

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 : P4900

ATTENTION : Ava Heiss



Laboratory Certification ID # 20012



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Cover Page

Order ID : P4900

Project ID : R36720

Client : Tetra Tech, EMI

Lab Sample Number

P4900-01
P4900-02
P4900-03
P4900-04
P4900-05
P4900-06
P4900-07
P4900-08
P4900-09

Client Sample Number

C0K64
C0K65
C0K66
C0K67
C0K68
C0K69
C0K69MS
C0K69MSD
C0K70

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: 11/26/2024

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 # P4900
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:

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:

- J** 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).
- U** Indicates the analyte was analyzed for, but not detected.
- ND** Indicates the analyte was analyzed for, but not detected
- E** Indicates the reported value is estimated because of the presence of interference
- M** Indicates Duplicate injection precision not met.
- N** Indicates the spiked sample recovery is not within control limits.
- S** Indicates the reported value was determined by the Method of Standard Addition (MSA).
- *** Indicates that the duplicate analysis is not within control limits.
- +** Indicates the correlation coefficient for the MSA is less than 0.995.
- D** Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
- M** 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
- OR** Indicates the analyte’s concentration exceeds the calibrated range of the instrument for that specific analysis.
- Q** Indicates the LCS did not meet the control limits requirements
- H** Sample Analysis Out Of Hold Time

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: P4900

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 Custody

✓

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: 11/26/2024

LAB CHRONICLE

OrderID: P4900	OrderDate: 11/18/2024 10:11:00 AM
Client: Tetra Tech, EMI	Project: R36720
Contact: Ava Heiss	Location: L51

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P4900-01	C0K64	WATER			11/14/24 13:40			11/16/24
			Oil and Grease	1664A			11/21/24 09:37	
P4900-02	C0K65	WATER			11/14/24 13:55			11/16/24
			Oil and Grease	1664A			11/21/24 09:37	
P4900-03	C0K66	WATER			11/14/24 13:50			11/16/24
			Oil and Grease	1664A			11/21/24 09:37	
P4900-04	C0K67	WATER			11/14/24 14:10			11/16/24
			Oil and Grease	1664A			11/21/24 09:37	
P4900-05	C0K68	WATER			11/14/24 11:35			11/16/24
			Oil and Grease	1664A			11/21/24 09:37	
P4900-06	C0K69	WATER			11/14/24 12:00			11/16/24
			Oil and Grease	1664A			11/21/24 09:37	
P4900-09	C0K70	WATER			11/14/24 10:30			11/16/24
			Oil and Grease	1664A			11/21/24 09:37	



SAMPLE DATA

Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/14/24 13:40
Project:	R36720	Date Received:	11/16/24
Client Sample ID:	C0K64	SDG No.:	P4900
Lab Sample ID:	P4900-01	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.60	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 13:55
Project:	R36720	Date Received:	11/16/24
Client Sample ID:	C0K65	SDG No.:	P4900
Lab Sample ID:	P4900-02	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

A

B

C

D

Client:	Tetra Tech, EMI	Date Collected:	11/14/24 13:50
Project:	R36720	Date Received:	11/16/24
Client Sample ID:	C0K66	SDG No.:	P4900
Lab Sample ID:	P4900-03	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

A

B

C

D

Client:	Tetra Tech, EMI	Date Collected:	11/14/24 14:10
Project:	R36720	Date Received:	11/16/24
Client Sample ID:	C0K67	SDG No.:	P4900
Lab Sample ID:	P4900-04	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.60	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

A

B

C

D

Client:	Tetra Tech, EMI	Date Collected:	11/14/24 11:35
Project:	R36720	Date Received:	11/16/24
Client Sample ID:	C0K68	SDG No.:	P4900
Lab Sample ID:	P4900-05	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 12:00
Project:	R36720	Date Received:	11/16/24
Client Sample ID:	C0K69	SDG No.:	P4900
Lab Sample ID:	P4900-06	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.70	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

A

B

C

D

Client:	Tetra Tech, EMI	Date Collected:	11/14/24 10:30
Project:	R36720	Date Received:	11/16/24
Client Sample ID:	C0K70	SDG No.:	P4900
Lab Sample ID:	P4900-09	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.:	P4900
Project:	R36720		

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID:	LB133544BL						
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.:	P4900
Project:	R36720	Sample ID:	P4900-06
Client ID:	C0K69MS	Percent Solids for Spike Sample:	0

A

B

C

D

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.:	P4900
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.:	P4900
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.:	P4900
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

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

A

B

C

D

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

Client:	Tetra Tech, EMI	SDG No.:	P4900
Project:	R36720	Sample ID:	P4937-01
Client ID:	EFFLUENTMSD	Percent Solids for Spike Sample:	0

A

B

C

D

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.:	P4900
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

P4900

USEPA CLP COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 3-111324-161224-0097

Date Shipped: 11/15/2024

DAS #: R36720

Lab: Chemtech Lab

Carrier Name: FedEx

Cooler #: Oil and Grease

Lab Contact: Yazmeen Gomez
Lab Phone: (908) 728-3147

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ET-TW-02-20241114	COK64	Treatment Water/ START	Grab	O/G(14)	3052 (H2SO4) (1)	TW-02	11/14/2024 13:40	
ET-TW-03-20241114	COK65	Treatment Water/ START	Grab	O/G(14)	3055 (H2SO4) (1)	TW-03	11/14/2024 13:55	
ET-TW-04-20241114	COK66	Treatment Water/ START	Grab	O/G(14)	3058 (H2SO4) (1)	TW-04	11/14/2024 13:50	
ET-SW-01-20241114	COK67	Surface Water/ START	Grab	O/G(14)	3061 (H2SO4) (1)	SW-01	11/14/2024 14:10	
ET-SW-02-20241114	COK68	Surface Water/ START	Grab	O/G(14)	3064 (H2SO4) (1)	SW-02	11/14/2024 11:35	
ET-SW-03-20241114	COK69	Surface Water/ START	Grab	O/G(14)	3067 (H2SO4), 3091 (H2SO4), 3092 (H2SO4) (3)	SW-03	11/14/2024 12:00	
ET-SW-04-20241114	COK70	Surface Water/ START	Grab	O/G(14)	3070 (H2SO4) (1)	SW-04	11/14/2024 10:30	

Sample(s) to be used for Lab QC: ET-SW-03-20241114 Tag 3067, ET-SW-03-20241114 Tag 3091, ET-SW-03-20241114 Tag 3092 - Special Instructions: Oil and Grease

Shipment for Case Complete? N
Samples Transferred From Chain of Custody #

Analysis Key: O/G=Oil and Grease

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
Sample DROPPED	<i>[Signature]</i> START	11/15/24 1030	<i>[Signature]</i>	11-16-24 9:00	IR Gun # 1 2.3" Custody Seal Intact Temp Blank present

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