

**Caerus Oil and Gas**

Sample Delivery Group: L1755563  
Samples Received: 07/11/2024  
Project Number: PG16  
Description: PG16 Dumpline Release  
Site: PG16  
Report To: Jake J. / Brett M. / Blair R. / Andy V.  
143 Diamond Avenue  
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward  
Project Manager

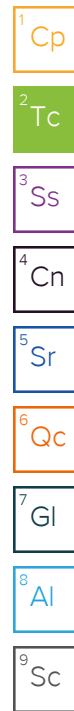
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**Pace Analytical National**

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# SAMPLE SUMMARY

## 20240709-PG16-(SB01)@14-16 L1755563-01 Solid

Collected by Ben Herrmann    Collected date/time 07/09/24 10:25    Received date/time 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324029	1	07/18/24 11:03	07/18/24 11:03	DJS	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2323690	1	07/15/24 08:15	07/16/24 12:12	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2323116	1	07/15/24 08:15	07/15/24 16:22	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2323981	1	07/16/24 16:53	07/17/24 07:08	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2324418	1	07/17/24 17:00	07/18/24 02:35	JCH	Mt. Juliet, TN

## 20240709-PG16-(SB01)@27-29 L1755563-02 Solid

Collected by Ben Herrmann    Collected date/time 07/09/24 10:25    Received date/time 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324018	1	07/18/24 14:58	07/18/24 14:58	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2323690	1	07/15/24 08:15	07/16/24 12:34	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2323116	1	07/15/24 08:15	07/15/24 16:41	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2323981	1	07/16/24 16:53	07/17/24 08:39	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2324418	1	07/17/24 17:00	07/18/24 02:52	JCH	Mt. Juliet, TN

## 20240709-PG16-(SB01)@34-36 L1755563-03 Solid

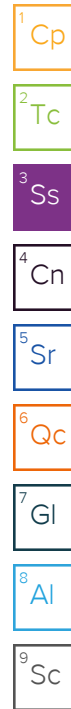
Collected by Ben Herrmann    Collected date/time 07/09/24 10:25    Received date/time 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324018	1	07/18/24 15:01	07/18/24 15:01	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2323690	1	07/15/24 08:15	07/16/24 12:55	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2323116	1	07/15/24 08:15	07/15/24 17:00	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2323981	1	07/16/24 16:53	07/17/24 07:21	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2324418	1	07/17/24 17:00	07/18/24 03:09	JCH	Mt. Juliet, TN

## 20240709-PG16-(SB01)@8-10 L1755563-04 Solid

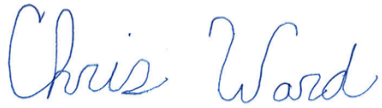
Collected by Ben Herrmann    Collected date/time 07/09/24 10:25    Received date/time 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324018	1	07/18/24 15:04	07/18/24 15:04	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2323690	1	07/15/24 08:15	07/16/24 13:17	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2323116	1	07/15/24 08:15	07/15/24 17:19	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2323981	1	07/16/24 16:53	07/17/24 08:00	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2324418	1	07/17/24 17:00	07/18/24 03:26	JCH	Mt. Juliet, TN



# CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward  
Project Manager

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Sodium Adsorption Ratio	0.363		1	07/18/2024 11:03	WG2324029

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
TPH (GC/FID) Low Fraction	0.0284	J	0.0217	0.100	1	07/16/2024 12:12	<a href="#">WG2323690</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	102			77.0-120		07/16/2024 12:12	<a href="#">WG2323690</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Benzene	0.000950	J	0.000467	0.00100	1	07/15/2024 16:22	<a href="#">WG2323116</a>
Toluene	0.00685		0.00130	0.00500	1	07/15/2024 16:22	<a href="#">WG2323116</a>
Ethylbenzene	U		0.000737	0.00250	1	07/15/2024 16:22	<a href="#">WG2323116</a>
Xylenes, Total	0.00470	J	0.000880	0.00650	1	07/15/2024 16:22	<a href="#">WG2323116</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/15/2024 16:22	<a href="#">WG2323116</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/15/2024 16:22	<a href="#">WG2323116</a>
(S) Toluene-d8	99.7			75.0-131		07/15/2024 16:22	<a href="#">WG2323116</a>
(S) 4-Bromofluorobenzene	104			67.0-138		07/15/2024 16:22	<a href="#">WG2323116</a>
(S) 1,2-Dichloroethane-d4	99.8			70.0-130		07/15/2024 16:22	<a href="#">WG2323116</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
C10-C28 Diesel Range	4.12		1.61	4.00	1	07/17/2024 07:08	<a href="#">WG2323981</a>
C28-C36 Motor Oil Range	4.31		0.274	4.00	1	07/17/2024 07:08	<a href="#">WG2323981</a>
(S) <i>o</i> -Terphenyl	49.7			18.0-148		07/17/2024 07:08	<a href="#">WG2323981</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/18/2024 02:35	<a href="#">WG2324418</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/18/2024 02:35	<a href="#">WG2324418</a>
(S) <i>p</i> -Terphenyl-d14	94.7			23.0-120		07/18/2024 02:35	<a href="#">WG2324418</a>
(S) Nitrobenzene-d5	84.1			14.0-149		07/18/2024 02:35	<a href="#">WG2324418</a>
(S) 2-Fluorobiphenyl	91.5			34.0-125		07/18/2024 02:35	<a href="#">WG2324418</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.737		1	07/18/2024 14:58	WG2324018

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.106		0.0217	0.100	1	07/16/2024 12:34	<a href="#">WG2323690</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.0			77.0-120		07/16/2024 12:34	<a href="#">WG2323690</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/15/2024 16:41	<a href="#">WG2323116</a>
Toluene	0.00170	J	0.00130	0.00500	1	07/15/2024 16:41	<a href="#">WG2323116</a>
Ethylbenzene	U		0.000737	0.00250	1	07/15/2024 16:41	<a href="#">WG2323116</a>
Xylenes, Total	U		0.000880	0.00650	1	07/15/2024 16:41	<a href="#">WG2323116</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/15/2024 16:41	<a href="#">WG2323116</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/15/2024 16:41	<a href="#">WG2323116</a>
(S) Toluene-d8	97.7			75.0-131		07/15/2024 16:41	<a href="#">WG2323116</a>
(S) 4-Bromofluorobenzene	103			67.0-138		07/15/2024 16:41	<a href="#">WG2323116</a>
(S) 1,2-Dichloroethane-d4	95.0			70.0-130		07/15/2024 16:41	<a href="#">WG2323116</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	2.23	J	1.61	4.00	1	07/17/2024 08:39	<a href="#">WG2323981</a>
C28-C36 Motor Oil Range	6.63		0.274	4.00	1	07/17/2024 08:39	<a href="#">WG2323981</a>
(S) <i>o</i> -Terphenyl	45.1			18.0-148		07/17/2024 08:39	<a href="#">WG2323981</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/18/2024 02:52	<a href="#">WG2324418</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/18/2024 02:52	<a href="#">WG2324418</a>
(S) <i>p</i> -Terphenyl-d14	90.3			23.0-120		07/18/2024 02:52	<a href="#">WG2324418</a>
(S) Nitrobenzene-d5	72.5			14.0-149		07/18/2024 02:52	<a href="#">WG2324418</a>
(S) 2-Fluorobiphenyl	81.9			34.0-125		07/18/2024 02:52	<a href="#">WG2324418</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.47		1	07/18/2024 15:01	WG2324018

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0530	J	0.0217	0.100	1	07/16/2024 12:55	<a href="#">WG2323690</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	100			77.0-120		07/16/2024 12:55	<a href="#">WG2323690</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/15/2024 17:00	<a href="#">WG2323116</a>
Toluene	U		0.00130	0.00500	1	07/15/2024 17:00	<a href="#">WG2323116</a>
Ethylbenzene	U		0.000737	0.00250	1	07/15/2024 17:00	<a href="#">WG2323116</a>
Xylenes, Total	U		0.000880	0.00650	1	07/15/2024 17:00	<a href="#">WG2323116</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/15/2024 17:00	<a href="#">WG2323116</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/15/2024 17:00	<a href="#">WG2323116</a>
(S) Toluene-d8	98.5			75.0-131		07/15/2024 17:00	<a href="#">WG2323116</a>
(S) 4-Bromofluorobenzene	107			67.0-138		07/15/2024 17:00	<a href="#">WG2323116</a>
(S) 1,2-Dichloroethane-d4	98.9			70.0-130		07/15/2024 17:00	<a href="#">WG2323116</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	1.63	J	1.61	4.00	1	07/17/2024 07:21	<a href="#">WG2323981</a>
C28-C36 Motor Oil Range	1.70	J	0.274	4.00	1	07/17/2024 07:21	<a href="#">WG2323981</a>
(S) <i>o</i> -Terphenyl	53.8			18.0-148		07/17/2024 07:21	<a href="#">WG2323981</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/18/2024 03:09	<a href="#">WG2324418</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/18/2024 03:09	<a href="#">WG2324418</a>
(S) <i>p</i> -Terphenyl-d14	93.8			23.0-120		07/18/2024 03:09	<a href="#">WG2324418</a>
(S) Nitrobenzene-d5	79.0			14.0-149		07/18/2024 03:09	<a href="#">WG2324418</a>
(S) 2-Fluorobiphenyl	88.2			34.0-125		07/18/2024 03:09	<a href="#">WG2324418</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.289		1	07/18/2024 15:04	WG2324018

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0670	J	0.0217	0.100	1	07/16/2024 13:17	<a href="#">WG2323690</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	101			77.0-120		07/16/2024 13:17	<a href="#">WG2323690</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/15/2024 17:19	<a href="#">WG2323116</a>
Toluene	U		0.00130	0.00500	1	07/15/2024 17:19	<a href="#">WG2323116</a>
Ethylbenzene	U		0.000737	0.00250	1	07/15/2024 17:19	<a href="#">WG2323116</a>
Xylenes, Total	U		0.000880	0.00650	1	07/15/2024 17:19	<a href="#">WG2323116</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/15/2024 17:19	<a href="#">WG2323116</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/15/2024 17:19	<a href="#">WG2323116</a>
(S) Toluene-d8	98.6			75.0-131		07/15/2024 17:19	<a href="#">WG2323116</a>
(S) 4-Bromofluorobenzene	105			67.0-138		07/15/2024 17:19	<a href="#">WG2323116</a>
(S) 1,2-Dichloroethane-d4	96.4			70.0-130		07/15/2024 17:19	<a href="#">WG2323116</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	10.9		1.61	4.00	1	07/17/2024 08:00	<a href="#">WG2323981</a>
C28-C36 Motor Oil Range	14.8		0.274	4.00	1	07/17/2024 08:00	<a href="#">WG2323981</a>
(S) <i>o</i> -Terphenyl	39.3			18.0-148		07/17/2024 08:00	<a href="#">WG2323981</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/18/2024 03:26	<a href="#">WG2324418</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/18/2024 03:26	<a href="#">WG2324418</a>
(S) <i>p</i> -Terphenyl-d14	88.4			23.0-120		07/18/2024 03:26	<a href="#">WG2324418</a>
(S) Nitrobenzene-d5	91.1			14.0-149		07/18/2024 03:26	<a href="#">WG2324418</a>
(S) 2-Fluorobiphenyl	94.9			34.0-125		07/18/2024 03:26	<a href="#">WG2324418</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4094938-2 07/16/24 10:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
<sup>(S)</sup> a,a,a-Trifluorotoluene(FID)	110			77.0-120

Laboratory Control Sample (LCS)

(LCS) R4094938-1 07/16/24 10:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.00	4.84	96.8	72.0-127	
<sup>(S)</sup> a,a,a-Trifluorotoluene(FID)			106	77.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R4095523-3 07/15/24 10:10

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	98.4			75.0-131
(S) 4-Bromofluorobenzene	103			67.0-138
(S) 1,2-Dichloroethane-d4	99.5			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4095523-1 07/15/24 08:35 • (LCSD) R4095523-2 07/15/24 08:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Benzene	0.125	0.129	0.121	103	96.8	70.0-123			6.40	20
Toluene	0.125	0.135	0.124	108	99.2	75.0-121			8.49	20
Ethylbenzene	0.125	0.136	0.128	109	102	74.0-126			6.06	20
Xylenes, Total	0.375	0.405	0.381	108	102	72.0-127			6.11	20
1,2,4-Trimethylbenzene	0.125	0.145	0.134	116	107	70.0-126			7.89	20
1,3,5-Trimethylbenzene	0.125	0.145	0.137	116	110	73.0-127			5.67	20
(S) Toluene-d8				99.4	97.3	75.0-131				
(S) 4-Bromofluorobenzene				99.1	103	67.0-138				
(S) 1,2-Dichloroethane-d4				102	103	70.0-130				

L1755444-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755444-01 07/15/24 11:56 • (MS) R4095523-4 07/15/24 18:16 • (MSD) R4095523-5 07/15/24 18:35

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Benzene	0.125	0.000725	0.132	0.120	105	95.4	1	10.0-149			9.52	37
Toluene	0.125	U	0.144	0.130	115	104	1	10.0-156			10.2	38
Ethylbenzene	0.125	U	0.148	0.133	118	106	1	10.0-160			10.7	38
Xylenes, Total	0.375	U	0.446	0.398	119	106	1	10.0-160			11.4	38
1,2,4-Trimethylbenzene	0.125	U	0.155	0.146	124	117	1	10.0-160			5.98	36
1,3,5-Trimethylbenzene	0.125	U	0.156	0.146	125	117	1	10.0-160			6.62	38
(S) Toluene-d8					98.8	98.6		75.0-131				
(S) 4-Bromofluorobenzene					104	101		67.0-138				
(S) 1,2-Dichloroethane-d4					98.1	105		70.0-130				

Method Blank (MB)

(MB) R4094788-1 07/17/24 03:52

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
<i>(S) o-Terphenyl</i>	41.0			18.0-148

Laboratory Control Sample (LCS)

(LCS) R4094788-2 07/17/24 04:05

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/kg	mg/kg	%	%	
C10-C28 Diesel Range	50.0	32.7	65.4	50.0-150	
<i>(S) o-Terphenyl</i>			61.3	18.0-148	

L1754973-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1754973-14 07/17/24 04:18 • (MS) R4094788-3 07/17/24 04:31 • (MSD) R4094788-4 07/17/24 04:45

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
C10-C28 Diesel Range	50.0	U	27.2	27.2	54.4	54.4	1	50.0-150			0.000	20
<i>(S) o-Terphenyl</i>					41.3	50.2		18.0-148				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4095315-2 07/17/24 23:42

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
<i>(S) p-Terphenyl-d14</i>	111			23.0-120
<i>(S) Nitrobenzene-d5</i>	89.4			14.0-149
<i>(S) 2-Fluorobiphenyl</i>	102			34.0-125

Laboratory Control Sample (LCS)

(LCS) R4095315-1 07/17/24 22:50

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/kg	mg/kg	%	%	
1-Methylnaphthalene	0.0800	0.0707	88.4	51.0-121	
2-Methylnaphthalene	0.0800	0.0700	87.5	50.0-120	
<i>(S) p-Terphenyl-d14</i>			106	23.0-120	
<i>(S) Nitrobenzene-d5</i>			108	14.0-149	
<i>(S) 2-Fluorobiphenyl</i>			107	34.0-125	

L1755777-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755777-03 07/18/24 01:08 • (MS) R4095315-3 07/18/24 01:26 • (MSD) R4095315-4 07/18/24 01:43

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
1-Methylnaphthalene	0.0776	U	0.0461	0.0580	58.2	73.9	1	10.0-142			22.9	28
2-Methylnaphthalene	0.0776	U	0.0463	0.0801	58.4	102	1	10.0-137	J3		53.5	28
<i>(S) p-Terphenyl-d14</i>					79.5	84.3		23.0-120				
<i>(S) Nitrobenzene-d5</i>					75.5	72.4		14.0-149				
<i>(S) 2-Fluorobiphenyl</i>					70.2	75.0		34.0-125				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

# GLOSSARY OF TERMS

## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

### Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 GI

8 AI

9 Sc

# ACCREDITATIONS & LOCATIONS

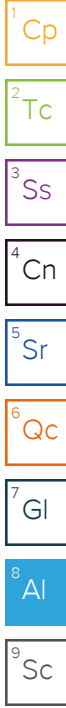
## Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1,6</sup>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1,4</sup>	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



**Caerus Piceance LLC**  
**143 Diamond Avenue**  
**Parachute, CO 81635**  
**970-285-9606**

Billing Information:  
**Same as above**

Pres Chk



12065 Lebanon Rd  
 Mount Juliet, TN 37122  
 Phone: 615-758-5858  
 Phone: 800-767-5859  
 Fax: 615-758-5859



Report to:  
**bmiddleton@caerusoilandgas.com**

Email To:  
**bmiddleton@caerusoilandgas.com**

Project Description:  
**PG16 Dumpline Release**

City/State Collected:  
**Battlement Mesa, CO**

Phone:  
 Fax:

Client Project #  
**PG16**

Lab Project #  
**PG16**

Collected by (print):  
**Ben Herrmann**

Site/Facility ID #  
**PG16**

P.O. #  
**PG16**

Collected by (signature):  
*[Signature]*  
 Immediately Packed on Ice N \_\_\_ Y X

**Rush?** (Lab MUST Be Notified)  
 \_\_\_ Same Day \_\_\_ Five Day  
 \_\_\_ Next Day \_\_\_ 5 Day (Rad Only)  
 \_\_\_ Two Day \_\_\_ 10 Day (Rad Only)  
 \_\_\_ Three Day

Date Results Needed  
**Standard TAT**

No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH- GRO, DRO, ORO	BTEX, 1,2,4-TMB, 1,3,5-TMB	1-&-2 Methyl naphthalene	SAR
20240709-PG16-(SB01)@14-16	Grab	SS	NA	7/9/2024	1025	2	X	X	X	X
20240709-PG16-(SB01)@27-29	Grab	SS	↓	7/9/2024	1325	2	X	X	X	X
20240709-PG16-(SB01)@34-36	Grab	SS		7/9/2024	1445	2	X	X	X	X
20240709-PG16-(SB01)@8-10	Grab	SS		7/9/2024	1005	2	X	X	X	X

L # **4755563**  
**J047**  
 Acctnum:  
 Template:  
 Prelogin:  
 TSR:  
 PB:  
 Shipped Via:  
 Remarks Sample # (lab only)

\* Matrix:  
 SS - Soil AIR - Air F - Filter  
 GW - Groundwater B - Bioassay  
 WW - WasteWater  
 DW - Drinking Water  
 OT - Other

Remarks:

Samples returned via:  
 \_\_\_ UPS \_\_\_ FedEx \_\_\_ Courier

Tracking #

pH \_\_\_ Temp \_\_\_  
 Flow \_\_\_ Other \_\_\_

**Sample Receipt Checklist**  
 COC Seal Present/Intact: NP Y N  
 COC Signed/Accurate: Y N  
 Bottles arrive intact: Y N  
 Correct bottles used: Y N  
 Sufficient volume sent: Y N  
 If Applicable  
 VOA Zero Headspace: Y N  
 Preservation Correct/Checked: Y N

Relinquished by: (Signature)  
*[Signature]*

Date: **7/10/24**  
 Time: **1230**

Received by: (Signature)  
*[Signature]*

Trip Blank Received: Yes / No  
 HCL / MeOH  
 TBR

Relinquished by: (Signature)  
*[Signature]*

Date: **7/10/24**  
 Time: **1700**

Received by: (Signature)  
*[Signature]*

Temp: °C Bottles Received: **8**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: Time:

Received for lab by: (Signature)  
*[Signature]*

Date: **7-11-24** Time: **0900**

Hold: Condition: NCF / OK



**Caerus Oil and Gas**

Sample Delivery Group: L1755857  
Samples Received: 07/12/2024  
Project Number: PG16  
Description: PG16 Dumpline Release  
Site: PG16  
Report To: Jake J. / Brett M. / Blair R. / Andy V.  
143 Diamond Avenue  
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward  
Project Manager

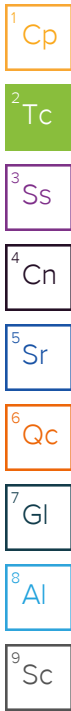
Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

**Pace Analytical National**

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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# SAMPLE SUMMARY

## 20240710-PG16-(SB02)@8-10 L1755857-01 Solid

Collected by Ben Hermann      Collected date/time 07/10/24 07:25      Received date/time 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324018	1	07/18/24 15:22	07/18/24 15:22	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2324039	1	07/16/24 08:25	07/16/24 22:15	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2324322	1	07/16/24 08:25	07/16/24 21:08	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2324919	1	07/17/24 17:04	07/18/24 00:52	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2324422	1	07/17/24 18:16	07/18/24 13:51	DSH	Mt. Juliet, TN

## 20240710-PG16-(SB02)@20-22 L1755857-02 Solid

Collected by Ben Hermann      Collected date/time 07/10/24 08:10      Received date/time 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324018	1	07/18/24 15:30	07/18/24 15:30	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2324039	1	07/16/24 08:25	07/16/24 22:38	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2324322	1	07/16/24 08:25	07/16/24 21:27	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2324919	1	07/17/24 17:04	07/18/24 02:10	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2324422	1	07/17/24 18:16	07/18/24 14:08	DSH	Mt. Juliet, TN

## 20240710-PG16-(SB02)@29-31 L1755857-03 Solid

Collected by Ben Hermann      Collected date/time 07/10/24 09:00      Received date/time 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324050	1	07/18/24 17:54	07/18/24 17:54	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2324039	1	07/16/24 08:25	07/16/24 23:02	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2324322	1	07/16/24 08:25	07/16/24 21:47	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2324919	1	07/17/24 17:04	07/18/24 02:23	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2324422	1	07/17/24 18:16	07/18/24 14:26	DSH	Mt. Juliet, TN

## 20240710-PG16-(SB02)@34-36 L1755857-04 Solid

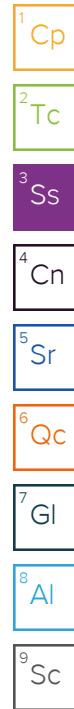
Collected by Ben Hermann      Collected date/time 07/10/24 09:20      Received date/time 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324050	1	07/18/24 18:02	07/18/24 18:02	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2324039	1	07/16/24 08:25	07/16/24 23:25	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2324322	1	07/16/24 08:25	07/16/24 22:06	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2324919	10	07/17/24 17:04	07/18/24 11:07	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2324422	1	07/17/24 18:16	07/18/24 14:44	DSH	Mt. Juliet, TN

## 20240710-PG16-(SB03)@8-10 L1755857-05 Solid

Collected by Ben Hermann      Collected date/time 07/10/24 11:00      Received date/time 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324050	1	07/18/24 18:05	07/18/24 18:05	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2324706	1	07/16/24 08:25	07/17/24 14:32	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2324322	1	07/16/24 08:25	07/16/24 22:25	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2324919	1	07/17/24 17:04	07/18/24 00:39	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2324422	1	07/17/24 18:16	07/18/24 15:19	DSH	Mt. Juliet, TN



# SAMPLE SUMMARY

## 20240710-PG16-(SB03)@21-23 L1755857-06 Solid

Collected by Ben Hermann  
 Collected date/time 07/10/24 12:45  
 Received date/time 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324050	1	07/18/24 18:08	07/18/24 18:08	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2324706	1	07/16/24 08:25	07/17/24 14:54	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2324322	1	07/16/24 08:25	07/16/24 22:44	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2324919	1	07/17/24 17:04	07/18/24 01:05	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2324422	1	07/17/24 18:16	07/18/24 15:37	DSH	Mt. Juliet, TN

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

## 20240710-PG16-(SB03)@34-36 L1755857-07 Solid

Collected by Ben Hermann  
 Collected date/time 07/10/24 15:30  
 Received date/time 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324050	1	07/18/24 18:11	07/18/24 18:11	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2324706	1	07/16/24 08:25	07/17/24 15:15	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2324322	1	07/16/24 08:25	07/16/24 23:03	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2324919	1	07/17/24 17:04	07/18/24 10:41	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2324422	1	07/17/24 18:16	07/18/24 15:54	DSH	Mt. Juliet, TN

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

# CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward  
Project Manager

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.256		1	07/18/2024 15:22	WG2324018

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0335	J	0.0217	0.100	1	07/16/2024 22:15	<a href="#">WG2324039</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	97.6			77.0-120		07/16/2024 22:15	<a href="#">WG2324039</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/16/2024 21:08	<a href="#">WG2324322</a>
Toluene	U		0.00130	0.00500	1	07/16/2024 21:08	<a href="#">WG2324322</a>
Ethylbenzene	U		0.000737	0.00250	1	07/16/2024 21:08	<a href="#">WG2324322</a>
Xylenes, Total	U		0.000880	0.00650	1	07/16/2024 21:08	<a href="#">WG2324322</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/16/2024 21:08	<a href="#">WG2324322</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/16/2024 21:08	<a href="#">WG2324322</a>
(S) Toluene-d8	95.9			75.0-131		07/16/2024 21:08	<a href="#">WG2324322</a>
(S) 4-Bromofluorobenzene	107			67.0-138		07/16/2024 21:08	<a href="#">WG2324322</a>
(S) 1,2-Dichloroethane-d4	88.1			70.0-130		07/16/2024 21:08	<a href="#">WG2324322</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	12.8		1.61	4.00	1	07/18/2024 00:52	<a href="#">WG2324919</a>
C28-C36 Motor Oil Range	9.12		0.274	4.00	1	07/18/2024 00:52	<a href="#">WG2324919</a>
(S) <i>o</i> -Terphenyl	57.3			18.0-148		07/18/2024 00:52	<a href="#">WG2324919</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/18/2024 13:51	<a href="#">WG2324422</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/18/2024 13:51	<a href="#">WG2324422</a>
(S) <i>p</i> -Terphenyl-d14	112			23.0-120		07/18/2024 13:51	<a href="#">WG2324422</a>
(S) Nitrobenzene-d5	114			14.0-149		07/18/2024 13:51	<a href="#">WG2324422</a>
(S) 2-Fluorobiphenyl	130	J1		34.0-125		07/18/2024 13:51	<a href="#">WG2324422</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.378		1	07/18/2024 15:30	WG2324018

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.173		0.0217	0.100	1	07/16/2024 22:38	<a href="#">WG2324039</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	95.8			77.0-120		07/16/2024 22:38	<a href="#">WG2324039</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/16/2024 21:27	<a href="#">WG2324322</a>
Toluene	U		0.00130	0.00500	1	07/16/2024 21:27	<a href="#">WG2324322</a>
Ethylbenzene	U		0.000737	0.00250	1	07/16/2024 21:27	<a href="#">WG2324322</a>
Xylenes, Total	U		0.000880	0.00650	1	07/16/2024 21:27	<a href="#">WG2324322</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/16/2024 21:27	<a href="#">WG2324322</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/16/2024 21:27	<a href="#">WG2324322</a>
(S) Toluene-d8	96.5			75.0-131		07/16/2024 21:27	<a href="#">WG2324322</a>
(S) 4-Bromofluorobenzene	104			67.0-138		07/16/2024 21:27	<a href="#">WG2324322</a>
(S) 1,2-Dichloroethane-d4	95.6			70.0-130		07/16/2024 21:27	<a href="#">WG2324322</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	49.8		1.61	4.00	1	07/18/2024 02:10	<a href="#">WG2324919</a>
C28-C36 Motor Oil Range	32.0		0.274	4.00	1	07/18/2024 02:10	<a href="#">WG2324919</a>
(S) <i>o</i> -Terphenyl	65.3			18.0-148		07/18/2024 02:10	<a href="#">WG2324919</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/18/2024 14:08	<a href="#">WG2324422</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/18/2024 14:08	<a href="#">WG2324422</a>
(S) <i>p</i> -Terphenyl-d14	116			23.0-120		07/18/2024 14:08	<a href="#">WG2324422</a>
(S) Nitrobenzene-d5	52.5			14.0-149		07/18/2024 14:08	<a href="#">WG2324422</a>
(S) 2-Fluorobiphenyl	103			34.0-125		07/18/2024 14:08	<a href="#">WG2324422</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.589		1	07/18/2024 17:54	WG2324050

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.167		0.0217	0.100	1	07/16/2024 23:02	<a href="#">WG2324039</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	96.5			77.0-120		07/16/2024 23:02	<a href="#">WG2324039</a>

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/16/2024 21:47	<a href="#">WG2324322</a>
Toluene	U		0.00130	0.00500	1	07/16/2024 21:47	<a href="#">WG2324322</a>
Ethylbenzene	U		0.000737	0.00250	1	07/16/2024 21:47	<a href="#">WG2324322</a>
Xylenes, Total	U		0.000880	0.00650	1	07/16/2024 21:47	<a href="#">WG2324322</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/16/2024 21:47	<a href="#">WG2324322</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/16/2024 21:47	<a href="#">WG2324322</a>
(S) Toluene-d8	97.6			75.0-131		07/16/2024 21:47	<a href="#">WG2324322</a>
(S) 4-Bromofluorobenzene	103			67.0-138		07/16/2024 21:47	<a href="#">WG2324322</a>
(S) 1,2-Dichloroethane-d4	95.5			70.0-130		07/16/2024 21:47	<a href="#">WG2324322</a>

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	43.6		1.61	4.00	1	07/18/2024 02:23	<a href="#">WG2324919</a>
C28-C36 Motor Oil Range	21.4		0.274	4.00	1	07/18/2024 02:23	<a href="#">WG2324919</a>
(S) <i>o</i> -Terphenyl	76.4			18.0-148		07/18/2024 02:23	<a href="#">WG2324919</a>

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/18/2024 14:26	<a href="#">WG2324422</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/18/2024 14:26	<a href="#">WG2324422</a>
(S) <i>p</i> -Terphenyl-d14	127	J1		23.0-120		07/18/2024 14:26	<a href="#">WG2324422</a>
(S) Nitrobenzene-d5	69.8			14.0-149		07/18/2024 14:26	<a href="#">WG2324422</a>
(S) 2-Fluorobiphenyl	119			34.0-125		07/18/2024 14:26	<a href="#">WG2324422</a>



## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.01		1	07/18/2024 18:02	WG2324050

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.133		0.0217	0.100	1	07/16/2024 23:25	<a href="#">WG2324039</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	96.6			77.0-120		07/16/2024 23:25	<a href="#">WG2324039</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/16/2024 22:06	<a href="#">WG2324322</a>
Toluene	U		0.00130	0.00500	1	07/16/2024 22:06	<a href="#">WG2324322</a>
Ethylbenzene	U		0.000737	0.00250	1	07/16/2024 22:06	<a href="#">WG2324322</a>
Xylenes, Total	U		0.000880	0.00650	1	07/16/2024 22:06	<a href="#">WG2324322</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/16/2024 22:06	<a href="#">WG2324322</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/16/2024 22:06	<a href="#">WG2324322</a>
(S) Toluene-d8	96.8			75.0-131		07/16/2024 22:06	<a href="#">WG2324322</a>
(S) 4-Bromofluorobenzene	104			67.0-138		07/16/2024 22:06	<a href="#">WG2324322</a>
(S) 1,2-Dichloroethane-d4	86.6			70.0-130		07/16/2024 22:06	<a href="#">WG2324322</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	649		16.1	40.0	10	07/18/2024 11:07	<a href="#">WG2324919</a>
C28-C36 Motor Oil Range	262		2.74	40.0	10	07/18/2024 11:07	<a href="#">WG2324919</a>
(S) <i>o</i> -Terphenyl	97.0			18.0-148		07/18/2024 11:07	<a href="#">WG2324919</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/18/2024 14:44	<a href="#">WG2324422</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/18/2024 14:44	<a href="#">WG2324422</a>
(S) <i>p</i> -Terphenyl-d14	160	J1		23.0-120		07/18/2024 14:44	<a href="#">WG2324422</a>
(S) Nitrobenzene-d5	87.7			14.0-149		07/18/2024 14:44	<a href="#">WG2324422</a>
(S) 2-Fluorobiphenyl	105			34.0-125		07/18/2024 14:44	<a href="#">WG2324422</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.517		1	07/18/2024 18:05	WG2324050

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	07/17/2024 14:32	<a href="#">WG2324706</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.8			77.0-120		07/17/2024 14:32	<a href="#">WG2324706</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/16/2024 22:25	<a href="#">WG2324322</a>
Toluene	U		0.00130	0.00500	1	07/16/2024 22:25	<a href="#">WG2324322</a>
Ethylbenzene	U		0.000737	0.00250	1	07/16/2024 22:25	<a href="#">WG2324322</a>
Xylenes, Total	U		0.000880	0.00650	1	07/16/2024 22:25	<a href="#">WG2324322</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/16/2024 22:25	<a href="#">WG2324322</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/16/2024 22:25	<a href="#">WG2324322</a>
(S) Toluene-d8	97.2			75.0-131		07/16/2024 22:25	<a href="#">WG2324322</a>
(S) 4-Bromofluorobenzene	102			67.0-138		07/16/2024 22:25	<a href="#">WG2324322</a>
(S) 1,2-Dichloroethane-d4	89.8			70.0-130		07/16/2024 22:25	<a href="#">WG2324322</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	16.3		1.61	4.00	1	07/18/2024 00:39	<a href="#">WG2324919</a>
C28-C36 Motor Oil Range	9.51		0.274	4.00	1	07/18/2024 00:39	<a href="#">WG2324919</a>
(S) <i>o</i> -Terphenyl	51.4			18.0-148		07/18/2024 00:39	<a href="#">WG2324919</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/18/2024 15:19	<a href="#">WG2324422</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/18/2024 15:19	<a href="#">WG2324422</a>
(S) <i>p</i> -Terphenyl-d14	92.7			23.0-120		07/18/2024 15:19	<a href="#">WG2324422</a>
(S) Nitrobenzene-d5	81.1			14.0-149		07/18/2024 15:19	<a href="#">WG2324422</a>
(S) 2-Fluorobiphenyl	103			34.0-125		07/18/2024 15:19	<a href="#">WG2324422</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.678		1	07/18/2024 18:08	WG2324050

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.123		0.0217	0.100	1	07/17/2024 14:54	<a href="#">WG2324706</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	97.4			77.0-120		07/17/2024 14:54	<a href="#">WG2324706</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/16/2024 22:44	<a href="#">WG2324322</a>
Toluene	U		0.00130	0.00500	1	07/16/2024 22:44	<a href="#">WG2324322</a>
Ethylbenzene	U		0.000737	0.00250	1	07/16/2024 22:44	<a href="#">WG2324322</a>
Xylenes, Total	U		0.000880	0.00650	1	07/16/2024 22:44	<a href="#">WG2324322</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/16/2024 22:44	<a href="#">WG2324322</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/16/2024 22:44	<a href="#">WG2324322</a>
(S) Toluene-d8	97.5			75.0-131		07/16/2024 22:44	<a href="#">WG2324322</a>
(S) 4-Bromofluorobenzene	102			67.0-138		07/16/2024 22:44	<a href="#">WG2324322</a>
(S) 1,2-Dichloroethane-d4	90.9			70.0-130		07/16/2024 22:44	<a href="#">WG2324322</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	5.34		1.61	4.00	1	07/18/2024 01:05	<a href="#">WG2324919</a>
C28-C36 Motor Oil Range	14.1		0.274	4.00	1	07/18/2024 01:05	<a href="#">WG2324919</a>
(S) <i>o</i> -Terphenyl	60.9			18.0-148		07/18/2024 01:05	<a href="#">WG2324919</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/18/2024 15:37	<a href="#">WG2324422</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/18/2024 15:37	<a href="#">WG2324422</a>
(S) <i>p</i> -Terphenyl-d14	108			23.0-120		07/18/2024 15:37	<a href="#">WG2324422</a>
(S) Nitrobenzene-d5	63.8			14.0-149		07/18/2024 15:37	<a href="#">WG2324422</a>
(S) 2-Fluorobiphenyl	104			34.0-125		07/18/2024 15:37	<a href="#">WG2324422</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Sodium Adsorption Ratio	2.13		1	07/18/2024 18:11	WG2324050

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
TPH (GC/FID) Low Fraction	0.0851	J	0.0217	0.100	1	07/17/2024 15:15	<a href="#">WG2324706</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.4			77.0-120		07/17/2024 15:15	<a href="#">WG2324706</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Benzene	U		0.000467	0.00100	1	07/16/2024 23:03	<a href="#">WG2324322</a>
Toluene	U		0.00130	0.00500	1	07/16/2024 23:03	<a href="#">WG2324322</a>
Ethylbenzene	U		0.000737	0.00250	1	07/16/2024 23:03	<a href="#">WG2324322</a>
Xylenes, Total	U		0.000880	0.00650	1	07/16/2024 23:03	<a href="#">WG2324322</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/16/2024 23:03	<a href="#">WG2324322</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/16/2024 23:03	<a href="#">WG2324322</a>
(S) Toluene-d8	96.9			75.0-131		07/16/2024 23:03	<a href="#">WG2324322</a>
(S) 4-Bromofluorobenzene	104			67.0-138		07/16/2024 23:03	<a href="#">WG2324322</a>
(S) 1,2-Dichloroethane-d4	88.6			70.0-130		07/16/2024 23:03	<a href="#">WG2324322</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
C10-C28 Diesel Range	2.88	J	1.61	4.00	1	07/18/2024 10:41	<a href="#">WG2324919</a>
C28-C36 Motor Oil Range	8.19		0.274	4.00	1	07/18/2024 10:41	<a href="#">WG2324919</a>
(S) <i>o</i> -Terphenyl	50.6			18.0-148		07/18/2024 10:41	<a href="#">WG2324919</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/18/2024 15:54	<a href="#">WG2324422</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/18/2024 15:54	<a href="#">WG2324422</a>
(S) <i>p</i> -Terphenyl-d14	105			23.0-120		07/18/2024 15:54	<a href="#">WG2324422</a>
(S) Nitrobenzene-d5	0.000	J2		14.0-149		07/18/2024 15:54	<a href="#">WG2324422</a>
(S) 2-Fluorobiphenyl	103			34.0-125		07/18/2024 15:54	<a href="#">WG2324422</a>

## Sample Narrative:

L1755857-07 WG2324422: Surrogate failure due to matrix interference

Method Blank (MB)

(MB) R4094610-2 07/16/24 14:01

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
<sup>(S)</sup> a,a,a-Trifluorotoluene(FID)	100			77.0-120

Laboratory Control Sample (LCS)

(LCS) R4094610-1 07/16/24 13:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.00	4.26	85.2	72.0-127	
<sup>(S)</sup> a,a,a-Trifluorotoluene(FID)			101	77.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R4095478-1 07/17/24 10:38

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
<sup>(S)</sup> a,a,a-Trifluorotoluene(FID)	109			77.0-120

Laboratory Control Sample (LCS)

(LCS) R4095478-2 07/17/24 10:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.00	4.26	85.2	72.0-127	
<sup>(S)</sup> a,a,a-Trifluorotoluene(FID)			108	77.0-120	

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

Method Blank (MB)

(MB) R4096123-2 07/16/24 20:36

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	98.4			75.0-131
(S) 4-Bromofluorobenzene	108			67.0-138
(S) 1,2-Dichloroethane-d4	85.2			70.0-130

Laboratory Control Sample (LCS)

(LCS) R4096123-1 07/16/24 19:19

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/kg	mg/kg	%	%	
Benzene	0.125	0.139	111	70.0-123	
Toluene	0.125	0.125	100	75.0-121	
Ethylbenzene	0.125	0.125	100	74.0-126	
Xylenes, Total	0.375	0.383	102	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.142	114	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.137	110	73.0-127	
(S) Toluene-d8			97.4	75.0-131	
(S) 4-Bromofluorobenzene			99.7	67.0-138	
(S) 1,2-Dichloroethane-d4			94.8	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4095352-1 07/17/24 23:20

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	0.441	J	0.274	4.00
(S) o-Terphenyl	63.8			18.0-148

Laboratory Control Sample (LCS)

(LCS) R4095352-2 07/17/24 23:33

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/kg	mg/kg	%	%	
C10-C28 Diesel Range	50.0	36.8	73.6	50.0-150	
(S) o-Terphenyl			70.6	18.0-148	

L1755857-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755857-06 07/18/24 01:05 • (MS) R4095352-3 07/18/24 01:18 • (MSD) R4095352-4 07/18/24 01:31

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
C10-C28 Diesel Range	48.9	5.34	37.3	41.1	65.4	73.1	1	50.0-150			9.69	20
(S) o-Terphenyl					59.7	62.1		18.0-148				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4095792-2 07/18/24 11:29

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
(S) p-Terphenyl-d14	126	J1		23.0-120
(S) Nitrobenzene-d5	61.1			14.0-149
(S) 2-Fluorobiphenyl	111			34.0-125

Laboratory Control Sample (LCS)

(LCS) R4095792-1 07/18/24 11:11

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/kg	mg/kg	%	%	
1-Methylnaphthalene	0.0800	0.0781	97.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0742	92.8	50.0-120	
(S) p-Terphenyl-d14			128	23.0-120	J1
(S) Nitrobenzene-d5			47.1	14.0-149	
(S) 2-Fluorobiphenyl			111	34.0-125	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

# GLOSSARY OF TERMS

## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

### Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

### Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 GI

8 AI

9 Sc

# ACCREDITATIONS & LOCATIONS

## Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1,6</sup>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1,4</sup>	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

**Caerus Piceance LLC**  
 143 Diamond Avenue  
 Parachute, CO 81635  
 970-285-9606

Billing Information:  
 Same as above

Report to:  
**bmiddleton@caerusoilandgas.com**

Email To:  
**bmiddleton@caerusoilandgas.com**

Project Description:  
**PG16 Dumpline Release**

City/State Collected:  
**Battlement Mesa, CO**

Phone:  
 Fax:

Client Project #  
**PG16**

Lab Project #  
**PG16**

Collected by (print):  
*Ben Herrmann*

Site/Facility ID #  
**PG16**

P.O. #  
**PG16**

Collected by (signature):  
*[Signature]*

**Rush?** (Lab MUST Be Notified)  
 \_\_\_ Same Day \_\_\_ Five Day  
 \_\_\_ Next Day \_\_\_ 5 Day (Rad Only)  
 \_\_\_ Two Day \_\_\_ 10 Day (Rad Only)  
 \_\_\_ Three Day  
 Date Results Needed  
**Standard TAT**

Immediately Packed on Ice N \_\_\_ Y

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
20240710-PG16-(SB02)@8-10	Grab	SS	8-10	7/10/2024	725	2
20240710-PG16-(SB02)@20-22			20-22		810	2
20240710-PG16-(SB02)@29-31			29-31		900	2
20240710-PG16-(SB02)@34-36			34-36		920	2
20240710-PG16-(SB03)@8-10			8-10		1100	2
20240710-PG16-(SB03)@21-23			21-23		1245	2
20240710-PG16-(SB03)@34-36	↓	↓	34-36	↓	1530	2

Analysis / Container / Preservative			
TPH- GRO, DRO, ORO	BTEX, 1,2,4-TMB, 1,3,5-TMB	1-&-2 Methyl naphthalene	SAR
X	X	X	X

Chain of Custody Page \_\_\_ of \_\_\_



12065 Lebanon Rd  
 Mount Juliet, TN 37122  
 Phone: 615-758-5858  
 Phone: 800-767-5859  
 Fax: 615-758-5859



L # **6175585**  
 Tabl **G197**  
 Acctnum:  
 Template:  
 Prelogin:  
 TSR:  
 PB:  
 Shipped Via:  
 Remarks Sample # (lab only)

\* Matrix:  
 SS - Soil AIR - Air F - Filter  
 GW - Groundwater B - Bioassay  
 WW - WasteWater  
 DW - Drinking Water  
 OT - Other

Remarks:  
 Samples returned via:  
 \_\_\_ UPS \_\_\_ FedEx \_\_\_ Courier \_\_\_

Tracking # **6426 8306 9400**

Sample Receipt Checklist

COC Seal Present/Intact:	<input checked="" type="checkbox"/>	Y	N
COC Signed/Accurate:	<input checked="" type="checkbox"/>	Y	N
Bottles arrive intact:	<input checked="" type="checkbox"/>	Y	N
Correct bottles used:	<input checked="" type="checkbox"/>	Y	N
Sufficient volume sent:	<input checked="" type="checkbox"/>	Y	N
VOA Zero Headspace:	<input checked="" type="checkbox"/>	Y	N
Preservation Correct/Checked:	<input checked="" type="checkbox"/>	Y	N

Relinquished by: (Signature)  
*[Signature]*

Date: **7/11/24**  
 Time: **1300**

Received by: (Signature)  
*[Signature]*

Trip Blank Received: Yes  No  
 HCT/MeoH  
 TBR

Relinquished by: (Signature)  
*[Signature]*

Date: **7/12/24**  
 Time: **1500**

Received by: (Signature)  
*[Signature]*

Temp: °C **4.5 + 0.3 = 4.8**  
 Bottles Received: **14**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: Time:

Received for lab by: (Signature)  
*[Signature]*


Date: **07/12/2024**  
 Time: **0900**

Hold: Condition: NCF /  OK

**Caerus Oil and Gas**

Sample Delivery Group: L1756544  
Samples Received: 07/13/2024  
Project Number: PG16  
Description: PG16 Dumpline Release  
Site: PG16  
Report To: Jake J. / Brett M. / Blair R. / Andy V.  
143 Diamond Avenue  
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward  
Project Manager

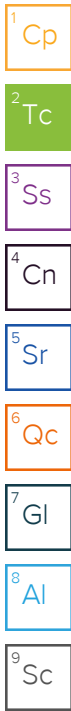
Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

**Pace Analytical National**

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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# SAMPLE SUMMARY

## 20240711-PG16-(SB04)@11-13 L1756544-01 Solid

Collected by Ben Herrmann      Collected date/time 07/11/24 08:15      Received date/time 07/13/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324060	1	07/19/24 16:40	07/19/24 16:40	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2326674	1	07/18/24 14:15	07/20/24 02:32	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2326719	1	07/18/24 14:15	07/20/24 14:32	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2327009	1	07/22/24 08:26	07/22/24 18:14	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2326995	1	07/20/24 22:32	07/21/24 10:07	JCH	Mt. Juliet, TN



## 20240711-PG16-(SB04)@19-20.5 L1756544-02 Solid

Collected by Ben Herrmann      Collected date/time 07/11/24 08:50      Received date/time 07/13/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324060	1	07/19/24 16:42	07/19/24 16:42	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2326674	1	07/18/24 14:15	07/20/24 02:53	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2326719	1	07/18/24 14:15	07/20/24 14:51	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2327009	1	07/22/24 08:26	07/22/24 19:10	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2326995	1	07/20/24 22:32	07/21/24 10:24	JCH	Mt. Juliet, TN



## 20240711-PG16-(SB04)@24-25.5 L1756544-03 Solid

Collected by Ben Herrmann      Collected date/time 07/11/24 09:25      Received date/time 07/13/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324060	1	07/19/24 16:43	07/19/24 16:43	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2326674	1	07/18/24 14:15	07/20/24 03:15	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2326719	1	07/18/24 14:15	07/20/24 15:10	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2327011	1	07/22/24 15:46	07/23/24 11:37	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2326995	1	07/20/24 22:32	07/21/24 10:42	JCH	Mt. Juliet, TN



## 20240711-PG16-(SB04)@34-35.5 L1756544-04 Solid

Collected by Ben Herrmann      Collected date/time 07/11/24 11:15      Received date/time 07/13/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324029	1	07/18/24 11:06	07/18/24 11:06	DJS	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2326674	1	07/18/24 14:15	07/20/24 07:32	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2326719	1	07/18/24 14:15	07/20/24 15:29	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2327011	1	07/22/24 15:46	07/23/24 03:21	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2326995	1	07/20/24 22:32	07/21/24 11:00	JCH	Mt. Juliet, TN

## 20240711-PG16-(SB05)@14-16 L1756544-05 Solid

Collected by Ben Herrmann      Collected date/time 07/11/24 13:15      Received date/time 07/13/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324029	1	07/18/24 11:08	07/18/24 11:08	DJS	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2326674	1	07/18/24 14:15	07/20/24 07:53	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2326719	1	07/18/24 14:15	07/20/24 15:48	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2327011	1	07/22/24 15:46	07/23/24 01:15	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2326995	1	07/20/24 22:32	07/21/24 11:17	JCH	Mt. Juliet, TN

# SAMPLE SUMMARY

20240711-PG16-(SB05)@19-21 L1756544-06 Solid

Collected by Ben Herrmann  
 Collected date/time 07/11/24 13:35  
 Received date/time 07/13/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324060	1	07/19/24 16:45	07/19/24 16:45	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2326674	1	07/18/24 14:15	07/20/24 08:14	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2326719	1	07/18/24 14:15	07/20/24 16:07	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2327011	1	07/22/24 15:46	07/23/24 02:11	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2326995	1	07/20/24 22:32	07/21/24 11:35	JCH	Mt. Juliet, TN

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

20240711-PG16-(SB05)@34.5-36.5 L1756544-07 Solid

Collected by Ben Herrmann  
 Collected date/time 07/12/24 07:50  
 Received date/time 07/13/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2324060	1	07/19/24 16:47	07/19/24 16:47	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2326674	1	07/18/24 14:15	07/20/24 08:35	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2326719	1	07/18/24 14:15	07/20/24 16:26	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2327011	1	07/22/24 15:46	07/23/24 02:25	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2326995	1	07/20/24 22:32	07/21/24 11:52	JCH	Mt. Juliet, TN

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

# CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward  
Project Manager

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc

## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.21		1	07/19/2024 16:40	WG2324060

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	07/20/2024 02:32	<a href="#">WG2326674</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	102			77.0-120		07/20/2024 02:32	<a href="#">WG2326674</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/20/2024 14:32	<a href="#">WG2326719</a>
Toluene	U		0.00130	0.00500	1	07/20/2024 14:32	<a href="#">WG2326719</a>
Ethylbenzene	U		0.000737	0.00250	1	07/20/2024 14:32	<a href="#">WG2326719</a>
Xylenes, Total	U		0.000880	0.00650	1	07/20/2024 14:32	<a href="#">WG2326719</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/20/2024 14:32	<a href="#">WG2326719</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/20/2024 14:32	<a href="#">WG2326719</a>
(S) Toluene-d8	100			75.0-131		07/20/2024 14:32	<a href="#">WG2326719</a>
(S) 4-Bromofluorobenzene	98.7			67.0-138		07/20/2024 14:32	<a href="#">WG2326719</a>
(S) 1,2-Dichloroethane-d4	95.1			70.0-130		07/20/2024 14:32	<a href="#">WG2326719</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	1.72	J	1.61	4.00	1	07/22/2024 18:14	<a href="#">WG2327009</a>
C28-C36 Motor Oil Range	U		0.274	4.00	1	07/22/2024 18:14	<a href="#">WG2327009</a>
(S) <i>o</i> -Terphenyl	66.7			18.0-148		07/22/2024 18:14	<a href="#">WG2327009</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/21/2024 10:07	<a href="#">WG2326995</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/21/2024 10:07	<a href="#">WG2326995</a>
(S) <i>p</i> -Terphenyl-d14	75.9			23.0-120		07/21/2024 10:07	<a href="#">WG2326995</a>
(S) Nitrobenzene-d5	71.9			14.0-149		07/21/2024 10:07	<a href="#">WG2326995</a>
(S) 2-Fluorobiphenyl	74.5			34.0-125		07/21/2024 10:07	<a href="#">WG2326995</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.71		1	07/19/2024 16:42	WG2324060

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0909	J	0.0217	0.100	1	07/20/2024 02:53	<a href="#">WG2326674</a>
(S) a,a,a-Trifluorotoluene(FID)	99.6			77.0-120		07/20/2024 02:53	<a href="#">WG2326674</a>

Volatile Organic Compounds (GC/MS) by Method 8260B

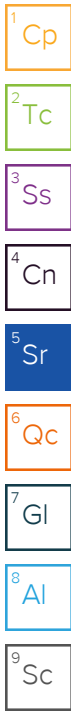
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/20/2024 14:51	<a href="#">WG2326719</a>
Toluene	U		0.00130	0.00500	1	07/20/2024 14:51	<a href="#">WG2326719</a>
Ethylbenzene	U		0.000737	0.00250	1	07/20/2024 14:51	<a href="#">WG2326719</a>
Xylenes, Total	U		0.000880	0.00650	1	07/20/2024 14:51	<a href="#">WG2326719</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/20/2024 14:51	<a href="#">WG2326719</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/20/2024 14:51	<a href="#">WG2326719</a>
(S) Toluene-d8	99.7			75.0-131		07/20/2024 14:51	<a href="#">WG2326719</a>
(S) 4-Bromofluorobenzene	101			67.0-138		07/20/2024 14:51	<a href="#">WG2326719</a>
(S) 1,2-Dichloroethane-d4	95.2			70.0-130		07/20/2024 14:51	<a href="#">WG2326719</a>

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	3.56	J	1.61	4.00	1	07/22/2024 19:10	<a href="#">WG2327009</a>
C28-C36 Motor Oil Range	U		0.274	4.00	1	07/22/2024 19:10	<a href="#">WG2327009</a>
(S) o-Terphenyl	71.2			18.0-148		07/22/2024 19:10	<a href="#">WG2327009</a>

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/21/2024 10:24	<a href="#">WG2326995</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/21/2024 10:24	<a href="#">WG2326995</a>
(S) p-Terphenyl-d14	80.6			23.0-120		07/21/2024 10:24	<a href="#">WG2326995</a>
(S) Nitrobenzene-d5	71.2			14.0-149		07/21/2024 10:24	<a href="#">WG2326995</a>
(S) 2-Fluorobiphenyl	76.4			34.0-125		07/21/2024 10:24	<a href="#">WG2326995</a>



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.86		1	07/19/2024 16:43	WG2324060

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0634	J	0.0217	0.100	1	07/20/2024 03:15	<a href="#">WG2326674</a>
(S) a,a,a-Trifluorotoluene(FID)	99.4			77.0-120		07/20/2024 03:15	<a href="#">WG2326674</a>

Volatile Organic Compounds (GC/MS) by Method 8260B

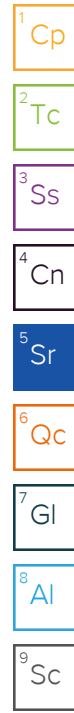
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/20/2024 15:10	<a href="#">WG2326719</a>
Toluene	U		0.00130	0.00500	1	07/20/2024 15:10	<a href="#">WG2326719</a>
Ethylbenzene	U		0.000737	0.00250	1	07/20/2024 15:10	<a href="#">WG2326719</a>
Xylenes, Total	0.00389	J	0.000880	0.00650	1	07/20/2024 15:10	<a href="#">WG2326719</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/20/2024 15:10	<a href="#">WG2326719</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/20/2024 15:10	<a href="#">WG2326719</a>
(S) Toluene-d8	101			75.0-131		07/20/2024 15:10	<a href="#">WG2326719</a>
(S) 4-Bromofluorobenzene	102			67.0-138		07/20/2024 15:10	<a href="#">WG2326719</a>
(S) 1,2-Dichloroethane-d4	89.8			70.0-130		07/20/2024 15:10	<a href="#">WG2326719</a>

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	19.0		1.61	4.00	1	07/23/2024 11:37	<a href="#">WG2327011</a>
C28-C36 Motor Oil Range	20.3		0.274	4.00	1	07/23/2024 11:37	<a href="#">WG2327011</a>
(S) o-Terphenyl	79.5			18.0-148		07/23/2024 11:37	<a href="#">WG2327011</a>

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/21/2024 10:42	<a href="#">WG2326995</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/21/2024 10:42	<a href="#">WG2326995</a>
(S) p-Terphenyl-d14	70.2			23.0-120		07/21/2024 10:42	<a href="#">WG2326995</a>
(S) Nitrobenzene-d5	56.6			14.0-149		07/21/2024 10:42	<a href="#">WG2326995</a>
(S) 2-Fluorobiphenyl	59.7			34.0-125		07/21/2024 10:42	<a href="#">WG2326995</a>



## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.85		1	07/18/2024 11:06	WG2324029

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.153		0.0217	0.100	1	07/20/2024 07:32	<a href="#">WG2326674</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.2			77.0-120		07/20/2024 07:32	<a href="#">WG2326674</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/20/2024 15:29	<a href="#">WG2326719</a>
Toluene	U		0.00130	0.00500	1	07/20/2024 15:29	<a href="#">WG2326719</a>
Ethylbenzene	U		0.000737	0.00250	1	07/20/2024 15:29	<a href="#">WG2326719</a>
Xylenes, Total	0.00163	J	0.000880	0.00650	1	07/20/2024 15:29	<a href="#">WG2326719</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/20/2024 15:29	<a href="#">WG2326719</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/20/2024 15:29	<a href="#">WG2326719</a>
(S) Toluene-d8	101			75.0-131		07/20/2024 15:29	<a href="#">WG2326719</a>
(S) 4-Bromofluorobenzene	100			67.0-138		07/20/2024 15:29	<a href="#">WG2326719</a>
(S) 1,2-Dichloroethane-d4	94.1			70.0-130		07/20/2024 15:29	<a href="#">WG2326719</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	11.9		1.61	4.00	1	07/23/2024 03:21	<a href="#">WG2327011</a>
C28-C36 Motor Oil Range	17.4		0.274	4.00	1	07/23/2024 03:21	<a href="#">WG2327011</a>
(S) <i>o</i> -Terphenyl	66.4			18.0-148		07/23/2024 03:21	<a href="#">WG2327011</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/21/2024 11:00	<a href="#">WG2326995</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/21/2024 11:00	<a href="#">WG2326995</a>
(S) <i>p</i> -Terphenyl-d14	127	J1		23.0-120		07/21/2024 11:00	<a href="#">WG2326995</a>
(S) Nitrobenzene-d5	129			14.0-149		07/21/2024 11:00	<a href="#">WG2326995</a>
(S) 2-Fluorobiphenyl	130	J1		34.0-125		07/21/2024 11:00	<a href="#">WG2326995</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.36		1	07/18/2024 11:08	WG2324029

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	07/20/2024 07:53	<a href="#">WG2326674</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	104			77.0-120		07/20/2024 07:53	<a href="#">WG2326674</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/20/2024 15:48	<a href="#">WG2326719</a>
Toluene	U		0.00130	0.00500	1	07/20/2024 15:48	<a href="#">WG2326719</a>
Ethylbenzene	U		0.000737	0.00250	1	07/20/2024 15:48	<a href="#">WG2326719</a>
Xylenes, Total	U		0.000880	0.00650	1	07/20/2024 15:48	<a href="#">WG2326719</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/20/2024 15:48	<a href="#">WG2326719</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/20/2024 15:48	<a href="#">WG2326719</a>
(S) Toluene-d8	97.4			75.0-131		07/20/2024 15:48	<a href="#">WG2326719</a>
(S) 4-Bromofluorobenzene	103			67.0-138		07/20/2024 15:48	<a href="#">WG2326719</a>
(S) 1,2-Dichloroethane-d4	97.7			70.0-130		07/20/2024 15:48	<a href="#">WG2326719</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	19.8		1.61	4.00	1	07/23/2024 01:15	<a href="#">WG2327011</a>
C28-C36 Motor Oil Range	0.793	J	0.274	4.00	1	07/23/2024 01:15	<a href="#">WG2327011</a>
(S) <i>o</i> -Terphenyl	66.4			18.0-148		07/23/2024 01:15	<a href="#">WG2327011</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/21/2024 11:17	<a href="#">WG2326995</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/21/2024 11:17	<a href="#">WG2326995</a>
(S) <i>p</i> -Terphenyl-d14	72.7			23.0-120		07/21/2024 11:17	<a href="#">WG2326995</a>
(S) Nitrobenzene-d5	67.8			14.0-149		07/21/2024 11:17	<a href="#">WG2326995</a>
(S) 2-Fluorobiphenyl	73.7			34.0-125		07/21/2024 11:17	<a href="#">WG2326995</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Sodium Adsorption Ratio	1.49		1	07/19/2024 16:45	WG2324060

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
TPH (GC/FID) Low Fraction	0.0846	J	0.0217	0.100	1	07/20/2024 08:14	<a href="#">WG2326674</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	101			77.0-120		07/20/2024 08:14	<a href="#">WG2326674</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Benzene	U		0.000467	0.00100	1	07/20/2024 16:07	<a href="#">WG2326719</a>
Toluene	U		0.00130	0.00500	1	07/20/2024 16:07	<a href="#">WG2326719</a>
Ethylbenzene	U		0.000737	0.00250	1	07/20/2024 16:07	<a href="#">WG2326719</a>
Xylenes, Total	U		0.000880	0.00650	1	07/20/2024 16:07	<a href="#">WG2326719</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/20/2024 16:07	<a href="#">WG2326719</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/20/2024 16:07	<a href="#">WG2326719</a>
(S) Toluene-d8	101			75.0-131		07/20/2024 16:07	<a href="#">WG2326719</a>
(S) 4-Bromofluorobenzene	99.5			67.0-138		07/20/2024 16:07	<a href="#">WG2326719</a>
(S) 1,2-Dichloroethane-d4	95.8			70.0-130		07/20/2024 16:07	<a href="#">WG2326719</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
C10-C28 Diesel Range	65.2		1.61	4.00	1	07/23/2024 02:11	<a href="#">WG2327011</a>
C28-C36 Motor Oil Range	18.6		0.274	4.00	1	07/23/2024 02:11	<a href="#">WG2327011</a>
(S) <i>o</i> -Terphenyl	64.6			18.0-148		07/23/2024 02:11	<a href="#">WG2327011</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/21/2024 11:35	<a href="#">WG2326995</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/21/2024 11:35	<a href="#">WG2326995</a>
(S) <i>p</i> -Terphenyl-d14	75.2			23.0-120		07/21/2024 11:35	<a href="#">WG2326995</a>
(S) Nitrobenzene-d5	64.7			14.0-149		07/21/2024 11:35	<a href="#">WG2326995</a>
(S) 2-Fluorobiphenyl	67.5			34.0-125		07/21/2024 11:35	<a href="#">WG2326995</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.02		1	07/19/2024 16:47	WG2324060

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0847	J	0.0217	0.100	1	07/20/2024 08:35	<a href="#">WG2326674</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	101			77.0-120		07/20/2024 08:35	<a href="#">WG2326674</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/20/2024 16:26	<a href="#">WG2326719</a>
Toluene	U		0.00130	0.00500	1	07/20/2024 16:26	<a href="#">WG2326719</a>
Ethylbenzene	U		0.000737	0.00250	1	07/20/2024 16:26	<a href="#">WG2326719</a>
Xylenes, Total	0.00173	J	0.000880	0.00650	1	07/20/2024 16:26	<a href="#">WG2326719</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/20/2024 16:26	<a href="#">WG2326719</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/20/2024 16:26	<a href="#">WG2326719</a>
(S) Toluene-d8	97.2			75.0-131		07/20/2024 16:26	<a href="#">WG2326719</a>
(S) 4-Bromofluorobenzene	103			67.0-138		07/20/2024 16:26	<a href="#">WG2326719</a>
(S) 1,2-Dichloroethane-d4	96.0			70.0-130		07/20/2024 16:26	<a href="#">WG2326719</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	13.4		1.61	4.00	1	07/23/2024 02:25	<a href="#">WG2327011</a>
C28-C36 Motor Oil Range	9.25		0.274	4.00	1	07/23/2024 02:25	<a href="#">WG2327011</a>
(S) <i>o</i> -Terphenyl	66.8			18.0-148		07/23/2024 02:25	<a href="#">WG2327011</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	07/21/2024 11:52	<a href="#">WG2326995</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/21/2024 11:52	<a href="#">WG2326995</a>
(S) <i>p</i> -Terphenyl-d14	66.0			23.0-120		07/21/2024 11:52	<a href="#">WG2326995</a>
(S) Nitrobenzene-d5	60.2			14.0-149		07/21/2024 11:52	<a href="#">WG2326995</a>
(S) 2-Fluorobiphenyl	64.3			34.0-125		07/21/2024 11:52	<a href="#">WG2326995</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4097113-2 07/20/24 00:28

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
<sup>(S)</sup> a,a,a-Trifluorotoluene(FID)	113			77.0-120

Laboratory Control Sample (LCS)

(LCS) R4097113-1 07/19/24 23:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.00	4.24	84.8	72.0-127	
<sup>(S)</sup> a,a,a-Trifluorotoluene(FID)			102	77.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R4096612-3 07/20/24 12:30

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	100			75.0-131
(S) 4-Bromofluorobenzene	99.1			67.0-138
(S) 1,2-Dichloroethane-d4	94.8			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4096612-1 07/20/24 10:55 • (LCSD) R4096612-2 07/20/24 11:13

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Benzene	0.125	0.107	0.103	85.6	82.4	70.0-123			3.81	20
Toluene	0.125	0.111	0.104	88.8	83.2	75.0-121			6.51	20
Ethylbenzene	0.125	0.115	0.105	92.0	84.0	74.0-126			9.09	20
Xylenes, Total	0.375	0.335	0.314	89.3	83.7	72.0-127			6.47	20
1,2,4-Trimethylbenzene	0.125	0.119	0.110	95.2	88.0	70.0-126			7.86	20
1,3,5-Trimethylbenzene	0.125	0.116	0.107	92.8	85.6	73.0-127			8.07	20
(S) Toluene-d8				99.3	99.1	75.0-131				
(S) 4-Bromofluorobenzene				97.8	98.3	67.0-138				
(S) 1,2-Dichloroethane-d4				96.1	101	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4097156-1 07/22/24 16:35

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	77.2			18.0-148

Laboratory Control Sample (LCS)

(LCS) R4097156-2 07/22/24 16:49

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/kg	mg/kg	%	%	
C10-C28 Diesel Range	50.0	40.0	80.0	50.0-150	
(S) o-Terphenyl			85.1	18.0-148	

L1756550-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1756550-01 07/22/24 20:34 • (MS) R4097156-3 07/22/24 20:48 • (MSD) R4097156-4 07/22/24 21:02

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
C10-C28 Diesel Range	49.4	2260	1960	2160	0.000	0.000	20	50.0-150	<u>V</u>	<u>V</u>	9.71	20
(S) o-Terphenyl					163	179		18.0-148	<u>J7</u>	<u>J7</u>		

Sample Narrative:

OS: Cannot run at lower dilution due to viscosity of extract

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4097157-1 07/22/24 23:51

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	89.6			18.0-148

Laboratory Control Sample (LCS)

(LCS) R4097157-2 07/23/24 00:05

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	37.9	75.8	50.0-150	
(S) o-Terphenyl			78.8	18.0-148	

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

Method Blank (MB)

(MB) R4096695-2 07/21/24 08:56

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
<i>(S) p-Terphenyl-d14</i>	92.7			23.0-120
<i>(S) Nitrobenzene-d5</i>	66.2			14.0-149
<i>(S) 2-Fluorobiphenyl</i>	78.5			34.0-125

Laboratory Control Sample (LCS)

(LCS) R4096695-1 07/21/24 08:39

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/kg	mg/kg	%	%	
1-Methylnaphthalene	0.0800	0.0885	111	51.0-121	
2-Methylnaphthalene	0.0800	0.0856	107	50.0-120	
<i>(S) p-Terphenyl-d14</i>			94.6	23.0-120	
<i>(S) Nitrobenzene-d5</i>			95.8	14.0-149	
<i>(S) 2-Fluorobiphenyl</i>			94.5	34.0-125	

L1756550-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1756550-02 07/21/24 13:21 • (MS) R4096695-3 07/21/24 13:38 • (MSD) R4096695-4 07/21/24 13:56

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
1-Methylnaphthalene	0.0764	0.398	0.541	0.327	187	0.000	1	10.0-142	V	J3 V	49.3	28
2-Methylnaphthalene	0.0764	1.01	1.33	0.805	419	0.000	1	10.0-137	V	J3 V	49.2	28
<i>(S) p-Terphenyl-d14</i>					82.7	66.3		23.0-120				
<i>(S) Nitrobenzene-d5</i>					269	171		14.0-149	J1	J1		
<i>(S) 2-Fluorobiphenyl</i>					87.6	68.1		34.0-125				

Sample Narrative:

OS: Surrogate failure due to matrix interference

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

# GLOSSARY OF TERMS

## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

### Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

### Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
V	The sample concentration is too high to evaluate accurate spike recoveries.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 GI

8 AI

9 Sc

# ACCREDITATIONS & LOCATIONS

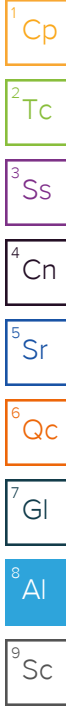
## Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1,6</sup>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1,4</sup>	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



**Caerus Piceance LLC**  
**143 Diamond Avenue**  
**Parachute, CO 81635**  
**970-285-9606**

Billing Information:  
**Same as above**

Pres Chk

Chain of Custody Page 1 of 1



12065 Lebanon Rd  
 Mount Juliet, TN 37122  
 Phone: 615-758-5858  
 Phone: 800-767-5859  
 Fax: 615-758-5859



Report to:  
**bmiddleton@caerusoilandgas.com**

Email To:  
**bmiddleton@caerusoilandgas.com**

Project Description:  
**PG16 Dumpline Release**

City/State Collected:  
**Battlement Mesa, CO**

Phone:  
 Fax:

Client Project #  
**PG16**

Lab Project #  
**PG16**

Collected by (print):  
**Ben Herrmann**

Site/Facility ID #  
**PG16**

P.O. #  
**PG16**

Collected by (signature):

**Rush?** (Lab MUST Be Notified)  
 Same Day  Five Day  
 Next Day  5 Day (Rad Only)  
 Two Day  10 Day (Rad Only)  
 Three Day

Quote #

Immediately Packed on Ice N \_\_\_ Y

Date Results Needed  
**Standard TAT**

No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH- GRO, DRO, ORO	BTEX, 1,2,4-TMB, 1,3,5-TMB	1-&-2 Methyl naphthalene	SAR								
20240711-PG16-(SB04)@11-13	Grab	SS	11-13	7/11/2024	815	2	X	X	X	X								
20240711-PG16-(SB04)@19-20.5	Grab	SS	19-20.5	7/11/2024	850	2	X	X	X	X								
20240711-PG16-(SB04)@24-25.5	Grab	SS	24-25.5	7/11/2024	925	2	X	X	X	X								
20240711-PG16-(SB04)@34-35.5	Grab	SS	34-35.5	7/11/2024	1115	2	X	X	X	X								
20240711-PG16-(SB05)@14-16	Grab	SS	14-16	7/11/2024	1315	2	X	X	X	X								
20240711-PG16-(SB05)@19-21	Grab	SS	19-21	7/11/2024	1335	2	X	X	X	X								
20240712-PG16-(SB05)@34.5-36.5	Grab	SS	34.5-36.5	7/12/2024	750	2	X	X	X	X								

L# **1756544**  
**A232**

Acctnum:  
 Template:  
 Prelogin:  
 TSR:  
 PB:

Shipped Via:  
 Remarks Sample # (lab only)

\* Matrix:  
 SS - Soil AIR - Air F - Filter  
 GW - Groundwater B - Bioassay  
 WW - WasteWater  
 DW - Drinking Water  
 OT - Other

Remarks:  
 pH \_\_\_\_\_ Temp \_\_\_\_\_  
 Flow \_\_\_\_\_ Other \_\_\_\_\_

Sample Receipt Checklist  
 COC Seal Present/Intact: NP  N  
 COC Signed/Accurate:  N  
 Bottles arrive intact:  N  
 Correct bottles used:  N  
 Sufficient volume sent:  N  
 If Applicable  
 VOA Zero Headspace: Y N  
 Preservation Correct/Checked: Y N

Relinquished by: (Signature)

Date: **7/12/2024**  
 Time: **1315**

Received by: (Signature)

Trip Blank Received: Yes / No  
 HCL / MeOH  
 TBR

Relinquished by: (Signature)

Date: **7/12/24**  
 Time: **1500**

Received by: (Signature)

Temp: **Mr 4i**  
 Bottles Received:

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: **7-13-24**  
 Time: **9:00**

Received for lab by: (Signature)

Date: **7-13-24**  
 Time: **9:00**

Hold:  
 Condition: **NCF / OK**



**Caerus Oil and Gas**

Sample Delivery Group: L1770331  
Samples Received: 08/22/2024  
Project Number: PG16  
Description: PG16 Dumpline Release  
Site: PG16  
Report To: Jake J. / Brett M. / Blair R. / Andy V.  
143 Diamond Avenue  
Parachute, CO 81635

Entire Report Reviewed By:







Chris Ward  
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

**Pace Analytical National**

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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# SAMPLE SUMMARY

20240820-PG16-(SB02) @ 34-36 L1770331-01 Solid

Collected by: Ben Herrmann  
 Collected date/time: 08/20/24 12:15  
 Received date/time: 08/22/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2352621	1	08/29/24 19:59	08/29/24 19:59	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2351770	1	08/25/24 14:09	08/29/24 01:21	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2352377	1	08/25/24 14:09	08/29/24 05:24	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2352593	1	08/29/24 08:04	08/29/24 13:22	KKS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2351758	1	08/28/24 14:31	08/29/24 12:46	JCH	Mt. Juliet, TN

- <sup>1</sup>Cp
- <sup>2</sup>Tc
- <sup>3</sup>Ss
- <sup>4</sup>Cn
- <sup>5</sup>Sr
- <sup>6</sup>Qc
- <sup>7</sup>Gl
- <sup>8</sup>Al
- <sup>9</sup>Sc

# CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward  
Project Manager

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.979		1	08/29/2024 19:59	WG2352621

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.116		0.0217	0.100	1	08/29/2024 01:21	<a href="#">WG2351770</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	98.6			77.0-120		08/29/2024 01:21	<a href="#">WG2351770</a>

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	08/29/2024 05:24	<a href="#">WG2352377</a>
Toluene	U		0.00130	0.00500	1	08/29/2024 05:24	<a href="#">WG2352377</a>
Ethylbenzene	U		0.000737	0.00250	1	08/29/2024 05:24	<a href="#">WG2352377</a>
Xylenes, Total	U		0.000880	0.00650	1	08/29/2024 05:24	<a href="#">WG2352377</a>
1,2,4-Trimethylbenzene	U	J4	0.00158	0.00500	1	08/29/2024 05:24	<a href="#">WG2352377</a>
1,3,5-Trimethylbenzene	U	J4	0.00200	0.00500	1	08/29/2024 05:24	<a href="#">WG2352377</a>
(S) Toluene-d8	113			75.0-131		08/29/2024 05:24	<a href="#">WG2352377</a>
(S) 4-Bromofluorobenzene	95.0			67.0-138		08/29/2024 05:24	<a href="#">WG2352377</a>
(S) 1,2-Dichloroethane-d4	94.1			70.0-130		08/29/2024 05:24	<a href="#">WG2352377</a>

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	10.6		1.61	4.00	1	08/29/2024 13:22	<a href="#">WG2352593</a>
C28-C36 Motor Oil Range	13.3		0.274	4.00	1	08/29/2024 13:22	<a href="#">WG2352593</a>
(S) <i>o</i> -Terphenyl	53.3			18.0-148		08/29/2024 13:22	<a href="#">WG2352593</a>

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.00449	0.0200	1	08/29/2024 12:46	<a href="#">WG2351758</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	08/29/2024 12:46	<a href="#">WG2351758</a>
(S) <i>p</i> -Terphenyl-d14	78.7			23.0-120		08/29/2024 12:46	<a href="#">WG2351758</a>
(S) Nitrobenzene-d5	80.2			14.0-149		08/29/2024 12:46	<a href="#">WG2351758</a>
(S) 2-Fluorobiphenyl	63.2			34.0-125		08/29/2024 12:46	<a href="#">WG2351758</a>



Method Blank (MB)

(MB) R4113495-2 08/28/24 16:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
<sup>(S)</sup> a,a,a-Trifluorotoluene(FID)	102			77.0-120

Laboratory Control Sample (LCS)

(LCS) R4113495-1 08/28/24 16:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.00	5.12	102	72.0-127	
<sup>(S)</sup> a,a,a-Trifluorotoluene(FID)			105	77.0-120	

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

Method Blank (MB)

(MB) R4113227-2 08/29/24 03:13

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	115			75.0-131
(S) 4-Bromofluorobenzene	95.3			67.0-138
(S) 1,2-Dichloroethane-d4	77.5			70.0-130

Laboratory Control Sample (LCS)

(LCS) R4113227-1 08/29/24 02:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00250	0.00225	90.0	70.0-123	
Toluene	0.00250	0.00258	103	75.0-121	J
Ethylbenzene	0.00250	0.00288	115	74.0-126	
Xylenes, Total	0.00750	0.00923	123	72.0-127	
1,2,4-Trimethylbenzene	0.00250	0.00480	192	70.0-126	J J4
1,3,5-Trimethylbenzene	0.00250	0.00475	190	73.0-127	J J4
(S) Toluene-d8			109	75.0-131	
(S) 4-Bromofluorobenzene			95.4	67.0-138	
(S) 1,2-Dichloroethane-d4			100	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4113518-1 08/29/24 11:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
<i>(S) o-Terphenyl</i>	63.1			18.0-148

Laboratory Control Sample (LCS)

(LCS) R4113518-2 08/29/24 12:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	35.0	70.0	50.0-150	
<i>(S) o-Terphenyl</i>			60.7	18.0-148	

L1769915-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1769915-04 08/29/24 14:03 • (MS) R4113518-3 08/29/24 14:16 • (MSD) R4113518-4 08/29/24 14:30

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	48.9	54.5	74.8	93.7	41.5	80.2	5	50.0-150	<u>J6</u>	<u>J3</u>	22.4	20
<i>(S) o-Terphenyl</i>					79.6	88.3		18.0-148				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4113777-2 08/29/24 10:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
<i>(S) p-Terphenyl-d14</i>	80.2			23.0-120
<i>(S) Nitrobenzene-d5</i>	87.4			14.0-149
<i>(S) 2-Fluorobiphenyl</i>	70.5			34.0-125

Laboratory Control Sample (LCS)

(LCS) R4113777-1 08/29/24 10:41

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/kg	mg/kg	%	%	
1-Methylnaphthalene	0.0800	0.0741	92.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0699	87.4	50.0-120	
<i>(S) p-Terphenyl-d14</i>			90.8	23.0-120	
<i>(S) Nitrobenzene-d5</i>			104	14.0-149	
<i>(S) 2-Fluorobiphenyl</i>			78.7	34.0-125	

L1770806-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1770806-11 08/29/24 14:51 • (MS) R4113777-3 08/29/24 15:09 • (MSD) R4113777-4 08/29/24 15:27

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
1-Methylnaphthalene	0.0800	U	0.0743	0.0692	92.9	86.5	1	10.0-142			7.11	28
2-Methylnaphthalene	0.0800	U	0.0740	0.0658	92.5	82.3	1	10.0-137			11.7	28
<i>(S) p-Terphenyl-d14</i>					87.8	79.3		23.0-120				
<i>(S) Nitrobenzene-d5</i>					111	112		14.0-149				
<i>(S) 2-Fluorobiphenyl</i>					80.9	77.6		34.0-125				

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

# GLOSSARY OF TERMS

## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

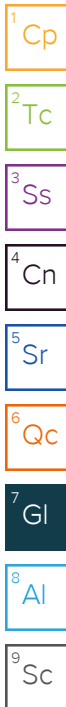
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

### Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

### Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.



# ACCREDITATIONS & LOCATIONS

## Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1,6</sup>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1,4</sup>	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

