18	17	17	0	100	10	[Signature]
	Total	30	33	23	33	31	27	32	31	27	31	298	10	[Signature]
100%	1	0	0	0	0	0	0	0	0	0	0	0	10	[Signature]
	2	0	0	0	0	0	0	0	0	0	0	0	10	[Signature]
	3	0	0	0	0	0	0	5	0	0	0	5	10	[Signature]
	4	4	5	4	3	4	4	0	5	5	4	38	10	[Signature]
	5	9	10	12	11	11	10	11	0	10	9	93	10	[Signature]
	6	19	18	18	14	17	15	17	12	0	0	130	10	[Signature]
	7	0	0	0	0	0	0	19	14	16	14	44	10	[Signature]
	Total	32	33	34	28	32	29	33	31	31	27	310	10	[Signature]

Circled fourth brood not used in statistical analysis.

7<sup>th</sup> day only used if <60% of the surviving control females have produced their third brood.

CHAIN OF CUSTODY FORM

<b>Client Name/Address:</b> Haley & Aldrich 9040 Friars Road Suite 220 San Diego, CA 92108-5860		<b>Project:</b> Boeing-SSFL NPDES Routine Outfall 002 COMPOSITE	
<b>Test America Contact:</b> Debby Wilson		<b>Phone Number:</b> 619.285.7132, 858.337.4061 (cell) <b>Field Manager:</b> Jeff Bannion 818.350.7340, 818.414.5608 (cell)	
<b>Project Manager:</b> Nancy Gardiner <b>Sampler:</b> S. Dawson	Sample I.D. Outfall002_20141218_Comp	Sampling Date/Time 12.18.14 0114	Bottle # 19A ✓ 17A ✓ 17B ✓ 18 ✓ 19 ✓
Sample Description Outfall 002 Outfall 002 Outfall 002 Outfall 002	Container Type 1L Poly 2.5 Gal Cube 50 mL Amber 1 Gal Cube 500 mL Poly	# of Cont. 1 1 1 1	Preservative None None None NaOH
Total Dissolved Metals: Cu, Pb, Hg, Cd Se, Zn, Tl Gross Alpha(900 D), Gross Beta(900 D), Tritium (H-3) (906 D), Sr-90 (905 D), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), < 40 CS-137 (901.0 or 901.1)			
Chronic Toxicity X			
Comments Filter w/in 24hrs of receipt at lab Unfiltered and unpreserved analyte Only test if first or second rain events of the year			

COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 002 for this storm event. These must be added to the same work order for COC Page 1 of 3 for Outfall 002 for the same event.

Relinquished By AAM/TZL 12.18.14 0140	Date/Time 12.18.14 0140	Received By SHARON NABI 12/18/14	Date/Time 12/18/14
Relinquished By SHARON NABI 12/18/14 10:54	Date/Time 12/18/14 10:54	Received By TESS DUNN 12-18-14	Date/Time 12-18-14
Relinquished By TESS DUNN 12-18-14 DCS 12:00	Date/Time 12-18-14 DCS 12:00	Received By [Signature]	Date/Time 12-18-14 [Signature]

WTC SHARON NABI



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# ***REFERENCE TOXICANT DATA***

**CERIODAPHNIA CHRONIC BIOASSAY**  
**EPA METHOD 1002.0**  
**REFERENCE TOXICANT - NaCl**



QA/QC Batch No.: RT-141203

Date Tested: 12/03/14 to 12/10/14

**TEST SUMMARY**

Test type: Daily static-renewal.  
 Species: *Ceriodaphnia dubia*.  
 Age: <24 hrs; all released within 8 hrs.  
 Test vessel size: 30 ml.  
 Number of test organisms per vessel: 1.  
 Temperature: 25 +/- 1°C.  
 Dilution water: Mod. hard reconstituted (MHRW).  
 Reference Toxicant: Sodium chloride (NaCl).

Endpoints: Survival and Reproduction.  
 Source: In-laboratory culture.  
 Food: .1 ml YTC, algae per day.  
 Test solution volume: 20 ml.  
 Number of replicates: 10.  
 Photoperiod: 16/8 hrs. light/dark cycle.  
 Test duration: 7 days.  
 Statistics: ToxCalc computer program.

**RESULTS SUMMARY**

Sample Concentration	Percent Survival		Mean Number of Young Per Female	
Control	100%		26.9	
0.25 g/L	100%		28.1	
0.5 g/L	100%		27.0	
1.0 g/L	100%		18.0	*
2.0 g/L	90%		2.3	*
4.0 g/L	0%	*	0	**

\* Statistically significantly less than control at P = 0.05 level  
 \*\* Reproduction data from concentrations greater than survival NOEC are excluded from statistical analysis.

**CHRONIC TOXICITY**

Survival LC50	2.6 g/l
Reproduction IC25	0.85 g/l

**QA/QC TEST ACCEPTABILITY**

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥ 15 young per surviving control female	Pass (26.9 young)
≥60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 8.0%)
Stat. sig. diff. conc. relative difference >13%	Pass (Stat. sig. diff. conc. Relative difference= 33.1%)
Concentration response relationship acceptable	Pass (Response curve normal)



**Ceriodaphnia Survival and Reproduction Test-7 Day Survival**

Start Date: 12/3/2014 14:00 Test ID: RT141203c Sample ID: REF-Ref Toxicant  
 End Date: 12/10/2014 13:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NACL-Sodium chloride  
 Sample Date: 12/3/2014 Protocol: EPAFW02-821-R-02-013 Test Species: CD-Ceriodaphnia dubia  
 Comments:

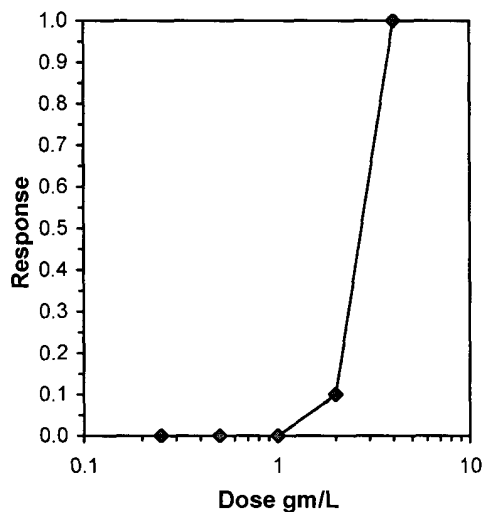
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Number Resp	Total Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
2	0.9000	0.9000	1	9	10	10	0.5000	0.0500	1	10
4	0.0000	0.0000	10	0	10	10			10	10

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	2	4	2.82843	
Treatments vs D-Control				

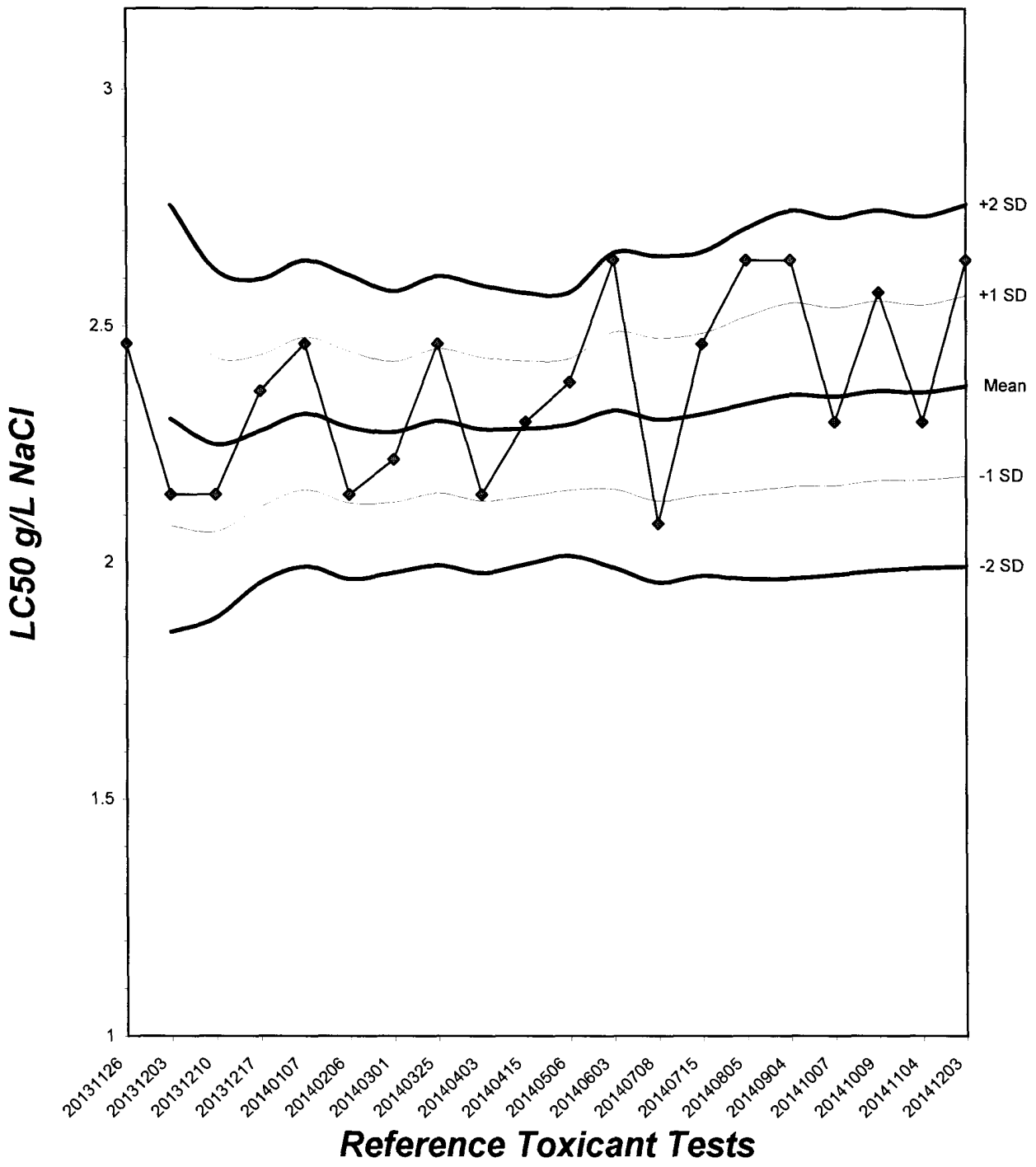
**Trimmed Spearman-Kärber**

Trim Level	EC50	95% CL	
0.0%	2.6390	2.3138	3.0099
5.0%	2.6984	2.2899	3.1798
10.0%	2.7216	2.5094	2.9517
20.0%	2.7216	2.5094	2.9517
Auto-0.0%	2.6390	2.3138	3.0099



# Ceriodaphnia Chronic Survival Laboratory Control Chart

CV% = 8.03



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**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 12/3/2014 14:00 Test ID: RT141203c Sample ID: REF-Ref Toxicant  
 End Date: 12/10/2014 13:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NACL-Sodium chloride  
 Sample Date: 12/3/2014 Protocol: EPAFW02-821-R-02-013 Test Species: CD-Ceriodaphnia dubia  
 Comments:

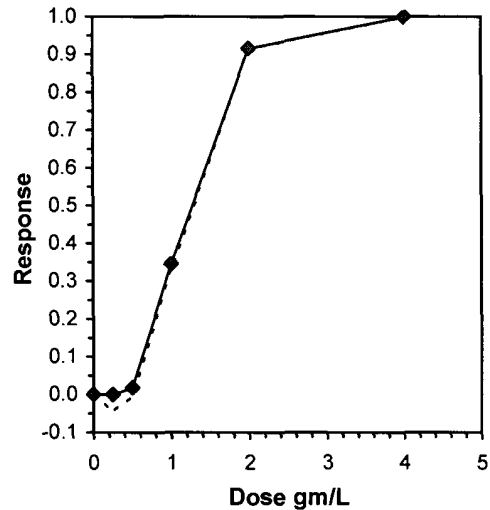
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	29.000	26.000	28.000	26.000	27.000	25.000	26.000	22.000	27.000	33.000
0.25	25.000	30.000	29.000	28.000	30.000	30.000	28.000	30.000	26.000	25.000
0.5	28.000	27.000	30.000	27.000	24.000	27.000	29.000	27.000	28.000	23.000
1	18.000	19.000	18.000	17.000	21.000	15.000	18.000	19.000	19.000	16.000
2	0.000	2.000	2.000	2.000	6.000	2.000	2.000	2.000	0.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-gm/L	Transform: Untransformed							t-Stat	1-Tailed Critical	MSD	Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N				Mean	N-Mean
D-Control	26.900	1.0000	26.900	22.000	33.000	10.580	10				27.500	1.0000
0.25	28.100	1.0446	28.100	25.000	30.000	7.399	10	-1.242	2.223	2.147	27.500	1.0000
0.5	27.000	1.0037	27.000	23.000	30.000	7.808	10	-0.104	2.223	2.147	27.000	0.9818
*1	18.000	0.6691	18.000	15.000	21.000	9.443	10	9.215	2.223	2.147	18.000	0.6545
*2	2.300	0.0855	2.300	0.000	6.000	82.111	10	25.469	2.223	2.147	2.300	0.0836
4	0.000	0.0000	0.000	0.000	0.000	0.000	10				0.000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.97547	0.947	0.13437	0.79031
Bartlett's Test indicates equal variances (p = 0.60)	2.75789	13.2767		

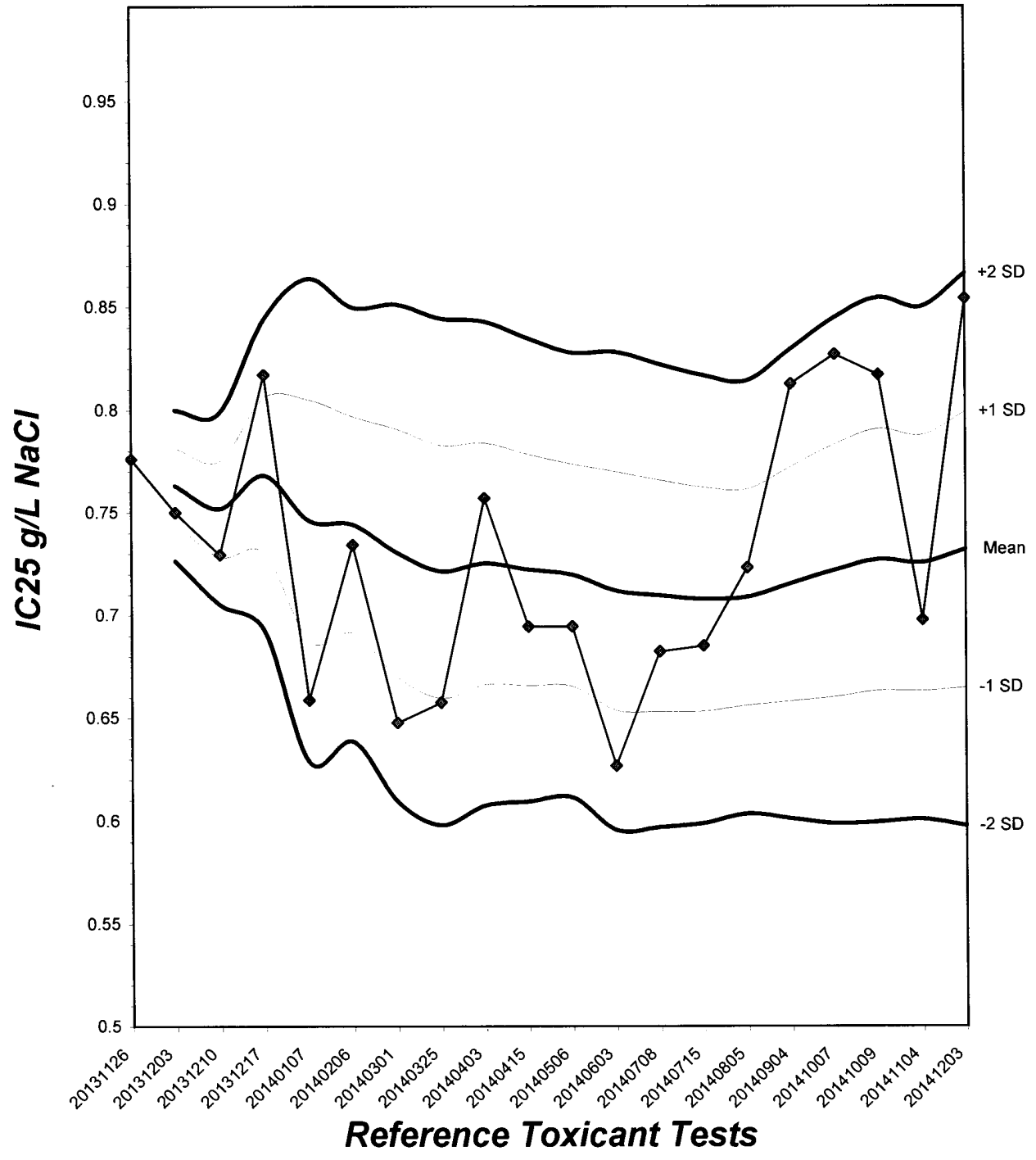
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs D-Control	0.5	1	0.70711		2.14743	0.07983	1196.13	4.66444	2.4E-30	4, 45

Linear Interpolation (200 Resamples)					
Point	gm/L	SD	95% CL		Skew
IC05	0.5486	0.0565	0.4009	0.5821	-3.1255
IC10	0.6250	0.0323	0.5424	0.6654	-0.9276
IC15	0.7014	0.0307	0.6298	0.7507	-0.6185
IC20	0.7778	0.0309	0.7171	0.8343	-0.2564
IC25	0.8542	0.0327	0.7943	0.9179	0.0400
IC40	1.0955	0.0399	1.0217	1.1692	-0.1435
IC50	1.2707	0.0342	1.2093	1.3340	-0.1116



# Ceriodaphnia Chronic Reproduction Laboratory Control Chart

CV% = 9.16



**CERIODAPHNIA DUBIA CHRONIC BIOASSAY**  
**Reference Toxicant - NaCl**  
**Reproduction and Survival Raw Data Sheet**



QA/QC No.: RT-141203

Start Date: 12/03/2014

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	h
	2	0	0	0	0	0	0	0	0	0	0	0	10	h
	3	5	4	4	3	3	3	5	2	3	0	32	10	h
	4	8	8	7	6	8	8	6	0	6	5	62	10	h
	5	0	14	0	0	0	0	0	6	0	12	32	10	h
	6	16	0	17	0	0	14	15	0	0	0	62	10	h
	7	18	19	17	17	16	16	18	14	18	16	81	10	h
	Total	29	26	28	26	27	25	26	22	27	33	269	10	h
0.25 g/l	1	0	0	0	0	0	0	0	0	0	0	10	h	
	2	0	0	0	0	0	0	0	0	0	0	10	h	
	3	5	4	3	5	3	5	3	5	4	2	39	10	h
	4	8	10	9	7	9	8	7	9	8	9	84	10	h
	5	0	16	0	0	0	0	0	16	0	14	46	10	h
	6	12	0	17	16	18	17	18	0	14	0	112	10	h
	7	17	18	19	0	19	0	19	19	0	15	0	10	h
	Total	25	30	29	28	30	30	28	30	26	25	281	10	h
0.5 g/l	1	0	0	0	0	0	0	0	0	0	0	10	h	
	2	0	0	0	0	0	0	0	0	0	0	10	h	
	3	4	3	5	4	4	3	4	4	3	2	36	10	h
	4	8	9	10	9	8	8	10	7	8	7	84	10	h
	5	0	0	0	0	0	0	0	16	0	14	30	10	h
	6	16	15	15	14	12	16	15	0	17	0	120	10	h
	7	14	16	18	17	16	19	8	16	15	0	0	10	h
	Total	28	27	30	27	24	27	29	27	28	23	270	10	h

Circled fourth brood not used in statistical analysis.  
 7<sup>th</sup> day only used if <60% of the surviving control females have produced their third brood.

**CERIODAPHNIA DUBIA CHRONIC BIOASSAY**  
**Reference Toxicant - NaCl**  
**Reproduction and Survival Raw Data Sheet**



QA/QC No.: RT-141203

Start Date: 12/03/2014

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
1.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	JK
	2	0	0	0	0	0	0	0	0	0	0	0	10	JK
	3	3	2	5	4	2	0	3	2	4	0	25	10	JK
	4	6	7	6	6	5	3	5	5	7	3	53	10	JK
	5	0	10	0	0	0	0	0	12	0	6	28	10	JK
	6	0	0	0	0	0	0	0	0	0	0	0	10	JK
	7	9	(6)	7	7	14	12	10	(6)	8	7	74	10	JK
	Total	18	19	18	17	21	15	18	19	19	16	180	10	JK
2.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	JK
	2	0	0	0	0	0	0	0	0	0	0	0	10	JK
	3	0	0	2	2	0	0	0	0	0	0	4	10	JK
	4	0	0	0	0	0	0	0	2	0	2	4	10	JK
	5	0	0	0	0	0	0	0	0	0	3	3	10	JK
	6	0	0	0	0	2	2	0	0	0	0	4	10	JK
	7	X	2	0	0	4	0	2	0	0	0	8	9	JK
	Total	0	2	2	2	6	2	2	2	0	5	23	9	JK
4.0 g/l	1	X	X	X	X	X	X	X	X	X	X	0	0	JK
	2	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	-	-	-	-	-	-	-	-	-	-	-
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	0	0	0	0	0	0	0	0	0	0	0	0	JK

Circled fourth brood not used in statistical analysis.  
 7<sup>th</sup> day only used if <60% of the surviving control females have produced their third brood.

**CERIODAPHNIA DUBIA CHRONIC BIOASSAY**  
**Reference Toxicant - NaCl**  
**Water Chemistries Raw Data Sheet**



QA/QC No.: RT-141203

Start Date: 12/03/2014

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Analyst Initials:		J	Z	Z	Z	Z	J	Z	Z	JL	JL	Z	Z	Z	Z
Time of Readings:		1400	1400	1400	1400	1400	1400	1400	1400	1400	1330	1330	1330	1330	1330
Control	DO	8.1	8.0	8.3	7.9	8.1	8.0	8.1	8.0	8.2	8.2	8.6	8.1	8.2	8.0
	pH	7.9	7.9	7.8	8.1	8.0	8.0	8.1	8.1	8.1	8.1	8.1	8.0	8.0	8.1
	Temp	25.1	25.0	25.1	25.0	25.1	24.8	25.0	24.9	24.9	25.0	25.1	25.0	25.0	25.1
0.25 g/l	DO	8.2	8.0	8.2	7.9	8.0	8.0	8.1	8.0	8.1	8.2	8.7	8.0	8.2	8.1
	pH	7.8	7.9	7.8	8.0	7.9	8.0	7.9	8.0	8.0	8.1	8.1	8.0	7.8	8.1
	Temp	25.1	25.0	25.1	25.0	25.1	24.9	25.0	24.8	25.0	25.0	25.0	24.9	25.0	25.0
0.5 g/l	DO	8.2	8.1	8.3	7.9	8.2	8.0	8.0	8.0	8.2	8.2	8.7	8.3	7.9	8.0
	pH	7.9	7.9	7.8	8.0	7.9	7.9	8.0	8.1	8.1	8.1	8.0	8.0	7.7	8.0
	Temp	25.1	25.1	25.1	25.0	25.0	24.9	25.0	24.9	25.0	25.0	24.9	24.8	24.8	25.0
1.0 g/l	DO	8.3	8.1	7.8	8.0	8.1	7.6	7.8	7.8	8.0	8.2	8.6	8.2	8.4	8.1
	pH	7.9	7.9	7.9	8.0	7.9	7.9	8.0	8.1	8.0	8.0	8.1	8.0	7.9	8.1
	Temp	25.1	25.0	25.1	24.9	25.0	25.0	25.0	24.9	24.9	25.2	25.0	24.8	25.0	25.0
2.0 g/l	DO	8.4	8.1	8.3	8.0	8.1	7.7	8.1	7.9	8.3	8.0	8.4	8.1	7.8	8.0
	pH	7.9	7.8	7.8	7.8	8.0	8.1	8.0	8.1	8.0	8.0	8.1	8.1	7.8	8.1
	Temp	25.0	25.1	25.1	24.9	25.0	24.8	25.0	24.9	25.0	25.2	24.6	24.8	24.7	25.0
4.0 g/l	DO	8.4	7.8	8.4	-	-	-	-	-	-	-	-	-	-	-
	pH	7.9	7.8	7.8	-	-	-	-	-	-	-	-	-	-	-
	Temp	25.1	25.1	25.2	-	-	-	-	-	-	-	-	-	-	-

Dissolved Oxygen (DO) readings are in mg/l O<sub>2</sub>; Temperature (Temp) readings are in °C.

Additional Parameters	Control			High Concentration		
	Day 1	Day 3	Day 5	Day 1	Day 3	Day 5
Conductivity (µS)	295	310	309	6541	3471	3349
Alkalinity (mg/l CaCO <sub>3</sub> )	56	56	55	56	56	56
Hardness (mg/l CaCO <sub>3</sub> )	93	92	92	92	92	92

Source of Neonates										
Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	1A	3A	2B	3B	1C	3C	1D	1E	3E	2G