2021 WATER QUALITY MONITORING REPORT FOR THE BIG TUJUNGA WASH MITIGATION AREA

Prepared for:

LOS ANGELES COUNTY PUBLIC WORKS
900 Fremont Avenue, 2nd Floor Annex
Alhambra, CA 91802

Prepared by:

CHAMBERS GROUP, INC.
5 Hutton Centre Drive, Suite 750
Santa Ana, California 92707
(949) 261-5414

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Distribution

Water quality monitoring reports are distributed to the following agencies:

Los Angeles County Public Works
Ms. Julianna Colwell
900 South Fremont Avenue
Alhambra, California 91803-1331

California Department of Fish and Wildlife
Mr. David T. Lin Ph.D.
Senior Environmental Scientist (Specialist)
CA Dept. of Fish and Wildlife
4665 Lampson Ave. suite C
Los Alamitos, CA 90720

Regional Water Quality Control Board, Los Angeles Region (4)
Ms. Valerie Carrillo Zara
320 West 4th Street, Suite 200 Los Angeles, California 90013

U.S. Fish and Wildlife Service
Ms. Christine Medak
2117 Salk Avenue, Suite 250
Carlsbad, California 92008

U.S. Army Corps of Engineers
Mr. Aaron Allen
P.O. Box 532711
Los Angeles, California 90053-2325

Interested Party
Mr. William Eick
2604 Foothill Boulevard, Suite C La Crescenta, California 91214

SECTION 1.0 – EXECUTIVE SUMMARY

As part of a water quality monitoring program on-going since 2000, water quality sampling of the Big Tujunga Ponds and Haines Canyon Creek was conducted on November 1, 2021. The water quality sampling results are summarized below:

- Observed temperatures were well below levels of concern for growth and survival of warmwater fish species at all stations. However, only a single temperature reading was taken in the fall and the weekly summer average temperature is unknown.
- Dissolved oxygen (DO) levels at all sample stations were above the minimum recommended level (5.0 milligrams per liter [mg/L]) for Basin Plan objectives and EPA's criteria for warmwater fish species.
- Potential hydrogen (pH) readings at all three sample stations were below the recommended range of 6.5 to 8.5 identified in the Basin Plan objectives, and were within the recommended range of 5.0 to 9.0 for EPA's criteria for human health.
- Nitrate-Nitrogen was below the drinking water maximum standard of 10 mg/L for both Basin Plan standards and EPA criteria for human health at all sample stations. Nitrite-Nitrogen and Ammonia-Nitrogen were not detected at any of the sample stations.
- Nutrient levels as measured by total Phosphorus-P concentration were below the lower end of the EPA's recommended maximum range of 0.05 to 0.10 mg/L for the desired goal of preventing plant nuisances in streams.
- No pesticides or residual chlorine were detected at any of the sample stations.
- Turbidity levels were below the EPA's secondary drinking water standard of 5 nephelometric turbidity units (NTU). The turbidity at the inflow to the Tujunga Ponds was slightly above the EPA's drinking water maximum standard of 1.0 NTU for systems that use conventional or direct filtration; however, waters within the Big Tujunga Wash Mitigation Area (Mitigation Area) are not filtered systems intended for human consumption.
- Fecal coliform levels detected were below the standard geometric mean of 126 MPN/100 ml at all sample stations except for the outflow to the Tujunga ponds, which was slightly above the standard geometric mean (130 MPN/100 ml). However, the standards are for *E. coli* and the water quality results are for fecal coliform and total coliform.

SECTION 2.0 – BACKGROUND

Los Angeles County Public Works (Public Works) purchased an approximately 210-acre parcel in Big Tujunga Wash as a mitigation area for Los Angeles County Flood Control District (LACFCD) projects throughout Los Angeles County. In coordination with local agencies, Public Works defined a number of measures to improve habitat quality at the site. A Final Master Mitigation Plan (FMMP) was prepared to guide the implementation of these enhancements. The FMMP also includes a monitoring program to gather data on conditions at the site during implementation of the improvements. The FMMP was prepared and is currently being implemented by Chambers Group, Inc. (Chambers Group). Water quality monitoring was conducted on a quarterly basis from the fourth quarter of 2000 through the fourth quarter of 2005. In 2006, monitoring was conducted on a semi-annual basis. In 2007 through 2009 monitoring was conducted annually, in December. In 2010, monitoring was conducted in November and pesticide sampling was conducted in early December. In 2012, monitoring was conducted in February and November. From 2013 to present, monitoring has been conducted annually in the fall. This report presents the results of the water quality sampling for November 2021.

The Mitigation Area is located just east of Hansen Dam in the Shadow Hills area of the City of Los Angeles. Both Big Tujunga Wash, an intermittent stream, and Haines Canyon Creek, a perennial stream, traverse the Mitigation Area in a general east-to-west direction. The East Tujunga Pond and West Tujunga Pond are located outside of the Mitigation Area, at the far northeastern portion of the site.

2.1 PROJECT SITE ACTIVITIES

A timeline of project-related activities including water quality sampling events is presented in Table 1.

Table 1: Major Activities to Date at the Big Tujunga Wash Mitigation Area

Date	Activity
2000, April	Baseline water quality sampling
2000, November to 2001, November	Arundo, tamarisk, and pepper tree removal Chemical (Rodeo®) application
2000, December to 2000, November	Water hyacinth removal
2000, December	Fish Sampling at Haines Canyon Creek
2000, December	Water quality sampling
2001, January to present	Exotic aquatic wildlife (non-native fish, crayfish, bullfrog, and turtle) removal – conducted quarterly
2001, February	Partial riparian planting
2001, March	Selective clearing at Canyon Trails Golf Club
2001, March	Water quality sampling
2001, June	Water quality sampling
2001, July	Fish Sampling at Haines Canyon Creek
2001, September	Water quality sampling
2001, October to 2001, November	Fish Sampling at Haines Canyon Creek
2001, December	Water quality sampling

Date	Activity
2002, January	Final riparian planting
2002, July	Upland replacement planting
2002, March	Water quality sampling
2002, June	Water quality sampling
2002, July	Fish Sampling at Haines Canyon Creek
2002, September	Water quality sampling
2002, October	Grading at Canyon Trails Golf Club begins
2002, November	Fish Sampling at Haines Canyon Creek
2002, December	Water quality sampling
2003, March	Water quality sampling
2003, April	Meeting with Canyon Trails Golf Club to discuss future use of herbicides and fertilizers
2003, June	Water quality sampling
2003, August	Fish Sampling at Haines Canyon Creek
2003, September	Water quality sampling
2003, fall	Completion of the golf course construction
2003, December	Water quality sampling
2004, January	Fish Sampling at Haines Canyon Creek
2004, April	Water quality sampling
2004, April	Rock Dam Removal Day
2004, June	Angeles National Golf Club (previously named Canyon Trails) opens to the public
2004, July	Water quality sampling
2004, October	Water quality sampling
2004, December	Water quality sampling
2005, April	Water quality sampling
2005, June	Water quality sampling
2005, October	Water quality sampling
2005, December	Water quality sampling
2006, July	Water quality sampling
2006, December	Water quality sampling
2007, December	Water quality sampling
2008, December	Water quality sampling
2009, August to October	As of 2009, the Station Fire was the largest fire in the recorded history of Angeles National Forest and the 10th largest fire in California since 1933. The fire burned a total of 160,577 acres. The fire was fully contained on October 16, 2009. (Source: Angeles National Forest Incident Update available - http://www.inciweb.org/incident/1856/)
2009, December	Water quality sampling
2010, November	Water quality sampling
2010, December	Water quality sampling for pesticides
2011, September to 2012, January	Water lettuce removal
2012, February	Water quality sampling
2012, November	Water quality sampling

Date	Activity
2013, October	Water quality sampling
2014, October	Water quality sampling
2015, November	Water quality sampling
2016, November 7	Water quality sampling
2017, December	The Creek Fire began on December 5, 2017, approximately 4 miles east of Sylmar, California. The Creek Fire burned a total of 15,619 acres. Much of the Mitigation Area burned, and close to 75 percent of the entire site exhibited signs of severe surface burns, including approximately all of the riparian communities found along Haines Canyon Creek, and more than half of the vegetation within the Big Tujunga Wash area. The fire was fully contained on January 9, 2018. (Sources: Angeles National Forest Incident Update available - https://inciweb.nwcg.gov/incident/5669/; Chambers Group 2018 Post Fire Assessment Report)
2017, December 21	Water quality sampling
2018, December 17	Water quality sampling
2019, April 23	After April 23, 2019 Chambers Group stopped the use of all herbicides within the Mitigation Area. From April 23 onward, exotic plants were (and will continue to be) managed with mechanical weed control methods only.
2019, October 30	Water Quality Sampling
2020, November 2	Water Quality Sampling
2021, November 1	Water Quality Sampling

2.2 UPSTREAM LAND USES

The monitoring program has been designed to specifically address inputs to the site from upstream land uses such as the Angeles National Golf Club (previously named Canyon Trails Golf Club). The golf course has been operating since June 2004. Potential negative impacts to aquatic species from run-on to the site that contains excessive nutrients or pesticides are of primary concern. Pesticides potentially used at the Angeles National Golf Course include herbicides, insecticides, fungicides, and grass growth inhibitors (Table 2).

Actual use of pesticides is based on golf course maintenance needs. Based on the pesticide use information from the Angeles National Golf Club, analysis of water samples for glyphosate, chlorpyrifos, other organophosphorous pesticides, and organochlorine pesticides is included in the sampling program for the Mitigation Area.

Table 2: Pesticides Potentially Used at the Angeles National Golf Club

Manufacturer and Product Name	Active Ingredient	Use
Syngenta Primo Maxx	trinexapac-ethyl	grass growth inhibitor used for turf management
Syngenta Reward	diquat dibromide	landscape and aquatic herbicide
Syngenta Barricade	prodiamine	pre-emergent herbicide

Manufacturer and Product Name	Active Ingredient	Use
Bayer Prostar 70 WP	flutolanil	fungicide
Monsanto QuikPRO	ammonium salt of glyphosphate and diquat dibromide	herbicide
Monsanto Rodeo® Verdicon Kleenup® Pro Lesco Prosecutor	glyphosate	emerged aquatic weed and brush herbicide
Valent ProGibb T&O	gibberellic acid	plant growth regulator
BASF Insignia 20 WG	pyraclostrobin	fungicide
BASF Stalker	Isopropylamine salt of Imazapyr	herbicide
Dow Agrosciences Surflan A.S.	oryzalin	herbicide
Dow Agrosciences Dursban Pro	chlorpyrifos	insecticide
Mycogen Scythe	pelargonic acid	herbicide

Source: J. Reidinger, Angeles National Golf Club, pers. comm. to M. Chimienti, LACDPW, March 18, 2004 and Angeles National Golf Club Monthly Summary Pesticide Use Reports (December 2004, February 2005 and April 2007).

SECTION 3.0 – MATERIALS AND METHODS

3.1 SAMPLING STATIONS

Four sampling locations have been identified for the monitoring program for the Mitigation Area (Figure 1). In 2021, Sample Stations 3 and 4 were dry which is typical for Sample Station 3 as the Big Tujunga Wash only flows briefly after rain events; however, due to severe drought conditions Sample Station 4 where Haines Canyon Creek exits the site, was also dry. As a result, Chambers Group biologists sampled Haines Canyon Creek approximately 1,000 feet upstream from Sample Station 4, and approximately 500 feet upstream of where surface flows terminated (see Figure 1 for alternate sample location). The water was too shallow to sample where the flows terminated, so the biologists walked upstream until the creek was deep enough to sample properly. Table 3 summarizes sampling locations and the conditions observed on November 1, 2021.

Figure 1:Mitigation Area Water Quality Sampling Stations

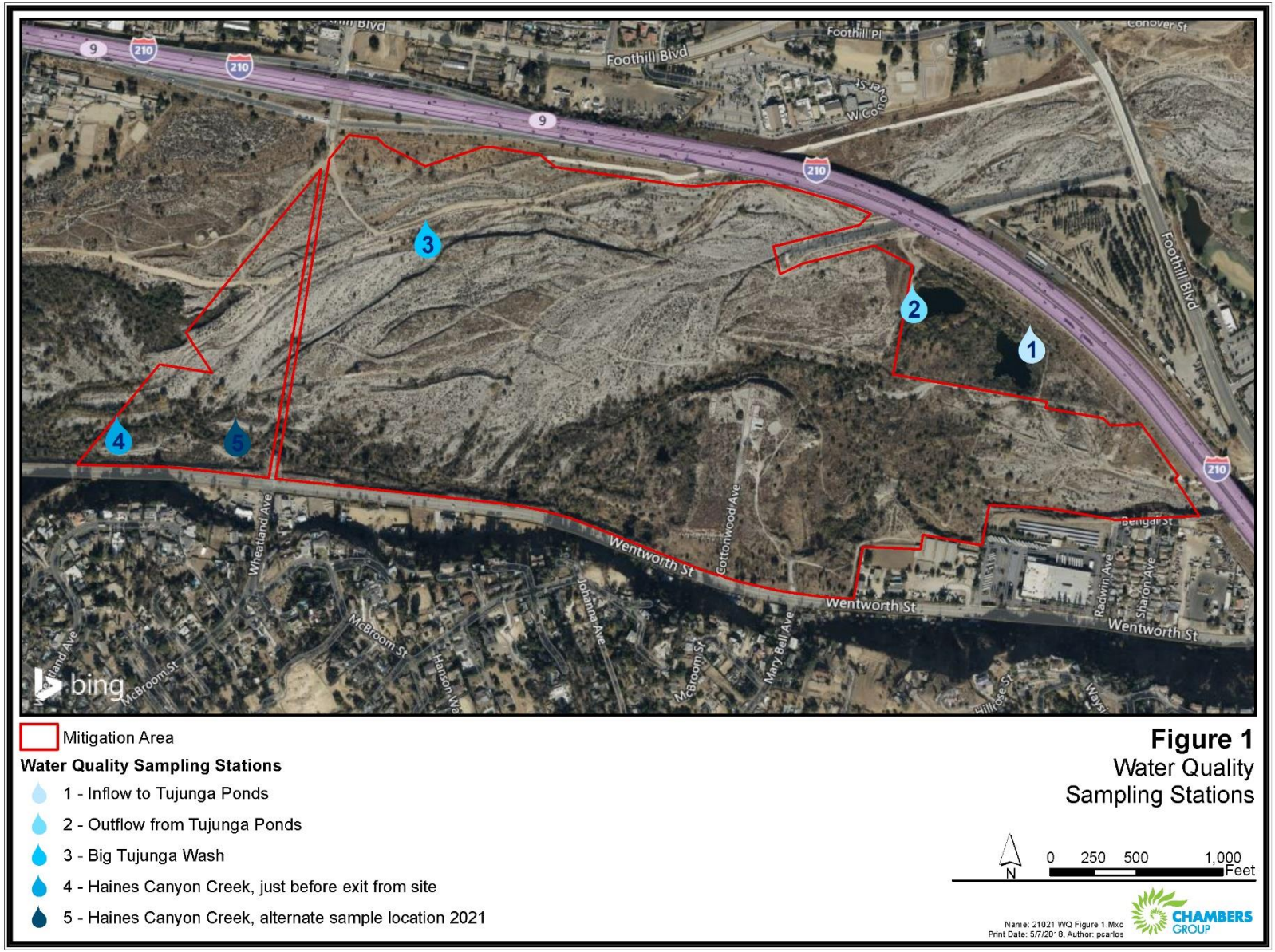

Table 3: Water Quality Sampling Locations and Conditions for November 2021

Date	November 1, 2021		
Air Temperature	Between 14.4 and 16.1 (°Celsius) during sample collection period		
Skies	Clear		
Observations	Water was clear at all locations		
Sampling Locations	**Latitude**	**Longitude**	**Time of sample**
(1) Inflow to Tujunga Ponds	34.26852 N	118.34000 W	1145
(2) Outflow from Tujunga Ponds	34.26799 N	118.34249 W	1040
(3) Big Tujunga Wash	34.26989 N	118.35126 W	station dry
(4) Haines Canyon Creek, before exit from the site	34.26655 N	118.35786 W	station dry
(5) Haines Canyon Creek, alternate sample location 2021	34.26669 N	118.35486 W	0945

3.2 SAMPLING PARAMETERS

Table 4 summarizes the sampling parameters included in the water quality monitoring program. The following meters were used in the field:

- pH and temperature – Milwaukee MW102 PRO+ 2-in-1 Temperature and pH Meter
- Dissolved oxygen - Milwaukee MW600 PRO Dissolved Oxygen Meter
- Turbidity – Hanna Instruments HI98703 Turbidity Portable Meter

Water testing was performed by Enthalpy Analytical LLC located in Orange, California and their subcontractors BSK Associates located in Fresno, California and Eurofins CalScience LLC located in Garden Grove, California. Samples were taken at mid-depth, along a transect perpendicular to the stream channel alignment. Quality assurance/quality control (QA/QC) procedures in each laboratory followed the methods described in their respective quality assurance manuals.

Table 4: Water Quality Sampling Parameters

Parameter	Analysis Location	Analytical Method
total Kjeldahl nitrogen (TKN)	laboratory	EPA 351.2
nitrite - nitrogen (NO_2-N)	laboratory	EPA 300.0 by IC
Nitrate - nitrogen (NO_3-N)	laboratory	EPA 300.0 by IC
ammonia (NH_4)	laboratory	EPA 350.1
orthophosphate - P	laboratory	Standard Methods 4500PE/EPA 365.1
total phosphorus - P	laboratory	Standard Methods 4500PE/EPA 365.1
total coliform	laboratory	Standard Methods 9221B
fecal coliform	laboratory	Standard Methods 9221C
turbidity	field	EPA 180.1
glyphosate (Roundup/Rodeo)[1]	laboratory	EPA 547
chlorpyrifos and organophosphorus pesticides[2]	laboratory	EPA 8141A
organochlorine pesticides[3]	laboratory	EPA 608
dissolved oxygen	field	Standard Methods 4500-O G
total residual chlorine	laboratory	Standard Methods 4500-Cl
temperature	field	Standard Methods 2550
pH	field	Standard Methods 4500-H+

Sources for analytical methods:
EPA. Method and Guidance for Analysis of Water.
American Public Health Association, American Waterworks Association, and Water Environment Federation. 1998. Standard Methods for the Examination of Water and Wastewater, 20th Edition. Washington D.C.

[1] First analysis completed in the first quarter of 2004
[2] First analysis completed in the fourth quarter of 2004. This analytical method tests for the following chemicals: azinphos- methyl, bolster, coumaphos, diazinon, chlorpyrifos, demeton, dichlorvos, disulfoton, ethoprop, fensulfothion, fenthion, mevinphos, naled, phorate, runnel, stirophos, parathion-methyl, tokuthion, and trichloronate.
[3] First analysis completed in the fourth quarter of 2004. This analytical method tests for the following chemicals: azinphos- methyl, bolster, coumaphos, diazinon, chlorpyrifos, demeton, dichlorvos, disulfoton, ethoprop, fensulfothion, fenthion, mevinphos, naled, phorate, runnel, stirophos, parathion-methyl, tokuthion, and trichloronate.

SECTION 4.0 – RESULTS

4.1 BASELINE WATER QUALITY

Sampling and analysis conducted by Public Works prior to implementation of the FMMP is considered the baseline for water quality conditions at the Mitigation Area. The results of baseline analyses conducted in April 2000 are presented in Table 5. Higher bacteria and turbidity observed in the 4/18/2000 samples are attributable to a rain event. Phosphorus levels were also high in the 4/18/2000 samples, due to release from sediments.

Table 5: Baseline Water Quality (2000)

Parameter	Units	Date (2000)	Haines Canyon Creek, Inflow to Tujunga Ponds	Haines Canyon Creek, Outflow from Tujunga Ponds	Big Tujunga Wash	Haines Canyon Creek, just before exit from site
Total coliform	MPN/ 100 ml	4/12	3,000	5,000	170	1,700
		4/18	2,200	170,000	2,400	70,000
Fecal coliform	MPN/ 100 ml	4/12	500	300	40	80
		4/18	500	30,000	2,400	50,000
Ammonia-N	mg/L	4/12	0	0	0	0
		4/18	0	0	0	0
Nitrate-N	mg/L	4/12	8.38	5.19	0	3.73
		4/18	8.2	3.91	0.253	0.438
Nitrite-N	mg/L	4/12	0.061	0	0	0
		4/18	0.055	0	0	0
Kjeldahl-N	mg/L	4/12	0	0.1062	0.163	0
		4/18	0	0.848	0.42	0.428
Dissolved phosphorus	mg/L	4/12	0.078	0.056	0	0.063
		4/18	0.089	0.148	0.111	0.163
Total phosphorus	mg/L	4/12	0.086	0.062	0	0.066
		4/18	0.113	0.153	0.134	0.211
pH	SU	4/12	7.78	7.68	7.96	7.91
		4/18	7.18	7.47	7.45	7.06
Turbidity	NTU	4/12	1.83	0.38	1.75	0.6
		4/18	4.24	323	4070	737

MPN – most probable number **NTU** – nephelometric turbidity units **mg/L –** milligrams per liter **SU** – standard unit

4.2 NOVEMBER 2021 RESULTS

Results of analyses conducted by Enthalpy Analytical and their subcontractors Eurofins CalScience and BSK Associates are appended to this report (Appendix A) and summarized in Table 6.

Table 6: Summary of Water Quality Results – November 1, 2021

Parameter	Units	Inflow to Tujunga Ponds	Outflow from Tujunga Ponds	Big Tujunga Wash	Haines Canyon Creek, just before exit from site
Temperature	°C	18.5	17.5	NA	16.0
Dissolved Oxygen	mg/L	7.5	7.7	NA	7.8
pH	SU	6.33	6.33	NA	6.34
Total residual chlorine	mg/L	ND	ND	NA	ND
Ammonia-Nitrogen	mg/L	ND	ND	NA	ND
Kjeldahl Nitrogen	mg/L	ND	ND	NA	ND
Nitrite-Nitrogen	mg/L	ND	ND	NA	ND
Nitrate-Nitrogen	mg/L	7.3	6.0	NA	3.1
Orthophosphate-P (dissolved phosphorus)	mg/L	ND	ND	NA	0.024
Total phosphorus-P	mg/L	0.024	ND	NA	0.028
Glyphosate	µg/L	ND	ND	NA	ND
Chlorpyrifos* (and other Organophosphorus Pesticides)	µg/L	ND	ND	NA	ND
Pesticides (EPA 608)** (Organochlorine Pesticides)	µg/L	ND	ND	NA	ND
Turbidity	NTU	1.62	0.56	NA	0.21
Fecal Coliform Bacteria	(MPN/100 ml)	79	130	NA	62
Total Coliform Bacteria	(MPN/100 ml)	1600	>1600	NA	1600

NA – data not available; station dry on the sample date
NTU – nephelometric turbidity units
µg/L – micrograms per liter
MPN – most probable number
ND – non-detect
mg/L – milligrams per liter
> - Value exceeds indicated concentration
SU – standard unit

***** The analytical method used for chlorpyrifos (EPA 8141A) also tests for the following chemicals: azinphos-methyl, bolster, coumaphos, demeton, diazinon, dichlorvos, disulfoton, ethoprop, fensulfothion, fenthion, merphos, methyl parathion, mevinphos, naled, phorate, ronnel, stirophos, tokuthion, and trichloronate.

****** EPA method 608 tests for aldrin, BHC, Chlordane, DDD, DDE, DDT, dieldrin, endrin, endosulfan, heptaclor, methoxychlor, and toxaphene. Water samples for these pesticides were collected on November 1, 2021.

4.3 COMPARISON OF RESULTS WITH AQUATIC LIFE CRITERIA

Tables 7 through 12 present objectives established by the United States Environmental Protection Agency (USEPA) and the Los Angeles Regional Water Quality Control Board (Regional Board) for protection of beneficial uses including freshwater aquatic life.

Table 7: National and Local Recommended Water Quality Criteria - Freshwaters

Parameter	Basin Plan Objectives[a]	EPA Criteria		
		CMC	CCC	Human Health
Temperature (°C)	b	See Table 12	See Table 12	--
Dissolved oxygen (mg/L)	>7.0 mean >5.0 min	5.0[c] (warmwater, early life stages, 1-day minimum)	6.0[c] (warmwater, early life stages, 7-day mean)	--
pH	6.5 - 8.5	--	6.5-9.0[d,e]	5.0-9.0[d,e]
Total residual chlorine (mg/L)	0.1	0.019[d,e]	0.011[d,e]	4.0 (maximum residual disinfectant level goal)
Fecal coliform (MPN/100 ml)	126[f] (geometric mean for *E. coli*) (water contact recreation)	--	--	Swimming standards: 33[g] (geometric mean for enterococci) 126[g] (geometric mean for *E. coli*)
Ammonia-nitrogen (mg/L)	See Tables 10 and 11	See Table 8	See Table 9	--
Nitrite-nitrogen (mg/L)	1	--	--	1 (primary drinking water standard)
Nitrate-nitrogen (mg/L)	10	--	--	10 (primary drinking water standard)
Total phosphorus (mg/L)	--	<0.05 – 0.1[e] (recommendation for streams, no criterion)		--
Turbidity (NTU)	h	i	i	5 (secondary drinking water standard) ≤1.0 (standard for systems that filter)

Notes:
MPN most probable number
NTU nephelometric turbidity units
-- No criterion
CMC Criteria Maximum Concentration or acute criterion
CCC Criteria Continuous Concentration or chronic criterion
a Source: California Regional Water Quality Control Board, Los Angeles Region. 1994. Water Quality Control Plan (Basin Plan). As amended.

b Narrative criterion: "The natural receiving water temperature of all regional waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses."
c Source: USEPA. 1986. Ambient Water Quality Criteria for Dissolved Oxygen. EPA 440-5-86-003. Washington, D.C.
d Source: USEPA. 1999. National Recommended Water Quality Criteria – Correction. EPA 822-Z-99-001. Washington, D.C.
e Source: USEPA. 1986. Quality Criteria for Water. EPA 440/5-86-001. Washington, D.C.
f Single sample limits – E. coli density shall not exceed 235/100 ml.
g Source: USEPA. 1986. Ambient Water Quality Criteria for Bacteria – 1986. EPA 440-5-84-002. Washington, D.C.
h Narrative criterion: "Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses."
i Narrative criterion for freshwater fish and other aquatic life: "Settleable and suspended solids should not reduce the depth of the compensation point for photosynthetic activity by more than 10 percent from the seasonally established norm for aquatic life."

Table 8: Temperature and pH-Dependent Values of the CMC (Acute Criterion) Mussels Absent

CMC: Mussels Absent, mg N/L										
pH	Temperature (°Celsius)									
	0	14	16	18	20	22	24	26	28	30
6.5	58.0	58.0	58.0	58.0	43.7	37.0	31.4	26.6	22.5	19.1
6.6	55.7	55.7	55.7	55.7	41.9	35.5	30.1	25.5	21.6	18.3
6.7	53.0	53.0	53.0	53.0	39.9	33.8	28.6	24.3	20.6	17.4
6.8	49.9	49.9	49.9	49.9	37.6	31.9	27.0	22.9	19.4	16.4
6.9	46.5	46.5	46.5	46.5	35.1	29.7	25.2	21.3	18.1	15.3
7.0	42.9	42.9	42.9	42.9	32.3	27.4	23.2	19.7	16.7	14.1
7.1	39.1	39.1	39.1	39.1	29.4	24.9	21.1	17.9	15.2	12.8
7.2	35.1	35.1	35.1	35.1	26.4	22.4	19.0	16.1	13.6	11.5
7.3	31.2	31.2	31.2	31.2	23.5	19.9	16.8	14.3	12.1	10.2
7.4	27.3	27.3	27.3	27.3	20.6	17.4	14.8	12.5	10.6	8.98
7.5	23.6	23.6	23.6	23.6	17.8	15.1	12.8	10.8	9.18	7.77
7.6	20.2	20.2	20.2	20.2	15.3	12.9	10.9	9.27	7.86	6.66
7.7	17.2	17.2	17.2	17.2	12.9	11.0	9.28	7.86	6.66	5.64
7.8	14.4	14.4	14.4	14.4	10.9	9.21	7.80	6.61	5.60	4.74
7.9	12.0	12.0	12.0	12.0	9.07	7.69	6.51	5.52	4.67	3.96
8.0	9.99	9.99	9.99	9.99	7.53	6.38	5.40	4.58	3.88	3.29
8.1	8.26	8.26	8.26	8.26	6.22	5.27	4.47	3.78	3.21	2.72
8.2	6.81	6.81	6.81	6.81	5.13	4.34	3.68	3.12	2.64	2.24
8.3	5.60	5.60	5.60	5.60	4.22	3.58	3.03	2.57	2.18	1.84
8.4	4.61	4.61	4.61	4.61	3.48	2.95	2.50	2.11	1.79	1.52
8.5	3.81	3.81	3.81	3.81	2.87	2.43	2.06	1.74	1.48	1.25
8.6	3.15	3.15	3.15	3.15	2.37	2.01	1.70	1.44	1.22	1.04
8.7	2.62	2.62	2.62	2.62	1.97	1.67	1.42	1.20	1.02	0.862

CMC: Mussels Absent, mg N/L										
pH	Temperature (°Celsius)									
	0	14	16	18	20	22	24	26	28	30
8.8	2.19	2.19	2.19	2.19	1.65	1.40	1.19	1.00	0.851	0.721
8.9	1.85	1.85	1.85	1.85	1.39	1.18	1.00	0.847	0.718	0.608
9.0	1.57	1.57	1.57	1.57	1.19	1.00	0.851	0.721	0.611	0.517

Note: Native species of freshwater mussels are not known for Big Tujunga Wash or Haines Canyon Creek. CMC – Criteria Maximum Concentration (ammonia)
Source: USEPA. 2009. Draft 2009 Update Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater. EPA 822-D-09-001. Washington, D.C

Table 9: Temperature and pH-Dependent Values of the CCC (Chronic Criterion) Mussels Absent and Early Fish Life Stages Present

CCC: Mussels Absent and Early Fish Life Stages Present, mg N/L										
pH	Temperature (°Celsius)									
	0	14	16	18	20	22	24	26	28	30
6.5	6.36	6.36	6.36	6.36	6.36	6.11	5.37	4.72	4.15	3.65
6.6	6.26	6.26	6.26	6.26	6.26	6.02	5.29	4.65	4.09	3.60
6.7	6.15	6.15	6.15	6.15	6.15	5.91	5.19	4.57	4.01	3.53
6.8	6.00	6.00	6.00	6.00	6.00	5.77	5.08	4.46	3.92	3.45
6.9	5.84	5.84	5.84	5.84	5.84	5.61	4.93	4.34	3.81	3.35
7.0	5.64	5.64	5.64	5.64	5.64	5.42	4.76	4.19	3.68	3.24
7.1	5.41	5.41	5.41	5.41	5.41	5.20	4.57	4.02	3.53	3.10
7.2	5.14	5.14	5.14	5.14	5.14	4.94	4.35	3.82	3.36	2.95
7.3	4.84	4.84	4.84	4.84	4.84	4.66	4.09	3.60	3.16	2.78
7.4	4.52	4.52	4.52	4.52	4.52	4.34	3.82	3.36	2.95	2.59
7.5	4.16	4.16	4.16	4.16	4.16	4.00	3.52	3.09	2.72	2.39
7.6	3.79	3.79	3.79	3.79	3.79	3.65	3.21	2.82	2.48	2.18
7.7	3.41	3.41	3.41	3.41	3.41	3.28	2.89	2.54	2.23	1.96
7.8	3.04	3.04	3.04	3.04	3.04	2.92	2.57	2.26	1.98	1.74
7.9	2.67	2.67	2.67	2.67	2.67	2.57	2.26	1.98	1.74	1.53
8.0	2.32	2.32	2.32	2.32	2.32	2.23	1.96	1.72	1.52	1.33
8.1	2.00	2.00	2.00	2.00	2.00	1.92	1.69	1.49	1.31	1.15
8.2	1.71	1.71	1.71	1.71	1.71	1.64	1.45	1.27	1.12	0.982
8.3	1.45	1.45	1.45	1.45	1.45	1.40	1.23	1.08	0.949	0.835
8.4	1.23	1.23	1.23	1.23	1.23	1.18	1.04	0.914	0.804	0.706
8.5	1.04	1.04	1.04	1.04	1.04	0.999	0.878	0.772	0.679	0.597
8.6	0.878	0.878	0.878	0.878	0.878	0.844	0.742	0.652	0.573	0.504
8.7	0.742	0.742	0.742	0.742	0.742	0.714	0.628	0.552	0.485	0.426
8.8	0.631	0.631	0.631	0.631	0.631	0.606	0.533	0.469	0.412	0.362
8.9	0.539	0.539	0.539	0.539	0.539	0.518	0.455	0.400	0.352	0.309
9.0	0.464	0.464	0.464	0.464	0.464	0.446	0.392	0.345	0.303	0.266

Note: Native species of freshwater mussels are not known for Big Tujunga Wash or Haines Canyon Creek. CCC – Criteria Continuous Concentration (ammonia)
Source: USEPA. 2009. Draft 2009 Update Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater. EPA 822-D-09-001. Washington, D.C.

Table 10: 30-Day Average Objective for Ammonia-N for Freshwaters Applicable to Waters Subject to the "Early Life Stage Present" Condition (mg N/L)

pH	Temperature (°Celsius)								
	14	16	18	20	22	24	26	28	30
6.5	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

Source: California Regional Water Quality Control Board, Los Angeles Region. 2005. Amendments to the Water Quality Control Plan – Los Angeles Region with Respect to Early Life Stage Implementation Provisions of the Inland Surface Water Ammonia Objectives for Freshwaters. Taken from USEPA. 1999. 1999 Update of Ambient Water Quality Criteria for Ammonia. EPA 822-R-99-014. Washington, D.C.

Table 11: One-Hour Average Objective for Ammonia-N for Freshwaters (mg N/L)

pH	Waters Designated COLD and/or MIGR	Waters Not Designated COLD and/or MIGR
6.5	32.6	48.8
6.6	31.3	46.8
6.7	29.8	44.6
6.8	28.1	42.0
6.9	26.2	39.1
7.0	24.1	36.1
7.1	22.0	32.8
7.2	19.7	29.5
7.3	17.5	26.2
7.4	15.4	23.0
7.5	13.3	19.9
7.6	11.4	17.0
7.7	9.65	14.4
7.8	8.11	12.1
7.9	6.77	10.1
8.0	5.62	8.40
8.1	4.64	6.95
8.2	3.83	5.72
8.3	3.15	4.71
8.4	2.59	3.88
8.5	2.14	3.20
8.6	1.77	2.65
8.7	1.47	2.20
8.8	1.23	1.84
8.9	1.04	1.56
9.0	0.885	1.32

COLD – Beneficial use designation of Cold Freshwater Habitat
MIGR – Beneficial use designation of Migration of Aquatic Organisms
Source: California Regional Water Quality Control Board, Los Angeles Region. 2002. Amendments to the Water Quality Control Plan – Los Angeles Region with Respect to Inland Surface Water Ammonia Objectives. Taken from USEPA. 1999. 1999 Update of Ambient Water Quality Criteria for Ammonia. EPA 822-R-99-014. Washington, D.C.

Table 12: Example Calculated Values for Maximum Weekly Average Temperature for Growth and Short-Term Maxima for Survival of Juvenile and Adult Fishes During the Summer

Species	Growth - Maximum Weekly Average Temperature (°C)	Survival - Short-Term Maximum Temperature (°C)
black crappie	27	--
brook trout	19	24
bluegill	32	35
channel catfish	32	35
emerald shiner	30	--
largemouth bass	32	34
rainbow trout	19	24

Source: USEPA. 1986. Quality Criteria for Water. EPA 440/5-86-001. Washington, D.C.

SECTION 5.0 – DISCUSSION

Results from the November 2021 sampling are described by parameter in Table 13. Except for pH, none of the 2021 parameters tested were substantially different from the baseline conditions recorded in 2000 and/or were still within the recommended range for each parameter as provided in the Basin Plan and/or EPA objectives. The first water sampling for Glyphosate, Chlorpyrifos, and other organophosphorus and organochlorine pesticides did not occur until 2004. None of these pesticides were detected in 2004 nor were they detected in 2021. Table 14 shows the 2021 water quality sampling results as compared to the 2000 baseline water quality sampling results. In addition, none of the parameters were substantially different between pre- and post-Creek Fire conditions (2016/2017) and parameters continue to fall largely within or below the recommended range for each parameter as provided in the Basin Plan and/or EPA objectives. Two of the parameters tested in 2021 were outside the recommended range for at least one of the sample locations and are discussed in Table 13.

Table 13: Discussion of November 2021 Water Quality Sampling Results

Parameter	Discussion
Temperature	• Observed temperatures were below levels of concern for growth and survival of warmwater fish species at all stations (example species in Table 12). However, growth criteria are based on the maximum weekly average temperature during the summer and only a single temperature reading was taken at each sampling station in the fall. The weekly summer average temperature is unknown. The reference maxima provided in Table 12 for the growth and survival of juvenile and adult fishes during the summer are provided by the EPA and mainly apply to sportfishing species and not the native fish species that occupy the Mitigation Area. According to the US Fish and Wildlife's Recovery Outline for Santa Ana Sucker, Santa Ana sucker are typically most abundant in clear water, at temperatures generally less than 22°C and have experienced mortality at temperatures greater than 26.7 °C (USFWS 20124). According to UC Davis' Center for Watershed Sciences, Santa Ana speckled dace prefer summer water temperatures below 20°C but may tolerate temperatures as high as 26 to 28°C (UC Davis 2021a5). Arroyo chub are most common in streams with temperatures between 10 and 24°C (UC Davis 2021b6). All temperatures recorded were below or within the

[4] U.S. Fish and Wildlife Service (USFWS)
2012 Recovery Outline for Santa Ana Sucker (*Catostomus santaanae*). Accessed online at: https://www.fws.gov/carlsbad/tespecies/Recovery/documents/Recovery%20Outline%20for%20Santa%20Ana%20Sucker-3-30-2012.pdf in June 2021.

[5] UC Davis
2021a UC Davis Center for Watershed Sciences. Rhinichthys oculus subspecies. Accessed online at: https://pisces.ucdavis.edu/content/rhinichthys-osculus-subspecies-2 in June 2021.

[6] UC Davis
2021b UC Davis Center for Watershed Sciences. Gila orcutti. Accessed online at: https://pisces.ucdavis.edu/content/gila-orcutti in June 2021.

Parameter	Discussion
	range for survival of sensitive fish species that occur in the Mitigation Area.
Dissolved oxygen	• DO levels were 7.5 mg/L at the inflow to the Tujunga Ponds, 7.7 mg/L at the outflow from the Tujunga Ponds, and 7.8 mg/L where Haines Canyon Creek exits the site. DO levels at all sample stations were above the minimum recommended level (5.0 mg/L) for Basin Plan objectives and EPA's criteria for warmwater fish species.
pH	• pH readings were 6.33 at the inflow to the Tujunga Ponds, 6.33 at the outflow from the Tujunga Ponds, and 6.34 where Haines Canyon Creek exits the site. The pH readings at all three sample stations were slightly below the recommended range of 6.5 to 8.5 identified in the Basin Plan objectives and were within the recommended range of 5.0 to 9.0 for EPA's criteria for human health. It is unknown what conditions caused the low pH at the Tujunga Ponds and Haines Canyon Creek. As sampling is conducted in the fall, leaf litter from deciduous trees and shrubs has the potential to acidify the water for a short time until bacteria and other microorganisms can start breaking down plant matter and buffering acidic conditions. Additional sampling throughout the year would be required to try to pinpoint the exact cause of low pH.
Total residual chlorine	• No residual chlorine was detected at any sample station.
Nitrogen	• Nitrate-Nitrogen measurements at all sample stations were below the drinking water maximum standard of 10 mg/L for both Basin Plan standards and EPA criteria for human health. • Nitrite-Nitrogen was not detected at any sample station. • Ammonia-Nitrogen was not detected at any sample station.
Phosphorus	• The observed Total Phosphorus-P concentration was 0.024 mg/L at the inflow to the Tujunga Ponds, 0.028 mg/L where Haines Canyon Creek exits the site and was not detected at the outflow to the Tujunga Ponds. The Total Phosphorus-P concentration at all sample stations was below the lower end of the EPA's recommended maximum range of 0.05 to 0.10 mg/L for the desired goal of preventing plant nuisances in streams.
Glyphosate	• Glyphosate was not detected at any sample station.
Chlorpyrifos and other Organophosphorus Pesticides	• Organophosphorus Pesticides including Chlorpyrifos, that were analyzed by EPA method 8141A were not detected at any sample station.
Organochlorine Pesticides	• Organochlorine pesticides analyzed by EPA Method 608 were not detected at

Parameter	Discussion
	any sample station.
Turbidity	• Turbidity readings were 1.62 NTU at the inflow to the Tujunga Ponds, 0.56 NTU at the outflow from the Tujunga Ponds, and 0.21 NTU where Haines Canyon Creek exits the site. Turbidity levels were below the EPA's secondary drinking water standard of 5 NTU. The turbidity at the inflow to the Tujunga Ponds was slightly above the EPA's drinking water maximum standard of 1.0 NTU for systems that use conventional or direct filtration; however, waters within the Mitigation Area are not filtered systems intended for human consumption.
Coliform Bacteria	• Per the Basin Plan objectives, the fresh water bacteria standard for water contact recreation is for *E. coli* (126 MPN/100 ml geometric mean, 235 MPN/100 ml single sample limits). Fecal coliform levels were 79 MPN/100 ml at the inflow to the Tujunga Ponds, 130 MPN/100 ml at the outflow from the Tujunga Ponds, and 62 MPN/100 ml where Haines Canyon Creek exits the site. Fecal coliform levels detected at the inflow to Tujunga Ponds and where Haines Creek exits the site were below the standard geometric mean. Fecal levels detected at the outflow from the Tujunga ponds were slightly above the geometric mean. Sampling specifically for *E. coli* was not conducted. • Total coliform levels were equal to or greater than 1600 MPN/100 ml at all sample stations. [Note that recreation standards are for *E. coli*. Per the Basin Plan, total coliform standards apply to marine waters and waterbodies where shellfish can be harvested for human consumption.] • The presence of coliform bacteria indicates fecal contamination by warm-blooded mammal and avian species including waterfowl. While not all coliform bacteria are harmful, elevated levels of coliform bacteria indicate an increased likelihood that harmful coliform bacteria such as *E. coli*, may be present. Sources of coliform pollution in the Mitigation Area may include run-off from surrounding residential areas; horses (equestrian) that utilize the trails; waterfowl that occupy the Tujunga Ponds; other birds, aquatic organisms, and mammals that use the ponds and creek; and illegal human uses of the ponds and creek such as swimming and bathing. Organic materials that carry coliform bacteria have the potential to be harmful to aquatic life, as oxygen in the water may become low during aerobic decomposition of organic materials. Spikes in the levels of coliform bacteria in the Mitigation Area have not been uncommon since water quality sampling began in 2000.

mg/L – milligrams per liter **NTU** – nephelometric turbidity units **MPN** – most probable number

Table 14: 2021 Water Quality Results Compared to Baseline (2000)

Parameter	Units	Date (2000)	Date (2021)	Haines Canyon Creek, Inflow to Tujunga Ponds (2000)	Haines Canyon Creek, Inflow to Tujunga Ponds (2021)	Haines Canyon Creek, Outflow from Tujunga Ponds (2000)	Haines Canyon Creek, Outflow from Tujunga Ponds (2021)	Big Tujunga Wash (2000)	Big Tujunga Wash (2021)	Haines Canyon Creek, just before exit from site (2000)	Haines Canyon Creek, just before exit from site (2021)
Total coliform	MPN/ 100 ml	4/12	11/1	3,000	1600	5,000	>1600	170	NA	1,700	1600
		4/18		2,200		170,000		2,400		70,000	
Fecal coliform	MPN/ 100 ml	4/12	11/1	500	79	300	130	40	NA	80	62
		4/18		500		30,000		2,400		50,000	
Ammonia-N	mg/L	4/12	11/1	0	ND	0	ND	0	NA	0	ND
		4/18		0		0		0		0	
Nitrate-N	mg/L	4/12	11/1	8.38	7.3	5.19	6.0	0	NA	3.73	3.1
		4/18		8.2		3.91		0.253		0.438	
Nitrite-N	mg/L	4/12	11/1	0.061	ND	0	ND	0	NA	0	ND
		4/18		0.055		0		0		0	
Kjeldahl-N	mg/L	4/12	11/1	0	ND	0.1062	ND	0.163	NA	0	ND
		4/18		0		0.848		0.42		0.428	
Dissolved phosphorus	mg/L	4/12	11/1	0.078	ND	0.056	ND	0	NA	0.063	0.024
		4/18		0.089		0.148		0.111		0.163	
Total phosphorus	mg/L	4/12	11/1	0.086	0.024	0.062	ND	0	NA	0.066	0.028
		4/18		0.113		0.153		0.134		0.211	
pH	SU	4/12	11/1	7.78	6.33	7.68	6.33	7.96	NA	7.91	6.34
		4/18		7.18		7.47		7.45		7.06	
Turbidity	NTU	4/12	11/1	1.83	1.62	0.38	0.56	1.75	NA	0.6	0.21
		4/18		4.24		323		4070		737	

NA – data not available; station dry on the sample date
MPN – most probable number
> - Value exceeds indicated concentration
NTU – nephelometric turbidity units
ND – non-detect
SU – standard unit
µg/L – micrograms per liter
mg/L – milligrams per liter

SECTION 6.0 – GLOSSARY

Ammonia-Nitrogen – NH3-N is a gaseous alkaline compound of nitrogen and hydrogen that is highly soluble in water. Un-ionized ammonia (NH3) is toxic to aquatic organisms. The proportions of NH3 and ammonium (NH4+) and hydroxide (OH-) ions are dependent on temperature, pH, and salinity.

Chlorine, Residual – The chlorination of water supplies and wastewaters serves to destroy or deactivate disease-producing organisms. Residual chlorine in natural waters is an aquatic toxicant.

Chlorpyrifos - White crystal-like solid insecticide widely used in homes and on farms. Used to control cockroaches, fleas, termites, ticks crop pests.

Coliform Bacteria – Several genera of bacteria belonging to the family Enterobacteriaceae. Based on the method of detection, the coliform group is historically defined as facultative anaerobic, gram-negative, non-spore-forming, rod-shaped bacteria that ferment lactose with gas and acid formation within 48 hours at 35 C.

Coliform Bacteria, Fecal – Part of the intestinal flora of warm-blooded animals. Presence in surface waters is considered an indication of pollution.

Dissolved Oxygen - Dissolved oxygen (DO) is the amount of oxygen that is present in water. Water bodies receive oxygen from the atmosphere and from aquatic plants. Running water, such as that of a swift moving stream, dissolves more oxygen than the still water of a pond or lake.

Glyphosate - White compound broad-spectrum herbicide used to kill weeds.

Kjeldahl Nitrogen – Named for the laboratory technique used for detection, Kjeldahl nitrogen includes organic nitrogen and ammonia nitrogen.

Nitrate-Nitrogen – NO3--N is an essential nutrient for many photosynthetic autotrophs.

Nitrite-Nitrogen – NO2--N is an intermediate oxidation state of nitrogen, both in the oxidation of ammonia to nitrate and in the reduction of nitrate.

Organochlorine Pesticides – An older class of pesticides, that are effective against a variety of insects. These chemicals were introduced in the 1940s, and many of their uses have been cancelled or restricted by the U.S. EPA because of their environmental persistence and potential adverse effects on wildlife and human.

Organophosphorus Pesticides – These pesticides are active against a broad spectrum of insects and have accounted for a large share of all insecticides used in the United States. Although organophosphorus insecticides are still used for insect control on many food crops, most residential uses have been phased out in the United States. Certain organophosphorus insecticides are also registered for public health applications (e.g., mosquito control) in the United States.

Orthophosphorus – The reactive form of phosphorus, commonly used as fertilizer.

pH – The hydrogen ion activity of water (pH) is measured on a logarithmic scale, ranging from 0 to 14. The pH of “pure” water at 25° C is 7.0 (neutral). Low pH is acidic; high pH is basic or alkaline.

Phosphorus, Total – In natural waters, phosphorus occurs almost solely as orthophosphates, condensed phosphates, and organically bound phosphate. Phosphorus is essential to the growth of organisms.

Turbidity – Attributable to the suspended and colloidal matter in water, including clay, silt, finely divided organic and inorganic matter, soluble colored organic compounds, and plankton and other microscopic organisms. The reduction of clearness in turbid waters diminishes the penetration of light and therefore can adversely affect photosynthesis.

APPENDIX A – 2021 LABORATORY RESULTS

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 452939
Report Level: II
Report Date: 11/23/2021

Analytical Report *prepared for:*

Heather Franklin
Chambers Group
5 Hutton Centre Drive
Suite 750
Santa Ana, CA 92707

Location: Big Tujunga

Authorized for release by:

Diane Galvan, Project Manager
714-771-9928
diane.galvan@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105, CDC ELITE Member

ENTHALPY ANALYTICAL

Sample Summary

Heather Franklin
Chambers Group
5 Hutton Centre Drive
Suite 750
Santa Ana, CA 92707

Lab Job #: 452939
Location: Big Tujunga
Date Received: 11/01/21

Sample ID	Lab ID	Collected	Matrix
PONDS INLET	452939-001	11/01/21 11:45	Water
PONDS OUTLET	452939-002	11/01/21 10:40	Water
HAINES CREEK EXIT	452939-003	11/01/21 09:45	Water

Case Narrative

Chambers Group
5 Hutton Centre Drive
Suite 750
Santa Ana, CA 92707
Heather Franklin

Lab Job Number: 452939
Location: Big Tujunga
Date Received: 11/01/21

This data package contains sample and QC results for three water samples, requested for the above referenced project on 11/01/21. The samples were received cold and intact.

Pesticides:
BSK Associates in Fresno, CA performed the analysis. Please see the BSK Associates case narrative. No analytical problems were encountered.

PCBs:
BSK Associates in Fresno, CA performed the analysis. Please see the BSK Associates case narrative. No analytical problems were encountered.

Organophosphorus Pesticides (EPA 8141A):
Eurofins CalScience in Garden Grove, CA performed the analysis (NELAP certified). Please see the Eurofins CalScience case narrative.

EPA 547 Glyphosate (EPA 547):
BSK Associates in Fresno, CA performed the analysis. Please see the BSK Associates case narrative.

ENTHALPY ANALYTICAL

Chain of Custody Record

Lab No: 452939

Page: _____ of _____

Turn Around Time (rush by advanced notice only)

Standard:		5 Day:		3 Day:	
2 Day:		1 Day:		Custom TAT:	

Enthalpy Analytical - Orange

931 W. Barkley Avenue, Orange, CA 92868

Phone 714-771-6900

Matrix: A = Air S = Soil/Solid W = Water DW = Drinking Wate SD = Sediment PP = Pure Product SEA = Sea Water SW = Swab T = Tissue WP = Wipe O = Other

Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

Sample Receipt Temp: 6.6 / 4.3 (lab use only)

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Chambers Group Inc	Quote #:	
Report To:	Heather Franklin	Proj. Name:	Big Tujunga
Email:	hfranklin@chambersgroupinc.com	Proj. #:	
Address:		P.O. #:	
		Address:	
Phone:	970-420-0816	Global ID:	
Fax:		Sampled By:	

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	total KJELDAHL nitrogen	nitrate - nitrogen	nitrite - nitrogen	ammonia	orthophosphate	total phosphorus	total coliform	fecal coliform	glyphosate	chlorpyrifos & organophosphorus pesticide	Total residual chlorine	organochlorine pesticides
1	Ponds Inlet	11/1/2021		W	1		X	X	X	X	X	X	X	X	X	X	X	X
2	Ponds outlet	11/1/2021	1040	W	1		X	X	X	X	X	X	X	X	X	X	X	X
3	Haines Creek Exit	11/1/2021	0945	W	1		X	X	X	X	X	X	X	X	X	X	X	X
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Analysis Request

Test Instructions / Comments

	Signature	Print Name	Company / Title	Date / Time
[1] Relinquished By:		Alisa Muniz	Chambers Group/Biologist	11/1/2021 : 1640
[1] Received By:		NICK G	EA	11/1/21 1641
[2] Relinquished By:				
[2] Received By:				
[3] Relinquished By:				
[3] Received By:				

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Chambers Group Inc. Project: Big Tujunga

Date Received: 11/01/21 Sampler's Name Present: ☐ Yes ☑ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2) Sample Temp (°C) (No Cooler) :_____

Sample Temp (°C), One from each cooler: #1: 6.6 #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: 4.3 #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✔		
Are sample IDs present?	✔		
Are sampling dates & times present?		✔	
Is a relinquished signature present?	✔		
Are the tests required clearly indicated on the COC?	✔		
Are custody seals present?		✔	
If custody seals are present, were they intact?			✔
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)	✔		
Did all samples arrive intact? If no, indicate in Section 4 below.	✔		
Did all bottle labels agree with COC? (ID, dates and times)	✔		
Were the samples collected in the correct containers for the required tests?	✔		
Are the containers labeled with the correct preservatives?	✔		
Is there headspace in the VOA vials greater than 5-6 mm in diameter?	✔		
Was a sufficient amount of sample submitted for the requested tests?	✔		

Section 5 Explanations/Comments

All vials received with headspace. Sampling time for "Ponds Inlet" not listed on COC, only on containers as 11:45.

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials:_____ Date/Time_____

☑ Email (email sent to/on): DMG /11/1/21

Project Manager's response:

Completed By: _____ Date: 11/01/21

ENTHALPY ANALYTICAL

Analysis Results for 452939

Heather Franklin
Chambers Group
5 Hutton Centre Drive
Suite 750
Santa Ana, CA 92707

Lab Job #: 452939
Location: Big Tujunga
Date Received: 11/01/21

Sample ID: PONDS INLET **Lab ID: 452939-001** **Collected: 11/01/21 11:45**
Matrix: Water

452939-001 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 300.0 Prep Method: METHOD									
Nitrogen, Nitrite	ND		mg/L	0.10	1	277105	11/02/21 09:28	11/02/21 14:29	JCP
Nitrogen, Nitrate	**7.3**		mg/L	0.10	1	277105	11/02/21 09:28	11/02/21 14:29	JCP
Method: EPA 350.1 Prep Method: METHOD									
Ammonia-N	ND		mg/L	0.10	1	277088	11/02/21	11/02/21	ATP
Method: EPA 351.2 Prep Method: METHOD									
Nitrogen, Total Kjeldahl	ND		mg/L	0.40	1	277271	11/04/21	11/04/21	ATP
Method: SM 4500-CL-G									
Chlorine, Total Residual	ND	H	mg/L	0.10	1	277173	11/02/21 17:41	11/02/21 17:41	WWC
Method: SM 4500-P-B5-E									
Phosphorus	**0.024**		mg/L	0.020	1	277429	11/05/21	11/05/21	ATP
Method: SM 4500-P-E									
Orthophosphate as P	ND		mg/L	0.020	1	277245	11/03/21 07:00	11/03/21 07:17	ATP
Orthophosphate as PO4	ND		mg/L	0.060	1	277245	11/03/21 07:00	11/03/21 07:17	ATP
Method: SM 9221B Prep Method: METHOD									
Coliform, Total	**1,600**		MPN/100ml	1.8	1	277085	11/01/21 17:38	11/05/21 14:10	SZL
Method: SM 9221E Prep Method: METHOD									
Fecal Coliform	**79**		MPN/100ml	1.8	1	277085	11/01/21 17:38	11/04/21 16:30	SZL

Results for any subcontracted analyses are not included in this section.

ENTHALPY ANALYTICAL

Analysis Results for 452939

Sample ID: PONDS OUTLET	Lab ID: 452939-002	Collected: 11/01/21 10:40
	Matrix: Water	

452939-002 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 300.0 Prep Method: METHOD									
Nitrogen, Nitrite	ND		mg/L	0.10	1	277105	11/02/21 09:28	11/02/21 14:50	JCP
Nitrogen, Nitrate	**6.0**		mg/L	0.10	1	277105	11/02/21 09:28	11/02/21 14:50	JCP
Method: EPA 350.1 Prep Method: METHOD									
Ammonia-N	ND		mg/L	0.10	1	277088	11/02/21	11/02/21	ATP
Method: EPA 351.2 Prep Method: METHOD									
Nitrogen, Total Kjeldahl	ND		mg/L	0.40	1	277273	11/04/21	11/04/21	ATP
Method: SM 4500-CL-G									
Chlorine, Total Residual	ND	H	mg/L	0.10	1	277173	11/02/21 17:41	11/02/21 17:41	WWC
Method: SM 4500-P-B5-E									
Phosphorus	ND		mg/L	0.020	1	277429	11/05/21	11/05/21	ATP
Method: SM 4500-P-E									
Orthophosphate as P	ND		mg/L	0.020	1	277245	11/03/21 07:00	11/03/21 07:17	ATP
Orthophosphate as PO4	ND		mg/L	0.060	1	277245	11/03/21 07:00	11/03/21 07:17	ATP
Method: SM 9221B Prep Method: METHOD									
Coliform, Total	**>1,600**		MPN/100ml	1.8	1	277085	11/01/21 17:38	11/05/21 14:10	SZL
Method: SM 9221E Prep Method: METHOD									
Fecal Coliform	**130**		MPN/100ml	1.8	1	277085	11/01/21 17:38	11/04/21 16:30	SZL

Results for any subcontracted analyses are not included in this section.

ENTHALPY ANALYTICAL

Analysis Results for 452939

Sample ID: HAINES CREEK EXIT	Lab ID: 452939-003	Collected: 11/01/21 09:45
	Matrix: Water	

452939-003 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 300.0 Prep Method: METHOD									
Nitrogen, Nitrite	ND		mg/L	0.10	1	277105	11/02/21 09:28	11/02/21 15:11	JCP
Nitrogen, Nitrate	**3.1**		mg/L	0.10	1	277105	11/02/21 09:28	11/02/21 15:11	JCP
Method: EPA 350.1 Prep Method: METHOD									
Ammonia-N	ND		mg/L	0.10	1	277088	11/02/21	11/02/21	ATP
Method: EPA 351.2 Prep Method: METHOD									
Nitrogen, Total Kjeldahl	ND		mg/L	0.40	1	277272	11/04/21	11/04/21	ATP
Method: SM 4500-CL-G									
Chlorine, Total Residual	ND	H	mg/L	0.10	1	277173	11/02/21 17:41	11/02/21 17:41	WWC
Method: SM 4500-P-B5-E									
Phosphorus	**0.028**		mg/L	0.020	1	277429	11/05/21	11/05/21	ATP
Method: SM 4500-P-E									
Orthophosphate as P	**0.024**		mg/L	0.020	1	277245	11/03/21 07:00	11/03/21 07:17	ATP
Orthophosphate as PO4	**0.074**		mg/L	0.060	1	277245	11/03/21 07:00	11/03/21 07:17	ATP
Method: SM 9221B Prep Method: METHOD									
Coliform, Total	**1,600**		MPN/100ml	1.8	1	277085	11/01/21 17:38	11/04/21 16:30	SZL
Method: SM 9221E Prep Method: METHOD									
Fecal Coliform	**62**		MPN/100ml	1.8	1	277085	11/01/21 17:38	11/03/21 17:25	SZL

> Value exceeds indicated concentration
H Holding time was exceeded
ND Not Detected

Results for any subcontracted analyses are not included in this section.

ENTHALPY ANALYTICAL

Batch QC

Type: Blank	Lab ID: QC952935	Batch: 277088
Matrix: Water	Method: EPA 350.1	Prep Method: METHOD

QC952935 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
Ammonia-N	ND		mg/L	0.10	11/02/21	11/02/21

Type: Lab Control Sample	Lab ID: QC952936	Batch: 277088
Matrix: Water	Method: EPA 350.1	Prep Method: METHOD

QC952936 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
Ammonia-N	2.459	2.500	mg/L	98%		80-120

Type: Matrix Spike	Lab ID: QC952937	Batch: 277088
Matrix (Source ID): Water (452939-003)	Method: EPA 350.1	Prep Method: METHOD

QC952937 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	DF
Ammonia-N	2.358	ND	2.500	mg/L	94%		80-120	1

Type: Matrix Spike Duplicate	Lab ID: QC952938	Batch: 277088
Matrix (Source ID): Water (452939-003)	Method: EPA 350.1	Prep Method: METHOD

QC952938 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim	DF
Ammonia-N	2.371	ND	2.500	mg/L	95%		80-120	1	20	1

Type: Blank	Lab ID: QC952984	Batch: 277105
Matrix: Drinking Water	Method: EPA 300.0	Prep Method: METHOD

QC952984 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
Nitrogen, Nitrite	ND		mg/L	0.10	11/02/21 09:28	11/02/21 14:08
Nitrogen, Nitrate	ND		mg/L	0.10	11/02/21 09:28	11/02/21 14:08

Type: Lab Control Sample	Lab ID: QC952985	Batch: 277105
Matrix: Drinking Water	Method: EPA 300.0	Prep Method: METHOD

QC952985 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
Nitrogen, Nitrite	9.441	9.134	mg/L	103%		90-110
Nitrogen, Nitrate	9.201	9.036	mg/L	102%		90-110

ENTHALPY ANALYTICAL

Batch QC

Type:	**Matrix Spike**	**Lab ID:**	**QC952986**	**Batch:**	**277105**
Matrix (Source ID):	**Drinking Water (452918-001)**	**Method:**	**EPA 300.0**	**Prep Method:**	**METHOD**

QC952986 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	DF
Nitrogen, Nitrite	10.63	ND	9.134	mg/L	116%		80-120	1
Nitrogen, Nitrate	9.562	ND	9.036	mg/L	106%		80-120	1

Type:	**Matrix Spike Duplicate**	**Lab ID:**	**QC952987**	**Batch:**	**277105**
Matrix (Source ID):	**Drinking Water (452918-001)**	**Method:**	**EPA 300.0**	**Prep Method:**	**METHOD**

QC952987 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim	DF
Nitrogen, Nitrite	10.41	ND	9.134	mg/L	114%		80-120	2	20	1
Nitrogen, Nitrate	9.507	ND	9.036	mg/L	105%		80-120	1	20	1

Type:	**Blank**	**Lab ID:**	**QC953144**	**Batch:**	**277173**
Matrix:	**Water**	**Method:**	**SM 4500-CL-G**		

QC953144 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
Chlorine, Total Residual	ND		mg/L	0.10	11/02/21 17:41	11/02/21 17:41

Type:	**Lab Control Sample**	**Lab ID:**	**QC953145**	**Batch:**	**277173**
Matrix:	**Water**	**Method:**	**SM 4500-CL-G**		

QC953145 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
Chlorine, Total Residual	0.9620	1.000	mg/L	96%		80-120

Type:	**Sample Duplicate**	**Lab ID:**	**QC953146**	**Batch:**	**277173**
Matrix (Source ID):	**Water (452939-003)**	**Method:**	**SM 4500-CL-G**		

QC953146 Analyte	Result	Source Sample Result	Units	Qual	RPD	RPD Lim	DF
Chlorine, Total Residual	ND	ND	mg/L			20	1

Type:	**Blank**	**Lab ID:**	**QC953340**	**Batch:**	**277245**
Matrix:	**Water**	**Method:**	**SM 4500-P-E**		

QC953340 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
Orthophosphate as P	ND		mg/L	0.020	11/03/21 07:00	11/03/21 07:17
Orthophosphate as PO4	ND		mg/L	0.060	11/03/21 07:00	11/03/21 07:17

ENTHALPY ANALYTICAL

Batch QC

Type: Lab Control Sample	**Lab ID:** QC953341	**Batch:** 277245
Matrix: Water	**Method:** SM 4500-P-E	

QC953341 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
Orthophosphate as P	0.4050	0.4000	mg/L	101%		80-120
Orthophosphate as PO4	1.242	1.230	mg/L	101%		80-120

Type: Matrix Spike	**Lab ID:** QC953342	**Batch:** 277245
Matrix (Source ID): Drinking Water (453036-003)	**Method:** SM 4500-P-E	

QC953342 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	DF
Orthophosphate as P	0.9380	0.1370	0.8000	mg/L	100%		75-125	2
Orthophosphate as PO4	2.876	0.4200	2.460	mg/L	100%		75-125	2

Type: Matrix Spike Duplicate	**Lab ID:** QC953343	**Batch:** 277245
Matrix (Source ID): Drinking Water (453036-003)	**Method:** SM 4500-P-E	

QC953343 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim	DF
Orthophosphate as P	0.9360	0.1370	0.8000	mg/L	100%		75-125	0	20	2
Orthophosphate as PO4	2.870	0.4200	2.460	mg/L	100%		75-125	0	20	2

Type: Blank	**Lab ID:** QC953419	**Batch:** 277271
Matrix: Water	**Method:** EPA 351.2	**Prep Method:** METHOD

QC953419 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
Nitrogen, Total Kjeldahl	ND		mg/L	0.20	11/04/21	11/04/21

Type: Lab Control Sample	**Lab ID:** QC953420	**Batch:** 277271
Matrix: Water	**Method:** EPA 351.2	**Prep Method:** METHOD

QC953420 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
Nitrogen, Total Kjeldahl	2.461	2.500	mg/L	98%		90-110

Type: Matrix Spike	**Lab ID:** QC953421	**Batch:** 277271
Matrix (Source ID): Water (452939-001)	**Method:** EPA 351.2	**Prep Method:** METHOD

QC953421 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	DF
Nitrogen, Total Kjeldahl	11.64	0.3531	12.50	mg/L	90%		90-110	2.5

ENTHALPY ANALYTICAL

Batch QC

Type:	Matrix Spike Duplicate	Lab ID:	QC953422	Batch:	277271
Matrix (Source ID):	Water (452939-001)	Method:	EPA 351.2	Prep Method:	METHOD

QC953422 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim	DF
Nitrogen, Total Kjeldahl	11.97	0.3531	12.50	mg/L	93%		90-110	3	20	2.5

Type:	Blank	Lab ID:	QC953423	Batch:	277272
Matrix:	Water	Method:	EPA 351.2	Prep Method:	METHOD

QC953423 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
Nitrogen, Total Kjeldahl	ND		mg/L	0.20	11/04/21	11/04/21

Type:	Lab Control Sample	Lab ID:	QC953424	Batch:	277272
Matrix:	Water	Method:	EPA 351.2	Prep Method:	METHOD

QC953424 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
Nitrogen, Total Kjeldahl	2.450	2.500	mg/L	98%		90-110

Type:	Matrix Spike	Lab ID:	QC953425	Batch:	277272
Matrix (Source ID):	Water (452939-003)	Method:	EPA 351.2	Prep Method:	METHOD

QC953425 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	DF
Nitrogen, Total Kjeldahl	13.24	0.2207	12.50	mg/L	104%		90-110	2.5

Type:	Matrix Spike Duplicate	Lab ID:	QC953426	Batch:	277272
Matrix (Source ID):	Water (452939-003)	Method:	EPA 351.2	Prep Method:	METHOD

QC953426 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim	DF
Nitrogen, Total Kjeldahl	13.35	0.2207	12.50	mg/L	105%		90-110	1	20	2.5

Type:	Blank	Lab ID:	QC953427	Batch:	277273
Matrix:	Water	Method:	EPA 351.2	Prep Method:	METHOD

QC953427 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
Nitrogen, Total Kjeldahl	ND		mg/L	0.20	11/04/21	11/04/21

ENTHALPY ANALYTICAL

Batch QC

Type: Lab Control Sample	Lab ID: QC953428	Batch: 277273
Matrix: Water	Method: EPA 351.2	Prep Method: METHOD

QC953428 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
Nitrogen, Total Kjeldahl	2.429	2.500	mg/L	97%		90-110

Type: Matrix Spike	Lab ID: QC953429	Batch: 277273
Matrix (Source ID): Water (452939-002)	Method: EPA 351.2	Prep Method: METHOD

QC953429 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	DF
Nitrogen, Total Kjeldahl	13.00	0.3174	12.50	mg/L	101%		90-110	2.5

Type: Matrix Spike Duplicate	Lab ID: QC953430	Batch: 277273
Matrix (Source ID): Water (452939-002)	Method: EPA 351.2	Prep Method: METHOD

QC953430 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim	DF
Nitrogen, Total Kjeldahl	12.99	0.3174	12.50	mg/L	101%		90-110	0	20	2.5

Type: Blank	Lab ID: QC953870	Batch: 277429
Matrix: Water	Method: SM 4500-P-B5-E	

QC953870 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
Phosphorus	ND		mg/L	0.020	11/05/21	11/05/21

Type: Lab Control Sample	Lab ID: QC953871	Batch: 277429
Matrix: Water	Method: SM 4500-P-B5-E	

QC953871 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
Phosphorus	0.4140	0.4000	mg/L	104%		80-120

Type: Matrix Spike	Lab ID: QC953872	Batch: 277429
Matrix (Source ID): Water (452939-003)	Method: SM 4500-P-B5-E	

QC953872 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	DF
Phosphorus	0.9625	0.02800	1.000	mg/L	93%		75-125	2.5

ENTHALPY ANALYTICAL

Batch QC

Type:	**Matrix Spike Duplicate**	**Lab ID:**	**QC953873**	**Batch:**	**277429**
Matrix (Source ID):	**Water (452939-003)**	**Method:**	**SM 4500-P-B5-E**		

QC953873 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim	DF
Phosphorus	0.9625	0.02800	1.000	mg/L	93%		75-125	0	20	2.5

ND Not Detected

Laboratory Job Number 452939

Subcontracted Products

BSK Associates

BSK Associates Laboratory Fresno
1414 Stanislaus St
Fresno, CA 93706
559-497-2888 (Main)

AEK0753
11/22/2021
Invoice: AE26532

Diane Galvan
Enthalpy Analytical, Inc.
931 West Barkley Avenue
Orange, CA 92868

RE: Report for AEK0753 General - Diane Galvan

Dear Diane Galvan,

Thank you for using BSK Associates for your analytical testing needs. In the following pages, you will find the test results for the samples submitted to our laboratory on 11/4/2021. The results have been approved for release by our Laboratory Director as indicated by the authorizing signature below.

The samples were analyzed for the test(s) indicated on the Chain of Custody (see attached) and the results relate only to the samples analyzed. BSK certifies that the testing was performed in accordance with the quality system requirements specified in the 2016 TNI Standard. Any deviations from this standard or from the method requirements for each test procedure performed will be annotated alongside the analytical result or noted in the Case Narrative. Unless otherwise noted, the sample results are reported on an “as received” basis.

If additional clarification of any information is required, please contact your Project Manager, Elaine M. Phillips , at 559-497-2888.

Thank you again for using BSK Associates. We value your business and appreciate your loyalty.

Sincerely,

Elaine M. Phillips, Project Manager

Accredited in Accordance with NELAP
ORELAP #4021

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

BSK ASSOCIATES

Case Narrative

Project and Report Details		Invoice Details	
Client:	Enthalpy Analytical, Inc.	**Invoice To:**	Enthalpy Analytical, Inc.
Report To:	Diane Galvan	**Invoice Attn:**	Montrose Environmental Group
Project #:	EO-452939	**Project PO#:**	018066
Received:	11/04/2021 - 09:57		
Report Due:	11/18/2021		

Sample Receipt Conditions

Cooler: Default Cooler
Temperature on Receipt ºC: 4.3

Containers Intact
COC/Labels Agree
Received On Wet Ice
Packing Material - Other
Sample(s) were received in temperature range.
Initial receipt at BSK-FAL

Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

BS	Blank spike recoveries did not meet acceptance limits.
BS1.0	Blank spike recovery for this analyte was above upper control limit; no material impact on reported result as sample is ND for this parameter.
BS3.0	BS/BSD RPD exceeded the acceptance limit. Recovery met acceptance criteria.
MS1.0	Matrix spike recoveries exceed control limits.

Report Distribution

Recipient(s)	Report Format	CC:
Diane Galvan	FINAL.RPT	incomingreports@enthalpy.com

Certificate of Analysis

Sample ID: AEK0753-01
Sampled By: Client
Sample Description: Ponds Inlet // 452939-001

Sample Date - Time: 11/01/2021 - 11:45
Matrix: Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Organochlorine Pesticides and PCBs by GC-ECD									
4,4'-DDD	EPA 608.3	ND	0.050	ug/L	1	AEK0455	11/08/21	11/18/21	
4,4'-DDE	EPA 608.3	ND	0.050	ug/L	1	AEK0455	11/08/21	11/18/21	
4,4'-DDT	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Aldrin	EPA 608.3	ND	0.0050	ug/L	1	AEK0455	11/08/21	11/18/21	
alpha-BHC	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
alpha-Chlordane	EPA 608.3	ND	0.10	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1016	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1221	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1232	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1242	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1248	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1254	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1260	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
beta-BHC	EPA 608.3	ND	0.0050	ug/L	1	AEK0455	11/08/21	11/18/21	
Chlordane (Technical)	EPA 608.3	ND	0.10	ug/L	1	AEK0455	11/08/21	11/18/21	
delta-BHC	EPA 608.3	ND	0.0050	ug/L	1	AEK0455	11/08/21	11/18/21	
Dieldrin	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Endosulfan I	EPA 608.3	ND	0.020	ug/L	1	AEK0455	11/08/21	11/18/21	
Endosulfan II	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Endosulfan Sulfate	EPA 608.3	ND	0.050	ug/L	1	AEK0455	11/08/21	11/18/21	
Endrin	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Endrin Aldehyde	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	BS1.0
gamma-Chlordane	EPA 608.3	ND	0.10	ug/L	1	AEK0455	11/08/21	11/18/21	
Heptachlor	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Heptachlor Epoxide	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Lindane	EPA 608.3	ND	0.020	ug/L	1	AEK0455	11/08/21	11/18/21	
Toxaphene	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Surrogate: TCMX	EPA 608.3	111 %	*Acceptable range: 26-144 %*						

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Certificate of Analysis

Sample ID: AEK0753-02
Sampled By: Client
Sample Description: Ponds Outlet // 452939-002

Sample Date - Time: 11/01/2021 - 10:40
Matrix: Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Organochlorine Pesticides and PCBs by GC-ECD									
4,4'-DDD	EPA 608.3	ND	0.050	ug/L	1	AEK0455	11/08/21	11/18/21	
4,4'-DDE	EPA 608.3	ND	0.050	ug/L	1	AEK0455	11/08/21	11/18/21	
4,4'-DDT	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Aldrin	EPA 608.3	ND	0.0050	ug/L	1	AEK0455	11/08/21	11/18/21	
alpha-BHC	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
alpha-Chlordane	EPA 608.3	ND	0.10	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1016	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1221	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1232	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1242	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1248	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1254	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1260	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
beta-BHC	EPA 608.3	ND	0.0050	ug/L	1	AEK0455	11/08/21	11/18/21	
Chlordane (Technical)	EPA 608.3	ND	0.10	ug/L	1	AEK0455	11/08/21	11/18/21	
delta-BHC	EPA 608.3	ND	0.0050	ug/L	1	AEK0455	11/08/21	11/18/21	
Dieldrin	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Endosulfan I	EPA 608.3	ND	0.020	ug/L	1	AEK0455	11/08/21	11/18/21	
Endosulfan II	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Endosulfan Sulfate	EPA 608.3	ND	0.050	ug/L	1	AEK0455	11/08/21	11/18/21	
Endrin	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Endrin Aldehyde	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	BS1.0
gamma-Chlordane	EPA 608.3	ND	0.10	ug/L	1	AEK0455	11/08/21	11/18/21	
Heptachlor	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Heptachlor Epoxide	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Lindane	EPA 608.3	ND	0.020	ug/L	1	AEK0455	11/08/21	11/18/21	
Toxaphene	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Surrogate: TCMX	EPA 608.3	116 %	*Acceptable range: 26-144 %*						

Certificate of Analysis

Sample ID: AEK0753-03
Sampled By: Client
Sample Description: Haines Creek Exit // 452939-003

Sample Date - Time: 11/01/2021 - 09:45
Matrix: Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Organochlorine Pesticides and PCBs by GC-ECD									
4,4'-DDD	EPA 608.3	ND	0.050	ug/L	1	AEK0455	11/08/21	11/18/21	
4,4'-DDE	EPA 608.3	ND	0.050	ug/L	1	AEK0455	11/08/21	11/18/21	
4,4'-DDT	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Aldrin	EPA 608.3	ND	0.0050	ug/L	1	AEK0455	11/08/21	11/18/21	
alpha-BHC	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
alpha-Chlordane	EPA 608.3	ND	0.10	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1016	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1221	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1232	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1242	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1248	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1254	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Aroclor-1260	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
beta-BHC	EPA 608.3	ND	0.0050	ug/L	1	AEK0455	11/08/21	11/18/21	
Chlordane (Technical)	EPA 608.3	ND	0.10	ug/L	1	AEK0455	11/08/21	11/18/21	
delta-BHC	EPA 608.3	ND	0.0050	ug/L	1	AEK0455	11/08/21	11/18/21	
Dieldrin	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Endosulfan I	EPA 608.3	ND	0.020	ug/L	1	AEK0455	11/08/21	11/18/21	
Endosulfan II	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Endosulfan Sulfate	EPA 608.3	ND	0.050	ug/L	1	AEK0455	11/08/21	11/18/21	
Endrin	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Endrin Aldehyde	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	BS1.0
gamma-Chlordane	EPA 608.3	ND	0.10	ug/L	1	AEK0455	11/08/21	11/18/21	
Heptachlor	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Heptachlor Epoxide	EPA 608.3	ND	0.010	ug/L	1	AEK0455	11/08/21	11/18/21	
Lindane	EPA 608.3	ND	0.020	ug/L	1	AEK0455	11/08/21	11/18/21	
Toxaphene	EPA 608.3	ND	0.50	ug/L	1	AEK0455	11/08/21	11/18/21	
Surrogate: TCMX	EPA 608.3	111 %	*Acceptable range: 26-144 %*						

BSK Associates Laboratory Fresno

Organics Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
EPA 608.3 - Quality Control											
Batch: AEK0455										Prepared: 11/8/2021	
Prep Method: EPA 3510C										Analyst: PNN	
Blank (AEK0455-BLK1)											
4,4'-DDD	ND	0.0050	ug/L							11/18/21	
4,4'-DDE	ND	0.0050	ug/L							11/18/21	
4,4'-DDT	ND	0.0050	ug/L							11/18/21	
Aldrin	ND	0.0050	ug/L							11/18/21	
alpha-BHC	ND	0.0050	ug/L							11/18/21	
alpha-Chlordane	ND	0.010	ug/L							11/18/21	
Aroclor-1016	ND	0.50	ug/L							11/18/21	
Aroclor-1221	ND	0.50	ug/L							11/18/21	
Aroclor-1232	ND	0.50	ug/L							11/18/21	
Aroclor-1242	ND	0.50	ug/L							11/18/21	
Aroclor-1248	ND	0.50	ug/L							11/18/21	
Aroclor-1254	ND	0.50	ug/L							11/18/21	
Aroclor-1260	ND	0.50	ug/L							11/18/21	
beta-BHC	ND	0.0050	ug/L							11/18/21	
Chlordane (Technical)	ND	0.10	ug/L							11/18/21	
delta-BHC	ND	0.0050	ug/L							11/18/21	
Dieldrin	ND	0.0050	ug/L							11/18/21	
Endosulfan I	ND	0.0050	ug/L							11/18/21	
Endosulfan II	ND	0.0050	ug/L							11/18/21	
Endosulfan Sulfate	ND	0.0050	ug/L							11/18/21	
Endrin	ND	0.0050	ug/L							11/18/21	
Endrin Aldehyde	ND	0.0050	ug/L							11/18/21	
gamma-Chlordane	ND	0.010	ug/L							11/18/21	
Heptachlor	ND	0.0050	ug/L							11/18/21	
Heptachlor Epoxide	ND	0.0050	ug/L							11/18/21	
Lindane	ND	0.0050	ug/L							11/18/21	
Toxaphene	ND	0.10	ug/L							11/18/21	
Surrogate: TCMX	*0.19*			*0.15*		*130*	*26-144*			11/18/21	
Blank Spike (AEK0455-BS1)											
4,4'-DDD	0.052	0.0050	ug/L	0.040	ND	130	50-150			11/18/21	
4,4'-DDE	0.052	0.0050	ug/L	0.040	ND	130	50-150			11/18/21	
4,4'-DDT	0.057	0.0050	ug/L	0.040	ND	143	50-150			11/18/21	
Aldrin	0.055	0.0050	ug/L	0.040	ND	137	50-150			11/18/21	
alpha-BHC	0.052	0.0050	ug/L	0.040	ND	130	50-150			11/18/21	
alpha-Chlordane	0.055	0.010	ug/L	0.040	ND	137	50-150			11/18/21	
beta-BHC	0.053	0.0050	ug/L	0.040	ND	132	50-150			11/18/21	
delta-BHC	0.051	0.0050	ug/L	0.040	ND	128	50-150			11/18/21	
Dieldrin	0.058	0.0050	ug/L	0.040	ND	145	50-150			11/18/21	
Endosulfan I	0.055	0.0050	ug/L	0.040	ND	137	50-150			11/18/21	
Endosulfan II	0.057	0.0050	ug/L	0.040	ND	142	50-150			11/18/21	
Endosulfan Sulfate	0.055	0.0050	ug/L	0.040	ND	137	50-150			11/18/21	
Endrin	0.057	0.0050	ug/L	0.040	ND	142	50-150			11/18/21	

BSK Associates Laboratory Fresno

Organics Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual	
EPA 608.3 - Quality Control												
Batch: AEK0455										Prepared: 11/8/2021		
Prep Method: EPA 3510C										Analyst: PNN		
Blank Spike (AEK0455-BS1)												
Endrin Aldehyde	0.066	0.0050	ug/L	0.040	ND	164	50-150			11/18/21	BS	***High***
gamma-Chlordane	0.054	0.010	ug/L	0.040	ND	135	50-150			11/18/21		
Heptachlor	0.031	0.0050	ug/L	0.040	ND	77	50-150			11/18/21		
Heptachlor Epoxide	0.055	0.0050	ug/L	0.040	ND	138	50-150			11/18/21		
Lindane	0.054	0.0050	ug/L	0.040	ND	134	50-150			11/18/21		
Surrogate: TCMX	*0.20*			*0.15*		*132*	*50-150*			11/18/21		
Blank Spike (AEK0455-BS2)												
Toxaphene	0.086	0.10	ug/L	0.080	ND	107	50-150			11/18/21		
Surrogate: TCMX	*0.15*			*0.15*		*102*	*50-150*			11/18/21		
Blank Spike (AEK0455-BS3)												
Aroclor-1016	0.87	0.50	ug/L	0.80	ND	109	50-150			11/18/21		
Aroclor-1260	0.85	0.50	ug/L	0.80	ND	107	50-150			11/18/21		
Surrogate: TCMX	*0.15*			*0.15*		*99*	*50-150*			11/18/21		
Blank Spike Dup (AEK0455-BSD1)												
4,4'-DDD	0.051	0.0050	ug/L	0.040	ND	129	50-150	1	20	11/18/21		
4,4'-DDE	0.049	0.0050	ug/L	0.040	ND	121	50-150	7	20	11/18/21		
4,4'-DDT	0.053	0.0050	ug/L	0.040	ND	132	50-150	8	20	11/18/21		
Aldrin	0.053	0.0050	ug/L	0.040	ND	133	50-150	3	20	11/18/21		
alpha-BHC	0.049	0.0050	ug/L	0.040	ND	123	50-150	6	20	11/18/21		
alpha-Chlordane	0.051	0.010	ug/L	0.040	ND	128	50-150	7	20	11/18/21		
beta-BHC	0.052	0.0050	ug/L	0.040	ND	129	50-150	3	20	11/18/21		
delta-BHC	0.048	0.0050	ug/L	0.040	ND	121	50-150	5	20	11/18/21		
Dieldrin	0.053	0.0050	ug/L	0.040	ND	133	50-150	9	20	11/18/21		
Endosulfan I	0.051	0.0050	ug/L	0.040	ND	127	50-150	8	20	11/18/21		
Endosulfan II	0.051	0.0050	ug/L	0.040	ND	129	50-150	10	20	11/18/21		
Endosulfan Sulfate	0.052	0.0050	ug/L	0.040	ND	130	50-150	5	20	11/18/21		
Endrin	0.054	0.0050	ug/L	0.040	ND	135	50-150	5	20	11/18/21		
Endrin Aldehyde	0.060	0.0050	ug/L	0.040	ND	151	50-150	8	20	11/18/21	BS	***High***
gamma-Chlordane	0.051	0.010	ug/L	0.040	ND	129	50-150	5	20	11/18/21		
Heptachlor	0.039	0.0050	ug/L	0.040	ND	97	50-150	24	20	11/18/21	BS3.0	
Heptachlor Epoxide	0.052	0.0050	ug/L	0.040	ND	129	50-150	7	20	11/18/21		
Lindane	0.050	0.0050	ug/L	0.040	ND	126	50-150	6	20	11/18/21		
Surrogate: TCMX	*0.19*			*0.15*		*126*	*50-150*			11/18/21		
Matrix Spike (AEK0455-MS1), Source: REK0036-03												
4,4'-DDD	0.039	0.0050	ug/L	0.038	ND	101	50-150			11/18/21		
4,4'-DDE	0.032	0.0050	ug/L	0.038	ND	83	50-150			11/18/21		
4,4'-DDT	0.039	0.0050	ug/L	0.038	ND	103	50-150			11/18/21		
Aldrin	0.031	0.0050	ug/L	0.038	ND	81	50-150			11/18/21		
alpha-BHC	0.034	0.0050	ug/L	0.038	ND	90	50-150			11/18/21		
alpha-Chlordane	0.033	0.010	ug/L	0.038	ND	86	50-150			11/18/21		

BSK Associates Laboratory Fresno

Organics Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
EPA 608.3 - Quality Control											
Batch: AEK0455										Prepared: 11/8/2021	
Prep Method: EPA 3510C										Analyst: PNN	
Matrix Spike (AEK0455-MS1), Source: REK0036-03											
beta-BHC	0.032	0.0050	ug/L	0.038	ND	84	50-150			11/18/21	
delta-BHC	0.033	0.0050	ug/L	0.038	ND	87	50-150			11/18/21	
Dieldrin	0.039	0.0050	ug/L	0.038	ND	103	50-150			11/18/21	
Endosulfan I	0.029	0.0050	ug/L	0.038	ND	75	50-150			11/18/21	
Endosulfan II	0.040	0.0050	ug/L	0.038	ND	104	50-150			11/18/21	
Endosulfan Sulfate	0.045	0.0050	ug/L	0.038	ND	117	50-150			11/18/21	
Endrin	0.037	0.0050	ug/L	0.038	ND	97	50-150			11/18/21	
Endrin Aldehyde	0.12	0.0050	ug/L	0.038	ND	313	50-150			11/18/21	MS1.0 ***High***
gamma-Chlordane	0.038	0.010	ug/L	0.038	ND	99	50-150			11/18/21	
Heptachlor	0.029	0.0050	ug/L	0.038	ND	76	50-150			11/18/21	
Heptachlor Epoxide	0.030	0.0050	ug/L	0.038	ND	79	50-150			11/18/21	
Lindane	0.033	0.0050	ug/L	0.038	ND	86	50-150			11/18/21	
Surrogate: TCMX	*0.13*			*0.14*		*92*	*50-150*			11/18/21	

Certificate of Analysis

Notes:

- The Chain of Custody document and Sample Integrity Sheet are part of the analytical report.
- Any remaining sample(s) for testing will be disposed of according to BSK's sample retention policy unless other arrangements are made in advance.
- All positive results for EPA Methods 504.1 and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed.
- Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.
- J-value is equivalent to DNQ (Detected, not quantified) which is a trace value. A trace value is an analyte detected between the MDL and the laboratory reporting limit. This result is of an unknown data quality and is only qualitative (estimated). Baseline noise, calibration curve extrapolation below the lowest calibrator, method blank detections, and integration artifacts can all produce apparent DNQ values, which contribute to the un-reliability of these values.
- (1) - Residual chlorine and pH analysis have a 15 minute holding time for both drinking and waste water samples as defined by the EPA and 40 CFR 136. Waste water and ground water (monitoring well) samples must be field filtered to meet the 15 minute holding time for dissolved metals.
- Field tests are outside the scope of laboratory accreditation and there is no certification available for field testing.
- Summations of analytes (i.e. Total Trihalomethanes) may appear to add individual amounts incorrectly, due to rounding of analyte values occurring before or after the total value is calculated, as well as rounding of the total value.
- RL Multiplier is the factor used to adjust the reporting limit (RL) due to variations in sample preparation procedures and dilutions required for matrix interferences.
- Due to the subjective nature of the Threshold Odor Method, all characterizations of the detected odor are the opinion of the panel of analysts. The characterizations can be found in Standard Methods 2170B Figure 2170:1.
- The MCLs provided in this report (if applicable) represent the primary MCLs for that analyte.
- (2) - Formerly known as Bis(2-Chloroisopropyl) ether.

Definitions

mg/L:	Milligrams/Liter (ppm)	MDL:	Method Detection Limit	MDA95:	Min. Detected Activity
mg/Kg:	Milligrams/Kilogram (ppm)	RL:	Reporting Limit: DL x Dilution	MPN:	Most Probable Number
µg/L:	Micrograms/Liter (ppb)	ND:	None Detected below MRL/MDL	CFU:	Colony Forming Unit
µg/Kg:	Micrograms/Kilogram (ppb)	pCi/L:	PicoCuries per Liter	Absent:	Less than 1 CFU/100mLs
%:	Percent	RL Mult:	RL Multiplier	Present:	1 or more CFU/100mLs
NR:	Non-Reportable	MCL:	Maximum Contaminant Limit	U:	The analyte was not detected at or above the reported sample quantitation limit.

Please see the individual Subcontract Lab's report for applicable certifications.

BSK is not accredited under the NELAP program for the following parameters: **NA**

Certificate of Analysis

Certifications: **Please refer to our website for a copy of our Accredited Fields of Testing under each certification.**

Fresno

State of California - ELAP	1180	State of Hawaii	4021
Los Angeles CSD	9254479	NELAP certified	4021-018
State of Nevada	CA000792022-1	State of Oregon - NELAP	4021-018
EPA - UCMR4	CA00079	State of Washington	C997-21a

Sacramento

State of California - ELAP	2435		

San Bernardino

State of California - ELAP	2993	Los Angeles CSD	9254478
NELAP certified	4119-006	State of Oregon - NELAP	4119-006

Vancouver

NELAP certified	WA100008-014	State of Oregon - NELAP	WA100008-014
State of Washington	C824-21		

AEK0753 Entha6900 11/04/2021

BSK Associates SR-FL-0002-22

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Sample Integrity

BSK Bottles: Yes No Page 1 of 1

COC Info

Was temperature within range? Chemistry ≤ 6°C Micro < 8°C	Yes No NA	Were correct containers and preservatives received for the tests requested?	Yes No NA
If samples were taken today, is there evidence that chilling has begun?	Yes No NA	Bubbles Present VOAs (524.2/TTHM/TCP)? TB Received? (Check Method Below)	Yes No NA Yes No NA
Did all bottles arrive unbroken and intact?	Yes No	Was a sufficient amount of sample received?	Yes No
Did all bottle labels agree with COC?	Yes No	Do samples have a hold time <72 hours?	Yes No
Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes NA	Was PM notified of discrepancies? PM: By/Time:	Yes No NA

Bottles Received — "—" means preservation/chlorine checks are either N/A or are performed in the lab

250ml(A) 500ml(B) 1Liter(C) 40mlVOA(V) 125ml(D)	Checks*	Passed?	[-]				
Bacti $Na_2S_2O_3$	—	—					
None (P) White Cap	—	—					
Cr6 (P) Lt. Green Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **DW**	Cl, pH > 8	P F					
Cr6 (P) Pink Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **WW**	pH 9.3-9.7	P F					
Cr6 (P) Black Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **7199** ***24 HOUR HOLD TIME***	pH 9.0-9.5	P F					
HNO_3 (P) Red Cap or HCl (P) Purple Cap/Lt. Blue Label	—	—					
H_2SO_4 (P) or (AG) Yellow Cap/Label	pH < 2	P F					
NaOH (P) Green Cap	Cl, pH >10	P F					
NaOH + ZnAc (P)	pH > 9	P F					
Dissolved Oxygen 300ml (g)	—	—					
None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270	—	—	IC			EC 1/5 9	
HCl (AG) Lt. Blue Label O&G, Diesel, **TCP**	—	—					
Ascorbic, EDTA, KH_2Ct (AG) Pink Label 525	—	—					
Na_2SO_3 250mL (AG) Neon Green Label 515	—	—					
$Na_2S_2O_3$ 1 Liter (Brown P) 549	—	—					
$Na_2S_2O_3$ (AG) Blue Label 548, THM, 524	—	—					
$Na_2S_2O_3$ (CG) Blue Label 504, 505, 547	—	—					
$Na_2S_2O_3$ + MCAA (CG) Orange Label 531	pH < 3	P F					
NH_4Cl (AG) Purple Label 552	—	—					
EDA (P) or (AG) Brown Label DBPs	—	—					
HCL (CG) 524.2,BTEX,Gas, MTBE, 8260/624	—	—					
Buffer pH 4 (CG)	—	—					
H_3PO_4 (CG) Salmon Label	—	—					
Trizma – EPA 537.1 - **Field Blank Required**							
Other:							
Asbestos 1L (P) w/ Foil / LL Metals Bottle	—	—					
Bottled Water	—	—					
Clear Glass 125mL / 250mL / 500mL / 1 Liter	—	—					
Solids: Brass / Steel / Plastic Bag	—	—					

Split

	Container	Preservative	Date/Time/Initials		Container	Preservative	Date/Time/Initials
S P				S P			
S P				S P			

Comments

*Preservation check completed by lab performing analysis.

✓ **Indicates Blanks Received**

504 ___ 524.2 ___ TTHM ___ 537.1 ___ TCP___

✓ **MS/MSD Received Method:** _____

Scanned: VCH Rush/Short HT Page: _____ Time: _____

ENTHALPY

AEK0753 Entha6900 11/04/2021

10

Enthalpy Analytical - Orange
Orange, CA 92868
(714) 771-6900 / Fax: (510) 486-0532

Subcontract Labora
BSK Associates
1414 Stanislaus Street
Fresno, CA 93706
ATTN: Elaine Phillips
PO #: 018066

4-3 #65

Enthalpy Order: EO-452939
PM: Diane Galvan
Email: diane.galvan@enthalpy.com
CC: incomingreports@enthalpy.com
Phone: 714-771-9928

Results Due: Standard TAT
Report Level: II
Report To: RL
EDDs: Standard Excel EDD (3 tab xls: SAMPDATE, QCDATA, LNOTE)

Notes:

Sample ID	Collected	Lab ID	# Cont.	Matrix	Analysis Requested	Comment
PONDS INLET	01-NOV-2021 11:45	452939-001	3	Water	~~EPA 547 Glyphosate~~	HOLD 11/15/21
				Water	EPA 608 Organochlorine Pesticides/PCBs	
PONDS OUTLET	01-NOV-2021 10:40	452939-002	3	Water	~~EPA 547 Glyphosate~~	
				Water	EPA 608 Organochlorine Pesticides/PCBs	
HAINES CREEK EXIT	01-NOV-2021 09:45	452939-003	3	Water	~~EPA 547 Glyphosate~~	
				Water	EPA 608 Organochlorine Pesticides/PCBs	

Notes:	Relinquished By:	Received By:
	Date: 11/04/21 1800	Date:
	Date:	Date:
		[signature] BSK
	Date:	Date: 11-4-21 @ 957

w/ GSU

BSK Associates Laboratory Fresno
1414 Stanislaus St
Fresno, CA 93706
559-497-2888 (Main)

AEK0829
11/19/2021
Invoice: AE26457

Diane Galvan
Enthalpy Analytical, Inc.
931 West Barkley Avenue
Orange, CA 92868

RE: Report for AEK0829 General - Diane Galvan

Dear Diane Galvan,

Thank you for using BSK Associates for your analytical testing needs. In the following pages, you will find the test results for the samples submitted to our laboratory on 11/5/2021. The results have been approved for release by our Laboratory Director as indicated by the authorizing signature below.

The samples were analyzed for the test(s) indicated on the Chain of Custody (see attached) and the results relate only to the samples analyzed. BSK certifies that the testing was performed in accordance with the quality system requirements specified in the 2016 TNI Standard. Any deviations from this standard or from the method requirements for each test procedure performed will be annotated alongside the analytical result or noted in the Case Narrative. Unless otherwise noted, the sample results are reported on an "as received" basis.

If additional clarification of any information is required, please contact your Project Manager, Elaine M. Phillips , at 559-497-2888.

Thank you again for using BSK Associates. We value your business and appreciate your loyalty.

Sincerely,

Elaine M. Phillips, Project Manager

Accredited in Accordance with NELAP
ORELAP #4021

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

BSK ASSOCIATES

Case Narrative

Project and Report Details		Invoice Details	
Client:	Enthalpy Analytical, Inc.	**Invoice To:**	Enthalpy Analytical, Inc.
Report To:	Diane Galvan	**Invoice Attn:**	Montrose Environmental Group
Project #:	EO-452939	**Project PO#:**	018066
Received:	11/05/2021 - 11:18		
Report Due:	11/19/2021		

Sample Receipt Conditions

Cooler: Default Cooler
Temperature on Receipt ºC: 1.0

Containers Intact
COC/Labels Agree
Received On Wet Ice
Packing Material - Bubble Wrap
Sample(s) were received in temperature range.
Initial receipt at BSK-FAL

Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

None applied

Report Distribution

Recipient(s)	Report Format	CC:
Diane Galvan	FINAL.RPT	incomingreports@enthalpy.com

Certificate of Analysis

Sample ID: AEK0829-01
Sampled By: Client
Sample Description: Ponds Inlet // 452939-001

Sample Date - Time: 11/01/2021 - 11:45
Matrix: Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Glyphosate by HPLC									
Glyphosate	EPA 547	ND	25	ug/L	1	AEK0430	11/06/21	11/08/21	
Surrogate: AMPA	EPA 547	117 %	*Acceptable range: 70-130 %*						

Certificate of Analysis

Sample ID: AEK0829-02
Sampled By: Client
Sample Description: Ponds Outlet // 452939-002

Sample Date - Time: 11/01/2021 - 10:40
Matrix: Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Glyphosate by HPLC									
Glyphosate	EPA 547	ND	25	ug/L	1	AEK0430	11/06/21	11/08/21	
Surrogate: AMPA	EPA 547	116 %	*Acceptable range: 70-130 %*						

Certificate of Analysis

Sample ID: AEK0829-03
Sampled By: Client
Sample Description: Haines Creek Exit // 452939-003

Sample Date - Time: 11/01/2021 - 09:45
Matrix: Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Glyphosate by HPLC									
Glyphosate	EPA 547	ND	25	ug/L	1	AEK0430	11/06/21	11/08/21	
Surrogate: AMPA	EPA 547	115 %	*Acceptable range: 70-130 %*						

BSK Associates Laboratory Fresno

Organics Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
EPA 547 - Quality Control											
Batch: AEK0430										Prepared: 11/6/2021	
Prep Method: EPA 547										Analyst: JNG	
Blank (AEK0430-BLK1)											
Glyphosate	ND	5.0	ug/L							11/08/21	
Surrogate: AMPA	*250*			*200*		*123*	*70-130*			11/08/21	
Blank Spike (AEK0430-BS1)											
Glyphosate	99	5.0	ug/L	100	ND	99	70-130			11/08/21	
Surrogate: AMPA	*240*			*200*		*122*	*70-130*			11/08/21	
Blank Spike Dup (AEK0430-BSD1)											
Glyphosate	91	5.0	ug/L	100	ND	91	70-130	8	30	11/08/21	
Surrogate: AMPA	*250*			*200*		*123*	*70-130*			11/08/21	
Matrix Spike (AEK0430-MS1), Source: REK0018-01											
Glyphosate	90	5.0	ug/L	100	ND	90	70-130			11/08/21	
Surrogate: AMPA	*240*			*200*		*120*	*70-130*			11/08/21	
Matrix Spike Dup (AEK0430-MSD1), Source: REK0018-01											
Glyphosate	93	5.0	ug/L	100	ND	93	70-130	4	30	11/08/21	
Surrogate: AMPA	*240*			*200*		*118*	*70-130*			11/08/21	

Certificate of Analysis

Notes:

- The Chain of Custody document and Sample Integrity Sheet are part of the analytical report.
- Any remaining sample(s) for testing will be disposed of according to BSK's sample retention policy unless other arrangements are made in advance.
- All positive results for EPA Methods 504.1 and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed.
- Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.
- J-value is equivalent to DNQ (Detected, not quantified) which is a trace value. A trace value is an analyte detected between the MDL and the laboratory reporting limit. This result is of an unknown data quality and is only qualitative (estimated). Baseline noise, calibration curve extrapolation below the lowest calibrator, method blank detections, and integration artifacts can all produce apparent DNQ values, which contribute to the un-reliability of these values.
- (1) - Residual chlorine and pH analysis have a 15 minute holding time for both drinking and waste water samples as defined by the EPA and 40 CFR 136. Waste water and ground water (monitoring well) samples must be field filtered to meet the 15 minute holding time for dissolved metals.
- Field tests are outside the scope of laboratory accreditation and there is no certification available for field testing.
- Summations of analytes (i.e. Total Trihalomethanes) may appear to add individual amounts incorrectly, due to rounding of analyte values occurring before or after the total value is calculated, as well as rounding of the total value.
- RL Multiplier is the factor used to adjust the reporting limit (RL) due to variations in sample preparation procedures and dilutions required for matrix interferences.
- Due to the subjective nature of the Threshold Odor Method, all characterizations of the detected odor are the opinion of the panel of analysts. The characterizations can be found in Standard Methods 2170B Figure 2170:1.
- The MCLs provided in this report (if applicable) represent the primary MCLs for that analyte.
- (2) - Formerly known as Bis(2-Chloroisopropyl) ether.

Definitions

mg/L:	Milligrams/Liter (ppm)	MDL:	Method Detection Limit	MDA95:	Min. Detected Activity
mg/Kg:	Milligrams/Kilogram (ppm)	RL:	Reporting Limit: DL x Dilution	MPN:	Most Probable Number
µg/L:	Micrograms/Liter (ppb)	ND:	None Detected below MRL/MDL	CFU:	Colony Forming Unit
µg/Kg:	Micrograms/Kilogram (ppb)	pCi/L:	PicoCuries per Liter	Absent:	Less than 1 CFU/100mLs
%:	Percent	RL Mult:	RL Multiplier	Present:	1 or more CFU/100mLs
NR:	Non-Reportable	MCL:	Maximum Contaminant Limit	U:	The analyte was not detected at or above the reported sample quantitation limit.

Please see the individual Subcontract Lab's report for applicable certifications.

BSK is not accredited under the NELAP program for the following parameters: **NA**

Certificate of Analysis

Certifications: **Please refer to our website for a copy of our Accredited Fields of Testing under each certification.**

Fresno

State of California - ELAP	1180	State of Hawaii	4021
Los Angeles CSD	9254479	NELAP certified	4021-018
State of Nevada	CA000792022-1	State of Oregon - NELAP	4021-018
EPA - UCMR4	CA00079	State of Washington	C997-21a

Sacramento

State of California - ELAP	2435		

San Bernardino

State of California - ELAP	2993	Los Angeles CSD	9254478
NELAP certified	4119-006	State of Oregon - NELAP	4119-006

Vancouver

NELAP certified	WA100008-014	State of Oregon - NELAP	WA100008-014
State of Washington	C824-21		

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AEK0829 Entha6900 11/05/2021 10

Enthalpy Analytical - Orange
Orange, CA 92868
(714) 771-6900 / Fax: (510) 486-0532

Subcontract Laboratory:
BSK Associates
1414 Stanislaus Street
Fresno, CA 93706
ATTN: Elaine Phillips
PO #: TBD

1.0 #65
5()
WI 18W

Enthalpy Order: EO-452939
PM: Diane Galvan
Email: diane.galvan@enthalpy.com
CC: incomingreports@enthalpy.com
Phone: 714-771-9928

Results Due: Standard TAT
Report Level: II
Report To: RL
EDDs: Standard Excel EDD (3 tab xls: SAMPDATE, QCDATA, LNOTE)

Notes:

Sample ID	Collected	Lab ID	# Cont.	Matrix	Analysis Requested	Comment
PONDS INLET	01-NOV-2021 11:45	452939-001	3	Water	EPA 547 Glyphosate	
PONDS OUTLET	01-NOV-2021 10:40	452939-002	3	Water	EPA 547 Glyphosate	
HAINES CREEK EXIT	01-NOV-2021 09:45	452939-003	3	Water	EPA 547 Glyphosate	

Notes:	Relinquished By:	Received By:
	Date: 11/4/21 1930	Date: 11-5-21
	Date:	Date:
		Veronica
	Date:	Date: 11-5-21 11:19

BSK Associates SR-FL-0002-22

AEK0829 Entha6900 11/05/2021

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Sample Integrity

BSK Bottles: Yes (No) Page 1 of 1

COC Info

Was temperature within range? Chemistry ≤ 6°C Micro < 8°C	(Yes) No NA	Were correct containers and preservatives received for the tests requested?	(Yes) No NA
If samples were taken today, is there evidence that chilling has begun?	Yes No (NA)	Bubbles Present VOAs (524.2/TTHM/TCP)? TB Received? (Check Method Below)	Yes No (NA) Yes No (NA)
Did all bottles arrive unbroken and intact?	(Yes) No	Was a sufficient amount of sample received?	(Yes) No
Did all bottle labels agree with COC?	(Yes) No	Do samples have a hold time <72 hours?	Yes (No)
Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes (NA)	Was PM notified of discrepancies? PM: By/Time:	Yes No (NA)

Bottles Received

"—" means preservation/chlorine checks are either N/A or are performed in the lab

250ml(A) 500ml(B) 1Liter(C) 40mlVOA(V) 125ml(D)	Checks*	Passed?	1-3				
Bacti $Na_2S_2O_3$	—	—					
None (P) White Cap	—	—					
Cr6 (P) Lt. Green Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **DW**	Cl, pH > 8	P F					
Cr6 (P) Pink Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **WW**	pH 9.3-9.7	P F					
Cr6 (P) Black Label/Blue Cap $NH_4OH(NH_4)_2SO_4$ **7199** ***24 HOUR HOLD TIME***	pH 9.0-9.5	P F					
HNO_3 (P) Red Cap or HCl (P) Purple Cap/Lt. Blue Label	—	—					
H_2SO_4 (P) or (AG) Yellow Cap/Label	pH < 2	P F					
NaOH (P) Green Cap	Cl, pH >10	P F					
NaOH + ZnAc (P)	pH > 9	P F					
Dissolved Oxygen 300ml (g)	—	—					
None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270	—	—					
HCl (AG) Lt. Blue Label O&G, Diesel, **TCP**	—	—					
Ascorbic, EDTA, KH_2Ct (AG) Pink Label 525	—	—					VCH 11-5-21
Na_2SO_3 250mL (AG) Neon Green Label 515	—	—					
$Na_2S_2O_3$ 1 Liter (Brown P) 549	—	—					
$Na_2S_2O_3$ (AG) Blue Label 548, THM, 524	—	—	2V				
$Na_2S_2O_3$ (CG) Blue Label 504, 505, 547	—	—					
$Na_2S_2O_3$ + MCAA (CG) Orange Label 531	pH < 3	P F					
NH_4Cl (AG) Purple Label 552	—	—					
EDA (P) or (AG) Brown Label DBPs	—	—					
HCL (CG) 524.2,BTEX,Gas, MTBE, 8260/624	—	—					
Buffer pH 4 (CG)	—	—					
H_3PO_4 (CG) Salmon Label	—	—					
Trizma – EPA 537.1 - **Field Blank Required**							
Other:							
Asbestos 1L (P) w/ Foil / LL Metals Bottle	—	—					
Bottled Water	—	—					
Clear Glass 125mL / 250mL / 500mL / 1 Liter	—	—					
Solids: Brass / Steel / Plastic Bag	—	—					

Split

	Container	Preservative	Date/Time/Initials		Container	Preservative	Date/Time/Initials
S P				S P			
S P				S P			

Comments

*Preservation check completed by lab performing analysis.

✓ Indicates Blanks Received

504 ___ 524.2 ___ TTHM ___ 537.1 ___ TCP___

✓ MS/MSD Received Method: _____

Scanned: _____ Rush/Short HT Page: _____ Time: _____

Laboratory Job Number 452939

Subcontracted Products

Eurofins CalScience

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Calscience LLC
7440 Lincoln Way
Garden Grove, CA 92841
Tel: (714)895-5494

Laboratory Job ID: 570-74765-1
Client Project/Site: 452939

For:
Enthalpy Analytical LLC
931 W. Barkley Ave
Orange, California 92868

Attn: Diane Galvan

Authorized for release by:
11/17/2021 6:36:35 PM

Xuan Dang, Project Manager I
(714)895-5494
Xuan.Dang@eurofinset.com

Table of Contents

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QC Sample Results 9
QC Association Summary 11
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Sample Summary 15
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Definitions/Glossary

Client: Enthalpy Analytical LLC
Project/Site: 452939

Job ID: 570-74765-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Enthalpy Analytical LLC
Project/Site: 452939

Job ID: 570-74765-1

Job ID: 570-74765-1

Laboratory: Eurofins Calscience LLC

Narrative

Job Narrative
570-74765-1

Comments
No additional comments.

Receipt
The samples were received on 11/3/2021 5:32 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.9º C.

GC Semi VOA
Method 8141A: The closing continuing calibration verification (CCVC) associated with batch 570-192862 recovered above the upper control limit for Azinphos-methyl, Bolstar, Coumaphos, Dichlorvos, Merphos, Mevinphos and Trichloronate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

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

Organic Prep
Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-192600. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.
Method 8141A

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

Detection Summary

Client: Enthalpy Analytical LLC
Project/Site: 452939

Job ID: 570-74765-1

Client Sample ID: PONDS INLET — Lab Sample ID: 570-74765-1

No Detections.

Client Sample ID: PONDS OUTLET — Lab Sample ID: 570-74765-2

No Detections.

Client Sample ID: HAINES CREEK EXIT — Lab Sample ID: 570-74765-3

No Detections.

This Detection Summary does not include radiochemical test results.

Method: 8141A - Organophosphorous Pesticides (GC)

Client Sample ID: PONDS INLET
Date Collected: 11/01/21 11:45
Date Received: 11/03/21 17:32

Lab Sample ID: 570-74765-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Azinphos-methyl	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 00:49	1
Bolstar	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 00:49	1
Chlorpyrifos	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 00:49	1
Coumaphos	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 00:49	1
Demeton-o/s	ND		0.0096		mg/L		11/08/21 12:06	11/10/21 00:49	1
Diazinon	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 00:49	1
Dichlorvos	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 00:49	1
Disulfoton	ND		0.0096		mg/L		11/08/21 12:06	11/10/21 00:49	1
Ethoprop	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 00:49	1
Fensulfothion	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 00:49	1
Fenthion	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 00:49	1
Merphos	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 00:49	1
Methyl parathion	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 00:49	1
Mevinphos	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 00:49	1
Naled	ND		0.038		mg/L		11/08/21 12:06	11/10/21 00:49	1
Phorate	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 00:49	1
Ronnel	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 00:49	1
Stirophos	ND		0.019		mg/L		11/08/21 12:06	11/10/21 00:49	1
Tokuthion	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 00:49	1
Trichloronate	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 00:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tributyl phosphate	*84*		*30 - 151*	*11/08/21 12:06*	*11/10/21 00:49*	*1*

Client Sample ID: PONDS OUTLET
Date Collected: 11/01/21 10:40
Date Received: 11/03/21 17:32

Lab Sample ID: 570-74765-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Azinphos-methyl	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 01:37	1
Bolstar	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 01:37	1
Chlorpyrifos	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 01:37	1
Coumaphos	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 01:37	1
Demeton-o/s	ND		0.0096		mg/L		11/08/21 12:06	11/10/21 01:37	1
Diazinon	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 01:37	1
Dichlorvos	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 01:37	1
Disulfoton	ND		0.0096		mg/L		11/08/21 12:06	11/10/21 01:37	1
Ethoprop	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 01:37	1
Fensulfothion	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 01:37	1
Fenthion	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 01:37	1
Merphos	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 01:37	1
Methyl parathion	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 01:37	1
Mevinphos	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 01:37	1
Naled	ND		0.038		mg/L		11/08/21 12:06	11/10/21 01:37	1
Phorate	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 01:37	1
Ronnel	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 01:37	1
Stirophos	ND		0.019		mg/L		11/08/21 12:06	11/10/21 01:37	1
Tokuthion	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 01:37	1
Trichloronate	ND		0.0048		mg/L		11/08/21 12:06	11/10/21 01:37	1

Method: 8141A - Organophosphorous Pesticides (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tributyl phosphate	*75*		*30 - 151*	*11/08/21 12:06*	*11/10/21 01:37*	*1*

Client Sample ID: HAINES CREEK EXIT
Date Collected: 11/01/21 09:45
Date Received: 11/03/21 17:32

Lab Sample ID: 570-74765-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Azinphos-methyl	ND		0.0050		mg/L		11/08/21 12:06	11/10/21 02:24	1
Bolstar	ND		0.0050		mg/L		11/08/21 12:06	11/10/21 02:24	1
Chlorpyrifos	ND		0.0050		mg/L		11/08/21 12:06	11/10/21 02:24	1
Coumaphos	ND		0.0050		mg/L		11/08/21 12:06	11/10/21 02:24	1
Demeton-o/s	ND		0.010		mg/L		11/08/21 12:06	11/10/21 02:24	1
Diazinon	ND		0.0050		mg/L		11/08/21 12:06	11/10/21 02:24	1
Dichlorvos	ND		0.0050		mg/L		11/08/21 12:06	11/10/21 02:24	1
Disulfoton	ND		0.010		mg/L		11/08/21 12:06	11/10/21 02:24	1
Ethoprop	ND		0.0050		mg/L		11/08/21 12:06	11/10/21 02:24	1
Fensulfothion	ND		0.0050		mg/L		11/08/21 12:06	11/10/21 02:24	1
Fenthion	ND		0.0050		mg/L		11/08/21 12:06	11/10/21 02:24	1
Merphos	ND		0.0050		mg/L		11/08/21 12:06	11/10/21 02:24	1
Methyl parathion	ND		0.0050		mg/L		11/08/21 12:06	11/10/21 02:24	1
Mevinphos	ND		0.0050		mg/L		11/08/21 12:06	11/10/21 02:24	1
Naled	ND		0.040		mg/L		11/08/21 12:06	11/10/21 02:24	1
Phorate	ND		0.0050		mg/L		11/08/21 12:06	11/10/21 02:24	1
Ronnel	ND		0.0050		mg/L		11/08/21 12:06	11/10/21 02:24	1
Stirophos	ND		0.020		mg/L		11/08/21 12:06	11/10/21 02:24	1
Tokuthion	ND		0.0050		mg/L		11/08/21 12:06	11/10/21 02:24	1
Trichloronate	ND		0.0050		mg/L		11/08/21 12:06	11/10/21 02:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tributyl phosphate	*71*		*30 - 151*	*11/08/21 12:06*	*11/10/21 02:24*	*1*

Surrogate Summary

Client: Enthalpy Analytical LLC
Project/Site: 452939

Job ID: 570-74765-1

Method: 8141A - Organophosphorous Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	TBPH2 (30-151)								
570-74765-1	PONDS INLET	84								
570-74765-2	PONDS OUTLET	75								
570-74765-3	HAINES CREEK EXIT	71								

Surrogate Legend

TBPH = Tributyl phosphate

Method: 8141A - Organophosphorous Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	TBPH1 (30-151)								
LCS 570-192600/2-A	Lab Control Sample	104								
LCSD 570-192600/3-A	Lab Control Sample Dup	103								
MB 570-192600/1-A	Method Blank	121								

Surrogate Legend

TBPH = Tributyl phosphate

Client: Enthalpy Analytical LLC
Project/Site: 452939

Job ID: 570-74765-1

Method: 8141A - Organophosphorous Pesticides (GC)

Lab Sample ID: MB 570-192600/1-A
Matrix: Water
Analysis Batch: 192862

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 192600

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Azinphos-methyl	ND		0.0050		mg/L		11/08/21 12:06	11/09/21 20:04	1
Bolstar	ND		0.0050		mg/L		11/08/21 12:06	11/09/21 20:04	1
Chlorpyrifos	ND		0.0050		mg/L		11/08/21 12:06	11/09/21 20:04	1
Coumaphos	ND		0.0050		mg/L		11/08/21 12:06	11/09/21 20:04	1
Demeton-o/s	ND		0.010		mg/L		11/08/21 12:06	11/09/21 20:04	1
Diazinon	ND		0.0050		mg/L		11/08/21 12:06	11/09/21 20:04	1
Dichlorvos	ND		0.0050		mg/L		11/08/21 12:06	11/09/21 20:04	1
Disulfoton	ND		0.010		mg/L		11/08/21 12:06	11/09/21 20:04	1
Ethoprop	ND		0.0050		mg/L		11/08/21 12:06	11/09/21 20:04	1
Fensulfothion	ND		0.0050		mg/L		11/08/21 12:06	11/09/21 20:04	1
Fenthion	ND		0.0050		mg/L		11/08/21 12:06	11/09/21 20:04	1
Merphos	ND		0.0050		mg/L		11/08/21 12:06	11/09/21 20:04	1
Methyl parathion	ND		0.0050		mg/L		11/08/21 12:06	11/09/21 20:04	1
Mevinphos	ND		0.0050		mg/L		11/08/21 12:06	11/09/21 20:04	1
Naled	ND		0.040		mg/L		11/08/21 12:06	11/09/21 20:04	1
Phorate	ND		0.0050		mg/L		11/08/21 12:06	11/09/21 20:04	1
Ronnel	ND		0.0050		mg/L		11/08/21 12:06	11/09/21 20:04	1
Stirophos	ND		0.020		mg/L		11/08/21 12:06	11/09/21 20:04	1
Tokuthion	ND		0.0050		mg/L		11/08/21 12:06	11/09/21 20:04	1
Trichloronate	ND		0.0050		mg/L		11/08/21 12:06	11/09/21 20:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tributyl phosphate	*121*		*30 - 151*	*11/08/21 12:06*	*11/09/21 20:04*	*1*

Lab Sample ID: LCS 570-192600/2-A
Matrix: Water
Analysis Batch: 192862

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 192600

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Azinphos-methyl			0.0400	0.04150		mg/L		104	44 - 163		
Bolstar			0.0400	0.03559		mg/L		89	41 - 151		
Chlorpyrifos			0.0400	0.03221		mg/L		81	42 - 152		
Coumaphos			0.0400	0.03699		mg/L		92	35 - 170		
Diazinon			0.0400	0.03691		mg/L		92	43 - 155		
Disulfoton			0.0400	0.03477		mg/L		87	41 - 152		
Ethoprop			0.0400	0.03626		mg/L		91	47 - 158		
Fensulfothion			0.0400	0.03584		mg/L		90	51 - 166		
Fenthion			0.0400	0.03252		mg/L		81	43 - 161		
Merphos			0.0400	0.04838		mg/L		121	44 - 180		
Methyl parathion			0.0400	0.03638		mg/L		91	35 - 167		
Phorate			0.0400	0.03471		mg/L		87	39 - 159		
Ronnel			0.0400	0.03256		mg/L		81	42 - 151		
Stirophos			0.0400	0.03413		mg/L		85	39 - 172		
Tokuthion			0.0400	0.03208		mg/L		80	33 - 155		
Trichloronate			0.0400	0.03706		mg/L		93	39 - 157		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tributyl phosphate	*104*		*30 - 151*

Client: Enthalpy Analytical LLC
Project/Site: 452939

Job ID: 570-74765-1

Method: 8141A - Organophosphorous Pesticides (GC)

Lab Sample ID: LCSD 570-192600/3-A
Matrix: Water
Analysis Batch: 192862

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 192600

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Azinphos-methyl			0.0400	0.04183		mg/L		105	44 - 163	1	30
Bolstar			0.0400	0.03536		mg/L		88	41 - 151	1	30
Chlorpyrifos			0.0400	0.03271		mg/L		82	42 - 152	2	30
Coumaphos			0.0400	0.03668		mg/L		92	35 - 170	1	30
Diazinon			0.0400	0.03976		mg/L		99	43 - 155	7	30
Disulfoton			0.0400	0.03528		mg/L		88	41 - 152	1	30
Ethoprop			0.0400	0.03740		mg/L		94	47 - 158	3	30
Fensulfothion			0.0400	0.03555		mg/L		89	51 - 166	1	30
Fenthion			0.0400	0.03262		mg/L		82	43 - 161	0	30
Merphos			0.0400	0.04837		mg/L		121	44 - 180	0	30
Methyl parathion			0.0400	0.03714		mg/L		93	35 - 167	2	30
Phorate			0.0400	0.03521		mg/L		88	39 - 159	1	30
Ronnel			0.0400	0.03284		mg/L		82	42 - 151	1	30
Stirophos			0.0400	0.03446		mg/L		86	39 - 172	1	30
Tokuthion			0.0400	0.03217		mg/L		80	33 - 155	0	30
Trichloronate			0.0400	0.03774		mg/L		94	39 - 157	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tributyl phosphate	*103*		*30 - 151*

QC Association Summary

Client: Enthalpy Analytical LLC
Project/Site: 452939

Job ID: 570-74765-1

GC Semi VOA

Prep Batch: 192600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-74765-1	PONDS INLET	Total/NA	Water	3510C	
570-74765-2	PONDS OUTLET	Total/NA	Water	3510C	
570-74765-3	HAINES CREEK EXIT	Total/NA	Water	3510C	
MB 570-192600/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-192600/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-192600/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 192862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-74765-1	PONDS INLET	Total/NA	Water	8141A	192600
570-74765-2	PONDS OUTLET	Total/NA	Water	8141A	192600
570-74765-3	HAINES CREEK EXIT	Total/NA	Water	8141A	192600
MB 570-192600/1-A	Method Blank	Total/NA	Water	8141A	192600
LCS 570-192600/2-A	Lab Control Sample	Total/NA	Water	8141A	192600
LCSD 570-192600/3-A	Lab Control Sample Dup	Total/NA	Water	8141A	192600

Lab Chronicle

Client: Enthalpy Analytical LLC
Project/Site: 452939

Job ID: 570-74765-1

Client Sample ID: PONDS INLET
Date Collected: 11/01/21 11:45
Date Received: 11/03/21 17:32

Lab Sample ID: 570-74765-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1043.6 mL	10 mL	192600	11/08/21 12:06	H1SH	ECL 1
Total/NA	Analysis	8141A		1			192862	11/10/21 00:49	UJ3K	ECL 1
	Instrument ID: GC69									

Client Sample ID: PONDS OUTLET
Date Collected: 11/01/21 10:40
Date Received: 11/03/21 17:32

Lab Sample ID: 570-74765-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1040.5 mL	10 mL	192600	11/08/21 12:06	H1SH	ECL 1
Total/NA	Analysis	8141A		1			192862	11/10/21 01:37	UJ3K	ECL 1
	Instrument ID: GC69									

Client Sample ID: HAINES CREEK EXIT
Date Collected: 11/01/21 09:45
Date Received: 11/03/21 17:32

Lab Sample ID: 570-74765-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1001.7 mL	10 mL	192600	11/08/21 12:06	H1SH	ECL 1
Total/NA	Analysis	8141A		1			192862	11/10/21 02:24	UJ3K	ECL 1
	Instrument ID: GC69									

Laboratory References:
ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

Accreditation/Certification Summary

Client: Enthalpy Analytical LLC
Project/Site: 452939

Job ID: 570-74765-1

Laboratory: Eurofins Calscience LLC

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

Authority	Program	Identification Number	Expiration Date
California	State	2944	09-30-22
Oregon	NELAP	CA300001	01-30-22

Method Summary

Client: Enthalpy Analytical LLC
Project/Site: 452939

Job ID: 570-74765-1

Method	Method Description	Protocol	Laboratory
8141A	Organophosphorous Pesticides (GC)	SW846	ECL 1
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ECL 1

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

Sample Summary

Client: Enthalpy Analytical LLC
Project/Site: 452939

Job ID: 570-74765-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-74765-1	PONDS INLET	Water	11/01/21 11:45	11/03/21 17:32
570-74765-2	PONDS OUTLET	Water	11/01/21 10:40	11/03/21 17:32
570-74765-3	HAINES CREEK EXIT	Water	11/01/21 09:45	11/03/21 17:32

ENTHALPY

Enthalpy Analytical - Orange
Orange, CA 92868
(714) 771-6900 / Fax: (510) 486-0532

Subcontract Laboratory:
Eurofins CalScience
7440 Lincoln Way
Garden Grove, CA 92841-1432
ATTN: Xuan Dang
PO #: TBD

Enthalpy Order: EO-452939
PM: Diane Galvan
Email: diane.galvan@enthalpy.com
CC: incomingreports@enthalpy.com
Phone: 714-771-9928

Results Due: Standard TAT
Report Level: II
Report To: RL
EDDs: .DBF erpimsenhanced

570-74765 Chain of Custody

Notes:

Sample ID	Collected	Lab ID	# Cont.	Matrix	Analysis Requested	Comment
PONDS INLET	01-NOV-2021 11.45	452939-001	1	Water	Organophosphorus Pesticides	Include chlorpyrifos
PONDS OUTLET	01-NOV-2021 10:40	452939-002	1	Water	Organophosphorus Pesticides	Include chlorpyrifos
HAINES CREEK EXIT	01-NOV-2021 09.45	452939-003	1	Water	Organophosphorus Pesticides	Include chlorpyrifos

Notes:	Relinquished By:	Received By:
	[signature]	[signature] ECI
	Date: 11/3/21 1732	Date: 11/3/21 1732
	Date:	Date:
	Date:	Date:

2.0/29 SCJ

Login Sample Receipt Checklist

Client: Enthalpy Analytical LLC

Job Number: 570-74765-1

Login Number: 74765
List Number: 1
Creator: Ramos, Maribel

List Source: Eurofins Calscience LLC

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	