

Via Email to [losangeles@waterboards.ca.gov](mailto:losangeles@waterboards.ca.gov)

August 15, 2018

In reply refer to SHEA-115913

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

Subject: Second Quarter 2018 NPDES Discharge Monitoring Report  
Compliance File CI-6027 and NPDES No. CA0001309  
Santa Susana Field Laboratory  
Ventura County, California

The Boeing Company (Boeing) hereby submits this Discharge Monitoring Report (DMR) for the Santa Susana Field Laboratory (Santa Susana Site) for the period of 1 April through 30 June 2018 (Second Quarter 2018). This DMR was prepared as required by and in accordance with National Pollutant Discharge Elimination System Permit No. CA0001309 (NPDES Permit) issued by the California Regional Water Quality Control Board, Los Angeles Region (Regional Board) in 2015 and under the regulatory oversight of the Regional Board.

Hard copies of this DMR are available to the public at California State University at Northridge Library; 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 2018 DMR CONTENTS

This DMR includes the following sections and appendices:

- **Discharge and Sample Collection Summary:** This section describes the number of rain events, number of samples collected, sample dates, and sample locations during the Second Quarter 2018. Table I summarizes the Second Quarter 2018 sampling record by outfall, location, and sample type collected per the requirements of the NPDES Permit.
- **Second Quarter 2018 Summary of Non-Compliance:** This section summarizes the sample results that exceeded NPDES Permit limits, daily maximum benchmark limits, and receiving water limits in the Second Quarter 2018.
- **Second Quarter 2018 Santa Susana Site Stormwater Pollution Prevention Plan (SWPPP)/Best Management Practices (BMP) Activities:** This section presents the Santa Susana Site SWPPP activities and other BMP related activities associated with NASA, DOE, Expert Panel, the Northern Drainage, and the Outfall 001/002 BMP Compliance Report implemented in the Second Quarter 2018. Table II summarizes typical BMP-related activities that occur at outfalls every quarter.

Table III summarizes specific BMP activities by outfall location that were completed during the Second Quarter 2018.

- **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 2018.
- **Data Validation and Quality Control:** This section discusses data validation results and any laboratory or field corrective actions.
- **Figure 1** shows the stormwater collection conveyance system, location of 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 sampling location.
- **Appendix A** summarizes the rainfall measured during the Second Quarter 2018 at the Santa Susana Site.
- **Appendix B** tabulates waste shipment details.
- **Appendix C** presents chemical analytical results from the Second Quarter 2018 stormwater and/or receiving water and sediment samples in tabular form by outfall location, 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 2018 Bioassessment Sampling Report.

## DISCHARGE AND SAMPLE COLLECTION SUMMARY

The Santa Susana Site measured no qualifying rain events that produced greater than 0.1 inch of rainfall within a 24-hour period and were preceded by at least 72 hours of dry weather during the Second Quarter 2018 (Appendix A). Automated flow-weighted composite samplers (autosamplers) were set in preparation for all rain events. No discharge occurred at any of the outfalls; therefore, no samples were collected.

One quarterly offsite receiving water sample was collected at the Arroyo Simi location (RSW-002, Frontier Park; see Figure 2). Samples were collected to calculate the geometric mean in compliance with Receiving Water Requirements in Attachment E of the NPDES Permit. Five equally spaced samples were collected within the 30-day period from 22 March 2018 through 20 April 2018. Since laboratory results were available prior to the publication of the First Quarter 2018 DMR, the April 2018 geometric mean sample results and calculation were included in the First Quarter 2018 report. The annual sediment sample was also collected at the Arroyo Simi–Frontier Park location on April 24, 2018.

Table I summarizes the Second Quarter 2018 sampling record by location, sample frequency, and sample type collected per NPDES Permit requirements.

**TABLE I: Sampling Record during the Second Quarter 2018**

Date	Outfall/Location	Sample Frequency	Sample Type
4/6/2018*	Arroyo Simi Receiving Water (RSW-002, Frontier Park)	Geometric Mean	Grab
4/13/2018*	Arroyo Simi Receiving Water (RSW-002, Frontier Park)	Geometric Mean	Grab
4/20/2018*	Arroyo Simi Receiving Water (RSW-002, Frontier Park)	Geometric Mean	Grab
4/24/2018	Arroyo Simi Receiving Water (RSW-002, Frontier Park)	Quarterly Surface Water, Annual Sediment	Grab

**Notes:**

\* = Geometric mean samples reported in the First Quarter 2018 DMR.

All analyses were conducted at analytical laboratories certified for such analyses by the State Water Resources Control Board (i.e., all have current certification from the Environmental Laboratory Accreditation Program [ELAP] established by the California Environmental Laboratory Improvement Act) or are approved by the State Water Resources Control Board Executive Officer and in accordance with current USEPA guideline procedure or as specified in the NPDES Permit.

**SECOND QUARTER 2018 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 2018, Outfalls 002, 008, and 009 did not discharge, thus, no receiving water surveys were conducted.

**SECOND QUARTER 2018 SUMMARY OF NON-COMPLIANCE**

No surface water discharges occurred from the Santa Susana Site during Second Quarter 2018. 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 sample location RSW-002 in Simi Valley, no constituents exceeded receiving water or sediment limits.

**SECOND QUARTER 2018 SANTA SUSANA SITE SWPPP/BMP ACTIVITIES**

Boeing implemented significant activities related to the Site-Wide SWPPP (Haley & Aldrich, 2018) and BMP-related activities 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	X	X
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 structural BMPs, including the flow-through structure.	N/A	N/A	X	X	N/A	X	N/A	N/A	N/A	X	X	X

**Notes:**

X = BMP activity is applicable to the outfall and was completed in Second Quarter 2018.

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.

Table III summarizes the additional activities completed during the Second Quarter 2018 by outfall or BMP location.

**TABLE III: Additional Second Quarter 2018 BMP Activities**

OUTFALL OR BMP LOCATION	BMP ACTIVITIES DURING SECOND QUARTER 2018
Roadway	At a road located near the Outfall 005-007 stormwater tank pad, installed riprap in a channel along the road to prevent erosion and re-established check dams on the road.
002 (South Slope)	Re-established waterbars on road leading to air monitoring station "Boeing-6".
004 (Sodium Reactor Experiment Area)	Sealed a crack in the concrete channel.
010 (Building 203)	Due to vegetation percent cover exceeding 70% during the Second Quarter 2018, temporary BMPs were removed.
011 (Perimeter Pond)	Stormwater Treatment System 011: Installed stainless steel crosses for air bleed valves for the Supernatant Pumps at SWTS 011. Installed an AC/Heater into the Lab at SWTS 011. Completed the fabrication and installation of two new sampling sinks at SWTS 011 for use during system performance sampling activities. Removed the media from the Sand Filters at SWTS 011. Began removing rust from the vessels in anticipation of repairing the inside of the tanks. Performed weed abatement in and around the compounds.
018 (R-2 Pond Spillway)	Added riprap to the Engineering Chemistry Laboratory (ECL) impoundment discharge to prevent erosion.  Stormwater Treatment System 018: Received delivery of new polymer for ACTIFLO to prepare the system for possible discharge event. Installed and calibrated the pH sensors. Calibrated turbidity meters. Staged microsand at the system. Completed the electrical wiring to the Motor Control Center (MCC) to allow the aerators to operate at Silvernale. Installed orange safety cable and orange safety webbing at SWTS 018 to delineate the entrance path to the facility. Added rip rap dissipater to the channel entering Silvernale at the new bridge (next to the portable toilet). Completed long-term shutdown of SWTS 018. Performed weed abatement in and around the compounds.
019 (Area I Groundwater Extraction and Treatment [GET] System)	The GET system has not operated since April 2013. Wells were pumped to hydrotest the GET system and test the ultraviolet light unit, however, all groundwater was hauled offsite and properly disposed of at a treatment facility. Therefore, no NPDES Permit sampling was performed at the Area I GET System in the Second Quarter 2018. Conducted maintenance inspections of the structural BMPs.

In addition to SWPPP related activities, specific BMP projects included: NASA SWPPP BMPs; DOE BMPs; Expert Panel reports related to BMPs; Northern Drainage BMPs; and Outfall 001/002 BMPs. These are discussed in more detail below.

**OTHER BMP ACTIVITIES**

BMP observations and maintenance inspections were conducted in conformance with the Site-Wide SWPPP (Haley & Aldrich, 2017) at and around the former active test stands Alfa and Bravo and former Advanced Propulsion Test Facility.

**NASA-RELATED ACTIVITIES**

Demolition activities covered by NASA's Construction SWPPP dated 16 May 2017 are inspected in accordance with the Construction General Permit (CGP). During the Second Quarter 2018, NASA completed planned demolition activities in the Alfa and Bravo Test Stand Areas. NASA maintained wattles as linear sediment controls, maintained silt fencing, and hydroseeded areas within these sites where construction activities had been completed.

Demolition and stormwater control activities covered by NASA's Construction SWPPP dated 21 February 2017 are inspected in accordance with the Construction General Permit (CGP). During the Second Quarter 2018, BMPs including wattles, sandbags, riprap, and hydroseed were placed within the Delta Test Stand Area where construction activities had been completed. Construction activities within Delta were completed in January 2018 and a request for NOT was filed in February 2018.

Demolition activities covered by NASA's Construction SWPPP dated 04 December 2017 are inspected in accordance with the Construction General Permit (CGP). During the Second Quarter 2018, NASA continued demolition activities in the Coca Test Stand Area. NASA maintained wattles as linear sediment controls, sandbags, and hydroseed within active demolition areas.

**DOE-RELATED ACTIVITIES**

DOE reported no BMP related activities during the Second Quarter 2018.

**EXPERT PANEL-RELATED ACTIVITIES**

The BMP activities discussed below were performed, commenced, or completed during the Second Quarter 2018 in coordination with the Expert Panel.

*B-1 Area*

The B-1 Area BMPs consists of:

- 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 2018 activities included inspections of the BMPs, cleaning the areas free of sediment and debris, and installing a felt catch basin cover at the upper parking lot media filter to create an animal escape route when the high-density polyethylene (HDPE) cover is wet.

*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 culvert modifications were designed to treat stormwater road runoff and stormwater from the surrounding hillside. The Second Quarter 2018 activities included inspections of the BMPs, including the culvert inlets and rip-rap check dams, and repair of the weir board and fabric at CM-12.

#### *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 runoff 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 2018 activities included inspections of the BMPs.

#### *Lower Lot Biofilter*

The lower lot biofilter is a stormwater treatment BMP designed and built to capture, convey, and treat stormwater runoff 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 2018 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. No stormwater was pumped from the Cistern to the sedimentation basin during the Second Quarter 2018. Cracks along the curb and roadway at the wooden retaining wall were sealed to prevent the delivery of sediment carried from the non-impervious slope in the southeast portion of the lower lot by stormwater that was undercutting the gunite slope.

#### *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. 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 sand bag berm was placed across the ELV asphalt swale, to divert runoff from directly discharging to the Northern Drainage to instead flow toward CM-1 for treatment. The Second Quarter 2018 activities included inspections of the BMPs.

#### *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 also placed upstream of the inlet to increase the settling of solids. The Second Quarter 2018 activities included inspections of the BMPs.

#### *Road Runoff Diversion to CM-3*

The construction of a new Service Area road runoff diversion to CM-3 was completed during the Second Quarter 2017. This BMP included a new curb installed on the north side of the road meant to convey flow to a new drop inlet and trench under the road, which then directs the collected runoff to CM-3 for treatment before entering the Northern Drainage. The Second Quarter 2018 activities included inspections of the BMPs.

#### *Road Runoff Diversion to CM-1*

The construction of a new road runoff diversion to CM-1 was completed during Fourth Quarter 2017 and the rip-rap berm was increased in height to treat the additional road runoff. The Second Quarter 2018 activities included inspections of the BMPs.

#### *Well 13 Road*

The 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 2018 activities included inspections of the BMPs.

#### *Upper Parking Lot Media Filter*

The 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, designed to treat runoff from parts of the parking lot, as well as parts of the adjacent Entrance Road. The Second Quarter 2018 activities included inspections of the BMPs.

#### *Creosote Treated Wood Poles*

During Fourth Quarter 2017, creosote treated wood poles had fiber roll installed around the base of the pole. Second Quarter 2018 activities included inspections of the BMPs.

#### *Former Shooting Range*

Prior to the Second Quarter 2018, existing BMPs at the Former Shooting Range consisted of:

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

The Second Quarter 2018 activities included inspections of the BMPs.

#### *Non-Industrial Sources Special Studies*

The Expert Panel submitted a Site-Wide Stormwater Work Plan and 2014/15 Annual Report (2015 Work Plan) in September of 2015 (Geosyntec and the Expert Panel, 2015a) on behalf of Boeing to meet the requirements of the NPDES Permit (Order No. R4-2015-0033)<sup>1</sup>. The 2015 Work Plan also includes recommended non-industrial sources special studies intended to help identify sources of lead and dioxins within the Outfall 009 watershed. The special studies involve vacuum sampling pavement solids, pan

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<sup>1</sup> Available at: <http://www.boeing.com/principles/environment/santa-susana/permits.page>



sampling atmospheric deposition solids, soil sampling around treated wood poles, lead isotope sampling, and sediment and stormwater sampling at multiple locations along the Northern Drainage. No sampling was conducted for the various studies in the Second Quarter 2018.

### **NORTHERN DRAINAGE BMPS**

Boeing restored the Northern Drainage following cleanup activities performed under the oversight of the Department of Toxic Substances Control (DTSC) and in accordance with the requirements of Regional Board's Cleanup and Abatement Order No. R4-2007-0054 (Regional Board, 2007). The restoration and mitigation activities proposed in the Northern Drainage Restoration, Mitigation, and Monitoring Plan (RMMP)<sup>2</sup> 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. 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 submitted in December 2017. Based on the success of the project, Boeing requested that the Regional Board provide written notice stating that Boeing has complied with all terms of the Cleanup and Abatement Order and Boeing's obligations under the Order are terminated. Boeing will continue to inspect the Northern Drainage BMPs annually and will maintain them on an as-needed basis. No RMMP-related inspections of Northern Drainage BMPs were performed during Second Quarter 2018.

### **OUTFALL 001/002 BMP COMPLIANCE REPORT RELATED ACTIVITIES**

Boeing submitted a BMP Compliance Report to the Regional Board on 16 June 2017 discussing activities to reduce or eliminate benchmark exceedances for the Outfall 001 and 002 drainages (Boeing, 2017). The BMP activities were completed during the Third Quarter 2017 and are currently included in sitewide BMP inspections.

Boeing and the Expert Panel will continue to monitor and evaluate the effectiveness of BMPs within the watersheds of Outfall 001 and Outfall 002 and discuss in the 2018 Expert Panel Annual Report.

### **ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION REPORT**

The annual comprehensive site compliance evaluation was conducted in May 2018 and reported in Appendix E.

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

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

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<sup>2</sup> Available at: <http://www.boeing.com/principles/environment/santa-susana/technical-reports.page>

Attachment H of the NPDES Permit presents the State Board'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 2018 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.

## **BIOASSESSMENT MONITORING**

A bioassessment review was conducted at the Santa Susana Site on 24 April 2018 to evaluate water quality conditions in the tributary to Arroyo Simi downstream of Outfall 006 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 2018.

## **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 and continuing our collaboration with the Expert Panel.

## **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 2018 at The Boeing Company, Santa Susana Site.

Sincerely,



David W. Dassler P.E.  
Remediation Program Manager  
Environment, Health & Safety

### Enclosures:

#### References

Figure 1 – Site Map with Stormwater Collection and Conveyance System, RSW-001 Sampling Location, and Site Features

Figure 2 – Arroyo Simi Receiving Water – (RSW-002, Frontier Park) Sampling Location

Appendix A – Second Quarter 2018 Rainfall Data Summary

Appendix B – Second Quarter 2018 Waste Shipment Summary Tables

Appendix C – Second Quarter 2018 Discharge Monitoring Data Summary Tables

Appendix D – Second Quarter 2018 Analytical Laboratory Reports, Chain of Custody Forms, and Validation Reports

Appendix E – Annual Comprehensive Site Compliance Evaluation Report

Appendix F – Second Quarter 2018 Bioassessment Sampling Report

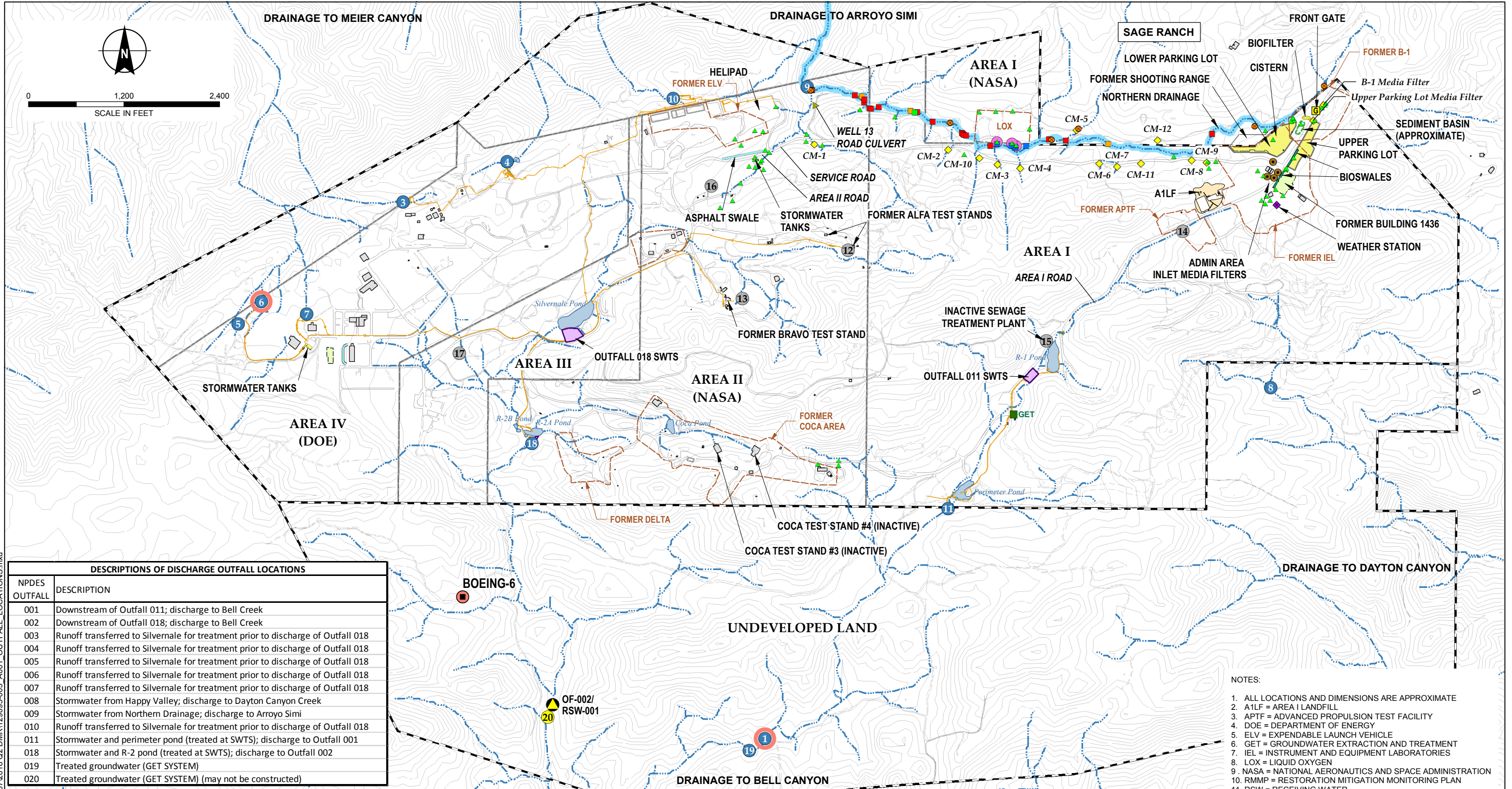
cc: Ms. Cassandra Owens, RWQCB  
Mr. Mark Malinowski, DTSC  
California State University – Northridge, Library  
Simi Valley Public Library  
Los Angeles Public Library, Platt Branch

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## 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 of Outfall 018
004	Runoff transferred to Silvernale for treatment prior to discharge of Outfall 018
005	Runoff transferred to Silvernale for treatment prior to discharge of Outfall 018
006	Runoff transferred to Silvernale for treatment prior to discharge of Outfall 018
007	Runoff transferred to Silvernale for treatment prior to discharge of 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 of 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)
020	Treated groundwater (GET SYSTEM) (may not be constructed)

**LEGEND**

19	ACTIVE NPDES OUTFALL LOCATION	●	INLET MEDIA FILTER	■	STORMWATER TREATMENT SYSTEM	---	DRAINAGE	■	BIOFILTER	□	CONCRETE SLAB IN PLACE
17	FORMER NPDES OUTFALL LOCATION	⊕	GROUNDWATER MONITORING WELL	▭	FORMER STUDY AREA	---	ASPHALT SWALE	■	BIOSWALE	■	LANDFILL AREA
20	POSSIBLE FUTURE NPDES OUTFALL LOCATION	▲	BMP MONITORING LOCATION	■	RMMP LOCATION	---	PAVED ROAD	▭	SEDIMENT BASIN	▭	SANTA SUSANA SITE PROPERTY BOUNDARY
▲	BELL CREEK RECEIVING WATER (RSW-001) SAMPLING LOCATION AND OUTFALL 002	●	SPECIAL STUDIES LOCATION	■	CHECK STRUCTURE - MOSTLY NATURAL SANDSTONE, SOME RIP RAP	---	DIRT ROAD	▭	STORMWATER TANK	▭	ADMINISTRATIVE AREA BOUNDARY
●	SLOPE DRAIN DISCHARGE POINT TO NORTHERN DRAINAGE	■	GET SYSTEM	■	CHECK STRUCTURE - RIP RAP	---	STORMWATER CONVEYANCE PIPELINE WITH FLOW DIRECTION	▭	SURFACE WATER POND	▭	EXISTING BUILDING/STRUCTURE
◆	CULVERT MODIFICATION	●	AIR MONITORING LOCATION	■	CHECK STRUCTURE - VEGETATED RIP RAP	---	25' ELEVATION CONTOUR	▭	FORMER BUILDING FOOTPRINT	▭	VEHICLE PARKING AREA
		○	BIOASSESSMENT LOCATION	■	SLOPE DRAIN WITH UNDERLYING CHECK STRUCTURE AND ENERGY DISSIPATING GRAVEL AT INFLUENT END						

- 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**

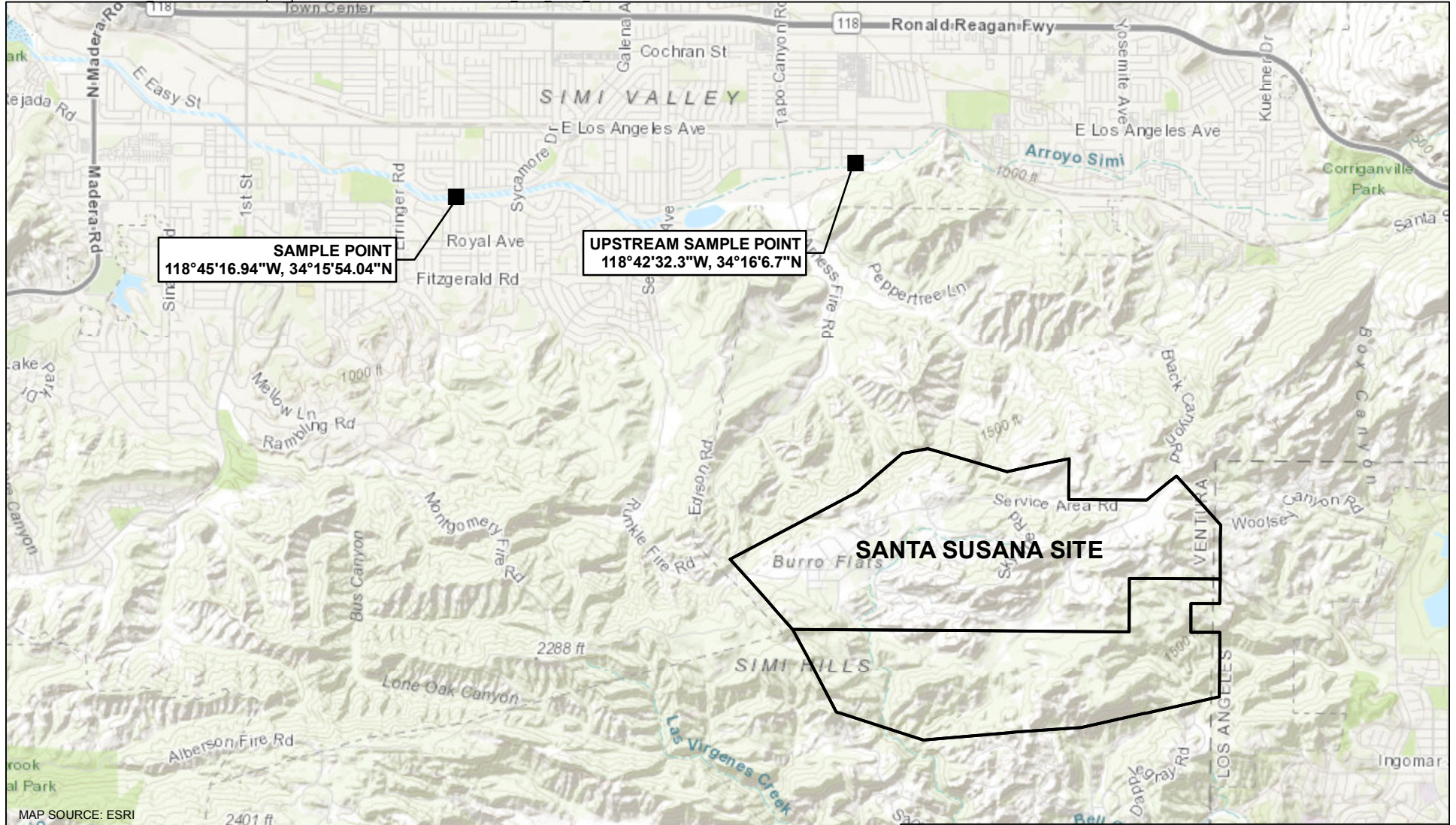
NPDES PERMIT COMPLIANCE SECOND QUARTER 2018  
DISCHARGE MONITORING REPORT  
THE BOEING COMPANY  
VENTURA COUNTY, CALIFORNIA

**SITE MAP WITH STORMWATER COLLECTION AND CONVEYANCE SYSTEM AND SITE FEATURES**

AUGUST 2018

**FIGURE 1**

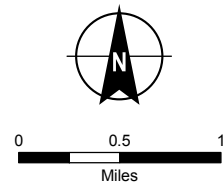
G:\0458\_SSF\Global\GIS\MapProjects\2018-07\2018 Q2 DMR\129095-003\_A001\_OUTFALL\_LOCATIONS.mxd



MAP SOURCE: ESRI

**NOTE**

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.



**HALEY  
ALDRICH**

NPDES PERMIT COMPLIANCE SECOND QUARTER 2018  
DISCHARGE MONITORING REPORT  
THE BOEING COMPANY  
VENTURA COUNTY, CALIFORNIA

**ARROYO SIMI RECEIVING WATER  
(RSW-002, FRONTIER PARK)  
SAMPLING LOCATION**

AUGUST 2018

**FIGURE 2**



**APPENDIX A**

**Second Quarter 2018 Rainfall Data Summary**

**TABLE A  
DAILY RAINFALL SUMMARY**

**THE BOEING COMPANY  
NPDES PERMIT CA0001309**

Station: AREA 1  
Parameter: Rain  
Month/Year: April 2018

**HOURLY 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	
D	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	0.00
A	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Y	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
O	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F	5	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00
T	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
H	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
O	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
H	13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
O	16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
H	19	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00
	24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Flags: d = Off-line part of hour, invalid hour due to maintenance (April 5) or semi-annual audit (April 23). For the off-line events, the rain gauge at the former Building 436 confirmed that no rainfall was recorded on April 5 during hour 06:00-07:00 and the rain gauge at Sage Ranch confirmed that no rainfall was recorded on April 23 during hour 06:00-07:00.



**TABLE A  
DAILY RAINFALL SUMMARY**

**THE BOEING COMPANY  
NPDES PERMIT CA0001309**

Station: AREA 1  
Parameter: Rain  
Month/Year: June 2018

**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	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	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	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	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	0.00
	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	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	0.00
	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	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	0.00
E	17	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.02
	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	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	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	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	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	0.00
	24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**APPENDIX B**

**Second Quarter 2018 Waste Shipment Summary Table**

**TABLE B  
LIQUID WASTE SHIPMENTS**

**SECOND QUARTER 2018 REPORTING SUMMARY  
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			
4/6/2018	011779439FLE	HAZARDOUS WASTE, LIQUID (TRICHLOROETHYLENE)	39,245	P	OC Vacuum Inc. 5900 Cherry Avenue Long Beach, CA 90805	n/a	n/a	US Ecology Vernon Inc. 5375 South Boyle Avenue Los Angeles, CA 90058			
	011779440FLE	HAZARDOUS WASTE, LIQUID (TRICHLOROETHYLENE)	39,162	P							
4/12/2018	011779503FLE	HAZARDOUS WASTE, LIQUID (TRICHLOROETHYLENE)	39,100	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	Tristate Motor Transit Co. 8141 East 7th Street Joplin, MO 64801	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061		Clean Harbors Aragonite LLC 11600 North Aptus Road Grantsville, UT 84029		
4/18/2018	011779587FLE	HAZARDOUS WASTE, LIQUID, (TRICHLOROETHYLENE)	6,364	P			NH1801937996	NON-HAZARDOUS, NON D.O.T. REGULATED, (WATER)	383	P	Clean Harbors Grassy Mountain LLC 3 Miles East 7 Miles North of Knolls Grantsville, UT 84029
		NON-HAZARDOUS, NON D.O.T. REGULATED, (WATER)	55	P							
4/19/2018	011779564FLE	HAZARDOUS WASTE, LIQUID, (TRICHLOROETHYLENE)	3,900	P	OC Vacuum Inc. 5900 Cherry Avenue Long Beach, CA 90805	n/a	US Ecology Vernon Inc. 5375 South Boyle Avenue Los Angeles, CA 90058				
4/27/2018	018446723JJK	HAZARDOUS WASTE, LIQUID, (TRICHLOROETHYLENE)	60	G	WM Enviroserv 10633 Ruchti Road South Gate, CA 90280						
5/1/2018	011779803FLE	HAZARDOUS WASTE, LIQUID, (TRICHLOROETHYLENE)	1,648	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	Tristate Motor Transit Co. 8141 East 7th Street Joplin, MO 64801	n/a	Clean Harbors Aragonite LLC 11600 North Aptus Road Grantsville, UT 84029			
		HAZARDOUS WASTE, LIQUID, (TRICHLOROETHYLENE)	1,356	P				Clean Harbors Wilmington LLC 1737 East Denni Street Wilmington, CA 90744			
	011779804FLE	WASTE CORROSIVE LIQUID, ACIDIC, INORGANIC, (HYDROCHLORIC ACID SOLUTION, NITRIC ACID)	17	P		NH1802104823		NON HAZARDOUS, NON D.O.T. REGULATED, (WATER)	30	G	Clean Harbors Grassy Mountain LLC 3 Miles East 7 Miles North of Knolls Grantsville, UT 84029
		WASTE CORROSIVE LIQUID, BASIC, INORGANIC, (SODIUM THIOSULFATE)	21	P							
5/8/2018	018447404JJK	POLYCHLORINATED BIPHENYLS, (TRANSFORMER OIL)	28	K	WM Enviroserv 10633 Ruchti Road South Gate, CA 90280	n/a		Chemical Waste Management 35251 Old Skyline Road Kettleman City, CA 93239			
		NON HAZARDOUS WASTE, LIQUID, (TRANSFORMER OIL)	2,065	P							
	018447405JJK	NON RCRA HAZARDOUS WASTE, LIQUID, (OIL)	30	G				NON RCRA HAZARDOUS WASTE, LIQUID, (OILY WATER)	165	G	Demeno/Kerdoon 2000 N. Alameda Street Compton, CA 90222

**TABLE B  
LIQUID WASTE SHIPMENTS**

**SECOND QUARTER 2018 REPORTING SUMMARY  
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
5/8/2018	018447403JJK	NON RCRA HAZARDOUS WASTE, LIQUID, (OIL)	165	G	WM Enviroserv 10633 Ruchti Road South Gate, CA 90280	n/a	n/a	Clean Harbors Wilmington LLC 1737 East Denni Street Wilmington, CA 90744
		NON RCRA HAZARDOUS WASTE, LIQUID	385	G				US Ecology Nevada Hwy 95, 12 Miles South Beatty, NV 89003
	018447406JJK	HAZARDOUS WASTE, LIQUID, (CADMIUM, LEAD)	5	G				US Ecology Vernon Inc. 5375 South Boyle Avenue Los Angeles, CA 90058
5/30/2018	018446724JJK	HAZARDOUS WASTE, LIQUID, (TRICHLOROETHYLENE)	5,000	G	OC Vacuum Inc. 5900 Cherry Avenue Long Beach, CA 90805	n/a	n/a	Demunno/Kerdoon 2000 N. Alameda Street Compton, CA 90222
5/31/2018	018446725JJK	HAZARDOUS WASTE, LIQUID, (TRICHLOROETHYLENE)	5,000	G				
	011780686FLE	HAZARDOUS WASTE, LIQUID, (TRICHLOROETHYLENE)	39,250	P	WM Enviroserv 10633 Ruchti Road South Gate, CA 90280	n/a	n/a	Clean Harbors Grassy Mountain LLC 3 Miles East 7 Miles North of Knolls Grantsville, UT 84029
6/1/2018	018446394JJK	NON RCRA HAZARDOUS WASTE, LIQUID, (OIL)	200	G				
	01846395JJK	NON RCRA HAZARDOUS WASTE, LIQUID, (PCB, TRANSFORMER)	7,400	P				
6/6/2018	NH1802843901	NON HAZARDOUS, NON D.O.T. REGULATED, (WATER)	638	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	Tristate Motor Transit Co. 8141 East 7th Street Joplin, MO 64801	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	Clean Harbors Grassy Mountain LLC 3 Miles East 7 Miles North of Knolls Grantsville, UT 84029
		NON HAZARDOUS, NON D.O.T. REGULATED, (WATER)	33	P				
	011780807FLE	WASTE CORROSIVE LIQUIDS, TOXIC, (SODIUM HYDROXIDE, SODIUM CYANIDE)	19	P				Clean Harbors Aragonite LLC 11600 North Aptus Road Grantsville, UT 84029
		HAZARDOUS WASTE, LIQUID, (TRICHLOROETHYLENE)	19	P				

**TABLE B  
LIQUID WASTE SHIPMENTS**

**SECOND QUARTER 2018 REPORTING SUMMARY  
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
4/11/2018	18091	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
	18092	FLUSH WATER WITH TRACE SEWAGE, (CLARIFIER)	5,000	G				
4/24/2018	18170	FLUSH WATER WITH TRACE SEWAGE, (HOLDING TANK)	5,000	G				
	18171	FLUSH WATER WITH TRACE SEWAGE, (CLARIFIER)	5,000	G				
5/8/2018	18246	FLUSH WATER WITH TRACE SEWAGE, (HOLDING TANK)	5,000	G				
	18247	FLUSH WATER WITH TRACE SEWAGE, (CLARIFIER)	5,000	G				
5/22/2018	18307	FLUSH WATER WITH TRACE SEWAGE, (CLARIFIER)	5,000	G				
	18308	FLUSH WATER WITH TRACE SEWAGE, (HOLDING TANK)	5,000	G				
6/5/2018	18365	FLUSH WATER WITH TRACE SEWAGE, (CLARIFIER)	5,000	G				
	18366	FLUSH WATER WITH TRACE SEWAGE, (HOLDING TANK)	5,000	G				
6/20/2018	18456	FLUSH WATER WITH TRACE SEWAGE, (HOLDING TANK)	5,000	G				
	18457	FLUSH WATER WITH TRACE SEWAGE, (HOLDING TANK)	5,000	G				

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



**TABLE B  
SOLID WASTE SHIPMENTS**

**SECOND QUARTER 2018 REPORTING SUMMARY  
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
4/18/2018	NH1801937996	NON HAZARDOUS, NON D.O.T. REGULATED MATERIAL, (DEBRIS)	191	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	Tristate Motor Transit Co. 8141 East 7th Street Joplin, MO 64801		Clean Harbors Grassy Mountain LLC 3 Miles East 7 Miles North of Knolls Grantsville, UT 84029
5/1/2018	NH1802104823	NON HAZARDOUS, NON D.O.T. REGULATED MATERIAL, (DEBRIS)	36	P				
	011779803FLE	HAZARDOUS WASTE, SOLID, (BENZENE, ALCOHOL, ACETONE)	5	P				Clean Harbors Aragonite LLC 11600 North Aptus Road Grantsville, UT 84029
5/8/2018	018447404JJK	HAZARDOUS WASTE, SOLID, (TRICHLOROETHENE)	200	P	WM Enviroserv 10633 Ruchti Road South Gate, CA 90280		n/a	
		NON RCRA HAZARDOUS WASTE, SOLID, (SEDIMENT)	800	P				
5/15/2018	018446031JJK	NON RCRA HAZARDOUS WASTE, SOLID, (STEEL, WOOD)	700	P		n/a		Chemical Waste Management 35251 Old Skyline Road Kettleman City, CA 93239
	018447412JJK	NON RCRA HAZARDOUS WASTE, SOLID, (SEDIMENT)	20	Y	Patriot Environmental Services 508 East E. Street Wilmington, CA 90744			
6/1/2018	018446393JJK	NON RCRA HAZARDOUS WASTE, SOLID, (PPE, DEBRIS)	300	P	WM Enviroserv 10633 Ruchti Road South Gate, CA 90280			
6/6/2018	NH1802843901	NON HAZARDOUS, NON D.O.T. REGULATED MATERIAL, (DEBRIS)	68	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	Tristate Motor Transit Co. 8141 East 7th Street Joplin, MO 64801	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	Clean Harbors Grassy Mountain LLC 3 Miles East 7 Miles North of Knolls Grantsville, UT 84029
	011780807FLE	HAZARDOUS WASTE, SOLID, (BENZENE, ALCOHOL, ACETONE)	10	P				Clean Harbors Aragonite LLC 11600 North Aptus Road Grantsville, UT 84029
6/27/2018	NH1803125378-B	BATTERIES, DRY, SEALED, N.O.S., (ALKALINE BATTERIES)	34	P		n/a	n/a	Clean Harbors Wilmington LLC 1737 East Denni Street Wilmington, CA 90744
		UNIVERSAL WASTE, (ELECTRONIC DEVICES)	128	P				
7/3/2018	018446303JJK	WASTE, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID	10	T	Patriot Environmental Services 508 East E. Street Wilmington, CA 90744			US Ecology Nevada Hwy 95, 12 Miles South Beatty, NV 89003

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

**TABLE B  
FLAMMABLE WASTE SHIPMENTS**

**SECOND QUARTER 2018 REPORTING SUMMARY  
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
5/1/2018	011779804FLE	WASTE, FLAMMABLE LIQUIDS (DIESEL, GASOLINE)	5	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
6/6/2018	011780807FLE	WASTE AEROSOLS, FLAMMABLE	7	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	Tristate Motor Transit Co. 8141 East 7th Street Joplin, MO 64801	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	Clean Harbors Aragonite LLC 11600 North Aptus Road Grantsville, UT 84029

Notes:  
P = Pounds

**APPENDIX C**

**Second Quarter 2018 Discharge Monitoring Data Summary Tables**

**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. TCDD TEQs for the purpose of determining permit compliance are the sum of the products of the detected dioxin congener concentration multiplied by that congener's toxicity equivalency factor (TEF) and bioaccumulation equivalency factor (BEF). The resulting compliance TCDD TEQ does not include those congener concentrations that are reported as DNQ, as specified on page 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°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 reported with 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 monitoring location RSW-002 (Arroyo Simi) 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 counting 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 or monthly average.
<(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) 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 %RSD (relative standard deviation) or %D (difference) were noncompliant.
Comp	Composite sample type.
C5	Calibration verification %R (recovery) 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.
F	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.

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

F1	MS and/or 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 (CaCO <sub>3</sub> ).
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 (MQL), but > than MDL.
K	The sample dilution's set-up did not meet the oxygen depletion criteria of at least 2 mg/l; therefore, the reported result is an estimated value only.
L	Laboratory control sample %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 %R was below the method control limits.
LBS/DAY	Pounds per day.
LCS	Laboratory control standard.
LCSD	Laboratory control standard duplicate.
LQ	LCS/LCSD recovery above method control limits.
M1	MS and/or MSD were above the acceptance limits due to sample matrix interference.
M2	The MS and/or MS duplicate were below the acceptance limits due to sample matrix interference.
Max	Maximum.
MB	Analyte present in the method blank.
MDA/MDC	Minimum detectable activity/minimum detectable concentration.
MDL	Method Detection Limit.
Meas	Measure sample type.
MFL	Million fibers per liter.
MGD	Million gallons per day.
MHA	Due to high level of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information.
mg/L	Milligrams per liter.
mg/kg	Milligrams per kilogram.
ml/L/hr	Milliliters per liter per hour.

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

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 MDAs are not calculated as there is no statistical method for combining MDAs.
NPDES	National Pollutant Discharge Elimination System.
NTU	Nephelometric turbidity unit.
OCDD	Octa CDD.
OCDF	Octa CDF.
P	Pounds.
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 recovery outside of control limits.
Q1	MS/MSD RPD was outside the control limit.
R	As a validation qualifier, results are rejected; the presence or absence of analyte cannot be verified.
R	(reason code in parentheses) %R for calibration not within control limits.
RL	Laboratory reporting limit.
RL-1	Reporting limit raised due to sample matrix effects.
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.
TIE	Toxicity identification Evaluation

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

T	Presumed contamination, as indicated by a detect in the trip blank.
U	Result not detected.
µg/L (ug/L)	Micrograms per liter.
µg/g	Micrograms per gram.
µg/kg (ug/kg)	Micrograms per kilogram.
µmhos/cm (umhos/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.
(4)	The drinking water maximum contaminant level of 3.00E-05 ug/L is for the dioxin congener 2,3,7,8-TCDD. TCDD TEQ w/out DNQ Values is the sum of the products of the detected dioxin congener concentration multiplied by that congener's TEF and BEF. There are 17 dioxin congeners.
(a)	Based on Order No. R4-2015-0033, page 17, Footnote 7, sampling event is a dry discharge. Effluent limitations for Cadmium are not applicable for discharges during dry weather.
(b)	Based on Order No. R4-2015-0033, page 17, Footnote 7, sampling event is a wet discharge. Effluent limitations for Cadmium are applicable for discharges during wet weather.
(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 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 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. Effluent limitations for Selenium are applicable for discharges during dry weather discharges.



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

(f)	Based on Order No. R4-2015-0033, page 17, Footnote 8, sampling event is a wet discharge. Effluent limitations for Selenium are not applicable for discharges during wet weather.
(g)	The frequency of Iron at Outfall 002 is increased from once per year to once per discharge until four consecutive sample results demonstrate compliance per the NPDES Permit.
(h)	The frequency of Iron and Manganese at Outfall 001 is increased from once per year to once per discharge until four consecutive sample results demonstrate compliance per the NPDES Permit.
(i)	Analyte does not have a receiving water limit for RSW-001.
(j)	Total Ammonia is reported in wet weight units mg/kg.
(k)	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 mg/kg.

Arroyo Simi Receiving Water (RSW-002, Frontier Park Sampling Location), Sediment

Second Quarter 2018 Reporting Summary  
The Boeing Company  
Santa Susana Field Laboratory  
NPDES Permit CA0001309

April 1 through June 30, 2018

				04/24/2018 07:30		
Analyte	Units	Permit Limit Daily Max/Monthly Ave	Sample Frequency	Sample Type	Result	Laboratory/ Validation Qualifier
<b>Pollutants With Limits</b>						
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 < 0.0025	U
Aroclor 1221	µg/g	0.12/-	1/Year	Grab	ND < 0.0025	U
Aroclor 1232	µg/g	0.12/-	1/Year	Grab	ND < 0.0025	U
Aroclor 1242	µg/g	0.12/-	1/Year	Grab	ND < 0.0025	U
Aroclor 1248	µg/g	0.12/-	1/Year	Grab	ND < 0.0025	U
Aroclor 1254	µg/g	0.12/-	1/Year	Grab	ND < 0.0033	U
Aroclor 1260	µg/g	0.12/-	1/Year	Grab	ND < 0.0033	U
Chlordane	µg/g	0.0033/-	1/Year	Grab	ND < 0.0099	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
<b>Pollutants Without Limits</b>						
Percent Moisture	%	-/-	1/Year	Grab	25	*
Total Ammonia <sup>(j)</sup>	mg/kg	-/-	1/Year	Grab	7.67	J (DNQ)
Bivalve Embryo Toxicity (Mytilus edulis)	% Normal/Alive	-/-	1/Year	Grab	100	--
Conductivity	umhos/cm	-/-	1/Year	Grab	1,840	*
Dissolved Oxygen	mg/L	-/-	1/Year	Grab	6.23	*
pH (Field)	s.u.	-/-	1/Year	Grab	7.64	*
Sediment Toxicity (Eohaustorius estuarius)	% Survival	-/-	1/Year	Grab	100	--
Temperature (Field)	Deg F	-/-	1/Year	Grab	63.7	*
Total Organic Carbon <sup>(k)</sup>	mg/kg	-/-	1/Year	Grab	710	--
Water Velocity	ft/sec	-/-	1/Year	Meas	0.0	*
<b>Particle Size Distribution</b>						
Gravel	%	-/-	1/Year	Grab	5.86	*
Coarse Sand	%	-/-	1/Year	Grab	9.29	*
Medium Sand	%	-/-	1/Year	Grab	71.89	*
Fine Sand	%	-/-	1/Year	Grab	12.83	*
Silt/Clay	%	-/-	1/Year	Grab	0.13	*

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

Arroyo Simi Receiving Water (RSW-002, Frontier Park Sampling Location), Water

Second Quarter 2018 Reporting Summary  
 The Boeing Company  
 Santa Susana Field Laboratory  
 NPDES Permit CA0001309

April 1 through June 30, 2018

Analyte	Units	Permit Limit Daily Max/Monthly Ave	Sample Frequency	04/24/2018 07:10		
				Sample Type	Result	Laboratory/ Validation Qualifier
<b>Pollutants With Limits</b>						
4,4'-DDD	µg/L	0.0014/-	1/Quarter	Grab	ND < 0.0038	U
4,4'-DDE	µg/L	0.001/-	1/Quarter	Grab	ND < 0.0028	U
4,4'-DDT	µg/L	0.001/-	1/Quarter	Grab	ND < 0.0038	U
Aroclor 1016	µg/L	0.0003/-	1/Quarter	Grab	ND < 0.095	U
Aroclor 1221	µg/L	0.0003/-	1/Quarter	Grab	ND < 0.095	U
Aroclor 1232	µg/L	0.0003/-	1/Quarter	Grab	ND < 0.095	U
Aroclor 1242	µg/L	0.0003/-	1/Quarter	Grab	ND < 0.095	UJ (C)
Aroclor 1248	µg/L	0.0003/-	1/Quarter	Grab	ND < 0.095	U
Aroclor 1254	µg/L	0.0003/-	1/Quarter	Grab	ND < 0.095	U
Aroclor 1260	µg/L	0.0003/-	1/Quarter	Grab	ND < 0.14	U
Chlordane	µg/L	0.001/-	1/Quarter	Grab	ND < 0.076	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 < 0.0019	U
E. Coli	MPN/100mL	235/-	1/Year	Grab	ANR	ANR
pH (Field)	s.u.	6.5-8.5/-	1/Quarter	Grab	7.64	*
Toxaphene	µg/L	0.0003/-	1/Quarter	Grab	ND < 0.24	U
<b>Pollutants Without Limits</b>						
Hardness (as CaCO <sub>3</sub> )	mg/L	-/-	1/Quarter	Grab	700	--
Priority Pollutants	NA	-/-	1/5 Years	Grab	ANR	ANR
Temperature (Field)	Deg F	-/-	1/Quarter	Grab	63.7	*
TCDD - Equivalents	µg/L	-/-	1/Year	Grab	ANR	ANR
Total Suspended Solids	mg/L	-/-	1/Year	Grab	ANR	ANR
Water Velocity	ft/sec	-/-	1/Quarter	Meas	0.0	*

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

**APPENDIX D**

**Second Quarter 2018 Analytical Laboratory Reports,  
Chain of Custody Forms, and Validation Reports**

## APPENDIX D

### TABLE OF CONTENTS

**Section No.**

- 1 Arroyo Simi – 440-209578-1, April 24, 2018, MECx Data Validation Report
- 2 Arroyo Simi – J209578-1, April 24, 2018, TestAmerica Analytical Report
  
- 3 Arroyo Simi – 440-209580-1, April 24, 2018, MECx Data Validation Report
- 4 Arroyo Simi – J209580-1, April 24, 2018, TestAmerica Analytical Report

---

**DATA VALIDATION REPORT**

**Boeing SSFL Arroyo Simi**

**SAMPLE DELIVERY GROUP: 440-209578-1**

**Prepared for**  
Haley & Aldrich

**May 21, 2018**

MEC<sup>x</sup>, Inc.  
8864 Interchange Drive  
Houston, Texas 77054

[www.mecx.net](http://www.mecx.net)





**TABLE OF CONTENTS**

I. INTRODUCTION..... 1

II. Sample Management..... 2

III. EPA Methods 8081A and 8082 – Pesticides and PCBs..... 6

    III.1. Holding Times ..... 6

    III.2. Calibration..... 6

    III.3. Quality Control Samples ..... 6

        III.3.1. Method Blanks..... 6

        III.3.2. Laboratory Control Samples ..... 6

        III.3.3. Surrogate Recovery..... 6

        III.3.4. Matrix Spike/Matrix Spike Duplicate ..... 6

    III.4. Field QC Samples..... 6

        III.4.1. Field Blanks and Equipment Blanks ..... 6

        III.4.2. Field Duplicates..... 6

    III.5. Compound Identification ..... 7

    III.6. Compound Quantification and Reported Detection Limits..... 7

    III.7. System Performance..... 7

IV. VARIOUS METHODS — GENERAL CHEMISTRY..... 7

    IV.1. Holding Times ..... 7

    IV.2. Calibration..... 7

    IV.3. Quality Control Samples ..... 7

        IV.3.1. Method Blanks..... 7

        IV.3.2. Laboratory Control Samples ..... 8

        IV.3.3. Laboratory Duplicates..... 8

        IV.3.4. Matrix Spike/Matrix Spike Duplicate ..... 8

    IV.4. Sample Result Verification..... 8

    IV.5. Field QC Samples..... 8



IV.5.1. Field Blanks and Equipment Blanks ..... 8  
IV.5.2. Field Duplicates..... 8

**TABLES**

- 1 – Sample Identification
- 2 – Data Qualifier Reference
- 3 - Reason Code Reference





## I. INTRODUCTION

---

**Task Order Title:** Boeing SSFL Arroyo Simi

**Contract:** 40458-078 and 40458-083

**MEC<sup>x</sup> Project No.:** 1272.003D.01 002

**Sample Delivery Group:** 440-209578-1

**Project Manager:** K. Miller

**Matrix:** Sediment

**QC Level:** IV

**No. of Samples:** 1

**No. of Reanalyses/Dilutions:** 0

**Laboratory:** TestAmerica - Irvine

**TABLE 1 - SAMPLE IDENTIFICATION**

Sample Name	Lab Sample Name	Matrix	Collection	Method
Arroyo_Simi_Sed_20180424	440-209578-1	Sediment	4/24/2018 7:30:00 AM	8081, 8082, 600/R- 95/136, 600/R- 94/025, 4500-NH3C, 9060



## 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) 440-209578-1:

- The laboratories received the sample in this sample delivery group (SDG) on ice and within the temperature limits of less than 6 degrees Celsius ( $^{\circ}\text{C}$ ) and greater than  $0^{\circ}\text{C}$ .
- The laboratories received the sample containers intact and properly preserved, as applicable.
- According to the sample receipt form, custody seals were absent upon receipt at TestAmerica-Irvine; however, the samples or cooler did not appear to have been compromised or tampered with. Custody seals were present and intact upon receipt at Lancaster.
- Analysis for 48-hour Bivalve Embryo toxicity and Sediment toxicity were subcontracted to Aquatic Bioassay and Consulting Laboratories (ABC).
- Analysis for Total Organic Carbon (TOC) was subcontracted to TestAmerica-St. Louis.
- Field and laboratory personnel signed and dated the COC except as noted below.
  - The COC for transfer from TestAmerica-Irvine to ABC did not include a relinquish signature, date or time.
  - The COC for transfer from TestAmerica-Irvine to TestAmerica-St. Louis did not include a receipt signature, date or time.



**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.	Not applicable.
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.
+	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.



Reason Code	Organic	Inorganic
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.
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. EPA METHODS 8081A AND 8082 – PESTICIDES AND PCBs

---

L. Calvin of MEC<sup>x</sup> reviewed the SDG on May 31, 2018

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC<sup>x</sup> Data Validation Procedure for 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)*.

#### III.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.

#### III.2. CALIBRATION

The initial calibrations had %RSDs of  $\leq 20\%$  or  $r^2$  of  $\geq 0.990$  on both analytical columns. The initial calibration verification (ICV) and continuing calibration verification (CCV) %Ds were within the control limit of  $\leq 15\%$ . The % breakdown of endrin in the performance evaluation mix was  $< 15\%$ .

#### III.3. QUALITY CONTROL SAMPLES

##### III.3.1. METHOD BLANKS

Target compounds were not detected in method blanks.

##### III.3.2. LABORATORY CONTROL SAMPLES

Recoveries were within the laboratory control limits. Chlordane and toxaphene were not spiked in the pesticide LCS.

##### III.3.3. SURROGATE RECOVERY

Pesticide surrogate tetrachloro-m-xylene (TCMX) and PCB surrogate decachlorobiphenyl (DCB) were recovered within the laboratory control limits for soils of 35-115% and 45-143%, respectively, in the site sample.

##### III.3.4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Matrix spike (MS)/MS duplicate (MSD) analyses were performed on the sample of this SDG. Recoveries and RPDs were within the laboratory control limits, except for the RPD for 4,4'-DDD of 33%. As 4,4'-DDD was not detected in the sample, no qualification was necessary. Chlordane and toxaphene were not spiked in the pesticide MS/MSD.

#### III.4. FIELD QC SAMPLES

MEC<sup>x</sup> 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<sup>x</sup> used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below.

##### III.4.1. FIELD BLANKS AND EQUIPMENT BLANKS

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

##### III.4.2. FIELD DUPLICATES

Field duplicate samples were not identified in this SDG.



### III.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 select pesticides and seven Aroclors by Methods 8081A and 8082.

### III.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. Reported nondetects are valid to the reporting limit.

### III.7. SYSTEM PERFORMANCE

Review of the raw data indicated no problems with system performance.

## IV. VARIOUS METHODS — GENERAL CHEMISTRY

---

Marcia Hilchey of MECX reviewed the SDG on May 21, 2018.

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

### IV.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 sediment toxicity
- 14 days for 48-hour bivalve embryo toxicity

### IV.2. CALIBRATION

Calibration criteria were met. The initial calibration  $r^2$  values for TOC and ammonia were  $\geq 0.995$  and 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.

### IV.3. QUALITY CONTROL SAMPLES

#### IV.3.1. METHOD BLANKS

The method blanks and calibration blanks had no detects. The chronic toxicity tests met the negative control criteria of the laboratory and method.



#### IV.3.2. **LABORATORY CONTROL SAMPLES**

Laboratory control sample recoveries were within the laboratory control limits. The positive control criteria were met for the chronic toxicity tests.

#### IV.3.3. **LABORATORY DUPLICATES**

Laboratory duplicate analyses were not reported for the sample in this SDG.

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

MS/MSD analyses were performed on the sample in this SDG for ammonia and TOC. Recoveries and the RPD met laboratory control limits. MS/MSD analyses for the remaining methods were not performed on the sample in this SDG.

#### IV.4. **SAMPLE RESULT VERIFICATION**

Calculations were verified and the sample results reported on the sample results summary were verified against the raw data. No transcription errors or calculation errors were noted. Reported nondetects are valid to the MDL.

#### IV.5. **FIELD QC SAMPLES**

MEC<sup>x</sup> 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<sup>x</sup> used the remaining detects to evaluate the associated site sample. Findings associated with field QC samples are summarized below.

##### IV.5.1. **FIELD BLANKS AND EQUIPMENT BLANKS**

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

##### IV.5.2. **FIELD DUPLICATES**

Field duplicate samples were not identified in this SDG.



# Validated Sample Result Forms: 4402095781

## Analysis Method EPA/600/R-94/025

Sample Name Arroyo\_Simi\_Sed\_20180424 Matrix Type: SE Result Type: TRG

Sample Date: 4/24/2018 7:30:00 AM Validation Level: 8

Lab Sample Name: 440-209578-1

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\_20180424 Matrix Type: SE Result Type: TRG

Sample Date: 4/24/2018 7:30:00 AM Validation Level: 8

Lab Sample Name: 440-209578-1

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-NH3C

Sample Name Arroyo\_Simi\_Sed\_20180424 Matrix Type: SE Result Type: TRG

Sample Date: 4/24/2018 7:30:00 AM Validation Level: 8

Lab Sample Name: 440-209578-1

Analyte	Fraction:	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Ammonia (as N)	N	7664-41-7N	10.2	13.3	2.66	mg/kg	J,DX	J	DNQ

## Analysis Method SW8081A

Sample Name Arroyo\_Simi\_Sed\_20180424 Matrix Type: SE Result Type: TRG

Sample Date: 4/24/2018 7:30:00 AM Validation Level: 8

Lab Sample Name: 440-209578-1

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	9.9	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\_20180424**Matrix Type:** SE**Result Type:** TRG**Sample Date:** 4/24/2018 7:30:00 AM**Validation Level:** 8**Lab Sample Name:** 440-209578-1

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	2.5	ug/kg	U	U	
Aroclor-1221 (PCB-1221)	N	11104-28-2	ND	22	2.5	ug/kg	U	U	
Aroclor-1232 (PCB-1232)	N	11141-16-5	ND	22	2.5	ug/kg	U	U	
Aroclor-1242 (PCB-1242)	N	53469-21-9	ND	22	2.5	ug/kg	U	U	
Aroclor-1248 (PCB-1248)	N	12672-29-6	ND	22	2.5	ug/kg	U	U	
Aroclor-1254 (PCB-1254)	N	11097-69-1	ND	22	3.3	ug/kg	U	U	
Aroclor-1260 (PCB-1260)	N	11096-82-5	ND	22	3.3	ug/kg	U	U	

**Analysis Method** SW9060**Sample Name** Arroyo\_Simi\_Sed\_20180424**Matrix Type:** SE**Result Type:** TRG**Sample Date:** 4/24/2018 7:30:00 AM**Validation Level:** 8**Lab Sample Name:** 440-209578-1

Analyte	Fraction:	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Organic Carbon (TOC)	N	TOC	710	100	33	mg/kg			

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-209578-1

Client Project/Site: Annual Sediment Arroyo Simi-Frontier Par

Revision: 1

For:

Haley & Aldrich, Inc.

400 E Van Buren St.

Suite 545

Phoenix, Arizona 85004

Attn: Katherine Miller



Authorized for release by:

7/16/2018 2:54:27 PM

Urvashi Patel, Manager of Project Management

(949)261-1022

[urvashi.patel@testamericainc.com](mailto:urvashi.patel@testamericainc.com)

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

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

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- 13
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I certify under penalty of perjury that the information contained in this report and all attachments was produced in accordance with the indicated methods and laboratory standard operating procedures, except as noted, and are complete and accurate to the best of my knowledge and belief. Subcontract laboratory reports that are attached have been evaluated for completeness and quality control acceptability.



---

Urvashi Patel  
Manager of Project Management  
7/16/2018 2:54:27 PM



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	3
Sample Summary . . . . .	4
Case Narrative . . . . .	5
Client Sample Results . . . . .	6
Method Summary . . . . .	7
Lab Chronicle . . . . .	8
QC Sample Results . . . . .	9
QC Association Summary . . . . .	12
Definitions/Glossary . . . . .	14
Certification Summary . . . . .	15
Subcontract Data . . . . .	16
Chain of Custody . . . . .	43
Receipt Checklists . . . . .	46

# Sample Summary

Client: Haley & Aldrich, Inc.  
Project/Site: Annual Sediment Arroyo Simi-Frontier Par

TestAmerica Job ID: 440-209578-1

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-209578-1	Arroyo_Simi_Sed_20180424	Solid	04/24/18 07:30	04/24/18 18:10

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- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# Case Narrative

Client: Haley & Aldrich, Inc.  
Project/Site: Annual Sediment Arroyo Simi-Frontier Par

TestAmerica Job ID: 440-209578-1

**Job ID: 440-209578-1**

**Laboratory: TestAmerica Irvine**

## Narrative

### Job Narrative 440-209578-1

#### Comments

Revised to report ammonia in wet weight per client request.

#### Receipt

The samples were received on 4/24/2018 6:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.9° C, 1.1° C and 1.5° C.

#### GC Semi VOA

Method(s) 8081A: Surrogate recovery was outside acceptance limits for the following matrix spike (MS) sample: Arroyo\_Simi\_Sed\_20180424 (440-209578-1[MS]). The matrix spike duplicate (MSD) and parent sample's surrogates recovery were within limits. The MS sample has been qualified and reported. Sample matrix interference and non-homogeneity are suspected.

Method(s) 8081A: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 440-472702 and analytical batch 440-472816 was outside control limits. Sample matrix interference and non-homogeneity are suspected.

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 Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Annual Sediment Arroyo Simi-Frontier Par

TestAmerica Job ID: 440-209578-1

**Client Sample ID: Arroyo\_Simi\_Sed\_20180424**

**Lab Sample ID: 440-209578-1**

**Date Collected: 04/24/18 07:30**

**Matrix: Solid**

**Date Received: 04/24/18 18:10**

## 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		04/26/18 17:23	04/27/18 12:49	1
4,4'-DDE	ND		5.0	1.5	ug/Kg		04/26/18 17:23	04/27/18 12:49	1
4,4'-DDT	ND		5.0	1.5	ug/Kg		04/26/18 17:23	04/27/18 12:49	1
Chlordane (technical)	ND		50	9.9	ug/Kg		04/26/18 17:23	04/27/18 12:49	1
Dieldrin	ND		5.0	1.5	ug/Kg		04/26/18 17:23	04/27/18 12:49	1
Toxaphene	ND		200	50	ug/Kg		04/26/18 17:23	04/27/18 12:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	45		45 - 120	04/26/18 17:23	04/27/18 12:49	1
Tetrachloro-m-xylene	55		35 - 115	04/26/18 17:23	04/27/18 12:49	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	710		100	33	mg/Kg		05/03/18 18:35	05/04/18 16:08	1
Ammonia (as N)	7.67	J,DX	9.99	2.00	mg/Kg		04/26/18 10:55	04/27/18 08:00	1



# Method Summary

Client: Haley & Aldrich, Inc.  
 Project/Site: Annual Sediment Arroyo Simi-Frontier Par

TestAmerica Job ID: 440-209578-1

Method	Method Description	Protocol	Laboratory
8081A	Organochlorine Pesticides (GC)	SW846	TAL IRV
9060	Organic Carbon, Total (TOC)	SW846	TAL SL
SM 2540G	Total, Fixed, and Volatile Solids	SM	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
None	Soil Preparation, Dry and Grind	None	TAL SL
SM 4500 NH3 B	Distillation, Ammonia	SM	TAL IRV

**Protocol References:**

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, 5730 Central Crest Street, Houston, TX 77092, TEL (713)316-1800

SC0103 = Eurofins Lancaster Laboratories Env LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

# Lab Chronicle

Client: Haley & Aldrich, Inc.  
 Project/Site: Annual Sediment Arroyo Simi-Frontier Par

TestAmerica Job ID: 440-209578-1

**Client Sample ID: Arroyo\_Simi\_Sed\_20180424**

**Lab Sample ID: 440-209578-1**

**Date Collected: 04/24/18 07:30**

**Matrix: Solid**

**Date Received: 04/24/18 18:10**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.13 g	2 mL	472702	04/26/18 17:23	VA	TAL IRV
Total/NA	Analysis	8081A		1			472816	04/27/18 12:49	D1D	TAL IRV
Total/NA	Prep	None			96.5 mg	100 mg	364062	05/03/18 18:35	BLH	TAL SL
Total/NA	Analysis	9060		1	96.5 mg	100 mg	364103	05/04/18 16:08	BLH	TAL SL
Total/NA	Analysis	SM 2540G		1			472459	04/25/18 17:14	HTL	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			2.5013 g	50 mL	472587	04/26/18 10:55	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			472818	04/27/18 08:00	YZ	TAL IRV

**Laboratory References:**

- ABC = Aquatic Bioassay - Ventura, CA, 29 North Olive Street, Ventura, CA 93001
- SC0028 = PTS Laboratories, Inc, 5730 Central Crest Street, Houston, TX 77092, TEL (713)316-1800
- SC0103 = Eurofins Lancaster Laboratories Env LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300
- TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
- TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Annual Sediment Arroyo Simi-Frontier Par

TestAmerica Job ID: 440-209578-1

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

**Lab Sample ID: MB 440-472702/1-A**

**Matrix: Solid**

**Analysis Batch: 472816**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 472702**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		5.0	1.5	ug/Kg		04/26/18 17:23	04/27/18 09:38	1
4,4'-DDE	ND		5.0	1.5	ug/Kg		04/26/18 17:23	04/27/18 09:38	1
4,4'-DDT	ND		5.0	1.5	ug/Kg		04/26/18 17:23	04/27/18 09:38	1
Chlordane (technical)	ND		50	10	ug/Kg		04/26/18 17:23	04/27/18 09:38	1
Dieldrin	ND		5.0	1.5	ug/Kg		04/26/18 17:23	04/27/18 09:38	1
Toxaphene	ND		200	50	ug/Kg		04/26/18 17:23	04/27/18 09:38	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	77		45 - 120	04/26/18 17:23	04/27/18 09:38	1
Tetrachloro-m-xylene	86		35 - 115	04/26/18 17:23	04/27/18 09:38	1

**Lab Sample ID: LCS 440-472702/2-A**

**Matrix: Solid**

**Analysis Batch: 472816**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 472702**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
4,4'-DDD	13.3	11.3		ug/Kg		85	59 - 118
4,4'-DDE	13.3	11.7		ug/Kg		88	55 - 115
4,4'-DDT	13.3	11.3		ug/Kg		85	51 - 131
cis-Chlordane	13.3	12.2		ug/Kg		91	56 - 115
trans-Chlordane	13.3	12.0		ug/Kg		90	32 - 143
Dieldrin	13.3	13.0		ug/Kg		98	57 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	85		45 - 120
Tetrachloro-m-xylene	84		35 - 115

**Lab Sample ID: 440-209578-1 MS**

**Matrix: Solid**

**Analysis Batch: 472816**

**Client Sample ID: Arroyo\_Simi\_Sed\_20180424**

**Prep Type: Total/NA**

**Prep Batch: 472702**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
4,4'-DDD	ND		13.3	6.26	PI	ug/Kg		47	40 - 130
4,4'-DDE	ND		13.3	6.49	PI	ug/Kg		49	35 - 130
4,4'-DDT	ND		13.3	5.68	PI	ug/Kg		43	35 - 130
Dieldrin	ND		13.3	7.11	PI	ug/Kg		53	40 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	43	LG	45 - 120
Tetrachloro-m-xylene	74		35 - 115

**Lab Sample ID: 440-209578-1 MSD**

**Matrix: Solid**

**Analysis Batch: 472816**

**Client Sample ID: Arroyo\_Simi\_Sed\_20180424**

**Prep Type: Total/NA**

**Prep Batch: 472702**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
4,4'-DDD	ND		13.2	8.76	PI BA	ug/Kg		66	40 - 130	33	30

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Annual Sediment Arroyo Simi-Frontier Par

TestAmerica Job ID: 440-209578-1

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

**Lab Sample ID: 440-209578-1 MSD**  
**Matrix: Solid**  
**Analysis Batch: 472816**

**Client Sample ID: Arroyo\_Simi\_Sed\_20180424**  
**Prep Type: Total/NA**  
**Prep Batch: 472702**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier		Result	Qualifier						
4,4'-DDE	ND		13.2	8.33	PI	ug/Kg		63	35 - 130	25	30
4,4'-DDT	ND		13.2	7.28	PI	ug/Kg		55	35 - 130	25	30
Dieldrin	ND		13.2	9.48	PI	ug/Kg		72	40 - 125	29	30
<b>Surrogate</b>	<b>MSD</b>	<b>MSD</b>	<b>Limits</b>								
	<b>%Recovery</b>	<b>Qualifier</b>									
DCB Decachlorobiphenyl (Surr)	60		45 - 120								
Tetrachloro-m-xylene	89		35 - 115								

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

**Lab Sample ID: MB 160-364062/1-A**  
**Matrix: Solid**  
**Analysis Batch: 364103**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 364062**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Organic Carbon	ND		100	33	mg/Kg		05/03/18 18:35	05/04/18 14:58	1

**Lab Sample ID: LCS 160-364062/2-A**  
**Matrix: Solid**  
**Analysis Batch: 364103**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 364062**

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.	Limits
		Result	Qualifier					
Total Organic Carbon	6050	4720		mg/Kg		78	49 - 117	

**Lab Sample ID: 440-209578-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 364103**

**Client Sample ID: Arroyo\_Simi\_Sed\_20180424**  
**Prep Type: Total/NA**  
**Prep Batch: 364062**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier		Result	Qualifier					
Total Organic Carbon	710		1000	2020		mg/Kg		132	50 - 150	

**Lab Sample ID: 440-209578-1 DU**  
**Matrix: Solid**  
**Analysis Batch: 364103**

**Client Sample ID: Arroyo\_Simi\_Sed\_20180424**  
**Prep Type: Total/NA**  
**Prep Batch: 364062**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier		Result				
Total Organic Carbon	710		788		mg/Kg		11	30

## Method: SM 4500 NH3 D - Ammonia

**Lab Sample ID: MB 440-472587/2-A**  
**Matrix: Solid**  
**Analysis Batch: 472818**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 472587**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Ammonia (as N)	ND		10.0	2.00	mg/Kg		04/26/18 10:55	04/27/18 08:00	1

TestAmerica Irvine

# QC Sample Results

Client: Haley & Aldrich, Inc.  
 Project/Site: Annual Sediment Arroyo Simi-Frontier Par

TestAmerica Job ID: 440-209578-1

## Method: SM 4500 NH3 D - Ammonia (Continued)

**Lab Sample ID: LCS 440-472587/1-A**  
**Matrix: Solid**  
**Analysis Batch: 472818**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 472587**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	50.0	46.50		mg/Kg		93	85 - 115

**Lab Sample ID: 440-209578-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 472818**

**Client Sample ID: Arroyo\_Simi\_Sed\_20180424**  
**Prep Type: Total/NA**  
**Prep Batch: 472587**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	7.67	J,DX	50.0	55.67		mg/Kg		96	75 - 125

**Lab Sample ID: 440-209578-1 MSD**  
**Matrix: Solid**  
**Analysis Batch: 472818**

**Client Sample ID: Arroyo\_Simi\_Sed\_20180424**  
**Prep Type: Total/NA**  
**Prep Batch: 472587**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Ammonia (as N)	7.67	J,DX	50.0	51.80		mg/Kg		88	75 - 125	7	15

# QC Association Summary

Client: Haley & Aldrich, Inc.  
Project/Site: Annual Sediment Arroyo Simi-Frontier Par

TestAmerica Job ID: 440-209578-1

## GC Semi VOA

### Prep Batch: 472702

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-209578-1	Arroyo_Simi_Sed_20180424	Total/NA	Solid	3546	
MB 440-472702/1-A	Method Blank	Total/NA	Solid	3546	
LCS 440-472702/2-A	Lab Control Sample	Total/NA	Solid	3546	
440-209578-1 MS	Arroyo_Simi_Sed_20180424	Total/NA	Solid	3546	
440-209578-1 MSD	Arroyo_Simi_Sed_20180424	Total/NA	Solid	3546	

### Analysis Batch: 472816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-209578-1	Arroyo_Simi_Sed_20180424	Total/NA	Solid	8081A	472702
MB 440-472702/1-A	Method Blank	Total/NA	Solid	8081A	472702
LCS 440-472702/2-A	Lab Control Sample	Total/NA	Solid	8081A	472702
440-209578-1 MS	Arroyo_Simi_Sed_20180424	Total/NA	Solid	8081A	472702
440-209578-1 MSD	Arroyo_Simi_Sed_20180424	Total/NA	Solid	8081A	472702

## General Chemistry

### Prep Batch: 364062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-209578-1	Arroyo_Simi_Sed_20180424	Total/NA	Solid	None	
MB 160-364062/1-A	Method Blank	Total/NA	Solid	None	
LCS 160-364062/2-A	Lab Control Sample	Total/NA	Solid	None	
440-209578-1 MS	Arroyo_Simi_Sed_20180424	Total/NA	Solid	None	
440-209578-1 DU	Arroyo_Simi_Sed_20180424	Total/NA	Solid	None	

### Analysis Batch: 364103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-209578-1	Arroyo_Simi_Sed_20180424	Total/NA	Solid	9060	364062
MB 160-364062/1-A	Method Blank	Total/NA	Solid	9060	364062
LCS 160-364062/2-A	Lab Control Sample	Total/NA	Solid	9060	364062
440-209578-1 MS	Arroyo_Simi_Sed_20180424	Total/NA	Solid	9060	364062
440-209578-1 DU	Arroyo_Simi_Sed_20180424	Total/NA	Solid	9060	364062

### Analysis Batch: 472459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-209578-1	Arroyo_Simi_Sed_20180424	Total/NA	Solid	SM 2540G	
MB 440-472459/1	Method Blank	Total/NA	Solid	SM 2540G	
440-209578-1 DU	Arroyo_Simi_Sed_20180424	Total/NA	Solid	SM 2540G	

### Prep Batch: 472587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-209578-1	Arroyo_Simi_Sed_20180424	Total/NA	Solid	SM 4500 NH3 B	
MB 440-472587/2-A	Method Blank	Total/NA	Solid	SM 4500 NH3 B	
LCS 440-472587/1-A	Lab Control Sample	Total/NA	Solid	SM 4500 NH3 B	
440-209578-1 MS	Arroyo_Simi_Sed_20180424	Total/NA	Solid	SM 4500 NH3 B	
440-209578-1 MSD	Arroyo_Simi_Sed_20180424	Total/NA	Solid	SM 4500 NH3 B	

### Analysis Batch: 472818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-209578-1	Arroyo_Simi_Sed_20180424	Total/NA	Solid	SM 4500 NH3 D	472587
MB 440-472587/2-A	Method Blank	Total/NA	Solid	SM 4500 NH3 D	472587

TestAmerica Irvine

# QC Association Summary

Client: Haley & Aldrich, Inc.  
Project/Site: Annual Sediment Arroyo Simi-Frontier Par

TestAmerica Job ID: 440-209578-1

## General Chemistry (Continued)

### Analysis Batch: 472818 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-472587/1-A	Lab Control Sample	Total/NA	Solid	SM 4500 NH3 D	472587
440-209578-1 MS	Arroyo_Simi_Sed_20180424	Total/NA	Solid	SM 4500 NH3 D	472587
440-209578-1 MSD	Arroyo_Simi_Sed_20180424	Total/NA	Solid	SM 4500 NH3 D	472587

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# Definitions/Glossary

Client: Haley & Aldrich, Inc.  
Project/Site: Annual Sediment Arroyo Simi-Frontier Par

TestAmerica Job ID: 440-209578-1

## Qualifiers

### GC Semi VOA

Qualifier	Qualifier Description
PI	Primary and confirm results varied by > than 40% RPD
LG	LG=Surrogate recovery below the acceptance limits
BA	Relative percent difference out of control

### 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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	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.  
 Project/Site: Annual Sediment Arroyo Simi-Frontier Par

TestAmerica Job ID: 440-209578-1

## Laboratory: 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 accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
SM 2540G		Solid	Percent Moisture
SM 4500 NH3 D	SM 4500 NH3 B	Solid	Ammonia (as N)

## Laboratory: TestAmerica St. Louis

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	State Program	10	MO00054	06-30-19
ANAB	DoD ELAP		L2305	04-06-19
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	06-30-19
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-19
Illinois	NELAP	5	200023	11-30-18
Iowa	State Program	7	373	12-01-18
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18
Michigan	State Program	5	9005	06-30-18 *
Missouri	State Program	7	780	06-30-18 *
Nevada	State Program	9	MO000542018-1	07-31-18 *
New Jersey	NELAP	2	MO002	06-30-19
New York	NELAP	2	11616	03-31-19
North Dakota	State Program	8	R207	06-30-18 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18 *
Pennsylvania	NELAP	3	68-00540	02-28-19
South Carolina	State Program	4	85002001	06-30-18 *
Texas	NELAP	6	T104704193-17-11	07-31-18 *
US Fish & Wildlife	Federal		058448	07-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18 *
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-18
West Virginia DEP	State Program	3	381	08-31-18 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.



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

April 27, 2018

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

Re: PTS File No: 48089  
Project Name: Boeing NPDES SSFL Outfalls  
Project Number: 44009879  
COC Number: 440-121373.1  
Particle Size Analyses – ASTM D422

Dear Patel Urvashi:

Please find enclosed report for Physical Properties analyses conducted upon a sample received from the above referenced project.

All analyses were performed by ASTM D4464 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 myself or Emeka Anazodo at (713) 316-1800.

Sincerely,  
PTS Laboratories, Inc.

*C.A. Umeh*

Chidi Umeh  
Flow Laboratory Supervisor

Encl.

# PTS Laboratories

Project Name: Boeing NPDES SSFL outfalls  
 Project Number: 44009879

PTS File No: 48089  
 Client: TestAmerica Irvine

## TEST PROGRAM - 20180426

CORE ID	Depth ft.	Core Recovery ft.	Grain Size Analysis ASTM D422/D4464				Comments
Date Received: 20180426		Grab	Grab				
Arroyo_SimiSed_20180424(440-209578-1)	n/a	Grab	X				1No. 8oz Glass Jar
<b>TOTALS:</b>			1				1

**Laboratory Test Program Notes**

Contaminant identification: \_\_\_\_\_

Standard TAT for basic analysis is 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: Boeing NPDES SSFL outfalls  
 PROJECT NO: 44009879

Sample 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	
Arroyo_ SimiSed_20180424(440-209578-1)	N/A	Medium sand	0.705	5.86	9.29	71.89	12.83	0.13

(1) Based on Mean from Trask

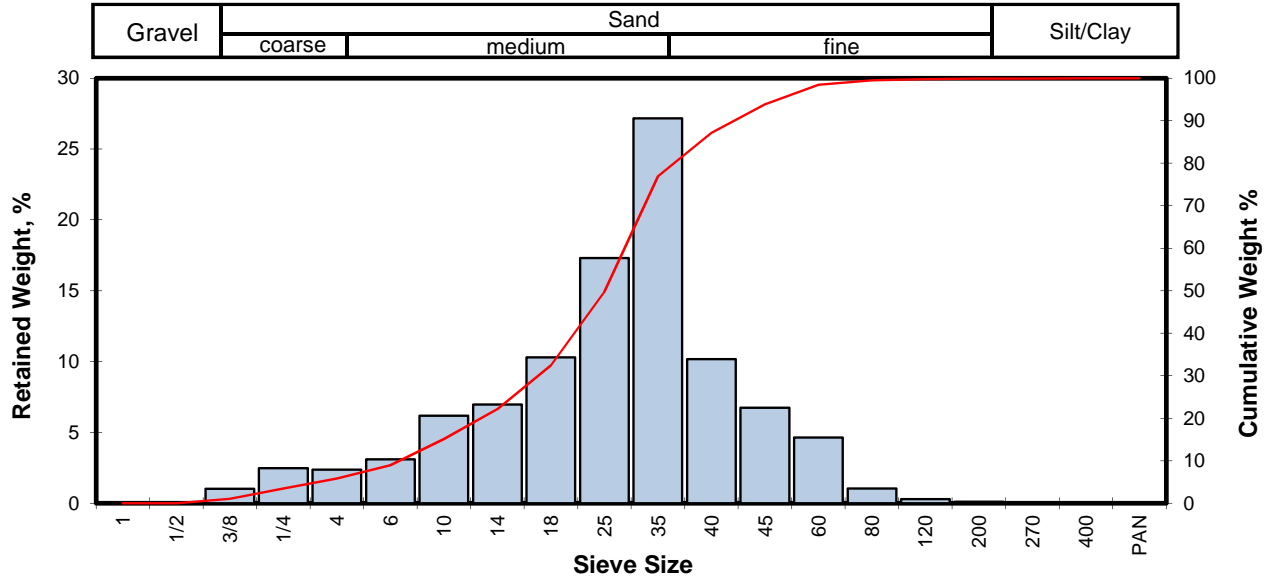


# PTS Laboratories, Inc.

## Sieve Analysis Results - ASTM D422

Client: TestAmerica Irvine  
 Project: Boeing NPDES SSFL outfalls  
 Project No: 44009879

PTS File No: 48089  
 Sample ID: 180424(440-209578-1)  
 Depth, ft: N/A



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
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	1.92	1.02	1.02
0.2500	6.351	-2.67	1/4	4.67	2.47	3.49
0.1873	4.757	-2.25	4	4.46	2.36	5.86
0.1324	3.364	-1.75	6	5.87	3.11	8.97
0.0787	2.000	-1.00	10	11.67	6.18	15.15
0.0557	1.414	-0.50	14	13.15	6.97	22.12
0.0394	1.000	0.00	18	19.44	10.30	32.42
0.0278	0.707	0.50	25	32.64	17.30	49.72
0.0197	0.500	1.00	35	51.25	27.16	76.87
0.0166	0.420	1.25	40	19.19	10.17	87.04
0.0139	0.354	1.50	45	12.73	6.75	93.79
0.0098	0.250	2.00	60	8.74	4.63	98.42
0.0070	0.177	2.50	80	1.98	1.05	99.47
0.0049	0.125	3.00	120	0.55	0.29	99.76
0.0029	0.074	3.75	200	0.21	0.11	99.87
0.0021	0.053	4.25	270	0.10	0.05	99.93
0.0015	0.037	4.75	400	0.06	0.03	99.96
			PAN	0.08	0.04	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-2.40	0.2079	5.282
10	-1.62	0.1214	3.084
16	-0.94	0.0755	1.917
25	-0.36	0.0505	1.284
40	0.22	0.0338	0.859
50	0.51	0.0277	0.705
60	0.69	0.0244	0.620
75	0.97	0.0202	0.512
84	1.18	0.0174	0.443
90	1.36	0.0153	0.390
95	1.63	0.0127	0.323

Measure	Trask	Inman	Folk-Ward
Median, phi	0.51	0.51	0.51
Median, in.	0.0277	0.0277	0.0277
Median, mm	0.705	0.705	0.705
Mean, phi	0.16	0.12	0.25
Mean, in.	0.0353	0.0363	0.0332
Mean, mm	0.898	0.921	0.843
Sorting	1.583	1.057	1.139
Skewness	1.151	-0.366	-0.404
Kurtosis	0.143	0.907	1.246

Grain Size Description: Medium sand (ASTM-USCS Scale) (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	5.86
Coarse Sand	10	9.29
Medium Sand	40	71.89
Fine Sand	200	12.83
Silt/Clay	<200	0.13
Total		100

TOTALS 188.71 100.00 100.00

# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Lab PM: Patel, Urvashi		Carrier Tracking No(e):	
Client Contact: Shipping/Receiving		Phone: urvashi.patel@testamericainc.com		COC No: 440-121373.1	
Company: PTS Laboratories, Inc.		Accreditations Required (See note): State Program - California		Page: Page 1 of 1	
Address: 5730 Central Crest Street, Houston, TX, 77092		Due Date Requested: 5/2/2018		Job #: 440-209578-1	
Phone: 713-316-1800(Tel)		TAT Requested (days):		Preservation Codes:	
Email:		PO #:		A - HCl	
WO #:		Project #:		M - Hexane	
Project Name: Boeing NPDES SSFL outfalls		SSOW#:		N - None	
Site:		Sample Date: 4/24/18		O - AsNaO2	
Sample Identification - Client ID (Lab ID)		Sample Time: 07:30 Pacific		P - Na2O4S	
Arroyo_Simi-Sed_20180424 (440-209578-1)		Sample Type (C=comp, G=grab)		Q - NaHSO4	
		Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)		R - Na2SO3	
		Preservation Code:		S - H2SO4	
		Solid		T - TSP Dodecahydrate	
		Field Filtered Sample (Yes or No)		U - Acetone	
		X		V - MCAA	
		Perform MS/MSD (Yes or No)		W - pH 4-5	
		X		L - EDA	
		SUB (Particle Size)/ Particle Size		Other:	
				48089	
		Total Number of Containers		Special Instructions/Note:	
		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  
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2  
 Special Instructions/QC Requirements:

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For Months

Empty Kit Relinquished by:	Date/Time:	Method of Shipment:
Relinquished by:	4/26/18 9:20	
Relinquished by:	Date/Time:	Received by: <i>[Signature]</i>
Relinquished by:	Date/Time:	Company: PTS LABS. INC
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Company:
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 9.6°C





## 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 07, 2018 12:57

### Project: Boeing NPDES SSFL Outfalls

Account #: 41440  
Group Number: 1936441  
SDG: SSF09  
PO Number: 44009879  
State of Sample Origin: CA

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Test America

Attn: Urvashi Patel

Respectfully Submitted,



Kay Hower

(717) 556-7364



### SAMPLE INFORMATION

Client Sample Description

Sample Collection  
Date/Time

ELLE#

Arroyo_Simi-Sed_20180424 (440-209578-1) Soil	04/24/2018 07:30	9578568
Arroyo_Simi-Sed_20180424 (440-209578-1MS) Soil	04/24/2018 07:30	9578569
Arroyo_Simi-Sed_20180424 (440-209578-1MSD) Soil	04/24/2018 07:30	9578570

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





**Sample Description:** Arroyo\_Simi-Sed\_20180424 (440-209578-1) Soil  
Boeing NPDES SSFL Outfalls

**Test America**  
**ELLE Sample #:** SW 9578568  
**ELLE Group #:** 1936441  
**Matrix:** Soil

**Project Name:** Boeing NPDES SSFL Outfalls

**Submittal Date/Time:** 04/26/2018 09:55  
**Collection Date/Time:** 04/24/2018 07:30  
**SDG#:** SSF09-01BKG

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>PCBs</b>		<b>SW-846 8082</b>	<b>ug/kg</b>	<b>ug/kg</b>	<b>ug/kg</b>	
10736	PCB-1016	12674-11-2	N.D. D1	2.5	22	1
10736	PCB-1221	11104-28-2	N.D. D1	2.5	22	1
10736	PCB-1232	11141-16-5	N.D. D1	2.5	22	1
10736	PCB-1242	53469-21-9	N.D. D1	2.5	22	1
10736	PCB-1248	12672-29-6	N.D. D1	2.5	22	1
10736	PCB-1254	11097-69-1	N.D. D1	3.3	22	1
10736	PCB-1260	11096-82-5	N.D. D1	3.3	22	1

**Wet Chemistry**

**SM 2540 G-1997**  
**%Moisture Calc**

CAT No.	Analysis Name	Method	Result	Detection Limit*	Limit of Quantitation	Dilution Factor
00111	Moisture	n.a.	21.7	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**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	181170018A	04/30/2018 05:21	Richard A Shober	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	181170018A	04/28/2018 10:00	Michelle A Newswanger	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18117820002B	04/27/2018 10:55	William C Schwebel	1

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

**Sample Description:** Arroyo\_Simi-Sed\_20180424 (440-209578-1MS) Soil  
Boeing NPDES SSFL Outfalls

**Test America**  
**ELLE Sample #:** SW 9578569  
**ELLE Group #:** 1936441  
**Matrix:** Soil

**Project Name:** Boeing NPDES SSFL Outfalls

**Submittal Date/Time:** 04/26/2018 09:55  
**Collection Date/Time:** 04/24/2018 07:30  
**SDG#:** SSF09-01MS

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>PCBs</b>						
		<b>SW-846 8082</b>	<b>ug/kg</b>	<b>ug/kg</b>	<b>ug/kg</b>	
10736	PCB-1016	12674-11-2	190 D2	2.5	21	1
10736	PCB-1221	11104-28-2	N.D. D1	2.5	21	1
10736	PCB-1232	11141-16-5	N.D. D1	2.5	21	1
10736	PCB-1242	53469-21-9	N.D. D1	2.5	21	1
10736	PCB-1248	12672-29-6	N.D. D1	2.5	21	1
10736	PCB-1254	11097-69-1	N.D. D1	3.3	21	1
10736	PCB-1260	11096-82-5	200 D1	3.3	21	1
<b>Wet Chemistry</b>						
		<b>SM 2540 G-1997</b>	<b>%</b>	<b>%</b>	<b>%</b>	
		<b>%Moisture Calc</b>				
00118	Moisture	n.a.	21.7	0.50	0.50	1

### Sample Comments

CA ELAP Lab Certification No. 2792

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### 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	181170018A	04/30/2018 05:33	Richard A Shober	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	181170018A	04/28/2018 10:00	Michelle A Newswanger	1
00118	Moisture	SM 2540 G-1997 %Moisture Calc	1	18117820002B	04/27/2018 10:55	William C Schwebel	1

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

**Sample Description:** Arroyo\_Simi-Sed\_20180424 (440-209578-1MSD) Soil  
Boeing NPDES SSFL Outfalls

**Test America**  
**ELLE Sample #:** SW 9578570  
**ELLE Group #:** 1936441  
**Matrix:** Soil

**Project Name:** Boeing NPDES SSFL Outfalls

**Submittal Date/Time:** 04/26/2018 09:55  
**Collection Date/Time:** 04/24/2018 07:30  
**SDG#:** SSF09-01MSD

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>PCBs</b>		<b>SW-846 8082</b>	<b>ug/kg</b>	<b>ug/kg</b>	<b>ug/kg</b>	
10736	PCB-1016	12674-11-2	190 D1	2.5	22	1
10736	PCB-1221	11104-28-2	N.D. D1	2.5	22	1
10736	PCB-1232	11141-16-5	N.D. D1	2.5	22	1
10736	PCB-1242	53469-21-9	N.D. D1	2.5	22	1
10736	PCB-1248	12672-29-6	N.D. D1	2.5	22	1
10736	PCB-1254	11097-69-1	N.D. D1	3.3	22	1
10736	PCB-1260	11096-82-5	230 D1	3.3	22	1

**Wet Chemistry**

**SM 2540 G-1997**  
**%Moisture Calc**

CAT No.	Analysis Name	Result	Method	Dilution Factor
00118	Moisture	21.7	n.a.	1
00121	Moisture Duplicate	21.1	n.a.	1

The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.

**Sample Comments**

CA ELAP Lab Certification No. 2792

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**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	181170018A	04/30/2018 05:44	Richard A Shober	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	181170018A	04/28/2018 10:00	Michelle A Newswanger	1
00118	Moisture	SM 2540 G-1997 %Moisture Calc	1	18117820002B	04/27/2018 10:55	William C Schwebel	1
00121	Moisture Duplicate	SM 2540 G-1997 %Moisture Calc	1	18117820002B	04/27/2018 10:55	William C Schwebel	1

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

## Quality Control Summary

Client Name: Test America  
Reported: 05/07/2018 12:57

Group Number: 1936441

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 ug/kg	MDL** ug/kg	LOQ ug/kg
Batch number: 181170018A	Sample number(s): 9578568-9578570		
PCB-1016	N.D.	2.0	17
PCB-1221	N.D.	2.0	17
PCB-1232	N.D.	2.0	17
PCB-1242	N.D.	2.0	17
PCB-1248	N.D.	2.0	17
PCB-1254	N.D.	2.6	17
PCB-1260	N.D.	2.6	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: 181170018A	Sample number(s): 9578568-9578570								
PCB-1016	167	157.61			94		76-121		
PCB-1260	168	164.24			98		79-130		
	%	%	%	%					
Batch number: 18117820002B	Sample number(s): 9578568-9578570								
Moisture	89.5	89.36			100		99-101		
Moisture	89.5	89.36			100		99-101		
Moisture Duplicate	89.5	89.36			100		99-101		

### MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/kg	MS Spike Added ug/kg	MS Conc ug/kg	MSD Spike Added ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 181170018A	Sample number(s): 9578568-9578570 UNSPK: 9578568									
PCB-1016	N.D.	164	145.23	165	149.55	89	91	76-121	3	50
PCB-1260	N.D.	166	159.37	167	183.19	96	110	79-130	14	50

\*- 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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

## Quality Control Summary

Client Name: Test America  
Reported: 05/07/2018 12:57

Group Number: 1936441

### MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/kg	MS Spike Added ug/kg	MS Conc ug/kg	MSD Spike Added ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
---------------	---------------------	----------------------	---------------	-----------------------	----------------	---------	----------	---------------	-----	---------

### Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc %	DUP Conc %	DUP RPD	DUP RPD Max
Batch number: 18117820002B	Sample number(s): 9578568-9578570 BKG: 9578568, P578568			
Moisture	21.68	21.06	3	5
Moisture	21.68	21.06	3	5
Moisture Duplicate	21.68	21.06	3	5

### 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: 181170018A

	Tetrachloro-m-xylene-D1	Decachlorobiphenyl-D1	Tetrachloro-m-xylene-D2	Decachlorobiphenyl-D2
9578568	90	92	94	77
9578569	97	98	99	86
9578570	99	102	99	97
Blank	99	97	99	92
LCS	106	96	108	95
MS	97	98	99	86
MSD	99	102	99	97
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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

41440/1936441/9578568-70

Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>	Sampler: Patel, Urvashi	Lab PM: Patel, Urvashi	Carrier Tracking No(s):	COC No: 440-121374.1
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 #: 440-209578-1
---	---	------------------------

Address: 2425 New Holland Pike, City: Lancaster State, Zip: PA, 17601 Phone: 717-656-2300(Tel) Email:	Due Date Requested: 5/4/2018 TAT Requested (days):	<b>Analysis Requested</b>				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:
Project Name: Boeing NPDES SSFL outfalls Site:	PO #: WO #:	Project #: 44009879 SSOW#:	Field Filtered Sample (Yes or No)	Perform: MS/MSD (Yes or No)	SUB (8082, L-PCB, Lancaster Labs)/ 8082LL-PCB- Lancaster Labs	Total Number of containers

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 (8082, L-PCB, Lancaster Labs)/ 8082LL-PCB- Lancaster Labs	Total Number of containers	Special Instructions/Note:
Arroyo_Simi-Sed_20180424 (440-209578-1)	4/24/18	07:30 Pacific		Solid	X	X		1	
Arroyo_Simi-Sed_20180424 (440-209578-1MS)	4/24/18	07:30 Pacific	MS	Solid	X	X		1	
Arroyo_Simi-Sed_20180424 (440-209578-1MSD)	4/24/18	07:30 Pacific	MSD	Solid	X	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.

<b>Possible Hazard Identification</b> Unconfirmed	<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b> <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months
Deliverable Requested: I, II, III, W, Other (specify)	Primary Deliverable Rank: 2
Empty Kit Relinquished by:	Special Instructions/QC Requirements:

Relinquished by:	Date/Time: 4/25/18 (07:00)	Company:	Received by:	Date/Time: 4/26/18 9:55	Company: FUE
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.6°C
--	-------------------	--



Client: Test America

**Delivery and Receipt Information**

Delivery Method: Fed Ex                      Arrival Timestamp: 04/26/2018 9:55  
 Number of Packages: 1                              Number of Projects: 1  
 State/Province of Origin: CA

**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:	Yes		

*Unpacked by Wyatt Shiffler (12792) at 14:44 on 04/26/2018*

**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	DT42-03	2.6	DT	Wet	Y	Loose	N

**Container Quantity Discrepancy Details**

Sample ID on COC	Container Qty. Received	Container Qty. on COC	Comments
Arroyo_Simi_20180424 _Grab_Extra	4	3	



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

<b>BMQL</b>	Below Minimum Quantitation Level	<b>mg</b>	milligram(s)
<b>C</b>	degrees Celsius	<b>mL</b>	milliliter(s)
<b>cfu</b>	colony forming units	<b>MPN</b>	Most Probable Number
<b>CP Units</b>	cobalt-chloroplatinate units	<b>N.D.</b>	non-detect
<b>F</b>	degrees Fahrenheit	<b>ng</b>	nanogram(s)
<b>g</b>	gram(s)	<b>NTU</b>	nephelometric turbidity units
<b>IU</b>	International Units	<b>pg/L</b>	picogram/liter
<b>kg</b>	kilogram(s)	<b>RL</b>	Reporting Limit
<b>L</b>	liter(s)	<b>TNTC</b>	Too Numerous To Count
<b>lb.</b>	pound(s)	<b>µg</b>	microgram(s)
<b>m3</b>	cubic meter(s)	<b>µL</b>	microliter(s)
<b>meq</b>	milliequivalents	<b>umhos/cm</b>	micromhos/cm
<b>&lt;</b>	less than		
<b>&gt;</b>	greater than		
<b>ppm</b>	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.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	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.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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.

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# 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 $\geq$ 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.
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.



May 14, 2018

Debby Wilson  
TestAmerica Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Dear Ms. Wilson:


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:	4/24/2018
ABC LAB. NO.:	TAM0417.210

### 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 Analytical Report**

Report Date: 14 May-18 10:44 (p 1 of 2)  
 Test Code: TAM0418.210e | 01-9589-6942

Eohaustorius 10-d Survival and Reburial Sediment Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 06-9072-4246	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2	Analyzed: 14 May-18 10:43	Analysis: Nonparametric-Two Sample	Official Results: Yes
Batch ID: 01-2480-0856	Test Type: Survival-Reburial	Analyst: Joe Freas	Start Date: 27 Apr-18 12:00	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 07 May-18 12:00	Species: Eohaustorius estuarius	Brine: Not Applicable	Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 01-6364-4259	Code: TAM0418.210e	Client: Test America	Sample Date: 24 Apr-18 07:30	Material: Sample Water	Project: 44009879
Receipt Date: 24 Apr-18 11:46	Source: Bioassay Report		Sample Age: 76h	Station: Arroyo Simi Sed 20180424 (440-209578-1)	

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**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
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			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	7.111	11.26	0.0285	Equal Variances
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
Distribution	D'Agostino Skewness Test	3.335	2.576	8.5E-04	Non-Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.4	0.3025	6.1E-05	Non-Normal Distribution
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	1.0000	0.9500	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	1.459	1.345	1.459	1.459
100		1.459	1.459	1.459	1.459	1.459



# CETIS Measurement Report

Report Date: 14 May-18 10:44 (p 1 of 1)  
 Test Code: TAM0418.210e | 01-9589-6942

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

<b>Batch ID:</b> 01-2480-0856	<b>Test Type:</b> Survival-Reburial	<b>Analyst:</b> Joe Freas
<b>Start Date:</b> 27 Apr-18 12:00	<b>Protocol:</b> EPA/600/R-94/025 (1994)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 07 May-18 12:00	<b>Species:</b> Eohaustorius estuarius	<b>Brine:</b> Not Applicable
<b>Duration:</b> 10d 0h	<b>Source:</b> Northwestern Aquatic Science, OR	<b>Age:</b>
<b>Sample ID:</b> 01-6364-4259	<b>Code:</b> TAM0418.210e	<b>Client:</b> Test America
<b>Sample Date:</b> 24 Apr-18 07:30	<b>Material:</b> Sample Water	<b>Project:</b> 44009879
<b>Receipt Date:</b> 24 Apr-18 11:46	<b>Source:</b> Bioassay Report	
<b>Sample Age:</b> 76h	<b>Station:</b> Arroyo Simi Sed 20180424 (440-209578-1)	

**Dissolved Oxygen-mg/L**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	9.95	9.315	10.59	9.9	10	0.05001	0.07073	0.71%	0
100		2	9.85	9.215	10.49	9.8	9.9	0.05	0.0707	0.72%	0
Overall		4	9.9	9.77	10.03	9.8	10	0.04082	0.08165	0.82%	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	7.8	7.787	7.813	7.8	7.8	0	0	0.0%	0
Overall		4	7.85	7.758	7.942	7.8	7.9	0.02887	0.05773	0.74%	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%)

**Dissolved Oxygen-mg/L**

Conc-%	Code	1	2
0	N	9.9	10
100		9.8	9.9

**pH-Units**

Conc-%	Code	1	2
0	N	7.9	7.9
100		7.8	7.8

**Salinity-ppt**

Conc-%	Code	1	2
0	N	20	20
100		20	20

**Temperature-°C**

Conc-%	Code	1	2
0	N	14.8	14.9
100		14.8	14.9



May 14, 2018

Debby Wilson  
TestAmerica Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Dear Ms. Wilson:

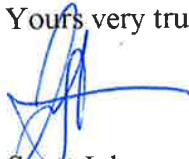
We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/R-95/136*. Results were as follows:

CLIENT:	TestAmerica
SAMPLE I.D.:	Arroyo Simi
DATE RECEIVED:	4/24/2018
ABC LAB. NO.:	TAM0418.210

**CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY**

NOEC =	100.00 %
TU <sub>c</sub> =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %
TST RESULT =	PASS

Yours very truly,

  
Scott Johnson  
Laboratory Director

**CETIS Summary Report**

Report Date: 14 May-18 10:49 (p 1 of 1)  
 Test Code: TAM0418.110m | 15-1670-4444

**Mussel Shell Development Test**

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 13-0192-1645	<b>Test Type:</b> Development-Survival	<b>Analyst:</b> Joe Freas
<b>Start Date:</b> 01 May-18 13:00	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 03 May-18 13:00	<b>Species:</b> Mytilis galloprovincialis	<b>Brine:</b>
<b>Duration:</b> 48h	<b>Source:</b> Carlsbad Aquafarms CA	<b>Age:</b>
<b>Sample ID:</b> 10-3800-7072	<b>Code:</b> TAM0418.210m	<b>Client:</b> Test America Irvine
<b>Sample Date:</b> 24 Apr-18 07:30	<b>Material:</b> Sample Water	<b>Project:</b> 44009879
<b>Receipt Date:</b> 24 Apr-18 11:46	<b>Source:</b> Bioassay Report	
<b>Sample Age:</b> 7d 5h	<b>Station:</b> Arroyo Simi Sed 20180424 (440-209578-1)	

**Single Comparison Summary**

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
03-1598-5177	Combined Proportion Normal	Equal Variance t Two-Sample Test	0.6659	100% passed combined proportion normal

**Combined Proportion Normal Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9829	0.9706	0.9951	0.9714	0.9952	0.0044	0.0099	1.00%	0.00%
100		5	0.9857	0.9739	0.9975	0.9714	0.9952	0.0043	0.0095	0.97%	-0.29%

**Combined Proportion Normal Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9952	0.9810	0.9762	0.9714	0.9905
100		0.9952	0.9714	0.9810	0.9905	0.9905

**Combined Proportion Normal Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	209/210	206/210	205/210	204/210	208/210
100		209/210	204/210	206/210	208/210	208/210



**CETIS Analytical Report**

Report Date: 14 May-18 10:49 (p 1 of 2)  
 Test Code: TAM0418.110m | 15-1670-4444

Mussel Shell Development Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 03-1598-5177	Endpoint: Combined Proportion Normal	CETIS Version: CETISv1.9.2			
Analyzed: 14 May-18 10:49	Analysis: Parametric-Two Sample	Official Results: Yes			
Batch ID: 13-0192-1645	Test Type: Development-Survival	Analyst: Joe Freas			
Start Date: 01 May-18 13:00	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Water			
Ending Date: 03 May-18 13:00	Species: Mytilis galloprovincialis	Brine:			
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:			
Sample ID: 10-3800-7072	Code: TAM0418.210m	Client: Test America Irvine			
Sample Date: 24 Apr-18 07:30	Material: Sample Water	Project: 44009879			
Receipt Date: 24 Apr-18 11:46	Source: Bioassay Report				
Sample Age: 7d 5h	Station: Arroyo Simi Sed 20180424 (440-209578-1)				

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed combined proportion normal	1.30%

Equal Variance t Two-Sample Test									
Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	-0.4448	1.86	0.048	8	CDF	0.6659	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0003269	0.0003269	1	0.1979	0.6682	Non-Significant Effect
Error	0.0132176	0.0016522	8			
Total	0.0135445		9			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Levene Equality of Variance Test	0.0488	11.26	0.8307	Equal Variances	
Variances	Mod Levene Equality of Variance Test	0.04883	13.75	0.8324	Equal Variances	
Variances	Variance Ratio F Test	1.11	23.15	0.9216	Equal Variances	
Distribution	Anderson-Darling A2 Normality Test	0.2694	3.878	0.7072	Normal Distribution	
Distribution	D'Agostino Skewness Test	0.06751	2.576	0.9462	Normal Distribution	
Distribution	Kolmogorov-Smirnov D Test	0.1697	0.3025	0.6643	Normal Distribution	
Distribution	Shapiro-Wilk W Normality Test	0.9525	0.7411	0.6981	Normal Distribution	

Combined Proportion Normal Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9829	0.9706	0.9951	0.9810	0.9714	0.9952	0.0044	1.00%	0.00%
100		5	0.9857	0.9739	0.9975	0.9905	0.9714	0.9952	0.0043	0.97%	-0.29%

Angular (Corrected) Transformed Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.445	1.393	1.497	1.432	1.401	1.502	0.01865	2.89%	0.00%
100		5	1.456	1.407	1.505	1.473	1.401	1.502	0.0177	2.72%	-0.79%

Combined Proportion Normal Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9952	0.9810	0.9762	0.9714	0.9905
100		0.9952	0.9714	0.9810	0.9905	0.9905

Angular (Corrected) Transformed Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.502	1.432	1.416	1.401	1.473
100		1.502	1.401	1.432	1.473	1.473

Combined Proportion Normal Binomials						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	209/210	206/210	205/210	204/210	208/210
100		209/210	204/210	206/210	208/210	208/210



# CETIS Measurement Report

Report Date: 14 May-18 10:49 (p 1 of 1)  
 Test Code: TAM0418.110m | 15-1670-4444

## Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 13-0192-1645	<b>Test Type:</b> Development-Survival	<b>Analyst:</b> Joe Freas
<b>Start Date:</b> 01 May-18 13:00	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 03 May-18 13:00	<b>Species:</b> Mytilis galloprovincialis	<b>Brine:</b>
<b>Duration:</b> 48h	<b>Source:</b> Carlsbad Aquafarms CA	<b>Age:</b>
<b>Sample ID:</b> 10-3800-7072	<b>Code:</b> TAM0418.210m	<b>Client:</b> Test America Irvine
<b>Sample Date:</b> 24 Apr-18 07:30	<b>Material:</b> Sample Water	<b>Project:</b> 44009879
<b>Receipt Date:</b> 24 Apr-18 11:46	<b>Source:</b> Bioassay Report	
<b>Sample Age:</b> 7d 5h	<b>Station:</b> Arroyo Simi Sed 20180424 (440-209578-1)	

### 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	8.529	11.07	9.7	9.9	0.1	0.1414	1.44%	0
Overall		4	9.825	9.673	9.977	9.7	9.9	0.04787	0.09574	0.97%	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	7.7	7.698	7.702	7.7	7.7	0	0	0.0%	0
Overall		4	7.8	7.616	7.984	7.7	7.9	0.05774	0.1155	1.48%	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	14.8	14.78	14.82	14.8	14.8	0	0	0.0%	0
100		2	14.8	14.78	14.82	14.8	14.8	0	0	0.0%	0
Overall		4	14.8	14.8	14.8	14.8	14.8	0	0	0.00%	0 (0%)

### Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	9.9	9.8
100		9.7	9.9

### pH-Units

Conc-%	Code	1	2
0	N	7.9	7.9
100		7.7	7.7

### Salinity-ppt

Conc-%	Code	1	2
0	N	34	34
100		34	34

### Temperature-°C

Conc-%	Code	1	2
0	N	14.8	14.8
100		14.8	14.8

TAMCA 18. 210e

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



**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING

**Chain of Custody Record**

<b>Client Information (Sub Contract Lab)</b>		Sampler: Patel, Urvashti		Lab PK: Patel, Urvashti		Carrier Tracking No(s):		COC No: 440-121367.1	
Client Contact: Shipping/Receiving		Phone: urvashti.patel@testamericainc.com		E-Mail: urvashti.patel@testamericainc.com		State of Origin: California		Page: Page 1 of 1	
Company: Aquatic Bioassay		Address: 29 North Olive Street, Ventura, CA, 93001		Phone: PO #: WO #:		Project #: 44009879		SSOW#: Boeing NPDES SSFL outfalls	
Due Date Requested: 5/2/2018		TAT Requested (days):		Field Filtered Sample (Yes or No):		Matrix (Hexane, None, AsNaO2, Zn Acetate, Nitric Acid, NaHSO4, MeOH, Amiclor, Ascorbic Acid, Ice, D-Water, MCAA, EDTA, PH 4-5, EDA, other (specify))		Preservation Codes: M - Hexane, N - None, O - AsNaO2, P - Zn Acetate, Q - Nitric Acid, R - NaHSO4, S - MeOH, T - Amiclor, U - Ascorbic Acid, V - Ice, W - D-Water, X - MCAA, Y - EDTA, Z - PH 4-5, Other (specify)	
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Preservation Code	
Arroyo_Simi-Sed_20180424 (440-209578-1)		4/24/18		07:30 Pacific		Solid		Solid	
Total Number of Containers		Field Filtered Sample (Yes or No)		Platform (MS/MS) (Yes or No)		SUB (Bioassay-Chronic 10day enhancers)		SUB (8-hour Bivalve Embryo toxicity) 48-hour	
4		X		X		X		X	
Special Instructions/Note:		sub to Aquatic Bioassay Consultants-send 4 1 liter wide mouth plastic containers							

**Analysis Requested**

Bivalve Embryo toxicity	
SUB (Bioassay-Chronic 10day enhancers)	
SUB (8-hour Bivalve Embryo toxicity) 48-hour	

**Special Instructions/Note:**

sub to Aquatic Bioassay Consultants-send 4 1 liter wide mouth plastic containers

**Possible Hazard Identification**

*Unconfirmed*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Custody Seals Intact: \_\_\_\_\_ Custody Seal No.: \_\_\_\_\_

Δ Yes Δ No

Method of Shipment: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Cooler Temperature(s) °C and Other Remarks: \_\_\_\_\_

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Special Instructions/QC Requirements:

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our 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/test/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.



WBC3004R

11/21/18

<b>Client Name/Address:</b> Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108		<b>Project:</b> Boeing-SSFL NPDES Permit 2015 Annual Sediment Arroyo Simi-Frontier Park		<b>Meter serial #</b> _____				
<b>Test America Contact:</b> Unvashi Patel 17461 Denan Ave Suite #100 Irvine CA 92614 Tel 949-260-3269 Cell 949-333-9055		<b>Project Manager:</b> Katherine Miller 520.289.8606, 520.904.6944 (cell)		<b>Field readings (Include units)</b> Time of readings: 0651 pH: 7.64 pH unit Temp: 17.6 °F DO = 6.23 mg/L Conductivity = 1840 µmhos/cm Velocity: 0-0 ft/sec				
<b>Test America's services under this CoC shall be performed in accordance with the T&amp;Cs within Blanket Service Agreement# 2015-18-TestAmerica by and between Haley &amp; Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories, Inc.</b>		<b>Field Manager:</b> Mark Dominick 978.234.5033, 818.599.0702 (cell)		<b>Field readings QC</b> Checked by: [Signature] Date/Time: 4-24-18/0654				
<b>Sampler:</b> Dan Smith/Daniel Cur	Sample ID: Arroyo_Sim_Sed_20180424	Sampling Date/Time: 4/24/2018 0730	Sample Matrix: SE	Container Type: 9 oz Jar 3	# of Cont: 3	Preservative: None	Bottle #: 165	MSMSD: Yes
				9 oz Jar 1		None		No
			SE	9 oz Jar 3	3	None	246	No
			SE	9 oz Jar 3	3	None	290	Yes
			SE	9 oz Jar 3	3	None	290	Yes
			SE	1L wide mouth Plastic	1	None	295	No
			SE	1L wide mouth Plastic	1	4C in the Dark	300	No
			SE	9 oz Jar 1	1	None	305	No
			SE	9 oz Jar 1	1	None	310	No

<b>ANALYSIS REQUIRED</b> Total Ammonia (SM4500-NH3-D) X Total Organic Carbon (9060) X PCBs (SW8082) X Chlordane, Dieldrin, Toxaphene, 4'-DDD, 4'-DDE, 4'-DDT (SW8081A) X 48-hour Bivalve Embryo Toxicity (Mytilus edulis or Crassostrea gigas) (EPA/95/136) X Chronic 10-day estuarine estuarine Toxicity (EPA/600/R-94/025) X % Moisture (2540G) X Particle Size Distribution (D422M) X	Comments: PCBs to Eurofins Keep sample in cooler in the dark until delivered to ABC Labs

Requisitioned By: [Signature] Date/Time: 4-24-18 10:05 Company: Haley & Aldrich	Received By: [Signature] Date/Time: 4-24-18 10:05 Company: Test America
Requisitioned By: [Signature] Date/Time: 4-24-18 13:37 Company: Test America	Received By: [Signature] Date/Time: 4-24-18 14:08 Company: Test America
Requisitioned By: [Signature] Date/Time: 4-24-18 18:10 Company: Test America	Received By: [Signature] Date/Time: 4-24-18 18:10 Company: Test America

Turn-around time (Check) 24 Hour <input checked="" type="checkbox"/> 72 Hour _____ 48 Hour _____ 5 Day _____ Normal _____	Trip Inaugury (Check) On Ice _____ Store samples for 6 months _____ Data Requirements (Check) No Level IV _____ All Level IV <input checked="" type="checkbox"/>
---	--



440-209578 Chain of Custody



CHAIN OF CUSTODY FORM

Test America

WBC300WR

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108		Project: Boeing-SSFL NPDES Permit 2015 At: Arroyo Sediment Arroyo Simi-Frontier Park		Meter serial #	
Test America Contact: Urvashti Patel 17461 Denan 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)		Field Readings Time of readings: 0651 pH: 7.64 pH unit Temp: 17.6 °F DO = 6.23 mg/L Conductivity = 1840 umhos/cm Velocity: 0.0 ft/sec	
Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)		ANALYSIS REQUIRED		Field readings QC Checked by: [Signature] Date/Time: 4-24-18/0654	
Sample Description: Arroyo Simi		Total Ammonia (SM4500-NH3-D)		Particle Size Distribution (D42M)	
Sample Matrix: SE		Total Organic Carbon (9060)		Chronic 10-day estuarine Toxicity (EPA800/R-94/025)	
Sampling Date/Time: 4/24/2018 0730		PCBs (SW8082)		48-hour Bivalve Embryo Toxicity (Mytilus edulis or Crassostrea gigas) (EPA8-95/136)	
Sample ID: Arroyo_Simi_Sed_20180424		Chlordane, Dieldrin, Toxaphene, 4,4-DDD, 4,4-DDE, 4,4-DDT (SW8081A)		% Moisture (2540G)	
Container Type: 9 oz Jar		Preservatives: None		Turn-around time (Check)	
Container Type: 9 oz Jar		Preservatives: None		24 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 10 Day <input type="checkbox"/> Normal <input type="checkbox"/>	
Container Type: 9 oz Jar		Preservatives: None		48 Hour <input type="checkbox"/> 5 Day <input type="checkbox"/>	
Container Type: 1L wide mouth Plastic		Preservatives: None		On ice <input type="checkbox"/>	
Container Type: 1L wide mouth Plastic		Preservatives: 4C in the Dark		Store samples for 6 months <input type="checkbox"/>	
Container Type: 9 oz Jar		Preservatives: None		Data Requirements (Check)	
Container Type: 9 oz Jar		Preservatives: None		No Level IV <input type="checkbox"/> All Level IV <input checked="" type="checkbox"/>	
Company: [Signature]		Date/Time: 4-24-18 1337		Date/Time: 4-24-18 18:10	
Company: [Signature]		Date/Time: 4-24-18 1337		Date/Time: 4-24-18 18:10	
Company: [Signature]		Date/Time: 4-24-18 1337		Date/Time: 4-24-18 18:10	

1.1/1.1  
 JK 506  
 1-5/1/15





# Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-209578-1

**Login Number: 209578**

**List Number: 1**

**Creator: Soderblom, Tim**

**List Source: TestAmerica Irvine**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





## Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-209578-1

**Login Number: 209578**

**List Number: 2**

**Creator: Taylor, Kristene N**

**List Source: TestAmerica St. Louis**

**List Creation: 04/26/18 05:03 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (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 Arroyo Simi**

**SAMPLE DELIVERY GROUP: 440-209580-1**

**Prepared for**  
Haley & Aldrich

**May 22, 2018**

MEC<sup>x</sup>, Inc.  
8864 Interchange Drive  
Houston, Texas 77054

[www.mecx.net](http://www.mecx.net)





**TABLE OF CONTENTS**

I. INTRODUCTION..... 1

II. Sample Management..... 2

III. EPA Methods 2340B —Hardness..... 6

    III.1. Holding Times ..... 6

    III.2. MS Tuning and Calibration..... 6

    III.3. Quality Control Samples ..... 6

        III.3.1. Method Blanks..... 6

        III.3.2. Interference Check Samples: ..... 6

        III.3.3. Laboratory Control Samples ..... 6

        III.3.4. Laboratory Duplicates:..... 6

        III.3.5. Matrix Spike/Matrix Spike Duplicate ..... 6

    III.4. Serial Dilution..... 6

    III.5. Internal Standards Performance..... 6

    III.6. Compound Quantification and Reported Detection Limits ..... 7

    III.7. Field QC Samples..... 7

        III.7.1. Field Blanks and Equipment Blanks ..... 7

        III.7.2. Field Duplicates ..... 7

IV. EPA Method 608 –Pesticides and PCBs ..... 7

    IV.1. Holding Times ..... 7

    IV.2. Calibration..... 7

    IV.3. Quality Control Samples ..... 7

        IV.3.1. Method Blanks..... 7

        IV.3.2. Laboratory Control Samples ..... 7

        IV.3.3. Surrogate Recovery..... 7

        IV.3.4. Matrix Spike/Matrix Spike Duplicate ..... 8

    IV.4. Field QC Samples..... 8



- IV.4.1. Field Blanks and Equipment Blanks ..... 8
- IV.4.2. Field Duplicates..... 8
- IV.5. Compound Identification ..... 8
- IV.6. Compound Quantification and Reported Detection Limits ..... 8
- IV.7. System Performance..... 8
  
- V. EPA METHODS 525.2— Semivolatile Organic Compounds (SVOCs)..... 8
  - V.1. Holding Times ..... 8
  - V.2. GC/MS Tuning and Calibration ..... 8
  - V.3. Quality Control Samples ..... 9
    - V.3.1. Method Blanks ..... 9
    - V.3.2. Laboratory Control Samples ..... 9
    - V.3.3. Surrogate Recovery..... 9
    - V.3.4. Matrix Spike/Matrix Spike Duplicate ..... 9
  - V.4. Field QC Samples..... 9
    - V.4.1. Field Blanks and Equipment Blanks ..... 9
    - V.4.2. Field Duplicates ..... 9
  - V.5. Internal Standards Performance..... 9
  - V.6. Compound Identification ..... 9
  - V.7. Compound Quantification and Reported Detection Limits ..... 9
  - V.8. Tentatively Identified Compounds (TICs) ..... 9
  - V.9. System Performance..... 9

**TABLES**

- 1 – Sample Identification
- 2 – Data Qualifier Reference
- 3 - Reason Code Reference



**I. INTRODUCTION**

---

**Task Order Title:** Boeing SSFL Arroyo Simi

**Contract:** 40458-078 and 40458-083

**MEC<sup>x</sup> Project No.:** 1272.003D.01 002

**Sample Delivery Group:** 440-209580-1

**Project Manager:** K. Miller

**Matrix:** Water

**QC Level:** IV

**No. of Samples:** 1

**No. of Reanalyses/Dilutions:** 0

**Laboratory:** TestAmerica - Irvine

**TABLE 1 - SAMPLE IDENTIFICATION**

Sample Name	Lab Sample Name	Matrix	Collection	Method
Arroyo_Simi_20180424_Grab	440-209580-1	Water	4/24/2018 7:10:00 AM	525.2, 608, SM2340



## II. SAMPLE MANAGEMENT

---

According to the case narrative, sample condition upon receipt form and the chain-of-custody (COC) provided by the laboratory for sample delivery group (SDG) 440-209580-1:

- The laboratory received the sample in this sample delivery group (SDG) on ice and within the temperature limits of less than 6 degrees Celsius ( $^{\circ}\text{C}$ ) and greater than  $0^{\circ}\text{C}$ .
- The laboratory received the sample containers intact and properly preserved, as applicable.
- Field and laboratory personnel signed and dated the original COC. Relinquish and receipt signatures were not present on the transfer COC from TA-Irvine to Weck.
- According to the sample receipt form, custody seals were absent, however; there was no evidence of sample compromise or tampering. Custody seals were present and intact upon receipt at Lancaster. Information regarding custody seals was not provided by Weck.



**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.	Not applicable.
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.
+	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.





Reason Code	Organic	Inorganic
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.
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. EPA METHODS 2340B —HARDNESS

---

Marcia Hilchey of MEC<sup>x</sup> reviewed the SDG on May 22, 2018.

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC<sup>x</sup> Data Validation Procedure for Metals (DVP-5, Rev. 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 calcium and magnesium, were met.

#### III.2. MS TUNING AND CALIBRATION

Instrument tuning review is not applicable to this method.

QAPP calibration criteria were met. A blank and three standards were used for calibration of calcium and magnesium. The initial calibration *r* values were  $\geq 0.995$ . CRQL recoveries were within the laboratory control limits of 50-150%. ICV and CCV recoveries were within control limits of 90-110%.

#### III.3. QUALITY CONTROL SAMPLES

##### III.3.1. METHOD BLANKS

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

##### III.3.2. INTERFERENCE CHECK SAMPLES:

ICP ICSAB recoveries were within the control limits of 80-120% or  $\pm 2x$  the reporting limit, whichever is greater. The target analytes were spiked to the ICSA as interferences; therefore, matrix interference was not evaluated.

##### III.3.3. LABORATORY CONTROL SAMPLES

Laboratory control sample recoveries were within the method 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 for Method 200.7 (supporting Method 2340B). Results were not assessed because the parent sample concentration exceeded the spike amount by  $4x$  for both target analytes.

#### III.4. SERIAL DILUTION

No serial dilution analyses were reported.

#### III.5. INTERNAL STANDARDS PERFORMANCE

Sample internal standard recovery is not applicable to this method.

### III.6. COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Calculations were verified and the reported sample results 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<sup>x</sup> 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<sup>x</sup> 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<sup>x</sup> reviewed the SDG on May 31, 2018

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC<sup>x</sup> Data Validation Procedure for 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 calibrations had %RSDs of  $\leq 10\%$  or  $r^2$  of  $\geq 0.990$  on both analytical columns except for the average %RSD of 12.1% for Aroclor 1242 on the confirmation column. The nondetect for Aroclor 1242 was qualified as estimated (UJ). The initial calibration verification (ICV) and continuing calibration verification (CCV) %Ds were within the control limit of  $\leq 15\%$ .

### IV.3. QUALITY CONTROL SAMPLES

#### IV.3.1. METHOD BLANKS

Target compounds were not detected in method blanks.

#### IV.3.2. LABORATORY CONTROL SAMPLES

Recoveries were within the laboratory control limits. Chlordane and toxaphene were not spiked in the pesticide LCS.

#### IV.3.3. SURROGATE RECOVERY

Pesticide surrogate tetrachloro-m-xylene (TCMX) and PCB surrogate decachlorobiphenyl (DCB) were recovered within the laboratory control limits of 10-150% and 10-148%, respectively, in the site sample.

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

Matrix spike (MS)/MS duplicate (MSD) analyses were performed on the sample of this SDG. Recoveries and RPDs were within the laboratory control limits. Chlordane and toxaphene were not spiked in the pesticide MS/MSD.

#### IV.4. **FIELD QC SAMPLES**

MEC<sup>X</sup> 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<sup>X</sup> 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 select pesticides and seven Aroclors by EPA Method 608.

#### 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. Reported nondetects are valid to the reporting limit.

#### IV.7. **SYSTEM PERFORMANCE**

Review of the raw data indicated no problems with system performance.

### V. **EPA METHODS 525.2— SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)**

---

L. Calvin of MEC<sup>X</sup> reviewed the SDG on June 4, 2018

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the MEC<sup>X</sup> *Data Validation Procedure for 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 24 hours of collection and analyzed within 30 days of extraction.

#### V.2. **GC/MS TUNING AND CALIBRATION**

The DFTPP tunes met the method abundance criteria. The sample was analyzed within 12 hours of the DFTPP injection time.

Calibration criteria were met. The initial calibration average RRFs were  $\geq 0.05$  and %RSDs  $\leq 30\%$  or  $r^2 \geq 0.990$ . The continuing calibration RRFs were  $\geq 0.05$  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**

Recoveries were within laboratory control limits.

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

MS/MSD analyses were performed on the sample in this SDG. Recoveries were within the laboratory control limits of 37-168% for chlorpyrifos and 36-153% for diazinon, and RPDs were within the laboratory control limit of  $\leq 30\%$ .

### **V.4. FIELD QC SAMPLES**

MEC<sup>X</sup> 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<sup>X</sup> 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**

The internal standard area counts were within the method control limits established by the continuing calibration standards of  $\pm 30\%$  for areas and  $\pm 10$  seconds for retention times.

### **V.6. COMPOUND IDENTIFICATION**

Compound identification was verified. The laboratory analyzed for chlorpyrifos and diazinon by Method 525.2. Review of the sample chromatogram, retention times, and spectra indicated no problems with target compound identification.

### **V.7. COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS**

Compound quantification was verified. 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.

### **V.8. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)**

The laboratory did not report TICs for this SDG.

### **V.9. SYSTEM PERFORMANCE**

Review of the raw data indicated no problems with system performance.

# Validated Sample Result Forms: 4402095801

## Analysis Method E525.2

Sample Name Arroyo\_Simi\_20180424\_Grab Matrix Type: WS Result Type: TRG

Sample Date: 4/24/2018 7:10:00 AM Validation Level: 8

Lab Sample Name: 440-209580-1

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\_20180424\_Grab Matrix Type: WS Result Type: TRG

Sample Date: 4/24/2018 7:10:00 AM Validation Level: 8

Lab Sample Name: 440-209580-1

Analyte	Fraction:	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
4,4'-DDD	N	72-54-8	ND	0.0047	0.0038	ug/L	U	U	
4,4'-DDE	N	72-55-9	ND	0.0047	0.0028	ug/L	U	U	
4,4'-DDT	N	50-29-3	ND	0.0095	0.0038	ug/L	U	U	
Aroclor-1016 (PCB-1016)	N	12674-11-2	ND	0.48	0.095	ug/L	U	U	
Aroclor-1221 (PCB-1221)	N	11104-28-2	ND	0.48	0.095	ug/L	U	U	
Aroclor-1232 (PCB-1232)	N	11141-16-5	ND	0.48	0.095	ug/L	U	U	
Aroclor-1242 (PCB-1242)	N	53469-21-9	ND	0.48	0.095	ug/L	U	UJ	C
Aroclor-1248 (PCB-1248)	N	12672-29-6	ND	0.48	0.095	ug/L	U	U	
Aroclor-1254 (PCB-1254)	N	11097-69-1	ND	0.48	0.095	ug/L	U	U	
Aroclor-1260 (PCB-1260)	N	11096-82-5	ND	0.48	0.14	ug/L	U	U	
Chlordane	N	57-74-9	ND	0.095	0.076	ug/L	U	U	
Dieldrin	N	60-57-1	ND	0.0047	0.0019	ug/L	U	U	
Toxaphene	N	8001-35-2	ND	0.47	0.24	ug/L	U	U	

## Analysis Method SM2340

Sample Name Arroyo\_Simi\_20180424\_Grab Matrix Type: WS Result Type: TRG

Sample Date: 4/24/2018 7:10:00 AM Validation Level: 8

Lab Sample Name: 440-209580-1

Analyte	Fraction:	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Hardness as CaCO3	T	HARDNESSCA CO3	700	0.33	0.17	mg/L			

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-209580-1

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:

5/9/2018 5:37:17 PM

Urvashi Patel, Manager of Project Management

(949)261-1022

[urvashi.patel@testamericainc.com](mailto:urvashi.patel@testamericainc.com)

### LINKS

Review your project  
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[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

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

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

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



---

Urvashi Patel  
Manager of Project Management  
5/9/2018 5:37:17 PM





# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	3
Sample Summary . . . . .	4
Case Narrative . . . . .	5
Client Sample Results . . . . .	6
Method Summary . . . . .	7
Lab Chronicle . . . . .	8
QC Sample Results . . . . .	9
QC Association Summary . . . . .	11
Definitions/Glossary . . . . .	12
Certification Summary . . . . .	13
Subcontract Data . . . . .	14
Chain of Custody . . . . .	28
Receipt Checklists . . . . .	29

# Sample Summary

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

TestAmerica Job ID: 440-209580-1

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-209580-1	Arroyo_Simi_20180424_Grab	Water	04/24/18 07:10	04/24/18 18:10

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# Case Narrative

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

TestAmerica Job ID: 440-209580-1

**Job ID: 440-209580-1**

**Laboratory: TestAmerica Irvine**

## Narrative

**Job Narrative  
440-209580-1**

### Comments

No additional comments.

### Receipt

The samples were received on 4/24/2018 6:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.9° C, 1.1° C and 1.5° C.

### GC Semi VOA

No analytical or quality issues were noted, other than those described 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

No analytical or quality issues were noted, other than those described 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 Sample Results

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

TestAmerica Job ID: 440-209580-1

**Client Sample ID: Arroyo\_Simi\_20180424\_Grab**

**Lab Sample ID: 440-209580-1**

**Date Collected: 04/24/18 07:10**

**Matrix: Water**

**Date Received: 04/24/18 18:10**

**Method: 608 - Organochlorine Pesticides in Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.095	0.076	ug/L		04/26/18 16:20	04/27/18 10:51	1
Dieldrin	ND		0.0047	0.0019	ug/L		04/26/18 16:20	04/27/18 10:51	1
Toxaphene	ND		0.47	0.24	ug/L		04/26/18 16:20	04/27/18 10:51	1
4,4'-DDD	ND		0.0047	0.0038	ug/L		04/26/18 16:20	04/27/18 10:51	1
4,4'-DDE	ND		0.0047	0.0028	ug/L		04/26/18 16:20	04/27/18 10:51	1
4,4'-DDT	ND		0.0095	0.0038	ug/L		04/26/18 16:20	04/27/18 10:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	54		10 - 150	04/26/18 16:20	04/27/18 10:51	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	700		0.33	0.17	mg/L			05/04/18 14:12	1

# Method Summary

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

TestAmerica Job ID: 440-209580-1

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 = 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.  
Project/Site: Quarterly Arroyo Simi-Frontier Park

TestAmerica Job ID: 440-209580-1

**Client Sample ID: Arroyo\_Simi\_20180424\_Grab**

**Lab Sample ID: 440-209580-1**

**Date Collected: 04/24/18 07:10**

**Matrix: Water**

**Date Received: 04/24/18 18:10**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	608			1055 mL	2 mL	472681	04/26/18 16:20	AP	TAL IRV
Total/NA	Analysis	608		1			472817	04/27/18 10:51	D1D	TAL IRV
Total Recoverable	Analysis	SM 2340B		1			474259	05/04/18 14:12	TQN	TAL IRV

## Laboratory References:

SC0103 = Eurofins Lancaster Laboratories Env LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

TAL IRV = 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

# QC Sample Results

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

TestAmerica Job ID: 440-209580-1

## Method: 608 - Organochlorine Pesticides in Water

**Lab Sample ID: MB 440-472681/1-A**  
**Matrix: Water**  
**Analysis Batch: 472817**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 472681**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.10	0.081	ug/L		04/26/18 16:20	04/27/18 09:23	1
Dieldrin	ND		0.0051	0.0020	ug/L		04/26/18 16:20	04/27/18 09:23	1
Toxaphene	ND		0.51	0.25	ug/L		04/26/18 16:20	04/27/18 09:23	1
4,4'-DDD	ND		0.0051	0.0040	ug/L		04/26/18 16:20	04/27/18 09:23	1
4,4'-DDE	ND		0.0051	0.0030	ug/L		04/26/18 16:20	04/27/18 09:23	1
4,4'-DDT	ND		0.010	0.0040	ug/L		04/26/18 16:20	04/27/18 09:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	55		10 - 150	04/26/18 16:20	04/27/18 09:23	1

**Lab Sample ID: LCS 440-472681/2-A**  
**Matrix: Water**  
**Analysis Batch: 472817**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 472681**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Dieldrin	0.198	0.192		ug/L		97	36 - 146
4,4'-DDD	0.198	0.172		ug/L		87	31 - 141
4,4'-DDE	0.198	0.173		ug/L		87	30 - 145
4,4'-DDT	0.198	0.161		ug/L		81	25 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	63		10 - 150

**Lab Sample ID: 440-209580-1 MS**  
**Matrix: Water**  
**Analysis Batch: 472817**

**Client Sample ID: Arroyo\_Simi\_20180424\_Grab**  
**Prep Type: Total/NA**  
**Prep Batch: 472681**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Dieldrin	ND		0.190	0.176		ug/L		93	50 - 120
4,4'-DDD	ND		0.190	0.158		ug/L		83	50 - 125
4,4'-DDE	ND		0.190	0.155		ug/L		82	45 - 125
4,4'-DDT	ND		0.190	0.147		ug/L		78	50 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
Tetrachloro-m-xylene	63		10 - 150

**Lab Sample ID: 440-209580-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 472817**

**Client Sample ID: Arroyo\_Simi\_20180424\_Grab**  
**Prep Type: Total/NA**  
**Prep Batch: 472681**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dieldrin	ND		0.190	0.156		ug/L		82	50 - 120	12	30
4,4'-DDD	ND		0.190	0.136		ug/L		72	50 - 125	15	30
4,4'-DDE	ND		0.190	0.136		ug/L		72	45 - 125	13	30
4,4'-DDT	ND		0.190	0.129		ug/L		68	50 - 125	14	30

TestAmerica Irvine

# QC Sample Results

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

TestAmerica Job ID: 440-209580-1

## Method: 608 - Organochlorine Pesticides in Water (Continued)

Lab Sample ID: 440-209580-1 MSD  
Matrix: Water  
Analysis Batch: 472817

Client Sample ID: Arroyo\_Simi\_20180424\_Grab  
Prep Type: Total/NA  
Prep Batch: 472681

<i>Surrogate</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
<i>Tetrachloro-m-xylene</i>	50		10 - 150

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# QC Association Summary

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

TestAmerica Job ID: 440-209580-1

## GC Semi VOA

### Prep Batch: 472681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-209580-1	Arroyo_Simi_20180424_Grab	Total/NA	Water	608	
MB 440-472681/1-A	Method Blank	Total/NA	Water	608	
LCS 440-472681/2-A	Lab Control Sample	Total/NA	Water	608	
440-209580-1 MS	Arroyo_Simi_20180424_Grab	Total/NA	Water	608	
440-209580-1 MSD	Arroyo_Simi_20180424_Grab	Total/NA	Water	608	

### Analysis Batch: 472817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-209580-1	Arroyo_Simi_20180424_Grab	Total/NA	Water	608	472681
MB 440-472681/1-A	Method Blank	Total/NA	Water	608	472681
LCS 440-472681/2-A	Lab Control Sample	Total/NA	Water	608	472681
440-209580-1 MS	Arroyo_Simi_20180424_Grab	Total/NA	Water	608	472681
440-209580-1 MSD	Arroyo_Simi_20180424_Grab	Total/NA	Water	608	472681

## Metals

### Analysis Batch: 474259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-209580-1	Arroyo_Simi_20180424_Grab	Total Recoverable	Water	SM 2340B	

# Definitions/Glossary

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

TestAmerica Job ID: 440-209580-1

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	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.  
Project/Site: Quarterly Arroyo Simi-Frontier Park

TestAmerica Job ID: 440-209580-1

## Laboratory: 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	06-30-18

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**Work Orders:** 8D24051

**Project:** 440-209580-1

**Attn:** Patty Mata

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

**Report Date:** 5/02/2018  
**Received Date:** 4/24/2018  
**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 4/24/18 with the Chain-of-Custody document. The samples were received in good condition, at 3.2 °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\_20180424\_Grab 8D24051-01 (Water) Sampled: 04/24/18 7:10 by Dan Smith/Daniel Bar

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
<b>Method:</b> EPA 525.2M	<b>Batch ID:</b> W8D1448	<b>Instr:</b> GCMS13	<b>Prepared:</b> 04/24/18 15:08	<b>Analyst:</b> EFC			
Chlorpyrifos	ND	6.9	10	ng/l	1	04/25/18 21:26	
Diazinon	ND	5.2	10	ng/l	1	04/25/18 21:26	
<i>Surrogate(s)</i>							
1,3-Dimethyl-2-nitrobenzene	105%		76-128	Conc: 527		04/25/18 21:26	
Triphenyl phosphate	102%		40-163	Conc: 509		04/25/18 21:26	



WECK LABORATORIES, INC.

# Certificate of Analysis

FINAL REPORT

## Quality Control Results

### Semivolatiles Organics - Low Level by Tandem GC/MS/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
<b>Blank (W8D1448-BLK1)</b>					<b>Prepared: 04/24/18 Analyzed: 04/25/18</b>						
Chlorpyrifos	ND	6.9	10	ng/l							
Diazinon	ND	5.2	10	ng/l							
<i>Surrogate(s)</i>											
1,3-Dimethyl-2-nitrobenzene			461	ng/l	500		92	76-128			
Triphenyl phosphate			435	ng/l	500		87	40-163			
<b>LCS (W8D1448-BS1)</b>					<b>Prepared: 04/24/18 Analyzed: 04/25/18</b>						
Chlorpyrifos	44.8	6.9	10	ng/l	50.0		90	37-169			
Diazinon	49.8	5.2	10	ng/l	50.0		100	43-152			
<i>Surrogate(s)</i>											
1,3-Dimethyl-2-nitrobenzene			434	ng/l	500		87	76-128			
Triphenyl phosphate			451	ng/l	500		90	40-163			
<b>Matrix Spike (W8D1448-MS1)</b>					<b>Source: 8D24051-01</b>		<b>Prepared: 04/24/18 Analyzed: 04/25/18</b>				
Chlorpyrifos	58.2	6.9	10	ng/l	50.0	ND	116	37-168			
Diazinon	42.4	5.2	10	ng/l	50.0	ND	85	36-153			
<i>Surrogate(s)</i>											
1,3-Dimethyl-2-nitrobenzene			511	ng/l	500		102	76-128			
Triphenyl phosphate			520	ng/l	500		104	40-163			
<b>Matrix Spike Dup (W8D1448-MSD1)</b>					<b>Source: 8D24051-01</b>		<b>Prepared: 04/24/18 Analyzed: 04/25/18</b>				
Chlorpyrifos	56.2	6.9	10	ng/l	50.0	ND	112	37-168	4	30	
Diazinon	47.7	5.2	10	ng/l	50.0	ND	95	36-153	12	30	
<i>Surrogate(s)</i>											
1,3-Dimethyl-2-nitrobenzene			485	ng/l	500		97	76-128			
Triphenyl phosphate			495	ng/l	500		99	40-163			



WECK LABORATORIES, INC.

# Certificate of Analysis

FINAL REPORT

## Notes and Definitions

Item	Definition
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



DoD-ELAP #L2457 • EPA-UCMR #CA00211 • ISO 17025 #L2457.01 • LACSD #10143 • NJ-DEP #CA015

*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.*



## 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, 2018 12:13

### Project: Boeing NPDES SSFL Outfalls

Account #: 41440  
Group Number: 1936440  
SDG: SSF08  
PO Number: 44009879  
State of Sample Origin: CA

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Test America

Attn: Urvashi Patel

Respectfully Submitted,



Kay Hower

(717) 556-7364



### SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
Arroyo_Simi_20180424_Grab (440-209580-1) Water	04/24/2018 07:10	9578565
Arroyo_Simi_20180424_Grab (440-209580-1MS) Water	04/24/2018 07:10	9578566
Arroyo_Simi_20180424_Grab (440-209580-1MSD) Water	04/24/2018 07:10	9578567

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



**Sample Description:** Arroyo\_Simi\_20180424\_Grab (440-209580-1) Water  
Boeing NPDES SSFL Outfalls

**Test America**  
**ELLE Sample #:** WW 9578565  
**ELLE Group #:** 1936440  
**Matrix:** Water

**Project Name:** Boeing NPDES SSFL Outfalls

**Submittal Date/Time:** 04/26/2018 09:55  
**Collection Date/Time:** 04/24/2018 07:10  
**SDG#:** SSF08-01BKG

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
<b>PCBs</b>		<b>EPA 608</b>	<b>ug/l</b>	<b>ug/l</b>	<b>ug/l</b>	
06030	PCB-1016	12674-11-2	N.D. D1	0.095	0.48	1
06030	PCB-1221	11104-28-2	N.D. D1	0.095	0.48	1
06030	PCB-1232	11141-16-5	N.D. D1	0.095	0.48	1
06030	PCB-1242	53469-21-9	N.D. D1	0.095	0.48	1
06030	PCB-1248	12672-29-6	N.D. D1	0.095	0.48	1
06030	PCB-1254	11097-69-1	N.D. D1	0.095	0.48	1
06030	PCB-1260	11096-82-5	N.D. D1	0.14	0.48	1
06030	Total PCBs	1336-36-3	N.D.	0.095	0.48	1

The LCS/LCSD surrogate(s) recovery is outside the QC acceptance limits as noted on the QC Summary. Since the recovery for the target analytes is compliant, the data is reported.

### Sample Comments

CA ELAP Lab Certification No. 2792

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### 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	181170024A	04/30/2018 22:29	Kirby B Turner	1
11960	Method 608 PCB Water Ext.	EPA 608	1	181170024A	04/30/2018 02:45	Sherry L Morrow	1

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

**Sample Description:** Arroyo\_Simi\_20180424\_Grab (440-209580-1MS) Water  
Boeing NPDES SSFL Outfalls

**Test America**  
**ELLE Sample #:** WW 9578566  
**ELLE Group #:** 1936440  
**Matrix:** Water

**Project Name:** Boeing NPDES SSFL Outfalls

**Submittal Date/Time:** 04/26/2018 09:55  
**Collection Date/Time:** 04/24/2018 07:10  
**SDG#:** SSF08-01MS

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
<b>PCBs</b>		<b>EPA 608</b>	<b>ug/l</b>	<b>ug/l</b>	<b>ug/l</b>	
06030	PCB-1016	12674-11-2	3.6 D1	0.095	0.48	1
06030	PCB-1221	11104-28-2	N.D. D1	0.095	0.48	1
06030	PCB-1232	11141-16-5	N.D. D1	0.095	0.48	1
06030	PCB-1242	53469-21-9	N.D. D1	0.095	0.48	1
06030	PCB-1248	12672-29-6	N.D. D1	0.095	0.48	1
06030	PCB-1254	11097-69-1	N.D. D1	0.095	0.48	1
06030	PCB-1260	11096-82-5	4.8 D1	0.14	0.48	1
06030	Total PCBs	1336-36-3	8.5	0.095	0.48	1

The LCS/LCSD surrogate(s) recovery is outside the QC acceptance limits as noted on the QC Summary. Since the recovery for the target analytes is compliant, the data is reported.

### Sample Comments

CA ELAP Lab Certification No. 2792

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### 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	181170024A	04/30/2018 22:40	Kirby B Turner	1
11960	Method 608 PCB Water Ext.	EPA 608	1	181170024A	04/30/2018 02:45	Sherry L Morrow	1

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

**Sample Description:** Arroyo\_Simi\_20180424\_Grab (440-209580-1MSD) Water  
Boeing NPDES SSFL Outfalls

**Test America**  
**ELLE Sample #:** WW 9578567  
**ELLE Group #:** 1936440  
**Matrix:** Water

**Project Name:** Boeing NPDES SSFL Outfalls

**Submittal Date/Time:** 04/26/2018 09:55  
**Collection Date/Time:** 04/24/2018 07:10  
**SDG#:** SSF08-01MSD

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
<b>PCBs</b>		<b>EPA 608</b>	<b>ug/l</b>	<b>ug/l</b>	<b>ug/l</b>	
06030	PCB-1016	12674-11-2	3.7 D1	0.095	0.47	1
06030	PCB-1221	11104-28-2	N.D. D1	0.095	0.47	1
06030	PCB-1232	11141-16-5	N.D. D1	0.095	0.47	1
06030	PCB-1242	53469-21-9	N.D. D1	0.095	0.47	1
06030	PCB-1248	12672-29-6	N.D. D1	0.095	0.47	1
06030	PCB-1254	11097-69-1	N.D. D1	0.095	0.47	1
06030	PCB-1260	11096-82-5	4.9 D2	0.14	0.47	1
06030	Total PCBs	1336-36-3	8.6	0.095	0.47	1

The LCS/LCSD surrogate(s) recovery is outside the QC acceptance limits as noted on the QC Summary. Since the recovery for the target analytes is compliant, the data is reported.

### Sample Comments

CA ELAP Lab Certification No. 2792

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### 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	181170024A	04/30/2018 22:52	Kirby B Turner	1
11960	Method 608 PCB Water Ext.	EPA 608	1	181170024A	04/30/2018 02:45	Sherry L Morrow	1

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

## Quality Control Summary

Client Name: Test America  
Reported: 05/03/2018 12:13

Group Number: 1936440

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 ug/l	MDL** ug/l	LOQ ug/l
Batch number: 181170024A	Sample number(s): 9578565-9578567		
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: 181170024A	Sample number(s): 9578565-9578567								
PCB-1016	5.01	3.25			65		60-117		
PCB-1260	5.01	4.88			97		57-134		

### MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 181170024A	Sample number(s): 9578565-9578567 UNSPK: 9578565									
PCB-1016	N.D.	4.77	3.62	4.75	3.67	76	77	60-117	1	30
PCB-1260	N.D.	4.77	4.84	4.75	4.94	102	104	57-134	2	30

\*- 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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

## Quality Control Summary

Client Name: Test America  
Reported: 05/03/2018 12:13

Group Number: 1936440

### 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: 181170024A

	Tetrachloro-m-xylene-D1	Decachlorobiphenyl-D1	Tetrachloro-m-xylene-D2	Decachlorobiphenyl-D2
9578565	64	97	61	97
9578566	73	98	70	98
9578567	76	99	72	95
Blank	58	91	57	88
LCS	31*	44	30*	45
MS	73	98	70	98
MSD	76	99	72	95
Limits:	33-137	10-148	33-137	10-148

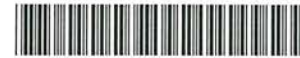
\*- Outside of specification

\*\* - 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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.



<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM: Patel, Urvashi	Carrier Tracking No(s):	COC No: 440-121374.1						
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 #: 440-209580-1						
Address: 2425 New Holland Pike, City: Lancaster State, Zip: PA, 17601 Phone: 717-656-2300(Tel) Email:		Due Date Requested: 5/4/2018 TAT Requested (days):	<b>Analysis Requested</b>								
Project Name: Boeing NPDES SSFL outfalls Site:		PO #: WO #: Project #: 44009879 SSOV#:									
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Sample Date</b>	<b>Sample Time</b>	<b>Sample Type (C=comp, G=grab)</b>	<b>Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)</b>	<b>Field Filtered Sample (Yes or No)</b>	<b>Perform MS/MSD (Yes or No)</b>	<b>Total Number of Containers</b>			<b>Preservation Codes:</b>
											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:
											Special Instructions/Note:
Arroyo_Simi_20180424_Grab (440-209580-1)		4/24/18	07:10 Pacific		Water		X				1
Arroyo_Simi_20180424_Grab (440-209580-1MS)		4/24/18	07:10 Pacific	MS	Water		X				1
Arroyo_Simi_20180424_Grab (440-209580-1MSD)		4/24/18	07:10 Pacific	MSD	Water		X				1
<p>Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte &amp; 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.</p>											
<b>Possible Hazard Identification</b>						<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>					
Unconfirmed						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> 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:		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: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 2.6°C							





Client: Test America

**Delivery and Receipt Information**

Delivery Method: Fed Ex Arrival Timestamp: 04/26/2018 9:55  
 Number of Packages: 1 Number of Projects: 1  
 State/Province of Origin: CA

**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:	Yes		

Unpacked by Wyatt Shiffler (12792) at 14:44 on 04/26/2018

**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	DT42-03	2.6	DT	Wet	Y	Loose	N

**Container Quantity Discrepancy Details**

Sample ID on COC	Container Qty. Received	Container Qty. on COC	Comments
Arroyo_Simi_20180424 _Grab_Extra	4	3	



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

<b>BMQL</b>	Below Minimum Quantitation Level	<b>mg</b>	milligram(s)
<b>C</b>	degrees Celsius	<b>mL</b>	milliliter(s)
<b>cfu</b>	colony forming units	<b>MPN</b>	Most Probable Number
<b>CP Units</b>	cobalt-chloroplatinate units	<b>N.D.</b>	non-detect
<b>F</b>	degrees Fahrenheit	<b>ng</b>	nanogram(s)
<b>g</b>	gram(s)	<b>NTU</b>	nephelometric turbidity units
<b>IU</b>	International Units	<b>pg/L</b>	picogram/liter
<b>kg</b>	kilogram(s)	<b>RL</b>	Reporting Limit
<b>L</b>	liter(s)	<b>TNTC</b>	Too Numerous To Count
<b>lb.</b>	pound(s)	<b>µg</b>	microgram(s)
<b>m3</b>	cubic meter(s)	<b>µL</b>	microliter(s)
<b>meq</b>	milliequivalents	<b>umhos/cm</b>	micromhos/cm
<b>&lt;</b>	less than		
<b>&gt;</b>	greater than		
<b>ppm</b>	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.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	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.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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 $\geq$ 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.
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.





## Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-209580-1

**Login Number: 209580**

**List Number: 1**

**Creator: Soderblom, Tim**

**List Source: TestAmerica Irvine**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



**APPENDIX E**

**Annual Comprehensive Site Compliance Evaluation Report**

## APPENDIX E

### ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION REPORT REPORTING YEAR JULY 1, 2017 – JUNE 30, 2018

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, 2017 – June 30, 2018. The Annual Comprehensive Site Compliance Evaluation (Annual Evaluation) was conducted between May 21 and 24, 2018 by Haley & Aldrich:

1. Michael Harding, QSD/P, CPESC, CESSWI
2. Dwayne Baluran, QSP, CESSWI

The QSPs 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, 2017 – June 30, 2018 the QSPs reviewed all inspection forms during the Annual Evaluation, up to May 2018, that documented inspections/visual observations. All inspection forms that were completed for the reporting year after the Annual Evaluation were reviewed by June 30, 2018; 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).

### POTENTIAL POLLUTANT SOURCE VISUAL INSPECTION

For reporting year July 1, 2017 – June 30, 2018, the QSPs conducted visual inspections at the Site during the Annual Evaluation at buildings, equipment, and surrounding areas to evaluate the status of existing

## APPENDIX E

### ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION REPORT REPORTING YEAR JULY 1, 2017 – JUNE 30, 2018

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, 2017 – June 30, 2018, the QSPs reviewed and evaluated the structural and non-structural BMPs at the Site during the Annual Evaluation. The QSPs determined the BMPs were adequate, properly implemented and maintained and in compliance with the SWPPP and BMP Plan. The onsite evaluation did result in minor recommendations (e.g. remove leaf litter removal and clean flume) which the QSPs 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 2018.

#### 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 15, 2017 as version 4. Version 5 of the SWPPP will be completed in the fall 2018 based on observations made during the Annual Evaluation. Revisions include:

- Updated Pollution Prevention Team (section 1.4);
- Added text to the material handling and storage areas (Section 2.8.1);
- Added text to the Sewage Treatment Plant (Inactive) and Portable Sanitary/Septic Waste Systems; (section 3.1.4);
- Added section to describe onsite structural BMPs (section 4.2);
- Updated figures;
- Updated BMP Plan (Appendix B);
- Updated Significant Materials Inventory (Appendix C);
- Updated California Stormwater Handbook BMP Fact sheets (Appendix D); and
- Updated inspection form (Appendix F).

#### NON-COMPLIANCE INCIDENTS AND CORRECTIVE ACTIONS TAKEN

As part of the Annual Evaluation, the QSPs reviewed the non-compliance issues (Permit Limit exceedances) discussed in the DMRs and reviewed the corrective actions during the evaluation period. The QSPs 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 QSPs 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 2018.

## **APPENDIX E**

### **ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION REPORT REPORTING YEAR JULY 1, 2017 – JUNE 30, 2018**

#### **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 2018 Bioassessment Sampling Report**



Date: May 15<sup>th</sup>, 2018

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 (2018)**

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 2018 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 2017 to 2018 rain year was characterized by below average rainfall amounts. Between July, 2017 and April, 2018 a total of 9.67 inches of rain fell on the SSFL property. The last significant rainfall occurred in March (total = 6.48 inches) (Figure 1). On April 24<sup>th</sup>, 2018, five days after trace rain (0.02 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



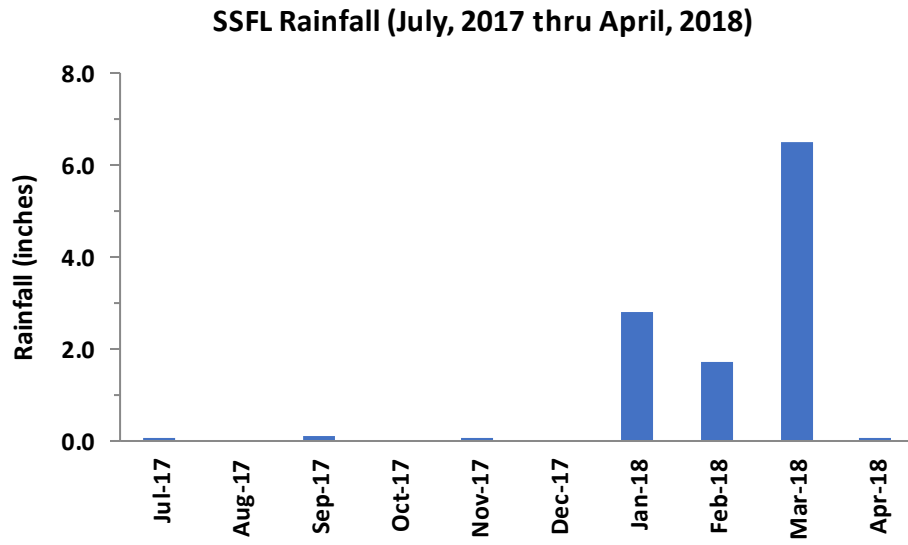


Figure 1. Rainfall (inches) measured July 2017 thru April 2018 on SSFL.



Figure 2. Photos taken downstream and upstream of each permitted discharge point from the SSFL property (2018).

