

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

enthalpy.com

Lab Job Number: 538515

Report Level : II

Report Date : 07/28/2025

Analytical Report prepared for:

Bryan Pastor County of Orange (705) 2301 N. Glassell Public Facilities & Resources Dept. Orange, CA 92865

Project: OCPW NUT, CL, SO4, TDS - Workorder #4300

Authorized for release by:

Quynhgiao Le, Project Manager

714-7716900

quynhgiao.le@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, CA ELAP #1338-S1, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105, ORELAP# 4197



Sample Summary

Bryan Pastor

County of Orange (705) 2301 N. Glassell

Public Facilities & Resources

Dept.

Orange, CA 92865

Lab Job #: 538515

OCPW NUT,CL,SO4,TDS Project No:

Location: Workorder #4300

Date Received: 07/25/25

Sample ID	Lab ID	Collected	Matrix
4300001	538515-001	07/25/25 11:11	Water
4300002	538515-002	07/25/25 11:35	Water
4300003	538515-003	07/25/25 12:12	Water



Case Narrative

County of Orange (705) Lab Job Number: 538515

2301 N. Glassell Project No: OCPW NUT,CL,SO4,TDS

Public Facilities & Resources Dept. Location: Workorder #4300

Orange, CA 92865

Bryan Pastor

Date Received: 07/25/25

This data package contains sample and QC results for three water samples, requested for the above referenced project on 07/25/25. The samples were received cold and intact.

Ammonia and TKN- Semi-Automated Method (SM 4500-NH3-G):

- Low recoveries were observed for nitrogen, total kjeldahl in the MS/MSD for batch 377481; the parent sample was not a project sample, the LCS was within limits, and the associated RPD was within limits.
- No other analytical problems were encountered.

Nitrate and Nitritate (EPA 353.2):

- Low recovery was observed for nitrogen, nitrate/nitrite in the MSD of 4300001 (lab # 538515-001); the LCS was within limits, and the associated RPD was within limits.
- No other analytical problems were encountered.

of 1					l
Page 1 of 1		ا «	_ Frozen		
	2	Yes	Cooled Frozen		
Workorder # 4300	07/25/2025	County Seals Intact	mbient		
Workor	DATE	County S	Sample Ambient	Handling	
Chain of Custody	Orange County Public Works OC Watersheds	2245 N. Glassell St. Orange CA 92865	Phone (714) 955-0600	Fax (714) 955-0637	
ENTHALPY	MA-080-17010712	Bryan Pastor (714) 955-0662			
CONTRACT LAB	Lab PA#	CONTACT	PNIR		

Remarks			
Analyses Required	NUT	NUT	NUT
Description	8.9	G S	89
Matrix	FW	FW	FW
# Containers	Jan 3	7	43/
Date & Time	07/25/2025 114	07/25/2025 N 38	07/25/2025 NV 43
SAMPLE#	4300001	4300002	4300003

Project #

24-4R SLUSH PLEASE



	Signature	Print Name	Organization	Date	Time
Relinquished By	The state of	Lario Sira	0000	7001744	CEST
Received By	Jan & Barn J.	Hermed	加入	7/25/125	5/5/
Relinquished By	Many 16	Dount	70	\$125/2K	1627
Received By	X CASK	Adam Din Kineyan	£.\	3115115	1533
Relinquished By	2				
Received By					

R13 2.5

SAMPLE RECEIPT CHECKLIST		-	
Section 1: General Info			
Date Received: 7/25/25 WO# 538515 Client: Orange County Public Works		ENTI	HALPY
Section 2: Shipping / Custody Are custody seal	s present	? 🗆 Ye	s ⊠ No
Custody seals intact on arrival? ■ N/A □ Yes □ No □ On cooler / box □ On samples			
■ Courier □ Walk-In □ Field Sampling □ Shipping Info:			
Section 3a: Condition / Packaging Outside 0.0 - 6.0°C (0.0 - 10.0°C for mice	robiology	/) (PM no	otified)
Date Opened 7/25/25 By (initials) HGS Type of ice used: ■ Wet □ Blue/Gel	☐ Non	e	
Samples received on ice directly from the field; cooling process had begun. (if checked, skip temperatures)			
Sample matrix doesn't require cooling (e.g. air, bulk PCB). (if checked, skip temperatures)		+0 0	
If no cooler: Observed/Adjusted Temp (°C):/ Thermometer/IR Gun: IR13			-
Cooler Temp (°C) #1: 2.5 / 2.5 #2: / #3: / #4: / #5: / #6:			kin 2h)
Section 3b: Microbiology Samples No microbiology sample Within temp range 0.0 - 10.0°C or received on ice directly from field.	Jies subn	nictea (S	KIP 3D)
☐ Adequate headspace for microbiology analysis. Section 3c: Air Samples ■ No air sam	nles suhi	mitted (s	kin 3c)
☐ 1.4L Canisters ☐ 6L Canisters ☐ Tedlar Bags ☐ MCE Cassettes ☐ Sorbent Tubes ☐ Other		intica (s	KIP JCJ
Section 4: Containers / Labels / Samples	YES	NO	N/A
1) Were custody papers present, filled properly, and legible?	X		
2) Is the sampler's name present on the CoC?		Х	
Were containers received in good condition (unbroken / unopened / uncompromised)?	Х		
4) Were the samples bagged? (required for microbiology samples; recommended for soil samples)			X
5) Were all of, and only, the correct samples received?	Х		
6) Are sample labels present, legible, and in agreement with the CoC?	X		
7) Does the container count match the CoC?	X		
8) Was sufficient sample volume / mass received for the analyses requested?	X		
9) Were samples received in proper containers for the analyses requested?	X		
10) Were samples received with > 1/2 holding time remaining?	X		
11) Are samples properly preserved as indicated by CoC / labels?	X		
12) Unpreserved VOAs received - If necessary, was the hold time changed in LIMS?			X
13) Are VOA vials free from headspace/bubbles > 6mm?			X
Section 5: Explanations / Comments			
(If no comments are made, then no discrepancies noted.)			
□ No additional discrepancies			
1 ~ 7			
Date Logged 7/25/25 By (print) ABD (sign)			
Date Labeled 7/25/25 By (print) AGR (sign) Actor for	16R		_

Enthalpy Analytical

J-0006, Rev 2: Form Version 16.3 020625



Analysis Results for 538515

Bryan Pastor County of Orange (705) 2301 N. Glassell Public Facilities & Resources Dept. Orange, CA 92865

Lab Job #: 538515 Project No: OCPW NUT,CL,SO4,TDS Location: Workorder #4300 Date Received: 07/25/25

Sample ID: 4300001 Lab ID: 538515-001 Collected: 07/25/25 11:11

Matrix: Water

			Watin. W	utci					
538515-001 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 120.1									
Specific Conductance	4,010		umhos/cm	1.0	1	377497	07/26/25	07/26/25	ARM
Method: EPA 160.4									
Volatile Suspended Solids	ND		mg/L	5.0	1	377461	07/25/25	07/27/25	TRR
Method: EPA 180.1									
Turbidity	3.7		NTU	0.20	1	377439	07/25/25 15:43	07/25/25 15:43	TRR
Method: EPA 350.1 Prep Method: METHOD									
Ammonia-N	0.97		mg/L	0.10	1	377485	07/26/25	07/28/25	JAK
Method: EPA 351.2 Prep Method: METHOD									
Nitrogen, Total Kjeldahl	1.4		mg/L	0.40	1	377481	07/26/25	07/28/25	JAK
Method: EPA 353.2 Prep Method: METHOD									
Nitrogen, Nitrate/Nitrite	3.1		mg/L	0.50	5	377444	07/25/25	07/25/25	DAD
Method: SM 4500-H+ B									
рН	7.90	Н	SU		1	377486	07/26/25 12:35	07/26/25 12:35	ARM
Temperature	15.90	Н	deg C	1.00	1	377486	07/26/25 12:35	07/26/25 12:35	ARM
Method: SM 4500-P-B5-E									
Total Phosphorous as PO4	0.87		mg/L	0.060	1	377442	07/25/25	07/28/25	JAK
Method: SM 4500-P-E									
Orthophosphate as P	0.16		mg/L	0.020	1	377449	07/25/25 16:27	07/25/25 17:08	JAK
Method: SM2540D Prep Method: METHOD									
Total Suspended Solids	7.4		mg/L	0.5	1	377461	07/25/25	07/27/25	TRR

1 of 3



Analysis Results for 538515

Sample ID: 4300002 Lab ID: 538515-002 Collected: 07/25/25 11:35

Matrix: Water

538515-002 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 120.1									
Specific Conductance	3,510		umhos/cm	1.0	1	377497	07/26/25	07/26/25	ARM
Method: EPA 160.4									
Volatile Suspended Solids	ND		mg/L	5.0	1	377461	07/25/25	07/27/25	TRR
Method: EPA 180.1									
Turbidity	2.4		NTU	0.20	1	377439	07/25/25 15:43	07/25/25 15:43	TRR
Method: EPA 350.1 Prep Method: METHOD									
Ammonia-N	0.17		mg/L	0.10	1	377485	07/26/25	07/28/25	JAK
Method: EPA 351.2 Prep Method: METHOD									
Nitrogen, Total Kjeldahl	0.86		mg/L	0.40	1	377481	07/26/25	07/28/25	JAK
Method: EPA 353.2 Prep Method: METHOD									
Nitrogen, Nitrate/Nitrite	ND		mg/L	0.10	1	377444	07/25/25	07/25/25	DAD
Method: SM 4500-H+ B									
рН	7.68	Н	SU		1	377486	07/26/25 12:35	07/26/25 12:35	ARM
Temperature	15.10	Н	deg C	1.00	1	377486	07/26/25 12:35	07/26/25 12:35	ARM
Method: SM 4500-P-B5-E									
Total Phosphorous as PO4	0.48		mg/L	0.060	1	377442	07/25/25	07/28/25	JAK
Method: SM 4500-P-E									
Orthophosphate as P	ND		mg/L	0.020	1	377449	07/25/25 16:27	07/25/25 17:08	JAK
Method: SM2540D Prep Method: METHOD									
Total Suspended Solids	5.6		mg/L	0.5	1	377461	07/25/25	07/27/25	TRR



Analysis Results for 538515

Sample ID: 4300003 Lab ID: 538515-003 Collected: 07/25/25 12:12

Matrix: Water

538515-003 Analyte	Result	Oual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 120.1	ricount	Quui	Office			Baton	Перигеи	Anaryzea	Onemise
Specific Conductance	3,490		umhos/cm	1.0	1	377497	07/26/25	07/26/25	ARM
Method: EPA 160.4									
Volatile Suspended Solids	ND		mg/L	5.0	1	377461	07/25/25	07/27/25	TRR
Method: EPA 180.1									
Turbidity	2.4		NTU	0.20	1	377439	07/25/25 15:43	07/25/25 15:43	TRR
Method: EPA 350.1 Prep Method: METHOD									
Ammonia-N	ND		mg/L	0.10	1	377485	07/26/25	07/28/25	JAK
Method: EPA 351.2 Prep Method: METHOD									
Nitrogen, Total Kjeldahl	0.77		mg/L	0.40	1	377481	07/26/25	07/28/25	JAK
Method: EPA 353.2 Prep Method: METHOD									
Nitrogen, Nitrate/Nitrite	ND		mg/L	0.10	1	377444	07/25/25	07/25/25	DAD
Method: SM 4500-H+ B									
рН	8.06	Н	SU		1	377486	07/26/25 12:35	07/26/25 12:35	ARM
Temperature	16.40	Н	deg C	1.00	1	377486	07/26/25 12:35	07/26/25 12:35	ARM
Method: SM 4500-P-B5-E									
Total Phosphorous as PO4	0.45		mg/L	0.060	1	377442	07/25/25	07/28/25	JAK
Method: SM 4500-P-E									
Orthophosphate as P	ND		mg/L	0.020	1	377449	07/25/25 16:27	07/25/25 17:08	JAK
Method: SM2540D Prep Method: METHOD									
Total Suspended Solids	9.0		mg/L	0.5	1	377461	07/25/25	07/27/25	TRR

H Holding time was exceeded

3 of 3

ND Not Detected



Type: Sample Duplicate Lab ID: QC1278190 Batch: 377497

Matrix (Source ID): Water (538515-001) Method: EPA 120.1

Source Sample **RPD** QC1278190 Analyte Result Result Units Qual **RPD** DF Lim Specific Conductance 4,081 4014 20 umhos/cm

Type: Sample Duplicate Lab ID: QC1277970 Batch: 377439

Matrix (Source ID): Water (538479-001) Method: EPA 180.1

Source **RPD** Sample QC1277970 Analyte Result Result Units Qual **RPD** Lim DF Turbidity 4.920 4.950 NTU 20 1

Type: Sample Duplicate Lab ID: QC1277971 Batch: 377439

Matrix (Source ID): Water (538479-002) Method: EPA 180.1

Source Sample **RPD RPD** Result QC1277971 Analyte Result Units Qual Lim DF 2.360 **Turbidity** 2.400 NTU 20 1

Lab ID: QC1278128 Type: Matrix Spike Batch: 377485 Method: EPA 350.1 Matrix (Source ID): Water (538372-001) **Prep Method: METHOD**

Source Sample

QC1278128 Analyte Result Result Spiked Units Recovery Qual Limits DF Ammonia-N 1.006 0.09371 1.000 mg/L 91% 90-110 1

Type: Matrix Spike Duplicate Lab ID: QC1278129 Batch: 377485 Matrix (Source ID): Water (538372-001) Method: EPA 350.1 Prep Method: METHOD

Source Sample **RPD** QC1278129 Analyte **RPD** Result Result **Spiked** Units Recovery Qual Limits Lim DF Ammonia-N 1.038 0.09371 1.000 mg/L 94% 90-110 20 1

Type: Blank Lab ID: QC1278130 Batch: 377485 Matrix: Water Method: EPA 350.1 Prep Method: METHOD

QC1278130 Analyte **Units** RL Result Qual **Prepared Analyzed** 0.10 07/26/25 07/28/25 Ammonia-N ND mg/L

1



Type: Lab Control Sample Lab ID: QC1278131 Batch: 377485

Matrix: Water Method: EPA 350.1 Prep Method: METHOD

Matrix: Water Method: EPA 350.1 Prep Method: METHOD

 QC1278131 Analyte
 Result
 Spiked
 Units
 Recovery
 Qual
 Limits

 Ammonia-N
 1.001
 1.000
 mg/L
 100%
 90-110

Type: Blank Lab ID: QC1278118 Batch: 377481

Matrix: Water Method: EPA 351.2 Prep Method: METHOD

 QC1278118 Analyte
 Result
 Qual
 Units
 RL
 Prepared
 Analyzed

 Nitrogen, Total Kjeldahl
 ND
 mg/L
 0.40
 07/26/25
 07/28/25

Type: Lab Control Sample Lab ID: QC1278119 Batch: 377481

Matrix: Water Method: EPA 351.2 Prep Method: METHOD

QC1278119 AnalyteResultSpikedUnitsRecoveryQualLimitsNitrogen, Total Kjeldahl2.0442.000mg/L102%90-110

Type: Matrix Spike Lab ID: QC1278120 Batch: 377481

Matrix (Source ID): Water (537779-001) Method: EPA 351.2 Prep Method: SM4500-Norg-B

Source Sample

QC1278120 Analyte Result Result **Spiked** Recovery Limits DF Units Qual Nitrogen, Total Kjeldahl 1.874 0.2548 2.000 81% 90-110 mg/L

Type: Matrix Spike Duplicate Lab ID: QC1278121 Batch: 377481

Matrix (Source ID): Water (537779-001) Method: EPA 351.2 Prep Method: SM4500-Norg-B

Source

Sample **RPD** QC1278121 Analyte Result Result **Spiked** Units Recovery Qual Limits **RPD** Lim DF Nitrogen, Total Kjeldahl 1.923 0.2548 2.000 83% 90-110 20 mg/L 1

Type: Blank Lab ID: QC1277976 Batch: 377444

Matrix: Water Method: EPA 353.2 Prep Method: METHOD

 QC1277976 Analyte
 Result
 Qual
 Units
 RL
 Prepared
 Analyzed

 Nitrogen, Nitrate/Nitrite
 ND
 mg/L
 0.10
 07/25/25
 07/25/25

Type: Lab Control Sample Lab ID: QC1277977 Batch: 377444

Matrix: Water Method: EPA 353.2 Prep Method: METHOD

QC1277977 AnalyteResultSpikedUnitsRecoveryQualLimitsNitrogen, Nitrate/Nitrite1.0381.000mg/L104%90-110



Type: Matrix Spike Lab ID: QC1277978 Batch: 377444

Matrix (Source ID): Water (538515-001) Method: EPA 353.2 Prep Method: METHOD

Source

QC1277978 Analyte	Result	Sample Result	Spiked	Units	Recovery	Qual	Limits	DF
Nitrogen, Nitrate/Nitrite	4.068	3.117	1.000	mg/L	95%		90-110	5

Type: Matrix Spike Duplicate Lab ID: QC1277979 Batch: 377444

Matrix (Source ID): Water (538515-001) Method: EPA 353.2 Prep Method: METHOD

Source Sample **RPD** QC1277979 Analyte Result Result **Spiked Units** Recovery Qual Limits **RPD** Lim DF Nitrogen, Nitrate/Nitrite 4.003 3.117 1.000 mg/L 89% 90-110 2 20 5

Type: Sample Duplicate Lab ID: QC1278132 Batch: 377486

Matrix (Source ID): Water (538297-001) Method: SM 4500-H+ B

Source **RPD** Sample **RPD** QC1278132 Analyte Result Result Units Qual DF Lim рН 7.220 7.190 SU 0 20 1 16.90 16.90 deg C 0 20 1 Temperature

Type: Blank Lab ID: QC1277972 Batch: 377442

Matrix: Water Method: SM 4500-P-B5-E

 QC1277972 Analyte
 Result
 Qual
 Units
 RL
 Prepared
 Analyzed

 Total Phosphorous as PO4
 ND
 mg/L
 0.060
 07/25/25
 07/28/25

Type: Lab Control Sample Lab ID: QC1277973 Batch: 377442

Matrix: Water Method: SM 4500-P-B5-E

QC1277973 AnalyteResultSpikedUnitsRecoveryQualLimitsTotal Phosphorous as PO41.2971.230mg/L105%80-120

Type: Matrix Spike Lab ID: QC1277974 Batch: 377442

Matrix (Source ID): Water (538515-003) Method: SM 4500-P-B5-E

Source Sample

Sample QC1277974 Analyte Result Result **Spiked** Units Recovery Qual Limits DF Total Phosphorous as PO4 1.784 0.4480 1.230 mg/L 109% 75-125 1



Type: Matrix Spike Duplicate Lab ID: QC1277975 Batch: 377442

Matrix (Source ID): Water (538515-003) Method: SM 4500-P-B5-E

Source

		Sample							RPD	
QC1277975 Analyte	Result	Result	Spiked	Units	Recovery	Qual	Limits	RPD	Lim	DF
Total Phosphorous as PO4	1.778	0.4480	1.230	mg/L	108%		75-125	0	20	1

Type: Blank Lab ID: QC1277994 Batch: 377449

Matrix: Water Method: SM 4500-P-E

 QC1277994 Analyte
 Result
 Qual
 Units
 RL
 Prepared
 Analyzed

 Orthophosphate as P
 ND
 mg/L
 0.020
 07/25/25 16:27
 07/25/25 17:08

Type: Lab Control Sample Lab ID: QC1277995 Batch: 377449

Matrix: Water Method: SM 4500-P-E

QC1277995 AnalyteResultSpikedUnitsRecoveryQualLimitsOrthophosphate as P0.40100.4000mg/L100%80-120

Type: Matrix Spike Lab ID: QC1277996 Batch: 377449

Matrix (Source ID): Water (538515-003) Method: SM 4500-P-E

Source Sample

QC1277996 Analyte	Result	Result	Spiked	Units	Recovery	Qual	Limits	DF
Orthophosphate as P	0.4090	ND	0.4000	mg/L	100%		75-125	1

Type: Matrix Spike Duplicate Lab ID: QC1277997 Batch: 377449

Matrix (Source ID): Water (538515-003) Method: SM 4500-P-E

Source

		Sample							RPD	
QC1277997 Analyte	Result	Result	Spiked	Units	Recovery	Qual	Limits	RPD	Lim	DF
Orthophosphate as P	0.4120	ND	0.4000	mg/L	101%		75-125	1	20	1

Type: Blank Lab ID: QC1278028 Batch: 377461

Matrix: Water

QC1278028 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
Method: EPA 160.4						
Volatile Suspended Solids	ND		mg/L	5.0	07/25/25	07/27/25
Method: SM2540D Prep Method: METHOD						
Total Suspended Solids	ND		mg/L	0.5	07/25/25	07/27/25



Type: Lab Control Sample Lab ID: QC1278029 Batch: 377461

Matrix: Water Method: SM2540D Prep Method: METHOD

QC1278029 AnalyteResultSpikedUnitsRecoveryQualLimitsTotal Suspended Solids99.80100.0mg/L100%90-110

Type: Lab Control Sample Duplicate Lab ID: QC1278030 Batch: 377461

Matrix: Water Method: SM2540D Prep Method: METHOD

RPD QC1278030 Analyte **RPD Spiked** Units Recovery Limits Result Qual Lim 100.0 Total Suspended Solids 100.1 mg/L 100% 90-110 0 5

Type: Sample Duplicate Lab ID: QC1278031 Batch: 377461

Matrix (Source ID): Water (538064-002)

Source Sample **RPD** QC1278031 Analyte Result Result Units Qual **RPD** Lim DF Method: EPA 160.4 Volatile Suspended Solids 49.00 49.00 mg/L 0 5 1 Method: SM2540D Prep Method: METHOD Total Suspended Solids 57.00 59.50 5 mg/L

Type: Sample Duplicate Lab ID: QC1278032 Batch: 377461

Matrix (Source ID): Water (538236-001)

QC1278032 Analyte	Result	Source Sample Result	Units	Qual	RPD	RPD Lim	DF
Method: EPA 160.4							
Volatile Suspended Solids	54.55	55.68	mg/L		2	5	1
Method: SM2540D Prep Method: METHOD							
Total Suspended Solids	118.8	122.2	mg/L		3	5	1

Value is outside QC limits

ND Not Detected