Technical Memorandum

WSC
WATER SYSTEMS CONSULTING, INC.

Date: 8/3/2018

To: Tony Spinrad **Phone:** (626) 222-4942
Irwindale Partners

CC: Tracy Zinn, Ryan Kelleher, Laine Carlson

Prepared by: Spencer Waterman and Michael Cruikshank

Reviewed by: Michael Cruikshank, PG, CHG and Laine Carlson, PE

Project: The Park at Live Oak

SUBJECT: **THE PARK AT LIVE OAK WATER SUPPLY WELL**

This technical memorandum (TM) was prepared at the request of Irwindale Partners II, LLC (Irwindale Partners) for California-American Water (CAW) by Water Systems Consulting, Inc. (WSC) to address the following CEQA threshold in regard to the Park at Live Oak (Project) water supply well discussed in the Project Water Supply Assessment (WSA):

Will the project (installation and operation of the water well and associated infrastructure) substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

1 Project Overview

The Project proposes development of a warehouse distribution/logistics and commercial retail center on an 80-acre former aggregate mine property that is being reclaimed. The property is located at 1270 Arrow Highway, south of Arrow Highway, north of Live Oak Avenue, and west of Interstate 605 in the City of Irwindale in Los Angeles County, California. Most of the Project site lies within California American Water's (CAW) Duarte water service area (Figure 1). CAW serves its Duarte customers by pumping groundwater from the adjudicated Main San Gabriel Basin (MSGB). As described in the Project WSA, there is an existing well capacity deficit in the CAW Duarte system, therefore an additional supply capacity will need to be added to serve the additional demands of the Project.

2 Main San Gabriel Basin

The CAW Duarte system overlies the adjudicated Main San Gabriel Basin (MSGB). The MSGB is an adjudicated basin that is subject to an entry of judgment through the Upper San Gabriel Valley Municipal Water District v. City of Alhambra, et al., Los Angeles County Case No. 924128, Judgment entered January 4, 1973 (MSGB Judgment). The MSGB is bounded by the San Gabriel Mountains to the north with smaller hills including San Jose, Puente, Merced, and Repetto forming the east, south, and southwest borders. The MSGB Watermaster

(Watermaster) administers and enforces the provisions of the MSGB Judgement which established water rights and the responsibility for efficient management of the quantity and quality of the MSGB's groundwater.

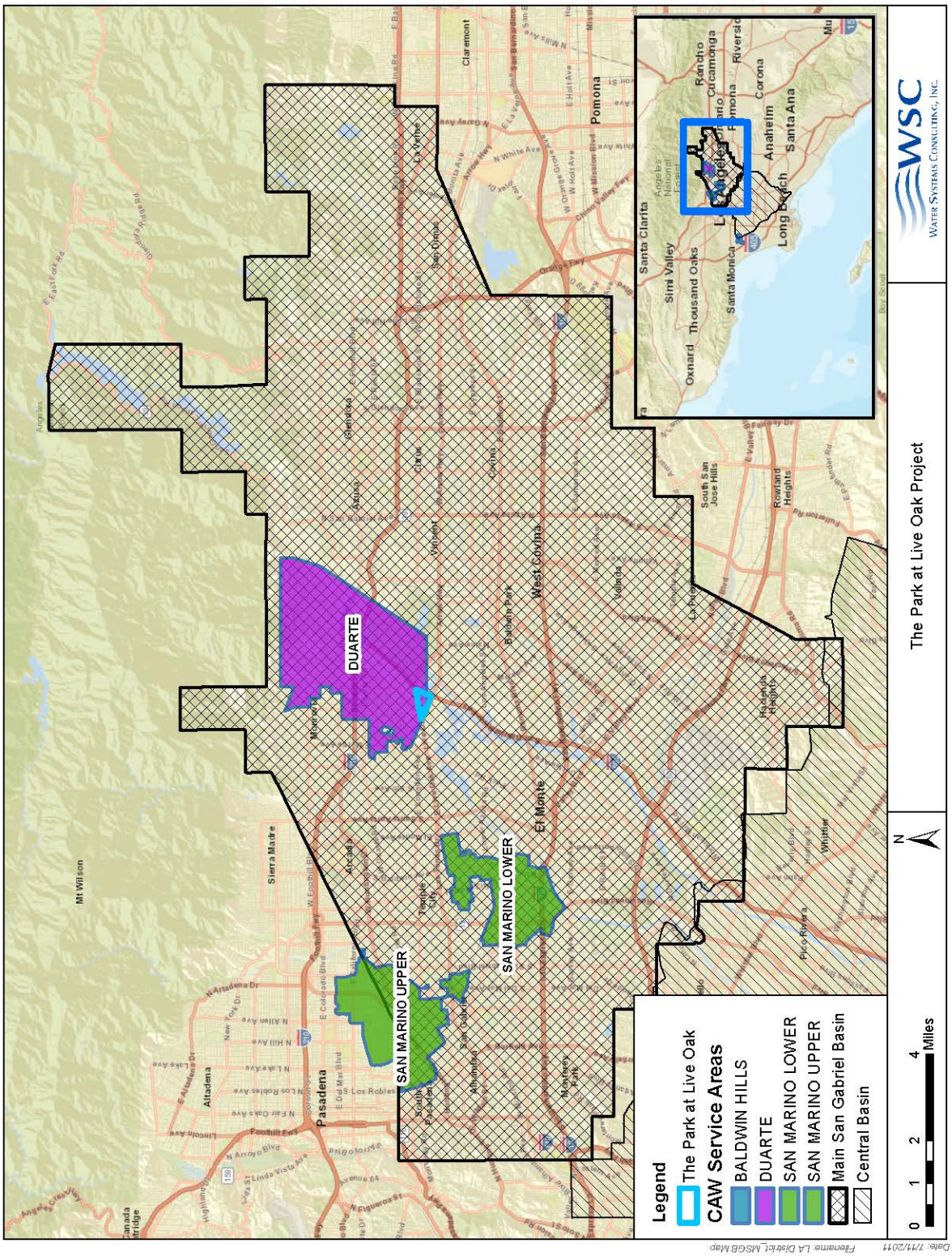


Figure 1. Project Location & Main San Gabriel Basin

The MSGB is an unconfined aquifer with an Operating Safe Yield (OSY) for fiscal year 2018/19 of 150,000 acre-ft (1). The annual OSY of the MSGB is established by Watermaster based on the groundwater elevation of the Key Well in Baldwin Park, located about 1.5 miles southeast of the Project. In general, the higher the groundwater table, the higher the safe yield is, thus increasing the amount CAW can pump.

The Project is centrally located in the MSGB, downgradient from the Santa Fe Spreading Grounds where on average 25,885 acre-ft per year of stormwater is captured and recharged (2). Groundwater elevation contour maps are generated as part of the *Five-Year Water Quality and Supply Plan 2017-2018 to 2021-2022* (3) as shown in Figure 2. Groundwater in the vicinity of the Project site flows southeast from about 185 feet above mean sea level (ft-amsl) to about 180 ft-amsl.

MSGB Judgement

The MSGB Judgment states that "in each and every calendar year commencing with 1953, the Basin has been and is in Overdraft" (4). CAW's Duarte service area has an adjudicated right to 1.84634% of the annually determined OSY for the MSGB as defined by the MSGB Judgment.

The amount of water parties of the MSGB Judgment may extract from the MSGB is not restricted, but the MSGB Judgment provides a means for replacing all annual extractions in excess of a Party's annual right. If a producer extracts water in excess of its portion of the annual OSY, it must pay a Replacement Water assessment, which will be used by Watermaster to purchase Supplemental Water through three Responsible Agencies: Upper San Gabriel Municipal Water District (Upper District), San Gabriel Valley Municipal Water District, and Three Valleys Municipal Water District.

Replacement Water

The Project site is located within Upper District's service area. Upper District is a member of Metropolitan Water District of Southern California (MWD). MWD's 2015 UWMP, under the historic hydrology conditions, projects 100% reliability for its customers. During the historic dry year periods identified for each wholesale source, the Duarte water system's wholesale demands have always been met. Additionally, numerous water supply reliability management initiatives are underway to enhance and preserve local water supplies. The Upper District has reviewed the updated MSGB Replacement Water demands presented in the Project's WSA and provided a letter dated May 16, 2018 which provides confirmation of the MSGB Replacement Water supply analysis presented in the WSA. A copy of this letter is included as Appendix A.

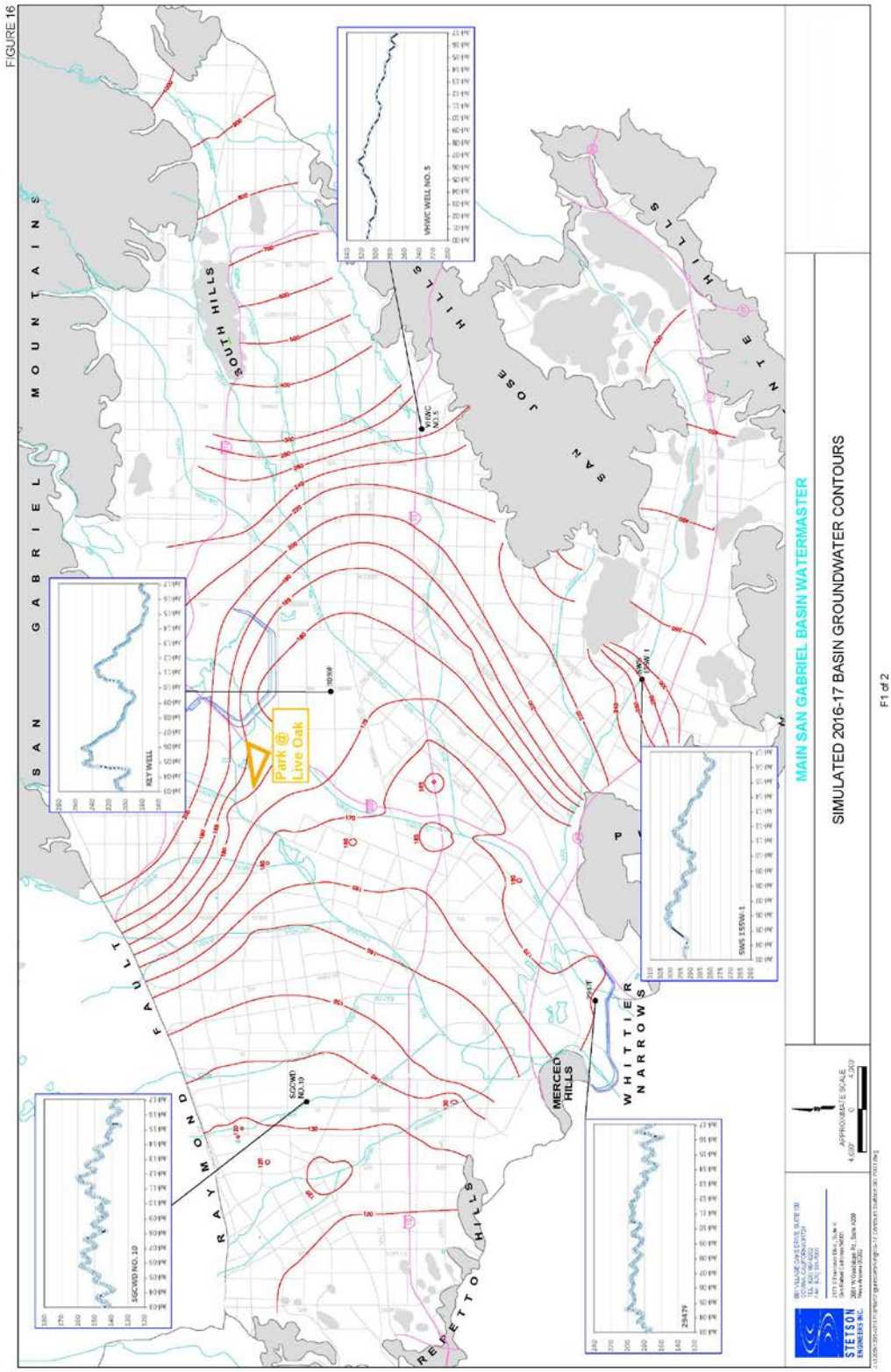


Figure 2. Groundwater Contour Map 2016-2017

Watermaster Process to Drill a Water Well

Prior to drilling a well in the MSGB, Watermaster requires an "Application to Drill Water Well" to be submitted. Watermaster staff prepares a staff report, in accordance with Watermaster's Rules and Regulations Section 28 (4). Watermaster will prepare a staff report that provides recommendations for the new well approval by applying operating principles described in Section 28(e). The analysis will be based on information provided by interested parties, all available water quality data, Watermaster's Five-Year Water Quality and Supply Plan (Five-Year Plan), and groundwater modeling and water quality trend analysis reports.

3 Existing ARI Well #1

On December 22, 2016, Arcadia Reclamation, Inc. (ARI), in accordance with Section 28 of the Watermaster's Rules and Regulations, submitted an "Application to Drill Water Well" to the Watermaster to drill a well on the Project site to support construction activities. Watermaster Staff provided a Staff Report on February 10, 2017 (see Appendix B) and recommended that a permit be issued to ARI for the proposed well. On March 1, 2017 the Watermaster approved the application under permit number 0287-NW-030117. The permit contains detailed information related to the surrounding production wells and associated groundwater quality.

ARI Well #1 was drilled to a depth of 410 feet below ground surface (ft-bgs) penetrating interbedded sands, gravels and cobbles by Gregg Drilling. ARI Well #1 is a 10-inch diameter, 400 ft deep low carbon steel well perforated from 160 to 400 ft-bgs. At the time of construction, the static water level was measured at 200 ft-bgs and the estimated yield was 500 gallons per minute (gpm). ARI Well #1 is currently operating with a well capacity of 600 gpm.

ARI Well#1 was sampled on March 15, 2018 and a full Title 22 Drinking Water Analysis was performed. The water quality results are included in Appendix C and none of the constituents tested were above the maximum contaminant level (MCL).

The pump will be removed from ARI Well #1 and the well may be converted to a monitoring well or abandoned, subject to approval by Watermaster. Upper District and its consultant expressed interest in preserving ARI Well #1 as a monitoring well associated with its nearby Indirect Reuse Replenishment Project (IRRP). The IRRP is a recycled water recharge project that will help replenish the groundwater supply in the MSGB. If ARI Well #1 is proposed to be abandoned, an "Application to Destroy Well" will need to be submitted to the Watermaster.

4 Proposed New Municipal Well

ARI Well #1 was not constructed to the specifications of a CAW municipal well. A new well needs to be constructed and introduced into the CAW system to meet CAW specifications, existing well capacity deficit, the demands of this Project, and the demands of another development in CAW's service area called the City of Hope Specific Plan. The proposed new well will be located on the Project site and will be designed as a municipal production well to produce a sufficient amount of water needed to meet the additional demands of the Park at Live Oak Project and the City of Hope Specific Plan as described in the WSA.

The new well will be drilled using the reverse circulation rotary drilling method. A 17.5-inch diameter pilot borehole will be drilled first to obtain lithology information, which will be instrumental in determining the final

design of the well. It is anticipated that the well casing will be 16-inch diameter stainless steel to a depth of about 630 ft-bgs.

The capacities of the existing municipal wells within one mile of the Project site range from 1,000 gpm to 2,600 gpm as shown in Figure 3. The Park at Live Oak, City of Hope and CAW are currently considering three alternatives for sizing the proposed well: 570 gpm, 1,000 gpm or 1,500 gpm. The minimum capacity of 570 gpm is required to support the new demands of the Park at Live Oak (140 gpm) and City of Hope Specific Plan (430 gpm) projects as described in the respective WSA's. CAW may desire to upsize the capacity of the well to 1,000 gpm or 1,500 gpm to alleviate an existing pumping capacity deficit in the CAW Duarte system. It is important to note that if the well is sized larger than 570 gpm, the additional capacity above 570 gpm would allow CAW to meet their existing water demands with more reliability in the event that any wells are out of service; this would not result in additional groundwater pumping by CAW. The capacity of the well will be determined during the construction and testing of the well. For the purposes of this TM, it is assumed that the capacity of the new well will be at least 1,000 gpm.

Water Supply Permit Amendment

An application for an amended domestic water supply permit shall be made as required by California Health and Safety Code, Division 104, Part 12, Chapter 4 (California Safe Drinking Water Act), Section 116550.

It is our understanding that CAW and/or its consultant will compile a complete submittal package and file it with California State Water Resources Control Board Division of Drinking Water (DDW). The components of that permit application are summarized in the list below. As part of the permit application, preliminary plans and specifications for the well drilling and construction should be submitted to DDW for review and comment. A Water Well Driller's Report will be filed with the California Department of Water Resources by the drilling contractor and must be submitted upon completion. Preliminary and final Drinking Water Source Assessment and Protection (DWSAP) program documents will be prepared by CAW and selected consultant and submitted to DDW, as necessary. Following construction of the new well and upon completion of aquifer testing, Title 22 ground water samples shall be collected for water quality analysis, the results of which must be submitted to DDW for review. The following are the components required in the DDW permit.

- Completed Permit Amendment Application
- CEQA Documentation
- Well Drilling Specs (Construction Plans) including Surface Construction Features
- Well Plot Plan (scale 1" = 50') and a Completed Min. Horizontal Distances Table
- Water Well Driller's Report
- A Completed Well Data Sheet and Chlorination Data Sheet (if applicable)
- Drinking Water Source Assessment Program (DWSAP) Documentation
- Water Quality Reports

Local Permitting Requirements

Los Angeles County Department of Public Health (LACDPH)

Prior to construction, an approved well drilling permit will be required from the LACDPH. Based on prior experience, this permit takes approximately 2 weeks to obtain. The permit application shall include a plot plan showing the location of the new well with respect to various features within 500 feet of the well, a legal

description of the property (including assessor's parcel map), the location/classification of waste disposal sites within 2,000 feet of the well, and any other information requested by LACDPH.

MSGB Watermaster

As described above, the MSGB Watermaster requires an "Application to Drill Water Well" to be submitted prior to constructing a new drinking water well.

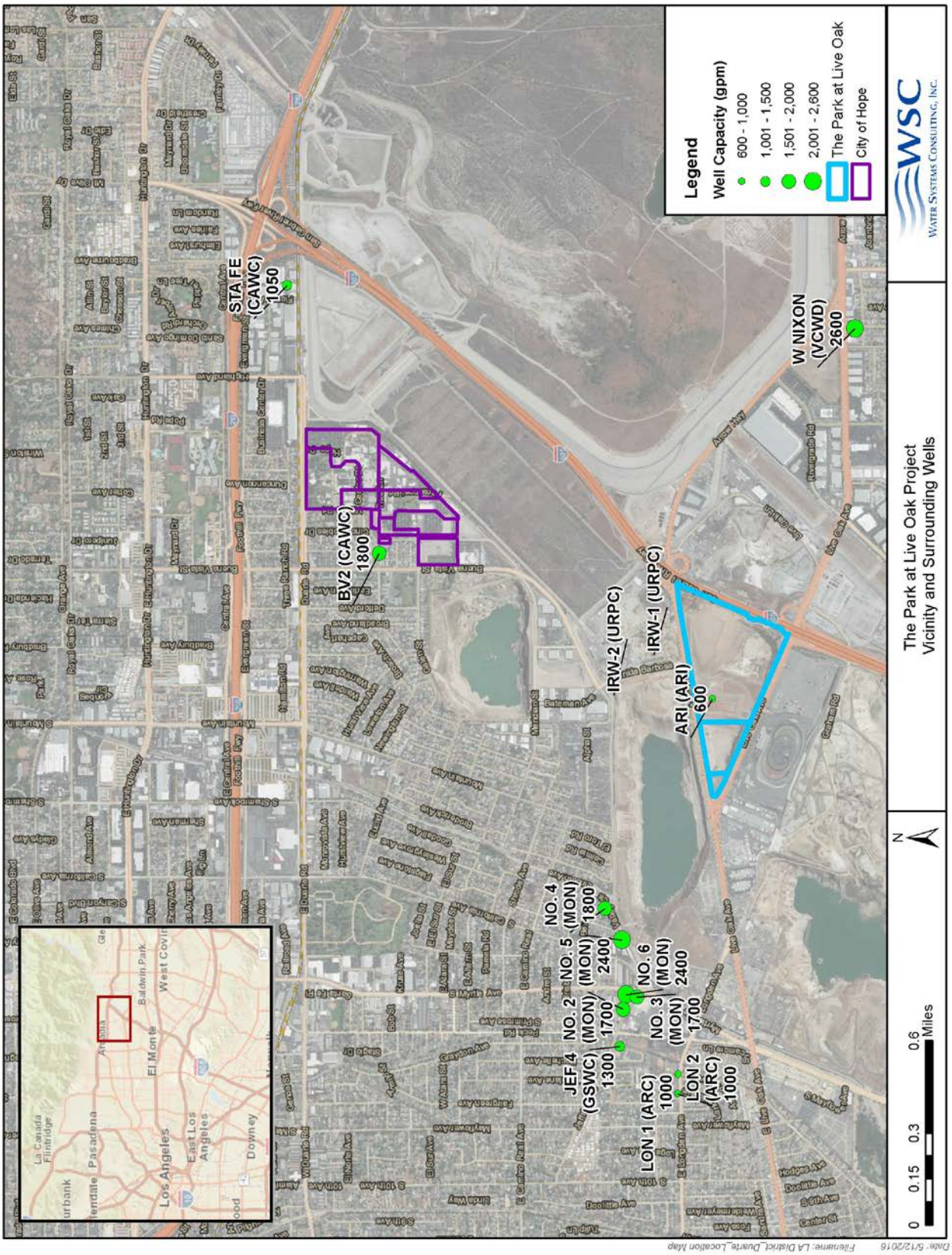


Figure 3. Wells in the Vicinity of the Project

5 Conclusion

The Project will be served by CAW through the construction of a new municipal water well with an anticipated 1,000 gpm capacity. The Park at Live Oak Project and the City of Hope Specific Plan require 570 gpm of well capacity. Any capacity above 570 gpm will be used by CAW to meet existing demands with more reliability.. The existing 600 gpm capacity ARI Well #1 is currently pumping groundwater beneath the Project site to support the quarry reclamation activities that are ongoing at the Site and will be converted to a monitoring well or abandoned prior to the installation of the new onsite water supply well, subject to approval by the Watermaster.

CAW has an adjudicated right to 1.84634%of the annual safe yield of the MSGB. Watermaster sets the OSY of the MSGB each year and has a mechanism to purchase Replacement Water for any production over the OSY. The Project has a letter from Upper District that states that they anticipate having sufficient Replacement Water available for the Project demands. Therefore, the Project is not anticipated to substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

6 References

1. **Main San Gabriel Basin Watermaster.** *Report on Final Determination of Operating Safe Yield for 2018-19 through 2022-23.* May 2018.

2. **Los Angeles County Department of Public Works, Stormwater Engineering Division.** dpw.lacounty.gov. [Online] [Cited: July 9, 2018.] http://dpw.lacounty.gov/wrd/SpreadingGround/watercon/file/Water%20Conserved%20Data%202017-2018.pdf.

3. **Main San Gabriel Basin Watermaster.** *Five Year Water Quality and Supply Plan 2017-2018 to 2021-22.* November 2017.

4. ***Rules and Regulations, Upper San Gabriel Valley Municipal Water District v. City of Alhambra, et al., ,.*** **Los Angeles County : s.n., Revised 2013.**

Appendix A Upper District Replacement Water Letter

UPPER SAN GABRIEL VALLEY
MUNICIPAL WATER DISTRICT

May 16, 2018

Mr. Spencer Waterman
Water Systems Consulting, Inc.
3765 S. Higuera Street, Suite 102
San Luis Obispo, CA 93401

SUBJECT: Supplemental Imported Water Provided for Main San Gabriel Basin Groundwater Replenishment

Dear Mr. Waterman:

The Upper San Gabriel Valley Municipal Water District (Upper District) is in receipt of your email dated April 17, 2018, regarding the Water Supply Assessment (WSA) being prepared for a proposed development entitled "The Park at Live Oak" within California American Water – Duarte's (CAW-Duarte) service area. By comparing projected demands (including "The Park at Live Oak", a City of Hope planned expansion and general increased demands as a result of population increases) to projected water rights (assuming an Operating Safe Yield of 150,000 acre-feet), the projected Replacement Water Requirement for CAW-Duarte may be as much as 3,277 acre-feet per year as of calendar year 2035.

Upper District is identified in the Main San Gabriel Basin Judgment as a Responsible Agency for the purposes of delivering untreated imported water on behalf of water producers within Upper District's service area, which produce local water supplies in excess of their water rights, including CAW-Duarte. Upper District is also a member of the Metropolitan Water District of Southern California (MWD). Based on historical deliveries, MWD has established a Tier 1 allocation of 67,228 acre-feet for Upper District. The projected 2035 imported water supply to Upper District during an average year is accurately presented on your Table 6-5 and totals 51,288 acre-feet. In addition, Upper District anticipates its recycled water supply will be 20,731 acre-feet, including 10,000 acre-feet for our planned groundwater replenishment project. Consequently, total supply is projected to be 72,019 acre-feet during an average year, while total demand is projected to be 55,228 acre-feet, resulting in a projected surplus of supply over demand of about 16,791 acre-feet. (A surplus of 10,000 acre-feet per year is projected to be available in single and multiple dry year scenarios.)

Upper District anticipates it will be able to meet the projected demand from the proposed project in CAW-Duarte's service area now and over the next 20 years through 2035.

Upper District also notes that CAW-Duarte has a Cyclic Storage account with the Main San Gabriel Basin Watermaster in the amount of 2,200 acre-feet and has about 100 acre-feet in storage as of March 31, 2018. Maintaining water in its Cyclic Storage account provides CAW-Duarte with an added level of flexibility to address future demands requiring delivery of untreated imported water.

Please feel free to contact me should you have any questions.

Sincerely,

Thomas A. Love, P.E.
General Manager

Appendix B. Staff Report - ARI Application to Drill Water Well

MainSanGabrielBasin
WATERMASTER

February 10, 2017

TO: INTERESTED PARTIES (Distribution List)

Arcadia Reclamation, Inc. (ARI) has applied to the Main San Gabriel Basin Watermaster (Watermaster) for an "Application to Drill Water Well" (Application) to drill a new well. In accordance with Watermaster's Rules and Regulations Section 28, Watermaster staff has prepared a Staff Report on ARI's application. The Staff Report and Application will be reviewed at the Watermaster's meeting on March 1, 2017, and action is expected to be taken.

If you should have any questions or comments regarding this Staff Report or the Application, please submit this information to the Watermaster office, or plan to attend Watermaster's meeting on March 1, 2017.

725 North Azusa Avenue • Azusa, California 91702 • Telephone (626) 815-1300 • Fax (626) 815-1303
http://www.watermaster.org

DISTRIBUTION LIST FOR STAFF REPORT
APPLICATION TO DRILL WATER WELL
ARCADIA RECLAMATION, INC.
NEW WELL

AGENCY	ADDRESSEE	MAILING ADDRESS
POTENTIALLY AFFECTED WATER PRODUCERS		
ARCADIA RECLAMATION, INC.	MR. ROBERT BOWCOCK	P.O. BOX 7368 LA VERNE, CA 91750
ARCADIA, CITY OF	MR. TOM TAIT	PO BOX 60021 ARCADIA, CA 91066
CALIFORNIA-AMERICAN WATER COMPANY (DUARTE)	MR. TIM MILLER	8657 GRAND AVENUE ROSEMEAD, CA 91770
GOLDEN STATE WATER COMPANY (SAN GABRIEL VALLEY DISTRICT)	MS. BENJAMIN LEWIS, JR.	401 SOUTH SAN DIMAS CANYON ROAD SAN DIMAS, CA 91773
MONROVIA, CITY OF	MR. PAUL ZAMPIELLO	415 SOUTH IVY AVENUE MONROVIA, CA 91016
UNITED ROCK PRODUCTS CORPORATION	MR. RUSS CARUSO	1245 EAST ARROW HWY. IRWINDALE, CA 91706
VALLEY COUNTY WATER DISTRICT	MR. TOM MORTENSON	14521 RAMONA BOULEVARD BALDWIN PARK, CA 91706
INTERESTED PARTIES		
LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS	MR. ERIC BATMAN	900 S. FREMONT ALHAMBRA, CA 91803
CALIFORNIA DEPARTMENT OF WATER RESOURCES	MR. MARK STUART	770 FAIRMONT AVENUE, #102 GLENDALE, CA 91203
CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL	MR. PETER MAC NICHOLL	8800 CAL CENTER SACRAMENTO, CA 95826-3200
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD	MS. SAM UNGER DR. ARTHUR HEATH	320 WEST 4TH STREET. SUITE 200 LOS ANGELES, CA 90013
LOS ANGELES COUNTY DEPARTMENT OF HEALTH SERVICES	MR. PATRICK NAJDAIN	5050 COMMERCE DRIVE BALDWIN PARK, CA 91706-1423
SAN GABRIEL BASIN WATER QUALITY AUTHORITY	MR. KEN MANNING	1720 W. CAMERON AVE., STE. 200 WEST COVINA, CA 91790
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	MR. DARIN KASAMOTO	P.O. BOX 1299 AZUSA, CA 91702

DISTRIBUTION LIST FOR STAFF REPORT
APPLICATION TO DRILL WATER WELL
ARCADIA RECLAMATION, INC.
NEW WELL

AGENCY	ADDRESSEE	MAILING ADDRESS
THREE VALLEYS MUNICIPAL WATER DISTRICT	MR. RICHARD W. HANSEN	1021 E. MIRAMAR AVE. CLAREMONT, CA 91711
UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	MR. SHANE CHAPMAN	602 E. HUNTINGTON DRIVE, SUITE B MONROVIA, CA 91016

MainSanGabrielBasin
WATERMASTER

February 10, 2017

TO: **MAIN SAN GABRIEL BASIN WATERMASTER**

FROM: **STETSON ENGINEERS INC.**

SUBJECT: **STAFF REPORT**
ARCADIA RECLAMATION, INC.
APPLICATION TO DRILL WATER WELL – NEW WELL

INTRODUCTION

In accordance with Section 28 of the Rules and Regulations of the Main San Gabriel Basin Watermaster (Watermaster), Arcadia Reclamation, Inc. (ARI) submitted an "Application to Drill Water Well" (Application) for a proposed new water well (ARI Well). The Application was initially received by Watermaster on December 2, 2016. Supplemental information was provided on December 22, 2016, and the Application is considered complete as of December 22, 2016. A copy of the ARI Application and supplemental information is included as Appendix A.

ARI currently is not a Party to the Main San Gabriel Basin Judgment (Judgment). However, pending Watermaster action on this Application, ARI is required to become a Party to the Judgment, and comply with the Judgment and Rules and Regulations.

Section 28(i) of the Rules and Regulations requires Watermaster determinations relating to the control of pumping for water quality purposes to be based upon staff's recommendations and comments received from or furnished by affected producers. Staff's recommendations shall result from staff's analysis of information provided by interested parties, all available water quality data, Watermaster's Five-Year Water Quality and Supply Plan (Five-Year Plan), groundwater modeling and water quality trend analysis reports, and will be based on operating principles described in Section 28(e). These operating principles are intended to protect the water quality of the Main San Gabriel Basin (Main Basin), to facilitate removal of contaminants from the Main Basin, and to prevent contaminant migration to lesser-contaminated or clean areas. The purpose of this Staff Report is to evaluate and provide recommendations to Watermaster regarding the Application for the proposed ARI Well.

BACKGROUND

ARI has agreed to intervene in the Judgment, become a Party to the Judgment and comply with all of the provisions of the Judgment and Rules and Regulations, pending Watermaster action on this Application. ARI has acknowledged this includes applicable Watermaster assessments on all water produced from the proposed ARI Well.

ARI submitted an Application for a proposed new well to provide water supply for the reclamation of a former aggregate mining site. ARI indicates the purpose of the proposed ARI Well is to produce groundwater for "...compaction and dust control..." for reclamation of the aggregate mining site over a period of between 8 to 10 years. In addition, the proposed ARI Well will not be used to produce groundwater for potable use and will not be used to provide water off-site. ARI indicates the proposed well will become a groundwater monitoring well after the proposed 8 to 10 years of groundwater production has been completed.

DESCRIPTION OF PROPOSED ARI WELL

The proposed ARI Well is planned to be located in the vicinity of Arrow Highway, in the City of Irwindale, as shown on Figure 1. The proposed ARI Well is proposed to be 10 inches in diameter, constructed to a depth of about 400 feet below ground surface (bgs) and perforated from 200 feet bgs to 400 feet bgs. The Application notes the anticipated yield of the proposed ARI Well is about 600 gallons per minute (gpm).

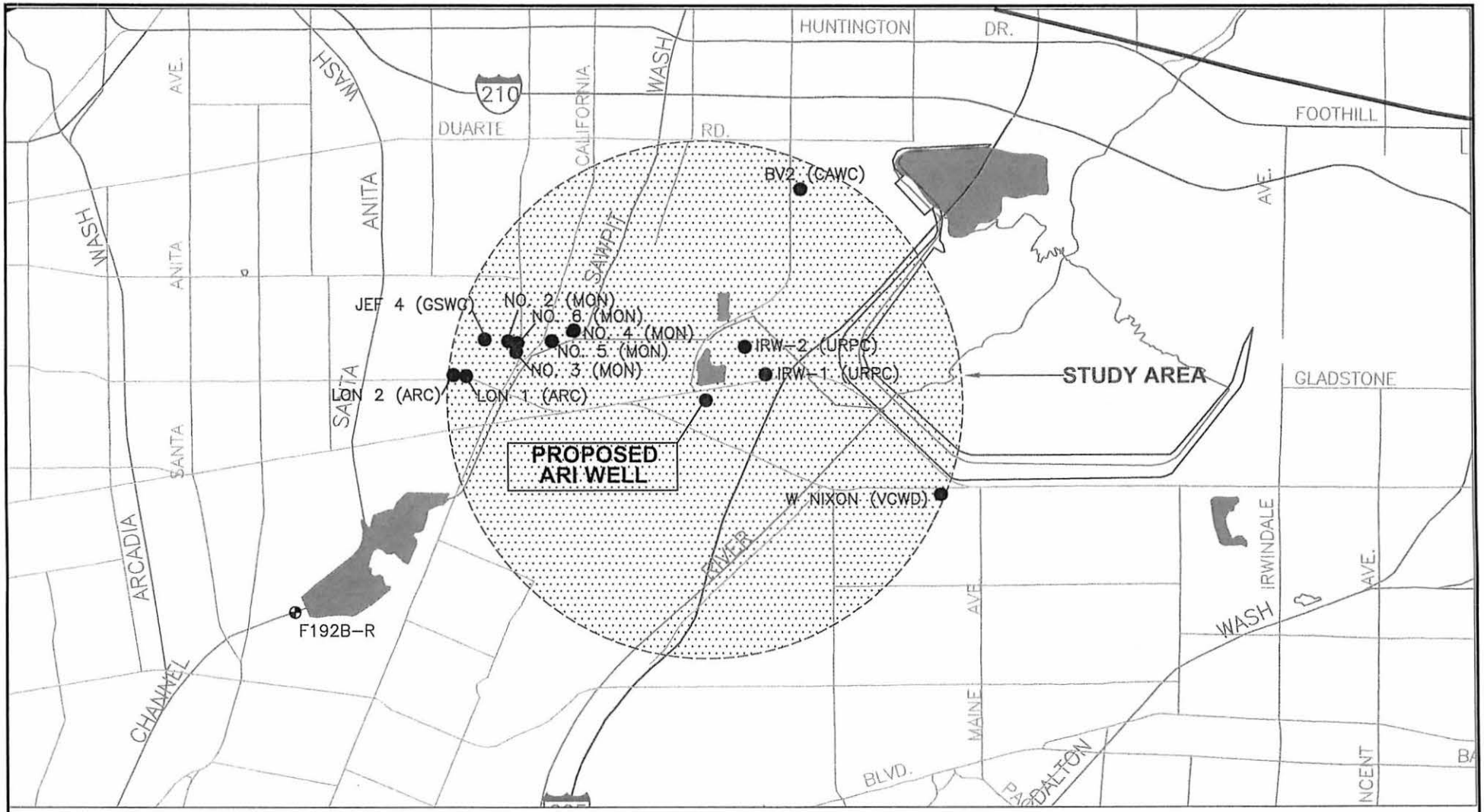
ENVIRONMENTAL SETTING

Study Area

The study area of this Staff Report encompasses an approximately 7,000-foot radius which includes the proposed ARI Well, as shown on Figure 1. The study area for the proposed ARI Well includes City of Arcadia's (Arcadia) Longden 1 and Longden 2 Wells; California American Water Company - Duarte's (CAWC) Buena Vista 2 Well; City of Monrovia's Wells No. 2, 3, 4, 5, and 6; Golden State Water Company's (GSWC) Jefferies 4 Well; United Rock Products Corporation's (URPC) Irwindale 1 and Irwindale 2 Wells; and Valley County Water District's (VCWD) West Nixon Well. Characteristics of these wells are shown in Table 1.

Geology

In the vicinity of the study area, the Main Basin's principal water-bearing formations are unconsolidated and semi-consolidated non-marine deposits of the Recent and Pleistocene Age. The recent alluvial deposits laid down during the last Pleistocene epoch consist of predominantly coarse boulders, gravel, and sands. Clay is also present in the recent alluvium, probably due to the weathering process after the sediments were deposited (California Department of Water Resources, March 1966).



LEGEND

● NO. 4 (MON) **WELL NAME (OWNER)**

⊕ F192B-R **STREAM GAGING STATION**

(ARC)	ARCADIA, CITY OF
(CAWC)	CALIFORNIA AMERICAN WATER COMPANY - DUARTE
(GSWC)	GOLDEN STATE WATER COMPANY
(MON)	MONROVIA, CITY OF
(VCWD)	VALLEY COUNTY WATER DISTRICT
(URPC)	UNITED ROCK PRODUCTS CORPORATION

STETSON ENGINEERS INC.
861 VILLAGE OAKS DRIVE, SUITE 100
COVINA, CALIFORNIA 91724
TEL: (626) 967-6202
FAX: (626) 331-7065

2171 E Francisco Blvd., Suite K
San Rafael California 94901

2651 W Guadalupe Rd., Suite A209
Mesa Arizona 85202

APPROXIMATE SCALE:
2,000' 0 2,000'

MAIN SAN GABRIEL BASIN WATERMASTER

PROPOSED ARI WELL
VICINITY MAP

FIGURE 1

\\SERVER3\Data\Jobs\1205\1205-60\Arcadia Reclamation Inc\Figure 1.dwg

The elevation of the ground surface at the proposed ARI Well is approximately 420 feet above mean sea level (msl). The effective base of the groundwater aquifer is approximately 1,100 feet below msl.

Available driller logs for the wells in the study area indicate the water bearing formations consist of alluvial materials ranging from gravel to boulders. These water bearing formations (aquifers) are embedded within intermittent clay layers of thicknesses. Profiles for available well logs within the study area are shown on Plate 1. The proposed ARI Well is located southerly to most of the wells in the study area.

Hydrology

The annual rainfall in the San Gabriel Valley averages approximately 17.2 inches since water year 1958-59, as shown on Table 2. The study area is drained by the Sawpit Wash which is a concrete-lined channel. There is a stream gaging station (F192B-R) in the Rio Hondo Channel, approximately three miles southwesterly of proposed the ARI Well, shown on Figure 1. Gaging Station F192B-R measures combined flows from Santa Anita Wash and Sawpit Wash at the outflow from Peck Pit. The stream gaging station is operated by the Los Angeles County Department of Public Works (LACDPW). Generally, there is no flow in the Rio Hondo Channel except for periods during and after heavy rains or after the release of water from Sierra Madre Dam, Santa Anita Dam, Santa Fe Dam, and Sawpit Dam. During water year 2015-16, flow in the Rio Hondo Channel at stream gaging station F192B-R ranged from 0 cubic feet per second (cfs) to about 60 cfs with a daily average of approximately 0.41 cfs (LACDPW, October 2015 – September 2016).

Hydrogeology

The aquifer underlying the study area consists mainly of sand, gravel and boulders. The static water levels in water production wells in the vicinity of the study area were measured in July 2016, as shown in Table 3. The measurements were used to construct an approximate groundwater contour map in the vicinity of the study area, as shown on Plate 2. Plate 2 indicates the regional groundwater flow in the vicinity of the study area appears to be from the east to west.

Groundwater Quality

Available historical water quality data for wells within the study area are shown in Table 1. In the study area, Trichloroethylene (TCE) historically was detected above the Maximum Contaminant Level (MCL) of 5 micrograms per liter (µg/l) in Arcadia's Longden 1 Well at 30.0 µg/l in July 1987 and Longden 2 Well at 62.0 µg/l in January 1985; and Monrovia's Wells No. 2 at 167.0 µg/l in August 1982, No. 3 at 18.0 µg/l in August 1982, No. 4 at 6.5 µg/l in February 1991, No. 5 at 6.1 µg/l in April 2016, and No. 6 at 23.0 µg/l in April 2014. Most recently TCE has been detected above the MCL in the study area only in for Monrovia's Wells No. 2 at 6.7 µg/l in October 2016 and No. 6 at 9.5 µg/l in October 2016.

Tetrachloroethylene (PCE) historically was detected above the MCL of 5 µg/l in Arcadia's Longden 2 Well at 7.7 µg/l in January 1982; Monrovia's Wells No. 2 at 11.0 µg/l in August 1982 and No. 3 at 17.0 µg/l in August 1982; and VCWD's West Nixon Well at 8.0 µg/l in November 2004. Most recently, PCE has not been detected above the MCL in any well in the study area.

The compound 1,2-Dichloroethane (1,2-DCA) historically was detected above the MCL of 0.5 µg/l in Arcadia's Longden 1 Well at 1.4 µg/l in July 1987; and Monrovia's Well No. 2 at 1.5 µg/l in February 1987. Most recently, 1,2-DCA has not been detected in any well in the study area.

Carbon Tetrachloride (CTC) historically was detected above the MCL of 0.5 µg/l in Arcadia's Longden 2 Well at 2.6 µg/l in September 1987. Most recently, CTC has not been detected in any well in the study area. No additional Volatile Organic Compound (VOC) has been detected in the most recent groundwater samples collected from any well in the study area.

Nitrate historically was detected above the MCL of 45 milligrams per liter (mg/l) in Arcadia's Longden 1 Well at 57.6 mg/l in October 2015 and Longden 2 Well at 109.1 mg/l in May 1985; and Monrovia's Wells No. 2 at 65.6 mg/l in December 1991 and No. 3 at 49.6 mg/l in May 1976. Most recently, Nitrate has been detected above the MCL in the study area only at Arcadia's Longden 1 Well at 48.7 mg/l in October 2016 and Longden 2 Well at 53.1 mg/l in December 2016.

Perchlorate historically was detected above the MCL of 6 µg/l in Monrovia's Well No. 2 at 6.9 µg/l in April 2015. Most recently, Perchlorate has not been detected above the MCL in any well in the study area.

Arsenic historically was not detected above the MCL of 10 µg/l in any well in the study area.

Hexavalent Chromium historically was not detected above the MCL of 10 µg/l in any well in the study area.

POTENTIAL SOURCES OF VOC CONTAMINATION

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is conducting a source investigation program to identify responsible parties, to establish a cause-and-effect relationship between a pollution source and contaminated groundwater, and to abate the source of pollution and clean up the soil and/or the groundwater. The Regional Board investigation includes the cities of Industry, La Puente, El Monte, South El Monte, Azusa, Baldwin Park, Monrovia, and adjacent areas.

Various lists of businesses and field reconnaissance inspections are used by Regional Board staff to identify potential target sources. Chemical use questionnaires developed for use in the program are subsequently sent to identified facilities and after

review of the returned questionnaires, sites are inspected. Site visits are used to identify suspect discharges and to request work plans for additional site assessment from potential dischargers.

In the study area, several industrial and commercial facilities have been included in Regional Board's site investigation list. These facilities include 3M-Unitek Corporation on Peck Road, Aremac Associates, Inc. on South Myrtle Avenue, and Bestran Corporation on South Myrtle Avenue.

COMPLIANCE WITH BASIN CLEANUP PLANS

The United States Environmental Protection Agency (USEPA) has not included the proposed ARI Well in any of its six operable units within the Main Basin. Currently there are no USEPA Basin Cleanup Plans for the proposed ARI Well.

POTENTIAL IMPACTS ON CONTAMINANT MIGRATION

The proposed ARI Well will provide water to be utilized for the reclamation of a former aggregate mining site. In addition, the proposed ARI Well will not be used to produce groundwater for potable use and will not be used to provide water off-site. The proposed ARI Well is not located in an area where groundwater remediation is on-going or proposed at this time. The proposed ARI Well should have no impact on contamination migration in the study area.

ALTERNATIVES

ARI submitted an Application to drill the proposed new well to provide water for the reclamation of a former aggregate mining site. The following alternative is available to ARI:

1. **No Action**: ARI may choose to operate its facility without a water supply, or by connecting to a public system.

CONCLUSIONS

Following review of available data and information, Watermaster staff has determined the following:

1. ARI has submitted an Application to Drill Water Well. ARI desires to drill the proposed new well to provide water for reclamation of a former aggregate mining site.

2. ARI currently is not a Party to the Judgment, but has agreed to submit paper work to intervene, be a Party to the Judgment and comply with provisions of the Judgment, and Rules and Regulations, including applicable assessments on all water production, pending Watermaster action on this Application.

3. The proposed ARI well is to be 10 inches in diameter, 400 feet deep, perforated from 200 feet to 400 feet bgs. The Application notes the anticipated yield of the proposed ARI Well is 600 gpm.

4. The proposed ARI Well is located in the Main Basin. Regional groundwater flow in the Main Basin is from the east to the west.

5. Historically, TCE, PCE, 1,1-DCE, 1,2-DCA, CTC, Nitrate, and Perchlorate have been detected in the wells in the study area. Currently, TCE has been detected above the MCL of 5 μg/l in Monrovia's Wells No. 2 and No. 6, and Nitrate has been detected above the MCL of 45 mg/l in Arcadia's Longden 1 Well and Longden 2 Well in the study area.

6. Currently, there are no USEPA Basin Cleanup Plans for the proposed ARI Well.

7. The proposed ARI Well should have no impact on contamination migration.

8. ARI has the alternative of "No Action", or by connecting to a public system.

RECOMMENDATIONS

Regarding the Application to Drill Water Well submitted by ARI, Watermaster staff recommends a permit be issued to ARI for the proposed ARI Well subject to the conditions described herein.

1. ARI shall file appropriate documents with Watermaster to become a Party to the Main Basin Judgment.
2. ARI shall comply with all of Watermaster's Judgment and Rules and Regulations.
3. ARI shall provide copies of all permits for the new well and proposed water use, including the County Department of Health Services, Regional Water Quality Control Board, and the State Department of Water Resources.
4. ARI shall submit the initial well data and quarterly reports as required by Section 28 (c) and (d) of Watermaster's Rules and Regulations.
5. ARI shall have the proposed well metered and report production on a quarterly basis to the Watermaster.
6. ARI shall pay all applicable assessments.
7. ARI shall promptly notify Watermaster of any changes to its plan to operate the new well.

REFERENCES

Main San Gabriel Basin Watermaster. July 2016. Draft Basinwide Groundwater Elevation Monitoring Program. Prepared for Watermaster by Stetson Engineers Inc. Covina, California.

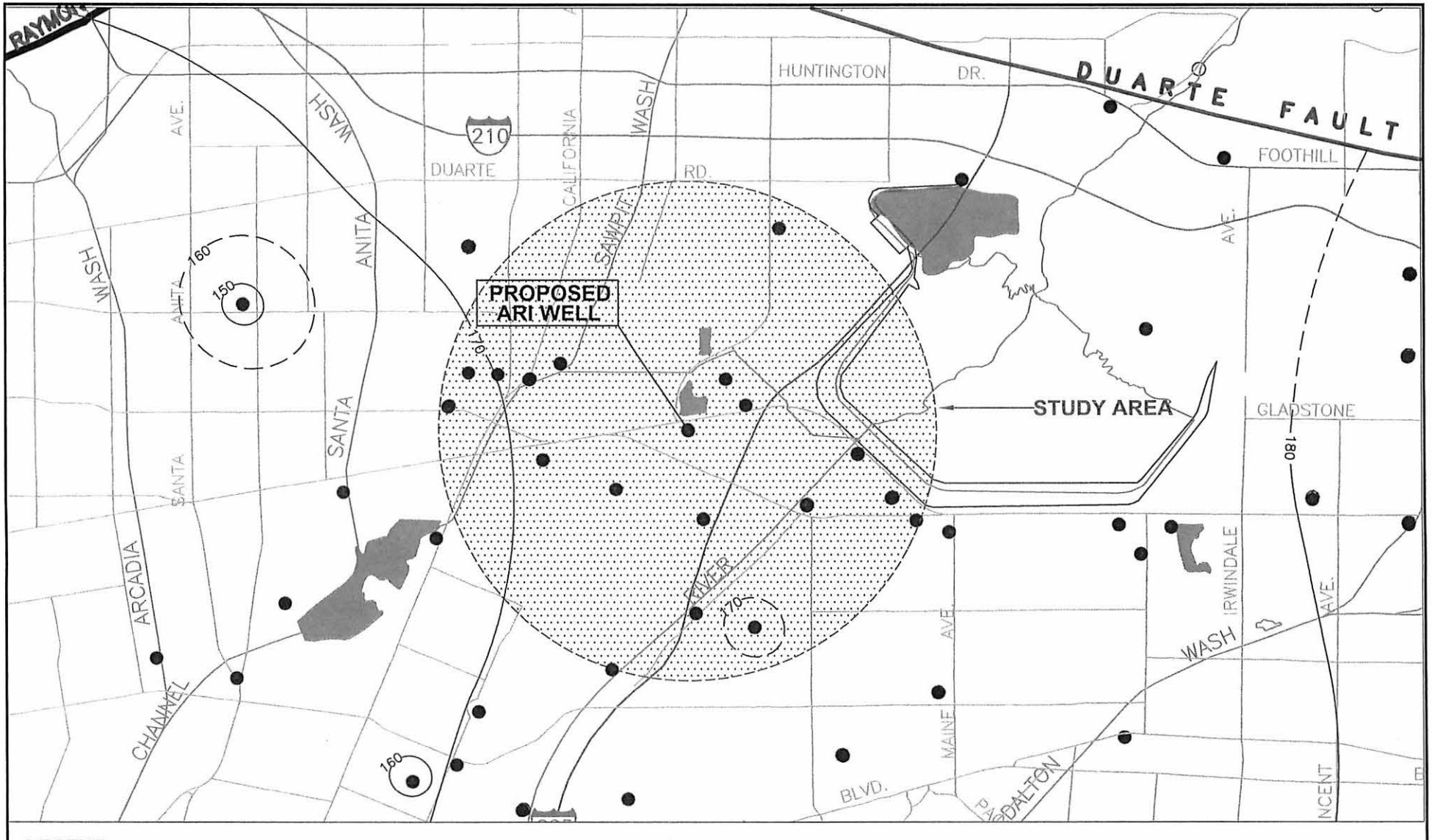
California Department of Water Resources. March 1966. *Planned Utilization of Ground Water Basins, San Gabriel Valley, Appendix A: Geohydrology. Bulletin No. 104-2.* Sacramento, California.

Los Angeles County Department of Public Works. October 2015 – September 2016. Discharge Data for Stream Gaging Station F192B-R for Water Year 2015-16.

J:\Jobs\1205\1205-60\Arcadia Reclamation Inc\ARI Report.doc

Appendix A

Application to Drill Water Well



LEGEND

- WELL
- 170 — INTERPOLATED GROUNDWATER CONTOUR IN FEET ABOVE MEAN SEA LEVEL
- 160 — APPROXIMATED GROUNDWATER CONTOUR IN FEET ABOVE MEAN SEA LEVEL

STETSON ENGINEERS INC.

861 VILLAGE OAKS DRIVE, SUITE 100
COVINA, CALIFORNIA 91724
TEL: (626) 967-6202
FAX: (626) 331-7065

2171 E Francisco Blvd., Suite K
San Rafael California 94901

2651 W Guadalupe Rd., Suite A209
Mesa Arizona 85202

APPROXIMATE SCALE:
2,000' 0 2,000'

MAIN SAN GABRIEL BASIN WATERMASTER

APPROXIMATE STATIC WATER LEVEL ELEVATIONS IN THE VICINITY OF PROPOSED ARI WELL (JULY 2016)

PLATE 2

\\SERVER3\Data\Jobs\1205\1205-60\Arcadia Reclamation Inc\Plate 2.dwg

TABLE 1
WELL CHARACTERISTICS AND WATER QUALITY AT PRODUCTION WELLS IN THE STUDY AREA FOR THE PROPOSED NEW ARI WELL

WELL NAME	RECORDATION NUMBER	DEPTH (1)	PERFORATIONS (1)	CAPACITY (GPM)	USAGE	STATUS (2)	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)				
							CONTAMINANT OF CONCERN	HISTORIC HIGH VALUE	HISTORIC HIGH DATE	MOST RECENT VALUE	MOST RECENT DATE
ARCADIA, CITY OF											
LON 1	1901013	550	275-530	1,000	MUNICIPAL	ACTIVE	TCE	30.0	07/87	1.4	10/16
							PCE	2.7	07/87	0.7	10/16
							1,1-DCE	4.1	06/87	ND	07/16
							1,2-DCA	1.4	07/87	ND	07/16
							1,1,1-TCA	4.6	07/87	ND	07/16
							NITRATE (NO3)	57.6	10/15	48.7	10/16
							NITRATE (N)	13.0	10/15	11.0	10/16
							CLO4	ND	12/97	ND	07/16
							AS	ND	04/85	ND	06/14
							CR6	1.9	11/00	1.5	09/13
LON 2	1901014	656	256-536	1,000	MUNICIPAL	ACTIVE	TCE	62.0	01/85	1.5	12/16
							PCE	7.7	01/82	ND	12/16
							CTC	2.6	09/87	ND	07/16
							1,1-DCE	0.9	05/87	ND	07/16
							1,1,1-TCA	12.0	01/85	ND	07/16
							NITRATE (NO3)	109.1	05/85	53.1	12/16
							NITRATE (N)	24.6	05/85	12.0	12/16
							CLO4	ND	07/97	ND	07/16
							AS	0.7	08/96	ND	01/16
							CR6	4.7	01/16	4.7	01/16
CALIFORNIA-AMERICAN WATER COMPANY/DUARTE SYSTEM											
B V 2	8000216	720	300-340 360-472 490-700	1,800	MUNICIPAL	ACTIVE	VOCS	ND	03/12	ND	12/16
							NITRATE (NO3)	4.1	12/14	3.0	09/16
							NITRATE (N)	0.9	12/14	0.7	09/16
							CLO4	ND	09/12	ND	09/16
							AS	ND	12/14	ND	12/14
							CR6	1.0	04/11	0.3	09/13
GOLDEN STATE WATER COMPANY/SAN GABRIEL VALLEY DISTRICT (SOUTH ARCADIA)											
JEF 4	8000111	1,003	697-765 773-780 867-905 910-973	1,300	MUNICIPAL	ACTIVE	VOCS	ND	08/89	ND	08/16
							NITRATE (NO3)	14.7	07/89	3.7	08/16
							NITRATE (N)	3.3	07/89	0.8	08/16
							CLO4	ND	08/97	ND	08/16
							AS	0.7	08/96	ND	08/15
							CR6	1.3	07/01	ND	08/15

TABLE 1
WELL CHARACTERISTICS AND WATER QUALITY AT PRODUCTION WELLS IN THE STUDY AREA FOR THE PROPOSED NEW ARI WELL

WELL NAME	RECORDATION NUMBER	DEPTH (1)	PERFORATIONS (1)	CAPACITY (GPM)	USAGE	STATUS (2)	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)				
							CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT	
								VALUE	DATE	VALUE	DATE
MONROVIA, CITY OF											
02	1900418	440	73-118	1,700	MUNICIPAL	ACTIVE	TCE	167.0	08/82	6.7	10/16
			136-180				PCE	11.0	08/82	1.9	10/16
			182-214				1,1,1-TCA	7.1	02/87	ND	07/16
			217-350				1,1-DCE	3.4	06/87	ND	10/16
			374-420				1,2-DCA	1.5	02/87	ND	07/16
							NITRATE (NO3)	65.6	12/91	27.9	10/16
							NITRATE (N)	14.8	12/91	6.3	10/16
							CLO4	6.9	04/15	ND	10/16
							AS	0.9	08/96	ND	04/16
							CR6	7.1	04/16	7.1	04/16
03	1900419	500	80-122	1,700	MUNICIPAL	ACTIVE	TCE	18.0	08/82	3.3	10/16
			126-133				PCE	17.0	08/82	ND	10/16
			134-160				1,1-DCE	0.8	12/08	ND	10/16
			166-197				NITRATE (NO3)	49.6	05/76	11.1	10/16
			209-216				NITRATE (N)	11.2	05/76	2.5	10/16
			229-240				CLO4	ND	08/97	ND	07/16
			247-346				AS	3.6	08/97	ND	04/16
			370-480				CR6	5.8	08/13	1.7	04/16
04	1900420	530	233-365	1,800	MUNICIPAL	ACTIVE	TCE	6.5	02/91	ND	12/16
			377-403				PCE	1.0	02/91	ND	12/16
			420-505				1,1-DCE	1.1	01/05	ND	12/16
							NITRATE (NO3)	28.8	06/91	4.9	01/16
							NITRATE (N)	6.5	06/91	1.1	01/16
							CLO4	ND	08/97	ND	01/16
							AS	3.8	08/97	ND	04/10
							CR6	1.1	07/01	0.5	08/13
05	1940104	550	211-345	2,400	MUNICIPAL	ACTIVE	TCE	6.1	04/16	2.7	10/16
			375-516				PCE	1.0	10/02	ND	10/16
			527-533				1,1-DCE	1.0	10/02	ND	10/16
							NITRATE (NO3)	29.4	01/91	13.3	04/16
							NITRATE (N)	6.6	01/91	3.0	04/16
							CLO4	ND	08/97	ND	07/16
							AS	1.0	08/96	ND	04/16
							CR6	1.5	04/16	1.5	04/16

TABLE 1
WELL CHARACTERISTICS AND WATER QUALITY AT PRODUCTION WELLS IN THE STUDY AREA FOR THE PROPOSED NEW ARI WELL

WELL NAME	RECORDATION NUMBER	DEPTH (1)	PERFORATIONS (1)	CAPACITY (GPM)	USAGE	STATUS (2)	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)				
							CONTAMINANT OF CONCERN	HISTORIC HIGH VALUE	HISTORIC HIGH DATE	MOST RECENT VALUE	MOST RECENT DATE
06	8000171	610	250-590	2,400	MUNICIPAL	ACTIVE	TCE	23.0	04/14	9.5	10/16
							PCE	2.3	01/10	1.6	10/16
							1,1-DCE	0.8	10/07	0.6	10/16
							NITRATE (NO3)	42.0	06/14	31.4	10/16
							NITRATE (N)	9.5	06/14	7.1	10/16
							CLO4	4.9	06/14	ND	10/16
							AS	ND	10/99	ND	04/16
							CR6	3.5	04/16	3.5	04/16
UNITED ROCK PRODUCTS CORPORATION											
IRW-1	1900106	NA	NA	NA	INDUSTRIAL	ACTIVE	VOCS	ND	08/89	ND	12/16
							NITRATE (NO3)	6.4	07/96	3.3	12/16
							NITRATE (N)	1.4	07/96	0.7	12/16
							CLO4	ND	02/98	ND	02/98
							AS	ND	04/98	ND	04/98
IRW-2	1903062	NA	NA	NA	INDUSTRIAL	ACTIVE	VOCS	ND	07/96	ND	12/16
							NITRATE (NO3)	4.5	10/04	2.2	12/16
							NITRATE (N)	1.0	10/04	0.5	12/16
							CLO4	ND	02/98	ND	02/98
VALLEY COUNTY WATER DISTRICT											
W NIXON (W JOAN)	1902356	600	300-584	2,600	MUNICIPAL	ACTIVE	TCE	4.0	11/04	0.6	11/16
							PCE	8.0	11/04	1.4	11/16
							NITRATE (NO3)	8.5	08/13	5.3	11/16
							NITRATE (N)	1.9	08/13	1.2	11/16
							CLO4	ND	05/97	ND	08/16
							AS	3.1	08/95	ND	08/16
							CR6	1.0	05/01	ND	08/16

NOTES:

(1)	Depth and Perforations in feet below ground surface
(2)	Status of well may not be consistent with DDW criteria
VOCS	Volatile Organic Compounds
ND	Not Detected
NA	Not Available

CHEMICAL CONSTITUENTS	MAXIMUM CONTAMINANT LEVEL	DETECTION LIMIT

TABLE 1
WELL CHARACTERISTICS AND WATER QUALITY AT PRODUCTION WELLS IN THE STUDY AREA FOR THE PROPOSED NEW ARI WELL

WELL NAME	RECORDATION NUMBER	DEPTH (1)	PERFORATIONS (1)	CAPACITY (GPM)	USAGE	STATUS (2)	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)				
							CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT	
								VALUE	DATE	VALUE	DATE

CLO4	Perchlorate	6 micrograms per liter (ug/L)	4.0 ug/L
NO3	Nitrate as Nitrate	45 milligrams per liter (mg/L)	2.0 mg/L
N	Nitrate as Nitrogen	10 mg/L	0.4 mg/L
TCE	Trichloroethylene	5 ug/L	0.5 ug/L
PCE	Tetrachloroethlene	5 ug/L	0.5 ug/L
CTC	Carbon Tetrachloride	0.5 ug/L	0.5 ug/L
1,1-DCE	1,1-Dichloroethylene	6 ug/L	0.5 ug/L
1,2-DCA	1,2-Dichloroethane	0.5 ug/L	0.5 ug/L
1,1,1-TCA	1,1,1-Trichloroethane	200 ug/L	0.5 ug/L
AS	Arsenic	10 ug/L	2.0 ug/L
CR6	Hexavalent Chromium	10 ug/L	1.0 ug/L

TABLE 2

ANNUAL RAINFALL IN THE SAN GABRIEL VALLEY FROM 1958-59 THROUGH 2015-16*

WATER YEAR	RAINFALL IN INCHES
1958-59	8.5
1959-60	10.6
1960-61	5.9
1961-62	22.4
1962-63	12.3
1963-64	9.4
1964-65	15.2
1965-66	19.6
1966-67	25.0
1967-68	15.0
1968-69	30.5
1969-70	11.1
1970-71	13.3
1971-72	8.5
1972-73	22.4
1973-74	16.8
1974-75	14.9
1975-76	12.1
1976-77	14.5
1977-78	38.4
1978-79	23.9
1979-80	34.8
1980-81	10.3
1981-82	18.9
1982-83	39.3
1983-84	10.6
1984-85	14.6
1985-86	22.0
1986-87	9.1
1987-88	14.9
1988-89	11.2
1989-90	12.4
1990-91	15.1
1991-92	22.8
1992-93	35.9
1993-94	11.6
1994-95	30.4
1995-96	15.6
1996-97	17.5
1997-98	36.1
1998-99	8.6
1999-00	14.4
2000-01	15.5
2001-02	6.4
2002-03	19.4
2003-04	12.7
2004-05	45.3
2005-06	16.8
2006-07	4.9
2007-08	16.4
2008-09	14.0
2009-10	20.2
2010-11	24.9
2011-12	10.9
2012-13	8.0
2013-14	6.3
2014-15	11.4
2015-16	10.1
TOTAL	**999.6**
58-YEAR AVERAGE	**17.2**

*Annual rainfall determined as the average of rainfall at San Dimas (station 95), Pomona† (station 356C), El Monte (station 108D), and Pasadena (station 610B).

†Pomona (station 356C) replaced Walnut (station 102D) in 2000-01. Pomona (average of stations 1260 and 1271) replaced in 2011-12.

TABLE 3
MEASURED GROUNDWATER ELEVATIONS AT SELECTED WELLS IN THE VICINITY OF THE PROPOSED NEW ARI WELL
JULY 2016

WELL NAME	RECORDATION NUMBER	LACDPW NUMBER	MEASURING DATE	DEPTH TO WATER (FEET)	RP ELEVATION (FEET MSL)	GROUNDWATER ELEVATION (FEET MSL)
ARCADIA, CITY OF						
LON 2	1901014	4198G	28-Jul-16	195.84	362.82	166.98
CALIFORNIA AMERICAN WATER COMPANY/DUARTE						
B V	1900355	4227A	11-Jul-16	279.78	450.86	171.08
LOS ANGELES, COUNTY OF						
USGVMWD-1	NA	NA	13-Jul-16	253.94	425.90	171.96
USGVMWD-2	NA	NA	13-Jul-16	234.26	405.39	171.13
USGVMWD-3	NA	NA	13-Jul-16	193.95	365.26	171.31
MONROVIA, CITY OF						
03	1900419	4198K	27-Jul-16	201.58	371.62	170.04
05	1940104	NA	27-Jul-16	203.15	374.27	171.12
VALLEY COUNTY WATER DISTRICT						
E NIXON (E JOAN)	1900032	4239	Jun-16	245.00	423.26	178.26

WATER LEVEL MEASUREMENTS WERE MADE USING A NORTHWEST INSTRUMENTATION'S ELECTRONIC SOUNDER WITH THE SMALLEST DIVISION OF 0.02 FEET

Appendix A

Application to Drill Water Well

RECEIVED

...ress:
...th Azusa Ave. DEC 02 2016
...usa, CA 91702

MSGB WATERMASTER

MAIN SAN GABRIEL BASIN WATERMASTER

SUPERIOR COURT CASE NO. 924128-LOS ANGELES COUNTY

APPLICATION TO DRILL WATER WELL

(State Well Number)
(Recordation Number)
(Owner's Designation)

(To Be Completed By Watermaster)

0287 - NW

(1) APPLICANT:
Name Arcadia Reclamation, Inc.
Address P.O. Box 7368
La Verne, CA 91750

(2) LOCATION OF PROPOSED WELL:
Well Address: 1270 E. Arrow Highway, Irwindale, CA 91706
Township, Range, and Section 1S, 11W, Sec 1
Thomas Brothers Guide (Please indicate year, page number and coordinates.) ______

Assessor's Parcel No. 8532-001-002
(Please attach copy of a map or sketch showing well location relative to streets or other major landmarks.)

(3) NAME OF WELL DRILLING CONTRACTOR: Gregg Drilling & Testing, Inc.

(4) PROPOSED USE:
Municipal ( ) Irrigation ( )
Domestic ( ) Industrial ( )
Water Quality Cleanup ( )
Other (X) Testing and dust control

(5) DRILLING EQUIPMENT:
Rotary (X)
Cable ( )
Other ( )

(6) PROPOSED WELL CHARACTERISTICS:
A. Casing Installed:
STEEL (X) PLASTIC ( )
OTHER ( )

Gravel Packed:
Yes (X) No ( ) Size 2"

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	Packed From ft.	Packed To ft.
0'	30'	18"	1/4"	20"	190'	410'
30'	400'	10"	1/4"			

Size of shoe or well ring: N/A
Describe joint Welded

B. Perforations or Screen:
Type of perforation or size of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Slot Size
200'	400'	12	3	0.40

C. Construction:
Will a surface sanitary seal be provided? Yes (X) No ( )
To what depth? 190' ft.
Is any strata anticipated to be sealed against pollution?
Yes (X) No ( )
If yes, note depth of strata
from 0' ft. to 190' ft.
from ______ ft. to ______ ft.
Proposed method of sealing 10 sack sand slurry pumped in

(7) WELL TESTS:
Will a pump test be made? Yes (x) No ( ) If yes, by whom?

Anticipated Well Yield 600 gpm
Will a chemical analysis be made? Yes ( ) No (X)
Will an electric log be made of the well? Yes ( ) No (X) (If yes, file copy with Watermaster upon well completion)

(8) PROPOSED PUMPING EQUIPMENT:
(A) Pump
Electric (x) Natural Gas ( )
Propane ( ) Diesel ( )
Other ( ) ______
(B) Make ______
(C) Pump Size (hp) 75 hp (gpm) 600 - 700 hp
(D) Design Efficiency ______

(9) PROXIMITY TO POTENTIAL SOURCES OF CONTAMINATION:
(A) Distance to nearest sewer line or septic tank N/A (ft.)
(B) Wells (Please provide distance, direction and name of nearest upgradient well(s) with volatile organic chemical or nitrate levels above a maximum contaminant level, if known.)
N/A

(10) Please provide copy of County of Los Angeles permits and State Department of Water Resources Water Well Driller Reports and any other permits for construction of a new well upon completion of the proposed well.

(11) Please provide Watermaster with copies of all feasibility studies, alternative water supply sources, water quality studies or other reports which validate the Applicant's need to drill a new well. Applicant must provide supporting data to show compliance with the requirements of Section 28 with particular reference to Section 28(e) of Watermaster's Rules and Regulations.

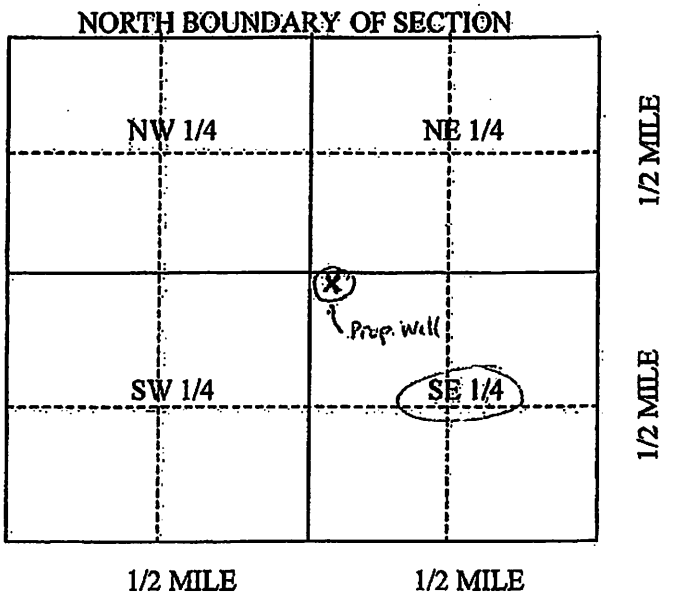
I hereby agree to comply with all regulations of the Main San Gabriel Basin Watermaster pertaining to well construction, operation, repair, modification, destruction and inactivation. The Applicant will furnish the Watermaster a complete well log upon completion of well construction.

Submitted for Applicant by: Robert W. Bowcock
Signature: [signature]
Title: Resource Manager
Date: 11-29-2016

Date Received by Watermaster: ______
Watermaster Action:
Approved ( ) Denied ( )
Date of Action: ______
Permit Number: ______
By: ______
(Name)
______
(Title)

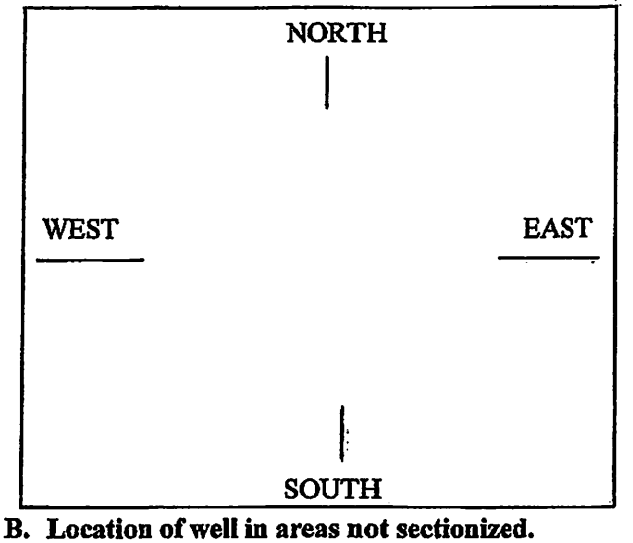
Form No. RR 28-03 – 08/00

WELL LOCATION SKETCH



Township 1 N/S
Range 11 E/W
Section No. 1

A. Location of well in sectionized areas. Sketch roads, railroads, streams, or other features as necessary.



B. Location of well in areas not sectionized. Sketch roads, railroads, streams, or other features as necessary. Indicate distances.

MAIN SAN GABRIEL BASIN WATERMASTER
STANDARD QUESTIONNAIRE
For
Applications Submitted to the
Watermaster Under Section 28 of the
Rules and Regulations

PLEASE RESPOND TO ALL ITEMS LISTED BELOW

1. Please describe your reason(s) for proposing the project associated with the application. Please be specific and provide detail.

   The Arcadia Reclamation property is reclaiming the former United Rock aggregate mine.

   The site is monitored by the Los Angeles Regional Water Quality Control Board.

   The groundwater produced will be utilized on the property for compaction and dust control for between 8-10 years.

   The groundwater well will then be converted to a groundwater monitoring well.

2. Please describe your review of the following alternatives in selecting the proposed project. Results of your review process (maps, tables, water quality data, cost, etc.) should be included.

   We have evaluated the entire site and consulted with the Los Angeles Regional Water Quality Control Board on the best location of the well and conversion to a monitoring well. (see attached map location)

3. Drill well at alternative location(s).

   a. Drill well in known contaminated area(s) and provide wellhead treatment.

      This is not feasible; further, the water will not be permitted for potable use.

   b. Activate an inactive well.

      An existing monitoring well on site was considered for use; however, the location identified is a better location.

   c. Activate an inactive well in known contaminated area and provide wellhead treatment.

      This is not feasible; further, the water will not be permitted for potable use.

   d. New water supply from nearby water producer and/or MWD.

      This is not feasible. The water supply is for a limited period and the addition of a new monitoring well will serve as an added benefit.

4. Does your planned project include the removal of contaminants from the Basin? If so, please provide an explanation and estimate the type and annual quantity of contaminant removal.

   No

5. If there are any time constraints on your proposed project, please provide detailed information.

   The well is needed immediately to maintain the reclamation schedule with the local communities and regional regulators.

6. What is to source of water rights or replenishment?

   The water will be used from pre-leases from surplus water rights in the market in the Main San Gabriel Basin. If sufficient water right leases are not secured, the water will be purchased as replacement water from the Upper San Gabriel Valley Water District. The property is located within the Upper San Gabriel Valley Water District's jurisdiction and is current on its taxes to both the Upper San Gabriel Valley Water District and the Metropolitan Water District of Southern California and is therefore entitled to claim them as their "Responsible Party" under the Judgment.

Appendix C. Title 22 Water Quality ARI Well #1

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Estes Park, CO 80517-

Telephone: (805)766-2040
Attention: Gregory Millikan

Number of Pages	**94**
Date Received	**03/15/2018**
Date Reported	**04/19/2018**

Job Number	Order Date	Client
91800	03/15/2018	ANACAP

Project ID: 5349.0007
Project Name: Arrow-Live Oak
Site: Live Oak Arrow
1270 E. Arrow Hwy.
Irwindale, CA 91706

Enclosed please find results of analyses of 1 water sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Attachment: 34 pages

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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CHAIN OF CUSTODY RECORD

107201

AETL JOB No. 91800

Page 1 of 1

COMPANY: ANACAPA GEOSERVICES
PROJECT MANAGER: MCLEAN
COMPANY ADDRESS: P.O. BOX 3292, ESTES PARK, CO 80517
PHONE: 8057662040
FAX:
PROJECT NAME: LIVE OAK-ARROW WATER
PROJECT #: 5349.0006
SITE NAME AND ADDRESS: ARROW LIVE OAK, 1270 E. ARROW HIGHWAY, IRWINDALE, CA
PO #: 5349.0006

	SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.	GEN MINERAL	PHYS-PROP	TEST INSTRUCTIONS & COMMENTS
1	SUPPLY 1	91800.01	3/15/2018	1043	LIQ	6/1 GAL	4°C	X	X	
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										

ANALYSIS REQUESTED

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	1	PROPERLY COOLED Y / N / NA	Y
CUSTODY SEALS Y / N / NA	N	SAMPLES INTACT Y / N / NA	Y
RECEIVED IN GOOD COND. Y / N	Y	SAMPLES ACCEPTED Y / N	Y

TURN AROUND TIME

- [X] NORMAL
- [ ] RUSH
  - [ ] SAME DAY
  - [ ] NEXT DAY
  - [ ] 2 DAYS
  - [ ] 3 DAYS

DATA DELIVERABLE REQUIRED

- [ ] HARD COPY
- [X] PDF
- [ ] GEOTRACKER (GLOBAL ID) _____
- [ ] OTHER (PLEASE SPECIFY) _____

RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature:	Signature:	Signature:
Printed Name: GREGORY MCLEAN	Printed Name:	Printed Name:
Date: 3/15/2018 Time: 1220	Date: Time:	Date: Time:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY LABORATORY: AETL 3.**
Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name: Jean Landa
Date: Time:	Date: Time:	Date: 03/15/18 Time: 1220

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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CHAIN OF CUSTODY RECORD

107202

AETL JOB No. 91800

Page 1 of 1

COMPANY: ANACAPA GEOSERVICES
PROJECT MANAGER: MILLIKAN
COMPANY ADDRESS: P.O. BOX 3292, ESTES PARK, CO 80517
PHONE / FAX: 805 7662040
PROJECT NAME: ARROW - LIVE OAK
PROJECT #: 5349.0007
SITE NAME AND ADDRESS: LIVE OAK ARROW, 1270 E. ARROW HIGHWAY / AZUSA, CA
PO #: 5349.0007

	SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.
1	SUPPLY 1	91800.01	3/15/2018	~~DRY~~ 1043	LIQ	6/1 GAL	4°C
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

ANALYSIS REQUESTED

TEST INSTRUCTIONS & COMMENTS

* See attachment

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	5	PROPERLY COOLED (Y / N / NA)	
CUSTODY SEALS (Y / N / NA)		SAMPLES INTACT (Y / N / NA)	
RECEIVED IN GOOD COND. (Y / N)		SAMPLES ACCEPTED (Y / N)	

TURN AROUND TIME

- [x] NORMAL
- [ ] RUSH
  - [ ] SAME DAY
  - [ ] NEXT DAY
  - [ ] 2 DAYS
  - [ ] 3 DAYS

DATA DELIVERABLE REQUIRED

- [ ] HARD COPY
- [ ] PDF
- [ ] GEOTRACKER (GLOBAL ID) _____
- [ ] OTHER (PLEASE SPECIFY) _____

	1.	2.	3.
RELINQUISHED BY: SAMPLER:	Signature: Printed Name: Greg Millikan Date: 3/15/18 Time: 1220	Signature: Printed Name: Date: Time:	Signature: Printed Name: Date: Time:
RECEIVED BY: / RECEIVED BY LABORATORY:	Signature: Printed Name: Date: Time:	Signature: Printed Name: Date: Time:	Signature: AETL Printed Name: Sean Claude Date: 3/15/18 Time: 1220

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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COOLER RECEIPT FORM

Client Name: AvaCare
Project Name: Arrow - Live Oak
AETL Job Number: 91800
Date Received: 03/15/18 Received by: Jean Sandoe
Carrier: ☐ AETL Courier ☒ Client ☐ GSO ☐ FedEx ☐ UPS
☐ Others:

Samples were received in: ☒ Cooler (2) ☐ Other (Specify):
Inside temperature of shipping container No 1: 3.1°C, No 2: 3.4°C, No 3: ____
Type of sample containers: ☐ VOA, ☐ Glass bottles, ☐ Wide mouth jars, ☐ HDPE bottles, ☐ Metal sleeves, ☒ Others (Specify): Plastic Gallons
How are samples preserved: ☐ None, ☒ Ice, ☐ Blue Ice, ☐ Dry Ice
✓ None, _ HNO_3, _ NaOH, _ ZnOAc, _ HCl, _ $Na_2S_2O_3$, _ MeOH
_ Other (Specify):

	Yes	No, explain below	Name, if client was notified.
1. Are the COCs Correct?	✓		
2. Are the Sample labels legible?	✓		
3. Do samples match the COC?	✓		
4. Are the required analyses clear?	✓		
5. Is there enough samples for required analysis?	✓		
6. Are samples sealed with evidence tape?	NA		
7. Are sample containers in good condition?	✓		
8. Are samples preserved?	✓		
9. Are samples preserved properly for the intended analysis?	✓		
10. Are the VOAs free of headspace?	NA		
11. Are the jars free of headspace?	✓		

Explain all "No" answers for above questions:

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Telephone: (805)766-2040
Attention: Gregory Millikan

Project ID: 5349.0007
Date Received 03/15/2018
Date Reported 04/19/2018

Job Number	Order Date	Client
91800	03/15/2018	ANACAP

CERTIFICATE OF ANALYSIS
CASE NARRATIVE

AETL received 1 samples with the following specification on 03/15/2018.

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
91800.01	SUPPLY 1	03/15/2018	Aqueous	6

Method ^ Submethod	Req Date	Priority	TAT	Units
120.1	03/22/2018	2	Normal	umhos/cm
130.2	03/22/2018	2	Normal	mg/L
150.1	03/22/2018	2	Normal	pH unit
160.1	03/22/2018	2	Normal	mg/L
1613B ^ TCDD	03/22/2018	2	Normal	pg/L
180.1	03/22/2018	2	Normal	NTU
200.7 ^ BORON	03/22/2018	2	Normal	mg/L
200.7 ^ GENMIN	03/22/2018	2	Normal	mg/L
200.8 ^ CAM METALS	03/22/2018	2	Normal	ug/L
218.6	03/22/2018	2	Normal	ug/L
245.2	03/22/2018	2	Normal	ug/L
300.0 ^ CHLORIDE	03/22/2018	2	Normal	mg/L
300.0 ^ FLUORIDE	03/22/2018	2	Normal	mg/L
300.0 ^ NITRATE-N	03/22/2018	2	Normal	mg/L
300.0 ^ NITRITE-N	03/22/2018	2	Normal	mg/L
300.0 ^ SULFATE	03/22/2018	2	Normal	mg/L
300.1	03/22/2018	2	Normal	ug/L
310.1	03/22/2018	2	Normal	mg/L
314.0	03/22/2018	2	Normal	ug/L
330.4	03/22/2018	2	Normal	mg/L
335.2	03/22/2018	2	Normal	mg/L
350.3	03/22/2018	2	Normal	mg/L
351.3	03/22/2018	2	Normal	mg/L
365.2	03/22/2018	2	Normal	mg/L
420.1	03/22/2018	2	Normal	mg/L
425.1	03/22/2018	2	Normal	mg/L

Continued

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Telephone: (805)766-2040
Attention: Gregory Millikan

Project ID: 5349.0007
Date Received 03/15/2018
Date Reported 04/19/2018

Job Number	Order Date	Client
91800	03/15/2018	ANACAP

CERTIFICATE OF ANALYSIS

CASE NARRATIVE

91800.01 SUPPLY 1 03/15/2018 Aqueous 6

Method ^ Submethod	Req Date	Priority	TAT	Units
504.1	03/22/2018	2	Normal	ug/L
508	03/22/2018	2	Normal	ug/L
515.3	03/22/2018	2	Normal	ug/L
524.2	03/22/2018	2	Normal	ug/L
525.2 ^ WECK	03/22/2018	2	Normal	ug/L
531.1	03/22/2018	2	Normal	ug/L
548.1	03/22/2018	2	Normal	ug/L
549.2	03/22/2018	2	Normal	ug/L
552.2	03/22/2018	2	Normal	ug/L
900.0	03/22/2018	2	Normal	pCi/L
903.0	03/22/2018	2	Normal	pCi/L
908.0	03/22/2018	2	Normal	pCi/L
EPA-100.2	03/22/2018	2	Normal	MF/L
RADIUM-228	03/22/2018	2	Normal	pCi/L
SM-4500-CLO2-D ^ CLO2	03/22/2018	2	Normal	mg/L
SM-4500-CLO2-D	03/22/2018	2	Normal	mg/L
SM-9221B	03/22/2018	2	Normal	MPN/100 mL
SM-9221E	03/22/2018	2	Normal	MPN/100 mL
SM2120-B	03/22/2018	2	Normal	Color Units
SM2150-A	03/22/2018	2	Normal	--

The samples were analyzed as specified on the enclosed chain of custody.
Analytical non-conformances have been noted on the report.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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ANALYTICAL RESULTS

Ordered By

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Estes Park, CO 80517-

Site

Live Oak Arrow
1270 E. Arrow Hwy.
Irwindale, CA 91706

Telephone: (805)766-2040
Attn: Gregory Millikan
Page: **2**

Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 120.1, Conductance, Specific Conductance (at 25 Deg. C)

QC Batch No: SC031518-2

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/15/2018	03/15/2018			
Preparation Method			120.1	120.1			
Date Analyzed			03/15/2018	03/15/2018			
Matrix			Aqueous	Aqueous			
Units			umhos/cm	umhos/cm			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Specific conductance	5.0	10.0	ND	336			

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ANALYTICAL RESULTS

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Irwindale, CA 91706

Telephone: (805)766-2040
Attn: Gregory Millikan
Page: **3**

Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 130.2, Hardness

QC Batch No: HA031518-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/15/2018	03/15/2018			
Preparation Method			130.2	130.2			
Date Analyzed			03/15/2018	03/15/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Hardness (Ca,Mg) as CaCO3	1	2	ND	140			

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Site

Live Oak Arrow
1270 E. Arrow Hwy.
Irwindale, CA 91706

Page: **4**

Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 150.1, pH - Electrometric (EPA/600/4-79-020)

QC Batch No: PH031518-2

Our Lab I.D.			91800.01				
Client Sample I.D.			SUPPLY 1				
Date Sampled			03/15/2018				
Date Prepared			03/15/2018				
Preparation Method			150.1				
Date Analyzed			03/15/2018				
Matrix			Aqueous				
Units			pH unit				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
pH	0.01	0.01	7.41				
Temperature (C)	0.01	0.01	17.8				

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Site

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Irwindale, CA 91706

Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 160.1, Total Dissolved Solids, Gravimetric, Dried at 180 C

QC Batch No: TD031918-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/19/2018	03/19/2018			
Preparation Method			160.1	160.1			
Date Analyzed			03/20/2018	03/20/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Total Dissolved Solids	5.0	10.0	ND	205			

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Irwindale, CA 91706

Telephone: (805)766-2040
Attn: Gregory Millikan
Page: 6

Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 1613B, 2,3,7,8-TCDD by Isotop

QC Batch No: W8C1196

Our Lab I.D.			Method Blank	91800.01			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/21/2018	03/21/2018			
Preparation Method			1613B	1613B			
Date Analyzed			03/29/2018	03/29/2018			
Matrix			Aqueous	Aqueous			
Units			pg/L	pg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
2,3,7,8-TCDD	5.0	5.0	ND	ND			

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ANALYTICAL RESULTS

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1270 E. Arrow Hwy.
Irwindale, CA 91706

Telephone: (805)766-2040
Attn: Gregory Millikan
Page: **7**

Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 180.1, Turbidity, Nephelometric (EPA/600/4-79-020)

QC Batch No: TU031518-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/15/2018	03/15/2018			
Preparation Method			180.1	180.1			
Date Analyzed			03/15/2018	03/15/2018			
Matrix			Aqueous	Aqueous			
Units			NTU	NTU			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Turbidity	0.5	1.0	ND	0.57J			

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ANALYTICAL RESULTS

Ordered By

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P.O. Box 3292
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Site

Live Oak Arrow
1270 E. Arrow Hwy.
Irwindale, CA 91706

Telephone: (805)766-2040
Attn: Gregory Millikan
Page: **8**

Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 200.7, Boron by ICP

QC Batch No: 0322182C1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/22/2018	03/22/2018			
Preparation Method			200.2	200.2			
Date Analyzed			03/23/2018	03/23/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Boron	0.050	0.100	ND	0.0601J			

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ANALYTICAL RESULTS

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Telephone: (805)766-2040
Attn: Gregory Millikan

Site

Live Oak Arrow
1270 E. Arrow Hwy.
Irwindale, CA 91706

Page: **9**

Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 200.7, General Minerals Cations

QC Batch No: 0321182C1

Our Lab I.D.			Method Blank	91800.01			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/21/2018	03/21/2018			
Preparation Method			200.2	200.2			
Date Analyzed			03/22/2018	03/22/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Aluminum	0.05	0.10	ND	ND			
Calcium	0.05	0.10	ND	48.0			
Copper	0.01	0.02	ND	0.0343			
Iron	0.01	0.02	ND	0.0413			
Magnesium	0.02	0.10	ND	9.15			
Manganese	0.01	0.01	ND	ND			
Potassium	0.10	0.20	ND	3.27			
Sodium	0.01	0.02	ND	15.3			
Zinc	0.01	0.02	ND	0.049			

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ANALYTICAL RESULTS

Ordered By

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P.O. Box 3292
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Site

Live Oak Arrow
1270 E. Arrow Hwy.
Irwindale, CA 91706

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Attn: Gregory Millikan
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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 200.8, CAM Metals by ICP/MS

QC Batch No: 0322181C7

Our Lab I.D.			Method Blank	91800.01			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/22/2018	03/22/2018			
Preparation Method			200.8	200.8			
Date Analyzed			03/23/2018	03/23/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Antimony	0.01	0.10	ND	0.274			
Arsenic	0.05	0.50	ND	2.38			
Barium	0.02	0.20	ND	75.1			
Beryllium	0.05	0.50	ND	ND			
Cadmium	0.02	0.20	ND	ND			
Chromium	0.10	1.00	ND	2.46			
Cobalt	0.05	0.50	ND	0.120J			
Copper	0.02	0.20	ND	13.6			
Lead	0.01	0.10	ND	0.892			
Molybdenum	0.01	0.10	ND	1.76			
Nickel	0.02	0.20	ND	0.183J			
Selenium	0.15	1.50	ND	ND			
Silver	0.06	0.60	ND	ND			
Thallium	0.01	0.10	ND	ND			
Vanadium	0.05	0.50	ND	1.92			
Zinc	0.05	0.50	ND	48.8			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 218.6, Chromium hexavalent by Ion Chromatography

QC Batch No: HC031618-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/16/2018	03/16/2018			
Preparation Method			218.6	218.6			
Date Analyzed			03/16/2018	03/16/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Chromium (VI)	0.02	0.05	ND	1.96			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 245.2, Mercury, Cold Vapor Technique, Automated

QC Batch No: 03212018

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/21/2018	03/21/2018			
Preparation Method			245.2	245.2			
Date Analyzed			03/22/2018	03/22/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Mercury	0.2	2.0	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 300.0, Determination of Chloride Anion in water by IC

QC Batch No: CH031518-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/15/2018	03/15/2018			
Preparation Method			300.0	300.0			
Date Analyzed			03/15/2018	03/15/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Chloride	0.02	0.20	ND	10.5			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 300.0, Determination of Fluoride Anion in water by IC

QC Batch No: FL031518-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/15/2018	03/15/2018			
Preparation Method			300.0	300.0			
Date Analyzed			03/15/2018	03/15/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Fluoride	0.01	0.10	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 300.0, Determination of Nitrate in water by IC

QC Batch No: NI031518-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/15/2018	03/15/2018			
Preparation Method			300.0	300.0			
Date Analyzed			03/15/2018	03/15/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Nitrate as Nitrogen	0.002	0.020	ND	0.901			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 300.0, Determination of Nitrite Anion in water by IC

QC Batch No: NI031518-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/15/2018	03/15/2018			
Preparation Method			300.0	300.0			
Date Analyzed			03/15/2018	03/15/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Nitrite as Nitrogen	0.004	0.040	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 300.0, Determination of Sulfate Anion in water by IC

QC Batch No: SU031518-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/15/2018	03/15/2018			
Preparation Method			300.0	300.0			
Date Analyzed			03/15/2018	03/15/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Sulfate	0.02	0.20	ND	18.7			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 300.1, Bromate and Chlorate by IC

QC Batch No: W8C1003

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/18/2018	03/18/2018			
Preparation Method			300.1	300.1			
Date Analyzed			03/18/2018	03/18/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Bromate	5.0	5.0	ND	ND			
Chlorate	10.0	10.0	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 310.1, Alkalinity, Titrimetric (pH 4.5), (EPA/600/4-79-020)

QC Batch No: AL031618-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/16/2018	03/16/2018			
Preparation Method			310.1	310.1			
Date Analyzed			03/16/2018	03/16/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Alkalinity, Bicarbonate	2.0	2.0	ND	112			
Alkalinity, Carbonate	2.0	2.0	ND	ND			
Alkalinity, Hydroxide	2.0	2.0	ND	ND			
Alkalinity, Total	2.0	2.0	ND	112			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 314.0, Perchlorate by IC

QC Batch No: 031618

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/16/2018	03/16/2018			
Preparation Method			314.0	314.0			
Date Analyzed			03/16/2018	03/16/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Perchlorate	2.0	2.0	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 330.4, Chlorine, Total Residual

QC Batch No: CH031518-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/15/2018	03/15/2018			
Preparation Method			330.4	330.4			
Date Analyzed			03/15/2018	03/15/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Chlorine, Residual, Total	0.05	0.10	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 335.2, Cyanide, Total, Titrimetric, Spectrophotometric

QC Batch No: CYT031918-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/19/2018	03/19/2018			
Preparation Method			335.2	335.2			
Date Analyzed			03/19/2018	03/19/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Cyanide (Total)	0.01	0.05	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 350.3, Ammonia as N, Potentiometric, ISE (EPA/600/4-79-020)

QC Batch No: AM031518-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/15/2018	03/15/2018			
Preparation Method			350.3	350.3			
Date Analyzed			03/15/2018	03/15/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Ammonia as Nitrogen	0.05	0.10	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 351.3, Nitrogen, Kjeldahl (EPA/600/4-79/020)

QC Batch No: TK032018-2

Our Lab I.D.			Method Blank	91800.01			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/20/2018	03/20/2018			
Preparation Method			351.3	351.3			
Date Analyzed			03/20/2018	03/20/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Nitrogen, Total Kjeldahl	0.05	0.10	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 365.2, Phosphorus, Total, Colorimetric, Ascorbic Acid

QC Batch No: PH031918-1

Our Lab I.D.			Method Blank	91800.01			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/19/2018	03/19/2018			
Preparation Method			365.2	365.2			
Date Analyzed			03/19/2018	03/19/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Phosphorus (total)	0.05	0.10	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 420.1, Phenolics, Total Recoverable, Spectrophotometric, Manual

QC Batch No: PH032018-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/20/2018	03/20/2018			
Preparation Method			420.1	420.1			
Date Analyzed			03/20/2018	03/20/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Phenolic compounds as phenol	0.15	0.30	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 425.1, Methylene Blue Active Substances (MBAS), (EPA/600/4-79-020)

QC Batch No: MB031518-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/15/2018	03/15/2018			
Preparation Method			425.1	425.1			
Date Analyzed			03/15/2018	03/15/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Surfactants (MBAS)	0.05	0.05	ND	ND			

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Anacapa Geoservices
P.O. Box 3292
Estes Park, CO 80517-

Telephone: (805)766-2040
Attn: Gregory Millikan

Site

Live Oak Arrow
1270 E. Arrow Hwy.
Irwindale, CA 91706

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 504.1, EDB and DBCP by GC

QC Batch No: W8C1193

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/21/2018	03/21/2018			
Preparation Method			504.1	504.1			
Date Analyzed			03/21/2018	03/21/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
1,2-Dibromo-3-chloropropane (DBCP)	0.010	0.010	ND	ND			
1,2-Dibromoethane (EDB)	0.020	0.020	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 508, Chlorinated Pesticides and PCBs

QC Batch No: W8C1034

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/19/2018	03/19/2018			
Preparation Method			508	508			
Date Analyzed			03/24/2018	03/24/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Aroclor-1016 (PCB-1016)	0.10	0.10	ND	ND			
Aroclor-1221 (PCB-1221)	0.10	0.10	ND	ND			
Aroclor-1232 (PCB-1232)	0.10	0.10	ND	ND			
Aroclor-1242 (PCB-1242)	0.10	0.10	ND	ND			
Aroclor-1248 (PCB-1248)	0.10	0.10	ND	ND			
Aroclor-1254 (PCB-1254)	0.10	0.10	ND	ND			
Aroclor-1260 (PCB-1260)	0.10	0.10	ND	ND			
Aldrin	0.010	0.010	ND	ND			
Chlordane	0.10	0.10	ND	ND			
Chlorothalonil	0.050	0.050	ND	ND			
4,4'-DDD (DDD)	0.010	0.010	ND	ND			
4,4'-DDE (DDE)	0.010	0.010	ND	ND			
4,4'-DDT (DDT)	0.010	0.010	ND	ND			
Dieldrin	0.010	0.010	ND	ND			
Endosulfan 1	0.010	0.010	ND	ND			
Endosulfan 11	0.010	0.010	ND	ND			
Endosulfan sulfate	0.010	0.010	ND	ND			
Endrin	0.010	0.010	ND	ND			
Endrin aldehyde	0.010	0.010	ND	ND			
Endrin ketone	0.020	0.020	ND	ND			
Heptachlor	0.010	0.010	ND	ND			
Heptachlor epoxide	0.010	0.010	ND	ND			
Hexachlorobenzene	0.050	0.050	ND	ND			
alpha-Hexachlorocyclohexane (Alpha-BHC)	0.010	0.010	ND	ND			
beta-Hexachlorocyclohexane (Betta-BHC)	0.010	0.010	ND	ND			
delta-Hexachlorocyclohexane (Delta-BHC)	0.010	0.010	ND	ND			
gamma-Hexachlorocyclohexane (Gamma-BHC, Lindane)	0.010	0.010	ND	ND			

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ANALYTICAL RESULTS

Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 508, Chlorinated Pesticides and PCBs

QC Batch No: W8C1034

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/19/2018	03/19/2018			
Preparation Method			508	508			
Date Analyzed			03/24/2018	03/24/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Hexachlorocyclopentadiene	0.050	0.050	ND	ND			
Methoxychlor	0.010	0.010	ND	ND			
Propachlor	0.050	0.050	ND	ND			
Toxaphene	1.0	1.0	ND	ND			
Trifluralin	0.010	0.010	ND	ND			
Our Lab I.D.			Method Blank	**91800.01**			
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**			
Tetrachloro-m-xylene	70-130		74.0	81.0			

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Live Oak Arrow
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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 515.3, Chlorinated Herbicides by GC/ECD

QC Batch No: W8C1192

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/21/2018	03/21/2018			
Preparation Method			515.3	515.3			
Date Analyzed			03/22/2018	03/22/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Acifluorfen	0.50	0.50	ND	ND			
Bentazon	2.0	2.0	ND	ND			
2,4-D	0.50	0.50	ND	ND			
Dalapon	0.50	0.50	ND	ND			
2,4-DB	2.0	2.0	ND	ND			
DCPA	0.10	0.10	ND	ND			
Dicamba	0.60	0.60	ND	ND			
3,5-Dichlorobenzoic acid	1.0	1.0	ND	ND			
Dichloroprop	0.30	0.30	ND	ND			
Dinoseb	0.50	0.50	ND	ND			
Pentachlorophenol (PCP)	0.20	0.20	ND	ND			
Picloram	1.0	1.0	ND	ND			
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)	0.20	0.20	ND	ND			
2,4,5-TP	0.20	0.20	ND	ND			
Our Lab I.D.			Method Blank	**91800.01**			
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**			
2,4-Dichlorophenylacetic acid (DCAA)	70-130		110	112			

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Live Oak Arrow
1270 E. Arrow Hwy.
Irwindale, CA 91706

Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 0322181A1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/22/2018	03/22/2018			
Preparation Method			524.2	524.2			
Date Analyzed			03/22/2018	03/22/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Acetone	0.5	1.0	ND	ND			
Benzene	0.25	0.50	ND	ND			
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND			
Bromochloromethane	0.25	0.50	ND	ND			
Bromodichloromethane	0.25	0.50	ND	ND			
Bromoform (Tribromomethane)	0.25	0.50	ND	ND			
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND			
2-Butanone (MEK)	0.5	1.0	ND	ND			
n-Butylbenzene	0.25	0.50	ND	ND			
sec-Butylbenzene	0.25	0.50	ND	ND			
tert-Butylbenzene	0.25	0.50	ND	ND			
Carbon Disulfide	0.25	0.50	ND	ND			
Carbon tetrachloride	0.25	0.50	ND	ND			
Chlorobenzene	0.25	0.50	ND	ND			
Chloroethane	0.25	0.50	ND	ND			
2-Chloroethyl vinyl ether	0.5	1.0	ND	ND			
Chloroform (Trichloromethane)	0.25	0.50	ND	ND			
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND			
2-Chlorotoluene	0.25	0.50	ND	ND			
4-Chlorotoluene	0.25	0.50	ND	ND			
1,2-Dibromo-3-chloropropane (DBCP)	0.01	0.10	ND	ND			
Dibromochloromethane	0.25	0.50	ND	ND			
1,2-Dibromoethane (EDB)	0.20	0.50	ND	ND			
Dibromomethane	0.25	0.50	ND	ND			
1,2-Dichlorobenzene	0.25	0.50	ND	ND			
1,3-Dichlorobenzene	0.25	0.50	ND	ND			
1,4-Dichlorobenzene	0.25	0.50	ND	ND			
Dichlorodifluoromethane	0.25	0.50	ND	ND			

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ANALYTICAL RESULTS

Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 0322181A1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/22/2018	03/22/2018			
Preparation Method			524.2	524.2			
Date Analyzed			03/22/2018	03/22/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
1,1-Dichloroethane	0.25	0.50	ND	ND			
1,2-Dichloroethane (EDC)	0.25	0.50	ND	ND			
1,1-Dichloroethene	0.25	0.50	ND	ND			
cis-1,2-Dichloroethene	0.25	0.50	ND	ND			
trans-1,2-Dichloroethene	0.25	0.50	ND	ND			
1,2-Dichloropropane	0.25	0.50	ND	ND			
1,3-Dichloropropane	0.25	0.50	ND	ND			
2,2-Dichloropropane	0.25	0.50	ND	ND			
1,1-Dichloropropene	0.25	0.50	ND	ND			
cis-1,3-Dichloropropene	0.25	0.50	ND	ND			
trans-1,3-Dichloropropene	0.25	0.50	ND	ND			
Ethylbenzene	0.25	0.50	ND	ND			
Hexachlorobutadiene	0.25	0.50	ND	ND			
2-Hexanone	0.5	1.0	ND	ND			
Isopropylbenzene	0.25	0.50	ND	ND			
p-Isopropyltoluene	0.25	0.50	ND	ND			
4-Methyl-2-pentanone (MIBK)	0.5	1.0	ND	ND			
Methyl-tert-butyl ether (MTBE)	0.5	1.0	ND	ND			
Methylene chloride (DCM)	0.5	1.0	ND	ND			
Naphthalene	0.25	0.50	ND	ND			
n-Propylbenzene	0.25	0.50	ND	ND			
Styrene	0.25	0.50	ND	ND			
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND			
1,1,2,2-Tetrachloroethane	0.25	0.50	ND	ND			
Tetrachloroethene	0.25	0.50	ND	ND			
Toluene (Methyl benzene)	0.25	0.50	ND	ND			
1,2,3-Trichlorobenzene	0.25	0.50	ND	ND			
1,2,4-Trichlorobenzene	0.25	0.50	ND	ND			
1,1,1-Trichloroethane	0.25	0.50	ND	ND			
1,1,2-Trichloroethane	0.25	0.50	ND	ND			
Trichloroethene	0.25	0.50	ND	ND			
Trichlorofluoromethane	0.5	1.0	ND	ND			
1,2,3-Trichloropropane	0.25	0.50	ND	ND			
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND			

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ANALYTICAL RESULTS

Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 0322181A1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/22/2018	03/22/2018			
Preparation Method			524.2	524.2			
Date Analyzed			03/22/2018	03/22/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND			
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND			
Vinyl Acetate	0.25	0.50	ND	ND			
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND			
o-Xylene	0.25	0.50	ND	ND			
m,p-Xylenes	0.5	1.0	ND	ND			
Total trihalomethane compounds	0.25	0.50	ND	ND			
Our Lab I.D.			Method Blank	**91800.01**			
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**			
Bromofluorobenzene	75-125		100	101			
1,2-Dichlorobenzene-d4	75-125		76.8	75.0			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 525.2, Semivolatile Organic Compounds in Water by GC/MS

QC Batch No: W8C1288

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/22/2018	03/22/2018			
Preparation Method			525.2	525.2			
Date Analyzed			03/23/2018	03/23/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Alachlor	0.10	0.10	ND	ND			
Atrazine	0.10	0.10	ND	ND			
Bromacil	0.50	0.50	ND	ND			
Butachlor	0.10	0.10	ND	ND			
Chloropropham	0.10	0.10	ND	ND			
Diazinon	0.10	0.10	ND	ND			
Dimethoate	0.20	0.20	ND	ND			
Diphenamid	0.10	0.10	ND	ND			
Disulfoton	0.10	0.10	ND	ND			
EPTC	0.10	0.10	ND	ND			
Metolachlor	0.10	0.10	ND	ND			
Metribuzin	0.10	0.10	ND	ND			
Molinate	0.10	0.10	ND	ND			
Prometon	0.10	0.10	ND	ND			
Prometryn	0.10	0.10	ND	ND			
Simazine	0.10	0.10	ND	ND			
Terbacil	2.0	2.0	ND	ND			
Thiobencarb	0.10	0.10	ND	ND			
Our Lab I.D.			Method Blank	**91800.01**			
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**			
1,3-Dimethyl-2-nitrobenzene	70-130		102	105			
Perylene-d12	50-120		72.0	75.0			
Triphenylphosphate	70-130		89.0	106			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 531.1, N-Methylcarbamoyloximes & N-Methylcarbamates by HPLC

QC Batch No: W8C1611

Our Lab I.D.			Method Blank	91800.01			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/27/2018	03/27/2018			
Preparation Method			531.1	531.1			
Date Analyzed			03/27/2018	03/27/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Aldicarb (Temik)	2.0	2.0	ND	ND			
Aldicarb sulfone	2.0	2.0	ND	ND			
Aldicarb sulfoxide	2.0	2.0	ND	ND			
Carbaryl	2.0	2.0	ND	ND			
Carbofuran (Furadan)	2.0	2.0	ND	ND			
3-Hydroxycarbofuran	2.0	2.0	ND	ND			
Methiocarb	2.0	2.0	ND	ND			
Methomyl	2.0	2.0	ND	ND			
Oxamyl	2.0	2.0	ND	ND			
Propoxur	2.0	2.0	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 548.1, Endothall by GC/ECD

QC Batch No: W8C1030

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/20/2018	03/20/2018			
Preparation Method			548.1	548.1			
Date Analyzed			03/23/2018	03/23/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Endothall	5.0	5.0	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 549.2, Diquat and Paraquat

QC Batch No: W8C1154

Our Lab I.D.			Method Blank	91800.01			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/20/2018	03/20/2018			
Preparation Method			549.2	549.2			
Date Analyzed			03/23/2018	03/23/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Diquat	0.40	0.40	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 552.2, Haloacetic Acids by GC/ECD

QC Batch No: W8C1191

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/21/2018	03/21/2018			
Preparation Method			552.2	552.2			
Date Analyzed			03/22/2018	03/22/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Bromoacetic acid	1.0	1.0	ND	ND			
Chloroacetic acid	2.0	2.0	ND	ND			
Dibromoacetic acid	1.0	1.0	ND	ND			
Dichloroacetic acid	1.0	1.0	ND	ND			
Trichloroacetic acid	1.0	1.0	ND	ND			
Total HAA 5	1.0	1.0	ND	ND			
Our Lab I.D.			Method Blank	**91800.01**			
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**			
2,3-Dibromopropionic acid	70-130		95.4	101			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 900.0, Measurement of Gross Alpha and Beta Radiation

QC Batch No: 2A1805080

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			04/09/2018	04/09/2018			
Preparation Method			900.0	900.0			
Date Analyzed			04/11/2018	04/11/2018			
Matrix			Aqueous	Aqueous			
Units			pCi/L	pCi/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Gross Alpha	1.11	1.11	ND	1.65			
Gross Beta	1.19	1.19	ND	ND			

Comment(s):
Gross Alpha Error: +- 1.19 Gross Beta Error: +- 0.931

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 903.0, Total Alpha Radium 226

QC Batch No: A21804433

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/20/2018	03/20/2018			
Preparation Method			903.0	903.0			
Date Analyzed			03/30/2018	03/30/2018			
Matrix			Aqueous	Aqueous			
Units			pCi/L	pCi/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Radium-226 (Total Alpha)	0.035	0.035	ND	0.053			

Comment(s):
Radium-226 Error: +- 0.077

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 908.0, Measurement of Uranium

QC Batch No: 2A1805127

Our Lab I.D.			Method Blank	91800.01			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			04/09/2018	04/09/2018			
Preparation Method			908.0	908.0			
Date Analyzed			04/12/2018	04/12/2018			
Matrix			Aqueous	Aqueous			
Units			pCi/L	pCi/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Uranium	0.342	0.342	ND	0.590			

Comment(s):
Uranium Error: +- 0.545

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: EPA-100.2, Determ. of Asbestos Structures over 10um in Length in Water

QC Batch No: 321806263

Our Lab I.D.			91800.01				
Client Sample I.D.			SUPPLY 1				
Date Sampled			03/15/2018				
Date Prepared			03/16/2018				
Preparation Method			EPA-100.2				
Date Analyzed			03/21/2018				
Matrix			Aqueous				
Units			MF/L				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
Asbestos, Total	0.19	0.19	ND				

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: RADIUM-228, Radium 228

QC Batch No: 2A1804797

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/29/2018	03/29/2018			
Preparation Method			Ra228	Ra228			
Date Analyzed			04/05/2018	04/05/2018			
Matrix			Aqueous	Aqueous			
Units			pCi/L	pCi/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Radium-228	0.400	0.400	ND	ND			

Comment(s):
Radium-228 Error: +- 0.474

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: SM-4500-CLO2-D, Chloramines by DPD Method

QC Batch No: W8C0986

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/16/2018	03/16/2018			
Preparation Method			SM4500CLO	SM4500CLO			
Date Analyzed			03/16/2018	03/16/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Chlorine, Residual, Free	0.050	0.050	ND	ND			
Dichloramine	0.050	0.050	ND	ND			
Monochloramine	0.050	0.050	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: SM-4500-CLO2-D, Chlorine Dioxide by DPD Method

QC Batch No: W8C0986

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/16/2018	03/16/2018			
Preparation Method			SM4500CLO	SM4500CLO			
Date Analyzed			03/16/2018	03/16/2018			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Chlorine Dioxide	0.10	0.10	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: SM-9221B, Standard Total Coliform Fermentation Technique, 20th Ed.

QC Batch No: AC81514

Our Lab I.D.			91800.01				
Client Sample I.D.			SUPPLY 1				
Date Sampled			03/15/2018				
Date Prepared			03/15/2018				
Preparation Method			SM9221B				
Date Analyzed			03/17/2018				
Matrix			Aqueous				
Units			MPN/100 mL				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
Coliform, total	1.1	1.1	ND				

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: SM-9221E, Fecal Coliform, by Standard Methods 20th Ed.

QC Batch No: AC81514

Our Lab I.D.			91800.01				
Client Sample I.D.			SUPPLY 1				
Date Sampled			03/15/2018				
Date Prepared			03/15/2018				
Preparation Method			SM9221E				
Date Analyzed			03/17/2018				
Matrix			Aqueous				
Units			MPN/100 mL				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
Coliform, fecal	1.1	1.1	ND				

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: SM2120-B, Color (By Visual Comparison)

QC Batch No: CO031518-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/15/2018	03/15/2018			
Preparation Method			SM2120B	SM2120B			
Date Analyzed			03/15/2018	03/15/2018			
Matrix			Aqueous	Aqueous			
Units			Color Units	Color Units			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Color	1.0	1.0	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: SM2150-A, Odor

QC Batch No: OD031518-1

Our Lab I.D.			Method Blank	**91800.01**			
Client Sample I.D.				SUPPLY 1			
Date Sampled				03/15/2018			
Date Prepared			03/15/2018	03/15/2018			
Preparation Method			SM2150A	SM2150A			
Date Analyzed			03/15/2018	03/15/2018			
Matrix			Aqueous	Aqueous			
Units			--	--			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Odor	1	1	ND	ND			

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 120.1, Conductance, Specific Conductance (at 25 Deg. C)

QC Batch No: SC031518-2; Dup or Spiked Sample: 91782.01; LCS: Clean Water; LCS Prepared: 03/15/2018; LCS Analyzed: 03/15/2018; Units: umhos/cm

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Specific conductance	246	248	<1	<15	1,000	990	99.0	80-120		

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 130.2, Hardness

QC Batch No: HA031518-1; Dup or Spiked Sample: 91779.01; LCS: Clean Water; QC Prepared: 03/15/2018; QC Analyzed: 03/15/2018; Units: mg/L

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Hardness (Ca,Mg) as CaCO3	20.0	22.0	110	20.0	20.0	100	9.5	80-120	<20	

QC Batch No: HA031518-1; Dup or Spiked Sample: 91779.01; LCS: Clean Water; QC Prepared: 03/15/2018; QC Analyzed: 03/15/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Hardness (Ca,Mg) as CaCO3	20.0	20.0	100	80-120						

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 150.1, pH - Electrometric (EPA/600/4-79-020)

QC Batch No: PH031518-2; Dup or Spiked Sample: 91782.01; LCS: Clean Water; LCS Prepared: 03/15/2018; LCS Analyzed: 03/15/2018; Units: pH unit

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
pH	7.00	6.91	1.3	<15	7.00	7.07	101	80-120		
Temperature (C)	18.7	18.9	1.1	<15						

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 160.1, Total Dissolved Solids, Gravimetric, Dried at 180 C

QC Batch No: TD031918-1; Dup or Spiked Sample: 91800.01; LCS: Clean Water; LCS Prepared: 03/19/2018; LCS Analyzed: 03/20/2018; Units: mg/L

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Total Dissolved Solids	204	214	4.8	<15	100	111	111	80-120		

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 1613B, 2,3,7,8-TCDD by Isotop

QC Batch No: W8C1196; LCS: Clean Water; LCS Prepared: 03/21/2018; LCS Analyzed: 03/29/2018; Units: pg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
2,3,7,8-TCDD	5.00	3.45	69.0	5.00	6.55	131	62.0	50-148	<20	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 180.1, Turbidity, Nephelometric (EPA/600/4-79-020)

QC Batch No: TU031518-1; Dup or Spiked Sample: 91800.01; LCS: Clean Water; LCS Prepared: 03/15/2018; LCS Analyzed: 03/15/2018; Units: NTU

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Turbidity	0.57	0.54	5.4	<15	15.0	14.4	96.0	80-120		

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 200.7, Boron by ICP

QC Batch No: 0322182C1; Dup or Spiked Sample: 91866.02; LCS: Clean Water; QC Prepared: 03/22/2018; QC Analyzed: 03/23/2018; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Boron	0.883	1.00	1.90	102	1.00	2.00	112	9.3	80-120	<20

QC Batch No: 0322182C1; Dup or Spiked Sample: 91866.02; LCS: Clean Water; QC Prepared: 03/22/2018; QC Analyzed: 03/23/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Boron	1.00	0.999	99.9	1.00	0.977	97.7	2.2	80-120	<20	

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Attn: Gregory Millikan

Site

Live Oak Arrow
1270 E. Arrow Hwy.
Irwindale, CA 91706

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 200.7, General Minerals Cations

QC Batch No: 0321182C1; Dup or Spiked Sample: 91813.01; LCS: Clean Water; QC Prepared: 03/21/2018; QC Analyzed: 03/22/2018; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Aluminum	0.0421	50.0	52.0	104	50.0	51.5	103	<1	80-120	<15
Calcium	0.358	50.0	52.9	105	50.0	52.9	105	<1	80-120	<15
Copper	0.101	1.00	1.08	97.9	1.00	1.08	97.9	<1	80-120	<15
Iron	0.0341	50.0	53.5	107	50.0	53.0	106	<1	80-120	<15
Magnesium	0.0997	50.0	52.6	105	50.0	52.6	105	<1	80-120	<15
Manganese	0.0128	1.00	0.936	92.3	1.00	0.944	93.1	<1	80-120	<15
Potassium	2.01	50.0	50.9	97.8	50.0	50.6	97.2	<1	80-120	<15
Sodium	6.84	50.0	55.7	97.7	50.0	55.0	96.3	1.4	80-120	<15
Zinc	0.0834	1.00	1.14	106	1.00	1.15	107	<1	80-120	<15

QC Batch No: 0321182C1; Dup or Spiked Sample: 91813.01; LCS: Clean Water; QC Prepared: 03/21/2018; QC Analyzed: 03/22/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Aluminum	50.0	51.0	102	50.0	51.0	102	<1	80-120	<15	
Calcium	50.0	52.5	105	50.0	52.5	105	<1	80-120	<15	
Copper	1.00	0.945	94.5	1.00	0.973	97.3	2.9	80-120	<15	
Iron	50.0	52.0	104	50.0	52.0	104	<1	80-120	<15	
Magnesium	50.0	52.0	104	50.0	52.0	104	<1	80-120	<15	
Manganese	1.00	0.933	93.3	1.00	0.906	90.6	2.9	80-120	<15	
Potassium	50.0	50.5	101	50.0	50.5	101	<1	80-120	<15	
Sodium	50.0	53.5	107	50.0	54.0	108	<1	80-120	<15	
Zinc	1.00	1.06	106	1.00	1.06	106	<1	80-120	<15	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 200.8, CAM Metals by ICP/MS

QC Batch No: 0322181C7; Dup or Spiked Sample: 91870.03; LCS: Clean Water; QC Prepared: 03/22/2018; QC Analyzed: 03/23/2018; Units: ug/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Antimony	0.00	20.0	19.9	99.5	20.0	20.4	102	2.5	80-120	<20
Arsenic	0.00	20.0	19.1	95.5	20.0	19.4	97.0	1.6	80-120	<20
Barium	10.5	20.0	30.2	98.5	20.0	30.4	99.5	1.0	80-120	<20
Beryllium	0.00	20.0	19.0	95.0	20.0	19.4	97.0	2.1	80-120	<20
Cadmium	0.00	20.0	19.3	96.5	20.0	19.7	98.5	2.1	80-120	<20
Chromium	0.485	20.0	19.9	97.1	20.0	19.8	96.6	<1	80-120	<20
Cobalt	0.0769	20.0	19.9	99.1	20.0	19.8	98.6	<1	80-120	<20
Copper	7.02	20.0	39.0 #	160	20.0	38.4 #	157	1.9	80-120	<20
Lead	1.02	20.0	22.0	105	20.0	21.8	104	<1	80-120	<20
Molybdenum	0.183	20.0	18.9	93.6	20.0	19.6	97.1	3.7	80-120	<20
Nickel	0.00	20.0	20.4	102	20.0	21.0	105	2.9	80-120	<20
Selenium	0.00	20.0	19.2	96.0	20.0	18.9	94.5	1.6	80-120	<20
Silver	0.00	20.0	19.1	95.5	20.0	19.2	96.0	<1	80-120	<20
Thallium	0.00	20.0	19.7	98.5	20.0	19.3	96.5	2.1	80-120	<20
Vanadium	0.175	20.0	19.9	98.6	20.0	19.6	97.1	1.5	80-120	<20
Zinc	28.4	20.0	113 #	423	20.0	115 #	433	2.3	80-120	<20

QC Batch No: 0322181C7; Dup or Spiked Sample: 91870.03; LCS: Clean Water; QC Prepared: 03/22/2018; QC Analyzed: 03/23/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Antimony	20.0	19.5	97.5	20.0	19.5	97.5	<1	80-120	<20	
Arsenic	20.0	18.8	94.0	20.0	19.3	96.5	2.6	80-120	<20	
Barium	20.0	19.1	95.5	20.0	19.2	96.0	<1	80-120	<20	
Beryllium	20.0	20.2	101	20.0	20.0	100	<1	80-120	<20	
Cadmium	20.0	18.8	94.0	20.0	18.7	93.5	<1	80-120	<20	
Chromium	20.0	19.1	95.5	20.0	19.2	96.0	<1	80-120	<20	
Cobalt	20.0	19.3	96.5	20.0	19.2	96.0	<1	80-120	<20	
Copper	20.0	17.8	89.0	20.0	17.7	88.5	<1	80-120	<20	
Lead	20.0	18.9	94.5	20.0	18.8	94.0	<1	80-120	<20	
Molybdenum	20.0	18.9	94.5	20.0	18.9	94.5	<1	80-120	<20	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 200.8, CAM Metals by ICP/MS

QC Batch No: 0322181C7; Dup or Spiked Sample: 91870.03; LCS: Clean Water; QC Prepared: 03/22/2018; QC Analyzed: 03/23/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Nickel	20.0	17.7	88.5	20.0	17.0	85.0	4.0	80-120	<20	
Selenium	20.0	19.4	97.0	20.0	19.6	98.0	1.0	80-120	<20	
Silver	20.0	19.1	95.5	20.0	19.0	95.0	<1	80-120	<20	
Thallium	20.0	19.2	96.0	20.0	19.1	95.5	<1	80-120	<20	
Vanadium	20.0	19.3	96.5	20.0	19.3	96.5	<1	80-120	<20	
Zinc	20.0	16.2	81.0	20.0	16.6	83.0	2.4	80-120	<20	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 218.6, Chromium hexavalent by Ion Chromatography

QC Batch No: HC031618-1; Dup or Spiked Sample: 91800.01; LCS: Clean Water; QC Prepared: 03/16/2018; QC Analyzed: 03/16/2018; Units: ug/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Chromium (VI)	1.96	1.00	2.72	76.0	1.00	2.73	77.0	1.3	70-140	<20

QC Batch No: HC031618-1; Dup or Spiked Sample: 91800.01; LCS: Clean Water; QC Prepared: 03/16/2018; QC Analyzed: 03/16/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Chromium (VI)	1.00	0.870	87.0	1.00	0.856	85.6	1.6	70-140	<20	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 245.2, Mercury, Cold Vapor Technique, Automated

QC Batch No: 03212018; Dup or Spiked Sample: 91853.02; LCS: Clean Water; QC Prepared: 03/21/2018; QC Analyzed: 03/22/2018; Units: ug/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Mercury	0.00	10.0	9.17	91.7	10.0	9.27	92.7	1.1	80-120	<15

QC Batch No: 03212018; Dup or Spiked Sample: 91853.02; LCS: Clean Water; QC Prepared: 03/21/2018; QC Analyzed: 03/22/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Mercury	10.0	9.90	99.0	10.0	9.86	98.6	<1	80-120	<15	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 300.0, Determination of Chloride Anion in water by IC

QC Batch No: CH031518-1; LCS: Clean Water; LCS Prepared: 03/15/2018; LCS Analyzed: 03/15/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Chloride	20.0	16.1	80.5	20.0	16.7	83.5	3.7	80-120	<20	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 300.0, Determination of Fluoride Anion in water by IC

QC Batch No: FL031518-1; LCS: Clean Water; LCS Prepared: 03/15/2018; LCS Analyzed: 03/15/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Fluoride	2.00	1.91	95.5	2.00	1.69	84.5	12.2	80-120	<20	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 300.0, Determination of Nitrate in water by IC

QC Batch No: NI031518-1; LCS: Clean Water; LCS Prepared: 03/15/2018; LCS Analyzed: 03/15/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Nitrate as Nitrogen	2.00	1.81	90.5	2.00	1.60	80.0	12.3	80-120	<20	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 300.0, Determination of Nitrite Anion in water by IC

QC Batch No: NI031518-1; LCS: Clean Water; LCS Prepared: 03/15/2018; LCS Analyzed: 03/15/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Nitrite as Nitrogen	2.00	1.98	99.0	2.00	1.63	81.5	19.4	80-120	<20	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 300.0, Determination of Sulfate Anion in water by IC

QC Batch No: SU031518-1; LCS: Clean Water; LCS Prepared: 03/15/2018; LCS Analyzed: 03/15/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Sulfate	20.0	16.1	80.5	20.0	16.2	81.0	<1	80-120	<20	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 300.1, Bromate and Chlorate by IC

QC Batch No: W8C1003; Dup or Spiked Sample: 8C01006-02; LCS: Clean Water; QC Prepared: 03/18/2018; QC Analyzed: 03/18/2018; Units: ug/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Bromate	3.50	100	117	113	100	119	115	1.8	64-133	<20
Chlorate	0.00	101	110	109	101	111	110	<1	76-120	<20

QC Batch No: W8C1003; Dup or Spiked Sample: 8C01006-02; LCS: Clean Water; QC Prepared: 03/18/2018; QC Analyzed: 03/18/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Bromate	100	101	101	85-115						
Chlorate	101	96.6	95.6	85-115						

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 310.1, Alkalinity, Titrimetric (pH 4.5), (EPA/600/4-79-020)

QC Batch No: AL031618-1; Dup or Spiked Sample: 91800.01; LCS: Clean Water; QC Prepared: 03/16/2018; QC Analyzed: 03/16/2018; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Alkalinity, Bicarbonate	112	20.0	130	90.0	20.0	130	90.0	<1	80-120	<15
Alkalinity, Total	112	20.0	130	90.0	20.0	130	90.0	<1	80-120	<15

QC Batch No: AL031618-1; Dup or Spiked Sample: 91800.01; LCS: Clean Water; QC Prepared: 03/16/2018; QC Analyzed: 03/16/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Alkalinity, Bicarbonate	20.0	20.0	100	20.0	20.0	100	<1	80-120	<15	
Alkalinity, Total	20.0	20.0	100	20.0	20.0	100	<1	80-120	<15	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 314.0, Perchlorate by IC

QC Batch No: 031618; LCS: Clean Water; Units: ug/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Perchlorate	0.00	20.0	17.4	86.8	20.0	16.9	84.3	2.9	80-120	<20

QC Batch No: 031618; LCS: Clean Water; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Perchlorate	20.0	17.1	85.5	20.0	18.6	93.0	8.4	85-115	<20	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 330.4, Chlorine, Total Residual

QC Batch No: CH031518-1; Dup or Spiked Sample: 91800.01; LCS: Clean Water; LCS Prepared: 03/15/2018; LCS Analyzed: 03/15/2018; Units: mg/L

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Chlorine, Residual, Total	ND	ND	<1	<15	0.260	0.256	98.5	80-120		

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 335.2, Cyanide, Total, Titrimetric, Spectrophotometric

QC Batch No: CYT031918-1; Dup or Spiked Sample: 91785.03; LCS: Clean Water; QC Prepared: 03/19/2018; QC Analyzed: 03/19/2018; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Cyanide (Total)	0.00	0.200	0.163	81.5	0.200	0.160	80.0	1.9	80-120	<15

QC Batch No: CYT031918-1; Dup or Spiked Sample: 91785.03; LCS: Clean Water; QC Prepared: 03/19/2018; QC Analyzed: 03/19/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Cyanide (Total)	0.200	0.166	83.0	0.200	0.162	81.0	2.4	80-120	<15	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 350.3, Ammonia as N, Potentiometric, ISE (EPA/600/4-79-020)

QC Batch No: AM031518-1; Dup or Spiked Sample: 91770.01; LCS: Clean Water; QC Prepared: 03/15/2018; QC Analyzed: 03/15/2018; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Ammonia as Nitrogen	0.149	0.500	0.548	79.8	0.500	0.559	82.0	2.7	80-120	<15

QC Batch No: AM031518-1; Dup or Spiked Sample: 91770.01; LCS: Clean Water; QC Prepared: 03/15/2018; QC Analyzed: 03/15/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Ammonia as Nitrogen	0.500	0.462	92.4	0.500	0.436	87.2	5.8	80-120	<15	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 351.3, Nitrogen, Kjeldahl (EPA/600/4-79/020)

QC Batch No: TK032018-2; Dup or Spiked Sample: 91800.01; LCS: Clean Water; LCS Prepared: 03/20/2018; LCS Analyzed: 03/20/2018; Units: mg/L

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit						
Nitrogen, Total Kjeldahl	ND	ND	<1	<15						

QC Batch No: TK032018-2; Dup or Spiked Sample: 91800.01; LCS: Clean Water; LCS Prepared: 03/20/2018; LCS Analyzed: 03/20/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Nitrogen, Total Kjeldahl	0.500	0.483	96.6	0.500	0.469	93.8	2.9	80-120	<15	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 365.2, Phosphorus, Total, Colorimetric, Ascorbic Acid

QC Batch No: PH031918-1; LCS: Clean Water; LCS Prepared: 03/19/2018; LCS Analyzed: 03/19/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Phosphorus (total)	0.200	0.208	104	0.200	0.200	100	3.9	80-120	<15	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 420.1, Phenolics, Total Recoverable, Spectrophotometric, Manual

QC Batch No: PH032018-1; Dup or Spiked Sample: 91800.01; LCS: Clean Water; QC Prepared: 03/20/2018; QC Analyzed: 03/20/2018; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Phenol	0.00	0.500	0.446	89.2	0.500	0.458	91.6	2.7	80-120	<15

QC Batch No: PH032018-1; Dup or Spiked Sample: 91800.01; LCS: Clean Water; QC Prepared: 03/20/2018; QC Analyzed: 03/20/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Phenol	0.500	0.460	92.0	0.500	0.465	93.0	1.1	80-120	<20	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 425.1, Methylene Blue Active Substances (MBAS), (EPA/600/4-79-020)

QC Batch No: MB031518-1; Dup or Spiked Sample: 91800.01; LCS: Clean Water; QC Prepared: 03/15/2018; QC Analyzed: 03/15/2018; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Surfactants (MBAS)	0.00	0.500	0.462	92.4	0.500	0.425	85.0	8.3	80-120	<15

QC Batch No: MB031518-1; Dup or Spiked Sample: 91800.01; LCS: Clean Water; QC Prepared: 03/15/2018; QC Analyzed: 03/15/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Surfactants (MBAS)	0.500	0.438	87.6	0.500	0.445	89.0	1.6	80-120	<15	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 504.1, EDB and DBCP by GC

QC Batch No: W8C1193; Dup or Spiked Sample: 8C20100-01; LCS: Clean Water; QC Prepared: 03/21/2018; QC Analyzed: 03/21/2018; Units: ug/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
1,2-Dibromo-3-chloropropane (DBCP)	0.0397	0.100	0.181	141	0.100	0.176	136	3.6	65-135	<20
1,2-Dibromoethane (EDB)	0.00	0.100	0.387#	387	0.100	0.389#	389	<1	65-135	<20

QC Batch No: W8C1193; Dup or Spiked Sample: 8C20100-01; LCS: Clean Water; QC Prepared: 03/21/2018; QC Analyzed: 03/21/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
1,2-Dibromo-3-chloropropane (DBCP)	0.100	0.101	101	70-130						
1,2-Dibromoethane (EDB)	0.100	0.102	102	70-130						

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 508, Chlorinated Pesticides and PCBs

QC Batch No: W8C1034; LCS: Clean Water; LCS Prepared: 03/19/2018; LCS Analyzed: 03/24/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Aldrin	0.100	0.0820	82.0	0.100	0.0820	82.0	<1	29-115	<25	
4,4'-DDD (DDD)	0.100	0.101	101	0.100	0.0980	98.0	3.0	55-142	<25	
4,4'-DDE (DDE)	0.100	0.0910	91.0	0.100	0.0890	89.0	2.2	49-129	<25	
4,4'-DDT (DDT)	0.100	0.0970	97.0	0.100	0.0940	94.0	3.1	54-160	<25	
Dieldrin	0.100	0.0870	87.0	0.100	0.0860	86.0	1.2	59-135	<25	
Endosulfan 1	0.100	0.0800	80.0	0.100	0.0800	80.0	<1	28-138	<25	
Endosulfan 11	0.100	0.0900	90.0	0.100	0.0880	88.0	2.2	53-133	<25	
Endosulfan sulfate	0.100	0.0940	94.0	0.100	0.0940	94.0	<1	58-155	<25	
Endrin	0.100	0.0930	93.0	0.100	0.0920	92.0	1.1	57-148	<25	
Endrin aldehyde	0.100	0.0810	81.0	0.100	0.0850	85.0	4.8	45-139	<25	
Heptachlor	0.100	0.0790	79.0	0.100	0.0790	79.0	<1	42-136	<25	
Heptachlor epoxide	0.100	0.0820	82.0	0.100	0.0830	83.0	1.2	59-134	<25	
alpha-Hexachlorocyclohexane (Alpha-BHC)	0.100	0.0840	84.0	0.100	0.0860	86.0	2.4	59-131	<25	
beta-Hexachlorocyclohexane (Betta-BHC)	0.100	0.0950	95.0	0.100	0.0960	96.0	1.0	63-136	<25	
delta-Hexachlorocyclohexane (Delta-BHC)	0.100	0.100	100	0.100	0.0990	99.0	1.0	59-137	<25	
gamma-Hexachlorocyclohexane (Gamma-BHC, Lindane)	0.100	0.0840	84.0	0.100	0.0860	86.0	2.4	59-129	<25	
Methoxychlor	0.100	0.0920	92.0	0.100	0.0890	89.0	3.3	56-167	<25	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 515.3, Chlorinated Herbicides by GC/ECD

QC Batch No: W8C1192; Dup or Spiked Sample: 8C15015-01; LCS: Clean Water; QC Prepared: 03/21/2018; QC Analyzed: 03/22/2018; Units: ug/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Acifluorfen	0.00	4.00	4.64	116	4.00	4.84	121	4.2	70-130	<20
Bentazon	0.00	16.0	17.4	109	16.0	18.6	116	6.2	70-130	<20
2,4-D	0.00	8.00	9.76	122	8.00	9.60	120	1.7	70-130	<20
Dalapon	0.00	8.00	9.44	118	8.00	9.36	117	<1	70-130	<20
2,4-DB	0.00	16.0	18.9	118	16.0	19.0	119	<1	70-130	<20
DCPA	0.00	4.00	4.60	115	4.00	4.76	119	3.4	70-130	<20
Dicamba	0.00	8.00	8.88	111	8.00	9.12	114	2.7	70-130	<20
3,5-Dichlorobenzoic acid	0.00	8.00	9.76	122	8.00	9.68	121	<1	70-130	<20
Dichloroprop	0.00	8.00	9.60	120	8.00	9.28	116	3.4	70-130	<20
Dinoseb	0.00	4.00	4.64	116	4.00	4.76	119	2.6	70-130	<20
Pentachlorophenol (PCP)	0.00	4.00	4.28	107	4.00	4.40	110	2.8	70-130	<20
Picloram	0.00	4.00	4.40	110	4.00	4.56	114	3.6	70-130	<20
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)	0.00	4.00	4.80	120	4.00	4.84	121	<1	70-130	<20
2,4,5-TP	0.00	4.00	4.36	109	4.00	4.76	119	8.8	70-130	<20

QC Batch No: W8C1192; Dup or Spiked Sample: 8C15015-01; LCS: Clean Water; QC Prepared: 03/21/2018; QC Analyzed: 03/22/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Acifluorfen	4.00	4.72	118	70-130						
Bentazon	16.0	17.4	109	70-130						
2,4-D	8.00	9.76	122	70-130						
Dalapon	8.00	9.04	113	70-130						
2,4-DB	16.0	18.6	116	70-130						
DCPA	4.00	4.76	119	70-130						
Dicamba	8.00	8.96	112	70-130						
3,5-Dichlorobenzoic acid	8.00	9.36	117	70-130						
Dichloroprop	8.00	9.44	118	70-130						
Dinoseb	4.00	4.80	120	70-130						
Pentachlorophenol (PCP)	4.00	4.40	110	70-130						

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 515.3, Chlorinated Herbicides by GC/ECD

QC Batch No: W8C1192; Dup or Spiked Sample: 8C15015-01; LCS: Clean Water; QC Prepared: 03/21/2018; QC Analyzed: 03/22/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Picloram	4.00	4.40	110	70-130						
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)	4.00	4.84	121	70-130						
2,4,5-TP	4.00	4.44	111	70-130						

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 0322181A1; LCS: Clean Water; LCS Prepared: 03/22/2018; LCS Analyzed: 03/22/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Benzene	25.0	24.9	99.6	25.0	25.3	101	1.4	75-125	<20	
Chlorobenzene	25.0	25.5	102	25.0	25.8	103	<1	75-125	<20	
Chloroform (Trichloromethane)	25.0	25.5	102	25.0	25.5	102	<1	75-125	<20	
1,1-Dichloroethene	25.0	25.5	102	25.0	26.0	104	1.9	75-125	<20	
Ethylbenzene	25.0	26.3	105	25.0	26.8	107	1.9	75-125	<20	
Methyl-tert-butyl ether (MTBE)	25.0	19.2	76.8	25.0	20.0	80.0	4.1	75-125	<20	
Toluene (Methyl benzene)	25.0	25.5	102	25.0	26.3	105	2.9	75-125	<20	
1,1,1-Trichloroethane	25.0	27.3	109	25.0	27.8	111	1.8	75-125	<20	
Trichloroethene	25.0	26.3	105	25.0	27.0	108	2.8	75-125	<20	
o-Xylene	25.0	26.0	104	25.0	26.5	106	1.9	75-125	<20	
m,p-Xylenes	50.0	52.5	105	50.0	53.0	106	<1	75-125	<20	
Surrogates										
Bromofluorobenzene	5.00	5.30	106	5.00	5.30	106	<1	75-125	<20	
1,2-Dichlorobenzene-d4	5.00	4.99	99.8	5.00	4.88	97.6	2.2	75-125	<20	

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 525.2, Semivolatile Organic Compounds in Water by GC/MS

QC Batch No: W8C1288; LCS: Clean Water; LCS Prepared: 03/22/2018; LCS Analyzed: 03/23/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Alachlor	5.00	5.00	100	5.00	5.00	100	<1	70-130	<30	
Atrazine	5.00	5.05	101	5.00	5.30	106	4.8	70-130	<30	
Bromacil	5.00	4.55	91.0	5.00	5.00	100	9.4	70-130	<30	
Butachlor	5.00	4.90	98.0	5.00	5.20	104	5.9	70-130	<30	
Chloropropham	5.00	5.00	100	5.00	5.15	103	3.0	70-130	<30	
Diazinon	5.00	4.35	87.0	5.00	4.30	86.0	1.2	50-120	<30	
Dimethoate	5.00	2.95	59.0	5.00	3.25	65.0	9.7	50-120	<30	
Diphenamid	5.00	5.25	105	5.00	5.45	109	3.7	70-130	<30	
Disulfoton	5.00	6.95 #	139	5.00	7.10 #	142	2.1	50-120	<30	
EPTC	5.00	4.70	94.0	5.00	4.95	99.0	5.2	70-130	<30	
Metolachlor	5.00	4.90	98.0	5.00	5.05	101	3.0	60-130	<30	
Metribuzin	5.00	4.60	92.0	5.00	4.90	98.0	6.3	50-120	<30	
Molinate	5.00	4.70	94.0	5.00	5.05	101	7.2	70-130	<30	
Prometon	5.00	1.95	39.0	5.00	1.80	36.0	8.0	15-120	<30	
Prometryn	5.00	3.65	73.0	5.00	4.10	82.0	11.6	30-120	<30	
Simazine	5.00	4.85	97.0	5.00	4.90	98.0	1.0	60-130	<30	
Terbacil	5.00	4.95	99.0	5.00	5.25	105	5.9	70-130	<30	
Thiobencarb	5.00	4.95	99.0	5.00	4.90	98.0	1.0	70-130	<30	
Surrogates										
1,3-Dimethyl-2-nitrobenzene	5.00	4.80	96.0	5.00	5.15	103	7.0	70-130	<30	
Perylene-d12	5.00	4.50	90.0	5.00	4.45	89.0	1.1	50-120	<30	
Triphenylphosphate	5.00	5.25	105	5.00	5.40	108	2.8	70-130	<30	

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Site

Live Oak Arrow
1270 E. Arrow Hwy.
Irwindale, CA 91706

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 531.1, N-Methylcarbamoyloximes & N-Methylcarbamates by HPLC

QC Batch No: W8C1611; Dup or Spiked Sample: 8C15015-01; LCS: Clean Water; QC Prepared: 03/27/2018; QC Analyzed: 03/27/2018; Units: ug/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Aldicarb (Temik)	0.00	2.00	4.32 #	216	2.00	4.16 #	208	3.8	65-135	<30
Aldicarb sulfone	0.00	2.00	4.10 #	205	2.00	4.30 #	215	4.8	65-135	<30
Aldicarb sulfoxide	0.00	2.00	3.62 #	181	2.00	3.66 #	183	1.1	65-135	<30
Carbaryl	0.00	2.00	3.60 #	180	2.00	3.64 #	182	1.1	65-135	<30
Carbofuran (Furadan)	0.00	2.00	3.82 #	191	2.00	3.50 #	175	8.7	65-135	<30
3-Hydroxycarbofuran	0.00	2.00	3.58 #	179	2.00	3.64 #	182	1.7	65-135	<30
Methiocarb	0.00	2.00	3.72 #	186	2.00	3.70 #	185	<1	65-135	<30
Methomyl	0.00	2.00	3.92 #	196	2.00	4.06 #	203	3.5	65-135	<30
Oxamyl	0.00	2.00	3.68 #	184	2.00	4.24 #	212	14.1	65-135	<30
Propoxur	0.00	2.00	3.82 #	191	2.00	3.98 #	199	4.1	65-135	<30

QC Batch No: W8C1611; Dup or Spiked Sample: 8C15015-01; LCS: Clean Water; QC Prepared: 03/27/2018; QC Analyzed: 03/27/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Aldicarb (Temik)	2.00	3.04 #	152	80-120						
Aldicarb sulfone	2.00	3.28 #	164	80-120						
Aldicarb sulfoxide	2.00	2.96 #	148	80-120						
Carbaryl	2.00	2.76 #	138	80-120						
Carbofuran (Furadan)	2.00	2.54 #	127	80-120						
3-Hydroxycarbofuran	2.00	2.94 #	147	80-120						
Methiocarb	2.00	3.48 #	174	80-120						
Methomyl	2.00	3.34 #	167	80-120						
Oxamyl	2.00	3.02 #	151	80-120						
Propoxur	2.00	2.82 #	141	80-120						

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 548.1, Endothall by GC/ECD

QC Batch No: W8C1030; Dup or Spiked Sample: 8C14076-01; LCS: Clean Water; QC Prepared: 03/20/2018; QC Analyzed: 03/23/2018; Units: ug/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Endothall	0.00	200	30.0	15.0	200	30.0	15.0	<1	0.1-109	<30

QC Batch No: W8C1030; Dup or Spiked Sample: 8C14076-01; LCS: Clean Water; QC Prepared: 03/20/2018; QC Analyzed: 03/23/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Endothall	100	95.0	95.0	31-117						

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 549.2, Diquat and Paraquat

QC Batch No: W8C1154; Dup or Spiked Sample: 91800.01; LCS: Clean Water; QC Prepared: 03/20/2018; QC Analyzed: 03/23/2018; Units: ug/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Diquat	0.00	20.0	18.8	94.0	20.0	13.2	66.0	35.0	46-122	<30

QC Batch No: W8C1154; Dup or Spiked Sample: 91800.01; LCS: Clean Water; QC Prepared: 03/20/2018; QC Analyzed: 03/23/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Diquat	20.0	16.4	82.0	70-130						

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 552.2, Haloacetic Acids by GC/ECD

QC Batch No: W8C1191; Dup or Spiked Sample: 918001.01; LCS: Clean Water; QC Prepared: 03/21/2018; QC Analyzed: 03/22/2018; Units: ug/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Bromoacetic acid	0.00	10.0	11.3	113	10.0	10.6	106	6.4	70-130	<30
Chloroacetic acid	0.00	10.0	10.7	107	10.0	9.80	98.0	8.8	70-130	<30
Dibromoacetic acid	0.00	10.0	10.1	101	10.0	9.70	97.0	4.0	70-130	<30
Dichloroacetic acid	0.00	10.0	10.5	105	10.0	10.1	101	3.9	70-130	<30
Trichloroacetic acid	0.00	10.0	10.6	106	10.0	10.2	102	3.8	70-130	<30

QC Batch No: W8C1191; Dup or Spiked Sample: 918001.01; LCS: Clean Water; QC Prepared: 03/21/2018; QC Analyzed: 03/22/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Bromoacetic acid	10.0	9.50	95.0	70-130						
Chloroacetic acid	10.0	10.1	101	70-130						
Dibromoacetic acid	10.0	9.30	93.0	70-130						
Dichloroacetic acid	10.0	9.70	97.0	70-130						
Trichloroacetic acid	10.0	9.50	95.0	70-130						

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 900.0, Measurement of Gross Alpha and Beta Radiation

QC Batch No: 2A1805080; Dup or Spiked Sample: 1803275-004; LCS: Clean Water; QC Prepared: 04/09/2018; QC Analyzed: 04/11/2018; Units: pCi/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Gross Alpha	0.00	431	608	141	431	552	128	9.7	60-140	<30

QC Batch No: 2A1805080; Dup or Spiked Sample: 1803275-004; LCS: Clean Water; QC Prepared: 04/09/2018; QC Analyzed: 04/11/2018; Units: pCi/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Gross Alpha	108	127	118	75-125						

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 903.0, Total Alpha Radium 226

QC Batch No: A21804433; Dup or Spiked Sample: 1803275-004; LCS: Clean Water; QC Prepared: 03/20/2018; QC Analyzed: 03/30/2018; Units: pCi/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Radium-226 (Total Alpha)	0.00	24.2	26.4	109	24.2	23.3	96.1	12.6	43-111	<35.5

QC Batch No: A21804433; Dup or Spiked Sample: 1803275-004; LCS: Clean Water; QC Prepared: 03/20/2018; QC Analyzed: 03/30/2018; Units: pCi/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Radium-226 (Total Alpha)	24.2	22.7	93.6	52-107						

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: 908.0, Measurement of Uranium

QC Batch No: 2A1805127; Dup or Spiked Sample: B2A1805127; LCS: Clean Water; QC Prepared: 04/09/2018; QC Analyzed: 04/12/2018; Units: pCi/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Uranium	0.00	26.8	27.1	101	26.8	24.1	89.8	11.7	75-125	<20

QC Batch No: 2A1805127; Dup or Spiked Sample: B2A1805127; LCS: Clean Water; QC Prepared: 04/09/2018; QC Analyzed: 04/12/2018; Units: pCi/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Uranium	26.8	18.7	69.8	54-105						

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: RADIUM-228, Radium 228

QC Batch No: 2A1804797; Dup or Spiked Sample: B2A1804797; LCS: Clean Water; QC Prepared: 03/29/2018; QC Analyzed: 04/05/2018; Units: pCi/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Radium-228	0.00	33.2	31.5	94.9	33.2	31.9	96.0	1.2	75-125	<25

QC Batch No: 2A1804797; Dup or Spiked Sample: B2A1804797; LCS: Clean Water; QC Prepared: 03/29/2018; QC Analyzed: 04/05/2018; Units: pCi/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Radium-228	33.2	26.8	80.6	65-108						

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: SM-4500-CLO2-D, Chloramines by DPD Method

QC Batch No: W8C0986; Dup or Spiked Sample: 91800.01; LCS: Clean Water; QC Prepared: 03/16/2018; QC Analyzed: 03/16/2018; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Chlorine, Residual, Free	0.00	0.200	0.192	96.0	0.200	0.180	90.0	6.5	79-116	<15

QC Batch No: W8C0986; Dup or Spiked Sample: 91800.01; LCS: Clean Water; QC Prepared: 03/16/2018; QC Analyzed: 03/16/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Chlorine, Residual, Free	0.200	0.202	101	85-110						

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: SM-4500-CLO2-D, Chlorine Dioxide by DPD Method

QC Batch No: W8C0986; Dup or Spiked Sample: 91800.01; LCS: Clean Water; QC Prepared: 03/16/2018; QC Analyzed: 03/16/2018; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Chlorine Dioxide	0.00	0.380	0.410	108	0.380	0.380	100	7.7	82-114	<15

QC Batch No: W8C0986; Dup or Spiked Sample: 91800.01; LCS: Clean Water; QC Prepared: 03/16/2018; QC Analyzed: 03/16/2018; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Chlorine Dioxide	0.380	0.384	101	85-110						

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Project ID: 5349.0007
Project Name: Arrow-Live Oak

AETL Job Number	Submitted	Client
91800	03/15/2018	ANACAP

Method: SM2120-B, Color (By Visual Comparison)

QC Batch No: CO031518-1; Dup or Spiked Sample: 91800.01; LCS: Clean Water; LCS Prepared: 03/15/2018; LCS Analyzed: 03/15/2018; Units: Color Units

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Color	ND	ND	<1	<15	25.0	24.0	96.0	80-120		

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Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

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Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders: 8C16014

Project: 91800

Attn: Cyrus Razmara

Client: American Environmental Testing Lab
2834 N Naomi Street
Burbank, CA 91504

Report Date: 4/18/2018
Received Date: 3/16/2018
Turnaround Time: Normal
Phones: (818) 845-8200
Fax: (818) 845-8840
P.O. #: 22608-Sub
Billing Code:

Dear Cyrus Razmara,

Enclosed are the results of analyses for samples received 3/16/18 with the Chain-of-Custody document. The samples were received in good condition, at 4.7 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Case Narrative

ok tio proceed in tiransferring for EPA504, 531, and 300.1. preserving 504, 531.1,525.2, and 300.1 ati tihe laboratory. And 549 was in a glass and noti plastic contiainersamples tiransfered and preserved intio proper contiainers ati tihe lab on 3/19/18 ati 13:28 per clienti requestiRG 3/19

Sample Results

Sample: 91800.01
8C16014-01 (Water)

Sampled: 03/15/18 10:43 by Client

Analyte		Result	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 1613B	**Batch ID:** W8C1196	**Instr:** GCMS15	**Prepared:** 03/21/18 08:40			**Analyst:** EFC	
2,3,7,8-TCDD (Dioxin)		ND	5.00	pg/l	1	03/29/18 18:12	
Method: EPA 300.1	**Batch ID:** W8C1003	**Instr:** LC12	**Prepared:** 03/18/18 08:22			**Analyst:** jan	
Bromate		ND	5.0	ug/l	1	03/18/18 12:00	
Chlorate		ND	10	ug/l	1	03/18/18 12:00	
Surrogate(s)							
Dichloroacetate		*113%*	*90-115*	*Conc: 566*		*03/18/18 12:00*	
Method: EPA 504.1	**Batch ID:** W8C1193	**Instr:** GC03	**Prepared:** 03/21/18 14:01			**Analyst:** cam	
1,2-Dibromo-3-chloropropane		ND	0.010	ug/l	1	03/21/18 20:22	
1,2-Dibromoethane (EDB)		ND	0.020	ug/l	1	03/21/18 20:22	
Method: EPA 508	**Batch ID:** W8C1034	**Instr:** GC07	**Prepared:** 03/19/18 09:06			**Analyst:** rmr	
4,4'-DDD		ND	0.010	ug/l	1	03/24/18 06:09	
4,4'-DDE		ND	0.010	ug/l	1	03/24/18 06:09	
4,4'-DDT		ND	0.010	ug/l	1	03/24/18 06:09	
Aldrin		ND	0.010	ug/l	1	03/24/18 06:09	

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Sample Results

(Continued)

Sample: 91800.01

8C16014-01 (Water)

Sampled: 03/15/18 10:43 by Client

(Continued)

Analyte		Result	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 508 (Continued)	**Batch ID:** W8C1034	**Instr:** GC07	**Prepared:** 03/19/18 09:06			**Analyst:** rmr	
alpha-BHC		ND	0.010	ug/l	1	03/24/18 06:09	
Aroclor 1016		ND	0.10	ug/l	1	03/24/18 06:09	
Aroclor 1221		ND	0.10	ug/l	1	03/24/18 06:09	
Aroclor 1232		ND	0.10	ug/l	1	03/24/18 06:09	
Aroclor 1242		ND	0.10	ug/l	1	03/24/18 06:09	
Aroclor 1248		ND	0.10	ug/l	1	03/24/18 06:09	
Aroclor 1254		ND	0.10	ug/l	1	03/24/18 06:09	
Aroclor 1260		ND	0.10	ug/l	1	03/24/18 06:09	
beta-BHC		ND	0.010	ug/l	1	03/24/18 06:09	
Chlordane (tech)		ND	0.10	ug/l	1	03/24/18 06:09	
Chlorothalonil		ND	0.050	ug/l	1	03/24/18 06:09	
delta-BHC		ND	0.010	ug/l	1	03/24/18 06:09	
Dieldrin		ND	0.010	ug/l	1	03/24/18 06:09	
Endosulfan I		ND	0.010	ug/l	1	03/24/18 06:09	
Endosulfan II		ND	0.010	ug/l	1	03/24/18 06:09	
Endosulfan sulfate		ND	0.010	ug/l	1	03/24/18 06:09	
Endrin		ND	0.010	ug/l	1	03/24/18 06:09	
Endrin aldehyde		ND	0.010	ug/l	1	03/24/18 06:09	
gamma-BHC (Lindane)		ND	0.010	ug/l	1	03/24/18 06:09	
Heptachlor		ND	0.010	ug/l	1	03/24/18 06:09	
Heptachlor epoxide		ND	0.010	ug/l	1	03/24/18 06:09	
Hexachlorobenzene		ND	0.050	ug/l	1	03/24/18 06:09	
Hexachlorocyclopentadiene		ND	0.050	ug/l	1	03/24/18 06:09	
Methoxychlor		ND	0.010	ug/l	1	03/24/18 06:09	
PCBs, Total		ND	0.50	ug/l	1	03/24/18 06:09	
Propachlor		ND	0.050	ug/l	1	03/24/18 06:09	
Toxaphene		ND	1.0	ug/l	1	03/24/18 06:09	
Trifluralin		ND	0.010	ug/l	1	03/24/18 06:09	
Surrogate(s)							
Decachlorobiphenyl		*99%*	*70-130*	*Conc: 0.0989*		*03/24/18 06:09*	
Tetrachloro-meta-xylene		*81%*	*70-130*	*Conc: 0.0809*		*03/24/18 06:09*	
Method: EPA 515.3	**Batch ID:** W8C1192	**Instr:** GC08	**Prepared:** 03/21/18 08:24			**Analyst:** rmr	
2,4,5-T		ND	0.20	ug/l	1	03/22/18 21:38	
2,4,5-TP (Silvex)		ND	0.20	ug/l	1	03/22/18 21:38	
2,4-D		ND	0.40	ug/l	1	03/22/18 21:38	
2,4-DB		ND	2.0	ug/l	1	03/22/18 21:38	
3,5-Dichlorobenzoic acid		ND	1.0	ug/l	1	03/22/18 21:38	
Acifluorfen		ND	0.40	ug/l	1	03/22/18 21:38	
Bentazon		ND	2.0	ug/l	1	03/22/18 21:38	
Dalapon		ND	0.40	ug/l	1	03/22/18 21:38	
DCPA		ND	0.10	ug/l	1	03/22/18 21:38	

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Sample Results

(Continued)

Sample: 91800.01

8C16014-01 (Water)

Sampled: 03/15/18 10:43 by Client

(Continued)

Analyte		Result	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 515.3 (Continued)	**Batch ID:** W8C1192	**Instr:** GC08	**Prepared:** 03/21/18 08:24			**Analyst:** rmr	
Dicamba		ND	0.60	ug/l	1	03/22/18 21:38	
Dichloroprop		ND	0.30	ug/l	1	03/22/18 21:38	
Dinoseb		ND	0.40	ug/l	1	03/22/18 21:38	
Pentachlorophenol		ND	0.20	ug/l	1	03/22/18 21:38	
Picloram		ND	0.60	ug/l	1	03/22/18 21:38	
Surrogate(s)							
2,4-DCAA		*112%*	*70-130*	*Conc: 11.2*		*03/22/18 21:38*	
Method: EPA 525.2	**Batch ID:** W8C1288	**Instr:** GCMS16	**Prepared:** 03/22/18 08:57			**Analyst:** etn	
Alachlor		ND	0.10	ug/l	1	03/23/18 11:55	
Atrazine		ND	0.10	ug/l	1	03/23/18 11:55	
Bromacil		ND	0.50	ug/l	1	03/23/18 11:55	
Butachlor		ND	0.10	ug/l	1	03/23/18 11:55	
Chlorpropham		ND	0.10	ug/l	1	03/23/18 11:55	
Diazinon		ND	0.10	ug/l	1	03/23/18 11:55	
Dimethoate		ND	0.20	ug/l	1	03/23/18 11:55	
Diphenamid		ND	0.10	ug/l	1	03/23/18 11:55	
Disulfoton		ND	0.10	ug/l	1	03/23/18 11:55	
EPTC		ND	0.10	ug/l	1	03/23/18 11:55	
Metolachlor		ND	0.10	ug/l	1	03/23/18 11:55	
Metribuzin		ND	0.10	ug/l	1	03/23/18 11:55	
Molinate		ND	0.10	ug/l	1	03/23/18 11:55	
Prometon		ND	0.10	ug/l	1	03/23/18 11:55	
Prometryn		ND	0.10	ug/l	1	03/23/18 11:55	
Simazine		ND	0.10	ug/l	1	03/23/18 11:55	
Terbacil		ND	2.0	ug/l	1	03/23/18 11:55	
Thiobencarb		ND	0.10	ug/l	1	03/23/18 11:55	
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene		*105%*	*70-130*	*Conc: 5.27*		*03/23/18 11:55*	
Perylene-d12		*75%*	*50-120*	*Conc: 3.77*		*03/23/18 11:55*	
Triphenyl phosphate		*106%*	*70-130*	*Conc: 5.31*		*03/23/18 11:55*	
Method: EPA 531.1	**Batch ID:** W8C1611	**Instr:** LC10	**Prepared:** 03/27/18 10:27			**Analyst:** pjs	
3-Hydroxycarbofuran		ND	2.0	ug/l	1	03/27/18 18:44	
Aldicarb		ND	2.0	ug/l	1	03/27/18 18:44	
Aldicarb sulfone		ND	2.0	ug/l	1	03/27/18 18:44	
Aldicarb sulfoxide		ND	2.0	ug/l	1	03/27/18 18:44	
Carbaryl		ND	2.0	ug/l	1	03/27/18 18:44	
Carbofuran		ND	2.0	ug/l	1	03/27/18 18:44	
Methiocarb		ND	2.0	ug/l	1	03/27/18 18:44	
Methomyl		ND	2.0	ug/l	1	03/27/18 18:44	
Oxamyl		ND	2.0	ug/l	1	03/27/18 18:44	
Propoxur (Baygon)		ND	2.0	ug/l	1	03/27/18 18:44	

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Sample Results

(Continued)

Sample: 91800.01

Sampled: 03/15/18 10:43 by Client

8C16014-01 (Water)

(Continued)

Analyte		Result	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 548.1	**Batch ID:** W8C1030	**Instr:** GCMS06	**Prepared:** 03/20/18 07:55			**Analyst:** etn	
Endothall		ND	45	ug/l	1	03/23/18 15:28	
Method: EPA 549.2	**Batch ID:** W8C1154	**Instr:** LC11	**Prepared:** 03/20/18 13:31			**Analyst:** blg	
Diquat		ND	4.0	ug/l	1	03/23/18 17:44	
Method: EPA 552.2	**Batch ID:** W8C1191	**Instr:** GC05	**Prepared:** 03/21/18 08:20			**Analyst:** cam	
Dibromoacetic acid (dbaa)		ND	1.0	ug/l	1	03/22/18 01:01	
Dichloroacetic acid (dcaa)		ND	1.0	ug/l	1	03/22/18 01:01	
HAA5, Total		ND	1.0	ug/l	1	03/22/18 01:01	
Monobromoacetic acid (mbaa)		ND	1.0	ug/l	1	03/22/18 01:01	
Monochloroacetic acid (mcaa)		ND	2.0	ug/l	1	03/22/18 01:01	
Trichloroacetic acid (tcaa)		ND	1.0	ug/l	1	03/22/18 01:01	
Surrogate(s)							
2,3-Dibromopropionic acid		*101%*	*70-130*	*Conc: 10.1*		*03/22/18 01:01*	
Method: SM 4500Cl-G	**Batch ID:** W8C0986	**Instr:** Inst	**Prepared:** 03/16/18 16:37			**Analyst:** mic	
Chlorine Residual, Free		ND	0.050	mg/l	1	03/16/18 19:19	*
Chlorine Residual, Total		ND	0.050	mg/l	1	03/16/18 19:19	*
Dichloramine		ND	0.050	mg/l	1	03/16/18 19:19	*
Monochloramine		ND	0.050	mg/l	1	03/16/18 19:19	*
Method: SM 4500ClO2-D	**Batch ID:** W8C0986	**Instr:** Inst	**Prepared:** 03/16/18 16:37			**Analyst:** mic	
Chlorine Dioxide as ClO2		ND	0.050	mg/l	1	03/16/18 19:19	*

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Quality Control Results

Anions by IC, EPA Method 300.1

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1003 - EPA 300.1/Dir Inj										
Blank (W8C1003-BLK1)				**Prepared & Analyzed: 03/18/18**						
Bromate	ND	5.0	ug/l							
Chlorate	ND	10	ug/l							
Surrogate(s)										
Dichloroacetate		*510*	*ug/l*	*500*		*102*	*90-115*			
Dichloroacetate		*510*	*ug/l*	*500*		*102*	*90-115*			
LCS (W8C1003-BS1)				**Prepared & Analyzed: 03/18/18**						
Bromate	101	5.0	ug/l	100		101	85-115			
Chlorate	95.6	10	ug/l	101		95	85-115			
Surrogate(s)										
Dichloroacetate		*502*	*ug/l*	*500*		*100*	*90-115*			
Dichloroacetate		*502*	*ug/l*	*500*		*100*	*90-115*			
Matrix Spike (W8C1003-MS1)	**Source: 8C01006-02**			**Prepared & Analyzed: 03/18/18**						
Bromate	117	5.0	ug/l	100	3.50	113	64-133			
Chlorate	110	10	ug/l	101	ND	109	76-120			
Surrogate(s)										
Dichloroacetate		*537*	*ug/l*	*500*		*107*	*90-115*			
Dichloroacetate		*537*	*ug/l*	*500*		*107*	*90-115*			
Matrix Spike (W8C1003-MS2)	**Source: 8C01006-03**			**Prepared & Analyzed: 03/18/18**						
Bromate	119	5.0	ug/l	100	3.39	116	64-133			
Chlorate	107	10	ug/l	101	ND	106	76-120			
Surrogate(s)										
Dichloroacetate		*544*	*ug/l*	*500*		*109*	*90-115*			
Dichloroacetate		*544*	*ug/l*	*500*		*109*	*90-115*			
Matrix Spike Dup (W8C1003-MSD1)	**Source: 8C01006-02**			**Prepared & Analyzed: 03/18/18**						
Bromate	118	5.0	ug/l	100	3.50	115	64-133	1	20	
Chlorate	111	10	ug/l	101	ND	110	76-120	1	20	
Surrogate(s)										
Dichloroacetate		*562*	*ug/l*	*500*		*112*	*90-115*			
Dichloroacetate		*562*	*ug/l*	*500*		*112*	*90-115*			
Matrix Spike Dup (W8C1003-MSD2)	**Source: 8C01006-03**			**Prepared & Analyzed: 03/18/18**						
Bromate	115	5.0	ug/l	100	3.39	111	64-133	4	20	
Chlorate	112	10	ug/l	101	ND	111	76-120	4	20	
Surrogate(s)										
Dichloroacetate		*554*	*ug/l*	*500*		*111*	*90-115*			
Dichloroacetate		*554*	*ug/l*	*500*		*111*	*90-115*			

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Quality Control Results

(Continued)

Carbamates and Urea Pesticides

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1611 - Direct Injection										
Blank (W8C1611-BLK1)				**Prepared & Analyzed: 03/27/18**						
3-Hydroxycarbofuran	ND	2.0	ug/l							
Aldicarb	ND	2.0	ug/l							
Aldicarb sulfone	ND	2.0	ug/l							
Aldicarb sulfoxide	ND	2.0	ug/l							
Carbaryl	ND	2.0	ug/l							
Carbofuran	ND	2.0	ug/l							
Methiocarb	ND	2.0	ug/l							
Methomyl	ND	2.0	ug/l							
Oxamyl	ND	2.0	ug/l							
Propoxur (Baygon)	ND	2.0	ug/l							
LCS (W8C1611-BS1)				**Prepared & Analyzed: 03/27/18**						
3-Hydroxycarbofuran	14.7	2.0	ug/l	10.0		147	80-120			Q-08
Aldicarb	15.2	2.0	ug/l	10.0		152	80-120			Q-08
Aldicarb sulfone	16.4	2.0	ug/l	10.0		164	80-120			Q-08
Aldicarb sulfoxide	14.8	2.0	ug/l	10.0		148	80-120			Q-08
Carbaryl	13.8	2.0	ug/l	10.0		138	80-120			Q-08
Carbofuran	12.7	2.0	ug/l	10.0		127	80-120			Q-08
Methiocarb	17.4	2.0	ug/l	10.0		174	80-120			Q-08
Methomyl	16.7	2.0	ug/l	10.0		167	80-120			Q-08
Oxamyl	15.1	2.0	ug/l	10.0		151	80-120			Q-08
Propoxur (Baygon)	14.1	2.0	ug/l	10.0		141	80-120			Q-08
Matrix Spike (W8C1611-MS1)	**Source: 8C15015-01**			**Prepared & Analyzed: 03/27/18**						
3-Hydroxycarbofuran	17.9	2.0	ug/l	10.0	ND	179	65-135			Q-08
Aldicarb	21.6	2.0	ug/l	10.0	ND	216	65-135			Q-08
Aldicarb sulfone	20.5	2.0	ug/l	10.0	ND	205	65-135			Q-08
Aldicarb sulfoxide	18.1	2.0	ug/l	10.0	ND	181	65-135			Q-08
Carbaryl	18.0	2.0	ug/l	10.0	ND	180	65-135			Q-08
Carbofuran	19.1	2.0	ug/l	10.0	ND	191	65-135			Q-08
Methiocarb	18.6	2.0	ug/l	10.0	ND	186	65-135			Q-08
Methomyl	19.6	2.0	ug/l	10.0	ND	196	65-135			Q-08
Oxamyl	18.4	2.0	ug/l	10.0	ND	184	65-135			Q-08
Propoxur (Baygon)	19.1	2.0	ug/l	10.0	ND	191	65-135			Q-08
Matrix Spike Dup (W8C1611-MSD1)	**Source: 8C15015-01**			**Prepared & Analyzed: 03/27/18**						
3-Hydroxycarbofuran	18.2	2.0	ug/l	10.0	ND	182	65-135	2	30	Q-08
Aldicarb	20.8	2.0	ug/l	10.0	ND	208	65-135	4	30	Q-08
Aldicarb sulfone	21.5	2.0	ug/l	10.0	ND	215	65-135	5	30	Q-08
Aldicarb sulfoxide	18.3	2.0	ug/l	10.0	ND	183	65-135	1	30	Q-08
Carbaryl	18.2	2.0	ug/l	10.0	ND	182	65-135	1	30	Q-08
Carbofuran	17.5	2.0	ug/l	10.0	ND	175	65-135	9	30	Q-08
Methiocarb	18.5	2.0	ug/l	10.0	ND	185	65-135	0.6	30	Q-08

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Quality Control Results

(Continued)

Carbamates and Urea Pesticides (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1611 - Direct Injection (Continued)										
Matrix Spike Dup (W8C1611-MSD1)	**Source: 8C15015-01**			**Prepared & Analyzed: 03/27/18**						
Methomyl	20.3	2.0	ug/l	10.0	ND	203	65-135	4	30	Q-08
Oxamyl	21.2	2.0	ug/l	10.0	ND	212	65-135	14	30	Q-08
Propoxur (Baygon)	19.9	2.0	ug/l	10.0	ND	199	65-135	4	30	Q-08

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Quality Control Results

(Continued)

Chlorinated Acids Herbicides by GC/ECD

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1192 - EPA 515.3/Micro Ext. Drtz.										
Blank (W8C1192-BLK1)				**Prepared: 03/21/18 Analyzed: 03/22/18**						
2,4,5-T	ND	0.20	ug/l							
2,4,5-TP (Silvex)	ND	0.20	ug/l							
2,4-D	ND	0.40	ug/l							
2,4-DB	ND	2.0	ug/l							
3,5-Dichlorobenzoic acid	ND	1.0	ug/l							
Acifluorfen	ND	0.40	ug/l							
Bentazon	ND	2.0	ug/l							
Dalapon	ND	0.40	ug/l							
DCPA	ND	0.10	ug/l							
Dicamba	ND	0.60	ug/l							
Dichloroprop	ND	0.30	ug/l							
Dinoseb	ND	0.40	ug/l							
Pentachlorophenol	ND	0.20	ug/l							
Picloram	ND	0.60	ug/l							
Surrogate(s)										
2,4-DCAA		*11.0*	*ug/l*	*10.0*		*110*	*70-130*			
LCS (W8C1192-BS1)				**Prepared: 03/21/18 Analyzed: 03/22/18**						
2,4,5-T	4.82	0.20	ug/l	4.00		121	70-130			
2,4,5-TP (Silvex)	4.45	0.20	ug/l	4.00		111	70-130			
2,4-D	9.72	0.40	ug/l	8.00		122	70-130			
2,4-DB	18.6	2.0	ug/l	16.0		116	70-130			
3,5-Dichlorobenzoic acid	9.36	1.0	ug/l	8.00		117	70-130			
Acifluorfen	4.72	0.40	ug/l	4.00		118	70-130			
Bentazon	17.4	2.0	ug/l	16.0		109	70-130			
Dalapon	9.01	0.40	ug/l	8.00		113	70-130			
DCPA	4.75	0.10	ug/l	4.00		119	70-130			
Dicamba	8.94	0.60	ug/l	8.00		112	70-130			
Dichloroprop	9.41	0.30	ug/l	8.00		118	70-130			
Dinoseb	4.81	0.40	ug/l	4.00		120	70-130			
Pentachlorophenol	4.40	0.20	ug/l	4.00		110	70-130			
Picloram	4.41	0.60	ug/l	4.00		110	70-130			
Surrogate(s)										
2,4-DCAA		*11.8*	*ug/l*	*10.0*		*118*	*70-130*			
Matrix Spike (W8C1192-MS1)	**Source: 8C15015-01**			**Prepared: 03/21/18 Analyzed: 03/22/18**						
2,4,5-T	4.80	0.20	ug/l	4.00	ND	120	70-130			
2,4,5-TP (Silvex)	4.36	0.20	ug/l	4.00	ND	109	70-130			
2,4-D	9.74	0.40	ug/l	8.00	ND	122	70-130			
2,4-DB	18.9	2.0	ug/l	16.0	ND	118	70-130			
3,5-Dichlorobenzoic acid	9.73	1.0	ug/l	8.00	ND	122	70-130			
Acifluorfen	4.63	0.40	ug/l	4.00	ND	116	70-130			
Bentazon	17.4	2.0	ug/l	16.0	ND	109	70-130			

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Quality Control Results

(Continued)

Chlorinated Acids Herbicides by GC/ECD (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1192 - EPA 515.3/Micro Ext. Drtz. (Continued)										
Matrix Spike (W8C1192-MS1)	**Source: 8C15015-01**			**Prepared: 03/21/18 Analyzed: 03/22/18**						
Dalapon	9.40	0.40	ug/l	8.00	ND	118	70-130			
DCPA	4.62	0.10	ug/l	4.00	ND	115	70-130			
Dicamba	8.91	0.60	ug/l	8.00	ND	111	70-130			
Dichloroprop	9.60	0.30	ug/l	8.00	ND	120	70-130			
Dinoseb	4.66	0.40	ug/l	4.00	ND	116	70-130			
Pentachlorophenol	4.28	0.20	ug/l	4.00	ND	107	70-130			
Picloram	4.42	0.60	ug/l	4.00	ND	110	70-130			
Surrogate(s)										
2,4-DCAA		*11.7*	*ug/l*	*10.0*		*117*	*70-130*			
Matrix Spike (W8C1192-MS2)	**Source: 8C15061-01**			**Prepared: 03/21/18 Analyzed: 03/22/18**						
2,4,5-T	4.34	0.20	ug/l	4.00	ND	109	70-130			
2,4,5-TP (Silvex)	4.79	0.20	ug/l	4.00	ND	120	70-130			
2,4-D	8.86	0.40	ug/l	8.00	ND	111	70-130			
2,4-DB	11.2	2.0	ug/l	16.0	ND	70	70-130			
3,5-Dichlorobenzoic acid	8.82	1.0	ug/l	8.00	ND	110	70-130			
Acifluorfen	4.50	0.40	ug/l	4.00	ND	113	70-130			
Bentazon	17.6	2.0	ug/l	16.0	ND	110	70-130			
Dalapon	7.96	0.40	ug/l	8.00	ND	100	70-130			
DCPA	4.28	0.10	ug/l	4.00	ND	107	70-130			
Dicamba	8.45	0.60	ug/l	8.00	ND	106	70-130			
Dichloroprop	9.26	0.30	ug/l	8.00	ND	116	70-130			
Dinoseb	4.18	0.40	ug/l	4.00	ND	104	70-130			
Pentachlorophenol	3.80	0.20	ug/l	4.00	ND	95	70-130			
Picloram	4.23	0.60	ug/l	4.00	ND	106	70-130			
Surrogate(s)										
2,4-DCAA		*10.3*	*ug/l*	*10.0*		*103*	*70-130*			
Matrix Spike Dup (W8C1192-MSD1)	**Source: 8C15015-01**			**Prepared: 03/21/18 Analyzed: 03/22/18**						
2,4,5-T	4.82	0.20	ug/l	4.00	ND	121	70-130	0.5	30	
2,4,5-TP (Silvex)	4.76	0.20	ug/l	4.00	ND	119	70-130	9	30	
2,4-D	9.61	0.40	ug/l	8.00	ND	120	70-130	1	30	
2,4-DB	19.0	2.0	ug/l	16.0	ND	119	70-130	1	30	
3,5-Dichlorobenzoic acid	9.68	1.0	ug/l	8.00	ND	121	70-130	0.5	30	
Acifluorfen	4.83	0.40	ug/l	4.00	ND	121	70-130	4	30	
Bentazon	18.5	2.0	ug/l	16.0	ND	116	70-130	6	30	
Dalapon	9.40	0.40	ug/l	8.00	ND	117	70-130	0.03	30	
DCPA	4.77	0.10	ug/l	4.00	ND	119	70-130	3	30	
Dicamba	9.15	0.60	ug/l	8.00	ND	114	70-130	3	30	
Dichloroprop	9.30	0.30	ug/l	8.00	ND	116	70-130	3	30	
Dinoseb	4.75	0.40	ug/l	4.00	ND	119	70-130	2	30	
Pentachlorophenol	4.39	0.20	ug/l	4.00	ND	110	70-130	3	30	
Picloram	4.55	0.60	ug/l	4.00	ND	114	70-130	3	30	

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Quality Control Results

(Continued)

Chlorinated Acids Herbicides by GC/ECD (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1192 - EPA 515.3/Micro Ext. Drtz. (Continued)										
Matrix Spike Dup (W8C1192-MSD1)	**Source: 8C15015-01**			**Prepared: 03/21/18**	**Analyzed: 03/22/18**					
Surrogate(s)										
2,4-DCAA		*11.8*	*ug/l*	*10.0*		*118*	*70-130*			
Matrix Spike Dup (W8C1192-MSD2)	**Source: 8C15061-01**			**Prepared: 03/21/18**	**Analyzed: 03/22/18**					
2,4,5-T	4.56	0.20	ug/l	4.00	ND	114	70-130	5	30	
2,4,5-TP (Silvex)	4.54	0.20	ug/l	4.00	ND	113	70-130	6	30	
2,4-D	9.79	0.40	ug/l	8.00	ND	122	70-130	10	30	
2,4-DB	20.1	2.0	ug/l	16.0	ND	126	70-130	57	30	MS-05
3,5-Dichlorobenzoic acid	10.4	1.0	ug/l	8.00	ND	130	70-130	17	30	
Acifluorfen	4.78	0.40	ug/l	4.00	ND	119	70-130	6	30	
Bentazon	19.5	2.0	ug/l	16.0	ND	122	70-130	10	30	
Dalapon	9.40	0.40	ug/l	8.00	ND	118	70-130	17	30	
DCPA	4.80	0.10	ug/l	4.00	ND	120	70-130	11	30	
Dicamba	9.08	0.60	ug/l	8.00	ND	113	70-130	7	30	
Dichloroprop	10.1	0.30	ug/l	8.00	ND	126	70-130	8	30	
Dinoseb	4.80	0.40	ug/l	4.00	ND	120	70-130	14	30	
Pentachlorophenol	4.42	0.20	ug/l	4.00	ND	110	70-130	15	30	
Picloram	4.39	0.60	ug/l	4.00	ND	110	70-130	4	30	
Surrogate(s)										
2,4-DCAA		*12.4*	*ug/l*	*10.0*		*124*	*70-130*			

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Quality Control Results

(Continued)

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1034 - EPA 508/L-L SF										
Blank (W8C1034-BLK1)				**Prepared: 03/19/18 Analyzed: 03/23/18**						
4,4'-DDD	ND	0.010	ug/l							
4,4'-DDE	ND	0.010	ug/l							
4,4'-DDT	ND	0.010	ug/l							
Aldrin	ND	0.010	ug/l							
alpha-BHC	ND	0.010	ug/l							
Aroclor 1016	ND	0.10	ug/l							
Aroclor 1221	ND	0.10	ug/l							
Aroclor 1232	ND	0.10	ug/l							
Aroclor 1242	ND	0.10	ug/l							
Aroclor 1248	ND	0.10	ug/l							
Aroclor 1254	ND	0.10	ug/l							
Aroclor 1260	ND	0.10	ug/l							
beta-BHC	ND	0.010	ug/l							
Chlordane (tech)	ND	0.10	ug/l							
Chlorothalonil	ND	0.050	ug/l							
delta-BHC	ND	0.010	ug/l							
Dieldrin	ND	0.010	ug/l							
Endosulfan I	ND	0.010	ug/l							
Endosulfan II	ND	0.010	ug/l							
Endosulfan sulfate	ND	0.010	ug/l							
Endrin	ND	0.010	ug/l							
Endrin aldehyde	ND	0.010	ug/l							
gamma-BHC (Lindane)	ND	0.010	ug/l							
Heptachlor	ND	0.010	ug/l							
Heptachlor epoxide	ND	0.010	ug/l							
Hexachlorobenzene	ND	0.050	ug/l							
Hexachlorocyclopentadiene	ND	0.050	ug/l							
Methoxychlor	ND	0.010	ug/l							
PCBs, Total	ND	0.50	ug/l							
Propachlor	ND	0.050	ug/l							
Toxaphene	ND	1.0	ug/l							
Trifluralin	ND	0.010	ug/l							
Surrogate(s)										
Decachlorobiphenyl		*0.0997*	*ug/l*	*0.100*		*100*	*70-130*			
Tetrachloro-meta-xylene		*0.0739*	*ug/l*	*0.100*		*74*	*70-130*			
Blank (W8C1034-BLK2)				**Prepared: 03/19/18 Analyzed: 03/27/18**						
4,4'-DDD	ND	0.010	ug/l							QC-2
4,4'-DDE	ND	0.010	ug/l							QC-2
4,4'-DDT	ND	0.010	ug/l							QC-2
Aldrin	ND	0.010	ug/l							QC-2

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Quality Control Results

(Continued)

Chlorinated Pesticides and/or PCBs by GC/ECD (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1034 - EPA 508/L-L SF (Continued)										
Blank (W8C1034-BLK2)				**Prepared: 03/19/18 Analyzed: 03/27/18**						
alpha-BHC	ND	0.010	ug/l							QC-2
Aroclor 1016	ND	0.10	ug/l							QC-2
Aroclor 1221	ND	0.10	ug/l							QC-2
Aroclor 1232	ND	0.10	ug/l							QC-2
Aroclor 1242	ND	0.10	ug/l							QC-2
Aroclor 1248	ND	0.10	ug/l							QC-2
Aroclor 1254	ND	0.10	ug/l							QC-2
Aroclor 1260	ND	0.10	ug/l							QC-2
beta-BHC	ND	0.010	ug/l							QC-2
Chlordane (tech)	ND	0.10	ug/l							QC-2
Chlorothalonil	ND	0.050	ug/l							QC-2
delta-BHC	ND	0.010	ug/l							QC-2
Dieldrin	ND	0.010	ug/l							QC-2
Endosulfan I	ND	0.010	ug/l							QC-2
Endosulfan II	ND	0.010	ug/l							QC-2
Endosulfan sulfate	ND	0.010	ug/l							QC-2
Endrin	ND	0.010	ug/l							QC-2
Endrin aldehyde	ND	0.010	ug/l							QC-2
gamma-BHC (Lindane)	ND	0.010	ug/l							QC-2
Heptachlor	ND	0.010	ug/l							QC-2
Heptachlor epoxide	ND	0.010	ug/l							QC-2
Hexachlorobenzene	ND	0.050	ug/l							QC-2
Hexachlorocyclopentadiene	ND	0.050	ug/l							QC-2
Methoxychlor	ND	0.010	ug/l							QC-2
PCBs, Total	ND	0.50	ug/l							QC-2
Propachlor	ND	0.050	ug/l							QC-2
Toxaphene	ND	1.0	ug/l							QC-2
Trifluralin	ND	0.010	ug/l							QC-2
Surrogate(s)										
Decachlorobiphenyl		*0.122*	*ug/l*	*0.100*		*122*	*70-130*			*QC-2*
Tetrachloro-meta-xylene		*0.0875*	*ug/l*	*0.100*		*88*	*70-130*			*QC-2*
LCS (W8C1034-BS1)				**Prepared: 03/19/18 Analyzed: 03/23/18**						
4,4´-DDD	0.101	0.010	ug/l	0.100		101	55-142			
4,4´-DDE	0.0913	0.010	ug/l	0.100		91	49-129			
4,4´-DDT	0.0974	0.010	ug/l	0.100		97	54-160			
Aldrin	0.0816	0.010	ug/l	0.100		82	29-115			
alpha-BHC	0.0843	0.010	ug/l	0.100		84	59-131			
beta-BHC	0.0954	0.010	ug/l	0.100		95	63-136			
delta-BHC	0.0995	0.010	ug/l	0.100		100	59-137			
Dieldrin	0.0871	0.010	ug/l	0.100		87	59-135			

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Quality Control Results

(Continued)

Chlorinated Pesticides and/or PCBs by GC/ECD (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1034 - EPA 508/L-L SF (Continued)										
LCS (W8C1034-BS1)				**Prepared: 03/19/18 Analyzed: 03/23/18**						
Endosulfan I	0.0803	0.010	ug/l	0.100		80	28-138			
Endosulfan II	0.0904	0.010	ug/l	0.100		90	53-133			
Endosulfan sulfate	0.0939	0.010	ug/l	0.100		94	58-155			
Endrin	0.0928	0.010	ug/l	0.100		93	57-148			
Endrin aldehyde	0.0814	0.010	ug/l	0.100		81	45-139			
gamma-BHC (Lindane)	0.0839	0.010	ug/l	0.100		84	59-129			
Heptachlor	0.0789	0.010	ug/l	0.100		79	42-136			
Heptachlor epoxide	0.0824	0.010	ug/l	0.100		82	59-134			
Methoxychlor	0.0919	0.010	ug/l	0.100		92	56-167			
Surrogate(s)										
Decachlorobiphenyl		*0.108*	*ug/l*	*0.100*		*108*	*70-130*			
Tetrachloro-meta-xylene		*0.0819*	*ug/l*	*0.100*		*82*	*70-130*			
LCS (W8C1034-BS2)				**Prepared: 03/19/18 Analyzed: 03/27/18**						
4,4´-DDD	0.100	0.010	ug/l	0.100		100	55-142			QC-2
4,4´-DDE	0.0878	0.010	ug/l	0.100		88	49-129			QC-2
4,4´-DDT	0.0966	0.010	ug/l	0.100		97	54-160			QC-2
Aldrin	0.0831	0.010	ug/l	0.100		83	29-115			QC-2
alpha-BHC	0.0865	0.010	ug/l	0.100		87	59-131			QC-2
beta-BHC	0.0987	0.010	ug/l	0.100		99	63-136			QC-2
delta-BHC	0.0997	0.010	ug/l	0.100		100	59-137			QC-2
Dieldrin	0.0885	0.010	ug/l	0.100		89	59-135			QC-2
Endosulfan I	0.0795	0.010	ug/l	0.100		80	28-138			QC-2
Endosulfan II	0.0920	0.010	ug/l	0.100		92	53-133			QC-2
Endosulfan sulfate	0.0954	0.010	ug/l	0.100		95	58-155			QC-2
Endrin	0.0912	0.010	ug/l	0.100		91	57-148			QC-2
Endrin aldehyde	0.0832	0.010	ug/l	0.100		83	45-139			QC-2
gamma-BHC (Lindane)	0.0851	0.010	ug/l	0.100		85	59-129			QC-2
Heptachlor	0.0820	0.010	ug/l	0.100		82	42-136			QC-2
Heptachlor epoxide	0.0832	0.010	ug/l	0.100		83	59-134			QC-2
Methoxychlor	0.0839	0.010	ug/l	0.100		84	56-167			QC-2
Surrogate(s)										
Decachlorobiphenyl		*0.102*	*ug/l*	*0.100*		*102*	*70-130*			*QC-2*
Tetrachloro-meta-xylene		*0.0872*	*ug/l*	*0.100*		*87*	*70-130*			*QC-2*
LCS Dup (W8C1034-BSD1)				**Prepared: 03/19/18 Analyzed: 03/23/18**						
4,4´-DDD	0.0981	0.010	ug/l	0.100		98	55-142	3	25	
4,4´-DDE	0.0885	0.010	ug/l	0.100		89	49-129	3	25	
4,4´-DDT	0.0941	0.010	ug/l	0.100		94	54-160	3	25	
Aldrin	0.0822	0.010	ug/l	0.100		82	29-115	0.7	25	
alpha-BHC	0.0863	0.010	ug/l	0.100		86	59-131	2	25	
beta-BHC	0.0963	0.010	ug/l	0.100		96	63-136	0.9	25	
delta-BHC	0.0990	0.010	ug/l	0.100		99	59-137	0.5	25	

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Quality Control Results

(Continued)

Chlorinated Pesticides and/or PCBs by GC/ECD (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1034 - EPA 508/L-L SF (Continued)										
LCS Dup (W8C1034-BSD1)				**Prepared: 03/19/18 Analyzed: 03/23/18**						
Dieldrin	0.0860	0.010	ug/l	0.100		86	59-135	1	25	
Endosulfan I	0.0798	0.010	ug/l	0.100		80	28-138	0.6	25	
Endosulfan II	0.0879	0.010	ug/l	0.100		88	53-133	3	25	
Endosulfan sulfate	0.0944	0.010	ug/l	0.100		94	58-155	0.5	25	
Endrin	0.0920	0.010	ug/l	0.100		92	57-148	0.9	25	
Endrin aldehyde	0.0852	0.010	ug/l	0.100		85	45-139	5	25	
gamma-BHC (Lindane)	0.0858	0.010	ug/l	0.100		86	59-129	2	25	
Heptachlor	0.0791	0.010	ug/l	0.100		79	42-136	0.4	25	
Heptachlor epoxide	0.0825	0.010	ug/l	0.100		83	59-134	0.1	25	
Methoxychlor	0.0892	0.010	ug/l	0.100		89	56-167	3	25	
Surrogate(s)										
Decachlorobiphenyl		*0.103*	*ug/l*	*0.100*		*103*	*70-130*			
Tetrachloro-meta-xylene		*0.0834*	*ug/l*	*0.100*		*83*	*70-130*			
LCS Dup (W8C1034-BSD2)				**Prepared: 03/19/18 Analyzed: 03/27/18**						
4,4´-DDD	0.0998	0.010	ug/l	0.100		100	55-142	0.4	25	QC-2
4,4´-DDE	0.0890	0.010	ug/l	0.100		89	49-129	1	25	QC-2
4,4´-DDT	0.0973	0.010	ug/l	0.100		97	54-160	0.7	25	QC-2
Aldrin	0.0833	0.010	ug/l	0.100		83	29-115	0.1	25	QC-2
alpha-BHC	0.0863	0.010	ug/l	0.100		86	59-131	0.3	25	QC-2
beta-BHC	0.0979	0.010	ug/l	0.100		98	63-136	0.8	25	QC-2
delta-BHC	0.0996	0.010	ug/l	0.100		100	59-137	0.07	25	QC-2
Dieldrin	0.0883	0.010	ug/l	0.100		88	59-135	0.3	25	QC-2
Endosulfan I	0.0810	0.010	ug/l	0.100		81	28-138	2	25	QC-2
Endosulfan II	0.0910	0.010	ug/l	0.100		91	53-133	1	25	QC-2
Endosulfan sulfate	0.0949	0.010	ug/l	0.100		95	58-155	0.5	25	QC-2
Endrin	0.0922	0.010	ug/l	0.100		92	57-148	1	25	QC-2
Endrin aldehyde	0.0869	0.010	ug/l	0.100		87	45-139	4	25	QC-2
gamma-BHC (Lindane)	0.0840	0.010	ug/l	0.100		84	59-129	1	25	QC-2
Heptachlor	0.0828	0.010	ug/l	0.100		83	42-136	1	25	QC-2
Heptachlor epoxide	0.0836	0.010	ug/l	0.100		84	59-134	0.5	25	QC-2
Methoxychlor	0.0848	0.010	ug/l	0.100		85	56-167	1	25	QC-2
Surrogate(s)										
Decachlorobiphenyl		*0.102*	*ug/l*	*0.100*		*102*	*70-130*			QC-2
Tetrachloro-meta-xylene		*0.0850*	*ug/l*	*0.100*		*85*	*70-130*			QC-2

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Quality Control Results

(Continued)

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C0986 - General Preparation										
Blank (W8C0986-BLK1)				**Prepared & Analyzed: 03/16/18**						
Chlorine Dioxide as ClO2	ND	0.050	mg/l							
Chlorine Residual, Free	ND	0.050	mg/l							
Chlorine Residual, Total	ND	0.050	mg/l							
Dichloramine	ND	0.050	mg/l							
Monochloramine	ND	0.050	mg/l							
LCS (W8C0986-BS1)				**Prepared & Analyzed: 03/16/18**						
Chlorine Dioxide as ClO2	0.384	0.050	mg/l	0.380		101	85-110			
Chlorine Residual, Free	0.202	0.050	mg/l	0.200		101	85-110			
Chlorine Residual, Total	0.202	0.050	mg/l	0.200		101	85-110			
Matrix Spike (W8C0986-MS1)	**Source: 8C16014-01**			**Prepared & Analyzed: 03/16/18**						
Chlorine Dioxide as ClO2	0.412	0.050	mg/l	0.380	ND	108	82-114			
Chlorine Residual, Free	0.180	0.050	mg/l	0.200	ND	90	79-116			
Chlorine Residual, Total	0.197	0.050	mg/l	0.200	ND	98	78-114			
Matrix Spike Dup (W8C0986-MSD1)	**Source: 8C16014-01**			**Prepared & Analyzed: 03/16/18**						
Chlorine Dioxide as ClO2	0.381	0.050	mg/l	0.380	ND	100	82-114	8	15	
Chlorine Residual, Free	0.192	0.050	mg/l	0.200	ND	96	79-116	6	15	
Chlorine Residual, Total	0.194	0.050	mg/l	0.200	ND	97	78-114	1	15	

Diquat and Paraquat by EPA 549.2

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1154 - EPA 549.2/SPE										
Blank (W8C1154-BLK1)				**Prepared: 03/20/18 Analyzed: 03/23/18**						
Diquat	ND	4.0	ug/l							
LCS (W8C1154-BS1)				**Prepared: 03/20/18 Analyzed: 03/23/18**						
Diquat	16.4	4.0	ug/l	20.0		82	70-130			
Matrix Spike (W8C1154-MS1)	**Source: 8C16014-01**			**Prepared: 03/20/18 Analyzed: 03/23/18**						
Diquat	18.7	4.0	ug/l	20.0	ND	94	46-122			
Matrix Spike Dup (W8C1154-MSD1)	**Source: 8C16014-01**			**Prepared: 03/20/18 Analyzed: 03/23/18**						
Diquat	13.3	4.0	ug/l	20.0	ND	66	46-122	34	30	MS-05

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Quality Control Results

(Continued)

Endothall By EPA 548.1

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1030 - EPA 548.1/SPE										
Blank (W8C1030-BLK1)				Prepared: 03/20/18 Analyzed: 03/23/18						
Endothall	ND	45	ug/l							
LCS (W8C1030-BS1)				Prepared: 03/20/18 Analyzed: 03/23/18						
Endothall	94.7	45	ug/l	100		95	31-117			
Matrix Spike (W8C1030-MS1)	Source: 8C14076-01			Prepared: 03/20/18 Analyzed: 03/23/18						
Endothall	29.7	90	ug/l	200	ND	15	0.1-109			
Matrix Spike (W8C1030-MS2)	Source: 8C19103-02			Prepared: 03/20/18 Analyzed: 03/23/18						
Endothall	136	90	ug/l	200	ND	68	0.1-109			
Matrix Spike Dup (W8C1030-MSD1)	Source: 8C14076-01			Prepared: 03/20/18 Analyzed: 03/23/18						
Endothall	29.1	90	ug/l	200	ND	15	0.1-109	2	30	
Matrix Spike Dup (W8C1030-MSD2)	Source: 8C19103-02			Prepared: 03/20/18 Analyzed: 03/23/18						
Endothall	124	90	ug/l	200	ND	62	0.1-109	10	30	

Fumigants by EPA Method 504.1

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1193 - EPA 504.1/Micro Ext.										
Blank (W8C1193-BLK1)				Prepared & Analyzed: 03/21/18						
1,2-Dibromo-3-chloropropane	ND	0.010	ug/l							
1,2-Dibromoethane (EDB)	ND	0.020	ug/l							
LCS (W8C1193-BS1)				Prepared & Analyzed: 03/21/18						
1,2-Dibromo-3-chloropropane	0.101	0.010	ug/l	0.100		101	70-130			
1,2-Dibromoethane (EDB)	0.102	0.020	ug/l	0.100		102	70-130			
LCS (W8C1193-BS2)				Prepared & Analyzed: 03/21/18						
1,2-Dibromo-3-chloropropane	0.0219	0.010	ug/l	0.0200		109	70-130			
1,2-Dibromoethane (EDB)	0.0208	0.020	ug/l	0.0200		104	70-130			
Matrix Spike (W8C1193-MS1)	Source: 8C20100-01			Prepared & Analyzed: 03/21/18						
1,2-Dibromo-3-chloropropane	0.180	0.010	ug/l	0.100	0.0397	141	65-135			MS-05
1,2-Dibromoethane (EDB)	0.387	0.020	ug/l	0.100	ND	387	65-135			MS-05
Matrix Spike Dup (W8C1193-MSD1)	Source: 8C20100-01			Prepared & Analyzed: 03/21/18						
1,2-Dibromo-3-chloropropane	0.176	0.010	ug/l	0.100	0.0397	136	65-135	3	30	MS-05
1,2-Dibromoethane (EDB)	0.389	0.020	ug/l	0.100	ND	389	65-135	0.7	30	MS-05

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Quality Control Results

(Continued)

Haloacetic Acids (HAAs) by GC/ECD

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1191 - EPA 552.2/Micro Ext. Drtz										
Blank (W8C1191-BLK1)				**Prepared & Analyzed: 03/21/18**						
Dibromoacetic acid (dbaa)	ND	1.0	ug/l							
Dichloroacetic acid (dcaa)	ND	1.0	ug/l							
HAA5, Total	ND	1.0	ug/l							
Monobromoacetic acid (mbaa)	ND	1.0	ug/l							
Monochloroacetic acid (mcaa)	ND	2.0	ug/l							
Trichloroacetic acid (tcaa)	ND	1.0	ug/l							
Surrogate(s)										
2,3-Dibromopropionic acid		*9.54*	*ug/l*	*10.0*		*95*	*70-130*			
LCS (W8C1191-BS1)				**Prepared & Analyzed: 03/21/18**						
Dibromoacetic acid (dbaa)	9.31	1.0	ug/l	10.0		93	70-130			
Dichloroacetic acid (dcaa)	9.74	1.0	ug/l	10.0		97	70-130			
Monobromoacetic acid (mbaa)	9.48	1.0	ug/l	10.0		95	70-130			
Monochloroacetic acid (mcaa)	10.1	2.0	ug/l	10.0		101	70-130			
Trichloroacetic acid (tcaa)	9.49	1.0	ug/l	10.0		95	70-130			
Surrogate(s)										
2,3-Dibromopropionic acid		*10.2*	*ug/l*	*10.0*		*102*	*70-130*			
Matrix Spike (W8C1191-MS1)	**Source: 8C16011-02**			**Prepared & Analyzed: 03/21/18**						
Dibromoacetic acid (dbaa)	36.5	1.0	ug/l	10.0	26.0	105	70-130			
Dichloroacetic acid (dcaa)	11.3	1.0	ug/l	10.0	1.82	95	70-130			
Monobromoacetic acid (mbaa)	12.7	1.0	ug/l	10.0	ND	127	70-130			
Monochloroacetic acid (mcaa)	9.46	2.0	ug/l	10.0	0.446	90	70-130			
Trichloroacetic acid (tcaa)	10.1	1.0	ug/l	10.0	0.541	96	70-130			
Surrogate(s)										
2,3-Dibromopropionic acid		*9.84*	*ug/l*	*10.0*		*98*	*70-130*			
Matrix Spike (W8C1191-MS2)	**Source: 8C16014-01**			**Prepared & Analyzed: 03/21/18**						
Dibromoacetic acid (dbaa)	10.1	1.0	ug/l	10.0	ND	101	70-130			
Dichloroacetic acid (dcaa)	10.5	1.0	ug/l	10.0	ND	105	70-130			
Monobromoacetic acid (mbaa)	11.3	1.0	ug/l	10.0	ND	113	70-130			
Monochloroacetic acid (mcaa)	10.7	2.0	ug/l	10.0	ND	107	70-130			
Trichloroacetic acid (tcaa)	10.6	1.0	ug/l	10.0	ND	106	70-130			
Surrogate(s)										
2,3-Dibromopropionic acid		*10.5*	*ug/l*	*10.0*		*105*	*70-130*			
Matrix Spike Dup (W8C1191-MSD1)	**Source: 8C16011-02**			**Prepared & Analyzed: 03/21/18**						
Dibromoacetic acid (dbaa)	34.7	1.0	ug/l	10.0	26.0	87	70-130	5	30	
Dichloroacetic acid (dcaa)	8.45	1.0	ug/l	10.0	1.82	66	70-130	29	30	MS-05
Monobromoacetic acid (mbaa)	10.9	1.0	ug/l	10.0	ND	109	70-130	15	30	
Monochloroacetic acid (mcaa)	7.76	2.0	ug/l	10.0	0.446	73	70-130	20	30	
Trichloroacetic acid (tcaa)	9.29	1.0	ug/l	10.0	0.541	88	70-130	8	30	
Surrogate(s)										
2,3-Dibromopropionic acid		*9.54*	*ug/l*	*10.0*		*95*	*70-130*			
Matrix Spike Dup (W8C1191-MSD2)	**Source: 8C16014-01**			**Prepared: 03/21/18 Analyzed: 03/22/18**						
Dibromoacetic acid (dbaa)	9.71	1.0	ug/l	10.0	ND	97	70-130	4	30	

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Quality Control Results

(Continued)

Haloacetic Acids (HAAs) by GC/ECD (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1191 - EPA 552.2/Micro Ext. Drtz (Continued)										
Matrix Spike Dup (W8C1191-MSD2)	**Source: 8C16014-01**			**Prepared: 03/21/18**	**Analyzed: 03/22/18**					
Dichloroacetic acid (dcaa)	10.1	1.0	ug/l	10.0	ND	101	70-130	4	30	
Monobromoacetic acid (mbaa)	10.6	1.0	ug/l	10.0	ND	106	70-130	6	30	
Monochloroacetic acid (mcaa)	9.81	2.0	ug/l	10.0	ND	98	70-130	9	30	
Trichloroacetic acid (tcaa)	10.2	1.0	ug/l	10.0	ND	102	70-130	4	30	
Surrogate(s)										
2,3-Dibromopropionic acid		*9.93*	*ug/l*	*10.0*		*99*	*70-130*			

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Quality Control Results

(Continued)

Semivolatile Organic Compounds by GC/MS

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1288 - EPA 525.2/SPE										
Blank (W8C1288-BLK1)				**Prepared: 03/22/18 Analyzed: 03/23/18**						
Alachlor	ND	0.10	ug/l							
Atrazine	ND	0.10	ug/l							
Bromacil	ND	0.50	ug/l							
Butachlor	ND	0.10	ug/l							
Chlorpropham	ND	0.10	ug/l							
Diazinon	ND	0.10	ug/l							
Dimethoate	ND	0.20	ug/l							
Diphenamid	ND	0.10	ug/l							
Disulfoton	ND	0.10	ug/l							
EPTC	ND	0.10	ug/l							
Metolachlor	ND	0.10	ug/l							
Metribuzin	ND	0.10	ug/l							
Molinate	ND	0.10	ug/l							
Prometon	ND	0.10	ug/l							
Prometryn	ND	0.10	ug/l							
Simazine	ND	0.10	ug/l							
Terbacil	ND	2.0	ug/l							
Thiobencarb	ND	0.10	ug/l							
Surrogate(s)										
1,3-Dimethyl-2-nitrobenzene		*5.10*	*ug/l*	*5.00*		*102*	*70-130*			
Perylene-d12		*3.61*	*ug/l*	*5.00*		*72*	*50-120*			
Triphenyl phosphate		*4.44*	*ug/l*	*5.00*		*89*	*70-130*			
LCS (W8C1288-BS1)				**Prepared: 03/22/18 Analyzed: 03/23/18**						
Alachlor	5.00	0.10	ug/l	5.00		100	70-130			
Atrazine	5.03	0.10	ug/l	5.00		101	70-130			
Bromacil	4.56	0.50	ug/l	5.00		91	70-130			
Butachlor	4.91	0.10	ug/l	5.00		98	70-130			
Chlorpropham	4.99	0.10	ug/l	5.00		100	70-130			
Diazinon	4.34	0.10	ug/l	5.00		87	50-120			
Dimethoate	2.93	0.20	ug/l	5.00		59	50-120			
Diphenamid	5.27	0.10	ug/l	5.00		105	70-130			
Disulfoton	6.96	0.10	ug/l	5.00		139	50-120			Q-08
EPTC	4.69	0.10	ug/l	5.00		94	70-130			
Metolachlor	4.92	0.10	ug/l	5.00		98	60-130			
Metribuzin	4.62	0.10	ug/l	5.00		92	50-120			
Molinate	4.72	0.10	ug/l	5.00		94	70-130			
Prometon	1.95	0.10	ug/l	5.00		39	15-120			
Prometryn	3.63	0.10	ug/l	5.00		73	30-120			
Simazine	4.83	0.10	ug/l	5.00		97	60-130			
Terbacil	4.94	2.0	ug/l	5.00		99	70-130			

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Quality Control Results

(Continued)

Semivolatile Organic Compounds by GC/MS (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1288 - EPA 525.2/SPE (Continued)										
LCS (W8C1288-BS1)				**Prepared: 03/22/18 Analyzed: 03/23/18**						
Thiobencarb	4.96	0.10	ug/l	5.00		99	70-130			
Surrogate(s)										
1,3-Dimethyl-2-nitrobenzene		*4.80*	*ug/l*	*5.00*		*96*	*70-130*			
Perylene-d12		*4.50*	*ug/l*	*5.00*		*90*	*50-120*			
Triphenyl phosphate		*5.24*	*ug/l*	*5.00*		*105*	*70-130*			
LCS Dup (W8C1288-BSD1)				**Prepared: 03/22/18 Analyzed: 03/23/18**						
Alachlor	5.01	0.10	ug/l	5.00		100	70-130	0.2	30	
Atrazine	5.31	0.10	ug/l	5.00		106	70-130	5	30	
Bromacil	4.99	0.50	ug/l	5.00		100	70-130	9	30	
Butachlor	5.20	0.10	ug/l	5.00		104	70-130	6	30	
Chlorpropham	5.16	0.10	ug/l	5.00		103	70-130	3	30	
Diazinon	4.29	0.10	ug/l	5.00		86	50-120	1	30	
Dimethoate	3.23	0.20	ug/l	5.00		65	50-120	10	30	
Diphenamid	5.45	0.10	ug/l	5.00		109	70-130	3	30	
Disulfoton	7.10	0.10	ug/l	5.00		142	50-120	2	30	Q-08
EPTC	4.93	0.10	ug/l	5.00		99	70-130	5	30	
Metolachlor	5.04	0.10	ug/l	5.00		101	60-130	3	30	
Metribuzin	4.92	0.10	ug/l	5.00		98	50-120	6	30	
Molinate	5.03	0.10	ug/l	5.00		101	70-130	6	30	
Prometon	1.80	0.10	ug/l	5.00		36	15-120	8	30	
Prometryn	4.08	0.10	ug/l	5.00		82	30-120	12	30	
Simazine	4.92	0.10	ug/l	5.00		98	60-130	2	30	
Terbacil	5.23	2.0	ug/l	5.00		105	70-130	6	30	
Thiobencarb	4.90	0.10	ug/l	5.00		98	70-130	1	30	
Surrogate(s)										
1,3-Dimethyl-2-nitrobenzene		*5.13*	*ug/l*	*5.00*		*103*	*70-130*			
Perylene-d12		*4.44*	*ug/l*	*5.00*		*89*	*50-120*			
Triphenyl phosphate		*5.38*	*ug/l*	*5.00*		*108*	*70-130*			

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

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W8C1196 - EPA 3510/L-L SF										
Blank (W8C1196-BLK1)				**Prepared: 03/21/18 Analyzed: 03/29/18**						
2,3,7,8-TCDD (Dioxin)	ND	5.00	pg/l							
LCS (W8C1196-BS1)				**Prepared: 03/21/18 Analyzed: 03/29/18**						
2,3,7,8-TCDD (Dioxin)	3.45	5.00	pg/l	5.00		69	50-148			
LCS Dup (W8C1196-BSD1)				**Prepared: 03/21/18 Analyzed: 03/29/18**						
2,3,7,8-TCDD (Dioxin)	6.54	5.00	pg/l	5.00		131	50-148	62	20	Q-12

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Notes and Definitions

Item	Definition
*	The recommended holding time for this analysis is only 15 minutes. The sample was analyzed as soon as it was possible but it was received and analyzed past holding time.
MS-05	The spike recovery and/or RPD were outside acceptance limits for the MS and/or MSD due to possible matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
Q-08	High bias in the QC sample does not affect sample result since analyte was not detected or below the reporting limit.
Q-12	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on the percent recoveries and/or other acceptable QC data.
QC-2	This QC sample was reanalyzed to complement samples that require re-analysis on different date. See analysis date.
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.

Not Certified Analyses Summary

Analyte	CAS #	Not Accredited By
SM 4500Cl-G in Water		
Chlorine Residual, Free	7782-50-5	NELAP
Monochloramine	10599-90-3	NELAP
Dichloramine	3400-09-7	NELAP

Reviewed by:

Regina Giancola
Project Manager

DoD-ELAP #L2457 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • 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.

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8C16014

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CHAIN OF CUSTODY RECORD

CLIENT NAME: AETL
PROJECT: 91800
ADDRESS: 2834 N. Naomi St, Burbank, CA 91504
PHONE #: 818-845-8200
FAX #:
PROJECT MANAGER: Cyrus Razmara
SAMPLER:
EMAIL: cyrus@aetlab.com
P.O. #: 22608-Sub

ANALYSIS REQUESTED: 504.1; 508; 515.4; 525.2 + 507 list; 531.1; 548.1; 549.2; 300.1B ⊛; 552.2; SM-4500-Cl-C ⊛⊛

SPECIAL HANDLING:
- ☐ Same Day Rush
- ☐ 24 Hour Rush
- ☐ 48-72 Hour Rush
- ☐ 4-5 Day Rush
- ☐ Rush Extraction
- ☐ 10-15 Business Days
- ☐ QA/QC Package

Additional surcharges will apply for rush requests, weekends & holidays.

2,3,78-TCDD 1613

ID # (For Lab Use Only)	DATE SAMPLED	TIME SAMPLED	SAMPLE TYPE	SAMPLE INDENTIFICATION/SITE LOCATION	# OF CONT.	504.1	508	515.4	525.2 + 507 list	531.1	548.1	549.2	300.1B	552.2	SM-4500-Cl-C	COMMENTS	2,3,78-TCDD 1613
	3/15/18	10:43	GW	91800.01	2x40ml VOA	*											
	↓	↓	↓	↓	2x lit Amber		*										
					1x lit Amber			*			*			*			
					1x lit Amber				*								
					1x40ml VOA					*							
					1x lit Amber							*					
					1x lit Plastic								*			⊛ Bromate & Chlorite	
					1x250ml pl										*	⊛⊛ Chloramine, Chlorine (R) & Chlorine Dioxide	
					2x lit Amber												*
					2x1 lit Amber											Extra Sample	

RELINQUISHED BY: SIGNATURE [signature] PRINT NAME [signature] DATE/TIME 3/16/18 0900

RECEIVED BY: SIGNATURE [signature] PRINT NAME DATE/TIME 3/16/18 09:00

SIGNATURE / PRINT NAME (blank)

SAMPLE CONDITION:
- Actual Temperature: 4.7°C
- Received on Ice: (Y) / N
- Preserved at Lab: Y / (N)
- Preserved: Y / (N)
- Evidence Seals Present: Y / (N)
- Evidence Seals Intact: Y / (N)
- Container Intact: (Y) / N
- Method of Shipment: ____

SAMPLE TYPE CODE:
AQ = Aqueous
NA = Non Aqueous
SL = Sludge
DW = Drinking Water
WW = Waste Water
RW = Rain Water
GW = Ground Water
SO = Soil
SW = Solid Waste
OL = Oil
OT = Other Matrix

PRESCHEDULED RUSH ANALYSES WILL TAKE PRIORITY OVER UNSCHEDULED RUSH REQUESTS. CLIENT AGREES TO TERMS AND CONDITIONS (SEE BACK OF THIS FORM OR AT WWW.WECKLABS.COM)

SPECIAL REQUIREMENTS/BILLING INFORMATION
* Transfer into proper containers and preserved at lab on 3/19/18 @ 13:20 by JG.

DISTRIBUTION: WHITE & CANARY – For Laboratory   Pink – For Client

April 16, 2018

American Environmental Testing Lab, Inc.
2834 N. Naomi Street
Burbank, CA 91504

Lab ID : SP 1803578
Customer : 2-13510

Laboratory Report

Introduction: This report package contains total of 5 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(2 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
91800-01	03/15/2018	03/16/2018	SP 1803578-001	GW

Sampling and Receipt Information: All samples were received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. All samples arrived on ice. All samples were prepared and analyzed within the method specified hold time. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Radio QC

900.0	04/11/2018:205080 All analysis quality controls are within established criteria.
	04/09/2018:203989 All preparation quality controls are within established criteria, except: The following note applies to Gross Alpha, Gross Beta: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
903.0	03/30/2018:204433 All analysis quality controls are within established criteria.
	03/20/2018:203158 All preparation quality controls are within established criteria.
908.0	04/12/2018:205127 All analysis quality controls are within established criteria.
	04/09/2018:204003 All preparation quality controls are within established criteria.
Ra - 05	04/05/2018:204797 All analysis quality controls are within established criteria.

Corporate Offices & Laboratory
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TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810

April 16, 2018

American Environmental Testing Lab, Inc.
2834 N. Naomi Street
Burbank, CA 91504

Lab ID : SP 1803578-001
Customer ID : 2-13510

Sampled On : March 15, 2018-10:43
Sampled By : Client
Received On : March 16, 2018-12:23
Matrix : Ground Water

Description : 91800-01
Project : 91800

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Radio Chemistry								
Gross Alpha	1.65 ± 1.19	1.11	pCi/L		900.0	04/09/18-14:30 2P1803989	900.0	04/11/18-15:40 2A1805080
Gross Beta	0.109 ± 0.931	1.19	pCi/L		900.0	04/09/18-14:30 2P1803989	900.0	04/11/18-15:40 2A1805080
Total Alpha Radium (226)	0.053 ± 0.077	0.304	pCi/L		903.0	03/20/18-17:00 2P1803158	903.0	03/30/18-12:14 2A1804433
Uranium	0.590 ± 0.545	0.342	pCi/L		908.0	04/09/18-18:30 2P1804003	908.0	04/12/18-13:49 2A1805127
Ra 228	0.000 ± 0.474	0.400	pCi/L		Ra - 05	03/29/18-19:00 2P1803337	Ra - 05	04/05/18-20:20 2A1804797

ND=Non-Detected. PQL=Practical Quantitation Limit. * PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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April 16, 2018
American Environmental Testing Lab, Inc.

Lab ID : SP 1803578
Customer : 2-13510

Radio QC

Ra - 05	03/29/2018:203337 All preparation quality controls are within established criteria.

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2018-04-17

April 16, 2018
American Environmental Testing Lab, Inc.

Lab ID : SP 1803578
Customer : 2-13510

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	04/11/18:205080AAT	CCV	cpm	8541	41.9 %	35-47	
			CCB	cpm		0.100	0.21	
Beta	900.0	04/11/18:205080AAT	CCV	cpm	8541	88.8 %	83-94	
			CCB	cpm		0.4000	0.51	
Gross Alpha	900.0	04/09/18:203989aat	Blank	pCi/L		0.15	3	
			LCS	pCi/L	107.8	118 %	75-125	
			MS	pCi/L	431.2	141 %	60-140	435
		(SP 1803275-004)	MSD	pCi/L	431.2	128 %	60-140	
			MSRPD	pCi/L	431.2	9.2%	≤30	
Gross Beta	900.0	04/09/18:203989aat	Blank	pCi/L		1.68	4	
			LCS	pCi/L	70.38	132 %	84-160	
			MS	pCi/L	281.5	73.6 %	80-130	435
		(SP 1803275-004)	MSD	pCi/L	281.5	87.7 %	80-130	
			MSRPD	pCi/L	431.2	16.5%	≤30	
Alpha	903.0	03/30/18:204433AAT	CCV	cpm	8549	41.0 %	37-46	
			CCB	cpm		0.0800	0.12	
Total Alpha Radium (226)	903.0	03/20/18:203158aat	RgBlk	pCi/L		-0.003	2	
			LCS	pCi/L	24.21	93.6 %	52-107	
			BS	pCi/L	24.21	109 %	43-111	
			BSD	pCi/L	24.21	96.1 %	43-111	
			BSRPD	pCi/L	24.21	12.4%	≤35.5	
Alpha	908.0	04/12/18:205127AAT	CCV	cpm	8540	39.7 %	36-45	
			CCB	cpm		0.0400	0.12	
Uranium	908.0	04/09/18:204003aat	RgBlk	pCi/L		-0.01	1	
			LRS	pCi/L	26.84	69.8 %	54-105	
			BS	pCi/L	26.84	101 %	75-125	
			BSD	pCi/L	26.84	89.8 %	75-125	
			BSRPD	pCi/L	26.84	11.5%	≤20	
Beta	Ra - 05	04/05/18:204797emv	CCV	cpm	8545	88.8 %	84-94	
			CCB	cpm		0.4000	0.48	
Ra 228	Ra - 05	03/29/18:203337emv	RgBlk	pCi/L		-0.06	3	
			LRS	pCi/L	33.24	80.6 %	65-108	
			BS	pCi/L	33.24	94.9 %	75-125	
			BSD	pCi/L	33.24	96.0 %	75-125	
			BSRPD	pCi/L	33.24	1.1%	≤25	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
LRS	: Laboratory Recovery Standard - Prepared to establish the batch recovery factor used in result calculations.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
BS	: Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
BSD	: Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
BSRPD	: BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

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April 16, 2018
American Environmental Testing Lab, Inc.

Lab ID : SP 1803578
Customer : 2-13510

Quality Control - Radio

Explanation	
435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

ENVIRONMENTAL

www.fglinc.com

CHAIN OF CUSTODY
AND ANALYSIS REQUEST DOCUMENT

ORIGINAL

CLIENT DETAILS — SECTION I

Client: A.E.T.L.

☐ New Customer Customer Number: _____

Address: 2834 N. Naomi St
Burbank, CA 91504

Phone: 818-845-8200 FAX: _____

E-Mail: cyrus@aetlab.com

Project name: 91800

Contact person: Cyrus Razmara

Billing Information (if different from above)

Name: Same as above

Address: _____

Phone: _____ FAX: _____

E-Mail: _____

Contact person: _____

Purchase order/contract/FGL quote number: 22607-Sub

Pre Log Required: yes _____ Frequency: Monthly ☐ Weekly ☐ Quarterly ☐ Other ☐ _____

SAMPLING — SECTION II

Sampler (s): Client

Comp Sampler Set up Date: _____ Time: _____

Time: _____ Mileage: _____

Shipping Charge: _____ Pickup Charge: _____

REPORT INFORMATION — SECTION III

Rush Analysis (surcharge will apply):

☐ 5 Day ☐ 4 Day ☐ 3 Day
☐ 2 Day ☐ 24 hour

Rush pre-approval by lab: _____ initial

Electronic Data Transfer: yes _____ no _____

If yes, To: State _____ Client _____ Other _____

Lab number: 1803578

SAMPLE INFORMATION — SECTION IV

Sample Number	Location/Description	Date Sampled	Time Sampled	Type of Sampling: Composite(C) Grab(G)	Number of Containers	Type of Containers: (G) Glass (P) Plastic (V) VOA (MT) Metal Tube	(P) Potable (NP) Non-Potable	(SW) Surface Water (MW) Monitoring Well (GW) Ground Water (TB) Travel Blank (AgW) Ag Water (WW) Wastewater (DW) Drinking Water	(S) Soil (SLG) Sludge (SLD) Solid (O) Oil	BacT: (Sys) System (SRC) Source (W) Waste	BacT: Routine (ROUT) Repeat (RPT) Other (OTH) Replace (RPL)	(LT) Leaf Tissue (PET) Petiole Tissue (PRD) Produce	Preservative: (1) NaOH + ZnAc, (2) NaOH, (3) HCl, (4) H2SO4, (5) HNO3, (6) Na2S203, (7) Other _____	ANALYSES REQUESTED: Gross 418.1 900.0	Radium 226 903.0	Radium 228 901.0	Uranium 908.0
	91800.01	3/15/18	10:43	G	4	P	P	GW						X	X	X	X

REMARKS — SECTION V

3

CUSTODY — SECTION VI

Relinquished by and subject to the terms and conditions on the reverse of this document:

Sargis-P Date 3/16/18 Time 1223

Received by: _____ Date _____ Time _____

Relinquished by: _____ Date _____ Time _____

Received by: _____ Date _____ Time _____

Relinquished by: _____ Date _____ Time _____

Received by: _____ Date _____ Time _____

Relinquished by: _____ Date _____ Time _____

Received by: _____ Date _____ Time _____

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FAX: (530) 343-3807

FIELD OFFICE
Visalia, California
Tel: (559) 734-9473
Mobile: (559) 737-2399
FAX (559) 734-8435

Condition Upon Receipt (Attach to COC)

Sample Receipt at SP:

1. Number of ice chests/packages received: OTC
2. Shipper tracking numbers _____
3. Were samples received in a chilled condition? Temps: ROI / 3 / _____ / _____ / _____ / _____ / _____
4. Surface water (SWTR) bact samples: A sample that has a temperature upon receipt of >10C, whether iced or not, should be flagged unless the time since sample collection has been less than two hours.
5. Do the number of bottles received agree with the COC? **Yes** / No / N/A
6. Verify sample date, time, sampler **Yes** / No / N/A
7. Were the samples received intact? (i.e. no broken bottles, leaks, etc.) **Yes** / No
8. Were sample custody seals intact? Yes / No / **N/A**

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? **Yes** / No
2. Did bottle labels correspond with the client's ID's? **Yes** / No
3. Were all bottles requiring sample preservation properly preserved? Yes / No / **N/A** FGL
   [Exception: Oil & Grease, VOA and CrVI verified in lab]
4. VOAs checked for Headspace? Yes / No / **N/A**
5. Were all analyses within holding times at time of receipt? **Yes** / No
6. Have rush or project due dates been checked and accepted? Yes / No / **N/A**

Include a copy of the COC for lab delivery. (Bacti. Inorganics and Radio)

Sample Receipt, Login and Verification completed by: Reviewed and Approved By **Cynthia T Casarez** Digitally signed by Cynthia T Casarez Title: Sample Receiving Date: 03/16/2018-13:31:56

Discrepency Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

2. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

(2013510)
American Environmental Testing Lab, Inc.
SP 1803578

LA Testing
520 Mission Street South Pasadena, CA 91030
Phone/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order ID: 321806263
Customer ID: 32AETL21
Customer PO:
Project ID:

Attn: Cyrus Razmara
American Environmental Testing Lab, Inc.
2834 North Naomi Street
Burbank, CA 91504

Phone: (818) 845-8200
Fax: (818) 845-8840
Collected: 03/15/2018
Received: 03/16/2018
Analyzed: 03/21/2018

Proj: 91800

Test Report: Determination of Asbestos Structures >10µm in Drinking Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm^2)	Area Analyzed (mm^2)	ASBESTOS				
					Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
							MFL (million fibers per liter)		
91800-01 321806263-0001	3/16/2018 01:30 PM	30	1288	0.2210	None Detected	ND	0.19	<0.19	0.00 - 0.72

Analyst(s)
Feng Liang (1)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 03/21/2018 20:01:40

Samples analyzed by LA Testing South Pasadena, CA CA ELAP 2283

OrderID: 321806263

Chain of Custody

EMSL Order Number *(Lab Use Only)*:

#321806263

LATESTING
520 MISSION STREET
S. PASADENA, CA 91030
PHONE: (800) 303-0047
FAX: (323) 254-9982

Company: American Environmental Testing Lab		**EMSL-Bill to:** ☐ Same ☐ Different If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party	
Street: 2834 N Naomi St			
City: Burbank	**State/Province:** CA	**Zip/Postal Code:** 91504	**Country:** USA
Report To (Name): Dr. Cyrus Razmara		**Fax #:**	**Purchase Order:** 22606Sub
Telephone #: 818-845-8200		**Email Address:** cyrus@aetlab.com	
Project Name/Number: 91800		**Please Provide Results:** ☐ Fax ☑ Email ☑ Mail	
U.S. State Samples Taken:		**Connecticut Samples:** ☐ Commercial ☐ Residential	

Turnaround Time (TAT) Options* - Please Check

☐ 3 Hour | ☐ 6 Hour | ☐ 24 Hour | ☐ 48 Hour | ☐ 72 Hour | ☐ 96 Hour | ☒ 1 Week | ☐ 2 Week

**For RUSH TATs Please Call Ahead to Confirm Lab Hours and Availability. Not all TAT options are valid for every test. Materials Science and IAQ TATs are in Business Days rather than Hours (i.e. 24 Hour = End of Next Business Day)*

Asbestos

PCM - Air
☐ NIOSH 7400
☐ w/8hr. TWA

TEM– Air ☐ 4-4.5hr TAT (AHERA ONLY)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Water
Fibers ≥10µm ☐ Waste ☒ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

PLM - Bulk
☐ PLM EPA 600/R-93/116
☐ PLM EPA NOB (<1%)
☐ NYS 198.1 (friable-NY)
☐ NYS 198.6 (non-friable-NY)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/ Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

TEM - Dust
☐ Microvac – ASTM D 5755
☐ Wipe-ASTM D6480

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP

Soil/Rock/Vermiculite
☐ PLM CARB 435 – A (0.25% sensitivity)
☐ PLM CARB 435 – B (0.1% sensitivity)
☐ TEM CARB 435 – B (0.1% sensitivity)
☐ EPA Reg. 1 Screening Protocol (Qualitative)

Other:

Lead (Pb)

Flame Atomic Absorption
☐ Chips SW846-7000B or AOAC 974.02
☐ Soil SW846-7000B/7420
☐ Air NIOSH 7082
☐ Wastewater SM3111B or SW846-7000B/7420
☐ ASTM Wipe SW846-7000B/7420
☐ non ASTM Wipe SW846-7000B/7420
☐ TCLP SW846-1311/7420/SM 3111B

ICP
☐ Air NIOSH 7300 Modified
☐ non ASTM Wipe SW846-6010B or C
☐ ASTM Wipe SW846-6010B or C
☐ Soil SW846-6010 B or C
☐ Waste Water SW846-6010B or C
☐ TCLP SW846-6010B or C

Graphite Furnace Atomic Absorption
☐ Soil SW846-7421 ☐ Wastewater EPA 200.9
☐ Air NIOSH 7105 ☐ Drinking Water EPA 200.9

Other: ☐

Materials Science

☐ Common Particle ID (large particles)
☐ Full Particle ID (environmental dust)
☐ Basic Material ID (solids)
☐ Advanced Material ID
☐ Physical Testing (Tensile, Compression)
☐ Combustion-by-products (soot, char, etc.)
☐ X-Ray Fluorescence (elem. analysis)
☐ X-Ray Diffraction (Crystalline Part.)
☐ MMVFs (Fibrous glass, RCF's)
☐ Particle Size (sieve/microscopy/laser)
☐ Combustible Dust
☐ Petrographic Examination
Other: ☐

Microbiology

Wipe and Bulk Samples
☐ Mold & Fungi – Direct Examination
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi Culture (Genus & Species)
☐ Bacterial Count & ID (Up to Three Types)
☐ Bacterial Count & ID (Up to Five Types)
☐ MRSA
☐ *Pseudomonas aeruginosa*

Water Samples
☐ Total Coliform & E.coli (P/A)
☐ Fecal Coliform (SM 9222D)
☐ Sewage Screen
☐ Heterotrophic Plate Count (SM 9215)

Air Samples
☐ Mold & Fungi (Spore Trap)
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi (Genus & Species)
☐ Bacterial Culture & ID (Up to Three Types)
☐ Bacterial Culture & ID (Up to Five Types)
☐ Endotoxin Testing

Real Time Q-PCR (See Analytical Guide for Code)
Code:

Legionella
☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4

Other: ☐

IAQ

Nuisance Dust NIOSH ☐ 0500 ☐ 0600
Airborne Dust ☐ PM10 ☐ TSP
Silica Analysis: ☐ All Species
Silica Analysis – Single Species
☐ Alpha Quartz ☐ Cristobalite ☐ Tridymite
☐ HVAC Efficiency
☐ Carbon Black
☐ Airborne Oil Mist
Radon Testing: Call for Kit and COC
Other: ☐

****Comments/Special Instructions:** Temp: 7.5°C

Client Sample #s	- 91800.01	**Total # of Samples:**	1
Relinquished (Client):		**Date:** 3/16/18	**Time:**
Received (Lab): T-Jr (WI)		**Date:** 3-16-18	**Time:** 12:30

Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide

OrderID: 321806263

Chain of Custody

EMSL Order Number *(Lab Use Only)*:

#321806263

LATESTING
520 MISSION STREET
S. PASADENA, CA 91030
PHONE: (800) 303-0047
FAX: (323) 254-9982

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
91800.01	Ground Water	1 Lit	3/15/18 10:43

*Comments/Special Instructions:

Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide

PAT-CHEM
LABORATORIES

QUALITY ANALYTICAL SERVICES SINCE 1987

1824 1st Street
San Fernando, CA 91340
(818) 639-5300 ph
(818) 639-5306 fx
pat-chem.com

Customer: **American Environmental Testing Laboratory**
2834 North Naomi Street
Burbank CA, 91504

Attention: Dr.Cyrus Razmara
Report Date: 20-Mar-18 08:18
Subject: Drinking Water

Project/P.O.#: 22605-sub

PARAMETER	METHOD	QC BATCH	REPORTING LIMIT	ANALYZED (ANALYST)	RESULT	NOTE
Drinking Water 91800.01 (Sample I.D.# : 18C0533-01) Collected: 15-Mar-18 By AETL						
E. Coli	SM 9221F	AC81514	1.1	17-Mar-18 (JC)	<1.1 MPN/100 ml	
Total Coliforms	SM 9221B	AC81514	1.1	17-Mar-18 (JC)	<1.1 MPN/100 ml	

Notes and Definitions

Respectfully Submitted,

Steve R Jefferson 3/20/2018
Laboratory Director

Pat-Chem Laboratories

1824 1st Street, San Fernando, CA 91340 Tel. (818) 639-5300 Fax (818) 639-5306

CHAIN OF CUSTODY

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Company: **American Environmental Testing Laboratory**	Bill to: **Account Payable**	Turn Around Time ( ) RUSH ( ) Same Day ( ) 2 days (x) Normal ( ) Next day ( ) 3 days	Sample ID # 18C0533
Address: **2834 North Naomi Street** **Burbank, CA 91504**	Address: **Same address as left**	( ) Sampling ( ) Pick Up ( ) Delivery ( ) Other ( ) Ambient ( ) Cold _____ °F ( ) Frozen	( ) Samples Intact ( ) Samples Accepted ( ) Properly Cooled
Phone: **818.845.8200**	FAX: **818.845.8840**		
Contact Name: **Dr. Cyrus Razmara**	P.O. #: 22605-SUB	Project #: 91800 ( ) Repeat (For Compliance)	
Sampled by: **Client**	Signature:	Project Name: _____	

LAB ID	CLIENT I.D.	DATE	TIME	SAMPLE DESCRIPTION	CONTAINERS #	ANALYSIS REQUEST	METHOD CODE
	91800-01	3/15/18	10:43	Drinking Water	2	T & F Califor	SM-9221

Relinquished by: Cyrus R	Date 3/15/18	Time 16:12	Received by:	SPECIAL INSTRUCTIONS: _____
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date	Time	Received by:	