

## **ANALYTICAL RESULTS SUMMARY**

GENERAL CHEMISTRY

**PROJECT NAME : R36720**

**TETRA TECH, EMI**

**240 Continental Drive, Suite 200**

**Newark, DE - 19713**

**Phone No: 302-738-7551**

**ORDER ID : P4899**

**ATTENTION : Ava Heiss**



**Laboratory Certification ID # 20012**



1) Signature Page	3
2) Case Narrative	4
2.1) Genchem- Case Narrative	4
3) Qualifier Page	5
4) QA Checklist	6
5) Genchem Data	7
6) Shipping Document	28
6.1) CHAIN OF CUSTODY	29
6.2) Lab Certificate	30

1
2
3
4
5
6

## Cover Page

**Order ID :** P4899

**Project ID :** R36720

**Client :** Tetra Tech, EMI

### Lab Sample Number

P4899-01  
P4899-02  
P4899-03  
P4899-04  
P4899-05  
P4899-06  
P4899-07  
P4899-08  
P4899-09

### Client Sample Number

C0K55  
C0K56  
C0K57  
C0K58  
C0K59  
C0K60  
C0K62  
C0K63  
C0K88

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : \_\_\_\_\_

Date: 11/25/2024

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012



284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

## **CASE NARRATIVE**

**Tetra Tech, EMI**

**Project Name: R36720**

**Project # N/A**

**Chemtech Project # P4899**

**Test Name: Oil and Grease**

### **A. Number of Samples and Date of Receipt:**

9 Water samples were received on 11/16/2024.

### **B. Parameters:**

According to the Chain of Custody document, the following analyses were requested: Oil and Grease. This data package contains results for Oil and Grease.

### **C. Analytical Techniques:**

The analysis of Oil and Grease was based on method 1664A.

### **D. QA/ QC Samples:**

The Holding Times were met for all analysis.

The Blank Spike met requirements for all samples.

The Duplicate analysis met criteria for all samples.

The Matrix Spike analysis met criteria for all samples.

The Matrix Spike Duplicate analysis met criteria for all samples.

The Blank analysis did not indicate the presence of lab contamination.

The Calibration met the requirements.

### **E. Additional Comments:**

As per method 1664A, MS/MSD is required to be performed with the sample analysis. However, Lab did not receive sufficient volume to perform the MS/MSD for P4899 therefore Lab reported MS-MSD from P4900 and P4937.

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I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature\_\_\_\_\_

## DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following “ Results Qualifiers” are used:

<b>J</b>	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
<b>U</b>	Indicates the analyte was analyzed for, but not detected.
<b>ND</b>	Indicates the analyte was analyzed for, but not detected
<b>E</b>	Indicates the reported value is estimated because of the presence of interference
<b>M</b>	Indicates Duplicate injection precision not met.
<b>N</b>	Indicates the spiked sample recovery is not within control limits.
<b>S</b>	Indicates the reported value was determined by the Method of Standard Addition (MSA).
<b>*</b>	Indicates that the duplicate analysis is not within control limits.
<b>+</b>	Indicates the correlation coefficient for the MSA is less than 0.995.
<b>D</b>	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
<b>M</b>	Method qualifiers “P” for ICP instrument “PM” for ICP when Microwave Digestion is used “CV” for Manual Cold Vapor AA “AV” for automated Cold Vapor AA “CA” for MIDI-Distillation Spectrophotometric “AS” for Semi -Automated Spectrophotometric “C” for Manual Spectrophotometric “T” for Titrimetric “NR” for analyte not required to be analyzed
<b>OR</b>	Indicates the analyte’s concentration exceeds the calibrated range of the instrument for that specific analysis.
<b>Q</b>	Indicates the LCS did not meet the control limits requirements
<b>H</b>	Sample Analysis Out Of Hold Time

## APPENDIX A

### QA REVIEW GENERAL DOCUMENTATION

Project #: P4899

Completed

For thorough review, the report must have the following:

#### GENERAL:

Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)

✓

Check chain-of-custody for proper relinquish/return of samples

✓

Is the chain of custody signed and complete

✓

Check internal chain-of-custody for proper relinquish/return of samples /sample extracts

✓

Collect information for each project id from server. Were all requirements followed

✓

#### COVER PAGE:

Do numbers of samples correspond to the number of samples in the Chain of Custody on login page

✓

Do lab numbers and client Ids on cover page agree with the Chain of Custody

✓

#### CHAIN OF CUSTODY:

Do requested analyses on Chain of Custody agree with form I results

✓

Do requested analyses on Chain of Custody agree with the log-in page

✓

Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody

✓

Were the samples received within hold time

✓

Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle

✓

#### ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: SOHIL JODHANI

Date: 11/25/2024

## LAB CHRONICLE

<b>OrderID:</b>	P4899	<b>OrderDate:</b>	11/18/2024 10:11:00 AM
<b>Client:</b>	Tetra Tech, EMI	<b>Project:</b>	R36720
<b>Contact:</b>	Ava Heiss	<b>Location:</b>	L51

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
<b>P4899-01</b>	<b>C0K55</b>	<b>WATER</b>			<b>11/14/24</b> <b>13:20</b>			<b>11/16/24</b>
			Oil and Grease	1664A			11/21/24 09:37	
<b>P4899-02</b>	<b>C0K56</b>	<b>WATER</b>			<b>11/14/24</b> <b>12:30</b>			<b>11/16/24</b>
			Oil and Grease	1664A			11/21/24 09:37	
<b>P4899-03</b>	<b>C0K57</b>	<b>WATER</b>			<b>11/14/24</b> <b>14:40</b>			<b>11/16/24</b>
			Oil and Grease	1664A			11/21/24 09:37	
<b>P4899-04</b>	<b>C0K58</b>	<b>WATER</b>			<b>11/14/24</b> <b>10:45</b>			<b>11/16/24</b>
			Oil and Grease	1664A			11/21/24 09:37	
<b>P4899-05</b>	<b>C0K59</b>	<b>WATER</b>			<b>11/14/24</b> <b>11:20</b>			<b>11/16/24</b>
			Oil and Grease	1664A			11/21/24 09:37	
<b>P4899-06</b>	<b>C0K60</b>	<b>WATER</b>			<b>11/14/24</b> <b>13:00</b>			<b>11/16/24</b>
			Oil and Grease	1664A			11/21/24 09:37	
<b>P4899-07</b>	<b>C0K62</b>	<b>WATER</b>			<b>11/14/24</b> <b>11:05</b>			<b>11/16/24</b>
			Oil and Grease	1664A			11/21/24 09:37	

## LAB CHRONICLE

<b>P4899-08</b>	<b>C0K63</b>	<b>WATER</b>			<b>11/14/24 13:30</b>		<b>11/16/24</b>
			Oil and Grease	1664A		11/21/24 09:37	
<b>P4899-09</b>	<b>C0K88</b>	<b>WATER</b>			<b>11/14/24 12:15</b>		<b>11/16/24</b>
			Oil and Grease	1664A		11/21/24 09:37	



# SAMPLE DATA

## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/14/24 13:20
Project:	R36720	Date Received:	11/16/24
Client Sample ID:	C0K55	SDG No.:	P4899
Lab Sample ID:	P4899-01	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	U	1	0.40	5.00	mg/L		11/21/24 09:37	1664A

Comments: \_\_\_\_\_

U = Not Detected  
 LOQ = Limit of Quantitation  
 MDL = Method Detection Limit  
 LOD = Limit of Detection  
 D = Dilution  
 Q = indicates LCS control criteria did not meet requirements  
 H = Sample Analysis Out Of Hold Time

J = Estimated Value  
 B = Analyte Found in Associated Method Blank  
 \* = indicates the duplicate analysis is not within control limits.  
 E = Indicates the reported value is estimated because of the presence of interference.  
 OR = Over Range  
 N = Spiked sample recovery not within control limits

## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/14/24 12:30
Project:	R36720	Date Received:	11/16/24
Client Sample ID:	C0K56	SDG No.:	P4899
Lab Sample ID:	P4899-02	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	U	1	0.40	5.00	mg/L		11/21/24 09:37	1664A

Comments:

U = Not Detected  
LOQ = Limit of Quantitation  
MDL = Method Detection Limit  
LOD = Limit of Detection  
D = Dilution  
Q = indicates LCS control criteria did not meet requirements  
H = Sample Analysis Out Of Hold Time

J = Estimated Value  
B = Analyte Found in Associated Method Blank  
\* = indicates the duplicate analysis is not within control limits.  
E = Indicates the reported value is estimated because of the presence of interference.  
OR = Over Range  
N = Spiked sample recovery not within control limits

## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/14/24 14:40
Project:	R36720	Date Received:	11/16/24
Client Sample ID:	C0K57	SDG No.:	P4899
Lab Sample ID:	P4899-03	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	U	1	0.40	5.00	mg/L		11/21/24 09:37	1664A

Comments: \_\_\_\_\_

U = Not Detected  
LOQ = Limit of Quantitation  
MDL = Method Detection Limit  
LOD = Limit of Detection  
D = Dilution  
Q = indicates LCS control criteria did not meet requirements  
H = Sample Analysis Out Of Hold Time

J = Estimated Value  
B = Analyte Found in Associated Method Blank  
\* = indicates the duplicate analysis is not within control limits.  
E = Indicates the reported value is estimated because of the presence of interference.  
OR = Over Range  
N = Spiked sample recovery not within control limits

## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/14/24 10:45
Project:	R36720	Date Received:	11/16/24
Client Sample ID:	C0K58	SDG No.:	P4899
Lab Sample ID:	P4899-04	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	J	1	0.40	5.00	mg/L		11/21/24 09:37	1664A

Comments:

U = Not Detected  
 LOQ = Limit of Quantitation  
 MDL = Method Detection Limit  
 LOD = Limit of Detection  
 D = Dilution  
 Q = indicates LCS control criteria did not meet requirements  
 H = Sample Analysis Out Of Hold Time

J = Estimated Value  
 B = Analyte Found in Associated Method Blank  
 \* = indicates the duplicate analysis is not within control limits.  
 E = Indicates the reported value is estimated because of the presence of interference.  
 OR = Over Range  
 N = Spiked sample recovery not within control limits

## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/14/24 11:20
Project:	R36720	Date Received:	11/16/24
Client Sample ID:	C0K59	SDG No.:	P4899
Lab Sample ID:	P4899-05	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.50	J	1	0.40	5.00	mg/L		11/21/24 09:37	1664A

Comments:

U = Not Detected  
 LOQ = Limit of Quantitation  
 MDL = Method Detection Limit  
 LOD = Limit of Detection  
 D = Dilution  
 Q = indicates LCS control criteria did not meet requirements  
 H = Sample Analysis Out Of Hold Time

J = Estimated Value  
 B = Analyte Found in Associated Method Blank  
 \* = indicates the duplicate analysis is not within control limits.  
 E = Indicates the reported value is estimated because of the presence of interference.  
 OR = Over Range  
 N = Spiked sample recovery not within control limits

## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/14/24 13:00
Project:	R36720	Date Received:	11/16/24
Client Sample ID:	C0K60	SDG No.:	P4899
Lab Sample ID:	P4899-06	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	U	1	0.40	5.00	mg/L		11/21/24 09:37	1664A

Comments:

U = Not Detected  
 LOQ = Limit of Quantitation  
 MDL = Method Detection Limit  
 LOD = Limit of Detection  
 D = Dilution  
 Q = indicates LCS control criteria did not meet requirements  
 H = Sample Analysis Out Of Hold Time

J = Estimated Value  
 B = Analyte Found in Associated Method Blank  
 \* = indicates the duplicate analysis is not within control limits.  
 E = Indicates the reported value is estimated because of the presence of interference.  
 OR = Over Range  
 N = Spiked sample recovery not within control limits

## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/14/24 11:05
Project:	R36720	Date Received:	11/16/24
Client Sample ID:	C0K62	SDG No.:	P4899
Lab Sample ID:	P4899-07	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	U	1	0.40	5.00	mg/L		11/21/24 09:37	1664A

Comments:

U = Not Detected  
 LOQ = Limit of Quantitation  
 MDL = Method Detection Limit  
 LOD = Limit of Detection  
 D = Dilution  
 Q = indicates LCS control criteria did not meet requirements  
 H = Sample Analysis Out Of Hold Time

J = Estimated Value  
 B = Analyte Found in Associated Method Blank  
 \* = indicates the duplicate analysis is not within control limits.  
 E = Indicates the reported value is estimated because of the presence of interference.  
 OR = Over Range  
 N = Spiked sample recovery not within control limits

## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/14/24 13:30
Project:	R36720	Date Received:	11/16/24
Client Sample ID:	C0K63	SDG No.:	P4899
Lab Sample ID:	P4899-08	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.80	J	1	0.40	5.00	mg/L		11/21/24 09:37	1664A

Comments: \_\_\_\_\_

U = Not Detected  
 LOQ = Limit of Quantitation  
 MDL = Method Detection Limit  
 LOD = Limit of Detection  
 D = Dilution  
 Q = indicates LCS control criteria did not meet requirements  
 H = Sample Analysis Out Of Hold Time

J = Estimated Value  
 B = Analyte Found in Associated Method Blank  
 \* = indicates the duplicate analysis is not within control limits.  
 E = Indicates the reported value is estimated because of the presence of interference.  
 OR = Over Range  
 N = Spiked sample recovery not within control limits

## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/14/24 12:15
Project:	R36720	Date Received:	11/16/24
Client Sample ID:	C0K88	SDG No.:	P4899
Lab Sample ID:	P4899-09	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	U	1	0.40	5.00	mg/L		11/21/24 09:37	1664A

Comments:

U = Not Detected  
LOQ = Limit of Quantitation  
MDL = Method Detection Limit  
LOD = Limit of Detection  
D = Dilution  
Q = indicates LCS control criteria did not meet requirements  
H = Sample Analysis Out Of Hold Time

J = Estimated Value  
B = Analyte Found in Associated Method Blank  
\* = indicates the duplicate analysis is not within control limits.  
E = Indicates the reported value is estimated because of the presence of interference.  
OR = Over Range  
N = Spiked sample recovery not within control limits



# QC RESULT SUMMARY

Preparation Blank Summary

Client: Tetra Tech, EMI

SDG No.: P4899

Project: R36720

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: <b>LB133544BL</b>							
Oil and Grease	mg/L	< 2.5000	2.5000	U	0.4	5.0	11/21/2024

Matrix Spike Summary

Client:

Tetra Tech, EMI

SDG No.:

P4899

Project:

R36720

Sample ID:

P4900-06

Client ID:

C0K69MS

Percent Solids for Spike Sample:

0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Oil and Grease	mg/L	78-114	20.8		0.70	J	20.0	1	101		11/21/2024

Matrix Spike Summary

Client:

Tetra Tech, EMI

SDG No.:

P4899

Project:

R36720

Sample ID:

P4900-06

Client ID:

C0K69MSD

Percent Solids for Spike Sample:

0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Oil and Grease	mg/L	78-114	20.3		0.70	J	20.0	1	98		11/21/2024

Matrix Spike Summary

Client:

Tetra Tech, EMI

SDG No.:

P4899

Project:

R36720

Sample ID:

P4937-01

Client ID:

EFFLUENTMS

Percent Solids for Spike Sample:

0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Oil and Grease	mg/L	78-114	72.8		52.6		20.0	1	101		11/21/2024

Matrix Spike Summary

Client:

Tetra Tech, EMI

SDG No.:

P4899

Project:

R36720

Sample ID:

P4937-01

Client ID:

EFFLUENTMSD

Percent Solids for Spike Sample:

0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Oil and Grease	mg/L	78-114	72.4		52.6		20.0	1	99		11/21/2024

## Duplicate Sample Summary

<b>Client:</b>	Tetra Tech, EMI	<b>SDG No.:</b>	P4899
<b>Project:</b>	R36720	<b>Sample ID:</b>	P4900-06
<b>Client ID:</b>	C0K69MSD	<b>Percent Solids for Spike Sample:</b>	0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/AD	Qual	Analysis Date
Oil and Grease	mg/L	+/-18	20.8		20.3		1	2.43		11/21/2024

### Duplicate Sample Summary

<b>Client:</b>	Tetra Tech, EMI	<b>SDG No.:</b>	P4899
<b>Project:</b>	R36720	<b>Sample ID:</b>	P4937-01
<b>Client ID:</b>	EFFLUENTMSD	<b>Percent Solids for Spike Sample:</b>	0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/AD	Qual	Analysis Date
Oil and Grease	mg/L	+/-18	72.8		72.4		1	0.55		11/21/2024

### Laboratory Control Sample Summary

**Client:** Tetra Tech, EMI

**SDG No.:** P4899

**Project:** R36720

**Run No.:** LB133544

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB133544BS							
Oil and Grease	mg/L	20.0	16.7		84	1	78-114	11/21/2024



# SHIPPING DOCUMENTS

**No: 3-111324-161150-0096**  
**Lab: Chemtech Lab**  
**Lab Contact: Yazmeen Gomez**  
**Lab Phone: (908) 728-3147**

No: 3-111324-161150-0096

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ET-WW-01-20241114	C0K55	Waste Water/ START	Grab	O/G(14)	3025 (H2SO4) (1)	WW-01	11/14/2024 13:20	
ET-WW-02-20241114	C0K56	Waste Water/ START	Grab	O/G(14)	3028 (H2SO4) (1)	WW-02	11/14/2024 12:30	
ET-WW-03-20241114	C0K57	Waste Water/ START	Grab	O/G(14)	3031 (H2SO4) (1)	WW-03	11/14/2024 14:40	
ET-WW-04-20241114	C0K58	Waste Water/ START	Grab	O/G(14)	3034 (H2SO4) (1)	WW-04	11/14/2024 10:45	
ET-WW-05-20241114	C0K59	Waste Water/ START	Grab	O/G(14)	3037 (H2SO4) (1)	WW-05	11/14/2024 11:20	
ET-WW-06-20241114	C0K60	Waste Water/ START	Grab	O/G(14)	3040 (H2SO4) (1)	WW-06	11/14/2024 13:00	
ET-WW-08-20241114	C0K62	Waste Water/ START	Grab	O/G(14)	3046 (H2SO4) (1)	WW-08	11/14/2024 11:05	
ET-TW-01-20241114	C0K63	Treatment Water/ START	Grab	O/G(14)	3049 (H2SO4) (1)	TW-01	11/14/2024 13:30	
ET-DUP-05-20241114	C0K88	Waste Water/ START	Grab	O/G(14)	3096 (H2SO4) (1)	DUP-05	11/14/2024 12:15	

Shipment for Case Complete? N

[illegible]

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
Sample Drop off	Michelle / START	11/15/24 11:00	De-	9:00 11-16-24	TR. Gum #1 2.4. 'C
					Custody Seal Intact
					Temp Blank pres

**Laboratory Certification**

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255424 Rev 1
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488