



ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

ALL4 - US Steel - TO-13A

JOB NUMBER

140-29732-1

Eurofins Knoxville

Job Notes

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Authorization



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Definitions/Glossary

Client: Enthalpy Analytical LLC
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29732-1

Qualifiers

Air - GC/MS Semi VOA

Qualifier	Qualifier Description
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

Glossary

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

Method Summary

Client: Enthalpy Analytical LLC
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29732-1

Method	Method Description	Protocol	Laboratory
TO-13A	PAHs/ Semivolatile Organics in Ambient Air	EPA	EET KNX
Split	Split Factor Determination	None	EET KNX
TO-13A	Extraction of PAH/Semivolatile Compounds (Ambient Air)	EPA	EET KNX

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Sample Summary

Client: Enthalpy Analytical LLC
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29732-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-29732-1	PAH02_221122_S	Air	11/22/22 11:58	11/25/22 10:00
140-29732-2	PAH03_221122_S	Air	11/22/22 11:51	11/25/22 10:00
140-29732-3	PAH04_221122_S	Air	11/22/22 11:19	11/25/22 10:00
140-29732-4	PAH01_221122_S	Air	11/22/22 11:31	11/25/22 10:00

Case Narrative

Client: Enthalpy Analytical LLC
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29732-1

Job ID: 140-29732-1

Laboratory: Eurofins Knoxville

Narrative

Job Narrative 140-29732-1

Sample Receipt

The samples were received on 11/25/2022 at 10:00 in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.4° C. A Chain-of-Custody (COC) was not received with these samples: PAH02_221122_S (140-29732-1), PAH03_221122_S (140-29732-2), PAH04_221122_S (140-29732-3) and PAH01_221122_S (140-29732-4). Using an email copy from the client.

GC/MS Semi-volatiles

Method TO-13A: The following samples were diluted to bring the concentration of target analytes within the calibration range: PAH02_221122_S (140-29732-1), PAH03_221122_S (140-29732-2), PAH04_221122_S (140-29732-3) and PAH01_221122_S (140-29732-4). Elevated reporting limits (RLs) are provided.

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

Client Sample Results

Client: Enthalpy Analytical LLC
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29732-1

Client Sample ID: PAH02_221122_S

Lab Sample ID: 140-29732-1

Date Collected: 11/22/22 11:58

Matrix: Air

Date Received: 11/25/22 10:00

Sample Container: PUF/XAD

Method: EPA TO-13A - PAHs/ Semivolatile Organics in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		50.0	15.0	ug/Sample		11/29/22 14:12	12/03/22 15:28	10
Acenaphthylene	43.0	J	50.0	17.0	ug/Sample		11/29/22 14:12	12/03/22 15:28	10
Anthracene	16.5	J	50.0	14.0	ug/Sample		11/29/22 14:12	12/03/22 15:28	10
Benzo(a)anthracene	17.0	J	50.0	11.0	ug/Sample		11/29/22 14:12	12/03/22 15:28	10
Benzo[a]pyrene	ND		50.0	22.0	ug/Sample		11/29/22 14:12	12/03/22 15:28	10
Benzo[b]fluoranthene	ND		50.0	22.0	ug/Sample		11/29/22 14:12	12/03/22 15:28	10
Benzo[g,h,i]perylene	ND		50.0	17.0	ug/Sample		11/29/22 14:12	12/03/22 15:28	10
Benzo[k]fluoranthene	ND		50.0	13.0	ug/Sample		11/29/22 14:12	12/03/22 15:28	10
Chrysene	ND		50.0	13.0	ug/Sample		11/29/22 14:12	12/03/22 15:28	10
Dibenz(a,h)anthracene	ND		50.0	17.0	ug/Sample		11/29/22 14:12	12/03/22 15:28	10
Fluoranthene	39.6	J	50.0	15.0	ug/Sample		11/29/22 14:12	12/03/22 15:28	10
Fluorene	40.2	J	50.0	15.0	ug/Sample		11/29/22 14:12	12/03/22 15:28	10
Indeno[1,2,3-cd]pyrene	ND		50.0	22.0	ug/Sample		11/29/22 14:12	12/03/22 15:28	10
Phenanthrene	87.9		50.0	14.0	ug/Sample		11/29/22 14:12	12/03/22 15:28	10
Pyrene	28.0	J	50.0	15.0	ug/Sample		11/29/22 14:12	12/03/22 15:28	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	90		51 - 109	11/29/22 14:12	12/03/22 15:28	10
Nitrobenzene-d5 (Surr)	103		32 - 137	11/29/22 14:12	12/03/22 15:28	10
Terphenyl-d14 (Surr)	99		65 - 124	11/29/22 14:12	12/03/22 15:28	10
13C6-Naphthalene	62		50 - 150	11/29/22 14:12	12/03/22 15:28	10

Method: EPA TO-13A - PAHs/ Semivolatile Organics in Ambient Air - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	2620		100	32.0	ug/Sample		11/29/22 14:12	12/03/22 18:25	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	0	D S1-	51 - 109	11/29/22 14:12	12/03/22 18:25	20
Nitrobenzene-d5 (Surr)	0	D S1-	32 - 137	11/29/22 14:12	12/03/22 18:25	20
Terphenyl-d14 (Surr)	0	D S1-	65 - 124	11/29/22 14:12	12/03/22 18:25	20
13C6-Naphthalene	0	D S1-	50 - 150	11/29/22 14:12	12/03/22 18:25	20

Client Sample Results

Client: Enthalpy Analytical LLC
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29732-1

Client Sample ID: PAH03_221122_S

Lab Sample ID: 140-29732-2

Date Collected: 11/22/22 11:51

Matrix: Air

Date Received: 11/25/22 10:00

Sample Container: PUF/XAD

Method: EPA TO-13A - PAHs/ Semivolatile Organics in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		50.0	15.0	ug/Sample		11/29/22 14:12	12/03/22 15:52	10
Acenaphthylene	37.4	J	50.0	17.0	ug/Sample		11/29/22 14:12	12/03/22 15:52	10
Anthracene	ND		50.0	14.0	ug/Sample		11/29/22 14:12	12/03/22 15:52	10
Benzo(a)anthracene	15.4	J	50.0	11.0	ug/Sample		11/29/22 14:12	12/03/22 15:52	10
Benzo[a]pyrene	ND		50.0	22.0	ug/Sample		11/29/22 14:12	12/03/22 15:52	10
Benzo[b]fluoranthene	ND		50.0	22.0	ug/Sample		11/29/22 14:12	12/03/22 15:52	10
Benzo[g,h,i]perylene	ND		50.0	17.0	ug/Sample		11/29/22 14:12	12/03/22 15:52	10
Benzo[k]fluoranthene	ND		50.0	13.0	ug/Sample		11/29/22 14:12	12/03/22 15:52	10
Chrysene	ND		50.0	13.0	ug/Sample		11/29/22 14:12	12/03/22 15:52	10
Dibenz(a,h)anthracene	ND		50.0	17.0	ug/Sample		11/29/22 14:12	12/03/22 15:52	10
Fluoranthene	ND		50.0	15.0	ug/Sample		11/29/22 14:12	12/03/22 15:52	10
Fluorene	18.8	J	50.0	15.0	ug/Sample		11/29/22 14:12	12/03/22 15:52	10
Indeno[1,2,3-cd]pyrene	ND		50.0	22.0	ug/Sample		11/29/22 14:12	12/03/22 15:52	10
Naphthalene	1150		50.0	16.0	ug/Sample		11/29/22 14:12	12/03/22 15:52	10
Phenanthrene	33.5	J	50.0	14.0	ug/Sample		11/29/22 14:12	12/03/22 15:52	10
Pyrene	ND		50.0	15.0	ug/Sample		11/29/22 14:12	12/03/22 15:52	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	82		51 - 109				11/29/22 14:12	12/03/22 15:52	10
Nitrobenzene-d5 (Surr)	82		32 - 137				11/29/22 14:12	12/03/22 15:52	10
Terphenyl-d14 (Surr)	91		65 - 124				11/29/22 14:12	12/03/22 15:52	10
13C6-Naphthalene	60		50 - 150				11/29/22 14:12	12/03/22 15:52	10

Client Sample Results

Client: Enthalpy Analytical LLC
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29732-1

Client Sample ID: PAH04_221122_S

Lab Sample ID: 140-29732-3

Date Collected: 11/22/22 11:19

Matrix: Air

Date Received: 11/25/22 10:00

Sample Container: PUF/XAD

Method: EPA TO-13A - PAHs/ Semivolatile Organics in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	43.0	J	50.0	15.0	ug/Sample		11/29/22 14:12	12/03/22 16:15	10
Acenaphthylene	899		50.0	17.0	ug/Sample		11/29/22 14:12	12/03/22 16:15	10
Anthracene	61.9		50.0	14.0	ug/Sample		11/29/22 14:12	12/03/22 16:15	10
Benzo(a)anthracene	18.9	J	50.0	11.0	ug/Sample		11/29/22 14:12	12/03/22 16:15	10
Benzo[a]pyrene	ND		50.0	22.0	ug/Sample		11/29/22 14:12	12/03/22 16:15	10
Benzo[b]fluoranthene	ND		50.0	22.0	ug/Sample		11/29/22 14:12	12/03/22 16:15	10
Benzo[g,h,i]perylene	ND		50.0	17.0	ug/Sample		11/29/22 14:12	12/03/22 16:15	10
Benzo[k]fluoranthene	ND		50.0	13.0	ug/Sample		11/29/22 14:12	12/03/22 16:15	10
Chrysene	ND		50.0	13.0	ug/Sample		11/29/22 14:12	12/03/22 16:15	10
Dibenz(a,h)anthracene	ND		50.0	17.0	ug/Sample		11/29/22 14:12	12/03/22 16:15	10
Fluoranthene	91.3		50.0	15.0	ug/Sample		11/29/22 14:12	12/03/22 16:15	10
Fluorene	279		50.0	15.0	ug/Sample		11/29/22 14:12	12/03/22 16:15	10
Indeno[1,2,3-cd]pyrene	ND		50.0	22.0	ug/Sample		11/29/22 14:12	12/03/22 16:15	10
Phenanthrene	346		50.0	14.0	ug/Sample		11/29/22 14:12	12/03/22 16:15	10
Pyrene	55.1		50.0	15.0	ug/Sample		11/29/22 14:12	12/03/22 16:15	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	93		51 - 109	11/29/22 14:12	12/03/22 16:15	10
Nitrobenzene-d5 (Surr)	107		32 - 137	11/29/22 14:12	12/03/22 16:15	10
Terphenyl-d14 (Surr)	97		65 - 124	11/29/22 14:12	12/03/22 16:15	10
13C6-Naphthalene	65		50 - 150	11/29/22 14:12	12/03/22 16:15	10

Method: EPA TO-13A - PAHs/ Semivolatile Organics in Ambient Air - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	18000		500	160	ug/Sample		11/29/22 14:12	12/03/22 19:12	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	0	D S1-	51 - 109	11/29/22 14:12	12/03/22 19:12	100
Nitrobenzene-d5 (Surr)	0	D S1-	32 - 137	11/29/22 14:12	12/03/22 19:12	100
Terphenyl-d14 (Surr)	0	D S1-	65 - 124	11/29/22 14:12	12/03/22 19:12	100
13C6-Naphthalene	0	D S1-	50 - 150	11/29/22 14:12	12/03/22 19:12	100

Client Sample Results

Client: Enthalpy Analytical LLC
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29732-1

Client Sample ID: PAH01_221122_S

Lab Sample ID: 140-29732-4

Date Collected: 11/22/22 11:31

Matrix: Air

Date Received: 11/25/22 10:00

Sample Container: PUF/XAD

Method: EPA TO-13A - PAHs/ Semivolatile Organics in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	3.55	J	10.0	3.00	ug/Sample		11/29/22 14:12	12/03/22 19:35	2
Acenaphthylene	3.45	J	10.0	3.40	ug/Sample		11/29/22 14:12	12/03/22 19:35	2
Anthracene	ND		10.0	2.80	ug/Sample		11/29/22 14:12	12/03/22 19:35	2
Benzo(a)anthracene	2.81	J	10.0	2.20	ug/Sample		11/29/22 14:12	12/03/22 19:35	2
Benzo[a]pyrene	ND		10.0	4.40	ug/Sample		11/29/22 14:12	12/03/22 19:35	2
Benzo[b]fluoranthene	ND		10.0	4.40	ug/Sample		11/29/22 14:12	12/03/22 19:35	2
Benzo[g,h,i]perylene	ND		10.0	3.40	ug/Sample		11/29/22 14:12	12/03/22 19:35	2
Benzo[k]fluoranthene	ND		10.0	2.60	ug/Sample		11/29/22 14:12	12/03/22 19:35	2
Chrysene	ND		10.0	2.60	ug/Sample		11/29/22 14:12	12/03/22 19:35	2
Dibenz(a,h)anthracene	ND		10.0	3.40	ug/Sample		11/29/22 14:12	12/03/22 19:35	2
Fluoranthene	ND		10.0	3.00	ug/Sample		11/29/22 14:12	12/03/22 19:35	2
Fluorene	ND		10.0	3.00	ug/Sample		11/29/22 14:12	12/03/22 19:35	2
Indeno[1,2,3-cd]pyrene	ND		10.0	4.40	ug/Sample		11/29/22 14:12	12/03/22 19:35	2
Naphthalene	129		10.0	3.20	ug/Sample		11/29/22 14:12	12/03/22 19:35	2
Phenanthrene	4.38	J	10.0	2.80	ug/Sample		11/29/22 14:12	12/03/22 19:35	2
Pyrene	ND		10.0	3.00	ug/Sample		11/29/22 14:12	12/03/22 19:35	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	85		51 - 109				11/29/22 14:12	12/03/22 19:35	2
Nitrobenzene-d5 (Surr)	85		32 - 137				11/29/22 14:12	12/03/22 19:35	2
Terphenyl-d14 (Surr)	92		65 - 124				11/29/22 14:12	12/03/22 19:35	2
13C6-Naphthalene	67		50 - 150				11/29/22 14:12	12/03/22 19:35	2

Default Detection Limits

Client: Enthalpy Analytical LLC
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29732-1

Method: TO-13A - PAHs/ Semivolatile Organics in Ambient Air

Prep: TO-13A

Analyte	RL	MDL	Units
Acenaphthene	5.00	1.50	ug/Sample
Acenaphthylene	5.00	1.70	ug/Sample
Anthracene	5.00	1.40	ug/Sample
Benzo(a)anthracene	5.00	1.10	ug/Sample
Benzo[a]pyrene	5.00	2.20	ug/Sample
Benzo[b]fluoranthene	5.00	2.20	ug/Sample
Benzo[g,h,i]perylene	5.00	1.70	ug/Sample
Benzo[k]fluoranthene	5.00	1.30	ug/Sample
Chrysene	5.00	1.30	ug/Sample
Dibenz(a,h)anthracene	5.00	1.70	ug/Sample
Fluoranthene	5.00	1.50	ug/Sample
Fluorene	5.00	1.50	ug/Sample
Indeno[1,2,3-cd]pyrene	5.00	2.20	ug/Sample
Naphthalene	5.00	1.60	ug/Sample
Phenanthrene	5.00	1.40	ug/Sample
Pyrene	5.00	1.50	ug/Sample

Surrogate Summary

Client: Enthalpy Analytical LLC
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29732-1

Method: TO-13A - PAHs/ Semivolatile Organics in Ambient Air

Matrix: Air

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		FBP (51-109)	NBZ (32-137)	TPHL (65-124)	C6N (50-150)
140-29732-1 - DL	PAH02_221122_S	0 D S1-	0 D S1-	0 D S1-	0 D S1-
140-29732-1	PAH02_221122_S	90	103	99	62
140-29732-2	PAH03_221122_S	82	82	91	60
140-29732-3 - DL	PAH04_221122_S	0 D S1-	0 D S1-	0 D S1-	0 D S1-
140-29732-3	PAH04_221122_S	93	107	97	65
140-29732-4	PAH01_221122_S	85	85	92	67
LCS 140-67899/2-B	Lab Control Sample	98	101	90	
MB 140-67899/1-B	Method Blank	74	77	79	

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)

NBZ = Nitrobenzene-d5 (Surr)

TPHL = Terphenyl-d14 (Surr)

C6N = 13C6-Naphthalene

QC Sample Results

Client: Enthalpy Analytical LLC
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29732-1

Method: TO-13A - PAHs/ Semivolatile Organics in Ambient Air

Lab Sample ID: MB 140-67899/1-B

Matrix: Air

Analysis Batch: 68084

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 67899

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		5.00	1.50	ug/Sample		11/29/22 14:12	12/03/22 14:41	1
Acenaphthylene	ND		5.00	1.70	ug/Sample		11/29/22 14:12	12/03/22 14:41	1
Anthracene	ND		5.00	1.40	ug/Sample		11/29/22 14:12	12/03/22 14:41	1
Benzo(a)anthracene	ND		5.00	1.10	ug/Sample		11/29/22 14:12	12/03/22 14:41	1
Benzo[a]pyrene	ND		5.00	2.20	ug/Sample		11/29/22 14:12	12/03/22 14:41	1
Benzo[b]fluoranthene	ND		5.00	2.20	ug/Sample		11/29/22 14:12	12/03/22 14:41	1
Benzo[g,h,i]perylene	ND		5.00	1.70	ug/Sample		11/29/22 14:12	12/03/22 14:41	1
Benzo[k]fluoranthene	ND		5.00	1.30	ug/Sample		11/29/22 14:12	12/03/22 14:41	1
Chrysene	ND		5.00	1.30	ug/Sample		11/29/22 14:12	12/03/22 14:41	1
Dibenz(a,h)anthracene	ND		5.00	1.70	ug/Sample		11/29/22 14:12	12/03/22 14:41	1
Fluoranthene	ND		5.00	1.50	ug/Sample		11/29/22 14:12	12/03/22 14:41	1
Fluorene	ND		5.00	1.50	ug/Sample		11/29/22 14:12	12/03/22 14:41	1
Indeno[1,2,3-cd]pyrene	ND		5.00	2.20	ug/Sample		11/29/22 14:12	12/03/22 14:41	1
Naphthalene	ND		5.00	1.60	ug/Sample		11/29/22 14:12	12/03/22 14:41	1
Phenanthrene	ND		5.00	1.40	ug/Sample		11/29/22 14:12	12/03/22 14:41	1
Pyrene	ND		5.00	1.50	ug/Sample		11/29/22 14:12	12/03/22 14:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	74		51 - 109	11/29/22 14:12	12/03/22 14:41	1
Nitrobenzene-d5 (Surr)	77		32 - 137	11/29/22 14:12	12/03/22 14:41	1
Terphenyl-d14 (Surr)	79		65 - 124	11/29/22 14:12	12/03/22 14:41	1

Lab Sample ID: LCS 140-67899/2-B

Matrix: Air

Analysis Batch: 68084

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 67899

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthene	100	87.05		ug/Sample		87	57 - 117
Acenaphthylene	100	84.71		ug/Sample		85	62 - 122
Anthracene	100	75.03		ug/Sample		75	62 - 122
Benzo(a)anthracene	100	81.33		ug/Sample		81	68 - 128
Benzo[a]pyrene	100	87.70		ug/Sample		88	58 - 118
Benzo[b]fluoranthene	100	96.04		ug/Sample		96	59 - 122
Benzo[g,h,i]perylene	100	81.86		ug/Sample		82	64 - 124
Benzo[k]fluoranthene	100	80.32		ug/Sample		80	59 - 119
Chrysene	100	76.82		ug/Sample		77	57 - 117
Dibenz(a,h)anthracene	100	82.78		ug/Sample		83	63 - 123
Fluoranthene	100	73.46		ug/Sample		73	62 - 122
Fluorene	100	84.88		ug/Sample		85	61 - 121
Indeno[1,2,3-cd]pyrene	100	85.79		ug/Sample		86	65 - 125
Naphthalene	100	85.22		ug/Sample		85	54 - 114
Phenanthrene	100	74.74		ug/Sample		75	60 - 120
Pyrene	100	70.15		ug/Sample		70	60 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	98		51 - 109
Nitrobenzene-d5 (Surr)	101		32 - 137
Terphenyl-d14 (Surr)	90		65 - 124

Eurofins Knoxville

QC Association Summary

Client: Enthalpy Analytical LLC
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29732-1

Air - GC/MS Semi VOA

Prep Batch: 67899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29732-1 - DL	PAH02_221122_S	Total/NA	Air	TO-13A	
140-29732-1	PAH02_221122_S	Total/NA	Air	TO-13A	
140-29732-2	PAH03_221122_S	Total/NA	Air	TO-13A	
140-29732-3	PAH04_221122_S	Total/NA	Air	TO-13A	
140-29732-3 - DL	PAH04_221122_S	Total/NA	Air	TO-13A	
140-29732-4	PAH01_221122_S	Total/NA	Air	TO-13A	
MB 140-67899/1-B	Method Blank	Total/NA	Air	TO-13A	
LCS 140-67899/2-B	Lab Control Sample	Total/NA	Air	TO-13A	

Cleanup Batch: 68073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29732-1 - DL	PAH02_221122_S	Total/NA	Air	Split	67899
140-29732-1	PAH02_221122_S	Total/NA	Air	Split	67899
140-29732-2	PAH03_221122_S	Total/NA	Air	Split	67899
140-29732-3	PAH04_221122_S	Total/NA	Air	Split	67899
140-29732-3 - DL	PAH04_221122_S	Total/NA	Air	Split	67899
140-29732-4	PAH01_221122_S	Total/NA	Air	Split	67899
MB 140-67899/1-B	Method Blank	Total/NA	Air	Split	67899
LCS 140-67899/2-B	Lab Control Sample	Total/NA	Air	Split	67899

Analysis Batch: 68084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29732-1	PAH02_221122_S	Total/NA	Air	TO-13A	68073
140-29732-1 - DL	PAH02_221122_S	Total/NA	Air	TO-13A	68073
140-29732-2	PAH03_221122_S	Total/NA	Air	TO-13A	68073
140-29732-3	PAH04_221122_S	Total/NA	Air	TO-13A	68073
140-29732-3 - DL	PAH04_221122_S	Total/NA	Air	TO-13A	68073
140-29732-4	PAH01_221122_S	Total/NA	Air	TO-13A	68073
MB 140-67899/1-B	Method Blank	Total/NA	Air	TO-13A	68073
LCS 140-67899/2-B	Lab Control Sample	Total/NA	Air	TO-13A	68073

Lab Chronicle

Client: Enthalpy Analytical LLC
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29732-1

Client Sample ID: PAH02_221122_S

Lab Sample ID: 140-29732-1

Date Collected: 11/22/22 11:58

Matrix: Air

Date Received: 11/25/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	TO-13A			1 PUF	1 mL	67899	11/29/22 14:12	DWS	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	68073	12/02/22 16:15	MCC	EET KNX
Total/NA	Analysis	TO-13A		10	1 mL	1 mL	68084	12/03/22 15:28	DWS	EET KNX
Instrument ID: MY										
Total/NA	Prep	TO-13A	DL		1 PUF	1 mL	67899	11/29/22 14:12	DWS	EET KNX
Total/NA	Cleanup	Split	DL		1 mL	1 mL	68073	12/02/22 16:15	MCC	EET KNX
Total/NA	Analysis	TO-13A	DL	20	1 mL	1 mL	68084	12/03/22 18:25	DWS	EET KNX
Instrument ID: MY										

Client Sample ID: PAH03_221122_S

Lab Sample ID: 140-29732-2

Date Collected: 11/22/22 11:51

Matrix: Air

Date Received: 11/25/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	TO-13A			1 PUF	1 mL	67899	11/29/22 14:12	DWS	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	68073	12/02/22 16:15	MCC	EET KNX
Total/NA	Analysis	TO-13A		10	1 mL	1 mL	68084	12/03/22 15:52	DWS	EET KNX
Instrument ID: MY										

Client Sample ID: PAH04_221122_S

Lab Sample ID: 140-29732-3

Date Collected: 11/22/22 11:19

Matrix: Air

Date Received: 11/25/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	TO-13A			1 PUF	1 mL	67899	11/29/22 14:12	DWS	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	68073	12/02/22 16:15	MCC	EET KNX
Total/NA	Analysis	TO-13A		10	1 mL	1 mL	68084	12/03/22 16:15	DWS	EET KNX
Instrument ID: MY										
Total/NA	Prep	TO-13A	DL		1 PUF	1 mL	67899	11/29/22 14:12	DWS	EET KNX
Total/NA	Cleanup	Split	DL		1 mL	1 mL	68073	12/02/22 16:15	MCC	EET KNX
Total/NA	Analysis	TO-13A	DL	100	1 mL	1 mL	68084	12/03/22 19:12	DWS	EET KNX
Instrument ID: MY										

Client Sample ID: PAH01_221122_S

Lab Sample ID: 140-29732-4

Date Collected: 11/22/22 11:31

Matrix: Air

Date Received: 11/25/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	TO-13A			1 PUF	1 mL	67899	11/29/22 14:12	DWS	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	68073	12/02/22 16:15	MCC	EET KNX
Total/NA	Analysis	TO-13A		2	1 mL	1 mL	68084	12/03/22 19:35	DWS	EET KNX
Instrument ID: MY										

Lab Chronicle

Client: Enthalpy Analytical LLC
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29732-1

Client Sample ID: Method Blank

Lab Sample ID: MB 140-67899/1-B

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	TO-13A			1 PUF	1 mL	67899	11/29/22 14:12	DWS	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	68073	12/02/22 16:15	MCC	EET KNX
Total/NA	Analysis	TO-13A		1	1 mL	1 mL	68084	12/03/22 14:41	DWS	EET KNX
Instrument ID: MY										

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 140-67899/2-B

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	TO-13A			1 PUF	1 mL	67899	11/29/22 14:12	DWS	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	68073	12/02/22 16:15	MCC	EET KNX
Total/NA	Analysis	TO-13A		1	1 mL	1 mL	68084	12/03/22 15:05	DWS	EET KNX
Instrument ID: MY										

Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Accreditation/Certification Summary

Client: Enthalpy Analytical LLC
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29732-1

Laboratory: Eurofins Knoxville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
	AFCEE	N/A	
ANAB	Dept. of Defense ELAP	L2311	02-13-25
ANAB	Dept. of Energy	L2311.01	02-13-25
ANAB	ISO/IEC 17025	L2311	02-13-25
Arkansas DEQ	State	88-0688	06-16-23
California	State	2423	06-30-23
Colorado	State	TN00009	02-28-23
Connecticut	State	PH-0223	09-30-23
Florida	NELAP	E87177	06-30-23
Georgia (DW)	State	906	12-11-22
Hawaii	State	NA	07-27-23
Kansas	NELAP	E-10349	10-31-23
Kentucky (DW)	State	90101	12-31-22
Louisiana	NELAP	83979	06-30-23
Louisiana (All)	NELAP	83979	06-30-23
Louisiana (DW)	State	LA019	12-31-22
Maryland	State	277	03-31-23
Michigan	State	9933	12-11-22
Nevada	State	TN00009	07-31-23
New Hampshire	NELAP	299919	01-17-23
New Jersey	NELAP	TN001	06-30-23
New York	NELAP	10781	03-31-23
North Carolina (DW)	State	21705	07-31-23
North Carolina (WW/SW)	State	64	12-31-22
Ohio VAP	State	CL0059	06-02-23
Oklahoma	State	9415	08-31-23
Oregon	NELAP	TNI0189	12-31-22
Pennsylvania	NELAP	68-00576	12-01-23
Tennessee	State	02014	07-27-25
Texas	NELAP	T104704380-22-17	08-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-19-00236	12-31-22
Utah	NELAP	TN00009	07-31-23
Virginia	NELAP	460176	09-14-23
Washington	State	C593	01-19-23
West Virginia (DW)	State	9955C	12-31-22
West Virginia DEP	State	345	04-30-23
Wisconsin	State	998044300	08-31-23

EUROFINS/TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST Log In Number:

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Are the shipping containers intact?	/			<input type="checkbox"/> Containers, Broken	Rec'd 1.20c 1.40c
2. Were ambient air containers received intact?			/	<input type="checkbox"/> Checked in lab	custody seal intact
3. The coolers/containers custody seal if present, is it intact?	/			<input type="checkbox"/> Yes <input type="checkbox"/> NA	100148 11.25.22
4. Is the cooler temperature within limits? (> freezing temp. of water to 6°C, VOST: 10°C) Thermometer ID : <u>574</u> Correction factor: <u>+0.2°C</u>	/			<input type="checkbox"/> Cooler Out of Temp, Client Contacted, Proceed/Cancel <input type="checkbox"/> Cooler Out of Temp, Same Day Receipt	Excluded 6049 7599 7940
5. Were all of the sample containers received intact?	/			<input type="checkbox"/> Containers, Broken	
6. Were samples received in appropriate containers?	/			<input type="checkbox"/> Containers, Improper; Client Contacted; Proceed/Cancel	TD-13 PUES RECEIVED 7013KNOX 102622-11
7. Do sample container labels match COC? (IDs, Dates, Times)		/		<input type="checkbox"/> COC & Samples Do Not Match <input type="checkbox"/> COC Incorrect/Incomplete <input checked="" type="checkbox"/> COC Not Received	" -12 " -13 " -16
8. Were all of the samples listed on the COC received?		/		<input type="checkbox"/> Sample Received, Not on COC <input type="checkbox"/> Sample on COC, Not Received	
9. Is the date/time of sample collection noted?		/		<input type="checkbox"/> COC; No Date/Time; Client Contacted	9, NO COLLECTION DATE ON CONTAINERS WILL USE 11-23-22
10. Was the sampler identified on the COC?		/		<input type="checkbox"/> Sampler Not Listed on COC	Labeling Verified by: _____ Date: _____
11. Is the client and project name/# identified?		/		<input type="checkbox"/> COC Incorrect/Incomplete	pH test strip lot number: _____
12. Are tests/parameters listed for each sample?		/		<input type="checkbox"/> COC No tests on COC	
13. Is the matrix of the samples noted?		/		<input type="checkbox"/> COC Incorrect/Incomplete	
14. Was COC relinquished? (Signed/Dated/Timed)		/		<input type="checkbox"/> COC Incorrect/Incomplete	Box 16A: pH Preservation Box 18A: Residual Chlorine
15. Were samples received within holding time?				<input type="checkbox"/> Holding Time - Receipt	Preservative: _____
16. Were samples received with correct chemical preservative (excluding Encore)?			/	<input type="checkbox"/> pH Adjusted, pH Included (See box 16A)	Lot Number: _____
17. Were VOA samples received without headspace?			/	<input type="checkbox"/> Incorrect Preservative	Exp Date: _____
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number: _____			/	<input type="checkbox"/> Headspace (VOA only) <input type="checkbox"/> Residual Chlorine	Analyst: _____ Date: _____ Time: _____
19. For 1613B water samples is pH<9?			/	<input type="checkbox"/> If no, notify lab to adjust	
20. For rad samples was sample activity info. Provided?			/	<input type="checkbox"/> Project missing info	
Project #: <u>14006806</u> PM Instructions: _____					

Sample Receiving Associate: Patt Date: 11-15-22

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