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Via Email to losangeles@waterboards.ca.gov

August 15, 2019
In reply refer to SHEA-116095

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

Subject: Second Quarter 2019 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 April 1 through June 30, 2019 (Second Quarter 2019). This DMR was prepared as required by, and in accordance with the National Pollutant Discharge Elimination System Permit No. CA0001309 (NPDES Permit) issued by the Los Angeles California Regional Water Quality Control Board (Regional Board) in 2015. The NPDES Permit covers the entire Santa Susana Site, which includes approximately 2,400 acres owned by Boeing, approximately 450 acres owned by the United States and administered by the National Aeronautics and Space Administration (NASA), and approximately 290 acres of Boeing's land for which the Department of Energy (DOE) has assumed responsibility for soil remediation.

In addition to reporting sampling results from any sampling that occurred during the Second Quarter 2019, this DMR discusses the steps taken in response to the November 2018 Woolsey Wildfire, which caused a substantial loss of vegetation at the Santa Susana Site and destroyed many previously installed controls identified as best management practices (BMPs). BMPs include, as examples, fiber rolls, sandbags, riprap, hydromulch, biofilters, bioswales, stormwater conveyance pipelines, and outfall monitoring equipment. Before the wildfire, naturally occurring vegetation, vegetation established by hydroseed, and BMPs aided in controlling soil erosion (detachment of soil particles from stabilized surfaces) and transport of soil containing naturally occurring constituents in stormwater. To reduce the potential for soil erosion after the fire and help establish vegetation regrowth, numerous activities were implemented as soon as feasible to restore the damaged natural and/or engineered water quality BMPs and facilities. During the Second Quarter 2019, Boeing continued to assess damage to the BMPs and Boeing's property in general caused by the wildfire, repaired/replaced/upgraded the damaged BMPs, and installed additional BMPs (needed because of the vegetation destroyed by the fire) across the Santa Susana Site to reduce sediment and soil in surface water flow. A more detailed discussion of these post-wildfire restoration efforts is provided under the heading "SECOND QUARTER 2019 SANTA SUSANA SITE SWPPP/BMP ACTIVITIES."

Hard copies of this DMR are available to the public at the California State University Northridge Oviatt Library, the Simi Valley Public Library, and the Platt Branch of the Los Angeles Public Library. An electronic version of this DMR is located at: http://www.boeing.com/principles/environment/santa-susana/monitoring-reports.page

SECOND QUARTER 2019 DMR CONTENTS

This DMR includes the following sections and appendices:

- **Discharge and Sample Collection Summary:** This section describes the number of rain events, the number of samples collected, sample dates, and sample locations during the Second Quarter 2019. Table I summarizes the Second Quarter 2019 sampling record by outfall or location and sample type collected per the requirements of the NPDES Permit.
- **Second Quarter 2019 Receiving Water Surveys:** This section summarizes the receiving water surveys required by the NPDES Permit.
- **Second Quarter 2019 Summary of Exceedances and/or Non-Compliance:** This section summarizes the Second Quarter 2019 sample results that exceeded NPDES Permit Limits, Benchmarks, and Receiving Water Limits, and the potential causes thereof.
- **Second Quarter 2019 Santa Susana Site Stormwater Pollution Prevention Plan (SWPPP)/BMP Activities:** This section presents the Santa Susana Site SWPPP and BMP-related activities implemented in the Second Quarter 2019 associated with Woolsey Wildfire Vegetation Restoration as well as activities associated with NASA, DOE, the Stormwater Expert Panel (Expert Panel), the Northern Drainage, and the Outfall 001/002 BMP Compliance Report. Table II summarizes typical BMP-related activities that occur at outfalls every quarter. Table III summarizes specific BMP activities completed during the Second Quarter 2019 by outfall location.
- **Annual Comprehensive Site Compliance Evaluation Report:** This section discusses the annual site compliance evaluation.
- **Bioassessment Monitoring:** This section discusses the bioassessment review required by the NPDES Permit.
- **SWPPP, BMP Plan, and Spill Contingency Plan Status and Effectiveness Report:** This section discusses updates to the SWPPP, BMP Plan, and Spill Contingency Plan Status and Effectiveness Report for 2019.
- **Figure 1** shows the stormwater collection conveyance system, the Bell Creek Receiving Water sampling location (RSW-001, Outfall 002), and Santa Susana Site features; **Figure 2** shows the Arroyo Simi Receiving Water (RSW-002, Frontier Park) sampling location and upstream monitoring location.
- **Appendix A** summarizes the rainfall measured at the Santa Susana Site during the Second Quarter 2019.
- **Appendix B** tabulates waste shipment details during the Second Quarter 2019.
- **Appendix C** presents chemical analytical results from the Second Quarter 2019 stormwater and/or receiving water sample discharge monitoring in tabular form by outfall locations, constituents evaluated (analytes), sample dates, and data validation qualifiers.
- **Appendix D** contains copies of the laboratory analytical reports, chain-of-custody forms, and data validation reports.
- **Appendix E** presents the Annual Comprehensive Site Compliance Evaluation Report.
- **Appendix F** presents the Second Quarter 2019 Bioassessment Sampling Report.

DISCHARGE AND SAMPLE COLLECTION SUMMARY

The Santa Susana Site had one qualifying rain event during the Second Quarter 2019 that measured greater than 0.1 inch of rainfall within a 24-hour period and were preceded by at least 72 hours of dry weather (Appendix A). Automated flow-weighted composite samplers (autosamplers) were set in preparation for all anticipated rain events. No discharge occurred at any of the outfalls; therefore, no samples were collected. There were no changes in the discharge as described in the NPDES Permit during the reporting period.

One quarterly offsite receiving water sample was collected at the Arroyo Simi location (RSW-002, Frontier Park; see Figure 2). The annual sediment sample was also collected at the Arroyo Simi–Frontier Park location on April 24, 2019.

Table I summarizes the Second Quarter 2019 sampling record by location, sample frequency, and sample type collected per NPDES Permit requirements and results are included in Appendix C.

TABLE I: Sampling Record during the Second Quarter 2019

Date	Outfall/Location	Sample Frequency	Sample Type
4/24/2019	Arroyo Simi Receiving Water (RSW-002, Frontier Park)	Quarterly Surface Water, Annual Sediment	Grab

All analyses were conducted at analytical laboratories certified by the State Water Resources Control Board (SWRCB) for such analyses (i.e., all have current certification from the Environmental Laboratory Accreditation Program [ELAP] established by the California Environmental Laboratory Improvement Act) or have been approved by the SWRCB Executive Officer in accordance with current U.S. Environmental Protection Agency (EPA) guideline procedures or as specified in the NPDES Permit. Laboratory analytical reports, including validation reports and notes, are included in Appendix D. Attachment H of the NPDES Permit presents the SWRCB's minimum levels laboratories are expected to achieve for reporting and determining compliance with NPDES Permit Limits. The analytical laboratory achieved these minimum levels in the Second Quarter 2019 except when reporting limits were above the minimum levels (generally due to matrix). In cases where the NPDES Permit Limit was less than the reporting limit and minimum level, the reporting limit was used to determine compliance.

SECOND QUARTER 2019 RECEIVING WATER SURVEYS

The receiving water monitoring program required by the Permit includes surveys of Bell Creek, Dayton Canyon Creek, and Arroyo Simi. Observations are made only during discharge from Outfalls 002, 008, and 009, respectively, and at most monthly during periods of multiple flow events. During Second Quarter 2019, Outfalls 002, 008, and 009 did not discharge, thus, no receiving water surveys were conducted.

SECOND QUARTER 2019 SUMMARY OF EXCEEDANCES AND/OR NON-COMPLIANCE

No surface water discharges occurred from the Santa Susana Site during Second Quarter 2019. As such, there are no onsite compliance issues to report for this period. Additionally, in the quarterly surface water sample and the annual sediment sample collected at Arroyo Simi sampling location (RSW-002, Frontier Park) in Simi Valley, no constituents exceeded receiving water or sediment limits.

SECOND QUARTER 2019 SANTA SUSANA SITE SWPPP/BMP ACTIVITIES

Boeing implemented significant BMP activities in compliance with the Site-Wide SWPPP (Haley & Aldrich, 2018) to assist in improving stormwater quality and compliance at the Santa Susana Site. Table II summarizes typical BMP-related activities that occur at outfalls every quarter.

TABLE II: Routine Quarterly Outfall BMP Activities

BMP Activities	Outfalls											
	001	002	003	004	005	006	007	008	009	010	011	018
Conducted erosion, sediment control, and drainage stabilization inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation.	X	X	X	X	X	X	X	X	X	X	X	X
Inspected the flume for sediment/debris.	X	X	X	X	N/A	X	N/A	X	X	X	N/A	X
Inspected the weir for sediment/debris.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	X	N/A
Cleaned the sample box of sediment and debris, checked for the presence of animals, and performed weed abatement as needed.	X	X	X	X	X	X	X	X	N/A	X	X	X
Checked the flow meter control box for the presence of debris and/or animals.	X	X	X	X	N/A	X	N/A	X	X	X	X	X
Cleaned the outfall area of sediment and debris and performed weed abatement as needed.	X	X	X	X	X	X	X	X	X	X	X	X
Reset the flow meter and replaced the tape monthly.	X	X	X	X	N/A	X	N/A	X	X	X	X	X
Conducted maintenance inspections of the stormwater conveyance system.	N/A	N/A	X	X	X	X	X	N/A	N/A	X	X	X
Conducted maintenance inspections of the stormwater retention system.	N/A	N/A	X	X	X	X	X	N/A	N/A	X	X	X
Conducted maintenance inspections of the flow-through structure.	N/A	N/A	X	X	N/A	X	N/A	N/A	N/A	X	X	N/A

Notes:

X = BMP activity is applicable to the outfall and was completed in Second Quarter 2019.

N/A = BMP activity is not applicable to the outfall because the outfall does not have a flume, sample box, flow meter, retention system or flow-through structure or is not part of the stormwater conveyance system.

In addition to SWPPP-related activities, specific BMP projects included: Woolsey Wildfire Vegetation Restoration, NASA, DOE, Expert Panel, Northern Drainage, and Outfall 001/002. These are discussed in more detail below.

Woolsey Wildfire Vegetation Restoration Activities

In November 2018, the Woolsey Wildfire burned approximately 80% of the Santa Susana Site destroying telephone poles, electrical lines, water conveyance lines, aluminum walkways and stairs, 24-hour composite sampling equipment, stormwater BMPs, and a substantial amount of vegetation. The Expert Panel initiated a post-wildfire source investigation to better understand how the wildfire impacted the quantity and quality of stormwater discharges during subsequent storm events. The Expert Panel met with the Regional Board on May 9, 2019 to share their initial observations and results of this investigation. The observations and findings from that meeting and subsequent analysis will be provided in their 2019 Annual Report. To reduce the impact of the ash and charred materials on stormwater, restore BMPs, and facilitate vegetation regrowth, Boeing implemented numerous the activities described in Table III were implemented as soon as feasible following extinction of the wildfire onsite.

Most of the repair work related to wildfire damage, including the operation of the stormwater treatment system at OU-18, was completed in the First Quarter of 2019 under the oversight and direction of the Regional Board and Stormwater Expert Panel and is detailed in the First Quarter DMR and First Quarter BMP Compliance Report. During the Second Quarter 2019, Boeing continued to repair/replace/upgrade remaining damaged BMPs and installed additional BMPs across the Santa Susana Site to reduce sediment and constituents in surface water flow. Table III summarizes the additional activities completed during the Second Quarter 2019 by outfall or BMP location.

TABLE III: Additional Second Quarter 2019 BMP Activities

Outfall or BMP Location	BMP Activities During Second Quarter 2019
001	Reconstructed the foundation under the sampling shed which was damaged due to the Woolsey Wildfire and subsequent heavy rains. Performed road maintenance. Performed weed abatement
002	Performed road maintenance. Applied a 2-part epoxy to the flume.
009	Replaced deteriorated sandbags at stormwater drop inlet at the top of the steel stairway.
010	Cleaned up leaves and vegetation encroaching into screen on perimeter of Media Bed. Performed road maintenance. Removed fiber roll at locations stabilized with vegetation.
011	Replaced broken/damaged fiber roll. Installed new autosampler coverage. Removed damaged sandbags. Bolted the new stormwater conveyance pump and plumbed the suction and discharge line.
012	Fused the HDPE liner at Outfall 012. Performed weed abatement on the road into the Outfall and around the spillway.
018	Applied epoxy paint on the flume.
Former Shooting Range	Removed fiber roll along the walking trail at locations stabilized with vegetation. Removed sediment from behind the upper check structure.
Perimeter Pond	Performed road maintenance.
R-1 Pond	Removed and disposed of damaged stormwater conveyance pipeline. Removed and disposed of old cement blocks. Reapplied gravel along the walkway and the intake pump pad.
R-2A Pond	Installed a new flow meter on the 12" pipeline for the stormwater conveyance pumps. Installed a new flow meter on the 10" pipeline for the backup Charles King Pump. Installed air release valves on the stormwater conveyance pipelines.

Outfall or BMP Location	BMP Activities During Second Quarter 2019
Outfall 011 Stormwater Treatment System	Bolted and chained the intake pipeline to the Perimeter Pond stormwater conveyance pipeline. Installed new 10" HDPE to allow the stormwater treatment system to operate in recirculation mode and transfer stormwater from Perimeter Pond. Anchored and secured the intake pumps. Hydrotested the filter feed pumps. Replaced the mechanical seals on Filter Feed Pump 105 and 106. Repaired minor leaks on the sodium hydroxide line. Performed weed abatement as needed. Assembled and installed new site control barriers. Installed signage on the flammable cabinets.
Outfall 018 Stormwater Treatment System	Bolted and chained the stormwater conveyance pipeline from R-2A Pond to Silvernale Pond. Completed repairs to the air compressors and performed a function test of the units. Constructed new cement walkways. Repaired minor leaks in the Sodium Hydroxide and Aluminum Sulfate storage sheds. Performed weed abatement as needed. Assembled and installed new site control barriers. Installed air release valves on the discharge pipeline. Installed signage on the flammable cabinets.

NASA-Related Activities

Demolition BMPs and stormwater control activities covered by NASA's Construction SWPPP (dated May 16, 2017) for the Alfa and Bravo areas are inspected in accordance with the Construction General Permit (CGP). All demolition and soil disturbance activities were completed in 2018. During the Second Quarter 2019, NASA maintained fiber roll as linear sediment controls, maintained silt fencing, and maintained hydroseeded areas within these sites where construction activities had been completed.

Demolition BMPs and stormwater control activities covered by NASA's Construction SWPPP (dated February 21, 2017) for the Delta Area are inspected in accordance with the CGP. During the Second Quarter 2019, the RWQCB issued a notice of termination (NOT) for this SWPPP.

Demolition BMPs and stormwater control activities covered by NASA's Construction SWPPP (dated December 4, 2017) in the Coca Test Stand Area are inspected in accordance with the CGP. All demolition and soil disturbance activities in the Coca Test Stand Area were completed in Fourth Quarter 2018. During the Second Quarter 2019, NASA maintained fiber roll as linear sediment controls and maintained sandbags within completed demolition areas.

Demolition BMPs and stormwater control activities covered by NASA's Construction SWPPP (dated September 20, 2018) for the LOX and Bravo Areas are inspected in accordance with the CGP. During the Second Quarter 2019, NASA completed demolition activities in these areas and maintained fiber roll as linear sediment controls and maintained sandbags.

DOE Related Activities

DOE reported no BMP-related activities during the Second Quarter 2019.

Expert Panel-Related Activities

The BMP activities discussed below were performed, commenced, or completed during the Second Quarter 2019 in coordination with the Expert Panel.

B-1 Area

The B-1 Area BMPs include:

- A sedimentation basin, constructed in 2012;
- A media filter, constructed in 2012; and
- An upper parking lot media filter, constructed in 2017.

The Second Quarter 2019 activities included continued BMP inspections and clearing the areas of sediment and debris.

Culvert Modifications

Twelve culvert modifications (CMs) were constructed in 2009 at various locations at or along the main road adjacent to the Northern Drainage. The CMs were designed to treat stormwater from roads and/or the surrounding hillsides. The Second Quarter 2019 activities included:

- BMP inspections, including the culvert inlets and riprap check dams;
- Cleaned basins free of sediment or debris at CM-1, 3, 4, 5, and 10;
- Removed the accumulated sediment within the drop inlet structure; and
- Repaired the metal culvert channel at CM-3.

Former Building 1436 Detention Bioswales

Two detention bioswales were constructed at the former Building 1436 following its removal in Third Quarter 2014. The graded surface was hydroseeded, and more than 2,900 native plantings were installed in December 2014. The bioswales were designed to capture, pretreat, and detain stormwater from the adjacent parking lot and from approximately 13.9 acres of drainage area east and upgradient prior to releasing the stormwater to the former Instrument and Equipment Laboratories (IEL) storm drain, where flow is diverted to the lower lot biofilter for treatment. The Second Quarter 2019 activities included BMP inspections and invasive plant removal adjacent to and within the bioswales. Replaced wattles at the inlet to the bioswale.

Lower Lot Biofilter

The lower lot biofilter is a stormwater treatment BMP designed and built to capture, convey, and treat stormwater from the lower parking lot and former IEL watershed. The lower lot biofilter consists of a 30,000-gallon cistern, a stormwater conveyance line, a sedimentation basin, and a media biofilter.

The Second Quarter 2019 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. Approximately 69,600 gallons of stormwater were pumped from the cistern to the sedimentation basin during the Second Quarter 2019. The Second Quarter 2019 activities included weed abatement as needed.

NASA Expendable Launch Vehicle (ELV) Area BMPs

BMPs and drainage improvements were installed between June and October 2013 at the NASA ELV to improve the quality of stormwater from the ELV area. After being pumped from the cistern at the bottom of the swale to the ELV system, stormwater is gravity-driven through the tank system, starting with the settling tanks, then through the filter media tank, before discharging to a tributary that flows to Outfall 009. In the

Second Quarter 2016, a sandbag berm was placed across the ELV asphalt swale to divert stormwater toward CM-1 for treatment instead of directly discharging to the Northern Drainage. The ELV system was not operational during the Second Quarter 2019 due to not having power at the BMP location. The Second Quarter 2019 activities included BMP inspections.

Administration Area Inlet Filters

Four storm drain inlets were modified with either drop inlet filters or weighted wattles filled with media mixtures during the Second Quarter 2017. At the inlet closest to the lower lot, a storm drain filter sock was placed upstream of the inlet to increase solids settling. The Second Quarter 2019 activities included BMP inspections and removed accumulated sediment in the basin.

Well 13 Road

Sandbag berms located near the culvert inlet and downgradient of the hydroseeded area were reinforced and increased in height during Fourth Quarter 2017. The Second Quarter 2019 activities included BMP inspections and replaced deteriorated sandbags at stormwater drop inlet at the top of the steel stairway to Outfall 009.

Upper Parking Lot Media Filter

Construction of a media filter at the northeast corner of the upper parking lot was completed during the Second Quarter 2017. This BMP included a new media filter similar in style to the B-1 media filter and designed to treat runoff from parts of the parking lot as well as parts of the adjacent Entrance Road. The Second Quarter 2019 activities included BMP inspections and removed sediment and debris in and around the media bed.

Former Shooting Range

Prior to the Second Quarter 2019, existing BMPs at the Former Shooting Range consisted of:

- Slope stabilization measures (i.e., vegetation planting areas);
- Riprap berms along the Northern Drainage;
- A culvert maintenance media filter;
- Fiber rolls;
- Sandbag berm;
- Silt fencing;
- Water bar across the trail;
- Three check structures on the Northern trail;
- Sandbags with fiber rolls;
- A check structure at the dissipater; and
- Hydroseeding.

The entire area where shot was deposited continues to benefit from the growth of dense vegetation which shields lead shot from direct contact with or dislodging due to precipitation.

The Second Quarter 2019 activities included BMP inspections, removing/replacing damaged fiber roll, and removing sediment buildup behind check structures at the Sage Ranch Walking Trail.

NASA and Boeing BMP Monitoring-Related Activities

In addition to activities performed in coordination with the Expert Panel described above, BMP performance monitoring samples were collected in the watershed associated with Outfall 009 during the Second Quarter 2019. These samples will be reported by the Expert Panel in their 2019 Annual Report.

Non-Industrial Sources Special Studies

Non-industrial sources special studies are intended to help identify source pollutants within various watersheds. Onsite and offsite samples were not collected during the Second Quarter 2019.

Northern Drainage BMPs

Boeing restored the Northern Drainage (Outfall 009) following cleanup activities performed under the Department of Toxic Substance Control oversight and in accordance with the requirements of the Regional Board's Cleanup and Abatement Order No. R4-2007-0054 (Regional Water Quality Control Board, 2007). The restoration and mitigation activities proposed in the Northern Drainage Restoration, Mitigation, and Monitoring Plan (RMMP)[1] were implemented in 2012. In accordance with the RMMP, regular maintenance, monitoring, and reporting were implemented in the Northern Drainage from 2012 through the Third Quarter 2017 for the stream's plant biology and geomorphology. The successful restoration and mitigation of the Northern Drainage per the success criteria of the RMMP were documented in the fifth and final Annual Mitigation Monitoring Report (Haley & Aldrich, 2017). Based on the success of the project, Boeing requested that the Regional Board provide written notice stating that Boeing had complied with all terms of the Cleanup and Abatement Order and Boeing's obligations under the Order would therefore be terminated. Boeing will continue to inspect the Northern Drainage BMPs annually and maintain them on an as-needed basis. A RMMP-related inspection of Northern Drainage BMPs was performed during Second Quarter 2019. The primary channel and major tributaries of the Northern Drainage were not burned during the Woolsey Wildfire – only areas in the southern portion of the Outfall 009 watershed upstream of the culvert modifications were burned.

Outfall 001/002 BMP Compliance Report Related Activities

Boeing submitted a BMP Compliance Report to the Regional Board on June 16, 2017, that discussed activities to reduce or eliminate benchmark exceedances for samples collected on January 21, 2017, from drainage at Outfalls 001 (iron, lead, manganese, and TCDD TEQ) and 002 (chronic toxicity and iron; Boeing, 2017). The BMP activities were completed during the Third Quarter 2017.

Boeing submitted a second BMP Compliance Report to the Regional Board on April 15, 2019, that discussed activities to reduce or eliminate benchmark exceedances for samples collected on December 7, 2018 from drainage at Outfall 002 (copper, gross alpha, iron, lead, selenium, and zinc). The BMP recommendations will be completed before the onset of the rainy season.

Boeing has submitted a third BMP Compliance Report to the Regional Board on July 12, 2019 to discuss activities to reduce or eliminate benchmark exceedances occurring during First Quarter 2019 associated with Outfall 002 (arsenic, manganese, sulfate, and TCDD TEQ). The BMP recommendations will be completed before the onset of the rainy season.

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[1] Available at: http://www.boeing.com/principles/environment/santa-susana/technical-reports.page

Boeing and the Expert Panel will continue to monitor and evaluate the effectiveness of BMPs within the watersheds of Outfall 001 and Outfall 002 as discussed in the 2018 Expert Panel Annual Report (Geosyntec and the Expert Panel, 2018). A discussion of next steps and recommendations for these watersheds will be included in the upcoming 2019 Expert Panel Annual Report.

Other BMP activities

BMP observations and maintenance inspections were conducted in conformance with the Site-Wide SWPPP (Haley & Aldrich, 2018) at and around the former test stands Alfa and Bravo and former Advanced Propulsion Test Facility.

ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION REPORT

The annual comprehensive site compliance evaluation was conducted in May 2019 and a summary is included in Appendix E.

BIOASSESSMENT MONITORING

A bioassessment review was conducted at the Santa Susana Site on April 24, 2019 to evaluate water quality conditions in the tributary to Arroyo Simi downstream of Outfall 009 and the tributary to the Los Angeles River downstream of Outfall 001 in accordance with NPDES Permit requirements. The methods, procedures, and results of the bioassessment are reported in the Bioassessment Monitoring Report included in Appendix F. Note that there was insufficient water flow to conduct the bioassessment monitoring in the second quarter of 2019.

SWPPP, BMP PLAN, AND SPILL CONTINGENCY PLAN STATUS AND EFFECTIVENESS REPORT

The SWPPP, BMP Plan, and Spill Contingency Plan (heretofore referred to as the Spill Prevention and Response Plan [SPRP]) are implemented and the effectiveness is evaluated by Boeing annually. The SWPPP, BMP Plan, and SPRP were reviewed following the annual comprehensive site compliance evaluation in May 2019 (Appendix E) and will be issued in the Third Quarter 2019.

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 distributed, sustainable erosion control/restoration measures. The Expert Panel is reviewing the data collected this year and will make BMP and monitoring recommendations that will be communicated in the 2019 Annual Report.

FACILITY CONTACT

If there are any questions regarding this report or its enclosures, you may contact Mr. Jeffrey Wokurka of Boeing at (818) 466-8800.

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 knowing violations.

Executed on the 15th of August 2019 at The Boeing Company, Seal Beach, CA Site.

Sincerely,

Kim O'Rourke
Remediation Program Manager
Environment, Health & Safety

Enclosures:

- References
- Figure 1 – Site Map with Stormwater Collection and Conveyance System and Site Features
- Figure 2 – Arroyo Simi Receiving Water (RSW-002, Frontier Park) Sampling Location and Upstream Monitoring Point
- Appendix A – Second Quarter 2019 Rainfall Data Summary
- Appendix B – Second Quarter 2019 Waste Shipment Summary Tables
- Appendix C – Second Quarter 2019 Discharge Monitoring Data Summary Tables
- Appendix D – Second Quarter 2019 Analytical Laboratory Reports, Chain of Custody Forms, and Validation Reports
- Appendix E – Annual Comprehensive Site Compliance Evaluation Report
- Appendix F – Second Quarter 2019 Bioassessment Sampling Report

c: Los Angeles Regional Water Quality Control Board; Attn: Ms. Cassandra Owens
California Department of Toxic Substances Control; Attn: Mr. Mark Mallnowski
California State University Northridge Oviatt Library
Simi Valley Public Library
Los Angeles Public Library, Platt Branch

REFERENCES

1. The Boeing Company, 2017. Best Management Practice Compliance Report, Outfalls 001 and 002, The Boeing Company, Santa Susana Site, Ventura County. 16 June.

2. California Regional Water Quality Control Board, 2007. Cleanup and Abatement Order No. R4-2007-0054. 6 November.

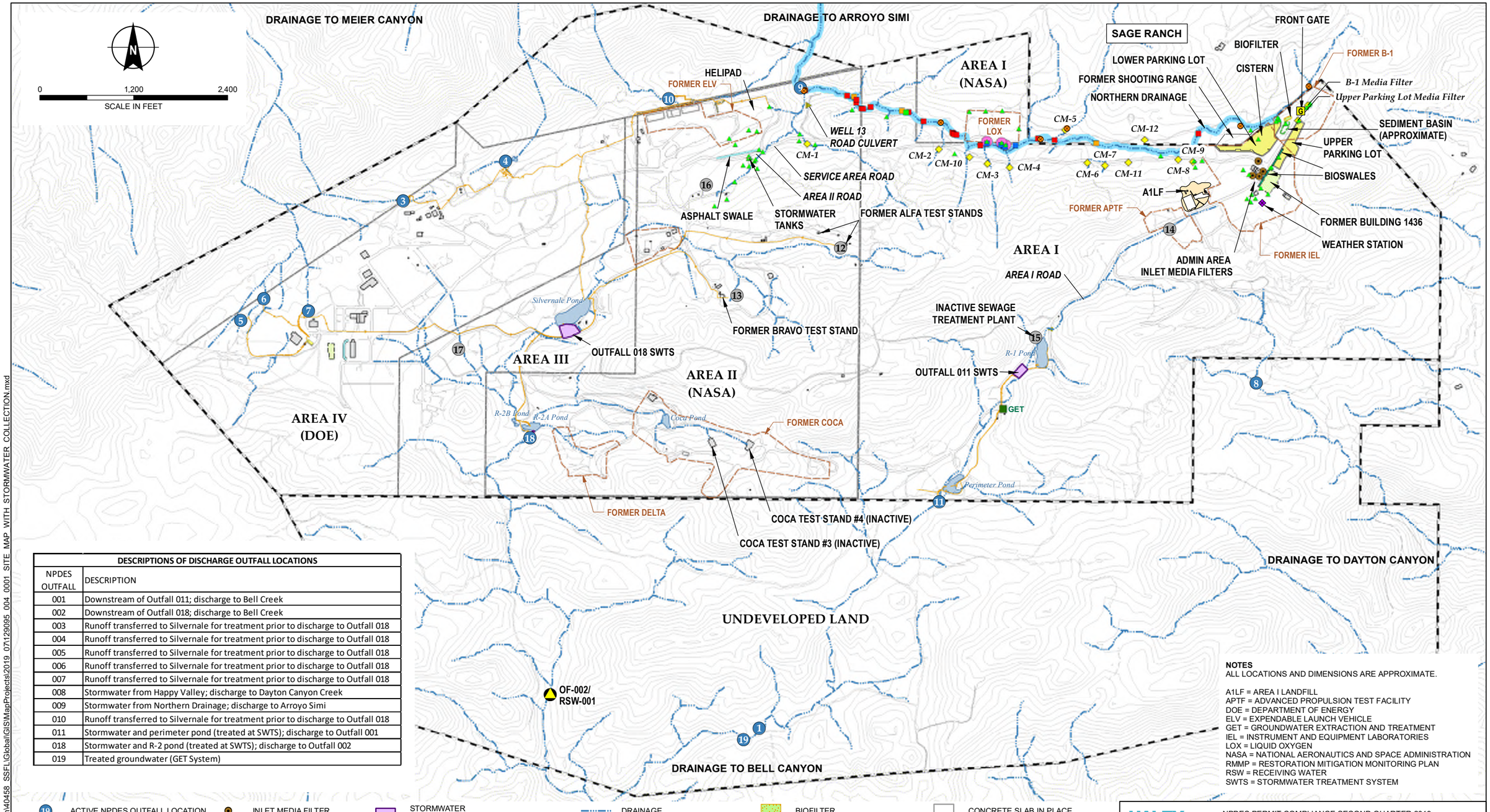
3. California Regional Water Quality Control Board, Los Angeles Region, 2015. Waste Discharge Requirements for The Boeing Company, Santa Susana Field Laboratory (Order No. R4-2015-0033, NPDES No. CA0001309). 12 February.

4. Geosyntec and the Expert Panel, 2018. Santa Susana Field Laboratory Site-Wide Stormwater Annual Report, 2017/18 Reporting Year, Ventura County, California (NPDES No. CA0001309, CI No.6027). 31 October.

5. Haley & Aldrich, Inc., 2017. Northern Drainage 2017 Annual Report, Clean Water Act Section 401 Water Quality Certification, File No. 12-001, Cleanup and Abatement Order No. R4-2007-0054, Streambed Alteration Agreement No. 1600-2003-5052-R5, Streambed Alteration Agreement No. 1600-2015-0079-R5, U.S. Army Corps of Engineers SPL-2012-00015, Santa Susana Field Laboratory, Ventura County, California. 13 December.

6. Haley & Aldrich, Inc., 2018. Stormwater Pollution and Prevention Plan (Version 5 for Compliance with 2015 NPDES Permit). 14 December.

FIGURES



DESCRIPTIONS OF DISCHARGE OUTFALL LOCATIONS	
NPDES OUTFALL	DESCRIPTION
001	Downstream of Outfall 011; discharge to Bell Creek
002	Downstream of Outfall 018; discharge to Bell Creek
003	Runoff transferred to Silvernale for treatment prior to discharge to Outfall 018
004	Runoff transferred to Silvernale for treatment prior to discharge to Outfall 018
005	Runoff transferred to Silvernale for treatment prior to discharge to Outfall 018
006	Runoff transferred to Silvernale for treatment prior to discharge to Outfall 018
007	Runoff transferred to Silvernale for treatment prior to discharge to Outfall 018
008	Stormwater from Happy Valley; discharge to Dayton Canyon Creek
009	Stormwater from Northern Drainage; discharge to Arroyo Simi
010	Runoff transferred to Silvernale for treatment prior to discharge to Outfall 018
011	Stormwater and perimeter pond (treated at SWTS); discharge to Outfall 001
018	Stormwater and R-2 pond (treated at SWTS); discharge to Outfall 002
019	Treated groundwater (GET System)

19 ACTIVE NPDES OUTFALL LOCATION
17 FORMER NPDES OUTFALL LOCATION
BELL CREEK RECEIVING WATER (RSW-001) SAMPLING LOCATION AND OUTFALL 002
SLOPE DRAIN DISCHARGE POINT TO NORTHERN DRAINAGE
CULVERT MODIFICATION
CM-12

INLET MEDIA FILTER
BMP MONITORING LOCATION
SPECIAL STUDIES LOCATION
GET SYSTEM

STORMWATER TREATMENT SYSTEM
FORMER STUDY AREA
RMMP LOCATION
CHECK STRUCTURE - MOSTLY NATURAL SANDSTONE, SOME RIP RAP
CHECK STRUCTURE - RIP RAP
CHECK STRUCTURE - VEGETATED RIP RAP
SLOPE DRAIN WITH UNDERLYING CHECK STRUCTURE AND ENERGY DISSIPATING GRAVEL AT INFLUENT END

DRAINAGE
ASPHALT SWALE
PAVED ROAD
DIRT ROAD
STORMWATER CONVEYANCE PIPELINE WITH FLOW DIRECTION
25' ELEVATION CONTOUR
VEHICLE PARKING AREA

BIOFILTER
BIOSWALE
SEDIMENT BASIN
STORMWATER TANK
SURFACE WATER POND
EXISTING BUILDING/STRUCTURE
FORMER BUILDING FOOTPRINT

CONCRETE SLAB IN PLACE
LANDFILL AREA
SANTA SUSANA SITE PROPERTY BOUNDARY
ADMINISTRATIVE AREA BOUNDARY

NOTES
ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

A1LF = AREA I LANDFILL
APTF = ADVANCED PROPULSION TEST FACILITY
DOE = DEPARTMENT OF ENERGY
ELV = EXPENDABLE LAUNCH VEHICLE
GET = GROUNDWATER EXTRACTION AND TREATMENT
IEL = INSTRUMENT AND EQUIPMENT LABORATORIES
LOX = LIQUID OXYGEN
NASA = NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
RMMP = RESTORATION MITIGATION MONITORING PLAN
RSW = RECEIVING WATER
SWTS = STORMWATER TREATMENT SYSTEM

HALEY ALDRICH

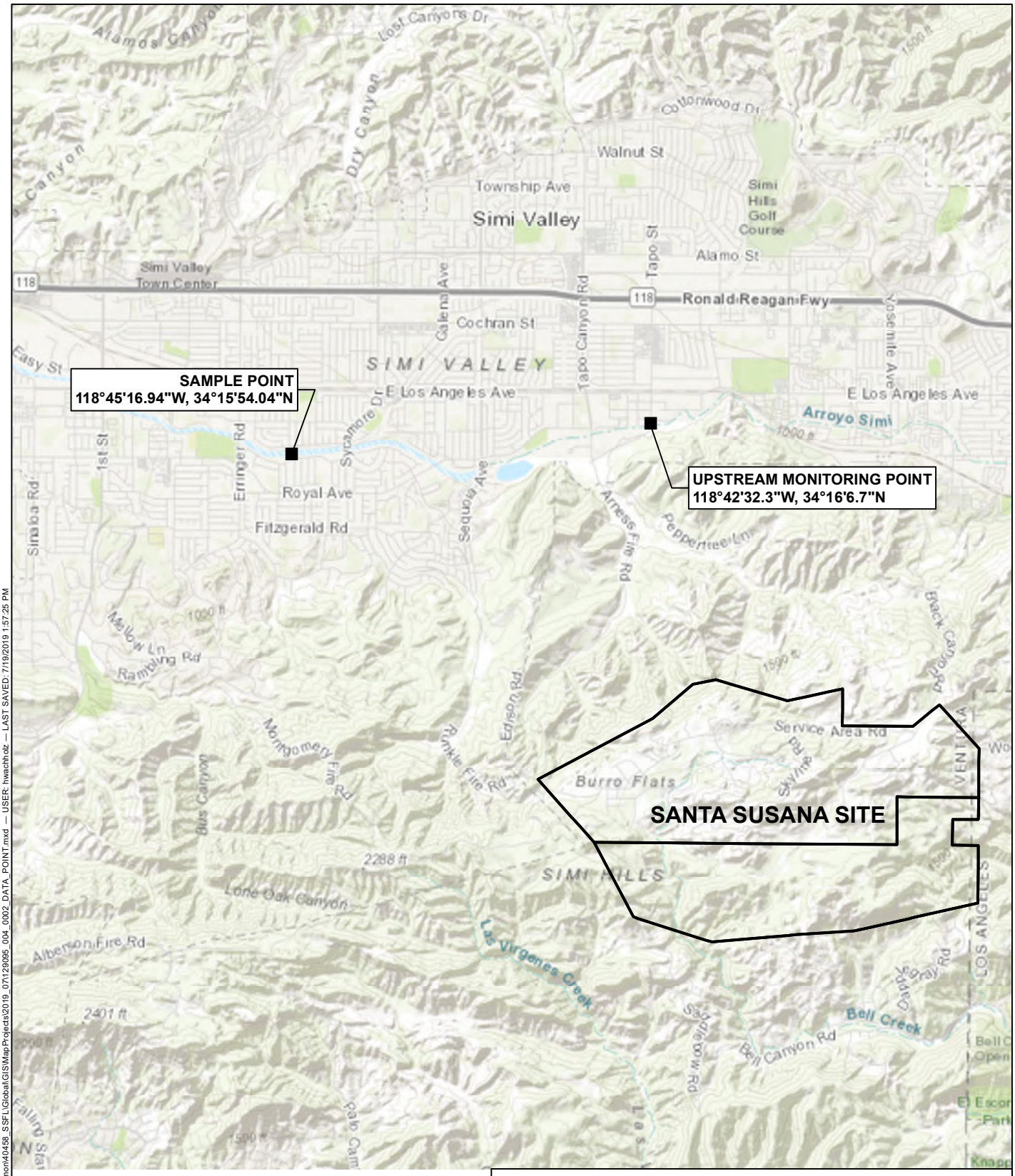
NPDES PERMIT COMPLIANCE SECOND QUARTER 2019
DISCHARGE MONITORING REPORT
THE BOEING COMPANY
VENTURA COUNTY, CALIFORNIA

SITE MAP WITH STORMWATER COLLECTION AND CONVEYANCE SYSTEM AND SITE FEATURES

AUGUST 2019

FIGURE 1

\\haleyaldrich.com\share\sdg_common\40458_SSFL\Global\GIS\MapProjects\2019_07\290095_004_0001_SITE_MAP_WITH_STORMWATER_COLLECTION.mxd



NOTES

1. THE SAMPLE POINT IS FOR QUARTERLY WATER QUALITY AND ANNUAL SEDIMENT SAMPLING.

2. THE UPSTREAM SAMPLE POINT LOCATION WAS CHOSEN BASED ON IT BEING UPSTREAM OF ALL POSSIBLE DISCHARGE FROM THE SANTA SUSANA SITE.

N

0 0.5 1

SCALE IN MILES

HALEY ALDRICH

NPDES PERMIT COMPLIANCE SECOND QUARTER 2019
DISCHARGE MONITORING REPORT
THE BOEING COMPANY
VENTURA COUNTY, CALIFORNIA

ARROYO SIMI RECEIVING WATER (RSW-002, FRONTIER PARK) SAMPLING LOCATION AND UPSTREAM MONITORING POINT

AUGUST 2019

FIGURE 2

GIS FILE PATH: \\haleyaldrich.com\sharelsdg_common\40468_SSFL\Global\GIS\MapProjects\2019_07\129095_004_0002_DATA_POINT.mxd — USER: hwaclh.obz — LAST SAVED: 7/19/2019 1:57:25 PM

APPENDIX A

Second Quarter 2019 Rainfall Data Summary

APPENDIX A

TABLE OF CONTENTS

TABLE A
DAILY RAINFALL SUMMARY

THE BOEING COMPANY
NPDES PERMIT CA0001309

Station: AREA 1
Parameter: Rain
Month/Year: April 2019

HOUR OF THE DAY, PACIFIC STANDARD TIME

	HR-BEG	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
	HR-END	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
	DAY																									Total
	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
	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
	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
	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
	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
D	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
A	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
Y	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
	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
O	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
F	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
	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
T	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
H	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
E	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
	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
M	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
O	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
N	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
T	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
H	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
	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
	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
	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
	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
	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
	29	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	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

TABLE A
DAILY RAINFALL SUMMARY

THE BOEING COMPANY
NPDES PERMIT CA0001309

Station: AREA 1
Parameter: Rain
Month/Year: May 2019

HOUR OF THE DAY, PACIFIC STANDARD TIME

	HR-BEG	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
	HR-END	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
	DAY																									Total
	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
	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
	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
	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
	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
D	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
A	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
Y	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.08
	11	0.00	0.00	0.00	0.01	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
O	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
F	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
	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
T	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
H	16	0.00	0.00	0.00	0.11	0.16	0.21	0.08	0.17	0.04	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85
E	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
	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	0.01	0.01
M	19	0.02	0.06	0.00	0.03	0.01	0.07	0.06	0.02	0.01	0.01	0.01	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	0.31
O	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	d	d	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N	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
T	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	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
H	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
	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
	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
	26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.10
	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
	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
	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
	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
	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

Flags: d = Off-line part of hour, invalid hour due to semi-annual audit (May 20). For the off-line events, the rain gauge at Sage Ranch confirmed that no rainfall was recorded on May 20 during hours 07:00-08:00 and 08:00-09:00.

TABLE A
DAILY RAINFALL SUMMARY

THE BOEING COMPANY
NPDES PERMIT CA0001309

Station: AREA 1
Parameter: Rain
Month/Year: June 2019

HOUR OF THE DAY, PACIFIC STANDARD TIME

	HR-BEG	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
	HR-END	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
	DAY																									Total
	1	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
	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
	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
	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
	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
	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
	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
D	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
A	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
Y	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
	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
O	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
F	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
	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
T	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
H	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
E	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
	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
M	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
O	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
N	21	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
T	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
H	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
	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
	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
	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
	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
	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
	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
	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

APPENDIX B

Second Quarter 2019 Waste Shipment Summary Tables

APPENDIX B

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TABLE B
WASTE SHIPMENT SUMMARY TABLE
LIQUID WASTE SHIPMENTS

SECOND QUARTER 2019
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309

DATE SHIPPED	MANIFEST OR JOB TRACKING NUMBER	TYPE OF WASTE	QTY.	UNITS	TRANSPORTER 1	TRANSPORTER 2	TRANSPORTER 3	DESTINATION
4/3/2019	019690267JJK	Hazardous Waste, Liquid, N.O.S, (Purge Ground Water)	250	G	Patriot Environmental Services 508 East E Street Wilmington, CA 90744-6023	n/a	n/a	US Ecology Vernon Inc. 5375 South Boyle Avenue Los Angeles, CA 90058
4/17/2019	040919-01	Non-Hazardous Waste, Liquid (Rain Water)	4,500	G	American Integrated Services, Inc. 1502 E Opp St Wilmington, CA 90744			Crosby & Overton 1630 W 17th Street Long Beach, CA 90813
	013451004FLE	Hazardous Waste, Liquid, N.O.S, (Trichloroethylene)	1,730	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061			Clean Harbors Wilmington LLC 1737 East Denni Street Wilmington, CA 90744
		Non-RCRA Hazardous Waste, Liquids, (Water, Diethylene Glycol Monobutyl Ether)	172	P				
	040919-06	Non-Hazardous Waste, Liquid (Rain Water)	4,500	G	American Integrated Services, Inc. 1502 E Opp St Wilmington, CA 90744			Crosby & Overton 1630 W 17th Street Long Beach, CA 90813
04/18/2019	040919-04	Non-Hazardous Waste, Liquid (Rain Water)	4,830	G				
	040919-05	Non-Hazardous Waste, Liquid (Rain Water)	4,000	G				
04/25/2019	NH1901760850-A	Non Hazardous, Non D.O.T. Regulated, (Water)	242	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	Basin Transportation LLC 130 Express Lane Mcalester, OK 74501		Clean Harbors Grassy Mountain LLC 3 Miles East 7 Miles North of Knolls Grantsville, UT 84029
		Non Hazardous, Non D.O.T. Regulated, (Water)	6,180	P				
		Non Hazardous, Non D.O.T. Regulated, (Water)	20	P				
	013451002FLE	Non-RCRA Hazardous Waste, Liquids, (Water, Pentachlorophenol)	12	P				Clean Harbors Environmental Services, Inc. 2247 South Highway 71 Kimball, NE 69145
	013451003FLE	Non-RCRA Hazardous Waste, Liquids, (DI Water, Diethylene Glycol)	12	P				
05/01/2019	013451183FLE	Waste Corrosive Liquids, Toxic, N.O.S, (Sodium Hydroxide, Sodium Cyanide)	86	P		n/a		Clean Harbors Wilmington LLC 1737 East Denni Street Wilmington, CA 90744
		Hazardous Waste, Liquid, N.O.S, (Trichloroethylene)	13	P				
	NH1902254715	Non Hazardous, Non D.O.T. Regulated, (Water)	1,133	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061			
		Non Hazardous, Non D.O.T. Regulated, (Water)	1,568	P				
	NH1902008525	Non Hazardous, Non D.O.T. Regulated, (Water)	1,868	P				
05/03/2019	0420190031	Non-Hazardous Waste, Liquid (Decon Water)	2,100	G	American Integrated Services, Inc. 1502 E Opp St Wilmington, CA 90744			
05/08/2019	013451546FLE	Waste Corrosive Liquids, Toxic, N.O.S, (Sodium Hydroxide, Sodium Cyanide)	111	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061			
		Non-RCRA Hazardous Waste, Liquid, (Distillates, Fatty Alchohol Ethoxylates)	1,840	P				

TABLE B
WASTE SHIPMENT SUMMARY TABLE
LIQUID WASTE SHIPMENTS

SECOND QUARTER 2019
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309

DATE SHIPPED	MANIFEST OR JOB TRACKING NUMBER	TYPE OF WASTE	QTY.	UNITS	TRANSPORTER 1	TRANSPORTER 2	TRANSPORTER 3	DESTINATION
06/03/2019	0520190030	Non-Hazardous Waste, Liquid (Rain Water)	5,000	G	American Integrated Services, Inc. 1502 E Opp St Wilmington, CA 90744	n/a	n/a	Crosby & Overton 1630 W 17th Street Long Beach, CA 90813
	0520190033	Non-Hazardous Waste, Liquid (Rain Water)	5,000	G				
06/04/2019	0520190031	Non-Hazardous Waste, Liquid (Rain Water)	4,400	G	American Integrated Services, Inc. 1502 E Opp St Wilmington, CA 90744			
	0520190032	Non-Hazardous Waste, Liquid (Rain Water)	4,800	G				
06/10/2019	013456015FLE	Hazardous Waste, Liquid, N.O.S	36,720	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061			US Ecology Vernon Inc. 5375 South Boyle Avenue Los Angeles, CA 90058
06/11/2019	016506183JJK	Hazardous Waste, Liquid, N.O.S (Water)	4,500	G	Ecology Control Industries, Inc 20846 Normandie Ave Torrance, CA 90502			
	016506184JJK	Hazardous Waste, Liquid, N.O.S (Water)	4,500	G				
	013456016FLE	Hazardous Waste, Liquid, N.O.S	36,000	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061			
06/12/2019	016506185JJK	Hazardous Waste, Liquid, N.O.S (Water)	4,500	G	Ecology Control Industries, Inc 20846 Normandie Ave Torrance, CA 90502			
	016506186JJK	Hazardous Waste, Liquid, N.O.S (Water)	4,500	G				
	013456017FLE	Hazardous Waste, Liquid, N.O.S	36,000	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061			
06/13/2019	013456018FLE	Hazardous Waste, Liquid, N.O.S	31,700	P				
06/18/2019	016506187JJK	Hazardous Waste, Liquid, N.O.S (Water)	4,500	G	Ecology Control Industries, Inc 20846 Normandie Ave Torrance, CA 90502			
	016506188JJK	Hazardous Waste, Liquid, N.O.S (Water)	4,500	G				
06/19/2019	013456218FLE	Waste Corrosive Liquids, Toxic, N.O.S, (Sodium Hydroxide, Sodium Cyanide)	48	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061			Clean Harbors Wilmington LLC 1737 East Denni Street Wilmington, CA 90744
		Hazardous Waste, Liquid, N.O.S, (Trichloroethane, Pyrolusite)	262	P				
		Hazardous Waste, Liquid, N.O.S, (Trichloroethane, Pyrolusite)	15	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061			
	NH1902947598	Non Hazardous, Non D.O.T. Regulated, (Water)	35	P				
	NH1902948163	Non Hazardous, Non D.O.T. Regulated, (Water)	811	P				

TABLE B
WASTE SHIPMENT SUMMARY TABLE
LIQUID WASTE SHIPMENTS

SECOND QUARTER 2019
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309

DATE SHIPPED	MANIFEST OR JOB TRACKING NUMBER	TYPE OF WASTE	QTY.	UNITS	TRANSPORTER 1	TRANSPORTER 2	TRANSPORTER 3	DESTINATION
06/20/2019	016506189JJK	Hazardous Waste, Liquid, N.O.S (Water)	4,500	G	Ecology Control Industries, Inc 20846 Normandie Ave Torrance, CA 90502			US Ecology Vernon Inc. 5375 South Boyle Avenue Los Angeles, CA 90058
	016506190JJK	Hazardous Waste, Liquid, N.O.S (Water)	4,500	G				
06/21/2019	016506191JJK	Hazardous Waste, Liquid, N.O.S (Water)	4,500	G	Ecology Control Industries, Inc 20846 Normandie Ave Torrance, CA 90502			
	016506192JJK	Hazardous Waste, Liquid, N.O.S (Water)	4,500	G				
06/24/2019	016506193JJK	Hazardous Waste, Liquid, N.O.S (Water)	4,500	G				
	016506194JJK	Hazardous Waste, Liquid, N.O.S (Water)	4,500	G				
04/02/2019	20151	Flush Water with Trace Sewage, (Holding Tank)	5,000	G	Southwest Processors 4120 Bandini Blvd. Vernon, CA 90058	n/a	n/a	Southwest Processors 4120 Bandini Blvd. Vernon, CA 90058
	20152	Flush Water with Trace Sewage, (Holding Tank)	5,000	G				
04/09/2019	20192	Flush Water with Trace Sewage, (Holding Tank)	5,000	G				
	20193	Flush Water with Trace Sewage, (Holding Tank)	5,000	G				
04/24/2019	20274	Flush Water with Trace Sewage, (Holding Tank)	5,000	G				
	20275	Flush Water with Trace Sewage, (Holding Tank)	5,000	G				
05/08/2019	20145	Flush Water with Trace Sewage, (Holding Tank)	5,000	G				
05/09/2019	20367	Flush Water with Trace Sewage, (Holding Tank)	5,000	G				
05/22/2019	20420	Flush Water with Trace Sewage	5,000	G				
	20421	Flush Water with Trace Sewage, (Holding Tank)	5,000	G				
06/05/2019	20471	Flush Water with Trace Sewage, (Holding Tank)	5,000	G				
	20472	Flush Water with Trace Sewage, (Holding Tank)	5,000	G				

TABLE B
WASTE SHIPMENT SUMMARY TABLE
LIQUID WASTE SHIPMENTS

SECOND QUARTER 2019
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309

DATE SHIPPED	MANIFEST OR JOB TRACKING NUMBER	TYPE OF WASTE	QTY.	UNITS	TRANSPORTER 1	TRANSPORTER 2	TRANSPORTER 3	DESTINATION
6/19/2019	20546	Flush Water with Trace Sewage, (Holding Tank)	5,000	G	Southwest Processors 4120 Bandini Blvd. Vernon, CA 90058	n/a	n/a	Southwest Processors 4120 Bandini Blvd. Vernon, CA 90058
6/20/2019	20554	Flush Water with Trace Sewage, (Holding Tank)	5,000	G				

Notes:
G = Gallons
n/a = Not Applicable
P = Pounds

TABLE B
WASTE SHIPMENT SUMMARY TABLE
SOLID WASTE SHIPMENTS

SECOND QUARTER 2019
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309

DATE SHIPPED	MANIFEST OR JOB TRACKING NUMBER	TYPE OF WASTE	QTY.	UNITS	TRANSPORTER 1	TRANSPORTER 2	TRANSPORTER 3	DESTINATION
04/04/2019	013450903FLE	Non-RCRA Hazardous Waste, Solids, (Debris, Sulfuric Acid)	207	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	n/a	n/a	Clean Harbors Wilmington LLC 1737 East Denni Street Wilmington, CA 90744
04/05/2019	013450914FLE	Asbestos	3,160	P				Clean Harbors Buttonwillow, LLC 2500 West Lokern Road Buttonwillow, CA 93206
04/16/2019	013450977FLE	Non-RCRA Hazardous Waste, Solid	20	Y				
04/17/2019	013450978FLE	Non-RCRA Hazardous Waste, Solid	20	Y				
	013451001FLE	Non-RCRA Hazardous Waste, Solid (Plastic, Debris)	23	P				
	013451004FLE	Non-RCRA Hazardous Waste, Solid, (Empty Containers)	190	P				Clean Harbors Wilmington LLC 1737 East Denni Street Wilmington, CA 90744
		Non-RCRA Hazardous Waste, Solid, (Empty Containers)	240	P				
	NH1901894826	Non Hazardous, Non D.O.T. Regulated Material, (Debris)	5	P				
	NH1901760850-B	Non Hazardous, Non D.O.T. Regulated Material, (Debris)	1,042	P				
		Non Hazardous, Non D.O.T. Regulated Material, (Debris)	924	P				
04/22/2019	013451074FLE	Non-RCRA Hazardous Waste, Solid	12,120	P				Clean Harbors Buttonwillow, LLC 2500 West Lokern Road Buttonwillow, CA 93206
	013451075FLE	Non-RCRA Hazardous Waste, Solid	9,860	P				
04/25/2019	013451003FLE	Non-RCRA Hazardous Waste, Solid, (Debris, Diethylene Glycol Monobutyl Ether)	127	P		Basin Transportation LLC 130 Express Lane Mcalester, OK 74501		Clean Harbors Environmental Services, Inc. 2247 South Highway 71 Kimball, NE 69145
05/01/2019	013451183FLE	Waste Environmentally Hazardous Substances, Solid, N.O.S. (Lead, Chromium)	7	P		n/a		Clean Harbors Wilmington LLC 1737 East Denni Street Wilmington, CA 90744
		Non-RCRA Hazardous Waste, Solids, (Ammonium Dihydrogen, Sand)	22	P				
		Non-RCRA Hazardous Waste, Solids, (Potassium Permanganate Residue)	32	P				

TABLE B
WASTE SHIPMENT SUMMARY TABLE
SOLID WASTE SHIPMENTS

SECOND QUARTER 2019
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309

DATE SHIPPED	MANIFEST OR JOB TRACKING NUMBER	TYPE OF WASTE	QTY.	UNITS	TRANSPORTER 1	TRANSPORTER 2	TRANSPORTER 3	DESTINATION
05/08/2019	013451546FLE	Waste Oxidizing Solid, N.O.S, (Bags, Manganese Dioxide)	98	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	n/a	n/a	Clean Harbors Wilmington LLC 1737 East Denni Street Wilmington, CA 90744
		Corrosive Solid, Basic, Inorganic, N.O.S., (Sodium Hydroxide)	40	P				
		Non-RCRA Hazardous Waste, Solid, (Potassium Permanganate Residue)	104	P				
		Non-RCRA Hazardous Waste, Solid, (Debris, Sulfuric Acid)	252	P				
		Non-RCRA Hazardous Waste, Solid, (Sodium Hydrogen Carbonate, Calcium Carbonate)	32	P				
05/20/2019	NH1902469753	Non Hazardous, Non D.O.T. Regulated, (Contruction Trash)	40	T				Waste Management - Antelope Valley 1200 West City Ranch Road Palmdale, CA 93551
05/31/2019	NH1902901532-C	Non Hazardous, Non D.O.T. Regulated	20	Y				
06/19/2019	NH1902947598	Non Hazardous, Non D.O.T. Regulated Material, (Debris)	14	P				Clean Harbors Wilmington LLC 1737 East Denni Street Wilmington, CA 90744
	013456218FLE	Non-RCRA Hazardous Waste, Solid, (Empty Containers)	77	P				
06/25/2019	019690436JJK	Non-RCRA Hazardous Waste, Solid, (Non TSCA Transformers)	10,485	P	Patriot Environmental Services 508 East E Street Wilmington, CA 90744-6023			US Ecology Nevada Highway 95 11 Miles South Beatty, NV 89003
04/01/2019	NH1901167320-41	Non Hazardous, Non D.O.T. Regulated	20	Y	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	n/a	n/a	Waste Management - Antelope Valley 1200 West City Ranch Road Palmdale, CA 93551
	NH1901167320-42	Non Hazardous, Non D.O.T. Regulated	20	Y				
	NH1901167320-43	Non Hazardous, Non D.O.T. Regulated	20	Y				
	NH1901167320-44	Non Hazardous, Non D.O.T. Regulated	20	Y				
	NH1901167320-45	Non Hazardous, Non D.O.T. Regulated	20	Y				
	NH1901167320-46	Non Hazardous, Non D.O.T. Regulated	20	Y				

Notes:
n/a = Not Applicable
P = Pounds
T = Ton
Y = Yards

APPENDIX C

Second Quarter 2019 Discharge Monitoring Data Summary Tables

APPENDIX C

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REPORTING SUMMARY NOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309

Not all of the following notes, abbreviations, symbols, or acronyms occur on every table:

1. 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) toxic equivalents (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 detected but not quantified (DNQ), as specified on page 26 of the NPDES permit (Water Board, 2015).

2. Temperature, total residual chlorine (TRC), dissolved oxygen (DO), and pH are measured in the field and are not validated.

3. 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^{o}F for temperature.

4. Exceedances are defined on page 6 of the NPDES permit as constituents in excess of daily maximum benchmark limits, daily maximum permit limits, or receiving water limits. Analytical concentrations or calculations to determine compliance to the NPDES permit are compared to the same number of significant figures as the daily maximum benchmark limits, daily maximum permit limits, or receiving water limits.

5. Priority pollutants, sampled once every five years, at Arroyo Simi Receiving Water sampling location (RSW-002, Frontier Park) were analyzed during the First Quarter 2018.

6. Dissolved metals are filtered by the laboratory and reported as "Metal, dissolved". Total metals are not filtered by the laboratory and reported as "Metal".

7. Abbreviations, symbols, and acronyms:

-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 total uncertainty.
%	Percent.
$	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 NPDES permit limit established for daily maximum.
<(value)	Analyte not detected at a concentration greater than or equal to the detection limit (DL), method detection limit (MDL), or laboratory reporting limit (RL); see laboratory report for specific detail.
>(value)	Greater than most probable number.
*	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-2 of attachment A of the NPDES permit.
*1	Improper preservation of sample.

REPORTING SUMMARY NOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309

*2	The inductively coupled plasma (ICP)/matrix spike (MS) parts per billion (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.
*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 NPDES permit to be sampled and analyzed over the reporting period (annual, semi-annual, etc.).
Avg	Average.
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 percent relative standard deviation (%RSD) or percent difference (%D) were noncompliant.
CaCO3	Calcium carbonate
Chromium VI	Hexavalent chromium
Comp	Composite sample type.
C5	Calibration verification percent recovery (%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 C	Degrees Celsius.
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 than the laboratory reporting limit).
E	E in validation qualifier indicates that duplicates show poor agreement.

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EB	Equipment blank.
EMPC	Estimated maximum possible concentration.
F	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.
FB	Field blank.
F1	Matrix spike (MS) and/or matrix spike duplicate (MSD) recovery is outside acceptance limits.
ft/sec	Feet per second.
G	Gallons.
gpd	Gallons per day.
H	Holding time was exceeded.
Hardness	Equivalent of calcium carbonate (CaCO3).
Hp	Hepta.
Hx	Hexa.
ICP	Interference check solution results were unsatisfactory.
J	Estimated value.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
J, DX	Estimated value, value < lowest standard method quantitation limit (MQL), but > than method detection limit (MDL).
K	The sample dilution's set-up did not meet the oxygen depletion criteria of at least 2 milligrams per liter (mg/L); therefore, the reported result is an estimated value only.
L	Laboratory control sample percent recovery (%R) was outside control limits.
L1	Laboratory control standard (LCS)/laboratory control standard duplicate (LCSD), relative percent difference (RPD) was outside the control limit.
L2	The laboratory control sample percent recovery (%R) was below the method control limits.
LBS/DAY	Pounds per day.
LCS	Laboratory control standard.
LCSD	Laboratory control standard duplicate.
LQ	Laboratory control standard (LCS)/ laboratory control standard duplicate (LCSD) recovery above method control limits.
M1	Matrix spike (MS) and/or matrix spike duplicate (MSD) were above the acceptance limits due to sample matrix interference.
M2	The matrix spike (MS) and/or matrix spike duplicate (MSD) were below the acceptance limits due to sample matrix interference.
Max	Maximum.
MB	Analyte present in the method blank.
MDA/MDC	Minimum detectable activity/minimum detectable concentration.

REPORTING SUMMARY NOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
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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 matrix spike (MS)/matrix spike duplicate (MSD) calculation does not provide useful spike recovery information.
mg/L	Milligrams per liter.
mg/kg	Milligrams per kilogram.
ml/L	Milliliters per liter
ml/L/hr	Milliliters per liter per hour.
MPN/100 mL	Most probable number per 100 milliliters.
MQL	Method quantitation limit.
MS	Matrix spike.
MSD	Matrix spike duplicate.
mS/cm	MilliSiemens per centimeter
NA	Not applicable; no NPDES permit limit established for the constituent and/or outfall or analyte not required per receiving water monitoring requirements.
ND	Analyte not detected.
NM	Not measured or determined or minimum detectable activities (MDAs) are not calculated as there is no statistical method for combining MDAs.
NPDES	National Pollutant Discharge Elimination System.
NR	Not reported by laboratory by the deadline of this report.
NTU	Nephelometric turbidity unit.
OCDD	Octa CDD.
OCDF	Octa CDF.
P	Pounds.
ppb	Parts per billion.
pCi/L	PicoCuries per liter.
Pe	Penta.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio; the measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
Q	Matrix spike (MS) recovery outside of control limits.
Q1	Matrix spike (MS)/matrix spike duplicate (MSD) relative percent difference (RPD) was outside the control limit.
R	As a validation qualifier, results are rejected; the presence or absence of analyte cannot be verified.
(R)	Percent recovery (%R) for calibration not within control limits.
RL	Laboratory reporting limit.

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RL-1	Reporting limit raised due to sample matrix effects.
RPD	Relative percent difference.
%R	Percent recovery.
%RSD	Percent relative standard deviation.
% Normal/Alive	Percent normal and alive.
% Survival	Percent survival.
S	Surrogate recovery was outside control limits.
s.u.	Standard unit.
TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin.
TCDF	2,3,7,8-tetrachlorodibenzo-p-furan.
TEQ	Toxic equivalent.
TIC	Tentatively identified compound
TIE	Toxicity identification evaluation
TOC	Total organic carbon
T	Presumed contamination, as indicated by a detect in the trip blank.
U	Result not detected.
µg/L	Micrograms per liter.
µg/g	Micrograms per gram.
µg/kg	Micrograms per kilogram.
µmhos/cm	Micromhos per centimeter.
UJ	Result not detected at the estimated reporting limit.
WHO TEF	World Health Organization toxic equivalency factor.
w/out	Without.
^	Analysis not completed due to hold time exceedance or insufficient sample volume.
#	Per Order No. R4-2015-0033, page 16, 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 inch 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 NPDES permit, table E-3a footnote 2, receiving water samples for pH, hardness, and priority pollutants must be collected on the same day as effluent samples.
(2)	Additional sample, not required by the NPDES permit.
(4.0)3.1/-	Represents (dry weather limit) wet weather limit / monthly average limit.
(3)	Secondary maximum contaminant level.

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(4)	The drinking water maximum contaminant level of 3.00E-05 µg/L is for the dioxin congener 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). TCDD Toxic Equivalent (TEQ) without detected but not quantified (DNQ) values is the sum of the products of the detected dioxin congener concentration multiplied by that congener's toxic Equivalency factor (TEF) and bioaccumulation equivalency factor (BEF). There are 17 dioxin congeners.
(a)	Based on Order No. R4-2015-0033, page 17, footnote 7, sampling event is a dry discharge and the NPDES Permit Limit for cadmium is 4.0 ug/L and 3.93 lbs/day at OF001,002,011,018 and 0.24 lbs/day at OF008.
(b)	Based on Order No. R4-2015-0033, page 17, footnote 7, sampling event is a wet discharge and the NPDES Permit Limit for cadmium is 3.1 ug/L and 4.91 lbs/day at OF001,002,011,018 and 3.05 lbs/day at OF008.
(c)	Based on Order No. R4-2015-0033, page 16, footnote 1, sampled during wet weather flow. The effluent limitations for total suspended solids and/or settleable solids are not applicable for discharges during wet weather.
(d)	Based on Order No. R4-2015-0033, page 16, footnote 1, sampled during dry weather flow. The effluent limitations for total suspended solids and/or settleable solids are applicable for discharges during dry weather.
(e)	Based on Order No. R4-2015-0033, page 17, footnote 8, sampling event is a dry discharge and the NPDES Permit Limit for selenium is 5 ug/L and 4.91 lbs/day.
(f)	Based on Order No. R4-2015-0033, page 17, footnote 8, sampling event is a wet discharge and the NPDES Permit Limit for selenium is 8.2 ug/L and 8.06 lbs/day.
(g)	The sampling frequency of this constituent is increased from once per year to once per discharge until four consecutive sample results demonstrate compliance per the NPDES permit. The corresponding dissolved metal also increased in sampling frequency to once per discharge.
(h)	Total Ammonia is reported in wet weight units milligrams per kilogram (mg/kg).
(i)	Total organic carbon (TOC) is reported in dry weight units. Permit asks for TOC units in % dry weight, but data is provided in dry unit milligrams per kilogram (mg/kg).
(j)	Analyte does not have a receiving water limit for Bell Creek Receiving Water (RSW-001, OF002).
(k)	Reserved.
(l)	When field staff arrived onsite to collect the composite sample they discovered that the autosampler had malfunctioned and had not collected "sips." Field staff repaired the autosampler, reset it, determined it was functioning properly, then returned the next day to collect the composite sample.
(m)	The composite sample was collected as a grab sample from the sample box due to insufficient flow.
(n)	The grab sample was delayed by an hour due to field error.
(o)	Unsafe conditions all day prevented access to the Outfall.
(p)	Reserved.

ARROYO SIMI
DISCHARGE MONITORING DATA SUMMARY TABLE

SECOND QUARTER 2019
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309

April 1 through June 30, 2019

				04/24/2019 07:30		
ANALYTE	**UNITS**	**PERMIT LIMIT DAILY MAX**	**SAMPLE FREQUENCY**	**SAMPLE TYPE**	**RESULT**	**LABORATORY/ VALIDATION QUALIFIER**
POLLUTANTS WITH LIMITS						
4,4'-DDD	µg/L	0.0014	1/Quarter	Grab	ND < 0.0043	U
4,4'-DDE	µg/L	0.001	1/Quarter	Grab	ND < 0.0032	U
4,4'-DDT	µg/L	0.001	1/Quarter	Grab	ND < 0.0043	U
Aroclor 1016	µg/L	0.0003	1/Quarter	Grab	ND < 0.10	U
Aroclor 1221	µg/L	0.0003	1/Quarter	Grab	ND < 0.10	U
Aroclor 1232	µg/L	0.0003	1/Quarter	Grab	ND < 0.10	U
Aroclor 1242	µg/L	0.0003	1/Quarter	Grab	ND < 0.10	U
Aroclor 1248	µg/L	0.0003	1/Quarter	Grab	ND < 0.10	U
Aroclor 1254	µg/L	0.0003	1/Quarter	Grab	ND < 0.10	U
Aroclor 1260	µg/L	0.0003	1/Quarter	Grab	ND < 0.15	U
Chlordane	µg/L	0.001	1/Quarter	Grab	ND < 0.086	U
Chlorpyrifos	µg/L	0.02	1/Quarter	Grab	ND < 0.0069	U
Diazinon	µg/L	0.16	1/Quarter	Grab	ND < 0.0052	U
Dieldrin	µg/L	0.0002	1/Quarter	Grab	ND < 0.0022	U
E. coli	MPN/100mL	235	1/Year	ANR	ANR	ANR
pH (Field)	s.u.	6.5-8.5	1/Quarter	Grab	6.96	*
Toxaphene	µg/L	0.0003	1/Quarter	Grab	ND < 0.27	U
POLLUTANTS WITHOUT LIMITS						
Hardness (as CaCO3)	mg/L	-	1/Quarter	Grab	760	*
Priority Pollutants	NA	-	1/5 Years	ANR	ANR	ANR
Temperature (Field)	Deg F	-	1/Quarter	Grab	65.73	*
TCDD - Equivalents	µg/L	-/-	1/Year	ANR	ANR	ANR
Total Suspended Solids	mg/L	-	1/Year	ANR	ANR	ANR
Water Velocity	ft/sec	-	1/Quarter	Meas	0.0	*

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

ARROYO SIMI, SEDIMENT
DISCHARGE MONITORING DATA SUMMARY TABLE

SECOND QUARTER 2019
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309

April 1 through June 30, 2019

				04/24/2019 08:15		
ANALYTE	**UNITS**	**PERMIT LIMIT DAILY MAX**	**SAMPLE FREQUENCY**	**SAMPLE TYPE**	**RESULT**	**LABORATORY/ VALIDATION QUALIFIER**
POLLUTANTS WITH LIMITS						
4,4'-DDD	µg/g	0.002	1/Year	Grab	ND < 0.0015	U
4,4'-DDE	µg/g	0.0014	1/Year	Grab	ND < 0.0015	U
4,4'-DDT	µg/g	0.0003	1/Year	Grab	ND < 0.0015	U
Aroclor 1016	µg/g	0.12	1/Year	Grab	ND < 0.0046	U
Aroclor 1221	µg/g	0.12	1/Year	Grab	ND < 0.0058	U
Aroclor 1232	µg/g	0.12	1/Year	Grab	ND < 0.010	U
Aroclor 1242	µg/g	0.12	1/Year	Grab	ND < 0.0042	U
Aroclor 1248	µg/g	0.12	1/Year	Grab	ND < 0.0042	U
Aroclor 1254	µg/g	0.12	1/Year	Grab	ND < 0.0042	U
Aroclor 1260	µg/g	0.12	1/Year	Grab	ND < 0.0062	U
Chlordane	µg/g	0.0033	1/Year	Grab	ND < 0.0010	U
Dieldrin	µg/g	0.0002	1/Year	Grab	ND < 0.0015	U
Toxaphene	µg/g	0.0006	1/Year	Grab	ND < 0.05	U
POLLUTANTS WITHOUT LIMITS						
Bivalve Embryo Toxicity (Mytilus edulis)	% Normal/Alive	-	1/Year	Grab	100	--
Conductivity (Field)	umhos/cm	-	1/Year	Grab	1,720	*
Dissolved Oxygen (Field)	mg/L	-	1/Year	Grab	7.56	*
Percent Moisture	%	-	1/Year	Grab	21.9	*
pH (Field)	s.u.	-	1/Year	Grab	6.99	*
Sediment Toxicity (Eohaustorius estuarius)	% Survival	-	1/Year	Grab	100	--
Temperature (Field)	Deg F	-	1/Year	Grab	65.86	*
Total Ammonia	mg/kg	-	1/Year	Grab	45.8	--
Total Organic Carbon	mg/kg	-	1/Year	Grab	1,700	J (C, DNQ)
Water Velocity	ft/sec	-	1/Year	Meas	0.0	*
PARTICLE SIZE DISTRIBUTION						
Gravel	%	-	1/Year	Grab	7.59	*
Coarse Sand	%	-	1/Year	Grab	10.68	*
Medium Sand	%	-	1/Year	Grab	68.76	*
Fine Sand	%	-	1/Year	Grab	12.49	*
Silt/Clay	%	-	1/Year	Grab	0.48	*

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

APPENDIX D

Second Quarter 2019 Analytical Laboratory Reports, Chain of Custody Forms, and Validation Reports

APPENDIX D

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DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-239866-1

Prepared for

Haley & Aldrich, Inc.

600 South Meyer Avenue, Suite 100

Tucson, Arizona 85701

23 May 2019

TABLE OF CONTENTS

TABLES

I. INTRODUCTION

Task Order Title: Boeing SSFL NPDES

Contract: 40458-078 and 40458-083

MEC^X Project No.: 1272.003D.01 002

Sample Delivery Group: 440-239866-1

Project Manager: Katherine Miller

Matrix: Water

QC Level: IV

No. of Samples: 1

No. of Reanalyses/Dilutions: 0

Laboratory: Eurofins/TestAmerica-Irvine

TABLE 1 - SAMPLE IDENTIFICATION

Sample Name	Lab Sample Name	Sub Lab Sample ID	Matrix	Collection	Method
ARROYO_SIMI-SED_20190424	440-239866-1	N/A	SE	4/24/2019 8:15:00 AM	EPA/600/R-94/025, EPA/600/R-95/136, SM4500-NH3D, SW8081A, SW8082, SW9060

II. SAMPLE MANAGEMENT

According to the case narrative, sample condition upon receipt form and the chains-of-custody (COC) provided by the laboratory for sample delivery group (SDG) 440-239866-1:

- The laboratories received the sample in this SDG on ice and within the temperature limits of <6 degrees Celsius (°C) and >0°C.
- The laboratories received the sample containers intact and properly preserved, as applicable.
- Field and laboratory personnel signed and dated the original COC, and laboratory personnel signed and dated the transfer COCs.
- Samples were transferred to TA-Seattle for Method 9060, Eurofins Lancaster for Method 8082, and to Aquatic Bioassay Consulting (ABC) for the biological methods.
- According to the Login Sample Receipt Checklist for TA-Irvine, custody seals were absent on the coolers as the coolers were couriered to the lab. Additionally, no evidence of tampering was noted. Custody seals were present and intact upon receipt at Lancaster and at TA-Seattle. A sample receipt form was not provided for ABC; therefore, presence or absence of custody seals is unknown.

TABLE 2 - DATA QUALIFIER REFERENCE

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. For dioxins or PCB congeners, the associated value is the quantitation limit or the estimated detection limit.	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. For perchlorate, the associated value is the sample detection limit or the quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may inaccurate or imprecise.	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may 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.
NJ	The analyte has been "tentatively identified" or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.	Not applicable.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.	The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

TABLE 3 - REASON CODE REFERENCE

Reason Code	Organic	Inorganic
H	Holding time was exceeded.	Holding time was exceeded.
S	Surrogate recovery was outside control limits.	The sequence or number of standards used for the calibration was incorrect.
C	Calibration percent relative standard deviation (%RSD) or percent deviation (%D) were noncompliant, or coefficient of determination (r^2) was <0.990.	Correlation coefficient (r) was <0.995.
R	Calibration relative response factor (RRF) was <0.05.	Percent recovery (%R) for calibration was outside control limits.
B	The analyte was detected in an associated blank as well as in the sample.	The analyte was detected in an associated blank as well as in the sample.
L	Laboratory control sample (LCS) or /LCS duplicate (LCSD) %R was outside the control limits.	LCS or LCSD %R was outside the control limits.
L1	LCS/LCSD relative percent difference (RPD) was outside the control limit.	LCS/LCSD RPD was outside the control limit.
Q	Matrix spike/matrix spike duplicate (MS/MSD) %R was outside control limits.	MS or MSD %R was outside the control limit.
Q1	MS/MSD RPD was outside the control limit.	MS/MSD RPD was outside the control limit.
E	Result was reported as an estimated maximum possible concentration (EMPC).	Laboratory duplicate RPD was outside the control limit.
I	Internal standard recovery was outside control limits.	Inductively coupled plasma (ICP) interference check standard (ICSA/ICSAB) result was outside control limits.
I1	Not applicable.	ICP mass spectrometer (ICPMS) internal standard recovery was outside control limits.
A	Not applicable.	Serial dilution %D was outside control limits.
M	Tuning (BFB or DFTPP) was not compliant.	ICPMS tune was not compliant.
T	The analyte was detected in an associated trip blank as well as in the sample.	Not applicable.

Reason Code	Organic	Inorganic
+	False positive – reported compound was not present.	False positive – reported compound was not present.
-	False negative – compound was present but not reported.	False negative – compound was present but not reported.
F	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.
F1	Field duplicate RPD was outside the control limit.	Field duplicate RPD was outside the control limit.
$	The reviewer corrected the reported result and/or other information.	The reviewer corrected the reported result and/or other information.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis was not used because another more technically sound analysis was available.	The analysis was not used because another more technically sound analysis was available.
P	Instrument performance not compliant.	Post digestion spike recovery was outside of 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	Other problems identified in the data are 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.	Other problems identified in the data are 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.

IV. EPA METHOD 8081A AND 8082–PESTICIDES AND PCBS

L. Calvin of MEC[X] reviewed the SDG on May 23, 2019

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC[X] Data Validation Procedure for Organochlorine Pesticides/PCBs by GC (DVP-4, Rev. 1), EPA Methods 8081A and 8082* and the *National Functional Guidelines for Superfund Organic Methods Data Review* (2014).

IV.1. HOLDING TIMES

Extraction and analytical holding times were met. The sediment sample was extracted within 14 days of collection and analyzed within 40 days of extraction.

IV.2. CALIBRATION

The initial calibration %RSDs were ≤20% or r^2 ≥0.990 on both analytical columns. With one exception, the initial calibration verification (ICV) and continuing calibration verification (CCV) %Ds were within the control limit of ≤15%. One of five peaks in the opening toxaphene CCV had a %D of -19.4% with a low response. In the professional judgment of the reviewer, sample data were not affected by the single peak %D outlier; therefore, no qualification was applied.

IV.3. QUALITY CONTROL SAMPLES

IV.3.1. *METHOD BLANKS*

The requested target compounds were not detected in method blanks.

IV.3.2. *LABORATORY CONTROL SAMPLES*

LCS recoveries were within the respective laboratory control limits for pesticides and PCBs. Toxaphene and chlordane were not spiked into the pesticide LCS sample.

IV.3.3. *SURROGATE RECOVERY*

Pesticide surrogate tetrachloro-m-xylene (TCMX) was recovered within the laboratory control limits of 28-115% in the site sample and PCB surrogate decachlorobiphenyl (DCB) was recovered within the laboratory control limits of 45-143%.

IV.3.4. *MATRIX SPIKE/MATRIX SPIKE DUPLICATE*

MS/MSD analyses were not performed on the sample in this SDG due to insufficient sample volume. MEC[X] evaluated method accuracy based on the LCS results.

IV.4. FIELD QC SAMPLES

MEC[X] evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC[X] used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below.

IV.4.1. *FIELD BLANKS AND EQUIPMENT BLANKS*

Field blank or equipment blank samples were not identified for this SDG.

IV.4.2. *FIELD DUPLICATES*

Field duplicate samples were not identified in this SDG.

IV.5. COMPOUND IDENTIFICATION

Compound identification was verified. Review of the sample chromatograms and retention times indicated no issues with target compound identification. The laboratory analyzed for six pesticide target compounds by Method 8081A and for seven Aroclors by Method 8082.

IV.6. 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. Pesticides and PCB Aroclors were not detected in the sample. Reported nondetects are valid to the reporting limit.

The laboratory's pesticide preparation bench sheet indicated the sample matrix consisted of coarse wet sand. The case narrative for this SDG indicated a copper cleanup was performed on the sample to remove interference caused by sulfur. The associated QC appropriately underwent the same cleanup procedure. The laboratory's PCB preparation bench sheet indicated the sample matrix consisted of brown, gritty, wet, sandy soil with rocks.

V. VARIOUS METHODS — GENERAL CHEMISTRY

M. Hilchey of MEC^X reviewed the SDG on May 27, 2019.

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 1), EPA Methods 600/R-95/136, 600/R-94/025 and 9060, Standard Methods for the Examination of Water and Wastewater 4500-NH3 D* and the *National Functional Guidelines for Inorganic Superfund Data Review* (2014).

V.1. HOLDING TIMES

The analytical holding times for sediments, as listed below, were met:

- 28 days for total organic carbon (TOC)
- 28 days for ammonia
- 14 days for chronic sediment toxicity
- 14 days for 48-hour bivalve embryo toxicity

V.2. CALIBRATION

The initial calibration correlation coefficient (r) value for TOC was 0.992, which is below the QAPP requirement of ≥0.995. The reported sample result was qualified as estimated (J). The initial calibration correlation coefficient (r) value for ammonia was ≥0.995. All initial and continuing calibration recoveries were within 90-110%. Analytical balance calibration logs were provided by the laboratory. For toxicity analyses, instruments were calibrated as per the manufacturer requirements and standard reference toxicant testing was performed to verify culture health and sensitivity.

V.3. QUALITY CONTROL SAMPLES

V.3.1. *METHOD BLANKS*

The method blanks and calibration blanks had no detects of sufficient concentration to warrant qualification of the site sample result. The chronic toxicity tests met the negative control criteria of the laboratory and method.

V.3.2. *LABORATORY CONTROL SAMPLES*

Laboratory control sample and laboratory control sample duplicate recoveries, as applicable, were within the laboratory control limits. The positive control criteria were met for the chronic toxicity tests

V.3.3. *LABORATORY DUPLICATES*

Laboratory duplicate analysis was performed on the sample in this SDG for TOC. The RPD was ≤10%. Laboratory duplicate analysis was not performed on the sample from this SDG for the remaining methods.

V.3.4. *MATRIX SPIKE/MATRIX SPIKE DUPLICATE*

MS/MSD analyses was performed on the sample in this SDG for TOC and ammonia. Recoveries and the RPD met laboratory control limits.

V.4. SAMPLE RESULT VERIFICATION

Calculations were verified and the sample results reported on the sample results summary were verified against the raw data. TOC was reported as the average of duplicate analyses; consistent with the method requirements. No transcription errors or calculation errors were noted. Reported nondetects are valid to the MDL. Reported nondetects are valid to the MDL.

V.5. FIELD QC SAMPLES

MEC^X evaluated 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. MEC^X used the remaining detects to evaluate the associated site sample. Findings associated with field QC samples are summarized below.

V.5.1. *FIELD BLANKS AND EQUIPMENT BLANKS*

Field blank or equipment blank samples were not identified for this SDG.

V.5.2. *FIELD DUPLICATES*

Field duplicate samples were not identified in this SDG.

Validated Sample Result Forms: 4402398661

Analysis Method EPA/600/R-94/025

Sample Name ARROYO_SIMI-SED_20190424 **Matrix Type:** SE **Result Type:** TRG

Sample Date: 4/24/2019 8:15:00 AM **Validation Level:** 8

Lab Sample Name: 440-239866-1

Analyte	Fraction:	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Sediment toxicity (chronic 10-day eohaustorius estuarius toxicity)	N	SEDTOX10DAY	100			% SURV			

Analysis Method EPA/600/R-95/136

Sample Name ARROYO_SIMI-SED_20190424 **Matrix Type:** SE **Result Type:** TRG

Sample Date: 4/24/2019 8:15:00 AM **Validation Level:** 8

Lab Sample Name: 440-239866-1

Analyte	Fraction:	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
48-hour Bivalve Embryo toxicity (Mytilus edulis)	N	BITOX48HOUR	100			% SURV			

Analysis Method SM4500-NH3D

Sample Name ARROYO_SIMI-SED_20190424 **Matrix Type:** SE **Result Type:** TRG

Sample Date: 4/24/2019 8:15:00 AM **Validation Level:** 8

Lab Sample Name: 440-239866-1

Analyte	Fraction:	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Ammonia (as N)	N	7664-41-7N	45.8	13.6	2.72	mg/kg			

Analysis Method SW8081A

Sample Name ARROYO_SIMI-SED_20190424 **Matrix Type:** SE **Result Type:** TRG

Sample Date: 4/24/2019 8:15:00 AM **Validation Level:** 8

Lab Sample Name: 440-239866-1

Analyte	Fraction:	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
4,4'-DDD	N	72-54-8	ND	5.0	1.5	ug/kg	U	U	
4,4'-DDE	N	72-55-9	ND	5.0	1.5	ug/kg	U	U	
4,4'-DDT	N	50-29-3	ND	5.0	1.5	ug/kg	U	U	
Chlordane	N	57-74-9	ND	50	10	ug/kg	U	U	
Dieldrin	N	60-57-1	ND	5.0	1.5	ug/kg	U	U	
Toxaphene	N	8001-35-2	ND	200	50	ug/kg	U	U	

Analysis Method SW8082

Sample Name ARROYO_SIMI-SED_20190424 **Matrix Type:** SE **Result Type:** TRG

Sample Date: 4/24/2019 8:15:00 AM **Validation Level:** 8

Lab Sample Name: 440-239866-1

Analyte	Fraction:	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aroclor-1016 (PCB-1016)	N	12674-11-2	ND	22	4.6	ug/kg	U, D1	U	
Aroclor-1221 (PCB-1221)	N	11104-28-2	ND	22	5.8	ug/kg	U, D1	U	
Aroclor-1232 (PCB-1232)	N	11141-16-5	ND	22	10	ug/kg	U, D1	U	
Aroclor-1242 (PCB-1242)	N	53469-21-9	ND	22	4.2	ug/kg	U, D1	U	
Aroclor-1248 (PCB-1248)	N	12672-29-6	ND	22	4.2	ug/kg	U, D1	U	
Aroclor-1254 (PCB-1254)	N	11097-69-1	ND	22	4.2	ug/kg	U, D1	U	
Aroclor-1260 (PCB-1260)	N	11096-82-5	ND	22	6.2	ug/kg	U, D1	U	

Analysis Method SW9060

Sample Name ARROYO_SIMI-SED_20190424 **Matrix Type:** SE **Result Type:** TRG

Sample Date: 4/24/2019 8:15:00 AM **Validation Level:** 8

Lab Sample Name: 440-239866-1

Analyte	Fraction:	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
TOC Average Duplicates	N	TOCAVGD	1700	2000	44	mg/kg	J,DX	J	C, DNQ

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

Laboratory Job ID: 440-239866-1
Client Project/Site: Annual Sediment Arroyo Simi-Frontier Par

For:
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Attn: Katherine Miller

Authorized for release by:
5/9/2019 9:50:04 PM

Urvashi Patel, Manager of Project Management
(949)260-3269
urvashi.patel@testamericainc.com

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.

Urvashi Patel
Manager of Project Management
5/9/2019 9:50:04 PM

Table of Contents

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 440-239866-1
Project/Site: Annual Sediment Arroyo Simi-Frontier Par

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-239866-1	Arroyo_Simi-Sed_20190424	Solid	04/24/19 08:15	04/25/19 16:39

Job ID: 440-239866-1

Laboratory: Eurofins TestAmerica, Irvine

Narrative

Job Narrative
440-239866-1

Comments
No additional comments.

Receipt
The sample was received on 4/25/2019 4:39 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0º C.

GC Semi VOA
Method(s) 8081A: The following samples in preparation batch 440-543461 required a copper clean-up to reduce matrix interferences caused by sulfur. The associated batch QC were also processed with the copper cleanup procedure. Arroyo_Simi-Sed_20190424 (440-239866-1).

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.

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

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

Subcontract Work
Methods 48-hour Bivalve Embryo toxicity, Bioassay-Chronic 10day eohaustorius: These methods were subcontracted to Aquatic Bioassay - Ventura, CA. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method 8082LL- PCB- Lancaster Labs: This method was subcontracted to Eurofins Lancaster Laboratories Env LLC. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Particle Size: This method was subcontracted to PTS Laboratories, Inc. The subcontract laboratory certification is different from that of the facility issuing the final report.

Client Sample ID: Arroyo_Simi-Sed_20190424
Lab Sample ID: 440-239866-1
Date Collected: 04/24/19 08:15
Matrix: Solid
Date Received: 04/25/19 16:39

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		5.0	1.5	ug/Kg		04/30/19 12:54	05/01/19 19:58	1
4,4'-DDE	ND		5.0	1.5	ug/Kg		04/30/19 12:54	05/01/19 19:58	1
4,4'-DDT	ND		5.0	1.5	ug/Kg		04/30/19 12:54	05/01/19 19:58	1
Chlordane (technical)	ND		50	10	ug/Kg		04/30/19 12:54	05/01/19 19:58	1
Dieldrin	ND		5.0	1.5	ug/Kg		04/30/19 12:54	05/01/19 19:58	1
Toxaphene	ND		200	50	ug/Kg		04/30/19 12:54	05/01/19 19:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*59*		*21 - 117*	*04/30/19 12:54*	*05/01/19 19:58*	*1*
Tetrachloro-m-xylene	*68*		*28 - 115*	*04/30/19 12:54*	*05/01/19 19:58*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Average Dup	**1700**	**J,DX**	2000	44	mg/Kg			05/07/19 15:19	1

Client Sample ID: Arroyo_Simi-Sed_20190424
Lab Sample ID: 440-239866-1
Date Collected: 04/24/19 08:15
Matrix: Solid
Date Received: 04/25/19 16:39
Percent Solids: 73.6

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**45.8**		13.6	2.72	mg/Kg	☼	05/03/19 05:00	05/03/19 08:00	1

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 440-239866-1
Project/Site: Annual Sediment Arroyo Simi-Frontier Par

Method	Method Description	Protocol	Laboratory
8081A	Organochlorine Pesticides (GC)	SW846	TAL IRV
9060	Organic Carbon, Total (TOC)	SW846	TAL SEA
Moisture	Percent Moisture	EPA	TAL IRV
SM 4500 NH3 D	Ammonia	SM	TAL IRV
Subcontract	48-hour Bivalve Embryo toxicity	None	ABC
Subcontract	Bioassay-Chronic 10day eohaustorius	None	ABC
Subcontract	Particle Size	None	SC0028
Subcontract	8082LL- PCB- Lancaster Labs	None	SC0103
3546	Microwave Extraction	SW846	TAL IRV
SM 4500 NH3 B	Distillation, Ammonia	SM	TAL IRV

Protocol References:

EPA = US Environmental Protection Agency
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.

Laboratory References:

ABC = Aquatic Bioassay - Ventura, CA, 29 North Olive Street, Ventura, CA 93001
SC0028 = PTS Laboratories, Inc, PO BOX 55750, Houston, TX 77255, TEL (713)316-1800
SC0103 = Eurofins Lancaster Laboratories Env LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300
TAL IRV = Eurofins TestAmerica, Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 440-239866-1
Project/Site: Annual Sediment Arroyo Simi-Frontier Par

Client Sample ID: Arroyo_Simi-Sed_20190424
Lab Sample ID: 440-239866-1
Date Collected: 04/24/19 08:15
Matrix: Solid
Date Received: 04/25/19 16:39

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.05 g	2 mL	543461	04/30/19 12:54	EGC	TAL IRV
Total/NA	Analysis	8081A		1			543720	05/01/19 19:58	D1D	TAL IRV
Total/NA	Analysis	9060		1			300161	05/07/19 15:19	JKM	TAL SEA
Total/NA	Analysis	Moisture		1			543589	04/30/19 22:24	QTN	TAL IRV

Client Sample ID: Arroyo_Simi-Sed_20190424
Lab Sample ID: 440-239866-1
Date Collected: 04/24/19 08:15
Matrix: Solid
Date Received: 04/25/19 16:39
Percent Solids: 73.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SM 4500 NH3 B			2.5016 g	50 mL	544180	05/03/19 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			544195	05/03/19 08:00	YZ	TAL IRV

Laboratory References:

ABC = Aquatic Bioassay - Ventura, CA, 29 North Olive Street, Ventura, CA 93001
SC0028 = PTS Laboratories, Inc, PO BOX 55750, Houston, TX 77255, TEL (713)316-1800
SC0103 = Eurofins Lancaster Laboratories Env LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300
TAL IRV = Eurofins TestAmerica, Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 440-543461/1-A
Matrix: Solid
Analysis Batch: 543453

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 543461

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		5.0	1.5	ug/Kg		04/30/19 12:54	04/30/19 17:23	1
4,4'-DDE	ND		5.0	1.5	ug/Kg		04/30/19 12:54	04/30/19 17:23	1
4,4'-DDT	ND		5.0	1.5	ug/Kg		04/30/19 12:54	04/30/19 17:23	1
Chlordane (technical)	ND		50	10	ug/Kg		04/30/19 12:54	04/30/19 17:23	1
Dieldrin	ND		5.0	1.5	ug/Kg		04/30/19 12:54	04/30/19 17:23	1
Toxaphene	ND		200	50	ug/Kg		04/30/19 12:54	04/30/19 17:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*101*		*21 - 117*	*04/30/19 12:54*	*04/30/19 17:23*	*1*
Tetrachloro-m-xylene	*95*		*28 - 115*	*04/30/19 12:54*	*04/30/19 17:23*	*1*

Lab Sample ID: LCS 440-543461/2-A
Matrix: Solid
Analysis Batch: 543453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 543461

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	13.3	11.6		ug/Kg		87	59 - 118
4,4'-DDE	13.3	9.96		ug/Kg		75	55 - 115
4,4'-DDT	13.3	11.3		ug/Kg		85	60 - 131
cis-Chlordane	13.3	9.90		ug/Kg		74	56 - 115
trans-Chlordane	13.3	9.87		ug/Kg		74	38 - 150
Dieldrin	13.3	11.2		ug/Kg		84	57 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*78*		*21 - 117*
Tetrachloro-m-xylene	*75*		*28 - 115*

Lab Sample ID: 440-240098-H-1-A MS
Matrix: Solid
Analysis Batch: 543453

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 543461

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	ND		13.2	10.4		ug/Kg		79	10 - 150
4,4'-DDE	ND		13.2	9.10		ug/Kg		69	10 - 150
4,4'-DDT	ND		13.2	9.22		ug/Kg		70	13 - 141
cis-Chlordane	ND		13.2	9.75		ug/Kg		74	10 - 150
trans-Chlordane	ND		13.2	9.57		ug/Kg		73	10 - 150
Dieldrin	ND		13.2	10.2		ug/Kg		77	10 - 150

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*57*		*21 - 117*
Tetrachloro-m-xylene	*68*		*28 - 115*

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 440-240098-H-1-B MSD
Matrix: Solid
Analysis Batch: 543453

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 543461

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4,4'-DDD	ND		13.1	10.0		ug/Kg		77	10 - 150	3	26
4,4'-DDE	ND		13.1	8.89		ug/Kg		68	10 - 150	2	40
4,4'-DDT	ND		13.1	9.26		ug/Kg		71	13 - 141	0	26
cis-Chlordane	ND		13.1	9.68		ug/Kg		74	10 - 150	1	40
trans-Chlordane	ND		13.1	9.47		ug/Kg		73	10 - 150	1	36
Dieldrin	ND		13.1	10.1		ug/Kg		78	10 - 150	1	28

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*54*		*21 - 117*
Tetrachloro-m-xylene	*68*		*28 - 115*

Method: 9060 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 580-300161/5
Matrix: Solid
Analysis Batch: 300161

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 - Average Dup	ND		2000	44	mg/Kg			05/07/19 15:11	1

Lab Sample ID: LCS 580-300161/6
Matrix: Solid
Analysis Batch: 300161

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 - Average Dup	4270	6070		mg/Kg		142	40 - 180

Lab Sample ID: LCSD 580-300161/7
Matrix: Solid
Analysis Batch: 300161

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
Total Organic Carbon - Average Dup	4270	5420		mg/Kg		127	40 - 180	11	32

Lab Sample ID: 440-239866-1 MS
Matrix: Solid
Analysis Batch: 300161

Client Sample ID: Arroyo_Simi-Sed_20190424
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Average Dup	1700	J,DX	120000	134000		mg/Kg		111	68 - 149

Method: 9060 - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 440-239866-1 MSD — **Client Sample ID: Arroyo_Simi-Sed_20190424**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 300161

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Average Dup	1700	J,DX	120000	132000		mg/Kg		109	68 - 149	1	32

Lab Sample ID: 440-239866-1 DU — **Client Sample ID: Arroyo_Simi-Sed_20190424**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 300161

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon - Average Dup	1700	J,DX	1650	J,DX	mg/Kg		4	50

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 440-544180/2-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 544195 — **Prep Batch: 544180**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		10.0	2.00	mg/Kg		05/03/19 05:00	05/03/19 08:00	1

Lab Sample ID: LCS 440-544180/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 544195 — **Prep Batch: 544180**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	50.0	45.38		mg/Kg		91	85 - 115

Lab Sample ID: 440-239866-1 MS — **Client Sample ID: Arroyo_Simi-Sed_20190424**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 544195 — **Prep Batch: 544180**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	45.8		67.9	103.7		mg/Kg	☼	85	75 - 125

Lab Sample ID: 440-239866-1 MSD — **Client Sample ID: Arroyo_Simi-Sed_20190424**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 544195 — **Prep Batch: 544180**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	45.8		67.9	99.92		mg/Kg	☼	80	75 - 125	4	15

GC Semi VOA

Analysis Batch: 543453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-543461/1-A	Method Blank	Total/NA	Solid	8081A	543461
LCS 440-543461/2-A	Lab Control Sample	Total/NA	Solid	8081A	543461
440-240098-H-1-A MS	Matrix Spike	Total/NA	Solid	8081A	543461
440-240098-H-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8081A	543461

Prep Batch: 543461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-239866-1	Arroyo_Simi-Sed_20190424	Total/NA	Solid	3546	
MB 440-543461/1-A	Method Blank	Total/NA	Solid	3546	
LCS 440-543461/2-A	Lab Control Sample	Total/NA	Solid	3546	
440-240098-H-1-A MS	Matrix Spike	Total/NA	Solid	3546	
440-240098-H-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	3546	

Analysis Batch: 543720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-239866-1	Arroyo_Simi-Sed_20190424	Total/NA	Solid	8081A	543461

General Chemistry

Analysis Batch: 300161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-239866-1	Arroyo_Simi-Sed_20190424	Total/NA	Solid	9060	
MB 580-300161/5	Method Blank	Total/NA	Solid	9060	
LCS 580-300161/6	Lab Control Sample	Total/NA	Solid	9060	
LCSD 580-300161/7	Lab Control Sample Dup	Total/NA	Solid	9060	
440-239866-1 MS	Arroyo_Simi-Sed_20190424	Total/NA	Solid	9060	
440-239866-1 MSD	Arroyo_Simi-Sed_20190424	Total/NA	Solid	9060	
440-239866-1 DU	Arroyo_Simi-Sed_20190424	Total/NA	Solid	9060	

Analysis Batch: 543589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-239866-1	Arroyo_Simi-Sed_20190424	Total/NA	Solid	Moisture	
440-239911-E-4 DU	Duplicate	Total/NA	Solid	Moisture	

Prep Batch: 544180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-239866-1	Arroyo_Simi-Sed_20190424	Total/NA	Solid	SM 4500 NH3 B	
MB 440-544180/2-A	Method Blank	Total/NA	Solid	SM 4500 NH3 B	
LCS 440-544180/1-A	Lab Control Sample	Total/NA	Solid	SM 4500 NH3 B	
440-239866-1 MS	Arroyo_Simi-Sed_20190424	Total/NA	Solid	SM 4500 NH3 B	
440-239866-1 MSD	Arroyo_Simi-Sed_20190424	Total/NA	Solid	SM 4500 NH3 B	

Analysis Batch: 544195

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-239866-1	Arroyo_Simi-Sed_20190424	Total/NA	Solid	SM 4500 NH3 D	544180
MB 440-544180/2-A	Method Blank	Total/NA	Solid	SM 4500 NH3 D	544180
LCS 440-544180/1-A	Lab Control Sample	Total/NA	Solid	SM 4500 NH3 D	544180
440-239866-1 MS	Arroyo_Simi-Sed_20190424	Total/NA	Solid	SM 4500 NH3 D	544180
440-239866-1 MSD	Arroyo_Simi-Sed_20190424	Total/NA	Solid	SM 4500 NH3 D	544180

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 440-239866-1
Project/Site: Annual Sediment Arroyo Simi-Frontier Par

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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
RER	Relative Error Ratio (Radiochemistry)
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)

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 440-239866-1
Project/Site: Annual Sediment Arroyo Simi-Frontier Par

Laboratory: Eurofins TestAmerica, Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	CA ELAP 2706	06-30-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids
SM 4500 NH3 D	SM 4500 NH3 B	Solid	Ammonia (as N)

Laboratory: Eurofins TestAmerica, Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-20
ANAB	DoD		L2236	01-19-22
ANAB	ISO/IEC 17025		L2236	01-19-22
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-20

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ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Test America
17461 Derian Ave
Suite #100
Irvine CA 92614

Report Date: May 03, 2019 14:14

Project: Boeing NPDES SSFL Outfalls

Account #: 41440
Group Number: 2040938
SDG: SSF14
PO Number: 440239866
State of Sample Origin: CA

Electronic Copy To Test America Attn: Urvashi Patel

Respectfully Submitted,

Kay Hower

(717) 556-7364

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.

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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
Arroyo_Simi-Sed_20190424 (440-239866-1) Solid	04/24/2019 08:15	1043749

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

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Sample Description: Arroyo_Simi-Sed_20190424 (440-239866-1) Solid
Boeing NPDES SSFL Outfalls

Project Name: Boeing NPDES SSFL Outfalls

Submittal Date/Time: 04/27/2019 09:20
Collection Date/Time: 04/24/2019 08:15
SDG#: SSF14-01

Test America
ELLE Sample #: SW 1043749
ELLE Group #: 2040938
Matrix: Solid

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
PCBs	**SW-846 8082**		ug/kg	ug/kg	ug/kg	
10736	PCB-1016	12674-11-2	N.D. D1	4.6	22	1
10736	PCB-1221	11104-28-2	N.D. D1	5.8	22	1
10736	PCB-1232	11141-16-5	N.D. D1	10	22	1
10736	PCB-1242	53469-21-9	N.D. D1	4.2	22	1
10736	PCB-1248	12672-29-6	N.D. D1	4.2	22	1
10736	PCB-1254	11097-69-1	N.D. D1	4.2	22	1
10736	PCB-1260	11096-82-5	N.D. D1	6.2	22	1
Wet Chemistry	**SM 2540 G-1997 %Moisture Calc**		%	%	%	
00111	Moisture	n.a.	21.9	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

CA ELAP Lab Certification No. 2792

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10736	PCBs in Soil (microwave)	SW-846 8082	1	191190015A	05/02/2019 23:47	Covenant Mutuku	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	191190015A	04/29/2019 18:00	Elizabeth E Donovan	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	19120820003A	05/01/2019 12:37	William C Schwebel	1

*=This limit was used in the evaluation of the final result

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Quality Control Summary

Client Name: Test America
Reported: 05/03/2019 14:14

Group Number: 2040938

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL**	LOQ
	ug/kg	ug/kg	ug/kg
Batch number: 191190015A	Sample number(s): 1043749		
PCB-1016	N.D.	3.6	17
PCB-1221	N.D.	4.6	17
PCB-1232	N.D.	8.0	17
PCB-1242	N.D.	3.3	17
PCB-1248	N.D.	3.3	17
PCB-1254	N.D.	3.3	17
PCB-1260	N.D.	4.9	17

LCS/LCSD

Analysis Name	LCS Spike Added ug/kg	LCS Conc ug/kg	LCSD Spike Added ug/kg	LCSD Conc ug/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 191190015A	Sample number(s): 1043749								
PCB-1016	167.37	152.49			91		76-121		
PCB-1260	168.23	168.2			100		79-130		
	%	%	%	%					
Batch number: 19120820003A	Sample number(s): 1043749								
Moisture	89.5	89.42			100		99-101		

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PCBs in Soil (microwave)
Batch number: 191190015A

	Tetrachloro-m-xylene-D1	Decachlorobiphenyl-D1	Tetrachloro-m-xylene-D2	Decachlorobiphenyl-D2
1043749	66	96	65	96
Limits:	53-140	45-143	53-140	45-143

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

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Quality Control Summary

Client Name: Test America
Reported: 05/03/2019 14:14

Group Number: 2040938

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PCBs in Soil (microwave)
Batch number: 191190015A

	Tetrachloro-m-xylene-D1	Decachlorobiphenyl-D1	Tetrachloro-m-xylene-D2	Decachlorobiphenyl-D2
Blank	90	103	90	99
LCS	86	103	88	102
Limits:	53-140	45-143	53-140	45-143

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Eurofins TestAmerica, Irvine
17461 Derian Ave Suite 100
Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

41440 2040938

Chain of Custody Record

1043749

eurofins : Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Urvashi	Carrier Tracking No(s):	COC No: 440-137715.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: urvashi.patel@testamericainc.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Env LLC		Accreditations Required (See note): State Program - California		Job #: 440-239866-1
Address: 2425 New Holland Pike,	Due Date Requested: 5/7/2019			
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL outfalls	Project #: 44009879			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (8082LL- PCB- Lancaster Labs)/ 8082LL- PCB- Lancaster Labs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Arroyo_Simi-Sed_20190424 (440-239866-1)	4/24/19	08:15 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	A. Kennedy	4/26/19 1700	TA IRV			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 4/27/19 0920	Company ELLE

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.6

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 247500

Group Number(s): 2040938

Client: Test America

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	04/27/2019 9:20
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Nicole Reiff (25684) at 10:29 on 04/27/2019

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	32170023	1.6	IR	Wet	Y	Loose	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

aquatic bioassay & consulting laboratories, inc

May 9, 2019

Urvashi Patel
TestAmerica Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Dear Ms. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025.* Results were as follows:

CLIENT:	TestAmerica
SAMPLE I.D.:	Arroyo Simi
DATE RECEIVED:	4/24/2019
ABC LAB. NO.:	TAM0419.172

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC = 100.00 %
TUc = 1.00

EC25 = >100.00 %
EC50 = >100.00 %
TST RESULT = PASS

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Eohaustorius 10-d Survival and Reburial Sediment Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	14-6655-6688	**Test Type:**	Survival-Reburial	**Analyst:**	Joe Freas
Start Date:	26 Apr-19 13:00	**Protocol:**	EPA/600/R-94/025 (1994)	**Diluent:**	Laboratory Seawater
Ending Date:	06 May-19 13:00	**Species:**	Eohaustorius estuarius	**Brine:**	Not Applicable
Test Length:	10d 0h	**Taxon:**	Malacostraca	**Source:**	Northwestern Aquatic Scienc **Age:**
Sample ID:	02-1858-1856	**Code:**	TAM0419.172e	**Project:**	Boeing NPDES SSFL Outfalls
Sample Date:	24 Apr-19 08:15	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	24 Apr-19 11:17	**CAS (PC):**		**Station:**	Arroyo_Simi_Sed_20190424 (440-1398
Sample Age:	53h	**Client:**	Test America		

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
15-3945-7304	Survival Rate	Wilcoxon Rank Sum Two-Sample Test	1.0000	100% passed survival rate	1

Test Acceptability

				TAC Limits			
Analysis ID	**Endpoint**	**Attribute**	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
15-3945-7304	Survival Rate	Control Resp	0.99	0.9	>>	Yes	Passes Criteria

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9900	0.9622	1.0000	0.9500	1.0000	0.0100	0.0224	2.26%	0.00%
100		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-1.01%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	0.9500	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	20/20	19/20	20/20	20/20	20/20
100		20/20	20/20	20/20	20/20	20/20

CETIS Analytical Report

Report Date: 09 May-19 11:45 (p 1 of 2)
Test Code/ID: TAM0419.172e / 12-0522-1664

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	15-3945-7304	**Endpoint:**	Survival Rate	**CETIS Version:**	CETISv1.9.5
Analyzed:	09 May-19 11:45	**Analysis:**	Nonparametric-Two Sample	**Status Level:**	1
Batch ID:	14-6655-8688	**Test Type:**	Survival-Reburial	**Analyst:**	Joe Freas
Start Date:	26 Apr-19 13:00	**Protocol:**	EPA/600/R-94/025 (1994)	**Diluent:**	Laboratory Seawater
Ending Date:	06 May-19 13:00	**Species:**	Eohaustorius estuarius	**Brine:**	Not Applicable
Test Length:	10d 0h	**Taxon:**	Malacostraca	**Source:**	Northwestern Aquatic Scienc **Age:**
Sample ID:	02-1858-1856	**Code:**	TAM0419.172e	**Project:**	Boeing NPDES SSFL Outfalls
Sample Date:	24 Apr-19 08:15	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	24 Apr-19 11:17	**CAS (PC):**		**Station:**	Arroyo_Simi_Sed_20190424 (440-1398
Sample Age:	53h	**Client:**	Test America		

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed survival rate	2.12%

Wilcoxon Rank Sum Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	30	n/a	1	8	Exact	1.0000	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.99	0.9	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0012877	0.0012877	1	1	0.3466	Non-Significant Effect
Error	0.0103014	0.0012877	8			
Total	0.0115891		9			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	7.111	11.26	0.0285	Equal Variances
	Mod Levene Equality of Variance Test	1	13.75	0.3559	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	1.796	3.878	<1.0E-37	Non-Normal Distribution
	D'Agostino Skewness Test	3.335	2.576	8.5E-04	Non-Normal Distribution
	Kolmogorov-Smirnov D Test	0.4	0.3025	6.1E-05	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.6247	0.7411	1.1E-04	Non-Normal Distribution

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9900	0.9622	1.0000	1.0000	0.9500	1.0000	0.0100	2.26%	0.00%
100		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-1.01%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.436	1.373	1.499	1.459	1.345	1.459	0.02269	3.53%	0.00%
100		5	1.459	1.458	1.459	1.459	1.459	1.459	0	0.00%	-1.58%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	0.9500	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.459	1.345	1.459	1.459	1.459
100		1.459	1.459	1.459	1.459	1.459

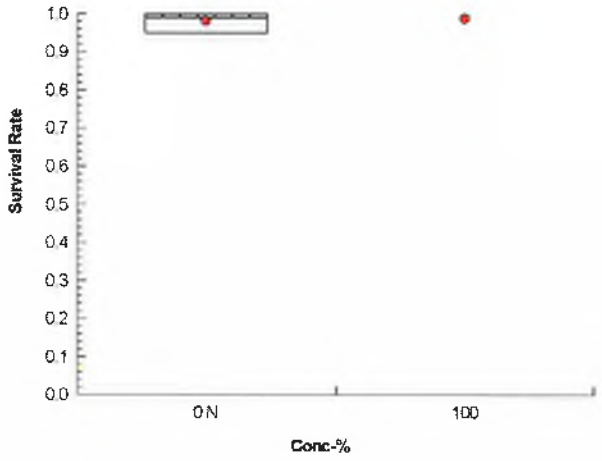
Eohaustorius 10-d Survival and Reburial Sediment Test — **Aquatic Bioassay & Consulting Labs, Inc.**

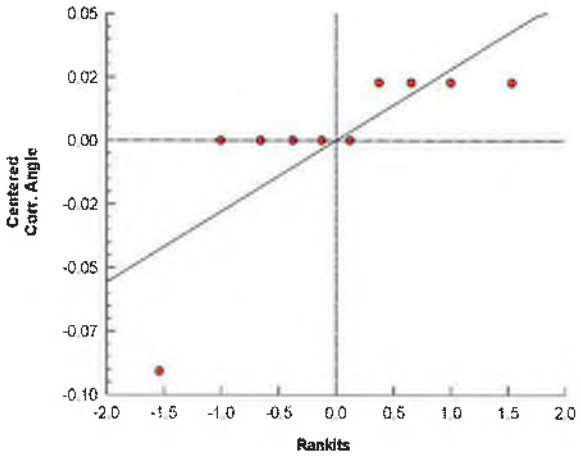
Analysis ID:	15-3945-7304	**Endpoint:**	Survival Rate	**CETIS Version:**	CETISv1.9.5
Analyzed:	09 May-19 11:45	**Analysis:**	Nonparametric-Two Sample	**Status Level:**	1

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	20/20	19/20	20/20	20/20	20/20
100		20/20	20/20	20/20	20/20	20/20

Graphics





Eohaustorius 10-d Survival and Reburial Sediment Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	14-6655-8688	**Test Type:**	Survival-Reburial	**Analyst:**	Joe Freas
Start Date:	26 Apr-19 13:00	**Protocol:**	EPA/600/R-94/025 (1994)	**Diluent:**	Laboratory Seawater
Ending Date:	06 May-19 13:00	**Species:**	Eohaustorius estuarius	**Brine:**	Not Applicable
Test Length:	10d 0h	**Taxon:**	Malacostraca	**Source:**	Northwestern Aquatic Scienc **Age:**

Sample ID:	02-1858-1856	**Code:**	TAM0419.172e	**Project:**	Boeing NPDES SSFL Outfalls
Sample Date:	24 Apr-19 08:15	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	24 Apr-19 11:17	**CAS (PC):**		**Station:**	Arroyo_Simi_Sed_20190424 (440-1398
Sample Age:	53h	**Client:**	Test America		

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	9.85	9.215	10.49	9.8	9.9	0.05	0.0707	0.72%	0
100		2	9.8	5.988	13.61	9.5	10.1	0.3	0.4243	4.33%	0
Overall		4	9.825	9.427	10.22	9.5	10.1	0.125	0.25	2.55%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
100		2	8.1	6.829	9.371	8	8.2	0.1	0.1414	1.75%	0
Overall		4	8	7.775	8.225	7.9	8.2	0.07071	0.1414	1.77%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		4	14.85	14.76	14.94	14.8	14.9	0.02887	0.05773	0.39%	0 (0%)

Eohaustorius 10-d Survival and Reburial Sediment Test — Aquatic Bioassay & Consulting Labs, Inc.

Dissolved Oxygen-mg/L

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		9.9					
100				9.5					
0	N	2		9.8					
100				10.1					

pH-Units

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.9					
100				8.2					
0	N	2		7.9					
100				8					

Salinity-ppt

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		20					
100				20					
0	N	2		20					
100				20					

Temperature-°C

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		14.8					
100				14.8					
0	N	2		14.9					
100				14.9					

aquatic bioassay & consulting laboratories, inc

May 9, 2019

Urvashi Patel
TestAmerica Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Dear Ms. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/R-95/136.* Results were as follows:

CLIENT:	TestAmerica
SAMPLE I.D.:	Arroyo Simi
DATE RECEIVED:	4/24/2019
ABC LAB. NO.:	TAM0419.172

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC = 100.00 %
TUc = 1.00

EC25 = >100.00 %
EC50 = >100.00 %
TST RESULT = PASS

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 09 May-19 11:26 (p 1 of 1)
Test Code/ID: EUR0419.172 / 06-9315-3541

Mussel Shell Development Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	05-9130-3176	**Test Type:**	Development-Survival	**Analyst:**	Joe Freas		
Start Date:	30 Apr-19 13:00	**Protocol:**	EPA/600/R-95/136 (1995)	**Diluent:**	Laboratory Water		
Ending Date:	02 May-19 13:00	**Species:**	Mytilis galloprovincialis	**Brine:**			
Test Length:	48h	**Taxon:**	Bivalvia	**Source:**	Carlsbad Aquafarms CA	**Age:**	
Sample ID:	18-5793-8925	**Code:**	EUR0419.172m	**Project:**	Boeing NPDES SSFL Outfalls		
Sample Date:	24 Apr-19 08:15	**Material:**	Sample Water	**Source:**	Bioassay Report		
Receipt Date:	27 Apr-19 11:00	**CAS (PC):**		**Station:**	Arroyo_Simi_Sed_20190424 (440-1398		
Sample Age:	6d 5h	**Client:**	Test America Irvine				

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
14-7483-6947	Combined Proportion Normal	Equal Variance t Two-Sample Test	0.7063	100% passed combined proportion normal	1

Test Acceptability

				TAC Limits			
Analysis ID	**Endpoint**	**Attribute**	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
14-7483-6947	Combined Proportion Normal	PMSD	0.02074	<<	0.25	No	Passes Criteria

Combined Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9758	0.9647	0.9869	0.9628	0.9860	0.0040	0.0089	0.92%	0.00%
100		5	0.9786	0.9596	0.9976	0.9581	1.0000	0.0068	0.0153	1.56%	-0.29%

Combined Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9814	0.9721	0.9628	0.9860	0.9767
100		0.9581	0.9721	0.9814	1.0000	0.9814

Combined Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/215	209/215	207/215	212/215	210/215
100		206/215	209/215	211/215	215/215	211/215

Mussel Shell Development Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	14-7483-6947	**Endpoint:**	Combined Proportion Normal	**CETIS Version:**	CETISv1.9.5
Analyzed:	09 May-19 11:25	**Analysis:**	Parametric-Two Sample	**Status Level:**	1
Batch ID:	05-9130-3176	**Test Type:**	Development-Survival	**Analyst:**	Joe Freas
Start Date:	30 Apr-19 13:00	**Protocol:**	EPA/600/R-95/136 (1995)	**Diluent:**	Laboratory Water
Ending Date:	02 May-19 13:00	**Species:**	Mytilis galloprovincialis	**Brine:**	
Test Length:	48h	**Taxon:**	Bivalvia	**Source:**	Carlsbad Aquafarms CA **Age:**
Sample ID:	18-5793-8925	**Code:**	EUR0419.172m	**Project:**	Boeing NPDES SSFL Outfalls
Sample Date:	24 Apr-19 08:15	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	27 Apr-19 11:00	**CAS (PC):**		**Station:**	Arroyo_Simi_Sed_20190424 (440-1398
Sample Age:	6d 5h	**Client:**	Test America Irvine		

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed combined proportion normal	2.07%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	-0.5652	1.86	0.058	8	CDF	0.7063	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
PMSD	0.02074	<<	0.25	No	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0007855	0.0007855	1	0.3195	0.5874	Non-Significant Effect
Error	0.0196682	0.0024585	8			
Total	0.0204536		9			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	0.8332	11.26	0.3880	Equal Variances
	Mod Levene Equality of Variance Test	1.064	13.75	0.3421	Equal Variances
	Variance Ratio F Test	4.847	23.15	0.1555	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.3951	3.878	0.3768	Normal Distribution
	D'Agostino Skewness Test	1.368	2.576	0.1714	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1918	0.3025	0.4111	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9378	0.7411	0.5291	Normal Distribution

Combined Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9758	0.9647	0.9869	0.9767	0.9628	0.9860	0.0040	0.92%	0.00%
100		5	0.9786	0.9596	0.9976	0.9814	0.9581	1.0000	0.0068	1.56%	-0.29%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.417	1.381	1.453	1.418	1.377	1.452	0.01297	2.05%	0.00%
100		5	1.434	1.355	1.514	1.434	1.365	1.537	0.02855	4.45%	-1.25%

Combined Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9814	0.9721	0.9628	0.9860	0.9767
100		0.9581	0.9721	0.9814	1.0000	0.9814

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.434	1.403	1.377	1.452	1.418
100		1.365	1.403	1.434	1.537	1.434

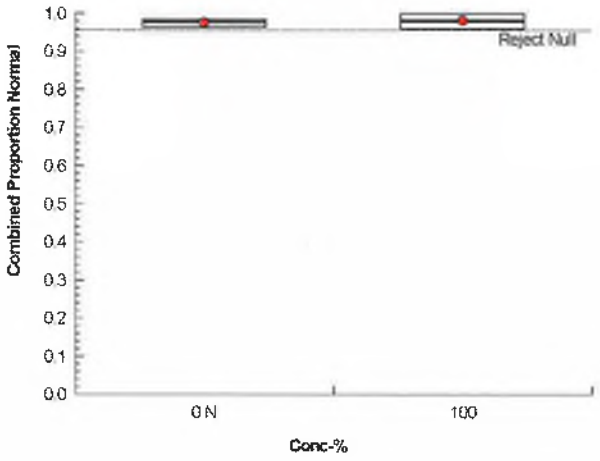
Mussel Shell Development Test — **Aquatic Bioassay & Consulting Labs, Inc.**

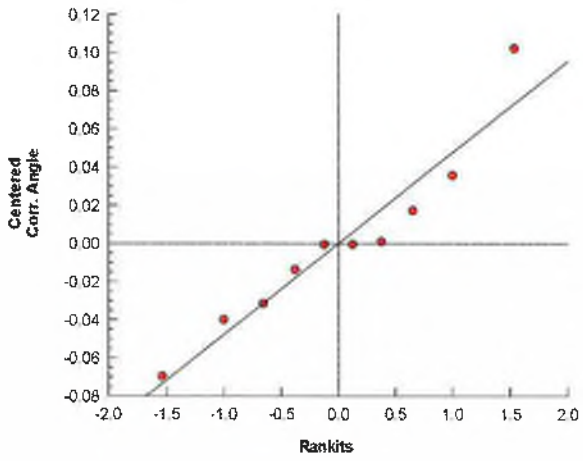
Analysis ID:	14-7483-6947	**Endpoint:**	Combined Proportion Normal	**CETIS Version:**	CETISv1.9.5
Analyzed:	09 May-19 11:25	**Analysis:**	Parametric-Two Sample	**Status Level:**	1

Combined Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/215	209/215	207/215	212/215	210/215
100		206/215	209/215	211/215	215/215	211/215

Graphics





CETIS Measurement Report

Report Date: 09 May-19 11:26 (p 1 of 2)
Test Code/ID: EUR0419.172 / 06-9315-3541

Mussel Shell Development Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	05-9130-3176	**Test Type:**	Development-Survival	**Analyst:**	Joe Freas		
Start Date:	30 Apr-19 13:00	**Protocol:**	EPA/600/R-95/136 (1995)	**Diluent:**	Laboratory Water		
Ending Date:	02 May-19 13:00	**Species:**	Mytilis galloprovincialis	**Brine:**			
Test Length:	48h	**Taxon:**	Bivalvia	**Source:**	Carlsbad Aquafarms CA	**Age:**	

Sample ID:	18-5793-8925	**Code:**	EUR0419.172m	**Project:**	Boeing NPDES SSFL Outfalls
Sample Date:	24 Apr-19 08:15	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	27 Apr-19 11:00	**CAS (PC):**		**Station:**	Arroyo_Simi_Sed_20190424 (440-1398
Sample Age:	6d 5h	**Client:**	Test America Irvine		

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	9.3	8.029	10.57	9.2	9.4	0.1	0.1414	1.52%	0
100		2	9.8	5.988	13.61	9.5	10.1	0.3	0.4243	4.33%	0
Overall		4	9.55	8.934	10.17	9.2	10.1	0.1936	0.3873	4.06%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
100		2	7.95	4.773	11.13	7.7	8.2	0.25	0.3536	4.45%	0
Overall		4	7.925	7.597	8.253	7.7	8.2	0.1031	0.2062	2.60%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		4	14.85	14.76	14.94	14.8	14.9	0.02887	0.05773	0.39%	0 (0%)

Mussel Shell Development Test — Aquatic Bioassay & Consulting Labs, Inc.

Dissolved Oxygen-mg/L

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		9.2					
100				9.5					
0	N	2		9.4					
100				10.1					

pH-Units

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.9					
100				8.2					
0	N	2		7.9					
100				7.7					

Salinity-ppt

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		34					
100				34					
0	N	2		34					
100				34					

Temperature-°C

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		14.8					
100				14.8					
0	N	2		14.9					
100				14.9					

Eurofins TestAmerica, Irvine
17461 Derian Ave Suite 100
Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Urvashi	Carrier Tracking No(s):	COC No: 440-137714.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: urvashi.patel@testamericainc.com	State of Origin: California	Page: Page 1 of 1
Company: Aquatic Bioassay		Accreditations Required (See note): State Program - California		Job #: 440-239866-1
Address: 29 North Olive Street,	Due Date Requested: 5/3/2019			
City: Ventura	TAT Requested (days):			
State, Zip: CA, 93001				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL outfalls	Project #: 44009879			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA

M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Bioassay-Chronic 10day eohaustorius)/ Bioassay-Chronic 10day eohaustorius	SUB (48-hour Bivalve Embryo toxicity)/ 48-hour Bivalve Embryo toxicity	Total Number of containers	Special Instructions/Note:
				Preservation Code:						
Arroyo_Simi-Sed_20190424 (440-239866-1)	4/24/19	08:15 Pacific		Solid			X	X	3	sub to Aquatic Bioassay Consultants-send 4 1 liter wide mouth plastic containers

.17°c

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For ______ Months*
Deliverable Requested: I, II, III, IV, Other (specify) — Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:		Time:		Method of Shipment:	
Relinquished by: A. Kerney	Date/Time: 4/26/19 1700	Company: TA IRV	Received by: A [signature]	Date/Time: 4/27/19 1100	Company: AquaticBioassay	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:			

Ver: 01/16/2019

EUR.corr. 17.2

DAN 1.52

TRAE FT 98

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2015 Annual Sediment Arroyo Simi-Frontier Park
Test America Contact: Urvashi Patel 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3269 Cell 949-333-9055	Project Manager: Katherine Miller 520.289.8605, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2013-20-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	
Sampler: Dan Smith	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Ammonia (SM4500-NH3-D)	Total Organic Carbon (9060)	PCBs (SW8082)	Chlordane, Dieldrin, Toxaphene, 4,4-DDD, 4,4-DDE, 4,4-DDT (SW8081A)	48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostrea gigas) (EPAR-85/136)	Chronic 10-day echaustorius estuarius Toxicity (EPA/600/R-94/025)	% Moisture (2540G)	Particle Size Distribution (D422M)	Comments
Arroyo Simi	Arroyo_Simi-Sed_20190424	4/24/2019 0815	SE	9 oz Jar	1	None	185	No	X								
			SE	9 oz Jar	1	None	248	No		X							
			SE	9 oz Jar	1	None	280	No			X						PCBs to Eurofins
			SE	9 oz Jar	1	None	290	No				X					
			SE	1L wide mouth Plastic	3	None	295	No					X				
			SE	1L wide mouth Plastic	4	4C in the Dark	300	No						X			Keep sample in cooler in the dark until delivered to ABC Labs.
			SE	9 oz Jar	1	None	305	No							X		
			SE	9 oz Jar	1	None	310	No								X	

Field Readings | Meter serial #

Field readings: (Include units)

Time of readings 0755

pH 6.99 pH unit

Temp 18.81 °C

DO = 7.56 mg/L

Conductivity = 1720 µmhos/cm

Velocity 0.0 ft/sec

Field readings QC

Checked by:

Date/Time: 4/24/19 0755

Relinquished By	Date/Time: 4-24-19/1000	Company: H.A	Received By / Date/Time: 4/24/19 1000
Relinquished By	Date/Time: 4/24/19 1117	Company: TAIRY	Received By / Date/Time: 4/24/19 1117
Relinquished By	Date/Time:	Company:	Received By / Date/Time:

Turn-around time: (Check)

24 Hour: ____ 72 Hour: ____ 10 Day: X

48 Hour: ____ 5 Day: ____ Normal: ____

Sample Integrity: (Check)

Intact: ____ On Ice: ____

Store samples for 6 months.

Data Requirements: (Check)

No Level IV: ____ All Level IV: X

5730 Centralcrest St. • Houston, TX 77092
Telephone (713) 316-1800 • Fax (877) 225-9953

May 9, 2019

Patel, Urvashi
Project Manager,
TestAmerica Irvine,
17461 Derian Ave Suite 100
Irvine, CA 92614-5817

Re: PTS File No: **49058**
Project Name: **Annual Sediment Arroyo Simi-Frontier Par**
Job Number: 44009879
Subject: Grain Size Particle Analyses

Dear Patel, Urvashi:

Please find enclosed report for Physical Properties analyses conducted upon samples received from the above referenced project.
All analyses were performed by ASTM D422 methodology. The sample is currently in storage and will be retained for thirty days past completion of testing at no charge. Please note that the sample will be disposed of at that time. You may contact me regarding storage, disposal, or return of the sample.

PTS Laboratories appreciates the opportunity to be of service. If you have any questions or require additional information, please contact me or Emeka Anazodo at (713) 316-1800.

Sincerely,
PTS Laboratories, Inc.

CAUmeh

Chidi Umeh,
Flow Laboratory Supervisor

Encl.

PTS Laboratories

Project Name: Annual Sediment Arroyo Simi-Frontier Par
Project Number: 44009879

PTS File No: 49058
Client: Eurofins TestAmerica, Irvine

TEST PROGRAM - 20190501

CORE ID		Depth ft.	Core Recovery ft.	Grain Size Analysis ASTM D422	Comments
			CORE	Grab	
Date Received: 20190501					
Arroyo_Simi-Sed_20190424 (440-239866-1)		N/A	N/A	X	
TOTALS:				1	

Laboratory Test Program Notes
Contaminant identification:
Standard TAT for basic analysis is 10-15 business days.
Grain Size Analysis: Laser or sieve method; includes tabular data, graphics and statistical sorting in Excel format.

PARTICLE SIZE SUMMARY

(METHODOLOGY: ASTM D422)

PROJECT NAME: Annual Sediment Arroyo Simi-Frontier Par
PROJECT NO: 44009879

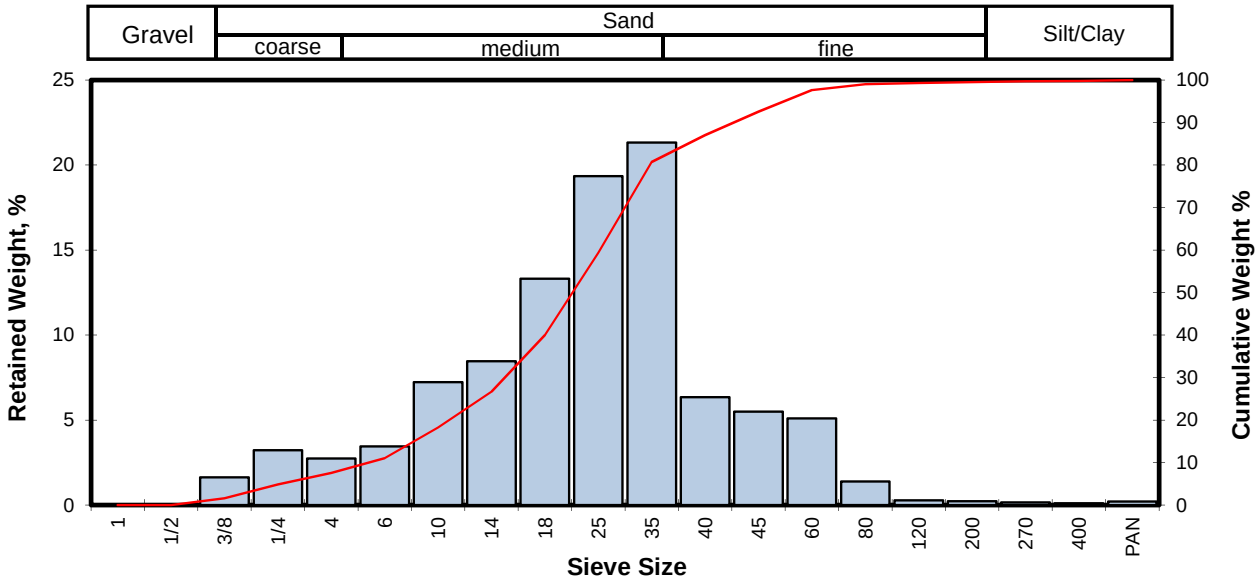
Sample ID	PTS ID	Depth, ft.	Mean Grain Size Description USCS/ASTM (1)	Median Grain Size, mm	Particle Size Distribution, wt. percent						
					Gravel	Sand Size					Silt/Clay
						Coarse	Medium	Fine	Silt	Clay	
Arroyo_Simi-Sed_20190424 (440-239866-1)	1	N/A	Medium Sand	0.836	7.59	10.68	68.76	12.49	0.27	0.21	0.48

(1) Based on Mean from Trask

PTS Laboratories, Inc.

Sieve Analysis Results - ASTM D422

Client:	Eurofins TestAmerica, Irvine	**PTS File No:**	49058
Project:	Annual Sediment Arroyo Simi-Frontier Par	**Sample ID:**	Arroyo_Simi-Sed_20190424 (440-239866-1)
Project No:	44009879	**Depth, ft:**	N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	6.28	1.63	1.63
0.2500	6.351	-2.67	1/4	12.43	3.22	4.84
0.1873	4.757	-2.25	4	10.61	2.75	7.59
0.1324	3.364	-1.75	6	13.36	3.46	11.04
0.0787	2.000	-1.00	10	27.92	7.22	18.27
0.0557	1.414	-0.50	14	32.66	8.45	26.72
0.0394	1.000	0.00	18	51.45	13.31	40.03
0.0278	0.707	0.50	25	74.72	19.33	59.37
0.0197	0.500	1.00	35	82.40	21.32	80.69
0.0166	0.420	1.25	40	24.51	6.34	87.03
0.0139	0.354	1.50	45	21.25	5.50	92.53
0.0098	0.250	2.00	60	19.70	5.10	97.63
0.0070	0.177	2.50	80	5.33	1.38	99.01
0.0049	0.125	3.00	120	1.09	0.28	99.29
0.0029	0.074	3.75	200	0.88	0.23	99.52
0.0021	0.053	4.25	270	0.63	0.16	99.68
0.0015	0.037	4.75	400	0.41	0.11	99.79
			PAN	0.83	0.21	100.00
TOTALS				386.46	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-2.64	0.2459	6.246
10	-1.90	0.1470	3.735
16	-1.24	0.0927	2.355
25	-0.60	0.0597	1.518
40	0.00	0.0394	1.001
50	0.26	0.0329	0.836
60	0.51	0.0276	0.700
75	0.87	0.0216	0.548
84	1.13	0.0180	0.457
90	1.38	0.0151	0.383
95	1.74	0.0118	0.299

Measure	Trask	Inman	Folk-Ward
Median, phi	0.26	0.26	0.26
Median, in.	0.0329	0.0329	0.0329
Median, mm	0.836	0.836	0.836
Mean, phi	-0.05	-0.05	0.05
Mean, in.	0.0407	0.0408	0.0380
Mean, mm	1.033	1.037	0.965
Sorting	1.663	1.183	1.256
Skewness	1.091	-0.262	-0.293
Kurtosis	0.145	0.853	1.224
Grain Size Description (ASTM-USCS Scale)		Medium sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	7.59
Coarse Sand	10	10.68
Medium Sand	40	68.76
Fine Sand	200	12.49
Silt	<200	0.27
Clay	Pan	0.21
	Total	100

Phone: (713) 316-1800

49058

Eurofins TestAmerica, Irvine
17461 Derian Ave Suite 100
Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Urvashi	Carrier Tracking No(s):	COC No: 440-137777.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: urvashi.patel@testamericainc.com	State of Origin: California	Page: Page 1 of 1
Company: PTS laboratories, Inc		Accreditations Required (See note): State Program - California		Job #: 440-239866-1
Address: PO BOX 55750,	Due Date Requested: 5/3/2019			
City: Houston	TAT Requested (days):			
State, Zip: TX, 77255	PO #:			
Phone: 713-316-1800(Tel)	WO #:			
Email:	Project #: 44009879			
Project Name: Annual Sediment Arroyo Simi-Frontier Par	SSOW#:			
Site:				

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other: PTS FILE NO: 49058

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Particle Size) Particle Size	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Arroyo_Simi-Sed_20190424 (440-239866-1)	4/24/19	08:15 Pacific		Solid			X	1	Bottle 500ml

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by: A. Kennedy	Date/Time: 4/29/19 1700	Company TAIRK	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by: Onyeka G	Date/Time: 5/1/2019 1145	Company PTS Labs	
Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:			

PAH 152

TRACE FT 96

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2015 Annual Sediment Arroyo Simi-Frontier Park
Test America Contact: Urvashi Patel 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3269 Cell 949-333-9055	Project Manager: Katherine Miller 520.289.8606, 520 904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	
Sampler: Dan Smith	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample ID	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Ammonia (SM4500-NH3-D)	Total Organic Carbon (9060)	PCBs (SW8082)	Chlordane, Dieldrin, Toxaphene, 4,4-DDD, 4,4-DDE, 4,4-DDT (SW8081A)	48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostreas gigas) (EPAR-95/136)	Chronic 10-day echaustorius estuarius Toxicity (EPA/600/R-94/025)	% Moisture (2540G)	Particle Size Distribution (D422M)	Comments
Arroyo Simi	Arroyo_Simi-Sed_20190424	4/24/2019 1015	SE	9 oz Jar	1	None	165	No	X								
			SE	9 oz Jar	1	None	246	No		X							
			SE	9 oz Jar	1	None	280	No			X						PCBs to Eurofins
			SE	9 oz Jar	1	None	290	No				X					
			SE	1L wide mouth Plastic	3	None	295	No					X				
			SE	1L wide mouth Plastic	4	4C in the Dark	300	No						X			Keep sample in cooler at the dark until delivered to ABC Labs
			SE	9 oz Jar	1	None	305	No							X		
			SE	9 oz Jar	1	None	310	No								X	

Field Readings	Meter serial #
Field readings: (include units)	
Time of readings 0755	
pH 6.99 pH unit	
Temp 18.81 °F	
DO = 7.56 mg/L	
Conductivity = 1720 µmhos/cm	
Velocity 0.0 ft/sec	
Field readings QC	
Checked by:	
Date/Time: 4/24/19 0755	

Relinquished By	Date/Time	Company	Received By	Date/Time
	4-24-19/1000	H.A		4/24/19 1000
Relinquished By	Date/Time	Company	Received By	Date/Time
	4/24/19 1117	TAIKY		4/24/19 1117
Relinquished By	Date/Time	Company	Received By	Date/Time
	4/25/19	DCS	TH,KV	4/25/19/16.30

Turn-around time (Check)
24 Hour ____ 72 Hour ____ 10 Day X
48 Hour ____ 5 Day ____ Normal ____

Sample Integrity (Check)
Intact: ____ On Ice ____
Store samples for 6 months
Data Requirements (Check)
No Level IV ____ All Level IV X

4:39 pm EE

1.7/2.0
112 94

440-239866 Chain of Custody

LB 4/25/19

CHAIN OF CUSTODY FORM

TRAE PT 98

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2015 **Annual Sediment Arroyo Simi-Frontier Park**
Test America Contact: Urvashi Patel 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3269 Cell 949-333-9055	Project Manager: Katherine Miller 520.289.8606, 520 904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	
Sampler: Dan Smith	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

ANALYSIS REQUIRED

Sample Description	Sample I.D	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Ammonia (SM4500-NH3-D)	Total Organic Carbon (9060)	PCBs (SW8082)	Chlordane, Dieldrin, Toxaphene, 4,4-DDD, 4,4-DDE, 4,4-DDT (SW8081A)	48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostrea gigas) (EPAR-95/136)	Chronic 10-day echaustorus estuarus Toxicity (EPA/600/R-94/025)	% Moisture (2540G)	Particle Size Distribution (D422M)	Comments
Arroyo Simi	Arroyo_Simi-Sed_20190424	4/24/2019 0815	SE	9 oz Jar	1	None	155	No	X								
			SE	9 oz Jar	1	None	248	No		X							
			SE	9 oz Jar	1	None	280	No			X						PCBs to Eurofins
			SE	9 oz Jar	1	None	290	No				X					
			SE	8L wide mouth Plastic	3	None	295	No					X				
			SE	1L wide mouth Plastic	4	4C in the Dark	300	No						X			Keep sample in cooler in the dark until delivered to ABC Labs
			SE	9 oz Jar	1	None	305	No							X		
			SE	9 oz Jar	1	None	310	No								X	

Relinquished By	Date/Time	Company	Received By	Date/Time
[signature]	4-24-19/1000	H.A	[signature]	4/24/19 1080
[signature]	4/24/19 1117	TAIRY	[signature]	4/24/19 1117
[signature]	4/24/19 1650	TAIRY	[signature]	4/24/19 1650

Turn-around time: (Check)
24 Hour ____ 72 Hour ____ 10 Day X
48 Hour ____ 5 Day ____ Normal ____

Sample Integrity: (Check)
Intact ____ On Ice ____
Store samples for 8 months

Data Requirements (Check)
No Level IV ____ All Level IV X

1294 40/43 3.5/4.1

Eurofins TestAmerica, Irvine
17461 Derian Ave Suite 100
Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

eurofins Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Urvashi	Carrier Tracking No(s):	COC No. 440-137663.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: urvashi.patel@testamericainc.com	State of Origin: California	Page: Page 1 of 1
Company: Aquatic Bioassay		Accreditations Required (See note): State Program - California		Job #: 440-239866-1
Address: 29 North Olive Street, ,	Due Date Requested: 5/3/2019			
City: Ventura	TAT Requested (days):			
State, Zip: CA, 93001				
Phone	PO #:			
Email	WO #:			
Project Name: Boeing NPDES SSFL outfalls	Project #: 44009879			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Bioassay-Chronic 10day eohaustorius)#	Bioassay-Chronic 10day eohaustorius	SUB (48-hour Bivalve Embryo toxicity)# 48-hour Bivalve Embryo toxicity	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
Arroyo_Simi-Sed_20190424 (440-239866-1)	4/24/19	08.15 Pacific		Solid			X	X		4	sub to Aquatic Bioassay Consultants-send 4 1 liter wide mouth plastic containers

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment

Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company
Relinquished by	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks

Ver 01/16/2019

5/9/2019

Eurofins TestAmerica, Irvine
17461 Derian Ave Suite 100
Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

eurofins Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Urvashi	Carrier Tracking No(s):	COC No: 440-137880.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: urvashi.patel@testamericainc.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 440-239866-1
Address: 5755 8th Street East,	Due Date Requested: 5/7/2019			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel) 253-922-5047(Fax)	PO #			
Email:	WO #			
Project Name: Annual Sediment Arroyo Simi-Frontier Par	Project #: 44009879			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wastefolt, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060/ Standard Soil TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Arroyo_Simi-Sed_20190424 (440-239866-1)	4/24/19	08:15 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time	Company	Received by	Date/Time	Company
Relinquished by: A. Kennedy	4/30/19 1700	TA IRV	Tom Blount	4/5/1/19 0935	TA-Sea
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: IR4 0.5/0.3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-239866-1

Login Number: 239866
List Number: 1
Creator: Bonta, Lucia F

List Source: Eurofins 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.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
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 (excluding tests with immediate HTs)	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: 440-239866-1

Login Number: 239866
List Number: 2
Creator: Hobbs, Kenneth F

List Source: Eurofins TestAmerica, Seattle
List Creation: 05/01/19 01:13 PM

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	IR4=0.5/0.3
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 (excluding tests with immediate HTs)	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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-239842-1

Prepared for

Haley & Aldrich, Inc.

600 South Meyer Avenue, Suite 100

Tucson, Arizona 85701

21 May 2019

MEC^X, Inc.
12269 East Vassar Drive
Aurora, Colorado 80014
www.mecx.net

TABLE OF CONTENTS

TABLES

I. INTRODUCTION

Task Order Title: Boeing SSFL NPDES

Contract: 40458-078 and 40458-083

MEC^X Project No.: 1272.003D.01 002

Sample Delivery Group: 440-239842-1

Project Manager: Katherine Miller

Matrix: Water

QC Level: IV

No. of Samples: 1

No. of Reanalyses/Dilutions: 0

Laboratory: Eurofins/TestAmerica-Irvine

TABLE 1 - SAMPLE IDENTIFICATION

Sample Name	Lab Sample Name	Sub Lab Sample ID	Matrix	Collection	Method
ARROYO_SIMI_20190424_GRAB	440-239842-1	N/A	WS	4/24/2019 7:30:00 AM	E525.2, E608, SM2340

II. SAMPLE MANAGEMENT

According to the case narrative, sample condition upon receipt form and the chains-of-custody (COC) provided by the laboratory for sample delivery group (SDG) 440-239842-1:

- The laboratories received the samples in this SDG on ice and within the temperature limits of <6 degrees Celsius (°C) and >0°C.
- The laboratories received the sample containers intact and properly preserved, as applicable.
- Field and laboratory personnel signed and dated the original COC; however, the transfer COC from TA-Irvine to Weck was not signed or dated by laboratory personnel.
- According to the Login Sample Receipt Checklist for TA-Irvine, custody seals were absent on the coolers; however, no evidence of tampering was noted. Receipt information at Weck Laboratories was not provided; however, the case narrative from Weck for this SDG indicated no receipt issues.

TABLE 2 - DATA QUALIFIER REFERENCE

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. For dioxins or PCB congeners, the associated value is the quantitation limit or the estimated detection limit.	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. For perchlorate, the associated value is the sample detection limit or the quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may inaccurate or imprecise.	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may 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.
NJ	The analyte has been "tentatively identified" or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.	Not applicable.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.	The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

TABLE 3 - REASON CODE REFERENCE

Reason Code	Organic	Inorganic
H	Holding time was exceeded.	Holding time was exceeded.
S	Surrogate recovery was outside control limits.	The sequence or number of standards used for the calibration was incorrect.
C	Calibration percent relative standard deviation (%RSD) or percent deviation (%D) were noncompliant, or coefficient of determination (r^2) was <0.990.	Correlation coefficient (r) was <0.995.
R	Calibration relative response factor (RRF) was <0.05.	Percent recovery (%R) for calibration was outside control limits.
B	The analyte was detected in an associated blank as well as in the sample.	The analyte was detected in an associated blank as well as in the sample.
L	Laboratory control sample (LCS) or /LCS duplicate (LCSD) %R was outside the control limits.	LCS or LCSD %R was outside the control limits.
L1	LCS/LCSD relative percent difference (RPD) was outside the control limit.	LCS/LCSD RPD was outside the control limit.
Q	Matrix spike/matrix spike duplicate (MS/MSD) %R was outside control limits.	MS or MSD %R was outside the control limit.
Q1	MS/MSD RPD was outside the control limit.	MS/MSD RPD was outside the control limit.
E	Result was reported as an estimated maximum possible concentration (EMPC).	Laboratory duplicate RPD was outside the control limit.
I	Internal standard recovery was outside control limits.	Inductively coupled plasma (ICP) interference check standard (ICSA/ICSAB) result was outside control limits.
I1	Not applicable.	ICP mass spectrometer (ICPMS) internal standard recovery was outside control limits.
A	Not applicable.	Serial dilution %D was outside control limits.
M	Tuning (BFB or DFTPP) was not compliant.	ICPMS tune was not compliant.
T	The analyte was detected in an associated trip blank as well as in the sample.	Not applicable.

Reason Code	Organic	Inorganic
+	False positive – reported compound was not present.	False positive – reported compound was not present.
-	False negative – compound was present but not reported.	False negative – compound was present but not reported.
F	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.
F1	Field duplicate RPD was outside the control limit.	Field duplicate RPD was outside the control limit.
$	The reviewer corrected the reported result and/or other information.	The reviewer corrected the reported result and/or other information.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis was not used because another more technically sound analysis was available.	The analysis was not used because another more technically sound analysis was available.
P	Instrument performance not compliant.	Post digestion spike recovery was outside of 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	Other problems identified in the data are 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.	Other problems identified in the data are 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. METHODS SM2340B —HARDNESS

M. Hilchey of MEC^X reviewed the SDG on May 21, 2019.

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 2), EPA Method 200.7, Standard Methods for the Examination of Water and Wastewater 2340B* and the *National Functional Guidelines for Inorganic Data Review* (2014).

III.1. HOLDING TIMES

The analytical holding time, six months for metals, was met.

III.2. MS TUNING AND CALIBRATION

Instrument tuning is not applicable to Method 200.7.

QAPP calibration criteria were met. A blank and three standards were used for instrument calibration of target analytes. The initial calibration r values were ≥0.995. CRQL recoveries were within the laboratory control limits of 50-150%. Initial calibration verification recoveries were within QAPP control limits of 95-105%.

III.3. QUALITY CONTROL SAMPLES

III.3.1. *METHOD BLANKS*

There were no target analyte detections in the method blank and calibration blanks.

III.3.2. *INTERFERENCE CHECK SAMPLES:*

ICP-AES ICSAB recoveries were within the control limits of 80-120% or ±2× the reporting limit, whichever is greater. The target analytes were spiked interferents; therefore, interference was not evaluated.

III.3.3. *LABORATORY CONTROL SAMPLES*

Laboratory control sample recoveries were within the QAPP control limits of 85-115%.

III.3.4. *LABORATORY DUPLICATES:*

Laboratory duplicate analyses were not performed on the sample in this SDG.

III.3.5. *MATRIX SPIKE/MATRIX SPIKE DUPLICATE*

MS/MSD analyses were performed on the sample in this SDG. Results were not assessed when the parent sample concentration exceeded the spike amount by 4×; therefore, MS/MSD results were not assessed for this analysis.

III.4. SERIAL DILUTION

No serial dilution analyses were performed on the sample in this SDG.

III.5. INTERNAL STANDARDS PERFORMANCE

Internal standard review is not applicable to Method 200.7.

III.6. Compound Quantification and Reported Detection Limits

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. Nondetects are valid to the MDL.

III.7. Field QC Samples

MEC^X evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^X used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below:

III.7.1. *Field Blanks and Equipment Blanks*

Field blank or equipment blank samples were not identified for this SDG.

III.7.2. *Field Duplicates*

There were no field duplicate samples identified for this SDG.

IV. EPA Method 608 –Pesticides and PCBs

L. Calvin of MEC^X reviewed the SDG on May 23, 2019

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Organochlorine Pesticides/PCBs by GC (DVP-4, Rev. 1), EPA Method 608* and the *National Functional Guidelines for Superfund Organic Methods Data Review* (2014).

IV.1. Holding Times

Extraction and analytical holding times were met. The sample was extracted within seven days of collection and analyzed within 40 days of extraction.

IV.2. Calibration

The initial calibration %RSDs were ≤10% or r^2 ≥0.990 on both analytical columns. With one exception, the initial calibration verification (ICV) and continuing calibration verification (CCV) %Ds were within the control limit of ≤15%. One of five peaks in the toxaphene CCV had a %D of -19.4% with a low response. In the professional judgment of the reviewer, sample data were not affected by the single peak %D outlier.

IV.3. Quality Control Samples

IV.3.1. *Method Blanks*

The requested target compounds were not detected in method blanks.

IV.3.2. *Laboratory Control Samples*

LCS/LCSD recoveries and RPDs were within the respective laboratory control limits for pesticides and PCBs. Toxaphene and chlordane were not spiked into the pesticide LCS/LCSD samples.

IV.3.3. *SURROGATE RECOVERY*

Pesticide surrogate tetrachloro-m-xylene (TCMX) was recovered within the laboratory control limits of 10-150% in the site sample and PCB surrogate decachlorobiphenyl (DCB) was recovered within the laboratory control limits of 10-127%.

IV.3.4. *MATRIX SPIKE/MATRIX SPIKE DUPLICATE*

MS/MSD analyses were not performed on the sample in this SDG due to insufficient sample volume. MEC^X evaluated method accuracy and precision based on the LCS/LCSD results.

IV.4. FIELD QC SAMPLES

MEC^X evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^X used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below.

IV.4.1. *FIELD BLANKS AND EQUIPMENT BLANKS*

Field blank or equipment blank samples were not identified for this SDG.

IV.4.2. *FIELD DUPLICATES*

Field duplicate samples were not identified in this SDG.

IV.5. COMPOUND IDENTIFICATION

Compound identification was verified. Review of the sample chromatograms and retention times indicated no issues with target compound identification. The laboratory analyzed for seven Aroclors and six pesticide target compounds by Method 608. The laboratory also reported total PCBs. As the individual Aroclors are more specific, the result for total PCBs was rejected (R) as duplicate data.

IV.6. 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. Pesticides and PCB Aroclors were not detected in the sample. Reported nondetects are valid to the reporting limit.

The laboratory's extraction bench sheet for pesticides indicated the sample extract was cloudy with a heavy emulsion. Notations in the sample comment section of the PCB extraction log were not decipherable.

V. EPA METHOD 525.2 — CHLORPYRIFOS AND DIAZINON

L. Calvin of MEC^X reviewed the SDG on June 5, 2019

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Semivolatile Organics* (DVP-3, Rev. 1), *EPA Method 525.2* and the *National Functional Guidelines for Superfund Organic Methods Data Review* (2014).

V.1. HOLDING TIMES

Extraction and analytical holding times were met. The water sample was extracted within the 24-hour holding time for diazinon. The sample was analyzed within 30 days of extraction.

V.2. GC/MS TUNING AND CALIBRATION

As the analyses were acquired in SIM mode, tuning was not applicable.

Calibration criteria were met. The initial calibration average RRFs were ≥0.05 and %RSDs ≤30% or r^2 ≥0.990. The continuing calibration RRFs were ≥0.05 and recoveries were within the method QC limits of 70-130%.

V.3. QUALITY CONTROL SAMPLES

V.3.1. *METHOD BLANKS*

Target compounds were not detected in the method blank.

V.3.2. *LABORATORY CONTROL SAMPLES*

LCS recoveries were within the laboratory control limits of 37-169% for chlorpyrifos and 43-152% for diazinon.

V.3.3. *SURROGATE RECOVERY*

Surrogate recoveries were within the laboratory control limits of 76-128% for 1,3-dimethyl-2-nitrobenzene and 40-163% for triphenyl phosphate.

V.3.4. *MATRIX SPIKE/MATRIX SPIKE DUPLICATE*

MS/MSD analyses were not performed on the sample in this SDG. Method accuracy was evaluated based upon LCS results.

V.4. FIELD QC SAMPLES

MEC^X evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^X used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below:

V.4.1. *FIELD BLANKS AND EQUIPMENT BLANKS*

Field blank or equipment blank samples were not identified for this SDG.

V.4.2. *FIELD DUPLICATES*

Field duplicate samples were not identified in this SDG.

V.5. INTERNAL STANDARDS PERFORMANCE

Sample internal standard recoveries were within ±30% of the most recent CCV internal standard areas.

V.6. COMPOUND IDENTIFICATION

Compound identification was verified at Level IV. The laboratory analyzed for chlorpyrifos and diazinon by Method 525.2. The requested target compounds were not detected above the MDL in the sample.

V.7. COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified at Level IV. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Reported nondetects are valid to the reporting limit. The sample did not require dilution.

V.8. SYSTEM PERFORMANCE

Evaluation indicated no issues with system performance.

Validated Sample Result Forms: 4402398421

Analysis Method E525.2

Sample Name ARROYO_SIMI_20190424_GRAB **Matrix Type:** WS **Result Type:** TRG

Sample Date: 4/24/2019 7:30:00 AM **Validation Level:** 8

Lab Sample Name: 440-239842-1

Analyte	Fraction:	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Chlorpyrifos	N	2921-88-2	ND	10	6.9	ng/L	U	U	
Diazinon	N	333-41-5	ND	10	5.2	ng/L	U	U	

Analysis Method E608

Sample Name ARROYO_SIMI_20190424_GRAB **Matrix Type:** WS **Result Type:** TRG

Sample Date: 4/24/2019 7:30:00 AM **Validation Level:** 8

Lab Sample Name: 440-239842-1

Analyte	Fraction:	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
4,4'-DDD	N	72-54-8	ND	0.0054	0.0043	ug/L	U	U	
4,4'-DDE	N	72-55-9	ND	0.0054	0.0032	ug/L	U	U	
4,4'-DDT	N	50-29-3	ND	0.011	0.0043	ug/L	U	U	
Aroclor-1016 (PCB-1016)	N	12674-11-2	ND	0.5	0.1	ug/L	U, D1	U	
Aroclor-1221 (PCB-1221)	N	11104-28-2	ND	0.5	0.1	ug/L	U, D1	U	
Aroclor-1232 (PCB-1232)	N	11141-16-5	ND	0.5	0.1	ug/L	U, D1	U	
Aroclor-1242 (PCB-1242)	N	53469-21-9	ND	0.5	0.1	ug/L	U, D1	U	
Aroclor-1248 (PCB-1248)	N	12672-29-6	ND	0.5	0.1	ug/L	U, D1	U	
Aroclor-1254 (PCB-1254)	N	11097-69-1	ND	0.5	0.1	ug/L	U, D1	U	
Aroclor-1260 (PCB-1260)	N	11096-82-5	ND	0.5	0.15	ug/L	U, D1	U	
Chlordane	N	57-74-9	ND	0.11	0.086	ug/L	U	U	
Dieldrin	N	60-57-1	ND	0.0054	0.0022	ug/L	U	U	
Polychlorinated biphenyls (PCBs)	N	1336-36-3	ND	0.5	0.1	ug/L	U	R	D
Toxaphene	N	8001-35-2	ND	0.54	0.27	ug/L	U	U	

Analysis Method SM2340

Sample Name ARROYO_SIMI_20190424_GRAB **Matrix Type:** WS **Result Type:** TRG

Sample Date: 4/24/2019 7:30:00 AM **Validation Level:** 8

Lab Sample Name: 440-239842-1

Analyte	Fraction:	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Hardness as CaCO3	T	HARDNESSCACO3	760	0.33	0.17	mg/L			

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

Laboratory Job ID: 440-239842-1
Client Project/Site: Quarterly Arroyo Simi-Frontier Park

For:
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Attn: Katherine Miller

Authorized for release by:
5/15/2019 4:26:14 PM

Urvashi Patel, Manager of Project Management
(949)260-3269
urvashi.patel@testamericainc.com

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.

Urvashi Patel
Manager of Project Management
5/15/2019 4:26:14 PM

Table of Contents

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Quarterly Arroyo Simi-Frontier Park

Job ID: 440-239842-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-239842-1	Arroyo_Simi_20190424_Grab	Water	04/24/19 07:30	04/24/19 17:00

Job ID: 440-239842-1

Laboratory: Eurofins TestAmerica, Irvine

Narrative

Job Narrative
440-239842-1

Comments
No additional comments.

Receipt
The samples were received on 4/24/2019 5:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 4.1° C and 4.3° C.

GC Semi VOA
Method(s) 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-543327 and analytical batch 440-543721. 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.

Metals
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) 3510C, 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-543327. Method 8081

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

Subcontract Work
Method 608_LL-PCB- Lancaster Labs: This method was subcontracted to Eurofins Lancaster Laboratories Env LLC. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Weck-525.2-Diazinon and Chlorpyrifos: This method was subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certification is different from that of the facility issuing the final report.

Client: Haley & Aldrich, Inc.
Project/Site: Quarterly Arroyo Simi-Frontier Park

Job ID: 440-239842-1

Client Sample ID: Arroyo_Simi_20190424_Grab

Lab Sample ID: 440-239842-1

Date Collected: 04/24/19 07:30

Matrix: Water

Date Received: 04/24/19 17:00

Method: 608 - Organochlorine Pesticides in Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.11	0.086	ug/L		04/30/19 05:57	05/01/19 18:15	1
Dieldrin	ND		0.0054	0.0022	ug/L		04/30/19 05:57	05/01/19 18:15	1
Toxaphene	ND		0.54	0.27	ug/L		04/30/19 05:57	05/01/19 18:15	1
4,4'-DDD	ND		0.0054	0.0043	ug/L		04/30/19 05:57	05/01/19 18:15	1
4,4'-DDE	ND		0.0054	0.0032	ug/L		04/30/19 05:57	05/01/19 18:15	1
4,4'-DDT	ND		0.011	0.0043	ug/L		04/30/19 05:57	05/01/19 18:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*41*		*10 - 150*	*04/30/19 05:57*	*05/01/19 18:15*	*1*

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness, as CaCO3	**760**		0.33	0.17	mg/L			05/03/19 17:45	1

Method: Weck-525.2-Diazinon and Chlorpyrifos - General Subcontract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorpyrifos	ND		10	6.9	ng/l		04/24/19 14:38	05/14/19 11:48	1
Diazinon	ND		10	5.2	ng/l		04/24/19 14:38	05/14/19 11:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,3-Dimethyl-2-nitrobenzene	*120*		*76 - 128*	*04/24/19 14:38*	*05/14/19 11:48*	*1*
Triphenyl phosphate	*112*		*40 - 163*	*04/24/19 14:38*	*05/14/19 11:48*	*1*

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Quarterly Arroyo Simi-Frontier Park

Job ID: 440-239842-1

Method	Method Description	Protocol	Laboratory
608	Organochlorine Pesticides in Water	40CFR136A	TAL IRV
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	TAL IRV
Subcontract	608_LL-PCB- Lancaster Labs	None	SC0103
Subcontract	Weck-525.2-Diazinon and Chlorpyrifos	None	Weck Lab
608	Liquid-Liquid Extraction (Separatory Funnel)	40CFR136A	TAL IRV

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

SC0103 = Eurofins Lancaster Laboratories Env LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300
TAL IRV = Eurofins TestAmerica, Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 440-239842-1
Project/Site: Quarterly Arroyo Simi-Frontier Park

Client Sample ID: Arroyo_Simi_20190424_Grab
Lab Sample ID: 440-239842-1

Date Collected: 04/24/19 07:30
Matrix: Water
Date Received: 04/24/19 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	608			930 mL	2 mL	543327	04/30/19 05:57	L1H	TAL IRV
Total/NA	Analysis	608		1			543721	05/01/19 18:15	D1D	TAL IRV
Total Recoverable	Analysis	SM 2340B		1			541884	05/03/19 17:45	P1R	TAL IRV
Total/NA	Prep	EPA 525.2/SPE		1			W9D1502_P	04/24/19 14:38		Weck Lab
Total/NA	Analysis	Weck-525.2-Diazinon and Chlorpyrifos		1			W9D1502	05/14/19 11:48	EFC	Weck Lab

Laboratory References:

SC0103 = Eurofins Lancaster Laboratories Env LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300
TAL IRV = Eurofins TestAmerica, Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Method: 608 - Organochlorine Pesticides in Water

Lab Sample ID: MB 440-543327/1-A
Matrix: Water
Analysis Batch: 543721

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 543327

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.10	0.080	ug/L		04/30/19 05:57	05/01/19 15:49	1
Dieldrin	ND		0.0050	0.0020	ug/L		04/30/19 05:57	05/01/19 15:49	1
Toxaphene	ND		0.50	0.25	ug/L		04/30/19 05:57	05/01/19 15:49	1
4,4'-DDD	ND		0.0050	0.0040	ug/L		04/30/19 05:57	05/01/19 15:49	1
4,4'-DDE	ND		0.0050	0.0030	ug/L		04/30/19 05:57	05/01/19 15:49	1
4,4'-DDT	ND		0.010	0.0040	ug/L		04/30/19 05:57	05/01/19 15:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*38*		*10 - 150*	*04/30/19 05:57*	*05/01/19 15:49*	*1*

Lab Sample ID: LCS 440-543327/2-A
Matrix: Water
Analysis Batch: 543721

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 543327

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dieldrin	0.250	0.154		ug/L		62	36 - 146
4,4'-DDD	0.250	0.177		ug/L		71	31 - 141
4,4'-DDE	0.250	0.158		ug/L		63	30 - 145
4,4'-DDT	0.250	0.157		ug/L		63	25 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*42*		*10 - 150*

Lab Sample ID: LCSD 440-543327/3-A
Matrix: Water
Analysis Batch: 543721

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 543327

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dieldrin	0.250	0.156		ug/L		62	36 - 146	1	35
4,4'-DDD	0.250	0.164		ug/L		66	31 - 141	8	35
4,4'-DDE	0.250	0.147		ug/L		59	30 - 145	7	35
4,4'-DDT	0.250	0.157		ug/L		63	25 - 150	0	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*41*		*10 - 150*

Method: Weck-525.2-Diazinon and Chlorpyrifos - General Subcontract Method

Lab Sample ID: W9D1502-BLK1
Matrix: Water
Analysis Batch: W9D1502

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: W9D1502_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorpyrifos	ND		10	6.9	ng/l		04/24/19 14:38	05/14/19 06:18	1
Diazinon	ND		10	5.2	ng/l		04/24/19 14:38	05/14/19 06:18	1

Method: Weck-525.2-Diazinon and Chlorpyrifos - General Subcontract Method (Continued)

Lab Sample ID: W9D1502-BLK1
Matrix: Water
Analysis Batch: W9D1502

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: W9D1502_P

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,3-Dimethyl-2-nitrobenzene	103		76 - 128	04/24/19 14:38	05/14/19 06:18	1
Triphenyl phosphate	136		40 - 163	04/24/19 14:38	05/14/19 06:18	1

Lab Sample ID: W9D1502-BS1
Matrix: Water
Analysis Batch: W9D1502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: W9D1502_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorpyrifos			50.0	57.9		ng/l		116	37 - 169		
Diazinon			50.0	7.92	BS-03 J	ng/l		16	43 - 152		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,3-Dimethyl-2-nitrobenzene	106		76 - 128
Triphenyl phosphate	129		40 - 163

Lab Sample ID: W9D1502-MS1
Matrix: Water
Analysis Batch: W9D1502

Client Sample ID: Arroyo_Simi_20190424_Grab MS
Prep Type: Total/NA
Prep Batch: W9D1502_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorpyrifos	ND		50.0	72.3		ng/l		145	37 - 168		
Diazinon	ND		50.0	49.6		ng/l		99	36 - 153		

Surrogate	Matrix Spike %Recovery	Matrix Spike Qualifier	Limits
1,3-Dimethyl-2-nitrobenzene	110		76 - 128
Triphenyl phosphate	135		40 - 163

Lab Sample ID: W9D1502-MSD1
Matrix: Water
Analysis Batch: W9D1502

Client Sample ID: Arroyo_Simi_20190424_Grab MSD
Prep Type: Total/NA
Prep Batch: W9D1502_P

Analyte	Sample Result	Sample Qualifier	Spike Added	ix Spike Dup Result	Matrix Spike D Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorpyrifos	ND		50.0	62.9		ng/l		126	37 - 168	14	30
Diazinon	ND		50.0	42.0		ng/l		84	36 - 153	17	30

Surrogate	latrix Spike Dup %Recovery	Matrix Spike Du Qualifier	Limits
1,3-Dimethyl-2-nitrobenzene	111		76 - 128
Triphenyl phosphate	136		40 - 163

GC Semi VOA

Prep Batch: 543327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-239842-1	Arroyo_Simi_20190424_Grab	Total/NA	Water	608	
MB 440-543327/1-A	Method Blank	Total/NA	Water	608	
LCS 440-543327/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 440-543327/3-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 543721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-239842-1	Arroyo_Simi_20190424_Grab	Total/NA	Water	608	543327
MB 440-543327/1-A	Method Blank	Total/NA	Water	608	543327
LCS 440-543327/2-A	Lab Control Sample	Total/NA	Water	608	543327
LCSD 440-543327/3-A	Lab Control Sample Dup	Total/NA	Water	608	543327

Metals

Analysis Batch: 541884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-239842-1	Arroyo_Simi_20190424_Grab	Total Recoverable	Water	SM 2340B	

Subcontract

Analysis Batch: W9D1502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-239842-1	Arroyo_Simi_20190424_Grab	Total/NA	Water	Weck-525.2-Diazinon and Chlorpyrifos	W9D1502_P
W9D1502-BLK1	Method Blank	Total/NA	Water	Weck-525.2-Diazinon and Chlorpyrifos	W9D1502_P
W9D1502-BS1	Lab Control Sample	Total/NA	Water	Weck-525.2-Diazinon and Chlorpyrifos	W9D1502_P
W9D1502-MS1	Arroyo_Simi_20190424_Grab MS	Total/NA	Water	Weck-525.2-Diazinon and Chlorpyrifos	W9D1502_P
W9D1502-MSD1	Arroyo_Simi_20190424_Grab MSD	Total/NA	Water	Weck-525.2-Diazinon and Chlorpyrifos	W9D1502_P

Prep Batch: W9D1502_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-239842-1	Arroyo_Simi_20190424_Grab	Total/NA	Water	EPA 525.2/SPE	
W9D1502-BLK1	Method Blank	Total/NA	Water	EPA 525.2/SPE	
W9D1502-BS1	Lab Control Sample	Total/NA	Water	EPA 525.2/SPE	
W9D1502-MS1	Arroyo_Simi_20190424_Grab MS	Total/NA	Water	EPA 525.2/SPE	
W9D1502-MSD1	Arroyo_Simi_20190424_Grab MSD	Total/NA	Water	EPA 525.2/SPE	

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 440-239842-1
Project/Site: Quarterly Arroyo Simi-Frontier Park

Qualifiers

Subcontract

Qualifier	Qualifier Description
BS-03	The recovery of this analyte in the BS/LCS was outside the control limits. The sample result was accepted based on another acceptable BS/LCS and/or MS and MSD that meet BS criteria.
J	Estimated conc. detected <MRL and >MDL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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
RER	Relative Error Ratio (Radiochemistry)
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)

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 440-239842-1
Project/Site: Quarterly Arroyo Simi-Frontier Park

Laboratory: Eurofins TestAmerica, Irvine

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	CA ELAP 2706	06-30-19

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ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Test America
17461 Derian Ave
Suite #100
Irvine CA 92614

Report Date: May 03, 2019 11:27

Project: Boeing NPDES SSFL Outfalls

Account #: 41440
Group Number: 2040776
SDG: SSF13
PO Number: 440239842
State of Sample Origin: CA

Electronic Copy To Test America Attn: Urvashi Patel

Respectfully Submitted,

Kay Hower

(717) 556-7364

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.

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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
Arroyo_Simi_20190421_Grab (440-239842-1) Water	04/24/2019 07:30	1042910

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

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Sample Description: Arroyo_Simi_20190421_Grab (440-239842-1) Water
Boeing NPDES SSFL outfalls

Project Name: Boeing NPDES SSFL Outfalls

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 07:30
SDG#: SSF13-01

Test America
ELLE Sample #: WW 1042910
ELLE Group #: 2040776
Matrix: Water

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
PCBs		**EPA 608**		ug/l	ug/l	ug/l	
06030	PCB-1016		12674-11-2	N.D. D1	0.10	0.50	1
06030	PCB-1221		11104-28-2	N.D. D1	0.10	0.50	1
06030	PCB-1232		11141-16-5	N.D. D1	0.10	0.50	1
06030	PCB-1242		53469-21-9	N.D. D1	0.10	0.50	1
06030	PCB-1248		12672-29-6	N.D. D1	0.10	0.50	1
06030	PCB-1254		11097-69-1	N.D. D1	0.10	0.50	1
06030	PCB-1260		11096-82-5	N.D. D1	0.15	0.50	1
06030	Total PCBs		1336-36-3	N.D.	0.10	0.50	1

Sample Comments

CA ELAP Lab Certification No. 2792

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06030	PCBs in Water by 608	EPA 608	1	191200030A	05/01/2019 18:49	Kirby B Turner	1
11960	Method 608 PCB Water Ext.	EPA 608	1	191200030A	05/01/2019 09:00	David S Schrum	1

*=This limit was used in the evaluation of the final result

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Quality Control Summary

Client Name: Test America
Reported: 05/03/2019 11:27

Group Number: 2040776

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
Batch number: 191200030A	Sample number(s): 1042910		
PCB-1016	N.D.	0.10	0.50
PCB-1221	N.D.	0.10	0.50
PCB-1232	N.D.	0.10	0.50
PCB-1242	N.D.	0.10	0.50
PCB-1248	N.D.	0.10	0.50
PCB-1254	N.D.	0.10	0.50
PCB-1260	N.D.	0.15	0.50
Total PCBs	N.D.	0.10	0.50

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 191200030A	Sample number(s): 1042910								
PCB-1016	5.02	4.34	5.02	4.13	87	82	60-117	5	30
PCB-1260	5.05	4.65	5.05	4.44	92	88	57-134	4	30

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PCBs in Water by 608
Batch number: 191200030A

	Tetrachloro-m-xylene-D1	Decachlorobiphenyl-D1	Tetrachloro-m-xylene-D2	Decachlorobiphenyl-D2
1042910	70	69	68	68
Blank	61	66	58	64
LCS	69	68	68	67
LCSD	58	76	54	76
Limits:	18-115	10-127	18-115	10-127

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

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Quality Control Summary

Client Name: Test America
Reported: 05/03/2019 11:27

Group Number: 2040776

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

A-41440 G-2040776 S-1042910

Eurofins TestAmerica, Irvine
17461 Derian Ave Suite 100
Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Urvashi	Carrier Tracking No(s):	COC No: 440-137645.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: urvashi.patel@testamericainc.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Env LLC		Accreditations Required (See note): State Program - California		Job #: 440-239842-1
Address: 2425 New Holland Pike,	Due Date Requested: 5/6/2019			
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL outfalls	Project #: 44009879			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (608_LL-PCB- Lancaster Labs)/ 608_LL-PCB- Lancaster Labs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Arroyo_Simi_20190424_Grab (440-239842-1)	4/24/19	07:30 Pacific		Water			X	3	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		4/25/19 1540	TAT RV			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 4/26/19 1015	Company EIE

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.8

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 247389

Group Number(s): 2040776

Client: Test America

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	04/26/2019 10:15
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Nicole Reiff (25684) at 13:12 on 04/26/2019

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	32170023	1.8	IR	Wet	Y	Loose	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T : 717-656-2300
F : 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders: 9D24059

Project: [none]

Attn: Patty Mata

Client: TestAmerica - Irvine CA
17461 Derian Ave, Suite 100
Irvine, CA 92614

Report Date: 5/14/2019
Received Date: 4/24/2019
Turnaround Time: 1 workday
Phones: (949) 261-1022
Fax: (949) 260-3297
P.O. #:
Billing Code:

Dear Patty Mata,

Enclosed are the results of analyses for samples received 4/24/19 with the Chain-of-Custody document. The samples were received in good condition, at 2.9 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: Arroyo_Simi_20190424_Grab
9D24059-01 (Water)

Sampled: 04/24/19 7:30 by Client

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 525.2M **Batch ID:** W9D1502 **Instr:** GCMS13 **Prepared:** 04/24/19 14:38 **Analyst:** EFC							
Chlorpyrifos	ND	6.9	10	ng/l	1	05/14/19 11:48	
Diazinon	ND	5.2	10	ng/l	1	05/14/19 11:48	
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*120%*		*76-128*	*Conc: 601*		*05/14/19 11:48*	
Triphenyl phosphate	*112%*		*40-163*	*Conc: 562*		*05/14/19 11:48*	

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Quality Control Results

Semivolatile Organics - Low Level by Tandem GC/MS/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W9D1502-BLK1)					**Prepared: 04/24/19**	**Analyzed: 05/14/19**					
Chlorpyrifos	ND	6.9	10	ng/l							
Diazinon	ND	5.2	10	ng/l							
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*513*			*ng/l*	*500*		*103*	*76-128*			
Triphenyl phosphate	*679*			*ng/l*	*500*		*136*	*40-163*			
LCS (W9D1502-BS1)					**Prepared: 04/24/19**	**Analyzed: 05/14/19**					
Chlorpyrifos	57.9	6.9	10	ng/l	50.0		116	37-169			
Diazinon	7.92	5.2	10	ng/l	50.0		16	43-152			BS-03, J
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*530*			*ng/l*	*500*		*106*	*76-128*			
Triphenyl phosphate	*647*			*ng/l*	*500*		*129*	*40-163*			
Matrix Spike (W9D1502-MS1)	**Source: 9D24059-01**				**Prepared: 04/24/19**	**Analyzed: 05/14/19**					
Chlorpyrifos	72.3	6.9	10	ng/l	50.0	*ND*	145	37-168			
Diazinon	49.6	5.2	10	ng/l	50.0	*ND*	99	36-153			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*551*			*ng/l*	*500*		*110*	*76-128*			
Triphenyl phosphate	*673*			*ng/l*	*500*		*135*	*40-163*			
Matrix Spike Dup (W9D1502-MSD1)	**Source: 9D24059-01**				**Prepared: 04/24/19**	**Analyzed: 05/14/19**					
Chlorpyrifos	62.9	6.9	10	ng/l	50.0	*ND*	126	37-168	14	30	
Diazinon	42.0	5.2	10	ng/l	50.0	*ND*	84	36-153	17	30	
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*556*			*ng/l*	*500*		*111*	*76-128*			
Triphenyl phosphate	*679*			*ng/l*	*500*		*136*	*40-163*			

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Notes and Definitions

Item	Definition
BS-03	The recovery of this analyte in the BS/LCS was outside the control limits. The sample result was accepted based on another acceptable BS/LCS and/or MS and MSD that meet BS criteria.
J	Estimated conc. detected <MRL and >MDL.
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
Dil	Dilution
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Source	Sample that was matrix spiked or duplicated.
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)
MDA	Minimum Detectable Activity
NR	Not Reportable
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.
An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB)
All results are expressed on wet weight basis unless otherwise specified.
All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS 002.

Reviewed by:

Regina Giancola
Project Manager

EPA-UCMR #CA00211 • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

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CHAIN OF CUSTODY FORM

TRAEFT98

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project Boeing-SSFL NPDES Permit 2015 **Quarterly Arroyo Simi-Frontier Park** **Dry Weather**	ANALYSIS REQUIRED
Test America Contact Urvashi Patel 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3269 Cell 949-333-9055		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2018-28 TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: Dan Smith	Field Manager: Mark Dominick 978.234.5033, 818.599 0702 (cell)	

ANALYSIS REQUIRED:
- Hardness as CaCO3, Recoverable (SM2340B)
- Chlorpyrifos, Diazinon (E625.2)
- Pesticides: Chlordane, 4,4-DDD, 4,4-DDE, 4,4-DDT, Dieldrin, Toxaphene + PCBs only (E608)

Field Readings	Meter serial #
Field Readings: (include units) Time of Readings: 0720	
pH 6.96 pH unit Temp 18.74 °C °F Velocity 0.0 ft/sec	
Field readings QC Checked by: Date/Time: 4-24-19 / 0720	

Sample Description	Sample I D	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Comments
Arroyo Simi	Arroyo_Simi_20190424_Grab	4/24/2019 / 0730	WS	250 mL Poly	3	HNO_3	100	Yes	
			WS	1L Glass Amber	6	HCl	275	Yes	Extract within 24-Hours of sampling
			WS	1L Glass Amber	6	None	285	Yes	
	Arroyo_Simi_20190424_Grab_Extra	4/24/2019 / 0730	WS	1L Glass Amber	2	HCl	275	No	Hold
			WS	1L Glass Amber	2	None	285	No	Hold

4/25/19 CD

440-239842 Chain of Custody

Relinquished By	Date/Time	Company	Received By	Date/Time
	4/24/19/1000	H.A		4/24/19 1000
	4/24/19	1340 TA IRV		4/24/19 1340
	4/24/19	1650 TA IRV		4/24/19 1700

Turn-around time (Check)
24 Hour ____ 72 Hour ____ 10 Day: X
48 Hour ____ 5 Day ____ Normal: ____

Sample Integrity (Check)
Intact: ____ On Ice: ____
Store samples for 6 months
Data Requirements (Check)
No Level IV ____ All Level IV X

AT

IR94 4.0/4.3
38/4.1

Eurofins TestAmerica, Irvine
17461 Derian Ave Suite 100
Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Urvashi	Carrier Tracking No(s):	COC No: 440-137643.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: urvashi.patel@testamericainc.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 440-239842-1
Address: 14859 East Clark Avenue, ,	Due Date Requested: 5/6/2019			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL outfalls	Project #: 44009879			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Sesolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	SUB (Weck-525.2-Diazinon and Chlorpyrifos) Weck-525.2-Diazinon and Chlorpyrifos	Total Number of containers	Special Instructions/Note:
			Preservation Code:					
Arroyo_Simi_20190424_Grab (440-239842-1)	4/24/19	07:30 Pacific		Water		X	6	Deliver same day as pick up -24 hour hold time for 525.2 -2 cmpds!!

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

5/15/2019

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-239842-1

Login Number: 239842
List Number: 1
Creator: Bonta, Lucia F

List Source: Eurofins 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.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
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 (excluding tests with immediate HTs)	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	

APPENDIX E

Annual Comprehensive Site Compliance Evaluation Report

APPENDIX E

ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION REPORT REPORTING YEAR JULY 1, 2018 – JUNE 30, 2019

This Annual Comprehensive Site Compliance Evaluation Report (Report) was prepared for The Boeing Company (Boeing) Santa Susana Field Laboratory (Site), located in Simi Hills, Ventura County, California in general accordance with Attachment G (Section IX.D.) of the Site's Waste Discharge Requirements (National Pollutant Discharge Elimination System [NPDES] Permit No. CA0001309, CI No. 6027). This Report evaluates compliance with the Site-Wide SWPPP during reporting year July 1, 2018 – June 30, 2019. The Annual Comprehensive Site Compliance Evaluation (Annual Evaluation) was conducted between May 20 and 23, 2019 by Haley & Aldrich:

1. Dwayne Baluran, QSP, CESSWI
2. Mark Dominick, PG, QSD

The Inspectors observed minor amounts of sediment delivered or accumulated around sediment control BMPs due to the areas upstream from most of the BMPs being well-vegetated with a diversity of plants including:

- California sagebrush
- Purple sage
- Deerweed
- Purple needlegrass
- Chamise
- Toyon
- Brome
- Fescue
- Climbing penstemon
- Buckwheat
- California bush sunflower
- Black sage

REVIEW OF VISUAL OBSERVATIONS RECORDS AND SAMPLING AND ANALYSIS RESULTS

For reporting year July 1, 2018 – June 30, 2019 the Inspectors reviewed all inspection forms during the Annual Evaluation, up to May 2019, that documented inspections/visual observations. All inspection forms that were completed for the reporting year after the Annual Evaluation were reviewed by June 30, 2019; each inspection form was complete or revised as needed. A process exists and has been implemented for non-compliance items to be properly evaluated and corrected.

Sampling and analysis results are evaluated in each quarterly Discharge Monitoring Report (DMR).

APPENDIX E

ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION REPORT
REPORTING YEAR JULY 1, 2018 – JUNE 30, 2019

POTENTIAL POLLUTANT SOURCE VISUAL INSPECTION

For reporting year July 1, 2018 – June 30, 2019, the Inspectors conducted visual inspections at the Site during the Annual Evaluation at buildings, equipment, and surrounding areas to evaluate the status of existing potential pollutant sources. Areas where known potential pollutants exist have Best Management Practices (BMPs) implemented to minimize and/or eliminate the potential for pollutant releases. No additional areas were identified that require additional BMPs.

BEST MANAGEMENT PRACTICE REVIEW

For reporting year July 1, 2018 – June 30, 2019, the Inspectors reviewed and evaluated the structural and non-structural BMPs at the Site during the during the Annual Evaluation. The Inspectors determined the BMPs were adequate, properly implemented and required minor maintenance and in compliance with the SWPPP and BMP Plan. The onsite evaluation did result in recommendations which the Inspectors identified on the inspection forms and verified that the corrective actions were completed prior to the issuance of the Second Quarter DMR or scheduled to be completed during the Third Quarter of 2019.

SWPPP REVISIONS AND SCHEDULE

The Los Angeles Regional Water Quality Control Board (Regional Board) adopted the 2015 NPDES Permit No. R4-2015-0033 on February 12, 2015, effective April 1, 2015, to revise the existing 2010 NPDES Permit No. R4-2010-0090. A revised SWPPP was submitted to the Regional Board in accordance with the terms of the new 2015 Permit on June 30, 2016. The most recent Site-Wide SWPPP was updated in accordance with the terms of the 2015 Permit and submitted to the Regional Board on December 14, 2018 as version 5. Version 6 of the SWPPP will be completed in the fall 2019 based on observations made during the Annual Evaluation. Revisions include:

- Updated text to Surface Water Discharges (section 2.4.1);
- Added text to Surface Water Ponds (section 2.4.2);
- Added text to Surface Water Monitoring Locations (section 2.4.3);
- Added text to Groundwater Treatment (section 2.5.2);
- Updated text to Inactive and Non-Operational Areas (section 2.7);
- Updated text to Area I (section 2.8.1.1);
- Removed text from Area IV (section 2.8.1.4);
- Updated text to Dust and Particulate Generating Activities (section 2.8.2);
- Added text to Non-Stormwater Discharges (section 2.8.4);
- Added text to Potential Soil Erosion (section 2.8.5);
- Added text to Northern Drainage (section 2.8.6.1);
- Updated text to Interim Soil Removal Actions (section 2.8.6.2);

- Added text to Pollutants with Potential to be Present (section 3.2);
- Updated text to Good Housekeeping and Preventative Maintenance (section 4.1.1);
- Added text to Erosion Control and Site Stabilization (section 4.1.7);
- Added text to New BMPs to be Implemented (section 4.3);
- Updated figures;
- Updated BMP Plan (Appendix B);
- Updated SPRP (Appendix E); and
- Updated inspection form (Appendix F).

NON-COMPLIANCE INCIDENTS AND CORRECTIVE ACTIONS TAKEN

As part of the Annual Evaluation, the Inspectors reviewed the non-compliance issues (Permit Limit exceedances) discussed in the DMRs and reviewed the corrective actions during the evaluation period. The Inspectors have determined that the corrective actions were adequate and appropriate and have been completed. During the onsite portion of the annual evaluation, minor recommendations were made to Boeing and the Inspectors have determined that the recommendations were either completed prior to the issuance of the Second Quarter DMR or scheduled to be completed during the Third Quarter of 2019.

CERTIFICATION

Per NPDES Permit Appendix G, Section IX.D, the signature and certification requirements for this evaluation report are included in the DMR text.

APPENDIX F

Second Quarter 2019 Bioassessment Sampling Report

Date: June 10th, 2019

To: Katherine Miller
Haley & Aldrich
600 South Meyer Avenue, Suite 100
Tucson, AZ 85701-2554

From: Scott Johnson
Laboratory Director
Aquatic Bioassay and Consulting Laboratories
29 N. Olive St.
Ventura, CA 93001

RE: BIOASSESSMENT SAMPLING FOR THE BOEING COMPANY AT THE SANTA SUSANA FIELD LABORATORY (2019)

The Bioassessment Sampling and Analysis Plan for The Boeing Company at the Santa Susana Field Laboratory (SSFL) specifies that spring/summer bioassessment sampling occur from four to six weeks following the last major storm event of the 2019 rain season. This time period was established by, and is included in, the state-wide bioassessment protocols established by the State of California's Surface Water Ambient Monitoring Program (SWAMP 2016). Flowing water through a stream reach over this period of time is necessary for the aquatic benthic macroinvertebrate (BMI) community that might reside there to become established and ensures that valid BMI samples will be collected.

The 2018 to 2019 rain year was characterized by above average rainfall amounts. Between July, 2018 and April, 2019 a total of 24.84 inches of rain fell on the SSFL property. The last significant rainfall occurred in March (total = 2.96 inches) (Figure 1). On May 1st, 2019, two days after trace rain (0.04 inches) fell, the two NPDES permitted sites on the SSFL were visited by Aquatic Bioassay and Consulting Laboratory Biologists to determine if bioassessment samples could be collected. Neither SSFL-001 nor SSFL-006 had flow and both were completely dry across their entire reaches (see photos).

If you have any questions regarding this memo or future sampling plans, please contact me directly.

Sincerely,

Scott Johnson
Laboratory Director
805 643 5621 x 11
scott@aquaticbioassay.com

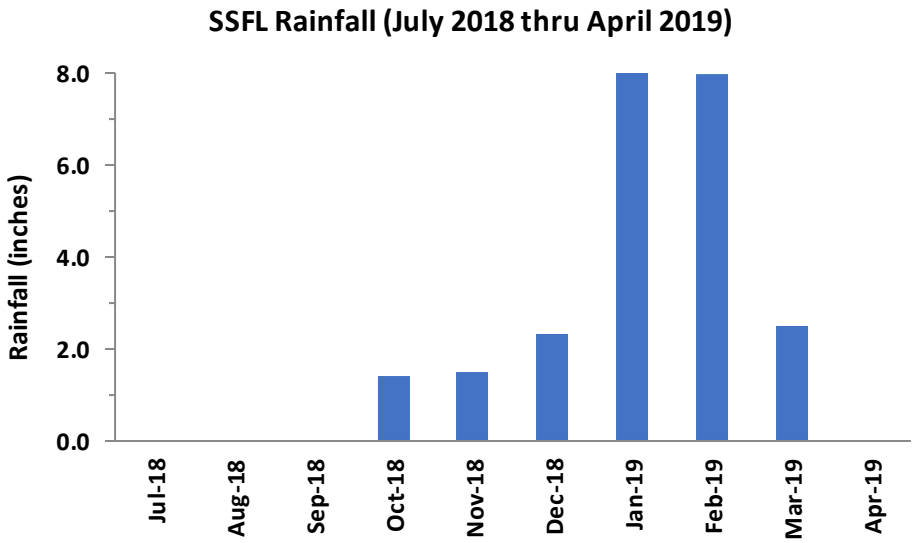

Figure 1. Rainfall (inches) measured July 2018 thru April 2019 at SSFL.

Figure 2. Photos taken downstream and upstream of each permitted discharge point from the SSFL property (2019).

SSFL-001, downstream

SSFL-001, upstream

SSFL-006, downstream

SSFL-006, upstream