

ANALYTICAL REPORT

PREPARED FOR

Attn: David Myers
Enthalpy Analytical LLC
800 Capitola Drive Suite 1
Durham, North Carolina 27713
Generated 1/23/2023 1:25:21 PM Revision 1

JOB DESCRIPTION

ALL4 - US Steel - TO-13A

JOB NUMBER

140-30156-1

Eurofins Knoxville

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization



Authorized for release by
Kevin Woodcock, Senior Project Manager
Kevin.Woodcock@et.eurofinsus.com
(865)291-3082

Generated
1/23/2023 1:25:21 PM
Revision 1

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Method Summary	5
Sample Summary	6
Case Narrative	7
Client Sample Results	8
Default Detection Limits	12
Surrogate Summary	13
QC Sample Results	14
QC Association Summary	15
Lab Chronicle	16
Certification Summary	18
Chain of Custody	19



Definitions/Glossary

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

Job ID: 140-30156-1

Qualifiers

Air - GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
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: 140-30156-1

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: 140-30156-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-30156-1	PAH01_230103_S	Air	01/03/23 11:15	01/05/23 09:15
140-30156-2	PAH02_230103_S	Air	01/03/23 11:31	01/05/23 09:15
140-30156-3	PAH03_230103_S	Air	01/03/23 11:42	01/05/23 09:15
140-30156-4	PAH04_230103_S	Air	01/03/23 12:15	01/05/23 09:15

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Case Narrative

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

Job ID: 140-30156-1

Job ID: 140-30156-1

Laboratory: Eurofins Knoxville

Narrative

Job Narrative 140-30156-1

Revision notes

This report was revised per client request to include the results for sample 140-30156-3 (PAH03_230103_S).

Sample Receipt

The samples were received on 1/5/2023 at 09:15 in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.9° C.

A Chain-of-Custody (COC) was not received with these samples: PAH01_230103_S (140-30156-1), PAH02_230103_S (140-30156-2), PAH03_230103_S (140-30156-3) and PAH04_230103_S (140-30156-4). Using an emailed copy.

The container label for the following samples did not match the information listed on the Chain-of-Custody (COC): PAH01_230103_S (140-30156-1), PAH02_230103_S (140-30156-2), PAH03_230103_S (140-30156-3) and PAH04_230103_S (140-30156-4). Client ID's not listed on sample containers, matched by PUF/XAD lab tracking ID's.

GC/MS Semi-volatiles

Method TO-13A: The following analyte recovered outside control limits for the LCS associated with preparation batch 140-69129 and 140-69236 and analytical batch 140-69311: Pyrene. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

Method TO-13A: Surrogate recovery for the following sample was outside of acceptance limits: PAH01_230103_S (140-30156-1). The entire sample was consumed during extraction, therefore, the data have been reported.

Method TO-13A: The following samples were diluted to bring the concentration of target analytes within the calibration range: PAH02_230103_S (140-30156-2) and PAH04_230103_S (140-30156-4). 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: 140-30156-1

Client Sample ID: PAH01_230103_S

Lab Sample ID: 140-30156-1

Date Collected: 01/03/23 11:15

Matrix: Air

Date Received: 01/05/23 09:15

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		5.00	1.50	ug/Sample		01/06/23 02:24	01/11/23 15:33	1
Acenaphthylene	ND		5.00	1.70	ug/Sample		01/06/23 02:24	01/11/23 15:33	1
Anthracene	ND		5.00	1.40	ug/Sample		01/06/23 02:24	01/11/23 15:33	1
Benzo(a)anthracene	ND		5.00	1.10	ug/Sample		01/06/23 02:24	01/11/23 15:33	1
Benzo(a)pyrene	ND		5.00	2.20	ug/Sample		01/06/23 02:24	01/11/23 15:33	1
Benzo(b)fluoranthene	ND		5.00	2.20	ug/Sample		01/06/23 02:24	01/11/23 15:33	1
Benzo(g,h,i)perylene	ND		5.00	1.70	ug/Sample		01/06/23 02:24	01/11/23 15:33	1
Benzo(k)fluoranthene	ND		5.00	1.30	ug/Sample		01/06/23 02:24	01/11/23 15:33	1
Chrysene	ND		5.00	1.30	ug/Sample		01/06/23 02:24	01/11/23 15:33	1
Dibenz(a,h)anthracene	ND		5.00	1.70	ug/Sample		01/06/23 02:24	01/11/23 15:33	1
Fluoranthene	ND		5.00	1.50	ug/Sample		01/06/23 02:24	01/11/23 15:33	1
Fluorene	ND		5.00	1.50	ug/Sample		01/06/23 02:24	01/11/23 15:33	1
Indeno[1,2,3-cd]pyrene	ND		5.00	2.20	ug/Sample		01/06/23 02:24	01/11/23 15:33	1
Naphthalene	ND		5.00	1.60	ug/Sample		01/06/23 02:24	01/11/23 15:33	1
Phenanthrene	ND		5.00	1.40	ug/Sample		01/06/23 02:24	01/11/23 15:33	1
Pyrene	ND	*	5.00	1.50	ug/Sample		01/06/23 02:24	01/11/23 15:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	7	S1-	51 - 109	01/06/23 02:24	01/11/23 15:33	1
Nitrobenzene-d5 (Surr)	7	S1-	32 - 137	01/06/23 02:24	01/11/23 15:33	1
Terphenyl-d14 (Surr)	8	S1-	65 - 124	01/06/23 02:24	01/11/23 15:33	1
13C6-Naphthalene	7	S1-	50 - 150	01/06/23 02:24	01/11/23 15:33	1

Client Sample Results

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

Job ID: 140-30156-1

Client Sample ID: PAH02_230103_S

Lab Sample ID: 140-30156-2

Date Collected: 01/03/23 10:31

Matrix: Air

Date Received: 01/05/23 09:15

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	16.4	J	50.0	15.0	ug/Sample		01/06/23 02:24	01/11/23 15:59	10
Acenaphthylene	97.0		50.0	17.0	ug/Sample		01/06/23 02:24	01/11/23 15:59	10
Anthracene	14.6	J	50.0	14.0	ug/Sample		01/06/23 02:24	01/11/23 15:59	10
Benzo(a)anthracene	14.0	J	50.0	11.0	ug/Sample		01/06/23 02:24	01/11/23 15:59	10
Benzo[a]pyrene	ND		50.0	22.0	ug/Sample		01/06/23 02:24	01/11/23 15:59	10
Benzo[b]fluoranthene	ND		50.0	22.0	ug/Sample		01/06/23 02:24	01/11/23 15:59	10
Benzo[g,h,i]perylene	ND		50.0	17.0	ug/Sample		01/06/23 02:24	01/11/23 15:59	10
Benzo[k]fluoranthene	ND		50.0	13.0	ug/Sample		01/06/23 02:24	01/11/23 15:59	10
Chrysene	ND		50.0	13.0	ug/Sample		01/06/23 02:24	01/11/23 15:59	10
Dibenz(a,h)anthracene	ND		50.0	17.0	ug/Sample		01/06/23 02:24	01/11/23 15:59	10
Fluoranthene	27.8	J	50.0	15.0	ug/Sample		01/06/23 02:24	01/11/23 15:59	10
Fluorene	42.8	J	50.0	15.0	ug/Sample		01/06/23 02:24	01/11/23 15:59	10
Indeno[1,2,3-cd]pyrene	ND		50.0	22.0	ug/Sample		01/06/23 02:24	01/11/23 15:59	10
Phenanthrene	70.8		50.0	14.0	ug/Sample		01/06/23 02:24	01/11/23 15:59	10
Pyrene	20.4	J *	50.0	15.0	ug/Sample		01/06/23 02:24	01/11/23 15:59	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	79		51 - 109	01/06/23 02:24	01/11/23 15:59	10
Nitrobenzene-d5 (Surr)	84		32 - 137	01/06/23 02:24	01/11/23 15:59	10
Terphenyl-d14 (Surr)	86		65 - 124	01/06/23 02:24	01/11/23 15:59	10
13C6-Naphthalene	51		50 - 150	01/06/23 02:24	01/11/23 15:59	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	3950		250	80.0	ug/Sample		01/06/23 02:24	01/12/23 14:25	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	0	S1- D	51 - 109	01/06/23 02:24	01/12/23 14:25	50
Nitrobenzene-d5 (Surr)	0	S1- D	32 - 137	01/06/23 02:24	01/12/23 14:25	50
Terphenyl-d14 (Surr)	0	S1- D	65 - 124	01/06/23 02:24	01/12/23 14:25	50
13C6-Naphthalene	0	S1- D	50 - 150	01/06/23 02:24	01/12/23 14:25	50

Client Sample Results

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

Job ID: 140-30156-1

Client Sample ID: PAH03_230103_S

Lab Sample ID: 140-30156-3

Date Collected: 01/03/23 11:42

Matrix: Air

Date Received: 01/05/23 09:15

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		01/06/23 02:24	01/11/23 16:24	10
Acenaphthylene	119		50.0	17.0	ug/Sample		01/06/23 02:24	01/11/23 16:24	10
Anthracene	22.4	J	50.0	14.0	ug/Sample		01/06/23 02:24	01/11/23 16:24	10
Benzo(a)anthracene	16.8	J	50.0	11.0	ug/Sample		01/06/23 02:24	01/11/23 16:24	10
Benzo[a]pyrene	ND		50.0	22.0	ug/Sample		01/06/23 02:24	01/11/23 16:24	10
Benzo[b]fluoranthene	ND		50.0	22.0	ug/Sample		01/06/23 02:24	01/11/23 16:24	10
Benzo[g,h,i]perylene	ND		50.0	17.0	ug/Sample		01/06/23 02:24	01/11/23 16:24	10
Benzo[k]fluoranthene	ND		50.0	13.0	ug/Sample		01/06/23 02:24	01/11/23 16:24	10
Chrysene	ND		50.0	13.0	ug/Sample		01/06/23 02:24	01/11/23 16:24	10
Dibenz(a,h)anthracene	ND		50.0	17.0	ug/Sample		01/06/23 02:24	01/11/23 16:24	10
Fluoranthene	49.0	J	50.0	15.0	ug/Sample		01/06/23 02:24	01/11/23 16:24	10
Fluorene	44.8	J	50.0	15.0	ug/Sample		01/06/23 02:24	01/11/23 16:24	10
Indeno[1,2,3-cd]pyrene	ND		50.0	22.0	ug/Sample		01/06/23 02:24	01/11/23 16:24	10
Phenanthrene	98.9		50.0	14.0	ug/Sample		01/06/23 02:24	01/11/23 16:24	10
Pyrene	31.0	J *	50.0	15.0	ug/Sample		01/06/23 02:24	01/11/23 16:24	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	77		51 - 109	01/06/23 02:24	01/11/23 16:24	10
Nitrobenzene-d5 (Surr)	77		32 - 137	01/06/23 02:24	01/11/23 16:24	10
Terphenyl-d14 (Surr)	81		65 - 124	01/06/23 02:24	01/11/23 16:24	10
13C6-Naphthalene	50		50 - 150	01/06/23 02:24	01/11/23 16:24	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	2580		125	40.0	ug/Sample		01/06/23 02:24	01/12/23 14:50	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	0	D S1-	51 - 109	01/06/23 02:24	01/12/23 14:50	25
Nitrobenzene-d5 (Surr)	0	D S1-	32 - 137	01/06/23 02:24	01/12/23 14:50	25
Terphenyl-d14 (Surr)	0	D S1-	65 - 124	01/06/23 02:24	01/12/23 14:50	25
13C6-Naphthalene	0	D S1-	50 - 150	01/06/23 02:24	01/12/23 14:50	25

Client Sample Results

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

Job ID: 140-30156-1

Client Sample ID: PAH04_230103_S

Lab Sample ID: 140-30156-4

Date Collected: 01/03/23 17:15

Matrix: Air

Date Received: 01/05/23 09:15

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	112		50.0	15.0	ug/Sample		01/06/23 02:24	01/11/23 17:14	10
Anthracene	177		50.0	14.0	ug/Sample		01/06/23 02:24	01/11/23 17:14	10
Benzo(a)anthracene	13.6	J	50.0	11.0	ug/Sample		01/06/23 02:24	01/11/23 17:14	10
Benzo[a]pyrene	ND		50.0	22.0	ug/Sample		01/06/23 02:24	01/11/23 17:14	10
Benzo[b]fluoranthene	ND		50.0	22.0	ug/Sample		01/06/23 02:24	01/11/23 17:14	10
Benzo[g,h,i]perylene	ND		50.0	17.0	ug/Sample		01/06/23 02:24	01/11/23 17:14	10
Benzo[k]fluoranthene	ND		50.0	13.0	ug/Sample		01/06/23 02:24	01/11/23 17:14	10
Chrysene	ND		50.0	13.0	ug/Sample		01/06/23 02:24	01/11/23 17:14	10
Dibenz(a,h)anthracene	ND		50.0	17.0	ug/Sample		01/06/23 02:24	01/11/23 17:14	10
Fluoranthene	100		50.0	15.0	ug/Sample		01/06/23 02:24	01/11/23 17:14	10
Fluorene	823		50.0	15.0	ug/Sample		01/06/23 02:24	01/11/23 17:14	10
Indeno[1,2,3-cd]pyrene	ND		50.0	22.0	ug/Sample		01/06/23 02:24	01/11/23 17:14	10
Phenanthrene	691		50.0	14.0	ug/Sample		01/06/23 02:24	01/11/23 17:14	10
Pyrene	55.4	*-	50.0	15.0	ug/Sample		01/06/23 02:24	01/11/23 17:14	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	91		51 - 109	01/06/23 02:24	01/11/23 17:14	10
Nitrobenzene-d5 (Surr)	121		32 - 137	01/06/23 02:24	01/11/23 17:14	10
Terphenyl-d14 (Surr)	93		65 - 124	01/06/23 02:24	01/11/23 17:14	10
13C6-Naphthalene	51		50 - 150	01/06/23 02:24	01/11/23 17:14	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthylene	3580		2000	680	ug/Sample		01/06/23 02:24	01/17/23 11:54	400
Naphthalene	44000		2000	640	ug/Sample		01/06/23 02:24	01/17/23 11:54	400

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	0	S1- D	51 - 109	01/06/23 02:24	01/17/23 11:54	400
Nitrobenzene-d5 (Surr)	0	S1- D	32 - 137	01/06/23 02:24	01/17/23 11:54	400
Terphenyl-d14 (Surr)	0	S1- D	65 - 124	01/06/23 02:24	01/17/23 11:54	400
13C6-Naphthalene	0	S1- D	50 - 150	01/06/23 02:24	01/17/23 11:54	400

Default Detection Limits

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

Job ID: 140-30156-1

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: 140-30156-1

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

Matrix: Air

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	FBP	NBZ	TPHL	C6N
		(51-109)	(32-137)	(65-124)	(50-150)
140-30156-1	PAH01_230103_S	7 S1-	7 S1-	8 S1-	7 S1-
140-30156-2	PAH02_230103_S	79	84	86	51
140-30156-2 - DL	PAH02_230103_S	0 S1- D	0 S1- D	0 S1- D	0 S1- D
140-30156-3	PAH03_230103_S	77	77	81	50
140-30156-3 - DL	PAH03_230103_S	0 D S1-	0 D S1-	0 D S1-	0 D S1-
140-30156-4	PAH04_230103_S	91	121	93	51
140-30156-4 - DL	PAH04_230103_S	0 S1- D	0 S1- D	0 S1- D	0 S1- D
LCS 140-69129/2-B	Lab Control Sample	86	94	78	
MB 140-69129/1-B	Method Blank	78	83	82	

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: 140-30156-1

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

Lab Sample ID: MB 140-69129/1-B

Matrix: Air

Analysis Batch: 69311

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 69129

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		5.00	1.50	ug/Sample		01/06/23 02:24	01/11/23 14:43	1
Acenaphthylene	ND		5.00	1.70	ug/Sample		01/06/23 02:24	01/11/23 14:43	1
Anthracene	ND		5.00	1.40	ug/Sample		01/06/23 02:24	01/11/23 14:43	1
Benzo(a)anthracene	ND		5.00	1.10	ug/Sample		01/06/23 02:24	01/11/23 14:43	1
Benzo[a]pyrene	ND		5.00	2.20	ug/Sample		01/06/23 02:24	01/11/23 14:43	1
Benzo[b]fluoranthene	ND		5.00	2.20	ug/Sample		01/06/23 02:24	01/11/23 14:43	1
Benzo[g,h,i]perylene	ND		5.00	1.70	ug/Sample		01/06/23 02:24	01/11/23 14:43	1
Benzo[k]fluoranthene	ND		5.00	1.30	ug/Sample		01/06/23 02:24	01/11/23 14:43	1
Chrysene	ND		5.00	1.30	ug/Sample		01/06/23 02:24	01/11/23 14:43	1
Dibenz(a,h)anthracene	ND		5.00	1.70	ug/Sample		01/06/23 02:24	01/11/23 14:43	1
Fluoranthene	ND		5.00	1.50	ug/Sample		01/06/23 02:24	01/11/23 14:43	1
Fluorene	ND		5.00	1.50	ug/Sample		01/06/23 02:24	01/11/23 14:43	1
Indeno[1,2,3-cd]pyrene	ND		5.00	2.20	ug/Sample		01/06/23 02:24	01/11/23 14:43	1
Naphthalene	ND		5.00	1.60	ug/Sample		01/06/23 02:24	01/11/23 14:43	1
Phenanthrene	ND		5.00	1.40	ug/Sample		01/06/23 02:24	01/11/23 14:43	1
Pyrene	ND		5.00	1.50	ug/Sample		01/06/23 02:24	01/11/23 14:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	78		51 - 109	01/06/23 02:24	01/11/23 14:43	1
Nitrobenzene-d5 (Surr)	83		32 - 137	01/06/23 02:24	01/11/23 14:43	1
Terphenyl-d14 (Surr)	82		65 - 124	01/06/23 02:24	01/11/23 14:43	1

Lab Sample ID: LCS 140-69129/2-B

Matrix: Air

Analysis Batch: 69311

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 69129

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthene	100	74.67		ug/Sample		75	57 - 117
Acenaphthylene	100	73.25		ug/Sample		73	62 - 122
Anthracene	100	65.95		ug/Sample		66	62 - 122
Benzo(a)anthracene	100	69.92		ug/Sample		70	68 - 128
Benzo[a]pyrene	100	79.04		ug/Sample		79	58 - 118
Benzo[b]fluoranthene	100	83.63		ug/Sample		84	59 - 122
Benzo[g,h,i]perylene	100	74.85		ug/Sample		75	64 - 124
Benzo[k]fluoranthene	100	71.13		ug/Sample		71	59 - 119
Chrysene	100	65.26		ug/Sample		65	57 - 117
Dibenz(a,h)anthracene	100	73.77		ug/Sample		74	63 - 123
Fluoranthene	100	62.93		ug/Sample		63	62 - 122
Fluorene	100	73.03		ug/Sample		73	61 - 121
Indeno[1,2,3-cd]pyrene	100	79.61		ug/Sample		80	65 - 125
Naphthalene	100	79.61		ug/Sample		80	54 - 114
Phenanthrene	100	65.21		ug/Sample		65	60 - 120
Pyrene	100	57.73	*-	ug/Sample		58	60 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	86		51 - 109
Nitrobenzene-d5 (Surr)	94		32 - 137
Terphenyl-d14 (Surr)	78		65 - 124

Eurofins Knoxville

QC Association Summary

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

Job ID: 140-30156-1

Air - GC/MS Semi VOA

Prep Batch: 69129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-30156-1	PAH01_230103_S	Total/NA	Air	TO-13A	
140-30156-2	PAH02_230103_S	Total/NA	Air	TO-13A	
140-30156-2 - DL	PAH02_230103_S	Total/NA	Air	TO-13A	
140-30156-3	PAH03_230103_S	Total/NA	Air	TO-13A	
140-30156-3 - DL	PAH03_230103_S	Total/NA	Air	TO-13A	
140-30156-4 - DL	PAH04_230103_S	Total/NA	Air	TO-13A	
140-30156-4	PAH04_230103_S	Total/NA	Air	TO-13A	
MB 140-69129/1-B	Method Blank	Total/NA	Air	TO-13A	
LCS 140-69129/2-B	Lab Control Sample	Total/NA	Air	TO-13A	

Cleanup Batch: 69236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-30156-1	PAH01_230103_S	Total/NA	Air	Split	69129
140-30156-2 - DL	PAH02_230103_S	Total/NA	Air	Split	69129
140-30156-2	PAH02_230103_S	Total/NA	Air	Split	69129
140-30156-3 - DL	PAH03_230103_S	Total/NA	Air	Split	69129
140-30156-3	PAH03_230103_S	Total/NA	Air	Split	69129
140-30156-4	PAH04_230103_S	Total/NA	Air	Split	69129
140-30156-4 - DL	PAH04_230103_S	Total/NA	Air	Split	69129
MB 140-69129/1-B	Method Blank	Total/NA	Air	Split	69129
LCS 140-69129/2-B	Lab Control Sample	Total/NA	Air	Split	69129

Analysis Batch: 69311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-30156-1	PAH01_230103_S	Total/NA	Air	TO-13A	69236
140-30156-2	PAH02_230103_S	Total/NA	Air	TO-13A	69236
140-30156-3	PAH03_230103_S	Total/NA	Air	TO-13A	69236
140-30156-4	PAH04_230103_S	Total/NA	Air	TO-13A	69236
MB 140-69129/1-B	Method Blank	Total/NA	Air	TO-13A	69236
LCS 140-69129/2-B	Lab Control Sample	Total/NA	Air	TO-13A	69236

Analysis Batch: 69346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-30156-2 - DL	PAH02_230103_S	Total/NA	Air	TO-13A	69236
140-30156-3 - DL	PAH03_230103_S	Total/NA	Air	TO-13A	69236

Analysis Batch: 69456

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-30156-4 - DL	PAH04_230103_S	Total/NA	Air	TO-13A	69236

Lab Chronicle

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

Job ID: 140-30156-1

Client Sample ID: PAH01_230103_S

Lab Sample ID: 140-30156-1

Date Collected: 01/03/23 11:15

Matrix: Air

Date Received: 01/05/23 09:15

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	69129	01/06/23 02:24	CLI	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	69236	01/09/23 16:01	MCC	EET KNX
Total/NA	Analysis	TO-13A		1	1 mL	1 mL	69311	01/11/23 15:33	DWS	EET KNX
Instrument ID: MY										

Client Sample ID: PAH02_230103_S

Lab Sample ID: 140-30156-2

Date Collected: 01/03/23 11:31

Matrix: Air

Date Received: 01/05/23 09:15

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	69129	01/06/23 02:24	CLI	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	69236	01/09/23 16:01	MCC	EET KNX
Total/NA	Analysis	TO-13A		10	1 mL	1 mL	69311	01/11/23 15:59	DWS	EET KNX
Instrument ID: MY										
Total/NA	Prep	TO-13A	DL		1 PUF	1 mL	69129	01/06/23 02:24	CLI	EET KNX
Total/NA	Cleanup	Split	DL		1 mL	1 mL	69236	01/09/23 16:01	MCC	EET KNX
Total/NA	Analysis	TO-13A	DL	50	1 mL	1 mL	69346	01/12/23 14:25	BKK	EET KNX
Instrument ID: MY										

Client Sample ID: PAH03_230103_S

Lab Sample ID: 140-30156-3

Date Collected: 01/03/23 11:42

Matrix: Air

Date Received: 01/05/23 09:15

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	69129	01/06/23 02:24	CLI	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	69236	01/09/23 16:01	MCC	EET KNX
Total/NA	Analysis	TO-13A		10	1 mL	1 mL	69311	01/11/23 16:24	DWS	EET KNX
Instrument ID: MY										
Total/NA	Prep	TO-13A	DL		1 PUF	1 mL	69129	01/06/23 02:24	CLI	EET KNX
Total/NA	Cleanup	Split	DL		1 mL	1 mL	69236	01/09/23 16:01	MCC	EET KNX
Total/NA	Analysis	TO-13A	DL	25	1 mL	1 mL	69346	01/12/23 14:50	BKK	EET KNX
Instrument ID: MY										

Client Sample ID: PAH04_230103_S

Lab Sample ID: 140-30156-4

Date Collected: 01/03/23 12:15

Matrix: Air

Date Received: 01/05/23 09:15

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	69129	01/06/23 02:24	CLI	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	69236	01/09/23 16:01	MCC	EET KNX
Total/NA	Analysis	TO-13A		10	1 mL	1 mL	69311	01/11/23 17:14	DWS	EET KNX
Instrument ID: MY										
Total/NA	Prep	TO-13A	DL		1 PUF	1 mL	69129	01/06/23 02:24	CLI	EET KNX
Total/NA	Cleanup	Split	DL		1 mL	1 mL	69236	01/09/23 16:01	MCC	EET KNX
Total/NA	Analysis	TO-13A	DL	400	1 mL	1 mL	69456	01/17/23 11:54	BKK	EET KNX
Instrument ID: MY										

Eurofins Knoxville

Lab Chronicle

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

Job ID: 140-30156-1

Client Sample ID: Method Blank

Lab Sample ID: MB 140-69129/1-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	69129	01/06/23 02:24	CLI	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	69236	01/09/23 16:01	MCC	EET KNX
Total/NA	Analysis	TO-13A		1	1 mL	1 mL	69311	01/11/23 14:43	DWS	EET KNX
Instrument ID: MY										

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 140-69129/2-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	69129	01/06/23 02:24	CLI	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	69236	01/09/23 16:01	MCC	EET KNX
Total/NA	Analysis	TO-13A		1	1 mL	1 mL	69311	01/11/23 15:08	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: 140-30156-1

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	07-27-25
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	12-31-23
Maryland	State	277	03-31-23
Michigan	State	9933	07-27-25
Nevada	State	TN00009	07-31-23
New Hampshire	NELAP	2999	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	12-31-23
Ohio VAP	State	CL0059	06-02-23
Oklahoma	State	9415	08-31-23
Oregon	NELAP	TNI0189	01-01-24
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	525-22-279-18762	10-06-25
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

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Knoxville

phone 865.291.3000 fax 865.584.4315

Regulatory Program:

☐ RCRA

☐ Other

Project Manager: Dustin Snare

☐ DW

☐ NPDES

Client Contact

ALL4 LLC

2393 Kimberton Road

Kimberton, PA 19442

(610) 422-1126

(xxx) xxx-xxxx

Project Name: U. S. Steel Coke ICR Monitoring

Site: U. S. Steel Corporation - Clairton, PA Works

P O #

Phone

FAX

Email: dsnare@all4inc.com

Tel/Fax: 610-422-1126

Analysis Turnaround Time

☐ CALENDAR

☐ WORKING

TAT if different from Below

☐ 2 weeks

☐ 1 week

☐ 2 days

☐ 1 day

Site Contact: Brett Tunno

Lab Contact: David Myers

23/01/03

Carrier:

COC No:

1 of 1

COCs

TALS Project #:

Sampler:

For Lab Use Only:

Walk-in Client:

Lab Sampling:

Job / SDG No.:

Sample Specific Notes:

End: 2023-01-03 11:05 AM

ID: TO13KNOX120122-32

End: 2023-01-03 11:22 AM

ID: T1013KNOX120122-33

End: 2023-01-03 11:33 AM

ID: TO13KNOX120122-34

End: 2023-01-03 12:08 PM

ID: TO13KNOX120122-35

TO-13A

Perform MS / MSD (Y / N)

Filtered Sample (Y / N)

of Cont

Matrix

Sample Type (C=Comp, G=Grab)

Sample Date

Sample Time

PAH01_230103_S

2023-01-03

11:15 AM

Filter

A

1

PAH02_230103_S

2023-01-03

11:31 AM

Filter

A

1

PAH03_230103_S

2023-01-03

11:42 AM

Filter

A

1

PAH04_230103_S

2023-01-03

12:15 PM

Filter

A

1

CUSTOM SEALS INTRAIT

RECEIVED AT 11:07 / 01-03-23

1-3-23

1000141 PAOX # 3930288140289 SD

Barcode

140-30156 Chain of Custody

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other

1

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard

☐ Flammable

☐ Skin Irritant

☐ Poison B

☐ Unknown

Special Instructions/QC Requirements & Comments:

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client

☒ Disposal by Lab

☐ Archive for

Months

1


Custody Seals Intact: ☐ Yes

Relinquished by: Dustin Snare

Relinquished by:

Relinquished by:

Cooler Temp. (°C): Obs'd:

Received by: 

Received by:

Received in Laboratory by:

Company: ALL4 LLC

Company:

Company:

Company:

Date/Time: 2023-01-04 3:20 PM

Date/Time:

Date/Time:

Date/Time:

Therm ID No.:

Date/Time: 1-5-23 09:15

Date/Time:

Date/Time:

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	2. NO CLIENT INFO ON CONTAINER, MATCHED BY PUF/XAD TO NUMBERS
2. Were ambient air containers received intact?				<input type="checkbox"/> Checked in lab	
3. The coolers/containers custody seal if present, is it intact?	/			<input type="checkbox"/> Yes <input type="checkbox"/> NA	2. USING EMAIL COPY
4. Is the cooler temperature within limits? (> freezing temp. of water to 6°C, VOST: 10°C) Thermometer ID : 5741 Correction factor: +0.2°C	/			<input type="checkbox"/> Cooler Out of Temp, Client Contacted, Proceed/Cancel <input type="checkbox"/> Cooler Out of Temp, Same Day Receipt	10
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	
7. Do sample container labels match COC? (IDs, Dates, Times)	/			<input checked="" type="checkbox"/> COC & Samples Do Not Match <input type="checkbox"/> COC Incorrect/Incomplete <input checked="" type="checkbox"/> COC Not Received	
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	
10. Was the sampler identified on the COC?	/			<input checked="" type="checkbox"/> Sampler Not Listed on COC	
11. Is the client and project name/# identified?	/			<input type="checkbox"/> COC Incorrect/Incomplete	
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	
15. Were samples received within holding time?	/			<input type="checkbox"/> Holding Time - Receipt	
16. Were samples received with correct chemical preservative (excluding Encore)?	/			<input type="checkbox"/> pH Adjusted, pH Included (See box 16A) <input type="checkbox"/> Incorrect Preservative	
17. Were VOA samples received without headspace?	/			<input type="checkbox"/> Headspace (VOA only) <input type="checkbox"/> Residual Chlorine	
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number:	/				
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 #: 14006806 PM Instructions:					

Labeling Verified by: _____ Date: _____

pH test strip lot number: _____

Box 16A: pH Preservation

Box 18A: Residual Chlorine

Preservative: _____

Lot Number: _____

Exp Date: _____

Analyst: _____

Date: _____

Time: _____

Sample Receiving Associate: _____

Date: 1-5-23

QA026R32.doc, 062719