



ANALYTICAL REPORT

PREPARED FOR

Attn: David Myers
Enthalpy Analytical LLC
800 Capitola Drive Suite 1
Durham, North Carolina 27713

Generated 1/9/2023 4:32:57 PM

JOB DESCRIPTION

ALL4 - US Steel - TO-13A

JOB NUMBER

140-29999-1

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



Generated
1/9/2023 4:32:57 PM

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

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: 140-29999-1

Qualifiers

Air - GC/MS Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
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: 140-29999-1

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: 140-29999-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-29999-1	PAH01_221219_S - TO13KNOX-102622-7	Air	12/20/22 22:28	12/21/22 09:45
140-29999-2	PAH03_221219_S - TO13KNOX-102622-18	Air	12/20/22 22:41	12/21/22 09:45
140-29999-3	PAH04_221219-S - TO13KNOX-102622-19	Air	12/20/22 22:28	12/21/22 09:45
140-29999-4	PAH02_221219_S - TO13KNOX-102622-20	Air	12/20/22 22:41	12/21/22 09:45

- 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: 140-29999-1


Job ID: 140-29999-1

Laboratory: Eurofins Knoxville

Narrative

Job Narrative 140-29999-1

Sample Receipt

The samples were received on 12/21/2022 at 09:45 in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.3° C. A Chain-of-Custody (COC) was not received with these samples: PAH01_221219_S - TO13KNOX-102622-7 (140-29999-1), PAH03_221219_S - TO13KNOX-102622-18 (140-29999-2), PAH04_221219-S - TO13KNOX-102622-19 (140-29999-3) and PAH02_221219_S - TO13KNOX-102622-20 (140-29999-4). 

GC/MS Semi-volatiles

Method TO-13A: The following samples were diluted to bring the concentration of target analytes within the calibration range: PAH04_221219-S - TO13KNOX-102622-19 (140-29999-3) and PAH02_221219_S - TO13KNOX-102622-20 (140-29999-4). Elevated reporting limits (RLs) are provided.

Method TO-13A: The following sample was diluted to bring the concentration of target analytes within the calibration range: PAH03_221219_S - TO13KNOX-102622-18 (140-29999-2). 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: 140-29999-1

Client Sample ID: PAH01_221219_S - TO13KNOX-102622-7

Lab Sample ID: 140-29999-1

Date Collected: 12/20/22 22:28

Matrix: Air

Date Received: 12/21/22 09:45

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		12/27/22 07:29	12/30/22 18:40	1
Acenaphthylene	ND		5.00	1.70	ug/Sample		12/27/22 07:29	12/30/22 18:40	1
Anthracene	ND		5.00	1.40	ug/Sample		12/27/22 07:29	12/30/22 18:40	1
Benzo(a)anthracene	1.43	J B	5.00	1.10	ug/Sample		12/27/22 07:29	12/30/22 18:40	1
Benzo[a]pyrene	ND		5.00	2.20	ug/Sample		12/27/22 07:29	12/30/22 18:40	1
Benzo[b]fluoranthene	ND		5.00	2.20	ug/Sample		12/27/22 07:29	12/30/22 18:40	1
Benzo[g,h,i]perylene	ND		5.00	1.70	ug/Sample		12/27/22 07:29	12/30/22 18:40	1
Benzo[k]fluoranthene	ND		5.00	1.30	ug/Sample		12/27/22 07:29	12/30/22 18:40	1
Chrysene	ND		5.00	1.30	ug/Sample		12/27/22 07:29	12/30/22 18:40	1
Dibenz(a,h)anthracene	ND		5.00	1.70	ug/Sample		12/27/22 07:29	12/30/22 18:40	1
Fluoranthene	ND		5.00	1.50	ug/Sample		12/27/22 07:29	12/30/22 18:40	1
Fluorene	ND		5.00	1.50	ug/Sample		12/27/22 07:29	12/30/22 18:40	1
Indeno[1,2,3-cd]pyrene	ND		5.00	2.20	ug/Sample		12/27/22 07:29	12/30/22 18:40	1
Naphthalene	47.2		5.00	1.60	ug/Sample		12/27/22 07:29	12/30/22 18:40	1
Phenanthrene	1.93	J	5.00	1.40	ug/Sample		12/27/22 07:29	12/30/22 18:40	1
Pyrene	ND		5.00	1.50	ug/Sample		12/27/22 07:29	12/30/22 18:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	76		51 - 109				12/27/22 07:29	12/30/22 18:40	1
Nitrobenzene-d5 (Surr)	76		32 - 137				12/27/22 07:29	12/30/22 18:40	1
Terphenyl-d14 (Surr)	76		65 - 124				12/27/22 07:29	12/30/22 18:40	1
13C6-Naphthalene	63		50 - 150				12/27/22 07:29	12/30/22 18:40	1

Client Sample Results

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

Job ID: 140-29999-1

Client Sample ID: PAH03_221219_S - TO13KNOX-102622-18

Lab Sample ID: 140-29999-2

Date Collected: 12/20/22 22:41

Matrix: Air

Date Received: 12/21/22 09:45

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		25.0	7.50	ug/Sample		12/27/22 07:29	12/30/22 19:04	5
Acenaphthylene	11.6	J	25.0	8.50	ug/Sample		12/27/22 07:29	12/30/22 19:04	5
Anthracene	ND		25.0	7.00	ug/Sample		12/27/22 07:29	12/30/22 19:04	5
Benzo(a)anthracene	6.19	J B	25.0	5.50	ug/Sample		12/27/22 07:29	12/30/22 19:04	5
Benzo[a]pyrene	ND		25.0	11.0	ug/Sample		12/27/22 07:29	12/30/22 19:04	5
Benzo[b]fluoranthene	ND		25.0	11.0	ug/Sample		12/27/22 07:29	12/30/22 19:04	5
Benzo[g,h,i]perylene	ND		25.0	8.50	ug/Sample		12/27/22 07:29	12/30/22 19:04	5
Benzo[k]fluoranthene	ND		25.0	6.50	ug/Sample		12/27/22 07:29	12/30/22 19:04	5
Chrysene	ND		25.0	6.50	ug/Sample		12/27/22 07:29	12/30/22 19:04	5
Dibenz(a,h)anthracene	ND		25.0	8.50	ug/Sample		12/27/22 07:29	12/30/22 19:04	5
Fluoranthene	ND		25.0	7.50	ug/Sample		12/27/22 07:29	12/30/22 19:04	5
Fluorene	ND		25.0	7.50	ug/Sample		12/27/22 07:29	12/30/22 19:04	5
Indeno[1,2,3-cd]pyrene	ND		25.0	11.0	ug/Sample		12/27/22 07:29	12/30/22 19:04	5
Naphthalene	377		25.0	8.00	ug/Sample		12/27/22 07:29	12/30/22 19:04	5
Phenanthrene	7.25	J	25.0	7.00	ug/Sample		12/27/22 07:29	12/30/22 19:04	5
Pyrene	ND		25.0	7.50	ug/Sample		12/27/22 07:29	12/30/22 19:04	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	77		51 - 109				12/27/22 07:29	12/30/22 19:04	5
Nitrobenzene-d5 (Surr)	75		32 - 137				12/27/22 07:29	12/30/22 19:04	5
Terphenyl-d14 (Surr)	89		65 - 124				12/27/22 07:29	12/30/22 19:04	5
13C6-Naphthalene	60		50 - 150				12/27/22 07:29	12/30/22 19:04	5

Client Sample Results

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

Job ID: 140-29999-1

Client Sample ID: PAH04_221219-S - TO13KNOX-102622-19

Lab Sample ID: 140-29999-3

Date Collected: 12/20/22 22:28

Matrix: Air

Date Received: 12/21/22 09:45

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	65.9		50.0	15.0	ug/Sample		12/27/22 07:29	12/29/22 18:35	10
Acenaphthylene	1140		50.0	17.0	ug/Sample		12/27/22 07:29	12/29/22 18:35	10
Anthracene	117		50.0	14.0	ug/Sample		12/27/22 07:29	12/29/22 18:35	10
Benzo(a)anthracene	30.5	J B	50.0	11.0	ug/Sample		12/27/22 07:29	12/29/22 18:35	10
Benzo[a]pyrene	ND		50.0	22.0	ug/Sample		12/27/22 07:29	12/29/22 18:35	10
Benzo[b]fluoranthene	ND		50.0	22.0	ug/Sample		12/27/22 07:29	12/29/22 18:35	10
Benzo[g,h,i]perylene	ND		50.0	17.0	ug/Sample		12/27/22 07:29	12/29/22 18:35	10
Benzo[k]fluoranthene	18.0	J	50.0	13.0	ug/Sample		12/27/22 07:29	12/29/22 18:35	10
Chrysene	20.7	J	50.0	13.0	ug/Sample		12/27/22 07:29	12/29/22 18:35	10
Dibenz(a,h)anthracene	ND		50.0	17.0	ug/Sample		12/27/22 07:29	12/29/22 18:35	10
Fluoranthene	160		50.0	15.0	ug/Sample		12/27/22 07:29	12/29/22 18:35	10
Fluorene	405		50.0	15.0	ug/Sample		12/27/22 07:29	12/29/22 18:35	10
Indeno[1,2,3-cd]pyrene	ND		50.0	22.0	ug/Sample		12/27/22 07:29	12/29/22 18:35	10
Phenanthrene	515		50.0	14.0	ug/Sample		12/27/22 07:29	12/29/22 18:35	10
Pyrene	90.5		50.0	15.0	ug/Sample		12/27/22 07:29	12/29/22 18:35	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	89		51 - 109	12/27/22 07:29	12/29/22 18:35	10
Nitrobenzene-d5 (Surr)	105		32 - 137	12/27/22 07:29	12/29/22 18:35	10
Terphenyl-d14 (Surr)	96		65 - 124	12/27/22 07:29	12/29/22 18:35	10
13C6-Naphthalene	61		50 - 150	12/27/22 07:29	12/29/22 18:35	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	27300		1000	320	ug/Sample		12/27/22 07:29	12/30/22 19:28	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	0	S1- D	51 - 109	12/27/22 07:29	12/30/22 19:28	200
Nitrobenzene-d5 (Surr)	0	S1- D	32 - 137	12/27/22 07:29	12/30/22 19:28	200
Terphenyl-d14 (Surr)	0	S1- D	65 - 124	12/27/22 07:29	12/30/22 19:28	200
13C6-Naphthalene	0	S1- D	50 - 150	12/27/22 07:29	12/30/22 19:28	200

Client Sample Results

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

Job ID: 140-29999-1

Client Sample ID: PAH02_221219_S - TO13KNOX-102622-20

Lab Sample ID: 140-29999-4

Date Collected: 12/20/22 22:41

Matrix: Air

Date Received: 12/21/22 09:45

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		12/27/22 07:29	12/29/22 19:01	10
Acenaphthylene	23.3	J	50.0	17.0	ug/Sample		12/27/22 07:29	12/29/22 19:01	10
Anthracene	ND		50.0	14.0	ug/Sample		12/27/22 07:29	12/29/22 19:01	10
Benzo(a)anthracene	12.4	J B	50.0	11.0	ug/Sample		12/27/22 07:29	12/29/22 19:01	10
Benzo[a]pyrene	ND		50.0	22.0	ug/Sample		12/27/22 07:29	12/29/22 19:01	10
Benzo[b]fluoranthene	ND		50.0	22.0	ug/Sample		12/27/22 07:29	12/29/22 19:01	10
Benzo[g,h,i]perylene	ND		50.0	17.0	ug/Sample		12/27/22 07:29	12/29/22 19:01	10
Benzo[k]fluoranthene	ND		50.0	13.0	ug/Sample		12/27/22 07:29	12/29/22 19:01	10
Chrysene	ND		50.0	13.0	ug/Sample		12/27/22 07:29	12/29/22 19:01	10
Dibenz(a,h)anthracene	ND		50.0	17.0	ug/Sample		12/27/22 07:29	12/29/22 19:01	10
Fluoranthene	ND		50.0	15.0	ug/Sample		12/27/22 07:29	12/29/22 19:01	10
Fluorene	15.0	J	50.0	15.0	ug/Sample		12/27/22 07:29	12/29/22 19:01	10
Indeno[1,2,3-cd]pyrene	ND		50.0	22.0	ug/Sample		12/27/22 07:29	12/29/22 19:01	10
Naphthalene	727		50.0	16.0	ug/Sample		12/27/22 07:29	12/29/22 19:01	10
Phenanthrene	29.9	J	50.0	14.0	ug/Sample		12/27/22 07:29	12/29/22 19:01	10
Pyrene	ND		50.0	15.0	ug/Sample		12/27/22 07:29	12/29/22 19:01	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	76		51 - 109				12/27/22 07:29	12/29/22 19:01	10
Nitrobenzene-d5 (Surr)	70		32 - 137				12/27/22 07:29	12/29/22 19:01	10
Terphenyl-d14 (Surr)	93		65 - 124				12/27/22 07:29	12/29/22 19:01	10
13C6-Naphthalene	54		50 - 150				12/27/22 07:29	12/29/22 19:01	10

Default Detection Limits

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

Job ID: 140-29999-1

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: 140-29999-1

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)
140-29999-1	PAH01_221219_S - TO13KNOX	76	76	76	63
140-29999-2	PAH03_221219_S - TO13KNOX-102622-18	77	75	89	60
140-29999-3	PAH04_221219-S - TO13KNOX-102622-19	89	105	96	61
140-29999-3 - DL	PAH04_221219-S - TO13KNOX-102622-19	0 S1- D	0 S1- D	0 S1- D	0 S1- D
140-29999-4	PAH02_221219_S - TO13KNOX-102622-20	76	70	93	54
LCS 140-68800/2-B	Lab Control Sample	88	93	82	
MB 140-68800/1-B	Method Blank	73	76	85	

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: 140-29999-1

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

Lab Sample ID: MB 140-68800/1-B

Matrix: Air

Analysis Batch: 68901

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 68800

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		5.00	1.50	ug/Sample		12/27/22 07:29	12/29/22 16:53	1
Acenaphthylene	ND		5.00	1.70	ug/Sample		12/27/22 07:29	12/29/22 16:53	1
Anthracene	ND		5.00	1.40	ug/Sample		12/27/22 07:29	12/29/22 16:53	1
Benzo(a)anthracene	ND		5.00	1.10	ug/Sample		12/27/22 07:29	12/29/22 16:53	1
Benzo[a]pyrene	ND		5.00	2.20	ug/Sample		12/27/22 07:29	12/29/22 16:53	1
Benzo[b]fluoranthene	ND		5.00	2.20	ug/Sample		12/27/22 07:29	12/29/22 16:53	1
Benzo[g,h,i]perylene	ND		5.00	1.70	ug/Sample		12/27/22 07:29	12/29/22 16:53	1
Benzo[k]fluoranthene	ND		5.00	1.30	ug/Sample		12/27/22 07:29	12/29/22 16:53	1
Chrysene	ND		5.00	1.30	ug/Sample		12/27/22 07:29	12/29/22 16:53	1
Dibenz(a,h)anthracene	ND		5.00	1.70	ug/Sample		12/27/22 07:29	12/29/22 16:53	1
Fluoranthene	ND		5.00	1.50	ug/Sample		12/27/22 07:29	12/29/22 16:53	1
Fluorene	ND		5.00	1.50	ug/Sample		12/27/22 07:29	12/29/22 16:53	1
Indeno[1,2,3-cd]pyrene	ND		5.00	2.20	ug/Sample		12/27/22 07:29	12/29/22 16:53	1
Naphthalene	ND		5.00	1.60	ug/Sample		12/27/22 07:29	12/29/22 16:53	1
Phenanthrene	ND		5.00	1.40	ug/Sample		12/27/22 07:29	12/29/22 16:53	1
Pyrene	ND		5.00	1.50	ug/Sample		12/27/22 07:29	12/29/22 16:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	73		51 - 109	12/27/22 07:29	12/29/22 16:53	1
Nitrobenzene-d5 (Surr)	76		32 - 137	12/27/22 07:29	12/29/22 16:53	1
Terphenyl-d14 (Surr)	85		65 - 124	12/27/22 07:29	12/29/22 16:53	1

Lab Sample ID: LCS 140-68800/2-B

Matrix: Air

Analysis Batch: 68901

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 68800

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthene	100	77.44		ug/Sample		77	57 - 117
Acenaphthylene	100	73.54		ug/Sample		74	62 - 122
Anthracene	100	65.77		ug/Sample		66	62 - 122
Benzo(a)anthracene	100	75.17		ug/Sample		75	68 - 128
Benzo[a]pyrene	100	83.73		ug/Sample		84	58 - 118
Benzo[b]fluoranthene	100	81.68		ug/Sample		82	59 - 122
Benzo[g,h,i]perylene	100	79.15		ug/Sample		79	64 - 124
Benzo[k]fluoranthene	100	79.53		ug/Sample		80	59 - 119
Chrysene	100	67.27		ug/Sample		67	57 - 117
Dibenz(a,h)anthracene	100	77.13		ug/Sample		77	63 - 123
Fluoranthene	100	63.78		ug/Sample		64	62 - 122
Fluorene	100	74.53		ug/Sample		75	61 - 121
Indeno[1,2,3-cd]pyrene	100	87.62		ug/Sample		88	65 - 125
Naphthalene	100	76.89		ug/Sample		77	54 - 114
Phenanthrene	100	66.37		ug/Sample		66	60 - 120
Pyrene	100	60.02		ug/Sample		60	60 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	88		51 - 109
Nitrobenzene-d5 (Surr)	93		32 - 137
Terphenyl-d14 (Surr)	82		65 - 124

Eurofins Knoxville

QC Association Summary

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

Job ID: 140-29999-1

Air - GC/MS Semi VOA

Prep Batch: 68800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29999-1	PAH01_221219_S - TO13KNOX-102622-7	Total/NA	Air	TO-13A	
140-29999-2	PAH03_221219_S - TO13KNOX-102622-18	Total/NA	Air	TO-13A	
140-29999-3 - DL	PAH04_221219-S - TO13KNOX-102622-19	Total/NA	Air	TO-13A	
140-29999-3	PAH04_221219-S - TO13KNOX-102622-19	Total/NA	Air	TO-13A	
140-29999-4	PAH02_221219_S - TO13KNOX-102622-20	Total/NA	Air	TO-13A	
MB 140-68800/1-B	Method Blank	Total/NA	Air	TO-13A	
LCS 140-68800/2-B	Lab Control Sample	Total/NA	Air	TO-13A	

Cleanup Batch: 68891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29999-1	PAH01_221219_S - TO13KNOX-102622-7	Total/NA	Air	Split	68800
140-29999-2	PAH03_221219_S - TO13KNOX-102622-18	Total/NA	Air	Split	68800
140-29999-3	PAH04_221219-S - TO13KNOX-102622-19	Total/NA	Air	Split	68800
140-29999-3 - DL	PAH04_221219-S - TO13KNOX-102622-19	Total/NA	Air	Split	68800
140-29999-4	PAH02_221219_S - TO13KNOX-102622-20	Total/NA	Air	Split	68800
MB 140-68800/1-B	Method Blank	Total/NA	Air	Split	68800
LCS 140-68800/2-B	Lab Control Sample	Total/NA	Air	Split	68800

Analysis Batch: 68901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29999-3	PAH04_221219-S - TO13KNOX-102622-19	Total/NA	Air	TO-13A	68891
140-29999-4	PAH02_221219_S - TO13KNOX-102622-20	Total/NA	Air	TO-13A	68891
MB 140-68800/1-B	Method Blank	Total/NA	Air	TO-13A	68891
LCS 140-68800/2-B	Lab Control Sample	Total/NA	Air	TO-13A	68891

Analysis Batch: 68942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29999-1	PAH01_221219_S - TO13KNOX-102622-7	Total/NA	Air	TO-13A	68891
140-29999-2	PAH03_221219_S - TO13KNOX-102622-18	Total/NA	Air	TO-13A	68891
140-29999-3 - DL	PAH04_221219-S - TO13KNOX-102622-19	Total/NA	Air	TO-13A	68891

Lab Chronicle

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

Job ID: 140-29999-1

Client Sample ID: PAH01_221219_S - TO13KNOX-102622-7

Lab Sample ID: 140-29999-1

Date Collected: 12/20/22 22:28

Matrix: Air

Date Received: 12/21/22 09:45

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	68800	12/27/22 07:29	DWS	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	68891	12/29/22 10:20	MCC	EET KNX
Total/NA	Analysis	TO-13A		1	1 mL	1 mL	68942	12/30/22 18:40	BKK	EET KNX
Instrument ID: MY										

Client Sample ID: PAH03_221219_S - TO13KNOX-102622-18

Lab Sample ID: 140-29999-2

Date Collected: 12/20/22 22:41

Matrix: Air

Date Received: 12/21/22 09:45

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	68800	12/27/22 07:29	DWS	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	68891	12/29/22 10:20	MCC	EET KNX
Total/NA	Analysis	TO-13A		5	1 mL	1 mL	68942	12/30/22 19:04	BKK	EET KNX
Instrument ID: MY										

Client Sample ID: PAH04_221219-S - TO13KNOX-102622-19

Lab Sample ID: 140-29999-3

Date Collected: 12/20/22 22:28

Matrix: Air

Date Received: 12/21/22 09:45

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	68800	12/27/22 07:29	DWS	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	68891	12/29/22 10:20	MCC	EET KNX
Total/NA	Analysis	TO-13A		10	1 mL	1 mL	68901	12/29/22 18:35	BKK	EET KNX
Instrument ID: MY										
Total/NA	Prep	TO-13A	DL		1 PUF	1 mL	68800	12/27/22 07:29	DWS	EET KNX
Total/NA	Cleanup	Split	DL		1 mL	1 mL	68891	12/29/22 10:20	MCC	EET KNX
Total/NA	Analysis	TO-13A	DL	200	1 mL	1 mL	68942	12/30/22 19:28	BKK	EET KNX
Instrument ID: MY										

Client Sample ID: PAH02_221219_S - TO13KNOX-102622-20

Lab Sample ID: 140-29999-4

Date Collected: 12/20/22 22:41

Matrix: Air

Date Received: 12/21/22 09:45

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	68800	12/27/22 07:29	DWS	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	68891	12/29/22 10:20	MCC	EET KNX
Total/NA	Analysis	TO-13A		10	1 mL	1 mL	68901	12/29/22 19:01	BKK	EET KNX
Instrument ID: MY										

Lab Chronicle

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

Job ID: 140-29999-1

Client Sample ID: Method Blank

Lab Sample ID: MB 140-68800/1-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	68800	12/27/22 07:29	DWS	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	68891	12/29/22 10:20	MCC	EET KNX
Total/NA	Analysis	TO-13A		1	1 mL	1 mL	68901	12/29/22 16:53	BKK	EET KNX
Instrument ID: MY										

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 140-68800/2-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	68800	12/27/22 07:29	DWS	EET KNX
Total/NA	Cleanup	Split			1 mL	1 mL	68891	12/29/22 10:20	MCC	EET KNX
Total/NA	Analysis	TO-13A		1	1 mL	1 mL	68901	12/29/22 17:18	BKK	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: 140-29999-1

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	12-31-22
Maryland	State	277	03-31-23
Michigan	State	9933	07-27-25
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

Knoxville, TN 37921-5947
phone 865.291.3000 fax 865.584.4315

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Project Manager: Dustin Snare Email: dsnare@all4inc.com Tel/Fax: 610-422-1126		Site Contact: Brett Tunno Lab Contact: David Myers		22/12/19		COC No: 1 of 1 COCs	
Client Contact ALL4 LLC 319 Spring St Royersford, PA 19442 (610) 422-1126 Phone (xxx) xxx-xxxx FAX Project Name: U. S. Steel Coke ICR Monitoring Site: U. S. Steel Corporation - Clairton, PA Works P O #		Analysis Turnaround Time <input type="checkbox"/> CALENDAR <input type="checkbox"/> WORKING TAT if different from Below <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		TALS Project #: Sampler: For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:			
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)
PAH01_221219_S	2022-12-19	10:30 AM	Filter	A	1		X
PAH02_221219_S	2022-12-19	10:40 AM	Filter	A	1		X
PAH03_221219_S	2022-12-19	10:47 AM	Filter	A	1		X
PAH04_221219_S	2022-12-19	10:22 AM	Filter	A	1		X
Sample Specific Notes: End: 2022-12-20 10:28 PM ID: TO13KNOX102622-7 End: 2022-12-20 10:41 PM ID: TO13KNOX102622-20 End: 2022-12-20 10:41 PM ID: TO13KNOX102622-18 End: 2022-12-20 10:28 PM ID: TO13KNOX102622-19							
 140-29999 Chain of Custody							
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other							
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. <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for Months							
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No							
Relinquished by: Stacy Arner							
Relinquished by:							
Relinquished by:							
Relinquished by:							
Cooler Temp. (°C): Obs'd: Cor'd: Therm ID No.: Received by: Company: Date/Time: Received by: Company: Date/Time: Received in Laboratory by: Company: 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	CUSTOMY SEALS INTACT
2. Were ambient air containers received intact?	/			<input type="checkbox"/> Checked in lab	RECEIVED AT RT 1-1/67132
3. The coolers/containers custody seal if present, is it intact?	/			<input type="checkbox"/> Yes <input type="checkbox"/> NA	BA 12-21-22 1 cooler PMS# 39248503 8061 PD
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : 57M 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	7
5. Were all of the sample containers received intact?	/			<input type="checkbox"/> Containers, Broken	REMOVED 4 PVFS
6. Were samples received in appropriate containers?	/			<input type="checkbox"/> Containers, Improper; Client Contacted; Proceed/Cancel	1013KNOX 10a6aa-7
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	" -18 " -19 " -20
8. Were all of the samples listed on the COC received?	/			<input type="checkbox"/> Sample Received, Not on COC	
9. Is the date/time of sample collection noted?	/			<input type="checkbox"/> Sample on COC, Not Received <input type="checkbox"/> COC; No Date/Time; Client Contacted	
10. Was the sampler identified on the COC?	/			<input 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	Box 16A: pH Preservation
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	Box 18A: Residual Chlorine
17. Were VOA samples received without headspace?	/			<input type="checkbox"/> Headspace (VOA only) <input type="checkbox"/> Residual Chlorine	Preservative: Lot Number: Exp Date: Analyst: Date: Time:
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?	/				
20. For rad samples was sample activity info. Provided?	/			<input type="checkbox"/> If no, notify lab to adjust <input type="checkbox"/> Project missing info	
Project #: 14006806 PM Instructions:					

Sample Receiving Associate: Prof. J. J. J. Date: 12-21-22

QA026R32.doc, 062719