APPENDIX A

STATE AND FEDERAL PERMITS FOR 2021 BLACK DUCK COLLECTION

Permit Number: MB13304C-0
Effective: 12/23/2020 Expires: 03/31/2023

Issuing Office:

Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
Migratory Bird Permit Office
1875 Century Boulevard, NE
Atlanta, GA 30345
Tel: 404-679-7070 Fax: 404-679-4180

CHIEF, MIGRATORY BIRD PERMIT OFFICE - REGION 5

Permittee:

WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS
1075 BIG SHANTY ROAD NW SUITE 100
KENNESAW, GA 30144
U.S.A.

Name and Title of Principal Officer:
MATTHEW C. GROSTICK - OFFICE MANAGER

Authority: Statutes and Regulations: 16 USC 703-712, 16 USC 668(a); 50 CFR Part 13, 50 CFR 21.23, 50 CFR 22.21.

Location where authorized activity may be conducted:
Activities authorized in Condition D may be conducted in Maine.
Activities authorized in Condition E and F may be conducted anywhere in the U.S. permittee has appropriate corresponding State authority.

Reporting requirements:
ANNUAL REPORT DUE: 01/31
You must submit an annual report to your Regional Migratory Bird Permit Office each year, even if you had no activity. Form at www.fws.gov/forms/3-202-1.pdf.

Authorizations and Conditions:

A. General conditions set out in Subpart B of 50 CFR 13, and specific conditions contained in Federal regulations cited above, are hereby made a part of this permit. All activities authorized herein must be carried out in accord with and for the purposes described in the application submitted. Continued validity, or renewal of this permit is subject to complete and timely compliance with all applicable conditions, including the filing of all required information and reports.

B. The validity of this permit is also conditioned upon strict observance of all applicable foreign, state, local tribal, or other federal law.

C. Valid for use by permittee named above.

D. *You are authorized to take, transport, and possess the following migratory birds for scientific purposes:*

Species	Trap and Release	Collection Period	State
American Black Duck	45	Annually	ME

E. You are authorized to salvage dead migratory birds (except species listed as threatened or endangered under the Endangered Species Act). Any dead bald eagle or golden eagle salvaged must be reported within 48 hours to the National Eagle Repository at (303) 287-2110 and to the migratory bird permit issuing office at 413-253-8643 or fax 413-253-8424. The Repository will provide directions for shipment of these specimens.

For a list of threatened and endangered species in your state, visit the U.S. Fish and Wildlife Service's Threatened and Endangered Species System (TESS) at: http://www.fws.gov/endangered/.

Permit Number: MB13304C-0
Effective: 12/23/2020 Expires: 03/31/2023

F. You are authorized to salvage abandoned (unoccupied) migratory bird nests and nonviable eggs outside the nesting season, except for nests and eggs of bald eagles or golden eagles, or species listed as threatened or endangered under the Endangered Species Act.

G. You may not salvage and must immediately report to the USFWS Office of Law Enforcement any dead or injured migratory birds that you encounter that appear to have been poisoned, shot, electrocuted, have collided with industrial power generation equipment, or were otherwise killed or injured as the result of potential criminal activity. See FWS OLE contact information below.

H. Any person who is
(1) employed by or under contract to you for the activities specified in this permit, or
(2) otherwise designated a subpermittee by you in writing, may exercise the authority of this permit.

I. You and any subpermittees must comply with the attached Standard Conditions for Federal Migratory Bird Scientific Collecting Permits. **These standard conditions are a continuation of your permit conditions *and must remain with your permit.***

For suspected illegal activity, immediately contact USFWS Office of Law Enforcement at: East Orland, ME 207-469-6642

STATE OF MAINE
DEPARTMENT OF INLAND FISHERIES AND WILDLIFE
Wildlife Division
650 State Street
Bangor, Maine 04401
Phone (207) 941-4466 Fax (207) 941-4450

WILDLIFE SCIENTIFIC COLLECTION PERMIT

Permit #: 2020 - 605

ISSUED TO: Wood Environment & Infrastructure Solutions
1075 Big Shanty Road NW
Kennesaw, GA 30144

DATES:	
EFFECTIVE	EXPIRATION
12/1/2020	3/31/2021

NAME AND PHONE NUMBER(S) OF PRINCIPAL OFFICER:
Dr. Louise S. Venne (770) 421-3400
Senior Toxicologist

THIS PERMIT INVOLVES:
☐ Bird Banding
☐ Endangered or Threatened Species

LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED:
Along the Penobscot River and Frenchmen's Bay (Penobscot, Hancock, and Waldo counties)

REGION(S):
☐ A ☑ B ☑ C
☐ D ☐ E ☑ F
☐ G

CONDITIONS OF PERMIT:
THIS PERMIT DOES NOT COVER SCIENTIFIC COLLECTION OF ANY FISH SPECIES.

Inland Fish: A separate permit for inland fish scientific collections can be found at http://www.maine.gov/ifw/pdf/scientificcollectorspermit06.pdf and faxed to the Fisheries Division at (207) 287-6395; or for more information, contact the Fisheries Division at (207) 287-5261.

Atlantic Salmon: If you are working on a watershed where Atlantic salmon are listed as Endangered or Threatened, you may need to acquire an additional permit from either National Marine Fisheries Service at (207) 866-7322, or U. S. Fish and Wildlife Service at (207) 827-5938.

Permittee shall comply with all applicable State and Federal laws, rules and regulations. Permittee is not authorized to take Federal trust species without the appropriate Federal permit. Permittee may not take species listed by the State of Maine as state endangered or threatened (http://www.maine.gov/ifw/wildlife/species/endangered_species/state_list.htm) or species listed as "special concern" (http://www.maine.gov/ifw/wildlife/species/endangered_species/specialconcern.htm) unless specifically permitted below.

- Authorized to assist Kelsey Sullivan (MDIFW Biologist) in trappng black ducks and permitted to take blood samples.

- Authorized to collect tissue samples from hunter-killed American black ducks, when available.

SUBPERMITTEE(S) UNDER THIS PERMIT:

Matthew C. Basler, Karen A. Merritt

REPORTING REQUIREMENTS:

Annually by January 31 on forms provided by the Commissioner.

SIGNATURE OF AUTHORIZED AGENCY REPRESENTATIVE:

NAME AND TITLE:
Dr. Craig McLaughlin
Wildlife Research Supervisor

DATE: 7/24/2020

APPENDIX B
FIELD DATA RECORDS (FDRS)

APPENDIX B-1
SEDIMENT SAMPLE FDRS

wood.

Penobscot River Mercury Study - Phase III Engineering Evaluation

SEDIMENT CORE LOG

Owner: Tom Gernard	Project No.: 3617207486.04	Logger: SC
Sub: N/A	WO:	Crew: TG, SC
Date: 1-25-21	Time : ~~1530~~ 1550	Vessel: N/A
Coordinates: **Lat**	**Long**	Plan Volume: 6", 0.14 gal
Sampling Station: MM-BKD01-012521_SED	Deploy No. 1	Sub-tidal Location? NO

Weather: Clear, 20°	Winds: None	Waters:	Traffic: N/A	Water Temp:

Measured Water Depth [NAVD88]:	N/A	Core Penetration Length (ft.):	0.9'
Correction to NAVD88 (+/- ft. from NAVD88):	+	Recovered Core Length (ft.):	0.79
Mudline (Corrected Depth) @ NAVD88:		Sample Length Retained (ft.):	0.50'
Study Depth (-NAVD88):		Acceptable Core (80% recovery):	88%
Required Penetration Length:		Core Volume Retained (gal.):	0.14

All Length Measurements are in Decimal Feet

Sample Interval (ft.)	Sample Id #	Description
Top 0.0-0.1'	N/A	not collected
0.1-0.3'	mmBKD-01-012521-SED-01-03-DUP @1555	Saturated to wet dark grey clay with trace organics and strong organic-like odor
N/A		SC 1-25-2021
Bottom		

Number of containers:	0	0	2	0
Type of container:	bucket	liner bag	jar	other

Liner Type: Acetate | ~~Vibracorer:~~ | Push Corer HAND | Slambar

Core Volumes	
Nominal core-barrel diameter	EST. Volume
4.0"	.50gal/ft
3.5"	.33gal/ft

Live Organisms present	
Oil-Like Present	
Odor Present	✓ organic
Debris Present	✓ organics

Photo Numbers

Comments

NONE

wood.

Penobscot River Mercury Study - Phase III Engineering Evaluation

SEDIMENT CORE LOG

Owner: Tom Gerhard	Project No.: 3617207486.04	Logger: SC
Sub: N/A	WO: N/A	Crew: TG, SC
	Date: 1-25-21 Time: 1515	Vessel: N/A
Coordinates: Lat	Long	Plan Volume: 6", 0.14 gal
Sampling Station: MMBKD-01_012521_SED	Deploy No. 1	Sub-tidal Location? NO

Weather: CLEAR, 20°	Winds: NONE	Waters:	Traffic: N/A	Water Temp: NC

Measured Water Depth [NAVD88]:	N/A	Core Penetration Length (ft.):	0.9'
Correction to NAVD88 (+/- ft. from NAVD88):	"	Recovered Core Length (ft.):	0.78'
Mudline (Corrected Depth) @ NAVD88:	"	Sample Length Retained (ft.):	0.5'
Study Depth (-NAVD88):	"	Acceptable Core (80% recovery):	0.87
Required Penetration Length:	"	Core Volume Retained (gal.):	0.14

All Length Measurements are in Decimal Feet

Sample Interval (ft.)	Sample Id #	Description
Top 0.0-0.1'	MMBKD-01_012521_SED_00-01 @1525	Saturated Dark Grey clay with some organics
0.1-0.3'	MMBKD-01-012521-SED-01-03 @1535	Very wet Dark and medium grey clay with trace organics
0.3-0.5'	MMBKD-01-012521-SED-03-05 @1540	moist dark grey ~~and~~ SC 1-25-21 clay strong organic odor
Bottom		SC 1-25-2021

Number of containers:	0	0	6	0
Type of container:	bucket	liner bag	jar	other

Core Volumes	
Nominal core-barrel diameter	EST. Volume
4.0"	.50gal/ft
3.5"	.33gal/ft

Liner Type: Acetate

Vibracorer:

Push Corer Acetate Slambar

Live Organisms present	
Oil-Like Present	
Odor Present	✓ organic
Debris Present	organics

Photo Numbers

Comments

NONE

wood. Penobscot River Mercury Study - Phase III Engineering Evaluation

SEDIMENT CORE LOG

Owner: TOM GERHARD	Project No.: 3617207486.04	Logger: T. GERHARD
Sub: N/A	WO:	Crew: TG, LV
	Date: 01/26/20 Time: 1445	Vessel: N/A
Coordinates: Lat	Long	Plan Volume: 6", 0.14 gal
Sampling Station: FRB-02	Deploy No. 1	Sub-tidal Location? NO

Weather: 20°, CLEAR	Winds:	Waters: CALM	Traffic: N/A	Water Temp: N/A

Measured Water Depth [NAVD88]:	N/A (INT)	Core Penetration Length (ft.):	0.6'
Correction to NAVD88 (+/- ft. from NAVD88):	N/A	Recovered Core Length (ft.):	0.6'
Mudline (Corrected Depth) @ NAVD88:	N/A	Sample Length Retained (ft.):	0.5'
Study Depth (-NAVD88):	N/A	Acceptable Core (80% recovery):	100% REC
Required Penetration Length:	0.5'	Core Volume Retained (gal.):	0.14

All Length Measurements are in Decimal Feet

Sample Interval (ft.)	Sample Id #	Description
Top 0.0 - 0.1	FRB-02_012621_SED_00-01 @ 1500	DARK GRAY TO BROWN CLAY W/ SOME FINE SAND. ORGANICS (GRASS/ROOTS) PRESENT. NO ODOR. ~~MOIST~~ WET TG NO PLASTICITY.
0.1 - 0.3	FRB-02_012621_SED_01-03 @ 1515	DARK GRAY TO BROWN CLAY W/ SILT. FINE ORGANICS (HAIR LIKE ROOTS) PRESENT. ORGANIC ODOR. MOIST. NO PLASTICITY.
0.3 - 0.5	FRB-02_012621_SED_03-05 @ 1530	DARK GRAY TO BROWN CLAY. ROOTS PRESENT. HIGH ORGANIC ODOR. LOW PLASTICITY. ~~SOM~~ MOIST TG
Bottom		TG

Number of containers:	0	0	6	0
Type of container:	bucket	liner bag	jar	other

Liner Type: ACETATE — ~~Vibracorer:~~ Push Corer HAND — Slambar

Core Volumes	
Nominal core-barrel diameter	EST. Volume
4.0"	.50gal/ft
3.5"	.33gal/ft

Live Organisms present	NO
Oil-Like Present	
Odor Present	ORGANIC
Debris Present	ROOTS

Photo Numbers

Comments

INCREASING ORGANIC ODOR W/ DEPTH.
DECREASING ROOT CONTENT AND MOISTURE W/ DEPTH.
NO WOOD PULP/CHIPS PRESENT.

wood. **Penobscot River Mercury Study - Phase III Engineering Evaluation**

SEDIMENT CORE LOG

Owner: TOM GERHARD	Project No.: 3617207486.04	Logger: T. GERHARD
Sub: N/A	WO:	Crew: TG, LV
Date: 1/26/2021	Time: 1830	Vessel: N/A
Coordinates: Lat	Long	Plan Volume: 6", 0.14 gal
Sampling Station: ES-13	Deploy No. 1	Sub-tidal Location? NO

Weather: OVERCAST, 30°	Winds: CALM	Waters: CALM	Traffic: N/A	Water Temp: N/A

Measured Water Depth [NAVD88]:	N/A (INT)	Core Penetration Length (ft.):	0.75'
Correction to NAVD88 (+/- ft. from NAVD88):	N/A	Recovered Core Length (ft.):	0.68'
Mudline (Corrected Depth) @ NAVD88:	N/A	Sample Length Retained (ft.):	0.50'
Study Depth (-NAVD88):	N/A	Acceptable Core (80% recovery):	91%
Required Penetration Length:	0.5'	Core Volume Retained (gal.):	0.14

All Length Measurements are in Decimal Feet

Sample Interval (ft.)	Sample Id #	Description
Top 0.0-0.1	ES-13_012621_SED_00-01 @ 1845	BROWN TO DARK BROWN SILT W/ SOME FINE SAND. SOME ORGANIC ODOR. WET. TRACE ORGANICS (ROOTS). NO PLASTICITY
0.1-0.3	ES-13_012621_SED_01-03 @ 1855	BROWN TO DARK BROWN SILT AND FINE SAND. TRACE GRAVEL (0.5-1") AND ORGANICS LOW ODOR, WET.
0.3-0.5	ES-13_012621_SED_03-05 @ 1905	DARK BROWN FINE SAND w/ SOME SILT, TRACE ORGANICS (HAIR ROOTS) NO ODOR, LOW MOISTURE NO PLASTICITY.
Bottom		TG

Number of containers:	0	0	6	0
Type of container:	bucket	liner bag	jar	other

Liner Type: ACETATE

Vibracorer: HAND PUSH

Push Corer ~~Slambar~~

Core Volumes	
Nominal core-barrel diameter	EST. Volume
4.0"	.50gal/ft
3.5"	.33gal/ft

Live Organisms present

Oil-Like Present

Odor Present NONE

Debris Present ROCKS/ROOTS

Photo Numbers

Comments

NONE

APPENDIX B-2
CO-LOCATED SEDIMENT PHOTOGRAPHIC LOG

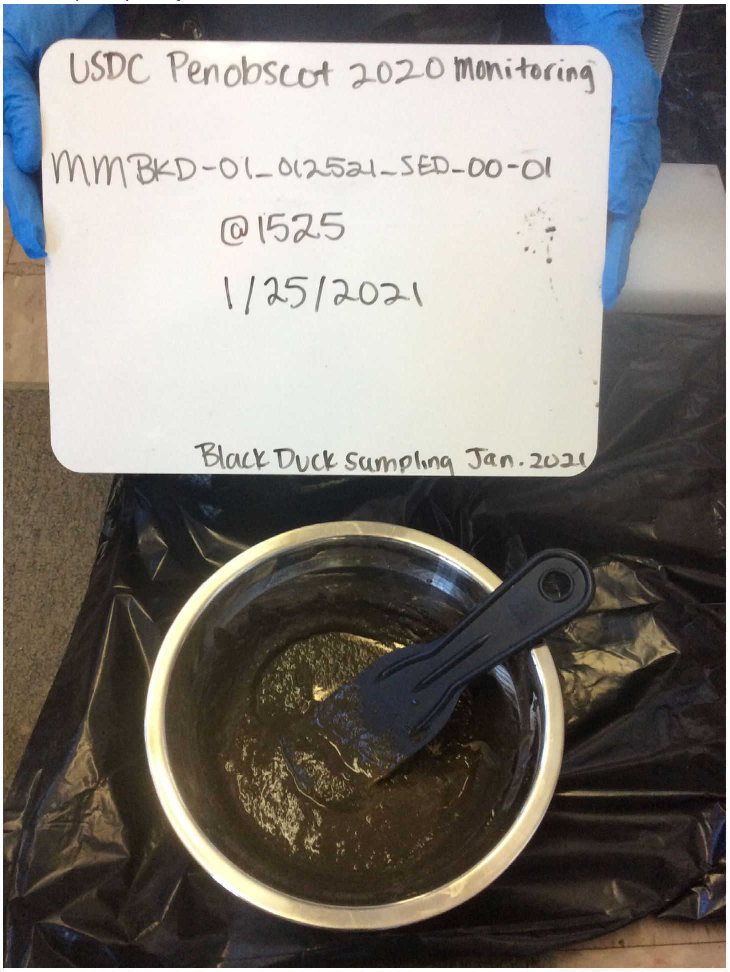


PHOTO 1:

Location: Penobscot River

Date: 1/25/2021

Sample collection time: 1525

Description: Intertidal sediment collected at MMBKD-01, depth 0-0.1 ft.

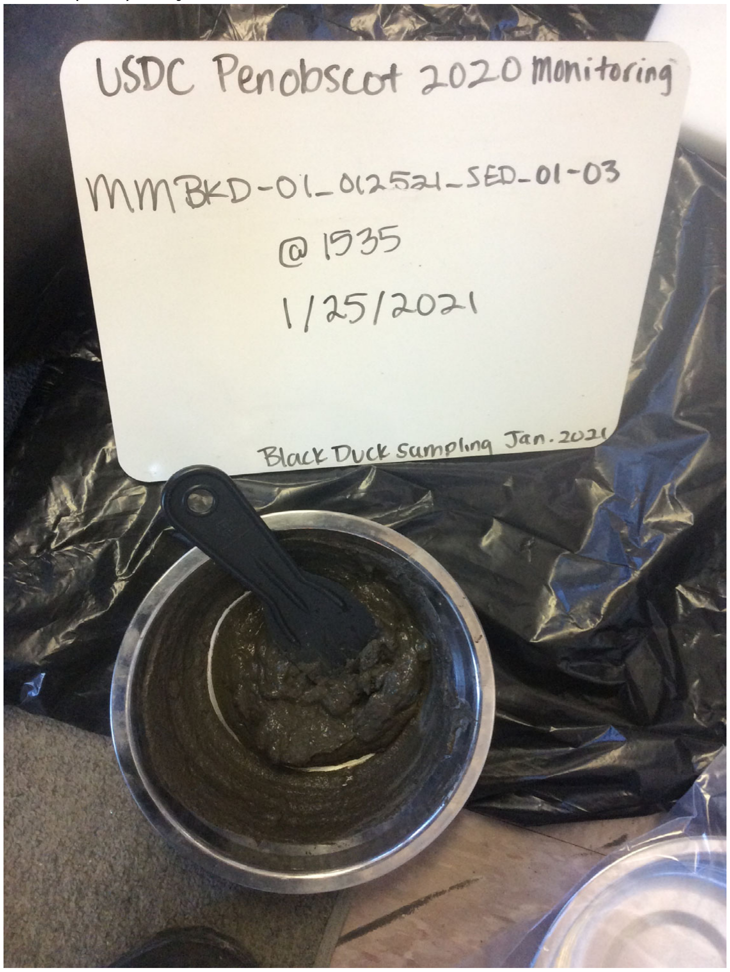


PHOTO 2:

Location: Penobscot River

Date: 1/25/2021

Sample collection time: 1535

Description: Intertidal sediment collected at MMBKD-01, depth 0.1-0.3 ft.

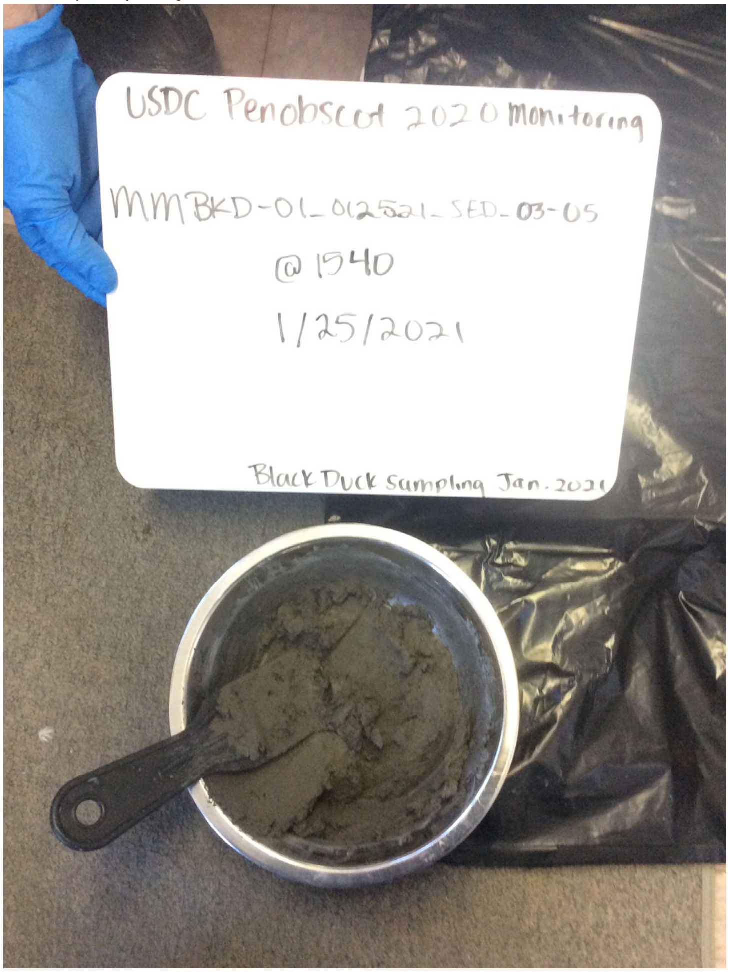


PHOTO 3:

Location: Penobscot River

Date: 1/25/2021

Sample collection time: 1540

Description: Intertidal sediment collected at MMBKD-01, depth 0.3-0.5 ft.

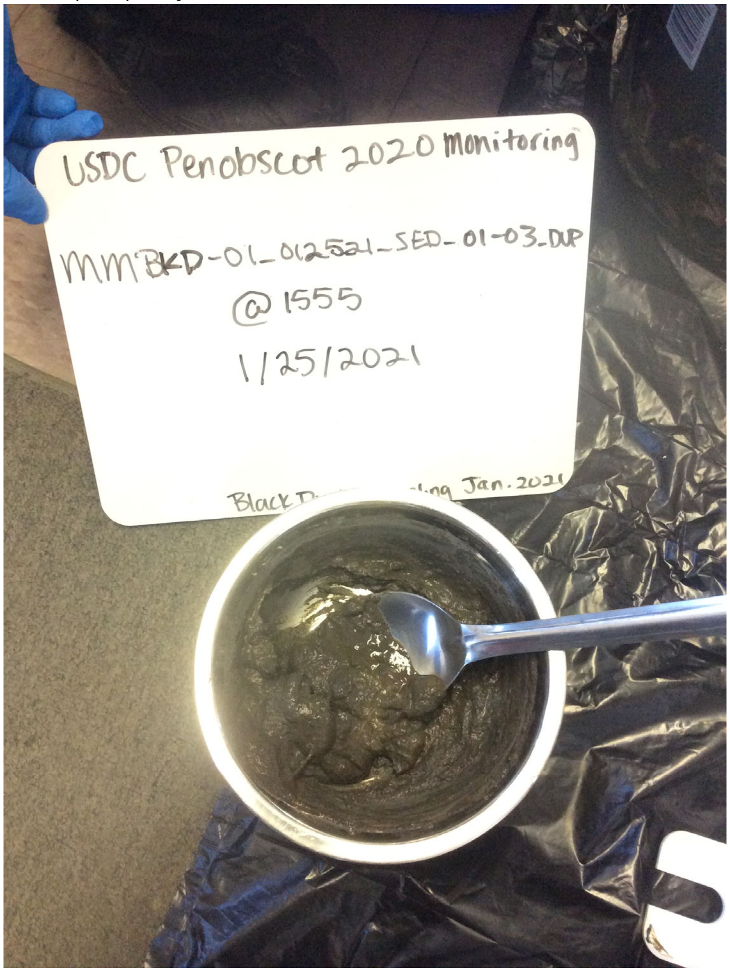


PHOTO 4:

Location: Penobscot River

Date: 1/25/2021

Sample collection time: 1555

Description: Intertidal sediment collected at MMBKD-01, depth 0.1-0.3 ft, duplicate sample.

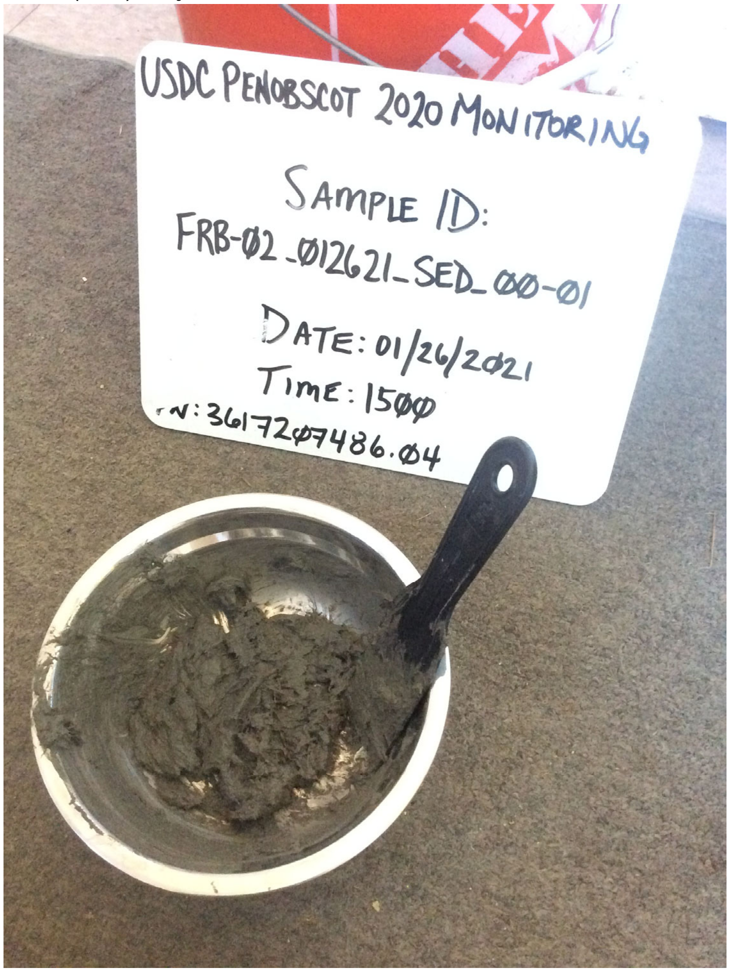


PHOTO 5:

Location: Penobscot River

Date: 1/26/2021

Sample collection time: 1500

Description: Intertidal sediment collected at FRB-02, depth 0-0.1 ft.

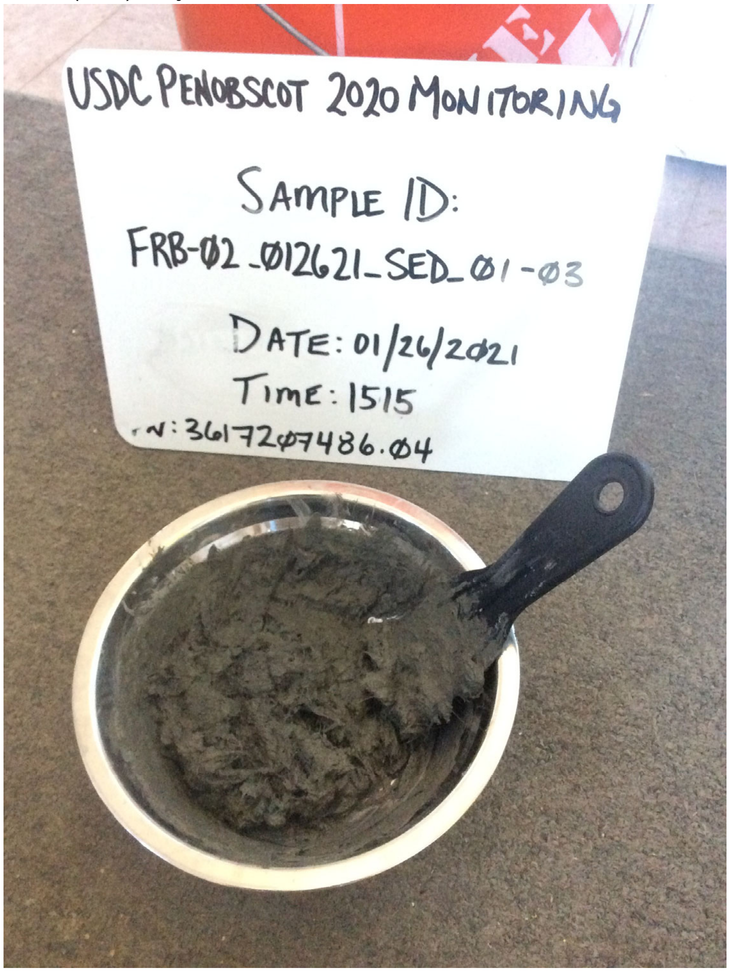


PHOTO 6:

Location: Penobscot River

Date: 1/26/2021

Sample collection time: 1515

Description: Intertidal sediment collected at FRB-02, depth 0.1-0.3 ft.

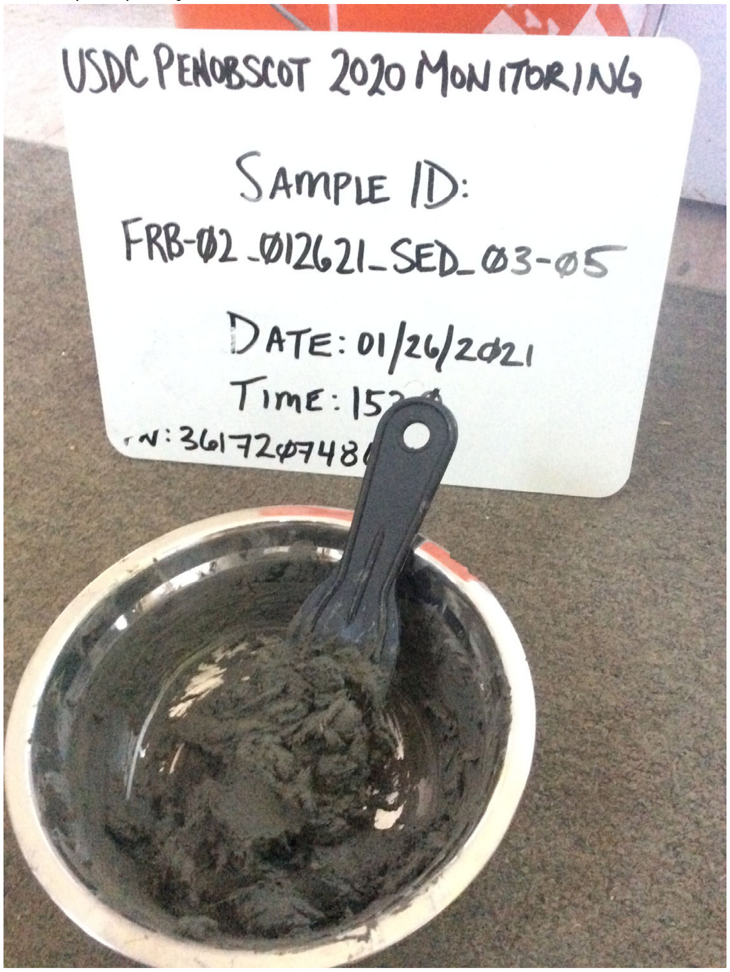


PHOTO 7:

Location: Penobscot River

Date: 1/26/2021

Sample collection time: 1530

Description: Intertidal sediment collected at FRB-02, depth 0.3-0.5 ft.

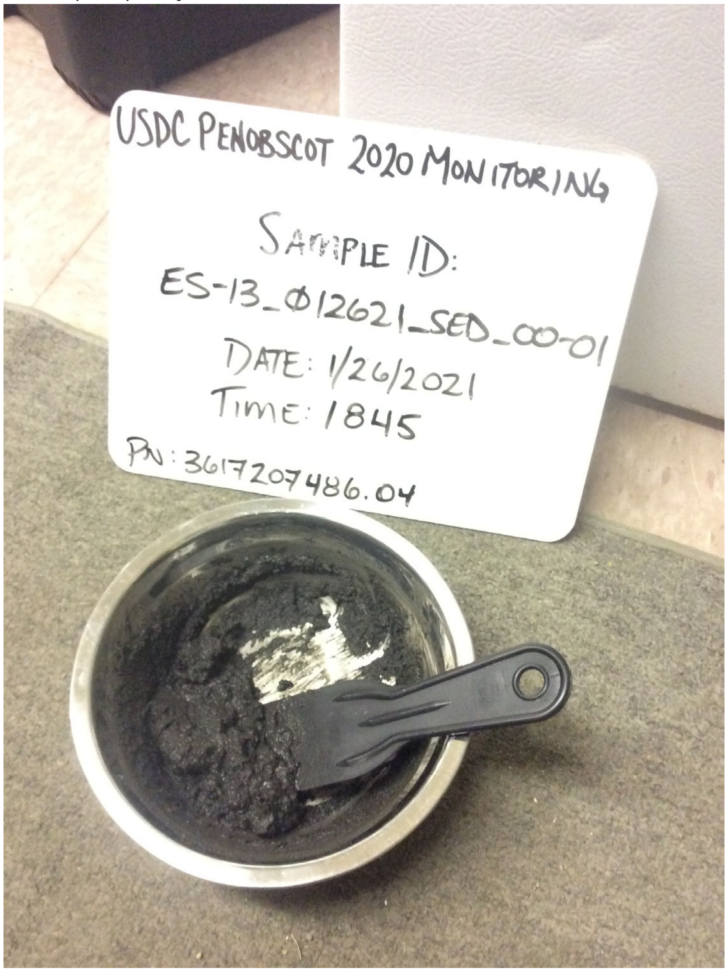


PHOTO 8:

Location: Penobscot River

Date: 1/26/2021

Sample collection time: 1845

Description: Intertidal sediment collected at ES-13, depth 0-0.1 ft.

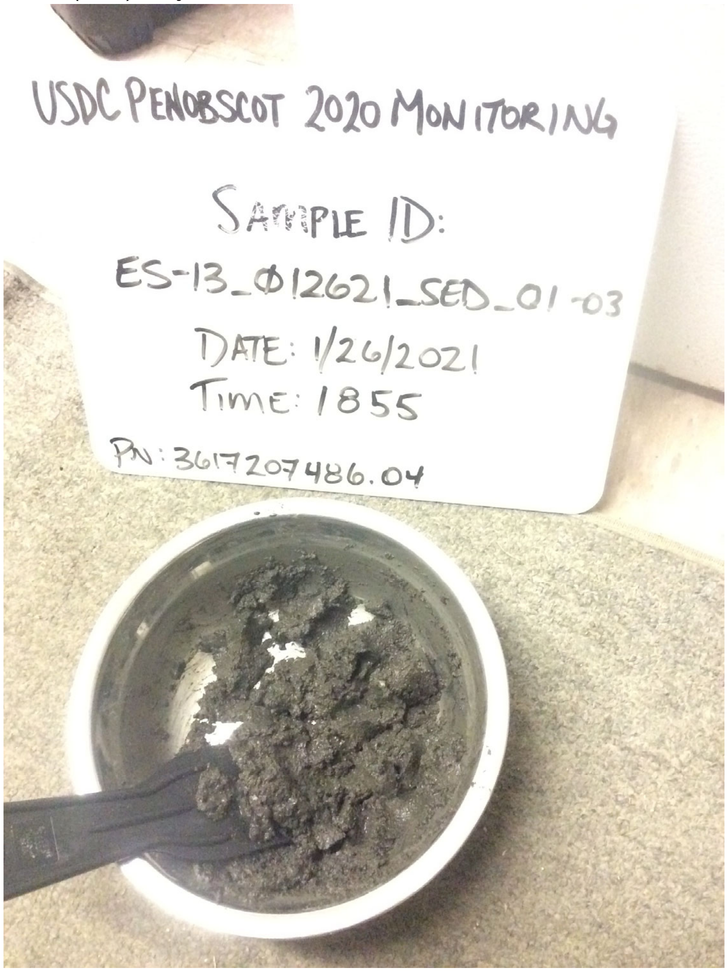


PHOTO 9:

Location: Penobscot River

Date: 1/26/2021

Sample collection time: 1855

Description: Intertidal sediment collected at ES-13, depth 0.1-0.3 ft.

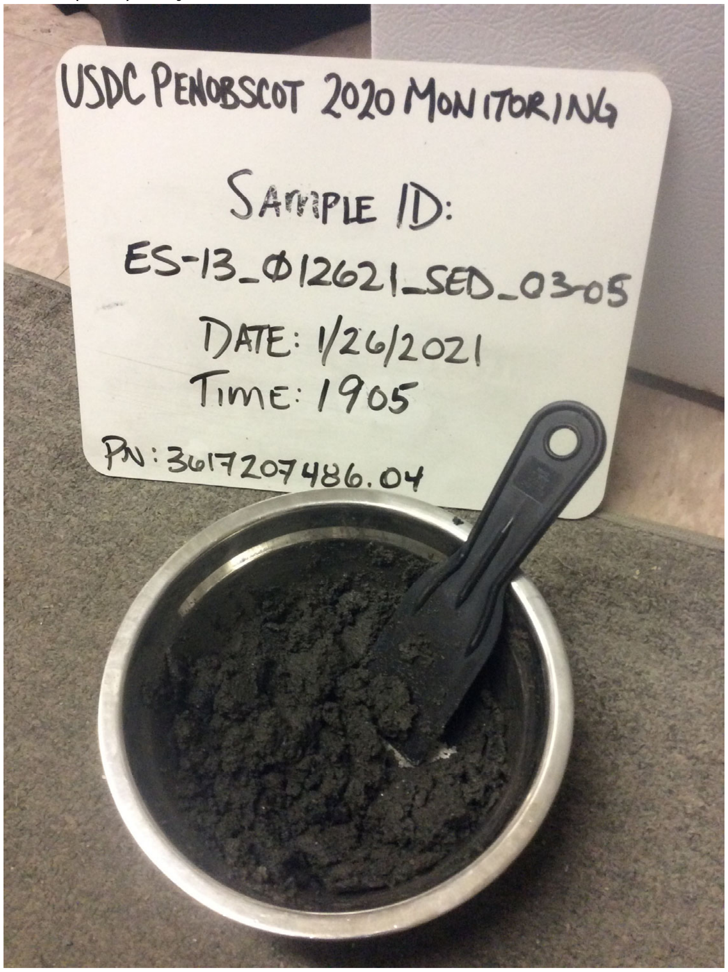


PHOTO 10:

Location: Penobscot River

Date: 1/26/2021

Sample collection time: 1905

Description: Intertidal sediment collected at ES-13, depth 0.3-0.5 ft.

APPENDIX B-3
BLACK DUCK FDRS

wood.

SAMPLE COLLECTION LOG
AMERICAN BLACK DUCK BLOOD

Project Name: USDC Penobscot River
Date: 1/25/2021
Collectors: TJG, LV, SC
Media: Blood (BL)

Project Number: 3617207486 3617207486.04.****
Location ID: MMBKD
Collection Method (Equip): ROCKET NET
Weather: ~15°F, LIGHT WIND N/NW
Lat/Long: Latitude: Longitude:

Sample ID	Time	Band Number	Weight (grams)	Sex	Age	Capillary Tubes	Notes
MMBKD-01_012521_ABD_01_BL	0951	224788514	1280	~~F~~ M	ASY	4	
MMBKD-01_012521_ABD_02_BL	1008	224788519	1230	M	SY	7	
MMBKD-01_012521_ABD_03_BL	1030	224788512	1400	M	SY	5	BAND...512 TJG
MMBKD-01_012521_ABD_04_BL	1040	224788526	1250	M	ASY	5	BAND...526 TJG
MMBKD-01_012521_ABD-05_BL	1051	224788522	1150	F	SY	4	
MMBKD-01_012521_ABD_06_BL	1107	224788511	1430	M	ASY	5	
MMBKD-01_012521_ABD-07_BL	1120	224788515	1120	F	SY	8	MS/MSD
MMBKD-01_012521_ABD_08_BL	1130	224788517	1310	M	SY	4	
MMBKD-01_012521_ABD-09_BL	1138	224788509	1270	M	SY	4	
MMBKD-01_012521_ABD-10_BL	1145	224788518	1070	F	SY	4	
MMBKD-01_012521_ABD-11-BL	1154	224788516	1290	M	ASY	6	
MMBKD-01_012521_ABD-12-BL	1204	224788523	1010	F	SY	6	
MMBKD-01_012521_ABD_13_BL	1217	224788524	1150	F	SY	5	
MMBKD-01_012521_ABD-14_BL	1228	224788513	1440	M	SY	4	
MMBKD-01_012521_ABD-15_BL	1233	224788510	1270	F	ASY	4	

Requested Analyses

Analytes:	Methods:	Container:	Preservative
Total Hg	1631e	70 uL Capillary Tubes	Frozen

Additional Questions:

Preservative at Collection: Wet Ice Dry Ice FREEZER
QC Collected: MS/MSD None MS/MSD Source: MMBKD-01_012521_ABD_07-BL

Notes:
Duck sampling was conducted according to the following SOPs included in the QAPP: SOP S-10 American Black Duck Sampling

Technician name (Print): TOM GERHARD QA/QC by:
Technician Signature: [signature] Date:

wood.

SAMPLE COLLECTION LOG
AMERICAN BLACK DUCK BLOOD

Project Name: USDC Penobscot River
Date: 1/26/2021
Collectors: TWG, LV
Media: Blood (BL)

Project Number: 3617207486 → 3617207486.04.****
Location ID: FRB-Ø1
Collection Method (Equip): WIRE TRAP.
Weather: CLEAR, 25°F
Lat/Long: Latitude: Longitude:

Sample ID	Time	Band Number	Weight (grams)	Sex	Age	Capillary Tubes	Notes
FRB-Ø2-Ø12621-ABD-Ø1-BL	1045	191729430	1490	M	ASY	8	MS/MSD
FRB-Ø2-Ø12621-ABD-Ø2-BL	1115	216756291	1290	M	ASY	5	

TG

Requested Analyses

Analytes:	Methods:	Container:	Preservative
Total Hg	1631e	70 uL Capillary Tubes	Frozen

Additional Questions:
Preservative at Collection: Wet Ice Dry Ice FREEZER
QC Collected: MS/MSD None MS/MSD Source: FRB-Ø2-Ø12621-ABD-Ø1-BL

Notes:
Duck sampling was conducted according to the following SOPs included in the QAPP: SOP S-10 American Black Duck Sampling

Technician name (Print): TOM GERHARD
Technician Signature:
QA/QC by:
Date:

wood.

SAMPLE COLLECTION LOG
AMERICAN BLACK DUCK BLOOD

Project Name: USDC Penobscot River
Date: 1/27/21
Collectors: TG, LV
Media: Blood (BL)

Project Number: 3617207486.04.****
Location ID: FRB-Ø2
Collection Method (Equip): WIRE TRAP
Weather: OVERCAST, ~32°F
Lat/Long: Latitude: Longitude:

Sample ID	Time	Band Number	Weight (grams)	Sex	Age	Capillary Tubes	Notes
FRB-Ø2-Ø12721_ABD-Ø3-BL	1220	224788529	1160	F	SY	4	
FRB-Ø2-Ø12721-ABD-Ø4-BL	1240	224788530	1270	M	SY	5	
FRB-Ø2-012721_ABD-Ø5-BL	1255	224788531	1020	F	SY	3	
							TG

Requested Analyses

Analytes:	Methods:	Container:	Preservative
Total Hg	1631e	70 uL Capillary Tubes	Frozen

Additional Questions:

Preservative at Collection: Wet Ice Dry Ice FREEZER

QC Collected: MS/MSD None MS/MSD Source: SEE 01/26/21 FDR

Notes:

Duck sampling was conducted according to the following SOPs included in the QAPP: SOP S-10 American Black Duck Sampling

Technician name (Print): TOM GERHARD
Technician Signature: [signature]

QA/QC by:
Date:

wood.

SAMPLE COLLECTION LOG
AMERICAN BLACK DUCK BLOOD

Project Name: USDC Penobscot River
Date: 1/30/2021
Collectors: TNG, LV
Media: Blood (BL)

Project Number: 3617207486.04.****
Location ID: ES-13 (VERONA ISLAND)
Collection Method (Equip): WIRE TRAP
Weather: CLEAR, 15°F.
Lat/Long: Latitude: Longitude:

Sample ID	Time	Band Number	Weight (grams)	Sex	Age	Capillary Tubes	Notes
ES-13_Ø13Ø21-ABD_Ø1_BL	1634	224788533	105Ø	F	SY	3	
ES-13_Ø13Ø21_ABD-Ø2-BL	1645	224788538	13ØØ	M	ASY	3	RECAP, OLD # 18?-
ES-13-Ø13Ø21-ABD-Ø3-BL	1654	224788539	137Ø	M	ASY	4	RECAP, OLD # 1827-8?007
ES-13-Ø13Ø21_ABD-Ø4_BL	1704	224788543	144Ø	M	ASY	4	
ES-13-Ø13Ø21_ABD_Ø5-BL	1714	224788547	1480	M	ASY	5	
ES-13_Ø13Ø21-ABD-Ø6-BL	1722	224788537	1250	M	SY	5	
ES-13-Ø13Ø21_ABD-Ø7-BL	1729	224788540	1300	M	ASY	3	
ES-13_Ø13Ø21-ABD-Ø8-BL	1740	224788535	1230	M	SY	4	
ES-13-Ø13Ø21-ABD-Ø9-BL	1752	224788548	1140	M	SY	4	
ES-13_Ø13Ø21-ABD_1Ø-BL	1758	224788544	1250	M	ASY	5	
ES-13_Ø13Ø21-ABD-11_BL	1806	224788534	1420	M	SY	4	
ES-13_Ø13Ø21-ABD-12-BL	1816	224788542	1350	M	ASY	4	
ES-13-Ø13Ø21_ABD-13-BL	1825	224788549	1150	F	SY	4	
ES-13_Ø13Ø21-ABD-14_BL	1836	224788545	1300	M	SY	8	MS/MSD
ES-13_Ø13Ø21-ABD-15_BL	1845	224788546	1070	F	SY	3	
EB_CAPILLARY-Ø13Ø21-ABD_QC	1850	—	—	—	—	—	EQUIPMENT BLANK

Requested Analyses

Analytes:	Methods:	Container:	Preservative
Total Hg	1631e	70 uL Capillary Tubes	Frozen

Additional Questions:

Preservative at Collection: Wet Ice Dry Ice FREEZER
QC Collected: MS/MSD None MS/MSD Source: ES-13_Ø13Ø21-ABD_14_BL

Notes:
Duck sampling was conducted according to the following SOPs included in the QAPP: SOP S-10 American Black Duck Sampling

Technician name (Print): TOM GERHARD
Technician Signature:

QA/QC by:
Date:

APPENDIX B-4
BLACK DUCK PHOTOGRAPHIC LOG

PHOTO 1:

Location:

FRB-02 (Frenchman Bay – Jordan River)

Description:

Wire duck trap setup in progress.

PHOTO 2:

Location:

FRB-02 (Frenchman Bay – Jordan River)

Description:

Wire duck trap setup in progress, with corn bait.

PHOTO 3:

Location:

Frenchman Bay - Skilling

Description:

Wire duck trap setup complete.

PHOTO 4:

Location:

ES-13

Description:

Rocket net blind.

PHOTO 5:

Location:

ES-13

Description:

Baited and set wire duck trap.

PHOTO 6:

Location:

ES-13

Description:

Wire trap with captured ducks.

PHOTO 7:

Location:

MMBKD-01

Description:

Maine DIFW biologist and Wood scientists aging a mallard via wear patterns on the primary coverts.

PHOTO 8:

Location:

Field Office

Description:

American black duck wing during aging, duck collected at MMBKD-01.

PHOTO 9:

Location:

MMBKD-01

Description:

Wood scientist banding a drake mallard, supervised by Maine DIFW biologist.

PHOTO 10:

Location:

FRB-02

Description:

Wood scientist banding a mallard.

PHOTO 11:

Location:

Field office

Description:

Wood scientist collecting a blood sample from an American black duck, collected at MMBKD-01.

PHOTO 12:

Location:

Field office

Description:

Wood scientist collecting a blood sample from an American black duck, collected at MMBKD-01.

PHOTO 13:

Location:

Field office

Description:

Banded and processed black ducks from ES-13 awaiting release.

APPENDIX C
STANDARD OPERATING PROCEDURES

SOP S-6: Sediment Collection
SOP S-7: Procedure for Descriptions and Identification of Soils
SOP S-7A: Procedure for Physical Description and Identification of Penobscot Sediment Characteristics
SOP S-10: Duck Collection and Sampling of Breast Muscle Tissue and Blood
SOP S-17: Decontamination Procedures
SOP S-19: Sample Chain of Custody Procedures
SOP S-20: Sample Packaging and Shipment
SOP S-23: Sediment Processing – Extrusion & Sampling

SOP No. S-6

WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
STANDARD OPERATING PROCEDURE

SEDIMENT COLLECTION

DEFINITIONS

FDR	Field Daily Record
FOL	Field Operation Lead
FSP	Field Sampling Plan
HASP	Health and Safety Plan
PM	Project Manager
PPE	Personal Protective Equipment
QAPP	Quality Assurance Project Plan
SOP	Standard Operating Procedure
Wood	Wood Environment & Infrastructure Solutions, Inc. (formerly Amec Foster Wheeler)

TERMINOLOGY

- Sampling Station or Location
- Sediment Collection – retrieval of bulk sediment
- Sediment Sample – aliquot of the bulk sediment to be subjected to laboratory analyses
- Deployment – individual use of sampling device to recover sediment
- Penetration – depth of the sampling device beneath the mudline
- Recovered Sediment – sediment removed and contained within sampling device
- Percent Recovery – amount of recovered sediment divided by penetration or capacity of sampling device
- Interval – a measured amount or increment, often measured where zero is surface of recovered sediment within the sampling device
- Strata – a layer of physically-similar material such as a 3-inch gravel layer or 2-foot sand layer
- Homogenization – blending of the recovered sediment often performed by designated interval
- Composing – combining homogenized recovered sediment often performed to add like strata or like intervals from multiple deployments (or across multiple stations) to achieve laboratory-required sample volume or mass

SEDIMENT COLLECTION

PURPOSE

The purpose of this SOP is to provide a standardized method for collecting polluted or contaminated sediment samples. This SOP may be used by employees of Wood, or its subcontractors supporting the Penobscot River Estuary Project. Deviations from the procedures outlined in this document are to be approved by the Project Manager (PM), Technical Lead (TL), or Field Operation Leader (FOL) prior to initiation of the sampling activity.

This SOP is applicable to the collection of representative sediment samples. Analysis of sediment may be biological, chemical, or physical in nature and may be used to determine the following:

- toxicity
- biological availability and effects of contaminants
- benthic biota
- extent and magnitude of contamination
- contaminant migration pathway and potential source
- fate of contaminants
- physical characteristics

The methodologies discussed in this SOP are applicable to the sampling of sediment in flowing waters, tidal flats, or vegetated marshes/wetlands.

This SOP is intended to provide general procedure and guidance for the operation of multiple types of sediment sampling equipment. On-water and nearshore operations are heavily dependent on a number of factors and conditions that may change during the period of work performance. If conditions change in the field that would require changing the proposed sampling method or location, field personnel shall contact the FOL, TL, or PM before making field changes.

RESPONSIBILITIES

Project Manager – responsible for work execution in accordance with scope of work, budget, and corporate policies and procedures.

Technical Lead – designated personnel with the requisite knowledge, skills, and abilities to develop scope, provide instruction, and resolve field conditions encountered to achieve the task objectives.

Field Operation Leader - may be a Wood employee or contractor who is responsible for overseeing the sediment sampling activities. The FOL is also responsible for checking work performed and verifying that the work satisfies the specific tasks outlined by this SOP and the Field Sampling Plan (FSP). It is the responsibility of the FOL to communicate with the field personnel regarding specific collection objectives and anticipated situations that require deviation from the FSP. It is also the responsibility of the FOL to communicate the need for any deviations from the Field Sampling Plan with the appropriate personnel (Project Manager or Technical Leader).

Field Crew Member / Field Personnel - performing sediment sampling are responsible for adhering to the applicable tasks outlined in this procedure while collecting samples.

EQUIPMENT

The following list of equipment shall be maintained by the field personnel and equipped on the vessel or in the field while performing sampling. This list <u>does not include</u> the sampling device and the parts of the device. See following sections on the specific equipment needs for each sampling device.

- <u>Aluminum foil</u> – cover decontaminated equipment or used to lay sampling equipment or sample upon as a clean surface (as a separation barrier)
- <u>Brush</u> – for clearing debris and contamination from sampling equipment prior to decontamination. Also, for scrubbing sampling equipment in decontamination detergent prior to rinse.
- <u>Bucket</u> – 2 or 5-gallon bucket, minimum of two, one for mixing decontamination detergent, one for rinse water for equipment decontamination.
- <u>Camera device</u> – for photographic documentation of each core or grab collected. Device should be a standalone camera, not a tablet, phone or other device.
- <u>Collection containers</u> - glass or plastic jars or bottles, commonly supplied by the analytical laboratory, with lined lids.
- <u>Clear Packing Tape</u> – for placing over the sample label on sampling containers once the label has been completed filled out. This will prevent label degradation from field conditions.
- <u>Decontamination Detergent</u> – Alconox or equivalent detergent to perform equipment decontamination.
- <u>FDR</u> – Enough copies of the FDR paperwork to fill out in the field at each sampling location that is planned to be visited during the workday. Ensure enough copies are provided each day in case multiple are needed at a given sampling location.
- <u>Field Clothing and Personal Protective Equipment (PPE)</u> - as specified in the HASP.
- <u>Field notebook</u> - a bound book used to record progress of sampling effort and record any problems and field observations during sampling. Alternatively, an electronic tablet device with pre-loaded forms for electronic data entry may be used.
- <u>Gloves</u> - for personal protection and to prevent cross-contamination of samples. May be nitrile or latex, disposable, powderless.
- <u>GPS Device</u> - for recording coordinates of each deployment at a sampling location and to provide navigation to the proposed station.

- Tablet - to store necessary forms used to record and track samples collected at the site. iPads, or equivalent, will contain the necessary field forms and maps for field personnel reference.
- Lead line – measuring tape with a weighted end to measure water depth at sampling location.
- Marker flags - Used for identifying sediment sampling locations.
- Permanent marking pen - used to mark sample jars/lids, coring tubes, and for documentation of field logbooks and data sheets.
- Ruler – wooden preferred
- Sample Labels –sample labels to affix to collection containers for each sampling location to be visited during the workday, as appropriate pre-printed.
- Stainless steel lab spoon **-** or equivalent. Used for homogenizing sediment samples.
- Stainless steel bowls or bucket **-** used for compositing samples; sized appropriate for sample volume capacity.
- Stainless steel or equivalent tray – upon which sampling devices will be placed providing a decontaminated surface for the equipment (e.g., ponar dredge).
- Trash bags - used to dispose of gloves and any other non-hazardous waste generated during sampling.
- White Board – used for documentation project name, project number, sampling station, core ID, date and time sampled while photo documenting sampling efforts. Place behind or under a core when taking photograph.

METHOD SUMMARY

Sediments can be collected with numerous sampling devices.

- For recovering sub-aqueous surface sediment from the 0 – 6-inch depth interval, collection can be performed with a grab sampler such as a Ponar dredge The Ponar dredge requires sufficient water depth is available to allow sufficient gravitational force during descent for the Ponar dredge to engage (or "dig in to") surface sediments and to trigger its pressure-activated closure springs. If used in shallow depths, or does not adequately engage, the Ponar dredge may not trigger as intended or adequately engage, resulting in no recovery of sediment, leading to multiple deployments.

- For recovering sediment deeper than 6 inches, a coring device is commonly required. Coring devices can consist of gravity core, vibracore, box core, push core or hammer core.
- For sediment samples in shallow water (less than 1 foot), submerged, mud flat or marsh/wetland areas collection can be performed using push core, hammer core, shovel, hand auger or split spoon sampler.

Procedures on how to operate each type of coring device are detailed in the following sections.

SAMPLE COLLECTION PROCEDURE BY METHOD

Before sampling with any of the below sampling devices, the following procedures shall be performed:

1. Sampling equipment shall be decontaminated prior to deployment. If the sampling station is the first to be visited that day, decontamination of equipment shall be performed before deployment. At the completion of sample collection at a given station, the equipment shall be decontaminated prior to moving to the next sampling location so as to not track contaminated materials or equipment to the next location. Decontamination shall be performed in accordance with SOP S-17.

2. An individual FDR will be completed for each deployment with deployments sequentially identified with an Alpha designation added to the Station ID. On each individual FDR, the station and deployment information will be fully completed including indicating not pertinent information rather than blank cells (if left blank, mark through cell to indicate not applicable). The FDR serves to record station information, conditions, deployment sequence, work conditions and crew, collection details, recovered sediment characteristics, and incremental sample identification and handling.

3. For each deployment, individual date, time, weather and water conditions, GPS coordinates, and crew roles will be recorded on the FDR.

4. When handling the recovered sediment and its incremental samples, a new pair of nitrile gloves shall be donned.

Grab Sample with Ponar Dredge

The Ponar dredge is a commonly used grab sampler When the scoop strikes the bottom, its tapered cutting edges penetrate beneath the mudline with minimal disturbance. Removable screens on top of each scoop allow water to flow through as it descends and minimize wash out upon retrieval. Often a winch is used for deployment and recovery due to the device's working weight especially when fully loaded.

Prior to leaving the field station, ensure all required parts of the Ponar dredge are properly functioning and the equipment is ready for deployment per the following:

1. Ensure that a sturdy nylon rope is securely fastened to the shackle at the top of the Ponar dredge. If needed, secure the knot in the line using cable ties to ensure the knot cannot work its way loose, causing it to come untied from the equipment during deployment. This can prevent equipment loss during sampling.

2. Inspect the nylon rope for any wear. If excessive where is noted, replace rope, or cut and splice together. Use cable ties at the splice to ensure knot will not loosen during deployment.

3. Ensure the Ponar dredge has at a minimum two screens free of damage. Damage that would require replacement may include screen broken from the frame or rips/tears in the screen covers. Carry extra screens with the equipment in the field in case screens are lost during deployment.

4. Ensure the spring-loaded trigger pin attached to the Ponar dredge is functioning by depressing the spring. Inspect the spring for signs of rust and significant wear that may lead to functionality issues while in the field.

5. Inspect all screws on the jaw and on the weight blocks and ensure they are securely fastened.

6. Safety check the functionality of the Ponar dredge by opening the jaws, placing the trigger pin in place and gently placing the dredge back on the ground. If the pin does not trigger, pull the pin out and then lift the ponar, closing the jaws. Ensure the jaws close completely.

7. For sampling stations where collection is for purposes of monitoring (station is re-visited from past campaigns) FOL will review the available logs and records of previous sampling campaigns and provide station-specific expectations to the field personnel.

The following steps shall be followed when deploying the Ponar dredge for collecting a sediment sample:

1. Ensure the deployment line is securely fastened on the Ponar dredge shackle.

2. Measure water depth and pull enough deployment line to reach the bottom with some contingency length. Tie off deployment line to a cleat or secure location on the vessel/working platform such that if the operator’s grip is lost on the rope during deployment, the equipment is not lost.

3. Place the screens in the correct locations.

4. Arrange the jaws of the Ponar dredge in the open position and place the spring-loaded trigger pin into the alignment hole on the Ponar dredge arms.

5. Lift and deploy the Ponar dredge over the side of the vessel/working platform, slowly lowering the sampler to approximately one to two meters above mudline. The drop depth can be adjusted based on field or site conditions including flows and sediment type. Stop momentarily and then drop the sampler to impact the sediment. Slack on the deployment line will allow the Ponar dredge to trigger, releasing the trigger pin and Ponar dredge jaws.

6. Give the deployment line a few quick, sharp tugs to ensure the Ponar dredge has property triggered.

7. Lift the Ponar dredge slowly and deliberately to the water surface and lift onto the deck of the vessel/working platform. Place the Ponar dredge onto the sampling tray.

8. Before removing the screens, carefully tip the Ponar dredge towards one side to slowly decant water through the screen. Care should be taken to retain the fine sediment fraction during this operation.

9. Remove the screens from the Ponar dredge, measure recovery, and collect interval by placing into bowl or equivalent. If necessary, follow procedures to re-deploy sampler if needed to obtain sufficient quantity of sample.

10. Take a photo of the sample, in the Ponar with whiteboard denoting project name, project number, sampling station, Core ID, date and time.

11. Record depth of recovery on the FDR form. With nitrile gloved hands, remove a small portion of the sediment to provide a sample classification on the FDR.

12. Properly mark or label the sample container per the FSP sampling nomenclature.

Watermark Universal Core Head Sediment Sampler (Push Core)

The Watermark universal core head sediment sampler is a device used to collect sediment in submerged, mud flat or marsh/wetland areas under human power. The sample is slowly lowered, or placed, at the sediment interface and pushed into the subsurface strata to obtain a sample. The sampler is then retrieved from the sediment by pulling the device out or by digging around the sampler, if on land or in shallow water, to minimize sample disturbance.

A push core sampler can be used at deeper depths (up to 10 feet of water depth) but manipulation and handling of the device becomes more difficult in deeper waters. The optimum depth for push sampling in most water conditions is 4 feet or less. The sampler is human powered and pushed into the sediment to the collection depth, or refusal. The push sampler consists of the following parts:

- Lexan tube (typically 2-4 ft in length; diameter may vary)
- Sampler head with check valve
- Nosecone, or core catcher, if needed
- T-handle to attach at sampler head or drive head
- Extension rods (typically 4 ft in length)

Prior to leaving the field station, ensure all required parts of the Watermark sampler are properly functioning and the equipment is ready for deployment per the following:

1. Inspect the pipe clamps securing the rubber sleeve secured to the sampler head. Ensure the clamps are not damaged or severely rusted and that the screw advances easily using the nut driver or screwdriver.

2. Inspect the rubber sleeve for any visible cracks or damage. If sleeve has large cracks splitting through the rubber, replace the sleeve.

3. Inspect the check valve in the sampler head. Submerge the head in a bucket of water and ensure the valve functions properly. As the sampler head is pushed deeper into the water, the valve should rise to the top of the sampler head. As the sampler head is lifted through the water column, the valve should lower to the bottom of the sampler head and should seal to provide suction on the sample tube holding the sample or water in the tube. A simple function test is to shake the sampler head in a vertical orientation. If the valve moves freely, a click can be heard as it moves in its travel channel.

4. Inspect Lexan liner tubes used to collect sample and ensure they are free from cracks or other debris. Ensure the ends of the tubes are not cracked or gouged. If longitudinal cracks (running the length of the tube) are present, replace the tube as these cracks can prevent the valve from providing a seal when retrieving the sample, increasing the possibility that sample will be lost during retrieval.

5. Inspect liner end caps for cracks and other damage. If cracks exist, replace caps.

6. Inspect threads in the top of the sampler head. T-handle or extensions rods should freely thread into the top of the sampler head. Fasten either the T-handle or extension rod to the top of the sampler head to ensure a proper fit.

7. Inspect the threads on extension rods, if used to ensure they are free of debris and that they thread correctly to other rods and the sampler head.

8. Inspect the core catcher, if used, for any signs of wear or rust. Ensure the teeth of the catcher are stiff and provide resistance to hold the sample in the liner tube. This can be performed by pulling the teeth away from the center and feeling if there is resistance.

9. For sampling stations where collection is for purposes of monitoring (station is re-visited from past campaigns) FOL will review the available logs and records of previous sampling campaigns and provide station-specific expectations to the field personnel.

The following steps shall be followed when deploying the Watermark sampler for collecting a sediment core. Steps below in **bold** are for when the sample is being obtained from **<u>below water only.</u>**

1. Secure a Lexan liner tube into the bottom of the rubber sleeve secured to the sampler head. Fasten pipe clamp using nut driver or flat head screwdriver. Pull gently upward on the sampler head while holding the liner stationary to ensure a tight fit.

   When fastening or removing a liner from the sampler head, only loosen and tighten the pipe clamp at the bottom of the rubber sleeve.

2. **Measure water depth at the sampling location and determine the required length of extension rods, if needed, and secure to the sampler. Measurement shall include water depth, air gap from water surface to vessel/working platform deck, and length of liner tube to account for the depth the sampler will be pushed into the mudline.**

   2a. When sampling on land, ensure enough length of rods are used to reach the desired depth.

3. **Slowly lower the sampler through the water column to the mudline.**

4. Push the sampler to the required depth, or refusal, defined as resistance at which the sampler will no longer advance under human power. Ensure the sampler is always perpendicular to the mudline while sampling.

   4a. If a sample is being collected in the marsh platform and a drive hammer is required to reach the required depth, thread the drive hammer into the top of the sampler head and drive the sampler to the required depth.

5. Twist the sampler clockwise 1 – 2 full rotations to shear the bottom of the sediment core, allowing the core to be recovered in the liner and not pulled back out of the liner during

retrieval. **Gently and deliberately retrieve the sampler to the water surface, leaving the bottom end of the liner just below the water surface.**

6. **Reach over the side of the vessel/working platform and cap the bottom of the liner so as the core breaks the water surface it does not slide out of the liner.**

7. **Keep the sample vertical. If overlying water exists above the sediment, carefully tip the sample slowly decant the overlying water from the top of the core. Take care to retain the fines fraction of sample that may be at the sediment interface.**

8. Keep the sample vertical and record pertinent information on the FDR.

9. Take a photo of the sample, in the liner with whiteboard denoting project name, project number, sampling station, Core ID, date and time.

10. Proceed to process the sample per SOP S-23.

AMS Professional Series Multi-Stage Sediment Sampler (Push/Hammer Core)

The AMS sediment sampler is a device used to collect sediment in submerged, mud flat, or marsh/wetland areas under human power. The sample is slowly lowered, or placed, at the sediment interface and pushed or hammered into the subsurface strata to obtain a sample. The sampler is then retrieved from the sediment by pulling the device out or by digging around the sampler, if on land or in shallow water, to minimize sample disturbance.

A push core sampler can be used at deeper depths (up to 10 feet of water depth) but manipulation and handling of the device becomes more difficult in deeper waters. The optimum depth for push sampling in most water conditions is 4 feet or less. The sampler is human powered and pushed into the sediment to the collection depth, or refusal. The push sampler consists of the following parts:

- Lexan tube (typically 2-4 ft in length)
- Sampler head with check valve
- Nosecone
- Core catcher, if needed
- T-handle to attach at sampler head
- Drive hammer, if needed
- Extension rods (typically 4 ft in length)

Prior to leaving the field station, ensure all required parts of the AMS sediment sampler are properly functioning and the equipment is ready for deployment per the following:

1. Inspect the threads on the stainless-steel sleeves to ensure they are clean and that the nose cone and sampler head thread properly to the sleeve.

2. Inspect the check valve in the sampler head. A simple function test is to shake the sampler head in a vertical orientation. If the valve moves freely, a click can be heard as it moves in its travel channel.

3. Inspect Lexan liner tubes used to collect sample and ensure they are free from cracks or other debris. Ensure the ends of the tubes are not cracked or gouged. If longitudinal cracks (running the length of the tube) are present, replace the tube as these cracks can prevent the valve from providing a seal when retrieving the sample, increasing the possibility that sample will be lost during retrieval.

4. Inspect liner end caps for cracks and other damage. If cracks exist, replace caps.

5. Inspect threads in the top of the sampler head. T-handle or extensions rods should freely thread into the top of the sampler head. Fasten either the T-handle or extension rod to the top of the sampler head to ensure a proper fit.

6. Inspect the threads on extension rods, if used to ensure they are free of debris and that they thread correctly to other rods and the sampler head.

7. Inspect the core catcher, if used, for any signs of wear. Ensure the teeth of the catcher are stiff and provide resistance to hold the sample in the liner tube. This can be performed by pulling the teeth away from the center and feeling if there is resistance. If teeth are weak, or broken, replace core catcher.

8. For sampling stations where collection is for purposes of monitoring (station is re-visited from past campaigns) FOL will review the available logs and records of previous sampling campaigns and provide station-specific expectations to the field personnel.

The following steps shall be followed when deploying the AMS sediment sampler for collecting a sediment core. Steps below in **bold** are for when the sample is being obtained from **below water only.**

11. Secure the nose cone to the bottom of the stainless-steel sleeve. Insert a lexan liner into the sleeve.

12. Secure the sampler head to the top of the stainless-steel sleeve.

13. **Measure water depth at the sampling location and determine the required length of extension rods, if needed, and secure to the sampler. Measurement shall include water depth, air gap from water surface to vessel/working platform deck, and length of liner tube to account for the depth the sampler will be pushed into the mudline.**

    2a. When sampling on land, ensure enough length of rods are used to reach the desired depth.

14. **Slowly lower the sampler through the water column to the mudline.**

15. Push the sampler to the required depth, or refusal, defined as resistance at which the sampler will no longer advance under human power. Ensure the sampler is always perpendicular to the mudline while sampling.

    4a. If a sample is being collected which must be hammered to reach the proposed depth, thread the drive hammer into the top of the sampler head, or onto the extension rods, and drive the sampler to the required depth.

16. Twist the sampler clockwise 1 – 2 full rotations to shear the bottom of the sediment core, allowing the core to be recovered in the liner and not pulled back out of the liner during retrieval. **Gently and deliberately retrieve the sampler to the water surface, leaving the bottom end of the liner just below the water surface.**

17. **Reach over the side of the vessel/working platform and cap the bottom of the liner so as the core breaks the water surface it does not slide out of the liner.**

18. **Keep the sample vertical. If overlying water exists above the sediment, carefully tip the sample slowly decant the overlying water from the top of the core. Take care to retain the fines fraction of sample that may be at the sediment interface.**

19. Remove the sampler head and nosecone from the stainless-steel sleeve and remove the lexan liner, maintain a vertical orientation during this process.

20. Take a photo of the sample, in the liner with whiteboard denoting project name, project number, sampling station, Core ID, date and time.

21. Keep the sample vertical and record pertinent information on the FDR.

22. Proceed to process the sample per SOP S-23.

Gravity Core Sampler

There are several types of gravity coring devices. Generally, the gravity core sampler uses the pull of gravity with a weighted sampler head to penetrate the mudline with a polycarbonate liner. The device can generally obtain cores up to 3 feet in length in deep water, depending on water and current conditions. The device is generally only effective in water depths greater than 4 feet with slack conditions facilitating the gravitational force to drive the liner into the sediments with sufficient penetration to preclude device falling over. The sediment is retained in the liner using suction induced by a ball valve or sealing cover. Recovering sediment using the gravity core is dependent upon multiple factors, which are tailored to station conditions, including: water depth, water circulation, weights, sediment type and compaction, liner length and diameter, suction efficiency, overlying water between the suction device and recovered sediment in liner, retrieval rate, and ability to effectively plug the liner at or beneath the water surface. The polycarbonate liner can be either dedicated or re-usable where the recovered sediment is extruded from the liner.

Field crews will review the manufacturer instruction manual prior to device use and tailor the means and methods outlined in this SOP to the device obtained and sampling station conditions. It is recommended that a ponar grab be performed at the sampling station prior to tailoring the gravity core and its deployment.

The gravity core device generally consists of the following parts:

- Sampler head
- Nylon deployment rope
- Polycarbonate liner tube
- Weight rings
- Suction device with integrated trigger
- Plug, stopper, or caps

Prior to leaving the field station, ensure all required parts of the gravity core sampler are properly functioning and the equipment is ready for deployment per the following:

1. Inspect the sampler head plunger for any significant wear including the rubber washer used to create a seal on the top of the liner during sample retrieval. If any cracks or damage or found, discontinue use of sampler.
2. Inspect shackle at top of sampler head. Ensure shackle bolt is securely fastened.
3. Inspect the nylon rope for any wear. If excessive wear is noted, replace rope, or cut and splice together. Use cable ties at the splice to ensure knot will not loosen during deployment.
4. Inspect the polycarbonate liner tube for any damage. If significant damage including chips, and gouges are noted, especially around the top of the liner, discard and use new liner.
5. Inspect liner clamp to ensure proper functionality. Lift the sampler head and place a liner into the head. Gently tug on the liner downward to test resistance of liner clamp. If liner falls out or is easily pulled out, discontinue use of the sampler until repairs have been made.
6. For sampling stations where collection is for purposes of monitoring (station is re-visited from past campaigns) FOL will review the available logs and records of previous sampling campaigns and provide station-specific expectations to the field personnel.

The following steps shall be followed when deploying the gravity core sampler for collecting a sediment sample.

1. Secure a polycarbonate liner into the sampler head and ensure it is secure by gently pulling downward on the liner.

2. Measure water depth and pull enough deployment line to reach the bottom with some contingency length. Tie off deployment line to a cleat or secure location on the vessel/working platform such that if the operator’s grip is lost on the rope during deployment, the equipment is not lost.

3. Slowly lower the sampler through the water column to approximately 2-3 meters above the mudline. Hold the sampler at this depth for approximately 10-15 seconds to ensure it is stationary and perpendicular to the sediment surface.

4. Release the sampler and allow it to penetrate the mudline. Hold slight tension on the deployment line so that the operator can feel if the sampler remained perpendicular during penetration and to feel when the sampler reaches refusal.

5. Pull the sampler out of the mudline with the deployment line and slowly retrieve the sampler to the water surface, leaving the bottom end of the liner just below the water surface.

6. Reach over the side of the vessel/working platform and cap the bottom of the liner so as the core breaks the water surface it does not slide out of the liner.

7. Keep the sample vertical. If overlying water exists above the sediment, carefully tip the sample slowly decant the overlying water from the top of the core. Take care to retain the fines fraction of sample that may be at the sediment interface.

8. Keep the sample vertical and record pertinent information on the FDR.

9. Take a photo of the sample, in the liner with whiteboard denoting project name, project number, sampling station, Core ID, date and time.

10. Proceed to process the sample per SOP S-23.

11. Log the remaining recovered sediment on the FDR.

12. Dispose of the remaining sediment and decontaminate the equipment.

Box Core Sampler

The box core sampler is a grab sample device that recovers a cube of sediment. For the Penobscot River sediment collection, the box core sampler is a tool to, in essence, bring undisturbed sediment to the vessel deck where the field crew will hand-insert a cylinder (liner segment) thereby creating a “core” suitable for incremental sampling. The box core is a heavy sampling device often capable to withstand water circulation forces in the water column during descent and requires the use of an A-frame and properly sized vessel to deploy. The sampler is attached to a winch cable and lowered through the moonpool of the vessel. Depending on the stiffness of the sediment at the mudline, the box core can be dropped from different water depths to ensure sufficient penetration is achieved. As the box impacts the mudline, it penetrates until it reaches sufficient resistance to stop advancement. The device is retrieved and as the bottom of the box breaks the mudline interface, the jaws close to retain the sediment within the box. The device is then raised to deck and placed in a stand where short Lexan liner tubes can be manually pushed into the undisturbed sediment to recover a cylindrical core. The device operation is performed by Wood’s subcontractor with assistance from Wood field staff.

Prior to leaving the dock, Wood field staff shall work with the subcontractor to ensure all required parts for the box core sampler are properly functioning and the equipment is ready for deployment per the following:

1. Inspect the box core sampler arms to ensure there is no significant damage of wear. Ensure the jaws open and close as intended.

2. Inspect shackle at top of box core sampler. Ensure shackle bolt is securely fastened.

3. Inspect winch cable to ensure no fraying is present or burrs are present that could cause hand injury.

4. For sampling stations where collection is for purposes of monitoring (station is re-visited from past campaigns) FOL will review the available logs and records of previous sampling campaigns and provide station-specific expectations to the field personnel.

The following steps shall be followed when deploying the box core sampler for collecting a sediment sample.

The box core sampler shall only be handled by Wood’s subcontractor or those personnel who have been properly trained in the operation of the sampler.

1. Using a lead line, and depth sounder if equipped, measure and confirm water depth.
2. Secure the winch cable to the shackle on top of the box core sampler.
3. With two crew members supporting, lift the box core sampler out of the stand and in a controlled manner, move the sampler over the moonpool of the vessel.
4. Slowly lower the box core sampler into the water to the prescribed depth for deployment.
5. Release the box core sampler into the mudline. Allow the sampler to sit for a short period of time to allow it to fully penetrate.

6. Retrieve the box core sampler to deck and place in the stand.
7. Push two short Lexan liner segments about 1 foot long each parallel to one another into the sediment inside the box core sampler.
8. Let the Lexan liners sit for approximately 30-60 seconds once pushed into the sediment to allow the sediment to gain cohesion and stick to the inside of the liner.
9. Place a cap on top of each liner to create suction when pulling the liner out of the sediment. Twist the liner clockwise 1 – 2 full rotations to shear the sediment and pull the liner from the box corer contained sediment. If the twisting removal results in sediment loss, separation, or disturbance within the liner, then manually dig out the second liner segment by excavating the box core-containing sediment around the second liner. If the twisting removal of the first liner is successful, repeat for second liner.
10. Pull the liners out of the box core sampler and record pertinent information on the FDR.
11. Dispose of remaining sediment in the box core sampler and decontaminated the equipment.
12. Take a photo of the sample, in the liner with whiteboard denoting project name, project number, sampling station, Core ID, date and time.
13. Process the cores per SOP S-23.

HEALTH AND SAFETY

All field personnel must wear protective clothing and equipment as specified in the HASP.

SITE CLEAN-UP

Excess sediment not included in the sample shall be returned into the waterbody from which it was collected.

Throw all used wipes and gloves into the trash bags and take with you to dispose of at the field office.

RECORD KEEPING AND QUALITY CONTROL

Each field crew will carry and complete at the time of work field data sheets, site diagrams, and sample labels. In addition, a field notebook shall be maintained by each individual or team that is collecting samples, as described in the QAPP. Each sample shall have an ID number affixed to the outside of the collection container. Deviations from the SOP shall be noted in the field notebook, as necessary.

Samples taken from waters with visible color abnormalities, foaming, unusual odor, iridescent film, or other indications of non-homogeneous conditions shall also be noted. Field personnel will collect the proper type and quantity of quality control samples as prescribed in the QAPP.

DECONTAMINATION

Because decontamination procedures are time consuming, having a quantity of pre-cleaned sampling tools available is recommended. All sampling equipment must be decontaminated prior to reuse as prescribed in the FSP and detailed in the QAPP SOP No. S-17, Decontamination of Field Equipment.

The general procedure for equipment decontamination is as follows:

1. Brush off any loose soil/sediment
2. Detergent Wash
3. River water rinse
4. Deionized water rinse
5. Air Dry

REFERENCES

Wood, 2020a. Field Sampling Plan; Penobscot River Phase III Engineering Study – Penobscot River, Maine. July 2016.

Wood, 2020b. Quality Assurance Project Plan; Penobscot River Phase III Engineering Study – Penobscot River, Maine. July 2016.

- END OF PROCEDURE -

SOP No. S-7

**AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE, INC.
STANDARD OPERATING PROCEDURE**

PROCEDURE FOR DESCRIPTION AND IDENTIFICATION OF SOILS

PROCEDURE FOR DESCRIPTION AND IDENTIFICATION OF SOILS

SCOPE AND APPLICABILITY

The appearance and textural properties of soil samples will be described using the Unified Soil Classification System (USCS). The USCS uses grain size to divide soils into different soil classes, coarse grained vs. fine grained. The system then further describes the soils based on the mix of coarse materials such as sand and gravel or the relative plasticity of the fine grained materials such as silt and clay.

Soil type identifications and descriptions will be recorded by field samplers during field investigation activities. Soil types will determined when completing explorations (monitoring well installations, soil borings, and surface soil sampling) and other activities where descriptions of soils are needed to characterize site location conditions. These field descriptions may be supplemented with laboratory data on grain size distributions analyses to characterize soils.

EQUIPMENT AND SUPPLIES

- USCS Key
- 6 foot folding rule or other measuring tool
- PID
- Field Data Records
- Knife of spatula

PROCEDURE

Soil descriptions are made using the USCS Classifications and will include the following observations:

- Color
- Name
- Gradation
- Density
- Moisture
- Plasticity
- Structure
- geologic origin
- USCS classification designation.

A USCS key to soil descriptions and terms is included as Attachment 1. All sample descriptions will be recorded in a field log book and/or the Field Data Record for the media being sampled (see FDR Appendix).

ATTACHMENT 1 - KEY TO SOIL DESCRIPTIONS AND TERMS

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS (>50% RETAINED on the No. 200 sieve)	GRAVELS (>50% of coarse fraction RETAINED on the No. 4 sieve)	CLEAN GRAVELS (<5% fines)	GW	Well-graded gravels or gravel-sand mixtures; trace or no fines.
			GP	Poorly-graded gravels or gravel-sand mixtures; trace or no fines.
		GRAVEL WITH FINES (>12% fines)	GM	Silty gravels or gravel-sand-silt mixtures.
			GC	Clayey gravels or gravel-sand-clay mixtures.
	SANDS (50% or more of coarse fraction PASSES the No. 4 sieve size)	CLEAN SANDS (<5% fines)	SW	Well-graded sands or sand-gravel mixtures; trace or no fines.
			SP	Poorly-graded sands or sand-gravel mixtures; trace or no fines.
		SAND WITH FINES (>12% fines)	SM	Silty sands or sand-gravel-silt mixtures.
			SC	Clayey sands or sand-gravel-clay mixtures.

TERMS DESCRIBING SOILS (excludes particles > 3", organics, debris, etc.)	**TERMS DESCRIBING MATERIALS** i.e. particles > 3", organics, debris, etc.)
Trace: Particles present, but < 5%	Occasional: Particles present, but < 10%
Few: 5% - 10%	Some: 10% to 25%
Little: 10% - 25%	Frequent: >25%
Some: 25% - 45%	

TERMS DESCRIBING MOISTURE	**TERMS DESCRIBING STRUCTURE**
Dry: Absence of moisture; dusty	Layer: > 3" thick
Moist: Damp, but no visible water	Seam: 1/16" to 3" thick
Wet: Visible/free water	Parting: < 1/16" thick

CORRELATION OF STANDARD PENETRATION TEST (SPT) WITH RELATIVE DENSITY AND CONSISTENCY

GRAVEL, SAND & SILT (NON-PLASTIC)

Relative Density	N-Value (blows per foot)
Very loose	0 - 4
Loose	5 - 10
Compact	11 - 30
Dense	31 - 50
Very Dense	> 51

SILT (PLASTIC) & CLAY

ATTACHMENT 1 - KEY TO SOIL DESCRIPTIONS AND TERMS

FINE-GRAINED SOILS (50% or more PASSES the No. 200 sieve)	SILTS AND CLAYS (liquid limit <50)	ML	Inorganic silts or rock flour, non-plastic or very slightly plastic. PI <4 or plots below "A" line.	Consistency	SPT N-Value	Su (psf)	Field Guidelines
				Very Soft	0 - 2	0 - 250	Fist easily penetrates
				Soft	3 - 4	250 - 500	Thumb easily penetrates
		CL	Inorganic lean clays. Low to medium plasticity. PI >7 and plots on or above "A" line.	Medium Stiff	5 - 8	500 - 1000	Thumb penetrates with moderate effort.
				Firm	9 - 15	1000 - 2000	Indented by thumb with great effort
		OL	Organic silts, clays and silty clays. Low to medium plasticity.	Very Stiff	16 - 30	2000 - 4000	Indented by thumbnail
	SILTS AND CLAYS (liquid limit ≥50)	MH	Inorganic elastic silt. PI line plots on or above "A" line.	Hard	>31	over 4000	Indented by thumbnail with difficulty
		CH	Inorganic fat clay. High plasticity. PI line plots on or above "A" line.	**ROCK QUALITY DESIGNATION (RQD)**			
		OH	Organic silts and clays. High plasticity.	RQD = sum of the lengths of intact pieces of core* >100mm (0.3ft.)			
	HIGHLY ORGANIC SOILS	Pt	Peat and other highly organic soils. Decomposed vegetable tissue. Fibrous to amorphous texture.	length of core advance			
				*Minimum NQ rock core (1.88 in. OD of core)			

ATTACHMENT 1 - KEY TO SOIL DESCRIPTIONS AND TERMS

Desired Soil Observations: (in this order)
Color -
Primary Soil Component
Secondary Soil Components
Angularity and/or shape of sand/gravel particles
USCS Symbol (See ASTM D 2488 Figs 1a, 1b, & 2)
Density/Consistency
Moisture
Plasticity (as applicable)
Structure
Geologic Origin
Fill, Alluvium, Lacustrine, Glacial Till, etc.
Presence of organics (leaves, roots, rootlets, etc.) or debris (concrete, brick, wood, metal, etc.)
Presence of cobbles or boulders (based on observations of drilling)
Odor, PID data, Torvane or pocket penetrometer data, etc.
Example Descriptions:
Olive brown, fine to medium sand, little silt, trace angular gravel, SM, medium dense, moist: FILL
- occasional concrete and brick fragments; petroleum odor; PID = 1.4 ppm
Gray, CLAY, little fine sand, trace angular gravel, CL, stiff, moist, desiccated: LACUSTRINE
Yellowish brown, fine SAND, trace silt, trace rounded gravel, poorly-graded, SP, loose, wet: ALLUVIUM
- occasional partings of fine sand; 1-inch seam of olive brown silt at 8' bgs; Torvane = 0.55 tsf

Quality Description	RQD
Very Poor	<25%
Poor	26% - 50%
Fair	51% - 75%
Good	76% - 90%
Excellent	>91%

Desired Rock Observations: (in this order)
Color (i.e. olive brown, gray, reddish brown)
Texture (aphanitic, fine-grained, etc.)
Lithology (igneous, sedimentary, metamorphic, etc.)
Hardness (very hard, hard, mod. hard, etc.)
Weathering (fresh, very slight, slight, moderate, mod. severe, severe, etc.)
Geologic discontinuities/jointing:
-dip (horiz - 0°-5°, low angle - 5°-35°, mod. dipping - 35°-55°, steep - 55°-85°, vertical - 85°-90°)
-spacing (very close - <5 cm, close - 5-30 cm, mod.close 30-100 cm, wide - 1-3 m, very wide >3 m)
-tightness (tight, open or healed)
-infilling (grain size, color, etc.)
Interpreted Formation (Waterville, Ellsworth, Cape Elizabeth, etc.)
RQD and Rock Mass Description (very poor, poor, fair, etc.)
Recovery

Sample Container Labeling Requirements (if retained): Site, Boring ID, Sample Number, Sample Depth, Sample Recovery, Blow Counts, Personnel Initials.

- END OF PROCEDURE -

SOP No. S-7A

AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE, INC.

STANDARD OPERATING PROCEDURE

PROCEDURE FOR PHYSICAL DESCRIPTIONS AND IDENTIFICATION OF PENOBSCOT SEDIMENT CHARACTERISTICS

PROCEDURE FOR PHYSICAL DESCRIPTIONS AND IDENTIFICATION OF PENOBSCOT SEDIMENT CHARACTERISTICS

SCOPE AND PURPOSE

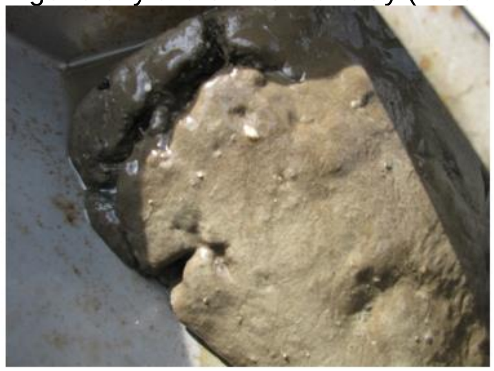
The purpose of this SOP is to provide a field guide for the uniform completion of the sediment description section of core forms, grab forms, visual forms and sediment trap forms. The intended users are from a broad background of environmental investigation including, geologists, biologists, chemists, engineers and environmental scientists. The visual appearance and textural properties of sediment samples will be described using the Unified Soil Classification System (USCS) without the group symbol and density. When further description is necessary the field descriptions may be supplemented with laboratory data on grain size distributions and density analyses to characterize sediments, determined by an Amec Foster Wheeler employee who has been competency tested on ASTM D 2488-09a classification skills.

TERMS

- Wood Waste is the broad term that encompasses four principal subgroups:
    - Twigs and bark (generally 2 inches and larger)
    - Wood mulch defined as pieces ½-inch and larger in any one direction
    - Wood chips defined as pieces 1/8-inch to ½-inch and generally appear like chain saw cuttings and often a mix of browns and black
    - Wood fines defined as pieces smaller than 1/8-inch and generally appear like flat sand grain-sized particles and often black


Typical wood chips

- New Mud- Dr. Geyer- generally a brown silt or clay (mobile) with a Munsell color of # YR #/#, add others


”New mud”

- Old Mud- Dr. Geyer – Generally a darker black silt or clay (non-mobile) with a Munsell color of # YR #/#, add others


“Old Mud”

EQUIPMENT AND SUPPLIES

USCS Key;

Munsell Soil Color Charts;

Field Data Records;

Knife or spatula;

PID (Optional based on site conditions).

SEDIMENT DESCIPTION PROCEDURE

Information to be documented on field data records with each sediment sample description will include the following observations:

Sediment descriptions are to be written in following sequence:
Primary Material [Abundance + color (Munsell code) + sediment texture “and” non-mineral observations (such as wood waste, shells, redox features, organisms, sheens] with Secondary Material [abundance + color (Munsell code) + sediment texture]…if pertinent continue in same manner for sequential Materials.
As example: Abundant brown (7.5YR4/4) sandy-silt and wood chips with some green (1 Gley 5/5G) silt and shells.

1.

The following practices will be employed for each Material by strata:

Describing the Abundance use the following nomenclature

Table 1: DESCRIBING Abundance

• Description	• Criteria	• Abbreviation
• Trace • Some • Moderate • Occasional • Abundant	• ~ 0--5% • ~ 5-20% • ~ 20-50% • ~ 50-70% • ~ 80-100%	• TR • Some • Mod • Occ • Abnt

- Primary constituent: Description of the sediment texture using USCS terminology (Sand, Silt, and Clay) using the bold text descriptions on the triangle below:

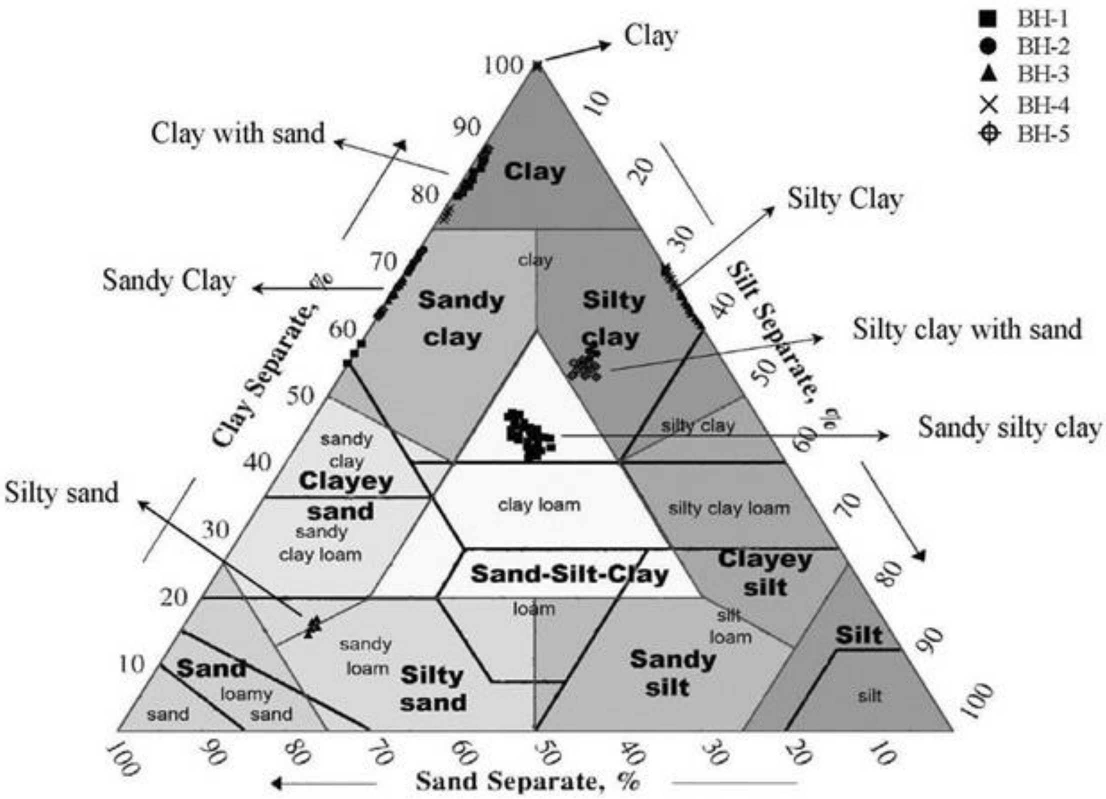


Figure 1 - Credit - Google image

- Stated color (primary or secondary): a one word description of the color as determined by the person characterizing (i.e., brown)
- Munsell soil color: Using the Munsell soil color chart describe the soil next to the soil chip. User should do this in natural sun light and while not wearing sunglasses.
- Secondary constituent: For heterogeneous samples describe other materials and strata's in the same order.

Soil Redox:[1]

Some soils will have reddish streaking through it, this is a redox feature and should be noted. Sampler should indicate the approximate percent of the observed sample is a reduction. If this is a separate mineral type then it should be indicated.


Soil redox example

Execution
The following steps are typically expected:

1. Retrieve sediment
2. Using a knife, spatula, spoon, or Nitrile-gloved hand remove about a golf-ball sized piece of the retrieved sediment. If it is solid, break apart and observe and record its primary and secondary matrix abundance and color and redox features. Record findings on FDR.
3. Using a Nitrile-gloved hand, hold and feel the material to identify its texture(s). Record findings on FDR
4. Dispose of assessed material.
5. Remove and properly dispose Nitrile gloves. Complete sediment description on FDR.

ATTACHMENT INDEX

Attachment 1: ASTM D 2488-09a
Attachment 2: Penobscot River Field Form: Grab Log
Attachment 3: Penobscot River Field Form: Core Log
Attachment 4: Penobscot River Field Form: Sediment Trap Form
Attachment 5: Penobscot River Field Form: Visual Assessment

[1] Applies to intertidal and marshes only

REFERENCES

ASTM International, 2009. Standard Practice for Description and Identification of Soils (Visual, Manual Procedure) Designation D 2488-09a. West Conshohocken, PA.

ASTM International, 2013. Standard Practice for Handling, Storing, and Preparing Soft Intact Marine Soil Designation D 3213-13. West Conshohocken, PA.

Munsell Color (Firm). (2010). Munsell soil color charts : with genuine Munsell color chips. Grand Rapids, MI :Munsell Color,

- END OF PROCEDURE -

Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)[1]

This standard is issued under the fixed designation D 2488; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope*

1.1 This practice covers procedures for the description of soils for engineering purposes.

1.2 This practice also describes a procedure for identifying soils, at the option of the user, based on the classification system described in Test Method D 2487. The identification is based on visual examination and manual tests. It must be clearly stated in reporting an identification that it is based on visual-manual procedures.

1.2.1 When precise classification of soils for engineering purposes is required, the procedures prescribed in Test Method D 2487 shall be used.

1.2.2 In this practice, the identification portion assigning a group symbol and name is limited to soil particles smaller than 3 in. (75 mm).

1.2.3 The identification portion of this practice is limited to naturally occurring soils (either intact or disturbed).

NOTE 1—This practice may be used as a descriptive system applied to such materials as shale, claystone, shells, crushed rock, etc. (see Appendix X2).

1.3 The descriptive information in this practice may be used with other soil classification systems or for materials other than naturally occurring soils.

1.4 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.5 *This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* For specific precautionary statements see Section 8.

1.6 *This practice offers a set of instructions for performing one or more specific operations. This document cannot replace education or experience and should be used in conjunction with professional judgment. Not all aspects of this practice may be applicable in all circumstances. This ASTM standard is not intended to represent or replace the standard of care by which the adequacy of a given professional service must be judged, nor should this document be applied without consideration of a project's many unique aspects. The word "Standard" in the title of this document means only that the document has been approved through the ASTM consensus process.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D 653 Terminology Relating to Soil, Rock, and Contained Fluids

D 1452 Practice for Soil Exploration and Sampling by Auger Borings

D 1586 Test Method for Penetration Test (SPT) and Split-Barrel Sampling of Soils

D 1587 Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes

D 2113 Practice for Rock Core Drilling and Sampling of Rock for Site Investigation

D 2487 Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)

D 3740 Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

D 4083 Practice for Description of Frozen Soils (Visual-Manual Procedure)

3. Terminology

3.1 *Definitions*—Except as listed below, all definitions are in accordance with Terminology D 653.

NOTE 2—For particles retained on a 3-in. (75-mm) US standard sieve, the following definitions are suggested:
Cobbles—particles of rock that will pass a 12-in. (300-mm) square opening and be retained on a 3-in. (75-mm) sieve, and

[1] This practice is under the jurisdiction of ASTM Committee D18 on Soil and Rock and is the direct responsibility of Subcommittee D18.07 on Identification and Classification of Soils.

Current edition approved June 15, 2009. Published July 2009. Originally approved in 1966. Last previous edition approved in 2009 as D 2488 – 09.

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

***A Summary of Changes section appears at the end of this standard.**

Boulders—particles of rock that will not pass a 12-in. (300-mm) square opening.

3.1.1 *clay*—soil passing a No. 200 (75-μm) sieve that can be made to exhibit plasticity (putty-like properties) within a range of water contents, and that exhibits considerable strength when air-dry. For classification, a clay is a fine-grained soil, or the fine-grained portion of a soil, with a plasticity index equal to or greater than 4, and the plot of plasticity index versus liquid limit falls on or above the "A" line (see Fig. 3 of Test Method D 2487).

3.1.2 *gravel*—particles of rock that will pass a 3-in. (75-mm) sieve and be retained on a No. 4 (4.75-mm) sieve with the following subdivisions:

coarse—passes a 3-in. (75-mm) sieve and is retained on a ¾-in. (19-mm) sieve.

fine—passes a ¾-in. (19-mm) sieve and is retained on a No. 4 (4.75-mm) sieve.

3.1.3 *organic clay*—a clay with sufficient organic content to influence the soil properties. For classification, an organic clay is a soil that would be classified as a clay, except that its liquid limit value after oven drying is less than 75 % of its liquid limit value before oven drying.

3.1.4 *organic silt*—a silt with sufficient organic content to influence the soil properties. For classification, an organic silt is a soil that would be classified as a silt except that its liquid limit value after oven drying is less than 75 % of its liquid limit value before oven drying.

3.1.5 *peat*—a soil composed primarily of vegetable tissue in various stages of decomposition usually with an organic odor, a dark brown to black color, a spongy consistency, and a texture ranging from fibrous to amorphous.

3.1.6 *sand*—particles of rock that will pass a No. 4 (4.75-mm) sieve and be retained on a No. 200 (75-μm) sieve with the following subdivisions:

coarse—passes a No. 4 (4.75-mm) sieve and is retained on a No. 10 (2.00-mm) sieve.

medium—passes a No. 10 (2.00-mm) sieve and is retained on a No. 40 (425-μm) sieve.

fine—passes a No. 40 (425-μm) sieve and is retained on a No. 200 (75-μm) sieve.

3.1.7 *silt*—soil passing a No. 200 (75-μm) sieve that is nonplastic or very slightly plastic and that exhibits little or no strength when air dry. For classification, a silt is a fine-grained soil, or the fine-grained portion of a soil, with a plasticity index less than 4, or the plot of plasticity index versus liquid limit falls below the "A" line (see Fig. 3 of Test Method D 2487).

4. Summary of Practice

4.1 Using visual examination and simple manual tests, this practice gives standardized criteria and procedures for describing and identifying soils.

4.2 The soil can be given an identification by assigning a group symbol(s) and name. The flow charts, Fig. 1a and Fig. 1b for fine-grained soils, and Fig. 2, for coarse-grained soils, can be used to assign the appropriate group symbol(s) and name. If the soil has properties which do not distinctly place it into a specific group, borderline symbols may be used, see Appendix X3.

NOTE 3—It is suggested that a distinction be made between *dual symbols* and *borderline symbols.*

Dual Symbol—A dual symbol is two symbols separated by a hyphen, for example, GP-GM, SW-SC, CL-ML used to indicate that the soil has been identified as having the properties of a classification in accordance with Test Method D 2487 where two symbols are required. Two symbols are required when the soil has between 5 and 12 % fines or when the liquid limit and plasticity index values plot in the CL-ML area of the plasticity chart.

Borderline Symbol—A borderline symbol is two symbols separated by a slash, for example, CL/CH, GM/SM, CL/ML. A borderline symbol should be used to indicate that the soil has been identified as having properties that do not distinctly place the soil into a specific group (see Appendix X3).

5. Significance and Use

5.1 The descriptive information required in this practice can be used to describe a soil to aid in the evaluation of its significant properties for engineering use.

5.2 The descriptive information required in this practice should be used to supplement the classification of a soil as determined by Test Method D 2487.

5.3 This practice may be used in identifying soils using the classification group symbols and names as prescribed in Test Method D 2487. Since the names and symbols used in this practice to identify the soils are the same as those used in Test Method D 2487, it shall be clearly stated in reports and all other appropriate documents, that the classification symbol and name are based on visual-manual procedures.

5.4 This practice is to be used not only for identification of soils in the field, but also in the office, laboratory, or wherever soil samples are inspected and described.

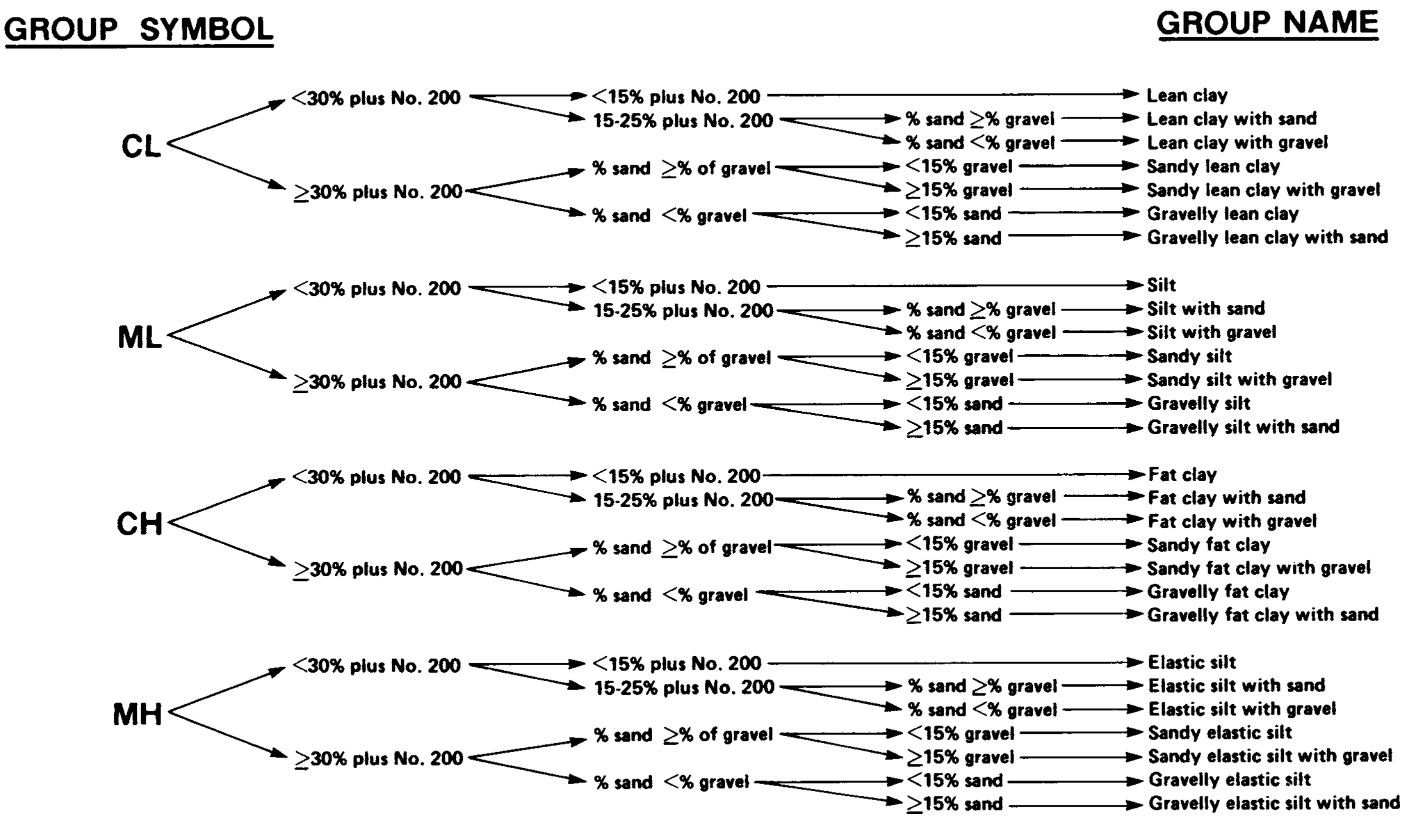
5.5 This practice has particular value in grouping similar soil samples so that only a minimum number of laboratory tests need be run for positive soil classification.

NOTE 4—The ability to describe and identify soils correctly is learned more readily under the guidance of experienced personnel, but it may also be acquired systematically by comparing numerical laboratory test results for typical soils of each type with their visual and manual characteristics.

5.6 When describing and identifying soil samples from a given boring, test pit, or group of borings or pits, it is not necessary to follow all of the procedures in this practice for every sample. Soils which appear to be similar can be grouped together; one sample completely described and identified with the others referred to as similar based on performing only a few of the descriptive and identification procedures described in this practice.

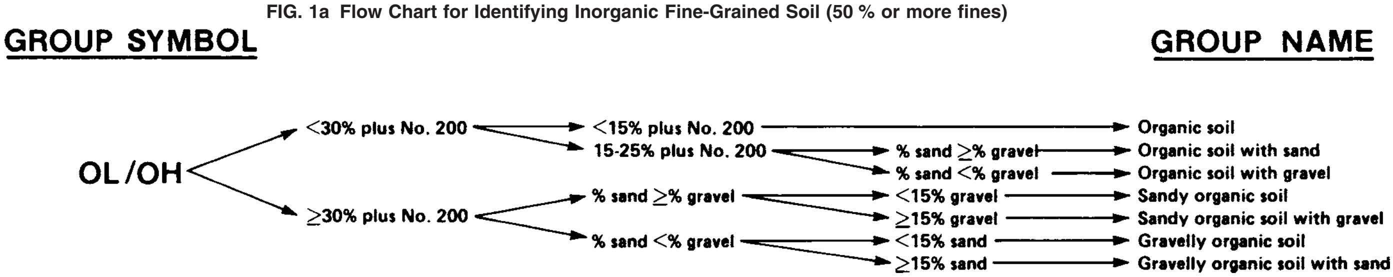
5.7 This practice may be used in combination with Practice D 4083 when working with frozen soils.

NOTE 5—Notwithstanding the statements on precision and bias contained in this standard: The precision of this test method is dependent on the competence of the personnel performing it and the suitability of the equipment and facilities used. Agencies that meet the criteria of Practice D 3740 are generally considered capable of competent and objective testing. Users of this test method are cautioned that compliance with Practice D 3740 does not in itself assure reliable testing. Reliable testing depends on several factors; Practice D 3740 provides a means for evaluating some of those factors.



NOTE 1—Percentages are based on estimating amounts of fines, sand, and gravel to the nearest 5 %.

FIG. 1a Flow Chart for Identifying Inorganic Fine-Grained Soil (50 % or more fines)



NOTE 1—Percentages are based on estimating amounts of fines, sand, and gravel to the nearest 5 %.

FIG. 1 b Flow Chart for Identifying Organic Fine-Grained Soil (50 % or more fines)

6. Apparatus

6.1 *Required Apparatus*:

6.1.1 *Pocket Knife or Small Spatula*.

6.2 *Useful Auxiliary Apparatus*:

6.2.1 *Test Tube and Stopper* (or jar with a lid).

6.2.2 *Hand Lens*.

7. Reagents

7.1 *Purity of Water*—Unless otherwise indicated, references to water shall be understood to mean water from a city water supply or natural source, including non-potable water.

7.2 *Hydrochloric Acid*—A small bottle of dilute hydrochloric acid, HCl, one part HCl (10 *N*) to three parts water (This reagent is optional for use with this practice). See Section 8.

8. Safety Precautions

8.1 When preparing the dilute HCl solution of one part concentrated hydrochloric acid (10 *N*) to three parts of distilled water, slowly add acid into water following necessary safety precautions. Handle with caution and store safely. If solution comes into contact with the skin, rinse thoroughly with water.

8.2 **Caution**—Do not add water to acid.

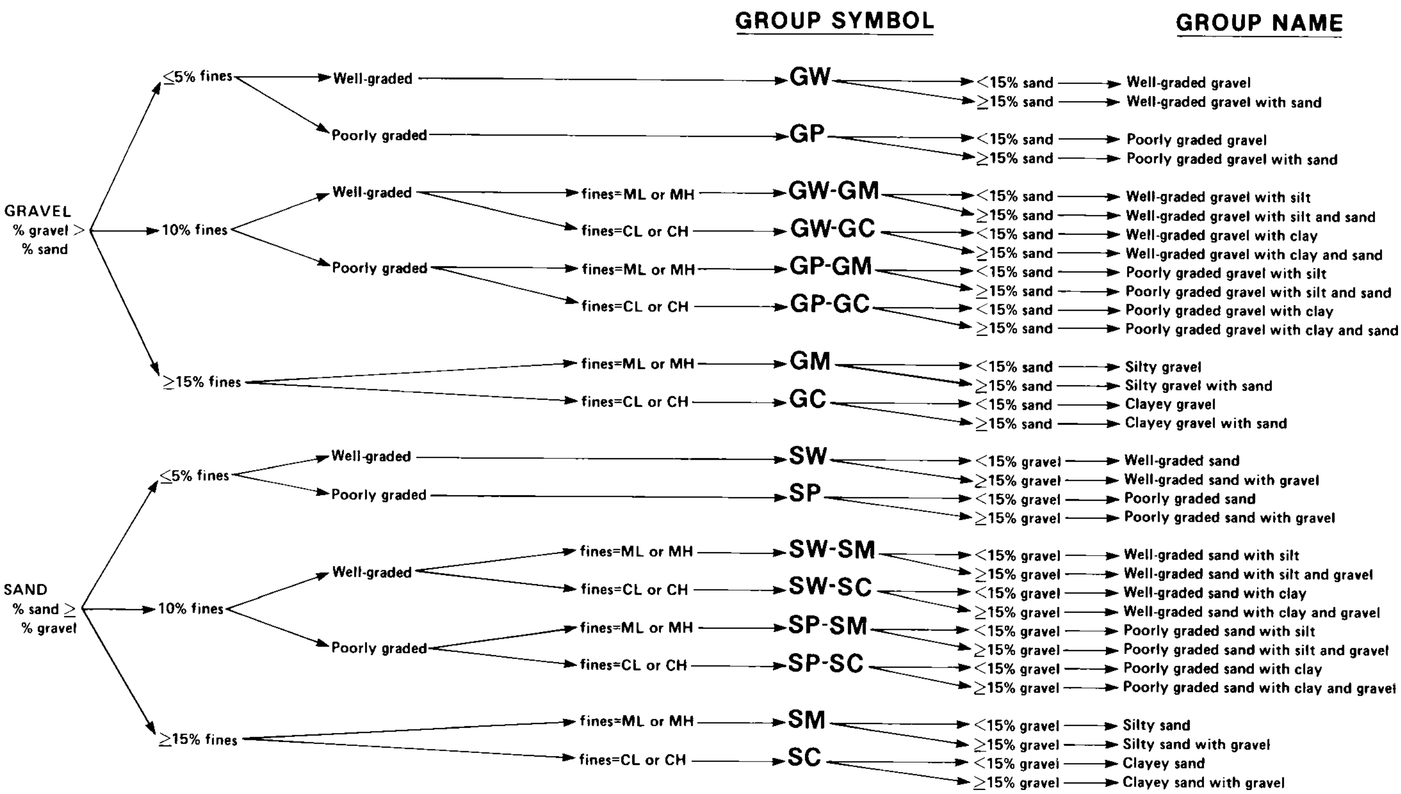
9. Sampling

9.1 The sample shall be considered to be representative of the stratum from which it was obtained by an appropriate, accepted, or standard procedure.

NOTE 6—Preferably, the sampling procedure should be identified as having been conducted in accordance with Practices D 1452, D 1587, or D 2113, or Test Method D 1586.

9.2 The sample shall be carefully identified as to origin.

NOTE 7—Remarks as to the origin may take the form of a boring number and sample number in conjunction with a job number, a geologic stratum, a pedologic horizon or a location description with respect to a permanent monument, a grid system or a station number and offset with respect to a stated centerline and a depth or elevation.



NOTE 1—Percentages are based on estimating amounts of fines, sand, and gravel to the nearest 5 %.

FIG. 2 Flow Chart for Identifying Coarse-Grained Soils (less than 50 % fines)

9.3 For accurate description and identification, the minimum amount of the specimen to be examined shall be in accordance with the following schedule:

Maximum Particle Size, Sieve Opening	Minimum Specimen Size, Dry Weight
4.75 mm (No. 4)	100 g (0.25 lb)
9.5 mm (⅜ in.)	200 g (0.5 lb)
19.0 mm (¾ in.)	1.0 kg (2.2 lb)
38.1 mm (1½ in.)	8.0 kg (18 lb)
75.0 mm (3 in.)	60.0 kg (132 lb)

NOTE 8—If random isolated particles are encountered that are significantly larger than the particles in the soil matrix, the soil matrix can be accurately described and identified in accordance with the preceeding schedule.

9.4 If the field sample or specimen being examined is smaller than the minimum recommended amount, the report shall include an appropriate remark.

10. Descriptive Information for Soils

10.1 *Angularity*—Describe the angularity of the sand (coarse sizes only), gravel, cobbles, and boulders, as angular, subangular, subrounded, or rounded in accordance with the criteria in Table 1 and Fig. 3. A range of angularity may be stated, such as: subrounded to rounded.

10.2 *Shape*—Describe the shape of the gravel, cobbles, and boulders as flat, elongated, or flat and elongated if they meet the criteria in Table 2 and Fig. 4. Otherwise, do not mention the shape. Indicate the fraction of the particles that have the shape, such as: one-third of the gravel particles are flat.

TABLE 1 Criteria for Describing Angularity of Coarse-Grained Particles (see Fig. 3)

Description	Criteria
Angular	Particles have sharp edges and relatively plane sides with unpolished surfaces
Subangular	Particles are similar to angular description but have rounded edges
Subrounded	Particles have nearly plane sides but have well-rounded corners and edges
Rounded	Particles have smoothly curved sides and no edges

10.3 *Color*—Describe the color. Color is an important property in identifying organic soils, and within a given locality it may also be useful in identifying materials of similar geologic origin. If the sample contains layers or patches of varying colors, this shall be noted and all representative colors shall be described. The color shall be described for moist samples. If the color represents a dry condition, this shall be stated in the report.

10.4 *Odor*—Describe the odor if organic or unusual. Soils containing a significant amount of organic material usually have a distinctive odor of decaying vegetation. This is especially apparent in fresh samples, but if the samples are dried, the odor may often be revived by heating a moistened sample. If the odor is unusual (petroleum product, chemical, and the like), it shall be described.

10.5 *Moisture Condition*—Describe the moisture condition as dry, moist, or wet, in accordance with the criteria in Table 3.

10.6 *HCl Reaction*—Describe the reaction with HCl as none, weak, or strong, in accordance with the critera in Table

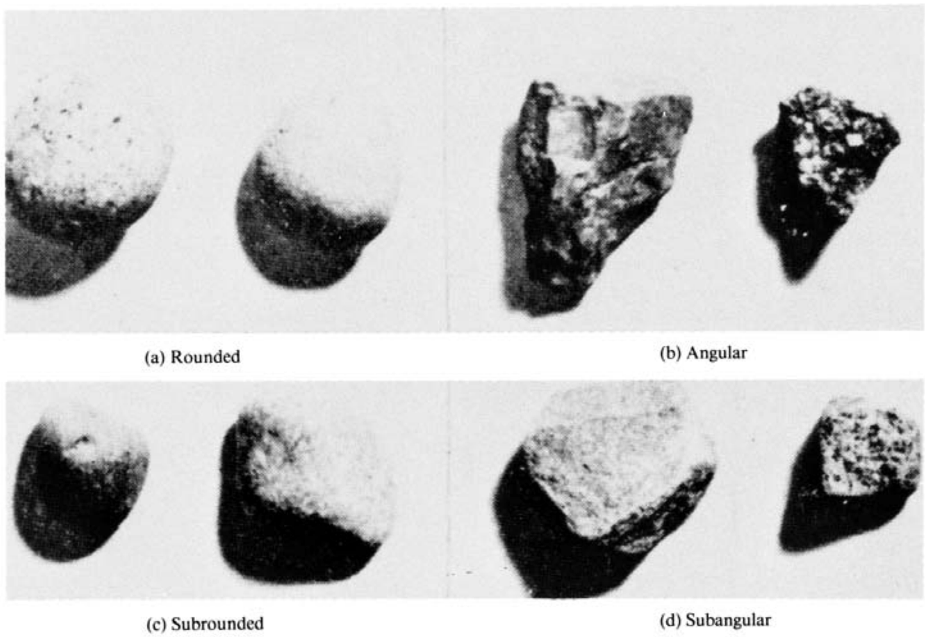


FIG. 3 Typical Angularity of Bulky Grains

TABLE 2 Criteria for Describing Particle Shape (see Fig. 4)

The particle shape shall be described as follows where length, width, and thickness refer to the greatest, intermediate, and least dimensions of a particle, respectively.

Flat	Particles with width/thickness > 3
Elongated	Particles with length/width > 3
Flat and elongated	Particles meet criteria for both flat and elongated

4. Since calcium carbonate is a common cementing agent, a report of its presence on the basis of the reaction with dilute hydrochloric acid is important.

10.7 *Consistency*—For intact fine-grained soil, describe the consistency as very soft, soft, firm, hard, or very hard, in accordance with the criteria in Table 5. This observation is inappropriate for soils with significant amounts of gravel.

10.8 *Cementation*—Describe the cementation of intact coarse-grained soils as weak, moderate, or strong, in accordance with the criteria in Table 6.

10.9 *Structure*—Describe the structure of intact soils in accordance with the criteria in Table 7.

10.10 *Range of Particle Sizes*—For gravel and sand components, describe the range of particle sizes within each component as defined in 3.1.2 and 3.1.6. For example, about 20 % fine to coarse gravel, about 40 % fine to coarse sand.

10.11 *Maximum Particle Size*—Describe the maximum particle size found in the sample in accordance with the following information:

10.11.1 *Sand Size*—If the maximum particle size is a sand size, describe as fine, medium, or coarse as defined in 3.1.6. For example: maximum particle size, medium sand.

10.11.2 *Gravel Size*—If the maximum particle size is a gravel size, describe the maximum particle size as the smallest sieve opening that the particle will pass. For example, maxi-

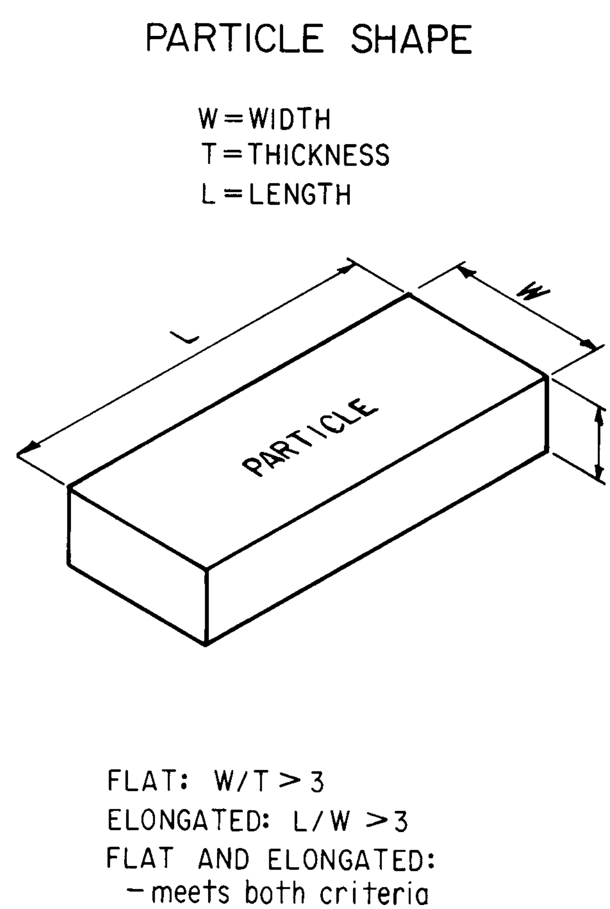


FIG. 4 Criteria for Particle Shape

TABLE 3 Criteria for Describing Moisture Condition

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

TABLE 4 Criteria for Describing the Reaction With HCl

Description	Criteria
None	No visible reaction
Weak	Some reaction, with bubbles forming slowly
Strong	Violent reaction, with bubbles forming immediately

TABLE 5 Criteria for Describing Consistency

Description	Criteria
Very soft	Thumb will penetrate soil more than 1 in. (25 mm)
Soft	Thumb will penetrate soil about 1 in. (25 mm)
Firm	Thumb will indent soil about ¼ in. (6 mm)
Hard	Thumb will not indent soil but readily indented with thumbnail
Very hard	Thumbnail will not indent soil

TABLE 6 Criteria for Describing Cementation

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure
Moderate	Crumbles or breaks with considerable finger pressure
Strong	Will not crumble or break with finger pressure

TABLE 7 Criteria for Describing Structure

Description	Criteria
Stratified	Alternating layers of varying material or color with layers at least 6 mm thick; note thickness
Laminated	Alternating layers of varying material or color with the layers less than 6 mm thick; note thickness
Fissured	Breaks along definite planes of fracture with little resistance to fracturing
Slickensided	Fracture planes appear polished or glossy, sometimes striated
Blocky	Cohesive soil that can be broken down into small angular lumps which resist further breakdown
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay; note thickness
Homogeneous	Same color and appearance throughout

mum particle size, 1½ in. (will pass a 1½-in. square opening but not a ¾-in. square opening).

10.11.3 *Cobble or Boulder Size*—If the maximum particle size is a cobble or boulder size, describe the maximum dimension of the largest particle. For example: maximum dimension, 18 in. (450 mm).

10.12 *Hardness*—Describe the hardness of coarse sand and larger particles as hard, or state what happens when the particles are hit by a hammer, for example, gravel-size particles fracture with considerable hammer blow, some gravel-size particles crumble with hammer blow. "Hard" means particles do not crack, fracture, or crumble under a hammer blow.

10.13 Additional comments shall be noted, such as the presence of roots or root holes, difficulty in drilling or augering hole, caving of trench or hole, or the presence of mica.

10.14 A local or commercial name or a geologic interpretation of the soil, or both, may be added if identified as such.

10.15 A classification or identification of the soil in accordance with other classification systems may be added if identified as such.

11. Identification of Peat

11.1 A sample composed primarily of vegetable tissue in various stages of decomposition that has a fibrous to amorphous texture, usually a dark brown to black color, and an organic odor, shall be designated as a highly organic soil and shall be identified as peat, PT, and not subjected to the identification procedures described hereafter.

12. Preparation for Identification

12.1 The soil identification portion of this practice is based on the portion of the soil sample that will pass a 3-in. (75-mm) sieve. The larger than 3-in. (75-mm) particles must be removed, manually, for a loose sample, or mentally, for an intact sample before classifying the soil.

12.2 Estimate and note the percentage of cobbles and the percentage of boulders. Performed visually, these estimates will be on the basis of volume percentage.

NOTE 9—Since the percentages of the particle-size distribution in Test Method D 2487 are by dry weight, and the estimates of percentages for gravel, sand, and fines in this practice are by dry weight, it is recommended that the report state that the percentages of cobbles and boulders are by volume.

12.3 Of the fraction of the soil smaller than 3 in. (75 mm), estimate and note the percentage, by dry weight, of the gravel, sand, and fines (see Appendix X4 for suggested procedures).

NOTE 10—Since the particle-size components appear visually on the basis of volume, considerable experience is required to estimate the percentages on the basis of dry weight. Frequent comparisons with laboratory particle-size analyses should be made.

12.3.1 The percentages shall be estimated to the closest 5 %. The percentages of gravel, sand, and fines must add up to 100 %.

12.3.2 If one of the components is present but not in sufficient quantity to be considered 5 % of the smaller than 3-in. (75-mm) portion, indicate its presence by the term *trace*, for example, trace of fines. A trace is not to be considered in the total of 100 % for the components.

13. Preliminary Identification

13.1 The soil is *fine grained* if it contains 50 % or more fines. Follow the procedures for identifying fine-grained soils of Section 14.

13.2 The soil is *coarse grained* if it contains less than 50 % fines. Follow the procedures for identifying coarse-grained soils of Section 15.

14. Procedure for Identifying Fine-Grained Soils

14.1 Select a representative sample of the material for examination. Remove particles larger than the No. 40 sieve (medium sand and larger) until a specimen equivalent to about a handful of material is available. Use this specimen for performing the dry strength, dilatancy, and toughness tests.

14.2 *Dry Strength*:

14.2.1 From the specimen, select enough material to mold into a ball about 1 in. (25 mm) in diameter. Mold the material until it has the consistency of putty, adding water if necessary.

14.2.2 From the molded material, make at least three test specimens. A test specimen shall be a ball of material about ½ in. (12 mm) in diameter. Allow the test specimens to dry in air, or sun, or by artificial means, as long as the temperature does not exceed 60°C.

14.2.3 If the test specimen contains natural dry lumps, those that are about ½ in. (12 mm) in diameter may be used in place of the molded balls.

NOTE 11—The process of molding and drying usually produces higher strengths than are found in natural dry lumps of soil.

14.2.4 Test the strength of the dry balls or lumps by crushing between the fingers. Note the strength as none, low, medium, high, or very high in accorance with the criteria in Table 8. If natural dry lumps are used, do not use the results of any of the lumps that are found to contain particles of coarse sand.

14.2.5 The presence of high-strength water-soluble cementing materials, such as calcium carbonate, may cause exceptionally high dry strengths. The presence of calcium carbonate can usually be detected from the intensity of the reaction with dilute hydrochloric acid (see 10.6).

14.3 *Dilatancy*:

14.3.1 From the specimen, select enough material to mold into a ball about ½ in. (12 mm) in diameter. Mold the material, adding water if necessary, until it has a soft, but not sticky, consistency.

14.3.2 Smooth the soil ball in the palm of one hand with the blade of a knife or small spatula. Shake horizontally, striking the side of the hand vigorously against the other hand several times. Note the reaction of water appearing on the surface of the soil. Squeeze the sample by closing the hand or pinching the soil between the fingers, and note the reaction as none, slow, or rapid in accordance with the criteria in Table 9. The reaction is the speed with which water appears while shaking, and disappears while squeezing.

14.4 *Toughness*:

14.4.1 Following the completion of the dilatancy test, the test specimen is shaped into an elongated pat and rolled by hand on a smooth surface or between the palms into a thread about ⅛ in. (3 mm) in diameter. (If the sample is too wet to roll easily, it should be spread into a thin layer and allowed to lose some water by evaporation.) Fold the sample threads and reroll repeatedly until the thread crumbles at a diameter of about ⅛ in. The thread will crumble at a diameter of ⅛ in. when the soil is near the plastic limit. Note the pressure required to roll the thread near the plastic limit. Also, note the strength of the thread. After the thread crumbles, the pieces should be lumped together and kneaded until the lump crumbles. Note the toughness of the material during kneading.

14.4.2 Describe the toughness of the thread and lump as low, medium, or high in accordance with the criteria in Table 10.

14.5 *Plasticity*—On the basis of observations made during the toughness test, describe the plasticity of the material in accordance with the criteria given in Table 11.

14.6 Decide whether the soil is an *inorganic* or an *organic* fine-grained soil (see 14.8). If inorganic, follow the steps given in 14.7.

14.7 *Identification of Inorganic Fine-Grained Soils*:

14.7.1 Identify the soil as a *lean clay*, CL, if the soil has medium to high dry strength, no or slow dilatancy, and medium toughness and plasticity (see Table 12).

14.7.2 Identify the soil as a *fat clay*, CH, if the soil has high to very high dry strength, no dilatancy, and high toughness and plasticity (see Table 12).

14.7.3 Identify the soil as a *silt*, ML, if the soil has no to low dry strength, slow to rapid dilatancy, and low toughness and plasticity, or is nonplastic (see Table 12).

14.7.4 Identify the soil as an *elastic silt*, MH, if the soil has low to medium dry strength, no to slow dilatancy, and low to medium toughness and plasticity (see Table 12).

NOTE 12—These properties are similar to those for a lean clay. However, the silt will dry quickly on the hand and have a smooth, silky feel when dry. Some soils that would classify as MH in accordance with the criteria in Test Method D 2487 are visually difficult to distinguish from lean clays, CL. It may be necessary to perform laboratory testing for proper identification.

14.8 *Identification of Organic Fine-Grained Soils*:

14.8.1 Identify the soil as an *organic soil*, OL/OH, if the soil contains enough organic particles to influence the soil properties. Organic soils usually have a dark brown to black color and

TABLE 8 Criteria for Describing Dry Strength

Description	Criteria
None	The dry specimen crumbles into powder with mere pressure of handling
Low	The dry specimen crumbles into powder with some finger pressure
Medium	The dry specimen breaks into pieces or crumbles with considerable finger pressure
High	The dry specimen cannot be broken with finger pressure. Specimen will break into pieces between thumb and a hard surface
Very high	The dry specimen cannot be broken between the thumb and a hard surface

TABLE 9 Criteria for Describing Dilatancy

Description	Criteria
None	No visible change in the specimen
Slow	Water appears slowly on the surface of the specimen during shaking and does not disappear or disappears slowly upon squeezing
Rapid	Water appears quickly on the surface of the specimen during shaking and disappears quickly upon squeezing

TABLE 10 Criteria for Describing Toughness

Description	Criteria
Low	Only slight pressure is required to roll the thread near the plastic limit. The thread and the lump are weak and soft
Medium	Medium pressure is required to roll the thread to near the plastic limit. The thread and the lump have medium stiffness
High	Considerable pressure is required to roll the thread to near the plastic limit. The thread and the lump have very high stiffness

TABLE 11 Criteria for Describing Plasticity

Description	Criteria
Nonplastic	A ⅛-in. (3-mm) thread cannot be rolled at any water content
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit

TABLE 12 Identification of Inorganic Fine-Grained Soils from Manual Tests

Soil Symbol	Dry Strength	Dilatancy	Toughness and Plasticity
ML	None to low	Slow to rapid	Low or thread cannot be formed
CL	Medium to high	None to slow	Medium
MH	Low to medium	None to slow	Low to medium
CH	High to very high	None	High

may have an organic odor. Often, organic soils will change color, for example, black to brown, when exposed to the air. Some organic soils will lighten in color significantly when air dried. Organic soils normally will not have a high toughness or plasticity. The thread for the toughness test will be spongy.

NOTE 13—In some cases, through practice and experience, it may be possible to further identify the organic soils as organic silts or organic clays, OL or OH. Correlations between the dilatancy, dry strength, toughness tests, and laboratory tests can be made to identify organic soils in certain deposits of similar materials of known geologic origin.

14.9 If the soil is estimated to have 15 to 25 % sand or gravel, or both, the words "with sand" or "with gravel" (whichever is more predominant) shall be added to the group name. For example: "lean clay with sand, CL" or "silt with gravel, ML" (see Fig. 1a and Fig. 1b). If the percentage of sand is equal to the percentage of gravel, use "with sand."

14.10 If the soil is estimated to have 30 % or more sand or gravel, or both, the words "sandy" or "gravelly" shall be added to the group name. Add the word "sandy" if there appears to be more sand than gravel. Add the word "gravelly" if there appears to be more gravel than sand. For example: "sandy lean clay, CL", "gravelly fat clay, CH", or "sandy silt, ML" (see Fig. 1a and Fig. 1b). If the percentage of sand is equal to the percent of gravel, use "sandy."

15. Procedure for Identifying Coarse-Grained Soils (Contains less than 50 % fines)

15.1 The soil is a *gravel* if the percentage of gravel is estimated to be more than the percentage of sand.

15.2 The soil is a *sand* if the percentage of gravel is estimated to be equal to or less than the percentage of sand.

15.3 The soil is a *clean gravel* or *clean sand* if the percentage of fines is estimated to be 5 % or less.

15.3.1 Identify the soil as a *well-graded gravel*, GW, or as a *well-graded sand*, SW, if it has a wide range of particle sizes and substantial amounts of the intermediate particle sizes.

15.3.2 Identify the soil as a *poorly graded gravel*, GP, or as a *poorly graded sand*, SP, if it consists predominantly of one size (uniformly graded), or it has a wide range of sizes with some intermediate sizes obviously missing (gap or skip graded).

15.4 The soil is either a *gravel with fines* or a *sand with fines* if the percentage of fines is estimated to be 15 % or more.

15.4.1 Identify the soil as a *clayey gravel*, GC, or a *clayey sand*, SC, if the fines are clayey as determined by the procedures in Section 14.

15.4.2 Identify the soil as a *silty gravel*, GM, or a *silty sand*, SM, if the fines are silty as determined by the procedures in Section 14.

15.5 If the soil is estimated to contain 10 % fines, give the soil a dual identification using two group symbols.

15.5.1 The first group symbol shall correspond to a clean gravel or sand (GW, GP, SW, SP) and the second symbol shall correspond to a gravel or sand with fines (GC, GM, SC, SM).

15.5.2 The group name shall correspond to the first group symbol plus the words "with clay" or "with silt" to indicate the plasticity characteristics of the fines. For example: "well-graded gravel with clay, GW-GC" or "poorly graded sand with silt, SP-SM" (see Fig. 2).

15.6 If the specimen is predominantly sand or gravel but contains an estimated 15 % or more of the other coarse-grained constituent, the words "with gravel" or "with sand" shall be added to the group name. For example: "poorly graded gravel with sand, GP" or "clayey sand with gravel, SC" (see Fig. 2).

15.7 If the field sample contains any cobbles or boulders, or both, the words "with cobbles" or "with cobbles and boulders" shall be added to the group name. For example: "silty gravel with cobbles, GM."

16. Report

16.1 The report shall include the information as to origin, and the items indicated in Table 13.

NOTE 14—*Example: Clayey Gravel with Sand and Cobbles, GC*—About 50 % fine to coarse, subrounded to subangular gravel; about 30 % fine to coarse, subrounded sand; about 20 % fines with medium plasticity, high dry strength, no dilatancy, medium toughness; weak reaction with HCl; original field sample had about 5 % (by volume) subrounded cobbles, maximum dimension, 150 mm.

In-Place Conditions—Firm, homogeneous, dry, brown

Geologic Interpretation—Alluvial fan

NOTE 15—Other examples of soil descriptions and identification are given in Appendix X1 and Appendix X2.

NOTE 16—If desired, the percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages, as follows:

Trace—Particles are present but estimated to be less than 5 %

Few—5 to 10 %

Little—15 to 25 %

Some—30 to 45 %

Mostly—50 to 100 %

16.2 If, in the soil description, the soil is identified using a classification group symbol and name as described in Test Method D 2487, it must be distinctly and clearly stated in log forms, summary tables, reports, and the like, that the symbol and name are based on visual-manual procedures.

TABLE 13 Checklist for Description of Soils

1. Group name
2. Group symbol
3. Percent of cobbles or boulders, or both (by volume)
4. Percent of gravel, sand, or fines, or all three (by dry weight)
5. Particle-size range:
   Gravel—fine, coarse
   Sand—fine, medium, coarse
6. Particle angularity: angular, subangular, subrounded, rounded
7. Particle shape: (if appropriate) flat, elongated, flat and elongated
8. Maximum particle size or dimension
9. Hardness of coarse sand and larger particles
10. Plasticity of fines: nonplastic, low, medium, high
11. Dry strength: none, low, medium, high, very high
12. Dilatancy: none, slow, rapid
13. Toughness: low, medium, high
14. Color (in moist condition)
15. Odor (mention only if organic or unusual)
16. Moisture: dry, moist, wet
17. Reaction with HCl: none, weak, strong

For intact samples:

18. Consistency (fine-grained soils only): very soft, soft, firm, hard, very hard
19. Structure: stratified, laminated, fissured, slickensided, lensed, homogeneous
20. Cementation: weak, moderate, strong
21. Local name
22. Geologic interpretation
23. Additional comments: presence of roots or root holes, presence of mica, gypsum, etc., surface coatings on coarse-grained particles, caving or sloughing of auger hole or trench sides, difficulty in augering or excavating, etc.

17. Precision and Bias

17.1 This practice provides qualitative information only, therefore, a precision and bias statement is not applicable.

18. Keywords

18.1 classification; clay; gravel; organic soils; sand; silt; soil classification; soil description; visual classification

APPENDIXES

(Nonmandatory Information)

X1. EXAMPLES OF VISUAL SOIL DESCRIPTIONS

X1.1 The following examples show how the information required in 16.1 can be reported. The information that is included in descriptions should be based on individual circumstances and need.

X1.1.1 *Well-Graded Gravel with Sand (GW)*—About 75 % fine to coarse, hard, subangular gravel; about 25 % fine to coarse, hard, subangular sand; trace of fines; maximum size, 75 mm, brown, dry; no reaction with HCl.

X1.1.2 *Silty Sand with Gravel (SM)*—About 60 % predominantly fine sand; about 25 % silty fines with low plasticity, low dry strength, rapid dilatancy, and low toughness; about 15 % fine, hard, subrounded gravel, a few gravel-size particles fractured with hammer blow; maximum size, 25 mm; no reaction with HCl (Note—Field sample size smaller than recommended).

In-Place Conditions—Firm, stratified and contains lenses of silt 1 to 2 in. (25 to 50 mm) thick, moist, brown to gray; in-place density 106 lb/ft^3; in-place moisture 9 %.

X1.1.3 *Organic Soil (OL/OH)*—About 100 % fines with low plasticity, slow dilatancy, low dry strength, and low toughness; wet, dark brown, organic odor; weak reaction with HCl.

X1.1.4 *Silty Sand with Organic Fines (SM)*—About 75 % fine to coarse, hard, subangular reddish sand; about 25 % organic and silty dark brown nonplastic fines with no dry strength and slow dilatancy; wet; maximum size, coarse sand; weak reaction with HCl.

X1.1.5 *Poorly Graded Gravel with Silt, Sand, Cobbles and Boulders (GP-GM)*—About 75 % fine to coarse, hard, subrounded to subangular gravel; about 15 % fine, hard, subrounded to subangular sand; about 10 % silty nonplastic fines; moist, brown; no reaction with HCl; original field sample had about 5 % (by volume) hard, subrounded cobbles and a trace of hard, subrounded boulders, with a maximum dimension of 18 in. (450 mm).

X2. USING THE IDENTIFICATION PROCEDURE AS A DESCRIPTIVE SYSTEM FOR SHALE, CLAYSTONE, SHELLS, SLAG, CRUSHED ROCK, AND THE LIKE

X2.1 The identification procedure may be used as a descriptive system applied to materials that exist in-situ as shale, claystone, sandstone, siltstone, mudstone, etc., but convert to soils after field or laboratory processing (crushing, slaking, and the like).

X2.2 Materials such as shells, crushed rock, slag, and the like, should be identified as such. However, the procedures used in this practice for describing the particle size and plasticity characteristics may be used in the description of the material. If desired, an identification using a group name and symbol according to this practice may be assigned to aid in describing the material.

X2.3 The group symbol(s) and group names should be placed in quotation marks or noted with some type of distinguishing symbol. See examples.

X2.4 Examples of how group names and symbols can be incororated into a descriptive system for materials that are not naturally occurring soils are as follows:

X2.4.1 *Shale Chunks*—Retrieved as 2 to 4-in. (50 to 100-mm) pieces of shale from power auger hole, dry, brown, no reaction with HCl. After slaking in water for 24 h, material identified as "Sandy Lean Clay (CL)"; about 60 % fines with medium plasticity, high dry strength, no dilatancy, and medium toughness; about 35 % fine to medium, hard sand; about 5 % gravel-size pieces of shale.

X2.4.2 *Crushed Sandstone*—Product of commercial crushing operation; "Poorly Graded Sand with Silt (SP-SM)"; about 90 % fine to medium sand; about 10 % nonplastic fines; dry, reddish-brown.

X2.4.3 *Broken Shells*—About 60 % uniformly graded gravel-size broken shells; about 30 % sand and sand-size shell pieces; about 10 % nonplastic fines; "Poorly Graded Gravel with Silt and Sand (GP-GM)."

X2.4.4 *Crushed Rock*—Processed from gravel and cobbles in Pit No. 7; "Poorly Graded Gravel (GP)"; about 90 % fine, hard, angular gravel-size particles; about 10 % coarse, hard, angular sand-size particles; dry, tan; no reaction with HCl.

X3. SUGGESTED PROCEDURE FOR USING A BORDERLINE SYMBOL FOR SOILS WITH TWO POSSIBLE IDENTIFICATIONS.

X3.1 Since this practice is based on estimates of particle size distribution and plasticity characteristics, it may be difficult to clearly identify the soil as belonging to one category. To indicate that the soil may fall into one of two possible basic groups, a borderline symbol may be used with the two symbols separated by a slash. For example: SC/CL or CL/CH.

X3.1.1 A borderline symbol may be used when the percentage of fines is estimated to be between 45 and 55 %. One symbol should be for a coarse-grained soil with fines and the other for a fine-grained soil. For example: GM/ML or CL/SC.

X3.1.2 A borderline symbol may be used when the percentage of sand and the percentage of gravel are estimated to be about the same. For example: GP/SP, SC/GC, GM/SM. It is practically impossible to have a soil that would have a borderline symbol of GW/SW.

X3.1.3 A borderline symbol may be used when the soil could be either well graded or poorly graded. For example: GW/GP, SW/SP.

X3.1.4 A borderline symbol may be used when the soil could either be a silt or a clay. For example: CL/ML, CH/MH, SC/SM.

X3.1.5 A borderline symbol may be used when a fine-grained soil has properties that indicate that it is at the boundary between a soil of low compressibility and a soil of high compressibility. For example: CL/CH, MH/ML.

X3.2 The order of the borderline symbols should reflect similarity to surrounding or adjacent soils. For example: soils in a borrow area have been identified as CH. One sample is considered to have a borderline symbol of CL and CH. To show similarity, the borderline symbol should be CH/CL.

X3.3 The group name for a soil with a borderline symbol should be the group name for the first symbol, except for:

CL/CH lean to fat clay
ML/CL clayey silt
CL/ML silty clay

X3.4 The use of a borderline symbol should not be used indiscriminately. Every effort shall be made to first place the soil into a single group.

X4. SUGGESTED PROCEDURES FOR ESTIMATING THE PERCENTAGES OF GRAVEL, SAND, AND FINES IN A SOIL SAMPLE

X4.1 *Jar Method*—The relative percentage of coarse- and fine-grained material may be estimated by thoroughly shaking a mixture of soil and water in a test tube or jar, and then allowing the mixture to settle. The coarse particles will fall to the bottom and successively finer particles will be deposited with increasing time; the sand sizes will fall out of suspension in 20 to 30 s. The relative proportions can be estimated from the relative volume of each size separate. This method should be correlated to particle-size laboratory determinations.

X4.2 *Visual Method*—Mentally visualize the gravel size particles placed in a sack (or other container) or sacks. Then, do the same with the sand size particles and the fines. Then, mentally compare the number of sacks to estimate the percentage of plus No. 4 sieve size and minus No. 4 sieve size present. The percentages of sand and fines in the minus sieve size No. 4 material can then be estimated from the wash test (X4.3).

X4.3 *Wash Test (for relative percentages of sand and fines)*—Select and moisten enough minus No. 4 sieve size material to form a 1-in (25-mm) cube of soil. Cut the cube in half, set one-half to the side, and place the other half in a small dish. Wash and decant the fines out of the material in the dish until the wash water is clear and then compare the two samples and estimate the percentage of sand and fines. Remember that the percentage is based on weight, not volume. However, the volume comparison will provide a reasonable indication of grain size percentages.

X4.3.1 While washing, it may be necessary to break down lumps of fines with the finger to get the correct percentages.

X5. ABBREVIATED SOIL CLASSIFICATION SYMBOLS

X5.1 In some cases, because of lack of space, an abbreviated system may be useful to indicate the soil classification symbol and name. Examples of such cases would be graphical logs, databases, tables, etc.

X5.2 This abbreviated system is not a substitute for the full name and descriptive information but can be used in supplementary presentations when the complete description is referenced.

X5.3 The abbreviated system should consist of the soil classification symbol based on this standard with appropriate lower case letter prefixes and suffixes as:

Prefix:	Suffix:
s = sandy	s = with sand
g = gravelly	g = with gravel
	c = with cobbles
	b = with boulders

X5.4 The soil classification symbol is to be enclosed in parenthesis. Some examples would be:

Group Symbol and Full Name	Abbreviated
CL, Sandy lean clay	s(CL)
SP-SM, Poorly graded sand with silt and gravel	(SP-SM)g
GP, poorly graded gravel with sand, cobbles, and boulders	(GP)scb
ML, gravelly silt with sand and cobbles	g(ML)sc

SUMMARY OF CHANGES

Committee D18 has identified the location of selected changes to this standard since the last issue (D 2488 – 09) that may impact the use of this standard. (Approved June 15, 2009.)

(*1*) Revised Section 1.2.3.

Penobscot River Mercury Study - Phase III Engineering Evaluation

SEDIMENT GRAB LOG

Owner: USDC, District of Maine	Project No.: 3616166052		Logger:
Sub:	WO: 3 - Geophysical		Crew:
Tablet #:	Date:	Time :	Vessel:
Coordinates: **Lat**	**Long**		Plan Volume:
Sampling Station:			Sub-tidal Location? **Y** **N**

Weather:	Winds:	Waters:	Traffic: None	Water Temp: __°F

Measured Water Depth [NAVD88]:	Total Number of Deployments:
Correction to NAVD88 (+/- ft. from NAVD88):	*Conditions:*
Mudline (Corrected Depth) @ NAVD88:	
Study Depth (-NAVD88):	

All Recovered Quantities are in Percent

Deployment	Recovery	Description	Sample ID

Number of containers:					Grab Equipment Sampler Type: Standard Ponar
Type of container:	bucket	liner bag	jar	other	Capacity

Live Organisms present	Y	N	**Comments**
Oil-Like Present	Y	N	
Odor Present	Y	N	
Debris Present	Y	N	

Photo Numbers

Penobscot River Mercury Study - Phase III Engineering Evaluation

SEDIMENT CORE LOG

Owner:	USDC, District of Maine	Project No.:	3616166052	Logger:	
Sub:		WO:		Crew:	
Tablet #:	Date:		Time :	Vessel:	
Coordinates: Lat		Long		Plan Volume:	
Sampling Station:		Deploy No.		Sub-tidal Location? **Y** **N**	

Weather:	Winds:	Waters:	Traffic:	Water Temp:

Measured Water Depth [NAVD88]:		Core Penetration Length (ft.):	
Correction to NAVD88 (+/- ft. from NAVD88):		Recovered Core Length (ft.):	
Mudline (Corrected Depth) @ NAVD88:		Sample Length Retained (ft.):	
Study Depth (-NAVD88):		Acceptable Core (80% recovery):	
Required Penetration Length:		Core Volume Retained (gal.):	

All Length Measurements are in Decimal Feet

Sample Interval (ft.)	Sample Id #	Description
Top		
Bottom		

Number of containers:					Core Volumes	
Type of container:	bucket	liner bag	jar	other	Nominal core-barrel diameter	EST. Volume
Liner Type: Soft	Hard	Vibracorer:			4.0"	.50gal/ft
		Push Corer		Slambar	3.5"	.33gal/ft

Live Organisms present	Y	N
Oil-Like Present	Y	N
Odor Present	Y	N
Debris Present	Y	N

Photo Numbers

Comments

Penobscot River Mercury Study - Phase III Engineering Evaluation

Sediment Trap Forms

Date: ______ **Logger:** ______
Time: ______ **Crew:** ______ **Weather:** ______
Location: ______ **Vessel:** ______ **Winds:** ______
Lat: ______ **Sub-tidal Location? Y N** ______ **Surface Waters:** ______
Long: ______ **Tide:** ______ **Open Waters:** ______

Retrieval Date: 10/15/2016 Station Name: FF_TRAP1

I. Description of Trap

A. Trap Method

Trap Types (Circle)
- Outside Cover
- Uncovered
- Inside Cover
- Other (describe below)

Trap Size in Inches

Eel pot	9X11X24
Lobster Pot	12X12X36

Further description (if needed): Burlap Sack

B. Sediment Recovered

Chip Size
- Twigs & Bark
- Leaves & Grass
- Shredded Mulch (1-2")
- Sawdust (1/4")
- Particle (grain)

Abundant:	80-100%
Occasional:	50-70%
Scattered:	20-50%
Some:	5-20%
Trace:	0-5%

Base Sediment
Gravel Sand Silt

Sediment Description:

Collection Method: Photographed: **Y N**
Comments: Collected: **Y N**

Samples:

amec foster wheeler

Penobscot River Mercury Study - Phase III Engineering Evaluation

VISUAL ASSESSMENT

Date: ____ **Logger:** ____ **Tablet #:** ____
Time: ____ **Crew:** ____ **Weather:** ____
Location: ____ **Vessel:** ____ **Winds:** ____
Lat: ____ **Sub-tidal Location? Y N** **Surface Waters:** ____
Long: ____ **Tide:** ____ **Open Waters:** ____

I. Surf Line

A. Strata 1

Chip Size
- Twigs & Bark ____
- Leaves & Grass ____
- Shredded Mulch (1-2") ____
- Sawdust (1/4") ____
- Particle (grain) ____

Abundant:	80-100%
Occasional:	50-70%
Scattered:	20-50%
Some:	5-20%
Trace:	0-5%

Base Sediment
Gravel Sand Silt

Intermingled Wood Chip **Y N** % chip
Munsel Color:
Redox:

Sediment Description:

B. Strata 2

Chip Size
- Twigs & Bark ____
- Leaves & Grass ____
- Shredded Mulch (1-2") ____
- Sawdust (1/4") ____
- Particle (grain) ____

Abundant:	80-100%
Occasional:	50-70%
Scattered:	20-50%
Some:	5-20%
Trace:	0-5%

Base Sediment
Gravel Sand Silt

Intermingled Wood Chip **Y N** % chip
Munsel Color:
Redox:

Sediment Description:

Collection Method: Ponar — Photographed: **Y N**
Comments: — Collected: **Y N**

II. Mud Line

A. WC Explosed above mudline **Y N**

Approx. Surface Thickness (in):
Collection Method: — Photographed: **Y N**
Comments: — Collected: **Y N**

B. WC below mudline

Deposition band offset from surf line **Y N**
Approx. Surface Thickness (in):
Collection Method: — Photographed: **Y N**
Comments: — Collected: **Y N**

III. Edge Conditions
(Circle)

Vegetated
Bulkhead
Rock (cliff)

IV. Bank Conditions
(Circle)

Boulder Outcrops
Sloping Mudflats
Slumped Mudflats

SOP No. S-10

AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE, INC.
STANDARD OPERATING PROCEDURE

DUCK COLLECTION AND SAMPLING OF BREAST MUSCLE TISSUE AND BLOOD

DUCK COLLECTION AND SAMPLING OF BREAST MUSCLE TISSUE AND BLOOD

OBJECTIVE

This standard operating procedure (SOP) sets forth the field procedures used to collect duck tissue and blood samples. Project personnel will possess the appropriate scientific collection permits and training.

Pre-Collection Activities

Staff assigned the responsibility of duck sample collection will be provided the following:

- Work documents (data sheets, copies of permits)
- Target species information
- Blood and tissue sampling equipment
- Collection and processing procedures
- Special instructions (if any)

Sample Collection Procedures

The general procedures to be followed when sampling ducks are outlined below.

Materials

The following collection equipment and materials will be available, as appropriate:

- Health and safety equipment (as required by the health and safety plan)
- *Identification Guide to North American Birds*: Part I (Pyle 1997)
- *The Tabular Pyle* (Sakai and Ralph 2007)
- Wing ruler
- Tail ruler
- Leg gauge
- Weighing scale(s)
- Weighing bags
- Clean holding bags
- Net guns
- Wire traps (and bait)
- Alcohol wipes
- Antiseptic ointment
- Nitrile gloves
- Vacutainer tubes (royal blue) with EDTA
- 25-gauge needle syringes
- Sharps container

- Powdered styptic for clotting minor cuts or abrasions
- Scalpels with spare blades
- Tweezers
- Scissors
- Pens/Pencils/Sharpies
- Field Notebook
- Digital Camera
- Handheld GPS
- Ziploc bags
- Sample coolers (with ice)

Field Notes

Field notes will be recorded during sampling activities, and at a minimum, will include the following information:

- Names of field crew and additional personnel present on site
- General weather conditions
- Date, time, and location, including a general description and GPS coordinates
- Capture technique
- Sampling duration
- General observations
- Representative photographs
- Banding information (if applicable) and sample identification from blood and tissue collection

Blood and Tissue Collection Form

Blood and tissue collection forms must be filled out completely and include the following information:

- 4-Digit Alpha Species Code
- Sample identification number
- Month/Day/Year
- Location
- Time (24-Hour)
- Weight
- Number of vacutainer tubes
- Number of tissue samples
- Sampler initials

Field Forms

Field forms may include the electronic field data record and chain of custody forms. Forms will be filled out completely and include the below listed information.

Field Data Record

- Collector's initials and method of collection
- Date, time, and location
- Number and type of individual samples
- Coordinates
- Photo numbers (if taken)
- Notes

Chain of Custody

- Project name and number
- Date and time (24-hour)
- Sample identification numbers
- Analytical method requested
- Signature of recording personnel

Sample Capture Procedures

Wire Traps. Wire traps can be an effective collection procedure for trapping multiple ducks at a time. Trapping should be conducted following the hunting season closure. Collection sites should be baited to accustom the ducks to finding food at the site. Toward the end of the baiting period open wire traps should be constructed on the bait site, allowing free access into and out of the baited trap. After ducks begin to willingly enter the open traps to eat the bait, the traps should be rebaited and set. To set, the traps should be closed, leaving only narrow access chutes which allowed the ducks to enter, but not exit the trap.

Net Gun. A pneumatic net gun is a suitable capture technique for short-duration handling, generally less than 10 minutes, which enables rapid capture and release of target duck. Net guns should only be used to capture a single duck at a time, as attempts to capture two or more ducks within a single net are likely to result in injury, or possibly death. At least two capture guns with loaded nets, or a gun with detachable barrel and multiple nets, should be available to the gunner for each capture. This provides a back-up that can be used to reduce chase duration if the first net missed the target duck or to re-net a duck if the first net did not provide adequate restraint. Pursuit and capture must occur on smooth, open terrain with good footing. Final, close pursuit for the purpose of netting a duck should be kept short (less than 1 min of strenuous flying), and must always be terminated when the target duck show signs of fatigue. Ducks must be handled and released as quickly as possible following capture. Attempts to capture two ducks with separate nets prior to handling and sampling must not be done unless there is an additional handler present to attend to the first captured duck while the net gunner and second handler pursue a second duck. Where multiple individuals are to be captured from the same flock or group, the capture crew must avoid causing fatigue and stress in non-target ducks.

Sample Collecting Procedures

Blood Collection. Blood should be collected from the inner brachial artery at the base of the wing, or from the femoral vein in the leg, using a 25 gauge needle syringe. However, the leg veins are typically not as good for drawing blood, and it is recommended that draws are attempted from both wings prior to attempting to draw from a leg. Blood should be collected into a trace element vacutainer (royal blue) containing EDTA to prevent clotting.

Wear nitrile gloves during blood collection. To collect blood from the brachial artery on the inside of either wing, have one person hold the bird on its back on a flat work surface. Spread one wing out and pluck the feathers from the inside of the “elbow” and wipe the area with alcohol until the darker brachial artery going over the wing bone is visible.

Remove the cap and sleeve of the syringe, and twist and remove the needle cover. As the needle is threaded on the syringe, twist the needle cover clockwise so it is tightening the needle while removing the cover. Pull out the plunger of the syringe about ½” and push it back in, this breaks the seal and makes it easier to pull gently on the plunger when drawing blood.

Use both hands on the syringe when collecting blood. One hand steadies the syringe and the other controls the plunger on the syringe. The needle should enter at a very slight angle (almost parallel) to the artery. Do not go all the way through artery as it is more difficult to find the center when the needle is pulled back through the artery. Once the needle is inserted into the skin, pull back very slightly on the plunger so that when the needle enters the artery, blood will immediately enter the syringe. Once good flow of blood is started, freeze needle movement, as any movement may remove the needle from the artery. Gradually pull back on the syringe plunger; do not pull back hard on the syringe plunger as the resulting suction may collapse the artery. The target collection is 1.5 cc (1.5 ml) of blood. Sometimes good blood flow is difficult and the needle must be removed to try the other wing.

Once sufficient blood is obtained, remove the needle, press briefly on the puncture spot and release the bird. Only rarely does the bird bleed enough to notice it on the feathers after its release. Transfer the blood from the syringe to a vacutainer tube (royal blue with EDTA). As the tubes have a slight vacuum, stick the needle into the tube and the blood will be sucked out of the syringe and into the tube. The 1.5 ml of blood should be gently mixed, appropriately labeled, and placed on ice for transport to the lab. Make sure that needles are disposed of in a sharps container.

Tissue Collection. Tissue collection from “taken” ducks may be conducted in the field or whole ducks may be shipped on ice to the laboratory. Both breasts are to be collected from each duck. Wear nitrile gloves during tissue collection. Insert a clean scalpel or a knife to make a midline incision through the skin of the breast (Figure 1A). Take care not to penetrate the body cavity, particularly in the abdominal region. Continue the skin incision to the vent and to the base of the neck, and reflect the skin away from the neck, breast, and abdominal areas (Figure 1B). Use the thumb and the first finger of each hand to reflect the skin, it is easiest to place the thumb and the first finger of each hand along the incision line in the breast area and then push and gently pull the skin to the side. When an opening in the skin has been established, work towards the bill and then the vent.

Make a shallow transverse incision just below the breast muscles and sternum (Figure 1C). Insert the thumb of one gloved hand into the incision along the midpoint of the sternum and apply a slight pressure upwards, then with a scissors in the other gloved hand, carefully cut through the ribs extending the cut on each side of the breast through the area of the wishbone (Figure aD). Gently separate the breastplate from the carcass, and use a scissors or a scalpel to sever any remaining connections (Figure 1E). The breastplate may be shipped to the laboratory for final processing, or the breasts may be removed by hand manually or with a scalpel in the field. Tissue should be double-bagged in Ziploc bags, labeled, and shipped on ice to the laboratory under the appropriate chain of custody procedures.

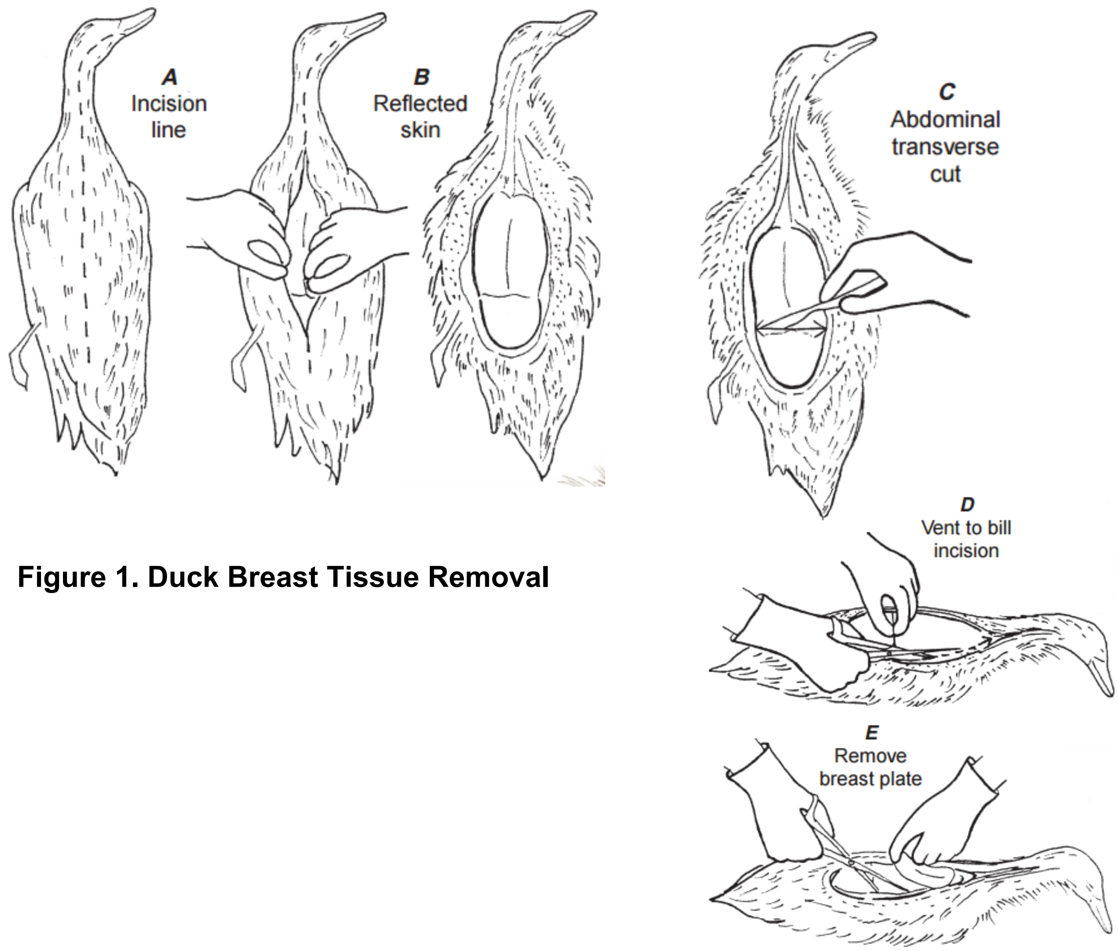


Figure 1. Duck Breast Tissue Removal

- END OF PROCEDURE -

SOP No. S-17

AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE, INC.
STANDARD OPERATING PROCEDURE

DECONTAMINATION PROCEDURES

Decontamination Procedures

PURPOSE

This Standard Operating Procedure (SOP) describes the methods to be used for the decontamination of all field equipment and sample processing equipment which becomes potentially contaminated during sampling tasks. The equipment may include coring devices, dredgers, hand-augers, biota collection devices, trowels, shovels, or any other type of equipment used during field activities.

Decontamination is performed as a quality assurance measure and a safety precaution. It prevents cross- contamination between samples and also helps to maintain a clean working environment for the safety of field personnel.

Decontamination is mainly achieved by rinsing with liquids which include: tap-water (potable water), Formula 409 cleaner solution (50 % Formula and 50% potable water), and deionized (DI) water. Equipment will be allowed to air dry after being cleaned or may be wiped dry paper towels if immediate re-use is needed. The frequency of equipment use dictates that most decontamination be accomplished at each sampling site, between collection points.

This same decontamination procedure will be used for sediment, soil, biota, or any other sampling where non-dedicated equipment is being used and the potential for cross contamination exists.

RESPONSIBILITIES

It is the primary responsibility of the project Field Operations Leader and field samplers to assure that the proper decontamination procedures are followed and that all waste materials produced by decontamination are properly stored and disposed of.

It is the responsibility of the project safety officer to draft and enforce safety measures which provide the best protection for all persons involved directly with sampling and/or decontamination.

It is the responsibility of any subcontractors to follow the proper designated decontamination procedures that are stated in their contracts and outlined in the Project Health and Safety Plan.

It is the responsibility of all personnel involved with sample collection or decontamination to maintain a clean working environment and to ensure that any contaminants are not negligently introduced to the environment.

EQUIPMENT AND MATERIALS

- Squeeze bottles or stainless steel sprayers– labeled squeeze bottles for dispensing decontamination fluids used in the rinsing process.
- Paper Towels **-** used for drying equipment after final rinse.

- Cleaning containers – plastic or stainless steel buckets to place equipment in during the decontamination procedure
- Cleaning Liquids – potable water, DI water, and Formula 409 cleaner solution
- Cleaning Brushes – to be used in conjunction with decontamination fluids to facilitate removal of stuck on sample media.
- Gloves - for personal protection and to prevent cross-contamination of samples. May be plastic or latex, disposable, powderless.
- Field Clothing and Personal Protective Equipment - as specified in the Health and Safety Plan.
- Trash bags - used to dispose of gloves and any other non-hazardous waste generated during sampling.

PROCEDURE

All non-dedicated equipment that comes in contact with the media that is sampled should be included in the decontamination process. Dedicated equipment does not require decontamination. Include equipment that is used for sample processing (e.g., stainless steel bowls and spoons) as well as equipment used for sample collection.

Sample collection equipment should be decontaminated between sampling locations. Sample processing equipment should be decontaminated between samples.

The standard procedures listed in the following section can be considered the procedure for full field decontamination. If different or more elaborate procedures are required for a specific task, they will be spelled out in the Field Sampling Plan (FSP). Such variations in decontamination may include following all, just part, or an expanded scope of the decontamination procedure stated herein. Any variation in the decontamination procedure should be documented in the log book and or, electronic field data record.

- Remove any solid particles (soil or sediment) from the equipment or material by brushing and then rinsing with clean water. This can be accomplished with a squeeze bottle and brush, or the equipment can be soaked in a bucket of potable water and bushed in place. This initial step is performed to remove gross contamination. Repeat the procedure until visibly free of gross contamination
- Rinse with potable water.
- Rinse with Formula 409 cleaner solution (50 % Formula and 50% potable water). This can be accomplished with a squeeze bottle and brush, or the equipment can be soaked and scrubbed in a bucket with solution.
- Thorough DI water rinse.
- Air dry or if needed for re use, dry with paper towels.

- If sampling equipment is not to be used immediately at another location, wrap the equipment in aluminum foil or place in a clean plastic bag and store in a clean safe place.

- If rinsate equipment blanks are specified in the FSP, collect rinsate by pouring DI water over sampling equipment and into sample containers.

REFERENCES

U.S. Environmental Protection Agency (USEPA), January, 1986. "Decontamination Techniques for Mobile Response Equipment Used at Waste Sites (State-of-the-Art Survey)." EPA/600/52-85/105.

- END OF PROCEDURE -

SOP No. S-19

AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE, INC.
STANDARD OPERATING PROCEDURE

SAMPLE CHAIN OF CUSTODY PROCEDURES

SAMPLE CHAIN OF CUSTODY PROCEDURE

INTRODUCTION

This SOP describes chain of custody procedures to be followed whenever collecting environmental samples.

CROSS-REFERENCES

- ASTM D4840-95: Guide for Sampling Chain-of-Custody Procedures
- U.S. EPA Region 4 "Environmental Investigations Standard Operating Procedures and Quality Assurance Manual," May 1996 Including 1997 Revisions
- Site-specific Health and Safety Plan

MATERIALS

DOCUMENTATION

- Work Plan
- Field Data Records (FDR)
- Chain-of-custody forms
- Sample labels
- Field logbook
- Permanent marker
- Lab contact information
- Chain-of-Custody Form

PREPARATION

Review Work Plan/Work Order to identify samples to be collected, analyses to be performed, laboratory performing the analyses, and any other project specific-objectives of the sampling program. Review sample collection SOPs for media being sampled.

SAMPLE LABELING

Enter in the log book and label each sample container with the following information: a) Project number b) Date and time of collection c) Sample location d) Sample number e) Analysis to be performed f) Sampler's initials g) Preservative If using field sample tracking system labels will be generated and printed by the field sample coordinator.

CHAIN OF CUSTODY

Definition

EPA provides the following definition of chain-of-custody:

"A sample is considered to be in your custody if any of the following criteria are met:

- The sample is in your possession or is in your view after being in your possession;

- The sample was in your possession and then locked up or sealed to prevent tampering; or
- You have placed the sample in a secured area."

Purpose

"The chain-of-custody form is functionally similar to a packing slip that accompanies a shipment of goods. The chain-of-custody form includes a chain-of-custody record located at the bottom of the form. The form is used as physical evidence of sample custody. EPA guidelines specify that official custody of samples must be maintained and documented from the time of collection until the time the samples are introduced as evidence in the event of litigation. The sampler is responsible for the care and custody of the sample until sample shipment."

Documentation

After samples are collected and labeled, fill out the chain-of-custody form. Examples of computer generated COC forms and hand written laboratory COC forms that may be used are presented in Attachment A of this SOP. The sampler becomes the initial sample custodian.

Chain-of-custody forms must be completed for every shipment of samples to an analytical laboratory.

Use indelible ink only, no pencil (a ball point pen is best). Make corrections by drawing a line through and initialing and dating the error, then enter the correct information. Erasures are not allowed.

A separate chain-of-custody form must accompany each cooler for each shipment. Place the original COC form in a zipper-type plastic bag in the cooler with the samples. The chain-of-custody forms must address all samples in that sample shipment. If multiple coolers are shipped a copy of the COC should accompany each cooler. This practice maintains the chain-of-custody for all samples in case of mis-shipment.

Transfer of Custody

When transferring the possession of samples, the individuals relinquishing and receiving custody will sign, date, and note the time on the record. Persons receiving the custody of a sample group are responsible for confirming the accuracy of the COC with regard to the number and type of sample containers for which they are accepting responsibility.

When samples are to be shipped to an analytical facility by commercial delivery service, the samples will be relinquished to the courier in sealed containers, and, if practicable, the shipment number will be noted on the COC form. When samples are transferred by commercial delivery service, a copy of the shipping documentation will serve as the COC record for the delivery service's role in the chain of custody.

The sample custodian relinquishing custody to a facility or agency will request the signature of a representative of the appropriate party acknowledging receipt of the samples. If a representative is unavailable or refuses to sign, this will be noted in the "Received by" space on the COC. When appropriate, the custody record will contain a statement that the samples were delivered to the designated location at the designated time.

Attachment A
Examples Of Chain Of Custody And Hand Written Laboratory Chain Of Custody Forms

Computer Generated Chain Of Custody

Olin Chemical Superfund Site

MACTEC E&C

Lab:

Sample #	Sample Date	Sample Time	Field Sample ID	Qty Total	Qty Each	Bottle Size and Material		Preservative	Media	Method	Fraction
556	10/25/2007	16:20	XTMW012XX003XX	5							
					2	1 Liter	Amber Glass	4 deg C	GW	PCBs 8082	T
					1	500 mL	Poly	HNO3 4 deg C	GW	TAL Metals + Mo 6010B / 7470A	T
					2	40 mL	Glass Vial	HCL, 4 deg C	GW	VOCs 8260B + TICs	T
556	10/25/2007	16:20	XTMW012XX003XX	4							
					2	1 Liter	Amber Glass	4 deg C	GW	SVOCs 8270C + TICs	T
					2	40 mL	Glass Vial	HCL, 4 deg C	GW	VOCs 8260B + TICs	T

*Relinquished:*____________ *Date:* __/__/__ *Time:*____ *Received:*____________ *Date:* __/__/__ *Time:*____

*Relinquished:*____________ *Date:* __/__/__ *Time:*____ *Received:*____________ *Date:* __/__/__ *Time:*____

Thursday, October 25, 2007 *Page 1 of 1*

- END OF PROCEDURE -

SOP No. S-20

AMEC FOSTER WHEELER ENVIRONMENT AND INFRASTRUCTURE, INC.
STANDARD OPERATING PROCEDURE

SAMPLE PACKAGING AND SHIPMENT

SAMPLE PACKAGING AND SHIPMENT

SCOPE AND APPLICATION

This Standard Operating Procedure (SOP) establishes methodologies for shipping samples collected during environmental field investigation/remediation activities. This SOP applies to all environmental samples including drinking water, groundwater, surface water samples, soil, and sediment samples, and treatment plant samples.

DEFINITIONS

Shipper's Declaration – A paper document describing the contents of a shipment.

HEALTH AND SAFETY WARNINGS

Shippers of dangerous goods should take all precautions to eliminate any hazards associated with the goods being shipped. The shipper should consult the most-recent version of the International Air Transportation Association (IATA) regulations regarding shipment of dangerous goods.

PERSONNEL QUALIFICATIONS

Any person designated as a shipper of dangerous goods shall be trained in the U.S. Department of Transportation Hazardous Materials Regulations, which must be renewed every two years. Shipment of environmental samples does not require specialized training; however, a familiarity with the regulations and the materials being shipped is considered beneficial.

EQUIPMENT AND SUPPLIES

Consult the most-recent version of the IATA regulations for a listing of proper shipping materials.

- Cooler -Samples -Labels -Ink pen
- Packing materials (bubble wrap) to prevent breakage, absorb leakage, and insulate samples.
- Polyethylene zip-type baggies large enough to contain the largest sample bottles.
- Custody seals if shipped through Federal Express (FEDEX) or similar shipping vendor.
- Large plastic trash bag to act as containment for the packing materials.

PROCEDURES

1. Be certain that all containers are sufficiently tight, preserved, and labeled correctly. Sediment samples should be allowed to settle for a minimum of 2 hrs prior to shipping to the laboratory. The sample manger should look closely at all sediment samples to see if a clear water layer forms above the sediment. Any water layer should be decanted from the sample jar prior to shipping to the laboratory.
2. Clean the exterior of each sample container such that no gross contamination remains.
3. Complete the Chain of Custody (COC) as described SOP S-19. When the COC form is completed, verify that bottle labels, analytical fractions, and bottle numbers match what is written on the COC form.

4. Wrap sample containers in bubble wrap. Zip-type plastic baggies may be used as additional containment.
5. Line the cooler with the trash bag and add a layer of packing material. If the cooler has a drain, close and seal to prevent leakage of water from melting ice.
6. Place sample containers into the cooler, and pack them sufficiently to prevent them from shifting during shipment.
7. Place ice-filled zip-type bags on samples such that all samples are contacted by the ice. Place sufficient ice to retain the sample temperature between 2 and 6 degrees C. Place a temperature blank in with the samples.
8. Fill the remaining space in the cooler with packing material and close and secure the top of the trash bag.
9. On the chain of custody, sign in the relinquished by box and add in the subsequent received by box the name of the courier/carrier and the air bill No. (if applicable).
10. Place the COC into a plastic bag and tape it to the inside top of the cooler.
11. Close the cooler and tape the cooler shut with strapping tape or similar high-strength shipping tape.
12. If more than one cooler is being shipped under the same COC, copies of the COC should be placed into each additional cooler in the same manner as the original COC.
13. If shipped through FEDEX or other shipping vendor, apply custody seals to the cooler such that the seals must be broken in order to open the cooler.
14. Apply “UP Arrows” in the appropriate direction on at least opposing sides of the cooler exterior,or indicate on top “this side up”.
15. Add the appropriate shipping address labels to the cooler along with a return address to the cooler. If more than one cooler is being shipped, add “one of ” to the label so that the recipient is aware that more than one cooler should be received.

DATA AND RECORDS MANAGEMENT

A copy of the COC shall be retained by the shipper until the completed laboratory data package is received. In addition, a copy of the air bill shall also be retained for validation/custody purposes and also for payment.

REFERENCES

AMEC Environment and Infrastructure, Inc. Standard Operating Procedure for Chain of Custody S-9 Code of Federal Regulations 40 CFR Part 261.4(d) Samples. Dangerous Goods Regulations, IATA, Most-Current Version.

-END OF PROCEDURE -

SOP No. S-23

WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
STANDARD OPERATING PROCEDURE

SEDIMENT PROCESSING – EXTRUSION & SAMPLING

DEFINITIONS

FDR	Field Daily Record
FOL	Field Operation Lead
FSP	Field Sampling Plan
HASP	Health and Safety Plan
PM	Project Manager
PPE	Personal Protective Equipment
QAPP	Quality Assurance Project Plan
SOP	Standard Operating Procedure
Wood	Wood Environment & Infrastructure Solutions, Inc. (formerly Amec Foster Wheeler)

SEDIMENT PROCESSING – EXTRUSION & SAMPLING

PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to provide a standardized method for processing a collected sediment core using incremental and mass extrusion. This SOP may be used by employees of Wood, or its subcontractors supporting the Penobscot River Estuary Project. Deviations from the procedures outlined in this document are to approved by the Project Manager (PM), Technical Lead, or Field Operation Lead prior to initiation of the sampling activity.

This SOP is a companion document to SOP-6, which outlines the sediment collection.

The methodologies and general procedures discussed in this SOP are applicable to the processing of collected sediment cores by extrusion methods in the field.

Analysis of sediment may be biological, chemical, or physical in nature and may be used to determine the following:

- toxicity
- biological availability and effects of contaminants
- benthic biota
- extent and magnitude of contamination
- contaminant migration pathway and potential source
- fate of contaminants
- physical characteristics

RESPONSIBILITIES

Project Manager – responsible for work execution in accordance with scope of work, budget, and corporate policies and procedures.

Technical Lead – designated personnel with the requisite knowledge, skills, and abilities to develop scope, provide instruction, and resolve field conditions encountered to achieve the task objectives.

Field Operation Leader - may be a Wood employee or contractor who is responsible for overseeing the sediment sampling activities. The FOL is also responsible for checking work performed and verifying that the work satisfies the specific tasks outlined by this SOP and the Field Sampling Plan (FSP). It is the responsibility of the FOL to communicate with the field personnel regarding specific collection objectives and anticipated situations that require deviation from the FSP. It is also the responsibility of the FOL to communicate the need for any deviations from the Field Sampling Plan with the appropriate personnel (Project Manager or Technical Leader).

Field Crew Member / Field Personnel - performing sediment sampling are responsible for adhering to the applicable tasks outlined in this procedure while collecting samples.

EQUIPMENT

The following list of equipment shall be maintained by the field personnel and equipped on the vessel or in the field while performing sample processing.

- Aluminum foil – cover decontaminated equipment or used to lay sampling equipment or sample upon as a clean surface (as a separation barrier)
- Brush – for clearing debris and contamination from sampling equipment prior to decontamination. Also, for scrubbing sampling equipment in decontamination detergent prior to rinse.
- Bucket – 2 to 5-gallon bucket, minimum of two, one for mixing decontamination detergent, one for rinse water for equipment decontamination.
- Camera device – for photographic documentation of each core or grab collected. Device should be a standalone camera, not a tablet, phone or other device.
- Collection containers - glass or plastic jars or bottles, commonly supplied by the analytical laboratory, with lids.
- Clear Packing Tape – for placing over the sample label on sampling containers once the label has been completed filled out. This will prevent label degradation from field conditions.
- Decontamination Detergent – Alconox or equivalent detergent to perform equipment decontamination.
- FDR – Enough copies of the FDR paperwork to fill out in the field at each sampling location that is planned to be visited during the workday. Ensure enough copies are provided each day in case multiple are needed at a given sampling location.
- Field Clothing and Personal Protective Equipment (PPE) - as specified in the HASP.
- Field notebook - a bound book used to record progress of sampling effort and record any problems and field observations during sampling. Alternatively, an electronic tablet device with pre-loaded forms for electronic data entry may be used.
- Gloves - for personal protection and to prevent cross-contamination of samples. May be nitrile or latex, disposable, powderless.
- Tablet - to store necessary forms used to record and track samples collected at the site. iPads, or equivalent, will contain the necessary field forms and maps for field personnel reference.
- Mass Extraction Tool – used for pushing sediment out of the liner into a tray for processing.
- Permanent marking pen - used to mark sample jars/lids, coring tubes, and for documentation of field logbooks and data sheets.
- Plastic tray – tray or gutter section for placing mass extruded core for processing

- Ruler – wooden preferred
- Sample Extruder – Device used to extrude sample from liner.
- Sample Labels –sample labels to affix to collection containers for each sampling location to be visited during the workday, as appropriate pre-printed.
- Stainless steel bowls or bucket **-** used for compositing samples; sized appropriate for sample volume capacity.
- Stainless steel lab spoon **-** or equivalent. Used for homogenizing sediment samples.
- Trash bags - used to dispose of gloves and any other non-hazardous waste generated during sampling.
- White Board – used for documentation project name, project number, sampling station, core ID, date and time sampled while photo documenting sampling efforts. Place behind or under a core when taking photograph.

TERMINOLOGY

- Sampling Station or Location
- Sediment Collection – retrieval of bulk sediment
- Sediment Sample – aliquot of the bulk sediment to be subjected to laboratory analyses
- Deployment – individual use of sampling device to recover sediment
- Penetration – depth of the sampling device beneath the mudline
- Recovered Sediment – sediment removed and contained within sampling device
- Percent Recovery – amount of recovered sediment divided by penetration or capacity of sampling device
- Interval – a measured amount or increment, often measured where zero is surface of recovered sediment within the sampling device
- Strata – a layer of physically-similar material such as a 3-inch gravel layer or 2 foot sand layer
- Homogenization – blending of the recovered sediment often performed by designated interval
- Composing – combining homogenized recovered sediment often performed to add like strata or like intervals from multiple deployments (or across multiple stations) to achieve laboratory-required sample volume or mass

METHOD SUMMARY

Sediment cores can be processed using several different methodologies. Incremental extrusion or mass extrusion of a sediment core are commonly used methods allowing for discrete sampling of specified intervals. The extrusion method allows for a single increment of sediment to be removed from the liner at a time. Once extruded, the interval is placed in a clean bowl, homogenized and aliquot placed into the analytical laboratory-specified sample container. The mass extrusion method involves removing an entire sediment core from the liner into a tray, and incrementally processing the core by removing a defined interval from the tray into clean bowl, homogenizing, and an aliquot placed into the analytical laboratory-specified sample container. Each of the processes are repeated until the required laboratory samples have been collected.

Procedures on how to complete each method are detailed in the following sections.

SAMPLE PROCESSING - EXTRUSION

Before processing a sample by either incremental or mass extrusion, the following procedures shall be performed:

1. Processing equipment shall be decontaminated prior to use. If the sampling station is the first to be visited that day, decontamination of equipment shall be performed before use. At the completion of sample collection at a given station, the equipment shall be decontaminated prior to moving to the next sampling location so as to not track contaminated materials or equipment to the next location. Decontamination shall be performed in accordance with SOP S-17.

2. Personnel performing the processing shall review the FDR completed for the collection. If the processing is not performed sequential to the collection, the FDR will be annotated to indicate the date, time, location, and crew members for the processing.

3. The individual FDR for the recovered sediment deployment to be processed will be supplemented with completion of the logging and incremental sampling. The FDR serves to record station information, conditions, deployment sequence, work conditions and crew, collection details, recovered sediment characteristics, and incremental sample identification and handling.

4. The processing crew will confirm that the top and bottom of the liner to be processed are known. If there is uncertainty as to the location of the mudline within the liner, the liner will not be processed.

5. When handling the recovered sediment and its incremental samples, a new pair of nitrile gloves shall be donned.

Incremental Extrusion

There are several types of coring devices that facilitate incremental extrusion. There are nuances specific to each device as the extrusion apparatus is commonly customized to the coring device. Field crews will review the manufacturer instruction manual prior to device use and tailor the means and methods outlined in this SOP to the device obtained. It is recommended that the processing crew perform one or two “practice cores” after reviewing the manufacturer instructions prior to performing incremental extrusion on a station-specific collected core.

The incremental extruder is a sample processing device that allows for the removal of a discrete interval of sediment from a liner in centimeter lengths. When the core is collected, a plug/stopper or extruding plug is inserted into the bottom of the core liner. This plug allows for the sample to be pressed out of the liner without impacting the sediment.

Prior to leaving the field station, ensure all required parts of the incremental extruder are properly functioning and the equipment is ready for use per the following:

1. Inspect extruder disks to ensure rubber seals are in good condition. If damage is noted, replace plug/puck or rubber seal.

2. Inspect threaded rod for any wear or damage. Ensure the threaded plugs/puck will properly thread onto the rod.

3. Ensure a sufficient quantity of plastic spacers are equipped for the proposed sampling.

The following steps shall be followed when using the incremental extruder to interval a core:

1. Mount the core barrel atop the barrel stabilizer disk.

2. Adjust the threaded disk on the threaded rod such that the gap between the threaded disk and barrel stabilizer disk can be filled with the plastic spacers. Adjust this gap to be equal to the total thickness of sample that will be aliquoted (i.e., 6 inches or 15 cm).

3. Place the core extruder funnel on the top of the liner section.

4. Remove the plastic spacers that coincide with the thickness of the sediment interval to be aliquoted (i.e., for a 0.0-0.1ft interval (2cm) remove 2 plastic spacers).

5. Push the liner tube down so that the bottom of the tube rests on the next in-place plastic spacer. This will push the sediment out of the liner and onto the extruder funnel.

6. Scrape the displaced sediment in the extruding funnel into a stainless-steel bowl, or cleaned equivalent (e.g, ziplock bag). Classify the material as it is placed into the bowl and record on the FDR specific to the interval.

7. Photograph the extruded interval. Include the white board within the photo view where the white board has clearly written the station identification, core deployment, interval extruded, and date and time.

8. Homogenize the extruded interval in the bowl by manually mixing 50 strokes or greater if additional blending is necessary. If encountered, remove pieces of gravel or wood greater than 1 inch in any one direction and record the type and dimensions of removed material on the FDR specific to the interval extruded.

9. Aliquot sufficient volume/mass to support the laboratory analyses, commonly outlined in the Field Sampling Plan or instructions from the laboratory, and place into the sample container.

10. Label the sample container by fully completing labels and place clear tape over the sample label for protection. Write the sample ID on the lid of the sample container.

11. Place sample container in cooler or equivalent to maintain analytical requirements for sample preservation commonly outlined in the Field Sampling Plan or instructions from the laboratory.

12. Remove the extruding funnel from the top of the liner and decontaminate and reinstall before continuing.

13. Repeat steps 1 – 11 until the required intervals have been extruded.

14. Log the entire core, including the material that is not being collected for analysis. Record pertinent data on the FDR as the core is aliquoted and samples are collected in the sample containers.

Mass Extrusion

Mass extrusion of a sediment core involves pushing the material out of the liner tube into a tray using a mass extraction tool, like a plunger. The entire length of a collected sediment core is placed in a plastic tray, intervals extracted, and materials mixed and processed consistent with the interval extrusion method.

Prior to leaving the field station, ensure all required equipment for mass extraction is ready for use per the following:

1. Inspect the mass extraction tool for damage or wear. Ensure the plastic disk at the end of the rod is securely fastened.

2. Inspect the plastic tray for any cracks or sharp edges. Remove from use if damaged.

The following steps shall be followed when using the mass extrusion method is used to interval a core:

1. Lay the sediment core in the plastic tray with the top approximately 1 foot from the end of the tray.

2. Using the mass extraction tool, push the sediment core out of the liner and into the tray.

3. Take a photo of the sediment using a whiteboard to identify the station location, date and time of collection, project number and name. The view should include the ruler positioned to measure from the mudline.

4. Remove the material within the measured interval (e.g., 0.1 to 0.3 ft) placing sediment in into a stainless-steel bowl, or cleaned equivalent (e.g, ziplock bag). Classify the material as it is placed into the bowl and record on the FDR specific to the interval.

5. Homogenize the extruded interval in the bowl by manually mixing 50 strokes or greater if additional blending is necessary. If encountered, remove pieces of gravel or wood greater than 1 inch in any one direction and record the type and dimensions of removed material on the FDR specific to the interval extruded.

6. Aliquot sufficient volume/mass to support the laboratory analyses, commonly outlined in the Field Sampling Plan or instructions from the laboratory, and place into the sample container.

7. Label the sample container by fully completing labels and place clear tape over the sample label for protection. Write the sample ID on the lid of the sample container.

8. Place sample container in cooler or equivalent to maintain analytical requirements for sample preservation commonly outlined in the Field Sampling Plan or instructions from the laboratory.

9. Decontaminate bowls and mixing tools before continuing.

10. Repeat steps 4 to 9 until the required intervals have been removed.

11. Log the entire core, including the material that is not being collected for analysis. Record pertinent data on the FDR as the core is aliquoted and samples are collected in the sample containers.

HEALTH AND SAFETY

All field personnel must wear protective clothing and equipment as specified in the HASP.

SAMPLE CONTAINERS AND LABELING

Sample labeling will occur as prescribed in the Field Sampling Plan.

All samples will be stored temperature controlled as outlined in the Field Sampling Plan, Quality Assurance Project Plan, or analytical laboratory instructions.
Labeled sample containers may be stored in the field station and subsequently shipped to the analytical laboratory. Samples will be shipped under chain-of-custody, protected with suitable resilient packing material to reduce shock, vibration, and disturbance.

SITE CLEAN-UP

Excess sediment not included in the sample shall be returned into the waterbody from which it was collected.

Throw all used wipes and gloves into the trash bags and take with you to dispose of at the field office.

RECORD KEEPING AND QUALITY CONTROL

Each field crew will carry and complete at the time or work field data sheets, site diagrams, and sample labels. In addition, a field notebook shall be maintained by each individual or team that is collecting samples, as described in the QAPP. Each sample shall have an ID number affixed to the outside of the collection container. Deviations from the SOP shall be noted in the field notebook, as necessary.

Samples taken from waters with visible color abnormalities, foaming, unusual odor, iridescent film, or other indications of non-homogeneous conditions shall also be noted. Field personnel will collect the proper type and quantity of quality control samples as prescribed in the QAPP.

DECONTAMINATION

Because decontamination procedures are time consuming, having a quantity of pre-cleaned sampling tools available is recommended. All sampling equipment must be decontaminated prior to reuse as prescribed in the FSP and detailed in the QAPP SOP No. S-17, Decontamination of Field Equipment.

The general procedure for equipment decontamination is as follows:

1. Brush off any loose soil/sediment
2. Detergent Wash
3. River water rinse
4. Deionized water rinse
5. Air Dry

REFERENCES

Wood, 2020a. Field Sampling Plan; Penobscot River Phase III Engineering Study – Penobscot River, Maine. July 2016.

Wood, 2020b. Quality Assurance Project Plan; Penobscot River Phase III Engineering Study – Penobscot River, Maine. July 2016.

- END OF PROCEDURE -

APPENDIX D
LABORATORY ANALYTICAL RESULTS

APPENDIX D-1
SEDIMENT LARS

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

15 March 2021

Denise King
Wood - MA
271 Mill Road
Chelmsford, MA 01824

RE: Penobscot

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Patrick Garcia-Strickland
Business Unit Manager

eurofins Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	**Reported:**
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MMBKD-01_012521_SED_00-01	1A00115-01	Soil/Sediment	25-Jan-21 15:25	29-Jan-21 09:40
MMBKD-01_012521_SED_01-03	1A00115-02	Soil/Sediment	25-Jan-21 15:35	29-Jan-21 09:40
MMBKD-01_012521_SED_03-05	1A00115-03	Soil/Sediment	25-Jan-21 15:40	29-Jan-21 09:40
MMBKD-01_012521_SED_01-03_DUP	1A00115-04	Soil/Sediment	25-Jan-21 12:00	29-Jan-21 09:40
FRB-02_012621_SED_00-01	1A00115-05	Soil/Sediment	26-Jan-21 15:00	29-Jan-21 09:40
FRB-02_012621_SED_01-03	1A00115-06	Soil/Sediment	26-Jan-21 15:15	29-Jan-21 09:40
FRB-02_012621_SED_03-05	1A00115-07	Soil/Sediment	26-Jan-21 15:30	29-Jan-21 09:40
ES-13_012621_SED_00-01	1A00115-08	Soil/Sediment	26-Jan-21 18:45	29-Jan-21 09:40
ES-13_012621_SED_01-03	1A00115-10	Soil/Sediment	26-Jan-21 18:55	29-Jan-21 09:40
ES-13_012621_SED_03-05	1A00115-11	Soil/Sediment	26-Jan-21 19:05	29-Jan-21 09:40

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Business Unit Manager

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 29-Jan-21 09:40. The samples were received intact, on-ice within a sealed cooler at

Cooler	Temp C°
Default Cooler	-27.3

SAMPLE PREPARATION AND ANALYSIS

Total solids analysis was performed in accordance with method SM2540B. Total solids are prepared at the same time as the preparation for the analyte(s) of interest in order to provide the most accurate dry mass correction which may be outside of the method recommended holding time of 7 days from sample collection.

Total mercury preparation and analysis was performed by flow injection atomic fluorescence spectrometry (FI-AFS) in accordance with EPA 7474/1631B.

Samples were prepared and analyzed for methyl mercury by cold vapor gas chromatography atomic fluorescence spectrometry (CV-GC-AFS) in accordance with EPA 1630 (EFGS SOP2808).

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries. All of the relative percent differences fell within established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

eurofins | Frontier Global Sciences

Sample Receipt Checklist

Client: Wood

Date & Time Received: 1/28/21 8:00

Date Labeled: 1/29/21

Labeled By: R

Matrix: Sed

Received By: R

Label Verified By: MFS 1/29/21

# of Coolers Received: 1

Samples Arrived By: X Shipping Service ___ Courier ___ Hand ___ Other (Specify: ___)

Coolant: ☐ None/Ambient ☐ Loose Ice ☐ Gel Ice ☑ Dry Ice Coolant Required: Y / N Temp Blank Used: Y/N for Cooler(s): ___

Notify Project Manager if packages/coolers are received without coolant or with thawed coolant and at a temperature in excess of 6°C. PM notified: Y/N

Samples from Wisconsin have special requirements. Shipment received includes samples from Wisconsin: Y/N

Cooler Information:	Y/N/NA	Comments
The coolers do not appear to be tampered with:	Y	
Custody Seals are present and intact:	Y	
Custody seals signed:	Y	

TID: 60147815	CF: -0.3 °C	Date/time: 1/28/21 8:00	By: R
Cooler 1: -27 °C	w/ CF: -27.3 °C	Cooler 4: °C	w/ CF: °C
Cooler 2: °C	w/ CF: °C	Cooler 5: °C	w/ CF: °C
Cooler 3: °C	w/ CF: °C	Cooler 6: °C	w/ CF: °C

Chain of Custody:	Y/N/NA	Comments
Sample ID/Description:	Y	
Date and time of collection:	Y	
Sampled by:	N	
Preservation type:	NA	
Requested analyses:	Y	
Required signatures:	Y	
Internal COC required:	NA	

Sample Condition/Integrity:	Y/N/NA	Comments
Sample containers intact/present:	Y	
Sample labels are present and legible:	Y	
Sample ID on container/bag matches COC:	Y	
Correct sample containers used:	Y	
Samples received within holding times:	Y	
Sample volume sufficient for requested analyses:	Y	
Correct preservative used for requested analyses:	Y	

Anomalies/Non-conformances (attach additional pages if needed):

1A00115

wood.

Wood E&IS
511 Congress Street
Portland, ME 04101
(207) 828-3367

SHIP TO:
Eurofins WA
5755 8th St E
Tacoma, WA, 98424
Atten: P. Garcia-Strickland
Lab Phone# 206-351-9522

CHAIN OF CUSTODY

DATE: 1/28/2021
COC #:
PAGE: 1 OF 1

Project Name:	Penobscot River 2020	Project Contact:	Denise King	Bill To: Denise King, Wood E&IS	Disposal Instructions: LAB
Project Number:	3617207486.03.****	Phone Number:	508-789-1738	271 Mill Rd	Shipment Method: FED EX
Project Manager:	Rod Pendelton	Project Phase:	Sediment Monitoring	Chelmsford, MA 01824	Waybill Number: N/A

Sample Information / Methods for Analysis / RUSH

No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Total Hg 1631e	Total MeHg 1630	STANDARD - 21days	48 Hour	72 Hour	5 Days	TOTAL BOTTLES	HOLD All Analyses
1	MMBKD-01_012521_SED_00-01	01/25/2021, 1525	SED	N	N	X	X	X				1	
2	MMBKD-01_012521_SED_01-03	01/25/2021, 1535	SED	N	N	X	X	X				1	
3	MMBKD-01_012521_SED_03-05	01/25/2021, 1540	SED	N	N	X		X				1	
4	MMBKD-01_012521_SED_01-03_DUP	01/25/2021, 1200	SED	N	N	X	X	X				1	
5	FRB-02_012621_SED_00-01	01/26/2021, 1500	SED	N	N	X	X	X				1	
6	FRB-02_012621_SED_01-03	01/26/2021, 1515	SED	N	N	X	X	X				1	
7	FRB-02_012621_SED_03-05	01/26/2021, 1530	SED	N	Y	X		X				1	
8	ES-13_012621_SED_00-01	01/26/2021, 1845	SED	N	N	~~H~~	~~H~~	X				1	H
9	ES-13_012621_SED_01-03	01/26/2021, 1855	SED	N	N	~~H~~	~~H~~	X				1	H
10	ES-13_012621_SED_03-05	01/26/2021, 1905	SED	N	N	~~H~~		X				1	H
11													
12													

Take of hold and analyze 02/02/2021 DMK

TG TG

Sampler's Signature:	[signature]	Date: 01/28/21	Time: 0930
Relinquished By/Affiliation:	Tom Gerhard, Wood E&IS	Date: 01/28/21	Time: 0930
Received By:	FEDEX	Date: 01/28/21	Time: 0930
Relinquished By/Affiliation:		Date:	Time:
Received By:		Date:	Time:
Relinquished By/Affiliation:		Date:	Time:
Received By (LAB):		Date:	Time:

For Lab Use

Does COC match samples:	Y or N
Broken Container:	Y or N
COC seal intact:	Y or N
Other problems:	Y or N
WSDOT contacted:	Y or N
Date contacted:	
Cooler Temperature at receipt	°C

Comments:
X=Analyze H=Hold Analysis Request

PO # C012906205

Total and Methyl Hg Frozen until Shipment
Extra volume for MS/MSD

NUMBER OF COOLERS SENT: 1

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	**Reported:**
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

MMBKD-01_012521_SED_00-01

1A00115-01

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1630 Mod											
Methyl Mercury (as Mercury)	ND	1.9	14.9	ng/g dry	500	F102324	19-Feb-21	1C04009	03-Mar-21	EPA 1630 Mod	U
Sample Preparation: EPA 1631B											
Mercury	**360**	34.6	153	ng/g dry	100	F102335	19-Feb-21	1B25007	24-Feb-21	EPA 1631B	
Sample Preparation: SM 2540B											
% Solids	**25.0**	0.1	0.1	% by Weight	1	F103409	04-Mar-21		05-Mar-21	SM 2540B	O-04, O-09

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	**Reported:**
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

MMBKD-01_012521_SED_01-03

1A00115-02

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1630 Mod											
Methyl Mercury (as Mercury)	ND	1.2	9.5	ng/g dry	500	F102324	19-Feb-21	1C04009	03-Mar-21	EPA 1630 Mod	U
Sample Preparation: EPA 1631B											
Mercury	**149**	10.6	46.8	ng/g dry	50	F102335	19-Feb-21	1B25007	24-Feb-21	EPA 1631B	
Sample Preparation: SM 2540B											
% Solids	**41.1**	0.1	0.1	% by Weight	1	F103409	04-Mar-21		05-Mar-21	SM 2540B	O-04, O-09

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	**Reported:**
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

MMBKD-01_012521_SED_03-05

1A00115-03

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**28.7**	8.58	37.9	ng/g dry	50	F102335	19-Feb-21	1B25007	24-Feb-21	EPA 1631B	J
Sample Preparation: SM 2540B											
% Solids	**52.4**	0.1	0.1	% by Weight	1	F103409	04-Mar-21		05-Mar-21	SM 2540B	O-04, O-09

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	**Reported:**
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

MMBKD-01_012521_SED_01-03_DUP

1A00115-04

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1630 Mod											
Methyl Mercury (as Mercury)	ND	1.3	10.2	ng/g dry	500	F102324	19-Feb-21	1C04009	03-Mar-21	EPA 1630 Mod	U
Sample Preparation: EPA 1631B											
Mercury	**142**	11.5	50.6	ng/g dry	50	F102335	19-Feb-21	1B25007	24-Feb-21	EPA 1631B	
Sample Preparation: SM 2540B											
% Solids	**38.5**	0.1	0.1	% by Weight	1	F103409	04-Mar-21		05-Mar-21	SM 2540B	O-04, O-09

Eurofins Frontier Global Sciences
5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	**Reported:**
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

FRB-02_012621_SED_00-01

1A00115-05

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1630 Mod											
Methyl Mercury (as Mercury)	ND	1.0	7.8	ng/g dry	500	F102324	19-Feb-21	1C04009	03-Mar-21	EPA 1630 Mod	U
Sample Preparation: EPA 1631B											
Mercury	**8.94**	8.57	37.9	ng/g dry	50	F102335	19-Feb-21	1B25007	24-Feb-21	EPA 1631B	J
Sample Preparation: SM 2540B											
% Solids	**50.1**	0.1	0.1	% by Weight	1	F103409	04-Mar-21		05-Mar-21	SM 2540B	O-04, O-09

eurofins Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	Reported:
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

FRB-02_012621_SED_01-03

1A00115-06

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1630 Mod											
Methyl Mercury (as Mercury)	ND	0.9	7.4	ng/g dry	500	F102324	19-Feb-21	1C04009	03-Mar-21	EPA 1630 Mod	U
Sample Preparation: EPA 1631B											
Mercury	**16.9**	8.42	37.2	ng/g dry	50	F102335	19-Feb-21	1B25007	24-Feb-21	EPA 1631B	J
Sample Preparation: SM 2540B											
% Solids	**50.9**	0.1	0.1	% by Weight	1	F103409	04-Mar-21		05-Mar-21	SM 2540B	O-04, O-09

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Business Unit Manager

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	**Reported:**
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

FRB-02_012621_SED_03-05

1A00115-07

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**14.2**	7.78	34.4	ng/g dry	50	F102335	19-Feb-21	1B25007	24-Feb-21	EPA 1631B	J
Sample Preparation: SM 2540B											
% Solids	**54.9**	0.1	0.1	% by Weight	1	F103409	04-Mar-21		05-Mar-21	SM 2540B	O-04, O-09

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	Reported:
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

ES-13_012621_SED_00-01

1A00115-08

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1630 Mod											
Methyl Mercury (as Mercury)	**12.3**	1.2	9.8	ng/g dry	500	F102324	19-Feb-21	1C04009	03-Mar-21	EPA 1630 Mod	
Sample Preparation: EPA 1631B											
Mercury	**253**	11.1	49.1	ng/g dry	50	F102335	19-Feb-21	1B25007	24-Feb-21	EPA 1631B	
Sample Preparation: SM 2540B											
% Solids	**40.0**	0.1	0.1	% by Weight	1	F103412	05-Mar-21		08-Mar-21	SM 2540B	O-04, O-09

eurofins
Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	Reported:
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

ES-13_012621_SED_01-03

1A00115-10

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1630 Mod											
Methyl Mercury (as Mercury)	**8.6**	1.2	9.3	ng/g dry	500	F102324	19-Feb-21	1C04009	03-Mar-21	EPA 1630 Mod	J
Sample Preparation: EPA 1631B											
Mercury	**239**	10.8	47.8	ng/g dry	50	F102335	19-Feb-21	1B25007	24-Feb-21	EPA 1631B	
Sample Preparation: SM 2540B											
% Solids	**40.7**	0.1	0.1	% by Weight	1	F103409	04-Mar-21		05-Mar-21	SM 2540B	O-04, O-09

eurofins Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	Reported:
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

ES-13_012621_SED_03-05

1A00115-11

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**32.1**	6.23	27.5	ng/g dry	50	F102335	19-Feb-21	1B25007	24-Feb-21	EPA 1631B	
Sample Preparation: SM 2540B											
% Solids	**72.6**	0.1	0.1	% by Weight	1	F103409	04-Mar-21		05-Mar-21	SM 2540B	O-04, O-09

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	**Reported:**
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C04009 - F102324											
Cal Standard (1C04009-CAL1)					Prepared & Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	0.05	-		ng/L	0.050000		98.6				
Cal Standard (1C04009-CAL2)					Prepared & Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	0.2	-		ng/L	0.20000		106				
Cal Standard (1C04009-CAL3)					Prepared & Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	0.9	-		ng/L	1.0000		93.8				
Cal Standard (1C04009-CAL4)					Prepared & Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	2.0	-		ng/L	2.0000		99.1				
Cal Standard (1C04009-CAL5)					Prepared & Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	4.1	-		ng/L	4.0000		103				
Calibration Blank (1C04009-CCB1)					Prepared & Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	0.04	-		ng/L							
Calibration Blank (1C04009-CCB2)					Prepared & Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	0.03	-		ng/L							
Calibration Blank (1C04009-CCB3)					Prepared & Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	0.03	-		ng/L							
Calibration Check (1C04009-CCV1)					Prepared & Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	0.6	-		ng/L	0.50368		122	67-133			
Calibration Check (1C04009-CCV2)					Prepared & Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	0.6	-		ng/L	0.50368		115	67-133			

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Business Unit Manager

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	**Reported:**
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C04009 - F102324											
Calibration Check (1C04009-CCV3)					Prepared & Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	0.6	-		ng/L	0.50368		125	67-133			
Instrument Blank (1C04009-IBL1)					Prepared & Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	ND	0.001	0.008	ng/L							U
Initial Cal Blank (1C04009-ICB2)					Prepared & Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	0.03	-		ng/L							
Initial Cal Check (1C04009-ICV2)					Prepared & Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	0.6	-		ng/L	0.50368		111	69-131			
Initial Cal Check (1C04009-ICV3)					Prepared & Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	0.6	-		ng/L	0.50368		114	69-131			
Batch 1C05008 - F102324											
Cal Standard (1C05008-CAL1)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	0.05	-		ng/L	0.050000		93.1				
Cal Standard (1C05008-CAL2)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	0.2	-		ng/L	0.20000		94.2				
Cal Standard (1C05008-CAL3)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	0.9	-		ng/L	1.0000		91.8				
Cal Standard (1C05008-CAL4)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	2.1	-		ng/L	2.0000		103				

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	**Reported:**
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C05008 - F102324											
Cal Standard (1C05008-CAL5)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	4.7	-		ng/L	4.0000		118				
Calibration Blank (1C05008-CCB1)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	-0.005	-		ng/L							U
Calibration Blank (1C05008-CCB2)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	-0.008	-		ng/L							U
Calibration Blank (1C05008-CCB3)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	-0.004	-		ng/L							U
Calibration Blank (1C05008-CCB4)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	-0.002	-		ng/L							U
Calibration Blank (1C05008-CCB5)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	0.0007	-		ng/L							
Calibration Blank (1C05008-CCB6)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	-0.003	-		ng/L							U
Calibration Blank (1C05008-CCB7)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	-0.01	-		ng/L							U
Calibration Blank (1C05008-CCB8)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	-0.02	-		ng/L							U
Calibration Check (1C05008-CCV1)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	0.5	-		ng/L	0.50368		98.5	67-133			

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	Reported:
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C05008 - F102324											
Calibration Check (1C05008-CCV2)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	0.5	-		ng/L	0.50368		102	67-133			
Calibration Check (1C05008-CCV3)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	0.5	-		ng/L	0.50368		103	67-133			
Calibration Check (1C05008-CCV4)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	0.6	-		ng/L	0.50368		116	67-133			
Calibration Check (1C05008-CCV5)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	0.6	-		ng/L	0.50368		128	67-133			
Calibration Check (1C05008-CCV6)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	0.5	-		ng/L	0.50368		97.2	67-133			
Calibration Check (1C05008-CCV7)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	0.4	-		ng/L	0.50368		77.3	67-133			
Calibration Check (1C05008-CCV8)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	0.4	-		ng/L	0.50368		73.5	67-133			
Instrument Blank (1C05008-IBL1)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	ND	0.001	0.004	ng/L							U
Initial Cal Blank (1C05008-ICB1)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	0.01	-		ng/L							
Initial Cal Check (1C05008-ICV1)					Prepared & Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	0.5	-		ng/L	0.50368		109	69-131			

eurofins Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	**Reported:**
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F102324 - EFGS SOP2986 KOH/Methanol Digestion for Methyl Hg											
Blank (F102324-BLK1)					Prepared: 19-Feb-21 Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	3.2	0.5	4.0	ng/g wet							J
Blank (F102324-BLK2)					Prepared: 19-Feb-21 Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	1.6	0.5	4.0	ng/g wet							J
Blank (F102324-BLK3)					Prepared: 19-Feb-21 Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	1.6	0.5	4.0	ng/g wet							J
Blank (F102324-BLK4)					Prepared: 19-Feb-21 Analyzed: 04-Mar-21						
Methyl Mercury (as Mercury)	ND	0.5	2.0	ng/g wet							U
LCS (F102324-BS1)					Prepared: 19-Feb-21 Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	409.3	2.0	15.6	ng/g wet	355.00		115	50-150			
LCS Dup (F102324-BSD1)					Prepared: 19-Feb-21 Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	401.7	2.0	15.8	ng/g wet	355.00		113	50-150	1.87	35	
Matrix Spike (F102324-MS1)		**Source: 1B00035-01**			Prepared: 19-Feb-21 Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	435.0	2.4	18.7	ng/g wet	0.37467	458.1	-6170	50-150			QM-07
Matrix Spike (F102324-MS2)		**Source: 1B00083-02**			Prepared: 19-Feb-21 Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	1.7	1.0	7.6	ng/g wet	0.38037	ND	453	50-150			QM-07, J
Matrix Spike Dup (F102324-MSD1)		**Source: 1B00035-01**			Prepared: 19-Feb-21 Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	373.0	2.4	19.4	ng/g wet	0.38745	458.1	-22000	50-150	-112	35	QM-07
Matrix Spike Dup (F102324-MSD2)		**Source: 1B00083-02**			Prepared: 19-Feb-21 Analyzed: 03-Mar-21						
Methyl Mercury (as Mercury)	ND	1.0	7.6	ng/g wet	0.37750	ND		50-150		35	QM-07, U

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Business Unit Manager

eurofins
Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	Reported:
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1B25007 - F101423											
Cal Standard (1B25007-CAL1)					Prepared & Analyzed: 24-Feb-21						
Mercury	0.61	-		ng/L	0.50000		123				
Cal Standard (1B25007-CAL2)					Prepared & Analyzed: 24-Feb-21						
Mercury	1.05	-		ng/L	1.0000		105				
Cal Standard (1B25007-CAL3)					Prepared & Analyzed: 24-Feb-21						
Mercury	4.54	-		ng/L	5.0000		90.7				
Cal Standard (1B25007-CAL4)					Prepared & Analyzed: 24-Feb-21						
Mercury	18.08	-		ng/L	20.000		90.4				
Cal Standard (1B25007-CAL5)					Prepared & Analyzed: 24-Feb-21						
Mercury	36.46	-		ng/L	40.000		91.1				
Calibration Blank (1B25007-CCB1)					Prepared & Analyzed: 24-Feb-21						
Mercury	0.20	-		ng/L							
Calibration Blank (1B25007-CCB2)					Prepared & Analyzed: 24-Feb-21						
Mercury	0.25	-		ng/L							
Calibration Blank (1B25007-CCB3)					Prepared & Analyzed: 24-Feb-21						
Mercury	0.03	-		ng/L							
Calibration Blank (1B25007-CCB4)					Prepared & Analyzed: 24-Feb-21						
Mercury	0.002	-		ng/L							
Calibration Blank (1B25007-CCB5)					Prepared & Analyzed: 24-Feb-21						
Mercury	0.009	-		ng/L							

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	**Reported:**
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1B25007 - F101423											
Calibration Blank (1B25007-CCB6)					Prepared & Analyzed: 24-Feb-21						
Mercury	0.19	-		ng/L							
Calibration Blank (1B25007-CCB7)					Prepared & Analyzed: 24-Feb-21						
Mercury	-0.05	-		ng/L							U
Calibration Check (1B25007-CCV1)					Prepared & Analyzed: 24-Feb-21						
Mercury	4.41	-		ng/L	4.9950		88.3	77-123			
Calibration Check (1B25007-CCV2)					Prepared & Analyzed: 24-Feb-21						
Mercury	4.47	-		ng/L	4.9950		89.4	77-123			
Calibration Check (1B25007-CCV3)					Prepared & Analyzed: 24-Feb-21						
Mercury	4.27	-		ng/L	4.9950		85.6	77-123			
Calibration Check (1B25007-CCV4)					Prepared & Analyzed: 24-Feb-21						
Mercury	4.15	-		ng/L	4.9950		83.1	77-123			
Calibration Check (1B25007-CCV5)					Prepared & Analyzed: 24-Feb-21						
Mercury	4.12	-		ng/L	4.9950		82.4	77-123			
Calibration Check (1B25007-CCV6)					Prepared & Analyzed: 24-Feb-21						
Mercury	3.90	-		ng/L	4.9950		78.0	77-123			
Calibration Check (1B25007-CCV7)					Prepared & Analyzed: 24-Feb-21						
Mercury	4.03	-		ng/L	4.9950		80.7	77-123			
Instrument Blank (1B25007-IBL1)					Prepared & Analyzed: 24-Feb-21						
Mercury	ND	0.09	0.40	ng/L							U

eurofins
Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	**Reported:**
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1B25007 - F101423											
Instrument Blank (1B25007-IBL2)					Prepared & Analyzed: 24-Feb-21						
Mercury	ND	0.09	0.40	ng/L							U
Instrument Blank (1B25007-IBL3)					Prepared & Analyzed: 24-Feb-21						
Mercury	ND	0.09	0.40	ng/L							U
Initial Cal Blank (1B25007-ICB1)					Prepared & Analyzed: 24-Feb-21						
Mercury	0.24	-		ng/L							
Initial Cal Check (1B25007-ICV1)					Prepared & Analyzed: 24-Feb-21						
Mercury	4.80	-		ng/L	4.9950		96.2	79-121			
Batch F102335 - EFGS SOP14801 EPA 7474 Preparation											
Blank (F102335-BLK1)					Prepared: 19-Feb-21 Analyzed: 24-Feb-21						
Mercury	1.75	0.91	4.00	ng/g wet							J
Blank (F102335-BLK2)					Prepared: 19-Feb-21 Analyzed: 24-Feb-21						
Mercury	1.08	0.91	4.00	ng/g wet							J
Blank (F102335-BLK3)					Prepared: 19-Feb-21 Analyzed: 24-Feb-21						
Mercury	0.98	0.91	4.00	ng/g wet							J
LCS (F102335-BS1)					Prepared: 19-Feb-21 Analyzed: 24-Feb-21						
Mercury	33.82	1.81	8.00	ng/g wet	39.960		84.6	75-125			
LCS Dup (F102335-BSD1)					Prepared: 19-Feb-21 Analyzed: 24-Feb-21						
Mercury	37.23	1.81	8.00	ng/g wet	39.960		93.2	75-125	9.58	24	

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	**Reported:**
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F102335 - EFGS SOP14801 EPA 7474 Preparation											
Matrix Spike (F102335-MS1)		**Source: 1A00115-01**		Prepared: 19-Feb-21 Analyzed: 24-Feb-21							
Mercury	2372	144	636	ng/g dry	1986.9	359.5	101	71-125			
Matrix Spike Dup (F102335-MSD1)		**Source: 1A00115-01**		Prepared: 19-Feb-21 Analyzed: 24-Feb-21							
Mercury	2070	143	630	ng/g dry	1968.9	359.5	86.9	71-125	15.3	24	

eurofins Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F103409 - EFGS SOP5133 Solids Analysis											
Duplicate (F103409-DUP1)		**Source: 1A00115-06**			Prepared: 04-Mar-21 Analyzed: 05-Mar-21						
% Solids	51.5	0.1	0.1	% by Weight		50.9			1.17	10	
Duplicate (F103409-DUP2)		**Source: 1B00120-01**			Prepared: 04-Mar-21 Analyzed: 05-Mar-21						
% Solids	81.9	0.1	0.1	% by Weight		82.1			0.244	10	
Batch F103412 - EFGS SOP5133 Solids Analysis											
Duplicate (F103412-DUP1)		**Source: 1A00115-08**			Prepared: 05-Mar-21 Analyzed: 08-Mar-21						
% Solids	41.5	0.1	0.1	% by Weight		40.0			3.68	10	

eurofins Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: Penobscot Sediments Hg	**Reported:**
Chelmsford MA, 01824	Project Manager: Denise King	15-Mar-21 11:14

Notes and Definitions

U	Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample.
QM-07	The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
O-09	Total Solids are prepared at the same time as the preparation for the analyte(s) of interest in order to provide the most accurate dry mass correction.
O-04	This sample was analyzed outside of the recommended holding time.
J	The result is an estimated concentration.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the method detection limit if reported to the MDL or above the reporting limit if reported to the MRL.
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

ANALYSIS SEQUENCE

1B25007

1B25008
Attached

Instrument: Hg2600-3

Calibration ID: UNASSIGNED

Analyzed: 2/24/2021

Lab Number	Analysis	Order	STD ID	ISTD ID	Comments
1B25007-IBL1	QC	1			
1B25007-IBL2	QC	2			
1B25007-IBL3	QC	3			
1B25007-CAL1	QC	4	2100111		QUALITY ASSURANCE
1B25007-CAL2	QC	5	2100112		PEER REVIEWED
1B25007-CAL3	QC	6	2100344		
1B25007-CAL4	QC	7	2100345		INITIALS: DGS
1B25007-CAL5	QC	8	2100346		
1B25007-ICV1	QC	9	2002777		
1B25007-ICB1	QC	10			
F102335-BS1	QC	11			
F102335-BSD1	QC	12			
F102335-BLK1	QC	13			
F102335-BLK2	QC	14			
F102335-BLK3	QC	15			
1A00115-01	Hg-CVAFS-S-7474	16			
1B25007-CCV1	QC	17	2002777		
1B25007-CCB1	QC	18			
F102335-MS1	QC	19			
F102335-MSD1	QC	20			
1A00115-02	Hg-CVAFS-S-7474	21			
1A00115-03	Hg-CVAFS-S-7474	22			
1A00115-04	Hg-CVAFS-S-7474	23			
1A00115-05	Hg-CVAFS-S-7474	24			
1A00115-06	Hg-CVAFS-S-7474	25			
1A00115-07	Hg-CVAFS-S-7474	26			
1A00115-08	Hg-CVAFS-S-7474	27			
1A00115-10	Hg-CVAFS-S-7474	28			
1B25007-CCV2	QC	29	2002777		
1B25007-CCB2	QC	30			
1A00115-11	Hg-CVAFS-S-7474	31			
F102333-BS1	QC	32			
F102333-BSD1	QC	33			
F102333-BLK1	QC	34			
F102333-BLK2	QC	35			
F102333-BLK3	QC	36			

ANALYSIS SEQUENCE

1B25007

Instrument: Hg2600-3

Calibration ID: UNASSIGNED **Analyzed: 2/24/2021**

Lab Number	Analysis	Order	STD ID	ISTD ID	Comments
1A00104-01	Hg-CVAFS-S-AR	37			
1A00105-01	Hg-CVAFS-S-AR	38			
1B00048-01	Hg-CVAFS-S-AR	39			
F102333-MS1	QC	40			
1B25007-CCV3	QC	41	2002777		
1B25007-CCB3	QC	42			
F102333-MSD1	QC	43			
1B25007-CCV4	QC	44	2002777		
1B25007-CCB4	QC	45			
1B25007-CCV5	QC	46	2002777		
1B25007-CCB5	QC	47			
1A00105-01RE1	Hg-CVAFS-S-AR	48			Added 2/25/2021 by MV2
1B00048-01RE1	Hg-CVAFS-S-AR	49			Added 2/25/2021 by MV2
1A00021-02RE1	Hg-CVAFS-S-SSE-F4	50			Added 2/19/2021 by MV2
1B25007-CCV6	QC	51	2002777		
1B25007-CCB6	QC	52			
1A00021-03RE1	Hg-CVAFS-S-SSE-F4	53			Added 2/19/2021 by MV2
1A00021-04RE1	Hg-CVAFS-S-SSE-F4	54			Added 2/19/2021 by MV2
1A00021-05RE1	Hg-CVAFS-S-SSE-F4	55			Added 2/19/2021 by MV2
1A00021-06RE1	Hg-CVAFS-S-SSE-F4	56			Added 2/19/2021 by MV2
1A00021-07RE1	Hg-CVAFS-S-SSE-F4	57			Added 2/19/2021 by MV2
1A00021-08RE1	Hg-CVAFS-S-SSE-F4	58			Added 2/19/2021 by MV2
1A00021-09RE1	Hg-CVAFS-S-SSE-F4	59			Added 2/19/2021 by MV2
1A00021-10RE1	Hg-CVAFS-S-SSE-F4	60			Added 2/19/2021 by MV2
1A00021-11RE1	Hg-CVAFS-S-SSE-F4	61			Added 2/19/2021 by MV2
1A00021-12RE1	Hg-CVAFS-S-SSE-F4	62			Added 2/19/2021 by MV2
1B25007-CCV7	QC	63	2002777		
1B25007-CCB7	QC	64			
1A00021-13RE1	Hg-CVAFS-S-SSE-F4	65			Added 2/19/2021 by MV2
1B25007-CCV8	QC	66	2002777		
1B25007-CCB8	QC	67			

2/25/21

Samples Loaded By Date

2/25/21

Data Processed By Date

Analyst:	AH/MV2(DE)	**Sequence(s) #:**	1B25007
Reviewer:		**Dataset ID(s):**	THg26003-210224-2
Date:	2/25/2021	**WO (s) #:**	Multiple
Batch #(s):	F102335, F101423, F10233		

• **Select the correct preparation method.**

	Analyte	Prep Method		Matrix
☐	THg	EFAFS-T-AFS-SOP2985	FSTM Trap 70:30 Digest	Air/Gas
☐	THg	EFAFS-T-AFS-SOP2807	Modified Cold Aqua Regia	Sed/Soil
☐	THg	EFAFS-T-AFS-SOP2821	Shared Bomb-HF/HNO3/HCl Digest	Sed/Soil
☐	THg	EFTM-T-TM-SOP2825	Nitric Acid Oven Bomb	Sed/Soil
☑	THg	EFAFS-T-AFS-SOP2795	70:30 Digest	~~Tissue~~ Sediment MM2DTb,
☐	THg	EFAFS-T-AFS-SOP2800	KCl Trap BrCl Oxidation	Air/Gas
☐	THg	EFTM-T-TM-SOP2837	Shared Nitric	Tissue
☐	THg	EFSR-P-SP-SOP2796	BrCl Oxidation	Water
☐	Hg0	NA	NA	Water
☑	Inorg Hg	SSE NA	NA	Water

Analyst Initials: Tn　　**Reviewer Initials** PGC

	YES	NO	N/A	
1. Compare SampleID with Benchsheet/Sequence/Raw Data (Have all samples been imported?)	☑ YES	☐ NO		☐
2. Check for transcription errors from Excel spreadsheet (or Prep Benchsheet)/Raw data	☑ YES	☐ NO		☐
(a) On raw data (instrument print-out), does correct file (dataset ID#) name appear in description? Naming convention: THg26001-yymmdd-1 or THg26002-yymmdd-1	☑ YES	☐ NO		☐
(b) Check 5% of transcription from Instrument print-out and Excel file. Compare the "Dilute" and "Peak (raw)" columns to "Dilution" and "Uncorrected Result" in Excel	☑ YES	☐ NO		☐
(c) Check standards & reagents in sequence & bench sheet for correct usage (expiries).	☑ YES	☐ NO	☐ N/A	☐
(d) Check and compare masses (review prep benchsheet)	☑ YES	☐ NO	☐ N/A	☐
(e) Check & compare initial & final volumes	☐ YES	☐ NO	☑ N/A	☐
(f) Do aliquots and dilutions written on benchsheet match those in Excel? 50 ml / aliquot = Excel dilution value	☑ YES	☐ NO	☐ N/A	☐
(g) Is the sequence #, analyst, date, and instrument # on the QC page?	☑ YES	☐ NO		☐
(h) Is the analysis status correct? (analyzed/initial review/reviewed)	☑ YES	☐ NO		☐
(i) Original prep bench sheet added to data package?	☑ YES	☐ NO		☐
(j) Benchsheet prep date MUST match actual prep date (check if re-shot vs re-extract)	☑ YES	☐ NO		☐
3. High QA? WO#(s)/Client(s):	☐ YES	☑ NO		☐
4. Client specific QC? (if Yes, refer to Project Notes/LIMS)	☑ YES	☐ NO		☐
(a) Have the QC requirements been met for all WO#s?	☑ YES	☐ NO		
(b) Prep blanks corrections/assigned properly	☑ YES	☐ NO		☐
5a. 20 or fewer samples in batch?	☑ YES	☐ NO		☐
(i) 3 PBs, 1 LCS(or BS), 1 LCSD(or BSD), 1 DUP/Batch 1 MS/MSD (or AS/ASD)/10 samples?	☑ YES	☐ NO		☐
(ii) 1 CCV and 1 CCB every 10 analytical runs?	☑ YES	☐ NO		☐

Peer Review Check List for THg by 2600 CV-AFS (SOP2822) 2016 Rev 1 (04/1/2016)

Analyst:	AH/MV2(DE)	**Sequence(s) #:**	1B25007
Reviewer:		**Dataset ID(s):**	THg26003-210224-2
Date:	2/25/2021	**WO (s) #:**	Multiple
Batch #(s):	F102335, F101423, F10233		

Analyst Initials ______ **Reviewer Initials** PGS

5b. Has the B/C section data been uploaded? ☐ YES ☐ NO ☑ N/A ☐

QA/QC Data Checked

6. RSD CF (≤ 15%) ☑ PASS ☐ FAIL ☐
   Comments:
7. The calibration curve included a minimum of 5 Standards ☑ YES ☐ NO ☐
   Comments:
8. 1st Calibration Standard % Recoveries EPA 1631E (75-125%) ☐ PASS ☐ FAIL ☐
9. ICV and CCV % Recoveries EPA 1631E (77-123%) ☑ PASS ☐ FAIL ☐
   Comments:
10. Do all calibration points pass acceptance criteria? ☑ YES ☐ NO ☐
    Comments:
11. Are qualifiers consistant with the data review flowcharts? ☐ YES ☐ NO ☑ N/A ☐
    Comments:
12. Explain any items on the failed data report from Element ☐
    Comments:
13. Are the individual Preparation Blanks < PQL or <2.2xMDL for WI (refer to appropriate prep method PQL list) ☑ PASS ☐ FAIL ☐
    (a) If not < PQL or <2.2xMDL for WI, note which PB(s) are above control limit:
    (b) Is the mean PB < PQL or <2.2xMDL for WI (for appropriate qualification)? ☑ YES ☐ NO ☐
    (c) Was a BrCl Blank analyzed for each preservation level? ☐ YES ☐ NO ☐ N/A ☐
    (d) Are Preparation Blanks summarized on QC page? ☑ YES ☐ NO ☐
14. Filtration Blank Prepared (if yes, use FB qualifier) ☐ YES ☑ NO ☐
    (a) Filtration Blank prep date same as associated samples' prep date ☐ YES ☐ NO ☑ N/A ☐
    (b) Filtration Blank absolute value < PQL or <2.2xMDL for WI ☐ YES ☐ NO ☑ N/A ☐
15. IBLs (3 minimum) individually < 0.50 ng/L, mean < 0.25 ng/L and STD of 0.10 ng/L? ☑ PASS ☐ FAIL ☐
    Comments:
16. CCBs individually < 0.50 ng/L or 2.2 x MDL for WI? ☑ PASS ☐ FAIL ☐
    Comments:
17. Have Total Solids been applied? (If NO, please ensure that they are done or nearly done) ☐ YES ☐ NO ☑ N/A ☐
18. Is the correct 'Source' designated for MD/MS/MSD? ☑ YES ☐ NO ☐
19. For digested preps: was there a spike witness signature & date on the prep bench sheet? ☑ YES ☐ NO ☐ N/A ☐

Peer Review Check List for THg by 2600 CV-AFS (SOP2822) 2016 Rev 1 (04/1/2016)

Analyst:	AH/MV2(DE)	**Sequence(s) #:**	1B25007
Reviewer:		**Dataset ID(s):**	THg26003-210224-2
Date:	2/25/2021	**WO (s) #:**	Multiple
Batch #(s):	F102335, F101423, F10233		

Analyst Initials ___ **Reviewer Initials** PGS

20. MS/MSD Spiked at least 1-5 X ambient or 5x MRL (whichever is higher) ? ☑ YES ☐ NO ☐
Comments:

21. Are all samples within instrument calibration range? (or at minimum dilution size) ☑ PASS ☐ FAIL ☐
Comments:

22. Are the samples run at the correct dilution level for the method? ☑ YES ☐ NO
Comments:

23. Dissolved < Total (if applicable) ☐ YES ☐ NO ☑ N/A ☐
Comments:

24. Effluent < Influent (visually confirm if needed) ☐ YES ☐ NO ☑ N/A ☐
Comments:

25. Are re-runs noted with reason? ☑ YES ☐ NO ☐ N/A ☐
Comments:

26. FSTM Datasets: Check to ensure the 'Response' & 'Initial Result' columns match in both the Excel dataset & LIMS for the FSTM A (in sequence) & B/C (in batch) traps? ☐ YES ☐ NO ☑ N/A ☐
Comments:

27. Is the B trap <5% A Traps ☐ YES ☐ NO ☑ N/A ☐
Comments:

28. Are spiked trap recoveries75-125% of true value? ☐ YES ☐ NO ☑ N/A ☐
Comments:

29.Have non-reportable samples been imported into LIMS and clicked to non-reportable? ☑ YES ☐ NO ☐ N/A
Comments:

30. Have re-extracts been created for non-reportable samples? ☑ YES ☐ NO ☐ N/A ☐

31. Are there any HIGH QA projects within the data? If so, place data package in QA office before scanning. ☐ YES ☐ NO ☑ N/A ☐

32. Does the data set need scanning? ☐ YES ☑ N/A ☐

33. Does the dataset have an LOQ/LOQ or DOC? ☐ YES ☑ N/A ☐

34. Water samples: has the preservation log been included in dataset for final volume verification? ☐ YES ☐ NO ☑ N/A ☐

35. Water samples-is the final volume correct in the sequence? ☐ YES ☐ NO ☑ N/A ☐

Files located at: \\Cuprum\gen_admin\Quality Assurance\Training Master\DOCs

36. Date of analyst IDOC/CDOC: 2/17/21 IDOC/CDOC within last 12 months? ☑ YES ☐ NO ☐

37. Date of analyst's SOP reading for method: ______ Current SOP revision read? ☐ YES ☐ NO ☐

38. Date of LOD: LOD within last 3 months? ☐ YES ☐ NO ☐

39. Date of LOQ: LOQ within last 3 months? ☐ YES ☐ NO ☐

Data can not be reported without a current IDOC/CDOC, LOD or LOQ.

Analyst:	AH/MV2(DE)	**Sequence(s) #:**	1B25007
Reviewer:		**Dataset ID(s):**	THg26003-210224-2
Date:	2/25/2021	**WO (s) #:**	Multiple
Batch #(s):	F102335, F101423, F10233		

40. Peer Reviewer's comments (use Peer Review Checklist Additional Comments form if necessary):

Additional Page (s)? ☐ YES

Failing Data Report - 1B25007

Sample ID	Analysis	Result	MRL	Dup Result	Source Result	True Value	Units	% Rec.	Rec. LCL	Rec. UCL	RPD	RPD Limit	Over Cal	Failure	Qualifier
F102335-BS1	Hg-CVAFS-S-7474	33.82	8.00			79.920	ng/g	42.3	75.00	125.00			PASS-OVER	FAIL-BS	QR-06
F102335-BSD1	Hg-CVAFS-S-7474	37.23	8.00	33.82125		79.920	ng/g	46.6	75.00	125.00	9.58	24.00	PASS-OVER	FAIL-BSD (Rec.)	QR-06
F102335-MS1	Hg-CVAFS-S-7474	593.0	159		89.88578	993.44	ng/g	50.6	71.00	125.00			PASS-OVER	FAIL-MS	
F102335-MSD1	Hg-CVAFS-S-7474	517.5	158	592.9647	89.88578	984.45	ng/g	43.4	71.00	125.00	15.3	24.00	PASS-OVER	FAIL-MSD (Rec.)	
1B25007-CCV8	Hg-CVAFS-S-7474	3.54	2.000			4.9950	ng/L	70.8	77.00	123.00			PASS-OVER	FAIL-CCV	
1A00105-01	Hg-CVAFS-S-AR	19800	247				ng/g						FAIL-OVER	PASS	
1B25007-CCV8	Hg-CVAFS-S-AR	3.54	1.250			4.9950	ng/L	70.8	77.00	123.00			PASS-OVER	FAIL-CCV	
1B25007-CCV8	Hg-CVAFS-S-AR DOD	3.54	1.250			4.9950	ng/L	70.8	77.00	123.00			PASS-OVER	FAIL-CCV	
1B25007-CCV8	Hg-CVAFS-S-SSE-F4	3.54	2.496			4.9950	ng/L	70.8	75.00	125.00			PASS-OVER	FAIL-CCV	

Analyst Reviewed By Date

Peer Reviewed By Date

PREPARATION BENCH SHEET

F102335

Eurofins Frontier Global Sciences, LLC

Matrix: Soil/Sediment **Prepared using: Trace Metals - EFGS SOP14801 EPA 7474 Preparation** **Prepared: 2/19/2021**

Lab Number	Sample ID and Source Sample	Initial (g)	Final (mL)	Spike1 ID	µl Spike1	Spike2 ID	µl Spike2	Extraction Comments
F102335-BLK1	**Blank**	0.5	200					
F102335-BLK2	**Blank**	0.5	200					
F102335-BLK3	**Blank**	0.5	200					
F102335-BS1	**LCS**	0.5	200	2002758	20			
F102335-BSD1	LCS Dup	0.5	200	2002758	20			
F102335-MS1	Matrix Spike [1A00115-01]	0.5033	200	2002756	25			
F102335-MSD1	Matrix Spike Dup [1A00115-01]	0.5079	200	2002756	25			

Standard ID(s):	Description:	Expiration:
2002756	THg 10,000ng/mL Primary Spiking Standard	04-May-21 00:00
2002758	THg 1,000ng/mL Secondary Spiking Standard	04-May-21 00:00

Reagent ID(s):	Description:	Expiration:
2002416	Fisher Nitric Acid, Tracemetal Grade	04-May-22 00:00
2100331	TraceMetal Grade Hydrochloric Acid	17-Jun-23 00:00
2100365	7474 Potassium Bromate/Bromide Reagent	26-Feb-21 00:00

PREPARATION BENCH SHEET

F102335

Eurofins Frontier Global Sciences, LLC

Matrix: Soil/Sediment **Prepared using: Trace Metals - EFGS SOP14801 EPA 7474 Preparation** **Prepared: 2/19/2021**

Lab Number	Sample ID	Initial (g)	Final (mL)	QC Sample	Sample Specs.	Location	Sample Comments	Analysis Comments
1A00115-01	MMBKD-01_012521_SED_00-01	0.5227	200	-	-	010203		
1A00115-02	MMBKD-01_012521_SED_01-03	0.5201	200	-	-	010203		
1A00115-03	MMBKD-01_012521_SED_03-05	0.5035	200	-	-	010203		
1A00115-04	MMBKD-01_012521_SED_01-03_DUP	0.5129	200	-	-	010203		
1A00115-05	FRB-02_012621_SED_00-01	0.5271	200	-	-	010203		
1A00115-06	FRB-02_012621_SED_01-03	0.5282	200	-	-	010203		
1A00115-07	FRB-02_012621_SED_03-05	0.5298	200	-	-	010203		
1A00115-08	ES-13_012621_SED_00-01	0.5094	200	-	-	010203		
1A00115-10	ES-13_012621_SED_01-03	0.5137	200	-	-	010203		
1A00115-11	ES-13_012621_SED_03-05	0.5001	200	-	-	010203		

[redacted]

Sample Preparation Review Checklist

Revision: 4
Effective: Dec. 11, 2017

Technician/Date: MV2 2/19/2021 Samples to lab: 0930 0:00 2/19/21 Batch #: F102333
Upload/Date: MV2 2/19/21 Reviewer/Date: VAL 2-24-21

		EFGS Preparation Method		
☐	SOP2836	Oven Digestion (Total Recoverable Metals)	☐ ICPMS	☐ AFS
☐	SOP2837	Tissue Nitric Digestion	☐ ICPMS	☐ CVAFS
☐	SOP2840	Modified Aqua Regia		
☐	SOP2820	RP		
☐	SOP2821	HF Bomb Digestion	☐ ICPMS	☐ CVAFS
☐	SOP2825	Nitric Bomb Digestion	☐ ICPMS	☐ CVAFS
☐	SOP2993	Oven Digestion (As , Se Speciation)		
☐	SOP5145	Microwave Digestion (Nutraceuticals)		
☐	SOP5145	Microwave Digestion (3051)		
☑	NA	Other: Sop 2807 Cold AR		

Initials	SOP Date	DOC Date
mv	2/11/21	10-5-2020

Comments:

Conditionally formatted training files located at:
\\us34fila\General and Admin\Quality Assurance\Training\Training Master
(Contact QA for any problems regarding these training files.)

Analytes: Hg

Reviewer Initials: VAL — Tertiary Review

Item					Reviewer	Tertiary
1. Is any SOP/DOC expiring within one week of Submission Date?		☐ YES		☑ NO	☑	☐
Data cannot be reported without a current IDOC/CDOC.	**If YES, notify supervisor and technician immediately.**					
2. Check prep method		☑ YES			☑	☐
(a) For Ceuticals: Is correct Hg code being used in LIMS?	☐ ICPMS	☐ CV-AFS	☐ 70:30	☑ N/A	☑	☐
3. Compare sample ID & container ID with benchsheet & in LIMS		☑ YES		☐ N/A	☑	☐
4. Check for transcription errors from benchsheet		☑ YES			☑	☐
(a) Check and compare initial and final volumes		☑ YES		☐ N/A	☑	☐
(b) Check and compare mass		☑ YES		☐ N/A	☑	☐
(c) Has the number of pills been documented (Special Info 5 in benchsheet)?		☐ YES		☑ N/A	☑	☐
(d) Have assay logbook copies been attached & avg masses entered?		☐ YES		☑ N/A	☑	☐
(e) For re-digests, have e-mails been attached and verified?		☐ YES		☑ N/A	☑	☐
(f) Benchsheet prep date MUST match actual prep date		☑ YES			☑	☐
5. Samples per Batch? **Check QC Requirements**	☑ ≤ 20 (mv 2/19/21)	☑ ≤ 10			☑	☐
(a) PBs per batch?	☑ 3 PBs	☐ 2 PBs	☐ 1 PBs		☑	☐
(b) Are pre and post homogenization blanks in batch?		☐ YES		☑ N/A	☑	☐
(c) BS, BS/BSD or CRM in batch?	☐ BS	☑ BS/BSD	☐ CRM		☑	☐
(d) MS/MSD in batch?		☑ YES		☐ N/A	☑	☐
(e) MD in batch?		☐ YES		☑ N/A	☑	☐
(f) Is there at least one duplicate QC source in batch?		☑ YES		☐ N/A	☑	☐
(g) Are there any client specific requests, QC requests, etc?		☐ YES		☑ N/A	☑	☐
Document:						
(h) Correct LIMS spike ID included for BS, BS/BSD and/or MS/MSD?		☑ YES		☐ N/A	☑	☐
(i) Correct 'source' designated for MD/MS/MSD?		☑ YES		☐ N/A	☑	☐
(j) For EFGS-filtered samples, was a filtration blank included ?		☐ YES		☑ N/A	☑	☐
6. Special prep requirements?		☐ YES		☑ N/A	☑	☐
(a) For 1638: Have samples sat for 48 hours after preservation?		☐ YES		☑ N/A	☑	☐
(b) For 200.8: Have samples sat for 16 hours after preservation?		☐ YES		☑ N/A	☑	☐
(c) For DOD have pipettes been calibrated day of prep?		☐ YES		☑ N/A	☑	☐
7. Are the samples appropriately spiked?		☑ YES		☐ N/A	☑	☐
(a) Is the spike and amount used appropriate and entered into LIMS?		☑ YES		☐ N/A	☑	☐
(b) For all spiking was there a witness? (Initials must be in logbook)		☑ YES		☐ N/A	☑	☐
(c) Spikes added:		☑ YES			☑	☐

NOTE: Due to LIMS software constraints, new LIMS IDs need to be created when multiple/ supplemental spikes are used. Enter new LIMS ID below and use table to list all spikes included in it.

Spike LIMS ID :

Spike Name	LIMS ID	µL	Spike Name	LIMS ID	µL
2nd ss Hg	2100109	20			
Hg 1000ng/mL	2002758	100			
	mv 2/19/21			2/19/21	

PREPARATION BENCH SHEET

F102333

Eurofins Frontier Global Sciences, LLC

Matrix: Soil/Sediment **Prepared using: Trace Metals - EFGS SOP2807 Cold Aqua Regia Digestion for Hg** **Prepared: 2/18/2021**

Lab Number	Sample ID and Source Sample	Initial (g)	Final (mL)	Spike1 ID	µl Spike1	Spike2 ID	µl Spike2	Extraction Comments
F102333-BLK1	Blank	0.5	20					
F102333-BLK2	Blank	0.5	20					
F102333-BLK3	Blank	0.5	20					
F102333-BS1	LCS	0.5	20	2100109	20			
F102333-BSD1	LCS Dup	0.5	20	2100109	20			
F102333-MS1	Matrix Spike [1B00048-01]	0.2567	20	2002758	100			
F102333-MSD1	Matrix Spike Dup [1B00048-01]	0.2634	20	2002758	100			

Standard ID(s):	Description:	Expiration:
2002758	THg 1,000ng/mL Secondary Spiking Standard	04-May-21 00:00
2100109	THg 100ng/mL Primary Spiking Standard	12-Apr-21 00:00

Reagent ID(s):	Description:	Expiration:
2002416	Fisher Nitric Acid, Tracemetal Grade	04-May-22 00:00
2003665	Boiling Chips for Trace Metals	29-Jun-21 00:00
2100331	TraceMetal Grade Hydrochloric Acid	17-Jun-23 00:00
2100342	5% BrCl	06-Jul-21 00:00

PREPARATION BENCH SHEET

F102333

Eurofins Frontier Global Sciences, LLC

Matrix: Soil/Sediment **Prepared using: Trace Metals - EFGS SOP2807 Cold Aqua Regia Digestion for Hg** **Prepared: 2/18/2021**

Lab Number	Sample ID	Initial (g)	Final (mL)	Location	Sample Comments	Analysis Comments
1A00104-01	Soil/Hazardous Waste PT study	0.2539	20	S&R		EDD Required
1A00105-01	Metals in Soil (cat#620)	0.2526	20	S&R		EDD Required
1B00048-01	LS-350-01142021	0.2564	20	010102	no	

[redacted]

Technician: MW **Batch#:** F102333 **Batch Color ID:** Black **Date:** 2/18/21

- [ ] **EFAFS-T-AFS-SOP2986** Tissues - Methyl Mercury - KOH/Methanol: **Hot plate 75±5°C for 2-4 hours.**
- [ ] **EFAFS-T-AFS-SOP2795** Tissues - Total Mercury - 70:30: **Hot plate 75±5°C for two hours.**
- [ ] **EFAFS-T-AFS-SOP5134** Sediments - Methyl Mercury - KBr/CH_2Cl_2: **Heat Block 45°C (nitrogen purge for 30 minutes).**
- [x] **EFAFS-T-AFS-SOP2807** Solids - Total Mercury - Cold AR: **18-25°C for over four hours.**

Other: ______ **Vial Type:** [x] Glass [ ] Teflon
Balance#: 23 Calibrated? [x] Yes [ ] No **Therm.#:** ______ Calibrated? [ ] Yes [ ] No
***Time in:** 1649 2/18/21 **Actual Temp. (raw):** ______ **°C w/ CF:** ______ °C *Time in can't begin before target temperature is reached
Time out: 0924 2/19/21 **Actual Temp. (raw):** ______ **°C w/ CF:** ______ °C MW 2/18/2

Final vol.: 20 **mL (LIMS ID:** 2100342 **)** **BS Spike vol.:** 20 **µL (LIMS ID:** 2100109 **)** ARU18325 2/16/21
Spike Witness: MFS 2/18/21 **(initial and date)** **MS Spike vol.:** 100 **µL (LIMS ID:** 2002758 **)**

HCl LIMS ID: 2100331 Pipette SN#: 1620889 Calibration Date: 11/20/20
HNO_3 LIMS ID: 2002416 Pipette SN#: 1910196 Calibration Date: 09/13/20
70/30 LIMS ID: ______ Dispenser #: ______ Calibrated? [ ] Yes [ ] No
Other Acid LIMS ID: ______ MW 2/18/21 Dispenser #: ______ MW 2/18/2
Glass Vial # 0078594 Boiling Chip lot # 2003665 *Hotblock Position: N/A

Vial #	Sample ID Number	Container ID	Sample Size [ ]mL [x]g	Vial #	Sample ID Number	Container ID	Sample Size [ ]mL [ ]g	CRM LIMS ID [ ] NA
1	F102333-BLK1	A	0.3215	19				
2	F102333-BLK2	A	0.3269	20				
3	F102333-BLK3	A	0.2699	21				
4	F102333-BS1	A	0.3062	22				**Comments**
5	F102333-BSD1	A	0.2574	23				
6	1B00048-01	D	0.2564	24				
7	F102333-MS1	D	0.2567	25				
8	F102333-MSD1	D	0.2634	26				
9	1A00104-01	A	0.2539	27				
10	1A00105-01	A	0.2526	28				
11				29				
12				30				
13				31				
14				32				
15				33				
16				34				
17				35				
18				36				

MFS 2/18/21
MFS 2/18/21
MW 2/18/21
MW 2/18/21

 *Hotblock diagram located in back of logbook **Verified By:** MFS 2/19/21

Revision: 4
Effective: Dec. 11, 2017

Sample Preparation Review Checklist

Technician/Date: LEL 2/22/2021 **Samples to lab:** 0:00 **Batch #:** F102336

Upload/Date: MV2 2/22/21 **Reviewer/Date:**

		EFGS Preparation Method		
☐	SOP2836	Oven Digestion (Total Recoverable Metals)	☐ ICPMS	☐ AFS
☐	SOP2837	Tissue Nitric Digestion	☐ ICPMS	☐ CVAFS
☐	SOP2840	Modified Aqua Regia		
☐	SOP2820	RP		
☐	SOP2821	HF Bomb Digestion	☐ ICPMS	☐ CVAFS
☐	SOP2825	Nitric Bomb Digestion	☐ ICPMS	☐ CVAFS
☐	SOP2993	Oven Digestion (As , Se Speciation)		
☐	SOP5145	Microwave Digestion (Nutraceuticals)		
☐	SOP5145	Microwave Digestion (3051)		
☐	NA	Other: 2795		

Initials	SOP Date	DOC Date
LEL	2-22-21	

Comments:

Conditionally formatted training files located at:
\\us34fila\General and Admin\Quality Assurance\Training\Training Master
(Contact QA for any problems regarding these training files.)

Analytes: Hg

					Reviewer Initials	Tertiary Review
1. Is any SOP/DOC expiring within one week of Submission Date?		☐ YES		☑ NO	☐	☐
Data cannot be reported without a current IDOC/CDOC.		**If YES, notify supervisor and technician immediately.**				
2. Check prep method		☐ YES			☐	☐
(a) For Ceuticals: Is correct Hg code being used in LIMS?	☐ ICPMS	☐ CV-AFS	☐ 70:30	☑ N/A	☐	☐
3. Compare sample ID & container ID with benchsheet & in LIMS		☑ YES		☐ N/A	☐	☐
4. Check for transcription errors from benchsheet		☑ YES			☐	☐
(a) Check and compare initial and final volumes		☑ YES		☐ N/A	☐	☐
(b) Check and compare mass		☑ YES		☐ N/A	☐	☐
(c) Has the number of pills been documented (Special Info 5 in benchsheet)?		☐ YES		☐ N/A	☐	☐
(d) Have assay logbook copies been attached & avg masses entered?		☐ YES		☑ N/A	☐	☐
(e) For re-digests, have e-mails been attached and verified?		☐ YES		☑ N/A	☐	☐
(f) Benchsheet prep date MUST match actual prep date		☑ YES			☐	☐
5. Samples per Batch? **Check QC Requirements**	☑ ≤ 20	☐ ≤ 10			☐	☐
(a) PBs per batch?	☑ 3 PBs	☐ 2 PBs	☐ 1 PBs		☐	☐
(b) Are pre and post homogenization blanks in batch?		☐ YES		☑ N/A	☐	☐
(c) BS, BS/BSD or CRM in batch?	☐ BS	☑ BS/BSD	☐ CRM		☐	☐
(d) MS/MSD in batch?		☑ YES		☐ N/A	☐	☐
(e) MD in batch?		☐ YES		☑ N/A	☐	☐
(f) Is there at least one duplicate QC source in batch?		☑ YES		☐ N/A	☐	☐
(g) Are there any client specific requests, QC requests, etc?		☐ YES		☑ N/A	☐	☐
Document:						
(h) Correct LIMS spike ID included for BS, BS/BSD and/or MS/MSD?		☑ YES		☐ N/A	☐	☐
(i) Correct 'source' designated for MD/MS/MSD?		☑ YES		☐ N/A	☐	☐
(j) For EFGS-filtered samples, was a filtration blank included ?		☐ YES		☑ N/A	☐	☐
6. Special prep requirements?		☐ YES		☑ N/A	☐	☐
(a) For 1638: Have samples sat for 48 hours after preservation?		☐ YES		☑ N/A	☐	☐
(b) For 200.8: Have samples sat for 16 hours after preservation?		☐ YES		☐ N/A	☐	☐
(c) For DOD have pipettes been calibrated day of prep?		☐ YES		☐ N/A	☐	☐
7. Are the samples appropriately spiked?		☐ YES		☐ N/A	☐	☐
(a) Is the spike and amount used appropriate and entered into LIMS?		☑ YES		☐ N/A	☐	☐
(b) For all spiking was there a witness? (Initials must be in logbook)		☐ YES		☐ N/A	☐	☐
(c) Spikes added:		☑ YES			☐	☐

NOTE: Due to LIMS software constraints, new LIMS IDs need to be created when multiple/ supplemental spikes are used. Enter new LIMS ID below and use table to list all spikes included in it.

Spike LIMS ID : ☐ ☐

Spike Name	LIMS ID	µL	Spike Name	LIMS ID	µL
THg low std/nc	2002758	50			
THg low std/nc	2100109	20			

PREPARATION BENCH SHEET

F102336

Eurofins Frontier Global Sciences, LLC

Matrix: Tissue **Prepared using: Trace Metals - EFGS SOP2795 Nitric/Sulfuric Hg Digestion** **Prepared: 2/22/2021**

Lab Number	Sample ID and Source Sample	Initial (g)	Final (mL)	Spike1 ID	µl Spike1	Spike2 ID	µl Spike2	Extraction Comments
F102336-BLK1	Blank	0.25	20					
F102336-BLK2	Blank	0.25	20					
F102336-BLK3	Blank	0.25	20					
F102336-BS1	LCS	0.25	20	2100109	20			
F102336-BSD1	LCS Dup	0.25	20	2100109	20			
F102336-MS1	Matrix Spike [1B00003-31]	0.0853	10	2002758	50			
F102336-MS2	Matrix Spike [1B00003-34]	0.048	10	2002758	50			
F102336-MSD1	Matrix Spike Dup [1B00003-31]	0.0603	10	2002758	50			
F102336-MSD2	Matrix Spike Dup [1B00003-34]	0.0531	10	2002758	50			

Standard ID(s):	Description:	Expiration:
2002758	THg 1,000ng/mL Secondary Spiking Standard	04-May-21 00:00
2100109	THg 100ng/mL Primary Spiking Standard	12-Apr-21 00:00

Reagent ID(s):	Description:	Expiration:
2003665	Boiling Chips for Trace Metals	29-Jun-21 00:00
2100342	5% BrCl	06-Jul-21 00:00
2100386	70/30 Digestion Acid	21-Aug-21 00:00

ue Date: 3/2/2021

PREPARATION BENCH SHEET

F102336

Eurofins Frontier Global Sciences, LLC

Matrix: Tissue **Prepared using: Trace Metals - EFGS SOP2795 Nitric/Sulfuric Hg Digestion** **Prepared: 2/22/2021**

Lab Number	Sample ID	Initial (g)	Final (mL)	QC Sample	Sample Specs.	Location	Sample Comments	Analysis Comments
1B00003-20	ES-13_013021_ABD_05_BL	0.1446	10	-	-	eezer 23		
1B00003-21	ES-13_013021_ABD_06_BL	0.1051	10	-	-	eezer 23		
1B00003-22	ES-13_013021_ABD_07_BL	0.1112	10	-	-	eezer 23		
1B00003-23	ES-13_013021_ABD_08_BL	0.0854	10	-	-	eezer 23		
1B00003-24	ES-13_013021_ABD_09_BL	0.0859	10	-	-	eezer 23		
1B00003-25	ES-13_013021_ABD_10_BL	0.1558	10	-	-	eezer 23		
1B00003-26	ES-13_013021_ABD_11_BL	0.109	10	-	-	eezer 23		
1B00003-27	ES-13_013021_ABD_12_BL	0.1129	10	-	-	eezer 23		
1B00003-28	ES-13_013021_ABD_13_BL	0.0774	10	-	-	eezer 23		
1B00003-29	ES-13_013021_ABD_14_BL	0.1405	10	-	-	eezer 23		
1B00003-30	ES-13_013021_ABD_15_BL	0.0978	10	-	-	eezer 23		
1B00003-31	FRB-02_012621_ABD_01_BL	0.0735	10	QC	-	eezer 23	MS/MSD	
1B00003-32	FRB-02_012621_ABD_02_BL	0.1756	10	-	-	eezer 23		
1B00003-33	FRB-02_012721_ABD_03_BL	0.124	10	-	-	eezer 23		
1B00003-34	FRB-02_012721_ABD_04_BL	0.063	10	-	-	eezer 23		
1B00003-35	FRB-02_012721_ABD_05_BL	0.0534	10	-	-	eezer 23		
1B00003-36	EB_CAPILLARY_013021_ABD_QC	0.1251	10	-	-	S&R	Add DI at lab to make blank	

ue Date: 3/2/2021

PREPARATION BENCH SHEET

F102336

Eurofins Frontier Global Sciences, LLC

Matrix: Tissue | **Prepared using: Trace Metals - EFGS SOP2795 Nitric/Sulfuric Hg Digestion** | **Prepared: 2/22/2021**

[redacted]

Technician: UFA **Batch#:** F102336 **Batch Color ID:** Red **Date:** 2-19-21

☐ **EFAFS-T-AFS-SOP2986** Tissues - Methyl Mercury - KOH/Methanol: **Hot plate 75±5°C for 2-4 hours.**
☒ **EFAFS-T-AFS-SOP2795** Tissues - Total Mercury - 70:30: **Hot plate 75±5°C for two hours.**
☐ **EFAFS-T-AFS-SOP5134** Sediments - Methyl Mercury - KBr/CH_2Cl_2: **Heat Block 45°C (nitrogen purge for 30 minutes).**
☐ **EFAFS-T-AFS-SOP2807** Solids - Total Mercury - Cold AR: **18-25°C for over four hours.**

Other: NA
Vial Type: ☒ Glass ☐ Teflon
Balance#: 23 Calibrated? ☒ Yes ☐ No **Therm.#:** 170756088 Calibrated? ☒ Yes ☐ No
***Time in:** 1120 **Actual Temp. (raw):** 74.4 °C **w/ CF:** 74.3 °C *Time in can't begin before target temperature is reached
Time out: 1420 **Actual Temp. (raw):** 76.9 °C **w/ CF:** 76.8 °C

Final vol.: 20,10 **mL (LIMS ID:** 2100342 **)** **BS Spike vol.:** 20 **µL (LIMS ID:** 2100109 **)**
Spike Witness: T 2/22/21 **(initial and date)** **MS Spike vol.:** 30 **µL (LIMS ID:** 2002758 **)**

HCl LIMS ID: NA
HNO₃ LIMS ID: NA
70/30 LIMS ID: 2100386
Other Acid LIMS ID: NA
Glass Vial #00076594 Boiling Chip lot # 2003665(C)
Pipette SN# RU18325 Calibration Date: 2-18-21
Pipette SN#: RU33325 Calibration Date: 2-18-21
Dispenser #: 19L81607 Calibrated? ☒ Yes ☐ No
Dispenser #: 19J37295
*Hotblock Position: NA

1-14 weighed 2-19-21 UFA 2-19-21

Vial #	Sample ID Number	Container ID	Sample Size ☐mL ☒g	Vial #	Sample ID Number	Container ID	Sample Size ☐mL ☒g	CRM LIMS ID ☒ NA
1	F102336-BLK1	C	0.2857	19 a)	1B00003-26	A	0.1090	a) Limited volume UFA 2-19-21
2	F102336-BLK2	C	0.3189	20 a)	1B00003-27	A	0.1129	
3	F102336-BLK3	C	0.3020	21 a)	1B00003-28	A	0.0774	
4	F102336-BS1	C	0.2807	22	1B00003-29	A	0.1405	**Comments**
5	F102336-BSD1	C	0.2737	23 a)	1B00003-30	A	0.0978	Vf = 10mL for
6	1B00003-36	A	~~0.0573~~ 0.1251	24	1B00003-32	A	0.1756	6-26. UFA 2-22-21
a) 7	1B00003-31	A	0.0735	25 a)	1B00003-33	A	0.1240	
8	F102336-MS1	A	0.0853	26 a)	1B00003-35	A	0.0534	
9	F102336-MSD1	A	0.0603	27				
a) 10	1B00003-34	A	0.0630	28				
11	F102336-MS2	A	0.0480	29				
12	F102336-MSD2	A	0.0531	30				
13	1B00003-20	A	0.1446	31				
a) 14	1B00003-21	A	0.1051	32				
a) 15	1B00003-22	A	0.1112	33				
a) 16	1B00003-23	A	0.0854	34				
a) 17	1B00003-24	A	0.0859	35			UFA 2-22-21	
18	1B00003-25	A	0.1558	36				

THg26003-210224-2

eurofins Frontier Global Sciences

Analysis Datasheet for Total Mercury

Date of Analysis: February 24, 2021
Instrument #: Hg2600-3
LIMS Sequence #: 1B25007, 1B25008

Analyst:
Units ng/L

Calibration Statistics:

LabNumber	n	True Val	Area	Uncorrected Response Factor	Corrected Peak Height	Corrected Response Factor	% Recovery
SEQ-CAL1	1	0.50 ng/L	165.72 units	331.45	108.92 units	217.85	123.0 %Rec
SEQ-CAL2	1	1.00 ng/L	242.36 units	242.36	185.56 units	185.56	104.8 %Rec
SEQ-CAL3	1	5.00 ng/L	860.08 units	172.02	803.28 units	160.66	90.7 %Rec
SEQ-CAL4	1	20.00 ng/L	3258.42 units	162.92	3201.62 units	160.08	90.4 %Rec
SEQ-CAL5	1	40.00 ng/L	6513.86 units	162.85	6457.06 units	161.43	91.1 %Rec
SEQ-CAL6	0						
SEQ-CAL7	0						
SEQ-CAL8	0						
SEQ-CAL9	0						

Corr. Mean RF	Corr. St Dev RF	Corr. RSD CF	Uncorr. Mean RF
177.11	+/- 25.19	14.2% RSD	214.32

Blanks:

LabNumber	n	Mean	Std Dev	Mean (ng/L)	Std Dev (ng/L)
SEQ-IBL	3	56.80 units	±8.30	0.27 ng/L	±0.04

Preparation Blanks

Sample Type	Batch ID	n	Mean	Std Dev
BLK	1	3	3.180 ng/L	±1.042
BLK	2	3	3.060 ng/L	±0.387
BLK	3	3	3.645 ng/L	±3.630
BLK	4	0	0.000 ng/L	
BLK	5	0	0.000 ng/L	
BLK	6	0	0.000 ng/L	

Instrument	Analyst	Sample Type	LabNumber	Dilution	Analyzed	FileID	RunEnd	Uncorrected Response	Batch ID	No PB Correction?	RESP	InitialResult	FinalResult	InitialUnits	Comments
Hg2600-3	00	CAL	SEQ-IBL1	1	2/24/2021 11:40:38	15803-1.RAW	11:40:38	62.20			5.4	0.030	0.030	ng/L	
Hg2600-3	00	CAL	SEQ-IBL2	1	2/24/2021 11:44:46	15804-1.RAW	11:44:46	60.96			4.2	0.023	0.023	ng/L	
Hg2600-3	00	CAL	SEQ-IBL3	1	2/24/2021 11:48:55	15805-1.RAW	11:48:55	47.25			-9.6	-0.054	-0.054	ng/L	
Hg2600-3	00	CAL	SEQ-CAL1	1	2/24/2021 11:53:04	15806-1.RAW	11:53:04	165.72			108.9	0.615	0.615	ng/L	
Hg2600-3	00	CAL	SEQ-CAL2	1	2/24/2021 11:57:13	15807-1.RAW	11:57:13	242.36			185.6	1.048	1.048	ng/L	
Hg2600-3	00	CAL	SEQ-CAL3	1	2/24/2021 12:01:21	15808-1.RAW	12:01:21	860.08			803.3	4.535	4.535	ng/L	
Hg2600-3	00	CAL	SEQ-CAL4	1	2/24/2021 12:05:30	15809-1.RAW	12:05:30	3258.42			3201.6	18.077	18.077	ng/L	
Hg2600-3	00	CAL	SEQ-CAL5	1	2/24/2021 12:09:39	15810-1.RAW	12:09:39	6513.86			6457.1	36.457	36.457	ng/L	
Hg2600-3	00	CAL	SEQ-ICV	1	2/24/2021 12:13:50	15811-1.RAW	12:13:50	907.74			850.9	4.804	4.804	ng/L	
Hg2600-3	00	CAL	SEQ-ICB	1	2/24/2021 12:17:59	15812-1.RAW	12:17:59	99.13			42.3	0.239	0.239	ng/L	
Hg2600-3	00	SAM	F102335-BS1	20	2/24/2021 12:22:08	15813-1.RAW	12:22:08	833.74	1		776.9	4.228	84.553	ng/L	F102335
Hg2600-3	00	SAM	F102335-BSD1	20	2/24/2021 12:26:17	15814-1.RAW	12:26:17	909.10	1		852.3	4.653	93.064	ng/L	F102335
Hg2600-3	00	BLK	F102335-BLK1	10	2/24/2021 12:30:26	15815-1.RAW	12:30:26	134.27	1		77.5	0.437	4.374	ng/L	F102335
Hg2600-3	00	BLK	F102335-BLK2	10	2/24/2021 12:34:35	15816-1.RAW	12:34:35	104.80	1		48.0	0.271	2.710	ng/L	F102335
Hg2600-3	00	BLK	F102335-BLK3	10	2/24/2021 12:38:44	15817-1.RAW	12:38:44	100.28	1		43.5	0.246	2.455	ng/L	F102335
Hg2600-3	00	SAM	1A00115-01	100	2/24/2021 12:42:54	15818-1.RAW	12:42:54	478.50	1		421.7	2.349	234.917	ng/L	F102335
Hg2600-3	00	SAM	WS		2/24/2021 12:47:03	15819-1.RAW	12:47:03	40.11	1		-16.7	#DIV/0!	#DIV/0!	ng/L	F102335
Hg2600-3	00	SAM	WS		2/24/2021 12:51:12	15820-1.RAW	12:51:12	37.45	1		-19.3	#DIV/0!	#DIV/0!	ng/L	F102335
Hg2600-3	00	SAM	WS		2/24/2021 12:55:21	15821-1.RAW	12:55:21	37.21			-19.6	Error	#VALUE!	ng/L	
Hg2600-3	00	SAM	WS		2/24/2021 12:59:30	15822-1.RAW	12:59:30	31.51			-25.3	Error	#VALUE!	ng/L	
Hg2600-3	00	CAL	SEQ-CCV1	1	2/24/2021 13:03:39	15823-1.RAW	13:03:39	837.86			781.1	4.410	4.410	ng/L	
Hg2600-3	00	CAL	SEQ-CCB1	1	2/24/2021 13:07:48	15824-1.RAW	13:07:48	92.93			36.1	0.204	0.204	ng/L	
Hg2600-3	00	SAM	F102335-MS1	400	2/24/2021 13:11:58	15825-1.RAW	13:11:58	718.93	1		662.1	3.730	1492.196	ng/L	F102335
Hg2600-3	00	SAM	F102335-MSD1	400	2/24/2021 13:16:07	15826-1.RAW	13:16:07	640.08	1		583.3	3.285	1314.111	ng/L	F102335
Hg2600-3	00	SAM	1A00115-02	50	2/24/2021 13:20:17	15827-1.RAW	13:20:17	633.36	1		576.6	3.192	159.587	ng/L	F102335
Hg2600-3	00	SAM	1A00115-03	50	2/24/2021 13:24:26	15828-1.RAW	13:24:26	202.00	1		145.2	0.756	37.810	ng/L	F102335
Hg2600-3	00	SAM	1A00115-04	50	2/24/2021 13:28:35	15829-1.RAW	13:28:35	563.42	1		506.6	2.797	139.840	ng/L	F102335
Hg2600-3	00	SAM	1A00115-05	50	2/24/2021 13:32:45	15830-1.RAW	13:32:45	109.88	1		53.1	0.236	11.806	ng/L	F102335
Hg2600-3	00	SAM	BLANKTEST	1	2/24/2021 13:36:54	15831-1.RAW	13:36:54	79.01	HG STANDARD DROPF		22.2	Error	#VALUE!	ng/L	HG STANDARD DROP
Hg2600-3	00	SAM	1A00115-06	50	2/24/2021 13:41:04	15832-1.RAW	13:41:04	148.49	1		91.7	0.454	22.704	ng/L	F102335
Hg2600-3	00	SAM	1A00115-07	50	2/24/2021 13:45:13	15833-1.RAW	13:45:13	141.39	1		84.6	0.414	20.700	ng/L	F102335
Hg2600-3	00	SAM	1A00115-08	50	2/24/2021 13:49:23	15834-1.RAW	13:49:23	980.86	1		924.1	5.154	257.685	ng/L	F102335
Hg2600-3	00	SAM	1A00115-10	50	2/24/2021 13:53:32	15835-1.RAW	13:53:32	954.75	1		897.9	5.006	250.315	ng/L	F102335
Hg2600-3	00	CAL	SEQ-CCV2	1	2/24/2021 13:57:41	15836-1.RAW	13:57:41	847.81			791.0	4.466	4.466	ng/L	
Hg2600-3	00	CAL	SEQ-CCB2	1	2/24/2021 14:01:51	15837-1.RAW	14:01:51	101.16			44.4	0.250	0.250	ng/L	
Hg2600-3	00	SAM	1A00115-11	50	2/24/2021 14:06:00	15838-1.RAW	14:06:00	274.70	1		217.9	1.167	58.333	ng/L	F102335
Hg2600-3	00	SAM	F102333-BS1	20	2/24/2021 14:10:10	15839-1.RAW	14:10:10	839.94	2		783.1	4.269	85.374	ng/L	F102333
Hg2600-3	00	SAM	F102333-BSD1	20	2/24/2021 14:14:19	15840-1.RAW	14:14:19	887.34	2		830.5	4.536	90.726	ng/L	F102333
Hg2600-3	00	BLK	F102333-BLK1	20	2/24/2021 14:18:28	15841-1.RAW	14:18:28	85.59	2		28.8	0.163	3.251	ng/L	F102333
Hg2600-3	00	BLK	F102333-BLK2	20	2/24/2021 14:22:38	15842-1.RAW	14:22:38	79.95	2		23.2	0.131	2.614	ng/L	F102333
Hg2600-3	00	BLK	F102333-BLK3	20	2/24/2021 14:26:47	15843-1.RAW	14:26:47	86.16	2		29.4	0.166	3.315	ng/L	F102333
Hg2600-3	00	SAM	1A00104-01	12500	2/24/2021 14:30:57	15844-1.RAW	14:30:57	3410.21	2		3353.4	18.933	236667.520	ng/L	F102333
Hg2600-3	00	SAM	1A00105-01	5000	2/24/2021 14:35:06	15845-1.RAW	14:35:06	8926.27	2		8869.5	50.077	250385.961	ng/L	F102333
Hg2600-3	00	SAM	1B00048-01	20	2/24/2021 14:39:16	15846-1.RAW	14:39:16	658.90	2		602.1	3.246	64.930	ng/L	F102333
Hg2600-3	00	SAM	F102333-MS1	400	2/24/2021 14:43:25	15847-1.RAW	14:43:25	2647.87	2		2591.1	14.622	5848.709	ng/L	
Hg2600-3	00	CAL	SEQ-CCV3	1	2/24/2021 14:47:35	15848-1.RAW	14:47:35	813.94			757.1	4.275	4.275	ng/L	
Hg2600-3	00	CAL	SEQ-CCB3	1	2/24/2021 14:51:45	15849-1.RAW	14:51:45	61.89			5.1	0.029	0.029	ng/L	
Hg2600-3	00	SAM	F102333-MSD1	400	2/24/2021 14:55:54	15850-1.RAW	14:55:54	2568.11	2		2511.3	14.171	5668.567	ng/L	
Hg2600-3	00	SAM	F102336-BS1	20	2/24/2021 15:00:04	15851-1.RAW	15:00:04	899.53	3		842.7	4.576	91.517	ng/L	F102336
Hg2600-3	00	SAM	F102336-BSD1	20	2/24/2021 15:04:14	15852-1.RAW	15:04:14	860.90	3		804.1	4.358	87.155	ng/L	F102336
Hg2600-3	00	BLK	F102336-BLK1	20	2/24/2021 15:08:23	15853-1.RAW	15:08:23	126.05	3		69.2	0.391	7.819	ng/L	F102336
Hg2600-3	00	BLK	F102336-BLK2	20	2/24/2021 15:12:33	15854-1.RAW	15:12:33	67.70	3		10.9	0.062	1.230	ng/L	F102336
Hg2600-3	00	BLK	F102336-BLK3	20	2/24/2021 15:16:43	15855-1.RAW	15:16:43	73.51	3		16.7	0.094	1.886	ng/L	F102336
Hg2600-3	00	SAM	1B00003-31	2500	2/24/2021 15:20:52	15856-1.RAW	15:20:52	109.03	3		52.2	0.293	733.626	ng/L	F102336
Hg2600-3	00	SAM	F102336-MS1	2500	2/24/2021 15:25:02	15857-1.RAW	15:25:02	418.65	3		361.8	2.042	5103.895	ng/L	F102336
Hg2600-3	00	SAM	F102336-MSD1	2500	2/24/2021 15:29:11	15858-1.RAW	15:29:11	244.21	3		187.4	1.057	2641.655	ng/L	F102336
Hg2600-3	00	SAM	1B00003-34	2500	2/24/2021 15:33:21	15859-1.RAW	15:33:21	88.06	3		31.3	0.175	437.567	ng/L	F102336

Instrument	Analyst	Sample Type	LabNumber	Dilution	Analyzed	FileID	RunEnd	Uncorrected Response	Batch ID	No PB Correction?	RESP	InitialResult	FinalResult	InitialUnits	Comments
Hg2600-3	00	CAL	SEQ-CCV4	1	2/24/2021 15:37:31	15860-1.RAW	15:37:31	792.17			735.4	4.152	4.152	ng/L	
Hg2600-3	00	CAL	SEQ-CCB4	1	2/24/2021 15:41:41	15861-1.RAW	15:41:41	57.20			0.4	0.002	0.002	ng/L	
Hg2600-3	00	SAM	F102336-MS2	2500	2/24/2021 15:45:50	15862-1.RAW	15:45:50	248.20	3		191.4	1.079	2698.005	ng/L	F102336
Hg2600-3	00	SAM	F102336-MSD2	2500	2/24/2021 15:50:00	15863-1.RAW	15:50:00	344.92	3		288.1	1.625	4063.257	ng/L	F102336
Hg2600-3	00	SAM	1B00003-20	2500	2/24/2021 15:54:10	15864-1.RAW	15:54:10	241.86	3		185.1	1.043	2608.519	ng/L	F102336
Hg2600-3	00	SAM	1B00003-21	2500	2/24/2021 15:58:20	15865-1.RAW	15:58:20	324.81	3		268.0	1.512	3779.427	ng/L	F102336
Hg2600-3	00	SAM	1B00003-22	2500	2/24/2021 16:02:30	15866-1.RAW	16:02:30	345.44	3		288.6	1.628	4070.566	ng/L	F102336
Hg2600-3	00	SAM	1B00003-23	2500	2/24/2021 16:06:39	15867-1.RAW	16:06:39	233.04	3		176.2	0.994	2483.979	ng/L	F102336
Hg2600-3	00	SAM	1B00003-24	2500	2/24/2021 16:10:49	15868-1.RAW	16:10:49	163.98	3		107.2	0.604	1509.240	ng/L	F102336
Hg2600-3	00	SAM	1B00003-25	2500	2/24/2021 16:14:59	15869-1.RAW	16:14:59	295.92	3		239.1	1.349	3371.584	ng/L	F102336
Hg2600-3	00	SAM	1B00003-26	2500	2/24/2021 16:19:09	15870-1.RAW	16:19:09	189.77	3		133.0	0.749	1873.203	ng/L	F102336
Hg2600-3	00	SAM	1B00003-27	2500	2/24/2021 16:23:19	15871-1.RAW	16:23:19	136.53	3		79.7	0.449	1121.687	ng/L	F102336
Hg2600-3	00	CAL	SEQ-CCV5	1	2/24/2021 16:27:29	15872-1.RAW	16:27:29	786.19			729.4	4.118	4.118	ng/L	
Hg2600-3	00	CAL	SEQ-CCB5	1	2/24/2021 16:31:38	15873-1.RAW	16:31:38	58.38			1.6	0.009	0.009	ng/L	
Hg2600-3	00	SAM	1B00003-28	2500	2/24/2021 16:35:48	15874-1.RAW	16:35:48	145.56	3		88.8	0.500	1249.246	ng/L	F102336
Hg2600-3	00	SAM	1B00003-29	2500	2/24/2021 16:39:58	15875-1.RAW	16:39:58	292.61	3		235.8	1.330	3324.801	ng/L	F102336
Hg2600-3	00	SAM	1B00003-30	2500	2/24/2021 16:44:09	15876-1.RAW	16:44:09	256.96	3		200.2	1.129	2821.582	ng/L	F102336
Hg2600-3	00	SAM	1B00003-32	2500	2/24/2021 16:48:19	15877-1.RAW	16:48:19	129.70	3		72.9	0.410	1025.325	ng/L	F102336
Hg2600-3	00	SAM	1B00003-33	2500	2/24/2021 16:52:29	15878-1.RAW	16:52:29	123.66	3		66.9	0.376	940.032	ng/L	F102336
Hg2600-3	00	SAM	1B00003-35	2500	2/24/2021 16:56:40	15879-1.RAW	16:56:40	90.25	3		33.4	0.187	468.484	ng/L	F102336
Hg2600-3	00	SAM	1B00003-36	2500	2/24/2021 17:00:51	15880-1.RAW	17:00:51	66.10	3		9.3	0.051	127.621	ng/L	F102336
Hg2600-3	00	SAM	1A00105-01RE1	10000	2/24/2021 17:05:01	15881-1.RAW	17:05:01	4024.81	2		3968.0	22.403	224034.005	ng/L	F102333, E
Hg2600-3	00	SAM	1B00048-01RE1	20	2/24/2021 17:09:11	15882-1.RAW	17:09:11	192.03	2		135.2	0.611	12.210	ng/L	F102333,E-01
Hg2600-3	00	SAM	1A00021-02RE1	1000000	2/24/2021 17:13:21	15883-1.RAW	17:13:21	292.54	4		235.7	1.331	1331024.856	ng/L	F101423
Hg2600-3	00	CAL	SEQ-CCV6	1	2/24/2021 17:17:31	15884-1.RAW	17:17:31	746.79			690.0	3.896	3.896	ng/L	
Hg2600-3	00	CAL	SEQ-CCB6	1	2/24/2021 17:21:41	15885-1.RAW	17:21:41	89.67			32.9	0.186	0.186	ng/L	
Hg2600-3	00	SAM	1A00021-03RE1	1000000	2/24/2021 17:25:51	15886-1.RAW	17:25:51	315.45	4		258.6	1.460	1460329.684	ng/L	F101423
Hg2600-3	00	SAM	1A00021-04RE1	2500000	2/24/2021 17:30:01	15887-1.RAW	17:30:01	605.37	4		548.6	3.097	7743233.588	ng/L	F101423
Hg2600-3	00	SAM	1A00021-05RE1	1000000	2/24/2021 17:34:11	15888-1.RAW	17:34:11	429.12	4		372.3	2.102	2102171.244	ng/L	F101423
Hg2600-3	00	SAM	1A00021-06RE1	1000000	2/24/2021 17:38:22	15889-1.RAW	17:38:22	544.73	4		487.9	2.755	2754879.502	ng/L	F101423
Hg2600-3	00	SAM	1A00021-07RE1	1000000	2/24/2021 17:42:33	15890-1.RAW	17:42:33	382.27	4		325.5	1.838	1837641.919	ng/L	F101423
Hg2600-3	00	SAM	1A00021-08RE1	1000000	2/24/2021 17:46:44	15891-1.RAW	17:46:44	220.14	4		163.3	0.922	922235.680	ng/L	F101423
Hg2600-3	00	SAM	1A00021-09RE1	1000000	2/24/2021 17:50:55	15892-1.RAW	17:50:55	218.86	4		162.1	0.915	914987.676	ng/L	F101423
Hg2600-3	00	SAM	1A00021-10RE1	1000000	2/24/2021 17:55:08	15893-1.RAW	17:55:08	216.38	4		159.6	0.901	900989.553	ng/L	F101423
Hg2600-3	00	SAM	1A00021-11RE1	1000000	2/24/2021 17:59:21	15894-1.RAW	17:59:21	185.37	4		128.6	0.726	725899.360	ng/L	F101423
Hg2600-3	00	SAM	1A00021-12RE1	1000000	2/24/2021 18:03:31	15895-1.RAW	18:03:31	178.33	4		121.5	0.686	686175.114	ng/L	F101423
Hg2600-3	00	CAL	SEQ-CCV7	1	2/24/2021 18:07:41	15896-1.RAW	18:07:41	771.16			714.4	4.033	4.033	ng/L	
Hg2600-3	00	CAL	SEQ-CCB7	1	2/24/2021 18:11:51	15897-1.RAW	18:11:51	47.45			-9.4	-0.053	-0.053	ng/L	
Hg2600-3	00	SAM	1A00021-13RE1	1000000	2/24/2021 18:16:01	15898-1.RAW	18:16:01	163.00	4		106.2	0.600	599584.938	ng/L	F101423
Hg2600-3	00	CAL	SEQ-CCV8	1	2/24/2021 18:20:11	15899-1.RAW	18:20:11	683.07			626.3	3.536	3.536	ng/L	
Hg2600-3	00	CAL	SEQ-CCB8	1	2/24/2021 18:24:21	15900-1.RAW	18:24:21	49.74			-7.1	-0.040	-0.040	ng/L	

TotalMercury Operat AH BlankS 56.801 Calib Eqn: Conc = (Area-56.80 Run Date: 2/24/2021 Blank SD: 8.298176019
EPA1631 Worksl THg260(CalibFa 177.11 Status: QC Warnings:7/QC E Run Time: 11:21:11 Blank RSD%: 14.60923995
Method #### R: 1 R²: 1 CF SD: 25.18733237
Descrip THg26003-210224-2 CF RSD%: 14.22098742

Sample/ID	Location	Phase	Dilute	Blank	Conc (ppt)	MB%	FinalConc	Rec%	QA	RawData	RunEnd	Peak (Raw)	Control (std)	Flags	RunCount	Comment
Clean				0.00	18.54					15799-1.RAW	11:24:03	3284.41	Clean	OK	1	
WS				56.80	0.00					15800-1.RAW	11:28:12	43.28	Sample	OK	1	
WS				56.80	0.00					15801-1.RAW	11:32:20	47.52	Sample	OK	1	
WS				56.80	0.00					15802-1.RAW	11:36:29	38.48	Sample	OK	1	
SEQ-IBL1	A1		1	0.00	0.35					15803-1.RAW	11:40:38	62.20	Sample	OK	1	
SEQ-IBL2	A2		1	0.00	0.34					15804-1.RAW	11:44:46	60.96	Sample	OK	1	
SEQ-IBL3	A3		1	0.00	0.27					15805-1.RAW	11:48:55	47.25	Sample	OK	1	
SEQ-CAL1	A4		1	56.80	0.61			123.00		15806-1.RAW	11:53:04	165.72	Sample	OK	1	
SEQ-CAL2	A5		1	56.80	1.05			104.77		15807-1.RAW	11:57:13	242.36	Sample	OK	1	
SEQ-CAL3	A6		1	56.80	4.54			90.71		15808-1.RAW	12:01:21	860.08	Sample	OK	1	
SEQ-CAL4	A7		1	56.80	18.08			90.38		15809-1.RAW	12:05:30	3258.42	Sample	FB	1	
SEQ-CAL5	A8		1	56.80	36.46			91.14		15810-1.RAW	12:09:39	6513.86	Sample	FB	1	
SEQ-ICV	A9		1	56.80	4.80					15811-1 RAW	12:13:50	907.74	Sample	OK	1	
SEQ-ICB	A10		1	56.80	0.24					15812-1.RAW	12:17:59	99.13	Sample	OK	1	
F102335-BS1	A11		20	56.80	87.73					15813-1.RAW	12:22:08	833.74	Sample	OK	1	F102335
F102335-BSD1	A12		20	56.80	96.24					15814-1.RAW	12:26:17	909.10	Sample	OK	1	F102335
F102335-BLK1	A13		10	56.80	4.37					15815-1.RAW	12:30:26	134.27	Sample	OK	1	F102335
F102335-BLK2	A14		10	56.80	2.71					15816-1.RAW	12:34:35	104.80	Sample	OK	1	F102335
F102335-BLK3	A15		10	56.80	2.46					15817-1.RAW	12:38:44	100.28		OK	1	F102335
1A00115-01	A16		100	56.80	238.10					15818-1.RAW	12:42:54	478.50	Sample	OK	1	F102335
WS				56.80	0.00					15819-1.RAW	12:47:03	40.11	Sample	OK	1	F102335
WS				56.80	0.00					15820-1.RAW	12:51:12	37.45	Sample	OK	1	F102335
WS				56.80	0.00					15821-1.RAW	12:55:21	37.21	Sample	OK	1	
WS				56.80	0.00					15822-1.RAW	12:59:30	31.51	Sample	OK	1	
SEQ-CCV1	A17		1	56.80	4.41			88.20		15823-1.RAW	13:03:39	837.86	Sample	OK	1	
SEQ-CCB1	A18		1	56.80	0.20			0.00		15824-1.RAW	13:07:48	92.93	Sample	OK	1	
F102335-MS1	A19		400	56.80	1495.38			124202.77		15825-1.RAW	13:11:58	718.93	Sample	OK	1	F102335
F102335-MSD1	A20		400	56.80	1317.29					15826-1.RAW	13:16:07	640.08	Sample	OK	1	F102335
1A00115-02	A21		50	56.80	162.77					15827-1.RAW	13:20:17	633.36	Sample	OK	1	F102335
1A00115-03	B1		50	56.80	40.99					15828-1.RAW	13:24:26	202.00	Sample	OK	1	F102335
1A00115-04	B2		50	56.80	143.02					15829-1.RAW	13:28:35	563.42	Sample	OK	1	F102335
1A00115-05	B3		50	56.80	14.99					15830-1.RAW	13:32:45	109.88	Sample	OK	1	F102335
BLANKTEST	B21		1	56.80	0.13					15831-1.RAW	13:36:54	79.01	Sample	OK	1	HG STANDARD DROPPED
1A00115-06	B4		50	56.80	25.88					15832-1.RAW	13:41:04	148.49	Sample	OK	1	F102335
1A00115-07	B5		50	56.80	23.88					15833-1.RAW	13:45:13	141.39	Sample	OK	1	F102335
1A00115-08	B6		50	56.80	260.86					15834-1.RAW	13:49:23	980.86	Sample	OK	1	F102335
1A00115-10	B7		50	56.80	253.49					15835-1.RAW	13:53:32	954.75	Sample	OK	1	F102335
SEQ-CCV2	B8		1	56.80	4.47			89.32		15836-1.RAW	13:57:41	847.81	Sample	OK	1	
SEQ-CCB2	B9		1	56.80	0.25			0.00		15837-1.RAW	14:01:51	101.16	Sample	OK	1	
1A00115-11	B10		50	56.80	61.51					15838-1.RAW	14:06:00	274.70	Sample	OK	1	F102335
F102333-BS1	B11		20	56.80	88.43					15839-1.RAW	14:10:10	839.94	Sample	OK	1	F102333
F102333-BSD1	B12		20	56.80	93.79					15840-1.RAW	14:14:19	887.34	Sample	FB	1	F102333
F102333-BLK1	B13		20	56.80	3.25					15841-1.RAW	14:18:28	85.59	Sample	OK	1	F102333
F102333-BLK2	B14		20	56.80	2.61					15842-1.RAW	14:22:38	79.95	Sample	OK	1	F102333
F102333-BLK3	B15		20	56.80	3.32					15843-1.RAW	14:26:47	86.16	Sample	OK	1	F102333
1A00104-01	B16		12500	56.80	236670.58					15844-1.RAW	14:30:57	3410.21	Sample	FB	1	F102333
1A00105-01	B17		5000	56.80	250389.02					15845-1.RAW	14:35:06	8926.27	Sample	FB	1	F102333
1A00048-01	B18		20	56.80	67.99					15846-1 RAW	14:39:16	658.90	Sample	OK	1	F102333
F102333-MS1	B19		400	56.80	5851.77			8482.09		15847-1.RAW	14:43:25	2647.87	Sample	FB	1	
SEQ-CCV3	C20		1	56.80	4.27			85.50		15848-1.RAW	14:47:35	813.94	Sample	OK	1	
SEQ-CCB3	C21		1	56.80	0.03			0.00		15849-1.RAW	14:51:45	61.89	Sample	OK	1	
F102333-MSD1	B20		400	56.80	5671.63					15850-1.RAW	14:55:54	2568.11	Sample	OK	1	
F102336-BS1	B21		20	56.80	95.16					15851-1.RAW	15:00:04	899.53	Sample	OK	1	F102336

F102336-BSD1	C1	20	56.80	90.80		15852-1.RAW	15:04:14	860.90	Sample	OK	1	F102336
F102336-BLK1	C2	20	56.80	7.82		15853-1.RAW	15:08:23	126.05	Sample	OK	1	F102336
F102336-BLK2	C3	20	56.80	1.23		15854-1.RAW	15:12:33	67.70	Sample	OK	1	F102336
F102336-BLK3	C4	20	56.80	1.89		15855-1.RAW	15:16:43	73.51	Sample	OK	1	F102336
1B00003-31	C5	2500	56.80	737.27		15856-1.RAW	15:20:52	109.03	Sample	OK	1	F102336
F102336-MS1	C6	2500	56.80	5107.54	691.82	15857-1.RAW	15:25:02	418.65	Sample	OK	1	F102336
F102336-MSD1	C7	2500	56.80	2645.30		15858-1.RAW	15:29:11	244.21	Sample	OK	1	F102336
1B00003-34	C8	2500	56.80	441.21		15859-1.RAW	15:33:21	88.06	Sample	OK	1	F102336
SEQ-CCV4	C9	1	56.80	4.15	83.04	15860-1.RAW	15:37:31	792.17	Sample	OK	1	
SEQ-CCB4	C10	1	56.80	0.00	0.00	15861-1.RAW	15:41:41	57.20	Sample	OK	1	
F102336-MS2	C11	2500	56.80	2701.65	134929.79	15862-1.RAW	15:45:50	248.20	Sample	OK	1	F102336
F102336-MSD2	C12	2500	56.80	4066.90		15863-1.RAW	15:50:00	344.92	Sample	OK	1	F102336
1B00003-20	C13	2500	56.80	2612.16		15864-1.RAW	15:54:10	241.86	Sample	OK	1	F102336
1B00003-21	C14	2500	56.80	3783.07		15865-1.RAW	15:58:20	324.81	Sample	OK	1	F102336
1B00003-22	C15	2500	56.80	4074.21		15866-1.RAW	16:02:30	345.44	Sample	OK	1	F102336
1B00003-23	C16	2500	56.80	2487.62		15867-1.RAW	16:06:39	233.04	Sample	OK	1	F102336
1B00003-24	C17	2500	56.80	1512.88		15868-1.RAW	16:10:49	163.98	Sample	OK	1	F102336
1B00003-25	C18	2500	56.80	3375.23		15869-1.RAW	16:14:59	295.92	Sample	OK	1	F102336
1B00003-26	C19	2500	56.80	1876.85		15870-1.RAW	16:19:09	189.77	Sample	OK	1	F102336
1B00003-27	C20	2500	56.80	1125.33		15871-1.RAW	16:23:19	136.53	Sample	OK	1	F102336
SEQ-CCV5	C21	1	56.80	4.12	82.36	15872-1.RAW	16:27:29	786.19	Sample	OK	1	
SEQ-CCB5	A1	1	56.80	0.01	0.00	15873-1.RAW	16:31:38	58.38	Sample	OK	1	
1B00003-28	A2	2500	56.80	1252.89		15874-1.RAW	16:35:48	145.56	Sample	OK	1	F102336
1B00003-29	A3	2500	56.80	3328.45		15875-1.RAW	16:39:58	292.61	Sample	OK	1	F102336
1B00003-30	A4	2500	56.80	2825.23		15876-1.RAW	16:44:09	256.96	Sample	OK	1	F102336
1B00003-32	A5	2500	56.80	1028.97		15877-1.RAW	16:48:19	129.70	Sample	OK	1	F102336
1B00003-33	A6	2500	56.80	943.68		15878-1.RAW	16:52:29	123.66	Sample	OK	1	F102336
1B00003-35	A7	2500	56.80	472.13		15879-1.RAW	16:56:40	90.25	Sample	OK	1	F102336
1B00003-36	A8	2500	56.80	131.27		15880-1.RAW	17:00:51	66.10	Sample	OK	1	F102336
1A00105-01RE1	A9	10000	56.80	224037.07		15881-1.RAW	17:05:01	4024.81	Sample	FB	1	F102333, E
1B00048-01RE1	A10	20	56.80	15.27		15882-1.RAW	17:09:11	192.03	Sample	OK	1	F102333,E-01
1A00021-02RE1	A11	1E+06	56.80	1331024.86		15883-1.RAW	17:13:21	292.54	Sample	OK	1	F101423
SEQ-CCV6	A12	1	56.80	3.90	77.92	15884-1.RAW	17:17:31	746.79	Sample	OK	1	
SEQ-CCB6	A13	1	56.80	0.19	0.00	15885-1.RAW	17:21:41	89.67	Sample	OK	1	
1A00021-03RE1	A14	1E+06	56.80	1460329.68		15886-1.RAW	17:25:51	315.45	Sample	OK	1	F101423
1A00021-04RE1	A15	3E+06	56.80	7743233.59		15887-1.RAW	17:30:01	605.37	Sample	OK	1	F101423
1A00021-05RE1	A16	1E+06	56.80	2102171.24		15888-1.RAW	17:34:11	429.12	Sample	OK	1	F101423
1A00021-06RE1	A17	1E+06	56.80	2754879.50		15889-1.RAW	17:38:22	544.73	Sample	OK	1	F101423
1A00021-07RE1	A18	1E+06	56.80	1837641.92		15890-1.RAW	17:42:33	382.27	Sample	OK	1	F101423
1A00021-08RE1	A19	1E+06	56.80	922235.66		15891-1.RAW	17:46:44	220.14	Sample	OK	1	F101423
1A00021-09RE1	A20	1E+06	56.80	914987.68		15892-1.RAW	17:50:55	218.86	Sample	OK	1	F101423
1A00021-10RE1	A21	1E+06	56.80	900989.55		15893-1.RAW	17:55:08	216.38	Sample	OK	1	F101423
1A00021-11RE1	B1	1E+06	56.80	725899.36		15894-1.RAW	17:59:21	185.37	Sample	OK	1	F101423
1A00021-12RE1	B2	1E+06	56.80	686175.11		15895-1.RAW	18:03:31	178.33	Sample	OK	1	F101423
SEQ-CCV7	B3	1	56.80	4.03	80.67	15896-1.RAW	18:07:41	771.16	Sample	OK	1	
SEQ-CCB7	B4	1	56.80	0.00	0.00	15897-1.RAW	18:11:51	47.45	Sample	OK	1	
1A00021-13RE1	B5	1E+06	56.80	599584.94		15898-1.RAW	18:16:01	163.00	Sample	OK	1	F101423
SEQ-CCV8	B6	1	56.80	3.54	70.72	15899-1.RAW	18:20:11	683.07	Sample	OK	1	
SEQ-CCB8	B7	1	56.80	0.00	0.00	15900-1.RAW	18:24:21	49.74	Sample	OK	1	

SEQ-IBL1	
SEQ-IBL2	
SEQ-IBL3	
SEQ-CAL1	
SEQ-CAL2	
SEQ-CAL3	
SEQ-CAL4	
SEQ-CAL5	
SEQ-ICV	
SEQ-ICB	
F102335-BS1	
F102335-BSD1	
F102335-BLK1	
F102335-BLK2	
F102335-BLK3	1B00003-34
1A00115-01	SEQ-CCV4
WS	SEQ-CCB4
WS	F102336-MS2
WS	F102336-MSD2
WS	1B00003-20
SEQ-CCV1	1B00003-21
SEQ-CCB1	1B00003-22
F102335-MS1	1B00003-23
F102335-MSD1	1B00003-24
1A00115-02	1B00003-25
1A00115-03	1B00003-26
1A00115-04	1B00003-27
1A00115-05	SEQ-CCV5
BLANKTEST	SEQ-CCB5
1A00115-06	1B00003-28
1A00115-07	1B00003-29
1A00115-08	1B00003-30
1A00115-10	1B00003-32
SEQ-CCV2	1B00003-33
SEQ-CCB2	1B00003-35
1A00115-11	1B00003-36
F102333-BS1	1A00105-01RE1
F102333-BSD1	1B00048-01RE1
F102333-BLK1	1A00021-02RE1
F102333-BLK2	SEQ-CCV6
F102333-BLK3	SEQ-CCB6
1A00104-01	1A00021-03RE1
1A00105-01	1A00021-04RE1
1A00048-01	1A00021-05RE1
F102333-MS1	1A00021-06RE1
SEQ-CCV3	1A00021-07RE1
SEQ-CCB3	1A00021-08RE1
F102333-MSD1	1A00021-09RE1
F102336-BS1	1A00021-10RE1
F102336-BSD1	1A00021-11RE1
F102336-BLK1	1A00021-12RE1
F102336-BLK2	SEQ-CCV7
F102336-BLK3	SEQ-CCB7
1B00003-31	1A00021-13RE1
F102336-MS1	SEQ-CCV8
F102336-MSD1	SEQ-CCB8

2/25/21

ANALYSIS SEQUENCE

1C04009

Analyzed with 1C04010

Instrument: Hg2700-1

Calibration ID: UNASSIGNED

Analyzed: 3/3/2021

Lab Number	Analysis	Order	STD ID	ISTD ID	Comments
1C04009-IBL1	QC	1			
1C04009-CAL1	QC	2	2100465		
1C04009-CAL2	QC	3	2100466		
1C04009-CAL3	QC	4	2100332		QUALITY ASSURANCE
1C04009-CAL4	QC	5	2100333		
1C04009-CAL5	QC	6	2100334		PEER REVIEWED
1C04009-ICV1	QC	7	2100149		
1C04009-ICB1	QC	8			INITIALS: PGS
1C04009-ICV2	QC	9	2100149		
1C04009-ICV3	QC	10	2100149		
1C04009-ICB2	QC	11			
F102324-BS1	QC	12			
F102324-BSD1	QC	13			
F102324-BLK1	QC	14			
F102324-BLK2	QC	15			
F102324-BLK3	QC	16			
1B00035-01	MHg-CVAFS-S-KOH	17			BatchQC
1B00035-01	MHg-CVAFS-S-KOH-Nutra	18			
F102324-MS1	QC	19			
F102324-MSD1	QC	20			
1B00083-02	MHg-CVAFS-S-KOH	21			BatchQC
1B00083-02	MHg-CVAFS-S-KOH-Nutra	22			
F102324-MS2	QC	23			
1C04009-CCV1	QC	24	2100149		
1C04009-CCB1	QC	25			
F102324-MSD2	QC	26			
1A00115-01	MHg-CVAFS-S-KOH	27			
1A00115-02	MHg-CVAFS-S-KOH	28			
1A00115-04	MHg-CVAFS-S-KOH	29			
1A00115-05	MHg-CVAFS-S-KOH	30			
1A00115-06	MHg-CVAFS-S-KOH	31			
1A00115-08	MHg-CVAFS-S-KOH	32			
1A00115-10	MHg-CVAFS-S-KOH	33			
1B00046-01	MHg-CVAFS-S-KOH-Nutra	34			
1B00047-01	MHg-CVAFS-S-KOH-Nutra	35			
1C04009-CCV2	QC	36	2100149		

ANALYSIS SEQUENCE

1C04009

Instrument: Hg2700-1

Calibration ID: UNASSIGNED **Analyzed: 3/3/2021**

Lab Number	Analysis	Order	STD ID	ISTD ID	Comments
1C04009-CCB2	QC	37			
1B00055-01	MHg-CVAFS-S-KOH-Nutra	38			
1B00057-01	MHg-CVAFS-S-KOH-Nutra	39			
1B00058-01	MHg-CVAFS-S-KOH-Nutra	40			
1B00082-01	MHg-CVAFS-S-KOH	41			
1B00082-02	MHg-CVAFS-S-KOH	42			
1B00082-03	MHg-CVAFS-S-KOH	43			
1B00082-04	MHg-CVAFS-S-KOH	44			
1B00083-01	MHg-CVAFS-S-KOH-Nutra	45			
1C04009-CCV3	QC	46	2100149		
1C04009-CCB3	QC	47			

3/4/21

Samples Loaded By Date

3/4/21

Data Processed By Date

Peer Review Check List for MHg for CV-GC-AFS (SOP2808) 2018 Rev 7 (8/2/18)

Analyst:	MFS	**Sequence #:**	1C04009
Reviewer:		**Dataset ID #:**	MHg27001-210303-1
Date:	3/4/21	**WO #:**	Multiple
Batch #(s):	F102324		

- **Select the correct preparation method.**

Additional Comments:

Analyte	Prep Method		Matrix
☐ MHg	SOP2797	MHg Distillation	Water
☑ MHg	SOP2986	KOH/MeOH Digest	Tissue
☐ MHg	SOP5134	MeCl Extraction	Sed/Soil
☐ DMHg	SOP2816 (Non-Accredited method)		ALL

	Analyst Initials: MFS			Reviewer Initials/Date: PGS
1. Compare Sample ID with Bench sheet/Sequence/Raw Data (Have all samples been imported?)	☑ YES	☐ NO		☐
2. Check for transcription errors from Excel spreadsheet (or Prep Bench sheet)/Raw data	☑ YES	☐ NO		☐
(a) Reviewer: 100% of peak heights checked	☑ YES	☐ NO		☐
(b) Are there peak height errors?	☐ YES	☑ NO		☐
(c) Error on a sample: Do peak heights, responses, & initial results match corrected data?	☐ YES	☐ NO	☑ N/A	☐
(d) Error on a Cal Pt, ICB/CCB, or PB: Has the data been reimported?	☐ YES	☐ NO	☑ N/A	☐
(e) Check standards & reagents in sequence & bench sheet for correct usage (i.e. expiries).	☑ YES	☐ NO	☐ N/A	☐
(f) Check and compare masses (review prep bench sheet)	☑ YES	☐ NO	☐ N/A	☐
(g) Check and compare initial and final volumes	☑ YES	☐ NO	☐ N/A	☐
(h) Do aliquots and dilutions written on benchsheet match those in Excel?	☑ YES	☐ NO	☐ N/A	☐
(i) Is the pH>3.0 for all distilled samples?	☐ YES	☐ NO	☑ N/A	☐
(j) Is the sequence #, analyst, date, and instrument # on the QC page?	☑ YES	☐ NO		☐
(k) Is the analysis status correct? (analyzed/initial review/reviewed)	☑ YES	☐ NO		☐
(l) Original prep bench sheet added to data package?	☑ YES	☐ NO		☐
(m) Benchsheet prep date MUST match actual prep date (check if re-shot vs re-extract)	☑ YES	☐ NO		☐
3. High QA? WO#(s)/Client(s):	☐ YES	☑ NO		☐
4. Client specific QC? (if Yes, refer to Project Notes/LIMS)	☐ YES	☑ NO		☐
(a) Have the QC requirements been met for all WO#s?	☑ YES	☐ NO		☐
5. 20 or fewer samples in batch?	☑ YES	☐ NO		☐
(a) 3 PBs, 1 LCS/LCSD (or BS/BSD), 2 MS/MSD/MD per batch?	☑ YES	☐ NO		☐
(b) 1 CCV and 1 CCB every 10 analytical runs?	☑ YES	☐ NO		☐

QA/QC Data Checked

6. The calibration curve included a minimum of 5 Standards	☑ PASS	☐ FAIL	☐ N/A	☐
Comments:				
7. 1st Calibration Standard % Recoveries (65-135%)	☑ PASS	☐ FAIL	☐ N/A	☐
Comments:				
8. RSD CF (≤ 15%)	☑ PASS	☐ FAIL		☐
Comments:				

Peer Review Check List for MHg for CV-GC-AFS (SOP2808) 2018 Rev 7 (8/2/18)

Analyst:	MFS	**Sequence #:**	1C04009
Reviewer:		**Dataset ID #:**	MHg27001-210303-1
Date:	3/14/21	**WO #:**	Multiple
Batch #(s):	F102324		

	Analyst Initials: MFS			Reviewer Initials/Date: PGS
9. ICV % Recoveries 67-133%	☑ PASS	☐ FAIL		☐
Comments:				
10. CCV % Recoveries 67-133%	☑ PASS	☐ FAIL		☐
Comments:				
11. Are the absolute value of the ICB and CCBs < PQL?	☑ PASS	☐ FAIL		☐
Comments:				
12. LCS/LCSD/CRM/BS/BSD % Recoveries (70-130%)	☑ PASS	☐ FAIL		☐
Comments:				
13. LCS/LCSD or BS/BSD RPD (< 25%)	☑ PASS	☐ FAIL		☐
Comments:				
14. Water: Average of Preparation Blanks < 0.045 ng/L and standard devaition of 0.015 ng/L?	☐ PASS	☐ FAIL	☑ N/A	☐
Comments:				
15. Sediment/Tissue: Individually, are the Preparation Blanks < PQL for the matrix?	☐ PASS	☑ FAIL	☐ N/A	☐
Comments: Blk 1	☐ PASS	☐ FAIL		☐
16. Have Total Solids been applied? (If NO, please ensure that they are done or nearly done)	☐ YES	☐ NO	☐ N/A	☐
17. Is the correct 'Source' designated for MD/MS/MSD?	☑ YES	☐ NO		☐
18. For digested preps: was there a spike witness signature & date on the prep bench sheet?	☑ YES	☐ NO	☐ N/A	☐
19. MD RPD/MT RSD(< 35%)	☐ PASS	☐ FAIL	x n/t	☐
Comments:				
20. Is there one set of MS/MSD per every 10 samples?	☑ PASS	☐ FAIL		☐
Comments:				
21. MS/MSD RPD(< 35%)	☐ PASS	☑ FAIL		☐
Comments: Incorrect spike				
22. MS (AS) % Recoveries (65-130%)	☐ PASS	☑ FAIL		☐
Comments:				
23. MSD (ASD) % Recoveries (65-130%)	☐ PASS	☑ FAIL		☐
Comments:				
24. Spiked 1-5X ambient or 1-5X PQL (whichever is higher) (from EPA 1630)	☐ YES	☑ NO		☐
25. Are all samples within instrument calibration range (or at maximum aliquot size)?	☑ YES	☐ NO		☐
Comments:				
26. For instrumental dilutions, is the dilution factor in excel correct?	☑ PASS	☐ NO	☐ N/A	☐
Is the sample volume, diluents, and final volume of the dilution noted on benchsheet?	☑ PASS	☐ NO	☐ N/A	☐
27. Dissolved < Total metals (if applicable)	☐ PASS	☐ NO	☑ N/A	☐
Comments:				
28. Effluent < Influent metals (visually confirm if needed)	☐ PASS	☐ NO	☑ N/A	☐
Comments:				

Peer Review Check List for MHg for CV-GC-AFS (SOP2808) 2018 Rev 7 (8/2/18)

Analyst:	MFS	**Sequence #:**	1C04009
Reviewer:		**Dataset ID #:**	MHg27001-210303-1
Date:		**WO #:**	Multiple
Batch #(s):	F102324		

Analyst Initials: MFS **Reviewer Initials/Date:** PGS

29. Are re-runs noted with reason? ☑ YES ☐ NO ☐ N/A ☐

 Comments:

30. For failing QC (CCV, CCB, PB, BS/BSD, CAL): ☐ YES ☑ NO ☐ N/A ☐

 Was a bubbler and trap test run before the analytical run continued?

 Comments:

31. Do re-run results compare to initial analysis (< 35% RPD)? ☐ YES ☐ NO ☐ N/A ☐

 Comments:

32. Are qualifiers consistent with the data review flowcharts? ☑ YES ☐ NO ☐ N/A ☐

 Comments:

33. Have non-reportable samples been imported into LIMS and clicked to non-reportable? ☑ YES ☐ NO ☐ N/A ☐

 Comments:

34. Have re-extracts been created for non-reportable samples? ☑ YES ☐ NO ☐ N/A ☐

35. Narrations in MMO box in LIMS?

 Comments:

36. Are there any HIGH QA projects within the data? ☐ YES ☑ NO

 If so, place dataset to the QA office.

37. Does the data set need scanning? ☐ YES ☑ N/A ☐

Files located at: \\Cuprum\gen_admin\Quality Assurance\Training Master\DOCs

38. Date of analyst IDOC/CDOC: 3/5/2020 IDOC/CDOC within last 12 months? ☑ YES ☐ NO ☐

39. Date of analyst's SOP reading: 10/24/2019 Current SOP revision? ☑ YES ☐ NO ☐

40. Date of LOD: 10-25-19 LOD within last 3 months (within 12 months for MDN)? ☐ YES ☑ NO ☐ N/A ☐

41. Date of LOQ: 10-25-19 LOQ within last 3 months (within 12 months for MDN)? ☐ YES ☑ NO ☐ N/A ☐

42. If MDN samples, date of last MDL study:

43. MDL study within last 12 months? ☐ YES ☐ NO ☑ N/A ☐

Data can not be reported without a current IDOC/CDOC, LOD or LOQ.

Additional Comments: ☐ YES ☑ NO ☐

Failing Data Report - 1C04009

Sample ID	Analysis	Result	MRL	Dup Result	Source Result	True Value	Units	% Rec.	Rec. LCL	Rec. UCL	RPD	RPD Limit	Over Cal	Failure	Qualifier
1C04009-ICV1	MHg-CVAFS-S-KOH	0.7	0.100			0.50368	ng/L	135	69.00	131.00			PASS-OVER	FAIL-CCV	
F102324-BLK1	MHg-CVAFS-S-KOH	3.2	2.0				ng/g						PASS-OVER	FAIL-BLK	QB-10
F102324-MS1	MHg-CVAFS-S-KOH	435.0	9.4		458.0528	0.37467	ng/g	-6170	50.00	150.00			PASS-OVER	FAIL-MS	QM-07
F102324-MSD1	MHg-CVAFS-S-KOH	373.0	9.7	434.9539	458.0528	0.38745	ng/g	-22000	50.00	150.00	-112	35.00	PASS-OVER	FAIL-MSD (Rec.)	QM-07
F102324-MS2	MHg-CVAFS-S-KOH	1.7	3.8		).736584(	0.38037	ng/g	453	50.00	150.00			PASS-OVER	FAIL-MS	QM-07
F102324-MSD2	MHg-CVAFS-S-KOH	0.4	3.8	1.723598	).736584(	0.37750	ng/g		50.00	150.00		35.00	PASS-OVER	FAIL-MSD (Rec.)	QM-07
1C04009-ICV1	MHg-CVAFS-S-KOH-Nutra	0.7	0.100			0.50368	ng/L	135	69.00	131.00			PASS-OVER	FAIL-CCV	
F102324-BLK1	MHg-CVAFS-S-KOH-Nutra	3.2	2.0				ng/g						PASS-OVER	FAIL-BLK	QB-10
F102324-MS1	MHg-CVAFS-S-KOH-Nutra	435.0	9.4		458.0528	0.37467	ng/g	-6170	50.00	150.00			PASS-OVER	FAIL-MS	QM-07
F102324-MSD1	MHg-CVAFS-S-KOH-Nutra	373.0	9.7	434.9539	458.0528	0.38745	ng/g	-22000	50.00	150.00	-112	35.00	PASS-OVER	FAIL-MSD (Rec.)	QM-07
F102324-MS2	MHg-CVAFS-S-KOH-Nutra	1.7	3.8		).736584(	0.38037	ng/g	453	50.00	150.00			PASS-OVER	FAIL-MS	QM-07
F102324-MSD2	MHg-CVAFS-S-KOH-Nutra	0.4	3.8	1.723598	).736584(	0.37750	ng/g		50.00	150.00		35.00	PASS-OVER	FAIL-MSD (Rec.)	QM-07
1C04009-ICV1	MHg-CVAFS-T-KOH	0.7	0.100			0.50368	ng/L	135	69.00	131.00			PASS-OVER	FAIL-CCV	
F102324-BLK1	MHg-CVAFS-T-KOH	3.2	2.0				ng/g						PASS-OVER	FAIL-BLK	QB-10
F102324-MS1	MHg-CVAFS-T-KOH	435.0	9.4			0.37467	ng/g	116000	50.00	150.00			PASS-OVER	FAIL-MS	QM-07
F102324-MSD1	MHg-CVAFS-T-KOH	373.0	9.7	434.9539		0.38745	ng/g	96300	50.00	150.00	18.7	35.00	PASS-OVER	FAIL-MSD (Rec.)	QM-07
F102324-MS2	MHg-CVAFS-T-KOH	1.7	3.8			0.38037	ng/g	453	50.00	150.00			PASS-OVER	FAIL-MS	QM-07
F102324-MSD2	MHg-CVAFS-T-KOH	0.4	3.8	1.723598		0.37750	ng/g		50.00	150.00		35.00	PASS-OVER	FAIL-MSD (Rec.)	QM-07

Analyst Reviewed By Date 3/4/21

Peer Reviewed By Date

Sample Preparation Review Checklist

Technician/Date: LEL 2/19/2021 **Samples to lab:** 17:50 **Batch #:** F102324

Upload/Date: MV2 (Cw?) 2/19/21 **Reviewer/Date:** MRR 3/3/21

EFGS Preparation Method				
☐ SOP2836	Oven Digestion (Total Recoverable Metals)	☐ ICPMS	☐ AFS
☐ SOP2837	Tissue Nitric Digestion	☐ ICPMS	☐ CVAFS
☐ SOP2840	Modified Aqua Regia		
☐ SOP2820	RP		
☐ SOP2821	HF Bomb Digestion	☐ ICPMS	☐ CVAFS
☐ SOP2825	Nitric Bomb Digestion	☐ ICPMS	☐ CVAFS
☐ SOP2993	Oven Digestion (As , Se Speciation)		
☐ SOP5145	Microwave Digestion (Nutraceuticals)		
☐ SOP5145	Microwave Digestion (3051)		
☐ NA	Other: Sop 2986 KoH/Methanol		

Initials	SOP Date	DOC Date
LEL	1/21/21	1/21/21
MV	2/19/21	N/A

Comments:

Conditionally formatted training files located at:
\\us34fila\General and Admin\Quality Assurance\Training\Training Master
(Contact QA for any problems regarding these training files.)

Analytes: MHg

Reviewer Initials: MRS **Tertiary Review:** UTL

Item				Reviewer	Tertiary
1. Is any SOP/DOC expiring within one week of Submission Date?	☐ YES		☑ NO	☑	☑
Data cannot be reported without a current IDOC/CDOC.	**If YES, notify supervisor and technician immediately.**				
2. Check prep method	☑ YES			☑	☑
(a) For Ceuticals: Is correct Hg code being used in LIMS?	☐ ICPMS ☐ CV-AFS	☐ 70:30	☑ N/A	☑	☑
3. Compare sample ID & container ID with benchsheet & in LIMS	☑ YES		☐ N/A	☑	☑
4. Check for transcription errors from benchsheet	☑ YES			☑	☑
(a) Check and compare initial and final volumes	☑ YES		☐ N/A	☑	☑
(b) Check and compare mass	☑ YES		☐ N/A	☑	☑
(c) Has the number of pills been documented (Special info 5 in benchsheet)?	☑ YES		☐ N/A	☑	☑
(d) Have assay logbook copies been attached & avg masses entered?	☑ YES		☐ N/A	☑	☑
(e) For re-digests, have e-mails been attached and verified?	☐ YES		☑ N/A	☑	☑
(f) Benchsheet prep date MUST match actual prep date	☑ YES			☑	☑
5. Samples per Batch? **Check QC Requirements**	☑ ≤ 20	☐ ≤ 10		☑	☑
(a) PBs per batch?	☑ 3 PBs	☐ 2 PBs	☐ 1 PBs	☑	☑
(b) Are pre and post homogenization blanks in batch?	☐ YES		☑ N/A	☑	☑
(c) BS, BS/BSD or CRM in batch?	☐ BS	☑ BS/BSD	☐ CRM	☑	☑
(d) MS/MSD in batch?	☑ YES		☐ N/A	☑	☑
(e) MD in batch?	☐ YES		☑ N/A	☑	☑
(f) Is there at least one duplicate QC source in batch?	☑ YES		☐ N/A	☑	☑
(g) Are there any client specific requests, QC requests, etc?	☐ YES		☑ N/A	☑	☑
Document:					
(h) Correct LIMS spike ID included for BS, BS/BSD and/or MS/MSD?	☑ YES		☐ N/A	☑	☑
(i) Correct 'source' designated for MD/MS/MSD?	☑ YES		☐ N/A	☑	☑
(j) For EFGS-filtered samples, was a filtration blank included ?	☐ YES		☑ N/A	☑	☑
6. Special prep requirements?	☐ YES		☑ N/A	☑	☑
(a) For 1638: Have samples sat for 48 hours after preservation?	☐ YES		☑ N/A	☑	☑
(b) For 200.8: Have samples sat for 16 hours after preservation?	☐ YES		☑ N/A	☑	☑
(c) For DOD have pipettes been calibrated day of prep?	☐ YES		☑ N/A	☑	☑
7. Are the samples appropriately spiked?	☑ YES		☐ N/A	☑	☑
(a) Is the spike and amount used appropriate and entered into LIMS?	☑ YES		☐ N/A	☑	☑
(b) For <u>all</u> spiking was there a witness? (Initials <u>must</u> be in logbook)	☑ YES		☐ N/A	☑	☑
(c) Spikes added:	☑ YES			☑	☑

NOTE: Due to LIMS software constraints, new LIMS IDs need to be created when multiple/ supplemental spikes are used. Enter new LIMS ID below and use table to list all spikes included in it.

Spike LIMS ID : ______ ☑ ☑

Spike Name	LIMS ID	µL	Spike Name	LIMS ID	µL
Dam-4	1905023	NA			
MHg l.endu	2100277	100			

PREPARATION BENCH SHEET

F102324

Eurofins Frontier Global Sciences, LLC

@ 1523 MRS 3/3/21

Matrix: Tissue **Prepared using: Trace Metals - EFGS SOP2986 KOH/Methanol Digestion for Methyl Hg** **Prepared: 2/19/2021**

Lab Number	Sample ID and Source Sample	Initial (g)	Final (mL)	Spike1 ID	µl Spike1	Spike2 ID	µl Spike2	Extraction Comments
F102324-BLK1	Blank	0.25	20					
F102324-BLK2	Blank	0.25	20					
F102324-BLK3	Blank	0.25	20					
F102324-BS1	LCS	0.1278	20	1905023				
F102324-BSD1	LCS Dup	0.1266	20	1905023				
F102324-MS1	Matrix Spike [1B00035-01]	0.2669	20	2100277	100			
F102324-MS2	Matrix Spike [1B00083-02]	0.2629	20	2100277	100			
F102324-MSD1	Matrix Spike Dup [1B00035-01]	0.2581	20	2100277	100			
F102324-MSD2	Matrix Spike Dup [1B00083-02]	0.2649	20	2100277	100			

Standard ID(s):	Description:	Expiration:
1905023	DORM-4	01-Jun-21 00:00
2100277	MHg New Primary 1.0 ng/mL CAL	29-Apr-21 00:00

Reagent ID(s):	Description:	Expiration:
2003243	Methanol, HPLC Grade	31-May-24 00:00
2003665	Boiling Chips for Trace Metals	29-Jun-21 00:00
2100328	25% KOH/Methanol	03-Aug-21 00:00

Past due - Rush Analysis

PREPARATION BENCH SHEET

F102324

Eurofins Frontier Global Sciences, LLC

Matrix: Tissue **Prepared using: Trace Metals - EFGS SOP2986 KOH/Methanol Digestion for Methyl Hg** **Prepared: 2/19/2021**

Lab Number	Sample ID	Initial (g)	Final (mL)	Location	Sample Comments	Analysis Comments
1A00115-01	MMBKD-01_012521_SED_00-01	0.2679	20	010203	NO	
1A00115-02	MMBKD-01_012521_SED_01-03	0.256	20	010203	NO	
1A00115-04	MMBKD-01_012521_SED_01-03_DUP	0.2547	20	010203	NO	
1A00115-05	FRB-02_012621_SED_00-01	0.2549	20	010203	NO	
1A00115-06	FRB-02_012621_SED_01-03	0.2646	20	010203	NO	
1A00115-08	ES-13_012621_SED_00-01	0.2541	20	010203	NO	
1A00115-10	ES-13_012621_SED_01-03	0.2653	20	010203	NO	
1B00035-01	468-2021-02040168	0.2671	20	200303		BatchQC
1B00046-01	464-2021-02050358	0.251	20	120402		
1B00047-01	464-2021-02040613	0.2544	20	120402		
1B00055-01	111-2021-02100215	0.2662	20	010203	no	
1B00057-01	111-2021-02100217	0.2698	20	010203		
1B00058-01	111-2021-02100216	0.2666	20	010203		
1B00082-01	NIMS#10301564 PROBIOTIC MINT CUCUMBER RETEST 1 652	0.2556	20	Deli Refrigerato	NO	
1B00082-02	NIMS#10301566 PROBIOTIC MINT CUCUMBER RETEST 2 652	0.2564	20	Deli Refrigerato	NO	
1B00082-03	NIMS#10301568 PROBIOTIC MINT CUCUMBER RETEST 2 652	0.2684	20	Deli Refrigerato	NO	
1B00082-04	NIMS#10301570 PROBIOTIC MINT CUCUMBER 650961	0.2509	20	Deli Refrigerato	NO	
1B00083-01	111-2021-02120128	0.2637	20	Deli Refrigerato	no	
1B00083-02	111-2021-02120129	0.2601	20	Deli Refrigerato	no	

Due Date: 2/19/2021

Past due - Rush Analysis

PREPARATION BENCH SHEET

F102324

Eurofins Frontier Global Sciences, LLC

Matrix: Tissue | Prepared using: Trace Metals - EFGS SOP2986 KOH/Methanol Digestion for Methyl Hg | Prepared: 2/19/2021

[redacted]

Due Date: 2/19/2021

Past due - Rush Analysis

Technician: Mn/LEL **Batch#:** F102324 **Batch Color ID:** Black **Date:** 2/18/21

- [x] **EFAFS-T-AFS-SOP2986** Tissues - Methyl Mercury - KOH/Methanol: **Hot plate 75±5°C for 2-4 hours.**
- [ ] **EFAFS-T-AFS-SOP2795** Tissues - Total Mercury - 70:30: **Hot plate 75±5°C for two hours.**
- [ ] **EFAFS-T-AFS-SOP5134** Sediments - Methyl Mercury - KBr/CH_2Cl_2: **Heat Block 45°C (nitrogen purge for 30 minutes).**
- [ ] **EFAFS-T-AFS-SOP2807** Solids - Total Mercury - Cold AR: **18-25°C for over four hours.**

Other: ________ **Vial Type:** [x] Glass [ ] Teflon
Balance#: 23 Calibrated? [x] Yes [ ] No **Therm.#:** 170756098 Calibrated? [x] Yes [ ] No
***Time in:** 1523 **Actual Temp. (raw):** 72.4 °C **w/ CF:** 79.0 °C *Time in can't begin before target temperature is reached
Time out: 1726 **Actual Temp. (raw):** 73.6 °C **w/ CF:** 74.2 °C

Final vol.: 20 **mL (LIMS ID:** 2003243 **)** **BS Spike vol.:** N/A **µL (LIMS ID:** See Below**)**
Spike Witness: Mn 2/19/21 **(initial and date)** **MS Spike vol.:** 100 **µL (LIMS ID:** 2100277**)**

HCl LIMS ID: ________ Pipette SN#: ________ Calibration Date: ________
HNO_3 LIMS ID: ________ Pipette SN#: ________ Calibration Date: ________ Mn 2/19/21
70/30 LIMS ID: ________ Dispenser #: ________ Calibrated? [ ] Yes [ ] No
Other Acid LIMS ID: 2100328 25% KOH/Methanol Dispenser #: PU33320 2/18/21
Glass Vial # 0078594 Boiling Chip lot # 2003665 *Hotblock Position: N/A

Vial #	Sample ID Number	Container ID	Sample Size [ ]mL [x]g	Vial #	Sample ID Number	Container ID	Sample Size [ ]mL [x]g	CRM LIMS ID [ ] NA
1	F102324-BLK1	A	0.2495	19	1B00046-01	A	0.2510	Dorm 4:
2	F102324-BLK2	A	0.4368	20	1B00047-01	A	0.2544	1905023
3	F102324-BLK3	A	0.2965	21	1B00055-01	A	0.2662	**Comments**
4	F102324-BS1	A	0.1278	22	1B00057-01	A	0.2698	
5	F102224-BSD1	A	0.1266	23	1B00058-01	A	0.2666	
6	1B00035-01 (MS1 Source)	A	0.2671	24	1B00078-01 Mn 2/19/21	A	0.2556	
7	F102324-MS1	A	0.2669	25	1B00082-02	A	0.2564	
8	F102324-MSD1	A	0.2581	26	1B00082-03	A	0.2684	
9	1B00083-02 (MS2 Source)	A	0.2601	27	1B00082-04	A	0.2509	
10	F102324-MS2	A	0.2629	28	1B00083-01	A	0.2637	
11	F102324-MSD2	A	0.2649	29				
12	1A00115-01	A	0.2679	30				
13	1A00115-02	A	0.2560	31				
14	1A00115-04	A	0.2547	32				
15	1A00115-05	A	0.2549	33				
16	1A00115-06	A	0.2646	34				
17	1A00115-08	A	0.2541	35				
18	1A00115-10	A	0.2653	36				

Mn 2/19/21

*Hotblock diagram located in back of logbook
Verified By: MFS 2/19/21

Nutra Assay Compositing

Initials fm Date 2/18/21 Start Time 1014 End Time 1109 Balance # N/A

Original Sample ID	Composited Sample ID	Compositing Method *1-6	Number of Tablets/Capsules	Total Mass (g)	Average Mass Per Unit ~~(g)~~ fm 2/18/21	Total Post Assay Weight (g)	Container Size/Type
1B00035-01 A	1B00035-01 A	4					Bag
1B00083-02A	1B00083-02A	4	10				Bag
1B00055-01 A	1B00055-01 A	4					Bag
1B00057-01A	1B00057-01A	4				fm 2/18/21	Bag
1B00058-01A	1B00058-01A	4					Bag
1B00083-01A	1B00083-01A	4	9				Bag

fm 2/18/21

Comments: 1A00115 Samples homogenized but not logged – fm 2/19/21

*Methods

1: Soft Gels: Puncture excipient with syringe and empty raw/fill material and mix.
2: Capsule with excipient: open excipient and remove raw/fill material and mix.
3: Tablets with no excipient: homogenized with "Magic Bullet" grinder.
4: Food: homogenized with "Magic Bullet" or comparable grinder
5: Plankton filtration
6: Other: describe in comments section

PREPARATION BENCH SHEET

F102324

Eurofins Frontier Global Sciences, LLC

Matrix: Tissue **Prepared using: Trace Metals - EFGS SOP2986 KOH/Methanol Digestion for Methyl Hg** **Prepared: 2/17/2021**

Lab Number	Sample ID and Source Sample	Initial (g)	Final (mL)	Spike1 ID	µl Spike1	Spike2 ID	µl Spike2	Extraction Comments
F102324-BLK1	Blank	0.5	40					
F102324-BLK2	Blank	0.5	40					
F102324-BLK3	Blank	0.5	40					
F102324-BS1	LCS	0.5	40					
F102324-BSD1	LCS Dup	0.5	40					
F102324-MS1	Matrix Spike [1B00035-01]	0.5	40					
F102324-MS2	Matrix Spike [1B00083-02]	0.5	40					
F102324-MSD1	Matrix Spike Dup [1B00035-01]	0.5	40					
F102324-MSD2	Matrix Spike Dup [1B00083-02]	0.5	40					

Standard ID(s): Description: Expiration:

ue Date: 2/19/2021

PREPARATION BENCH SHEET

F102324

Eurofins Frontier Global Sciences, LLC

Matrix: Tissue **Prepared using: Trace Metals - EFGS SOP2986 KOH/Methanol Digestion for Methyl Hg** **Prepared: 2/17/2021**

Lab Number	Sample ID	Initial (g)	Final (mL)	Location	Sample Comments	Analysis Comments
1A00115-01	MMBKD-01_012521_SED_00-01	0.5	40	010203	NO	
1A00115-02	MMBKD-01_012521_SED_01-03	0.5	40	010203	NO	
1A00115-04	MMBKD-01_012521_SED_01-03_DUP	0.5	40	010203	NO	
1A00115-05	FRB-02_012621_SED_00-01	0.5	40	010203	NO	
1A00115-06	FRB-02_012621_SED_01-03	0.5	40	010203	NO	
1A00115-08	ES-13_012621_SED_00-01	0.5	40	010203	NO	
1A00115-10	ES-13_012621_SED_01-03	0.5	40	010203	NO	
1B00035-01	468-2021-02040168	0.5	40	200303		BatchQC
1B00046-01	464-2021-02050358	0.5	40	120402		
1B00047-01	464-2021-02040613	0.5	40	120402		
1B00055-01	111-2021-02100215	0.5	40	010203	no	
1B00057-01	111-2021-02100217	0.5	40	010203		
1B00058-01	111-2021-02100216	0.5	40	010203		
1B00082-01	NIMS#10301564 PROBIOTIC MINT CUCUMBER RETEST 1 652	0.5	40	Deli Refrigerato	NO	
1B00082-02	NIMS#10301566 PROBIOTIC MINT CUCUMBER RETEST 2 652	0.5	40	Deli Refrigerato	NO	
1B00082-03	NIMS#10301568 PROBIOTIC MINT CUCUMBER RETEST 2 652	0.5	40	Deli Refrigerato	NO	
1B00082-04	NIMS#10301570 PROBIOTIC MINT CUCUMBER 650961	0.5	40	Deli Refrigerato	NO	
1B00083-01	111-2021-02120128	0.5	40	Deli Refrigerato	no	
1B00083-02	111-2021-02120129	0.5	40	Deli Refrigerato	no	

ue Date: 2/19/2021

PREPARATION BENCH SHEET

F102324

Eurofins Frontier Global Sciences, LLC

Matrix: Tissue   Prepared using: Trace Metals - EFGS SOP2986 KOH/Methanol Digestion for Methyl Hg   Prepared: 2/17/2021

[redacted]

ue Date: 2/19/2021

eurofins | Frontier Global Sciences

Organic Mercury Species 2700 Template v1.21

Analysis Datasheet for Methyl Mercury in Soil/Tissue

Date of Analysis: March 03, 2021
Instrument #: Hg2700-1
LIMS Sequence #: 1C04009, 1C04010

Analyst: MFS
Units ng/L

Calibration Statistics:

LabNumber	n	True Val	Area	Uncorrected Response Factor	Corrected Peak Height	Corrected Response Factor	% Recovery
SEQ-CAL1	1	0.05 ng/L	38.59 units	771.79	30.56 units	611.18	98.6 %Rec
SEQ-CAL2	1	0.20 ng/L	139.05 units	695.23	131.01 units	655.07	105.7 %Rec
SEQ-CAL3	1	1.00 ng/L	589.07 units	589.07	581.04 units	581.04	93.8 %Rec
SEQ-CAL4	1	2.00 ng/L	1235.80 units	617.90	1227.77 units	613.89	99.1 %Rec
SEQ-CAL5	1	4.00 ng/L	2558.78 units	639.70	2550.75 units	637.69	102.9 %Rec
SEQ-CAL6	0						
SEQ-CAL7	0						
SEQ-CAL8	0						
SEQ-CAL9	0						

Corr. Mean RF	Corr. St Dev RF	Corr. RSD CF	Uncorr. Mean RF
619.77	+/- 28.18	4.5% RSD	662.74

Blanks:

LabNumber	n	Mean	Std Dev	Mean (ng/L)	Std Dev (ng/L)
SEQ-IBL	1	8.03 units		0.01 ng/L	#VALUE!

Preparation Blanks

Sample Type	Batch ID	n	Mean	Std Dev
BLK	1	3	26.358 ng/L	±11.711
BLK	2	3	-0.013 ng/L	±0.000
BLK	3	0	0.000 ng/L	
BLK	4	0	0.000 ng/L	
BLK	5	0	0.000 ng/L	

File: MHg27001-210303-1

Instrument	Analyst	Sample Type	LabNumber	Dilution	Analyzed	FileID	Run End	Uncorrected Response	Batch ID	No PB Correction?	RESP	InitialResult	FinalResult	InitialUnits	Comments
Hg2700-1	00	CAL	SEQ-IBL1	1	3/3/21 13:06	5347-1.RAW	13:06:50	8.03			0.0	0.000	0.000	ng/L	
Hg2700-1	00	CAL	SEQ-CAL1	1	3/3/21 13:17	5348-1.RAW	13:17:05	38.59			30.6	0.049	0.049	ng/L	
Hg2700-1	00	CAL	SEQ-CAL2	1	3/3/21 13:27	5349-1.RAW	13:27:21	139.05			131.0	0.211	0.211	ng/L	
Hg2700-1	00	CAL	SEQ-CAL3	1	3/3/21 13:37	5350-1.RAW	13:37:36	589.07			581.0	0.938	0.938	ng/L	
Hg2700-1	00	CAL	SEQ-CAL4	1	3/3/21 13:47	5351-1.RAW	13:47:52	1235.80			1227.8	1.981	1.981	ng/L	
Hg2700-1	00	CAL	SEQ-CAL5	1	3/3/21 13:58	5352-1.RAW	13:58:07	2558.78			2550.8	4.116	4.116	ng/L	
Hg2700-1	00	CAL	SEQ-ICV1	1	3/3/21 14:08	5353-1.RAW	14:08:22	430.69			422.7	0.682	0.682	ng/L	136.3914483
Hg2700-1	00	CAL	SEQ-ICB1	1	3/3/21 14:18	5354-1.RAW	14:18:38	44.94			36.9	0.060	0.060	ng/L	
Hg2700-1	00	CAL	SEQ-ICV2	1	3/3/21 14:28	5355-1.RAW	14:28:54	353.17			345.1	0.557	0.557	ng/L	111.3770194
Hg2700-1	00	CAL	SEQ-ICV3	1	3/3/21 14:39	5356-1.RAW	14:39:10	365.33			357.3	0.577	0.577	ng/L	115.3012144
Hg2700-1	00	CAL	SEQ-ICB2	1	3/3/21 14:49	5357-1.RAW	14:49:25	25.71			17.7	0.029	0.029	ng/L	
Hg2700-1	00	SAM	F102324-BS1	1000	3/3/21 14:59	5358-1.RAW	14:59:41	1645.47	1		1637.4	2.616	2615.640	ng/L	F102324
Hg2700-1	00	SAM	F102324-BSD1	1000	3/3/21 15:09	5359-1.RAW	15:09:57	1600.49	1		1592.5	2.543	2543.072	ng/L	F102324
Hg2700-1	00	BLK	F102324-BLK1	500	3/3/21 15:20	5360-1.RAW	15:20:13	57.46	1		49.4	0.080	39.881	ng/L	F102324
Hg2700-1	00	BLK	F102324-BLK2	500	3/3/21 15:30	5361-1.RAW	15:30:28	32.39	1		24.4	0.039	19.649	ng/L	F102324
Hg2700-1	00	BLK	F102324-BLK3	500	3/3/21 15:40	5362-1.RAW	15:40:44	32.26	1		24.2	0.039	19.543	ng/L	F102324
Hg2700-1	00	SAM	1B00035-01	2500	3/3/21 15:51	5363-1.RAW	15:51:00	1531.10	1		1523.1	2.447	6117.295	ng/L	F102324
Hg2700-1	00	SAM	F102324-MS1	2500	3/3/21 16:01	5364-1.RAW	16:01:16	1453.55	1		1445.5	2.322	5804.461	ng/L	F102324
Hg2700-1	00	SAM	F102324-MSD1	2500	3/3/21 16:11	5365-1.RAW	16:11:32	1207.86	1		1199.8	1.925	4813.436	ng/L	F102324
Hg2700-1	00	SAM	1B00083-02	500	3/3/21 16:21	5366-1.RAW	16:21:48	52.58	1		44.5	0.019	9.579	ng/L	F102324
Hg2700-1	00	SAM	F102324-MS2	1000	3/3/21 16:32	5367-1.RAW	16:32:04	38.41	1		30.4	0.023	22.657	ng/L	F102324
Hg2700-1	00	CAL	SEQ-CCV1	1	3/3/21 16:42	5368-1.RAW	16:42:20	389.00			381.0	0.615	0.615	ng/L	
Hg2700-1	00	CAL	SEQ-CCB1	1	3/3/21 16:52	5369-1.RAW	16:52:37	33.51			25.5	0.041	0.041	ng/L	
Hg2700-1	00	SAM	F102324-MSD2	1000	3/3/21 17:02	5370-1.RAW	17:02:53	27.32	1		19.3	0.005	4.767	ng/L	F102324
Hg2700-1	00	SAM	1A00115-01	500	3/3/21 17:13	5371-1.RAW	17:13:09	38.68	1		30.6	-0.003	-1.634	ng/L	F102324
Hg2700-1	00	SAM	1A00115-02	500	3/3/21 17:23	5372-1.RAW	17:23:25	34.71	1		26.7	-0.010	-4.837	ng/L	F102324
Hg2700-1	00	SAM	1A00115-04	500	3/3/21 17:33	5373-1.RAW	17:33:41	38.66	1		30.6	-0.003	-1.651	ng/L	F102324
Hg2700-1	00	SAM	1A00115-05	500	3/3/21 17:43	5374-1.RAW	17:43:57	23.94	1		15.9	-0.027	-13.527	ng/L	F102324
Hg2700-1	00	SAM	1A00115-06	500	3/3/21 17:54	5375-1.RAW	17:54:12	19.77	1		11.7	-0.034	-16.891	ng/L	F102324
Hg2700-1	00	SAM	1A00115-08	500	3/3/21 18:04	5376-1.RAW	18:04:28	118.07	1		110.0	0.125	62.420	ng/L	F102324
Hg2700-1	00	SAM	1A00115-10	500	3/3/21 18:14	5377-1.RAW	18:14:44	98.13	1		90.1	0.093	46.331	ng/L	F102324
Hg2700-1	00	SAM	1B00046-01	500	3/3/21 18:25	5378-1.RAW	18:25:00	0.00	1		-8.0	-0.066	-32.836	ng/L	F102324
Hg2700-1	00	SAM	1B00047-01	500	3/3/21 18:35	5379-1.RAW	18:35:16	26.22	1		18.2	-0.023	-11.682	ng/L	F102324
Hg2700-1	00	CAL	SEQ-CCV2	1	3/3/21 18:45	5380-1.RAW	18:45:31	366.42			358.4	0.578	0.578	ng/L	
Hg2700-1	00	CAL	SEQ-CCB2	1	3/3/21 18:55	5381-1.RAW	18:55:48	24.94			16.9	0.027	0.027	ng/L	
Hg2700-1	00	SAM	1B00055-01	2500	3/3/21 19:06	5382-1.RAW	19:06:04	208.04	1		200.0	0.312	780.442	ng/L	F102324
Hg2700-1	00	SAM	1B00057-01	2500	3/3/21 19:16	5383-1.RAW	19:16:20	96.72	1		88.7	0.133	331.395	ng/L	F102324
Hg2700-1	00	SAM	1B00058-01	2500	3/3/21 19:26	5384-1.RAW	19:26:36	104.21	1		96.2	0.145	361.610	ng/L	F102324
Hg2700-1	00	SAM	1B00082-01	500	3/3/21 19:36	5385-1.RAW	19:36:52	27.82	1		19.8	-0.021	-10.389	ng/L	F102324
Hg2700-1	00	SAM	1B00082-02	500	3/3/21 19:47	5386-1.RAW	19:47:07	33.09	1		25.1	-0.012	-6.137	ng/L	F102324
Hg2700-1	00	SAM	1B00082-03	500	3/3/21 19:57	5387-1.RAW	19:57:24	26.93	1		18.9	-0.022	-11.110	ng/L	F102324
Hg2700-1	00	SAM	1B00082-04	500	3/3/21 20:07	5388-1.RAW	20:07:40	28.09	1		20.1	-0.020	-10.172	ng/L	F102324
Hg2700-1	00	SAM	1B00083-01	500	3/3/21 20:17	5389-1.RAW	20:17:56	26.68	1		18.6	-0.023	-11.314	ng/L	F102324
Hg2700-1	00	SAM	F103394-BS1	10	3/3/21 20:28	5390-1.RAW	20:28:12	739.01	2		731.0	1.181	11.807	ng/L	F103394
Hg2700-1	00	SAM	F103394-BSD1	10	3/3/21 20:38	5391-1.RAW	20:38:28	715.76	2		707.7	1.143	11.432	ng/L	F103394
Hg2700-1	00	CAL	SEQ-CCV3	1	3/3/21 20:48	5392-1.RAW	20:48:45	397.64			389.6	0.629	0.629	ng/L	

Ver by: VAL 3-4-21

* Peak windows updated for ~~date~~ WO 1A00115 due to large Hg II peak interference. MFS 3/4/21
All chromatograms annotated with new peak window and transcriptions verified - MFS 3/4/21

Printed: 3/4/2021

File: MHg27001-210303-1

Instrument	Analyst	Sample Type	LabNumber	Dilution	Analyzed	FileID	Run End	Uncorrected Response	Batch ID	No PB Correction?	RESP	InitialResult	FinalResult	InitialUnits	Comments
Hg2700-1	00	CAL	SEQ-CCB3	1	3/3/21 20:59	5393-1.RAW	20:59:01	29.21			21.2	0.034	0.034	ng/L	
Hg2700-1	00	BLK	F103394-BLK1	1	3/3/21 21:09	5394-1.RAW	21:09:17	0.00	2		-8.0	-0.013	-0.013	ng/L	F103394
Hg2700-1	00	BLK	F103394-BLK2	1	3/3/21 21:19	5395-1.RAW	21:19:33	0.00	2		-8.0	-0.013	-0.013	ng/L	F103394
Hg2700-1	00	BLK	F103394-BLK3	1	3/3/21 21:29	5396-1.RAW	21:29:49	0.00	2		-8.0	-0.013	-0.013	ng/L	F103394
Hg2700-1	00	SAM	1B00039-01	1	3/3/21 21:40	5397-1.RAW	21:40:07	201.96	2		193.9	0.326	0.326	ng/L	F103394
Hg2700-1	00	SAM	F103394-MS1	10	3/3/21 21:50	5398-1.RAW	21:50:24	740.23	2		732.2	1.183	11.827	ng/L	F103394
Hg2700-1	00	SAM	F103394-MSD1	10	3/3/21 22:00	5399-1.RAW	22:00:41	430.85	2		422.8	0.684	6.835	ng/L	F103394
Hg2700-1	00	SAM	1B00091-01	50	3/3/21 22:10	5400-1.RAW	22:10:57	77.57	2		69.5	0.112	5.623	ng/L	F103394
Hg2700-1	00	SAM	F103394-MS2	50	3/3/21 22:21	5401-1.RAW	22:21:14	190.62	2		182.6	0.295	14.744	ng/L	F103394
Hg2700-1	00	SAM	F103394-MSD2	50	3/3/21 22:31	5402-1.RAW	22:31:31	0.00	2		-8.0	-0.013	-0.635	ng/L	F103394
Hg2700-1	00	SAM	1B00091-02	50	3/3/21 22:41	5403-1.RAW	22:41:47	43.43	2		35.4	0.057	2.868	ng/L	F103394
Hg2700-1	00	CAL	SEQ-CCV4	1	3/3/21 22:52	5404-1.RAW	22:52:03	317.82			309.8	0.500	0.500	ng/L	
Hg2700-1	00	CAL	SEQ-CCB4	1	3/3/21 23:02	5405-1.RAW	23:02:20	30.76			22.7	0.037	0.037	ng/L	
Hg2700-1	00	SAM	1B00091-03	50	3/3/21 23:12	5406-1.RAW	23:12:37	25.01	2		17.0	0.028	1.382	ng/L	F103394
Hg2700-1	00	SAM	1B00091-04	50	3/3/21 23:22	5407-1.RAW	23:22:53	33.24	2		25.2	0.041	2.047	ng/L	F103394
Hg2700-1	00	SAM	1B00091-05	50	3/3/21 23:33	5408-1.RAW	23:33:11	23.34	2		15.3	0.025	1.248	ng/L	F103394
Hg2700-1	00	SAM	1B00091-06	50	3/3/21 23:43	5409-1.RAW	23:43:27	34.10	2		26.1	0.042	2.116	ng/L	F103394
Hg2700-1	00	SAM	1B00091-07	50	3/3/21 23:53	5410-1.RAW	23:53:44	29.30	2		21.3	0.035	1.728	ng/L	F103394
Hg2700-1	00	SAM	1B00091-08	50	3/3/21 0:04	5411-1.RAW	0:04:01	0.00	2		-8.0	-0.013	-0.635	ng/L	F103394
Hg2700-1	00	SAM	1B00091-09	50	3/3/21 0:14	5412-1.RAW	0:14:18	24.95	2		16.9	0.028	1.378	ng/L	F103394
Hg2700-1	00	SAM	1B00091-10	50	3/3/21 0:24	5413-1.RAW	0:24:34	19.44	2		11.4	0.019	0.933	ng/L	F103394
Hg2700-1	00	SAM	1B00107-01	50	3/3/21 0:34	5414-1.RAW	0:34:51	54.00	2		46.0	0.074	3.722	ng/L	F103394
Hg2700-1	00	SAM	1B00107-02	50	3/3/21 0:45	5415-1.RAW	0:45:08	25.89	2		17.9	0.029	1.454	ng/L	F103394
Hg2700-1	00	CAL	SEQ-CCV5	1	3/3/21 0:55	5416-1.RAW	0:55:25	273.83			265.8	0.429	0.429	ng/L	
Hg2700-1	00	CAL	SEQ-CCB5	1	3/3/21 1:05	5417-1.RAW	1:05:40	30.63			22.6	0.036	0.036	ng/L	
Hg2700-1	00	SAM	1B00107-03	50	3/3/21 1:15	5418-1.RAW	1:15:57	38.58	2		30.6	0.050	2.478	ng/L	F103394
Hg2700-1	00	SAM	1B00107-04	50	3/3/21 1:26	5419-1.RAW	1:26:13	28.26	2		20.2	0.033	1.645	ng/L	F103394
Hg2700-1	00	SAM	1B00107-05	50	3/3/21 1:36	5420-1.RAW	1:36:30	24.99	2		17.0	0.028	1.381	ng/L	F103394
Hg2700-1	00	SAM	1B00107-06	50	3/3/21 1:46	5421-1.RAW	1:46:47	47.29	2		39.3	0.064	3.180	ng/L	F103394
Hg2700-1	00	SAM	1B00107-07	50	3/3/21 1:57	5422-1.RAW	1:57:04	22.59	2		14.6	0.024	1.188	ng/L	F103394
Hg2700-1	00	SAM	1B00107-08	50	3/3/21 2:07	5423-1.RAW	2:07:21	32.69	2		24.7	0.040	2.002	ng/L	F103394
Hg2700-1	00	SAM	1B00107-10	50	3/3/21 2:17	5424-1.RAW	2:17:38	32.41	2		24.4	0.040	1.980	ng/L	F103394
Hg2700-1	00	CAL	SEQ-CCV6	1	3/3/21 2:27	5425-1.RAW	2:27:55	327.03			319.0	0.515	0.515	ng/L	
Hg2700-1	00	CAL	SEQ-CCB6	1	3/3/21 2:38	5426-1.RAW	2:38:12	31.33			23.3	0.038	0.038	ng/L	

Printed: 3/4/2021

MethylMercury
EPA1630

Operat MFS | BlankS 8.0304 | Calib Eqn: Conc = (Area-8.030) / | Run Date: ###### | Blank SD: 0
Works MHg270 | CalibFa 619.77 | Status: OK,1 Warnings | Run Time: 11:28:53 | Blank RSD 0
Methoc 2012-07 | R: 0.9996 | R²: 0.999257 | CalibAnal MHg | CF SD: 28.17647279
Descrip MHg27001-210303-1 | | | | CF RSD%: 4.546252908

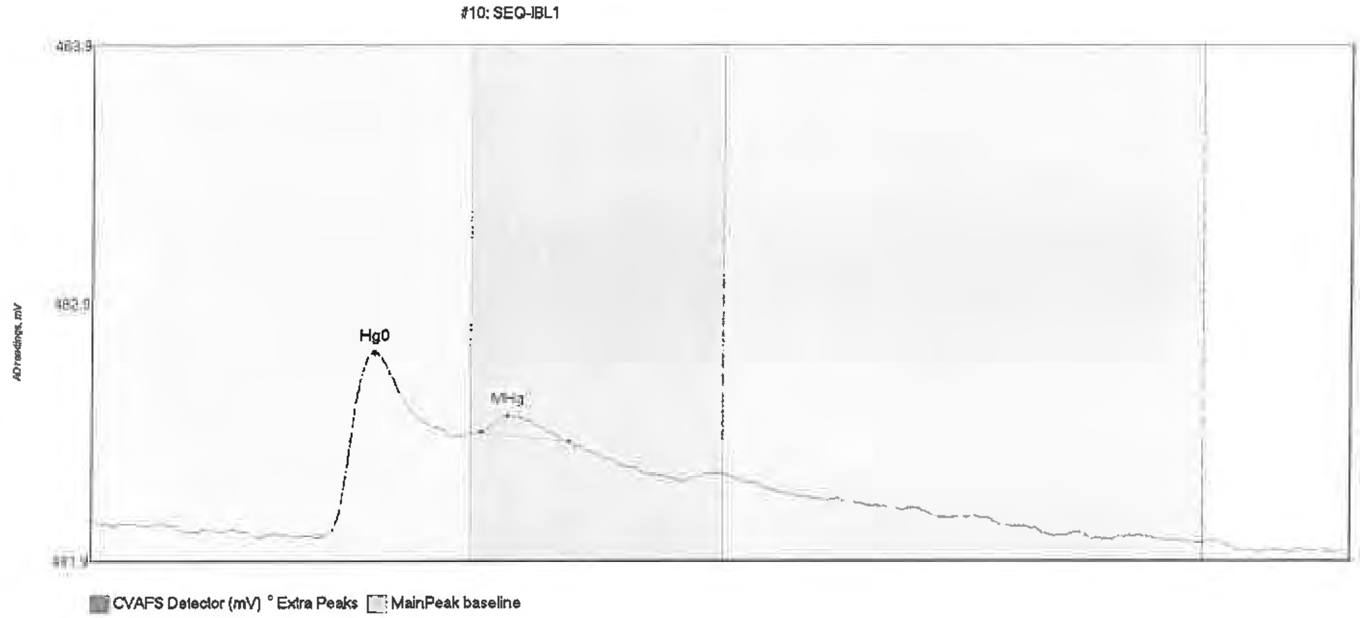
Sample/ID	Location	Rinse	Dilute	Blank	ConcHg0(p	ConcMeHg(	ConcHg2(p	ConcPrHg(	Rec%	QA	RawData	RunEnd	PeakHg0 (Ra	PeakMeHg (R	PeakHg2(Raw	PeakPrHg(Ra	Control (etf)	Flags	RunCount	Comment
Clean											5338-1.RAW		65.1413484	0	8.69589699	0	cleandry	OK	1	
WS	A1		1								5339-1.RAW		98.490497	0	0	0	psample10	CT	1	
HIGH PRIMER	A2		1	8.0304	0.909831	5.09					5340-1.RAW		571.91944	3161.94549	0	0	psample10	CT	1	
HIGH PRIMER	A3		1	8.0304	0.94961	5.20					5341-1.RAW		596.573884	3229.62144	0	0	psample10	CT	1	
PRIMER	A4		1	8.0304	0.640838	3.73					5342-1.RAW		405.205055	2321.69589	0	0	psample10	CT	1	
PRIMER	A5		1	8.0304	0.598552	3.45					5343-1.RAW		378.996845	2148.8248	0	0	psample10	CT	1	
PRIMER	A6		1	8.0304	0.504729	3.62					5344-1.RAW		320.848309	2249.09754	0	0	psample10	CT	1	
WS	A7		1	8.0304	0.031408	0.08					5345-1.RAW		27.4962625	58.0668981	0	0	psample10	OK	1	
WS	A8		1	8.0304	0.032156	0.01					5346-1.RAW		27.9598983	17.0904225	0	0	psample10	OK	1	
SEQ-IBL1	A9		1	0	0.103499	0.01					5347-1.RAW		64.1460639	8.03043981	0	0	psample10	OK	1	
SEQ-CAL1	A10		1	8.0304	0.019815	0.05			98.61		5348-1.RAW		20.3110173	38.589265	0	0	psample10	OK	1	
SEQ-CAL2	A11		1	8.0304		0.21			105.70		5349-1.RAW		0	139.045226	0	0	psample10	OK	1	
SEQ-CAL3	A12		1	8.0304	0.081049	0.94			93.75		5350-1.RAW		58.262261	589.073495	0	0	psample10	CT	1	
SEQ-CAL4	A13		1	8.0304	0.220313	1.98			99.05		5351-1.RAW		144.574698	1235.80336	0	0	psample10	CT	1	
SEQ-CAL5	A14		1	8.0304	0.402602	4.12			102.89		5352-1.RAW		257.552534	2558.78154	0	0	psample10	CT	1	
SEQ-ICV1	A15		1	8.0304	0.039797	0.68			136.56		5353-1.RAW		32.695732	430.689497	0	0	psample10	CT	1	
SEQ-ICB1	A16		1	8.0304		0.06			0.00		5354-1.RAW		0	44.9444734	0	0	psample10	OK	1	
SEQ-ICV2	C7		1	8.0304	0.028376	0.556885			111.52		5355-1.RAW		25.6170348	353.17309	0	0	psample10	CT	1	
SEQ-ICV3	C8		1	8.0304	0.026603	0.576506			115.44		5356-1.RAW		24.5184028	365.333652	0	0	psample10	CT	1	
SEQ-ICB2	C9		1	8.0304		0.028529			0.00		5357-1.RAW		0	25.7118634	0	0	psample10	OK	1	
F102324-BS1	A17		1000	8.0304	74.90364	2641.998					5358-1.RAW		54.4537324	1645.47092	0	0	psample10	OK	1	F102324
F102324-BSD1	A18		1000	8.0304	59.54465	2569.429					5359-1.RAW		44.9346374	1600.49485	0	0	psample10	OK	1	F102324
F102324-BLK1	A19		500	8.0304		39.88058					5360-1.RAW		0	57.464294	0	0	psample10	OK	1	F102324
F102324-BLK2	A20		500	8.0304		19.6488					5361-1.RAW		0	32.3860532	0	0	psample10	OK	1	F102324
F102324-BLK3	A21		500	8.0304		19.54348					5362-1.RAW		0	32.2554977	0	0	psample10	OK	1	F102324
1B00035-01	B1		2500	8.0304		6143.653					5363-1.RAW		0	1531.09986	0	0	psample10	CT	1	F102324
F102324-MS1	B2		2500	8.0304		5830.818			583081.81		5364-1.RAW		0	1453.54517	0	0	psample10	CT	1	F102324
F102324-MSD1	B3		2500	8.0304		4839.793					5365-1.RAW		0	1207.86076	0	0	psample10	CT	1	F102324
1B00083-02	B4		500	8.0304		35.93691					5366-1.RAW		0	52.5759259	0	0	psample10	OK	1	F102324
F102324-MS2	B5		1000	8.0304		49.01432			2450.72		5367-1.RAW		0	38.4082176	0	0	psample10	OK	1	F102324
SEQ-CCV1	B6		1	8.0304	0.016507	0.614699			123.09		5368-1.RAW		18.2607816	389.004427	0	0	psample10	CT	1	
SEQ-CCB1	B7		1	8.0304		0.041109			0.00		5369-1.RAW		0	33.508912	0	0	psample10	OK	1	
F102324-MSD2	[illegible]		1000	8.0304		31.125					5370-1.RAW		0	27.3208912	0	0	psample10	OK	1	F102324
1A00115-01	B9		500								5371-1.RAW		45.7962559	0	0	0	psample10	OK	1	F102324
1A00115-02	B10		500								5372-1.RAW		77.1413003	0	14.277955	0	psample10	OK	1	F102324
1A00115-04	B11		500								5373-1.RAW		38.5724435	0	15.8657049	0	psample10	OK	1	F102324
1A00115-05	B12		500								5374-1.RAW		0	0	5.66286531	0	psample10	OK	1	F102324
1A00115-06	B13		500								5375-1.RAW		46.2939155	0	0	0	psample10	OK	1	F102324
1A00115-08	B14		500								5376-1.RAW		59.9626993	0	27.0008408	0	psample10	OK	1	F102324
1A00115-10	B15		500								5377-1.RAW		41.1519429	0	10.5660434	0	psample10	OK	1	F102324
1B00046-01	B16		500								5378-1.RAW	18:25:00	0				psample10	NP	1	F102324
1B00047-01	B17		500	8.0304		14.67608					5379-1.RAW		0	26.2221354	0	0	psample10	OK	1	F102324
SEQ-CCV2	B18		1	8.0304	0.020287	0.578265			115.80		5380-1.RAW		20.6039586	366.423611	0	0	psample10	CT	1	
SEQ-CCB2	B19		1	8.0304		0.027284			0.00		5381-1.RAW		0	24.9401331	0	0	psample10	OK	1	
1B00055-01	B20		2500	8.0304		806.7997					5382-1.RAW		0	208.043692	0	0	psample10	OK	1	F102324
1B00057-01	B21		2500	8.0304		357.7525					5383-1.RAW		0	96.7206597	0	0	psample10	OK	1	F102324
1B00058-01	C1		2500	8.0304		387.9672					5384-1.RAW		0	104.211169	0	0	psample10	OK	1	F102324
1B00082-01	C2		500	8.0304		15.96821					5385-1.RAW		0	27.8237847	0	0	psample10	OK	1	F102324
1B00082-02	C3		500	8.0304		20.22048					5386-1.RAW		0	33.0946759	0	0	psample10	OK	1	F102324
1B00082-03	C4		500	8.0304		15.24811					5387-1.RAW		0	26.9311921	0	0	psample10	OK	1	F102324
1B00082-04	C5		500	8.0304		16.18586					5388-1.RAW		0	28.0935764	0	0	psample10	OK	1	F102324
1B00083-01	C6		500	8.0304		15.04362					5389-1.RAW		0	26.6777199	0	0	psample10	OK	1	F102324
F103394-BS1	C10		10	8.0304	0.549199	11.79422					5390-1.RAW		42.0683162	739.005179	0	0	psample10	CT	1	F103394
F103394-BSD1	C11		10	8.0304	0.580423	11.41916					5391-1.RAW		44.0034978	715.759722	0	0	psample10	CT	1	F103394
SEQ-CCV3	C12		1	8.0304	0.018376	0.628624			125.88		5392-1.RAW		19.4190905	397.635185	0	0	psample10	CT	1	
SEQ-CCB3	C13		1	8.0304		0.034181			0.00		5393-1.RAW		0	29.2149016	0	0	psample10	OK	1	

F103394-BLK1	C14	1						5394-1.RAW		11662.376	0	0	0	psample10	CT	1	F103394
F103394-BLK2	C15	1						5395-1.RAW	21:19:33	0				psample10	NP	1	F103394
F103394-BLK3	C16	1						5396-1.RAW	21:29:49	0				psample10	NP	1	F103394
1B00039-01	C17	1	8.0304		0.312904	0		5397-1.RAW		0	201.959983	3.46587791	0	psample10	OK	1	F103394
F103394-MS1	C18	10	8.0304		11.81397		1181.40	5398-1.RAW		0	740.229196	0	0	psample10	CT	1	F103394
F103394-MSD1	C19	10	8.0304	0.171238	6.822218			5399-1.RAW		18.6433437	430.853443	0	0	psample10	CT	1	F103394
1B00091-01	C20	50	8.0304		5.609851			5400-1.RAW		0	77.5671875	0	0	psample10	OK	1	F103394
F103394-MS2	C21	50	8.0304		14.73069		736.53	5401-1.RAW		0	190.624219	0	0	psample10	CT	1	F103394
F103394-MSD2	A1	50						5402-1.RAW		99.7344666	0	56.7474294	0	psample10	CT	1	F103394
1B00091-02	A2	50	8.0304		2.855471			5403-1.RAW		0	43.4253472	0	0	psample10	OK	1	F103394
SEQ-CCV4	A3	1	8.0304		0.499843		100.09	5404-1.RAW		0	317.819734	0	0	psample10	CT	1	
SEQ-CCB4	A4	1	8.0304		0.03667		0.00	5405-1.RAW		0	30.757581	0	0	psample10	OK	1	
1B00091-03	A5	50	8.0304		1.369445			5406-1.RAW		0	25.005353	0	0	psample10	OK	1	F103394
1B00091-04	A6	50	8.0304		2.033897			5407-1.RAW		0	33.2415509	0	0	psample10	OK	1	F103394
1B00091-05	A7	50	8.0304		1.234835	0		5408-1.RAW		0	23.3368056	0.10593171	0	psample10	OK	1	F103394
1B00091-06	A8	50	8.0304		2.103231			5409-1.RAW		0	34.1009838	0	0	psample10	OK	1	F103394
1B00091-07	A9	50	8.0304		1.715517			5410-1.RAW		0	29.295081	0	0	psample10	OK	1	F103394
1B00091-08	A10	50						5411-1.RAW	0:04:01	0				psample10	NP	1	F103394
1B00091-09	A11	50	8.0304		1.364979			5412-1.RAW		0	24.95	0	0	psample10	OK	1	F103394
1B00091-10	A12	50	8.0304		0.920396			5413-1.RAW		0	19.4391782	0	0	psample10	OK	1	F103394
1B00107-01	A13	50	8.0304		3.708586			5414-1.RAW		0	54.0001157	0	0	psample10	CT	1	F103394
1B00107-02	A14	50	8.0304		1.440992			5415-1.RAW		0	25.8922164	0	0	psample10	OK	1	F103394
SEQ-CCV5	A15	1	8.0304		0.42886		85.88	5416-1.RAW		0	273.826736	0	0	psample10	OK	1	
SEQ-CCB5	A16	1	8.0304		0.036463		0.00	5417-1.RAW		0	30.6289641	0	0	psample10	OK	1	
1B00107-03	A17	50	8.0304		2.464955			5418-1.RAW		0	38.5847222	0	0	psample10	OK	1	F103394
1B00107-04	A18	50	8.0304		1.632018			5419-1.RAW		0	28.2600694	0	0	psample10	OK	1	F103394
1B00107-05	A19	50	8.0304		1.368541			5420-1.RAW		0	24.9941551	0	0	psample10	OK	1	F103394
1B00107-06	A20	50	8.0304		3.166853			5421-1.RAW		0	47.2850694	0	0	psample10	CT	1	F103394
1B00107-07	A21	50	8.0304		1.174633			5422-1.RAW		0	22.5905671	0	0	psample10	OK	1	F103394
1B00107-08	B1	50	8.0304		1.989082			5423-1.RAW		0	32.6860532	0	0	psample10	OK	1	F103394
1B00107-10	B2	50	8.0304		1.967009			5424-1.RAW		0	32.4124421	0	0	psample10	OK	1	F103394
SEQ-CCV6	B3	1	8.0304		0.514702		103.07	5425-1.RAW		0	327.029022	0	0	psample10	CT	1	
SEQ-CCB6	B4	1	8.0304		0.037592	0	0.00	5426-1.RAW	2:38:12	0	31.3288773	0.16785301	0	psample10	OK	1	

MHg27001-210303-1

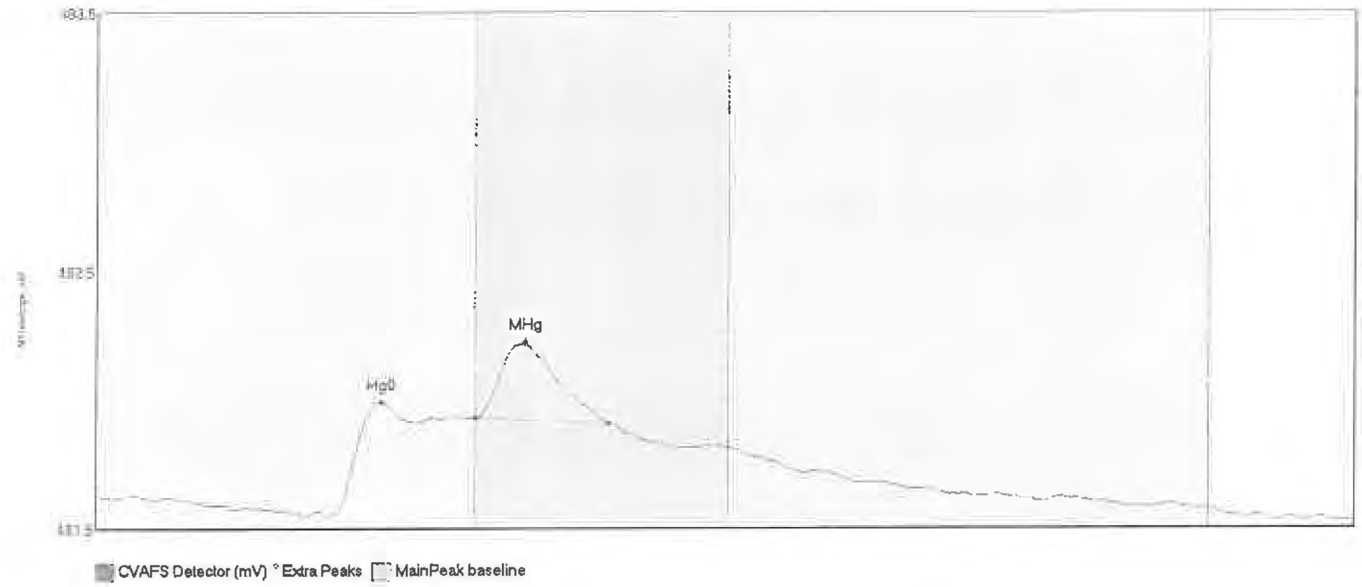
SEQ-IBL1	A9	1B00082-01	C2		
SEQ-CAL1	A10	1B00082-02	C3		
SEQ-CAL2	A11	1B00082-03	C4		
SEQ-CAL3	A12	1B00082-04	C5		
SEQ-CAL4	A13	1B00083-01	C6		
SEQ-CAL5	A14	F103394-BS1	C10		
SEQ-ICV1	A15	F103394-BSD1	C11		
SEQ-ICB1	A16	SEQ-CCV3	C12		
SEQ-ICV2	C7	SEQ-CCB3	C13		
SEQ-ICV3	C8	F103394-BLK1	C14		
SEQ-ICB2	C9	F103394-BLK2	C15		
F102324-BS1	A17	F103394-BLK3	C16		
F102324-BSD1	A18	1B00039-01	C17		
F102324-BLK1	A19	F103394-MS1	C18		
F102324-BLK2	A20	F103394-MSD1	C19		
F102324-BLK3	A21	1B00091-01	C20		
1B00035-01	B1	F103394-MS2	C21		
F102324-MS1	B2	F103394-MSD2	A1		
F102324-MSD1	B3	1B00091-02	A2		
1B00083-02	B4	SEQ-CCV4	A3		
F102324-MS2	B5	SEQ-CCB4	A4		
SEQ-CCV1	B6	1B00091-03	A5		
SEQ-CCB1	B7	1B00091-04	A6		
F102324-MSD2	B8	1B00091-05	A7		
1A00115-01	B9	1B00091-06	A8		
1A00115-02	B10	1B00091-07	A9		
1A00115-04	B11	1B00091-08	A10		
1A00115-05	B12	1B00091-09	A11		
1A00115-06	B13	1B00091-10	A12		
1A00115-08	B14	1B00107-01	A13		
1A00115-10	B15	1B00107-02	A14		
1B00046-01	B16	SEQ-CCV5	A15		
1B00047-01	B17	SEQ-CCB5	A16		
SEQ-CCV2	B18	1B00107-03	A17		
SEQ-CCB2	B19	1B00107-04	A18	1B00107-08	B1
1B00055-01	B20	1B00107-05	A19	1B00107-10	B2
1B00057-01	B21	1B00107-06	A20	SEQ-CCV6	B3
1B00058-01	C1	1B00107-07	A21	SEQ-CCB6	B4

Verified by: [signature] 3/4/21

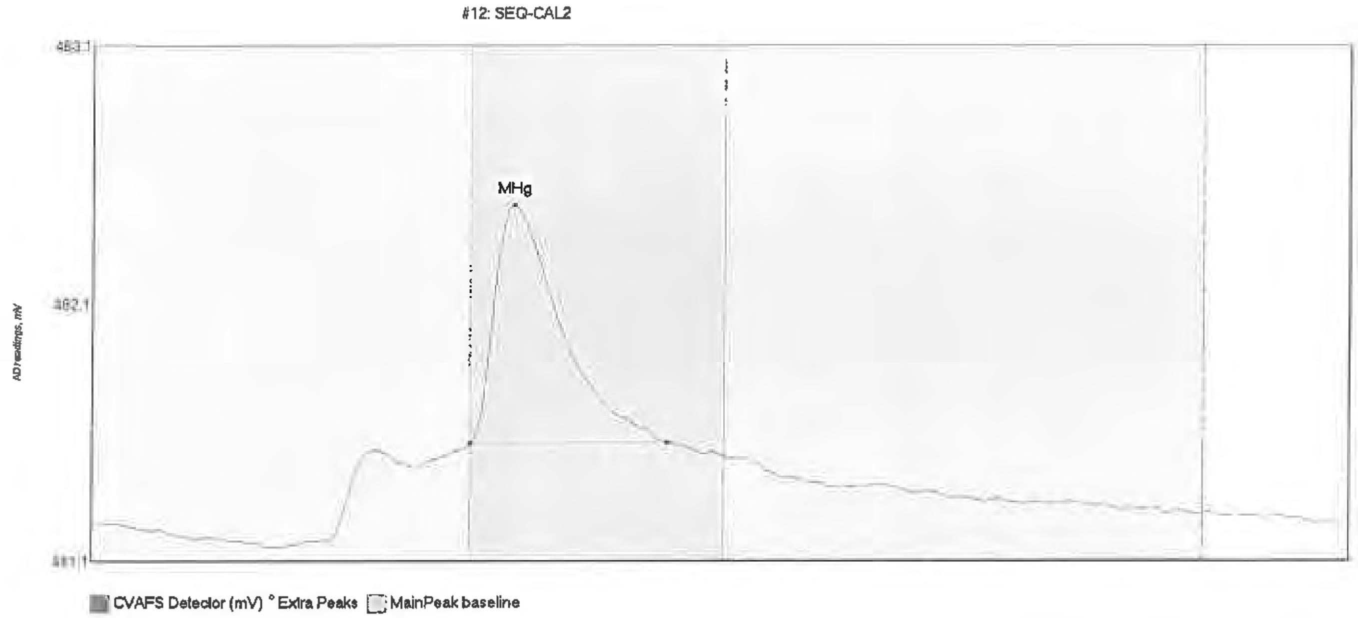


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-IBL1 Hg0	64.146	46.8	71.3	481.98	482.36	56.0	0.708	OK	482.0261	0.00	-0.11	
SEQ-IBL1 MHg	8.030	77.0	94.3	482.38	482.34	82.2	0.066	OK	482.0261	0.00	-0.11	

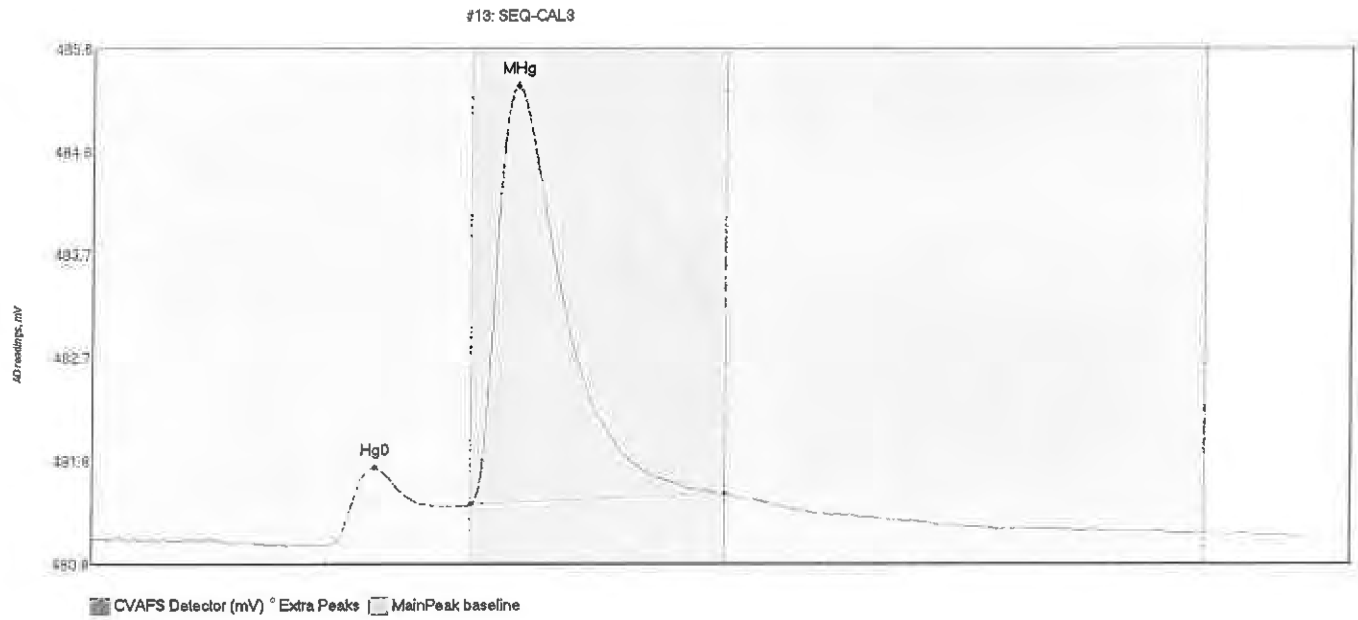
#11: SEQ-CAL1



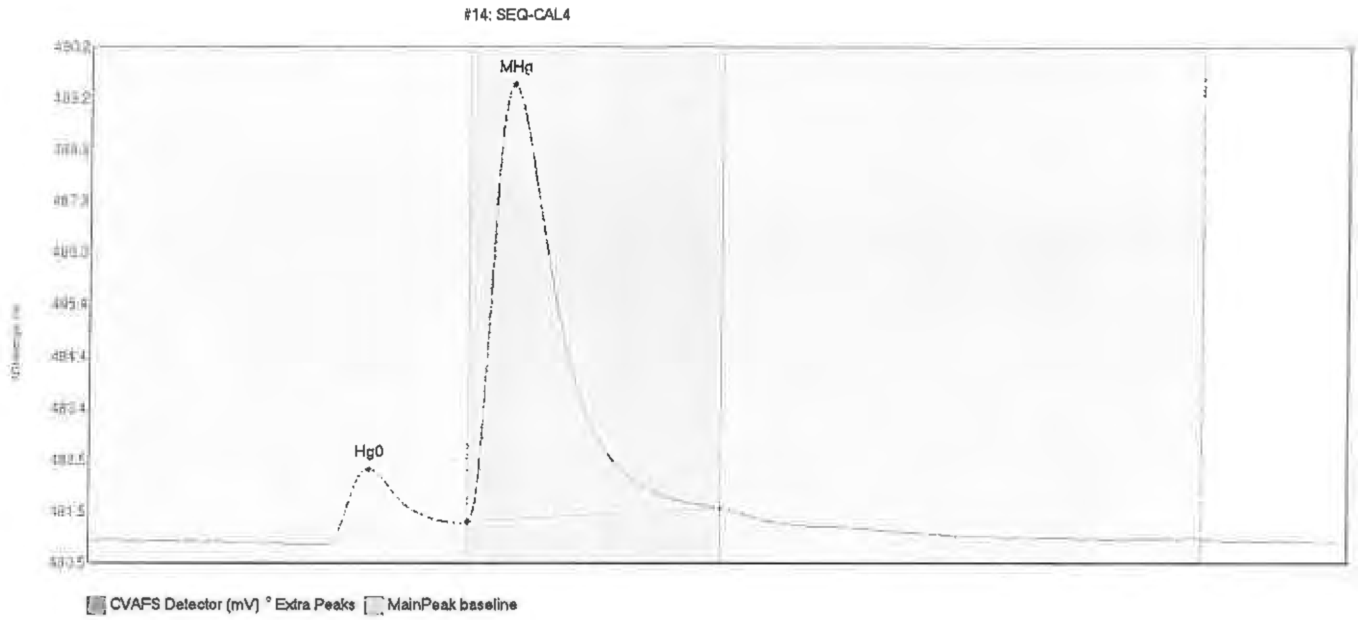
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CAL1 Hg0	20.311	46.5	64.0	481.57	481.93	56.7	0.444	OK	481.6513	0.01	-0.10	
SEQ-CAL1 MHg	38.589	75.1	101.3	481.95	481.93	84.8	0.291	OK	481.6513	0.01	-0.10	



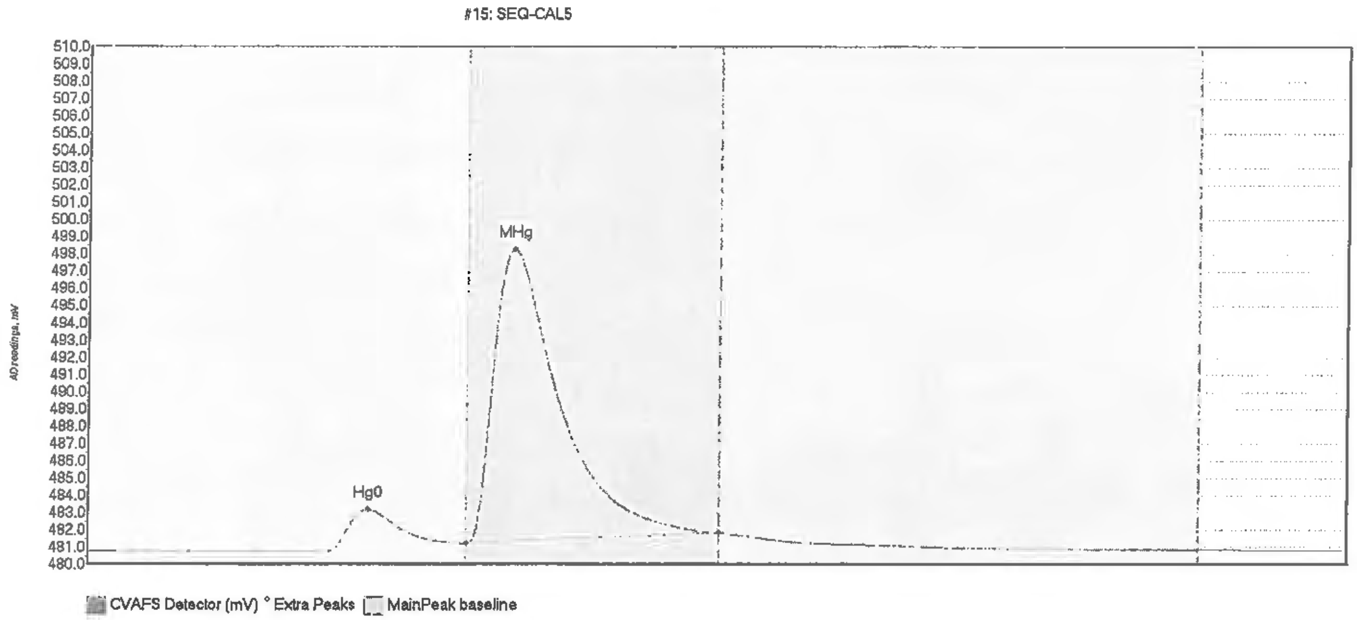
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CAL2	139.045	75.0	113.8	481.52	481.52	83.5	0.923	OK	481.2112	0.00	0.00	



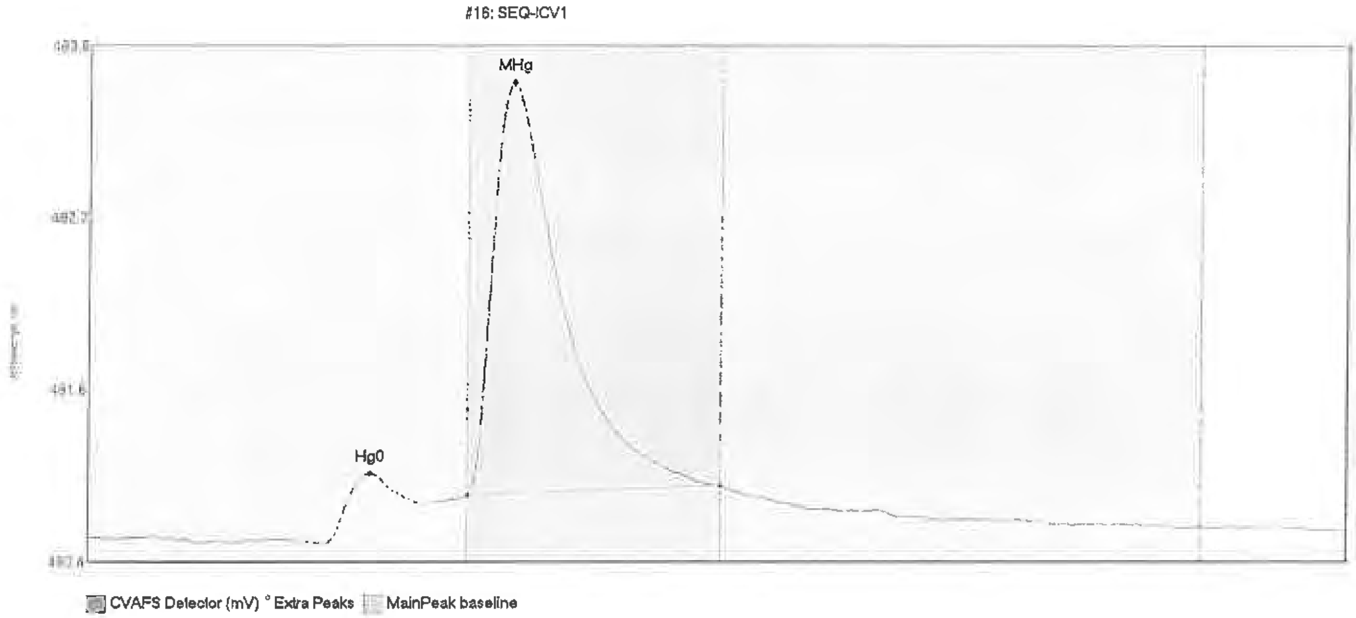
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CAL3 Hg0	58.262	45.7	70.3	480.97	481.33	56.1	0.723	OK	481.0274	0.00	0.01	
SEQ-CAL3 MHg	589.073	75.0	125.0	481.36	481.45	84.2	3.905	CT	481.0274	0.00	0.01	



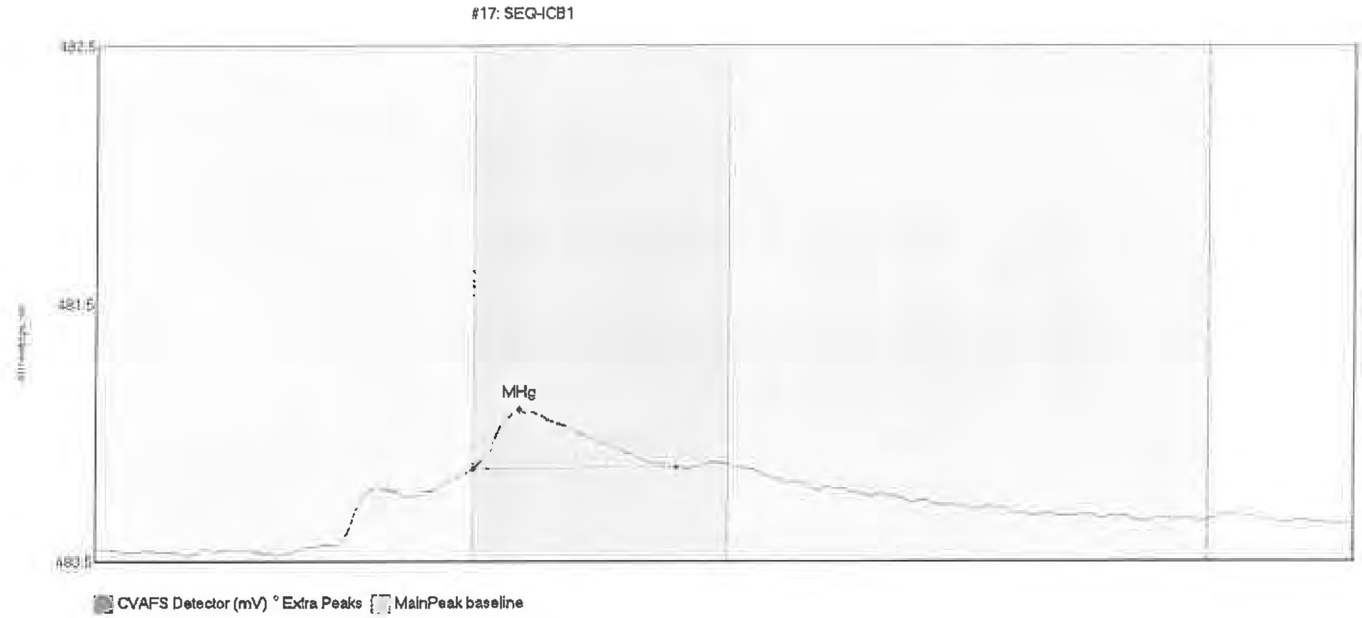
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CAL4 Hg0	144.575	46.6	73.9	480.88	481.30	55.7	1.422	OK	480.9691	0.00	-0.03	
SEQ-CAL4 MHg	1235.803	75.0	125.0	481.33	481.56	83.8	8.198	CT	480.9691	0.00	-0.03	



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CAL5 Hg0	257.553	46.7	74.4	480.71	481.21	55.5	2.457	OK	480.7592	0.00	0.05	
SEQ-CAL5 MHg	2558.782	75.0	125.0	481.21	481.81	84.2	17.056	CT	480.7592	0.00	0.05	

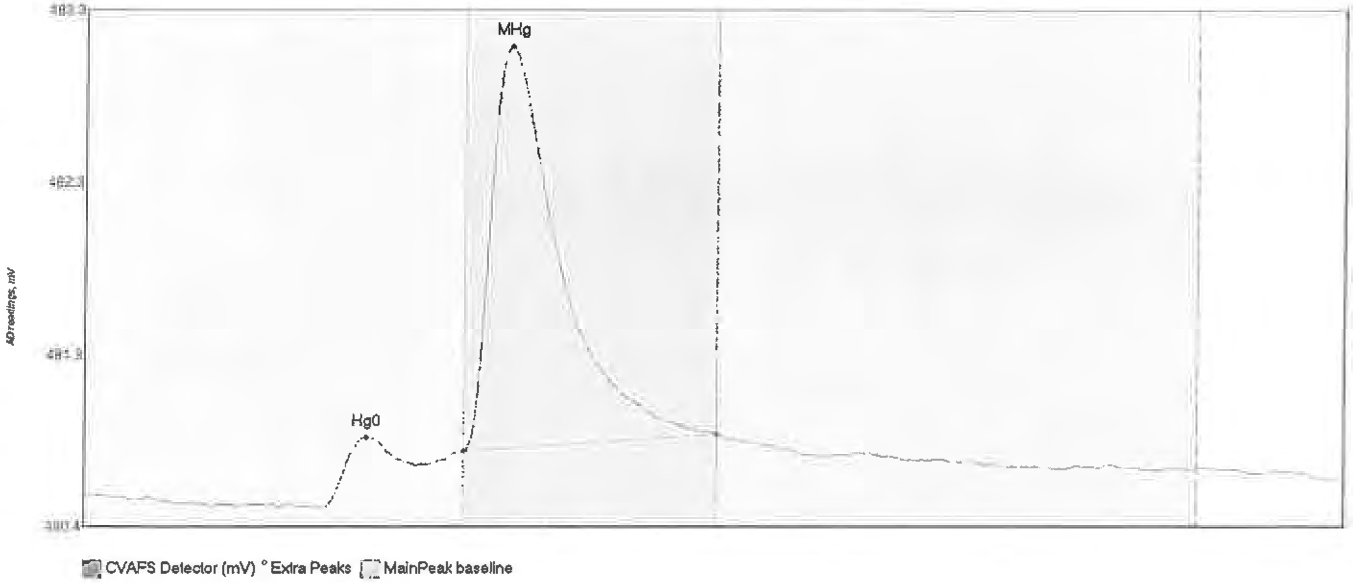


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-ICV1 Hg0	32.696	46.9	66.3	480.54	480.81	56.1	0.467	OK	480.5796	0.00	0.05	
SEQ-ICV1 MHg	430.689	75.0	125.0	480.86	480.92	83.9	2.739	CT	480.5796	0.00	0.05	

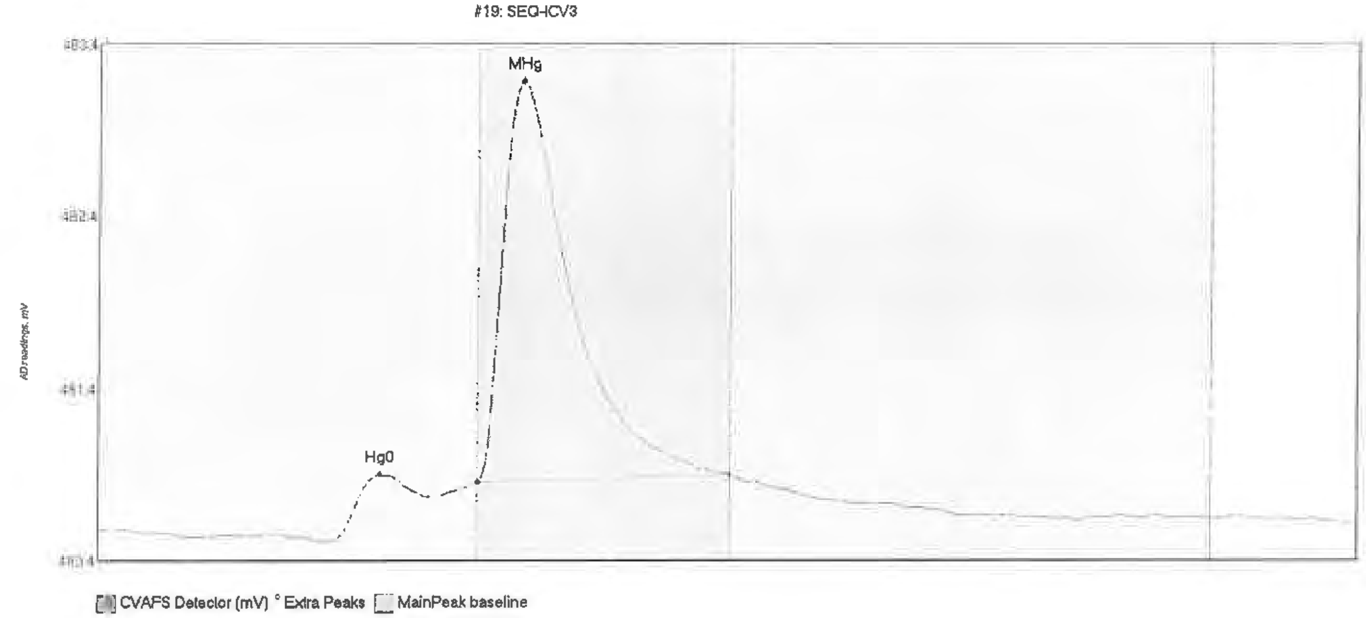


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-ICB1	44.944	75.0	114.8	480.87	480.88	84.1	0.228	OK	480.5590	0.00	0.10	

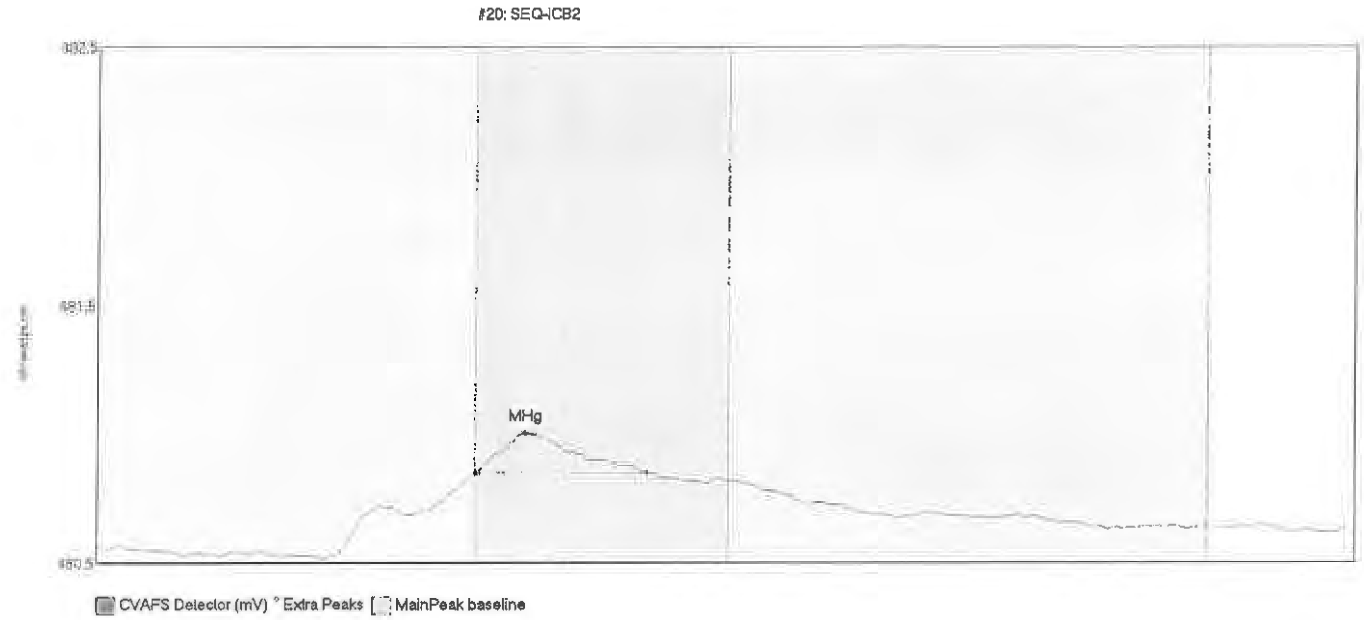
#18: SEQ-ICV2



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-ICV2 Hg0	25.617	46.7	65.6	480.49	480.73	55.9	0.397	OK	480.5636	0.00	0.10	
SEQ-ICV2 MHg	353.173	75.0	125.0	480.81	480.90	84.4	2.253	CT	480.5636	0.00	0.10	

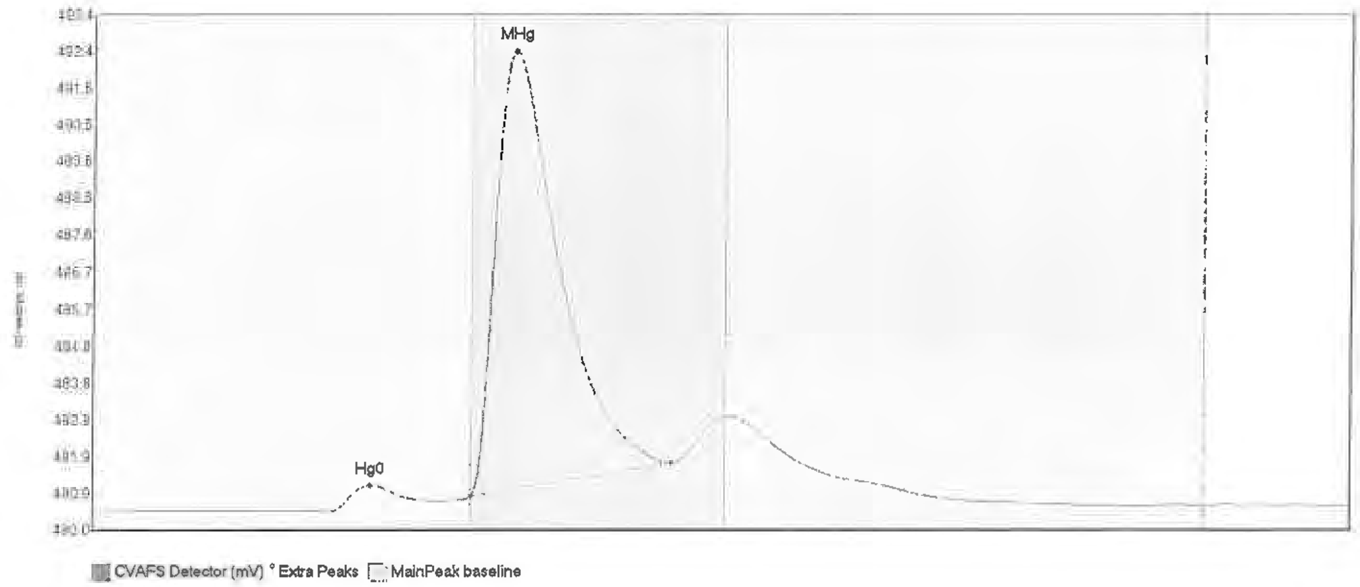


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-ICV3 Hg0	24.518	45.3	64.9	480.52	480.79	55.8	0.397	OK	480.5937	0.00	0.04	
SEQ-ICV3 MHg	365.334	75.0	125.0	480.88	480.92	83.9	2.337	CT	480.5937	0.00	0.04	



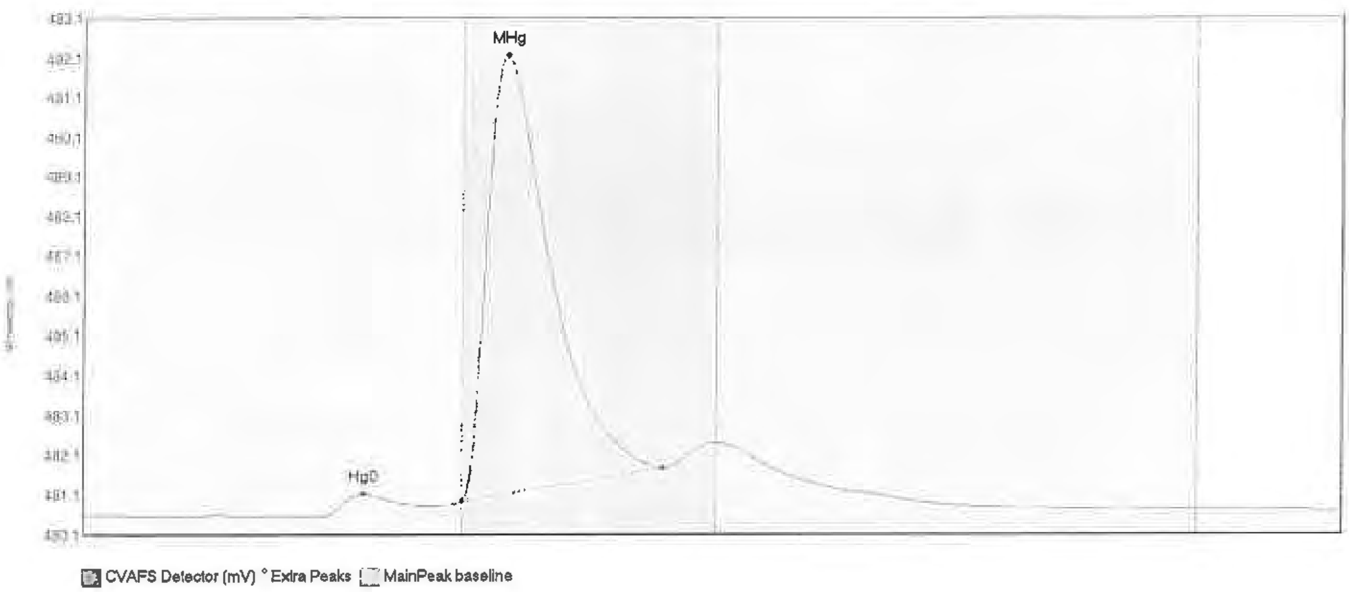
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-ICB2	25.712	75.0	108.9	480.85	480.84	84.9	0.153	OK	480.5604	0.00	0.08	

#21: F102324-BS1

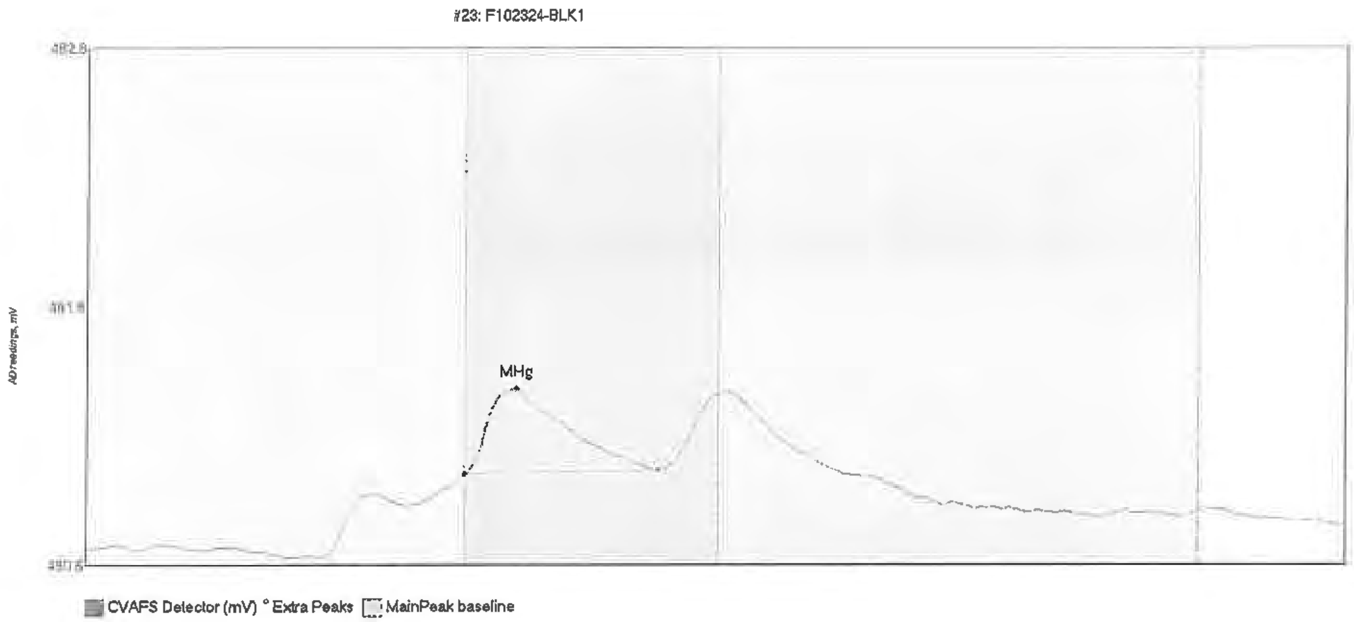


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102324-BS1 Hg0	54.454	46.1	67.7	480.45	480.73	55.2	0.682	OK	480.4941	0.00	0.10	F102324
F102324-BS1 MHg	1645.471	75.0	114.4	480.85	481.71	83.6	11.578	OK	480.4941	0.00	0.10	F102324

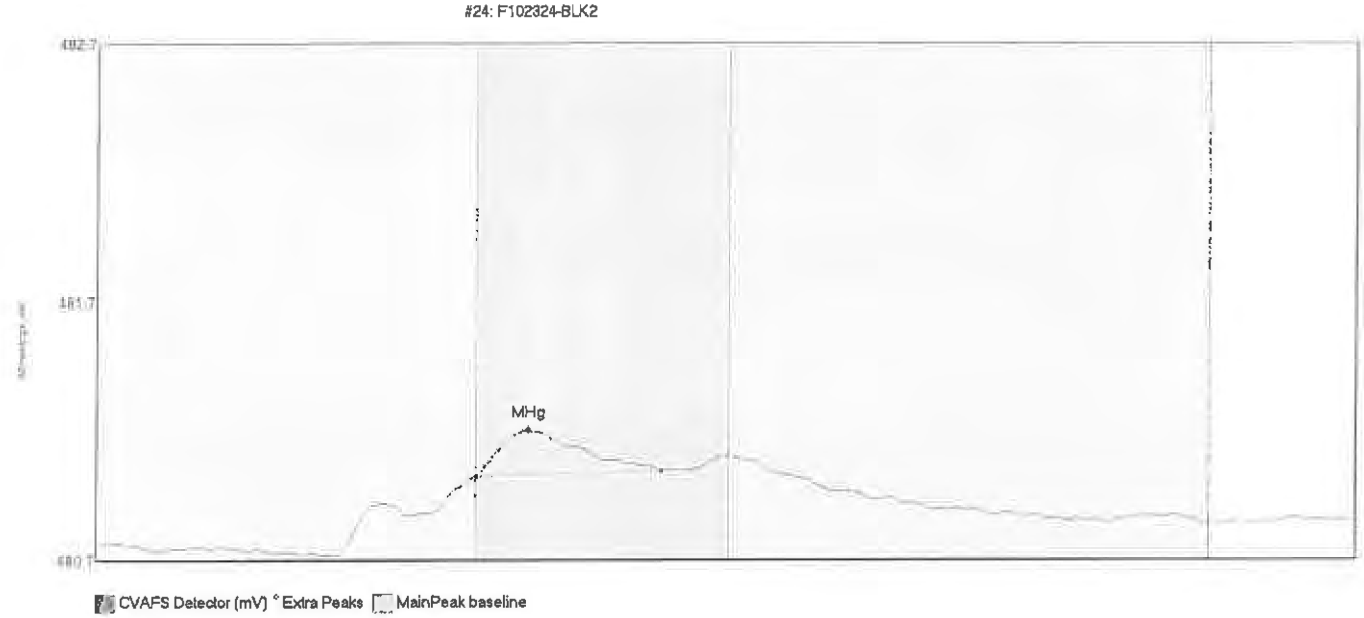
#22: F102324-BSD1



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102324-BSD1 Hg	44.935	47.1	67.5	480.52	480.79	55.4	0.572	OK	480.5404	0.00	0.11	F102324
F102324-BSD1 MH	1600.495	75.0	114.5	480.91	481.75	83.8	11.293	OK	480.5404	0.00	0.11	F102324

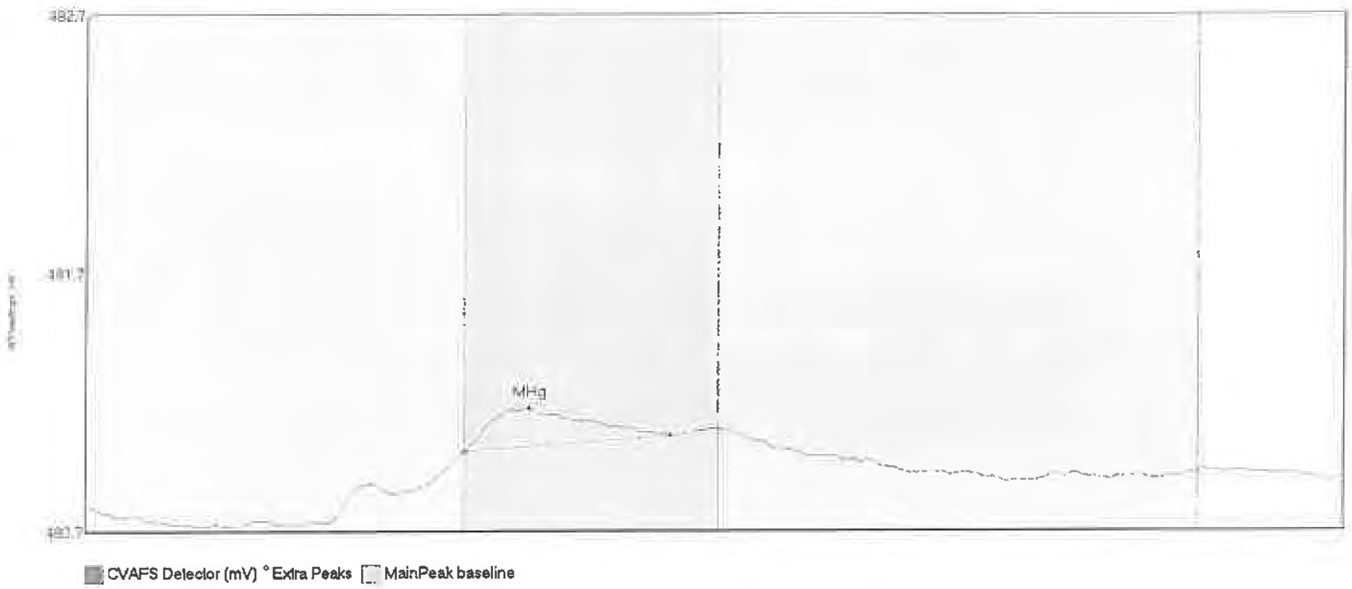


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102324-BLK1	57.464	75.0	113.1	480.91	480.92	85.1	0.330	OK	480.6195	0.00	0.10	F102324

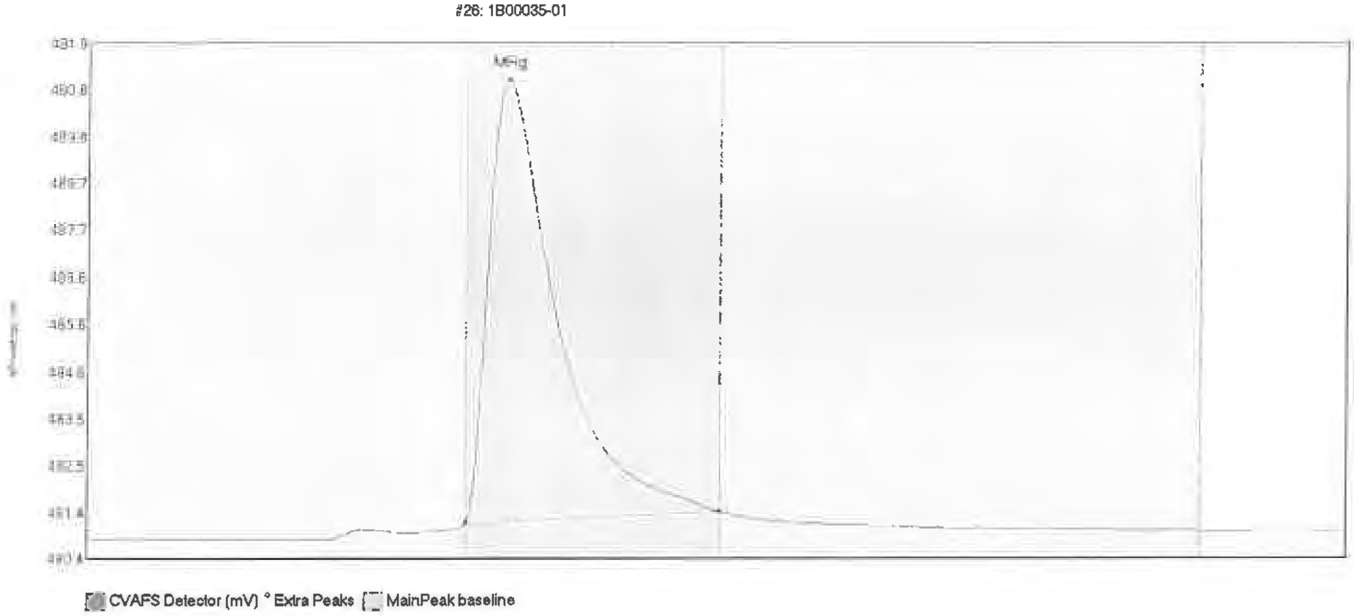


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102324-BLK2	32.386	75.0	111.8	480.98	481.00	85.3	0.182	OK	480.7256	0.00	0.09	F102324

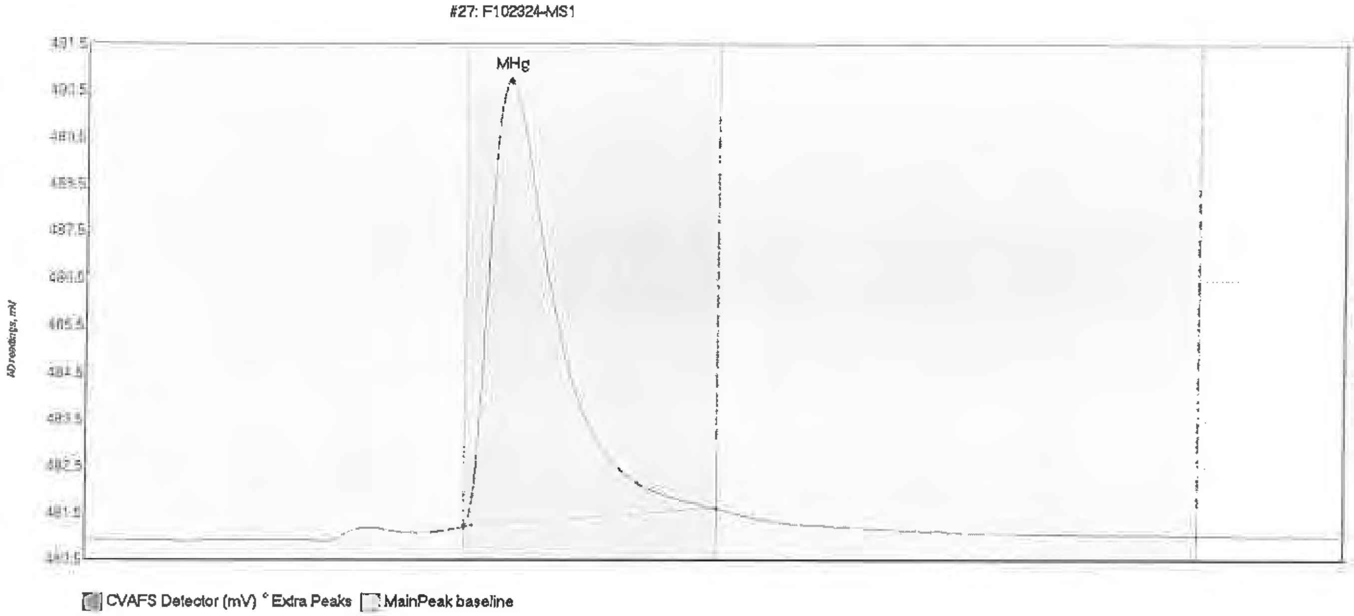
#25: F102324-BLK3



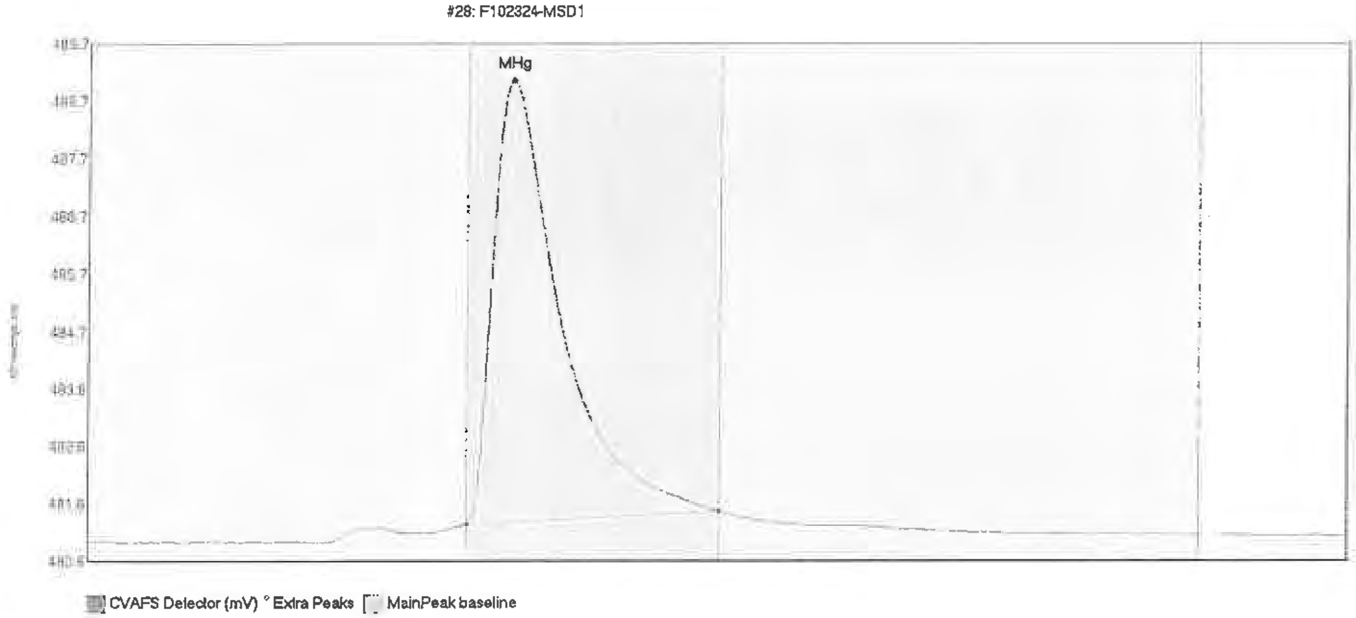
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102324-BLK3	32.255	75.0	115.5	480.98	481.04	87.7	0.170	OK	480.7737	0.00	0.10	F102324



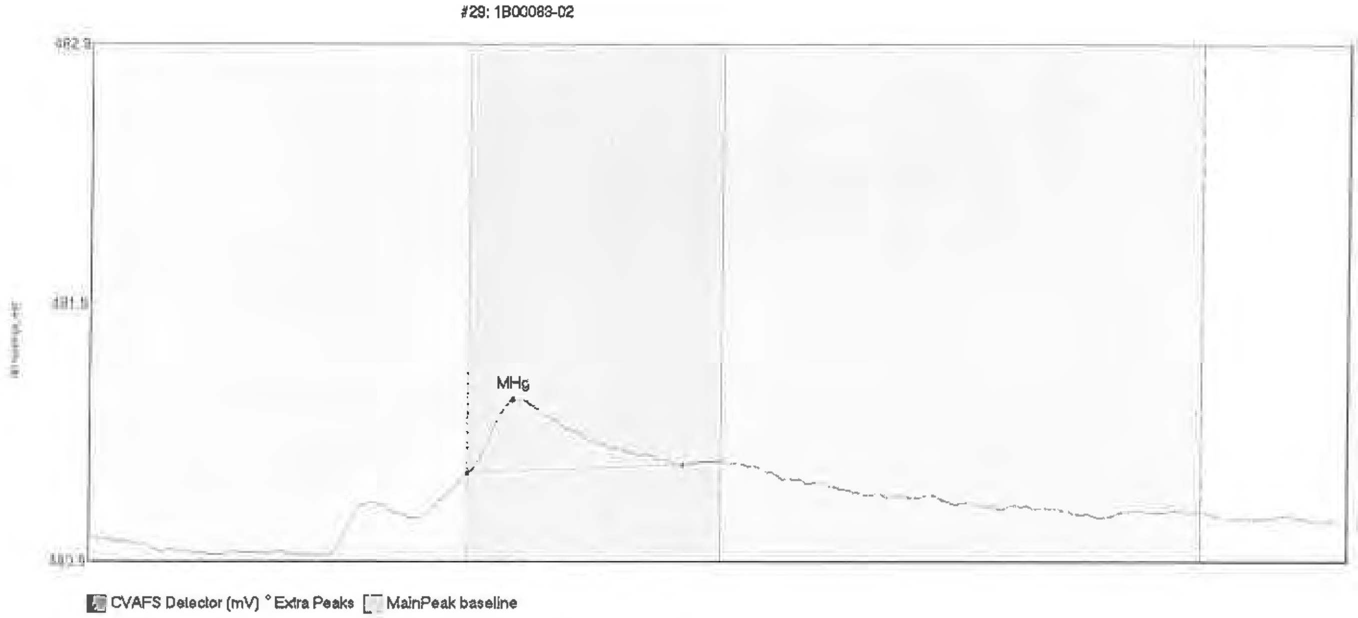
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00035-01	1531.100	75.0	125.0	481.18	481.44	83.4	9.861	CT	480.8236	0.00	0.18	F102324



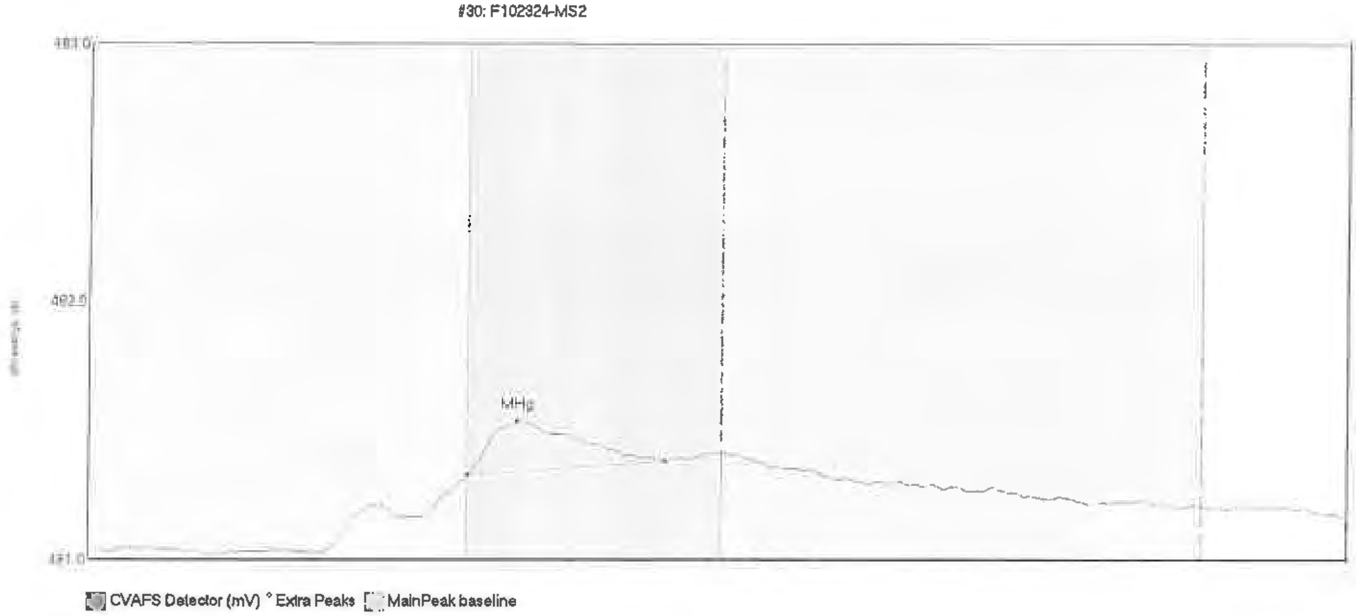
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102324-MS1	1453.545	75.0	125.0	481.23	481.60	83.7	9.498	CT	480.9489	0.00	0.04	F102324



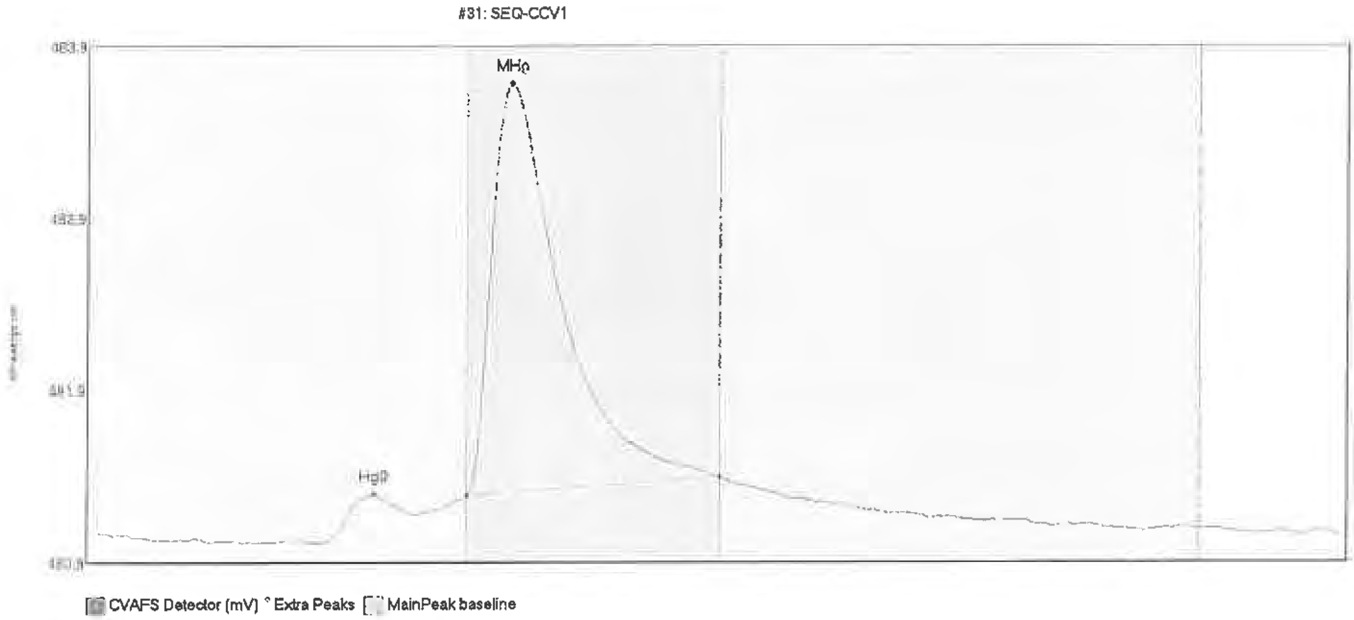
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102324-MSD1	1207.861	75.0	125.0	481.23	481.48	84.0	7.836	CT	480.9482	0.00	0.08	F102324



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00083-02	52.576	75.0	117.5	481.20	481.23	83.9	0.282	OK	480.9588	0.00	0.06	F102324

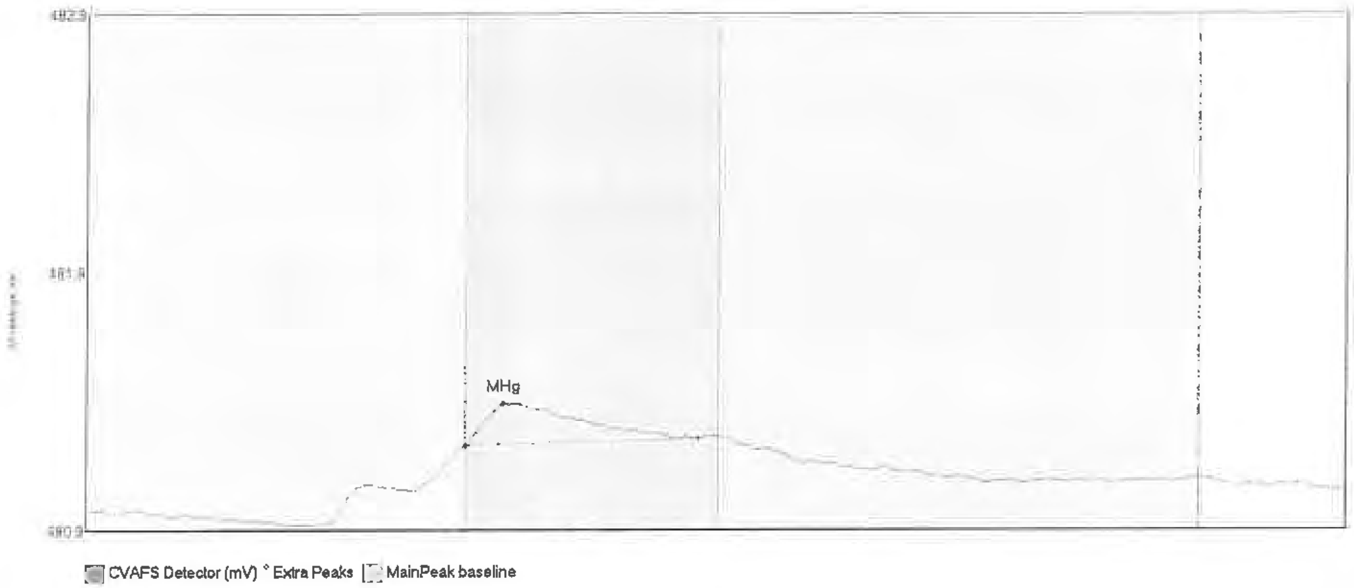


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102324-MS2	38.408	75.0	113.9	481.31	481.36	84.8	0.208	OK	481.0182	0.00	0.13	F102324

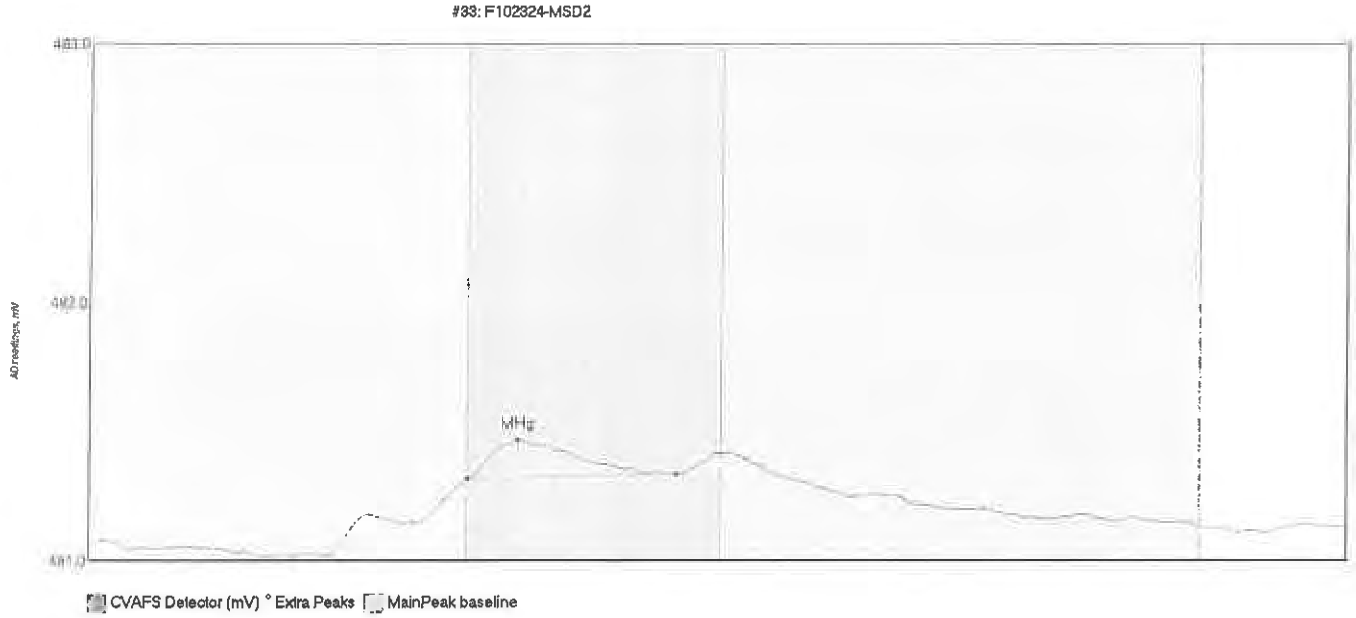


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCV1 Hg0	18.261	45.9	64.6	480.98	481.16	56.6	0.299	OK	481.0473	0.00	-0.01	
SEQ-CCV1 MHg	389.004	75.0	125.0	481.27	481.38	83.9	2.461	CT	481.0473	0.00	-0.01	

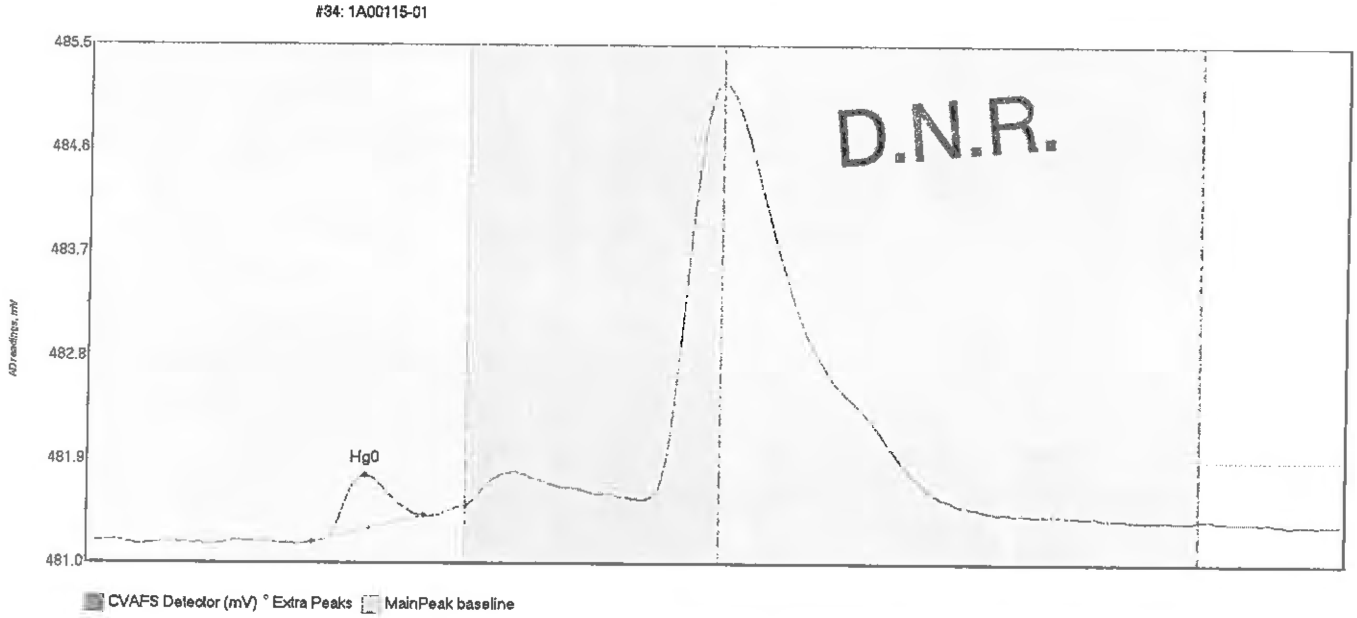
#32: SEQ-CCB1



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCB1	33.509	75.0	121.3	481.24	481.27	82.5	0.160	OK	480.9923	0.00	0.07	

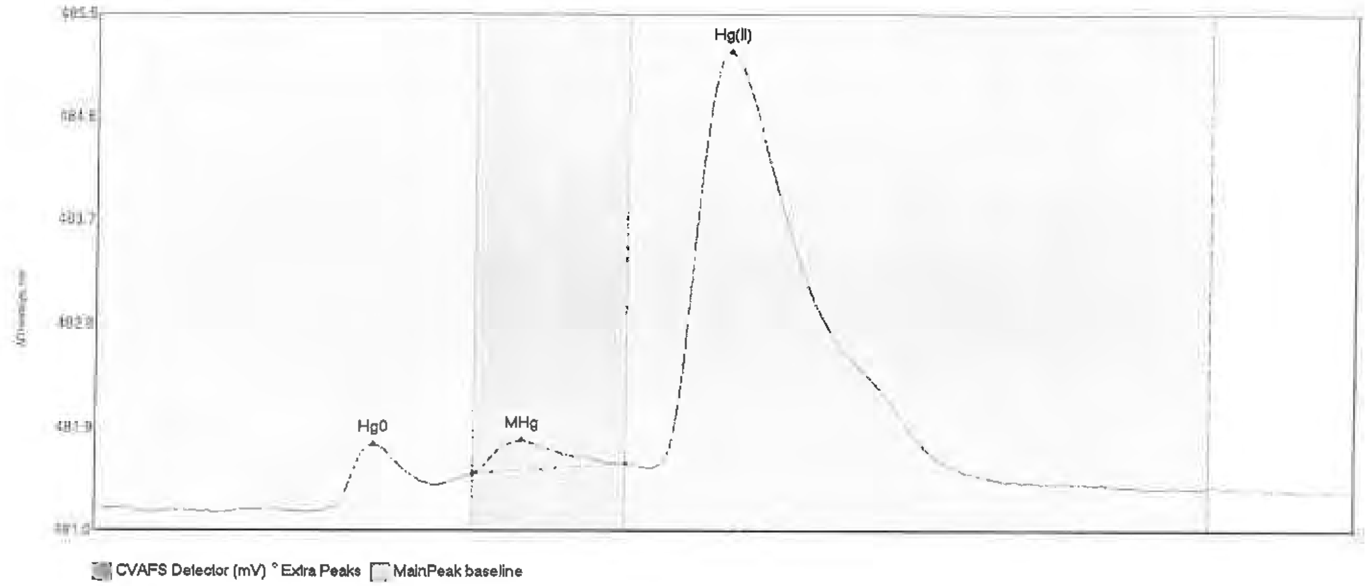


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102324-MSD2	27.321	75.0	116.3	481.33	481.35	84.9	0.147	OK	481.0894	0.00	0.06	F102324



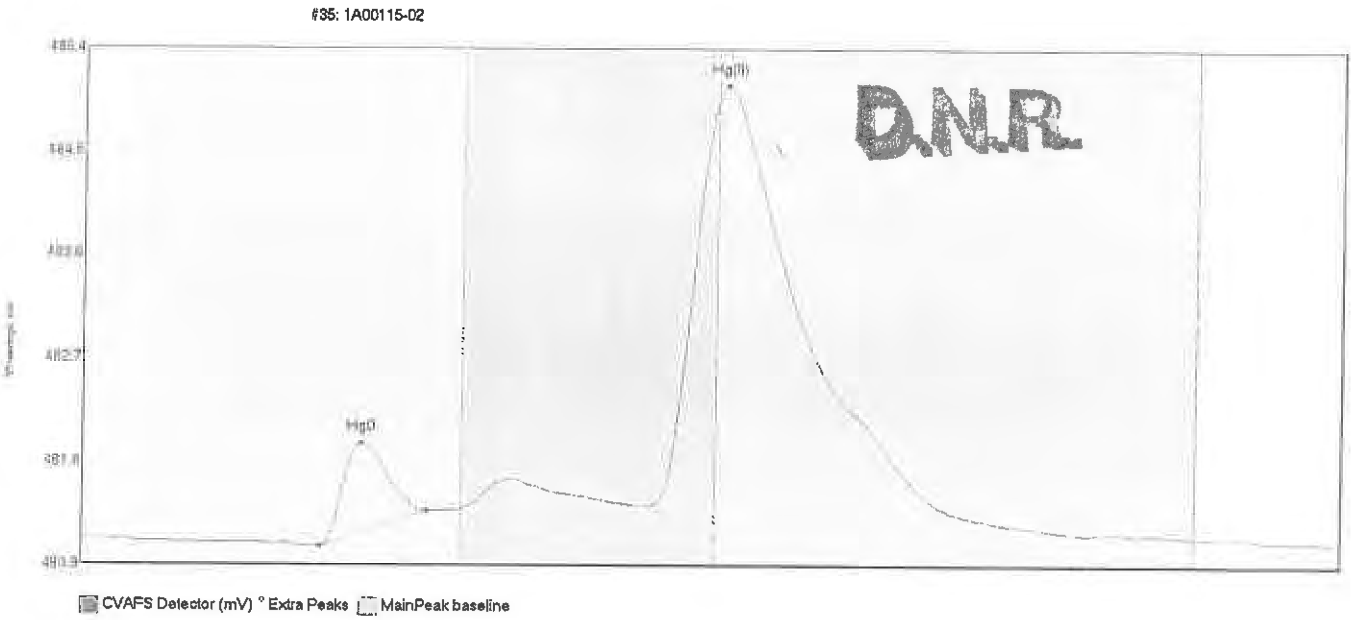
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00115-01	45.796	44.8	66.8	481.14	481.36	55.2	0.576	OK	481.1427	0.00	0.16	F102324

#34: 1A00115-01

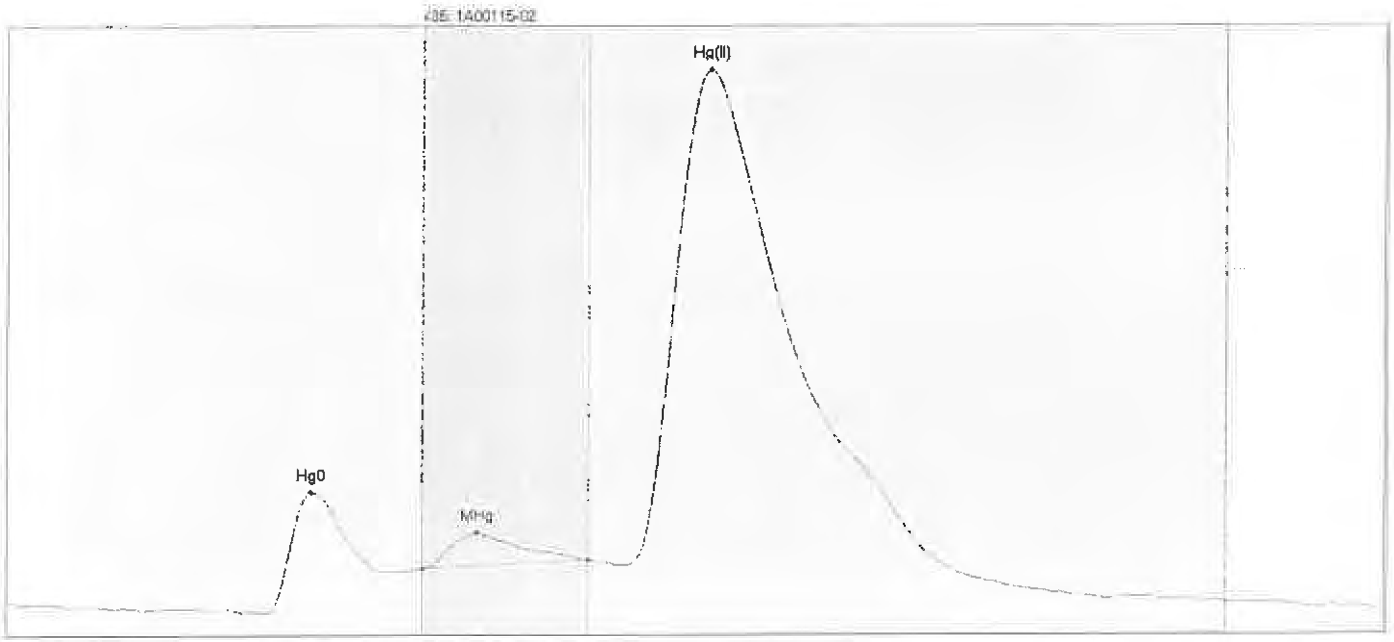


MHg 750-1050

Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00115-01 Hg0	45.796	44.8	66.8	481.14	481.36	55.2	0.576	OK	481.1427	0.00	0.16	F102324
1A00115-01 MHg	38.677	75.0	105.0	481.46	481.54	84.6	0.290	CT	481.1427	0.00	0.16	F102324
1A00115-01 Hg(I	885.892	109.8	175.3	481.51	481.44	125.2	3.628	OK	481.1427	0.00	0.16	F102324

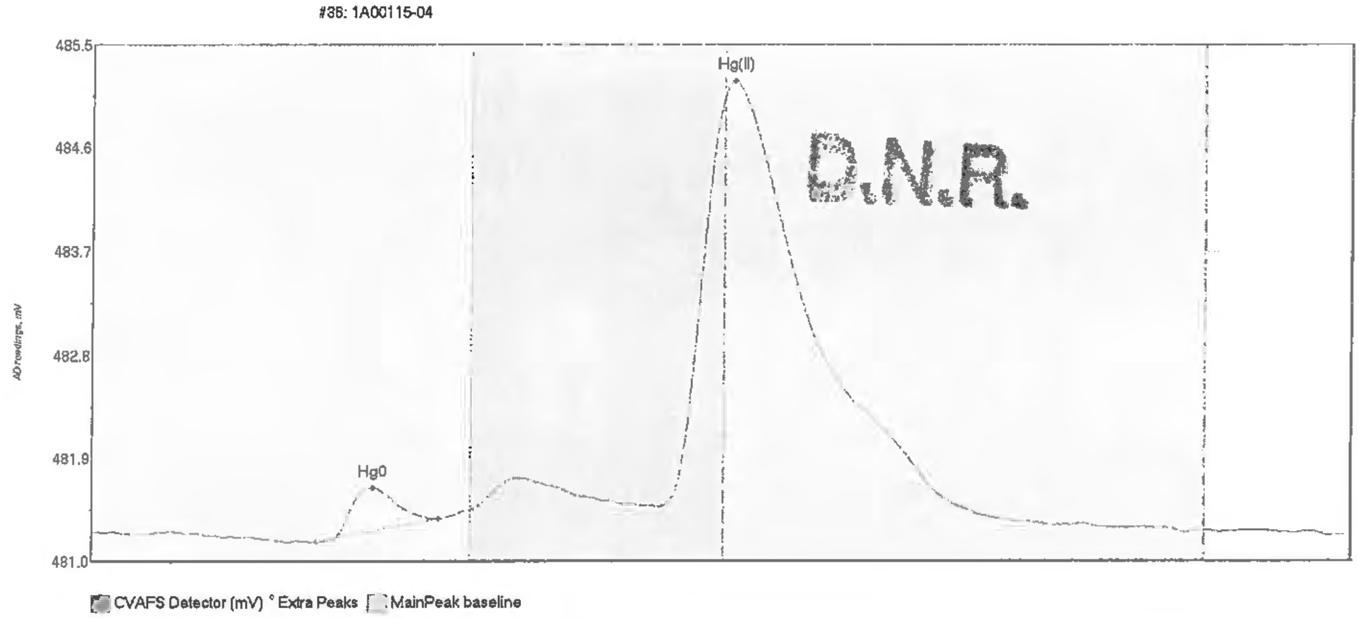


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00115-02 Hg0	77.141	47.0	68.3	481.10	481.41	55.1	0.892	OK	481.1790	0.00	-0.05	F102324
1A00115-02 Hg(I	14.278	125.0	176.8	484.96	481.34	126.8	0.129	OK	481.1790	0.00	-0.05	F102324



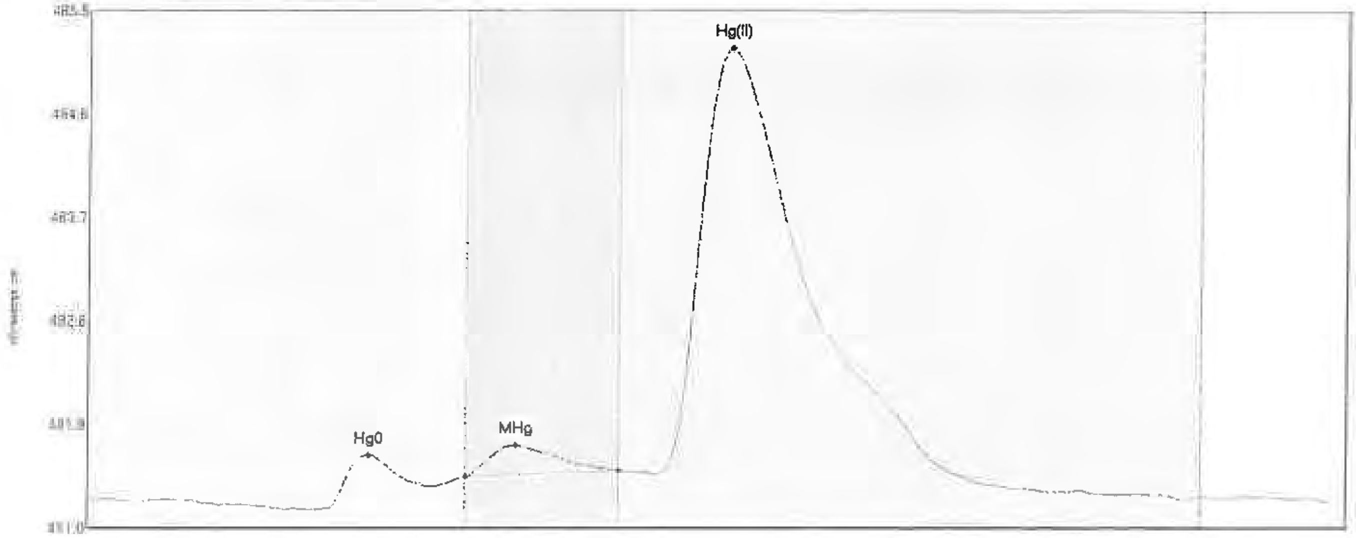
MHg 750-1050

Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00115-02 Hg0	77.141	47.0	68.3	481.10	481.41	55.1	0.892	OK	481.1790	0.00	-0.05	F102324
1A00115-02 MHg	34.706	75.0	105.0	481.43	481.49	84.8	0.259	CT	481.1790	0.00	-0.05	F102324
1A00115-02 Hg(I	860.767	111.9	176.8	481.46	401.34	126.8	3.633	OK	481.1790	0.00	-0.05	F102324



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00115-04 Hg0	38.572	44.8	68.7	481.13	481.33	55.9	0.471	OK	481.2258	0.00	-0.02	F102324
1A00115-04 Hg(I	15.866	125.0	180.7	484.99	481.32	127.0	0.141	OK	481.2258	0.00	-0.02	F102324

#36: 1A00115-04

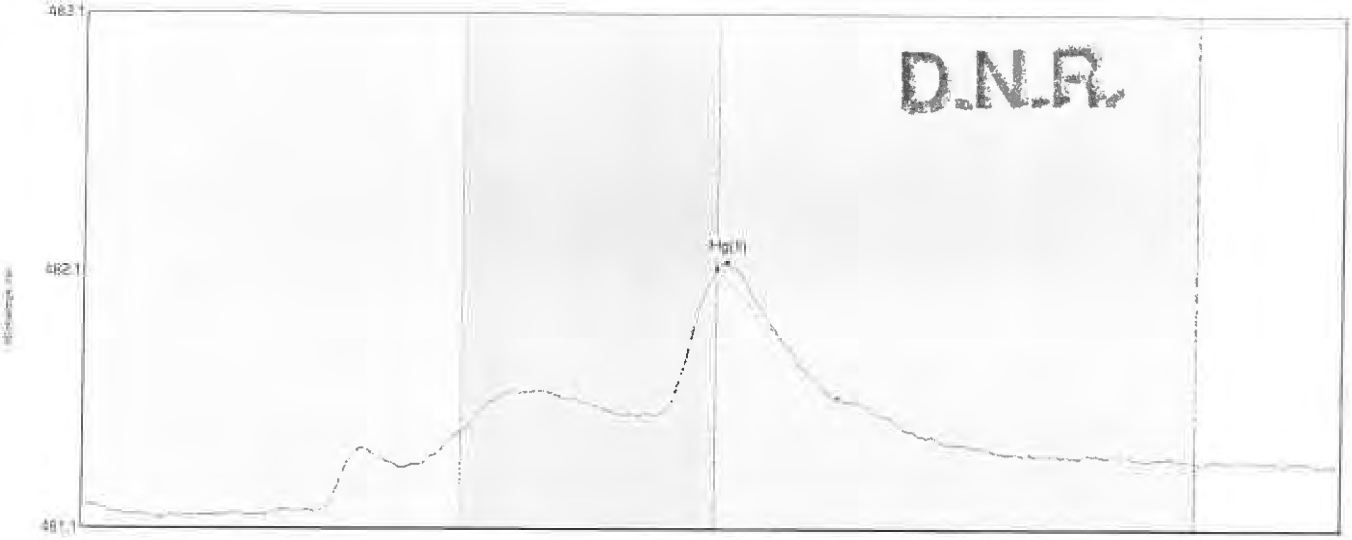


CVAFS Detector (mV) ° Extra Peaks MainPeak baseline

MHg 750-1050

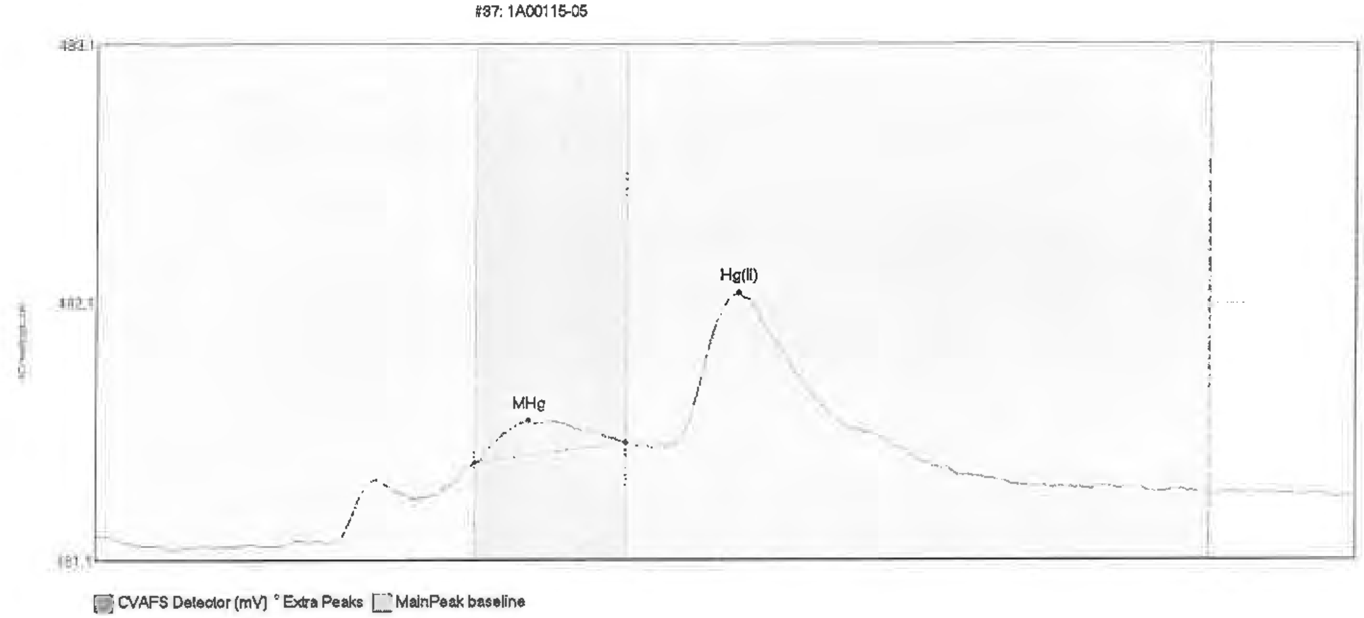
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00115-04 Hg0	38.572	44.8	68.7	481.13	481.33	55.9	0.471	OK	481.2258	0.00	-0.02	F102324
1A00115-04 MHg	38.656	75.0	105.0	481.42	481.47	84.8	0.273	CT	481.2258	0.00	-0.02	F102324
1A00115-04 Hg(I	888.757	112.4	180.7	481.44	481.32	127.0	3.688	OK	481.2258	0.00	-0.02	F102324

#37: 1A00115-05



CVAFS Detector (mV) * Extra Peaks MainPeak baseline

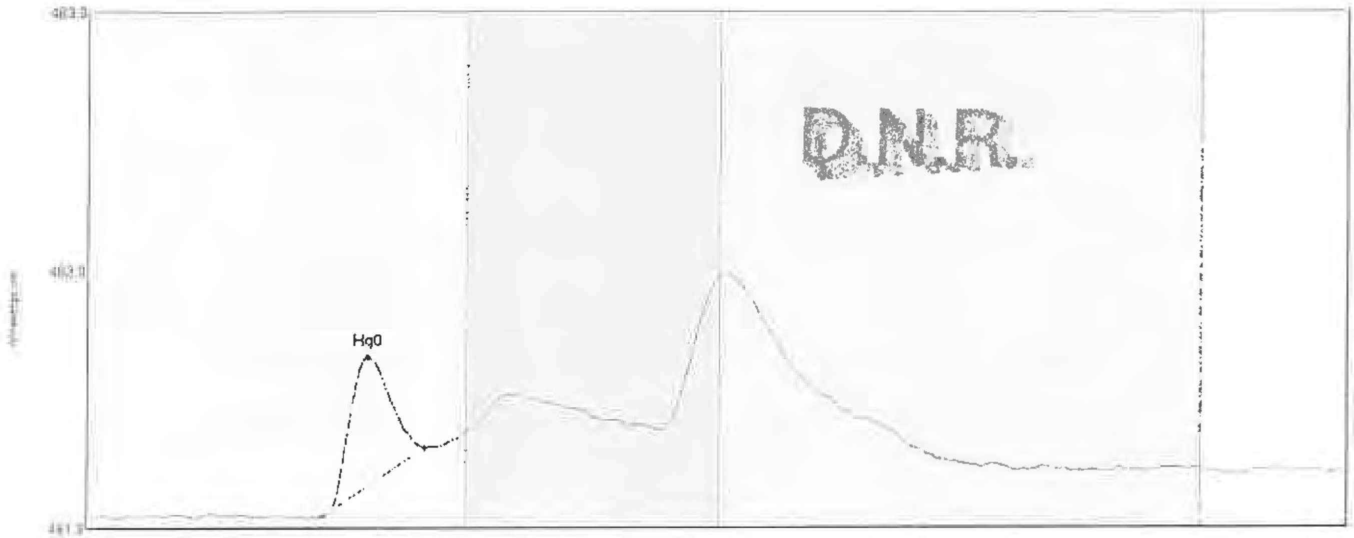
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00115-05	5.663	125.0	149.1	482.16	481.66	127.0	0.024	OK	481.2458	0.00	0.15	F102324



MHg 750-1050

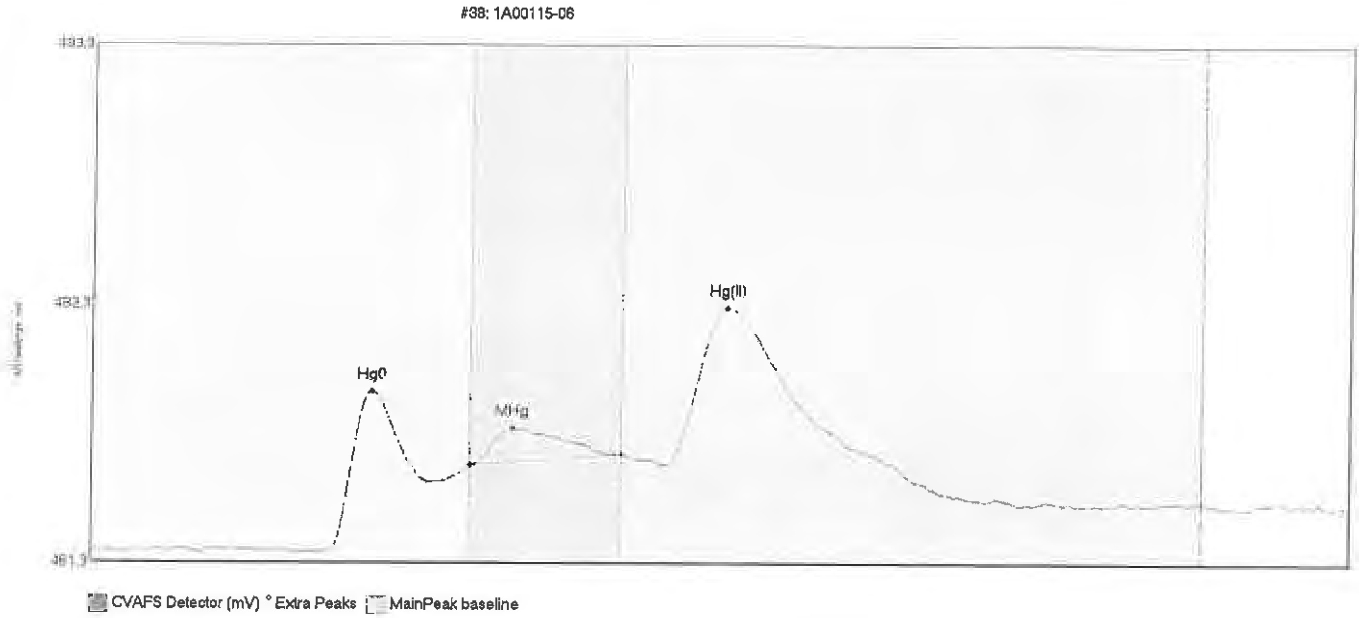
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00115-05 MHg	23.935	75.0	105.0	481.53	481.61	85.7	0.162	CT	481.2458	0.00	0.15	F102324
1A00115-05 Hg(I	112.276	113.5	158.3	481.60	481.59	127.0	0.589	OK	481.2458	0.00	0.15	F102324

#38: 1A00115-06



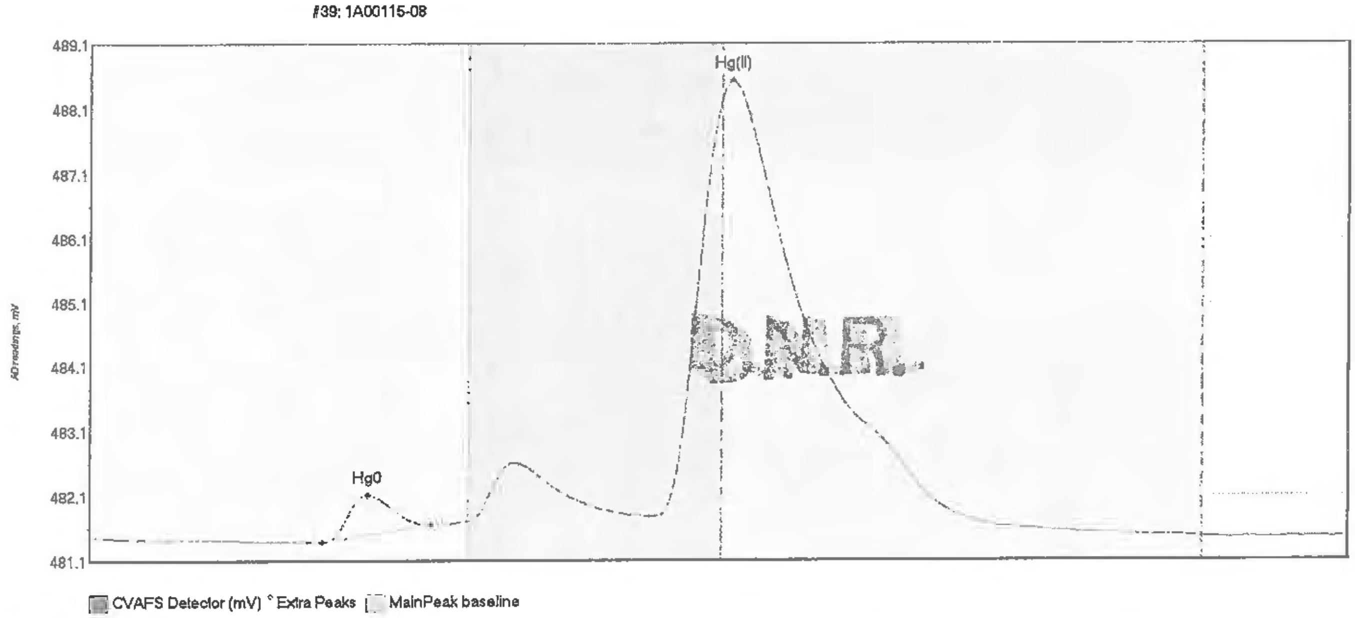
CVAFS Detector (mV) ° Extra Peaks [MainPeak baseline

Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00115-06	46.294	46.7	66.8	481.35	481.62	55.6	0.617	OK	481.3572	0.00	0.17	F102324

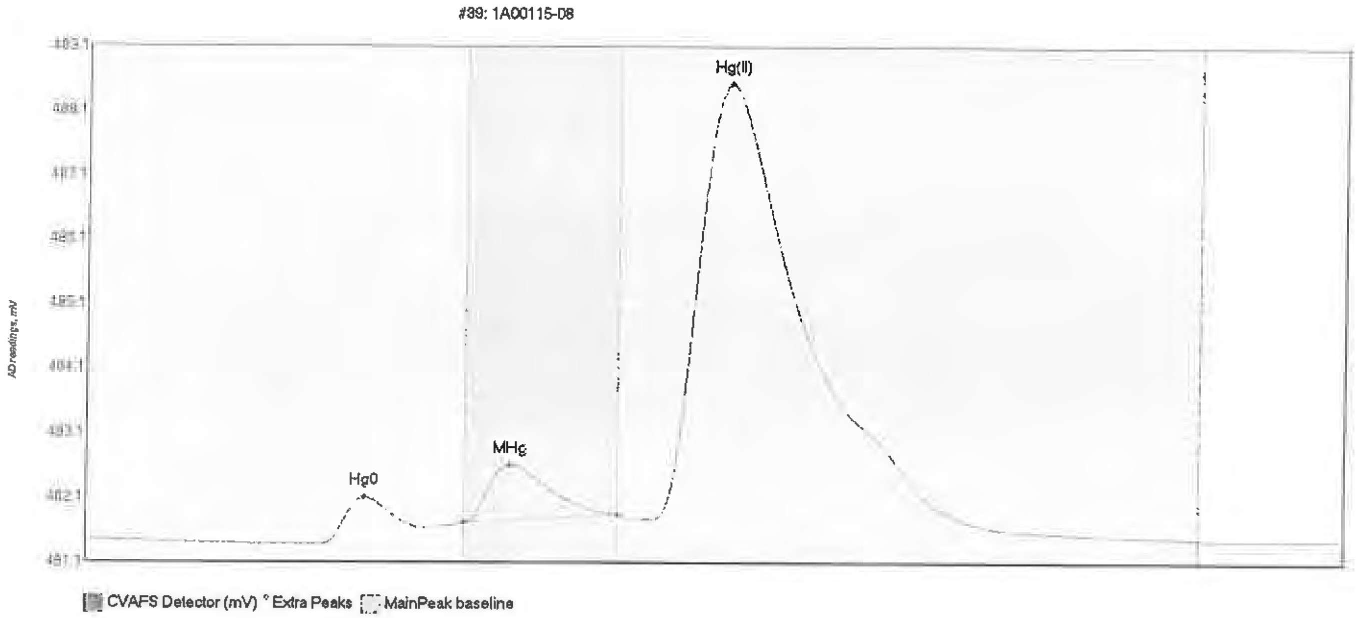


MHg 750-1050

Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00115-06 Hg0	46.294	46.7	66.8	481.35	481.62	55.6	0.617	OK	481.3572	0.00	0.17	F102324
1A00115-06 MHg	19.765	75.0	105.0	481.68	481.72	83.3	0.142	CT	481.3572	0.00	0.17	F102324
1A00115-06 Hg(I	116.260	113.4	158.1	481.69	481.69	125.8	0.606	OK	481.3572	0.00	0.17	F102324



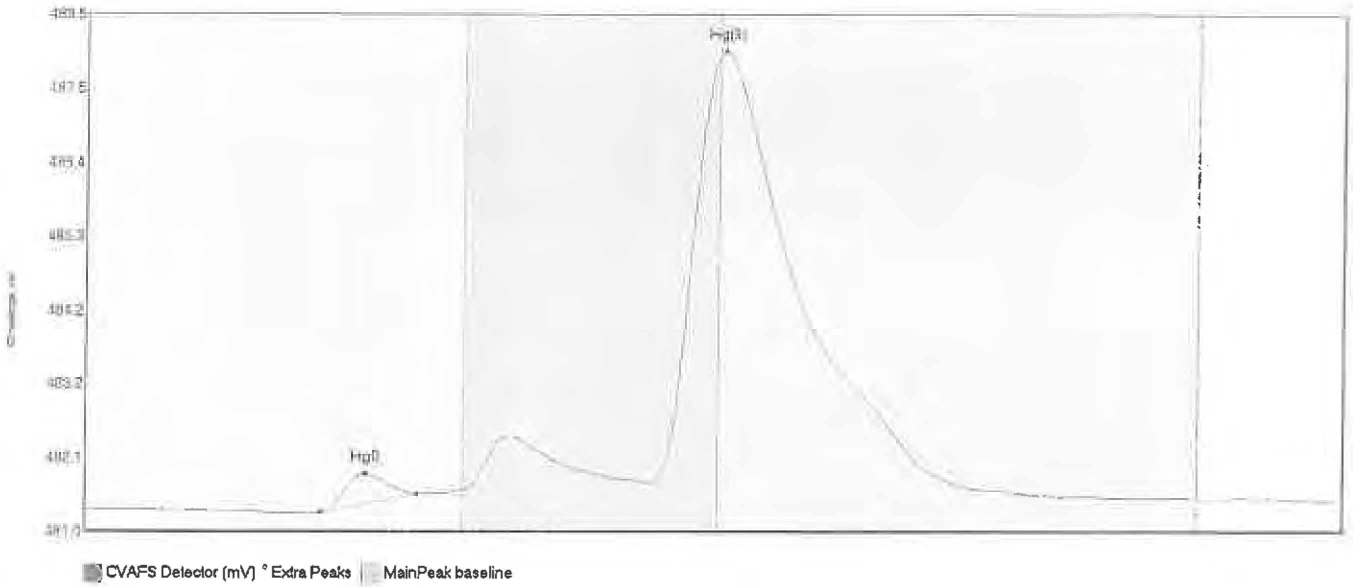
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00115-08 Hg0	59.963	46.3	67.6	481.35	481.61	55.2	0.731	OK	481.4272	0.00	0.00	F102324
1A00115-08 Hg(I	27.001	125.0	183.9	488.26	481.56	127.1	0.281	OK	481.4272	0.00	0.00	F102324



MHg 750-1050

Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00115-08 Hg0	59.963	46.3	67.6	481.35	481.61	55.2	0.731	OK	481.4272	0.00	0.00	F102324
1A00115-08 MHg	118.074	75.0	105.0	481.69	481.80	83.8	0.898	CT	481.4272	0.00	0.00	F102324
1A00115-08 Hg(I	1632.686	111.1	183.9	481.75	481.56	127.1	6.798	OK	481.4272	0.00	0.00	F102324

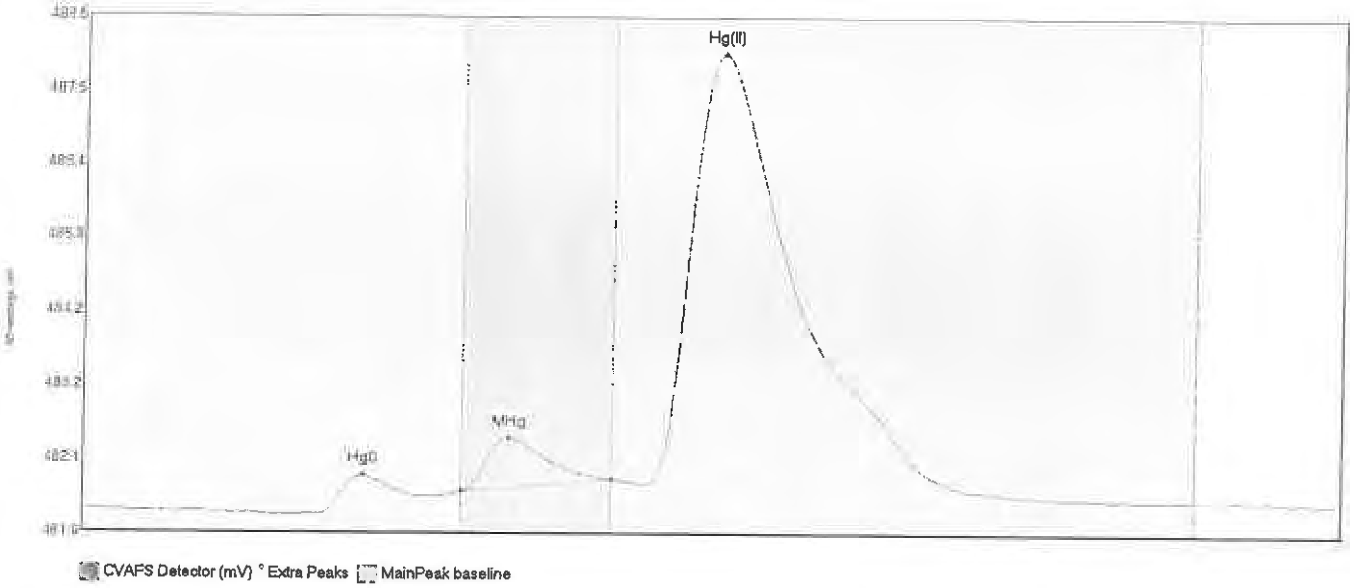
#40: 1A00115-10



D.N.R.

Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00115-10 Hg0	41.152	46.6	65.9	481.30	481.56	55.5	0.561	OK	481.3518	0.01	0.13	F102324
1A00115-10 Hg(I	10.566	125.0	177.1	487.92	481.63	126.2	0.084	OK	481.3518	0.01	0.13	F102324

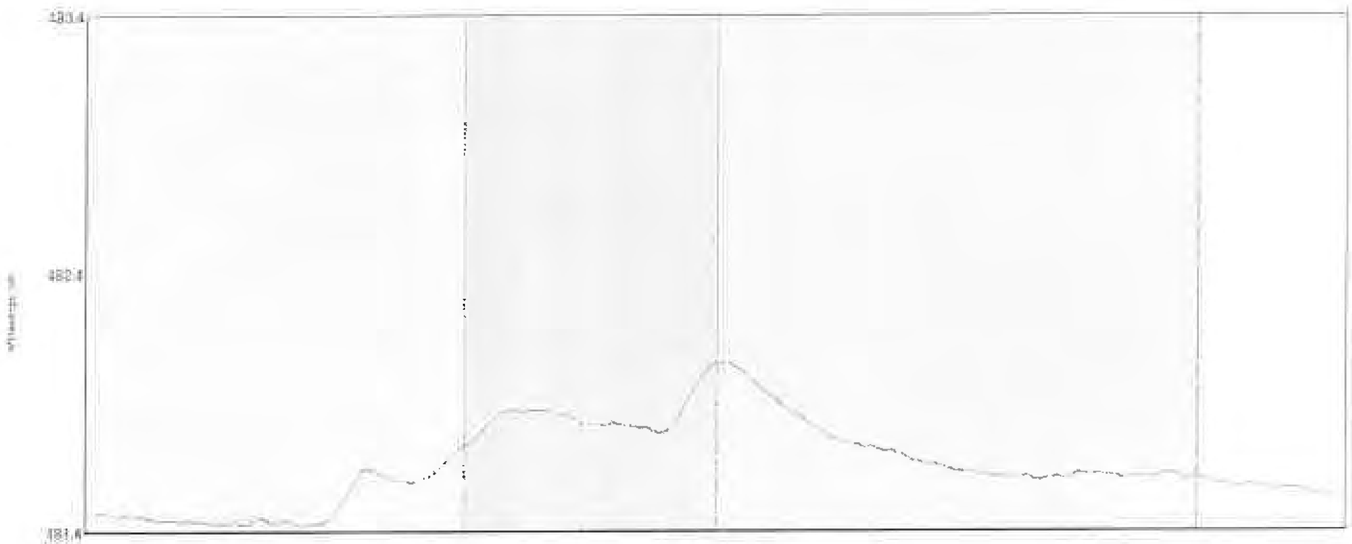
#40: 1A00115-10



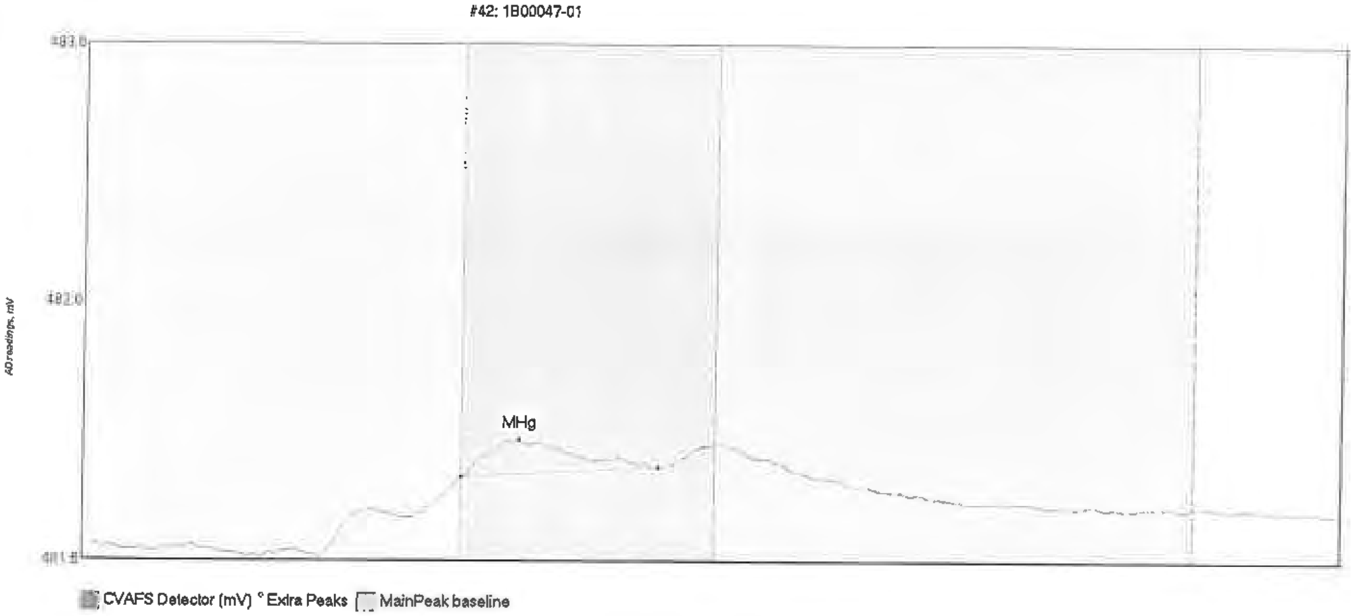
MHg 750-1050

Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00115-10 Hg0	41.152	46.6	65.9	481.30	481.56	55.5	0.561	OK	481.3518	0.01	0.13	F102324
1A00115-10 MHg	98.131	75.0	105.0	481.64	481.80	84.2	0.770	CT	481.3518	0.01	0.13	F102324
1A00115-10 Hg(I	1469.678	111.6	177.1	481.73	481.63	126.2	6.276	OK	481.3518	0.01	0.13	F102324

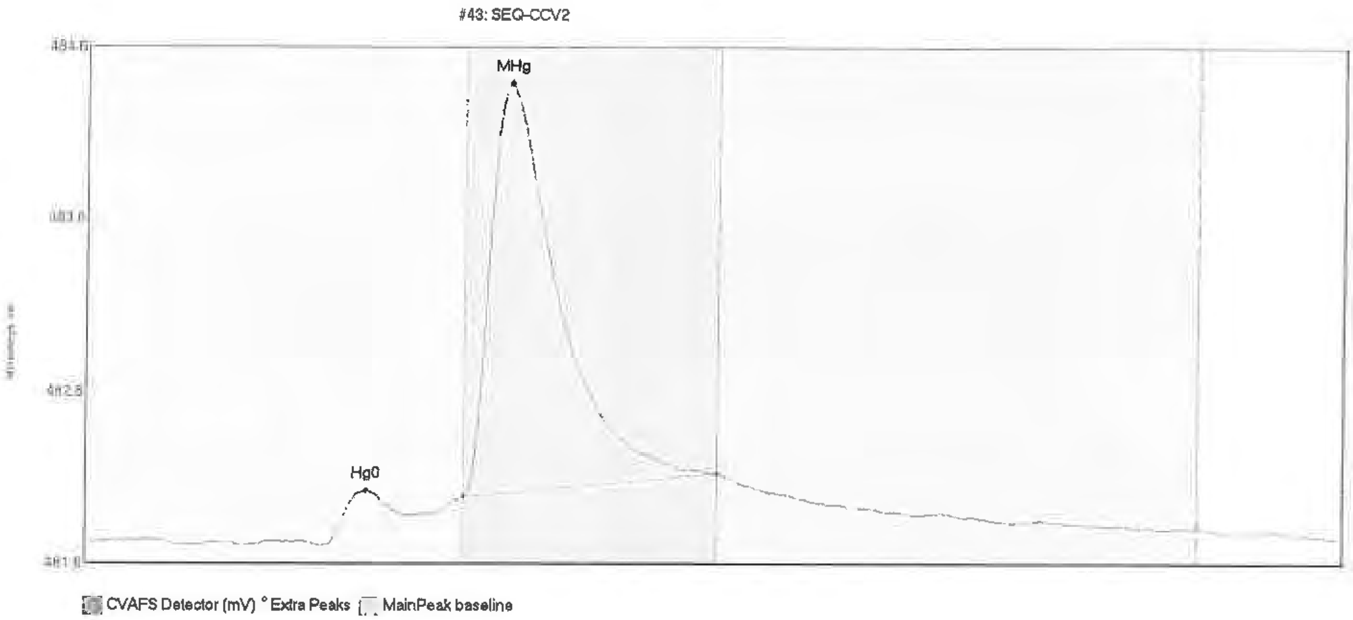
1B00046-01: No peak(s) detected.



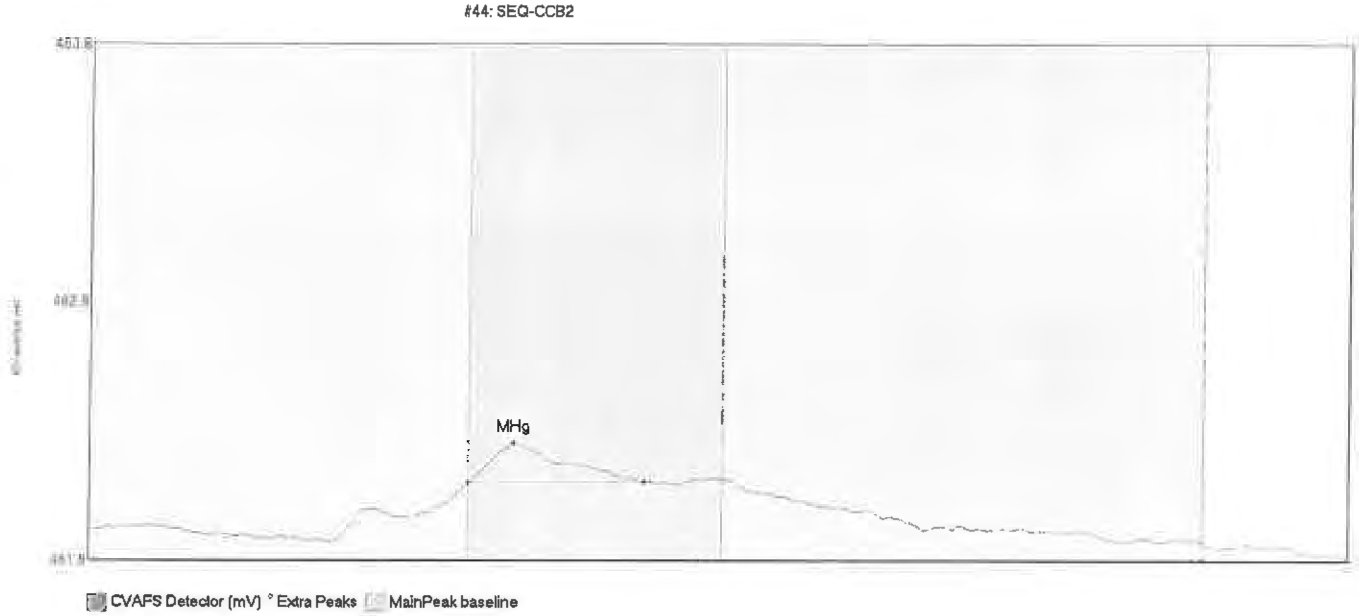
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00046-01	0.000	-	-	-	-	-	-	NP	481.5258	0.00	0.06	



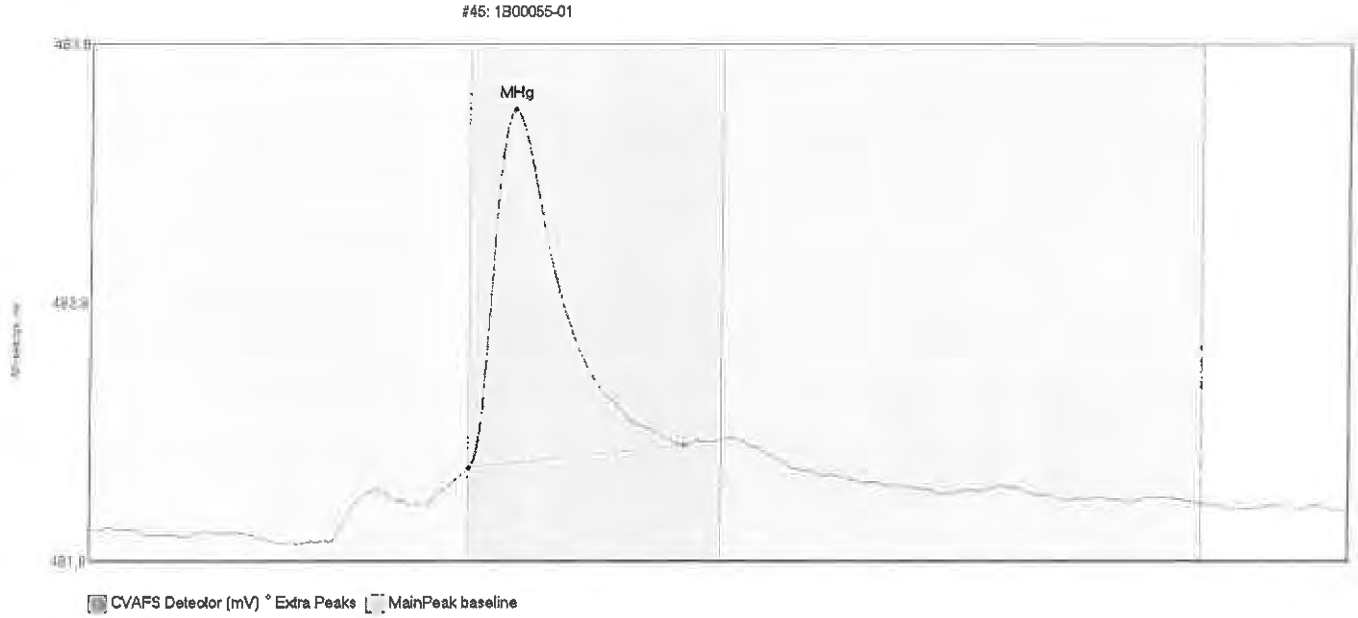
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00047-01	26.222	75.0	113.8	481.93	481.97	86.4	0.143	OK	481.6619	0.00	0.13	F102324



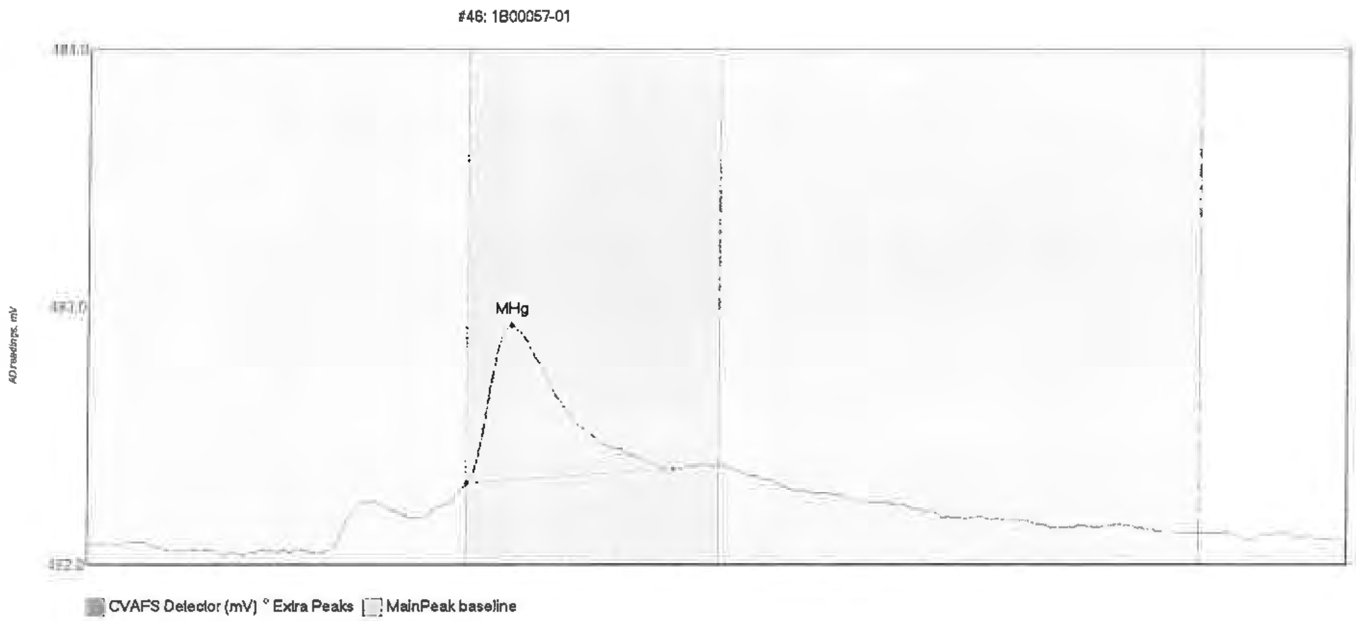
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCV2 Hg0	20.604	48.2	65.6	481.75	481.92	55.9	0.308	OK	481.7633	0.00	0.02	
SEQ-CCV2 MHg	366.424	75.0	125.0	482.03	482.16	84.0	2.388	CT	481.7633	0.00	0.02	



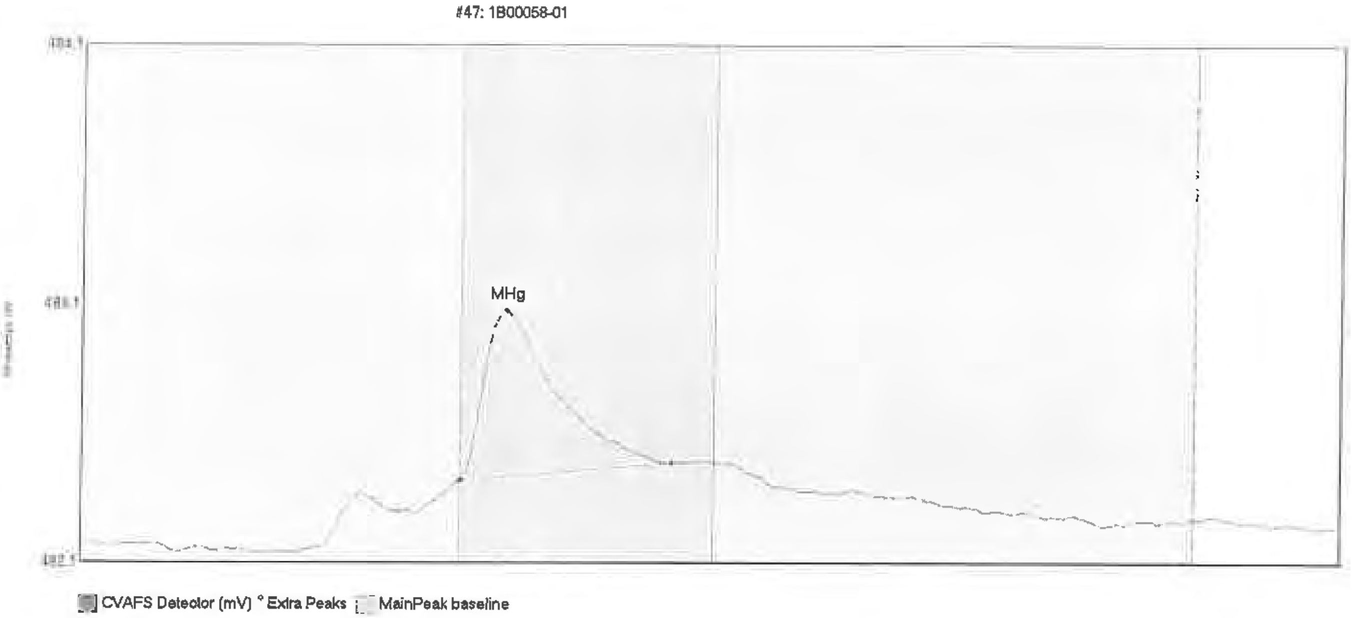
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCB2	24.940	75.0	109.4	482.09	482.09	83.8	0.151	OK	481.9043	0.00	-0.10	



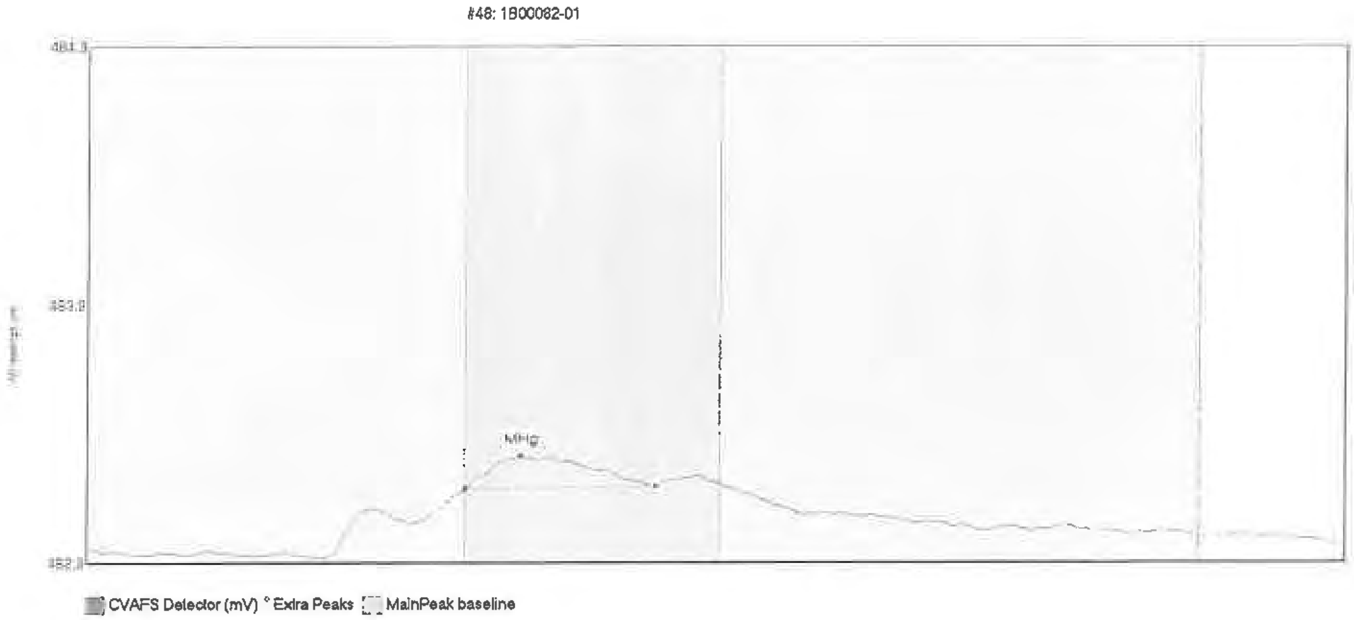
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00055-01	208.044	75.0	117.7	482.14	482.22	84.0	1.388	OK	481.8922	0.01	0.08	F102324



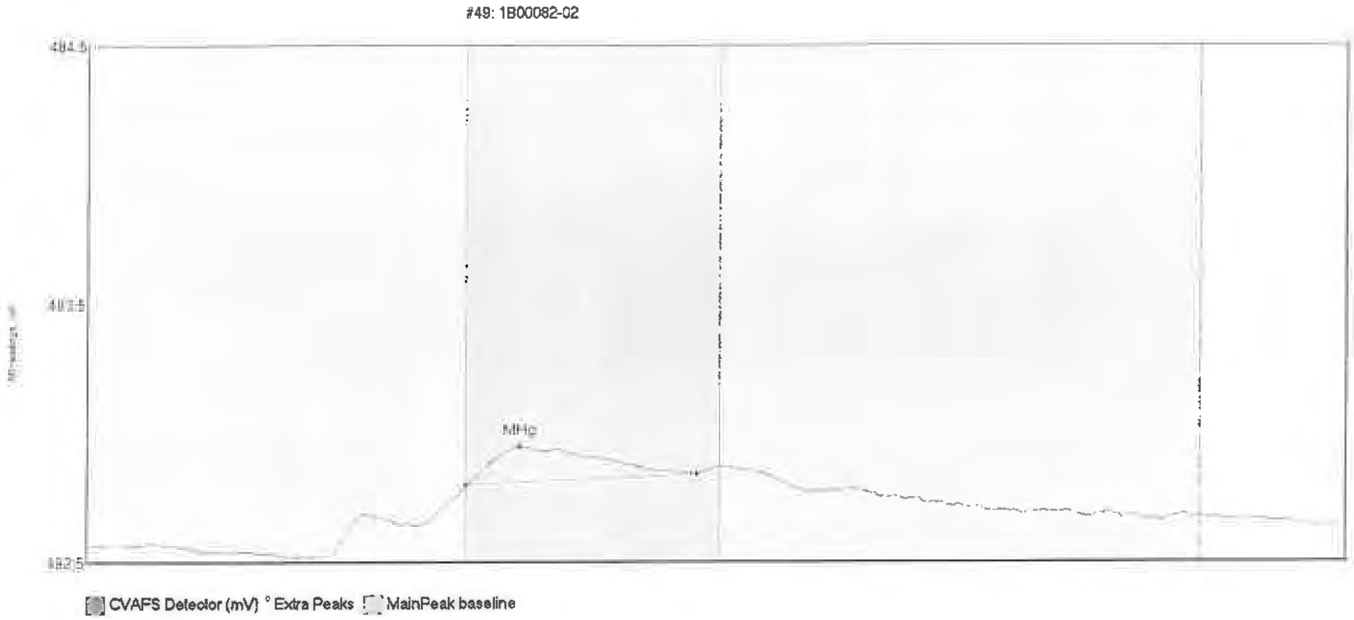
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00057-01	96.721	75.0	115.9	482.29	482.34	83.7	0.607	OK	482.0447	0.00	0.02	F102324



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00058-01	104.211	75.0	116.5	482.42	482.48	84.0	0.655	OK	482.1877	0.00	0.05	F102324

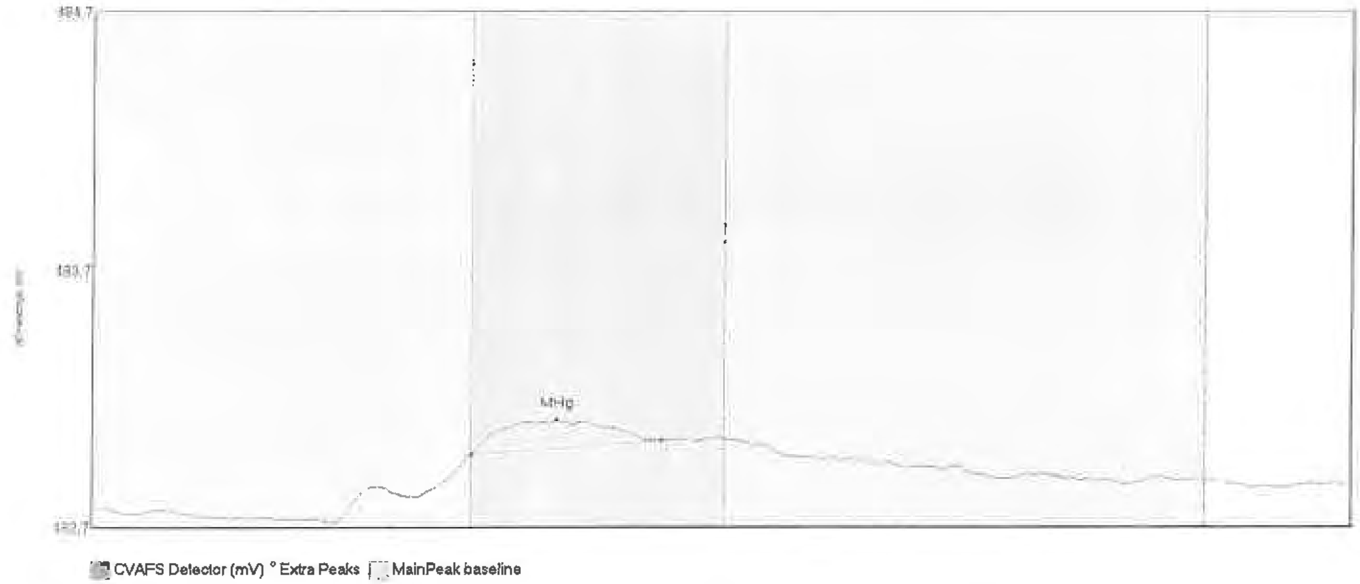


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00082-01	27.824	75.0	112.3	482.61	482.61	86.0	0.125	OK	482.3616	0.00	0.03	F102324

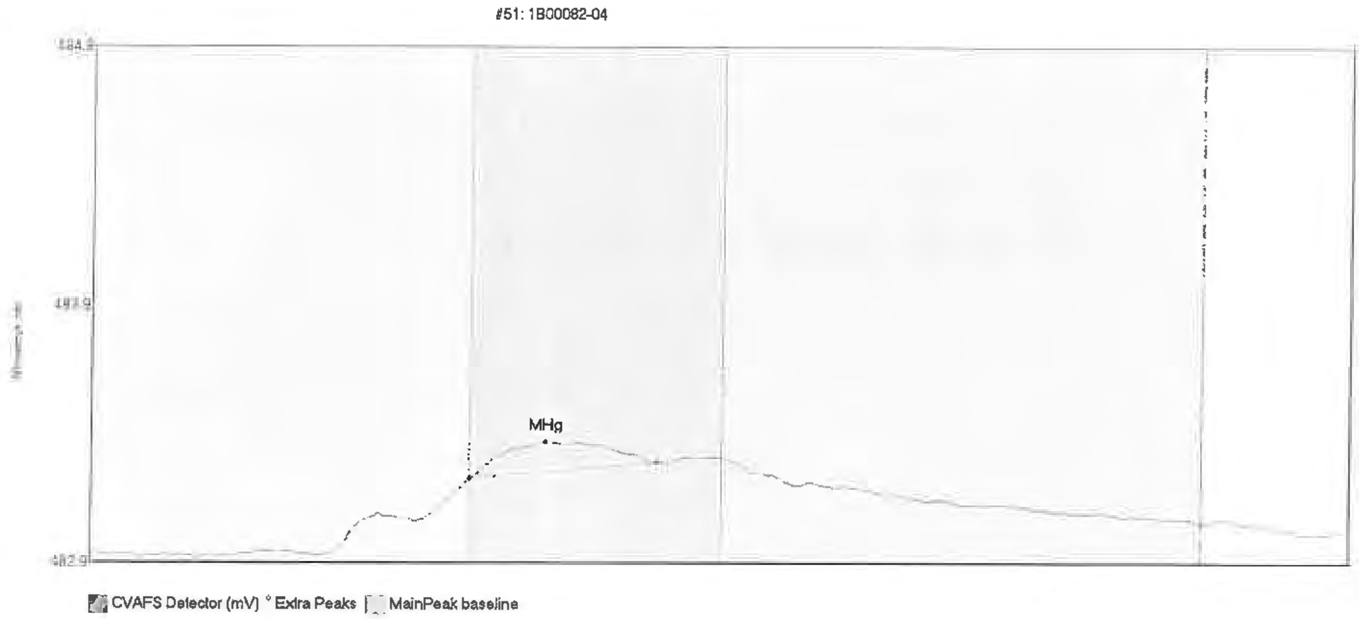


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00082-02	33.095	75.0	120.6	482.78	482.82	85.6	0.148	OK	482.5430	0.00	0.08	F102324

#50: 1B00082-03

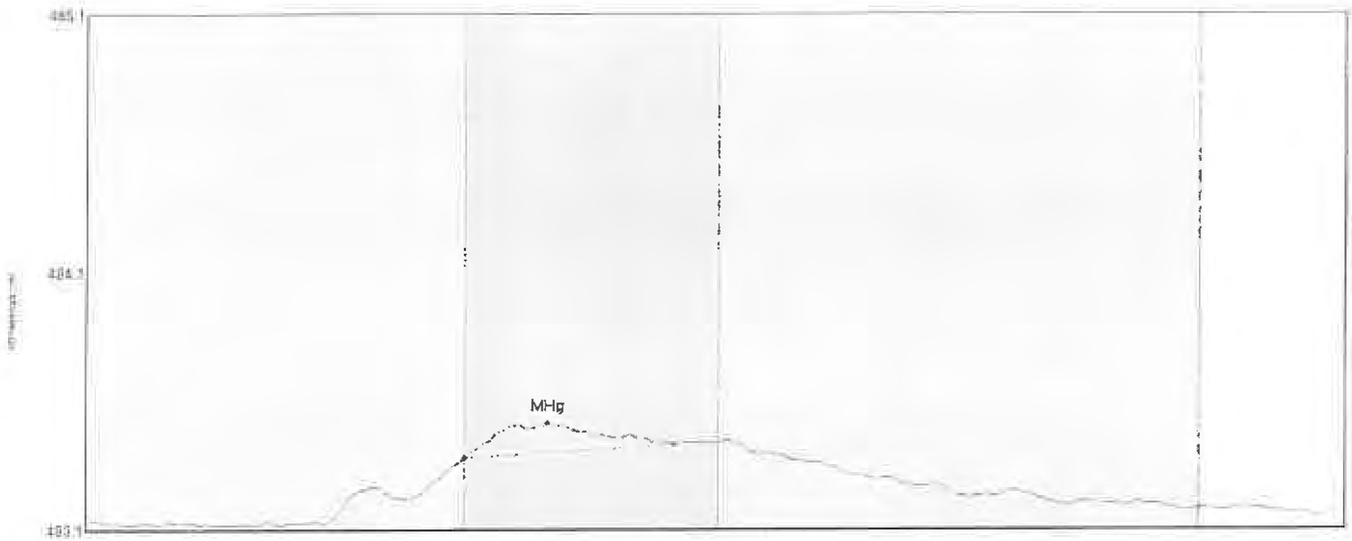


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00082-03	26.931	75.0	112.5	483.01	483.06	92.0	0.133	OK	482.8030	0.00	0.10	F102324

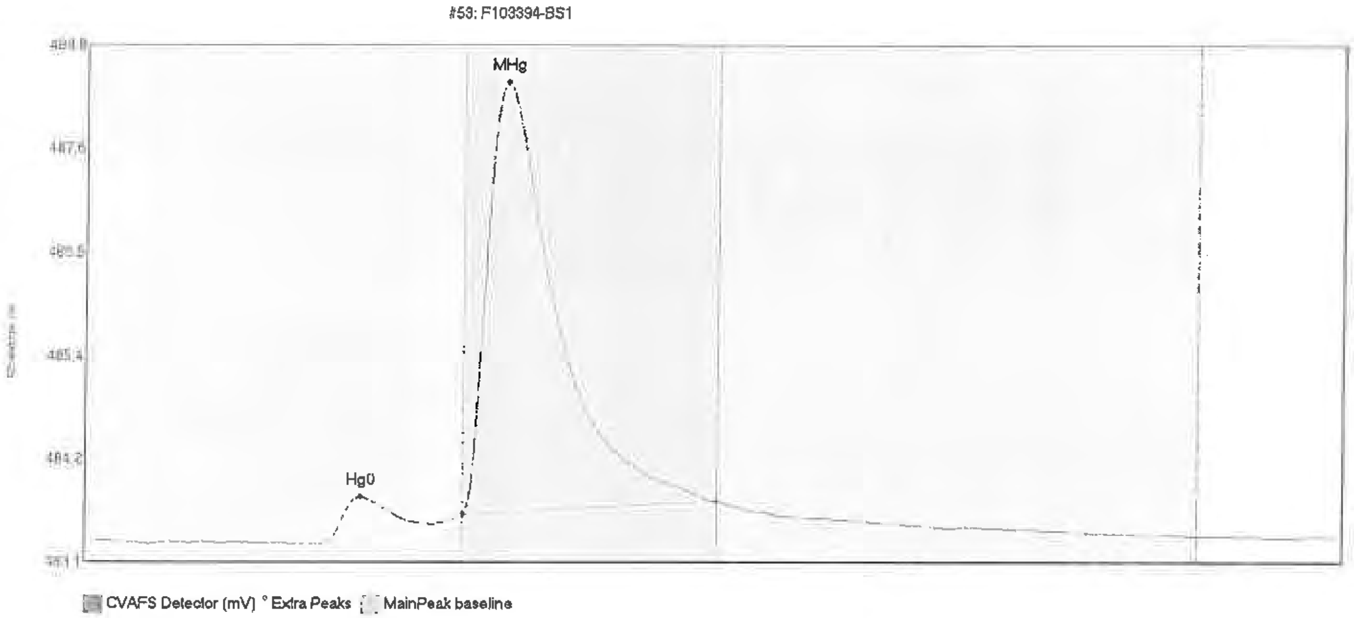


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00082-04	28.094	75.0	112.0	483.27	483.33	90.2	0.145	OK	482.9816	0.00	0.08	F102324

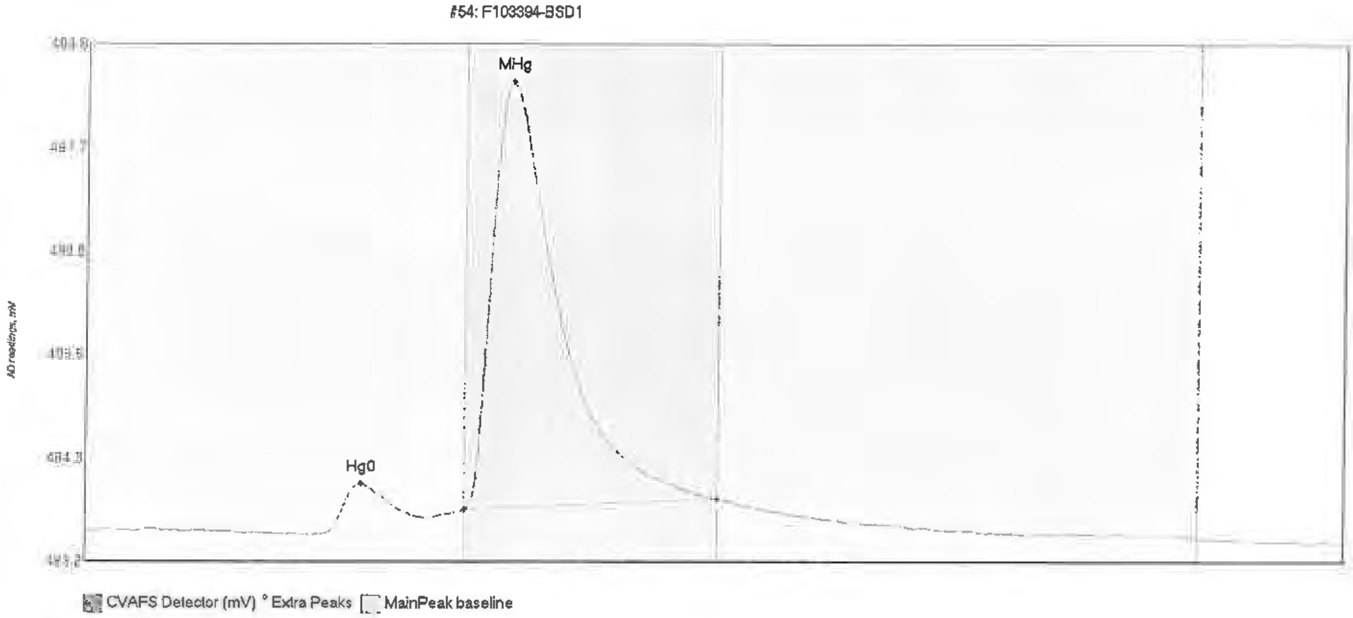
#52: 1B00083-01



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00083-01	26.678	75.0	116.2	483.40	483.45	91.1	0.137	OK	483.1533	0.00	0.04	F102324

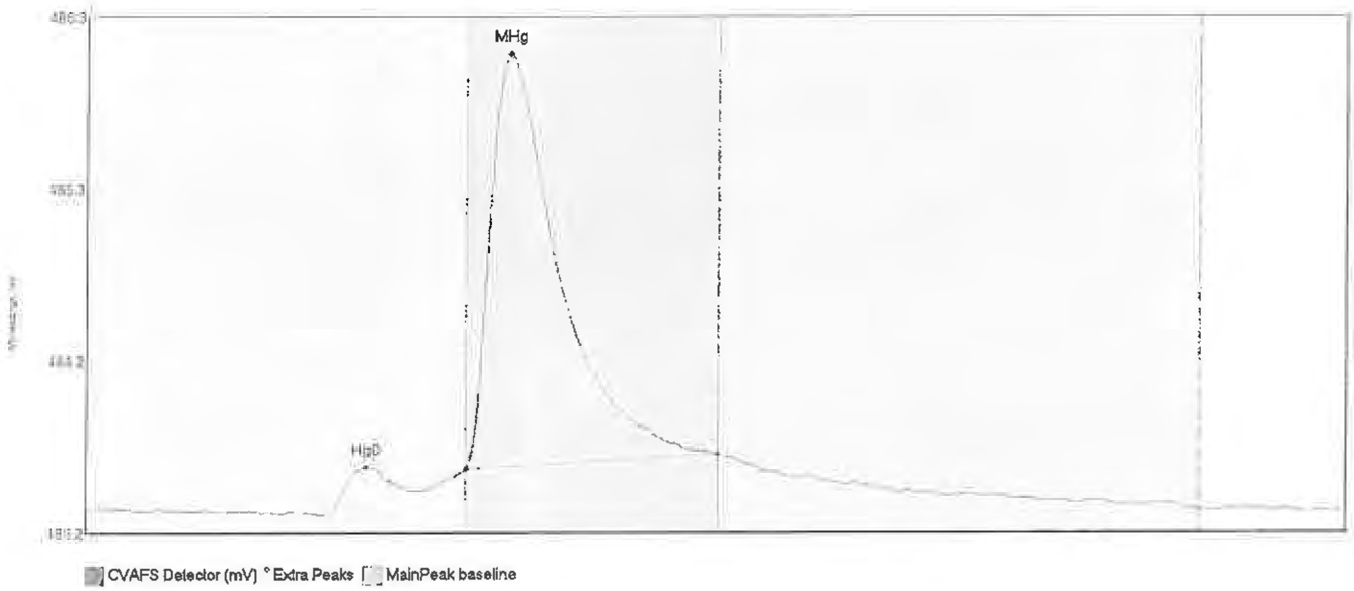


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F103394-BS1 Hg0	42.068	47.0	68.8	483.32	483.53	54.7	0.505	OK	483.3429	0.00	0.04	F103394
F103394-BS1 MHg	739.005	75.0	125.0	483.63	483.77	83.5	4.734	CT	483.3429	0.00	0.04	F103394

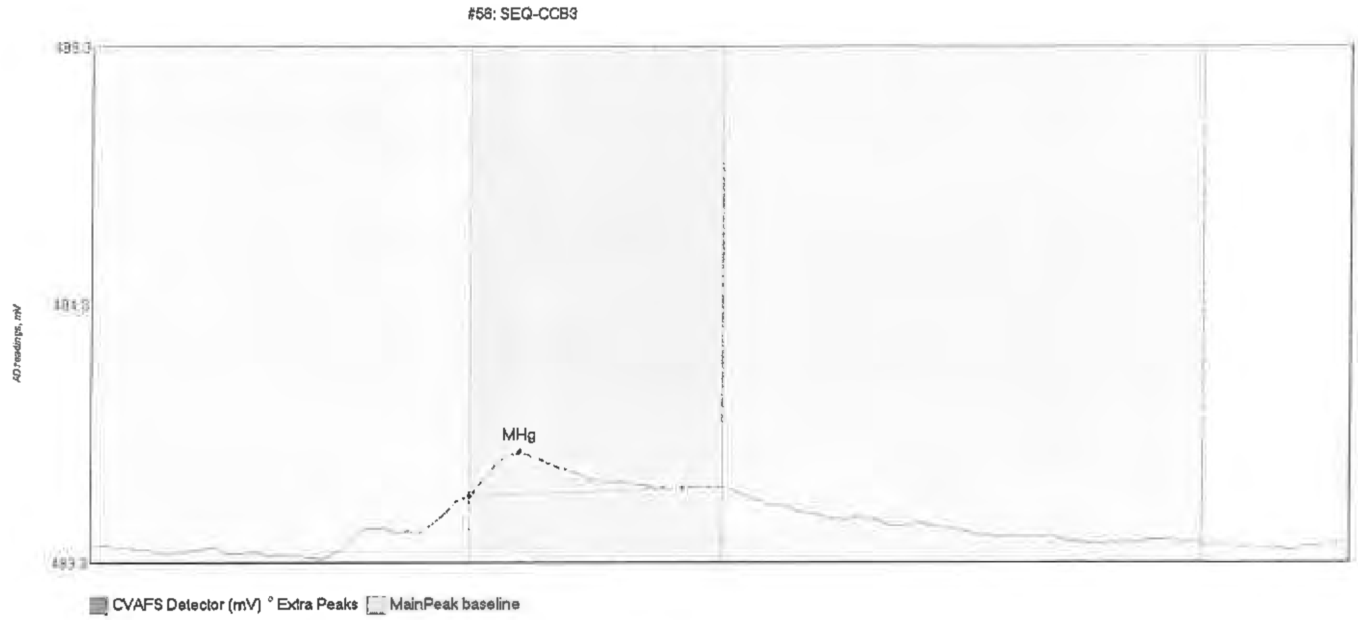


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F103394-BSD1 Hg	44.003	44.7	68.1	483.50	483.69	54.8	0.558	OK	483.5412	0.00	-0.14	F103394
F103394-BSD1 MH	715.760	75.0	125.0	483.78	183.89	84.3	4.665	CT	183.5412	0.00	-0.14	F103394

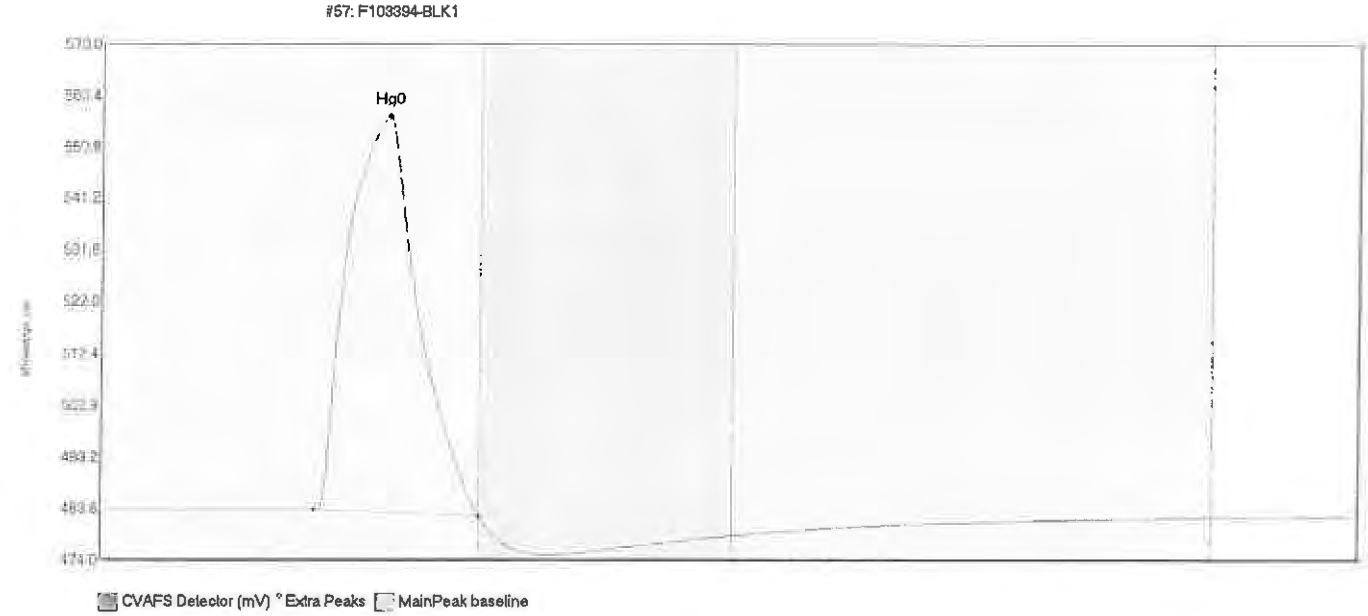
#55: SEQ-CCV3



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCV3 Hg0	19.419	46.5	64.8	483.27	483.42	55.4	0.289	OK	483.3082	0.00	-0.01	
SEQ-CCV3 MHg	397.635	75.0	125.0	483.55	483.63	83.6	2.527	CT	483.3082	0.00	-0.01	

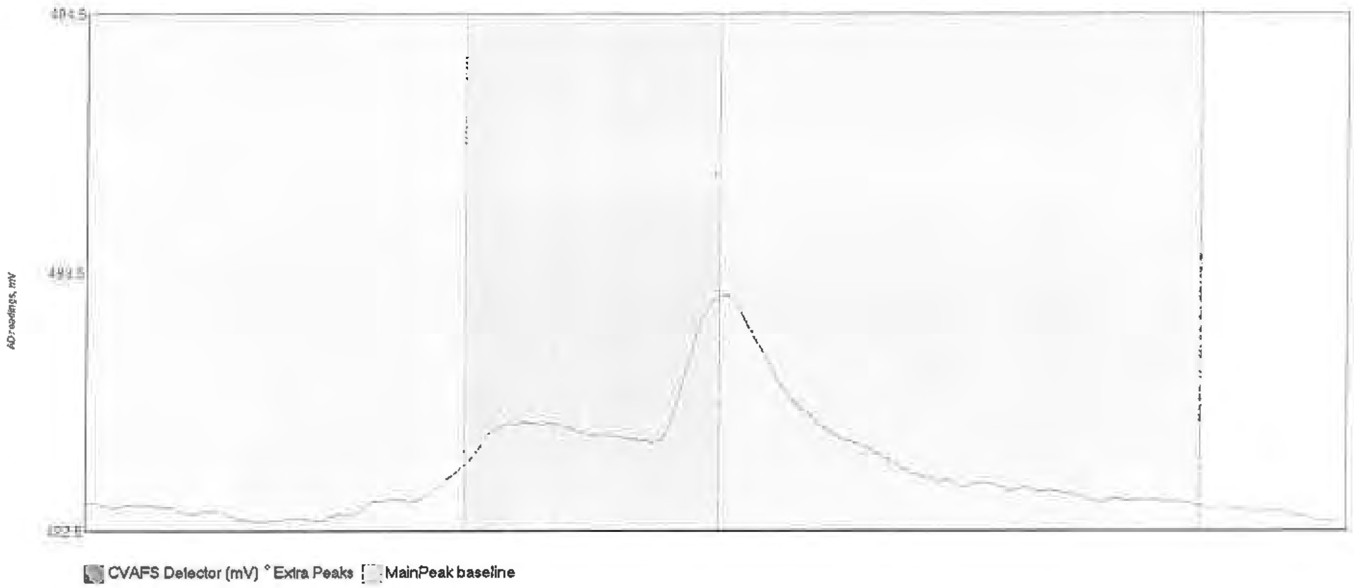


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCB3	29.215	75.0	117.0	483.51	483.54	84.9	0.170	OK	483.3200	0.00	0.01	



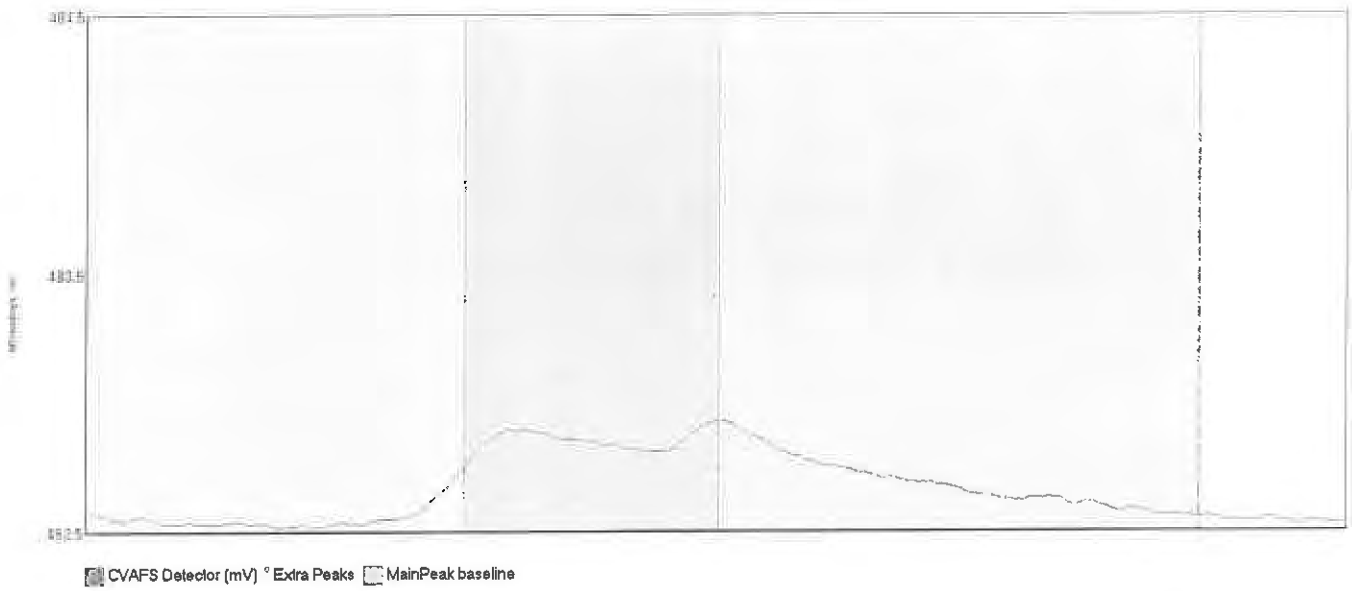
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F103394-BLK1	11662.376	42.5	75.0	483.41	482.28	57.1	73.148	CT	483.4344	0.00	-1.19	F103394

F103394-BLK2: No peak(s) detected.

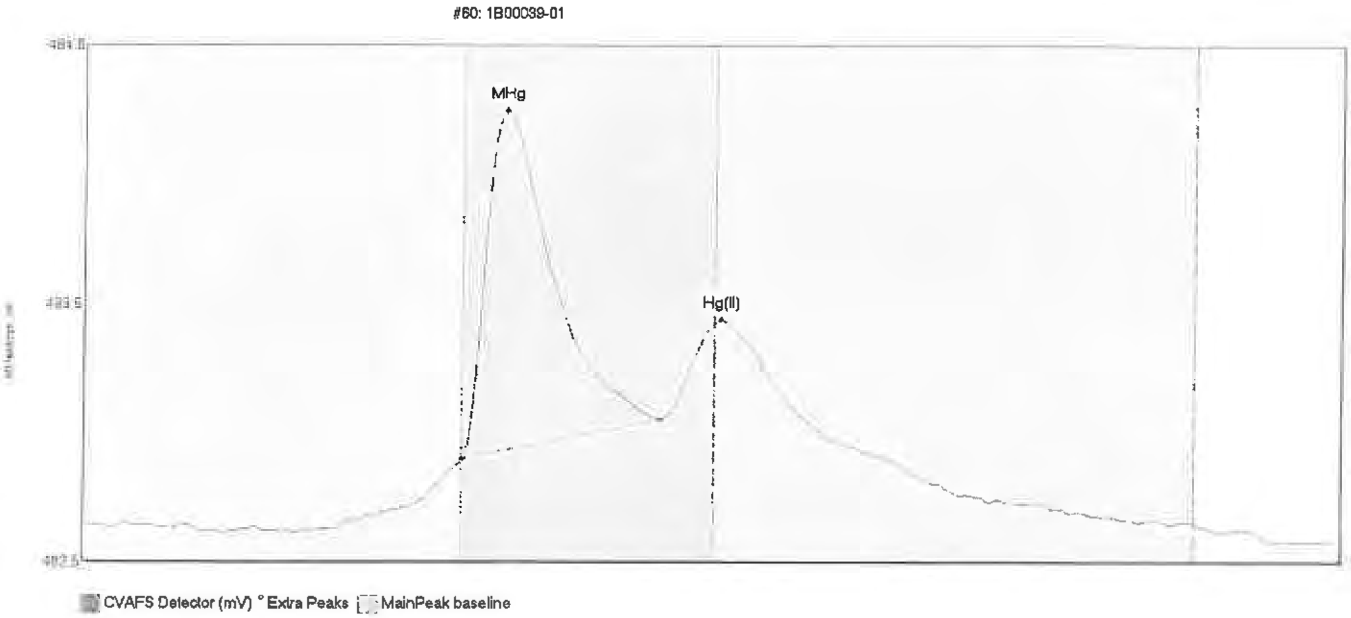


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F103394-BLK2	0.000	-	-	-	-	-	-	NP	482.6558	0.00	-0.07	F103394

F103394-BLK3: No peak(s) detected.

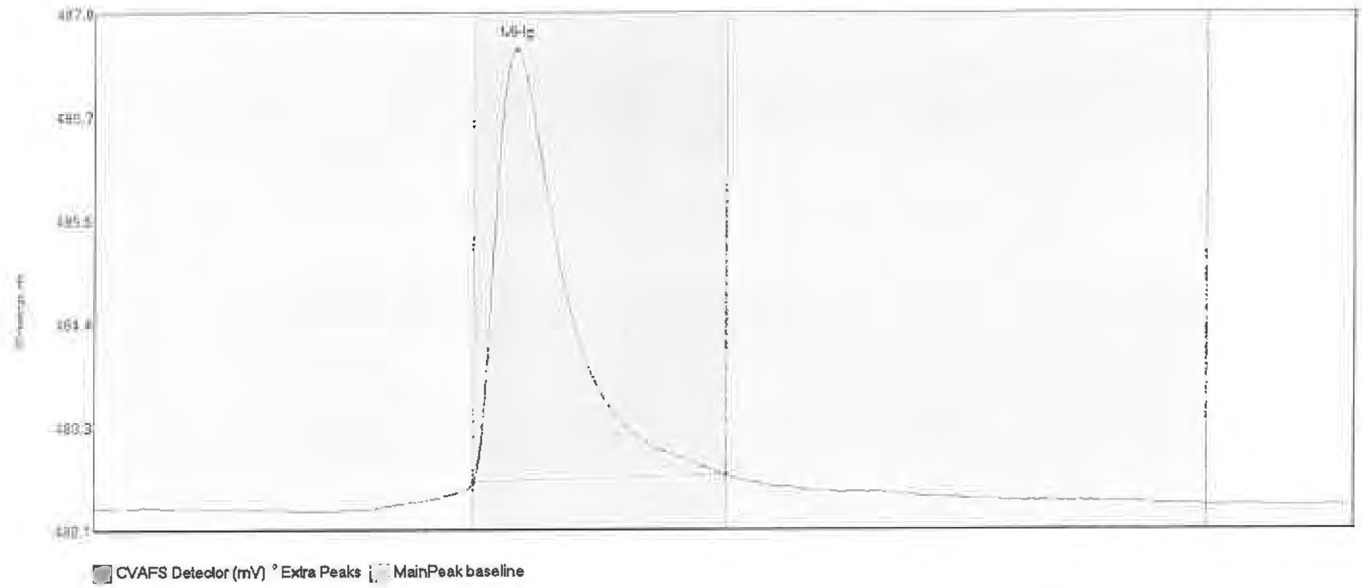


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F103394-BLK3	0.000	--	--	--	--	--	--	NP	482.5459	0.00	-0.04	F103394

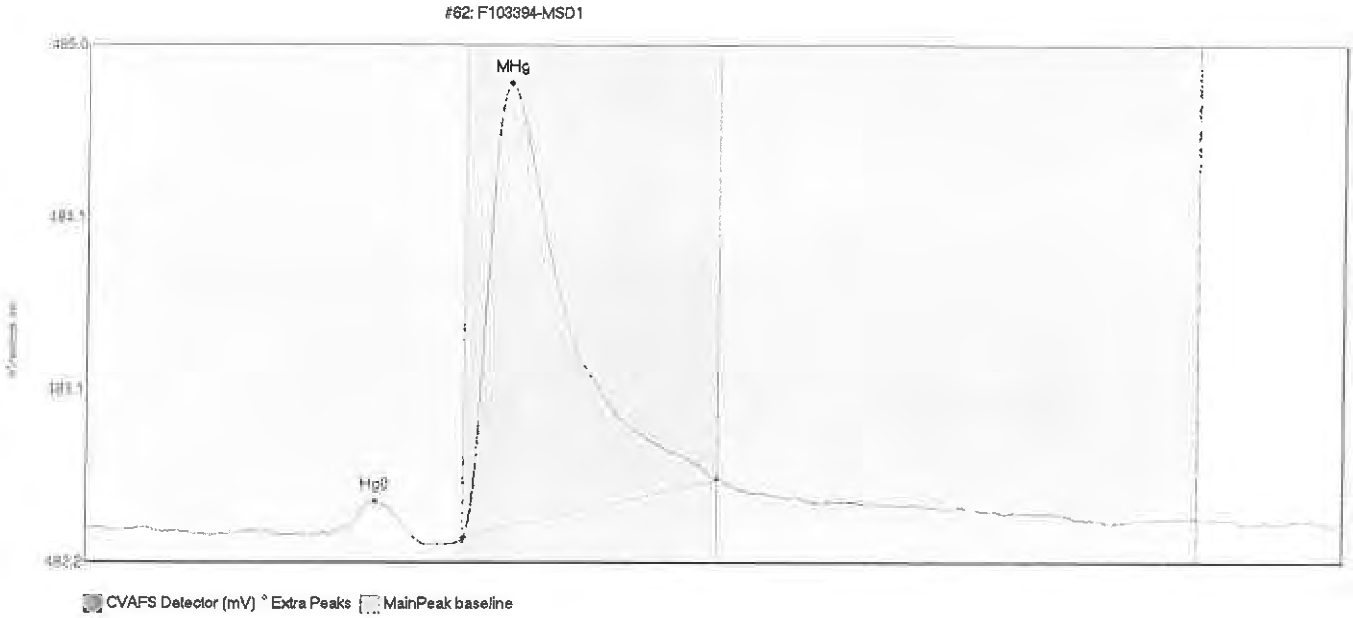


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00039-01 MHg	201.960	75.0	114.4	482.86	483.01	83.6	1.347	OK	482.6055	0.00	-0.08	F103394
1B00039-01 Hg(I	3.466	125.0	151.3	483.38	482.91	126.3	0.014	OK	482.6055	0.00	-0.08	F103394

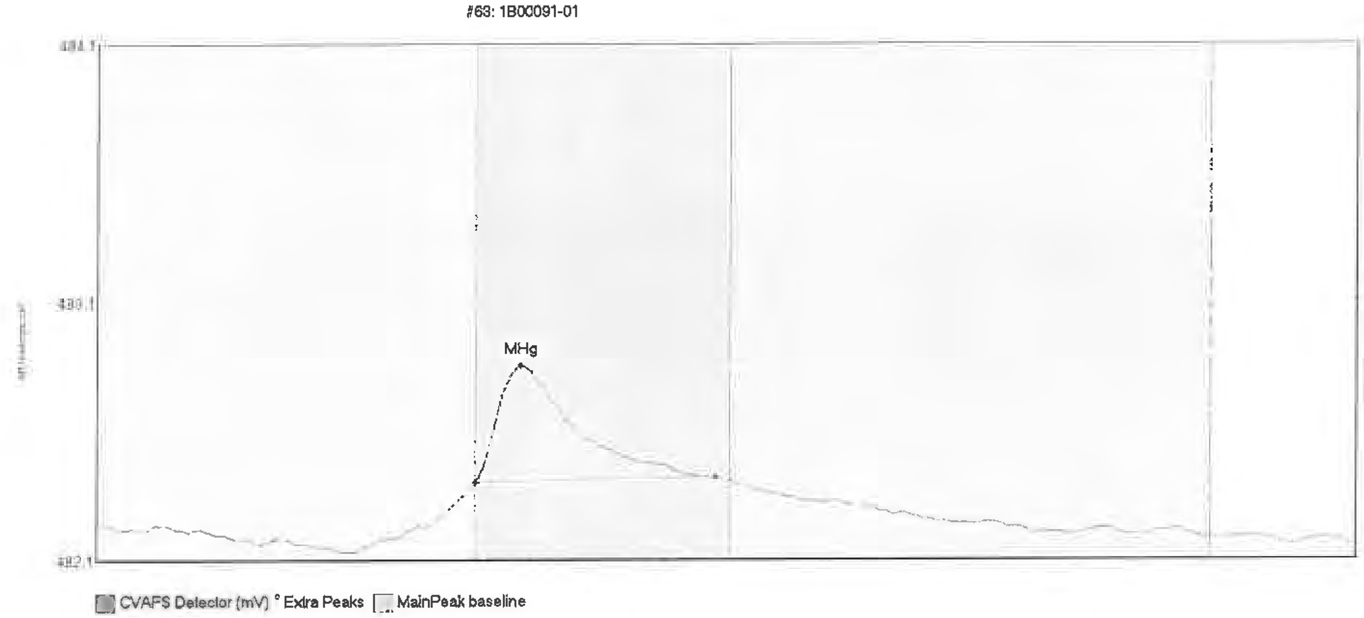
#61; F103394-MS1



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F103391-MS1	740.229	75.0	125.0	482.67	482.75	83.2	4.744	CT	482.3946	0.00	0.01	F103394

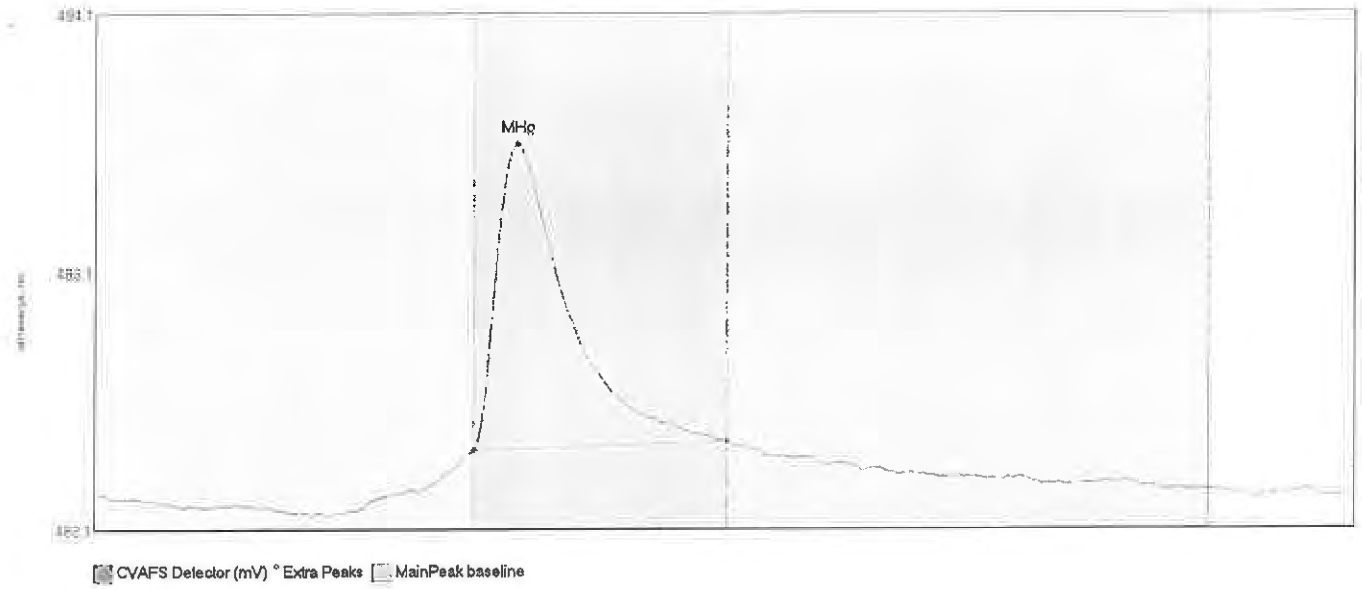


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F103394-MSD1 Hg	18.643	48.3	68.1	482.36	482.30	57.5	0.173	OK	482.3880	0.00	0.01	F103394
F103394-MSD1 MH	430.853	75.0	125.0	482.33	482.65	83.8	2.475	CT	482.3880	0.00	0.01	F103394

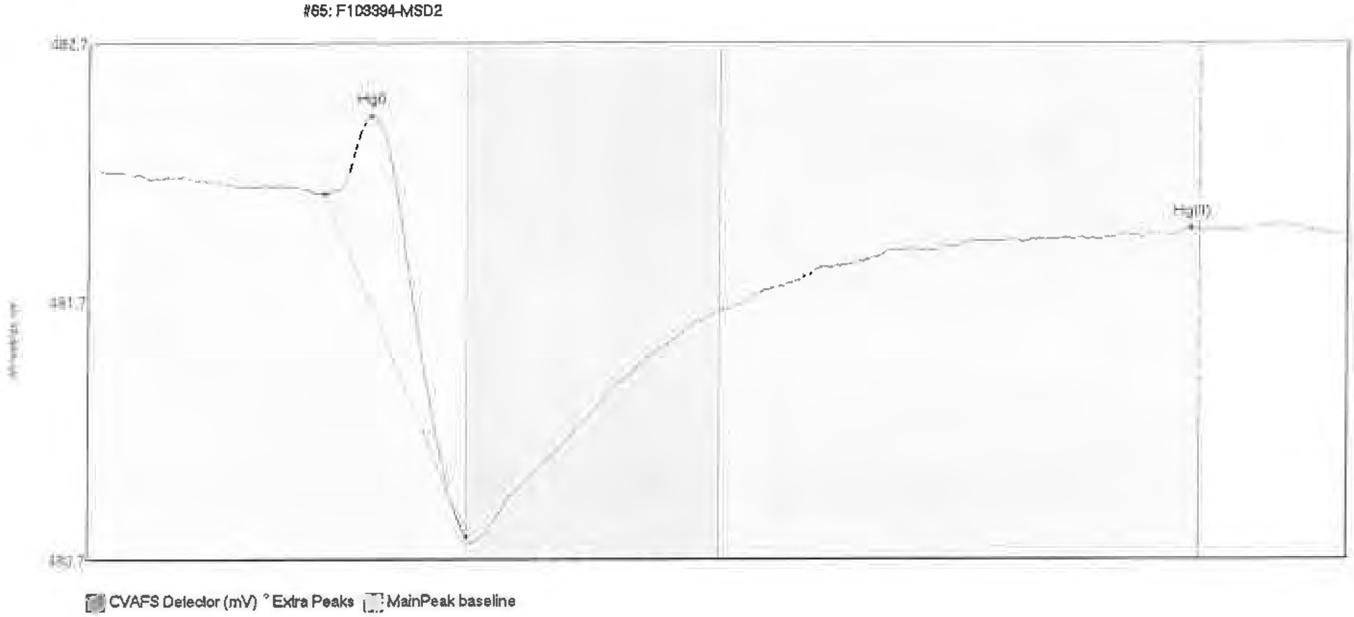


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00091-01	77.567	75.0	122.2	482.45	482.46	83.9	0.451	OK	482.2861	0.00	-0.08	F103394

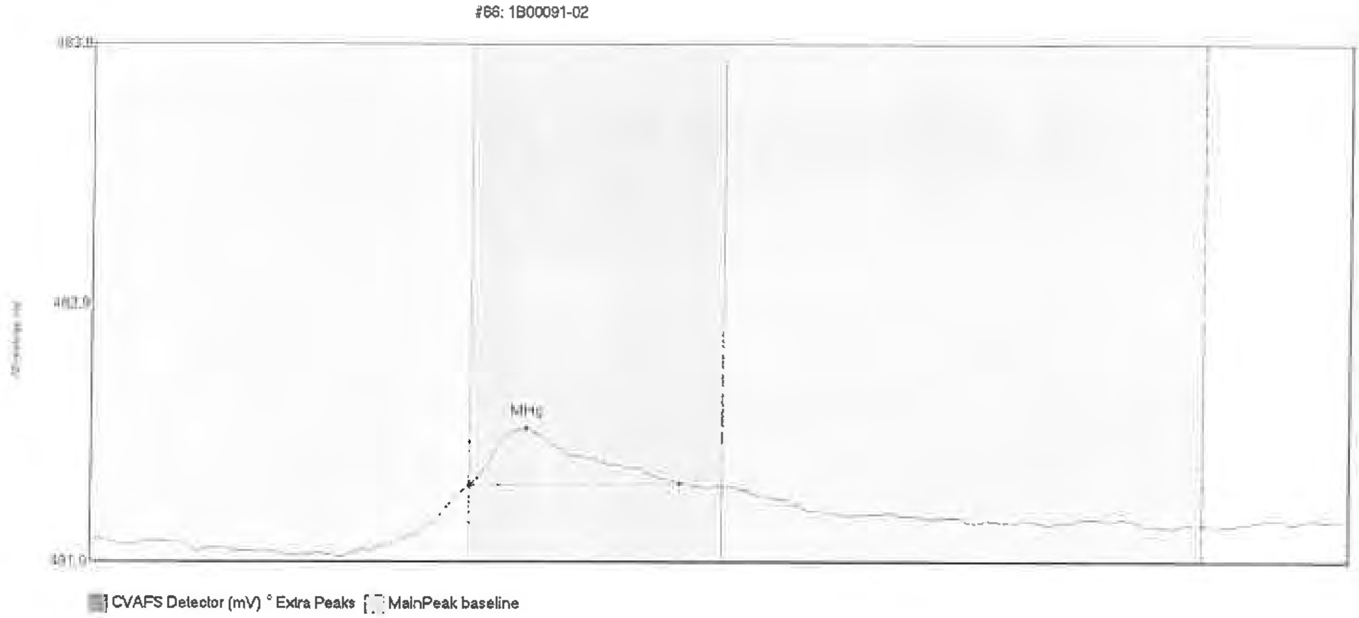
#64: F103394-MS2



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F103394-MS2	190.624	75.0	125.0	482.39	482.42	83.5	1.180	CT	482.2233	0.00	0.00	F103394

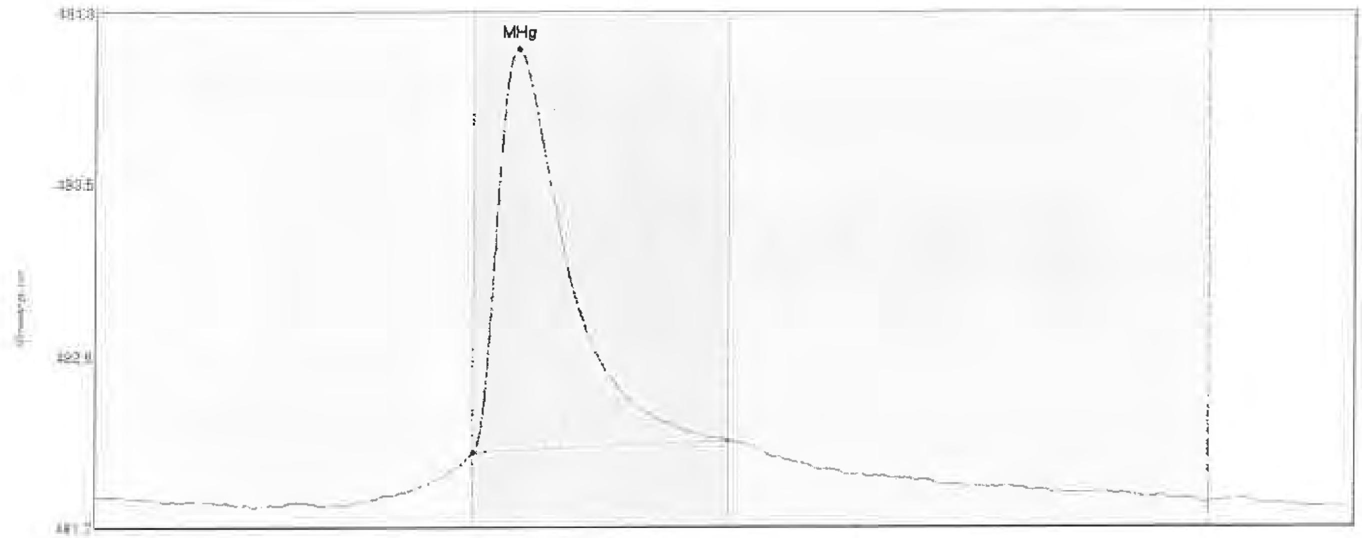


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F103394-MSD2 Hg	99.734	46.8	75.0	482.09	480.76	56.1	0.300	CT	482.1755	0.00	-0.24	F103394
F103391-MSD2 Hg	56.747	126.4	219.0	481.64	481.95	218.1	0.307	OK	482.1755	0.00	-0.24	F103394

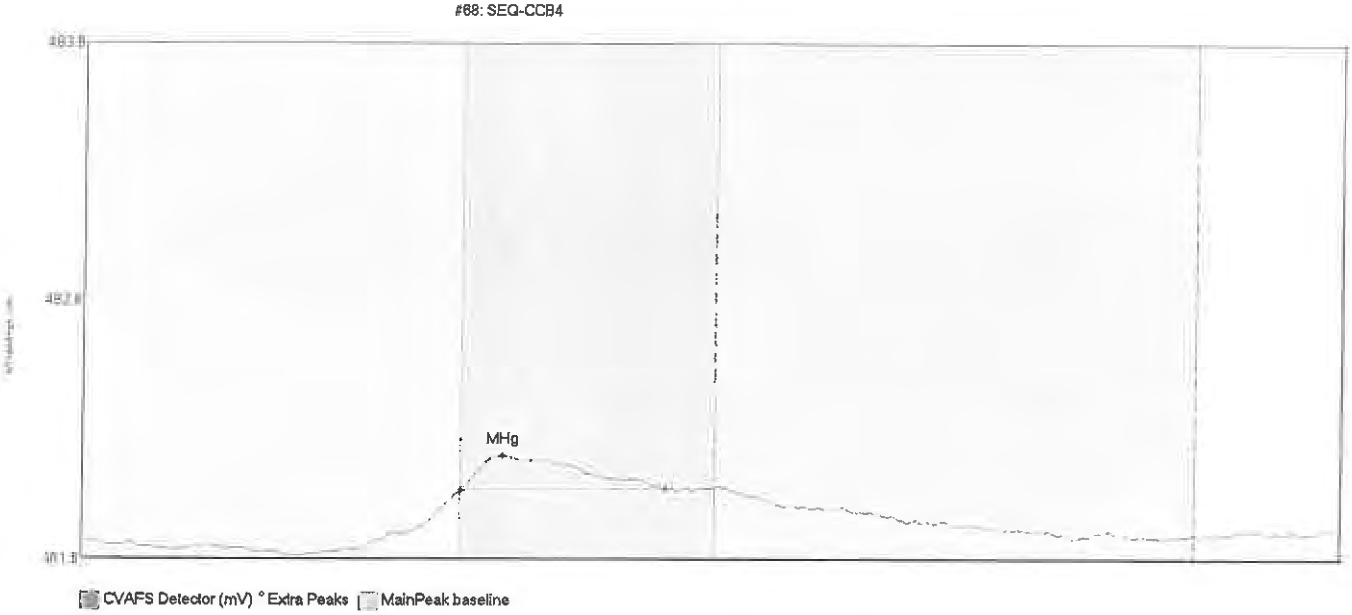


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00091-02	43.425	75.0	116.5	482.19	482.20	86.1	0.219	OK	481.9905	0.00	0.06	F103394

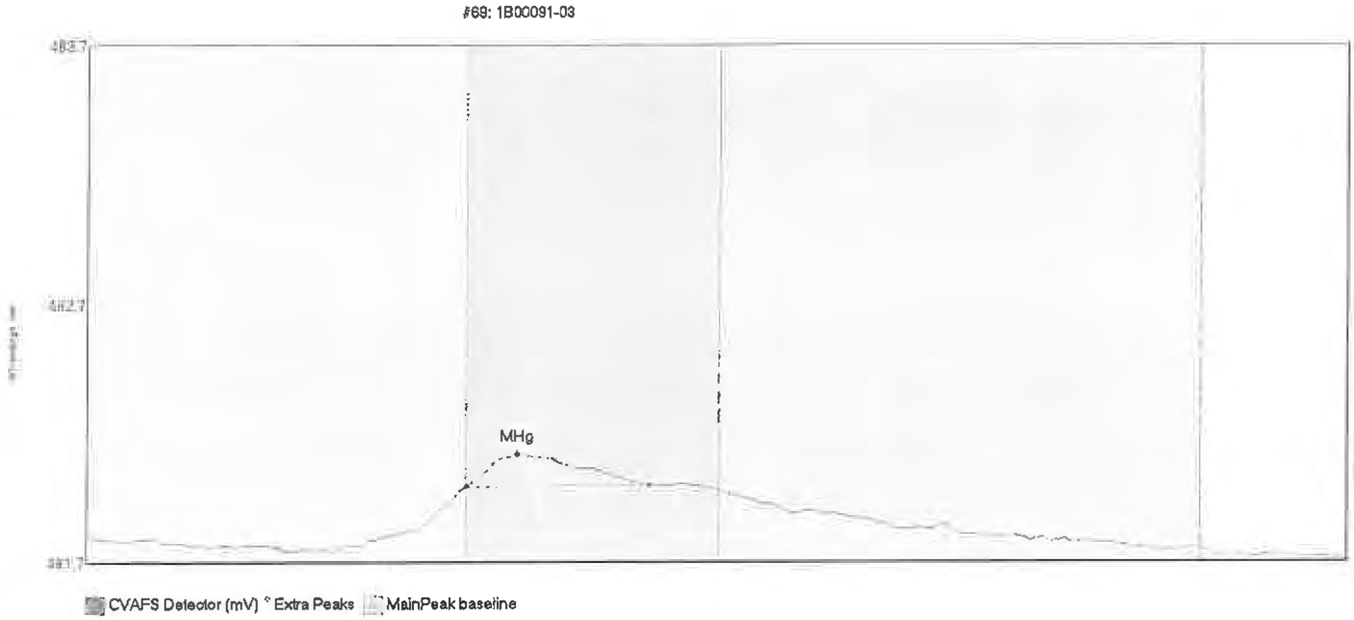
#67: SEQ-CCV4



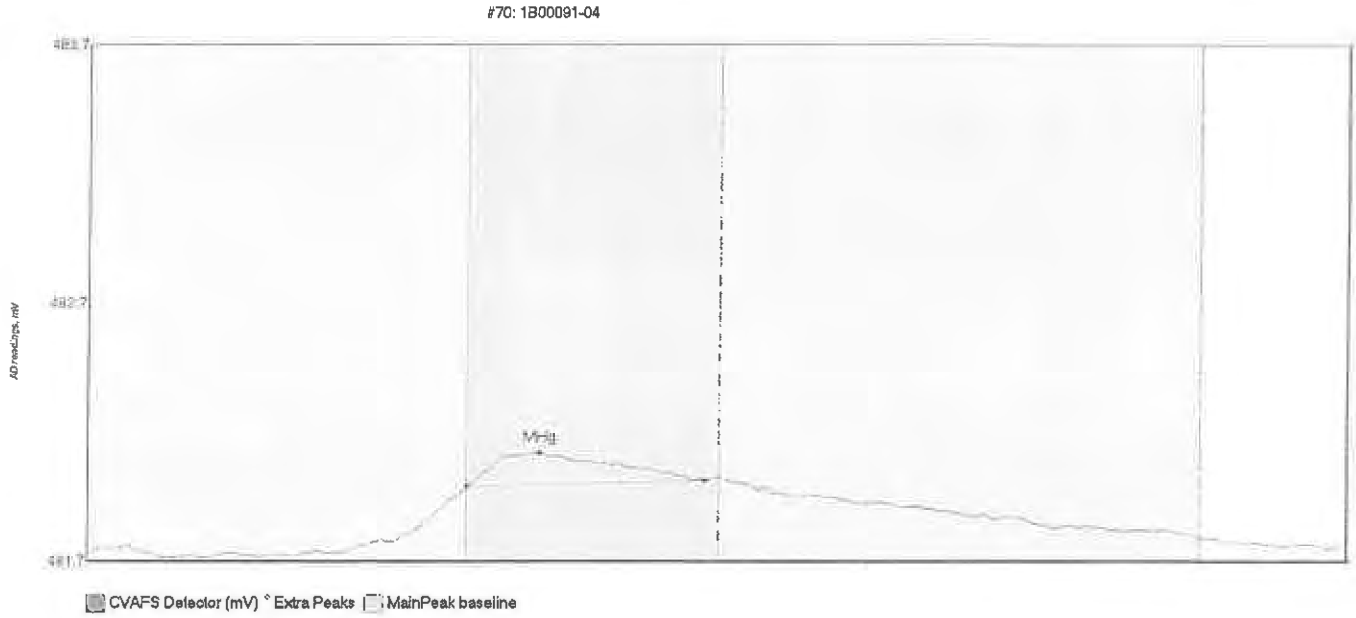
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCV4	317.820	75.0	125.0	482.09	482.15	83.7	2.047	CT	481.8637	0.00	-0.06	



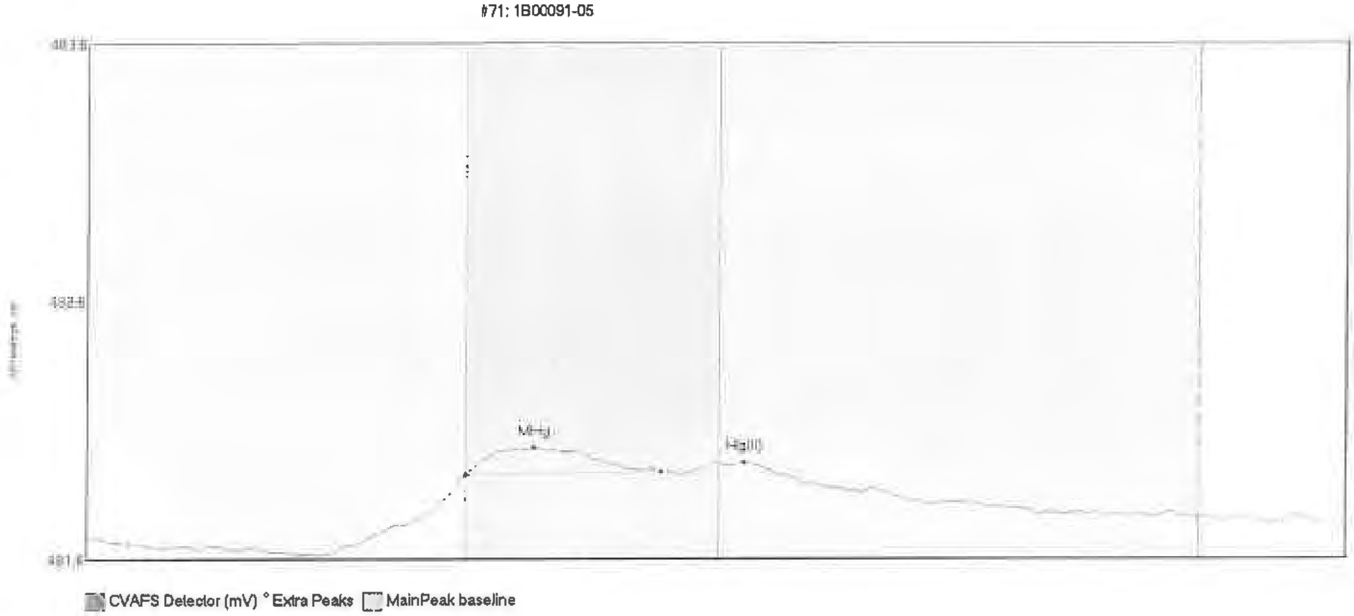
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCB4	30.758	75.0	115.4	482.02	482.03	83.4	0.135	OK	481.8309	0.00	0.04	



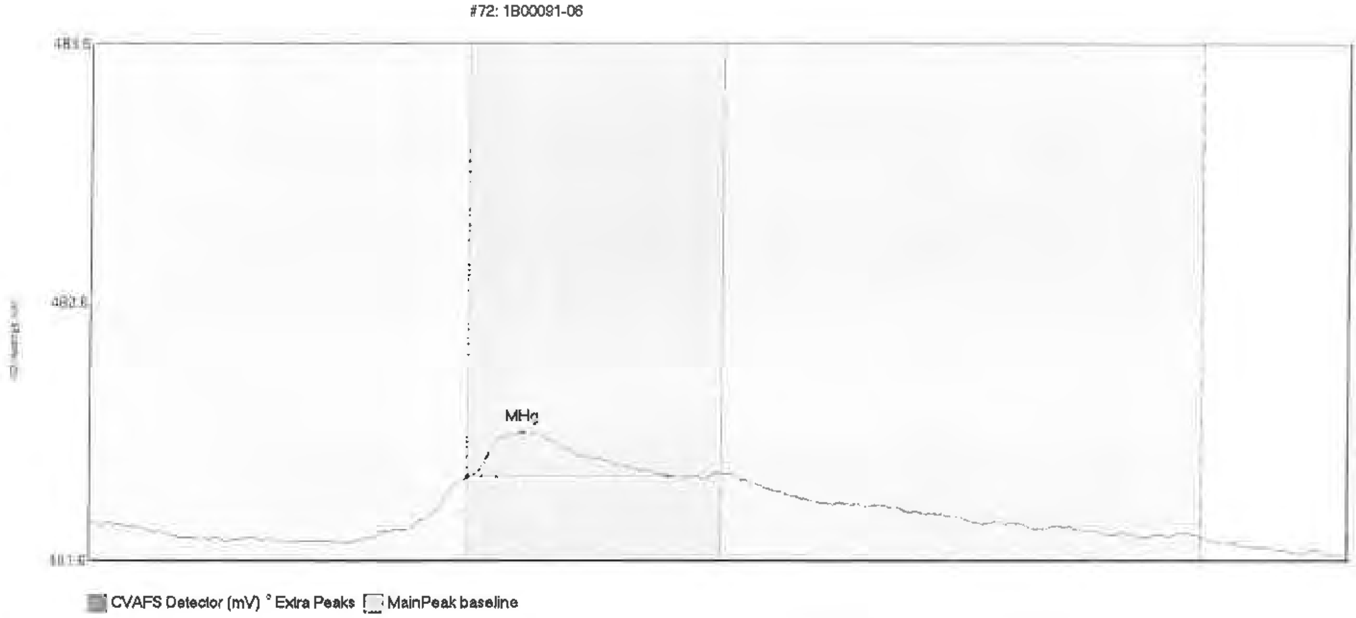
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00091-03	25.005	75.0	111.4	482.00	482.00	85.0	0.123	OK	481.8047	0.00	-0.08	F103394



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00091-04	33.242	75.0	122.2	481.98	482.00	89.3	0.129	OK	481.7282	0.00	0.02	F103394

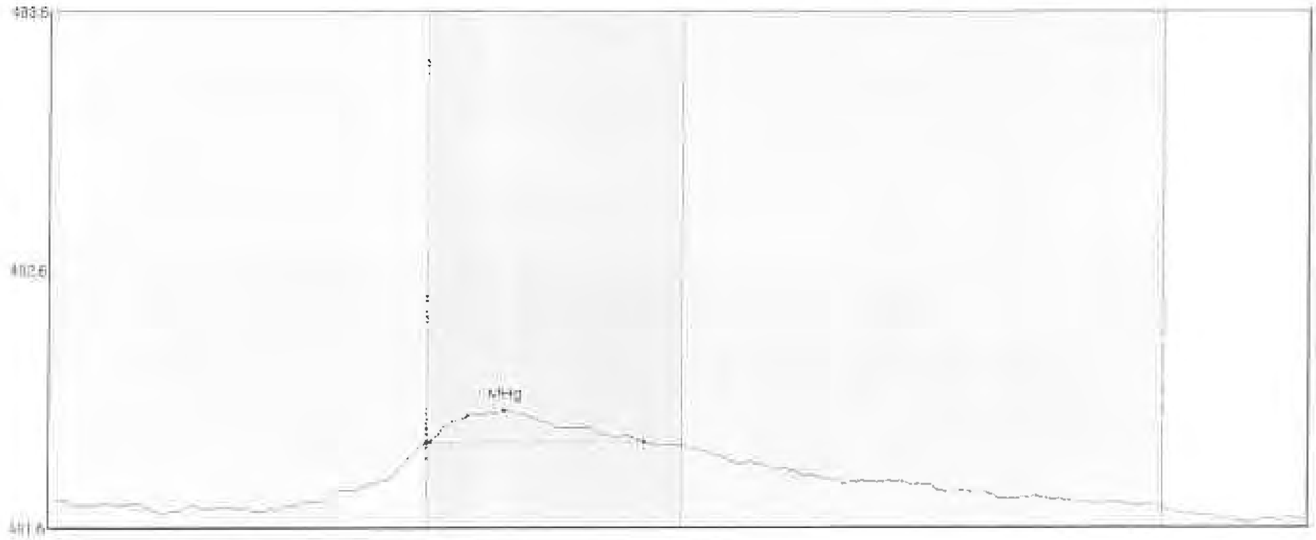


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00091-05 MHg	23.337	75.0	113.5	481.89	481.90	88.5	0.105	OK	481.6473	0.00	0.04	F103394
1B00091-05 Hg(I	0.106	128.0	130.6	481.92	481.93	130.1	0.011	OK	481.6473	0.00	0.04	F103394



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00091-06	34.101	75.0	114.7	481.88	481.88	85.7	0.170	OK	481.7025	0.00	-0.13	F103394

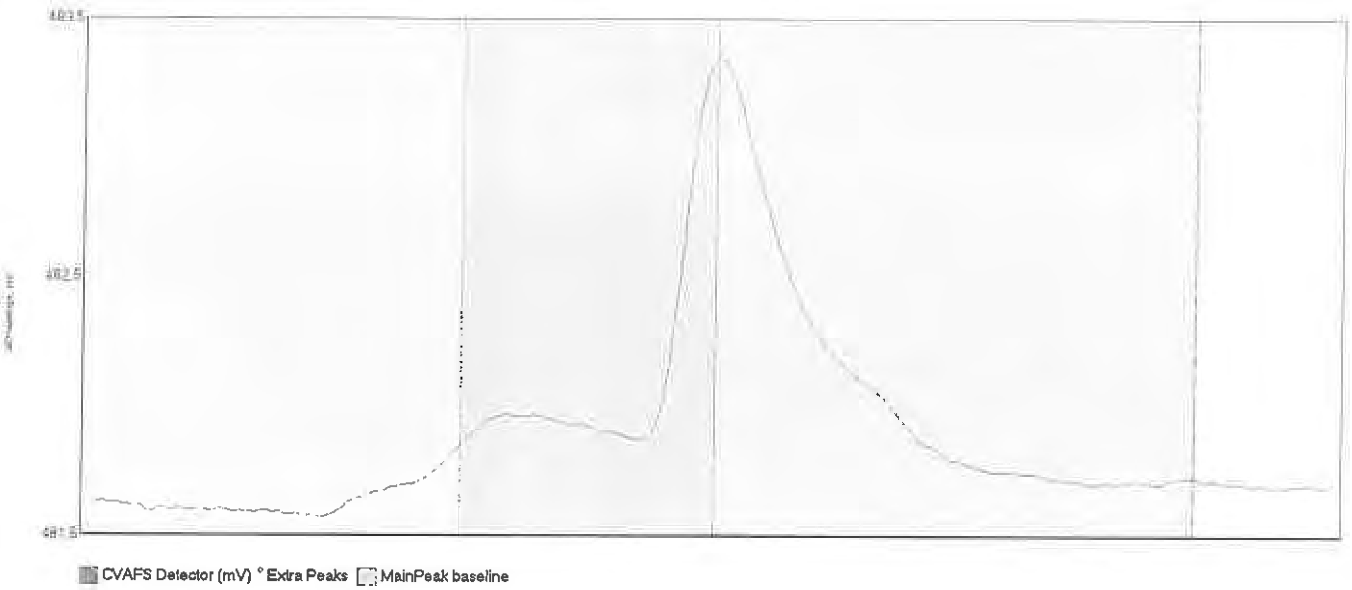
#73: 1B00091-07



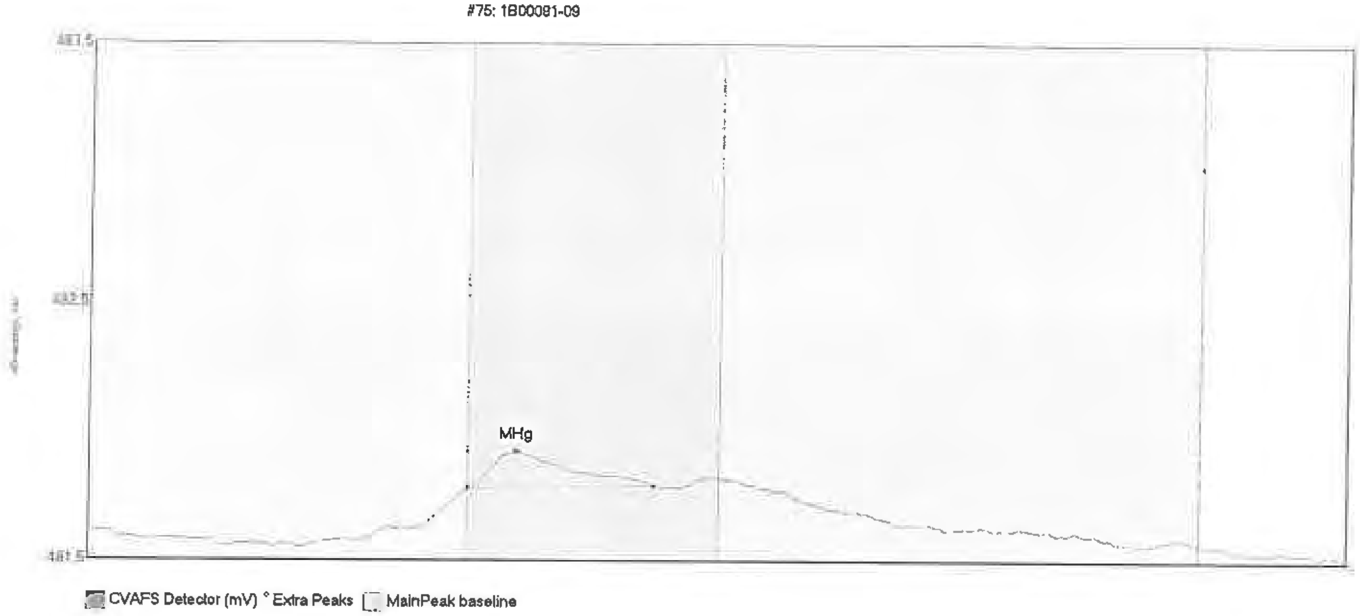
CVAFS Detector (mV) ° Extra Peaks MainPeak baseline

Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00091-07	29.295	75.0	117.5	481.90	481.90	90.1	0.123	OK	481.6841	0.00	-0.08	F103394

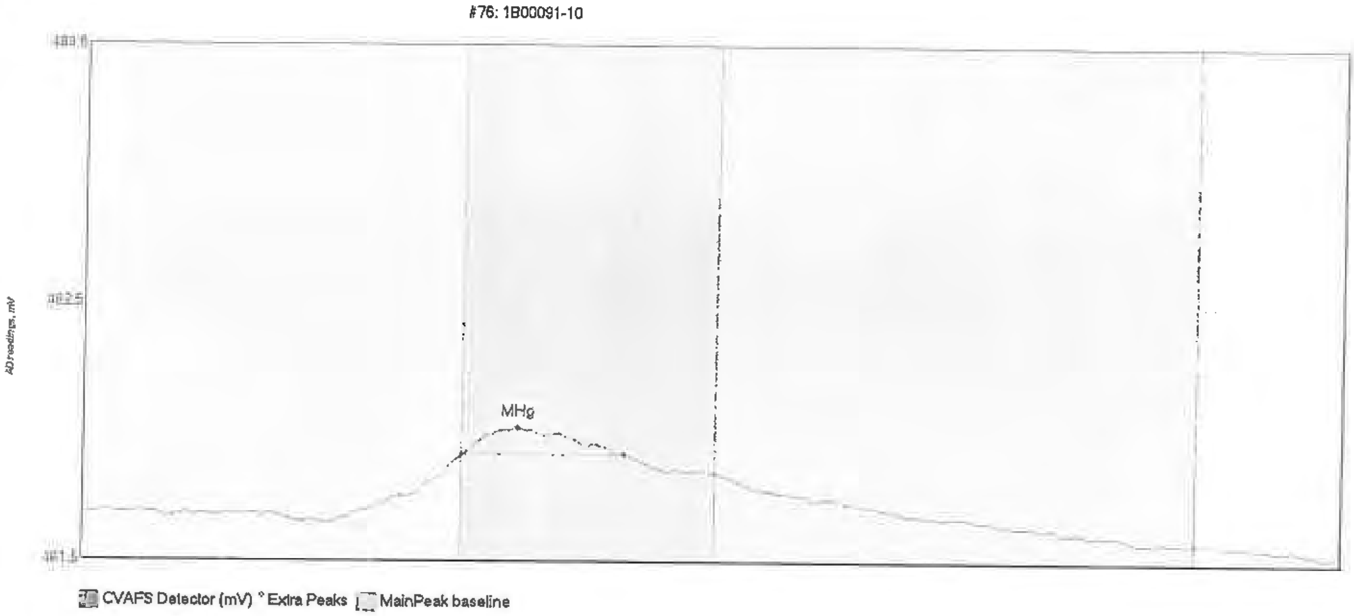
1B00091-08: No peak(s) detected.



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00091-08	0.000	-	-		-	-	-	NP	481.6556	0.00	0.06	F103394

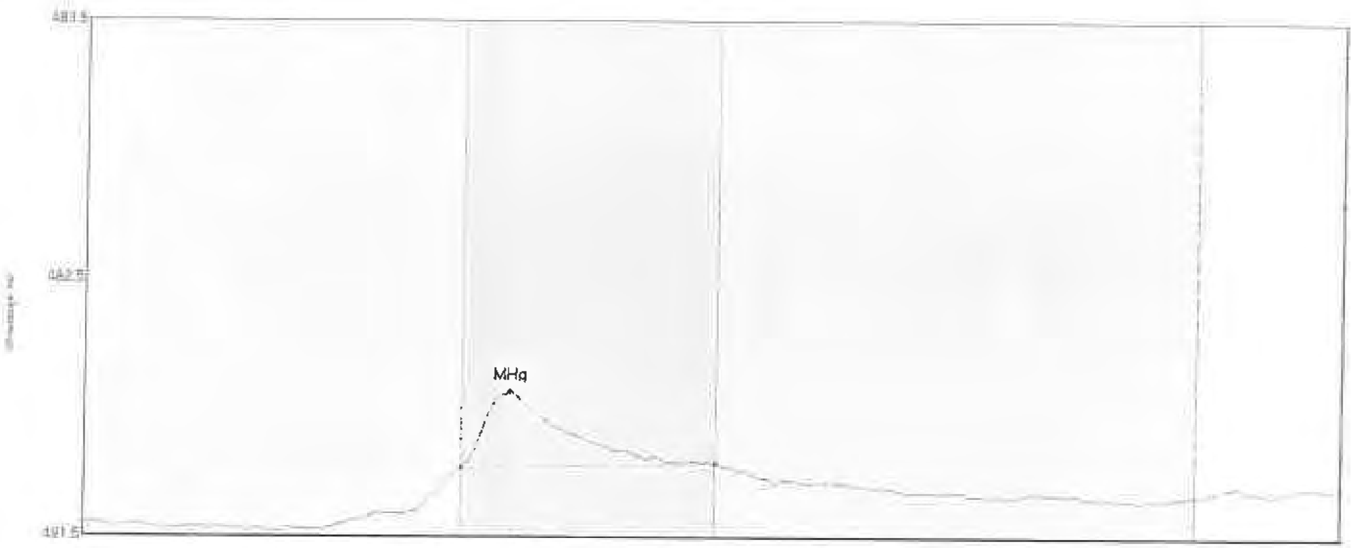


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00091-09	24.950	75.0	112.0	481.80	481.81	84.5	0.141	OK	481.6250	0.00	-0.09	F103394



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00091-10	19.439	75.0	106.7	481.89	481.89	85.9	0.103	OK	481.6609	0.00	-0.16	F103394

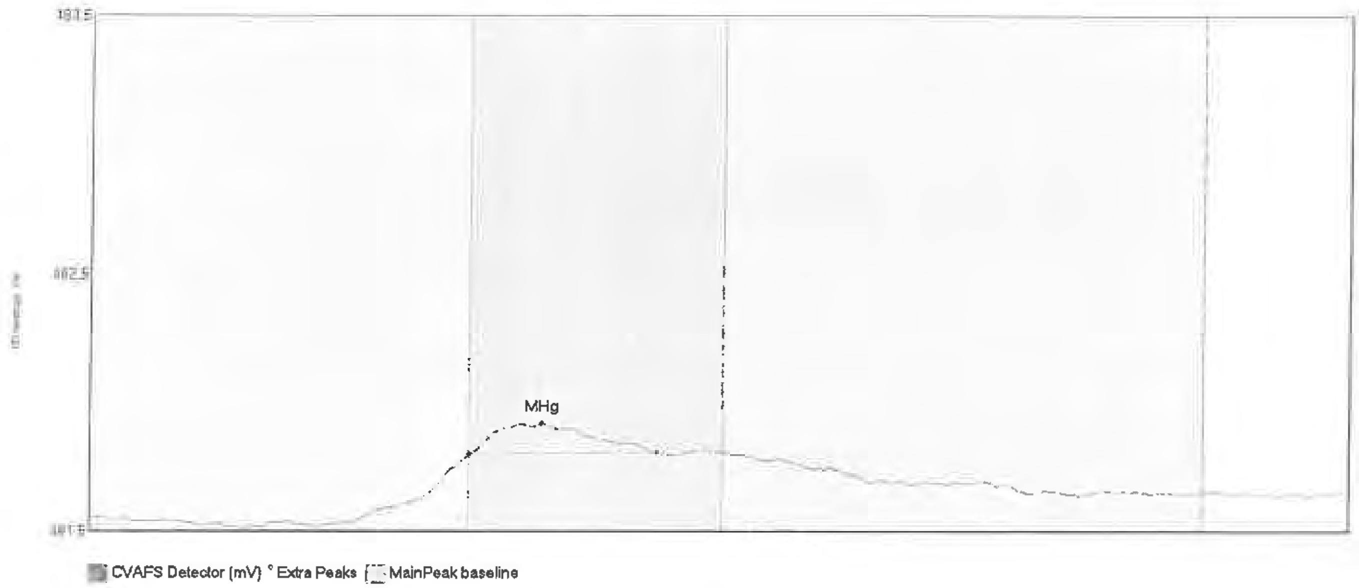
#77: 1B00107-01



CVAFS Detector (mV) ° Extra Peaks MainPeak baseline

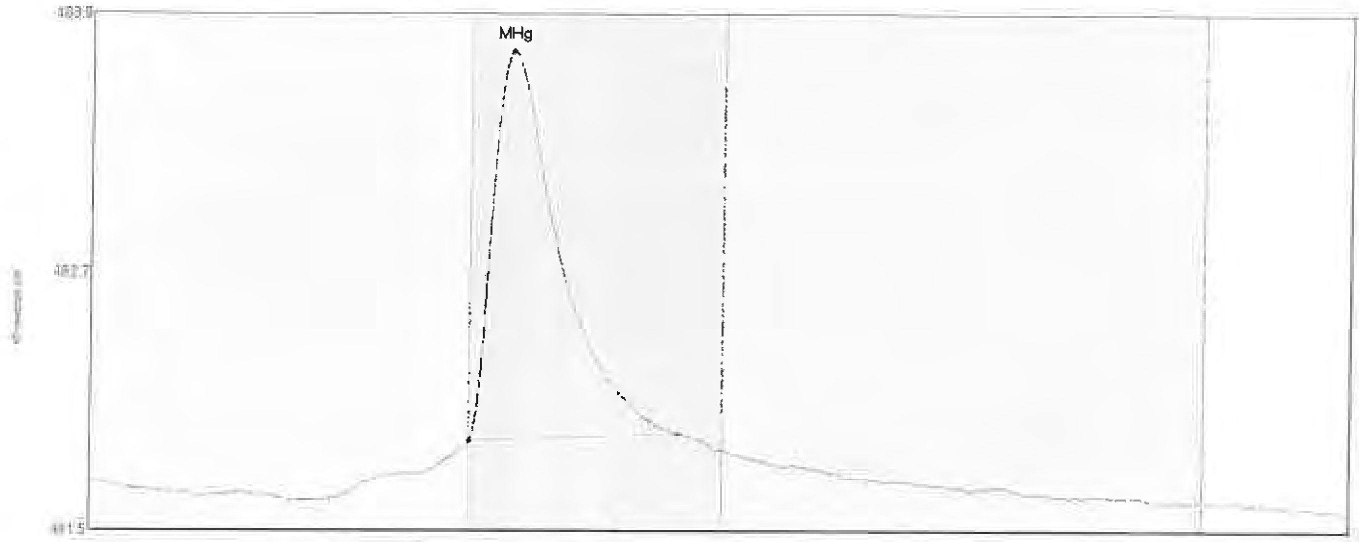
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00107-01	54.000	75.0	125.0	481.75	481.77	84.6	0.298	CT	481.5440	0.00	0.13	F103394

#78: 1B00107-02

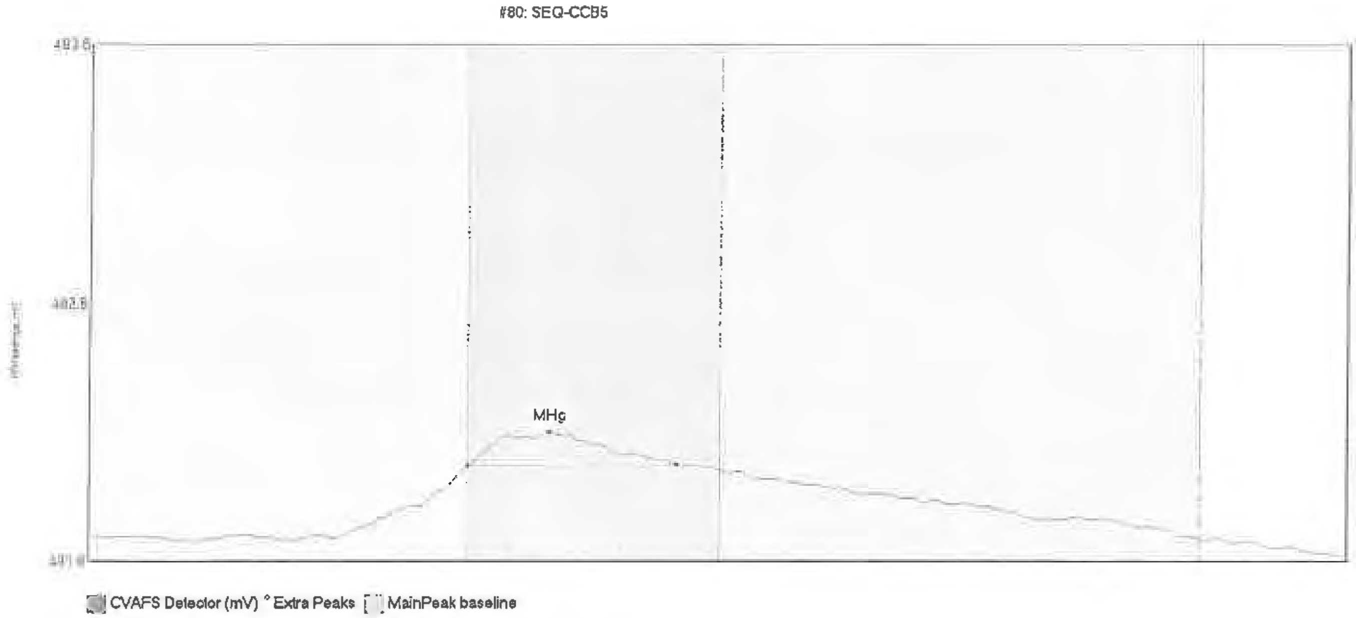


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00107-02	25.892	75.0	112.0	481.78	481.79	89.3	0.122	OK	481.5444	0.00	0.10	F103394

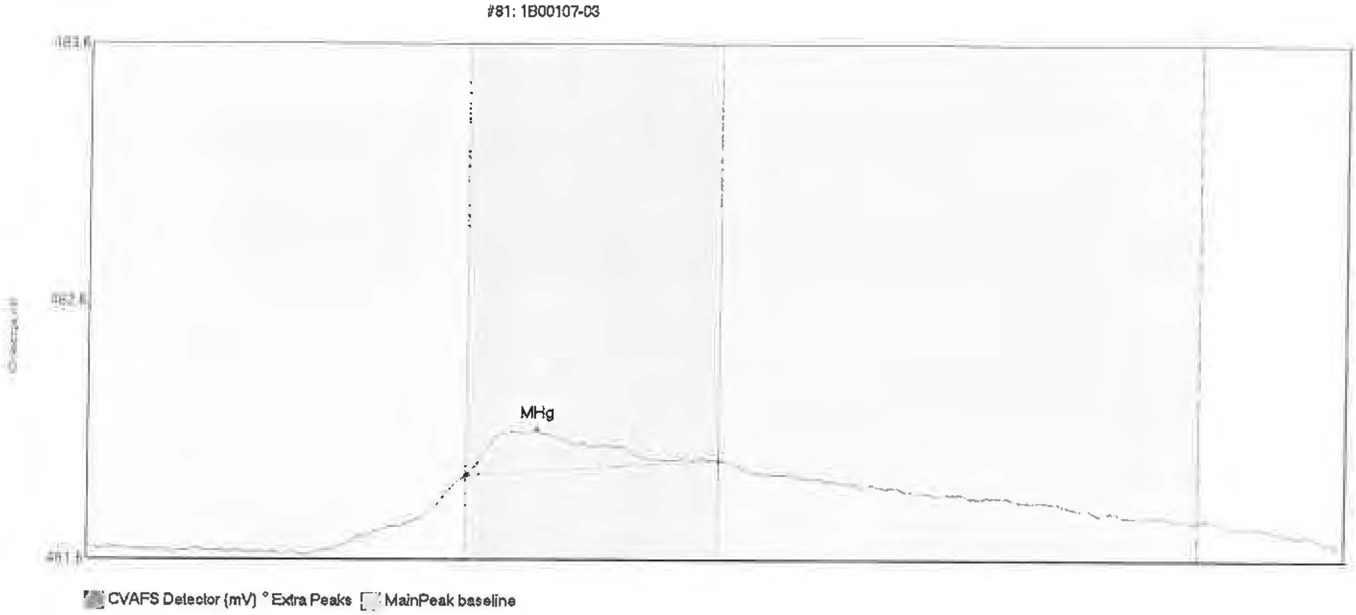
#79: SEQ-CCV5



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCV5	273.827	75.0	116.1	481.90	481.93	83.3	1.813	OK	481.7119	0.00	-0.15	

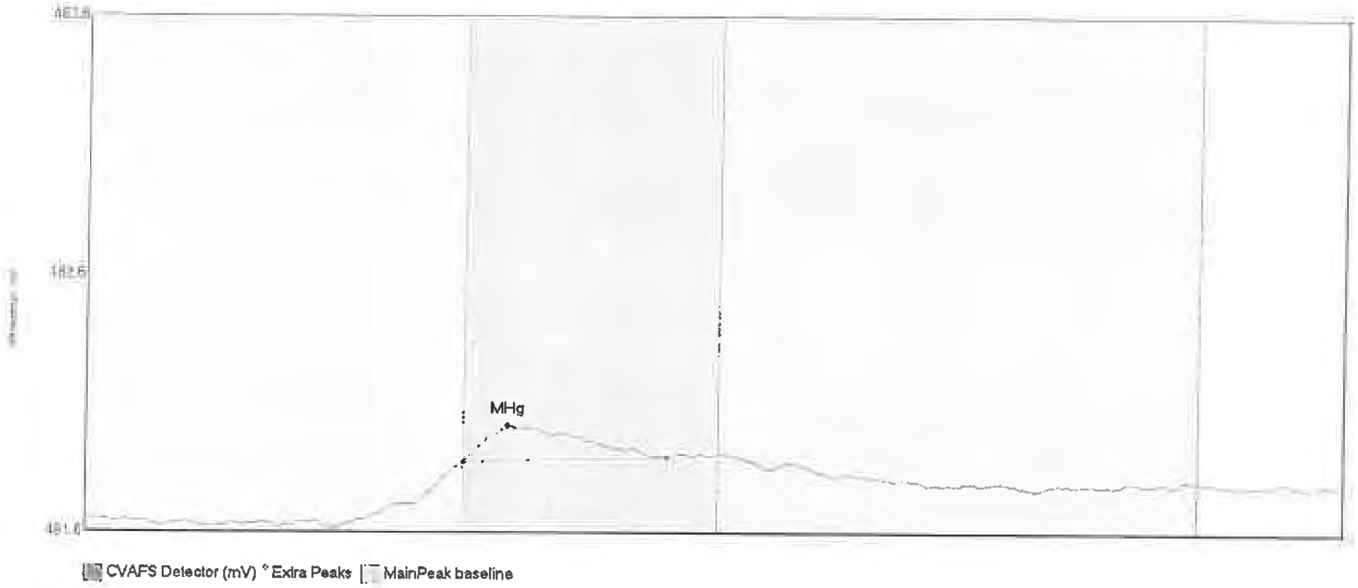


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCB5	30.629	75.0	116.4	481.92	481.92	91.3	0.129	OK	481.6501	0.00	-0.08	



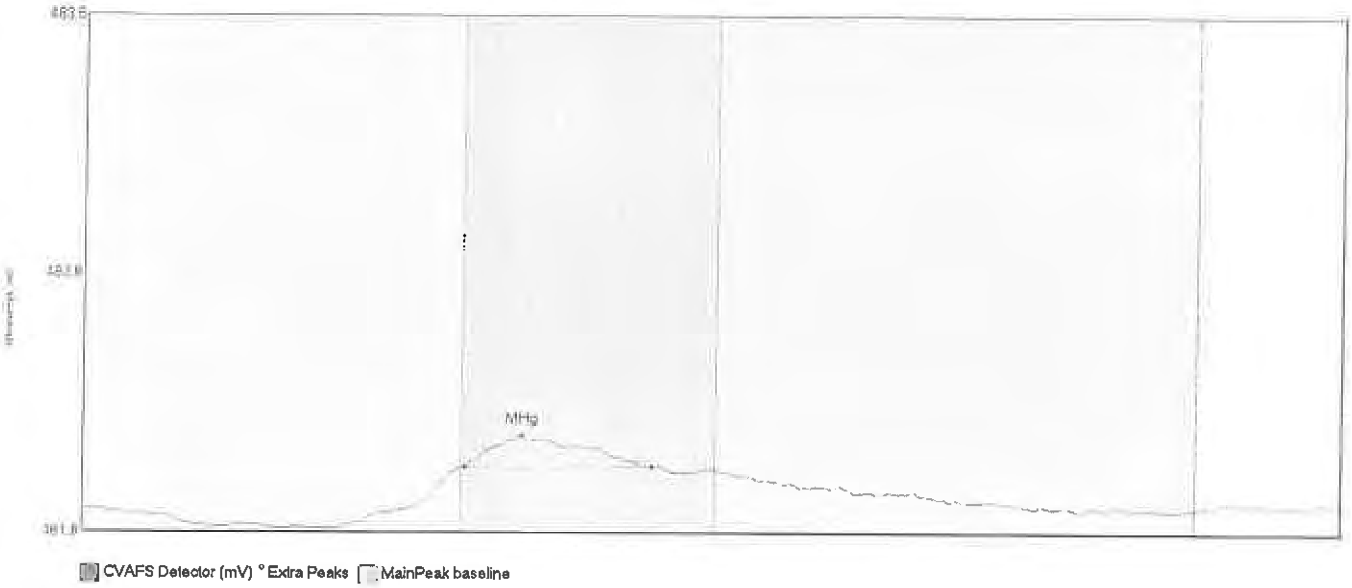
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00107-03	38.585	75.0	124.9	481.91	481.96	88.8	0.174	OK	481.6277	0.00	0.01	F103394

#82: 1B00107-04



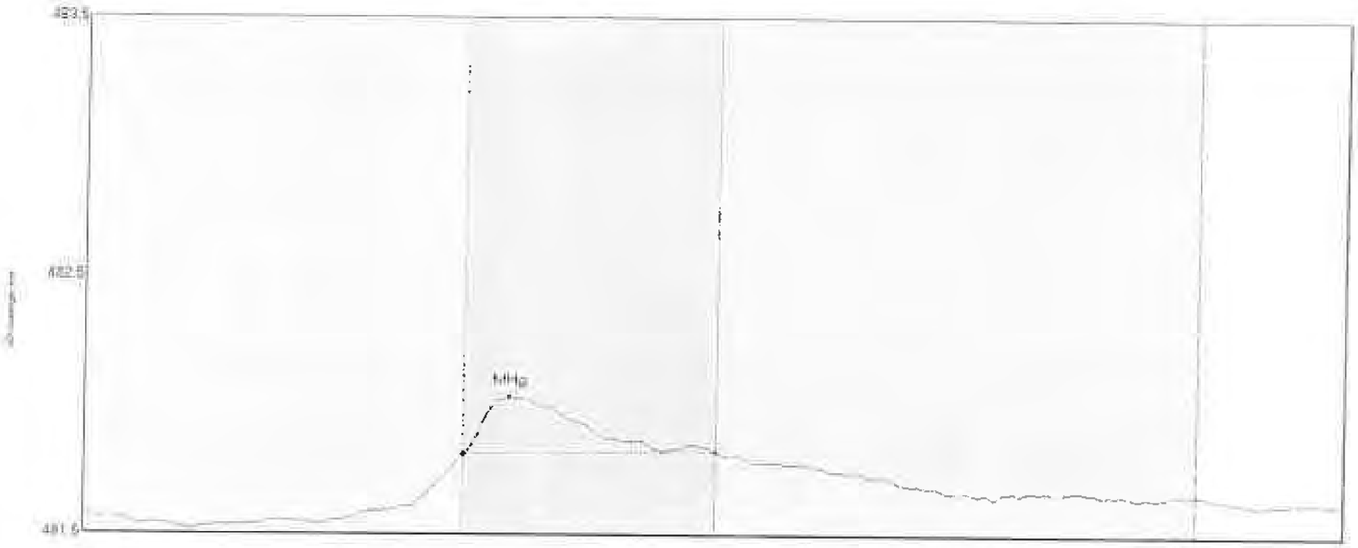
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00107-04	28.260	75.0	114.8	481.86	481.87	83.5	0.137	OK	481.6419	0.00	0.12	F103394

#83: 1B00107-05



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00107-05	24.994	75.6	112.7	481.83	481.83	87.0	0.121	OK	481.6629	0.00	0.01	F103394

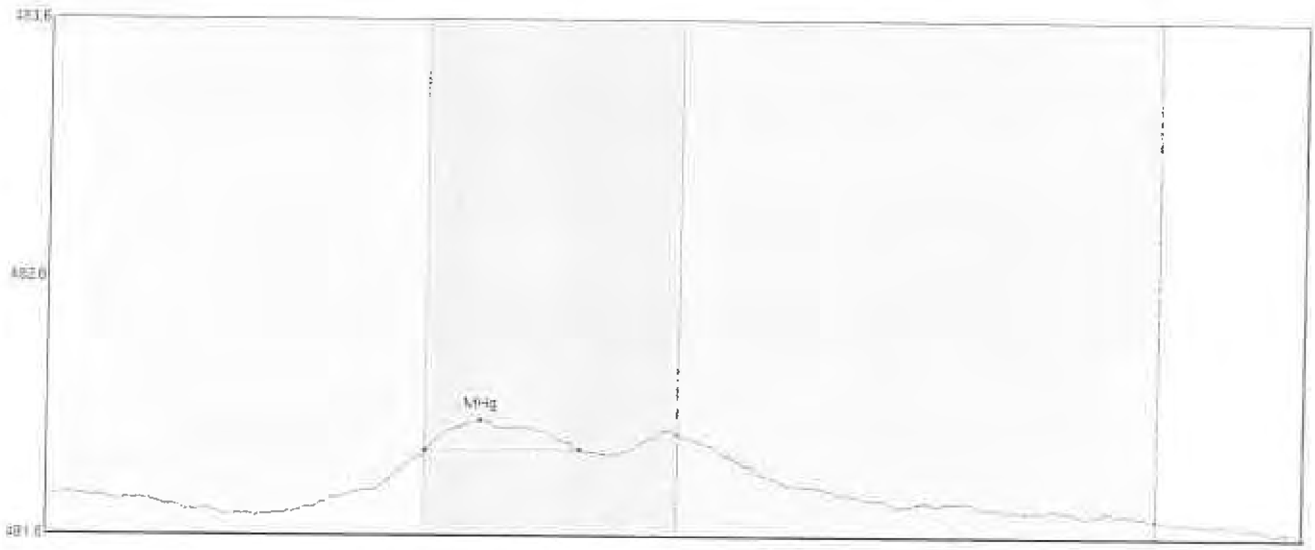
#84: 1B00107-06



CVAFS Detector (mV) ° Extra Peaks | MainPeak baseline

Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00107-06	47.285	75.0	125.0	481.79	481.79	84.1	0.219	CT	481.5495	0.00	0.05	F103394

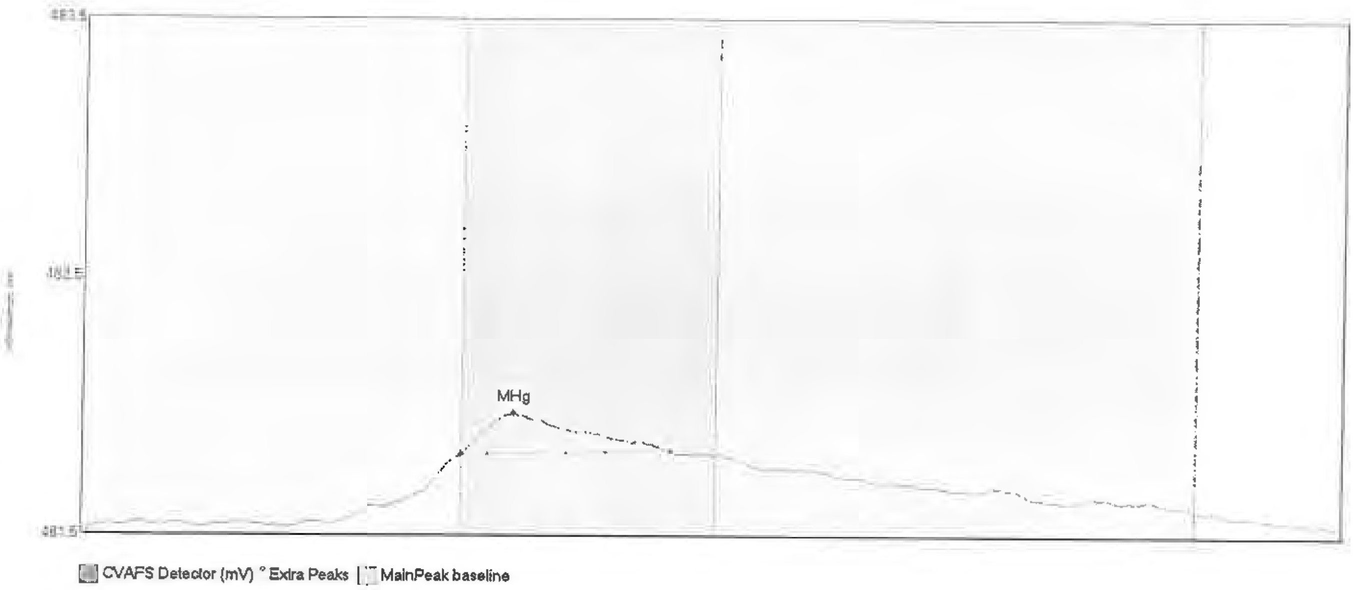
#85: 1B00107-07



CVAFS Detector (mV) ° Extra Peaks MainPeak baseline

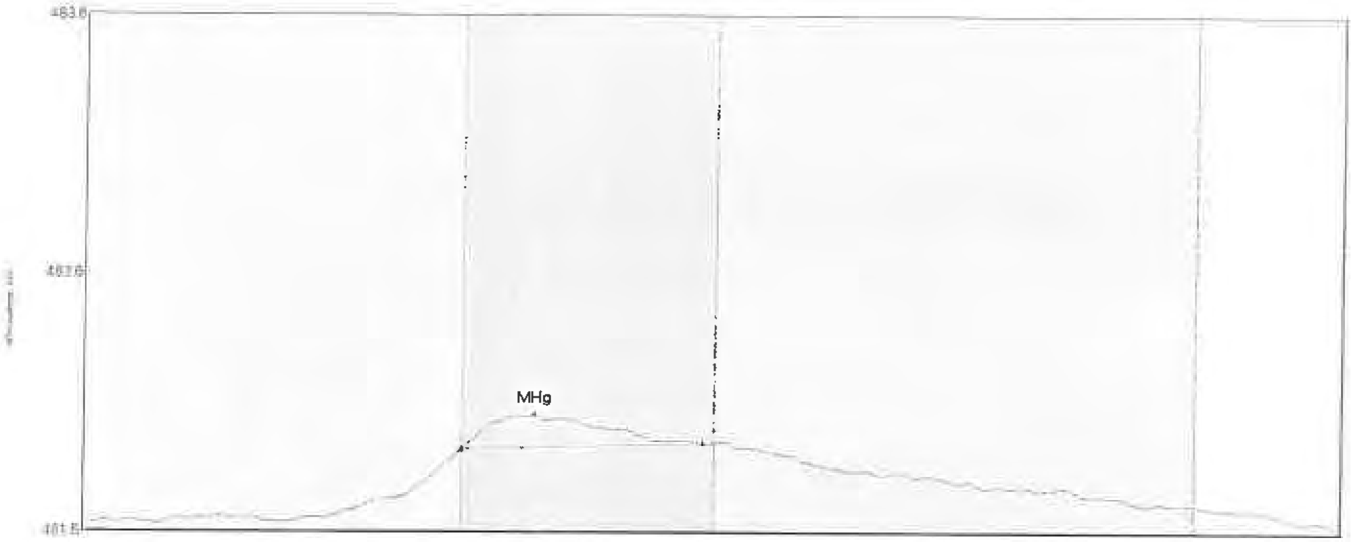
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00107-07	22.591	75.0	105.6	481.89	481.89	85.9	0.118	OK	481.7129	0.00	-0.13	F103394

#88: 1B00107-08



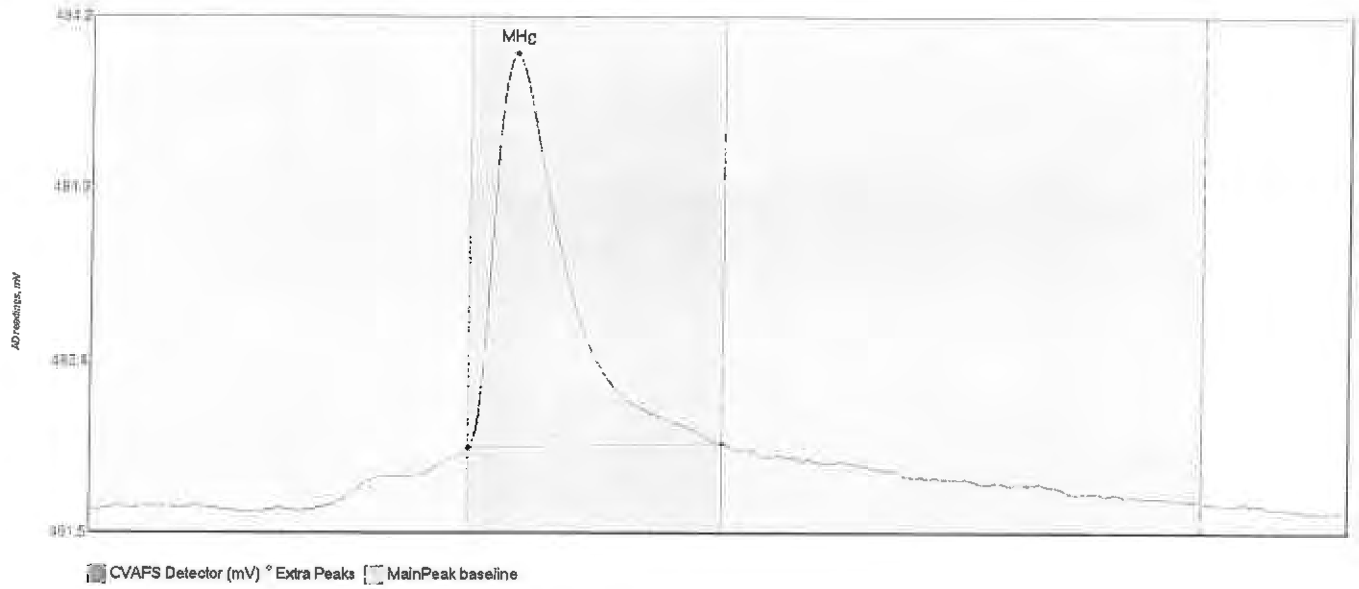
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00107-08	32.686	75.0	116.0	481.85	481.86	85.4	0.157	OK	481.5548	0.00	0.02	F103394

#87: 1B00107-10

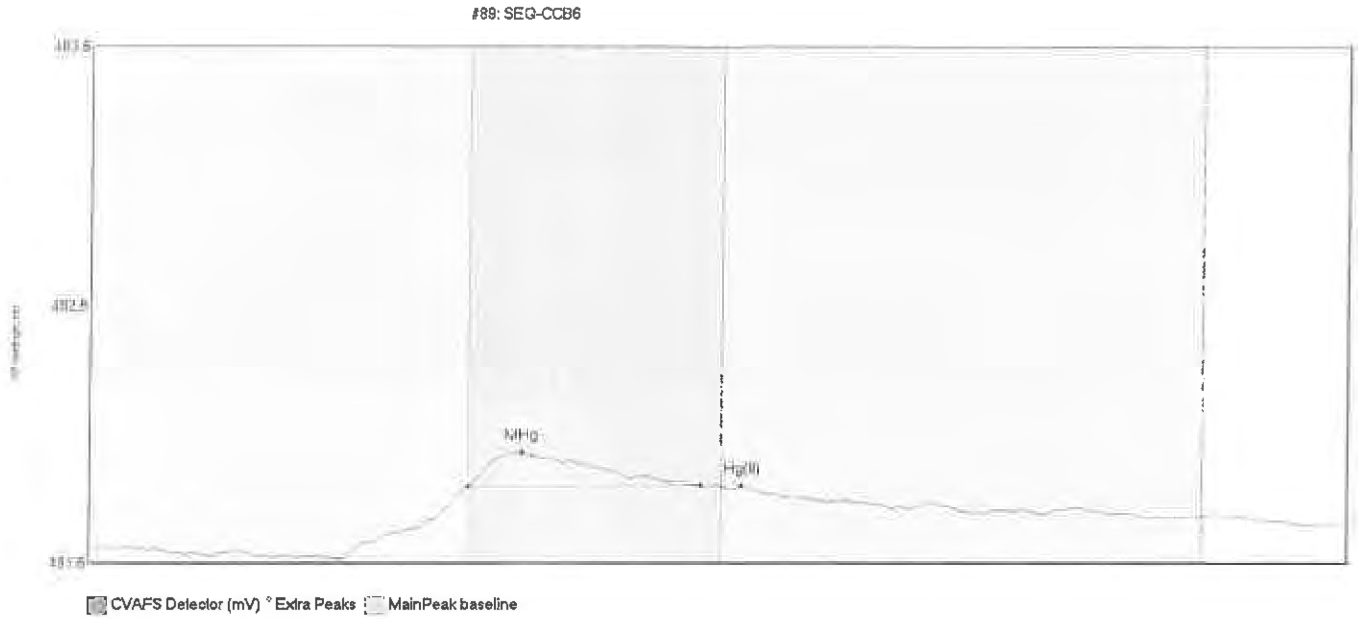


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00107-10	32.412	75.0	122.9	481.88	481.90	89.4	0.130	OK	481.5973	0.00	-0.02	F103394

#88: SEQ-CCV6



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCV6	327.029	75.0	125.0	481.97	481.99	84.0	2.057	CT	481.6421	0.00	-0.02	



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCB6 MHg	31.329	75.0	120.9	481.87	481.87	85.7	0.130	OK	481.6386	0.00	0.08	
SEQ-CCB6 Hg(II)	0.168	127.8	131.0	481.86	481.86	128.9	0.011	OK	481.6386	0.00	0.08	

QUALITY ASSURANCE
PEER REVIEWED
INITIALS: PGS

eurofins | Frontier Global Sciences

Total Solids Dataset Cover Page

Dataset ID: TS210305-1
Batch ID: F103409
Work Order(s): 115, 1B00120, 1B00048, 1C0

Analyst: AH/MV2
Prep. Date: 3/5/2021

Analytical Issues/Explanations:

Peer Review Checklist for Total Solids and Density (SOP5133)

Analyst: AH/MV2 **Date:** 3/5/2021 **Reviewer:** PGS **Date:**

WO #: Multiple **Batch #:** f103409 **Dataset ID:** TS210304-1

Reviewer Initials: PGS

General Comments/Re-run requirements:

*Sample 1A00115-08 was skipped during initial weighouts. —m— 3/5/21

Select	SOP	Method	Matrix
☑	SOP5133	TS	S/T
☐	SOP5133	Density	Liquids

Initials	SOP Date	
m	3/4/21	☐
AH	2/17/21	☐

Reviewer Initials: PGS

1. Total Solids

	☐ Density Only - NA this section			
A. Check for transcription errors from Benchsheet/Raw Data	☐ DONE			☐
(i) Do sample ID(s) match?	☑ YES	☐ NO		☐
(ii) Do mases/volumes match?	☑ YES	☐ NO		☐
(iii) Are the analyst name, dataset ID, and preparation date listed?	☑ YES	☐ NO		☐
(iv) Does the LIMS benchsheet prep date match the actual prep date?	☐ YES	☐ NO		☐
B. Does the batch include 1 MD/MT per 10 client samples?	☑ YES	☐ NO		☐
C. MD RPD/MT RSD ≤ 10%	☑ PASS	☐ FAIL		☐
D. Are qualifiers, O-04 and O-09, included for samples analyzed out of hold time?	☑ YES	☐ NO	☐ N/A	☐

2. Density

	☑ Total Solids Only - NA this section			
A. Check for transcription errors from Benchsheet/Raw Data	☐ DONE			☐
(i) Do sample ID(s) match?	☐ YES	☐ NO		☐
(ii) Do mases/volumes match?	☐ YES	☐ NO		☐
(iii) Are the analyst name, dataset ID, and preparation date listed?	☐ YES	☐ NO		☐
(iv) Does the LIMS benchsheet prep date match the actual prep date?	☐ YES	☐ NO		☐
(v) Volume (if other than 1 mL): ________. Can the calculated result be reproduced?	☐ YES	☐ NO	☐ N/A	☐

Failing Data Report -

Sample ID	Analysis	Result	MRL	Dup Result	Source Result	True Value	Units	% Rec.	Rec. LCL	Rec. UCL	RPD	RPD Limit	Over Cal	Failure	Qualifier

Analyst Reviewed By Date

Peer Reviewed By Date

Preparation Date: Mar 5, 2021 **Batch #:** 1 **Analyst:** AH/MV2

Batch ID: F103409

Work Order(s): 1A00115, 1B00120, 1B00048, 1C00012

Pan ID	Sample ID	Pan Wt (g)	Pan + Sample Wet (g)	Wet Sample (g)	Pan + Sample Dry (g)	Dry Sample (g)	% TS	Notes
1	1A00115-06	0.9860	6.1846	5.1986	3.6313	2.6453	50.9%	
2	F103409-MD	1.0009	6.0549	5.0540	3.6020	2.6011	51.5%	1.1%
3	1B00120-01	1.0010	6.0040	5.0030	5.1083	4.1073	82.1%	
4	F103409-MD	0.9856	6.7287	5.7431	5.6882	4.7026	81.9%	0.3%
5	1A00115-01	0.9863	6.1553	5.1690	2.2761	1.2898	25.0%	
6	1A00115-02	0.9918	6.0880	5.0962	3.0886	2.0968	41.1%	
7	1A00115-03	0.9888	6.1087	5.1199	3.6741	2.6853	52.4%	
8	1A00115-04	0.9770	6.0279	5.0509	2.9237	1.9467	38.5%	
9	1A00115-05	0.9941	8.5100	7.5159	4.7578	3.7637	50.1%	
10	1A00115-07	0.9887	6.6667	5.6780	4.1049	3.1162	54.9%	
11	1A00115-10	0.9768	6.0286	5.0518	3.0353	2.0585	40.7%	
12	1A00115-11	0.9996	8.3472	7.3476	6.3324	5.3328	72.6%	
13	1B00039-01	0.9842	6.7238	5.7396	1.7833	0.7991	13.9%	
14	1B00048-01	0.9818	6.1628	5.1810	5.2069	4.2251	81.5%	
15	1C00012-01	0.9776	6.3570	5.3794	5.3181	4.3405	80.7%	

UT04	19	Initial Weigh 3/4/21 Date/Time: 17:12	Thermometer ID: [illegible] CF: -0.7
2° Tech: [signature]	Calibrated: Y 3/4/21, 3/5/21	Final Weigh 3/5/21 Date/Time³: 1229	Oven Start Date/Time: 3/4/21 16:50
			Temp Raw/Corrected: 105.0 °C / 104.3
Batch: F1034[illegible]		Oven ID: OVN-12	Oven End Date/Time²: 3/5/21 1225
			Temp Raw/Corrected: 103.5 / 102.8

CF = Thermometer Correction Factor

Total Solids ☑ Density ☐ (Flask Volume = ______mL)

Line	Sample ID	Pan # or Flask #	Pan or Flask (g)	Pan or Flask + Wet Sample (g)	Pan + Dry Sample (g) ☐ Density Only	Density (g/mL) Sample Mass / Flask Volume ☑ Total Solids Only
1	1A00115-06A DUP1	A1	1.0009	6.0549	3.6020	
2	1B00120-01 DUP2	A2	0.9856	6.7287	5.6882	
3	1A00115-01A	A3	0.9863	6.1553	2.2761	
4	1A00115-02A	A4	~~0.9748~~ 0.9918	6.0880	3.0886	
5	1A00115-03A	A5	0.9888	6.1087	3.6741	
6	1A00115-04A	A6	0.9776	6.0279	2.9237	
7	1A00115-05A	A7	0.9941	8.5100	4.7578	
8	1A00115-06A	A8	0.9860	6.1846	3.6313	
9	1A00115-07A	A9	0.9887	6.0667	4.1049	
10	1A00115-10A	A10	0.9768	6.0286	3.0353	
11	1A00115-11A	A11	0.9996	8.3472	6.3324	
12	~~1B00039H~~ 1B00039-01	A12	0.9842	6.7238	1.7833	
13	1B00048-01	A13	0.9818	6.1628	5.2069	
14	1B00120-01	A14	~~1.0003~~ 1.0010	6.0040	5.1083	
15	1C00012-01	A15	0.9776	6.3570	5.3181	
16						
17						
18						
19						
20						
21						
22						
23						

[signature] 3/5/21

Comments:

[1]The same balance must be used to weigh samples before and after ovening.
[2]Samples must be ovened over 12 hours at 103-105°C.
[3]Samples must be re-weighed within 30 minutes of oven cool down.

PREPARATION BENCH SHEET

F103409

Eurofins Frontier Global Sciences, LLC

Matrix: Soil/Sediment

Prepared using: Trace Metals - EFGS SOP5133 Solids Analysis

Prepared: 3/4/2021

Lab Number	Sample ID	Initial (g)	Final (g)	Location	Sample Comments	Analysis Comments
1A00115-01	MMBKD-01_012521_SED_00-01	5	5	010203	NO	
1A00115-02	MMBKD-01_012521_SED_01-03	5	5	010203	NO	
1A00115-03	MMBKD-01_012521_SED_03-05	5	5	010203	NO	
1A00115-04	MMBKD-01_012521_SED_01-03_DUP	5	5	010203	NO	
1A00115-05	FRB-02_012621_SED_00-01	5	5	010203	NO	
1A00115-06 QC	FRB-02_012621_SED_01-03	5	5	010203	NO	
1A00115-07	FRB-02_012621_SED_03-05	5 3/5/2021	5	010203	NO	
~~1A00115-08~~	~~ES-13_012621_SED_00-01~~ MJS 3/4/21	5	5 MJS 3/5/2021	010203	NO	
1A00115-10	ES-13_012621_SED_01-03	5	5	010203	NO	
1A00115-11	ES-13_012621_SED_03-05	5	5	010203	NO	
1B00039-01	21B0186-01	5	5	200303		
1B00048-01	LS-350-01142021	5	5	010102	no	
1B00120-01 QC	LS-450-02/22/21	5	5	010102		
1C00012-01	WM-150030120211600	5	5	vironmental C	NO	

[redacted]

Due Date: 2/26/2021

Past due - Rush Analysis

PREPARATION BENCH SHEET

F103409

Eurofins Frontier Global Sciences, LLC

Matrix: Soil/Sediment **Prepared using: Trace Metals - EFGS SOP5133 Solids Analysis** **Prepared: 3/4/2021**

Lab Number	Sample ID and Source Sample	Initial (g)	Final (g)	Spike1 ID	µl Spike1	Spike2 ID	µl Spike2	Extraction Comments
F103409-DUP1	Duplicate [1A00115-06]	5	5					
F103409-DUP2	Duplicate [1B00120-01]	5	5					

Standard ID(s): Description: Expiration:

Due Date: 2/26/2021

Past due - Rush Analysis

QUALITY ASSURANCE
PEER REVIEWED
INITIALS: PGS

eurofins | Frontier Global Sciences

Total Solids Dataset Cover Page

Dataset ID:	TS210308-1	**Analyst:**	MV2
Batch ID:	F103412	**Prep. Date:**	3/8/2021
Work Order(s):	1A00115		

Analytical Issues/Explanations:

Peer Review Checklist for Total Solids and Density (SOP5133)

Analyst: MV2 **Date:** 3/8/2021 **Reviewer:** PCS **Date:**

WO #: 1A00115 **Batch #:** F103412 **Dataset ID:** TS210308-1

Reviewer Initials: PCS

General Comments/Re-run requirements:

Select	SOP	Method	Matrix
☑	SOP5133	TS	S/T
☐	SOP5133	Density	Liquids

Initials	SOP Date	
mv	7/31/20	☐
		☐

Reviewer Initials: PCS

1. Total Solids

☐ Density Only - NA this section

A. Check for transcription errors from Benchsheet/Raw Data	☑ DONE			☐
(i) Do sample ID(s) match?	☑ YES	☐ NO		☐
(ii) Do mases/volumes match?	☑ YES	☐ NO		☐
(iii) Are the analyst name, dataset ID, and preparation date listed?	☑ YES	☐ NO		☐
(iv) Does the LIMS benchsheet prep date match the actual prep date?	☑ YES	☐ NO		☐
B. Does the batch include 1 MD/MT per 10 client samples?	☑ YES	☐ NO		☐
C. MD RPD/MT RSD ≤ 10%	☑ PASS	☐ FAIL		☐
D. Are qualifiers, O-04 and O-09, included for samples analyzed out of hold time?	☑ YES	☐ NO	☐ N/A	☐

2. Density

☑ Total Solids Only - NA this section

A. Check for transcription errors from Benchsheet/Raw Data	☐ DONE			☐
(i) Do sample ID(s) match?	☐ YES	☐ NO		☐
(ii) Do mases/volumes match?	☐ YES	☐ NO		☐
(iii) Are the analyst name, dataset ID, and preparation date listed?	☐ YES	☐ NO		☐
(iv) Does the LIMS benchsheet prep date match the actual prep date?	☐ YES	☐ NO		☐
(v) Volume (if other than 1 mL): ________. Can the calculated result be reproduced?	☐ YES	☐ NO	☐ N/A	☐

Failing Data Report -

Sample ID	Analysis	Result	MRL	Dup Result	Source Result	True Value	Units	% Rec.	Rec. LCL	Rec. UCL	RPD	RPD Limit	Over Cal	Failure	Qualifier

Analyst Reviewed By Date

Peer Reviewed By Date

Preparation Date: Mar 8, 2021 **Batch #:** 1 **Analyst:** MV2

Batch ID: F103412

Work Order(s): 1A00115

Pan ID	Sample ID	Pan Wt (g)	Pan + Sample Wet (g)	Wet Sample (g)	Pan + Sample Dry (g)	Dry Sample (g)	% TS	Notes
1	1A00115-08	1.0086	7.1260	6.1174	3.4567	2.4481	40.0%	
2	F103412-MD	1.0086	7.1260	6.1174	3.5467	2.5381	41.5%	3.6%

PREPARATION BENCH SHEET

F103412

Eurofins Frontier Global Sciences, LLC

Matrix: Soil/Sediment

Prepared using: Trace Metals - EFGS SOP5133 Solids Analysis

Prepared: 3/5/2021

Lab Number	Sample ID and Source Sample	Initial (g)	Final (g)	Spike1 ID	µl Spike1	Spike2 ID	µl Spike2	Extraction Comments
F103412-DUP1	Duplicate [1A00115-08]	5	5					

Standard ID(s): Description: Expiration:

ue Date: 2/26/2021

Past due - Rush Analysis

PREPARATION BENCH SHEET

F103412

Eurofins Frontier Global Sciences, LLC

Matrix: Soil/Sediment

Prepared using: Trace Metals - EFGS SOP5133 Solids Analysis

Prepared: 3/5/2021

Lab Number	Sample ID	Initial (g)	Final (g)	Location	Sample Comments	Analysis Comments
1A00115-08	ES-13_012621_SED_00-01	5	5	010203	NO	

[redacted]

ue Date: 2/26/2021

Past due - Rush Analysis

Total Solids and Density Logbook

1° Tech: m	Balance: 24	Initial Weigh Date/Time: 3/5/21 1543	Thermometer ID: 3120634	CF: -0.7
2° Tech: N/A	Calibrated: ✓	Final Weigh Date/Time³: 3/8/21 0912	Oven Start Date/Time: 3/5/21	1542
			Temp Raw/Corrected: 104.2	103.5
Batch: F103412		Oven ID: OVN-02	Oven End Date/Time²: 3/8/21 0910	
			Temp Raw/Corrected: 102.8	102.1

CF = Thermometer Correction Factor

Total Solids ☑ Density ☐ (Flask Volume = ______mL)

Line	Sample ID	Pan # or Flask #	Pan or Flask (g)	Pan or Flask + Wet Sample (g)	Pan + Dry Sample (g) ☐ NA – Density Only	Density (g/mL) Sample Mass / Flask Volume ☑ NA – Total Solids Only
1	F103412-Dup	1	0.9882	8.7349	4.1634	
2	VA0115-08	2	1.0086	7.1260	3.4567	
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						

m 3/8/21

Comments:

[1]The same balance must be used to weigh samples before and after ovening.
[2]Samples must be ovened over 12 hours at 103-105°C.
[3]Samples must be re-weighed within 30 minutes of oven cool down.

Eurofins Frontier Global Sciences
5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

10 March 2021

Rod Pendleton
Wood - MA
271 Mill Road
Chelmsford, MA 01824

RE: Penobscot

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Patrick Strickland

Patrick Garcia-Strickland
Business Unit Manager

Eurofins Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.03	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	10-Mar-21 14:36

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EB_DeconlinerHSBowl_020121_SED_QC	1B00004-01	Water	01-Feb-21 10:45	02-Feb-21 09:31

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Business Unit Manager

eurofins Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.03	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	10-Mar-21 14:36

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 02-Feb-21 09:31. The samples were received intact, on-ice within a sealed cooler at

Cooler	Temp C°
Default Cooler	0.8

SAMPLE PREPARATION AND ANALYSIS

Samples were prepared and analyzed for total mercury by flow injection atomic fluorescence spectrometry (FI-AFS) in accordance with EPA 1631E.

Samples were prepared and analyzed for methyl mercury by cold vapor gas chromatography atomic fluorescence spectrometry (CV-GC-AFS) in accordance with EPA 1630 (EFGS-070).

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries. All of the relative percent differences fell within established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

eurofins | Frontier Global Sciences

Sample Receipt Checklist

Client: Wood Date & Time Received: 2/2/21 0931 Date Labeled:______ Labeled By:____

Matrix: ~~Sediment~~ Water 2/2/21 Received By: ____ Label Verified By: 2-2-21

\# of Coolers Received: 1 Samples Arrived By: ✓ Shipping Service ____ Courier ____ Hand ____ Other (Specify:____________)

Coolant: ☐ None/Ambient ☑ Loose Ice ☐ Gel Ice ☐ Dry Ice Coolant Required: Y / N Temp Blank Used: Y/N for Cooler(s):______

Notify Project Manager if packages/coolers are received without coolant or with thawed coolant and at a temperature in excess of 6°C. PM notified: Y/N

Samples from Wisconsin have special requirements. Shipment received includes samples from Wisconsin: Y/N

Cooler Information:	Y/N/NA	Comments
The coolers do not appear to be tampered with:	Y	
Custody Seals are present and intact:	Y	
Custody seals signed:	Y	

TID: 5403122 CF: +0.1 °C		Date/time: 2/2/21 0940	By:
Cooler 1: 0.7 °C	w/ CF: 0.8 °C	Cooler 4: °C	w/ CF: °C
Cooler 2: °C	w/ CF: °C	Cooler 5: °C	w/ CF: °C
Cooler 3: °C	w/ CF: °C	Cooler 6: °C	w/ CF: °C

Chain of Custody:	Y/N/NA	Comments
Sample ID/Description:	Y	
Date and time of collection:	Y	
Sampled by:	Y	
Preservation type:	Y	
Requested analyses:	Y	
Required signatures:	Y	
Internal COC required:	N	

Sample Condition/Integrity:	Y/N/NA	Comments
Sample containers intact/present:		
Sample labels are present and legible:		
Sample ID on container/bag matches COC:		
Correct sample containers used:		
Samples received within holding times:		
Sample volume sufficient for requested analyses:		
Correct preservative used for requested analyses:		

Anomalies/Non-conformances (attach additional pages if needed):

1B00004

wood.

Wood E&IS
511 Congress Street
Portland, ME 04101
(207) 828-3367

SHIP TO:
Eurofins
5755 8th St E
Tacoma, WA, 98424
Atten: P. Garcia-Strickland
Lab Phone# 206-351-9522

CHAIN OF CUSTODY

DATE: 2/1/2021
COC #:
PAGE: 1 OF 1

Project Name	Penobscot River 2020	Project Contact	Denise King	Bill To	Denise King, Wood E&IS	Disposal Instructions	LAB
Project Number	3617207486.03 ****	Phone Number	508-789-1736		271 Mill Rd	Shipment Method	FED EX
Project Manager	Rod Pendelton	Project Phase	Biota Monitoring		Chelmsford, MA 01824	Waybill Number	N/A

Sample Information / Methods for Analysis / RUSH

No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Total Hg 1631e	MeHg 1630	STANDARD - 21 days	48 Hour	72 Hour	5 Days	TOTAL CONTAINERS	HOLD All Analyses
1	EB_DeconlinerHSBowl_020121_SED_QC	02/01/2021, 1045	AQ	EB	N	X	X	X				2	
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12				TG									

TG

Sampler's Signature:	[signature]	Date: 2/1/2021	Time: 1230
Relinquished By/Affiliation:	TOM GERHARD, WOOD E+IS	Date: 2/1/2021	Time: 1230
Received By:	FEDEX	Date: 2/1/2021	Time: 1230
Relinquished By/Affiliation:		Date:	Time:
Received By:		Date:	Time:
Relinquished By/Affiliation:		Date:	Time:
Received By (LAB):	[signature]	Date: 2/2/21	Time: 0931

For Lab Use

Does COC match samples:	Y or N
Broken Container:	Y or N
COC seal intact:	Y or N
Other problems:	Y or N
WSDOT contacted:	Y or N
Date contacted:	
Cooler Temperature at receipt:	°C

Comments:
X=Analyze H=Hold Analysis Request

PO # C012906205

Total Hg and MeHg samples preserved with HCl.

NUMBER OF COOLERS SENT: 1

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.03	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	10-Mar-21 14:36

EB_DeconlinerHSBowl_020121_SED_QC

1B00004-01

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1630											
Methyl Mercury (as Mercury)	ND	0.026	0.050	ng/L	1.25	F102295	04-Feb-21	1B05002	04-Feb-21	EPA 1630	U
Sample Preparation: EPA 1631E											
Mercury	ND	0.08	0.50	ng/L	1	F102311	11-Feb-21	1B12001	11-Feb-21	EPA 1631E	U

eurofins Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.03	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	10-Mar-21 14:36

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1B05002 - F102295											
Cal Standard (1B05002-CAL1)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	0.050	-		ng/L	0.050000		100				
Cal Standard (1B05002-CAL2)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	0.209	-		ng/L	0.20000		105				
Cal Standard (1B05002-CAL3)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	0.965	-		ng/L	1.0000		96.5				
Cal Standard (1B05002-CAL4)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	1.984	-		ng/L	2.0000		99.2				
Cal Standard (1B05002-CAL5)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	3.965	-		ng/L	4.0000		99.1				
Calibration Blank (1B05002-CCB1)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	-0.007	-		ng/L							U
Calibration Blank (1B05002-CCB2)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	-0.011	-		ng/L							U
Calibration Blank (1B05002-CCB3)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	-0.0006	-		ng/L							U
Calibration Blank (1B05002-CCB4)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	0.012	-		ng/L							
Calibration Blank (1B05002-CCB5)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	0.005	-		ng/L							

eurofins Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.03	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	10-Mar-21 14:36

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1B05002 - F102295											
Calibration Blank (1B05002-CCB6)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	0.0004	-		ng/L							
Calibration Check (1B05002-CCV1)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	0.483	-		ng/L	0.50368		96.0	67-133			
Calibration Check (1B05002-CCV2)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	0.497	-		ng/L	0.50368		98.6	67-133			
Calibration Check (1B05002-CCV3)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	0.519	-		ng/L	0.50368		103	67-133			
Calibration Check (1B05002-CCV4)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	0.573	-		ng/L	0.50368		114	67-133			
Calibration Check (1B05002-CCV5)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	0.569	-		ng/L	0.50368		113	67-133			
Calibration Check (1B05002-CCV6)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	0.476	-		ng/L	0.50368		94.6	67-133			
Instrument Blank (1B05002-IBL1)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	ND	0.021	0.040	ng/L							U
Initial Cal Blank (1B05002-ICB1)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	-0.004	-		ng/L							U
Initial Cal Check (1B05002-ICV1)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	0.538	-		ng/L	0.50368		107	69-131			

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.03	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	10-Mar-21 14:36

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1B12001 - F102311											
Cal Standard (1B12001-CAL1)					Prepared & Analyzed: 11-Feb-21						
Mercury	0.58	-		ng/L	0.50000		117				
Cal Standard (1B12001-CAL2)					Prepared & Analyzed: 11-Feb-21						
Mercury	1.08	-		ng/L	1.0000		108				
Cal Standard (1B12001-CAL3)					Prepared & Analyzed: 11-Feb-21						
Mercury	4.58	-		ng/L	5.0000		91.7				
Cal Standard (1B12001-CAL4)					Prepared & Analyzed: 11-Feb-21						
Mercury	18.57	-		ng/L	20.000		92.8				
Cal Standard (1B12001-CAL5)					Prepared & Analyzed: 11-Feb-21						
Mercury	36.40	-		ng/L	40.000		91.0				
Calibration Blank (1B12001-CCB1)					Prepared & Analyzed: 11-Feb-21						
Mercury	-0.05	-		ng/L							U
Calibration Blank (1B12001-CCB2)					Prepared & Analyzed: 11-Feb-21						
Mercury	-0.02	-		ng/L							U
Calibration Blank (1B12001-CCB3)					Prepared & Analyzed: 11-Feb-21						
Mercury	-0.04	-		ng/L							U
Calibration Blank (1B12001-CCB4)					Prepared & Analyzed: 11-Feb-21						
Mercury	-0.11	-		ng/L							U
Calibration Blank (1B12001-CCB5)					Prepared & Analyzed: 11-Feb-21						
Mercury	-0.15	-		ng/L							U

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.03	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	10-Mar-21 14:36

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1B12001 - F102311											
Calibration Blank (1B12001-CCB6)					Prepared & Analyzed: 11-Feb-21						
Mercury	-0.05	-		ng/L							U
Calibration Blank (1B12001-CCB7)					Prepared & Analyzed: 11-Feb-21						
Mercury	-0.13	-		ng/L							U
Calibration Blank (1B12001-CCB8)					Prepared & Analyzed: 11-Feb-21						
Mercury	-0.11	-		ng/L							U
Calibration Blank (1B12001-CCB9)					Prepared & Analyzed: 11-Feb-21						
Mercury	-0.07	-		ng/L							U
Calibration Check (1B12001-CCV1)					Prepared & Analyzed: 11-Feb-21						
Mercury	4.85	-		ng/L	4.9950		97.0	77-123			
Calibration Check (1B12001-CCV2)					Prepared & Analyzed: 11-Feb-21						
Mercury	4.87	-		ng/L	4.9950		97.6	77-123			
Calibration Check (1B12001-CCV3)					Prepared & Analyzed: 11-Feb-21						
Mercury	4.91	-		ng/L	4.9950		98.2	77-123			
Calibration Check (1B12001-CCV4)					Prepared & Analyzed: 11-Feb-21						
Mercury	4.76	-		ng/L	4.9950		95.3	77-123			
Calibration Check (1B12001-CCV5)					Prepared & Analyzed: 11-Feb-21						
Mercury	4.76	-		ng/L	4.9950		95.3	77-123			
Calibration Check (1B12001-CCV6)					Prepared & Analyzed: 11-Feb-21						
Mercury	4.72	-		ng/L	4.9950		94.5	77-123			

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.03	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	10-Mar-21 14:36

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1B12001 - F102311											
Calibration Check (1B12001-CCV7)					Prepared & Analyzed: 11-Feb-21						
Mercury	4.42	-		ng/L	4.9950		88.5	77-123			
Calibration Check (1B12001-CCV8)					Prepared & Analyzed: 11-Feb-21						
Mercury	4.35	-		ng/L	4.9950		87.0	77-123			
Calibration Check (1B12001-CCV9)					Prepared & Analyzed: 11-Feb-21						
Mercury	4.19	-		ng/L	4.9950		83.9	77-123			
Instrument Blank (1B12001-IBL1)					Prepared & Analyzed: 11-Feb-21						
Mercury	ND	0.08	0.50	ng/L							U
Instrument Blank (1B12001-IBL2)					Prepared & Analyzed: 11-Feb-21						
Mercury	ND	0.08	0.50	ng/L							U
Instrument Blank (1B12001-IBL3)					Prepared & Analyzed: 11-Feb-21						
Mercury	0.09	0.08	0.50	ng/L							
Initial Cal Blank (1B12001-ICB1)					Prepared & Analyzed: 11-Feb-21						
Mercury	0.15	-		ng/L							
Initial Cal Check (1B12001-ICV1)					Prepared & Analyzed: 11-Feb-21						
Mercury	5.05	-		ng/L	4.9950		101	79-121			
Batch F102295 - EFGS SOP2797 Methyl Hg Distillation for Water											
Blank (F102295-BLK1)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	ND	0.026	0.050	ng/L							U

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.03	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	10-Mar-21 14:36

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F102295 - EFGS SOP2797 Methyl Hg Distillation for Water											
Blank (F102295-BLK2)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	ND	0.026	0.050	ng/L							U
Blank (F102295-BLK3)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	ND	0.026	0.050	ng/L							U
LCS (F102295-BS1)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	0.861	0.026	0.050	ng/L	1.1111		77.5	65-135			
LCS Dup (F102295-BSD1)					Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	0.860	0.026	0.050	ng/L	1.1111		77.4	65-135	0.145	35	
Matrix Spike (F102295-MS1)		**Source: 1B00004-01**			Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	1.007	0.026	0.050	ng/L	1.1111	ND	90.7	65-130			
Matrix Spike (F102295-MS2)		**Source: 1A00094-01RE1**			Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	1.076	0.026	0.050	ng/L	1.1111	0.318	68.1	65-130			
Matrix Spike Dup (F102295-MSD2)		**Source: 1A00094-01RE1**			Prepared & Analyzed: 04-Feb-21						
Methyl Mercury (as Mercury)	1.067	0.026	0.050	ng/L	1.1111	0.318	67.4	65-130	0.811	35	
Batch F102311 - EFGS SOP2796 EPA 1631 Oxidation											
Blank (F102311-BLK1)					Prepared & Analyzed: 11-Feb-21						
Mercury	0.08	0.08	0.50	ng/L							J
Blank (F102311-BLK2)					Prepared & Analyzed: 11-Feb-21						
Mercury	ND	0.08	0.50	ng/L							U

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.03	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	10-Mar-21 14:36

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F102311 - EFGS SOP2796 EPA 1631 Oxidation											
Blank (F102311-BLK3)					Prepared & Analyzed: 11-Feb-21						
Mercury	ND	0.08	0.50	ng/L							U
Blank (F102311-BLK4)					Prepared & Analyzed: 11-Feb-21						
Mercury	ND	0.08	0.50	ng/L							U
Blank (F102311-BLK5)					Prepared & Analyzed: 11-Feb-21						
Mercury	ND	0.08	0.50	ng/L							U
LCS (F102311-BS1)					Prepared & Analyzed: 11-Feb-21						
Mercury	4.59	0.08	0.50	ng/L	5.0000		91.9	77-123			
LCS Dup (F102311-BSD1)					Prepared & Analyzed: 11-Feb-21						
Mercury	4.41	0.08	0.50	ng/L	5.0000		88.3	77-123	4.02	24	
Matrix Spike (F102311-MS1)		**Source: 1A00113-08RE1**			Prepared & Analyzed: 11-Feb-21						
Mercury	569.8	8.34	50.0	ng/L	505.00	167.6	79.7	71-125			
Matrix Spike (F102311-MS2)		**Source: 1B00050-03**			Prepared & Analyzed: 11-Feb-21						
Mercury	9.65	0.08	0.50	ng/L	5.0000	6.05	71.9	71-125			
Matrix Spike Dup (F102311-MSD1)		**Source: 1A00113-08RE1**			Prepared & Analyzed: 11-Feb-21						
Mercury	589.4	8.34	50.0	ng/L	505.00	167.6	83.5	71-125	3.38	24	
Matrix Spike Dup (F102311-MSD2)		**Source: 1B00050-03**			Prepared & Analyzed: 11-Feb-21						
Mercury	9.81	0.08	0.50	ng/L	5.0000	6.05	75.2	71-125	1.70	24	

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.03	Reported:
Chelmsford MA, 01824	Project Manager: Rod Pendleton	10-Mar-21 14:36

Notes and Definitions

U	Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample.
J	The result is an estimated concentration.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the method detection limit if reported to the MDL or above the reporting limit if reported to the MRL.
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

ANALYSIS SEQUENCE

1B05002

1B08017 Attached

Instrument: Hg2700-1

Calibration ID: UNASSIGNED

Analyzed: 2/4/2021

Lab Number	Analysis	Order	STD ID	ISTD ID	Comments
1B05002-IBL1	QC	1			
1B05002-CAL1	QC	2	2003153		
1B05002-CAL2	QC	3	2003154		
1B05002-CAL3	QC	4	2100332		QUALITY ASSURANCE
1B05002-CAL4	QC	5	2100333		
1B05002-CAL5	QC	6	2100334		PEER - REVIEWED
1B05002-ICV1	QC	7	2100149		
1B05002-ICB1	QC	8			INITIALS: PGS
1B05002-CCV1	QC	9	2100149		
1B05002-CCB1	QC	10			
F102295-BS1	QC	11			
F102295-BSD1	QC	12			
F102295-BLK1	QC	13			
F102295-BLK2	QC	14			
F102295-BLK3	QC	15			
1B00004-01	MHg-CVAFS-W-Dist	16			
1B00004-01	MHg-CVAFS-W-Dist DOD	16			BatchQC
F102295-MS1	QC	17			
F102295-MSD1	QC	18			
0L00108-06RE1	MHg-CVAFS-W-Dist	19			1x: Redistill CCV Fail MFS 1/28/21
1A00094-01RE1	MHg-CVAFS-W-Dist	20			1x: Redistill CCV Fail MFS 1/28/21
1A00094-01RE1	MHg-CVAFS-W-Dist DOD	20			BatchQC
1B05002-CCV2	QC	21	2100149		
1B05002-CCB2	QC	22			
F102295-MS2	QC	23			
F102295-MSD2	QC	24			
1A00004-01RE1	MHg-CVAFS-W-Dist DOD	25			1x: Redistill CCV Fail MFS 1/28/21
1A00004-02RE1	MHg-CVAFS-W-Dist DOD	26			1x: Redistill CCV Fail MFS 1/28/21
1A00004-03RE1	MHg-CVAFS-W-Dist DOD	27			1x: Redistill CCV Fail MFS 1/28/21
1A00004-04RE1	MHg-CVAFS-W-Dist DOD	28			1x: Redistill CCV Fail MFS 1/28/21
1A00019-01RE1	MHg-CVAFS-W-Dist DOD	29			1x: Redistill CCV Fail MFS 1/28/21
1A00019-01RE1	MHg-CVAFS-W-Dist	29			Added 2/5/2021 by MV2
1A00019-02RE1	MHg-CVAFS-W-Dist DOD	30			1x: Redistill CCV Fail MFS 1/28/21
1A00019-03RE1	MHg-CVAFS-W-Dist DOD	31			1x: Redistill CCV Fail MFS 1/28/21
1A00019-04RE1	MHg-CVAFS-W-Dist DOD	32			1x: Redistill CCV Fail MFS 1/28/21
1B05002-CCV3	QC	33	2100149		

ANALYSIS SEQUENCE

1B05002

Instrument: Hg2700-1

Calibration ID: UNASSIGNED **Analyzed: 2/4/2021**

Lab Number	Analysis	Order	STD ID	ISTD ID	Comments
1B05002-CCB3	QC	34			
1A00094-02RE1	MHg-CVAFS-W-Dist	35			1x: Redistill CCV Fail MFS 1/28/21
1B05002-CCV4	QC	36	2100149		
1B05002-CCB4	QC	37			
1B05002-CCV5	QC	38	2100149		
1B05002-CCB5	QC	39			
1B05002-CCV6	QC	40	2100149		
1B05002-CCB6	QC	41			

2/9/21

Samples Loaded By Date

2/9/21

Data Processed By Date

Peer Review Check List for MHg for CV-GC-AFS (SOP2808) 2018 Rev 7 (8/2/18)

Analyst:	MFS/MV2 (DE)	**Sequence #:**	1B05002
Reviewer:		**Dataset ID #:**	MHg27001-210204-1
Date:	MV 2/9/21	**WO #:**	Multiple
Batch #(s):	~~F012297,~~ F102295		

- **Select the correct preparation method.**

Additional Comments:

Analyte	Prep Method		Matrix
☑ MHg	SOP2797	MHg Distillation	Water
☐ MHg	SOP2986	KOH/MeOH Digest	Tissue
☐ MHg	SOP5134	MeCl Extraction	Sed/Soil
☐ DMHg	SOP2816 (None Accredited method)		ALL

	Analyst Initials: MV			Reviewer Initials/Date: PGS
1. Compare Sample ID with Bench sheet/Sequence/Raw Data (Have all samples been imported?)	☑ YES	☐ NO		☐
2. Check for transcription errors from Excel spreadsheet (or Prep Bench sheet)/Raw data	☑ YES	☐ NO		☐
(a) Reviewer: 100% of peak heights checked	☐ YES	☐ NO		☐
(b) Are there peak height errors?	☐ YES	☑ NO		☐
(c) Error on a sample: Do peak heights, responses, & initial results match corrected data?	☑ YES	☐ NO	☐ N/A	☐
(d) Error on a Cal Pt, ICB/CCB, or PB: Has the data been reimported?	☐ YES	☐ NO	☑ N/A	☐
(e) Check standards & reagents in sequence & bench sheet for correct usage (i.e. expiries).	☐ YES	☐ NO	☑ N/A	☐
(f) Check and compare masses (review prep bench sheet)	☐ YES	☐ NO	☑ N/A	☐
(g) Check and compare initial and final volumes	☑ YES	☐ NO	☐ N/A	☐
(h) Do aliquots and dilutions written on benchsheet match those in Excel?	☑ YES	☐ NO	☐ N/A	☐
(i) Is the pH>3.0 for all distilled samples?	☑ YES	☐ NO	☐ N/A	☐
(j) Is the sequence #, analyst, date, and instrument # on the QC page?	☑ YES	☐ NO		☐
(k) Is the analysis status correct? (analyzed/initial review/reviewed)	☑ YES	☐ NO		☐
(l) Original prep bench sheet added to data package?	☑ YES	☐ NO		☐
(m) Benchsheet prep date MUST match actual prep date (check if re-shot vs re-extract)	☑ YES	☐ NO		☐
3. High QA? WO#(s)/Client(s):	☐ YES	☑ NO		☐
4. Client specific QC? (if Yes, refer to Project Notes/LIMS)	☐ YES	☑ NO		☐
(a) Have the QC requirements been met for all WO#s?	☑ YES	☐ NO		☐
5. 20 or fewer samples in batch?	☑ YES	☐ NO		☐
(a) 3 PBs, 1 LCS/LCSD (or BS/BSD), 2 MS/MSD/MD per batch?	☑ YES	☐ NO		☐
(b) 1 CCV and 1 CCB every 10 analytical runs?	☑ YES	☐ NO		☐

QA/QC Data Checked

6. The calibration curve included a minimum of 5 Standards	☑ PASS	☐ FAIL	☐ N/A	☐
Comments:				
7. 1st Calibration Standard % Recoveries (65-135%)	☑ PASS	☐ FAIL	☐ N/A	☐
Comments:				
8. RSD CF (≤ 15%)	☑ PASS	☐ FAIL		☐
Comments:				

Peer Review Check List for MHg for CV-GC-AFS (SOP2808) 2018 Rev 7 (8/2/18)

Analyst:	MFS/MV2 (DE)	**Sequence #:**	1B05002
Reviewer:		**Dataset ID #:**	MHg27001-210204-1
Date:		**WO #:**	Multiple
Batch #(s):	F012297, F102295		

Item	**Analyst Initials:** mw			**Reviewer Initials/Date:** PGS
9. ICV % Recoveries 67-133%	☑ PASS	☐ FAIL		☐
Comments:				
10. CCV % Recoveries 67-133%	☑ PASS	☐ FAIL		☐
Comments:				
11. Are the absolute value of the ICB and CCBs < PQL?	☑ PASS	☐ FAIL		☐
Comments:				
12. LCS/LCSD/CRM/BS/BSD % Recoveries (70-130%)	☑ PASS	☐ FAIL		☐
Comments:				
13. LCS/LCSD or BS/BSD RPD (< 25%)	☑ PASS	☐ FAIL		☐
Comments:				
14. Water: Average of Preparation Blanks < 0.045 ng/L and standard devaition of 0.015 ng/L?	☑ PASS	☐ FAIL	☐ N/A	☐
Comments:				
15. Sediment/Tissue: Individually, are the Preparation Blanks < PQL for the matrix?	☐ PASS	☐ FAIL	☑ N/A	☐
Comments:	☐ PASS	☐ FAIL		☐
16. Have Total Solids been applied? (If NO, please ensure that they are done or nearly done)	☐ YES	☐ NO	☑ N/A	☐
17. Is the correct 'Source' designated for MD/MS/MSD?	☑ YES	☐ NO		☐
18. For digested preps: was there a spike witness signature & date on the prep bench sheet?	☐ YES	☐ NO	☑ N/A	☐
19. MD RPD/MT RSD(< 35%)	☑ PASS	☐ FAIL		☐
Comments:				
20. Is there one set of MS/MSD per every 10 samples?	☑ PASS	☐ FAIL		☐
Comments:				
21. MS/MSD RPD(< 35%)	☑ PASS	☐ FAIL		☐
Comments:				
22. MS (AS) % Recoveries (65-130%)	☑ PASS	☐ FAIL		☐
Comments:				
23. MSD (ASD) % Recoveries (65-130%)	☑ PASS	☐ FAIL		☐
Comments:				
24. Spiked 1-5X ambient or 1-5X PQL (whichever is higher) (from EPA 1630)	☑ YES	☐ NO		☐
25. Are all samples within instrument calibration range (or at maximum aliquot size)?	☑ YES	☐ NO		☐
Comments:				
26. For instrumental dilutions, is the dilution factor in excel correct?	☑ PASS	☐ NO	☐ N/A	☐
Is the sample volume, diluents, and final volume of the dilution noted on benchsheet?	☑ PASS	☐ NO	☐ N/A	☐
27. Dissolved < Total metals (if applicable)	☐ PASS	☐ NO	☑ N/A	☐
Comments:				
28. Effluent < Influent metals (visually confirm if needed)	☐ PASS	☐ NO	☑ N/A	☐
Comments:				

Peer Review Check List for MHg for CV-GC-AFS (SOP2808) 2018 Rev 7 (8/2/18)

Analyst:	MFS/MV2 (DE)	**Sequence #:**	1B05002
Reviewer:		**Dataset ID #:**	MHg27001-210204-1
Date:		**WO #:**	Multiple
Batch #(s):	F012297, F102295		

	Analyst Initials: chr		Reviewer Initials/Date: PGS	
29. Are re-runs noted with reason? Comments:	☐ YES	☐ NO	☑ N/A	☐
30. For failing QC (CCV, CCB, PB, BS/BSD, CAL): Was a bubbler and trap test run before the analytical run continued? Comments:	☐ YES	☐ NO	☑ N/A	☐
31. Do re-run results compare to initial analysis (< 35% RPD)? Comments:	☐ YES	☐ NO	☑ N/A	☐
32. Are qualifiers consistent with the data review flowcharts? Comments:	☑ YES	☐ NO	☐ N/A	☐
33. Have non-reportable samples been imported into LIMS and clicked to non-reportable? Comments:	☐ YES	☐ NO	☑ N/A	☐
34. Have re-extracts been created for non-reportable samples? 35. Narrations in MMO box in LIMS? Comments:	☐ YES	☐ NO	☑ N/A	☐
36. Are there any HIGH QA projects within the data? If so, place dataset to the QA office.	☐ YES	☑ NO		
37. Does the data set need scanning?	☐ YES		☑ N/A	☐

Files located at: \\Cuprum\gen_admin\Quality Assurance\Training Master\DOCs

38. Date of analyst IDOC/CDOC: 3/5/20 IDOC/CDOC within last 12 months?	☑ YES	☐ NO		☐
39. Date of analyst's SOP reading: 6/24/20 Current SOP revision?	☐ YES	☐ NO		☐
40. Date of LOD: 10/25/19 LOD within last 3 months (within 12 months for MDN)?	☐ YES	☑ NO	☐ N/A	☐
41. Date of LOQ: 10/25/19 LOQ within last 3 months (within 12 months for MDN)?	☐ YES	☑ NO	☐ N/A	☐
42. If MDN samples, date of last MDL study: N.A				
43. MDL study within last 12 months?	☐ YES	☐ NO	☑ N/A	☐

Data can not be reported without a current IDOC/CDOC, LOD or LOQ.

Additional Comments:	☐ YES	☑ NO	☐

Failing Data Report - 1B05002

Sample ID	Analysis	Result	MRL	Dup Result	Source Result	True Value	Units	% Rec.	Rec. LCL	Rec. UCL	RPD	RPD Limit	Over Cal	Failure	Qualifier

Analyst Reviewed By Date

Peer Reviewed By Date

Methyl Mercury Distillations (EPA 1630)

Name: VM **Date:** 2-4-21 **Batch #:** F102295 **Sample Matrix:** Water

WO#: 0L00108, 1A00004, 1A00019, 1A00094, 1B00004

The pH of the preserved sample must be documented before an aliquot is removed for preparation.

Digest #	Sample ID Number	Preserved pH	Sample Size (mL)	Final pH (≥3)
1	F102295-BLK1	<2	45.5641	<3
2	F102295-BLK2	<2	45.9871	>3
3	F102295-BLK3	<2	46.1581	>3
4	F102295-BS1	<2	46.0135	<3
5	F102295-BSD1	<2	47.1073	>3
6	1B00004-01 B(SRC)	<2	45.6440	>3
7	F102295-MS1	<2	45.0522	>3
8	F102295-MSD1	<2	45.7940	<3
9	0L00108-06REI A	<2	47.0950	<3 MBS 2/4/21
10	1A00004-01REI A	<2	46.0538	>3
11	1A00004-02REI A	<2	45.2747	>3
a) 12	1A00004-03REI A	<2	45.4642	>3
13	1A00004-04REI A	<2	46.9128	>3
14	1A00019-01 REI A	<2	45.6357	>3
15	1A00019-02 REI A	<2	46.0785	<3
16	1A00019-03 REI A	<2	45.1717	>3
17	1A00019-04 REI A	<2	46.1170	>3
18	1A00094-01 REI A	<2	45.9842	<3
19	F102295-MS2	<2	46.0794	>3
20	F102295-MSD2	<2	46.7410	<3
21 ~~21~~	~~FT~~ VM 2-4-21 1A00094-02REI A	<2	45.9406	<3

MBS 2/4/21

Time first sample distillation completed: 1344

Spike ID: 2100277
Spike Amount: 50 µL
Spike Witness: [signature]

Balance #: 19
Calibrated? ☒ Yes ☐ No

Pipette #: NU69653
Cal. Date: 2-4-21

Pipette #: NU01152
Cal. Date: 2-4-21

Pipette #: NA
Cal. Date:

APDC ID: 2100230
HCl ID: 2100326 (0.4%)
Lot # pH paper: HC017484 HC911798

Temperature: No set range as the temp. may be changed to keep flow rate of ≥10 mL per hour. Temperature is recorded for informational purposes only.

Unit 1: 122
Unit 2: 114
Unit 3: OOS
Unit 4: OOS
Unit 5: 124
Unit 6: 118.9

Comments:
a) SRC MS2/MSD2

 Verified By: VM 2/4/21

eurofins | Frontier Global Sciences

Analysis Datasheet for Methyl Mercury in Soil/Tissue

Date of Analysis: February 04, 2021
Instrument #: Hg2700-1
LIMS Sequence #:

Analyst:
Units ng/L

Calibration Statistics:

LabNumber	n	True Val	Area	Uncorrected Response Factor	Corrected Peak Height	Corrected Response Factor	% Recovery
SEQ-CAL1	1	0.05 ng/L	11.79 units	235.80	8.43 units	168.56	100.5 %Rec
SEQ-CAL2	1	0.20 ng/L	38.47 units	192.34	35.11 units	175.53	104.6 %Rec
SEQ-CAL3	1	1.00 ng/L	165.32 units	165.32	161.96 units	161.96	96.5 %Rec
SEQ-CAL4	1	2.00 ng/L	336.28 units	168.14	332.92 units	166.46	99.2 %Rec
SEQ-CAL5	1	4.00 ng/L	668.55 units	167.14	665.18 units	166.30	99.1 %Rec
SEQ-CAL6	0						
SEQ-CAL7	0						
SEQ-CAL8	0						
SEQ-CAL9	0						

Corr. Mean RF	Corr. St Dev RF	Corr. RSD CF	Uncorr. Mean RF
167.76	+/- 4.96	3.0% RSD	185.75

Blanks:

LabNumber	n	Mean	Std Dev	Mean (ng/L)	Std Dev (ng/L)
SEQ-IBL	1	3.36 units		0.02 ng/L	#VALUE!

Preparation Blanks

Sample Type	Batch ID	n	Mean	Std Dev
BLK	1	3	-0.003 ng/L	±0.007
BLK	2	3	3.719 ng/L	±4.771
BLK	3	0	0.000 ng/L	
BLK	4	0	0.000 ng/L	
BLK	5	0	0.000 ng/L	

Instrument	Analyst	Sample Type	LabNumber	Dilution	Analyzed	FileID	Run End	Uncorrected Response	Batch ID	No PB Correction?	RESP	InitialResult	FinalResult	InitialUnits	Comments
Hg2700-1	00	CAL	SEQ-IBL1	1	2/4/21 13:28	4700-1.RAW	13:28:26	3.36			0.0	0.000	0.000	ng/L	
Hg2700-1	00	CAL	SEQ-CAL1	1	2/4/21 13:38	4701-1.RAW	13:38:41	11.79			8.4	0.050	0.050	ng/L	
Hg2700-1	00	CAL	SEQ-CAL2	1	2/4/21 13:48	4702-1.RAW	13:48:57	38.47			35.1	0.209	0.209	ng/L	
Hg2700-1	00	CAL	SEQ-CAL3	1	2/4/21 13:59	4703-1.RAW	13:59:12	165.32			162.0	0.965	0.965	ng/L	
Hg2700-1	00	CAL	SEQ-CAL4	1	2/4/21 14:09	4704-1.RAW	14:09:27	336.28			332.9	1.984	1.984	ng/L	
Hg2700-1	00	CAL	SEQ-CAL5	1	2/4/21 14:19	4705-1.RAW	14:19:43	668.55			665.2	3.965	3.965	ng/L	
Hg2700-1	00	CAL	SEQ-ICV1	1	2/4/21 14:29	4706-1.RAW	14:29:58	93.66			90.3	0.538	0.538	ng/L	
Hg2700-1	00	CAL	SEQ-ICB1	1	2/4/21 14:40	4707-1.RAW	14:40:14	2.70			-0.7	-0.004	-0.004	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 14:50	4708-1.RAW	14:50:30	1.70			-1.7	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 15:00	4709-1.RAW	15:00:45	2.21			-1.2	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 15:11	4710-1.RAW	15:11:00	0.64			-2.7	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 15:21	4711-1.RAW	15:21:16	0.99			-2.4	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 15:31	4712-1.RAW	15:31:31	0.00			-3.4	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 15:41	4713-1.RAW	15:41:47	2.16			-1.2	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 15:52	4714-1.RAW	15:52:02	0.00			-3.4	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 16:02	4715-1.RAW	16:02:18	0.21			-3.1	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 16:12	4716-1.RAW	16:12:33	0.00			-3.4	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 16:22	4717-1.RAW	16:22:49	0.00			-3.4	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 16:33	4718-1.RAW	16:33:04	0.00			-3.4	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 16:43	4719-1.RAW	16:43:20	0.72			-2.6	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 16:53	4720-1.RAW	16:53:35	0.00			-3.4	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 17:03	4721-1.RAW	17:03:51	2.33			-1.0	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 17:14	4722-1.RAW	17:14:06	1.55			-1.8	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 17:24	4723-1.RAW	17:24:22	1.04			-2.3	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 17:34	4724-1.RAW	17:34:37				-3.4	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 17:44	4725-1.RAW	17:44:52				-3.4	Error	#VALUE!	ng/L	
Hg2700-1	00	SAM	WS	1	2/4/21 17:55	4726-1.RAW	17:55:08	0.00			-3.4	Error	#VALUE!	ng/L	
Hg2700-1	00	CAL	SEQ-CCV1	1	2/4/21 18:05	4727-1.RAW	18:05:24	84.45			81.1	0.483	0.483	ng/L	
Hg2700-1	00	CAL	SEQ-CCB1	1	2/4/21 18:15	4728-1.RAW	18:15:39	2.12			-1.2	-0.007	-0.007	ng/L	
Hg2700-1	00	SAM	F102295-BS1	1.25	2/4/21 18:25	4729-1.RAW	18:25:55	133.07	1		129.7	0.775	0.969	ng/L	F102295
Hg2700-1	00	SAM	F102295-BSD1	1.25	2/4/21 18:36	4730-1.RAW	18:36:10	132.88	1		129.5	0.774	0.968	ng/L	F102295
Hg2700-1	00	BLK	F102295-BLK1	1.25	2/4/21 18:46	4731-1.RAW	18:46:26	4.03	1		0.7	0.004	0.005	ng/L	F102295
Hg2700-1	00	BLK	F102295-BLK2	1.25	2/4/21 18:56	4732-1.RAW	18:56:42	2.45	1		-0.9	-0.005	-0.007	ng/L	F102295
Hg2700-1	00	BLK	F102295-BLK3	1.25	2/4/21 19:06	4733-1.RAW	19:06:57	2.53	1		-0.8	-0.005	-0.006	ng/L	F102295
Hg2700-1	00	SAM	1B00004-01	1.25	2/4/21 19:17	4734-1.RAW	19:17:13	4.09	1		0.7	0.006	0.008	ng/L	F102295
Hg2700-1	00	SAM	F102295-MS1	1.25	2/4/21 19:27	4735-1.RAW	19:27:28	155.11	1		151.7	0.907	1.133	ng/L	F102295
Hg2700-1	00	SAM	F102295-MS2	1.25	2/4/21 19:37	4736-1.RAW	19:37:44	152.10	1		148.7	0.889	1.111	ng/L	F102295
Hg2700-1	00	SAM	0L00108-06RE1	1.25	2/4/21 19:47	4737-1.RAW	19:47:59	6.89	1		3.5	0.023	0.029	ng/L	F102295
Hg2700-1	00	SAM	1A00094-01RE1	1.25	2/4/21 19:58	4738-1.RAW	19:58:15	51.08	1		47.7	0.287	0.358	ng/L	F102295
Hg2700-1	00	CAL	SEQ-CCV2	1	2/4/21 20:08	4739-1.RAW	20:08:30	86.66			83.3	0.497	0.497	ng/L	
Hg2700-1	00	CAL	SEQ-CCB2	1	2/4/21 20:18	4740-1.RAW	20:18:46	1.53			-1.8	-0.011	-0.011	ng/L	
Hg2700-1	00	SAM	F102295-MS2	1.25	2/4/21 20:29	4741-1.RAW	20:29:01	165.40	1		162.0	0.968	1.210	ng/L	F102295
Hg2700-1	00	SAM	F102295-MSD2	1.25	2/4/21 20:39	4742-1.RAW	20:39:17	164.09	1		160.7	0.960	1.200	ng/L	F102295
Hg2700-1	00	SAM	1A00004-01RE1	1.25	2/4/21 20:49	4743-1.RAW	20:49:32	6.36	1		3.0	0.020	0.025	ng/L	F102295
Hg2700-1	00	SAM	1A00004-02RE1	1.25	2/4/21 20:59	4744-1.RAW	20:59:48	18.28	1		14.9	0.091	0.114	ng/L	F102295
Hg2700-1	00	SAM	1A00004-03RE1	1.25	2/4/21 21:10	4745-1.RAW	21:10:05	5.25	1		1.9	0.013	0.017	ng/L	F102295

Instrument	Analyst	Sample Type	LabNumber	Dilution	Analyzed	FileID	Run End	Uncorrected Response	Batch ID	No PB Correction?	RESP	InitialResult	FinalResult	InitialUnits	Comments
Hg2700-1	00	SAM	1A00004-04RE1	1.25	2/4/21 21:20	4746-1.RAW	21:20:21	11.75	1		8.4	0.052	0.065	ng/L	F102295
Hg2700-1	00	SAM	1A00019-01RE1	1.25	2/4/21 21:30	4747-1.RAW	21:30:36	2.45	1		-0.9	-0.003	-0.004	ng/L	F102295
Hg2700-1	00	SAM	1A00019-02RE1	1.25	2/4/21 21:40	4748-1.RAW	21:40:53	531.75	1		528.4	3.152	3.940	ng/L	F102295
Hg2700-1	00	SAM	1A00019-03RE1	1.25	2/4/21 21:51	4749-1.RAW	21:51:08	43.84	1		40.5	0.243	0.304	ng/L	F102295
Hg2700-1	00	SAM	1A00019-04RE1	1.25	2/4/21 22:01	4750-1.RAW	22:01:24	38.49	1		35.1	0.212	0.264	ng/L	F102295
Hg2700-1	00	CAL	SEQ-CCV3	1	2/4/21 22:11	4751-1.RAW	22:11:40	90.51			87.1	0.519	0.519	ng/L	
Hg2700-1	00	CAL	SEQ-CCB3	1	2/4/21 22:21	4752-1.RAW	22:21:56	3.26			-0.1	-0.001	-0.001	ng/L	
Hg2700-1	00	SAM	1A00094-02RE1	1.25	2/4/21 22:32	4753-1.RAW	22:32:11	72.83	1		69.5	0.416	0.520	ng/L	F102295
Hg2700-1	00	SAM	F012297-BS1	1000	2/4/21 22:42	4754-1.RAW	22:42:27	321.09	2		317.7	1.890	1890.196	ng/L	F102297
Hg2700-1	00	SAM	F012297-BSD1	1000	2/4/21 22:52	4755-1.RAW	22:52:43	352.63	2		349.3	2.078	2078.202	ng/L	F102297
Hg2700-1	00	BLK	F012297-BLK1	500	2/4/21 23:02	4756-1.RAW	23:02:59	5.82	2		2.5	0.015	7.336	ng/L	F102297
Hg2700-1	00	BLK	F012297-BLK2	500	2/4/21 23:13	4757-1.RAW	23:13:15	2.80	2		-0.6	-0.003	-1.688	ng/L	F102297
Hg2700-1	00	BLK	F012297-BLK3	500	2/4/21 23:23	4758-1.RAW	23:23:30	5.21	2		1.8	0.011	5.510	ng/L	F102297
Hg2700-1	00	SAM	1B00007-01	2500	2/4/21 23:33	4759-1.RAW	23:33:45	644.00	2		640.6	3.817	9543.152	ng/L	F102297
Hg2700-1	00	SAM	F012297-MS1	2500	2/4/21 23:44	4760-1.RAW	23:44:00	759.92	2		756.6	4.508	11270.678	ng/L	F102297
Hg2700-1	00	SAM	F012297-MSD1	2500	2/4/21 23:54	4761-1.RAW	23:54:16	737.85	2		734.5	4.377	10941.819	ng/L	F102297
Hg2700-1	00	SAM	1B00022-01	500	2/4/21 0:04	4762-1.RAW	0:04:32	630.46	2		627.1	3.731	1865.312	ng/L	F102297
Hg2700-1	00	CAL	SEQ-CCV4	1	2/4/21 0:14	4763-1.RAW	0:14:48	99.54			96.2	0.573	0.573	ng/L	
Hg2700-1	00	CAL	SEQ-CCB4	1	2/4/21 0:25	4764-1.RAW	0:25:04	5.45			2.1	0.012	0.012	ng/L	
Hg2700-1	00	SAM	F012297-MS2	500	2/4/21 0:35	4765-1.RAW	0:35:20	816.10	2		812.7	4.837	2418.607	ng/L	F102297
Hg2700-1	00	SAM	F012297-MSD2	500	2/4/21 0:45	4766-1.RAW	0:45:35	593.30	2		589.9	3.509	1754.560	ng/L	F102297
Hg2700-1	00	SAM	1B00001-01	500	2/4/21 0:55	4767-1.RAW	0:55:52	11.92	2		8.6	0.044	21.781	ng/L	F102297
Hg2700-1	00	SAM	1B00001-02	500	2/4/21 1:06	4768-1.RAW	1:06:08	8.74	2		5.4	0.025	12.313	ng/L	F102297
Hg2700-1	00	SAM	1B00007-02	2500	2/4/21 1:16	4769-1.RAW	1:16:24	179.19	2		175.8	1.047	2616.468	ng/L	F102297
Hg2700-1	00	SAM	1B00007-03	2500	2/4/21 1:26	4770-1.RAW	1:26:40	177.39	2		174.0	1.036	2589.656	ng/L	F102297
Hg2700-1	00	SAM	1B00007-04	2500	2/4/21 1:36	4771-1.RAW	1:36:55	231.05	2		227.7	1.356	3389.349	ng/L	F102297
Hg2700-1	00	SAM	1B00007-05	2500	2/4/21 1:47	4772-1.RAW	1:47:10	311.20	2		307.8	1.834	4583.772	ng/L	F102297
Hg2700-1	00	SAM	1B00007-06	2500	2/4/21 1:57	4773-1.RAW	1:57:26	279.70	2		276.3	1.646	4114.314	ng/L	F102297
Hg2700-1	00	SAM	1B00007-07	2500	2/4/21 2:07	4774-1.RAW	2:07:42	264.23	2		260.9	1.553	3883.720	ng/L	F102297
Hg2700-1	00	CAL	SEQ-CCV5	1	2/4/21 2:17	4775-1.RAW	2:17:57	98.83			95.5	0.569	0.569	ng/L	
Hg2700-1	00	CAL	SEQ-CCB5	1	2/4/21 2:28	4776-1.RAW	2:28:14	4.28			0.9	0.005	0.005	ng/L	
Hg2700-1	00	SAM	1B00008-01	500	2/4/21 2:38	4777-1.RAW	2:38:29	3.96	2		0.6	-0.004	-1.928	ng/L	F102297
Hg2700-1	00	SAM	1B00009-01	500	2/4/21 2:48	4778-1.RAW	2:48:45	26.50	2		23.1	0.130	65.233	ng/L	F102297
Hg2700-1	00	SAM	1B00015-01	2500	2/4/21 2:59	4779-1.RAW	2:59:01	191.93	2		188.6	1.123	2806.375	ng/L	F102297
Hg2700-1	00	SAM	1B00015-02	2500	2/4/21 3:09	4780-1.RAW	3:09:16	277.41	2		274.1	1.632	4080.246	ng/L	F102297
Hg2700-1	00	SAM	1B00015-03	2500	2/4/21 3:19	4781-1.RAW	3:19:32	379.22	2		375.9	2.239	5597.442	ng/L	F102297
Hg2700-1	00	SAM	1B00017-01	2500	2/4/21 3:29	4782-1.RAW	3:29:48	34.46	2		31.1	0.184	459.663	ng/L	F102297
Hg2700-1	00	SAM	1B00019-01	2500	2/4/21 3:40	4783-1.RAW	3:40:03	66.88	2		63.5	0.377	942.786	ng/L	F102297
Hg2700-1	00	SAM	1B00020-01	500	2/4/21 3:50	4784-1.RAW	3:50:18	354.43	2		351.1	2.085	1042.604	ng/L	F102297
Hg2700-1	00	SAM	1B00024-01	500	2/4/21 4:00	4785-1.RAW	4:00:34	6.77	2		3.4	0.013	6.440	ng/L	F102297
Hg2700-1	00	SAM	1B00025-01	500	2/4/21 4:10	4786-1.RAW	4:10:50	4.22	2		0.9	-0.002	-1.160	ng/L	F102297
Hg2700-1	00	CAL	SEQ-CCV6	1	2/4/21 4:21	4787-1.RAW	4:21:05	83.29			79.9	0.476	0.476	ng/L	
Hg2700-1	00	CAL	SEQ-CCB6	1	2/4/21 4:31	4788-1.RAW	4:31:21	3.44			0.1	0.000	0.000	ng/L	

P1 l

MethylMercury EPA1630

Operat: MFS	BlankS: 3.3622	Calib Eqn: Conc = (Area-3.362) / 167.7		Run Date: ######		Blank SD:	0
Workst: MHg270	CalibFa: 167.76	Status: OK,1 Warnings		Run Time: 11:40:13		Blank RSD	0
Method: 2012-07	R: 1	R²: 0.99993635		CalibAnal: MHg		CF SD:	4.964289657
Descrip: MHg27001-210204-1						CF RSD%:	2.959148082

Sample/ID	Location	Rinse	Dilute	Blank	ConcHg0(ppt)	ConcMeHg(ppt)	ConcHg2(ppt)	ConcPrHg(ppt)	Rec%	QA	RawData	RunEnd	PeakHg0 (Raw)	PeakMeHg (Raw)	PeakHg2(Raw)	PeakPrHg(Raw)	Control (etf)	Flags	RunCount	Comment
Clean											4690-1.RAW	11:45:51	30.4043403	0	3.54172887	0	cleandry	CT	1	
WS											4691-1.RAW	11:56:06	0				psample10	NP	1	
WS	A1		1								4692-1.RAW	12:06:21	68.821004	0	7.35112847	0	psample10	CT	1	
HP	A2		1	3.3622	0.3644597	5.98					4693-1.RAW	12:16:37	64.504251	1007.31438	0	0	psample10	CT	1	
HP	A3		1	3.3622	0.2876799	6.22					4694-1.RAW	12:26:52	51.6236164	1047.30872	0	0	psample10	CT	1	
P	A4		1	3.3622	0.1747306	4.15					4695-1.RAW	12:37:08	32.6751584	699.108073	0	0	psample10	CT	1	
P	A5		1	3.3622	0.1201287	4.06					4696-1.RAW	12:47:24	23.5150965	684.309664	0	0	psample10	CT	1	
P	A6		1	3.3622	0.0986018	4.05					4697-1.RAW	12:57:39	19.9037326	682.950752	0	0	psample10	CT	1	
WS	A7		1	3.3622	0	0.04					4698-1.RAW	13:07:54	3.25787102	9.31976273	0	0	psample10	CT	1	
WS	A8		1	3.3622	0.026471	0.00					4699-1.RAW	13:18:10	7.80300926	1.38995949	0	0	psample10	OK	1	
SEQ-TBL1	A9		1	0	0.0250089	0.02					4700-1.RAW	13:28:26	4.19551169	3.36221065	0	0	psample10	OK	1	
SEQ-CAL1	A10		1	3.3622	0	0.05			100.48		4701-1.RAW	13:38:41	2.54431306	11.790162	0	0	psample10	OK	1	
SEQ-CAL2	A11		1	3.3622	0	0.21			104.63		4702-1.RAW	13:48:57	2.93466819	38.4688657	0	0	psample10	OK	1	
SEQ-CAL3	A12		1	3.3622	0	0.97			96.54		4703-1.RAW	13:59:12	3.06381621	165.318924	0	0	psample10	CT	1	
SEQ-CAL4	A13		1	3.3622	0.0243933	1.98			99.22		4704-1.RAW	14:09:27	7.45445602	336.279803	0	0	psample10	CT	1	
SEQ-CAL5	A14		1	3.3622	0.1126368	3.97			99.13		4705-1.RAW	14:19:43	22.2582433	668.546394	0	0	psample10	CT	1	
SEQ-ICV1	A15		1	3.3622	0.0048363	0.54			107.78		4706-1.RAW	14:29:58	4.17354708	93.6584491	0	0	psample10	CT	1	
SEQ-ICB1	A16		1	3.3622		0.00			0.00		4707-1.RAW	14:40:14	0	2.70300926	0	0	psample10	OK	1	
WS	A17		1	3.3622	0	0	0				4708-1.RAW	14:50:30	1.07552731	1.70196759	0.73894676	0	psample10	CT	1	
WS	A18		1	3.3622		0					4709-1.RAW	15:00:45	0	2.20671296	0	0	psample10	OK	1	
WS	A19		1	3.3622	0	0					4710-1.RAW	15:11:00	1.66934381	0.6369213	0	0	psample10	OK	1	
WS	A20		1	3.3622		0	0				4711-1.RAW	15:21:16	0	0.99123264	1.03489583	0	psample10	OK	1	
WS	A21		1								4712-1.RAW	15:31:31	0.217906	0	0.7134838	0	psample10	OK	1	
WS	B1		1	3.3622		0					4713-1.RAW	15:41:47	0	2.1599537	0	0	psample10	OK	1	
WS	B2		1								4714-1.RAW	15:52:02	16.4479427	0	0	0	psample10	OK	1	
WS	B3		1	3.3622	0.0196317	0					4715-1.RAW	16:02:18	6.65564488	0.21345486	0	0	psample10	OK	1	
WS	B4		1								4716-1.RAW	16:12:33	14.191522	0	0	0	psample10	OK	1	
WS	B5		1								4717-1.RAW	16:22:49	3.56518515	0	0	0	psample10	OK	1	
WS	B6		1								4718-1.RAW	16:33:04	3.92468889	0	0	0	psample10	OK	1	
WS	B7		1	3.3622	0	0					4719-1.RAW	16:43:20	2.27829861	0.7240162	0	0	psample10	OK	1	
WS	B8		1								4720-1.RAW	16:53:35	1.93455874	0	0	0	psample10	CT	1	
WS	B9		1	3.3622	0	0					4721-1.RAW	17:03:51	2.53761574	2.32977431	0	0	psample10	CT	1	
WS	B10		1	3.3622		0					4722-1.RAW	17:14:06	0	1.54560185	0	0	psample10	OK	1	
WS	B11		1	3.3622		0					4723-1.RAW	17:24:22	0	1.04444444	0	0	psample10	OK	1	
WS	B12		1								4724-1.RAW	17:34:37	0				psample10	NP	1	
WS	B13		1								4725-1.RAW	17:44:52	0				psample10	NP	1	
WS	B14		1								4726-1.RAW	17:55:08	0.41651646	0	0	0	psample10	CT	1	
SEQ-CCV1	B15		1	3.3622		0.483350938			96.79		4727-1.RAW	18:05:24	0	84.449537	0	0	psample10	CT	1	
SEQ-CCB1	B16		1	3.3622	0	0			0.00		4728-1.RAW	18:15:39	1.29088542	2.11996528	0	0	psample10	OK	1	
F102295-BS1	B17		1.25	3.3622	0.0177968	0.966441908					4729-1.RAW	18:25:55	5.75069444	133.067043	0	0	psample10	OK	1	F102295
F102295-BSD1	B18		1.25	3.3622	0.0421777	0.965041164	2.6652887				4730-1.RAW	18:36:10	9.02282343	132.879051	361.066922	0	psample10	OK	1	F102295
F102295-BLK1	B19		1.25	3.3622	0	0.004981405	0.0519944				4731-1.RAW	18:46:26	1.00017361	4.0307581	10.3403067	0	psample10	OK	1	F102295
F102295-BLK2	B20		1.25	3.3622		0	0.0004584				4732-1.RAW	18:56:42	0	2.4458044	3.42372685	0	psample10	OK	1	F102295
F102295-BLK3	B21		1.25	3.3622		0	0.0565105				4733-1.RAW	19:06:57	0	2.53208912	10.946412	0	psample10	OK	1	F102295
1B00004-01	C1		1.25	3.3622	0.0211542	0.005437396	1.122061				4734-1.RAW	19:17:13	6.20128101	4.09195602	153.952459	0	psample10	OK	1	F102295
F102295-MS1	C2		1.25	3.3622		1.130659238	0		113.07		4735-1.RAW	19:27:28	0	155.106424	2.52278127	0	psample10	CT	1	F102295
F102295-MS2	C3		1.25	3.3622	0.0348826	1.108270405			55.41		4736-1.RAW	19:37:44	8.04375	152.101649	0	0	psample10	CT	1	F102295
0L00108-06RE1	C4		1.25	3.3622		0.026291814	0				4737-1.RAW	19:47:59	0	6.89079861	3.08087384	0	psample10	OK	1	F102295
1A00094-01RE1	C5		1.25	3.3622	0.0012431	0.355567308	0				4738-1.RAW	19:58:15	3.52904618	51.0824074	3.27728588	0	psample10	CT	1	F102295
SEQ-CCV2	C6		1	3.3622		0.4965316			99.43		4739-1.RAW	20:08:30	0	86.660735	0	0	psample10	CT	1	
SEQ-CCB2	C7		1	3.3622		0			0.00		4740-1.RAW	20:18:46	0	1.52829861	0	0	psample10	OK	1	
F102295-MS2	C8		1.25	3.3622	0	1.207344197	0		60.37		4741-1.RAW	20:29:01	0.3349675	165.398206	2.1729456	0	psample10	CT	1	F102295
F102295-MSD2	C9		1.25	3.3622	0.0647393	1.19756594	1.1066211				4742-1.RAW	20:39:17	12.0507837	164.08588	151.880301	0	psample10	OK	1	F102295
1A00004-01RE1	C10		1.25	3.3622		0.022316607	0				4743-1.RAW	20:49:32	0	6.35729167	2.81730324	0	psample10	OK	1	F102295
1A00004-02RE1	C11		1.25	3.3622	0.0330344	0.111158308	0.8937837				4744-1.RAW	20:59:48	7.79571759	18.2806134	123.315683	0	psample10	OK	1	F102295
1A00004-03RE1	C12		1.25	3.3622	0.0250474	0.014098637	0.8561682				4745-1.RAW	21:10:05	6.72378472	5.25436921	118.267361	0	psample10	OK	1	F102295
1A00004-04RE1	C13		1.25	3.3622	0	0.06252574	0.0655228				4746-1.RAW	21:20:21	3.05799673	11.7537037	12.1559317	0	psample10	OK	1	F102295
1A00019-01RE1	C14		1.25	3.3622	0	0	0				4747-1.RAW	21:30:36	0.73576437	2.44982639	1.79678819	0	psample10	CT	1	F102295

Pg 2

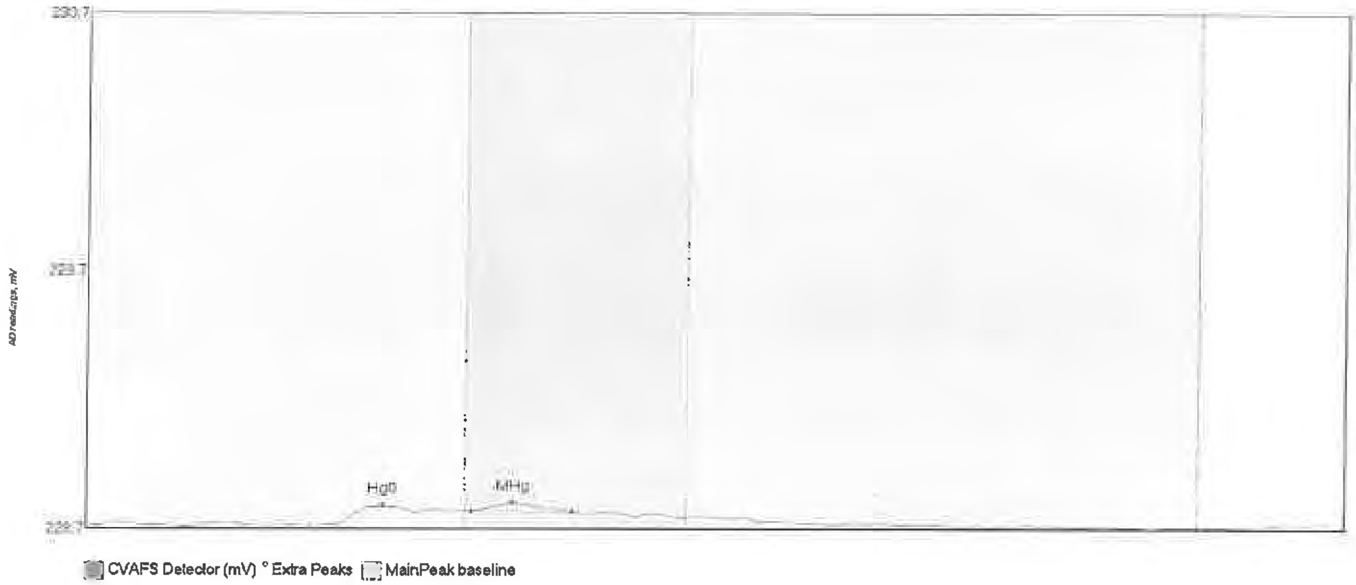
1A00019-02RE1	C15	1.25	3.3622	0.1079045	3.937049695	3.3434506		4748-1.RAW	21:40:53	17.8439236	531.748207	452.082087	0	psample10	OK	1	F102295
1A00019-03RE1	C16	1.25	3.3622		0.301586602	0.2232226		4749-1.RAW	21:51:08	0	43.8377315	33.3206019	0	psample10	OK	1	F102295
1A00019-04RE1	C17	1.25	3.3622		0.261755629	0.1903985		4750-1.RAW	22:01:24	0	38.4920718	28.9153356	0	psample10	OK	1	F102295
SEQ-CCV3	C18	1	3.3622	0	0.519477496		104.02	4751-1.RAW	22:11:40	2.22316667	90.5101563	0	0	psample10	CT	1	
SEQ-CCB3	C19	1	3.3622	0	0	0	0.00	4752-1.RAW	22:21:56	0.40836075	3.25784144	0.92094907	0	psample10	OK	1	
1A00094-02RE1	C20	1.25	3.3622		0.517631886	0.0606962		4753-1.RAW	22:32:11	0	72.8328704	11.5081597	0	psample10	CT	1	F102295
F012297-BS1	C21	1000	3.3622	24.282937	1893.91541	52.559554		4754-1.RAW	22:42:27	7.43593489	321.086921	12.179642	0	psample10	CT	1	F102297
F012297-BSD1	A1	1000	3.3622	11.894487	2081.921406	61.397297		4755-1.RAW	22:52:43	5.35763889	352.626952	13.6622685	0	psample10	CT	1	F102297
F012297-BLK1	A2	500	3.3622		7.335525545	0.1593705		4756-1.RAW	23:02:59	0	5.8234375	3.41568287	0	psample10	OK	1	F102297
F012297-BLK2	A3	500	3.3622		0	0		4757-1.RAW	23:13:15	0	2.79583333	1.95992477	0	psample10	OK	1	F102297
F012297-BLK3	A4	500	3.3622		5.509664425	0		4758-1.RAW	23:23:30	0	5.21082176	2.4494213	0	psample10	OK	1	F102297
1B00007-01	A5	2500	3.3622	25.71843	9546.871343			4759-1.RAW	23:33:45	5.08802811	643.998412	0	0	psample10	CT	1	F102297
F012297-MS1	A6	2500	3.3622		11274.39704		######	4760-1.RAW	23:44:00	0	759.92283	0	0	psample10	CT	1	F102297
F012297-MSD1	A7	2500	3.3622	109.83626	10945.53809			4761-1.RAW	23:54:16	10.7326968	737.854977	0	0	psample10	CT	1	F102297
1B00022-01	A8	500	3.3622	3.4236771	1869.030851			4762-1.RAW	0:04:32	4.51092807	630.462326	0	0	psample10	CT	1	F102297
SEQ-CCV4	A9	1	3.3622	0	0.573323151		114.81	4763-1.RAW	0:14:48	3.18559028	99.5433449	0	0	psample10	CT	1	
SEQ-CCB4	A10	1	3.3622		0.01241934		0.00	4764-1.RAW	0:25:04	0	5.44568866	0	0	psample10	OK	1	
F012297-MS2	A11	500	3.3622	2.5280694	2422.325672		121116.28	4765-1.RAW	0:35:20	4.21043241	816.104659	0	0	psample10	CT	1	F102297
F012297-MSD2	A12	500	3.3622	10.303714	1758.278931			4766-1.RAW	0:45:35	6.8193287	593.302671	0	0	psample10	CT	1	F102297
1B00001-01	A13	500	3.3622	5.6108697	25.49979081	0.5640921		4767-1.RAW	0:55:52	5.24477831	11.9179398	3.55147569	0	psample10	OK	1	F102297
1B00001-02	A14	500	3.3622		16.03216794			4768-1.RAW	1:06:08	0	8.74134838	0	0	psample10	OK	1	F102297
1B00007-02	A15	2500	3.3622	73.971975	2620.18746	0		4769-1.RAW	1:16:24	8.32604887	179.188079	1.56027199	0	psample10	OK	1	F102297
1B00007-03	A16	2500	3.3622	11.04339	2593.374833			4770-1.RAW	1:26:40	4.10326968	177.388836	0	0	psample10	CT	1	F102297
1B00007-04	A17	2500	3.3622	13.386084	3393.068211			4771-1.RAW	1:36:55	4.26047454	231.051707	0	0	psample10	CT	1	F102297
1B00007-05	A18	2500	3.3622	6.030723	4587.491155			4772-1.RAW	1:47:10	3.76689815	311.202633	0	0	psample10	CT	1	F102297
1B00007-06	A19	2500	3.3622	76.107156	4118.033474			4773-1.RAW	1:57:26	8.4693287	279.7	0	0	psample10	CT	1	F102297
1B00007-07	A20	2500	3.3622		3887.439168			4774-1.RAW	2:07:42	0	264.226128	0	0	psample10	CT	1	F102297
SEQ-CCV5	A21	1	3.3622	0.0014542	0.569099489		113.96	4775-1.RAW	2:17:57	3.60617557	98.8347801	0	0	psample10	OK	1	
SEQ-CCB5	B1	1	3.3622	0	0.005467925		0.00	4776-1.RAW	2:28:14	0.08492334	4.27951389	0	0	psample10	CT	1	
1B00008-01	B2	500	3.3622		1.79127911			4777-1.RAW	2:38:29	0	3.96322338	0	0	psample10	OK	1	F102297
1B00009-01	B3	500	3.3622	4.0793836	68.95187037	0		4778-1.RAW	2:48:45	4.73093171	26.4970486	1.12158565	0	psample10	OK	1	F102297
1B00015-01	B4	2500	3.3622		2810.093574			4779-1.RAW	2:59:01	0	191.931597	0	0	psample10	CT	1	F102297
1B00015-02	B5	2500	3.3622	0	4083.96502			4780-1.RAW	3:09:16	2.70202913	277.41386	0	0	psample10	CT	1	F102297
1B00015-03	B6	2500	3.3622	0	5601.16101			4781-1.RAW	3:19:32	1.58559959	379.224248	0	0	psample10	CT	1	F102297
1B00017-01	B7	2500	3.3622	90.924814	463.3816818			4782-1.RAW	3:29:48	9.46365741	34.4571181	0	0	psample10	OK	1	F102297
1B00019-01	B8	2500	3.3622	0	946.505293			4783-1.RAW	3:40:03	2.42332176	66.876794	0	0	psample10	CT	1	F102297
1B00020-01	B9	500	3.3622	3.1933091	1046.32322			4784-1.RAW	3:50:18	4.43363465	354.426192	0	0	psample10	CT	1	F102297
1B00024-01	B10	500	3.3622		10.15909058			4785-1.RAW	4:00:34	0	6.7708044	0	0	psample10	OK	1	F102297
1B00025-01	B11	500	3.3622		2.559068716	0		4786-1.RAW	4:10:50	0	4.22083333	1.31805556	0	psample10	OK	1	F102297
SEQ-CCV6	B12	1	3.3622		0.476451094		95.41	4787-1.RAW	4:21:05	0	83.2920139	0	0	psample10	CT	1	
SEQ-CCB6	B13	1	3.3622		0.000434992		0.00	4788-1.RAW	4:31:21	0	3.43518519	0	0	psample10	OK	1	

MHg27001-210204-1

WS	A1	F102295-BSD1	B18		
HP	A2	F102295-BLK1	B19		
HP	A3	F102295-BLK2	B20		
P	A4	F102295-BLK3	B21		
P	A5	1B00004-01	C1		
P	A6	F102295-MS1	C2		
WS	A7	F102295-MS2 DI MRS 2/5/21	C3		
WS	A8	0L00108-06RE	C4		
SEQ-IBL1	A9	1A00094-01RE	C5		
SEQ-CAL1	A10	SEQ-CCV2	C6		
SEQ-CAL2	A11	SEQ-CCB2	C7		
SEQ-CAL3	A12	F102295-MS2	C8		
SEQ-CAL4	A13	F102295-MSD2	C9		
SEQ-CAL5	A14	1A00004-01RE	C10		
SEQ-ICV1	A15	1A00004-02RE	C11		
SEQ-ICB1	A16	1A00004-03RE	C12		
WS	A17	1A00004-04RE	C13		
WS	A18	1A00019-01RE	C14	1B00001-02	A14
WS	A19	1A00019-02RE	C15	1B00007-02	A15
WS	A20	1A00019-03RE	C16	1B00007-03	A16
WS	A21	1A00019-04RE	C17	1B00007-04	A17
WS	B1	SEQ-CCV3	C18	1B00007-05	A18
WS	B2	SEQ-CCB3	C19	1B00007-06	A19
WS	B3	1A00094-02RE	C20	1B00007-07	A20
WS	B4	F012297-BS1	C21	SEQ-CCV5	A21
WS	B5	F012297-BSD1	A1	SEQ-CCB5	B1
WS	B6	F012297-BLK1	A2	1B00008-01	B2
WS	B7	F012297-BLK2	A3	1B00009-01	B3
WS	B8	F012297-BLK3	A4	1B00015-01	B4
WS	B9	1B00007-01	A5	1B00015-02	B5
WS	B10	F012297-MS1	A6	1B00015-03	B6
WS	B11	F012297-MSD1	A7	1B00017-01	B7
WS	B12	1B00022-01	A8	1B00019-01	B8
WS	B13	SEQ-CCV4	A9	1B00020-01	B9
WS	B14	SEQ-CCB4	A10	1B00024-01	B10
SEQ-CCV1	B15	F012297-MS2	A11	1B00025-01	B11
SEQ-CCB1	B16	F012297-MSD2	A12	SEQ-CCV6	B12
F102295-BS1	B17	1B00001-01	A13	SEQ-CCB6	B13

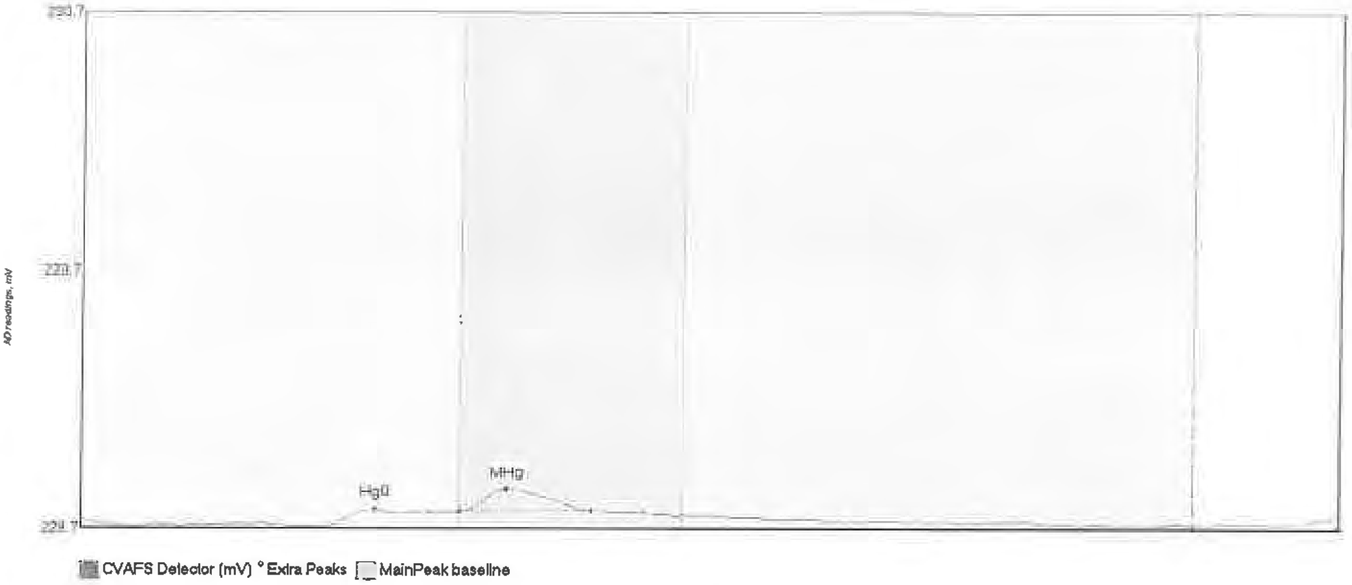
Verified by: [signature] 2/5/21

#11: SEQ-IBL1

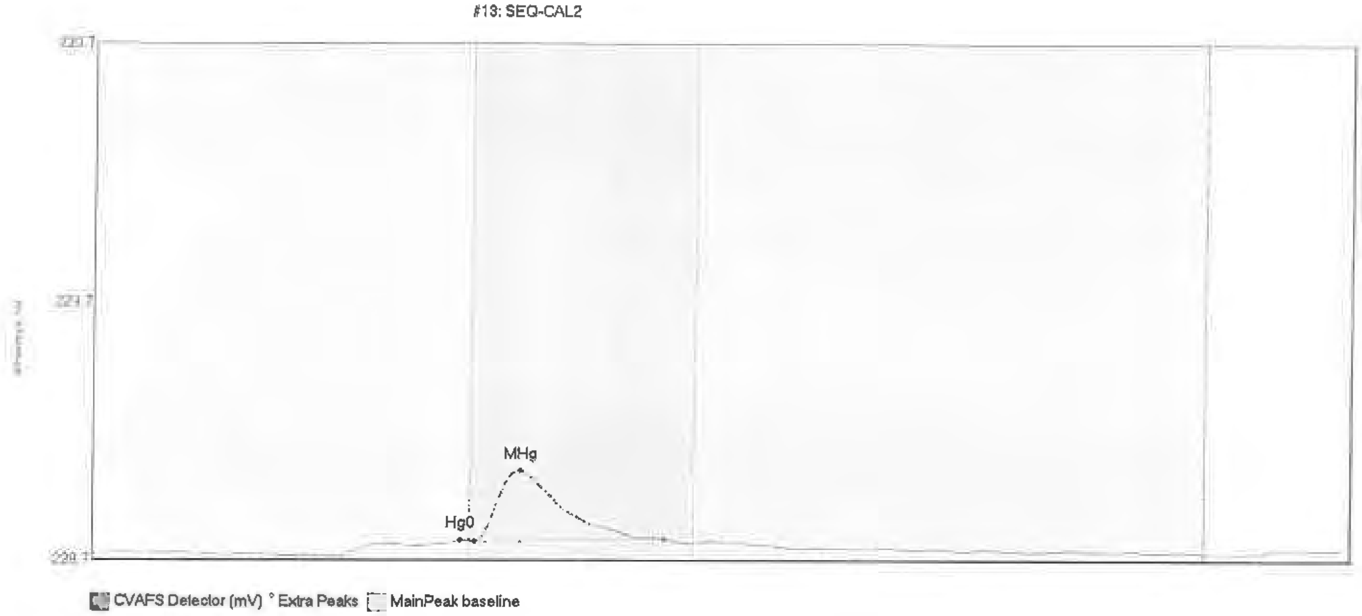


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-IBL1 Hg0	4.250	49.8	65.0	228.77	228.82	58.8	0.073	OK	228.7681	0.00	0.01	
SEQ-IBL1 MHg	3.362	76.2	96.1	228.82	228.81	84.4	0.031	OK	228.7681	0.00	0.01	

#12: SEQ-CAL1

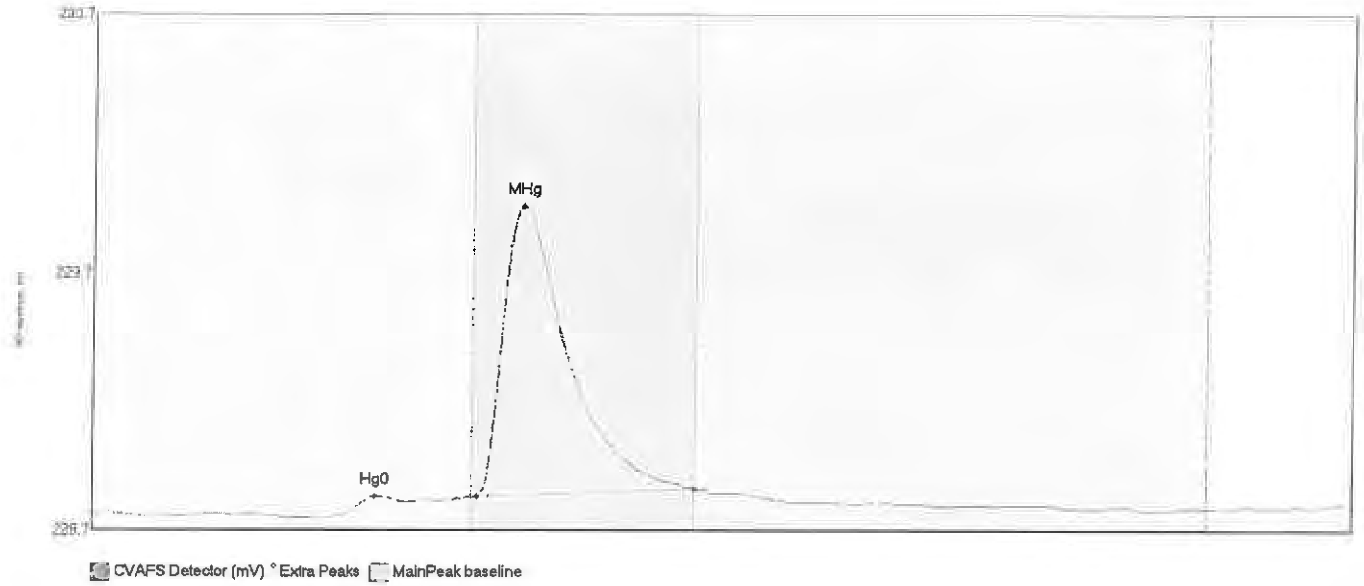


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CAL1 Hg0	2.544	48.3	63.2	228.74	228.79	58.5	0.064	OK	228.7559	0.00	0.01	
SEQ-CAL1 MHg	11.790	75.0	100.9	228.79	228.80	84.2	0.088	OK	228.7559	0.00	0.01	



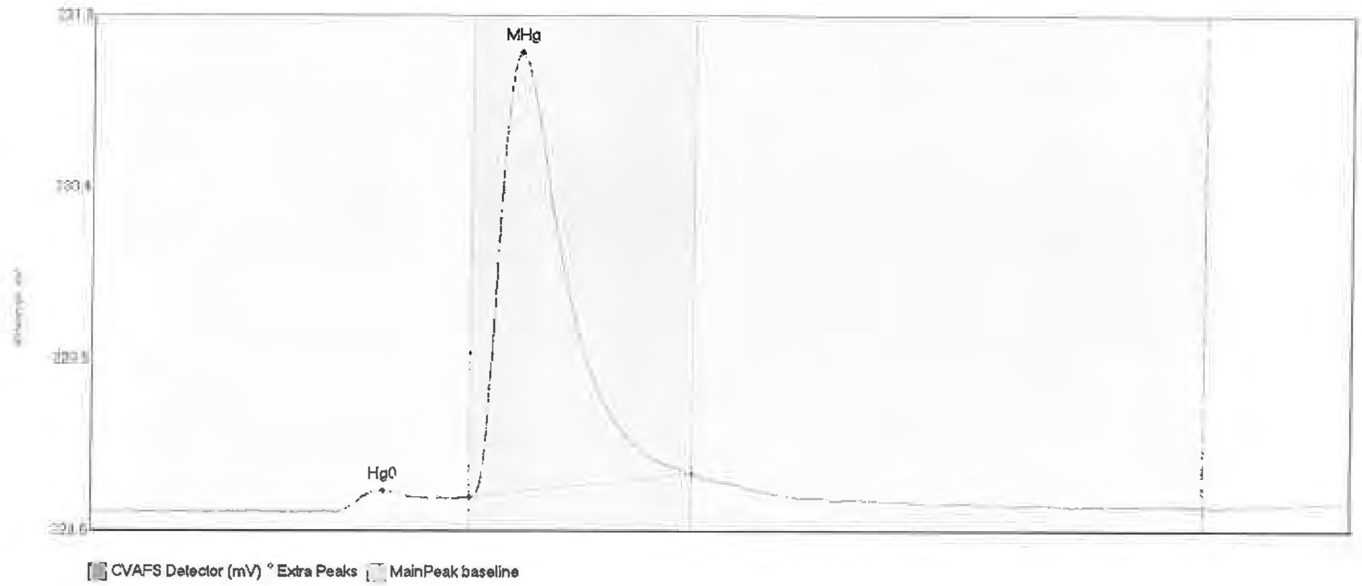
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CAL2 Hg0	2.935	49.2	74.2	228.71	228.78	73.3	0.067	OK	228.7217	0.00	0.02	
SEQ-CAL2 MHg	38.469	76.0	113.1	228.77	228.78	85.0	0.272	OK	228.7217	0.00	0.02	

#14: SEQ-CAL3

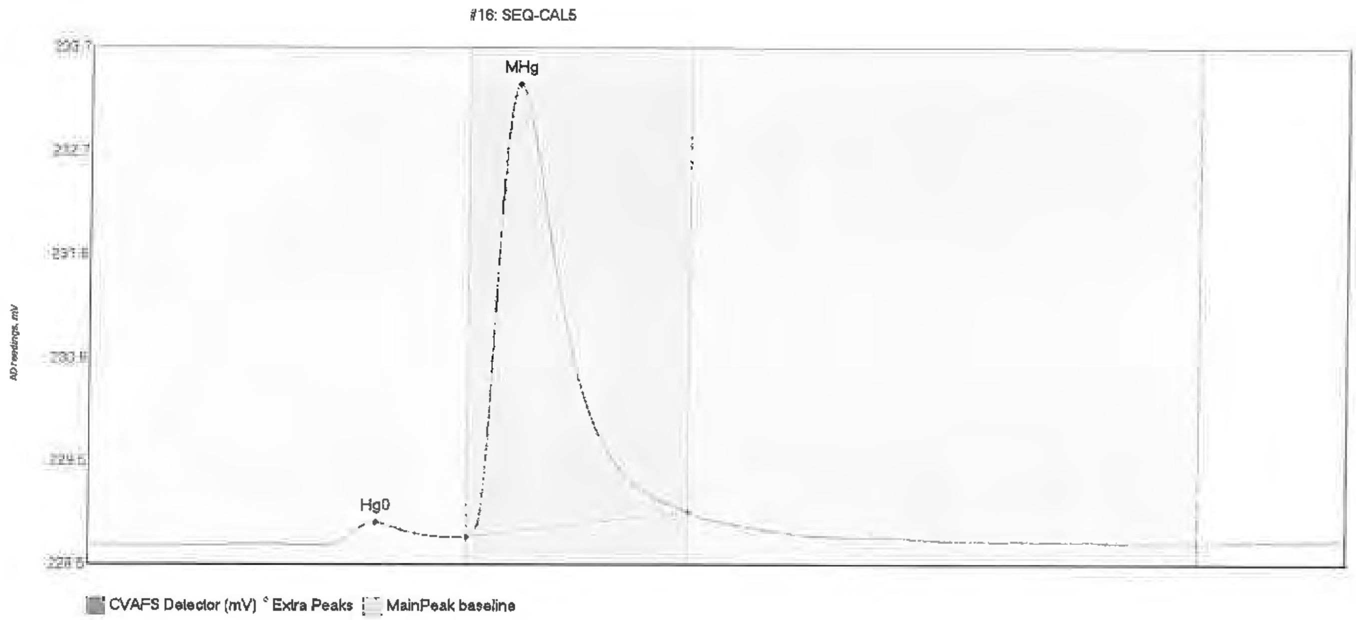


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CAL3 Hg0	3.064	49.2	62.0	228.71	228.76	55.9	0.072	OK	228.7168	0.00	0.04	
SEQ-CAL3 MHg	165.319	76.0	119.0	228.78	228.81	84.9	1.124	CT	228.7168	0.00	0.04	

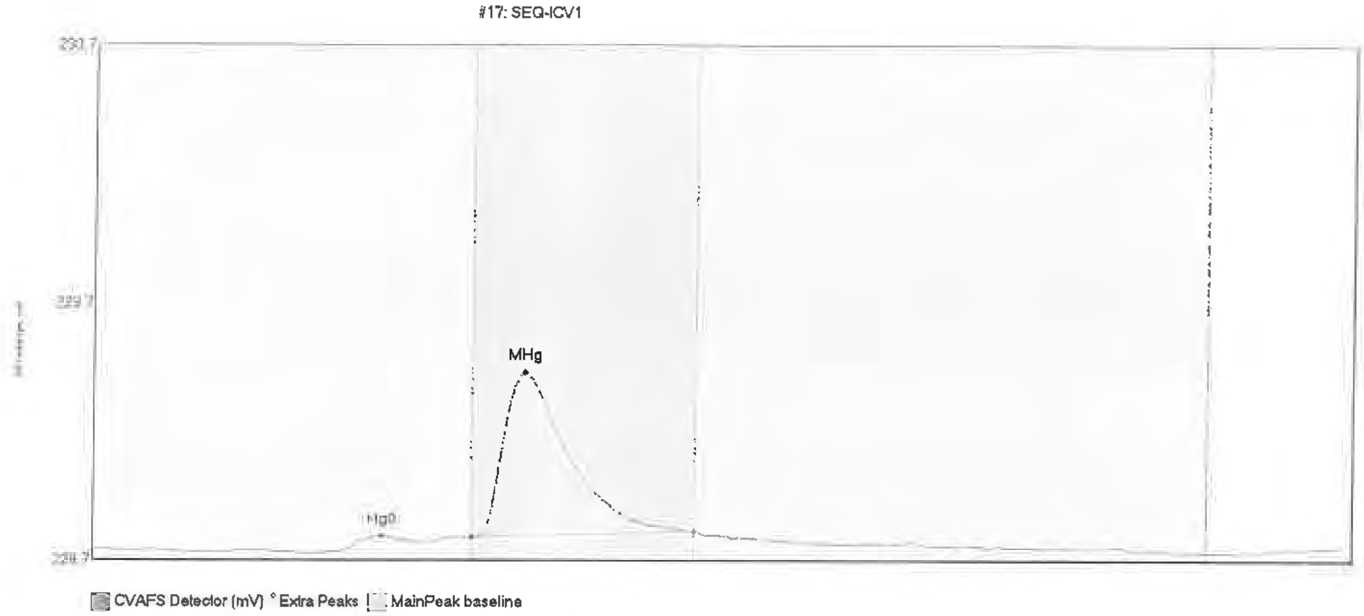
#15: SEQ-CAL4



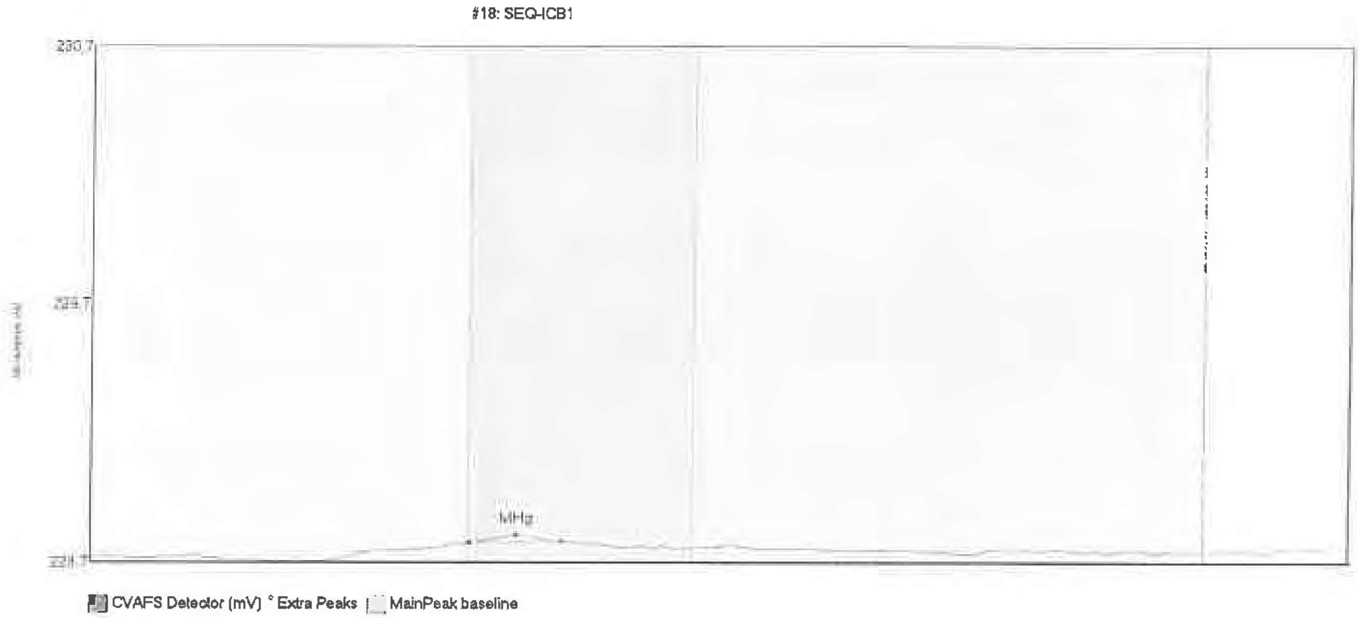
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CAL4 Hg0	7.454	48.7	67.2	228.71	228.78	58.0	0.110	OK	228.7100	0.00	0.05	
SEQ-CAL4 MHg	336.280	75.0	119.0	228.79	228.91	84.7	2.276	CT	228.7100	0.00	0.05	



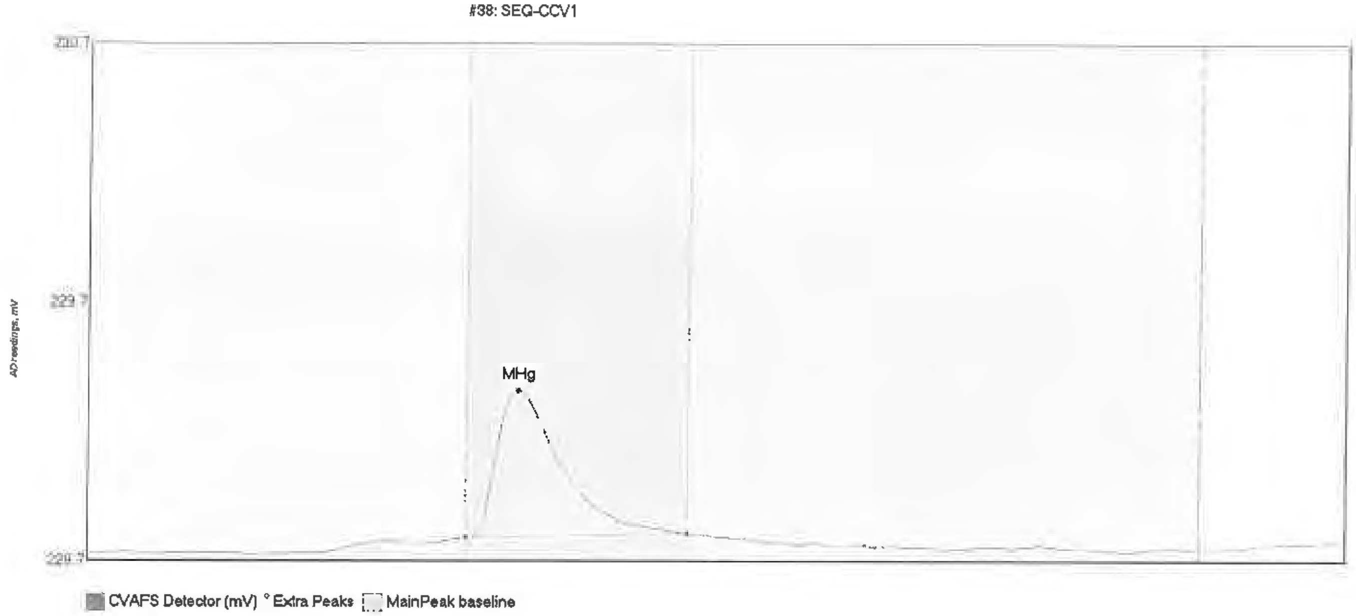
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CAL5 Hg0	22.258	46.5	75.0	228.71	228.79	57.3	0.225	CT	228.7106	0.00	0.04	
SEQ-CAL5 MHg	668.546	75.0	119.0	228.79	229.04	85.0	4.530	CT	228.7106	0.00	0.04	



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-ICV1 Hg0	4.174	47.5	66.4	228.73	228.77	57.4	0.064	OK	228.7423	0.00	0.01	
SEQ-ICV1 MHg	93.658	75.2	119.0	228.79	228.81	85.2	0.641	CT	228.7423	0.00	0.01	

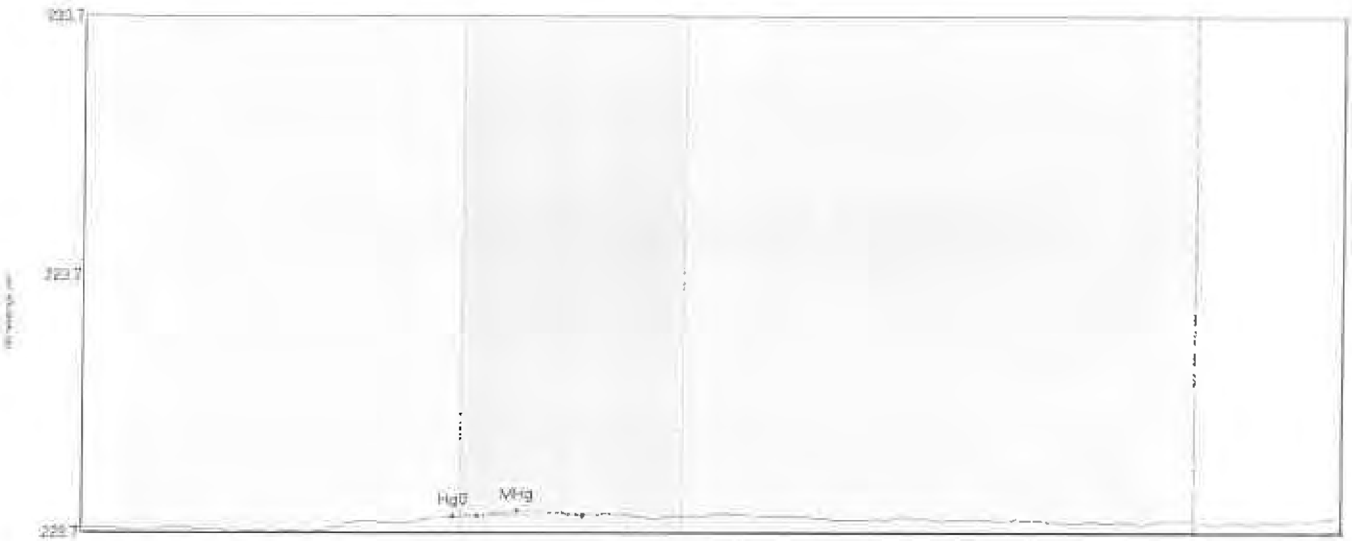


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-ICB1	2.703	75.3	93.3	228.79	228.79	84.5	0.031	OK	228.7326	0.00	0.04	



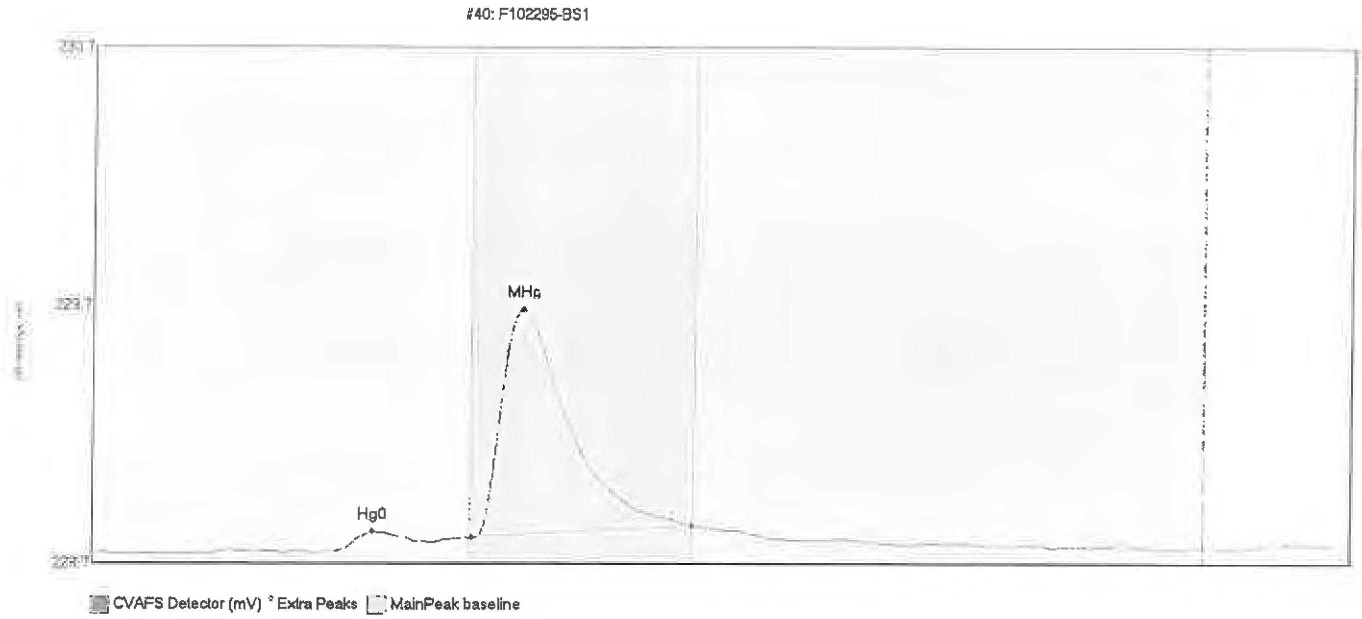
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCV1	84.450	75.0	119.0	228.77	228.78	85.4	0.567	CT	228.7054	0.00	0.05	

#39: SEQ-CCB1

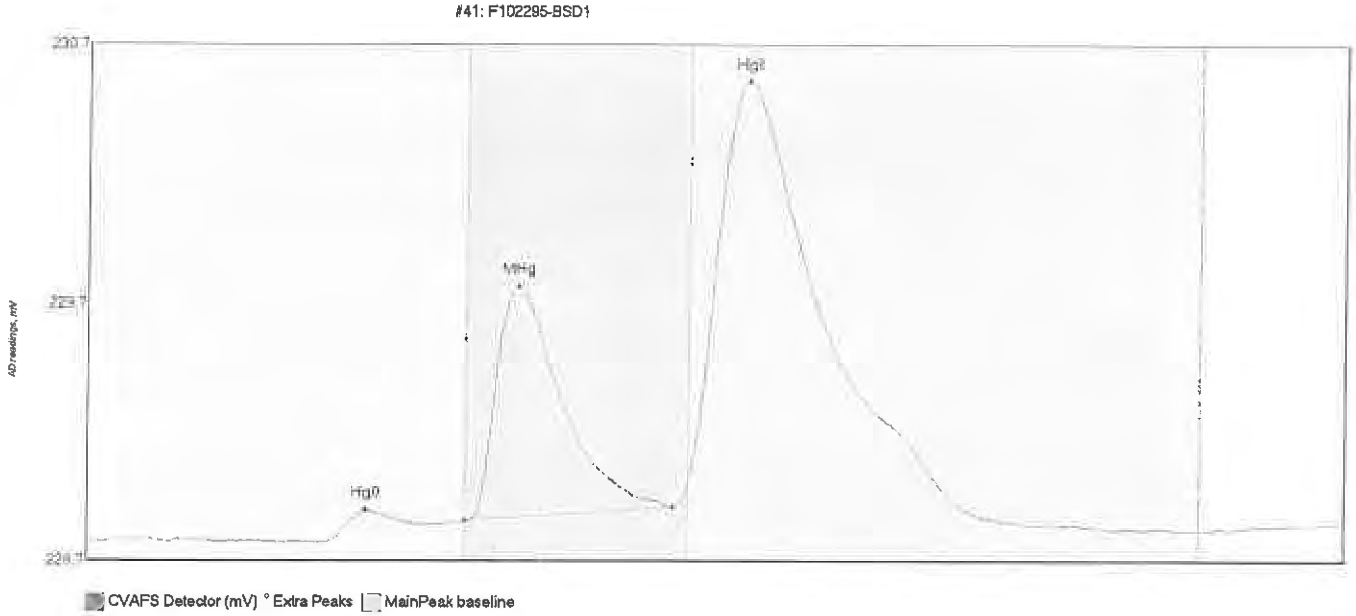


CVAFS Detector (mV) ° Extra Peaks MainPeak baseline

Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCB1 Hg0	1.296	50.1	74.7	228.74	228.78	73.5	0.044	OK	228.7353	0.00	0.04	
SEQ-CCB1 MHg	2.120	78.3	99.2	228.78	228.78	86.1	0.017	OK	228.7353	0.00	0.04	

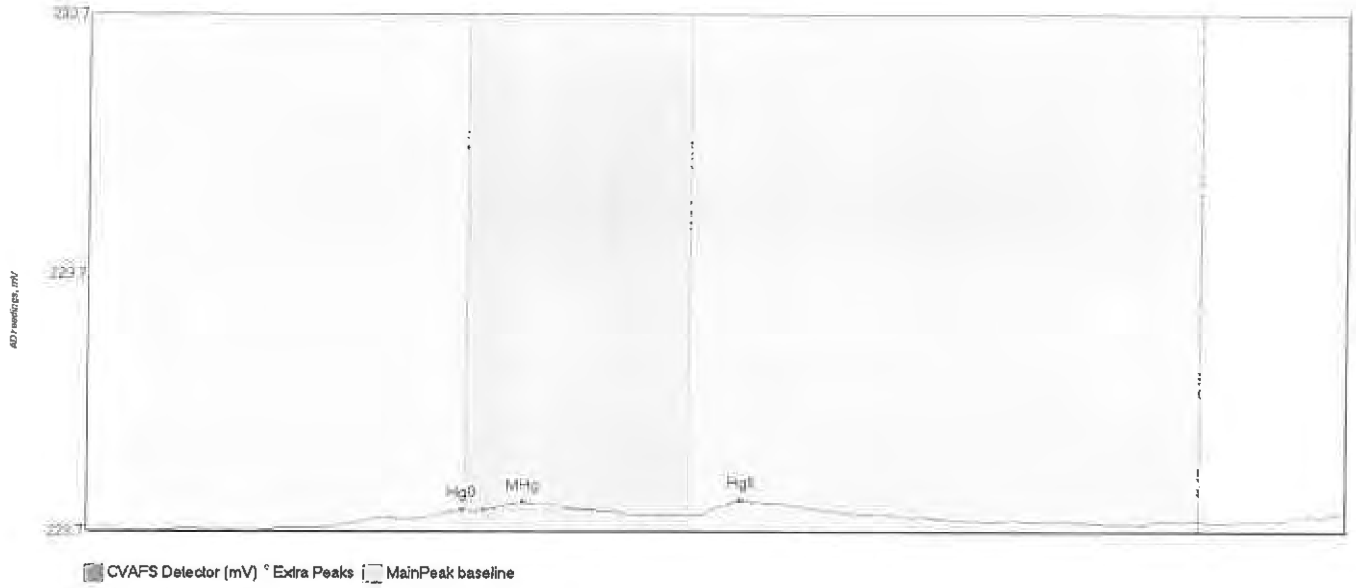


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102295-BS1 Hg0	5.751	47.9	67.7	228.75	228.79	55.9	0.078	OK	228.7495	0.00	0.03	F102295
F102295-BS1 MHg	133.067	75.4	118.6	228.81	228.85	85.1	0.881	OK	228.7495	0.00	0.03	F102295



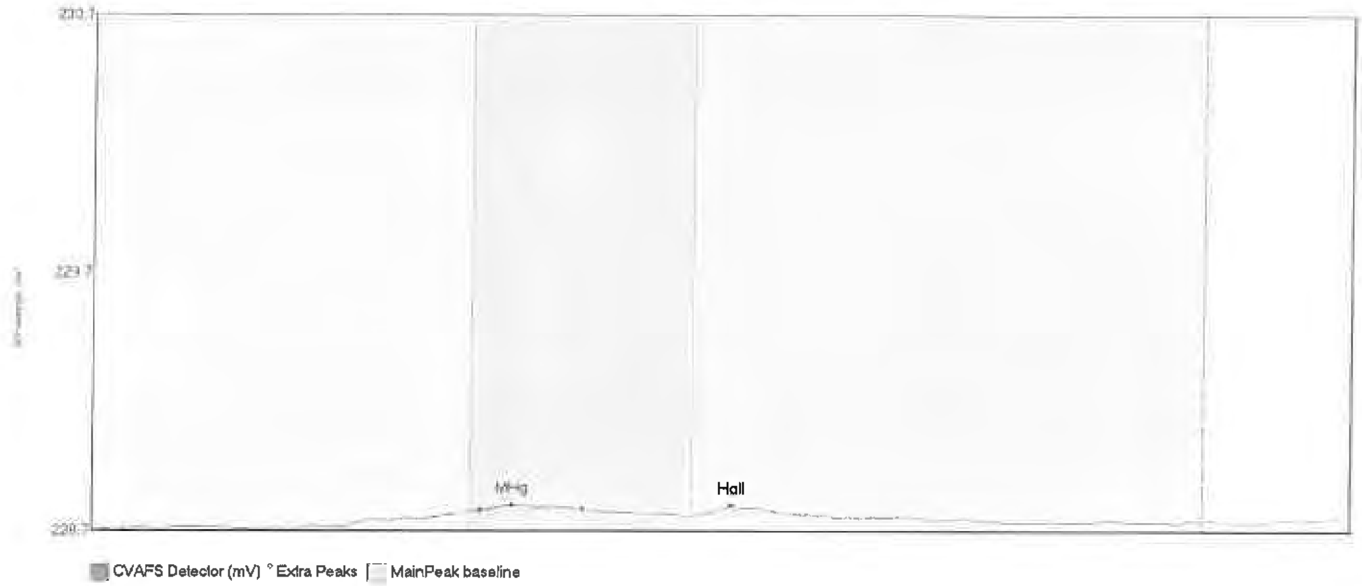
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102295-BSD1 Hg	9.023	47.1	67.0	228.73	228.80	55.4	0.122	OK	228.7390	0.00	0.07	F102295
F102295-BSD1 MH	132.879	75.0	115.9	228.82	228.87	85.2	0.908	OK	228.7390	0.00	0.07	F102295
F102295-BSD1 Hg	361.067	119.0	179.0	228.97	228.82	130.4	1.545	OK	228.7390	0.00	0.07	F102295

#42: F102295-BLK1



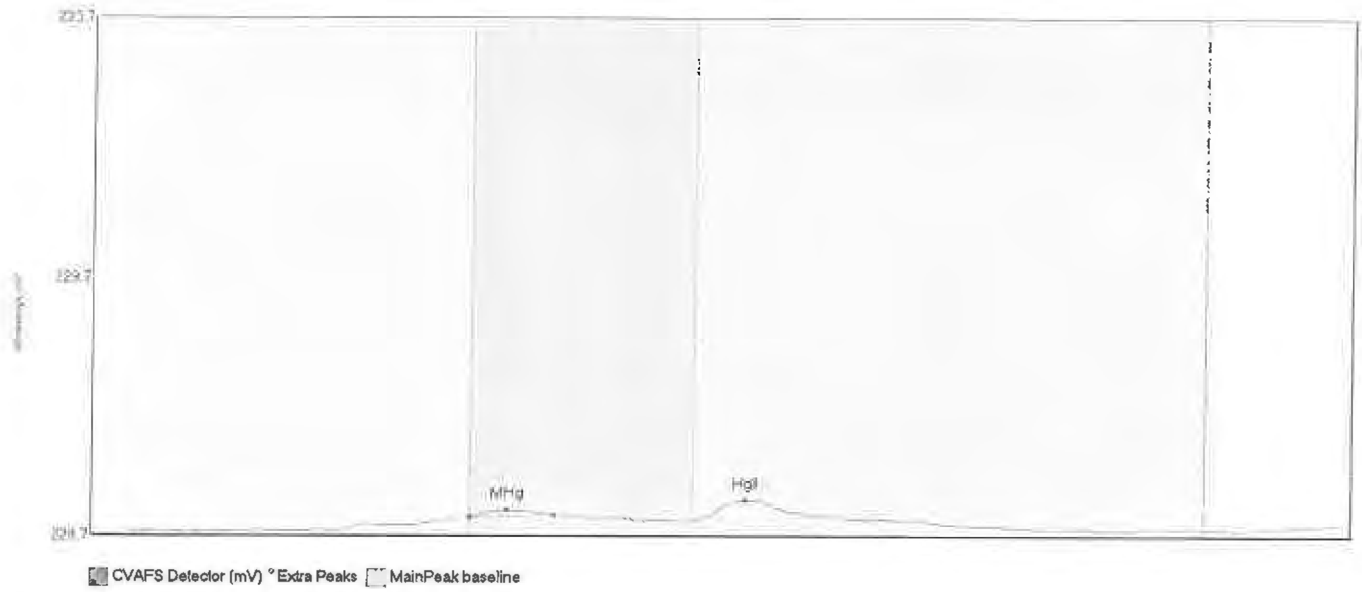
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102295-BLK1 Hg	1.000	45.8	74.9	228.76	228.83	74.3	0.068	OK	228.7597	0.00	0.05	F102295
F102295-BLK1 MH	3.583	78.7	100.1	228.83	228.83	86.5	0.031	OK	228.7597	0.00	0.05	F102295
F102295-BLK1 Hg	10.340	120.7	153.7	228.81	228.81	129.3	0.058	OK	228.7597	0.00	0.05	F102295

#43: F102295-BLK2



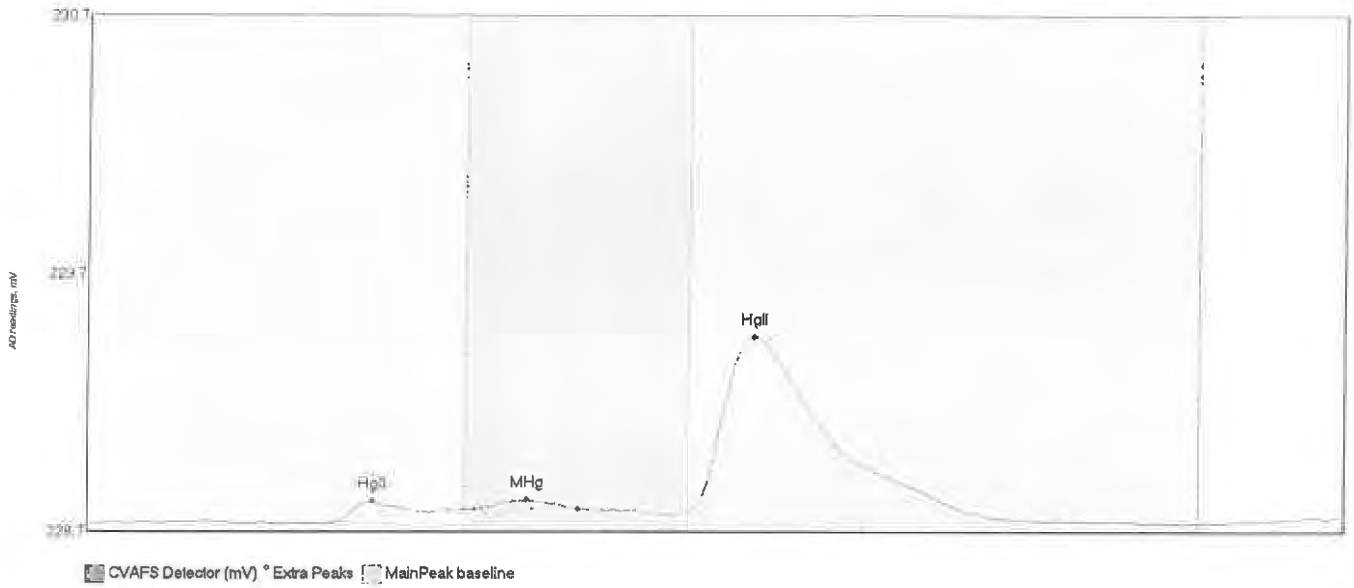
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102295-BLK2 MH	2.446	76.9	97.3	228.82	228.83	83.2	0.021	OK	228.7583	0.00	0.04	F102295
F102295-BLK2 Hg	2.977	121.0	140.2	228.81	228.81	126.9	0.032	OK	228.7583	0.00	0.04	F102295

#44: F102295-BLK3

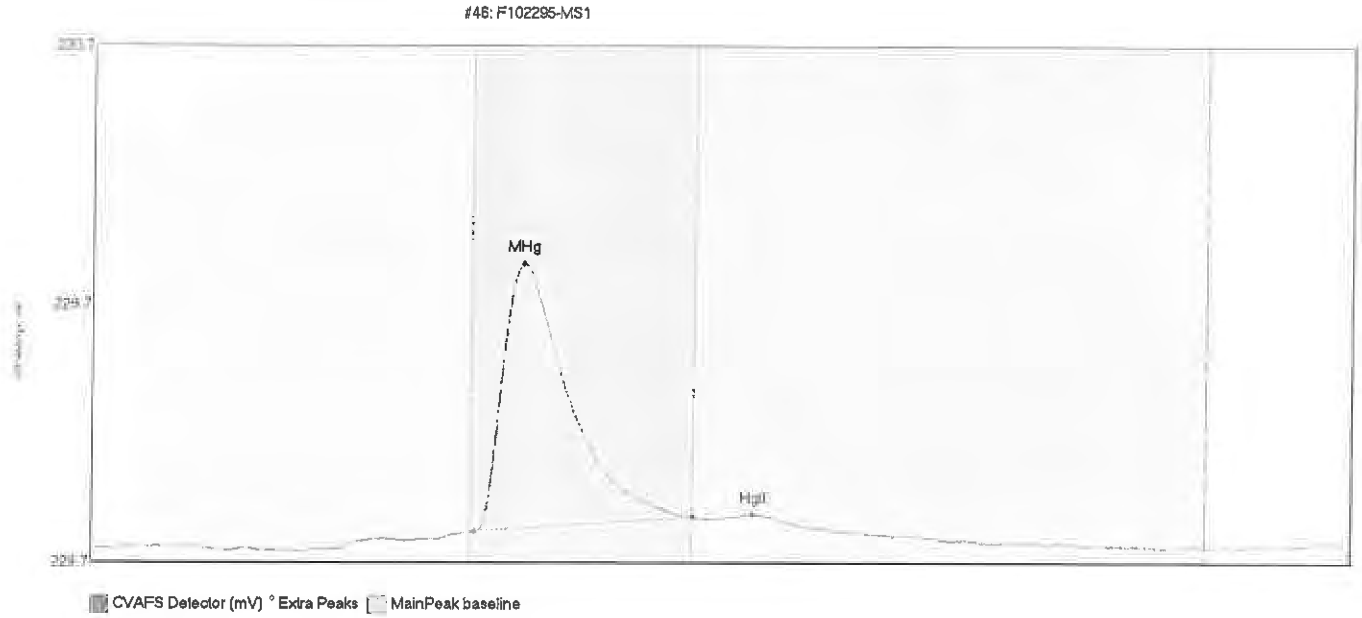


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102295-BLK3 MH	2.532	75.0	91.4	228.81	228.82	82.2	0.029	OK	228.7457	0.00	0.04	F102295
F102295-BLK3 Hg	10.946	119.3	151.0	228.80	228.80	129.5	0.077	OK	228.7457	0.00	0.04	F102295

#45: 1B00004-01

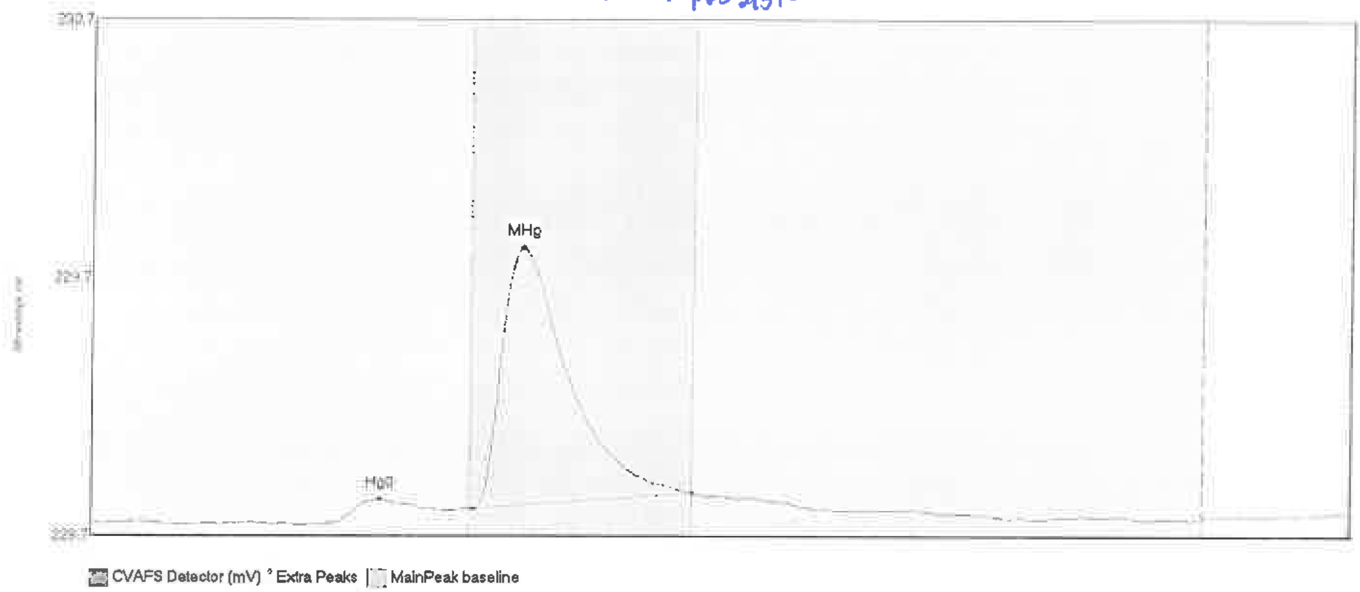


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00004-01 Hg0	6.201	47.4	68.1	228.75	228.79	56.6	0.086	OK	228.7504	0.00	0.02	F102295
1B00004-01 MHg	4.092	77.0	97.4	228.81	228.81	87.4	0.036	OK	228.7504	0.00	0.02	F102295
1B00004-01 HgII	153.952	119.0	173.6	228.79	228.80	131.9	0.686	OK	228.7504	0.00	0.02	F102295

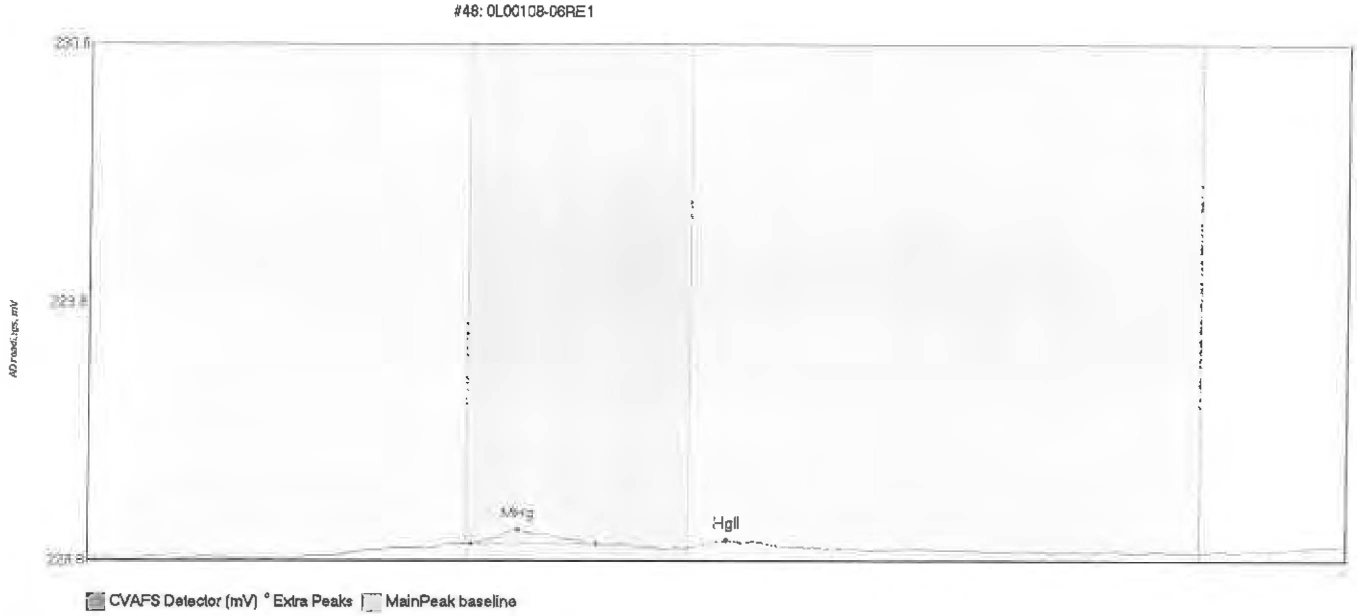


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102295-MS1 MHg	155.106	75.9	119.0	228.81	228.87	85.2	1.037	CT	228.7461	0.00	0.02	F1022[illegible]
F102295-MS1 HgI	2.523	124.9	140.9	228.87	228.83	130.8	0.016	OK	228.7461	0.00	0.02	F102295

#47: F102295-MS2 MSD1 MPS 2/5/21

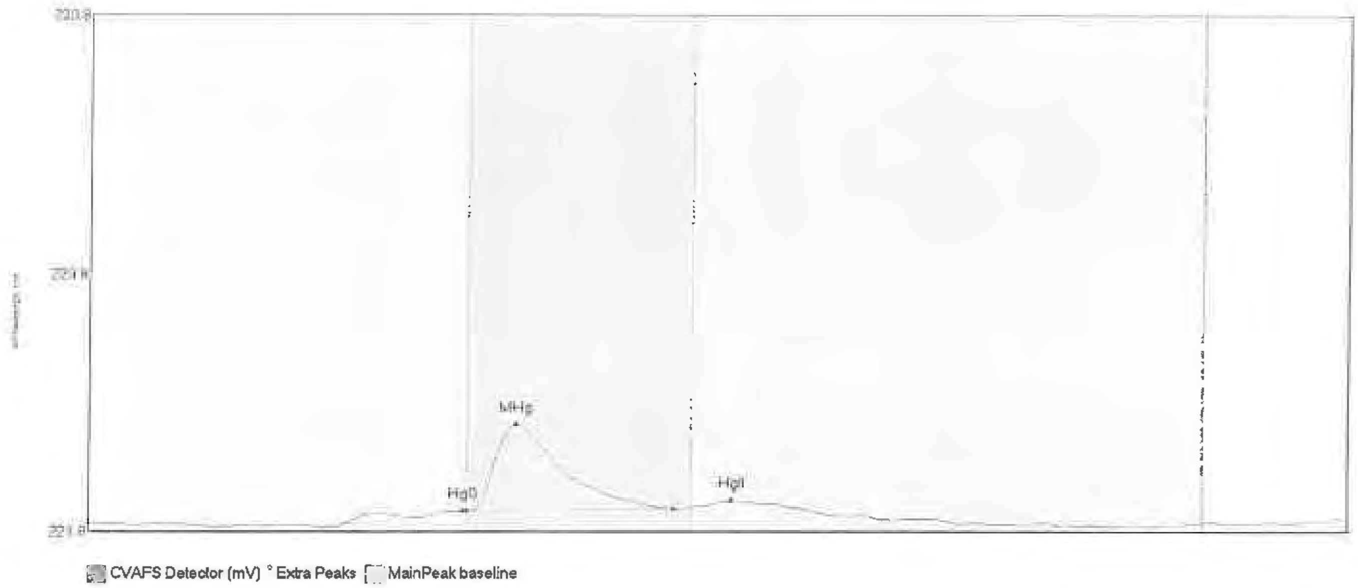


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102295-MS2 Hg0	7.784	48.8	70.8	228.78	228.82	57.2	0.086	OK	228.7762	0.00	0.04	F102295
F102295-MS2 MHg	152.102	75.6	119.0	228.83	228.89	85.4	1.009	CT	228.7762	0.00	0.04	F102295

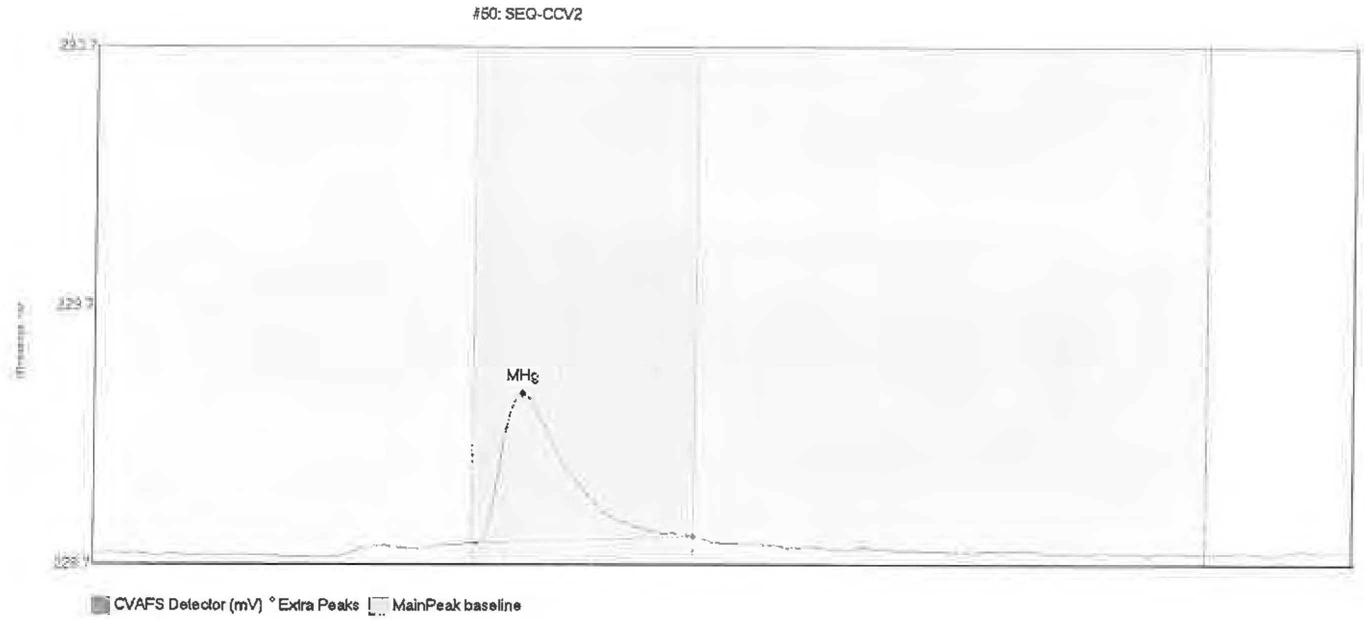


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
0L00103-06RE1 M	6.891	75.9	100.8	228.84	228.84	85.2	0.055	OK	228.7900	0.00	0.05	F102295
0L00108-06RE1 H	3.081	119.0	138.2	228.83	228.83	126.6	0.029	OK	228.7900	0.00	0.05	F102295

#49: 1A00094-01RE1



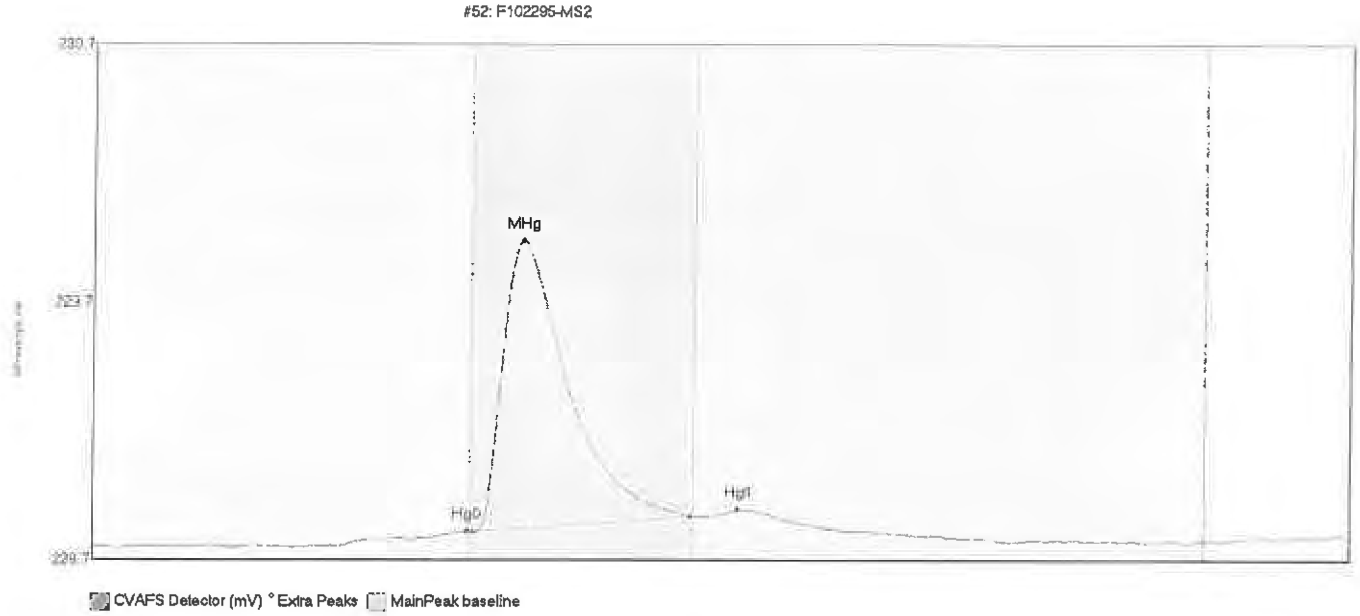
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00094-01RE1 H	3.529	49.3	75.0	228.78	228.84	74.2	0.058	CT	228.7941	0.00	0.01	F102295
1A00094-01RE1 M	51.082	75.1	115.5	228.84	228.85	84.5	0.337	OK	228.7941	0.00	0.01	F102295
1A00094-01RE1 H	3.277	119.0	139.0	228.85	228.86	127.0	0.031	OK	228.7941	0.00	0.01	F102295



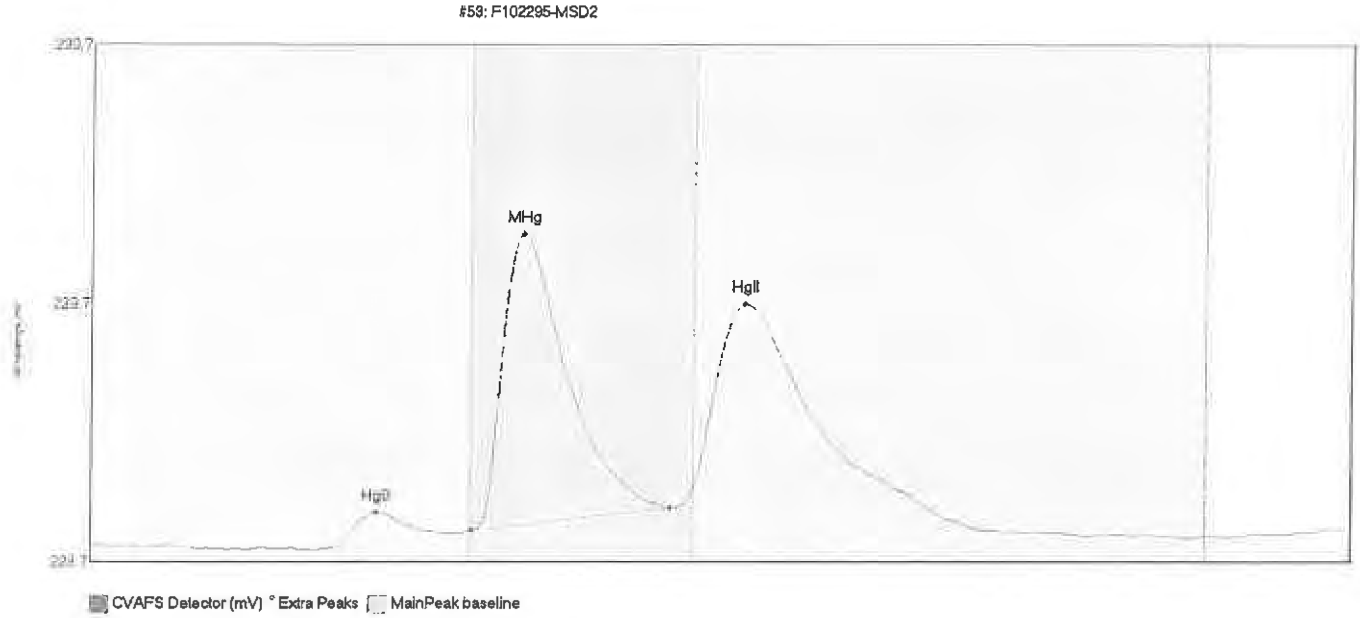
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCV2	86.661	75.6	119.0	228.80	228.83	84.8	0.580	CT	228.7643	0.00	0.01	

#51: SEQ-CCB2

Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCB2	1.528	78.0	93.9	228.80	228.80	86.8	0.020	OK	228.7474	0.00	0.04	

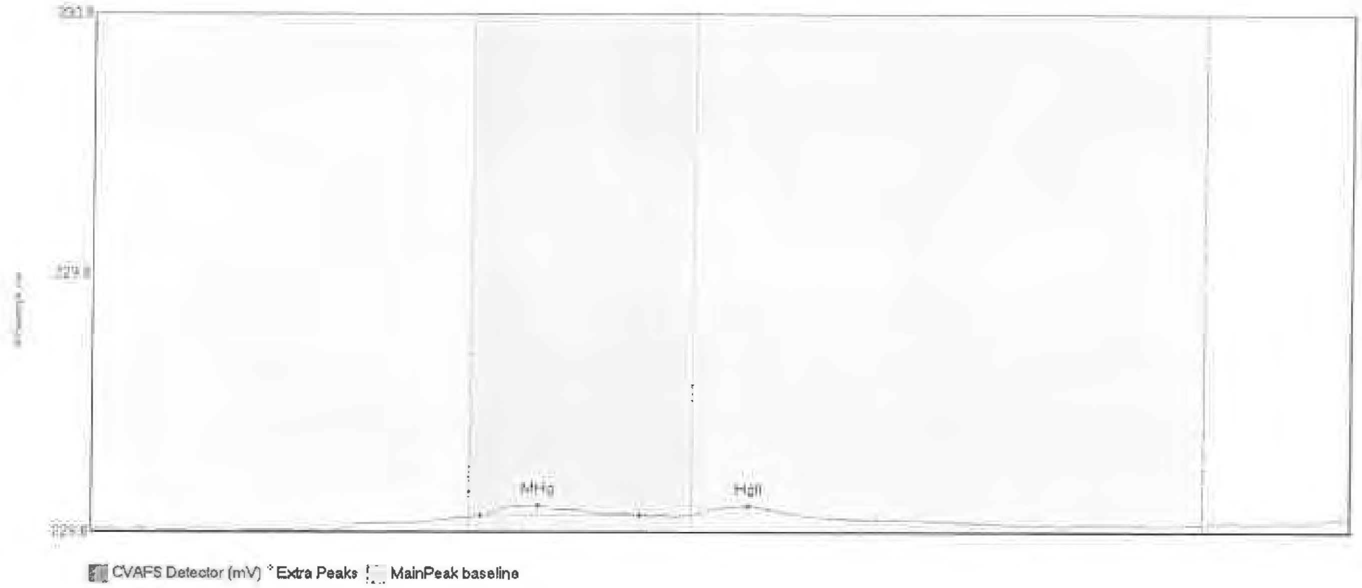


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102295-MS2 Hg0	0.335	42.4	75.0	228.76	228.82	74.3	0.059	CT	228.7559	0.00	0.05	F102295
F102295-MS2 MHg	165.398	75.7	118.3	228.82	228.87	85.2	1.126	OK	228.7559	0.00	0.05	F102295
F102295-MS2 HgI	2.173	123.6	136.8	228.88	228.86	127.7	0.020	OK	228.7559	0.00	0.05	F102295

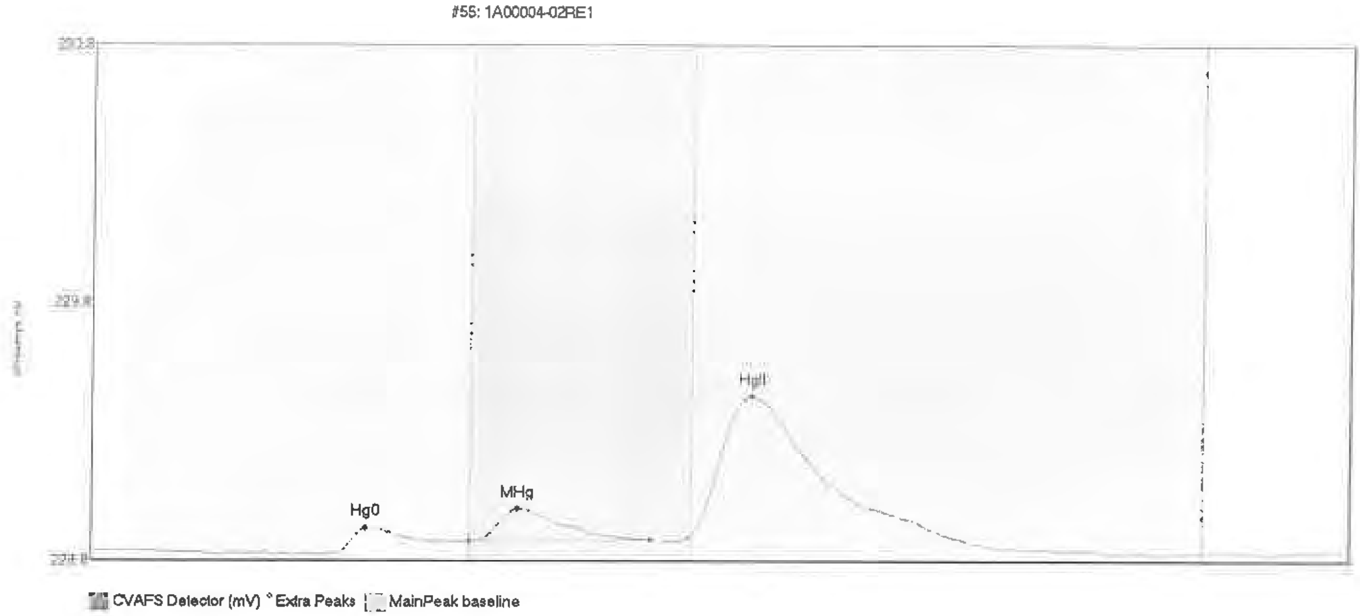


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F102295-MSD2 Hg	12.051	47.3	70.9	228.77	228.83	56.3	0.134	OK	228.7813	0.00	0.06	F102295
F102295-MSD2 MH	164.086	75.4	114.3	228.84	228.92	85.3	1.149	OK	228.7813	0.00	0.06	F102295
F102295-MSD2 Hg	151.880	119.0	168.8	229.01	228.88	129.0	0.708	OK	228.7813	0.00	0.06	F102295

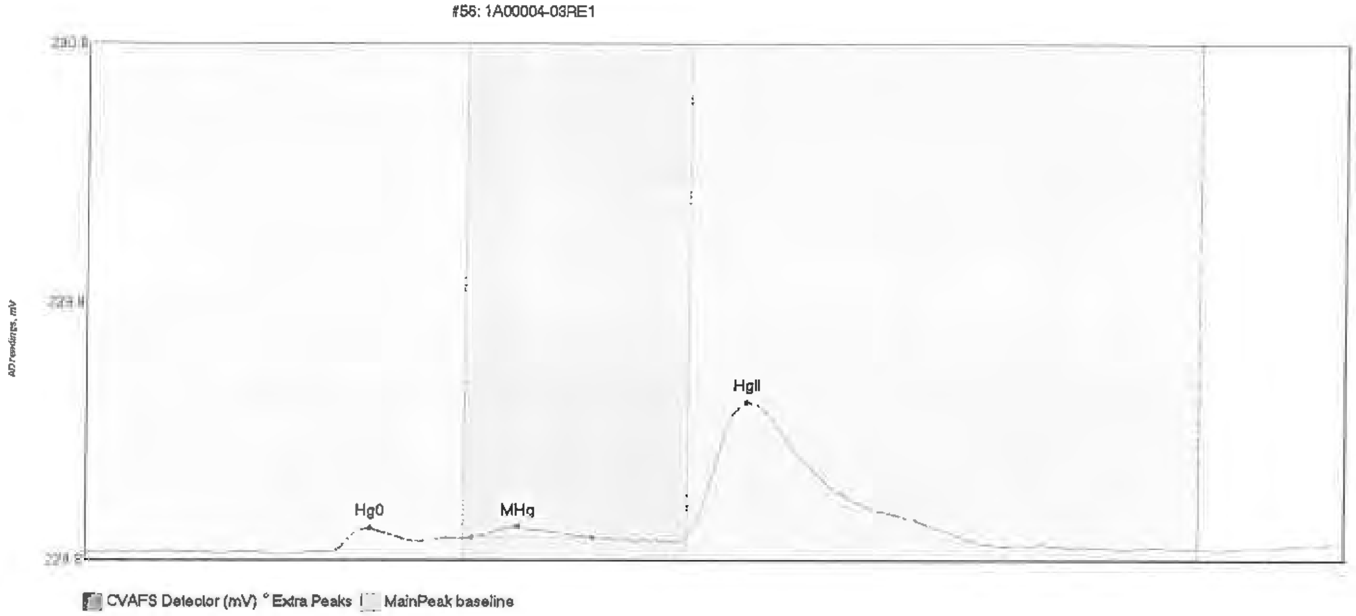
#54: 1A00004-01RE1



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00004-01RE1 M	6.339	77.3	108.6	228.85	228.85	88.5	0.040	OK	228.8013	0.00	0.04	F102295
1A00004-01RE1 H	2.817	120.7	137.4	228.86	228.86	130.1	0.028	OK	228.8013	0.00	0.04	F102295

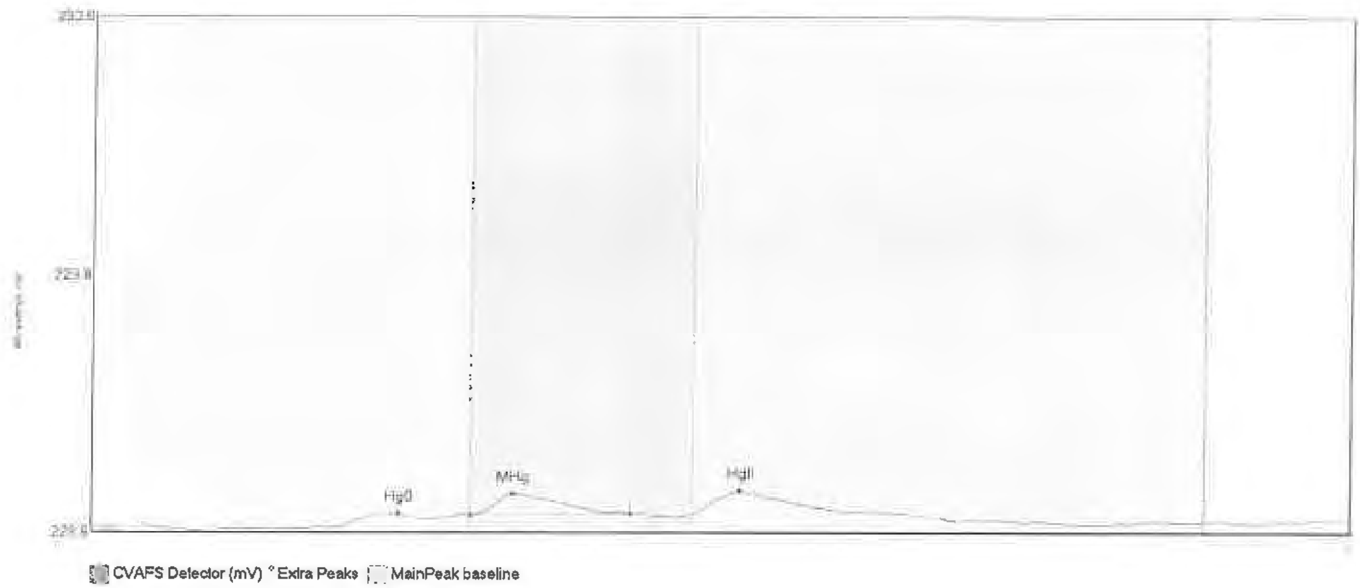


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00004-02RE1 H	7.796	49.1	67.2	228.79	228.84	54.8	0.098	OK	228.8057	0.00	-0.01	F102295
1A00004-02RE1 M	18.281	75.0	110.9	228.84	228.84	84.4	0.127	OK	228.8057	0.00	-0.01	F102295
1A00004-02RE1 H	123.316	119.0	177.3	228.87	228.82	130.8	0.535	OK	228.8057	0.00	-0.01	F102295



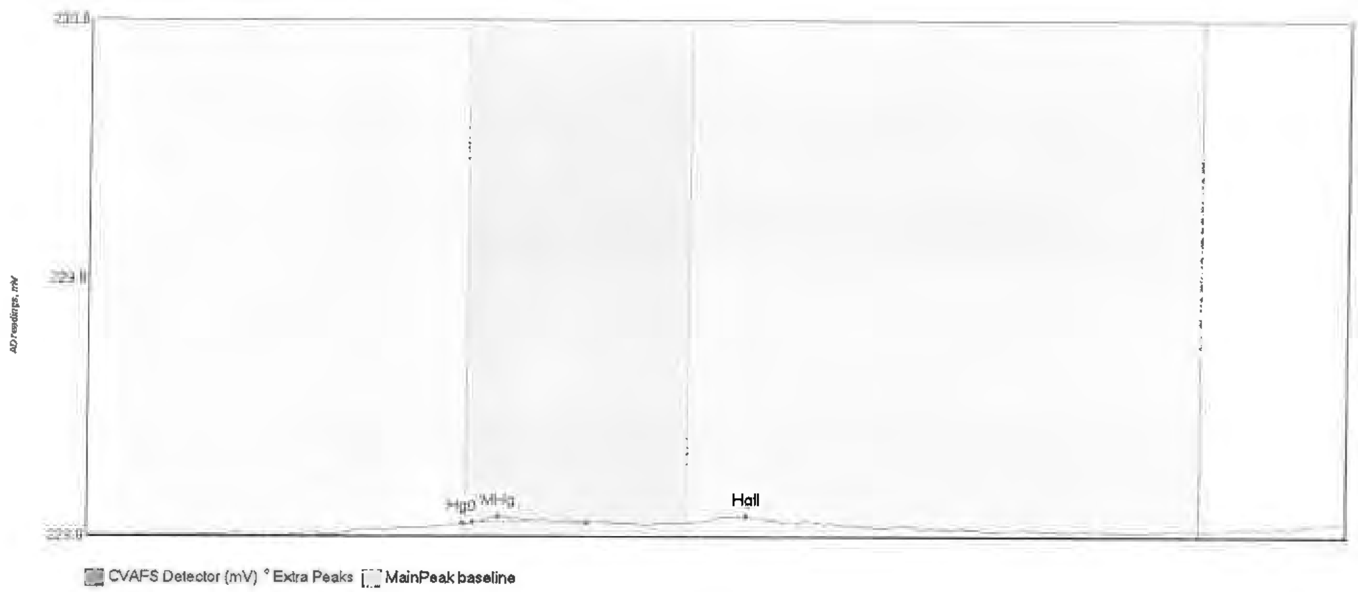
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00004-03RE1 H	6.724	48.1	66.6	228.79	228.84	56.5	0.092	OK	228.7910	0.00	0.04	F102295
1A00004-03RE1 M	5.254	76.6	100.2	228.85	228.85	85.7	0.042	OK	228.7910	0.00	0.04	F102295
1A00004-03RE1 H	118.267	119.0	174.6	228.86	228.84	130.6	0.513	OK	228.7910	0.00	0.04	F102295

#57: 1A00004-04RE1



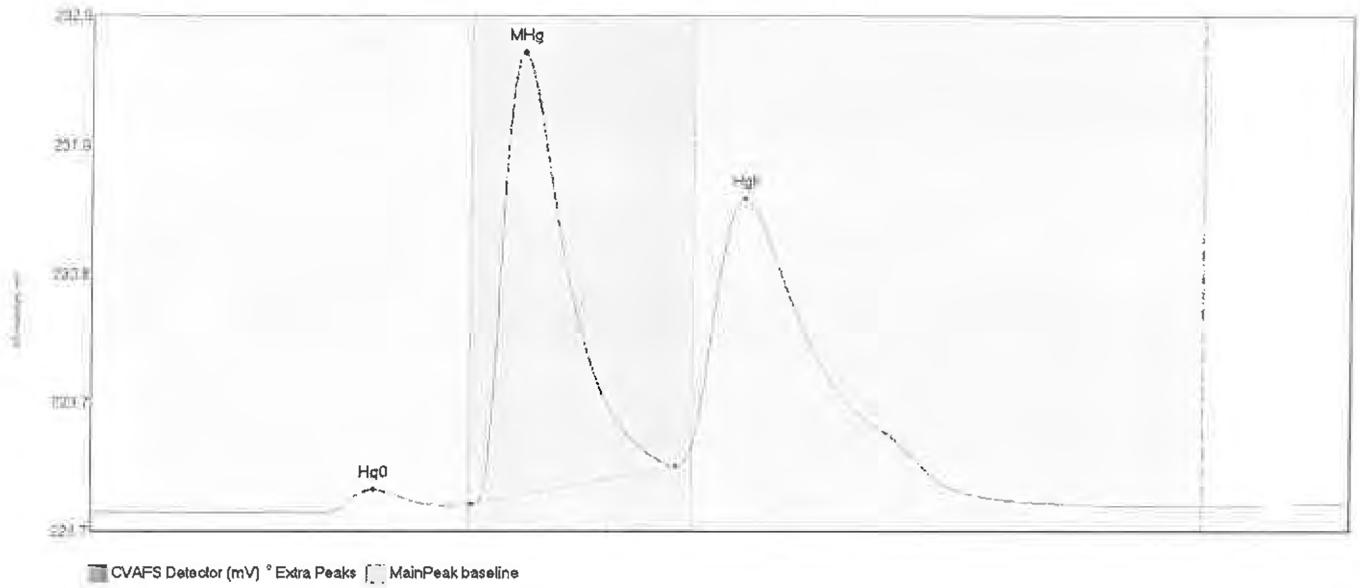
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00004-04RE1 H	3.058	48.4	65.4	228.81	228.84	60.8	0.051	OK	228.8100	0.00	0.03	F102295
1A00004-04RE1 M	11.754	75.2	106.8	228.85	228.86	83.6	0.083	OK	228.8100	0.00	0.03	F102295
1A00004-04RE1 H	12.156	119.0	147.2	228.86	228.87	128.2	0.086	OK	228.8100	0.00	0.03	F102295

#58: 1A00019-01RE1

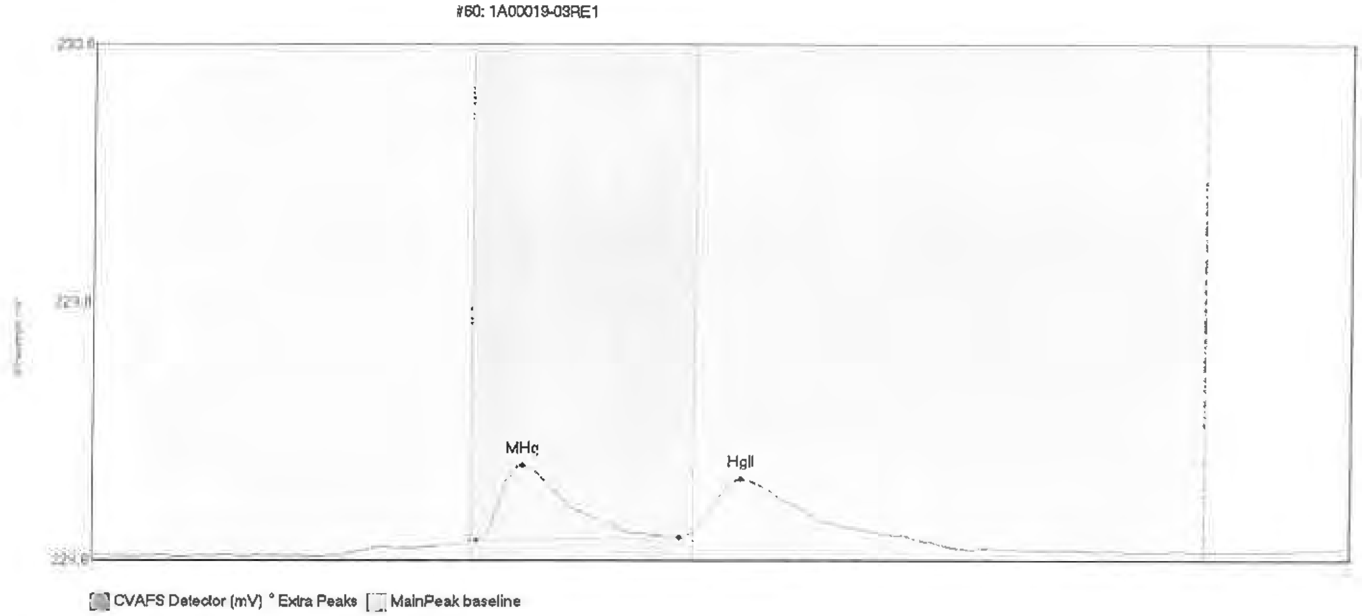


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00019-01RE1 H	0.736	50.9	75.0	228.83	228.87	74.4	0.037	CT	228.8302	0.00	0.04	F102295
1A00019-01RE1 M	2.450	76.5	99.0	228.87	228.87	81.4	0.022	OK	228.8302	0.00	0.04	F102295
1A00019-01RE1 H	1.797	122.1	137.7	228.88	228.88	130.5	0.017	OK	228.8302	0.00	0.04	F102295

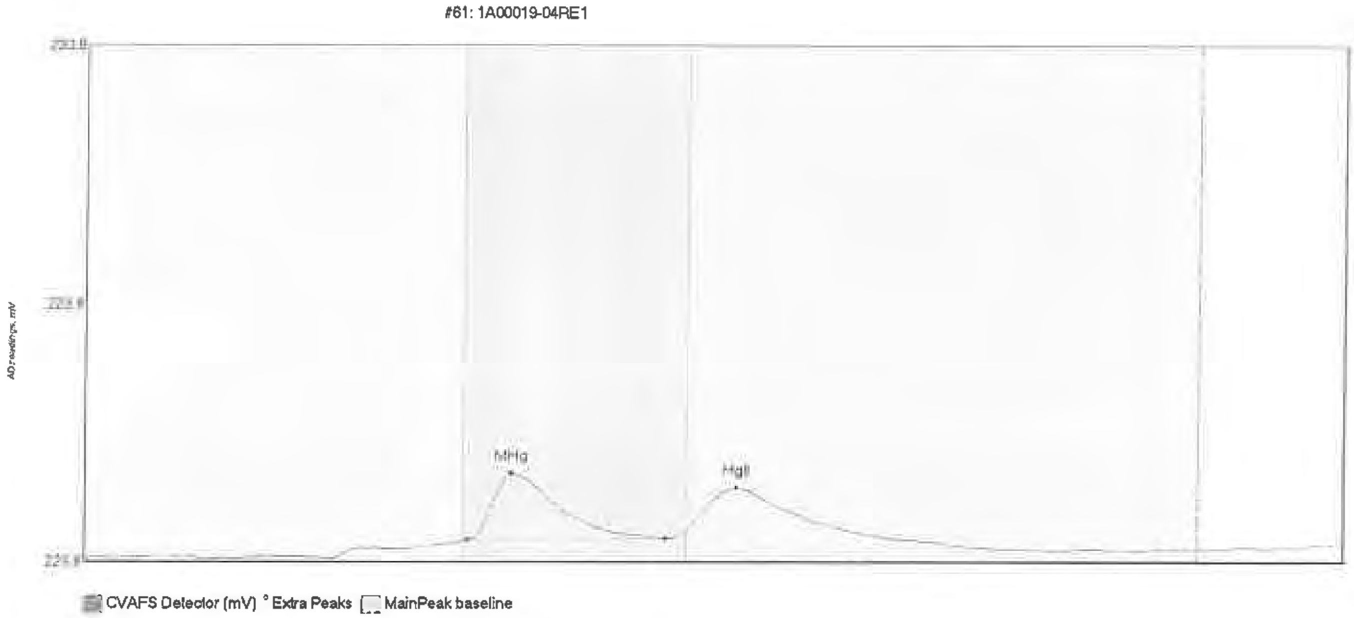
#59: 1A00019-02RE1



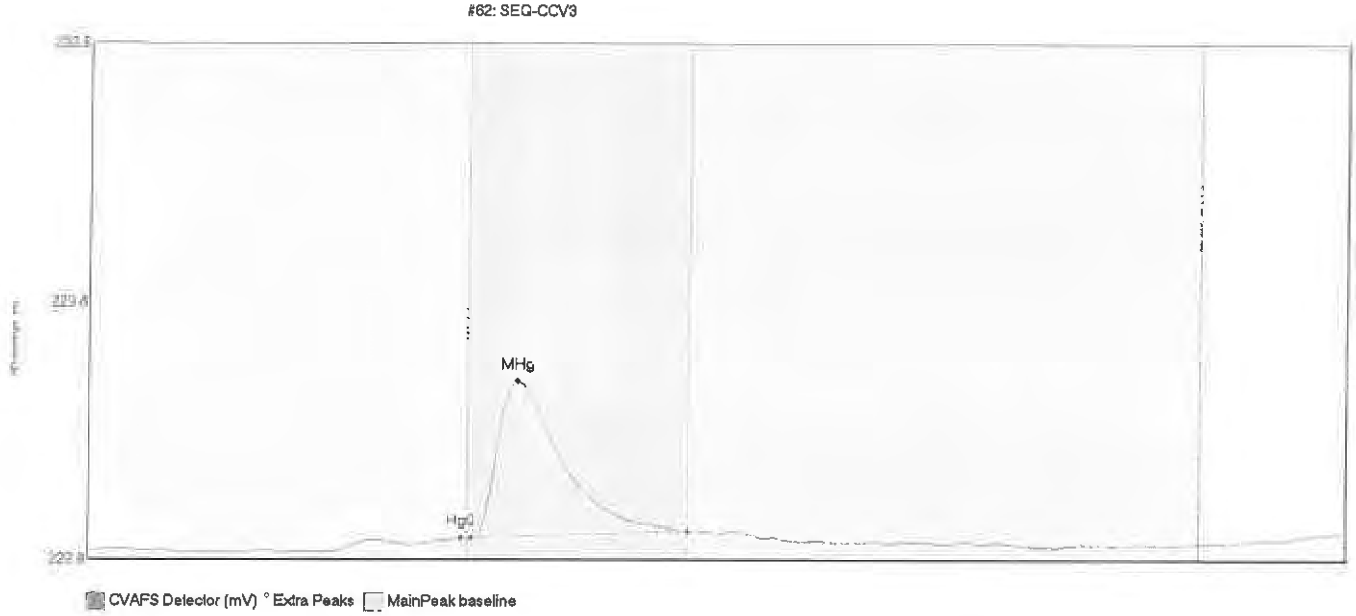
Name		Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	[illegible]	Comment
1A00019-02RE1	H	17.844	45.9	70.3	228.83	228.89	56.2	0.191	OK	228.8379	0.00	[illegible]	F102295
1A00019-02RE1	M	531.748	75.5	115.8	228.90	229.21	85.6	3.716	OK	228.8379	0.00	[illegible]	F102295
1A00019-02RE1	H	452.082	119.0	179.4	229.40	228.94	129.1	2.022	OK	228.8379	0.00	[illegible]	F102295



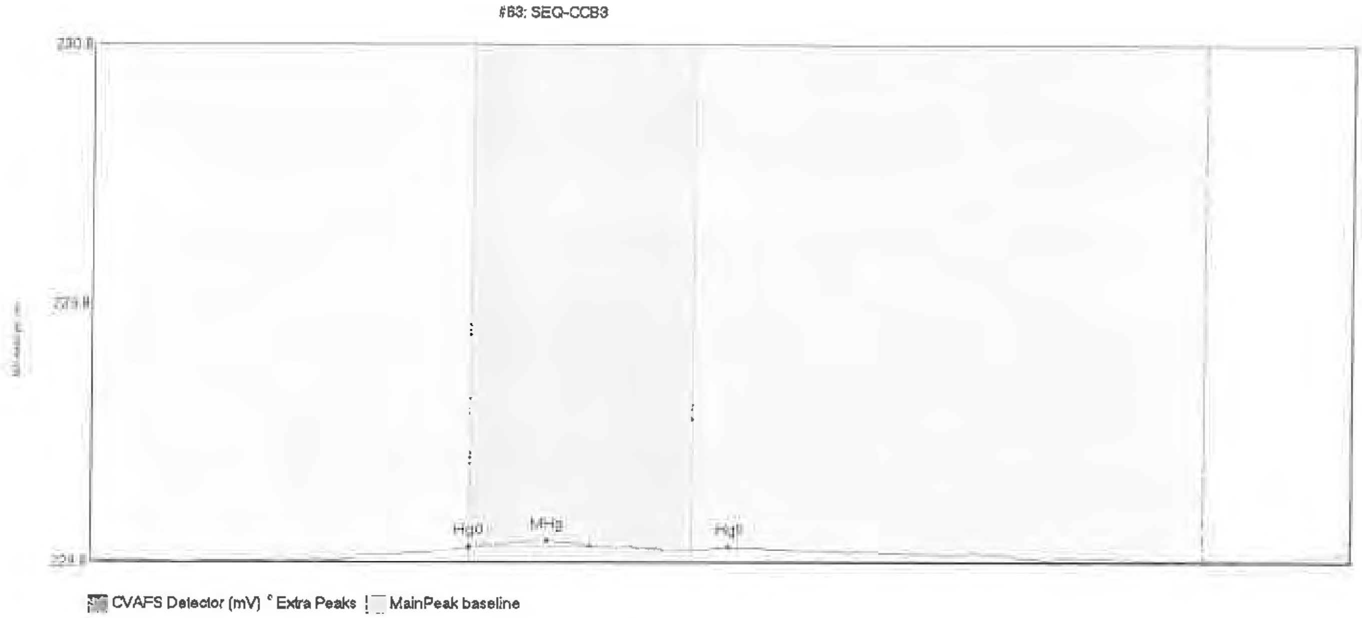
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00019-03RE1 M	43.838	76.1	116.3	228.87	228.88	85.1	0.291	OK	228.8134	0.00	0.02	F102295
1A00019-03RE1 H	33.321	119.0	153.6	228.90	228.91	128.3	0.204	OK	228.8134	0.00	0.02	F102295



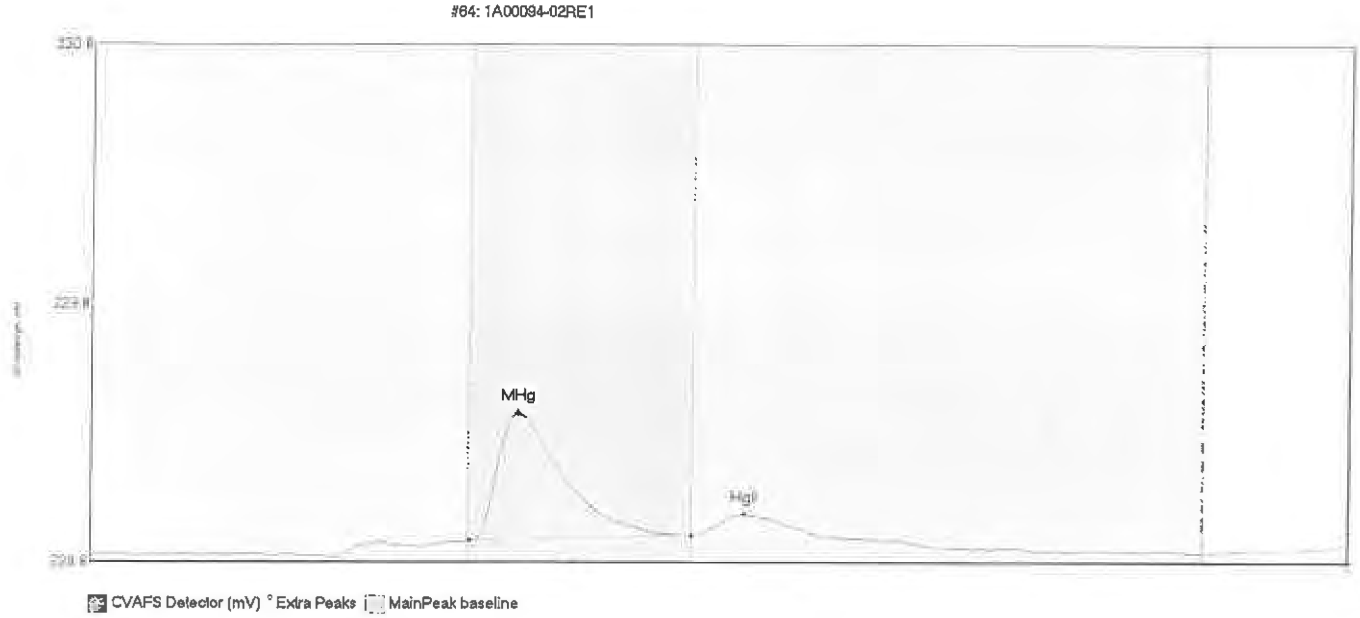
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00019-04RE1 M	38.492	75.8	114.8	228.85	228.35	84.6	0.260	OK	228.7802	0.00	0.05	F102295
1A00019-04RE1 H	28.915	119.0	152.9	228.88	228.88	128.8	0.169	OK	228.7802	0.00	0.05	F102295



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCV3 Hg0	2.223	49.6	74.7	228.81	228.85	73.9	0.045	OK	228.8083	0.00	0.06	
SEQ-CCV3 MHg	90.510	75.8	119.0	228.85	228.88	85.0	0.610	CT	228.8083	0.00	0.06	

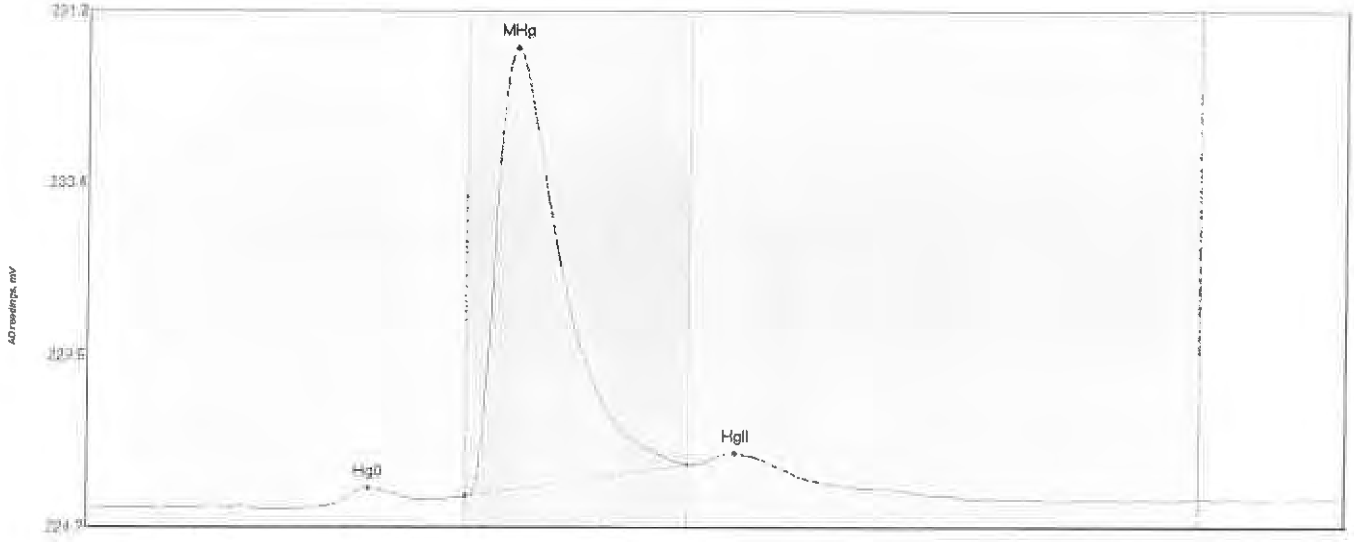


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCB3 Hg0	0.408	52.0	74.9	228.83	228.87	74.8	0.041	OK	228.8290	0.00	0.02	
SEQ-CCB3 MHg	3.258	75.1	98.7	228.87	228.87	90.1	0.026	OK	228.8290	0.00	0.02	
SEQ-CCB3 HgII	0.921	121.4	134.0	228.86	228.86	126.4	0.013	OK	228.8290	0.00	0.02	



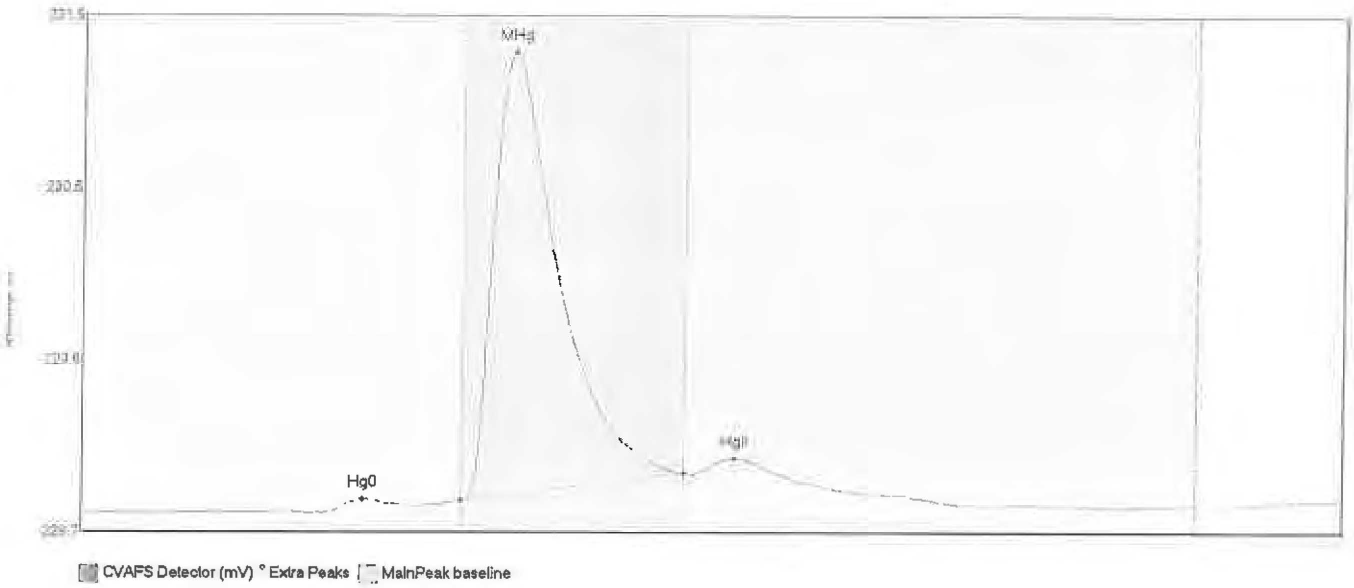
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1A00094-02RE1 M	72.833	75.3	119.0	228.85	228.87	84.7	0.493	CT	228.8018	0.00	0.03	F102295
1A00094-02RE1 H	10.831	120.8	144.8	228.88	228.87	129.3	0.079	OK	228.8018	0.00	0.03	F102295

#65: F012297-BS1

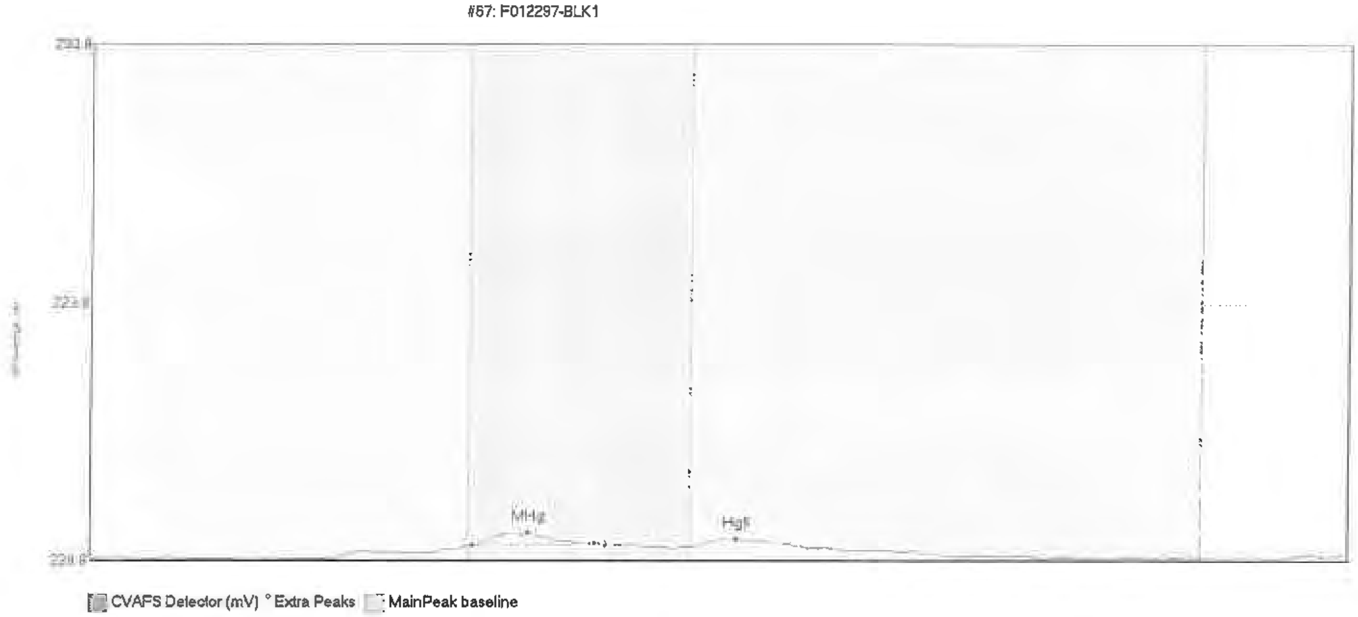


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F012297-BS1 Hg0	7.436	41.9	66.4	228.79	228.84	55.8	0.100	OK	228.7969	0.00	0.04	F102297
F012297-BS1 MHg	321.087	75.2	119.0	228.85	229.01	84.9	2.175	CT	228.7969	0.00	0.04	F102297
F012297-BS1 HgI	12.180	119.6	146.3	229.00	228.92	128.3	0.059	OK	228.7969	0.00	0.04	F102297

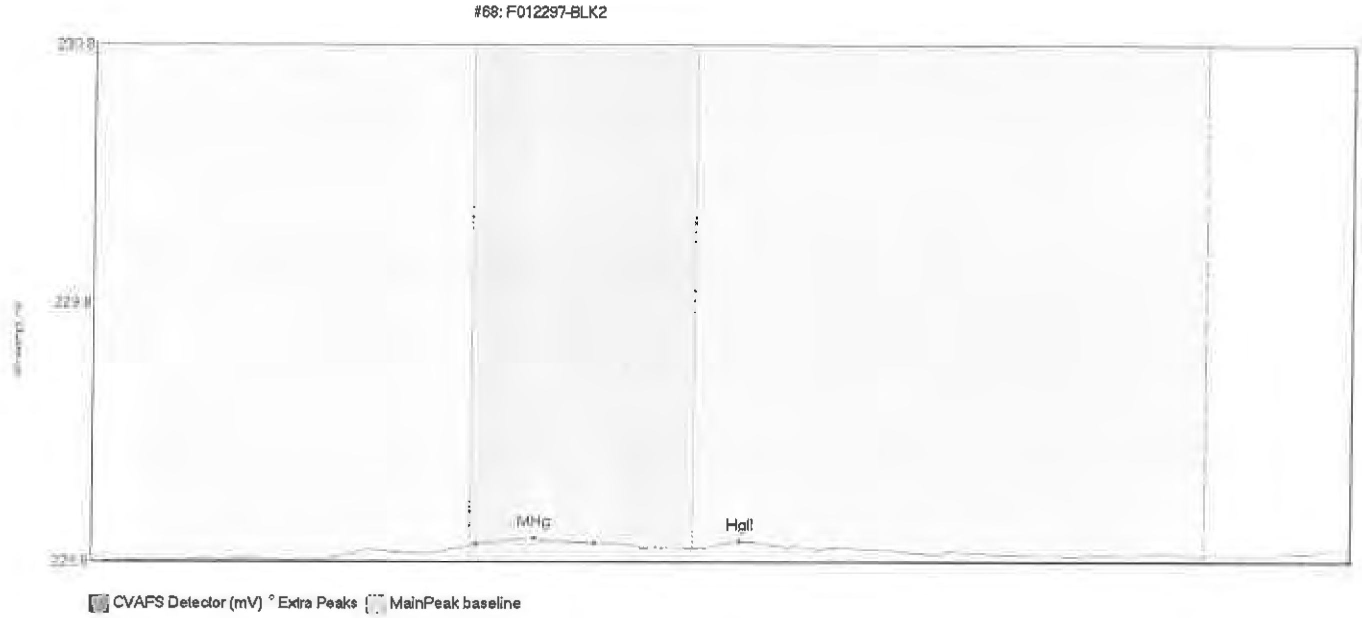
#66: F012297-BSD1



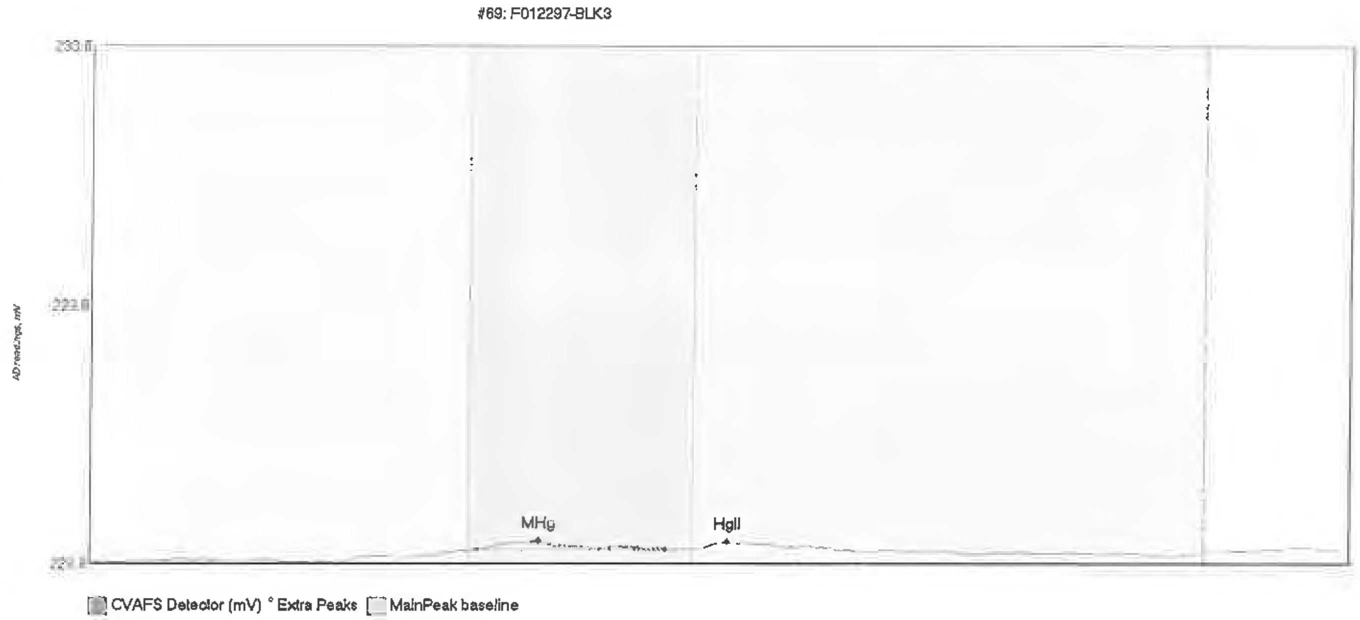
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F012297-BSD1 Hg	5.358	47.6	66.7	228.82	228.85	55.5	0.073	OK	228.8139	0.00	0.07	F102297
F012297-BSD1 MH	352.627	75.0	119.0	228.88	229.03	85.0	2.402	CT	228.8139	0.00	0.07	F102297
F012297-BSD1 Hg	13.662	120.8	147.1	229.02	228.95	128.8	0.084	OK	228.8139	0.00	0.07	F102297



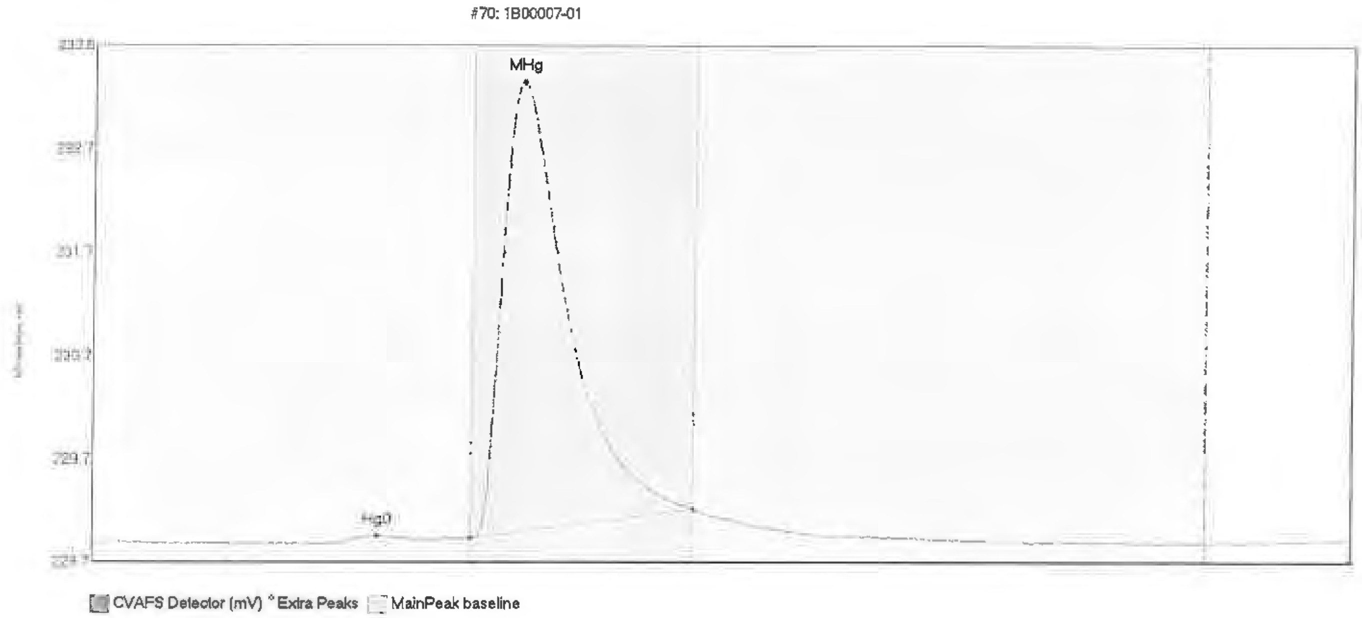
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F012297-BLK1 MH	5.823	75.8	102.3	228.87	228.87	86.9	0.047	OK	228.8183	0.00	0.01	F102297
F012297-BLK1 Hg	3.416	119.4	139.9	228.86	228.87	128.2	0.028	OK	228.8183	0.00	0.01	F102297



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F012297-BLK2 MH	2.796	76.2	99.4	228.87	228.87	87.5	0.023	OK	228.8082	0.00	0.04	F102297
F012297-BLK2 Hg	1.960	121.8	137.8	228.86	228.86	128.3	0.021	OK	228.8082	0.00	0.04	F102297

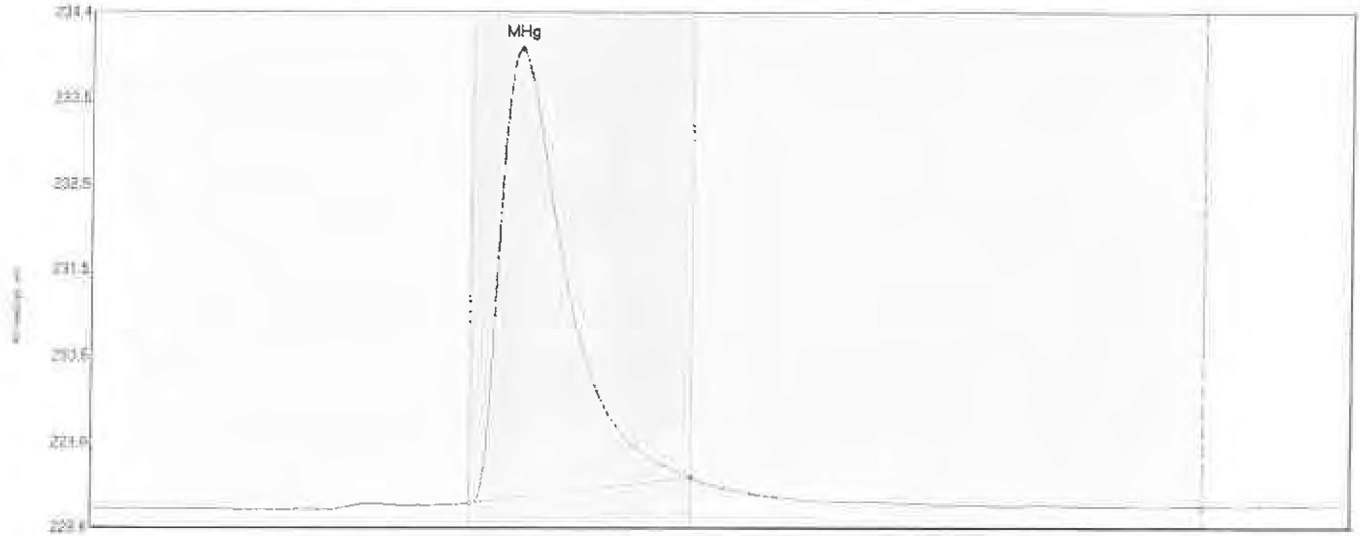


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F012297-BLK3 MH	5.210	76.8	113.5	228.88	228.88	88.8	0.032	OK	228.8400	0.00	0.05	F102297
F012297-BLK3 Hg	2.449	120.2	137.9	228.89	228.89	125.9	0.027	OK	228.8400	0.00	0.05	F102297



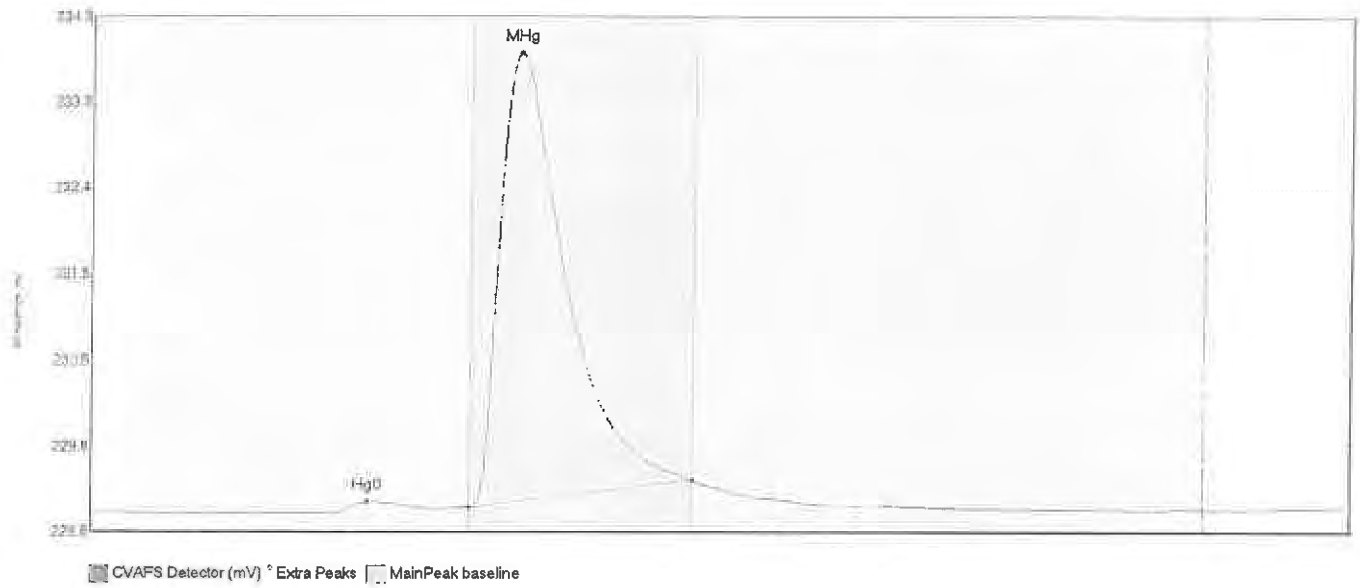
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00007-01 Hg0	5.088	47.8	67.0	228.88	228.92	56.5	0.069	OK	228.8951	0.00	0.02	F102297
1B00007-01 MHg	643.998	75.0	119.0	228.93	229.21	85.0	4.360	CT	228.8951	0.00	0.02	F102297

#71: F012297-MS1



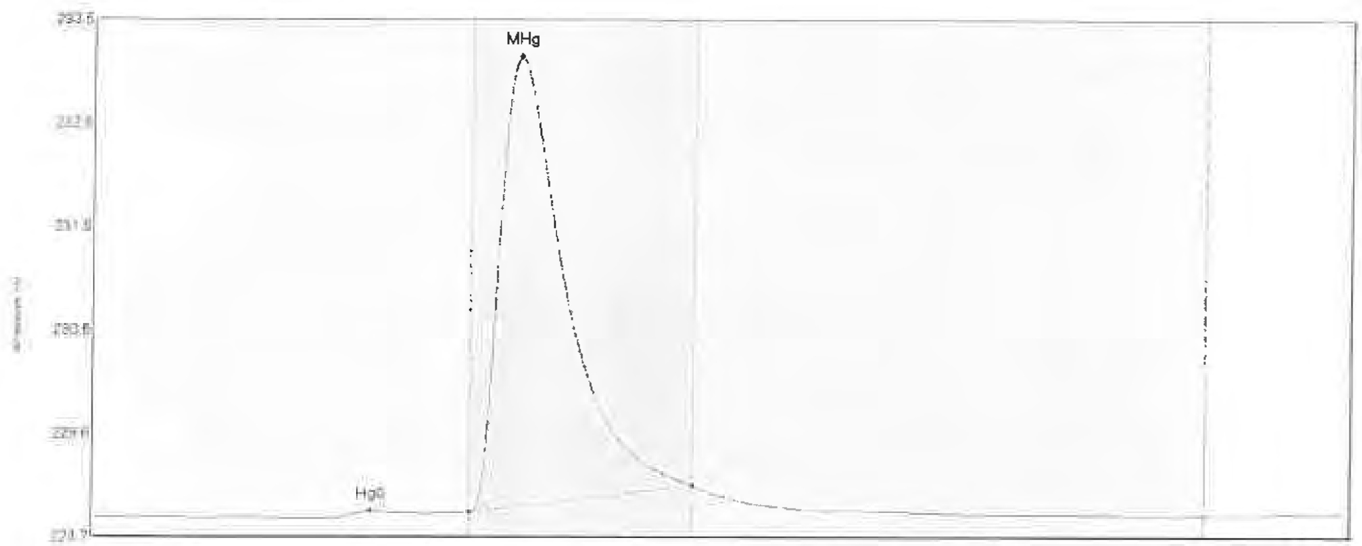
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F012297-MS1	759.923	75.0	119.0	228.88	229.17	84.8	5.144	CT	228.8314	0.00	0.04	F102297

#72: F012297-MSD1



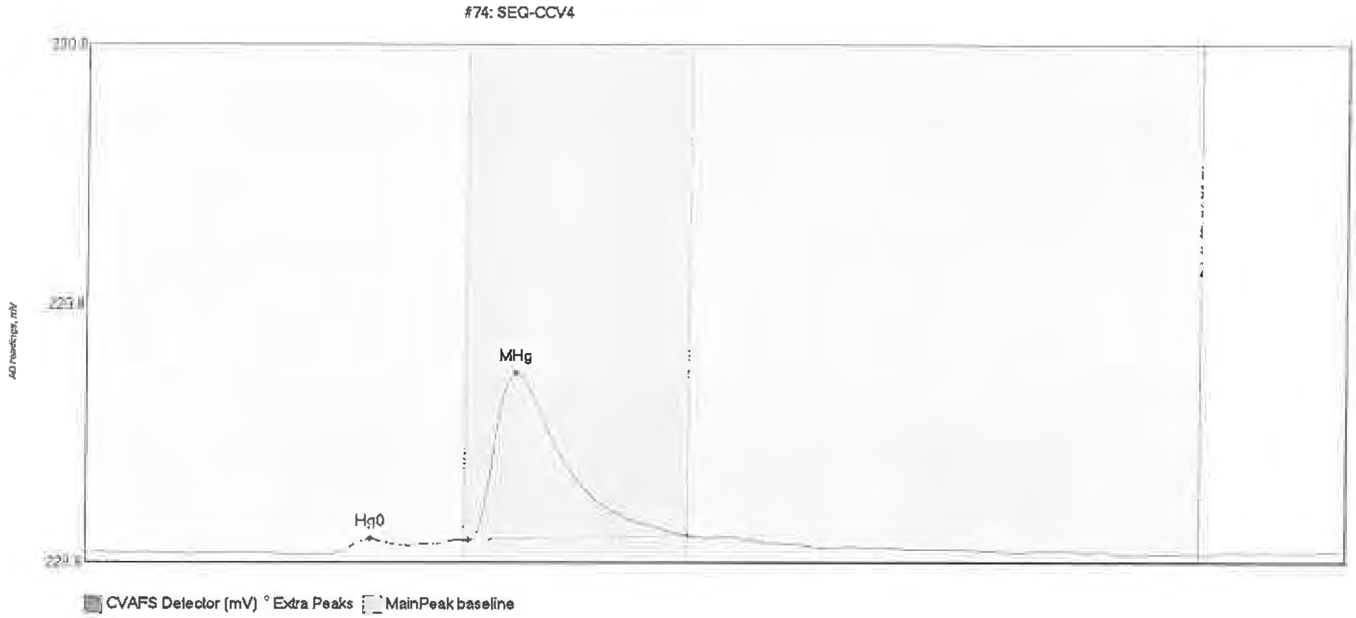
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F012297-MSD1 Hg	10.733	48.5	69.9	228.84	228.39	54.9	0.117	OK	228.8436	0.00	0.05	F102297
F012297-MSD1 MH	737.855	75.0	119.0	228.90	229.19	84.7	4.976	CT	228.8436	0.00	0.05	F102297

#73: 1B00022-01



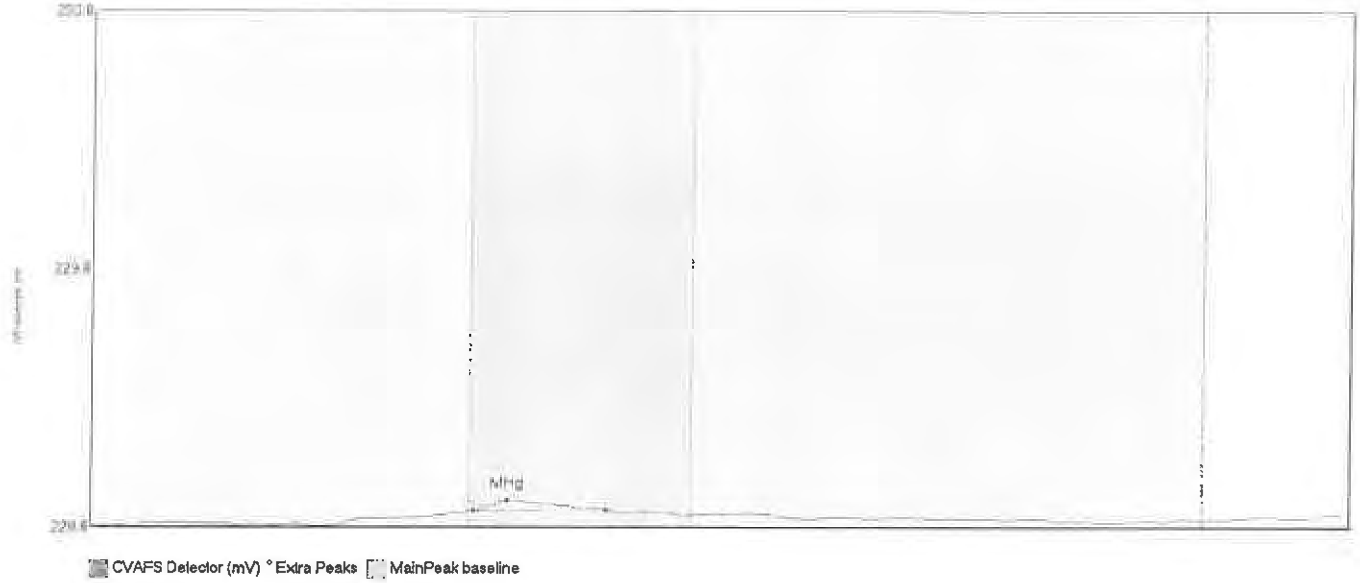
CVAFS Detector (mV) ° Extra Peaks MainPeak baseline

		Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
[illegible]	Hg0	4.511	48.2	66.1	228.84	228.89	55.6	0.069	OK	228.8531	0.00	0.03	F102297
[illegible]	MHg	630.462	75.0	119.0	228.90	229.14	84.6	4.281	CT	228.8531	0.00	0.03	F102297

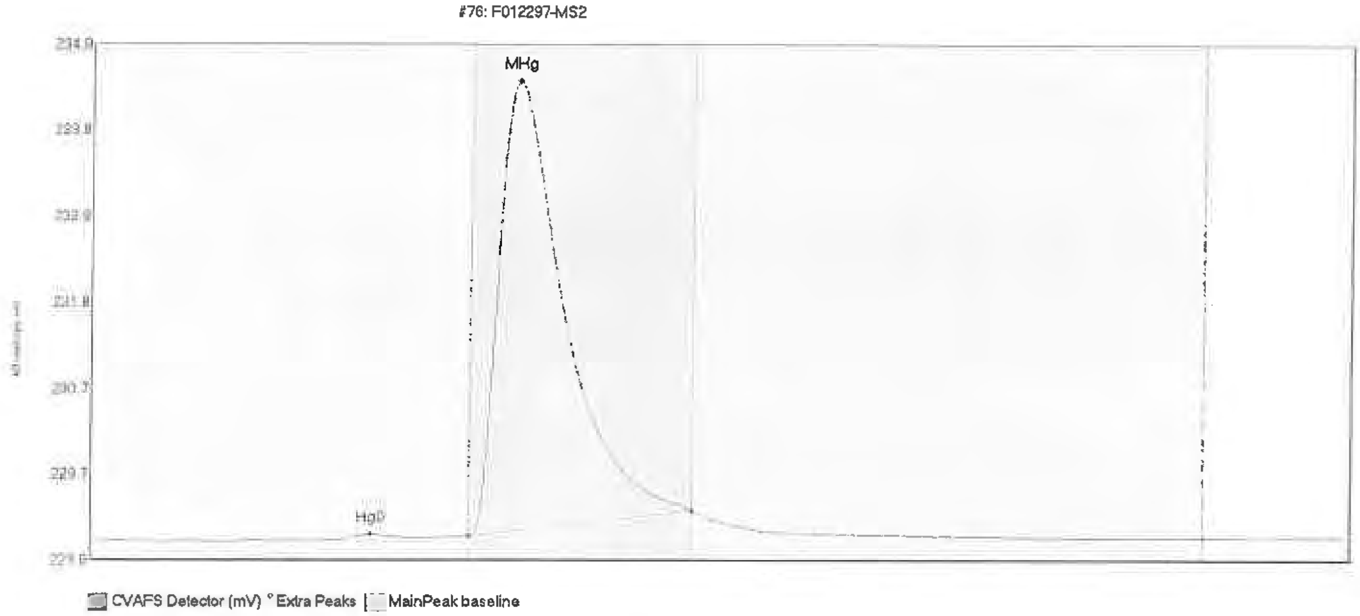


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCV4 Hg0	3.186	48.7	64.0	228.85	228.88	56.3	0.059	OK	228.8519	0.00	0.00	
SEQ-CCV4 MHg	99.543	75.8	119.0	228.90	228.92	84.9	0.643	CT	228.8519	0.00	0.00	

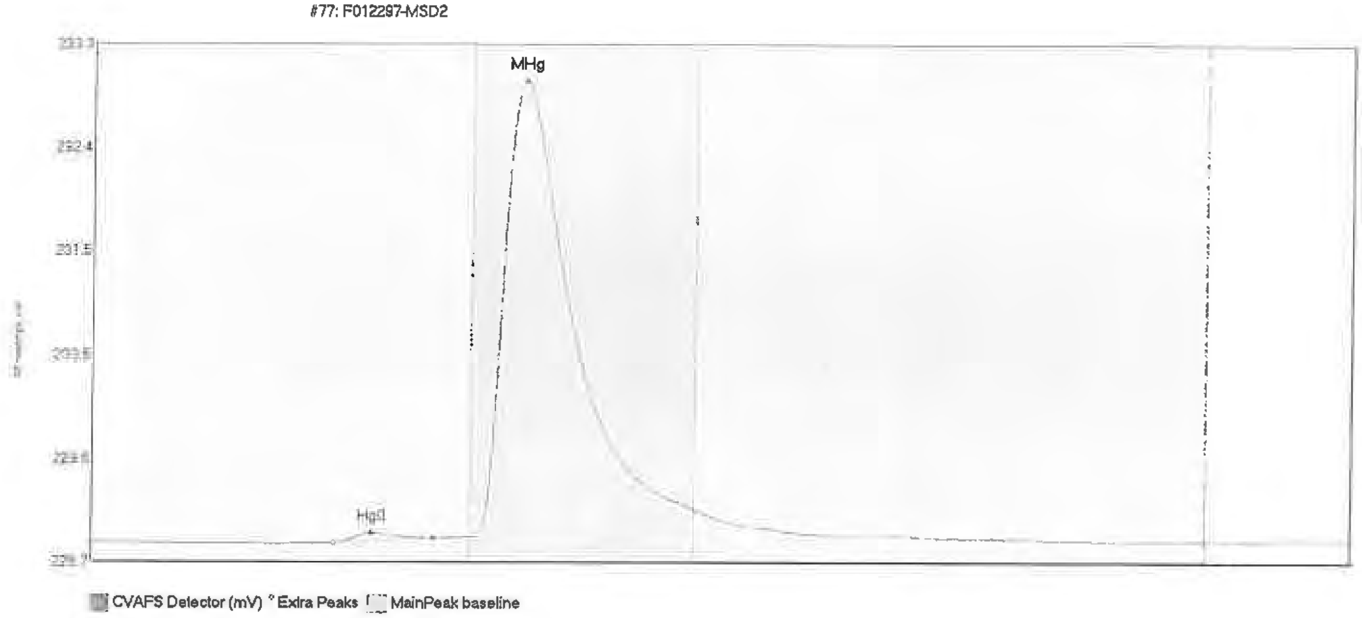
#75: SEQ-CCB4



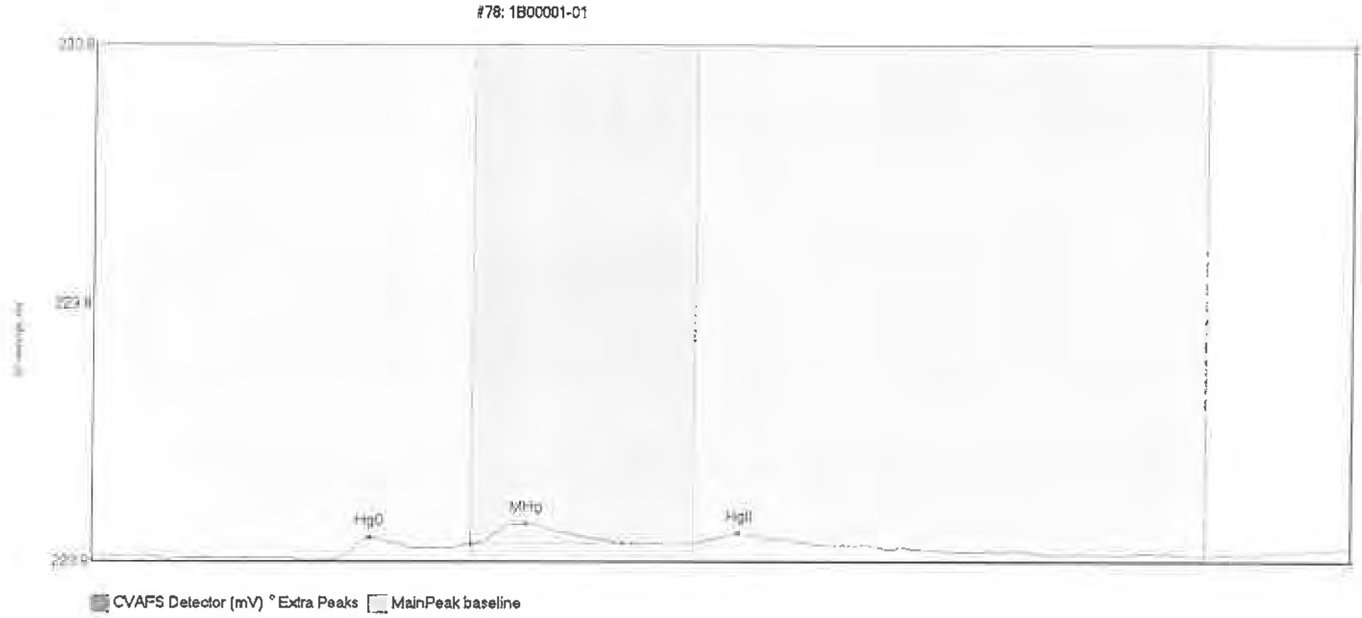
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCB4	5.446	75.8	102.0	228.88	228.89	82.5	0.042	OK	228.8265	0.00	0.05	



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F012297-MS2 Hg0	4.210	48.8	62.5	228.86	228.89	55.7	0.072	OK	228.8576	0.00	0.04	F102297
F012297-MS2 MHg	816.105	75.0	119.0	228.91	229.22	84.4	5.533	CT	228.8576	0.00	0.04	F102297

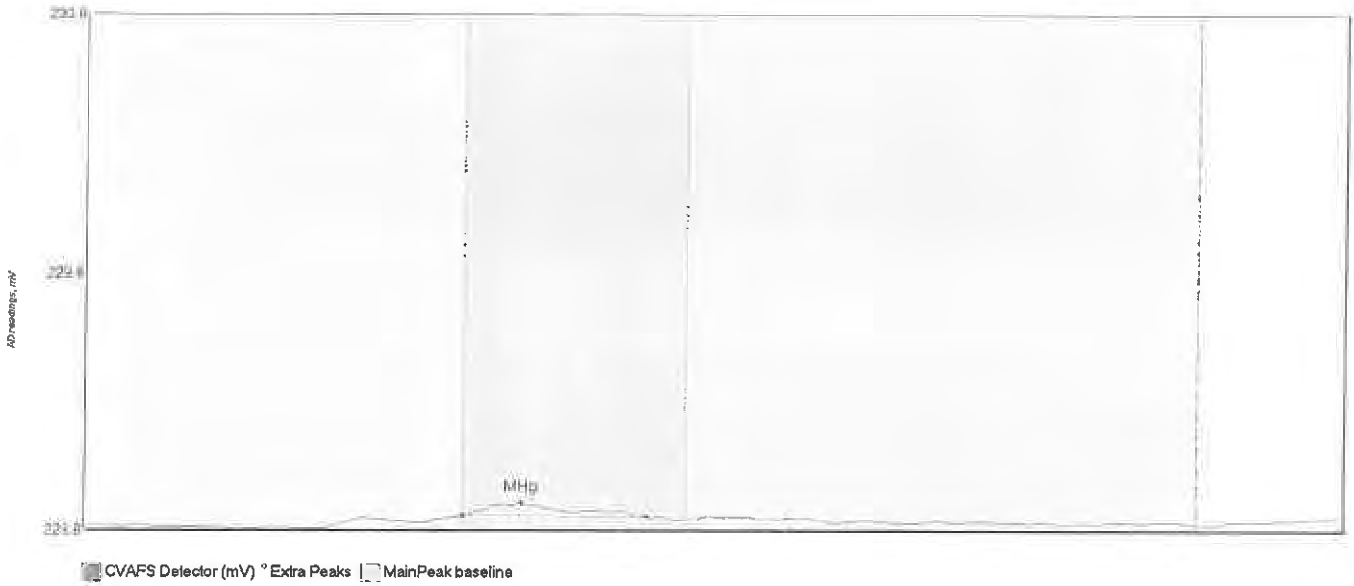


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
F012297-MSD2 Hg	6.819	48.0	67.7	228.86	228.90	55.5	0.089	OK	228.8609	0.00	0.04	F102297
F012297-MSD2 MH	593.303	75.2	119.0	228.92	229.17	85.4	4.081	CT	228.8609	0.00	0.04	F102297



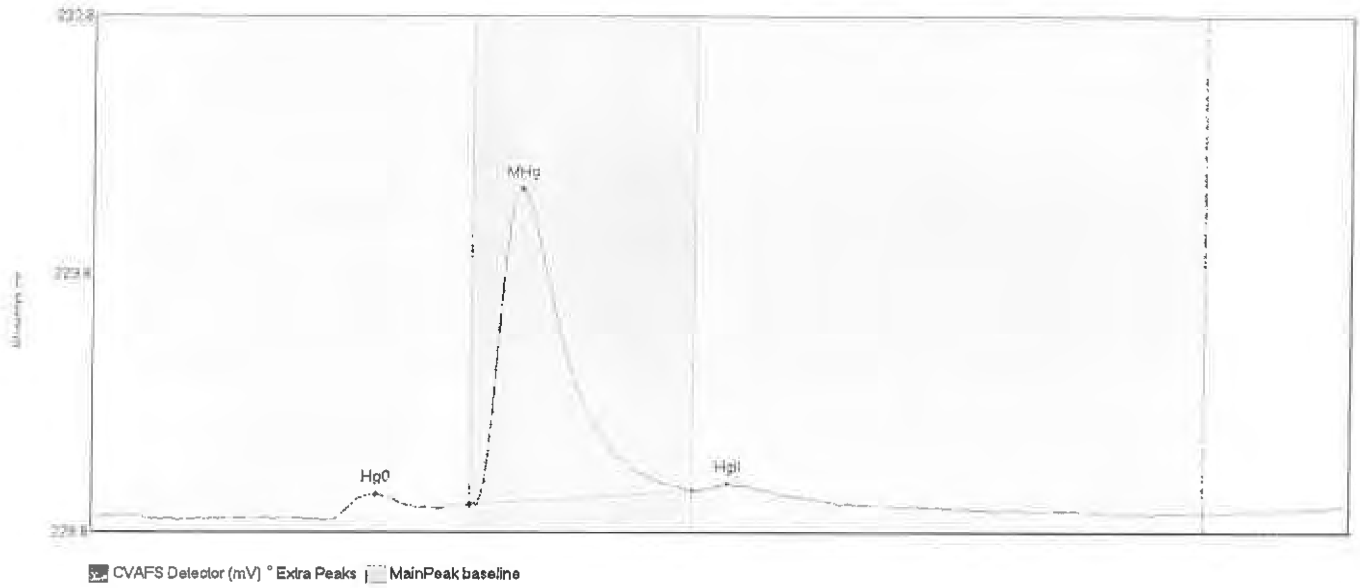
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00001-01 Hg0	5.245	47.8	63.5	228.82	228.86	55.1	0.085	OK	228.8373	0.00	0.02	F102297
1B00001-01 MHg	11.918	75.0	105.2	228.88	228.88	85.9	0.078	OK	228.8373	0.00	0.02	F102297
1B00001-01 HgII	3.551	119.6	140.0	228.88	228.89	127.9	0.036	OK	228.8373	0.00	0.02	F102297

#79: 1B00001-02



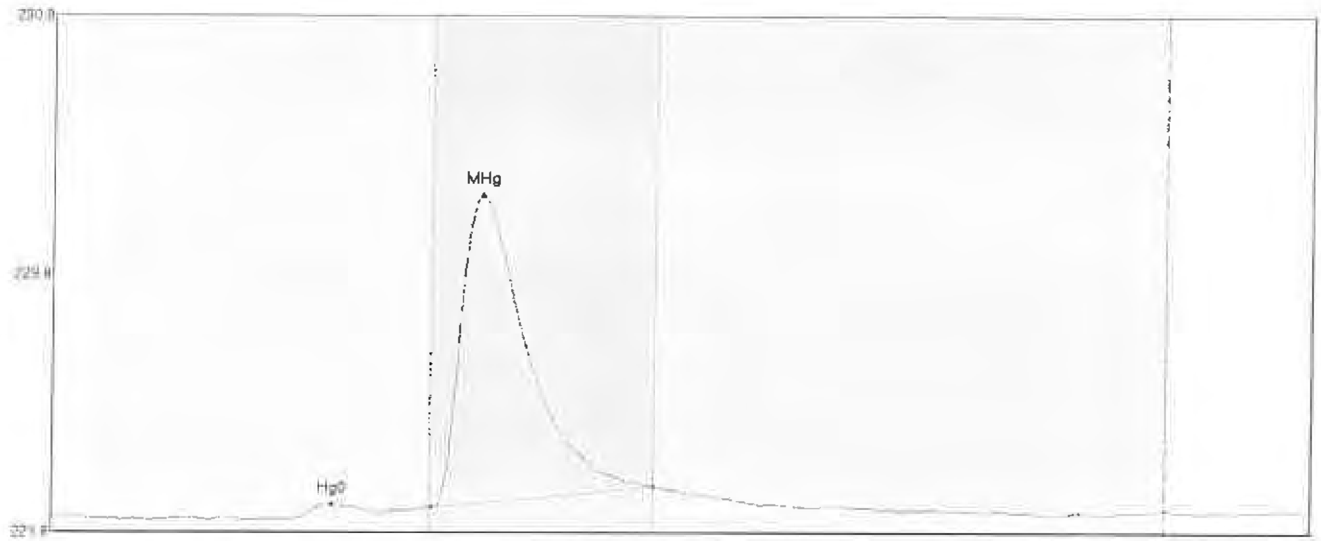
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00001-02	8.741	75.0	111.4	228.89	228.88	86.5	0.045	OK	228.8465	0.00	0.03	F102297

#80: 1B00007-02



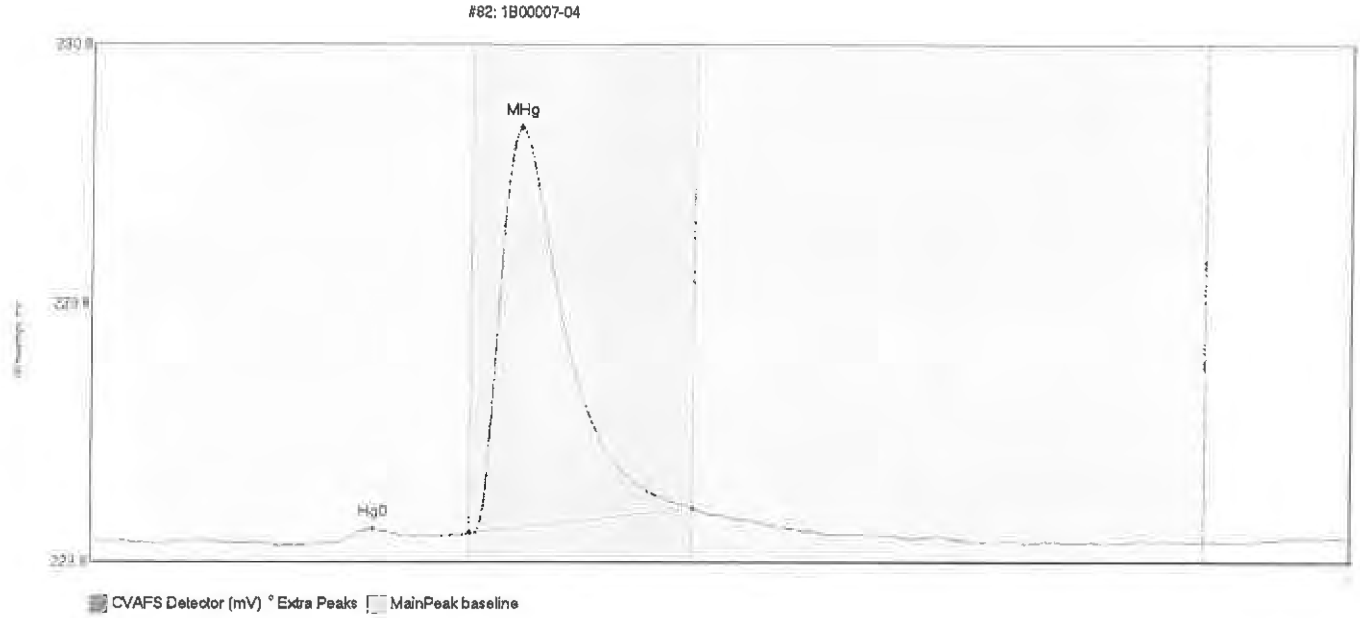
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00007-02 Hg0	8.326	47.7	68.7	228.86	228.90	56.7	0.098	OK	228.8670	0.00	0.04	F102297
1B00007-02 MHg	179.188	75.0	118.9	228.91	228.97	84.8	1.221	OK	228.8670	0.00	0.04	F102297
1B00007-02 HgII	3.730	120.0	139.8	228.97	228.94	125.9	0.025	OK	228.8670	0.00	0.04	F102297

#81: 1B00007-03

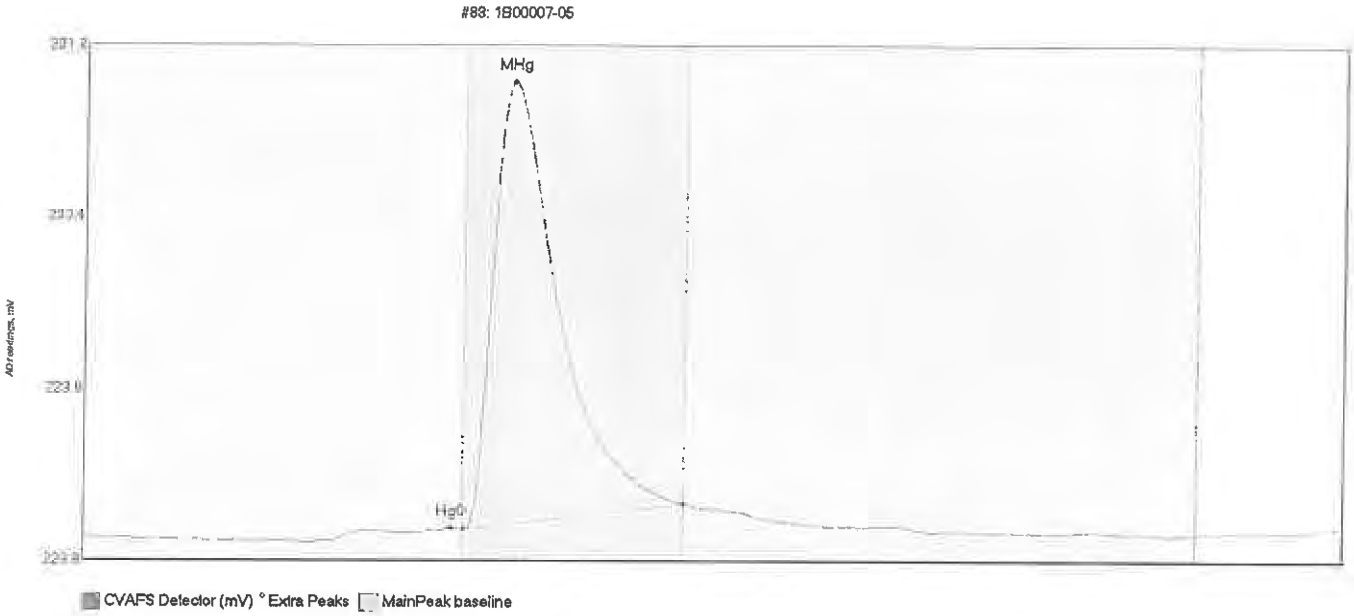


CVAFS Detector (mV) ° Extra Peaks MainPeak baseline

Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00007-03 Hg0	4.103	49.2	64.8	228.87	228.89	55.7	0.049	OK	228.8757	0.00	0.03	F102297
1B00007-03 MHg	177.389	75.3	119.0	228.91	228.99	84.9	1.210	CT	228.8757	0.00	0.03	F102297

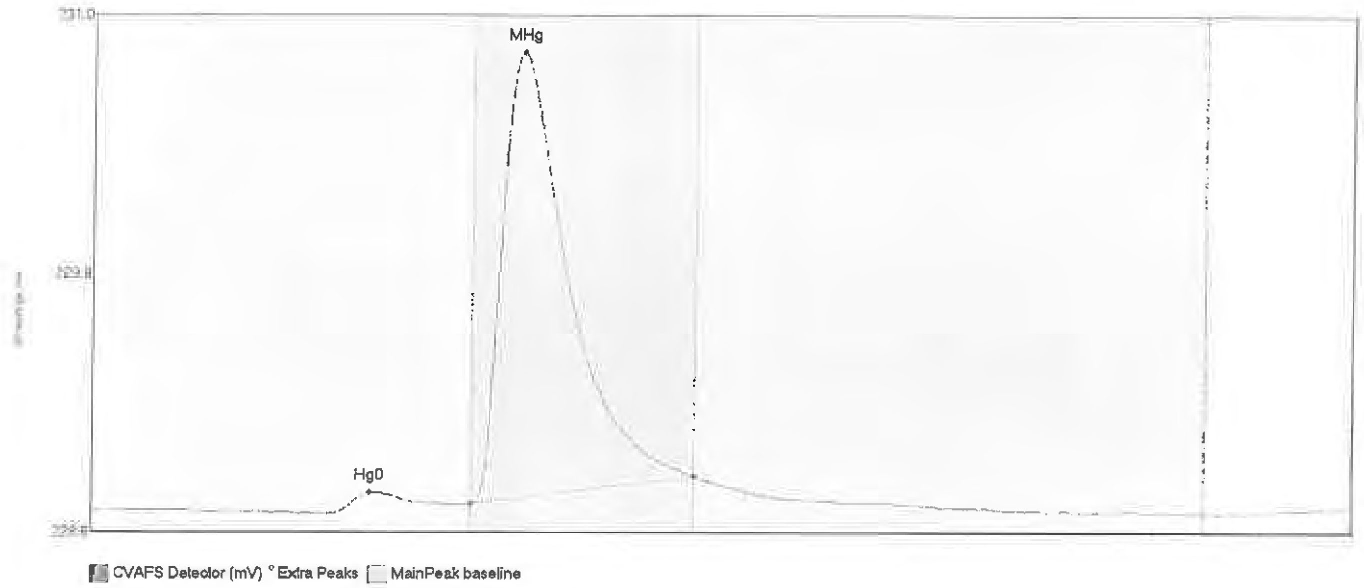


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00007-04 Hg0	4.260	47.9	68.2	228.88	228.90	55.8	0.056	OK	228.8811	0.00	0.02	F102297
1B00007-04 MHg	231.052	75.0	119.0	228.92	229.01	84.9	1.567	CT	228.8811	0.00	0.02	F102297



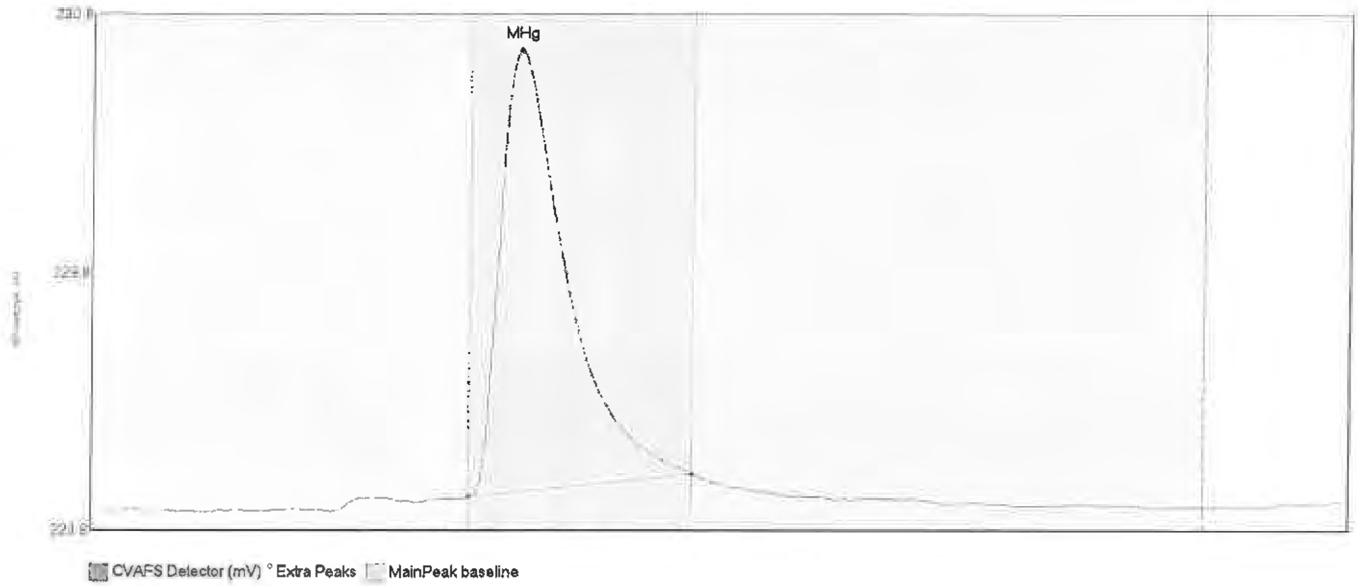
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00007-05 Hg0	3.767	48.6	73.9	228.87	228.92	72.8	0.058	OK	228.8879	0.00	0.04	F102297
1B00007-05 MHg	311.203	75.2	119.0	228.92	229.04	84.6	2.119	CT	228.8879	0.00	0.04	F102297

#84: 1B00007-06

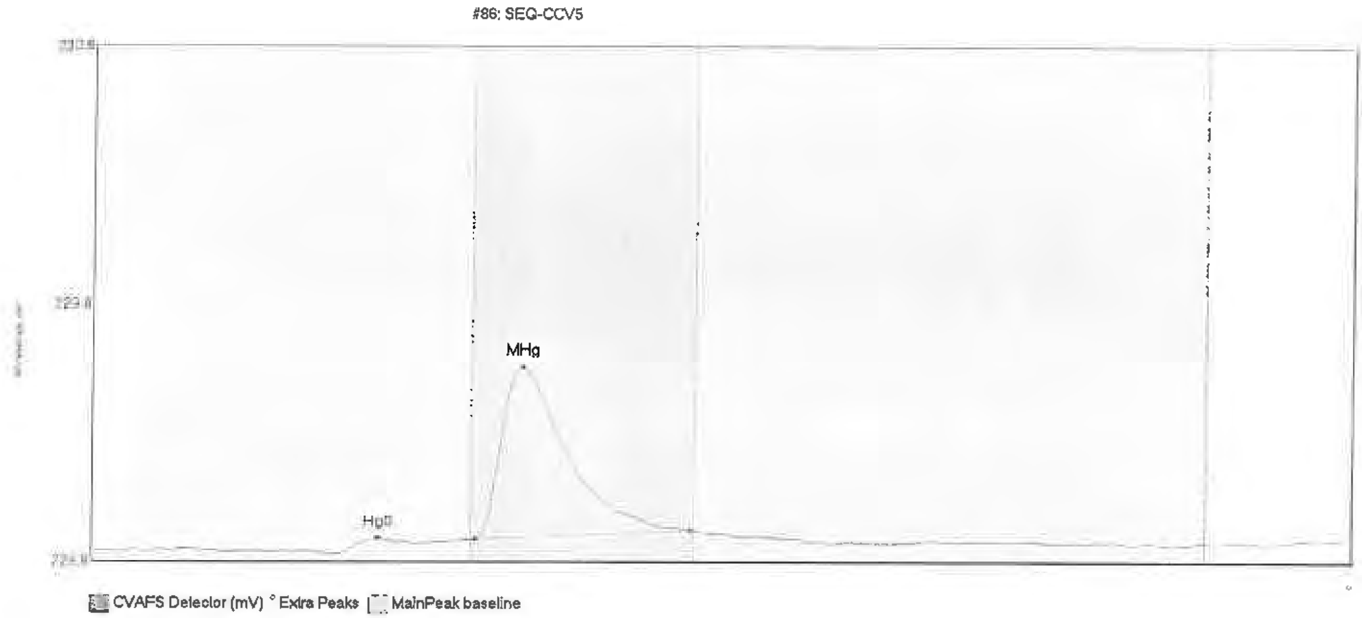


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00007-06 Hg0	8.469	47.9	73.3	228.87	228.91	55.0	0.087	OK	228.8832	0.00	0.01	F102297
1B00007-06 MHg	279.700	75.0	119.0	228.91	229.03	84.9	1.897	CT	228.8832	0.00	0.01	F102297

#85: 1B00007-07

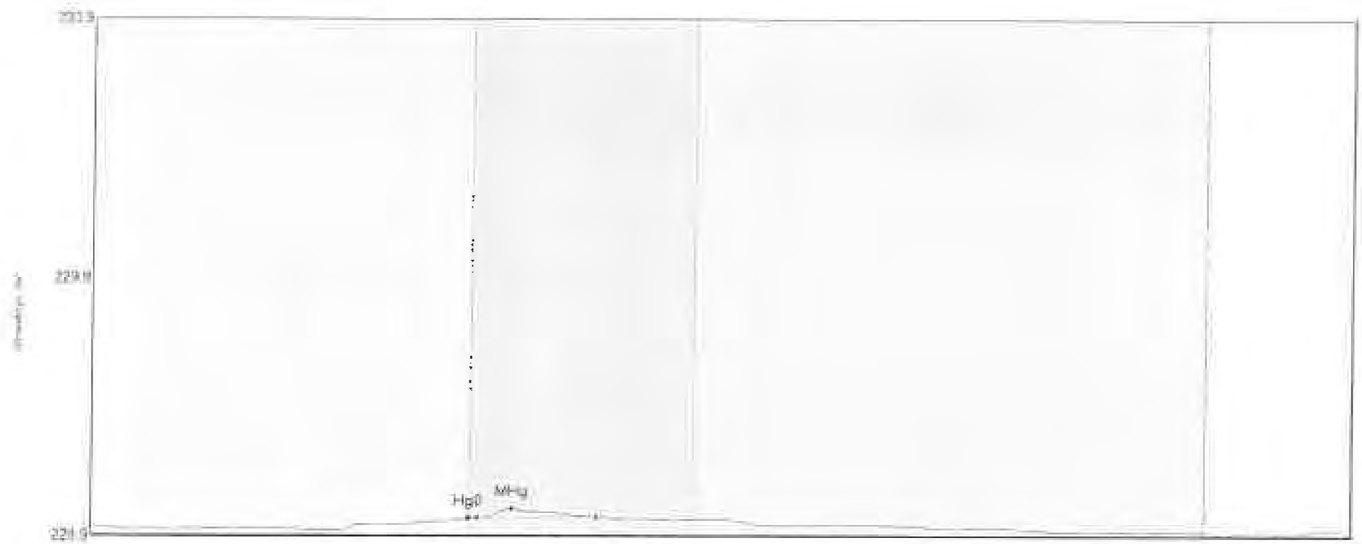


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00007-07	264.226	75.0	119.0	228.90	228.99	84.9	1.766	CT	228.8525	0.00	0.03	F102297



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCV5 Hg0	3.606	47.4	64.8	228.85	228.89	56.7	0.062	OK	228.8673	0.00	0.05	
SEQ-CCV5 MHg	98.835	75.8	118.2	228.91	228.95	85.0	0.670	OK	228.8673	0.00	0.05	

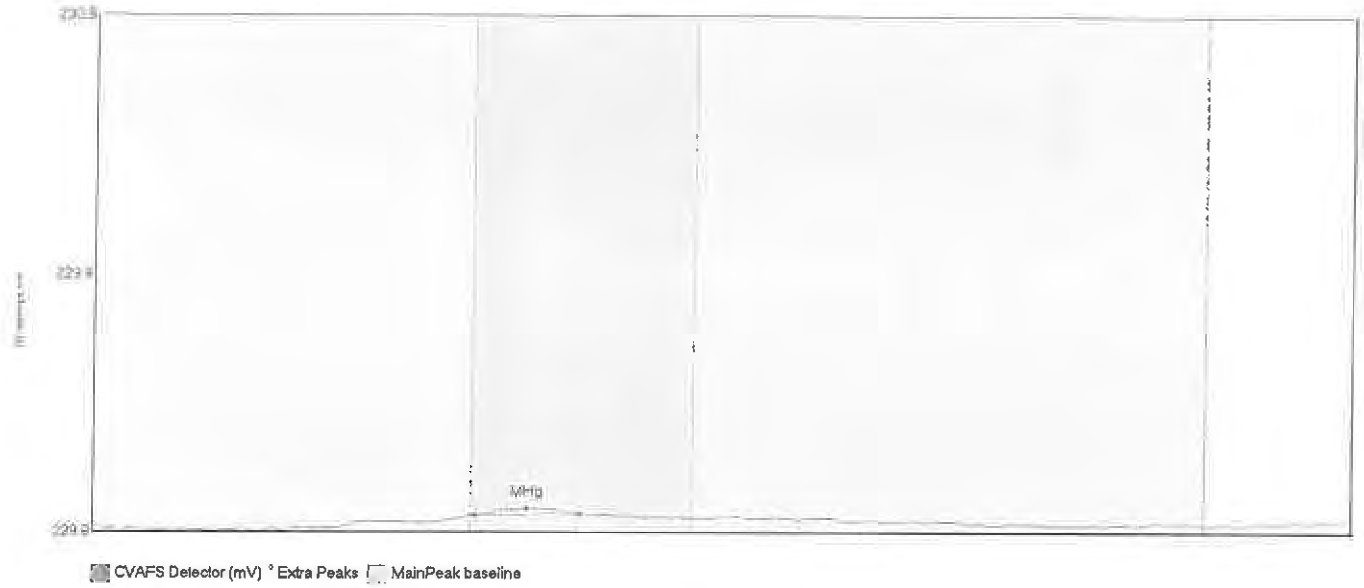
#87: SEQ-CCB5



CVAFS Detector (mV) ° Extra Peaks MainPeak baseline

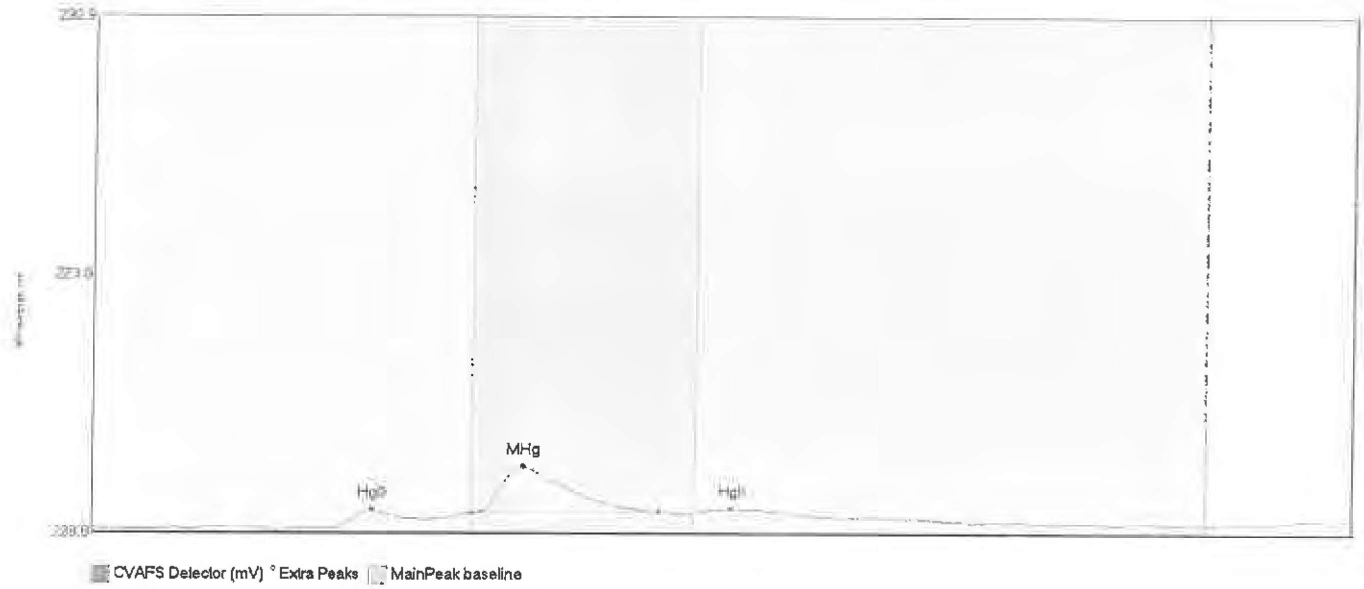
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCB5 Hg0	0.085	54.7	75.0	228.91	228.93	74.7	0.023	CT	228.9055	0.00	-0.01	
SEQ-CCB5 MHg	4.280	76.4	99.9	228.94	228.94	83.3	0.036	OK	228.9055	0.00	-0.01	

#88: 1B00008-01

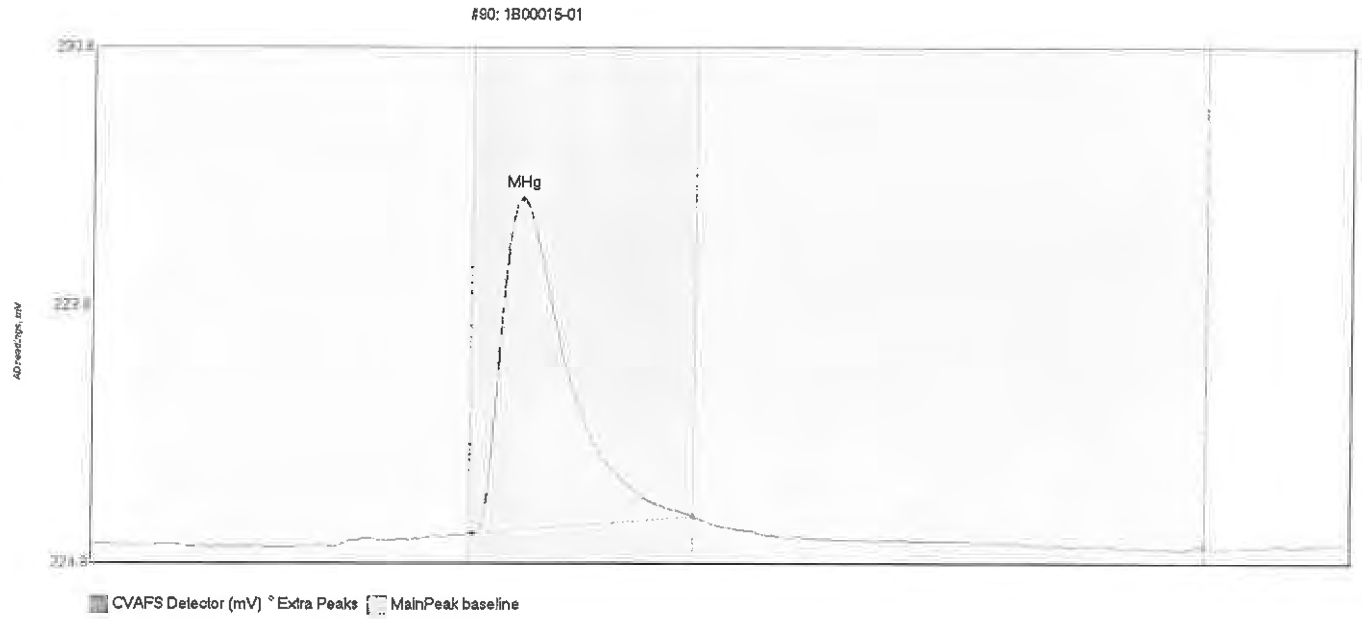


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00008-01	3.224	75.8	96.5	228.91	228.91	86.0	0.028	OK	228.8662	0.00	0.03	F102297

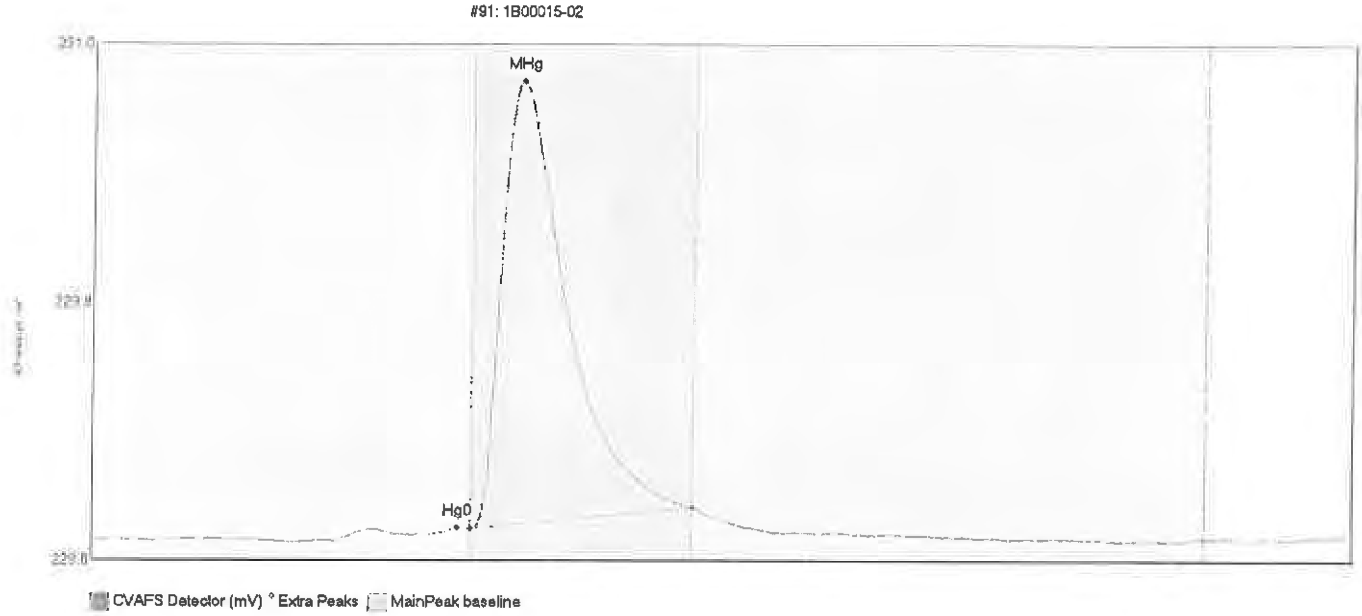
#89: 1B00009-01



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00009-01 Hg0	4.703	47.7	65.5	228.87	228.91	55.5	0.072	OK	228.8739	0.00	0.03	F102297
1B00009-01 MHg	26.497	75.0	111.7	228.93	228.94	85.1	0.182	OK	228.8739	0.00	0.03	F102297
1B00009-01 HgII	1.051	119.4	133.6	228.93	228.94	126.2	0.015	OK	228.8739	0.00	0.03	F102297

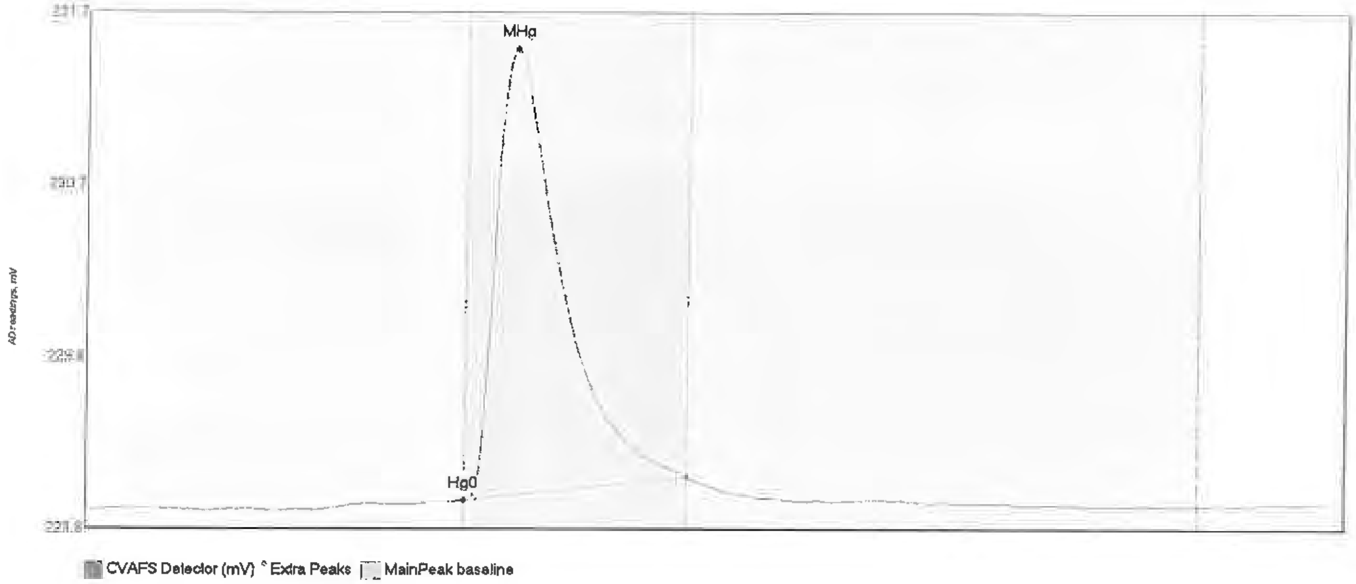


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00015-01	191.932	75.5	119.0	228.95	229.02	85.1	1.294	CT	228.9063	0.00	0.00	F102297



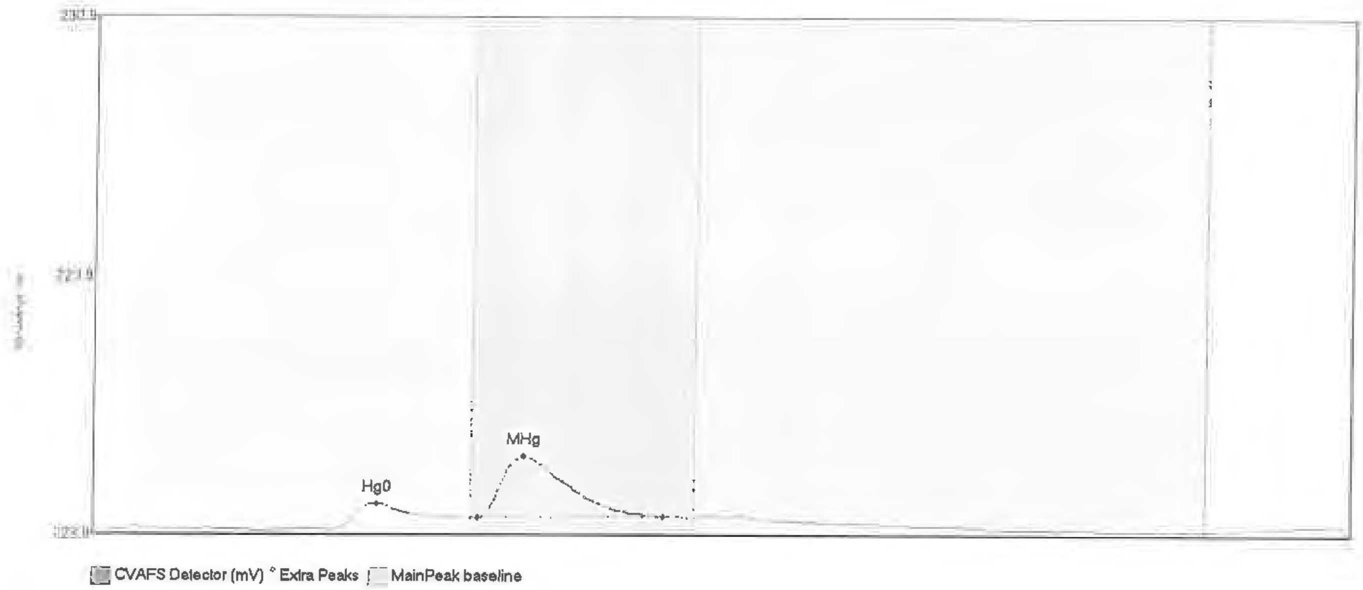
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00015-02 Hg0	2.723	48.0	74.8	228.87	228.93	72.4	0.057	OK	228.8757	0.00	0.02	F102297
1B00015-02 MHg	277.414	75.0	119.0	228.93	229.01	84.8	1.891	CT	228.8757	0.00	0.02	F102297

#92: 1B00015-03



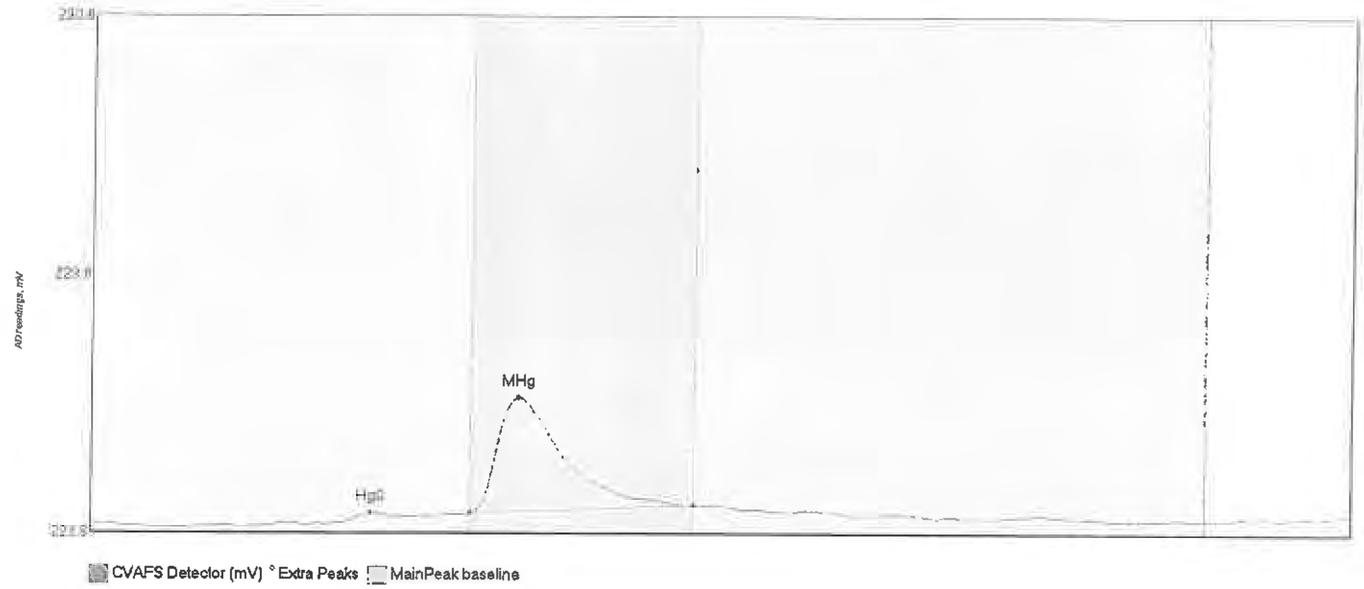
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00015-03 Hg0	1.588	46.7	75.0	228.88	228.94	74.9	0.055	CT	228.8820	0.00	0.05	F102297
1B00015-03 MHg	379.224	75.0	119.0	228.94	229.07	84.8	2.566	CT	228.8820	0.00	0.05	F102297

#93: 1B00017-01

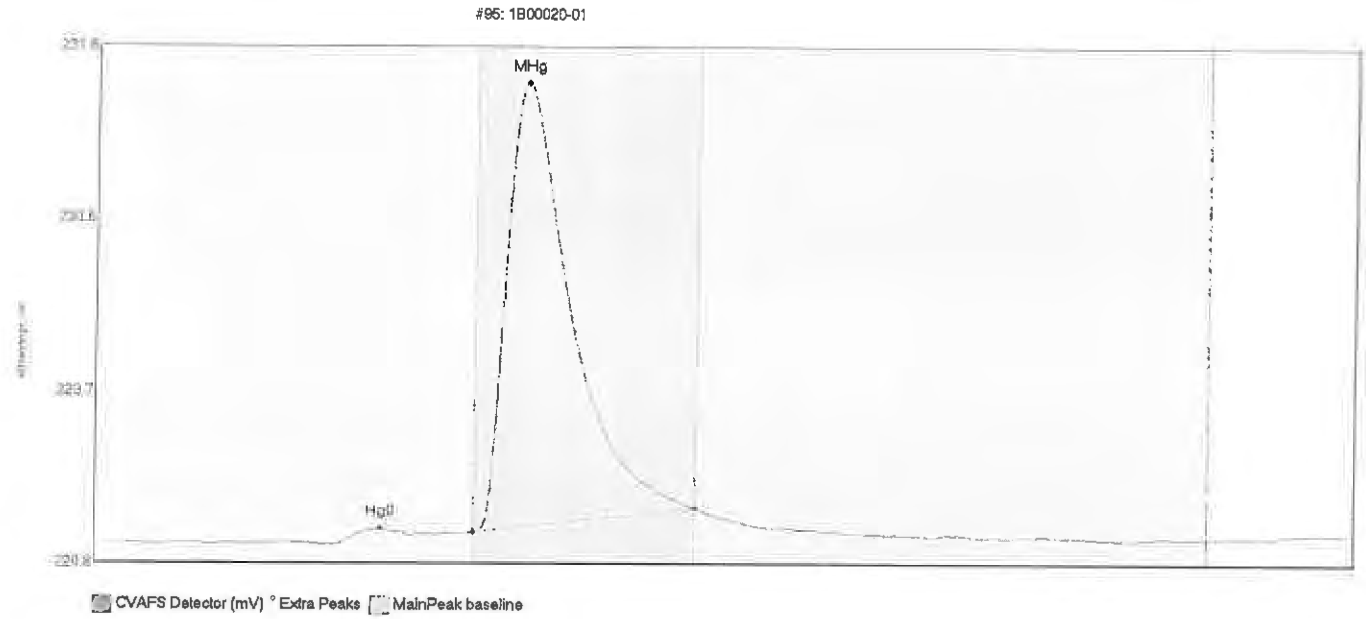


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00017-01 Hg0	9.464	47.3	71.7	228.90	228.95	56.5	0.104	OK	228.9093	0.00	0.01	F102297
1B00017-01 MHg	34.457	76.3	112.8	228.95	228.96	85.1	0.235	OK	228.9093	0.00	0.01	F102297

#94: 1B00019-01



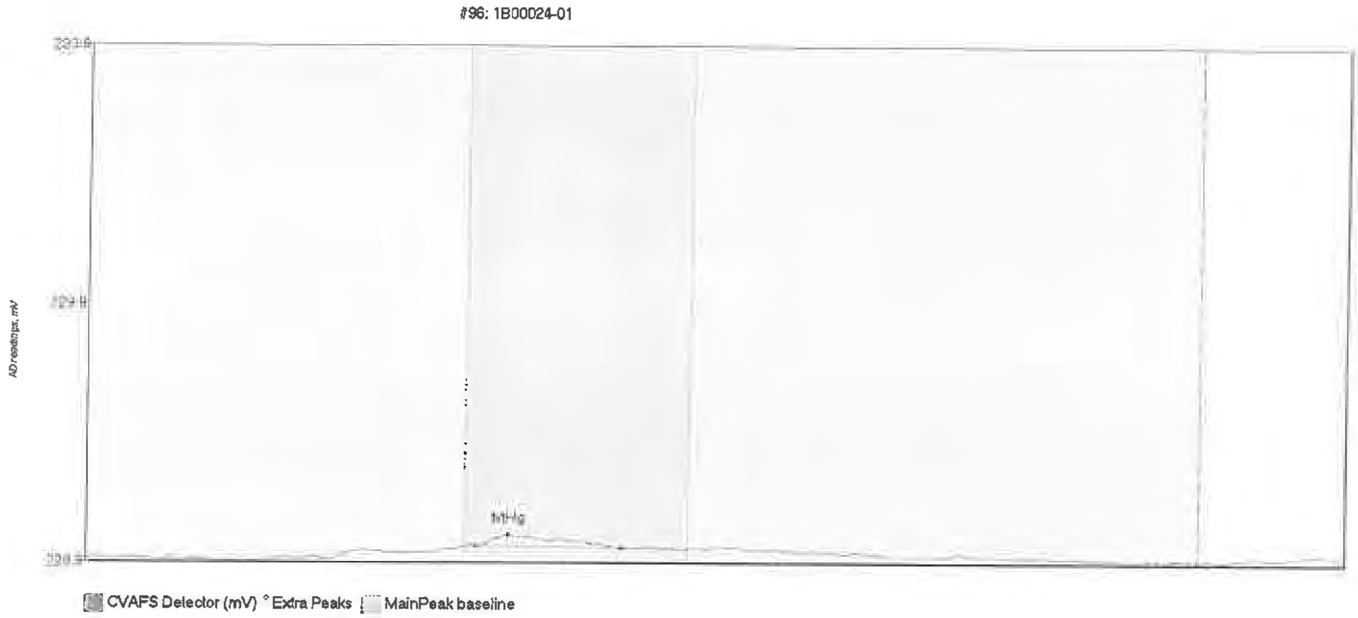
Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00019-01 Hg0	2.423	49.4	66.5	228.88	228.91	55.2	0.039	OK	228.8767	0.00	0.04	F102297
1B00019-01 MHg	66.877	75.0	119.0	228.92	228.95	84.6	0.447	CT	228.8767	0.00	0.04	F102297



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00020-01 Hg0	4.434	47.3	62.4	228.87	228.93	56.6	0.085	OK	228.8866	0.00	0.04	F102297
1B00020-01 MHg	354.426	75.0	119.0	228.94	229.07	85.0	2.425	CT	228.8866	0.00	0.04	F102297

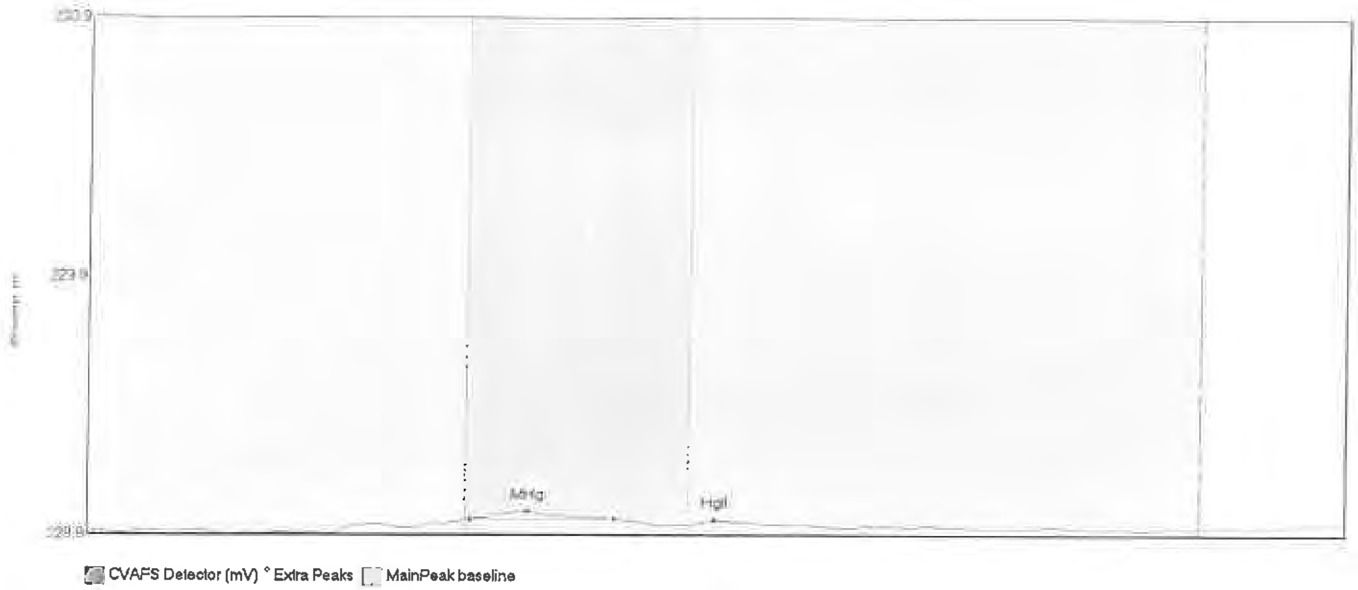
Peak Chart for MHg27001-210204-1*

MHg27001-210204-1*

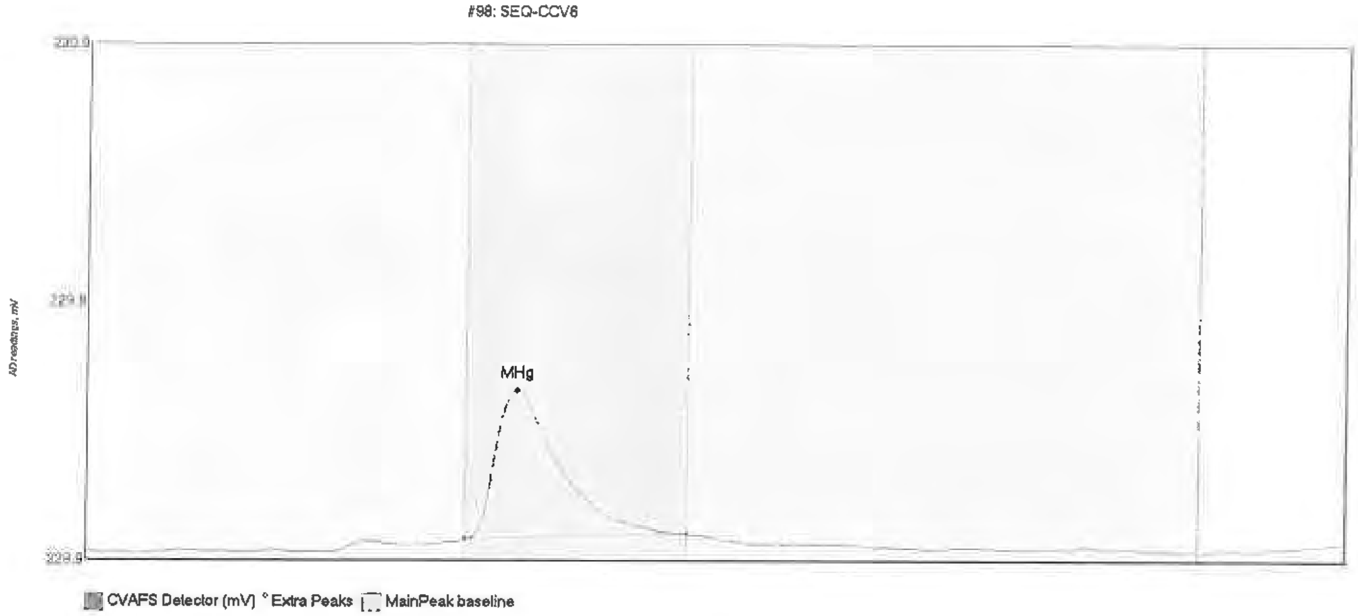


Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
1B00024-01	6.771	77.2	105.8	228.97	228.96	83.5	0.040	OK	228.9253	0.00	0.01	F102297

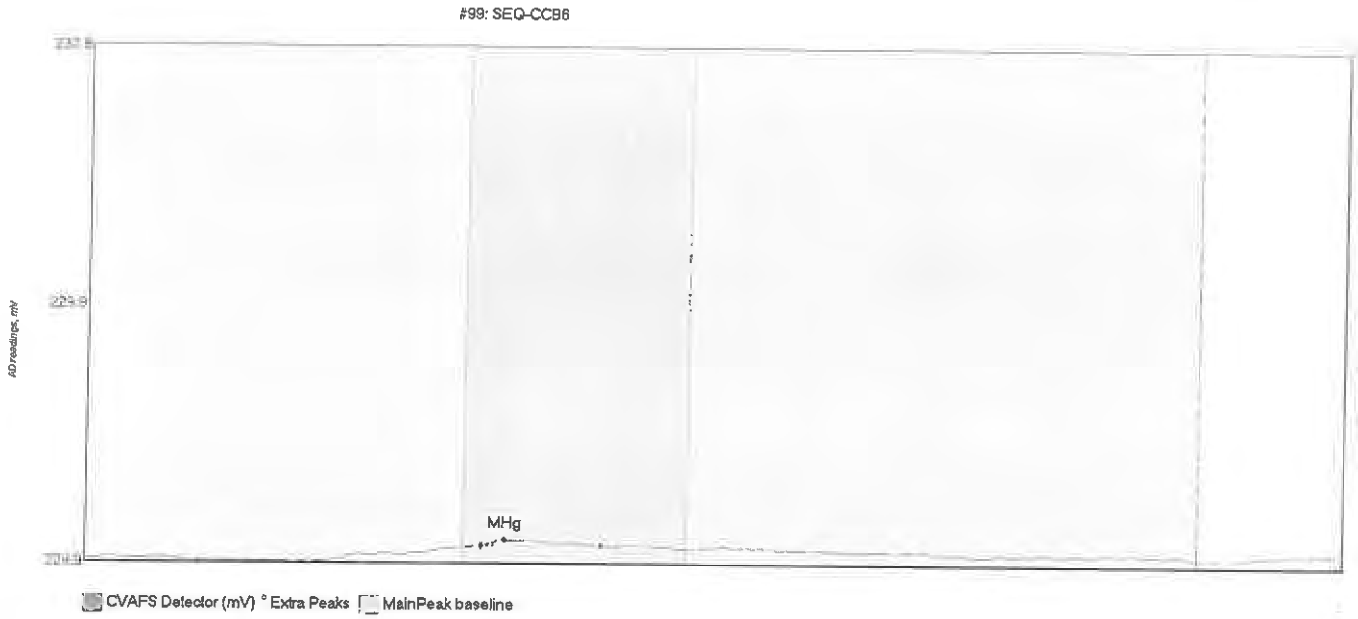
#97: 1B00025-01



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	[illegible]	Comment
1B00025-01 MHg	4.221	75.8	104.4	228.92	228.92	87.2	0.032	OK	228.8765	0.00	[illegible]	F102297
1B00025-01 HgII	1.318	119.5	133.9	228.90	228.90	124.1	0.017	OK	228.8765	0.00	[illegible]	F102297



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCV6	83.292	75.0	119.0	228.94	228.96	85.1	0.576	CT	228.8912	0.00	0.03	



Name	Area	Start Time	EndTime	StartValue	EndValue	Peak Max	PeakHeight	Flags	Baseline	BlDev	BlShift	Comment
SEQ-CCB6	3.435	78.5	102.1	228.95	228.95	83.0	0.023	OK	228.9003	0.00	0.04	

ANALYSIS SEQUENCE

1B12001

Analyzed with 1B12002

Instrument: Hg2600-3

Calibration ID: UNASSIGNED

Analyzed: 2/11/2021

Lab Number	Analysis	Order	STD ID	ISTD ID	Comments
1B12001-IBL1	QC	1			
1B12001-IBL2	QC	2			
1B12001-IBL3	QC	3			QUALITY ASSURANCE
1B12001-CAL1	QC	4	2100111		
1B12001-CAL2	QC	5	2100112		PEER REVIEWED
1B12001-CAL3	QC	6	2100078		
1B12001-CAL4	QC	7	2100079		INITIALS: RGS
1B12001-CAL5	QC	8	2100080		
1B12001-ICV1	QC	9	2002777		
1B12001-ICB1	QC	10			
1B00053-01	Hg-CVAFS-W-1631	11			
1B00053-01RE1	Hg-CVAFS-W-1631	12			Added 2/10/2021 by MFS
1B00053-01RE2	Hg-CVAFS-W-1631	13			Added 2/10/2021 by MFS
1B00053-02	Hg-CVAFS-W-1631	14			
1B00053-02RE1	Hg-CVAFS-W-1631	15			Added 2/10/2021 by MFS
1B00053-02RE2	Hg-CVAFS-W-1631	16			Added 2/10/2021 by MFS
1B00053-03	Hg-CVAFS-W-1631	17			
1B00053-03RE1	Hg-CVAFS-W-1631	18			Added 2/10/2021 by MFS
1B00053-03RE2	Hg-CVAFS-W-1631	19			Added 2/10/2021 by MFS
1B12001-CCV1	QC	20	2002777		
1B12001-CCB1	QC	21			
1B12001-CCV2	QC	22	2002777		
1B12001-CCB2	QC	23			
1B12001-CCV3	QC	24	2002777		
1B12001-CCB3	QC	25			
1B12001-CCV4	QC	26	2002777		
1B12001-CCB4	QC	27			
1B12001-CCV5	QC	28	2002777		
1B12001-CCB5	QC	29			
1B12001-CCV6	QC	30	2002777		
1B12001-CCB6	QC	31			
F102311-BS1	QC	32			
F102311-BSD1	QC	33			
F102311-BLK1	QC	34			
F102311-BLK2	QC	35			
F102311-BLK3	QC	36			

ANALYSIS SEQUENCE

1B12001

Instrument: Hg2600-3

Calibration ID: UNASSIGNED

Analyzed: 2/11/2021

Lab Number	Analysis	Order	STD ID	ISTD ID	Comments
F102311-BLK4	QC	37			
F102311-BLK5	QC	38			
1A00113-08RE1	Hg-CVAFS-W-1631	39			BatchQC
1A00113-08RE1	Hg-CVAFS-W-1631 DOD	40			BatchQC
1A00113-08RE1	Hg-CVAFS-W-1631-WI DNR	41			10X: E MFS 2/9/21
F102311-MS1	QC	42			
1B12001-CCV7	QC	43	2002777		
1B12001-CCB7	QC	44			
F102311-MSD1	QC	45			
1B00004-01	Hg-CVAFS-W-1631	46			
1B00027-02	Hg-CVAFS-W-1631	47			
1B00027-04	Hg-CVAFS-W-1631	48			
1B00027-06	Hg-CVAFS-W-1631	49			
1B00045-01	Hg-CVAFS-W-1631 DOD	50			
1B00045-02	Hg-CVAFS-W-1631 DOD	51			
1B00045-03	Hg-CVAFS-W-1631 DOD	52			
1B00045-04	Hg-CVAFS-W-1631 DOD	53			
1B00050-01	Hg-CVAFS-W-1631	54			
1B12001-CCV8	QC	55	2002777		
1B12001-CCB8	QC	56			
1B00050-02	Hg-CVAFS-W-1631	57			
1B00050-03	Hg-CVAFS-W-1631	58			
1B00050-03	Hg-CVAFS-W-1631 DOD	59			BatchQC
1B00050-03	Hg-CVAFS-W-1631-WI DNR	60			BatchQC
F102311-MS2	QC	61			
F102311-MSD2	QC	62			
1B00050-04	Hg-CVAFS-W-1631	63			
1B00050-05	Hg-CVAFS-W-1631	64			
1B00050-06	Hg-CVAFS-W-1631	65			
1B12001-CCV9	QC	66	2002777		
1B12001-CCB9	QC	67			

Samples Loaded By 2/12/21 Date

Data Processed By 2/12/21 Date

Peer Review Check List for THg by 2600 CV-AFS (SOP2822) 2016 Rev 1 (04/1/2016)

Analyst:	KG/ MFS (DE)	**Sequence(s) #:**	1B12001
Reviewer:		**Dataset ID(s):**	THg26003-210211-3
Date:	2/12/2021	**WO (s) #:**	Multiple
Batch #(s):	F102307, F102311		

• **Select the correct preparation method.**

Analyte	Prep Method		Matrix
☐ THg	EFAFS-T-AFS-SOP2985	FSTM Trap 70:30 Digest	Air/Gas
☐ THg	EFAFS-T-AFS-SOP2807	Modified Cold Aqua Regia	Sed/Soil
☐ THg	EFAFS-T-AFS-SOP2821	Shared Bomb-HF/HNO3/HCl Digest	Sed/Soil
☐ THg	EFTM-T-TM-SOP2825	Nitric Acid Oven Bomb	Sed/Soil
☐ THg	EFAFS-T-AFS-SOP2795	70:30 Digest	Tissue
☐ THg	EFAFS-T-AFS-SOP2800	KCl Trap BrCl Oxidation	Air/Gas
☐ THg	EFTM-T-TM-SOP2837	Shared Nitric	Tissue
☑ THg	EFSR-P-SP-SOP2796	BrCl Oxidation	Water
☐ Hg0	NA	NA	Water
☐ Inorg Hg	NA	NA	Water

Analyst Initials: MFS **Reviewer Initials** PCS

1. Compare SampleID with Benchsheet/Sequence/Raw Data (Have all samples been imported?)	☑ YES	☐ NO		☐
2. Check for transcription errors from Excel spreadsheet (or Prep Benchsheet)/Raw data	☑ YES	☐ NO		☐
(a) On raw data (instrument print-out), does correct file (dataset ID#) name appear in description? Naming convention: THg26001-yymmdd-1 or THg26002-yymmdd-1	☑ YES	☐ NO		☐
(b) Check 5% of transcription from Instrument print-out and Excel file. Compare the "Dilute" and "Peak (raw)" columns to "Dilution" and "Uncorrected Result" in Excel	☑ YES	☐ NO		☐
(c) Check standards & reagents in sequence & bench sheet for correct usage (expiries).	☑ YES	☐ NO	☐ N/A	☐
(d) Check and compare masses (review prep benchsheet)	☑ YES	☐ NO	☐ N/A	☐
(e) Check & compare initial & final volumes	☑ YES	☐ NO	☐ N/A	☐
(f) Do aliquots and dilutions written on benchsheet match those in Excel? 50 ml / aliquot = Excel dilution value	☑ YES	☐ NO	☐ N/A	☐
(g) Is the sequence #, analyst, date, and instrument # on the QC page?	☑ YES	☐ NO		☐
(h) Is the analysis status correct? (analyzed/initial review/reviewed)	☑ YES	☐ NO		☐
(i) Original prep bench sheet added to data package?	☑ YES	☐ NO		☐
(j) Benchsheet prep date MUST match actual prep date (check if re-shot vs re-extract)	☑ YES	☐ NO		☐
3. High QA? WO#(s)/Client(s): ______	☐ YES	☑ NO		☐
4. Client specific QC? (if Yes, refer to Project Notes/LIMS)	☑ YES	☐ NO		☐
(a) Have the QC requirements been met for all WO#s?	☑ YES	☐ NO		
(b) Prep blanks corrections/assigned properly	☑ YES	☐ NO		☐
5a. 20 or fewer samples in batch?	☑ YES	☐ NO		☐
(i) 3 PBs, 1 LCS(or BS), 1 LCSD(or BSD), 1 DUP/Batch 1 MS/MSD (or AS/ASD)/10 samples?	☑ YES	☐ NO		☐
(ii) 1 CCV and 1 CCB every 10 analytical runs?	☑ YES	☐ NO		☐

Peer Review Check List for THg by 2600 CV-AFS (SOP2822) 2016 Rev 1 (04/1/2016)

Analyst:	KG/ MFS (DE)	Sequence(s) #:	1B12001
Reviewer:		Dataset ID(s):	THg26003-210211-3
Date:	2/12/2021	WO (s) #:	Multiple
Batch #(s):	F102307, F102311		

Analyst Initials: MFS   Reviewer Initials: PGS

5b. Has the B/C section data been uploaded? ☐ YES ☐ NO ☑ N/A ☐

QA/QC Data Checked

6. RSD CF (≤ 15%) ☑ PASS ☐ FAIL ☐
   Comments:
7. The calibration curve included a minimum of 5 Standards ☑ YES ☐ NO ☐
   Comments:
8. 1st Calibration Standard % Recoveries EPA 1631E (75-125%) ☑ PASS ☐ FAIL ☐
9. ICV and CCV % Recoveries EPA 1631E (77-123%) ☑ PASS ☐ FAIL ☐
   Comments:
10. Do all calibration points pass acceptance criteria? ☑ YES ☐ NO ☐
   Comments:
11. Are qualifiers consistant with the data review flowcharts? ☑ YES ☐ NO ☐ N/A ☐
   Comments:
12. Explain any items on the failed data report from Element ☐
   Comments:
13. Are the individual Preparation Blanks < PQL or <2.2xMDL for WI (refer to appropriate prep method PQL list) ☑ PASS ☐ FAIL ☐
   (a) If not < PQL or <2.2xMDL for WI, note which PB(s) are above control limit:
   (b) Is the mean PB < PQL or <2.2xMDL for WI (for appropriate qualification)? ☑ YES ☐ NO ☐
   (c) Was a BrCl Blank analyzed for each preservation level? ☑ YES ☐ NO ☐ N/A ☐
   (d) Are Preparation Blanks summarized on QC page? ☑ YES ☐ NO ☐
14. Filtration Blank Prepared (if yes, use FB qualifier) ☐ YES ☑ NO ☐
   (a) Filtration Blank prep date same as associated samples' prep date ☐ YES ☐ NO ☑ N/A ☐
   (b) Filtration Blank absolute value < PQL or <2.2xMDL for WI ☐ YES ☐ NO ☑ N/A ☐
15. IBLs (3 minimum) individually < 0.50 ng/L, mean < 0.25 ng/L and STD of 0.10 ng/L? ☑ PASS ☐ FAIL ☐
   Comments:
16. CCBs individually < 0.50 ng/L or 2.2 x MDL for WI? ☑ PASS ☐ FAIL ☐
   Comments:
17. Have Total Solids been applied? (If NO, please ensure that they are done or nearly done) ☐ YES ☐ NO ☑ N/A ☐
18. Is the correct 'Source' designated for MD/MS/MSD? ☑ YES ☐ NO ☐
19. For digested preps: was there a spike witness signature & date on the prep bench sheet? ☐ YES ☐ NO ☑ N/A ☐

Peer Review Check List for THg by 2600 CV-AFS (SOP2822) 2016 Rev 1 (04/1/2016)

Analyst:	KG/ MFS (DE)	**Sequence(s) #:**	1B12001
Reviewer:		**Dataset ID(s):**	THg26003-210211-3
Date:	2/12/2021	**WO (s) #:**	Multiple
Batch #(s):	F102307, F102311		

Analyst Initials MFS **Reviewer Initials** PCS

20. MS/MSD Spiked at least 1-5 X ambient or 5x MRL (whichever is higher) ? ☑ YES ☐ NO ☐
Comments:

21. Are all samples within instrument calibration range? (or at minimum dilution size) ☑ PASS ☐ FAIL ☐
Comments:

22. Are the samples run at the correct dilution level for the method? ☑ YES ☐ NO
Comments:

23. Dissolved < Total (if applicable) ☐ YES ☐ NO ☑ N/A ☐
Comments:

24. Effluent < Influent (visually confirm if needed) ☑ YES ☐ NO ☐ N/A ☐
Comments:

25. Are re-runs noted with reason? ☑ YES ☐ NO ☑ N/A ☐
Comments:

26. FSTM Datasets: Check to ensure the 'Response' & 'Initial Result' columns match in both the Excel dataset & LIMS for the FSTM A (in sequence) & B/C (in batch) traps? ☐ YES ☐ NO ☑ N/A ☐
Comments:

27. Is the B trap <5% A Traps ☐ YES ☐ NO ☑ N/A ☐
Comments:

28. Are spiked trap recoveries75-125% of true value? ☐ YES ☐ NO ☑ N/A ☐
Comments:

29.Have non-reportable samples been imported into LIMS and clicked to non-reportable? ☐ YES ☐ NO ☑ N/A
Comments:

30. Have re-extracts been created for non-reportable samples? ☐ YES ☐ NO ☑ N/A ☐

31. Are there any HIGH QA projects within the data? If so, place data package in QA office before scanning. ☐ YES ☐ NO ☑ N/A ☐

32. Does the data set need scanning? ☐ YES ☑ N/A ☐

33. Does the dataset have an LOQ/LOQ or DOC? ☐ YES ☑ N/A ☐

34. Water samples: has the preservation log been included in dataset for final volume verification? ☐ YES ☐ NO ☑ N/A ☐

35. Water samples-is the final volume correct in the sequence? ☐ YES ☐ NO ☐ N/A ☐

Files located at: \\Cuprum\gen_admin\Quality Assurance\Training Master\DOCs

36. Date of analyst IDOC/CDOC: 1/22/21 IDOC/CDOC within last 12 months? ☑ YES ☐ NO ☐

37. Date of analyst's SOP reading for method: 1/6/21 Current SOP revision read? ☑ YES ☐ NO ☐

38. Date of LOD: 1/22/21 LOD within last 3 months? ☑ YES ☐ NO ☐

39. Date of LOQ: 1/22/21 LOQ within last 3 months? ☑ YES ☐ NO ☐

Data can not be reported without a current IDOC/CDOC, LOD or LOQ.

Peer Review Check List for THg by 2600 CV-AFS (SOP2822) 2016 Rev 1 (04/1/2016)

Analyst:	KG/ MFS (DE)	**Sequence(s) #:**	1B12001
Reviewer:		**Dataset ID(s):**	THg26003-210211-3
Date:	2/12/2021	**WO (s) #:**	Multiple
Batch #(s):	F102307, F102311		

40. Peer Reviewer's comments (use Peer Review Checklist Additional Comments form if necessary):

Additional Page (s)? ☐ YES

Failing Data Report - 1B12001

Sample ID	Analysis	Result	MRL	Dup Result	Source Result	True Value	Units	% Rec.	Rec. LCL	Rec. UCL	RPD	RPD Limit	Over Cal	Failure	Qualifier

Analyst Reviewed By

2/12/21
Date

Peer Reviewed By

Date

PREPARATION BENCH SHEET

F102307

Eurofins Frontier Global Sciences, LLC

Matrix: Water **Prepared using: Trace Metals - EFGS SOP2796 EPA 1631 Oxidation** **Prepared: 2/10/2021**

Lab Number	Sample ID	Initial (mL)	Final (mL)	QC Sample	Sample Specs.	Location	Sample Comments	Analysis Comments
1B00053-01	BrCl Lot Test 2100335 Bottle 1	50	50.5	-	-	Hg Lab		
1B00053-01RE1	BrCl Lot Test 2100335 Bottle 1	50	50.5	-	-	Hg Lab	Added 2/10/2021 by MFS	Added 2/10/2021 by MFS
1B00053-01RE2	BrCl Lot Test 2100335 Bottle 1	50	50.5	-	-	Hg Lab	Added 2/10/2021 by MFS	Added 2/10/2021 by MFS
1B00053-02	BrCl Lot Test 2100335 Bottle 3	50	50.5	-	-	Hg Lab		
1B00053-02RE1	BrCl Lot Test 2100335 Bottle 3	50	50.5	-	-	Hg Lab	Added 2/10/2021 by MFS	Added 2/10/2021 by MFS
1B00053-02RE2	BrCl Lot Test 2100335 Bottle 3	50	50.5	-	-	Hg Lab	Added 2/10/2021 by MFS	Added 2/10/2021 by MFS
1B00053-03	BrCl Lot Test 2100335 Bottle 4	50	50.5	-	-	Hg Lab		
1B00053-03RE1	BrCl Lot Test 2100335 Bottle 4	50	50.5	-	-	Hg Lab	Added 2/10/2021 by MFS	Added 2/10/2021 by MFS
1B00053-03RE2	BrCl Lot Test 2100335 Bottle 4	50	50.5	-	-	Hg Lab	Added 2/10/2021 by MFS	Added 2/10/2021 by MFS

[redacted] Analyze each bottle in triplicate - MFS 2/10/21

ue Date: 3/3/2021

PREPARATION BENCH SHEET

F102307

Eurofins Frontier Global Sciences, LLC

Matrix: Water

Prepared using: Trace Metals - EFGS SOP2796 EPA 1631 Oxidation

Prepared: 2/10/2021

Lab Number	Sample ID	Initial (mL)	Final (mL)	QC Sample	Sample Specs.	Location	Sample Comments	Analysis Comments
1B00053-01	BrCl Lot Test 2100335 Bottle 1	50	50.5	-	-	Hg Lab		
1B00053-01RE1	BrCl Lot Test 2100335 Bottle 1	50	50.5	-	-	Hg Lab	Added 2/10/2021 by MFS	Added 2/10/2021 by MFS
1B00053-01RE2	BrCl Lot Test 2100335 Bottle 1	50	50.5	-	-	Hg Lab	Added 2/10/2021 by MFS	Added 2/10/2021 by MFS
1B00053-02	BrCl Lot Test 2100335 Bottle 3	50	50.5	-	-	Hg Lab		
1B00053-02RE1	BrCl Lot Test 2100335 Bottle 3	50	50.5	-	-	Hg Lab	Added 2/10/2021 by MFS	Added 2/10/2021 by MFS
1B00053-02RE2	BrCl Lot Test 2100335 Bottle 3	50	50.5	-	-	Hg Lab	Added 2/10/2021 by MFS	Added 2/10/2021 by MFS
1B00053-03	BrCl Lot Test 2100335 Bottle 4	50	50.5	-	-	Hg Lab		
1B00053-03RE1	BrCl Lot Test 2100335 Bottle 4	50	50.5	-	-	Hg Lab	Added 2/10/2021 by MFS	Added 2/10/2021 by MFS
1B00053-03RE2	BrCl Lot Test 2100335 Bottle 4	50	50.5	-	-	Hg Lab	Added 2/10/2021 by MFS	Added 2/10/2021 by MFS

[redacted]

mL 0.2N BrCl + 50uL Hyd. HCl -> 50 mL F.V. MQ Water. Analyze each bottle in triplicate - MFS 2/10/21

e Date: 3/3/2021

PREPARATION BENCH SHEET

F102311

Eurofins Frontier Global Sciences, LLC

Matrix: Water **Prepared using: Trace Metals - EFGS SOP2796 EPA 1631 Oxidation** **Prepared: 2/11/2021**

Lab Number	Sample ID and Source Sample	Initial (mL)	Final (mL)	Spike1 ID	µl Spike1	Spike2 ID	µl Spike2	Extraction Comments
F102311-BLK1	Blank	50	50.5					
F102311-BLK2	Blank	50	50.5					
F102311-BLK3	Blank	50	50.5					
F102311-BLK4	WI-DNR Preservation Blank	50	50.5					
F102311-BLK5	5% Method Blank	50	50.5					
F102311-BS1	LCS	50	50.5	2100046	25			
F102311-BSD1	LCS Dup	50	50.5	2100046	25			
F102311-MS1	Matrix Spike [1A00113-08RE1]	0.4950495	0.5	2100046	25			[Spk] 50mL->50.5mL; 0.5mL->0.5mL; Spiked 0.5mL
F102311-MS2	Matrix Spike [1B00050-03]	50	50.5	2100046	25			
F102311-MSD1	Matrix Spike Dup [1A00113-08RE1]	0.4950495	0.5	2100046	25			[Spk] 50mL->50.5mL; 0.5mL->0.5mL; Spiked 0.5mL
F102311-MSD2	Matrix Spike Dup [1B00050-03]	50	50.5	2100046	25			

Standard ID(s):	Description:	Expiration:
2100046	THg 10ng/mL Calibration Standard	05-Apr-21 00:00

Reagent ID(s):	Description:	Expiration:
2003452	25% Hydroxylamine-HCl working solution	05-Jun-21 00:00
2100063	0.2 N BRCL JANUARY 2021	06-Jul-21 00:00
2100103	THg 2% BrCl	
2100104	THg Washstation (0.5% BrCl)	05-Jun-21 00:00
2100281	3% SnCl2 THg reductant	
2100343	2% Preservation Blank	11-Jul-21 00:00

ue Date: 2/12/2021

PREPARATION BENCH SHEET

F102311

Eurofins Frontier Global Sciences, LLC

Matrix: Water **Prepared using: Trace Metals - EFGS SOP2796 EPA 1631 Oxidation** **Prepared: 2/11/2021**

Lab Number	Sample ID	Initial (mL)	Final (mL)	QC Sample	Sample Specs.	Location	Sample Comments	Analysis Comments
1A00113-08RE1	GW Influent (500-194237-8)	50	50.5	-	-	010402	Requires Preservation Blank - DM 1/29	
1B00004-01	EB_DeconlinerHSBowl_020121_SED_QC	50	50.5	-	-	010402		
1B00027-02	Field Blank	50	50.5	-	-	010402		
1B00027-04	YRWWTP Effluent	50	50.5	-	-	010402		
1B00027-06	YRWWTP Influent	50	50.5	-	-	010402		
1B00045-01	MTF-UW-015	50	50.5	-	-	020501		
1B00045-02	MTF-TW-026	50	50.5	-	-	020501		
1B00045-03	MTF-TW-027	50	50.5	-	-	020501		
1B00045-04	MTF-TB-015	50	50.5	-	-	020501		
1B00050-01	001	50	50.5	-	-	020501		
1B00050-02	001 Field Blank	50	50.5	-	-	020501		
1B00050-03	002	50	50.5	-	-	020501	BatchQC	Added for BatchQC in: F102311
1B00050-04	002 Field Blank	50	50.5	-	-	020501		
1B00050-05	A-149	50	50.5	-	-	020501		
1B00050-06	A-149 Field Blank	50	50.5	-	-	020501		

[redacted]

Due Date: 2/12/2021

PREPARATION BENCH SHEET

F102311

Eurofins Frontier Global Sciences, LLC

Matrix: Water | Prepared using: Trace Metals - EFGS SOP2796 EPA 1631 Oxidation | Prepared: 2/11/2021

Due Date: 2/12/2021

THg26003-210211-3

eurofins | Frontier Global Sciences

Analysis Datasheet for Total Mercury

Date of Analysis: February 11, 2021
Instrument #: Hg2600-3
LIMS Sequence #: 1B12001, 1B12002

Analyst: KG
Units ng/L

Calibration Statistics:

LabNumber	n	True Val	Area	Uncorrected Response Factor	Corrected Peak Height	Corrected Response Factor	% Recovery
SEQ-CAL1	1	0.50 ng/L	130.68 units	261.37	72.61 units	145.21	116.6 %Rec
SEQ-CAL2	1	1.00 ng/L	192.34 units	192.34	134.26 units	134.26	107.8 %Rec
SEQ-CAL3	1	5.00 ng/L	628.79 units	125.76	570.72 units	114.14	91.7 %Rec
SEQ-CAL4	1	20.00 ng/L	2369.38 units	118.47	2311.30 units	115.57	92.8 %Rec
SEQ-CAL5	1	40.00 ng/L	4589.88 units	114.75	4531.80 units	113.29	91.0 %Rec
SEQ-CAL6	0						
SEQ-CAL7	0						
SEQ-CAL8	0						
SEQ-CAL9	0						

Corr. Mean RF	Corr. St Dev RF	Corr. RSD CF	Uncorr. Mean RF
124.49	+/- 14.46	11.6% RSD	162.54

Blanks:

LabNumber	n	Mean	Std Dev	Mean (ng/L)	Std Dev (ng/L)
SEQ-IBL	3	58.08 units	±10.21	0.36 ng/L	±0.06

Preparation Blanks

Sample Type	Batch ID	n	Mean	Std Dev
BLK	1	0	0.000 ng/L	
BLK	2	3	31.725 ng/L	±5.206
BLK	3	3	24.158 ng/L	±8.350
BLK	4	5	-0.036 ng/L	±0.097
BLK	5	0	0.000 ng/L	
BLK	6	0	0.000 ng/L	

File: THg26003-210211-3

Instrument	Analyst	Sample Type	LabNumber	Dilution	Analyzed	FileID	RunEnd	Uncorrected Response	Batch ID	No PB Correction?	RESP	InitialResult	FinalResult	InitialUnits	Comments
Hg2600-3	00	CAL	SEQ-IBL1	1	2/11/2021 11:25:07	14827-1.RAW	11:25:07 AM	50.70			-7.4	-0.059	-0.059	ng/L	
Hg2600-3	00	CAL	SEQ-IBL2	1	2/11/2021 11:29:15	14828-1.RAW	11:29:15 AM	53.80			-4.3	-0.034	-0.034	ng/L	
Hg2600-3	00	CAL	SEQ-IBL3	1	2/11/2021 11:33:24	14829-1.RAW	11:33:24 AM	69.74			11.7	0.094	0.094	ng/L	
Hg2600-3	00	CAL	SEQ-CAL1	1	2/11/2021 11:37:33	14830-1.RAW	11:37:33 AM	130.68			72.6	0.583	0.583	ng/L	
Hg2600-3	00	CAL	SEQ-CAL2	1	2/11/2021 11:41:41	14831-1.RAW	11:41:41 AM	192.34			134.3	1.078	1.078	ng/L	
Hg2600-3	00	CAL	SEQ-CAL3	1	2/11/2021 11:45:50	14832-1.RAW	11:45:50 AM	628.79			570.7	4.584	4.584	ng/L	
Hg2600-3	00	CAL	SEQ-CAL4	1	2/11/2021 11:49:59	14833-1.RAW	11:49:59 AM	2369.38			2311.3	18.566	18.566	ng/L	
Hg2600-3	00	CAL	SEQ-CAL5	1	2/11/2021 11:54:08	14834-1.RAW	11:54:08 AM	4589.88			4531.8	36.402	36.402	ng/L	
Hg2600-3	00	CAL	SEQ-ICV1	1	2/11/2021 11:58:18	14835-1.RAW	11:58:18 AM	687.17			629.1	5.053	5.053	ng/L	
Hg2600-3	00	CAL	SEQ-ICB1	1	2/11/2021 12:02:27	14836-1.RAW	12:02:27 PM	78.51			18.4	0.148	0.148	ng/L	
Hg2600-3	00	SAM	1B00053-01	1	2/11/2021 12:06:36	14837-1.RAW	12:06:36 PM	38.39	1		-19.7	-0.158	-0.158	ng/L	F102307
Hg2600-3	00	SAM	1B00053-01RE1	1	2/11/2021 12:10:46	14838-1.RAW	12:10:46 PM	31.25	1		-26.8	-0.216	-0.216	ng/L	F102307
Hg2600-3	00	SAM	1B00053-01RE2	1	2/11/2021 12:14:54	14839-1.RAW	12:14:54 PM	45.78	1		-12.3	-0.099	-0.099	ng/L	F102307
Hg2600-3	00	SAM	1B00053-02	1	2/11/2021 12:19:04	14840-1.RAW	12:19:04 PM	42.14	1		-15.9	-0.128	-0.128	ng/L	F102307
Hg2600-3	00	SAM	1B00053-02RE1	1	2/11/2021 12:23:13	14841-1.RAW	12:23:13 PM	37.81	1		-20.3	-0.163	-0.163	ng/L	F102307
Hg2600-3	00	SAM	1B00053-02RE2	1	2/11/2021 12:27:22	14842-1.RAW	12:27:22 PM	49.46	1		-8.6	-0.069	-0.069	ng/L	F102307
Hg2600-3	00	SAM	1B00053-03	1	2/11/2021 12:31:31	14843-1.RAW	12:31:31 PM	65.34	1		7.3	0.058	0.058	ng/L	F102307
Hg2600-3	00	SAM	1B00053-03RE1	1	2/11/2021 12:35:40	14844-1.RAW	12:35:40 PM	30.08	1		-28.0	-0.225	-0.225	ng/L	F102307
Hg2600-3	00	SAM	1B00053-03RE2	1	2/11/2021 12:39:49	14845-1.RAW	12:39:49 PM	42.70	1		-15.4	-0.124	-0.124	ng/L	F102307
Hg2600-3	00	SAM	F101436-BS1	400	2/11/2021 12:43:58	14846-1.RAW	12:43:58 PM	638.18	2		580.1	4.580	1832.152	ng/L	F101436
Hg2600-3	00	CAL	SEQ-CCV1	1	2/11/2021 12:48:08	14847-1.RAW	12:48:08 PM	661.57			603.5	4.848	4.848	ng/L	
Hg2600-3	00	CAL	SEQ-CCB1	1	2/11/2021 12:52:17	14848-1.RAW	12:52:17 PM	52.34			-5.7	-0.046	-0.046	ng/L	
Hg2600-3	00	SAM	F101436-BSD1	400	2/11/2021 12:56:26	14849-1.RAW	12:56:26 PM	648.14	2		590.1	4.660	1864.136	ng/L	F101436
Hg2600-3	00	BLK	F101436-BLK1	100	2/11/2021 13:00:36	14850-1.RAW	1:00:36 PM	105.05	2		47.0	0.377	37.728	ng/L	F101436
Hg2600-3	00	BLK	F101436-BLK2	100	2/11/2021 13:04:45	14851-1.RAW	1:04:45 PM	94.19	2		36.1	0.290	29.005	ng/L	F101436
Hg2600-3	00	BLK	F101436-BLK3	100	2/11/2021 13:08:54	14852-1.RAW	1:08:54 PM	93.49	2		35.4	0.284	28.441	ng/L	F101436
Hg2600-3	00	SAM	1A00086-01B	100	2/11/2021 13:13:04	14853-1.RAW	1:13:04 PM	235.62	2		177.5	1.109	110.888	ng/L	F101436
Hg2600-3	00	SAM	1A00086-02B	100	2/11/2021 13:17:13	14854-1.RAW	1:17:13 PM	114.21	2		56.1	0.134	13.364	ng/L	F101436
Hg2600-3	00	SAM	1A00103-01B	100	2/11/2021 13:21:23	14855-1.RAW	1:21:23 PM	66.17	2		8.1	-0.252	-25.222	ng/L	F101436
Hg2600-3	00	SAM	1A00103-02B	100	2/11/2021 13:25:32	14856-1.RAW	1:25:32 PM	70.23	2		12.1	-0.220	-21.968	ng/L	F101436
Hg2600-3	00	SAM	1A00103-03B	100	2/11/2021 13:29:41	14857-1.RAW	1:29:41 PM	65.02	2		6.9	-0.262	-26.152	ng/L	F101436
Hg2600-3	00	SAM	1A00103-04B	100	2/11/2021 13:33:50	14858-1.RAW	1:33:50 PM	70.99	2		12.9	-0.214	-21.352	ng/L	F101436
Hg2600-3	00	CAL	SEQ-CCV2	1	2/11/2021 13:37:59	14859-1.RAW	1:37:59 PM	664.89			606.8	4.874	4.874	ng/L	
Hg2600-3	00	CAL	SEQ-CCB2	1	2/11/2021 13:42:09	14860-1.RAW	1:42:09 PM	56.15			-1.9	-0.015	-0.015	ng/L	
Hg2600-3	00	SAM	1A00086-01C	2500	2/11/2021 13:46:18	14861-1.RAW	1:46:18 PM	3789.34	2		3731.3	29.959	74896.712	ng/L	F101436
Hg2600-3	00	SAM	1A00086-02C	2500	2/11/2021 13:50:27	14862-1.RAW	1:50:27 PM	3755.16	2		3697.1	29.684	74210.370	ng/L	F101436
Hg2600-3	00	SAM	1A00103-01C	1000	2/11/2021 13:54:37	14863-1.RAW	1:54:37 PM	3132.99	2		3074.9	24.668	24667.514	ng/L	F101436
Hg2600-3	00	SAM	1A00103-02C	1000	2/11/2021 13:58:46	14864-1.RAW	1:58:46 PM	3063.20	2		3005.1	24.107	24106.940	ng/L	F101436
Hg2600-3	00	SAM	1A00103-03C	1000	2/11/2021 14:02:56	14865-1.RAW	2:02:56 PM	3038.98	2		2980.9	23.912	23912.374	ng/L	F101436
Hg2600-3	00	SAM	1A00103-04C	1000	2/11/2021 14:07:05	14866-1.RAW	2:07:05 PM	3315.59	2		3257.5	26.134	26134.224	ng/L	F101436
Hg2600-3	00	SAM	1A00086-01A	2500	2/11/2021 14:11:15	14867-1.RAW	2:11:15 PM	1900.64	2		1842.6	14.788	36969.210	ng/L	F101436
Hg2600-3	00	SAM	1A00086-02A	2500	2/11/2021 14:15:24	14868-1.RAW	2:15:24 PM	1836.30	2		1778.2	14.271	35677.096	ng/L	F101436
Hg2600-3	00	SAM	1A00103-01A	1000	2/11/2021 14:19:34	14869-1.RAW	2:19:34 PM	130.24	2		72.2	0.548	547.929	ng/L	F101436
Hg2600-3	00	SAM	1A00103-02A	1000	2/11/2021 14:23:43	14870-1.RAW	2:23:43 PM	134.59	2		76.5	0.583	582.878	ng/L	F101436
Hg2600-3	00	CAL	SEQ-CCV3	1	2/11/2021 14:27:52	14871-1.RAW	2:27:52 PM	669.03			611.0	4.907	4.907	ng/L	
Hg2600-3	00	CAL	SEQ-CCB3	1	2/11/2021 14:32:02	14872-1.RAW	2:32:02 PM	53.00			-5.1	-0.041	-0.041	ng/L	
Hg2600-3	00	SAM	1A00103-03A	1000	2/11/2021 14:36:11	14873-1.RAW	2:36:11 PM	1028.56	2		970.5	7.764	7763.665	ng/L	F101436
Hg2600-3	00	SAM	1A00103-04A	1000	2/11/2021 14:40:21	14874-1.RAW	2:40:21 PM	892.20	2		834.1	6.668	6668.372	ng/L	F101436
Hg2600-3	00	SAM	F101437-BS1	400	2/11/2021 14:44:31	14875-1.RAW	2:44:31 PM	608.30	3		550.2	4.359	1743.688	ng/L	F101437
Hg2600-3	00	SAM	F101437-BSD1	400	2/11/2021 14:48:40	14876-1.RAW	2:48:40 PM	612.47	3		554.4	4.393	1757.090	ng/L	F101437
Hg2600-3	00	BLK	F101437-BLK1	100	2/11/2021 14:52:50	14877-1.RAW	2:52:50 PM	100.05	3		42.0	0.337	33.712	ng/L	F101437
Hg2600-3	00	BLK	F101437-BLK2	100	2/11/2021 14:56:59	14878-1.RAW	2:56:59 PM	80.80	3		22.7	0.183	18.253	ng/L	F101437
Hg2600-3	00	BLK	F101437-BLK3	100	2/11/2021 15:01:09	14879-1.RAW	3:01:09 PM	83.61	3		25.5	0.205	20.510	ng/L	F101437
Hg2600-3	00	SAM	1A00111-01B	100	2/11/2021 15:05:18	14880-1.RAW	3:05:18 PM	126.79	3		68.7	0.310	31.035	ng/L	F101437
Hg2600-3	00	SAM	1A00111-02B	100	2/11/2021 15:09:28	14881-1.RAW	3:09:28 PM	121.47	3		63.4	0.268	26.760	ng/L	F101437
Hg2600-3	00	SAM	1A00111-03B	100	2/11/2021 15:13:37	14882-1.RAW	3:13:37 PM	97.92	3		39.8	0.078	7.840	ng/L	F101437
Hg2600-3	00	CAL	SEQ-CCV4	1	2/11/2021 15:17:47	14883-1.RAW	3:17:47 PM	650.96			592.9	4.762	4.762	ng/L	

File: THg26003-210211-3

Instrument	Analyst	Sample Type	LabNumber	Dilution	Analyzed	FileID	RunEnd	Uncorrected Response	Batch ID	No PB Correction?	RESP	InitialResult	FinalResult	InitialUnits	Comments
Hg2600-3	00	CAL	SEQ-CCB4	1	2/11/2021 15:21:57	14884-1.RAW	3:21:57 PM	44.96			-13.1	-0.105	-0.105	ng/L	
Hg2600-3	00	SAM	1A00111-04B	100	2/11/2021 15:26:06	14885-1.RAW	3:26:06 PM	8376.93	3		8318.8	66.580	6657.959	ng/L	F101437
Hg2600-3	00	SAM	1A00111-05B	100	2/11/2021 15:30:16	14886-1.RAW	3:30:16 PM	106.75	3		48.7	0.149	14.933	ng/L	F101437
Hg2600-3	00	SAM	1A00111-06B	100	2/11/2021 15:34:25	14887-1.RAW	3:34:25 PM	97.71	3		39.6	0.077	7.673	ng/L	F101437
Hg2600-3	00	SAM	1A00117-01B	100	2/11/2021 15:38:35	14888-1.RAW	3:38:35 PM	129.83	3		71.8	0.335	33.476	ng/L	F101437
Hg2600-3	00	SAM	1A00117-02B	100	2/11/2021 15:42:45	14889-1.RAW	3:42:45 PM	116.38	3		58.3	0.227	22.675	ng/L	F101437
Hg2600-3	00	SAM	1A00111-01C	1000	2/11/2021 15:46:54	14890-1.RAW	3:46:54 PM	3247.79	3		3189.7	25.597	25597.177	ng/L	F101437
Hg2600-3	00	SAM	1A00111-02C	1000	2/11/2021 15:51:04	14891-1.RAW	3:51:04 PM	3223.88	3		3165.8	25.405	25405.118	ng/L	F101437
Hg2600-3	00	SAM	1A00111-03C	1000	2/11/2021 15:55:14	14892-1.RAW	3:55:14 PM	1803.76	3		1745.7	13.998	13997.998	ng/L	F101437
Hg2600-3	00	SAM	1A00111-04C	1000	2/11/2021 15:59:23	14893-1.RAW	3:59:23 PM	801.23	3		743.2	5.945	5945.208	ng/L	F101437
Hg2600-3	00	SAM	1A00111-05C	1000	2/11/2021 16:03:33	14894-1.RAW	4:03:33 PM	3344.554567	3		3286.5	26.374	26374.469	ng/L	F101437
Hg2600-3	00	CAL	SEQ-CCV5	1	2/11/2021 16:07:43	14895-1.RAW	4:07:43 PM	650.66			592.6	4.760	4.760	ng/L	
Hg2600-3	00	CAL	SEQ-CCB5	1	2/11/2021 16:11:53	14896-1.RAW	4:11:53 PM	39.11			-19.0	-0.152	-0.152	ng/L	
Hg2600-3	00	SAM	1A00111-06B	1000	2/11/2021 16:16:02	14897-1.RAW	4:16:02 PM	3303.79	3		3245.7	26.047	26046.996	ng/L	F101437
Hg2600-3	00	SAM	1A00117-01B	2500	2/11/2021 16:20:12	14898-1.RAW	4:20:12 PM	3749.63	3		3691.5	29.643	74106.746	ng/L	F101437
Hg2600-3	00	SAM	1A00117-02B	2500	2/11/2021 16:24:22	14899-1.RAW	4:24:22 PM	3755.89	3		3697.8	29.693	74232.603	ng/L	F101437
Hg2600-3	00	SAM	1A00111-01A	1000	2/11/2021 16:28:32	14900-1.RAW	4:28:32 PM	247.46	3		189.4	1.497	1497.063	ng/L	F101437
Hg2600-3	00	SAM	1A00111-02A	1000	2/11/2021 16:32:42	14901-1.RAW	4:32:42 PM	230.77	3		172.7	1.363	1362.947	ng/L	F101437
Hg2600-3	00	SAM	1A00111-03A	1000	2/11/2021 16:36:52	14902-1.RAW	4:36:52 PM	1687.22	3		1629.1	13.062	13061.917	ng/L	F101437
Hg2600-3	00	SAM	1A00111-04A	1000	2/11/2021 16:41:02	14903-1.RAW	4:41:02 PM	747.21	3		689.1	5.511	5511.257	ng/L	F101437
Hg2600-3	00	SAM	1A00111-05A	1000	2/11/2021 16:45:11	14904-1.RAW	4:45:11 PM	238.56	3		180.5	1.426	1425.525	ng/L	F101437
Hg2600-3	00	SAM	1A00111-06A	1000	2/11/2021 16:49:21	14905-1.RAW	4:49:21 PM	243.48	3		185.4	1.465	1465.063	ng/L	F101437
Hg2600-3	00	SAM	1A00117-01A	2500	2/11/2021 16:53:30	14906-1.RAW	4:53:30 PM	1764.41	3		1706.3	13.696	34241.171	ng/L	F101437
Hg2600-3	00	CAL	SEQ-CCV6	1	2/11/2021 16:57:40	14907-1.RAW	4:57:40 PM	645.83			587.7	4.721	4.721	ng/L	
Hg2600-3	00	CAL	SEQ-CCB6	1	2/11/2021 17:01:50	14908-1.RAW	5:01:50 PM	51.43			-6.7	-0.053	-0.053	ng/L	
Hg2600-3	00	SAM	1A00117-02A	2500	2/11/2021 17:05:59	14909-1.RAW	5:05:59 PM	1593.92	3		1535.8	12.327	30817.521	ng/L	F101437
Hg2600-3	00	SAM	F102311-BS1	1	2/11/2021 17:10:09	14910-1.RAW	5:10:09 PM	620.00	4		561.9	4.549	4.549	ng/L	F102311
Hg2600-3	00	SAM	F102311-BSD1	1	2/11/2021 17:14:19	14911-1.RAW	5:14:19 PM	597.69	4		539.6	4.370	4.370	ng/L	F102311
Hg2600-3	00	BLK	F102311-BLK1	1	2/11/2021 17:18:29	14912-1.RAW	5:18:29 PM	67.97	4		9.9	0.079	0.079	ng/L	F102311
Hg2600-3	00	BLK	F102311-BLK2	1	2/11/2021 17:22:39	14913-1.RAW	5:22:39 PM	56.14	4		-1.9	-0.016	-0.016	ng/L	F102311
Hg2600-3	00	BLK	F102311-BLK3	1	2/11/2021 17:26:49	14914-1.RAW	5:26:49 PM	52.10	4		-6.0	-0.048	-0.048	ng/L	F102311
Hg2600-3	00	BLK	F102311-BLK4	1	2/11/2021 17:30:58	14915-1.RAW	5:30:58 PM	57.30	4		-0.8	-0.006	-0.006	ng/L	F102311
Hg2600-3	00	BLK	F102311-BLK5	1	2/11/2021 17:35:08	14916-1.RAW	5:35:08 PM	34.66	4		-23.4	-0.188	-0.188	ng/L	F102311
Hg2600-3	00	SAM	1A00113-08RE1	100	2/11/2021 17:39:18	14917-1.RAW	5:39:18 PM	264.59	4		206.5	1.659	165.912	ng/L	F102311
Hg2600-3	00	SAM	F102311-MS1	100	2/11/2021 17:43:28	14918-1.RAW	5:43:28 PM	760.41	4		702.3	5.642	564.185	ng/L	F102311
Hg2600-3	00	CAL	SEQ-CCV7	1	2/11/2021 17:47:38	14919-1.RAW	5:47:38 PM	608.60			550.5	4.422	4.422	ng/L	
Hg2600-3	00	CAL	SEQ-CCB7	1	2/11/2021 17:51:48	14920-1.RAW	5:51:48 PM	42.41			-15.7	-0.126	-0.126	ng/L	
Hg2600-3	00	SAM	F102311-MSD1	100	2/11/2021 17:55:58	14921-1.RAW	5:55:58 PM	784.54	4		726.5	5.836	583.563	ng/L	F102311
Hg2600-3	00	SAM	1B00004-01	1	2/11/2021 18:00:08	14922-1.RAW	6:00:08 PM	62.42	4		4.3	0.071	0.071	ng/L	F102311
Hg2600-3	00	SAM	1B00027-02	1	2/11/2021 18:04:17	14923-1.RAW	6:04:17 PM	33.33	4		-24.7	-0.163	-0.163	ng/L	F102311
Hg2600-3	00	SAM	1B00027-04	1	2/11/2021 18:08:27	14924-1.RAW	6:08:27 PM	649.36	4		591.3	4.785	4.785	ng/L	F102311
Hg2600-3	00	SAM	1B00027-06	10	2/11/2021 18:12:37	14925-1.RAW	6:12:37 PM	248.67	4		190.6	1.535	15.345	ng/L	F102311
Hg2600-3	00	SAM	1B00045-01	50	2/11/2021 18:16:46	14926-1.RAW	6:16:46 PM	627.58	4		569.5	4.575	228.760	ng/L	F102311
Hg2600-3	00	SAM	1B00045-02	50	2/11/2021 18:20:57	14927-1.RAW	6:20:57 PM	314.08	4		256.0	2.057	102.850	ng/L	F102311
Hg2600-3	00	SAM	1B00045-03	50	2/11/2021 18:25:07	14928-1.RAW	6:25:07 PM	322.76	4		264.7	2.127	106.338	ng/L	F102311
Hg2600-3	00	SAM	1B00045-04	1	2/11/2021 18:29:17	14929-1.RAW	6:29:17 PM	95.79	4		37.7	0.339	0.339	ng/L	F102311
Hg2600-3	00	SAM	1B00050-01	1	2/11/2021 18:33:26	14930-1.RAW	6:33:26 PM	353.88	4		295.8	2.412	2.412	ng/L	F102311
Hg2600-3	00	CAL	SEQ-CCV8	1	2/11/2021 18:37:36	14931-1.RAW	6:37:36 PM	599.22			541.1	4.347	4.347	ng/L	
Hg2600-3	00	CAL	SEQ-CCB8	1	2/11/2021 18:41:46	14932-1.RAW	6:41:46 PM	44.53			-13.5	-0.109	-0.109	ng/L	
Hg2600-3	00	SAM	1B00050-02	1	2/11/2021 18:45:56	14933-1.RAW	6:45:56 PM	43.28	4		-14.8	-0.083	-0.083	ng/L	F102311
Hg2600-3	00	SAM	1B00050-03	1	2/11/2021 18:50:06	14934-1.RAW	6:50:06 PM	799.35	4		741.3	5.990	5.990	ng/L	F102311
Hg2600-3	00	SAM	F102311-MS2	1	2/11/2021 18:54:16	14935-1.RAW	6:54:16 PM	1242.57	4		1184.5	9.550	9.550	ng/L	F102311
Hg2600-3	00	SAM	F102311-MSD2	1	2/11/2021 18:58:26	14936-1.RAW	6:58:26 PM	1262.99	4		1204.9	9.714	9.714	ng/L	F102311
Hg2600-3	00	SAM	1B00050-04	1	2/11/2021 19:02:36	14937-1.RAW	7:02:36 PM	41.20	4		-16.9	-0.100	-0.100	ng/L	F102311
Hg2600-3	00	SAM	1B00050-05	10	2/11/2021 19:06:46	14938-1.RAW	7:06:46 PM	354.46	4		296.4	2.384	23.843	ng/L	F102311
Hg2600-3	00	SAM	1B00050-06	1	2/11/2021 19:10:55	14939-1.RAW	7:10:55 PM	48.46	4		-9.6	-0.042	-0.042	ng/L	F102311
Hg2600-3	00	SAM	1A00111-04B	1000	2/11/2021 19:15:05	14940-1.RAW	7:15:05 PM	838.69	3		780.6	6.246	6246.103	ng/L	F101437
Hg2600-3	00	CAL	SEQ-CCV9	1	2/11/2021 19:19:15	14941-1.RAW	7:19:15 PM	579.62			521.5	4.189	4.189	ng/L	
Hg2600-3	00	CAL	SEQ-CCB9	1	2/11/2021 19:23:25	14942-1.RAW	7:23:25 PM	49.42			-8.7	-0.070	-0.070	ng/L	

Printed: 2/12/2021

Pg1

TotalMercury
EPA1631

Operat: KG | BlankS: 58.079 | Calib Eqn: Conc = (Area-58.07 | Run Date: 2/11/2021 | Blank SD: 10.21444925
Workst: THg260(| CalibFa: 124.49 | Status: QC Warnings:5/QC E | Run Time: 11:05:40 | Blank RSD%: 17.58715638
Method: #### | R: 1 | R²: 0.9999 | CF SD: 14.46363438
Descrip: THg26003-210211-3 | CF RSD%: 11.61791979

Sample/ID	Location	Rinse	Dilute	Blank	Conc (ppt)	MB%	FinalConc	Rec%	QA	RawData	RunEnd	Peak (Raw)	Control (std)	Flags	RunCount	Comment
Clean										14823-1.RAW	11:08:33	0.00	Clean	NP	1	
WS				58.08	0.00					14824-1.RAW	11:12:41	36.34	Sample	OK	1	
WS				58.08	0.00					14825-1.RAW	11:16:50	37.92	Sample	OK	1	
WS				58.08	0.00					14826-1.RAW	11:20:58	36.19	Sample	OK	1	
SEQ-IBL1	A1		1	0.00	0.41					14827-1.RAW	11:25:07	50.70		OK	1	
SEQ-IBL2	A2		1	0.00	0.43					14828-1.RAW	11:29:15	53.80	Sample	OK	1	
SEQ-IBL3	A3		1	0.00	0.56					14829-1.RAW	11:33:24	69.74	Sample	OK	1	
SEQ-CAL1	A4		1	58.08	0.58			116.64		14830-1.RAW	11:37:33	130.68	Sample	OK	1	
SEQ-CAL2	A5		1	58.08	1.08			107.84		14831-1.RAW	11:41:41	192.34	Sample	OK	1	
SEQ-CAL3	A6		1	58.08	4.58			91.69		14832-1.RAW	11:45:50	628.79	Sample	OK	1	
SEQ-CAL4	A7		1	58.08	18.57			92.83		14833-1.RAW	11:49:59	2369.38	Sample	OK	1	
SEQ-CAL5	A8		1	58.08	36.40			91.00		14834-1.RAW	11:54:08	4589.88	Sample	OK	1	
SEQ-ICV1	A9		1	58.08	5.05			101.06		14835-1.RAW	11:58:18	687.17	Sample	OK	1	
SEQ-ICB1	A10		1	58.08	0.15			0.00		14836-1.RAW	12:02:27	76.51	Sample	OK	1	
1B00053-01	A11		1	58.08	0.00					14837-1.RAW	12:06:36	38.39	Sample	OK	1	F102307
1B00053-01RE1	A12		1	58.08	0.00					14838-1.RAW	12:10:46	31.25	Sample	OK	1	F102307
1B00053-01RE2	A13		1	58.08	0.00					14839-1.RAW	12:14:54	45.78	Sample	OK	1	F102307
1B00053-02	A14		1	58.08	0.00					14840-1.RAW	12:19:04	42.14	Sample	OK	1	F102307
1B00053-02RE1	A15		1	58.08	0.00					14841-1.RAW	12:23:13	37.81	Sample	OK	1	F102307
1B00053-02RE2	A16		1	58.08	0.00					14842-1.RAW	12:27:22	49.46	Sample	OK	1	F102307
1B00053-03	A17		1	58.08	0.06					14843-1.RAW	12:31:31	65.34	Sample	OK	1	F102307
1B00053-03RE1	A18		1	58.08	0.00					14844-1.RAW	12:35:40	30.08	Sample	OK	1	F102307
1B00053-03RE2	A19		1	58.08	0.00					14845-1.RAW	12:39:49	42.70	Sample	OK	1	F102307
F101436-BS1	A20		400	58.08	1863.88					14846-1.RAW	12:43:58	638.18	Sample	OK	1	F101436
SEQ-CCV1	A21		1	58.08	4.85			96.95		14847-1.RAW	12:48:08	661.57	Sample	OK	1	
SEQ-CCB1	B1		1	58.08	0.00			0.00		14848-1.RAW	12:52:17	52.34	Sample	OK	1	
F101436-BSD1	B2		400	58.08	1895.86					14849-1.RAW	12:56:26	648.14	Sample	OK	1	F101436
F101436-BLK1	B3		100	58.08	37.73					14850-1.RAW	13:00:36	105.05	Sample	OK	1	F101436
F101436-BLK2	B4		100	58.08	29.01					14851-1.RAW	13:04:45	94.19	Sample	OK	1	F101436
F101436-BLK3	B5		100	58.08	28.44					14852-1.RAW	13:08:54	93.49	Sample	OK	1	F101436
1A00086-01B	B6		100	58.08	142.61					14853-1.RAW	13:13:04	235.62	Sample	OK	1	F101436
1A00086-02B	B7		100	58.08	45.09					14854-1.RAW	13:17:13	114.21	Sample	OK	1	F101436
1A00103-01B	B8		100	58.08	6.50					14855-1.RAW	13:21:23	66.17	Sample	OK	1	F101436
1A00103-02B	B9		100	58.08	9.76					14856-1.RAW	13:25:32	70.23	Sample	OK	1	F101436
1A00103-03B	B10		100	58.08	5.57					14857-1.RAW	13:29:41	65.02	Sample	OK	1	F101436
1A00103-04B	B11		100	58.08	10.37					14858-1.RAW	13:33:50	70.99	Sample	OK	1	F101436
SEQ-CCV2	B12		1	58.08	4.87			97.48		14859-1.RAW	13:37:59	664.89	Sample	OK	1	
SEQ-CCB2	B13		1	58.08	0.00			0.00		14860-1.RAW	13:42:09	56.15	Sample	OK	1	
1A00086-01C	B14		2500	58.08	74928.44					14861-1.RAW	13:46:18	3789.34	Sample	OK	1	F101436
1A00086-02C	B15		2500	58.08	74242.09					14862-1.RAW	13:50:27	3755.16	Sample	OK	1	F101436
1A00103-01C	B16		1000	58.08	24699.24					14863-1.RAW	13:54:37	3132.99	Sample	OK	1	F101436
1A00103-02C	B17		1000	58.08	24138.66					14864-1.RAW	13:58:46	3063.20	Sample	OK	1	F101436
1A00103-03C	B18		1000	58.08	23944.10					14865-1.RAW	14:02:56	3038.98	Sample	OK	1	F101436
1A00103-04C	B19		1000	58.08	26165.95					14866-1.RAW	14:07:05	3315.59	Sample	OK	1	F101436
1A00086-01A	B20		2500	58.08	37000.93					14867-1.RAW	14:11:15	1900.64	Sample	OK	1	F101436
1A00086-02A	B21		2500	58.08	35708.82					14868-1.RAW	14:15:24	1836.30	Sample	OK	1	F101436
1A00103-01A	C1		1000	58.08	579.65					14869-1.RAW	14:19:34	130.24	Sample	OK	1	F101436
1A00103-02A	C2		1000	58.08	614.60					14870-1.RAW	14:23:43	134.59	Sample	OK	1	F101436
SEQ-CCV3	C3		1	58.08	4.91			98.15		14871-1.RAW	14:27:52	669.03	Sample	OK	1	

Pg2

SEQ-CCB3	C4	1	58.08	0.00	0.00	14872-1.RAW	14:32:02	53.00	Sample	OK	1	
1A00103-03A	C5	1000	58.08	7795.39		14873-1.RAW	14:36:11	1028.56	Sample	OK	1	F101436
1A00103-04A	C6	1000	58.08	6700.10		14874-1.RAW	14:40:21	892.20	Sample	OK	1	F101436
F101437-BS1	C7	400	58.08	1767.85		14875-1.RAW	14:44:31	608.30	Sample	OK	1	F101437
F101437-BSD1	C8	400	58.08	1781.25		14876-1.RAW	14:48:40	612.47	Sample	OK	1	F101437
F101437-BLK1	C9	100	58.08	33.71		14877-1.RAW	14:52:50	100.05	Sample	OK	1	F101437
F101437-BLK2	C10	100	58.08	18.25		14878-1.RAW	14:56:59	80.80	Sample	OK	1	F101437
F101437-BLK3	C11	100	58.08	20.51		14879-1.RAW	15:01:09	83.61	Sample	OK	1	F101437
1A00111-01B	C12	100	58.08	55.19		14880-1.RAW	15:05:18	126.79	Sample	OK	1	F101437
1A00111-02B	C13	100	58.08	50.92		14881-1.RAW	15:09:28	121.47	Sample	OK	1	F101437
1A00111-03B	C14	100	58.08	32.00		14882-1.RAW	15:13:37	97.92	Sample	OK	1	F101437
SEQ-CCV4	C15	1	58.08	4.76	95.25	14883-1.RAW	15:17:47	650.96	Sample	OK	1	
SEQ-CCB4	C16	1	58.08	0.00	0.00	14884-1.RAW	15:21:57	44.96	Sample	OK	1	
1A00111-04B	C17	100	58.08	6682.12		14885-1.RAW	15:26:06	8376.93	Sample	OK	1	F101437
1A00111-05B	C18	100	58.08	39.09		14886-1.RAW	15:30:16	106.75	Sample	OK	1	F101437
1A00111-06B	C19	100	58.08	31.83		14887-1.RAW	15:34:25	97.71	Sample	OK	1	F101437
1A00117-01B	C20	100	58.08	57.63		14888-1.RAW	15:38:35	129.83	Sample	OK	1	F101437
1A00117-02B	C21	100	58.08	46.83		14889-1.RAW	15:42:45	116.38	Sample	OK	1	F101437
1A00111-01C	A1	1000	58.08	25621.34		14890-1.RAW	15:46:54	3247.79	Sample	OK	1	F101437
1A00111-02C	A2	1000	58.08	25429.28		14891-1.RAW	15:51:04	3223.88	Sample	OK	1	F101437
1A00111-03C	A3	1000	58.08	14022.16		14892-1.RAW	15:55:14	1803.76	Sample	OK	1	F101437
1A00111-04C	A4	1000	58.08	5969.37		14893-1.RAW	15:59:23	801.23	Sample	OK	1	F101437
1A00111-05C	A5	1000	58.08	26398.63		14894-1.RAW	16:03:33	3344.55	Sample	OK	1	F101437
SEQ-CCV5	A6	1	58.08	4.76	95.20	14895-1.RAW	16:07:43	650.66	Sample	OK	1	
SEQ-CCB5	A7	1	58.08	0.00	0.00	14896-1.RAW	16:11:53	39.11	Sample	OK	1	
1A00111-06B C	A8	1000	58.08	26071.15		14897-1.RAW	16:16:02	3303.79	Sample	OK	1	F101437
1A00117-01B	A9	2500	58.08	74130.90		14898-1.RAW	16:20:12	3749.63	Sample	OK	1	F101437
1A00117-02B	A10	2500	58.08	74256.76		14899-1.RAW	16:24:22	3755.89	Sample	OK	1	F101437
1A00111-01A	A11	1000	58.08	1521.22		14900-1.RAW	16:28:32	247.46	Sample	OK	1	F101437
1A00111-02A	A12	1000	58.08	1387.11		14901-1.RAW	16:32:42	230.77	Sample	OK	1	F101437
1A00111-03A	A13	1000	58.08	13086.08		14902-1.RAW	16:36:52	1687.22	Sample	OK	1	F101437
1A00111-04A	A14	1000	58.08	5535.42		14903-1.RAW	16:41:02	747.21	Sample	OK	1	F101437
1A00111-05A	A15	1000	58.08	1449.68		14904-1.RAW	16:45:11	238.56	Sample	OK	1	F101437
1A00111-06A	A16	1000	58.08	1489.22		14905-1.RAW	16:49:21	243.48	Sample	OK	1	F101437
1A00117-01A	A17	2500	58.08	34265.33		14906-1.RAW	16:53:30	1764.41	Sample	OK	1	F101437
SEQ-CCV6	A18	1	58.08	4.72	94.42	14907-1.RAW	16:57:40	645.83	Sample	OK	1	
SEQ-CCB6	A19	1	58.08	0.00	0.00	14908-1.RAW	17:01:50	51.43	Sample	OK	1	
1A00117-02A	A20	2500	58.08	30841.68		14909-1.RAW	17:05:59	1593.92	Sample	OK	1	F101437
F102311-BS1	A21	1	58.08	4.51		14910-1.RAW	17:10:09	620.00	Sample	OK	1	F102311
F102311-BSD1	B1	1	58.08	4.33		14911-1.RAW	17:14:19	597.69	Sample	OK	1	F102311
F102311-BLK1	B2	1	58.08	0.08		14912-1.RAW	17:18:29	67.97	Sample	OK	1	F102311
F102311-BLK2	B3	1	58.08	0.00		14913-1.RAW	17:22:39	56.14	Sample	OK	1	F102311
F102311-BLK3	B4	1	58.08	0.00		14914-1.RAW	17:26:49	52.10	Sample	OK	1	F102311
F102311-BLK4	B5	1	58.08	0.00		14915-1.RAW	17:30:58	57.30	Sample	OK	1	F102311
F102311-BLK5	B6	1	58.08	0.00		14916-1.RAW	17:35:08	34.66	Sample	OK	1	F102311
1A00113-08RE1	B7	100	58.08	165.88		14917-1.RAW	17:39:18	264.59	Sample	OK	1	F102311
F102311-MS1	B8	100	58.08	564.15	338.06	14918-1.RAW	17:43:28	760.41	Sample	OK	1	F102311
SEQ-CCV7	B9	1	58.08	4.42	88.44	14919-1.RAW	17:47:38	608.60	Sample	OK	1	
SEQ-CCB7	B10	1	58.08	0.00	0.00	14920-1.RAW	17:51:48	42.41	Sample	OK	1	
F102311-MSD1	B11	100	58.08	583.53		14921-1.RAW	17:55:58	784.54	Sample	OK	1	F102311
1B00004-01	B12	1	58.08	0.03		14922-1.RAW	18:00:08	62.42	Sample	OK	1	F102311
1B00027-02	B13	1	58.08	0.00		14923-1.RAW	18:04:17	33.33	Sample	OK	1	F102311
1B00027-04	B14	1	58.08	4.75		14924-1.RAW	18:08:27	649.36	Sample	OK	1	F102311
1B00027-06	B15	10	58.08	15.31		14925-1.RAW	18:12:37	248.67	Sample	OK	1	F102311

Pg3

1B00045-01	B16	50	58.08	228.72		14926-1.RAW	18:16:46	627.58	Sample	OK	1	F102311
1B00045-02	B17	50	58.08	102.81		14927-1.RAW	18:20:57	314.08	Sample	OK	1	F102311
1B00045-03	B18	50	58.08	106.30		14928-1.RAW	18:25:07	322.76	Sample	OK	1	F102311
1B00045-04	B19	1	58.08	0.30		14929-1.RAW	18:29:17	95.79	Sample	OK	1	F102311
1B00050-01	B20	1	58.08	2.38		14930-1.RAW	18:33:26	353.88	Sample	OK	1	F102311
SEQ-CCV8	B21	1	58.08	4.35	86.93	14931-1.RAW	18:37:36	599.22	Sample	OK	1	
SEQ-CCB8	C1	1	58.08	0.00	0.00	14932-1.RAW	18:41:46	44.53	Sample	OK	1	
1B00050-02	C2	1	58.08	0.00		14933-1.RAW	18:45:56	43.28	Sample	OK	1	F102311
1B00050-03	C3	1	58.08	5.95		14934-1.RAW	18:50:06	799.35	Sample	OK	1	F102311
F102311-MS2	C4	1	58.08	9.51	119.61	14935-1.RAW	18:54:16	1242.57	Sample	OK	1	F102311
F102311-MSD2	C5	1	58.08	9.68		14936-1.RAW	18:58:26	1262.99	Sample	OK	1	F102311
1B00050-04	C6	1	58.08	0.00		14937-1.RAW	19:02:36	41.20	Sample	OK	1	F102311
1B00050-05	C7	10	58.08	23.81		14938-1.RAW	19:06:46	354.46	Sample	OK	1	F102311
1B00050-06	C8	1	58.08	0.00		14939-1.RAW	19:10:55	48.46	Sample	OK	1	F102311
1A00111-04B	C9	1000	58.08	6270.26		14940-1.RAW	19:15:05	838.69	Sample	OK	1	F101437
SEQ-CCV9	C10	1	58.08	4.19	83.78	14941-1.RAW	19:19:15	579.62	Sample	OK	1	
SEQ-CCB9	C11	1	58.08	0.00	0.00	14942-1.RAW	19:23:25	49.42	Sample	OK	1	
TEST CAL 3	C12	1	58.08	4.11		14943-1.RAW	19:27:35	570.22	Sample	OK	1	2100340
TEST CAL 3	C13	1	58.08	4.39		14944-1.RAW	19:31:45	604.00	Sample	OK	1	2100340

THg26003-210211-3

[illegible] 02/12

SEQ-IBL1	A1	1A00103-01C	B16	1A00117-02~~B~~C	A10		
SEQ-IBL2	A2	1A00103-02C	B17	1A00111-01A	A11		
SEQ-IBL3	A3	1A00103-03C	B18	1A00111-02A	A12		
SEQ-CAL1	A4	1A00103-04C	B19	1A00111-03A	A13		
SEQ-CAL2	A5	1A00086-01A	B20	1A00111-04A	A14		
SEQ-CAL3	A6	1A00086-02A	B21	1A00111-05A	A15		
SEQ-CAL4	A7	1A00103-01A	C1	1A00111-06A	A16		
SEQ-CAL5	A8	1A00103-02A	C2	1A00117-01A	A17		
SEQ-ICV1	A9	SEQ-CCV3	C3	SEQ-CCV6	A18		
SEQ-ICB1	A10	SEQ-CCB3	C4	SEQ-CCB6	A19		
1B00053-01	A11	1A00103-03A	C5	1A00117-02A	A20		
1B00053-01RE1	A12	1A00103-04A	C6	F102311-BS1	A21		
1B00053-01RE2	A13	F101437-BS1	C7	F102311-BSD1	B1		
1B00053-02	A14	F101437-BSD1	C8	F102311-BLK1	B2		
1B00053-02RE1	A15	F101437-BLK1	C9	F102311-BLK2	B3		
1B00053-02RE2	A16	F101437-BLK2	C10	F102311-BLK3	B4		
1B00053-03	A17	F101437-BLK3	C11	F102311-BLK4	B5		
1B00053-03RE1	A18	1A00111-01B	C12	F102311-BLK5	B6		
1B00053-03RE2	A19	1A00111-02B	C13	1A00113-08RE1	B7		
F101436-BS1	A20	1A00111-03B	C14	F102311-MS1	B8		
SEQ-CCV1	A21	SEQ-CCV4	C15	SEQ-CCV7	B9		
SEQ-CCB1	B1	SEQ-CCB4	C16	SEQ-CCB7	B10		
F101436-BSD1	B2	1A00111-04B	C17	F102311-MSD1	B11		
F101436-BLK1	B3	1A00111-05B	C18	1B00004-01	B12		
F101436-BLK2	B4	1A00111-06B	C19	1B00027-02	B13		
F101436-BLK3	B5	1A00117-01B	C20	1B00027-04	B14		
1A00086-01B	B6	1A00117-02B	C21	1B00027-06	B15	F102311-MS2	C4
1A00086-02B	B7	1A00111-01C	A1	1B00045-01	B16	F102311-MSD2	C5
1A00103-01B	B8	1A00111-02C	A2	1B00045-02	B17	1B00050-04	C6
1A00103-02B	B9	1A00111-03C	A3	1B00045-03	B18	1B00050-05	C7
1A00103-03B	B10	1A00111-04C	A4	1B00045-04	B19	1B00050-06	C8
1A00103-04B	B11	1A00111-05C	A5	1B00050-01	B20	1A00111-04B	C9
SEQ-CCV2	B12	SEQ-CCV5	A6	SEQ-CCV8	B21	SEQ-CCV9	C10
SEQ-CCB2	B13	SEQ-CCB5	A7	SEQ-CCB8	C1	SEQ-CCB9	C11
1A00086-01C	B14	1A00111-06~~B~~C	A8	1B00050-02	C2	TEST CAL 3	C12
1A00086-02C	B15	1A00117-01~~B~~C	A9	1B00050-03	C3	TEST CAL 3	C13

[illegible] 02/12

Verified by:

[illegible] 02/12/21

Environment Testing
America

ANALYTICAL REPORT

Job Number: 180-116528-1

Job Description: Wood Penobscot River Proposal

For:
Wood E&I Solutions Inc
271 Mill Road
Chelmsford, MA 01824

Attention: Ms. Denise King

Approved for release.
Carrie L Gamber
Senior Project Manager
2/5/2021 1:41 PM

Carrie L Gamber, Senior Project Manager
301 Alpha Drive, Pittsburgh, PA, 15238
(412)963-2428
Carrie.Gamber@Eurofinset.com

02/05/2021

Table of Contents

Table of Contents

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

CASE NARRATIVE

Client: Wood E&I Solutions Inc

Project: Wood Penobscot River Proposal

Report Number: 180-116528-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 01/28/2021; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.9 C.

TOTAL ORGANIC CARBON
The reporting limit for Lloyd Kahn TOC analysis is a nominal value and does not reflect adjustments in sample mass processed on an individual basis.

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

Detection Summary

Client: Wood E&I Solutions Inc Job ID: 180-116528-1
Project/Site: Wood Penobscot River Proposal

Client Sample ID: MMBKD-01_012521_SED_00-01 Lab Sample ID: 180-116528-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Duplicates	94000		4000	3000	mg/Kg	1	☼	EPA-Lloyd Kahn	Total/NA

Client Sample ID: MMBKD-01_012521_SED_01-03 Lab Sample ID: 180-116528-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Duplicates	54000		2500	1900	mg/Kg	1	☼	EPA-Lloyd Kahn	Total/NA

Client Sample ID: MMBKD-01_012521_SED_03-05 Lab Sample ID: 180-116528-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Duplicates	34000		1900	1400	mg/Kg	1	☼	EPA-Lloyd Kahn	Total/NA

Client Sample ID: MMBKD-01_012521_SED_01-03_DUP Lab Sample ID: 180-116528-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Duplicates	56000		2500	1900	mg/Kg	1	☼	EPA-Lloyd Kahn	Total/NA

Client Sample ID: FRB-02_012621_SED_00-01 Lab Sample ID: 180-116528-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Duplicates	21000		2100	1500	mg/Kg	1	☼	EPA-Lloyd Kahn	Total/NA

Client Sample ID: FRB-02_012621_SED_01-03 Lab Sample ID: 180-116528-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Duplicates	24000		2000	1500	mg/Kg	1	☼	EPA-Lloyd Kahn	Total/NA

Client Sample ID: FRB-02_012621_SED_03-05 Lab Sample ID: 180-116528-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Duplicates	22000		1800	1300	mg/Kg	1	☼	EPA-Lloyd Kahn	Total/NA

Client Sample ID: ES-13_012621_SED_00-01 Lab Sample ID: 180-116528-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Duplicates	66000		2400	1800	mg/Kg	1	☼	EPA-Lloyd Kahn	Total/NA

Client Sample ID: ES-13_012621_SED_01-03 Lab Sample ID: 180-116528-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Duplicates	44000		2000	1500	mg/Kg	1	☼	EPA-Lloyd Kahn	Total/NA

Client Sample ID: ES-13_012621_SED_03-05 Lab Sample ID: 180-116528-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Duplicates	12000		1400	1000	mg/Kg	1	☼	EPA-Lloyd Kahn	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

General Chemistry

Client Sample ID: MMBKD-01_012521_SED_00-01
Date Collected: 01/25/21 15:25
Date Received: 01/28/21 08:30

Lab Sample ID: 180-116528-1
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	75.2		0.1	0.1	%			02/03/21 13:23	1
Percent Solids	24.8		0.1	0.1	%			02/03/21 13:23	1

General Chemistry

Client Sample ID: MMBKD-01_012521_SED_00-01 **Lab Sample ID: 180-116528-1**
Date Collected: 01/25/21 15:25 **Matrix: Solid**
Date Received: 01/28/21 08:30 **Percent Solids: 24.8**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	**94000**		4000	3000	mg/Kg	☼		01/29/21 14:10	1

General Chemistry

Client Sample ID: MMBKD-01_012521_SED_01-03
Lab Sample ID: 180-116528-2
Date Collected: 01/25/21 15:35
Matrix: Solid
Date Received: 01/28/21 08:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	60.4		0.1	0.1	%			02/03/21 10:43	1
Percent Solids	39.6		0.1	0.1	%			02/03/21 10:43	1

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: Wood Penobscot River Proposal

Job ID: 180-116528-1

General Chemistry

Client Sample ID: MMBKD-01_012521_SED_01-03
Date Collected: 01/25/21 15:35
Date Received: 01/28/21 08:30

Lab Sample ID: 180-116528-2
Matrix: Solid
Percent Solids: 39.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	54000		2500	1900	mg/Kg	☼		01/29/21 14:27	1

General Chemistry

Client Sample ID: MMBKD-01_012521_SED_03-05   **Lab Sample ID: 180-116528-3**
Date Collected: 01/25/21 15:40   **Matrix: Solid**
Date Received: 01/28/21 08:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	47.4		0.1	0.1	%			02/03/21 10:43	1
Percent Solids	52.6		0.1	0.1	%			02/03/21 10:43	1

General Chemistry

Client Sample ID: MMBKD-01_012521_SED_03-05   **Lab Sample ID: 180-116528-3**
Date Collected: 01/25/21 15:40   **Matrix: Solid**
Date Received: 01/28/21 08:30   **Percent Solids: 52.6**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	**34000**		1900	1400	mg/Kg	☼		01/29/21 14:44	1

General Chemistry

Client Sample ID: MMBKD-01_012521_SED_01-03_DUP
Date Collected: 01/25/21 12:00
Date Received: 01/28/21 08:30

Lab Sample ID: 180-116528-4
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	60.7		0.1	0.1	%			02/03/21 10:43	1
Percent Solids	39.3		0.1	0.1	%			02/03/21 10:43	1

General Chemistry

Client Sample ID: MMBKD-01_012521_SED_01-03_DUP
Date Collected: 01/25/21 12:00
Date Received: 01/28/21 08:30

Lab Sample ID: 180-116528-4
Matrix: Solid
Percent Solids: 39.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	56000		2500	1900	mg/Kg	☼		01/29/21 15:06	1

General Chemistry

Client Sample ID: FRB-02_012621_SED_00-01 | **Lab Sample ID: 180-116528-5**
Date Collected: 01/26/21 15:00 | **Matrix: Solid**
Date Received: 01/28/21 08:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	51.7		0.1	0.1	%			02/03/21 11:23	1
Percent Solids	48.3		0.1	0.1	%			02/03/21 11:23	1

General Chemistry

Client Sample ID: FRB-02_012621_SED_00-01
Lab Sample ID: 180-116528-5
Date Collected: 01/26/21 15:00
Matrix: Solid
Date Received: 01/28/21 08:30
Percent Solids: 48.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	21000		2100	1500	mg/Kg	☼		01/29/21 15:36	1

General Chemistry

Client Sample ID: FRB-02_012621_SED_01-03
Date Collected: 01/26/21 15:15
Date Received: 01/28/21 08:30
Lab Sample ID: 180-116528-6
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	49.7		0.1	0.1	%			02/03/21 11:23	1
Percent Solids	50.3		0.1	0.1	%			02/03/21 11:23	1

General Chemistry

Client Sample ID: FRB-02_012621_SED_01-03
Date Collected: 01/26/21 15:15
Date Received: 01/28/21 08:30

Lab Sample ID: 180-116528-6
Matrix: Solid
Percent Solids: 50.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	24000		2000	1500	mg/Kg	☼		01/29/21 15:53	1

General Chemistry

Client Sample ID: FRB-02_012621_SED_03-05 **Lab Sample ID: 180-116528-7**
Date Collected: 01/26/21 15:30 **Matrix: Solid**
Date Received: 01/28/21 08:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	44.0		0.1	0.1	%			02/03/21 11:23	1
Percent Solids	56.0		0.1	0.1	%			02/03/21 11:23	1

General Chemistry

Client Sample ID: FRB-02_012621_SED_03-05
Lab Sample ID: 180-116528-7
Date Collected: 01/26/21 15:30
Matrix: Solid
Date Received: 01/28/21 08:30
Percent Solids: 56.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	22000		1800	1300	mg/Kg	☼		01/29/21 16:16	1

General Chemistry

Client Sample ID: ES-13_012621_SED_00-01 **Lab Sample ID: 180-116528-8**
Date Collected: 01/26/21 18:45 **Matrix: Solid**
Date Received: 01/28/21 08:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	58.9		0.1	0.1	%			02/04/21 12:03	1
Percent Solids	41.1		0.1	0.1	%			02/04/21 12:03	1

General Chemistry

Client Sample ID: ES-13_012621_SED_00-01
Date Collected: 01/26/21 18:45
Date Received: 01/28/21 08:30

Lab Sample ID: 180-116528-8
Matrix: Solid
Percent Solids: 41.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	66000		2400	1800	mg/Kg	☼		02/04/21 11:59	1

General Chemistry

Client Sample ID: ES-13_012621_SED_01-03 — **Lab Sample ID: 180-116528-9**

Date Collected: 01/26/21 18:55 — **Matrix: Solid**

Date Received: 01/28/21 08:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	50.0		0.1	0.1	%			02/04/21 12:03	1
Percent Solids	50.0		0.1	0.1	%			02/04/21 12:03	1

General Chemistry

Client Sample ID: ES-13_012621_SED_01-03
Lab Sample ID: 180-116528-9
Date Collected: 01/26/21 18:55
Matrix: Solid
Date Received: 01/28/21 08:30
Percent Solids: 50.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	**44000**		2000	1500	mg/Kg	☼		02/04/21 13:41	1

General Chemistry

Client Sample ID: ES-13_012621_SED_03-05 — **Lab Sample ID: 180-116528-10**
Date Collected: 01/26/21 19:05 — **Matrix: Solid**
Date Received: 01/28/21 08:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	28.6		0.1	0.1	%			02/04/21 12:03	1
Percent Solids	71.4		0.1	0.1	%			02/04/21 12:03	1

General Chemistry

Client Sample ID: ES-13_012621_SED_03-05 **Lab Sample ID: 180-116528-10**
Date Collected: 01/26/21 19:05 **Matrix: Solid**
Date Received: 01/28/21 08:30 **Percent Solids: 71.4**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	12000		1400	1000	mg/Kg	☼		02/04/21 12:22	1

Default Detection Limits

Client: Wood E&I Solutions Inc
Job ID: 180-116528-1
Project/Site: Wood Penobscot River Proposal

General Chemistry

Analyte	RL	MDL	Units
Percent Moisture	0.1	0.1	%
Percent Solids	0.1	0.1	%
Total Organic Carbon - Duplicates	1000	750	mg/Kg

Method: 2540G - SM 2540G

Lab Sample ID: 180-116528-5 DU — **Client Sample ID: FRB-02_012621_SED_00-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 345426

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	51.7		51.4		%		0.6	10
Percent Solids	48.3		48.6		%		0.6	10

Lab Sample ID: 180-116528-8 DU — **Client Sample ID: ES-13_012621_SED_00-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 345577

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	58.9		59.2		%		0.5	10
Percent Solids	41.1		40.8		%		0.7	10

Method: EPA-Lloyd Kahn - Organic Carbon, Total (TOC)

Lab Sample ID: MB 180-345159/4 — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 345159

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	ND		1000	750	mg/Kg			01/29/21 13:31	1

Lab Sample ID: LCS 180-345159/5 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 345159

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	37800	34800		mg/Kg		92	75 - 125

Lab Sample ID: 180-116528-7 MS — **Client Sample ID: FRB-02_012621_SED_03-05**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 345159

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	22000		39300	58100		mg/Kg	☼	93	75 - 125

Lab Sample ID: 180-116528-7 MSD — **Client Sample ID: FRB-02_012621_SED_03-05**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 345159

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	22000		37700	59400		mg/Kg	☼	100	75 - 125	2	20

Lab Sample ID: MB 180-345656/4 — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 345656

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	ND		1000	750	mg/Kg			02/04/21 11:37	1

Method: EPA-Lloyd Kahn - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 180-345656/5
Matrix: Solid
Analysis Batch: 345656

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	37800	38300		mg/Kg		101	75 - 125

Lab Sample ID: 180-116528-10 MS
Matrix: Solid
Analysis Batch: 345656

Client Sample ID: ES-13_012621_SED_03-05
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	12000		32900	42100		mg/Kg	☼	90	75 - 125

Lab Sample ID: 180-116528-10 MSD
Matrix: Solid
Analysis Batch: 345656

Client Sample ID: ES-13_012621_SED_03-05
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	12000		31900	42900		mg/Kg	☼	96	75 - 125	2	20

General Chemistry

Analysis Batch: 345159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-116528-1	MMBKD-01_012521_SED_00-01	Total/NA	Solid	EPA-Lloyd Kahn	
180-116528-2	MMBKD-01_012521_SED_01-03	Total/NA	Solid	EPA-Lloyd Kahn	
180-116528-3	MMBKD-01_012521_SED_03-05	Total/NA	Solid	EPA-Lloyd Kahn	
180-116528-4	MMBKD-01_012521_SED_01-03_DUP	Total/NA	Solid	EPA-Lloyd Kahn	
180-116528-5	FRB-02_012621_SED_00-01	Total/NA	Solid	EPA-Lloyd Kahn	
180-116528-6	FRB-02_012621_SED_01-03	Total/NA	Solid	EPA-Lloyd Kahn	
180-116528-7	FRB-02_012621_SED_03-05	Total/NA	Solid	EPA-Lloyd Kahn	
MB 180-345159/4	Method Blank	Total/NA	Solid	EPA-Lloyd Kahn	
LCS 180-345159/5	Lab Control Sample	Total/NA	Solid	EPA-Lloyd Kahn	
180-116528-7 MS	FRB-02_012621_SED_03-05	Total/NA	Solid	EPA-Lloyd Kahn	
180-116528-7 MSD	FRB-02_012621_SED_03-05	Total/NA	Solid	EPA-Lloyd Kahn	

Analysis Batch: 345415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-116528-2	MMBKD-01_012521_SED_01-03	Total/NA	Solid	2540G	
180-116528-3	MMBKD-01_012521_SED_03-05	Total/NA	Solid	2540G	
180-116528-4	MMBKD-01_012521_SED_01-03_DUP	Total/NA	Solid	2540G	

Analysis Batch: 345426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-116528-5	FRB-02_012621_SED_00-01	Total/NA	Solid	2540G	
180-116528-6	FRB-02_012621_SED_01-03	Total/NA	Solid	2540G	
180-116528-7	FRB-02_012621_SED_03-05	Total/NA	Solid	2540G	
180-116528-5 DU	FRB-02_012621_SED_00-01	Total/NA	Solid	2540G	

Analysis Batch: 345455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-116528-1	MMBKD-01_012521_SED_00-01	Total/NA	Solid	2540G	

Analysis Batch: 345577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-116528-8	ES-13_012621_SED_00-01	Total/NA	Solid	2540G	
180-116528-9	ES-13_012621_SED_01-03	Total/NA	Solid	2540G	
180-116528-10	ES-13_012621_SED_03-05	Total/NA	Solid	2540G	
180-116528-8 DU	ES-13_012621_SED_00-01	Total/NA	Solid	2540G	

Analysis Batch: 345656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-116528-8	ES-13_012621_SED_00-01	Total/NA	Solid	EPA-Lloyd Kahn	
180-116528-9	ES-13_012621_SED_01-03	Total/NA	Solid	EPA-Lloyd Kahn	
180-116528-10	ES-13_012621_SED_03-05	Total/NA	Solid	EPA-Lloyd Kahn	
MB 180-345656/4	Method Blank	Total/NA	Solid	EPA-Lloyd Kahn	
LCS 180-345656/5	Lab Control Sample	Total/NA	Solid	EPA-Lloyd Kahn	
180-116528-10 MS	ES-13_012621_SED_03-05	Total/NA	Solid	EPA-Lloyd Kahn	
180-116528-10 MSD	ES-13_012621_SED_03-05	Total/NA	Solid	EPA-Lloyd Kahn	

Client Sample ID: MMBKD-01_012521_SED_00-01
Lab Sample ID: 180-116528-1
Date Collected: 01/25/21 15:25
Matrix: Solid
Date Received: 01/28/21 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			345455	02/03/21 13:23	MM1	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: MMBKD-01_012521_SED_00-01
Lab Sample ID: 180-116528-1
Date Collected: 01/25/21 15:25
Matrix: Solid
Date Received: 01/28/21 08:30
Percent Solids: 24.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA-Lloyd Kahn		1			345159	01/29/21 14:10	DLF	TAL PIT
	Instrument ID: FLASHEA									

Client Sample ID: MMBKD-01_012521_SED_01-03
Lab Sample ID: 180-116528-2
Date Collected: 01/25/21 15:35
Matrix: Solid
Date Received: 01/28/21 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			345415	02/03/21 10:43	MM1	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: MMBKD-01_012521_SED_01-03
Lab Sample ID: 180-116528-2
Date Collected: 01/25/21 15:35
Matrix: Solid
Date Received: 01/28/21 08:30
Percent Solids: 39.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA-Lloyd Kahn		1			345159	01/29/21 14:27	DLF	TAL PIT
	Instrument ID: FLASHEA									

Client Sample ID: MMBKD-01_012521_SED_03-05
Lab Sample ID: 180-116528-3
Date Collected: 01/25/21 15:40
Matrix: Solid
Date Received: 01/28/21 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			345415	02/03/21 10:43	MM1	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: MMBKD-01_012521_SED_03-05
Lab Sample ID: 180-116528-3
Date Collected: 01/25/21 15:40
Matrix: Solid
Date Received: 01/28/21 08:30
Percent Solids: 52.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA-Lloyd Kahn		1			345159	01/29/21 14:44	DLF	TAL PIT
	Instrument ID: FLASHEA									

Client Sample ID: MMBKD-01_012521_SED_01-03_DUP **Lab Sample ID: 180-116528-4**
Date Collected: 01/25/21 12:00 **Matrix: Solid**
Date Received: 01/28/21 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			345415	02/03/21 10:43	MM1	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: MMBKD-01_012521_SED_01-03_DUP **Lab Sample ID: 180-116528-4**
Date Collected: 01/25/21 12:00 **Matrix: Solid**
Date Received: 01/28/21 08:30 **Percent Solids: 39.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA-Lloyd Kahn		1			345159	01/29/21 15:06	DLF	TAL PIT
	Instrument ID: FLASHEA									

Client Sample ID: FRB-02_012621_SED_00-01 **Lab Sample ID: 180-116528-5**
Date Collected: 01/26/21 15:00 **Matrix: Solid**
Date Received: 01/28/21 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			345426	02/03/21 11:23	MM1	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: FRB-02_012621_SED_00-01 **Lab Sample ID: 180-116528-5**
Date Collected: 01/26/21 15:00 **Matrix: Solid**
Date Received: 01/28/21 08:30 **Percent Solids: 48.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA-Lloyd Kahn		1			345159	01/29/21 15:36	DLF	TAL PIT
	Instrument ID: FLASHEA									

Client Sample ID: FRB-02_012621_SED_01-03 **Lab Sample ID: 180-116528-6**
Date Collected: 01/26/21 15:15 **Matrix: Solid**
Date Received: 01/28/21 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			345426	02/03/21 11:23	MM1	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: FRB-02_012621_SED_01-03 **Lab Sample ID: 180-116528-6**
Date Collected: 01/26/21 15:15 **Matrix: Solid**
Date Received: 01/28/21 08:30 **Percent Solids: 50.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA-Lloyd Kahn		1			345159	01/29/21 15:53	DLF	TAL PIT
	Instrument ID: FLASHEA									

Client Sample ID: FRB-02_012621_SED_03-05
Lab Sample ID: 180-116528-7

Date Collected: 01/26/21 15:30
Matrix: Solid
Date Received: 01/28/21 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			345426	02/03/21 11:23	MM1	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: FRB-02_012621_SED_03-05
Lab Sample ID: 180-116528-7

Date Collected: 01/26/21 15:30
Matrix: Solid
Date Received: 01/28/21 08:30
Percent Solids: 56.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA-Lloyd Kahn		1	14.6 mg	14.6 mg	345159	01/29/21 16:16	DLF	TAL PIT
	Instrument ID: FLASHEA									

Client Sample ID: ES-13_012621_SED_00-01
Lab Sample ID: 180-116528-8

Date Collected: 01/26/21 18:45
Matrix: Solid
Date Received: 01/28/21 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			345577	02/04/21 12:03	KMM	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ES-13_012621_SED_00-01
Lab Sample ID: 180-116528-8

Date Collected: 01/26/21 18:45
Matrix: Solid
Date Received: 01/28/21 08:30
Percent Solids: 41.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA-Lloyd Kahn		1			345656	02/04/21 11:59	DLF	TAL PIT
	Instrument ID: FLASHEA									

Client Sample ID: ES-13_012621_SED_01-03
Lab Sample ID: 180-116528-9

Date Collected: 01/26/21 18:55
Matrix: Solid
Date Received: 01/28/21 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			345577	02/04/21 12:03	KMM	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ES-13_012621_SED_01-03
Lab Sample ID: 180-116528-9

Date Collected: 01/26/21 18:55
Matrix: Solid
Date Received: 01/28/21 08:30
Percent Solids: 50.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA-Lloyd Kahn		1			345656	02/04/21 13:41	DLF	TAL PIT
	Instrument ID: FLASHEA									

Client Sample ID: ES-13_012621_SED_03-05 — Lab Sample ID: 180-116528-10

Date Collected: 01/26/21 19:05 — **Matrix: Solid**

Date Received: 01/28/21 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			345577	02/04/21 12:03	KMM	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ES-13_012621_SED_03-05 — Lab Sample ID: 180-116528-10

Date Collected: 01/26/21 19:05 — **Matrix: Solid**

Date Received: 01/28/21 08:30 — **Percent Solids: 71.4**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA-Lloyd Kahn		1	14.7 mg	14.7 mg	345656	02/04/21 12:22	DLF	TAL PIT
	Instrument ID: FLASHEA									

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Analysis

- DLF = Donald Ferguson
- KMM = Kendric Moore
- MM1 = Mary Beth Miller

Accreditation/Certification Summary

Client: Wood E&I Solutions Inc | Job ID: 180-116528-1
Project/Site: Wood Penobscot River Proposal

Laboratory: Eurofins TestAmerica, Pittsburgh

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Maine	State	PA00164	03-06-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
EPA-Lloyd Kahn		Solid	Total Organic Carbon - Duplicates

Method	Method Description	Protocol	Laboratory
2540G	SM 2540G	SM22	TAL PIT
EPA-Lloyd Kahn	Organic Carbon, Total (TOC)	EPA	TAL PIT

Protocol References:

EPA = US Environmental Protection Agency

SM22 = Standard Methods For The Examination Of Water And Wastewater, 22nd Edition

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Sample Summary

Client: Wood E&I Solutions Inc
Project/Site: Wood Penobscot River Proposal

Job ID: 180-116528-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-116528-1	MMBKD-01_012521_SED_00-01	Solid	01/25/21 15:25	01/28/21 08:30	
180-116528-2	MMBKD-01_012521_SED_01-03	Solid	01/25/21 15:35	01/28/21 08:30	
180-116528-3	MMBKD-01_012521_SED_03-05	Solid	01/25/21 15:40	01/28/21 08:30	
180-116528-4	MMBKD-01_012521_SED_01-03_DUP	Solid	01/25/21 12:00	01/28/21 08:30	
180-116528-5	FRB-02_012621_SED_00-01	Solid	01/26/21 15:00	01/28/21 08:30	
180-116528-6	FRB-02_012621_SED_01-03	Solid	01/26/21 15:15	01/28/21 08:30	
180-116528-7	FRB-02_012621_SED_03-05	Solid	01/26/21 15:30	01/28/21 08:30	
180-116528-8	ES-13_012621_SED_00-01	Solid	01/26/21 18:45	01/28/21 08:30	
180-116528-9	ES-13_012621_SED_01-03	Solid	01/26/21 18:55	01/28/21 08:30	
180-116528-10	ES-13_012621_SED_03-05	Solid	01/26/21 19:05	01/28/21 08:30	

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Pittsburgh Job No.: 180-116528-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
LKTOCKHPL1_00030	05/10/21	11/10/20	DI Water, Lot na	100 mL	LKTOCKHP_00014	2.128 g	Total Organic Carbon - Duplicates	10022.9 mg/L
.LKTOCKHP_00014	01/28/25	Frontier Scientific, Lot LH90S92			(Purchased Reagent)		Total Organic Carbon - Duplicates	47.1 %
LKTOCSRM_00040	09/28/22	CE Elantech, Lot 020718			(Purchased Reagent)		Total Organic Carbon - Duplicates	37790 mg/Kg

Reagent

LKTOCKHP_00014

CERTIFICATE OF ANALYSIS

Catalog No.	:	**141482**	**Lot Number**	:	**LH90S92**
Product Name	:	**Potassium hydrogen phthalate, 99%**			
CAS	:	**877-24-7**			
Version	:	**1.2**			
Molecular Formula	:	**C8H5KO4**			
Molecular Weight	:	**204.22**	**Issue Date**	:	**2018-09-17**

Appearance	:	**White crystals**
IR	:	**Conforms to structure**
Assay	:	**99.96%**
pH	:	**4.0 (0.05 M soln. at 25 ℃)**

Issued by QC Manager Nancy

This is the computer generated page without signature.

Frontier Scientific

ADVANCED DISCOVERY CHEMICALS

Frontier Scientific
P.O. Box 31
Logan,Utah 84323
(p) 1-435-753-1901
(f) 1-435-753-6731
www.frontiersci.com
sales@frontiersci.com

Date	1/24/2020
PO#	DR2551163
Order#	3088009
Series ID	
Description	Research Samples in ml vial(s) Note:Single msds.doc for all compounds.

Shipping Address	Test America Pittsburgh PO# DR2551163/Ref#3068005 301 Alpha Dr Attn: Shawn Clemente Pittsburgh,PA 15238-2907

Number of Samples	1

	Catalog Number	Weight (g)	Name
1	JK141482	500.1	Potassium hydrogen phthalate, 99%

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/04/2017 Version 4 Reviewed on 12/31/2012

1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name :	Potassium hydrogen phthalate
Product number :	141482
CAS-No. :	877-24-7
Synonyms:	Monopotassium phthalate

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses :	Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:	J&K Scientific LLC 601 Interchange Blvd, Newark, DE 19711 Telephone/Fax: +1 952 942 3333 / +1 952 942 3322 E-mail address: jkus@jk-scientific.com J&K Scientific Ltd. AEF 18/F Bldg-D Majesty Garden 6 Bei-Si-Huan-Zhong Rd. Beijing Telephone/Fax: +86 10 8284 8833 / +86 10 8284 9933 E-mail address: jkinfo@jkchemical.com
Preparation information:	Product safety department
Emergency telephone number:	+1 800 424 9300 (for USA & Canada)

2 Hazards identification

2.1 Classification of the substance or mixture GHS Classification in accordance with 29 CFR 1910 (OSHA HCS) The substance is not classified according to the Globally Harmonized System (GHS).

2.2 Label elements

GHS label elements	Not regulated
Hazard pictograms	Not regulated
Signal word	Not regulated
Hazard statements	Not regulated
Precautionary statements	Do not get in eyes, on skin, or on clothing.

Classification system

NFPA ratings (scale 0 - 4)

Health = 0
Fire = 0
Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 0
Fire = 0
Reactivity = 0

2.3 Other hazards

Results of PBT and vPvB assessment

PBT:	Not applicable.
vPvB:	Not applicable.

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/04/2017 Version 4 Reviewed on 12/31/2012

Product name : Potassium hydrogen phthalate

3 Composition/information on ingredients

Chemical characterization: Substances

MF:	C8H5KO4
MW:	204.23 g/mol
CAS-No. Description	877-24-7 Potassium hydrogen phthalate
Identification number(s)	
EC number:	212-889-4

4 First-aid measures

4.1 Description of first aid measures

General information:	Consult a physician. Show this safety data sheet to the doctor in attendance.
After inhalation:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
After skin contact:	Wash off with soap and plenty of water. Consult a physician.
After eye contact:	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
After swallowing:	Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Information for doctor

Most important symptoms and effects, both acute and delayed	To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Indication of any immediate medical attention and special treatment needed	No data available

5 Fire-fighting measures

5.1 Extinguishing media	
Suitable extinguishing agents:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
5.2 Special hazards arising from the substance or mixture	Carbon oxides, Potassium oxides
5.3 Advice for firefighters	Wear self contained breathing apparatus for fire fighting if necessary.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures	Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.Remove persons from danger area.
Environmental precautions:	Do not allow to enter sewers/ surface or ground water.
6.2 Methods and material for containment and cleaning up	Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/04/2017 Version 4 Reviewed on 12/31/2012

Product name : Potassium hydrogen phthalate

6.3 Reference to other sections	No dangerous substances are released. See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

Protective Action Criteria for Chemicals

PAC-1:	9.8 mg/m3
PAC-2:	110 mg/m3
PAC-3:	650 mg/m3

7 Handling and storage

7.1 Handling

Precautions for safe handling	No special precautions are necessary if used correctly. Avoid formation of dust and aerosols.Provide appropriate exhaust ventilation at places where dust is formed.Normal measures for preventive fire protection
Information about protection against explosions and fires	No special measures required.

7.2 Storage

Conditions for safe storage, including any incompatibilities	Store in a cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage Class (TRGS510):	LGK 13: Non-combustible solids that cannot be assigned to any of the above storage classes

8 Exposure controls/personal protection

8.1 Control parameters

Components with limit values that require monitoring at the workplace	Not required.
Additional information:	The lists that were valid during the creation were used as basis.

Exposure controls

8.2 Personal protective equipment

General protective and hygienic measures:	The usual precautionary measures for handling chemicals should be followed.
Breathing equipment:	Not required.
Protection of hands:	

Protective gloves

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves :	The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
Penetration time of glove material	The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/04/2017 Version 4 Reviewed on 12/31/2012

Product name : Potassium hydrogen phthalate

Body protection:	Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information	
Appearance	
Form:	Powder
Color:	White
Odor:	No data available
Odor threshold:	Not determined.
pH-value:	Not applicable.
Change in condition	
Melting point/Melting range:	295-300 °C (563-572 °F)
Boiling point/Boiling range:	Undetermined.
Flash point:	Not applicable.
Flammability (solid, gaseous):	Product is not flammable.
Ignition temperature:	
Decomposition temperature:	Not determined.
Auto igniting:	Not determined.
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits	
Lower:	Not determined.
Upper:	Not determined.
Vapor pressure:	Not applicable.
Density at 25 °C (77 °F):	1.64 g/cm³ (13.686 lbs/gal)
Bulk density:	Not determined
Relative density	Not determined.
Vapor density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water:	Not determined.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
Other information	no data available

10 Stability and reactivity

10.1 Reactivity	No data available
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	No dangerous reactions known.
10.4 Conditions to avoid	No data available
10.5 Incompatible materials	Strong oxidizing agents

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/04/2017 · *Version 4* · *Reviewed on 12/31/2012*

Product name : Potassium hydrogen phthalate

10.6 Hazardous decomposition products	Carbon oxides, Potassium oxides

11 Toxicological information

11.1 Information on toxicological effects

Primary irritant effect	
on the skin:	No irritant effect.
on the eye:	No irritating effect.
Sensitization:	No sensitizing effects known.
Carcinogenic categories	
IARC (International Agency for Research on Cancer)	Substance is not listed.
NTP (National Toxicology Program)	Substance is not listed.
OSHA-Ca (Occupational Safety & Health Administration)	Substance is not listed.
RTECS-No.:	CZ4326000

12 Ecological information

12.1 Toxicity	
Aquatic toxicity	No data available
12.2 Persistence and degradability	No data available
12.3 Behavior in environmental systems	
Bioaccumulative potential :	No data available
Mobility in soil :	No data available
12.4 Additional ecological information	
General notes:	Water hazard class 2 (Self-assessment): hazardous for water Do not allow product to reach ground water, water course or sewage system. Danger to drinking water if even small quantities leak into the ground.
12.5 Results of PBT and vPvB assessment	
PBT:	Not applicable.
vPvB:	Not applicable.
12.6 Other adverse effects :	No data available

13 Disposal considerations

13.1 Product	Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
13.2 Contaminated packaging	Dispose of as unused product.
13.3 Recommendation	Disposal must be made according to official regulations.

14 Transport information

14.1 UN-Number	
DOT, ADR, ADN, IMDG, IATA	Not regulated

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/04/2017 · *Version 4* · *Reviewed on 12/31/2012*

Product name : Potassium hydrogen phthalate

14.2 UN proper shipping name	
DOT, ADR, ADN, IMDG, IATA	Not regulated
14.3 Transport hazard class(es)	
DOT, ADR, ADN, IMDG, IATA	
Class	Not regulated
14.4 Packing group	
DOT, ADR, IMDG, IATA	Not regulated
14.5 Environmental hazards:	
Marine pollutant:	No
Special precautions for user	Not applicable.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
14.6 Transport/Additional information:	Not dangerous according to the above specifications.
UN "Model Regulation":	Not regulated

15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Sara	
Section 355 (extremely hazardous substances):	Substance is not listed.
Section 313 (Specific toxic chemical listings):	Substance is not listed.
TSCA (Toxic Substances Control Act):	Substance is listed.
Proposition 65	
Chemicals known to cause cancer:	Substance is not listed.
Chemicals known to cause reproductive toxicity for females:	Substance is not listed.
Chemicals known to cause reproductive toxicity for males:	Substance is not listed.
Chemicals known to cause developmental toxicity:	Substance is not listed.
Carcinogenic categories	
EPA (Environmental Protection Agency)	Substance is not listed.
TLV (Threshold Limit Value established by ACGIH)	Substance is not listed.
NIOSH-Ca (National Institute for Occupational Safety and Health)	Substance is not listed.
GHS label elements	Not regulated
Hazard pictograms	Not regulated
Signal word	Not regulated
Hazard statements	Not regulated
Precautionary statements	Do not get in eyes, on skin, or on clothing.

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/04/2017 · *Version 4* · *Reviewed on 12/31/2012*

Product name : Potassium hydrogen phthalate

15.2 Chemical safety assessment:	A Chemical Safety Assessment has not been carried out.

16 Other information

The above information is believed to be correct but does not represent any guarantee of the properties of the product. Some new information or amendments may be added afterwards. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. The products are supposed to be used promptly after purchase in consideration of safety. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility. Any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit

Reagent

LKTOCSRM_00040

CERTIFICATE OF ANALYSIS

ELEMENTAL ANALYSIS
STANDARD REFERENCE MATERIAL

PRODUCT NAME:	SOIL CNS REFERENCE MATERIAL
ARTICLE NO:	SA33840025
APPEARANCE:	Brown powder
LOT NUMBER:	020718

Lot Number 020718 is a highly purified and homogeneous lot of Soil NC.
It is intended for use in checking micro chemical procedures for the determination of carbon, nitrogen and sulfur.

ORIGINAL MANUFACTURER ASSAY: Lot Number 020718

ELEMENTAL ANALYSIS (STATISTICAL EXPERIMENTAL VALUES)

CARBON:	**3.779 %**	-	**RSD%: +/- 0.050**
NITROGEN:	**0.386 %**	-	**RSD%: +/- 0.050**
SULFUR	**0.070 %**	-	**RSD%: +/- 0.050**

Verified via use of an NIST certified Montana Soil (NIST Std. Ref Mat. N. 2711 batch 1299). Statistical results of 9 samples of supplied material after calibration with NIST material.

Expiration Date: This CRM is valid for two years from the date of opening.

Date 02/07/2018

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh   Job Number: 180-116528-1

SDG No.:

Project: Wood Penobscot River Proposal

Client Sample ID	Lab Sample ID
MMBKD-01_012521_SED_00-01	180-116528-1
MMBKD-01_012521_SED_01-03	180-116528-2
MMBKD-01_012521_SED_03-05	180-116528-3
MMBKD-01_012521_SED_01-03_DUP	180-116528-4
FRB-02_012621_SED_00-01	180-116528-5
FRB-02_012621_SED_01-03	180-116528-6
FRB-02_012621_SED_03-05	180-116528-7
ES-13_012621_SED_00-01	180-116528-8
ES-13_012621_SED_01-03	180-116528-9
ES-13_012621_SED_03-05	180-116528-10

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: MMBKD-01_012521_SED_00-01 Lab Sample ID: 180-116528-1

Lab Name: Eurofins TestAmerica, Pittsburgh Job No.: 180-116528-1

SDG ID.:

Matrix: Solid Date Sampled: 01/25/2021 15:25

Reporting Basis: DRY Date Received: 01/28/2021 08:30

% Solids: 24.8

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon - Duplicates	94000	4000	3000	mg/Kg			1	EPA-Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: MMBKD-01_012521_SED_01-03

Lab Sample ID: 180-116528-2

Lab Name: Eurofins TestAmerica, Pittsburgh

Job No.: 180-116528-1

SDG ID.:

Matrix: Solid

Date Sampled: 01/25/2021 15:35

Reporting Basis: DRY

Date Received: 01/28/2021 08:30

% Solids: 39.6

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon - Duplicates	54000	2500	1900	mg/Kg			1	EPA-Lloyd Kahn

FORM IB-IN

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: MMBKD-01_012521_SED_03-05

Lab Sample ID: 180-116528-3

Lab Name: Eurofins TestAmerica, Pittsburgh

Job No.: 180-116528-1

SDG ID.:

Matrix: Solid

Date Sampled: 01/25/2021 15:40

Reporting Basis: DRY

Date Received: 01/28/2021 08:30

% Solids: 52.6

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon - Duplicates	34000	1900	1400	mg/Kg			1	EPA-Lloyd Kahn

FORM IB-IN

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: MMBKD-01_012521_SED_01-03_DUP

Lab Sample ID: 180-116528-4

Lab Name: Eurofins TestAmerica, Pittsburgh

Job No.: 180-116528-1

SDG ID.:

Matrix: Solid

Date Sampled: 01/25/2021 12:00

Reporting Basis: DRY

Date Received: 01/28/2021 08:30

% Solids: 39.3

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon - Duplicates	56000	2500	1900	mg/Kg			1	EPA-Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: FRB-02_012621_SED_00-01

Lab Sample ID: 180-116528-5

Lab Name: Eurofins TestAmerica, Pittsburgh

Job No.: 180-116528-1

SDG ID.:

Matrix: Solid

Date Sampled: 01/26/2021 15:00

Reporting Basis: DRY

Date Received: 01/28/2021 08:30

% Solids: 48.3

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon - Duplicates	21000	2100	1500	mg/Kg			1	EPA-Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: FRB-02_012621_SED_01-03

Lab Sample ID: 180-116528-6

Lab Name: Eurofins TestAmerica, Pittsburgh

Job No.: 180-116528-1

SDG ID.:

Matrix: Solid

Date Sampled: 01/26/2021 15:15

Reporting Basis: DRY

Date Received: 01/28/2021 08:30

% Solids: 50.3

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon - Duplicates	24000	2000	1500	mg/Kg			1	EPA-Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: FRB-02_012621_SED_03-05

Lab Sample ID: 180-116528-7

Lab Name: Eurofins TestAmerica, Pittsburgh

Job No.: 180-116528-1

SDG ID.:

Matrix: Solid

Date Sampled: 01/26/2021 15:30

Reporting Basis: DRY

Date Received: 01/28/2021 08:30

% Solids: 56.0

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon - Duplicates	22000	1800	1300	mg/Kg			1	EPA-Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: ES-13_012621_SED_00-01

Lab Sample ID: 180-116528-8

Lab Name: Eurofins TestAmerica, Pittsburgh

Job No.: 180-116528-1

SDG ID.:

Matrix: Solid

Date Sampled: 01/26/2021 18:45

Reporting Basis: DRY

Date Received: 01/28/2021 08:30

% Solids: 41.1

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon - Duplicates	66000	2400	1800	mg/Kg			1	EPA-Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: ES-13_012621_SED_01-03

Lab Sample ID: 180-116528-9

Lab Name: Eurofins TestAmerica, Pittsburgh

Job No.: 180-116528-1

SDG ID.:

Matrix: Solid

Date Sampled: 01/26/2021 18:55

Reporting Basis: DRY

Date Received: 01/28/2021 08:30

% Solids: 50.0

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon - Duplicates	44000	2000	1500	mg/Kg			1	EPA-Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: ES-13_012621_SED_03-05

Lab Sample ID: 180-116528-10

Lab Name: Eurofins TestAmerica, Pittsburgh

Job No.: 180-116528-1

SDG ID.:

Matrix: Solid

Date Sampled: 01/26/2021 19:05

Reporting Basis: DRY

Date Received: 01/28/2021 08:30

% Solids: 71.4

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon - Duplicates	12000	1400	1000	mg/Kg			1	EPA-Lloyd Kahn

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh   Job No.: 180-116528-1

SDG No.:

Analyst: DLF   Batch Start Date: 01/29/2021

Reporting Units: mg/Kg   Analytical Batch No.: 345159

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
2	CCV	13:18	Total Organic Carbon - Duplicates	10100	10000	101	85-115		LKTOCKHPL1_00030
3	CCB	13:23	Total Organic Carbon - Duplicates	ND					
16	CCV	15:23	Total Organic Carbon - Duplicates	10200	10000	102	85-115		LKTOCKHPL1_00030
17	CCB	15:28	Total Organic Carbon - Duplicates	ND					
30	CCV	17:28	Total Organic Carbon - Duplicates	10200	10000	102	85-115		LKTOCKHPL1_00030
31	CCB	17:34	Total Organic Carbon - Duplicates	ND					

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh　　Job No.: 180-116528-1

SDG No.:

Analyst: DLF　　Batch Start Date: 02/04/2021

Reporting Units: mg/Kg　　Analytical Batch No.: 345656

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
2	CCV	11:25	Total Organic Carbon - Duplicates	10100	10000	100	85-115		LKTOCKHPL1_00030
3	CCB	11:31	Total Organic Carbon - Duplicates	ND					
14	CCV	13:29	Total Organic Carbon - Duplicates	10100	10000	101	85-115		LKTOCKHPL1_00030
15	CCB	13:35	Total Organic Carbon - Duplicates	ND					
24	CCV	14:48	Total Organic Carbon - Duplicates	10100	10000	101	85-115		LKTOCKHPL1_00030
25	CCB	14:53	Total Organic Carbon - Duplicates	ND					

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh Job No.: 180-116528-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 345159 Date: 01/29/2021 13:31							
EPA-Lloyd Kahn	MB 180-345159/4	Total Organic Carbon - Duplicates	ND		mg/Kg	1000	1
Batch ID: 345656 Date: 02/04/2021 11:37							
EPA-Lloyd Kahn	MB 180-345656/4	Total Organic Carbon - Duplicates	ND		mg/Kg	1000	1

FORM III-IN

5-IN
MATRIX SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh   Job No.: 180-116528-1

SDG No.:

Matrix: Solid

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 345159 Date: 01/29/2021 16:32											
EPA-Lloyd Kahn	180-116528-7	Total Organic Carbon - Duplicates	22000		mg/Kg						
EPA-Lloyd Kahn	180-116528-7 MS	Total Organic Carbon - Duplicates	58100		mg/Kg	39300	93	75-125			
Batch ID: 345656 Date: 02/04/2021 12:44											
EPA-Lloyd Kahn	180-116528-10	Total Organic Carbon - Duplicates	12000		mg/Kg						
EPA-Lloyd Kahn	180-116528-10 MS	Total Organic Carbon - Duplicates	42100		mg/Kg	32900	90	75-125			

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM V-IN

5-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh   Job No.: 180-116528-1

SDG No.:

Matrix: Solid

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 345159	Date: 01/29/2021 16:49										
EPA-Lloyd Kahn	180-116528-7 MSD	Total Organic Carbon - Duplicates	59400		mg/Kg	37700	100	75-125	2	20	
Batch ID: 345656	Date: 02/04/2021 13:07										
EPA-Lloyd Kahn	180-116528-10 MSD	Total Organic Carbon - Duplicates	42900		mg/Kg	31900	96	75-125	2	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM V-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh   Job No.: 180-116528-1

SDG No.:

Matrix: Solid

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 345159	Date: 01/29/2021 13:42										
					LCS Source: LKTOCSRM_00040						
EPA-Lloyd Kahn	LCS 180-345159/5	Total Organic Carbon - Duplicates	34800		mg/Kg	37800	92	75-125			
Batch ID: 345656	Date: 02/04/2021 11:48										
					LCS Source: LKTOCSRM_00040						
EPA-Lloyd Kahn	LCS 180-345656/5	Total Organic Carbon - Duplicates	38300		mg/Kg	37800	101	75-125			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburg Job Number: 180-116528-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: 2540G RL Date: 01/31/2010 13:27

Analyte	Wavelength/ Mass	RL (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

FORM IX - IN

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburg   Job Number: 180-116528-1

SDG Number:

Matrix: Solid   Instrument ID: NOEQUIP

Method: 2540G   XRL Date: 01/31/2010 13:31

Analyte	Wavelength/ Mass	XRL (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

FORM IX - IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburg   Job Number: 180-116528-1

SDG Number:

Matrix: Solid   Instrument ID: FLASHEA

Method: EPA-Lloyd Kahn   MDL Date: 03/09/2017 16:58

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Total Organic Carbon - Duplicates		1000	746

FORM IX - IN

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburg   Job Number: 180-116528-1

SDG Number:

Matrix: Solid   Instrument ID: FLASHEA

Method: EPA-Lloyd Kahn   XMDL Date: 03/09/2017 16:58

Analyte	Wavelength/ Mass	XRL (mg/Kg)	XMDL (mg/Kg)
Total Organic Carbon - Duplicates		1000	746

FORM IX - IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh   Job No.: 180-116528-1

SDG No.:

Instrument ID: NOEQUIP   Analysis Method: 2540G

Start Date: 02/03/2021 10:43   End Date: 02/03/2021 10:43

Lab Sample Id	D/F	Type	Time	Analytes	
				%Sol	Moist
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
ZZZZZZ			10:43		
180-116528-2	1	T	10:43	X	X
180-116528-3	1	T	10:43	X	X
180-116528-4	1	T	10:43	X	X

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh   Job No.: 180-116528-1

SDG No.:

Instrument ID: NOEQUIP   Analysis Method: 2540G

Start Date: 02/03/2021 11:23   End Date: 02/03/2021 11:23

Lab Sample Id	D/F	Type	Time	Analytes: %Sol	Moist
180-116528-5	1	T	11:23	X	X
180-116528-5 DU	1	T	11:23	X	X
180-116528-6	1	T	11:23	X	X
ZZZZZZ			11:23		
ZZZZZZ			11:23		
ZZZZZZ			11:23		
180-116528-7	1	T	11:23	X	X
ZZZZZZ			11:23		
ZZZZZZ			11:23		
ZZZZZZ			11:23		
ZZZZZZ			11:23		
ZZZZZZ			11:23		
ZZZZZZ			11:23		
ZZZZZZ			11:23		
ZZZZZZ			11:23		
ZZZZZZ			11:23		
ZZZZZZ			11:23		
ZZZZZZ			11:23		
ZZZZZZ			11:23		
ZZZZZZ			11:23		
ZZZZZZ			11:23		
ZZZZZZ			11:23		

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh   Job No.: 180-116528-1

SDG No.:

Instrument ID: NOEQUIP   Analysis Method: 2540G

Start Date: 02/03/2021 13:23   End Date: 02/03/2021 13:23

Lab Sample Id	D/F	Type	Time	% Sol	Moist																							
ZZZZZZ			13:23																									
ZZZZZZ			13:23																									
ZZZZZZ			13:23																									
ZZZZZZ			13:23																									
ZZZZZZ			13:23																									
ZZZZZZ			13:23																									
ZZZZZZ			13:23																									
180-116528-1	1	T	13:23	X	X																							

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh　Job No.: 180-116528-1

SDG No.:

Instrument ID: NOEQUIP　Analysis Method: 2540G

Start Date: 02/04/2021 12:03　End Date: 02/04/2021 12:03

Lab Sample Id	D/F	Type	Time	Analytes	
				%Sol	Moist
180-116528-8	1	T	12:03	X	X
180-116528-8 DU	1	T	12:03	X	X
180-116528-9	1	T	12:03	X	X
180-116528-10	1	T	12:03	X	X
ZZZZZZ			12:03		
ZZZZZZ			12:03		
ZZZZZZ			12:03		
ZZZZZZ			12:03		
ZZZZZZ			12:03		
ZZZZZZ			12:03		
ZZZZZZ			12:03		
ZZZZZZ			12:03		
ZZZZZZ			12:03		
ZZZZZZ			12:03		
ZZZZZZ			12:03		
ZZZZZZ			12:03		
ZZZZZZ			12:03		
ZZZZZZ			12:03		
ZZZZZZ			12:03		
ZZZZZZ			12:03		
ZZZZZZ			12:03		
ZZZZZZ			12:03		

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh   Job No.: 180-116528-1

SDG No.:

Instrument ID: FLASHEA   Analysis Method: EPA-Lloyd Kahn

Start Date: 01/29/2021 13:00   End Date: 02/01/2021 10:39

Lab Sample Id	D/F	Type	Time	Analytes: TOCD
RINSE 180-345159/1			13:00	
CCV 180-345159/2	1		13:18	X
CCB 180-345159/3	1		13:23	X
MB 180-345159/4	1	T	13:31	X
LCS 180-345159/5	1	T	13:42	X
ZZZZZZ			13:53	
RINSE 180-345159/7			14:05	
180-116528-1	1	T	14:10	X
RINSE 180-345159/9			14:21	
180-116528-2	1	T	14:27	X
RINSE 180-345159/11			14:38	
180-116528-3	1	T	14:44	X
RINSE 180-345159/13			14:55	
180-116528-4	1	T	15:06	X
RINSE 180-345159/15			15:17	
CCV 180-345159/16	1		15:23	X
CCB 180-345159/17	1		15:28	X
180-116528-5	1	T	15:36	X
RINSE 180-345159/19			15:48	
180-116528-6	1	T	15:53	X
RINSE 180-345159/21			16:04	
180-116528-7	1	T	16:16	X
RINSE 180-345159/23			16:27	
180-116528-7 MS	1	T	16:32	X
RINSE 180-345159/25			16:43	
180-116528-7 MSD	1	T	16:49	X
RINSE 180-345159/27			17:00	
ZZZZZZ			17:11	
RINSE 180-345159/29			17:23	
CCV 180-345159/30	1		17:28	X
CCB 180-345159/31	1		17:34	X
ZZZZZZ			17:39	
RINSE 180-345159/33			17:50	
ZZZZZZ			17:56	
RINSE 180-345159/35			18:07	
ZZZZZZ			18:18	
RINSE 180-345159/37			18:30	
ZZZZZZ			18:35	
RINSE 180-345159/39			18:46	
ZZZZZZ			18:57	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh   Job No.: 180-116528-1

SDG No.:

Instrument ID: FLASHEA   Analysis Method: EPA-Lloyd Kahn

Start Date: 01/29/2021 13:00   End Date: 02/01/2021 10:39

Lab Sample Id	D/F	Type	Time	Analytes																									
				TOCD																									
RINSE 180-345159/41			07:45																										
CCV 180-345159/42			07:56																										
CCB 180-345159/43			08:02																										
ZZZZZZ			08:08																										
RINSE 180-345159/45			08:20																										
ZZZZZZ			08:31																										
RINSE 180-345159/47			08:42																										
ZZZZZZ			08:53																										
RINSE 180-345159/49			09:04																										
ZZZZZZ			09:15																										
RINSE 180-345159/51			09:27																										
CCV 180-345159/52			09:38																										
CCB 180-345159/53			09:43																										
ZZZZZZ			09:49																										
RINSE 180-345159/55			10:00																										
ZZZZZZ			10:11																										
RINSE 180-345159/57			10:22																										
CCV 180-345159/58			10:33																										
CCB 180-345159/59			10:39																										

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh Job No.: 180-116528-1

SDG No.:

Instrument ID: FLASHEA Analysis Method: EPA-Lloyd Kahn

Start Date: 02/04/2021 11:19 End Date: 02/04/2021 14:53

Lab Sample Id	D/F	Type	Time	Analytes
				TOCD
RINSE 180-345656/1			11:19	
CCV 180-345656/2	1		11:25	X
CCB 180-345656/3	1		11:31	X
MB 180-345656/4	1	T	11:37	X
LCS 180-345656/5	1	T	11:48	X
180-116528-8	1	T	11:59	X
RINSE 180-345656/7			12:11	
180-116528-10	1	T	12:22	X
RINSE 180-345656/9			12:33	
180-116528-10 MS	1	T	12:44	X
RINSE 180-345656/11			12:56	
180-116528-10 MSD	1	T	13:07	X
RINSE 180-345656/13			13:18	
CCV 180-345656/14	1		13:29	X
CCB 180-345656/15	1		13:35	X
180-116528-9	1	T	13:41	X
RINSE 180-345656/17			13:52	
RINSE 180-345656/18			13:57	
ZZZZZZ			14:09	
RINSE 180-345656/20			14:20	
RINSE 180-345656/21			14:25	
RINSE 180-345656/22			14:31	
RINSE 180-345656/23			14:37	
CCV 180-345656/24	1		14:48	X
CCB 180-345656/25	1		14:53	X

Prep Types:
T = Total/NA

FORM XIII-IN

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Pittsbur Job No.: 180-116528-1

SDG No.:

Batch Number: 345415 Batch Start Date: 02/03/21 12:50 Batch Analyst: Miller, Mary Beth

Batch Method: 2540G Batch End Date: 02/04/21 01:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
180-116528-A-2	MMBKD-01_012521_SED_01-03	2540G	T	42	1.02 g	9.60 g	4.42 g		
180-116528-A-3	MMBKD-01_012521_SED_03-05	2540G	T	43	1.00 g	7.67 g	4.51 g		
180-116528-A-4	MMBKD-01_012521_SED_01-03_DUP	2540G	T	44	1.01 g	10.32 g	4.67 g		

Batch Notes	
Balance ID	B738722774
Batch Comment	completed by mbm
Date and Time Samples in Desiccator	02/04/2021 09:00
Date and Time Samples out of Desiccator	02/04/2021 09:30
Date samples were placed in the oven	02/03/2021
Oven Temp In	103 Degrees C
Time samples were place in the oven	12:50
Date samples were removed from oven	02/04/2021
Oven Temp Out	104 Degrees C
Time Samples were removed from oven	09:00
Oven ID	5005
Thermometer ID	Qc-12 cf=0
Temperature - Start - Uncorrected	103 Degrees C
Temperature - End - Uncorrected	104 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Pittsbur Job No.: 180-116528-1

SDG No.:

Batch Number: 345426 Batch Start Date: 02/03/21 12:50 Batch Analyst: Miller, Mary Beth

Batch Method: 2540G Batch End Date: 02/04/21 13:04

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry	AnalysisComment	
180-116528-A-5	FRB-02_012621_SED_00-01	2540G	T	45	1.00 g	6.01 g	3.42 g	tray 49	
180-116528-A-5 DU	FRB-02_012621_SED_00-01	2540G	T	46	1.01 g	6.03 g	3.45 g		
180-116528-A-6	FRB-02_012621_SED_01-03	2540G	T	47	1.00 g	8.02 g	4.53 g		
180-116528-A-7	FRB-02_012621_SED_03-05	2540G	T	51	1.01 g	8.22 g	5.05 g		

Batch Notes	
Balance ID	B738722774
Batch Comment	completed by mbm
Date and Time Samples in Desiccator	02/04/2021 09:00
Date and Time Samples out of Desiccator	02/04/2021 09:30
Date samples were placed in the oven	02/03/2021
Oven Temp In	103 Degrees C
Time samples were place in the oven	12:30
Date samples were removed from oven	02/04/2021
Oven Temp Out	104 Degrees C
Time Samples were removed from oven	09:00
Oven ID	5005
Thermometer ID	QC-12 CF=0
Temperature - Start - Uncorrected	103 Degrees C
Temperature - End - Uncorrected	104 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Pittsbur Job No.: 180-116528-1

SDG No.:

Batch Number: 345455 Batch Start Date: 02/03/21 13:23 Batch Analyst: Miller, Mary Beth

Batch Method: 2540G Batch End Date: 02/04/21 13:07

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
180-116528-A-1	MMBKD-01_012521_SED_00-01	2540G	T	76	1.00 g	8.38 g	2.83 g		

Batch Notes	
Balance ID	B738722774
Batch Comment	completed by mbm
Date and Time Samples in Desiccator	02/04/2021 09:00
Date and Time Samples out of Desiccator	02/04/2021 09:30
Date samples were placed in the oven	02/03/2021
Oven Temp In	103 Degrees C
Time samples were place in the oven	01:30
Date samples were removed from oven	02/04/2021
Oven Temp Out	104 Degrees C
Time Samples were removed from oven	09:00
Oven ID	5005
Thermometer ID	qc-12 CF=0
Temperature - Start - Uncorrected	103 Degrees C
Temperature - End - Uncorrected	104 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Pittsbur Job No.: 180-116528-1

SDG No.:

Batch Number: 345577 Batch Start Date: 02/04/21 12:03 Batch Analyst: Moore, Kendric M

Batch Method: 2540G Batch End Date: 02/05/21 12:59

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry	AnalysisComment	
180-116528-A-8	ES-13_012621_SED_00-01	2540G	T	1	1.04 g	6.34 g	3.22 g	Tray 0.2	
180-116528-A-8 DU	ES-13_012621_SED_00-01	2540G	T	2	1.03 g	6.32 g	3.19 g		
180-116528-A-9	ES-13_012621_SED_01-03	2540G	T	3	1.03 g	8.03 g	4.53 g		
180-116528-A-10	ES-13_012621_SED_03-05	2540G	T	4	1.02 g	8.11 g	6.08 g		

Batch Notes	
Balance ID	8949
Batch Comment	Desiccator 6
Date and Time Samples in Desiccator	02/05/2021 11:25
Date and Time Samples out of Desiccator	02/05/2021 12:49
Date samples were placed in the oven	02/04/2021
Oven Temp In	103 Degrees C
Time samples were place in the oven	15:26
Date samples were removed from oven	02/05/2021
Oven Temp Out	103 Degrees C
Time Samples were removed from oven	11:22
Oven ID	5005
Thermometer ID	qa back-up 12(tclp) cf=0
Temperature - Start - Uncorrected	103 Degrees C
Temperature - End - Uncorrected	103 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Pittsbur Job No.: 180-116528-1

SDG No.:

Batch Number: 345159 Batch Start Date: 01/29/21 13:00 Batch Analyst: Ferguson, Donald

Batch Method: EPA-Lloyd Kahn Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LKTOCKHPL1 00030	LKTOCSRM 00040		
CCV 180-345159/2		EPA-Lloyd Kahn				0.1 mL			
MB 180-345159/4		EPA-Lloyd Kahn		23.55 mg	23.55 mg				
LCS 180-345159/5		EPA-Lloyd Kahn		9.75 mg	9.75 mg		9.75 mg		
CCV 180-345159/16		EPA-Lloyd Kahn				0.1 mL			
180-116528-A-7	FRB-02_012621_SED_03-05	EPA-Lloyd Kahn	T	14.6 mg	14.6 mg				
180-116528-A-7 MS	FRB-02_012621_SED_03-05	EPA-Lloyd Kahn	T	13.4 mg	13.4 mg		7.8 mg		
180-116528-A-7 MSD	FRB-02_012621_SED_03-05	EPA-Lloyd Kahn	T	14.15 mg	14.15 mg		7.9 mg		
CCV 180-345159/30		EPA-Lloyd Kahn				0.1 mL			

Batch Notes	
Batch Comment	Ottawa sand 3442271
Phosphoric Acid ID	3958283

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Pittsbur Job No.: 180-116528-1

SDG No.:

Batch Number: 345656 Batch Start Date: 02/04/21 11:19 Batch Analyst: Ferguson, Donald

Batch Method: EPA-Lloyd Kahn Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LKTOCKHPL1 00030	LKTOCSRM 00040		
CCV 180-345656/2		EPA-Lloyd Kahn				0.1 mL			
MB 180-345656/4		EPA-Lloyd Kahn		20.2 mg	20.2 mg				
LCS 180-345656/5		EPA-Lloyd Kahn		10.45 mg	10.45 mg		10.45 mg		
180-116528-B-10	ES-13_012621_SED_03-05	EPA-Lloyd Kahn	T	14.7 mg	14.7 mg				
180-116528-B-10 MS	ES-13_012621_SED_03-05	EPA-Lloyd Kahn	T	13.05 mg	13.05 mg		8.1 mg		
180-116528-B-10 MSD	ES-13_012621_SED_03-05	EPA-Lloyd Kahn	T	13.05 mg	13.05 mg		7.85 mg		
CCV 180-345656/14		EPA-Lloyd Kahn				0.1 mL			
CCV 180-345656/24		EPA-Lloyd Kahn				0.1 mL			

Batch Notes	
Batch Comment	Ottawa sand 3442271
Phosphoric Acid ID	3958283

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

General Chemistry Raw Data Report

Job ID: 180-116528-1

Batch: 345415 | **Analyst Initials: MM1**
Method: 2540G | **Instrument: No Equipment**

Lab Sample ID: 180-116528-A-2 — Analysis Date: Feb 03, 2021 10:43

Analyte	Detector	Dilution	Raw Result	Unit
Percent Moisture	None	1	60.3729603729604	%
Percent Solids	None	1	39.6270396270396	%

Lab Sample ID: 180-116528-A-3 — Analysis Date: Feb 03, 2021 10:43

Analyte	Detector	Dilution	Raw Result	Unit
Percent Moisture	None	1	47.376311844078	%
Percent Solids	None	1	52.623688155922	%

Lab Sample ID: 180-116528-A-4 — Analysis Date: Feb 03, 2021 10:43

Analyte	Detector	Dilution	Raw Result	Unit
Percent Moisture	None	1	60.687432867884	%
Percent Solids	None	1	39.312567132116	%

General Chemistry Raw Data Report

Job ID: 180-116528-1

Batch: 345426 | **Analyst Initials: MM1**
Method: 2540G | **Instrument: No Equipment**

Lab Sample ID: 180-116528-A-5
Analysis Date: Feb 03, 2021 11:23

Analyte	Detector	Dilution	Raw Result	Unit
Percent Moisture	None	1	51.6966067864271	%
Percent Solids	None	1	48.3033932135729	%

Lab Sample ID: 180-116528-A-5 DU
Analysis Date: Feb 03, 2021 11:23

Analyte	Detector	Dilution	Raw Result	Unit
Percent Moisture	None	1	51.394422310757	%
Percent Solids	None	1	48.605577689243	%

Lab Sample ID: 180-116528-A-6
Analysis Date: Feb 03, 2021 11:23

Analyte	Detector	Dilution	Raw Result	Unit
Percent Moisture	None	1	49.7150997150997	%
Percent Solids	None	1	50.2849002849003	%

Lab Sample ID: 180-116528-A-7
Analysis Date: Feb 03, 2021 11:23

Analyte	Detector	Dilution	Raw Result	Unit
Percent Moisture	None	1	43.9667128987517	%
Percent Solids	None	1	56.0332871012483	%

General Chemistry Raw Data Report

Job ID: 180-116528-1

Batch: 345455 **Analyst Initials: MM1**
Method: 2540G **Instrument: No Equipment**

Lab Sample ID: 180-116528-A-1 **Analysis Date: Feb 03, 2021 13:23**

Analyte	Detector	Dilution	Raw Result	Unit
Percent Moisture	None	1	75.2032520325203	%
Percent Solids	None	1	24.7967479674797	%

General Chemistry Raw Data Report

Job ID: 180-116528-1

Batch: 345577 **Analyst Initials: KMM**
Method: 2540G **Instrument: No Equipment**

Lab Sample ID: 180-116528-A-8 Analysis Date: Feb 04, 2021 12:03

Analyte	Detector	Dilution	Raw Result	Unit
Percent Moisture	None	1	58.8679245283019	%
Percent Solids	None	1	41.1320754716981	%

Lab Sample ID: 180-116528-A-8 DU Analysis Date: Feb 04, 2021 12:03

Analyte	Detector	Dilution	Raw Result	Unit
Percent Moisture	None	1	59.1682419659735	%
Percent Solids	None	1	40.8317580340265	%

Lab Sample ID: 180-116528-A-9 Analysis Date: Feb 04, 2021 12:03

Analyte	Detector	Dilution	Raw Result	Unit
Percent Moisture	None	1	50	%
Percent Solids	None	1	50	%

Lab Sample ID: 180-116528-A-10 Analysis Date: Feb 04, 2021 12:03

Analyte	Detector	Dilution	Raw Result	Unit
Percent Moisture	None	1	28.6318758815233	%
Percent Solids	None	1	71.3681241184767	%

Eager Xperience

Method name : Lloyd Kahn
Method filename : C:\data\January\092320A.mth

Sample table

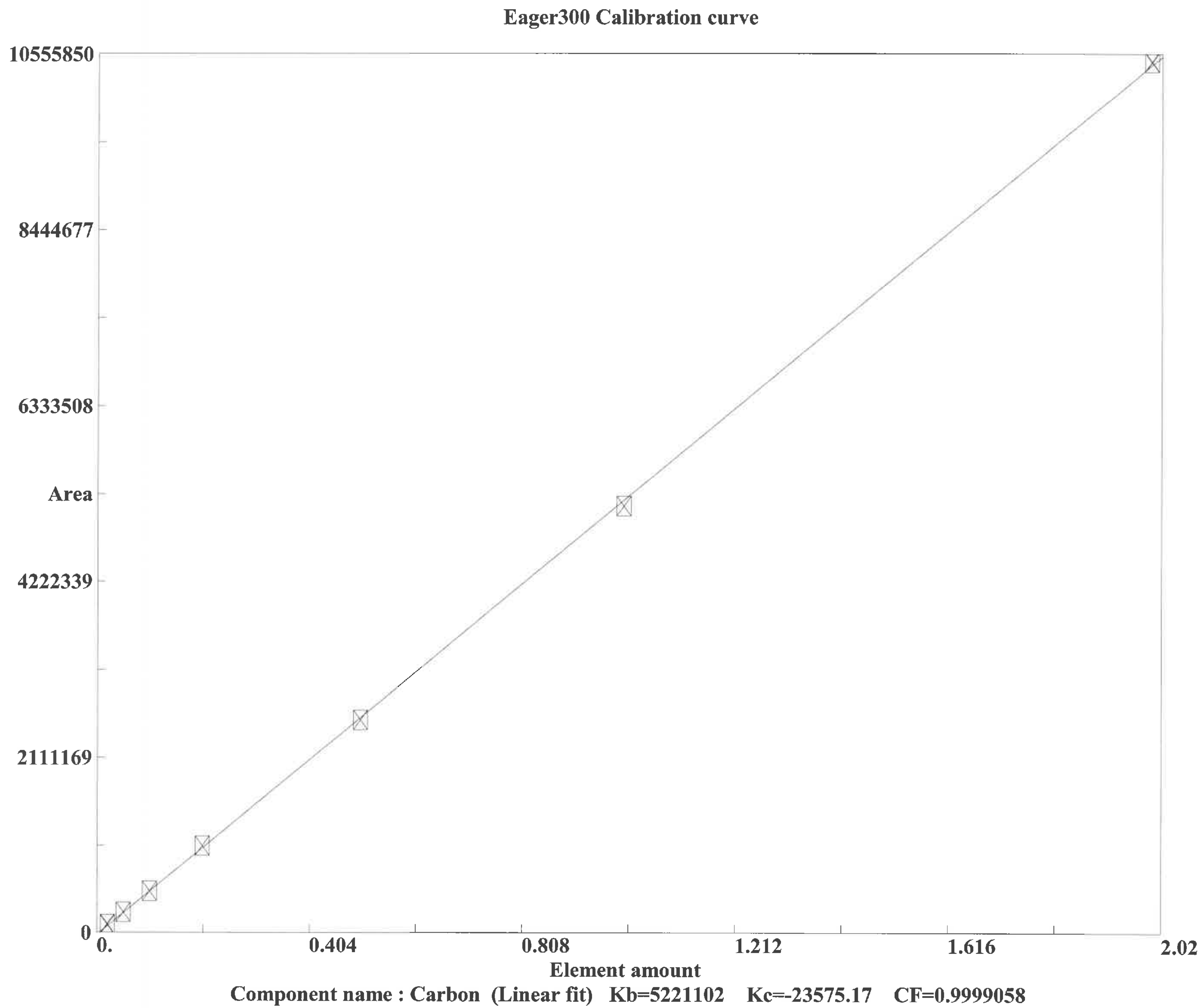
Chromatogram overwrite : Enabled

#	Sample name	Filename	Type	Weight	Hum.%
1	BYPASS	A092320006	ByP	-	0
2	BLANK	A092320007	Blk	-	0
3	BLANK	A092320008	Blk	-	0
4	1,000 KHP CT#3785365	A092320009	Std	200	0
5	2,500 KHP CT#3785364	A092320010	Std	50	0
6	5,000 KHP CT#3785364	A092320011	Std	100	0
7	10,000 KHP CT#3785364	A092320012	Std	200	0
8	25,000 KHP CT#3785363	A092320013	Std	50	0
9	50,000 KHP CT#3785363	A092320014	Std	100	0
10	100,000 KHP CT#3785363	A092320015	Std	200	0
11	ICV 37,810 KHP CT#3742673	A092320016	Unk	11.6	0
12	CCV	A092320017	Unk	100	0
13	CCB	A092320018	Unk	20	0
14	MB	A092320019	Unk	21.1	0
15	MB	A092320020	Unk	24.4	0
16	LCS	A092320021	Unk	12.7	0
17	LCS	A092320022	Unk	9.8	0
18	180-110583-A-9	A092320023	Unk	18.2	0
19	180-110583-A-9	A092320024	Unk	18	0
20	Rinse	A092320025	Unk	1	0
21	180-110583-B-14	A092320026	Unk	10.6	0
22	180-110583-B-14	A092320027	Unk	7.4	0
23	Rinse	A092320028	Unk	1	0
24	180-110583-B-14 MS	A092320029	Unk	8.3	0
25	180-110583-B-14 MS	A092320030	Unk	6.6	0
26	Rinse	A092320031	Unk	1	0
27	180-110583-B-14 MSD	A092320032	Unk	7.7	0
28	180-110583-B-14 MSD	A092320033	Unk	7.8	0
29	Rinse	A092320034	Unk	1	0
30	180-110583-A-19	A092320035	Unk	13.1	0
31	180-110583-A-19	A092320036	Unk	16.6	0
32	Rinse	A092320037	Unk	1	0
33	CCV	A092320038	Unk	100	0
34	CCB	A092320039	Unk	20	0
35	180-110583-A-20	A092320040	Unk	11.9	0
36	180-110583-A-20	A092320041	Unk	9.1	0
37	Rinse	A092320042	Unk	1	0

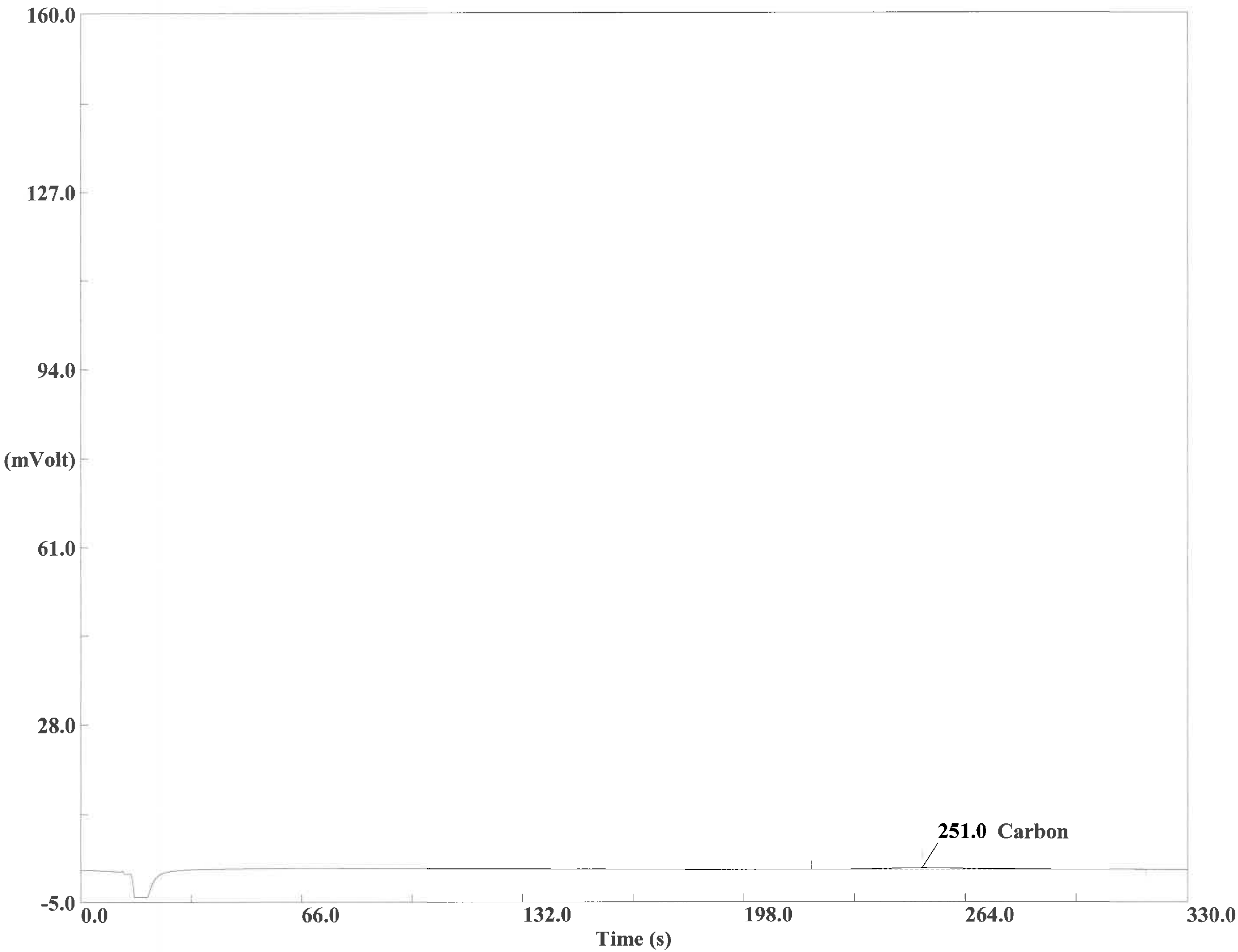
Llyod Kahn %Readback Error Calculation Spreadsheet

ICAL Std (ppm)	ICAL ID	Average Area	% Actual Carbon of Std.	%Readback Error	%Readback Criteria
1000	092320LK_ICAL	99423	0.0073	27.364	≤50%
2500	092320LK_ICAL	247009	0.0856	14.411	≤30%
5000	092320LK_ICAL	499611	0.0912	8.825	≤30%
10000	092320LK_ICAL	1048607	0.0982	1.838	≤30%
25000	092320LK_ICAL	2561375	0.9721	2.787	≤30%
50000	092320LK_ICAL	5128187	0.9777	2.231	≤30%
100000	092320LK_ICAL	10456420	0.9991	0.090	≤30%

Kb Value	Ke Value	Volume Cal Standard Injected	True Value Carbon Std in %
[illegible]	[illegible]	**200**	**0.01**
		50	**0.10**
		100	**0.10**
		200	**0.10**
		50	**1.00**
		100	**1.00**
		200	**1.00**


Eager300 Calibration curve
10555850
8444677
6333508
Area
4222339
2111169
0
0.
0.404
0.808
1.212
1.616
2.02
Element amount
Component name : Carbon (Linear fit) Kb=5221102 Kc=-23575.17 CF=0.9999058

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320009.dat
Sample name :1,000 KHP CT#3785365   Analysed :09/23/2020 14:23

Eager 300 Report

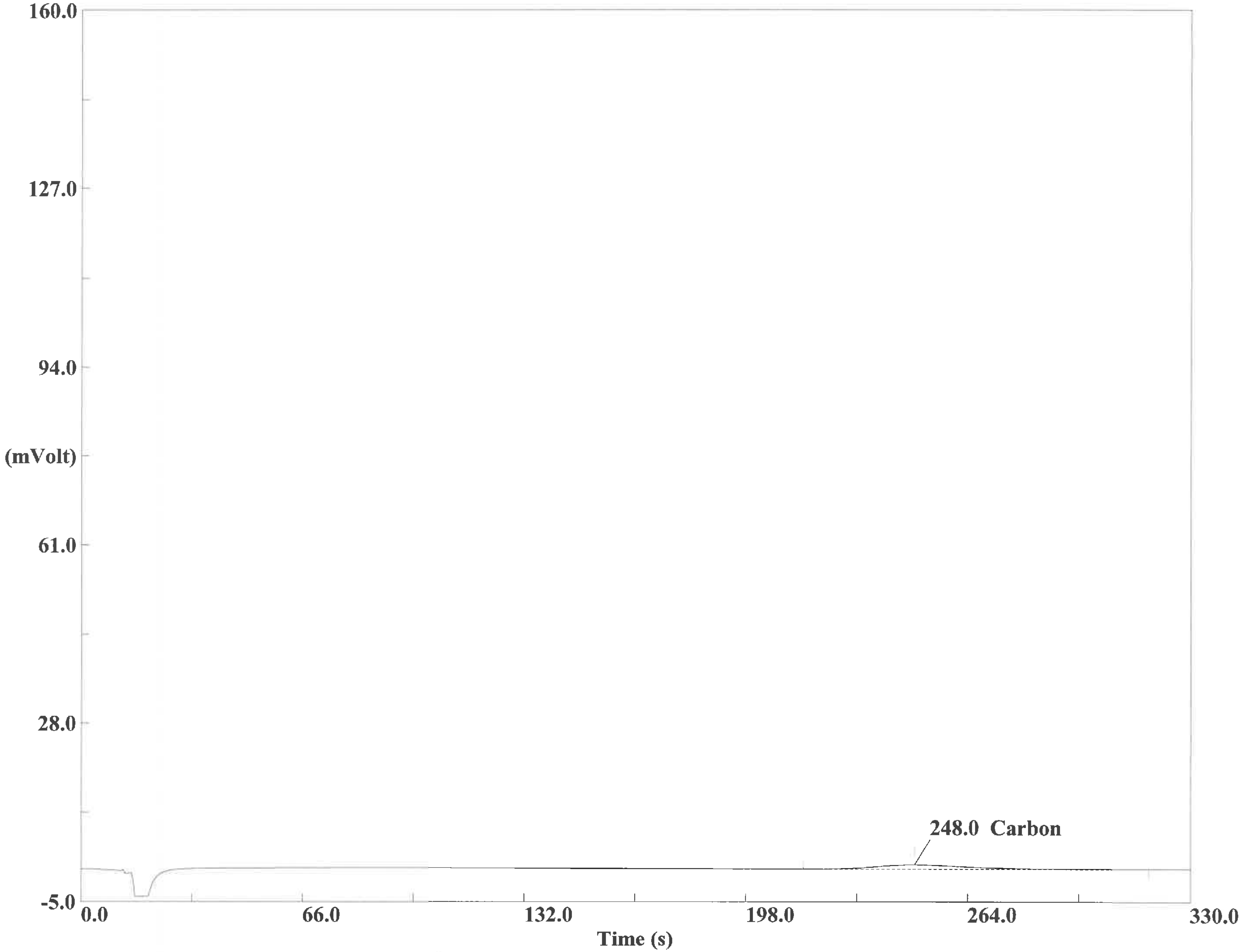
Page: 1   Sample: 1,000 KHP CT#3785365 (A092320009)

Method Name : Lloyd Kahn
Method File : C:\data\January\092320A.mth
Chromatogram : A092320009
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 09/23/2020 14:23   Printed : 9/23/2020 14:29
Sample ID : 1,000 KHP CT#3785365 (# 4)
Instrument N. : Instrument #1
Analysis Type : Calibration (Area)   Sample weight : 200

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.0100	251	99423	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320010.dat
Sample name :2,500 KHP CT#3785364 Analysed :09/23/2020 14:29

Eager 300 Report

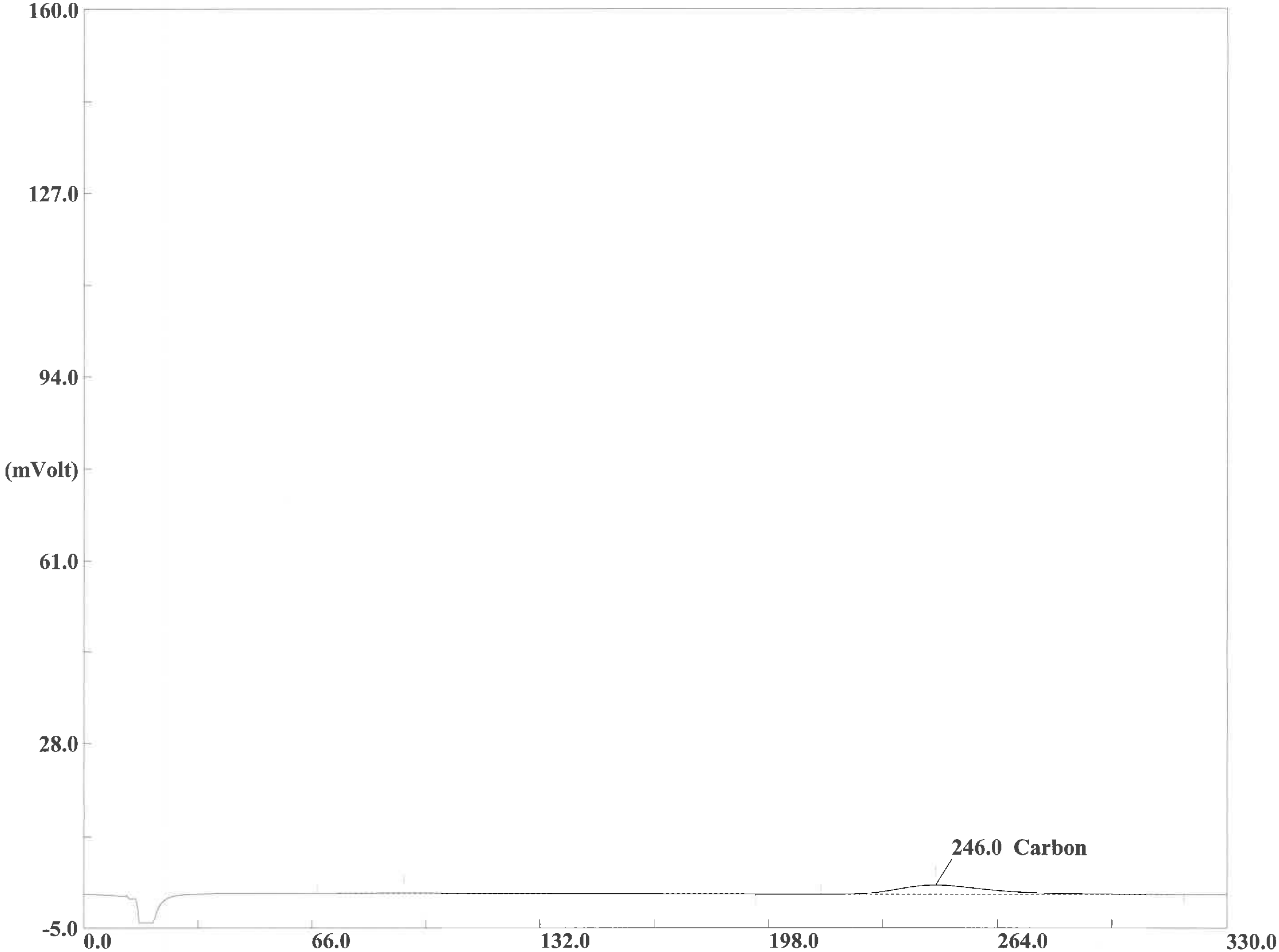
Page: 1   Sample: 2,500 KHP CT#3785364 (A092320010)

Method Name : Lloyd Kahn
Method File : C:\data\January\092320A.mth
Chromatogram : A092320010
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 09/23/2020 14:29   Printed : 9/23/2020 14:34
Sample ID : 2,500 KHP CT#3785364 (# 5)
Instrument N. : Instrument #1
Analysis Type : Calibration (Area)   Sample weight : 50

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.1000	248	247009	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320011.dat
Sample name :5,000 KHP CT#3785364 Analysed :09/23/2020 14:34

Eager 300 Report

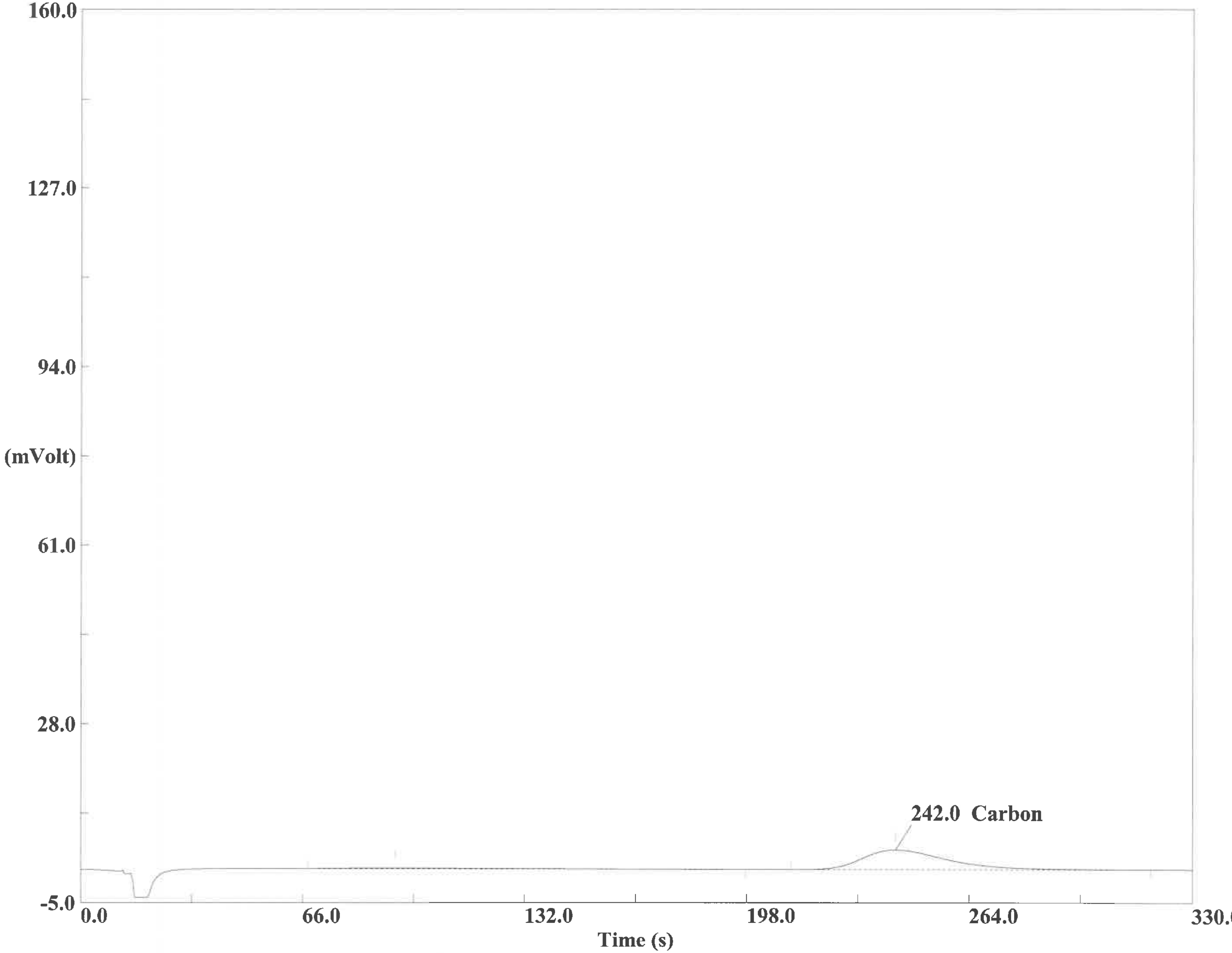
Page: 1   Sample: 5,000 KHP CT#3785364 (A092320011)

Method Name : Lloyd Kahn
Method File : C:\data\January\092320A.mth
Chromatogram : A092320011
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 09/23/2020 14:34   Printed : 9/23/2020 14:40
Sample ID : 5,000 KHP CT#3785364 (# 6)
Instrument N. : Instrument #1
Analysis Type : Calibration (Area)   Sample weight : 100

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.1000	246	499611	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320012.dat
Sample name :10,000 KHP CT#3785364   Analysed :09/23/2020 14:40

Eager 300 Report

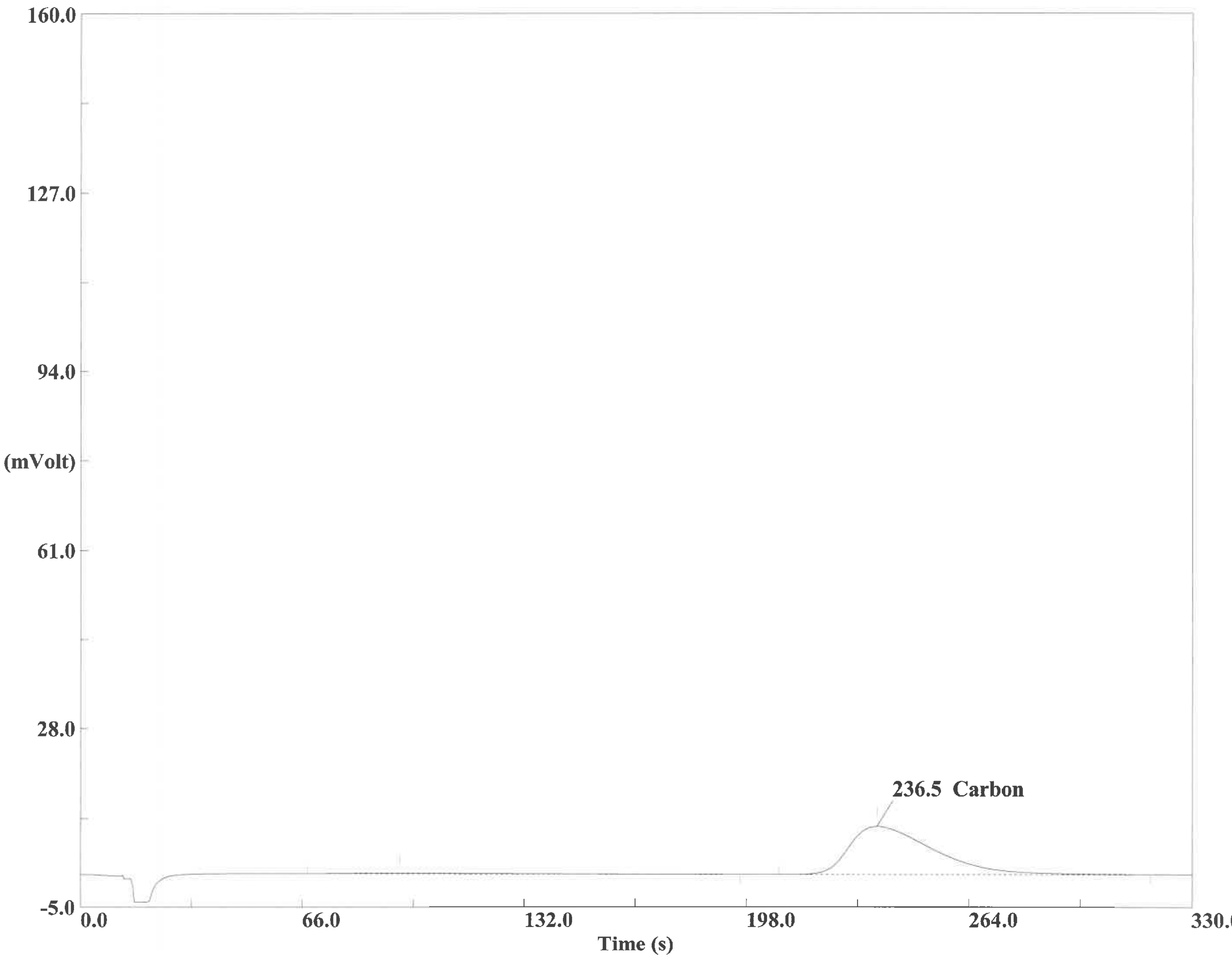
Page: 1   Sample: 10,000 KHP CT#3785364 (A092320012)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\092320A.mth
Chromatogram   : A092320012
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 09/23/2020 14:40   Printed   : 9/23/2020 14:46
Sample ID   : 10,000 KHP CT#3785364 (# 7)
Instrument N. : Instrument #1
Analysis Type : Calibration (Area)   Sample weight : 200

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.1000	242	1048607	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320013.dat
Sample name :25,000 KHP CT#3785363 Analysed :09/23/2020 14:46

Eager 300 Report

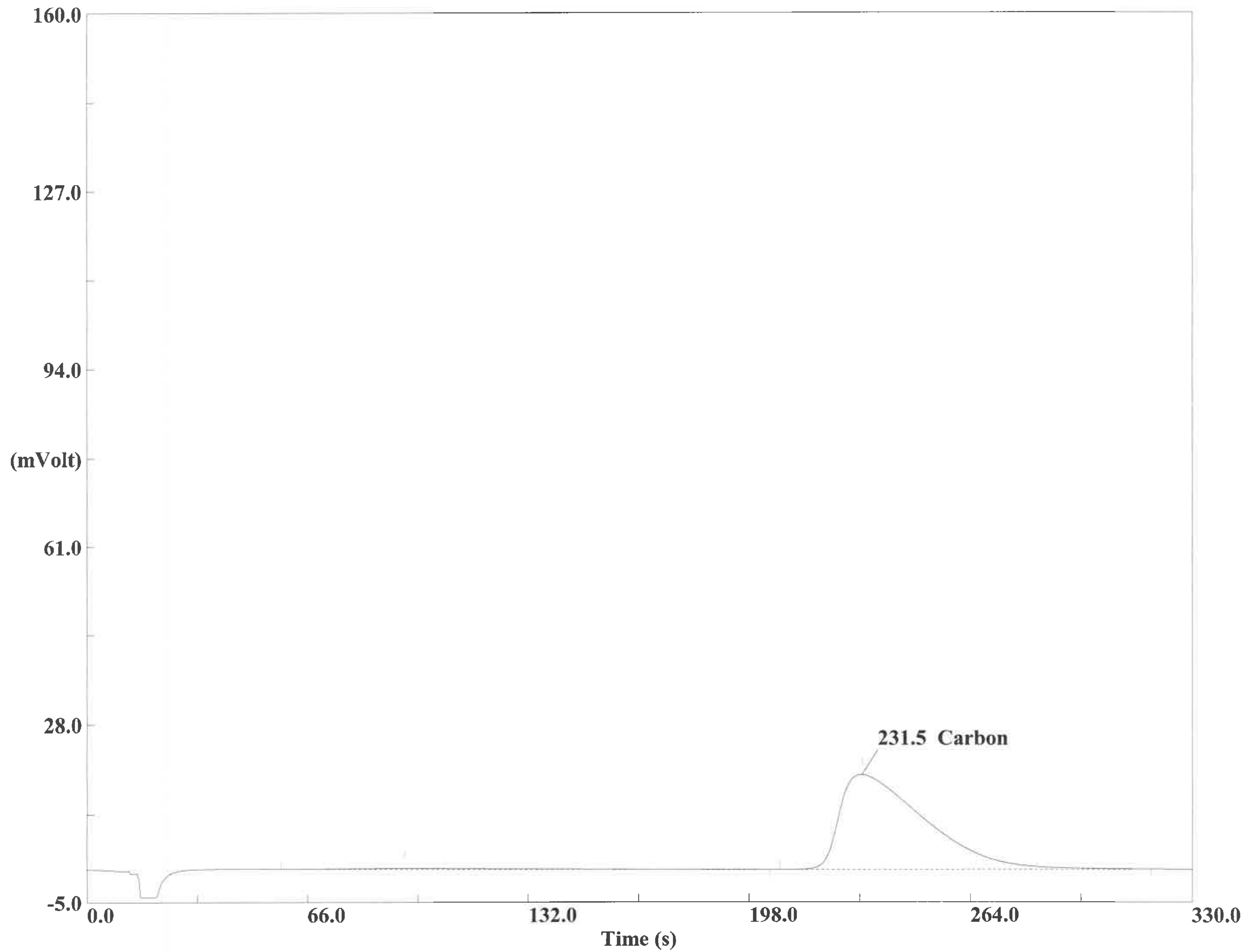
Page: 1   Sample: 25,000 KHP CT#3785363 (A092320013)

Method Name : Lloyd Kahn
Method File : C:\data\January\092320A.mth
Chromatogram : A092320013
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 09/23/2020 14:46   Printed : 9/23/2020 14:51
Sample ID : 25,000 KHP CT#3785363 (# 8)
Instrument N. : Instrument #1
Analysis Type : Calibration (Area)   Sample weight : 50

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.0000	237	2561375	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320014.dat
Sample name :50,000 KHP CT#3785363 Analysed :09/23/2020 14:51

Eager 300 Report

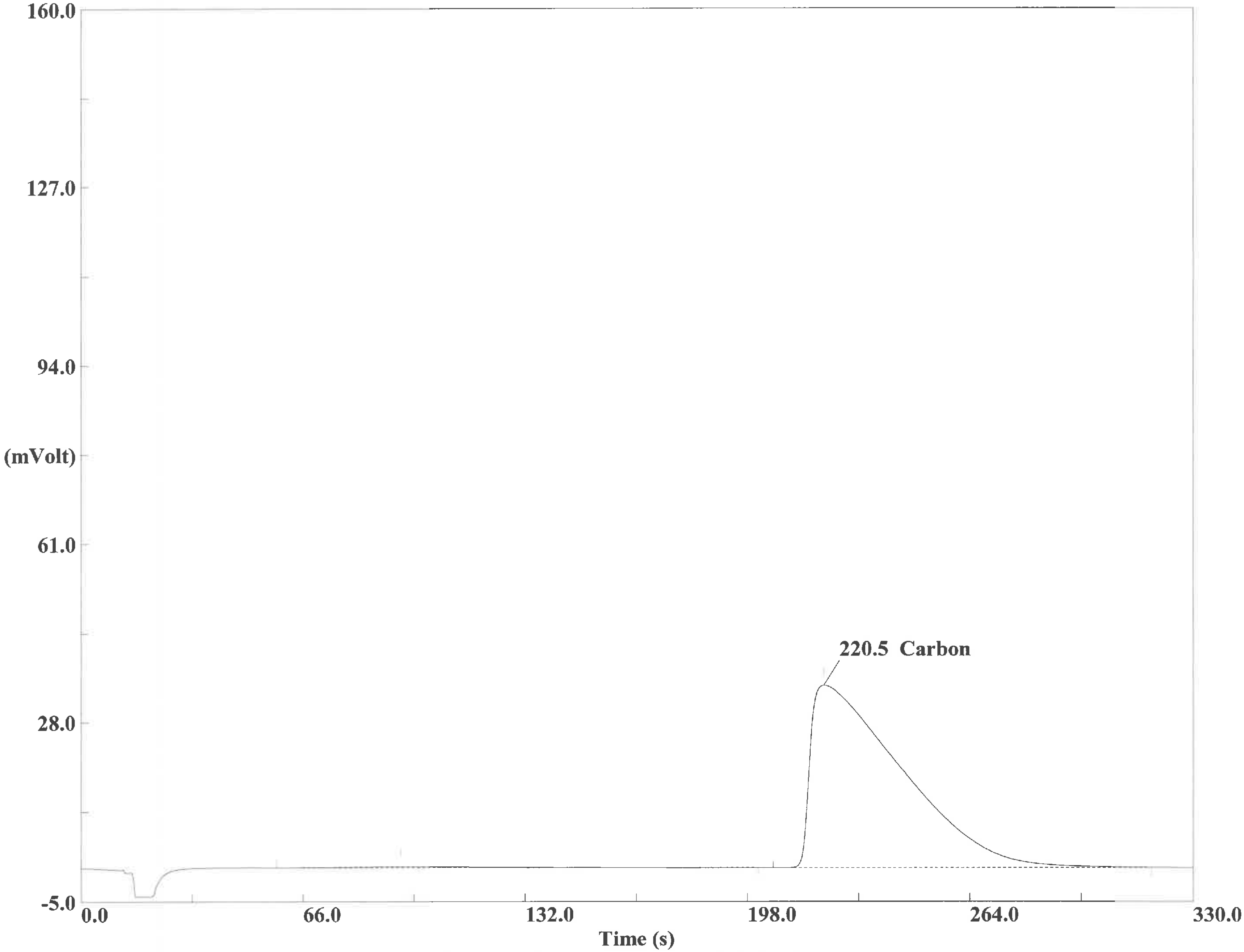
Page: 1   Sample: 50,000 KHP CT#3785363 (A092320014)

Method Name : Lloyd Kahn
Method File : C:\data\January\092320A.mth
Chromatogram : A092320014
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 09/23/2020 14:51   Printed : 9/23/2020 14:57
Sample ID : 50,000 KHP CT#3785363 (# 9)
Instrument N. : Instrument #1
Analysis Type : Calibration (Area)   Sample weight : 100

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.0000	232	5128187	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320015.dat
Sample name :100,000 KHP CT#3785363 Analysed :09/23/2020 14:57

Eager 300 Report

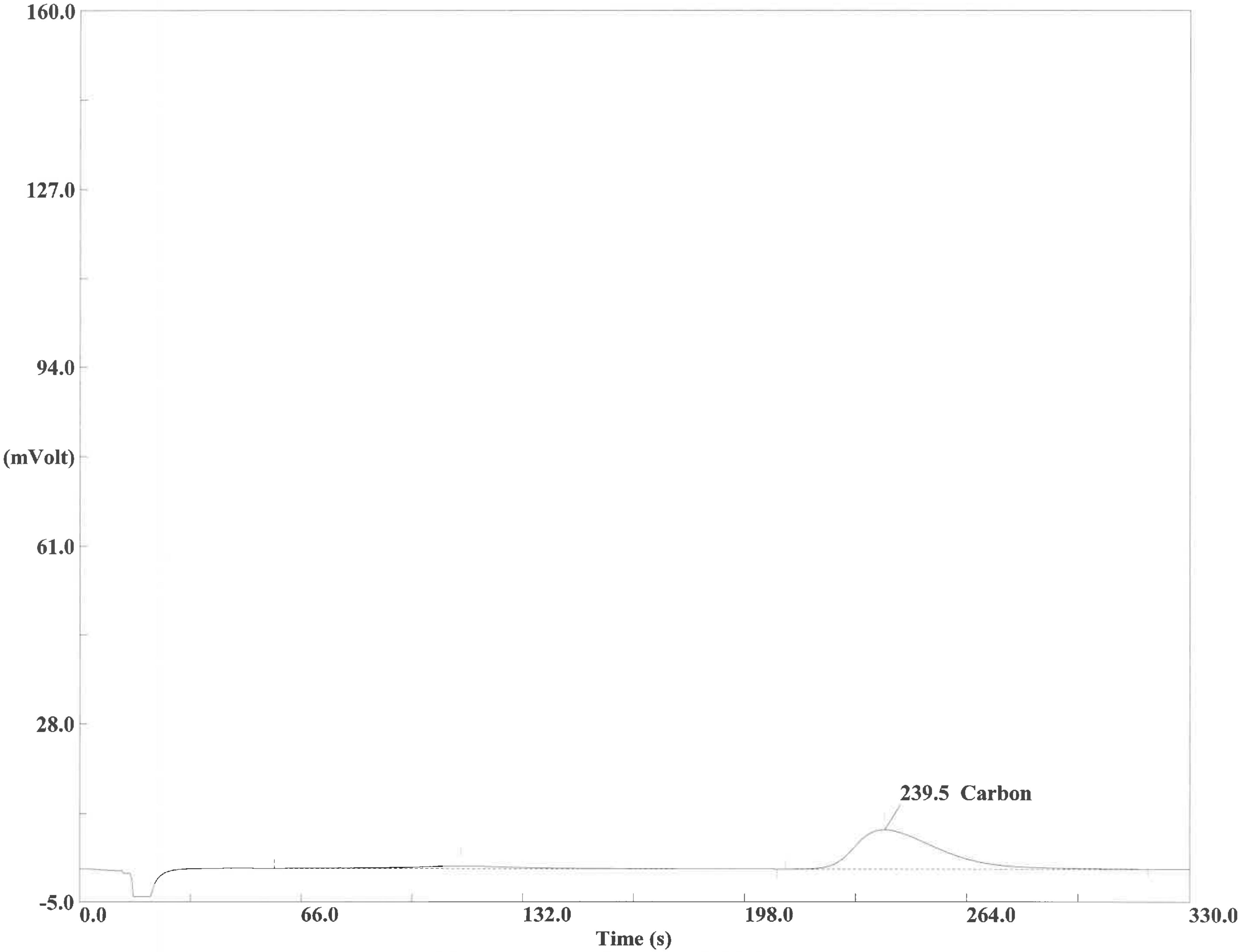
Page: 1   Sample: 100,000 KHP CT#3785363 (A092320015)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\092320A.mth
Chromatogram   : A092320015
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 09/23/2020 14:57   Printed   : 9/23/2020 15:03
Sample ID   : 100,000 KHP CT#3785363 (# 10)
Instrument N. : Instrument #1
Analysis Type : Calibration (Area)   Sample weight : 200

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.0000	221	10456420	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320016.dat

Sample name :ICV 37,810 KHP CT#3742673   Analysed :09/23/2020 15:03

Eager 300 Report

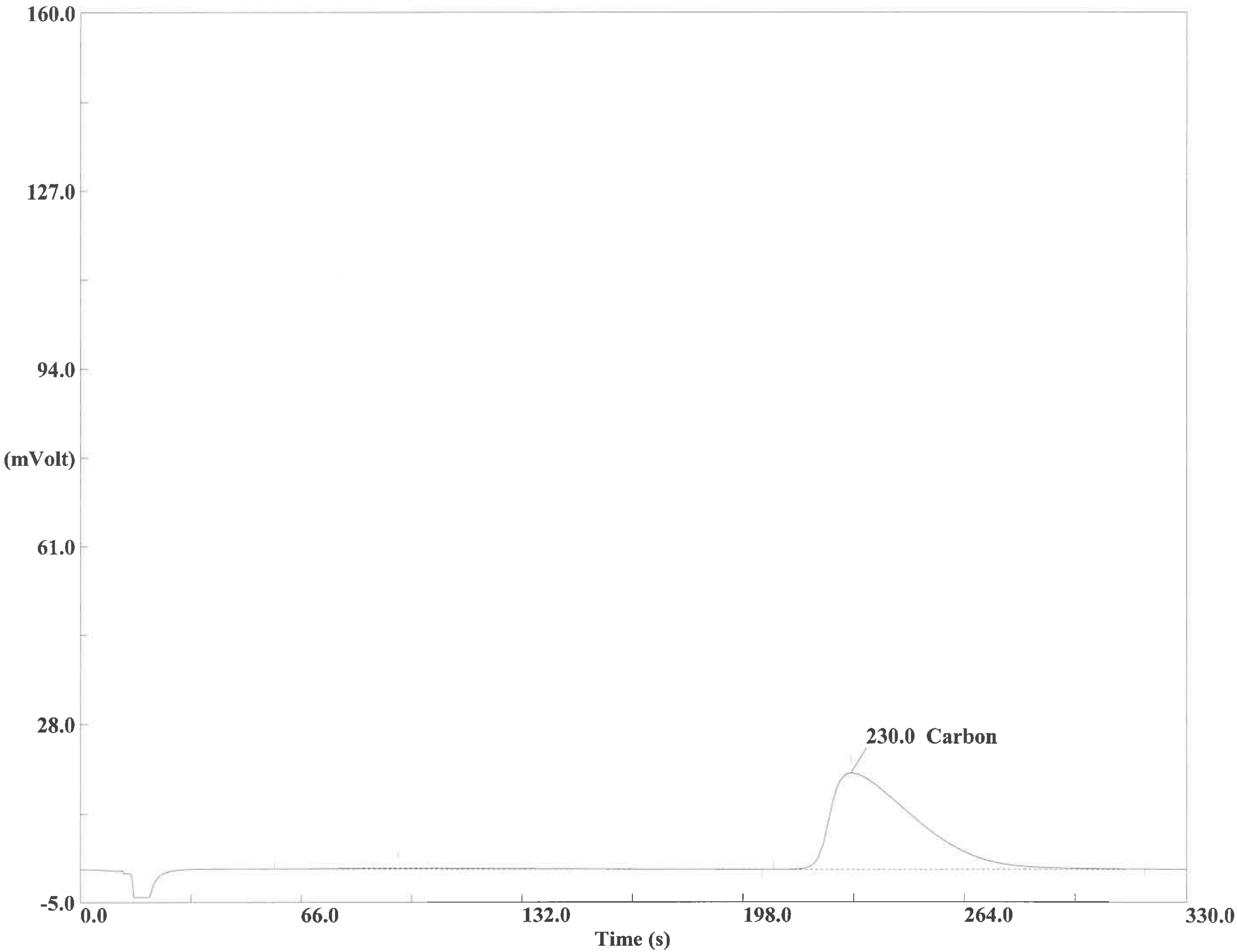
Page: 1   Sample: ICV 37,810 KHP CT#3742673 (A092320016)

Method Name : Lloyd Kahn
Method File : C:\data\January\092320A.mth
Chromatogram : A092320016
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 09/23/2020 15:03   Printed : 9/23/2020 15:08
Sample ID : ICV 37,810 KHP CT#3742673 (# 11)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 11.6

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	3.4865	240	2087987	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320017.dat
Sample name :CCV Analysed :09/23/2020 15:08

Eager 300 Report

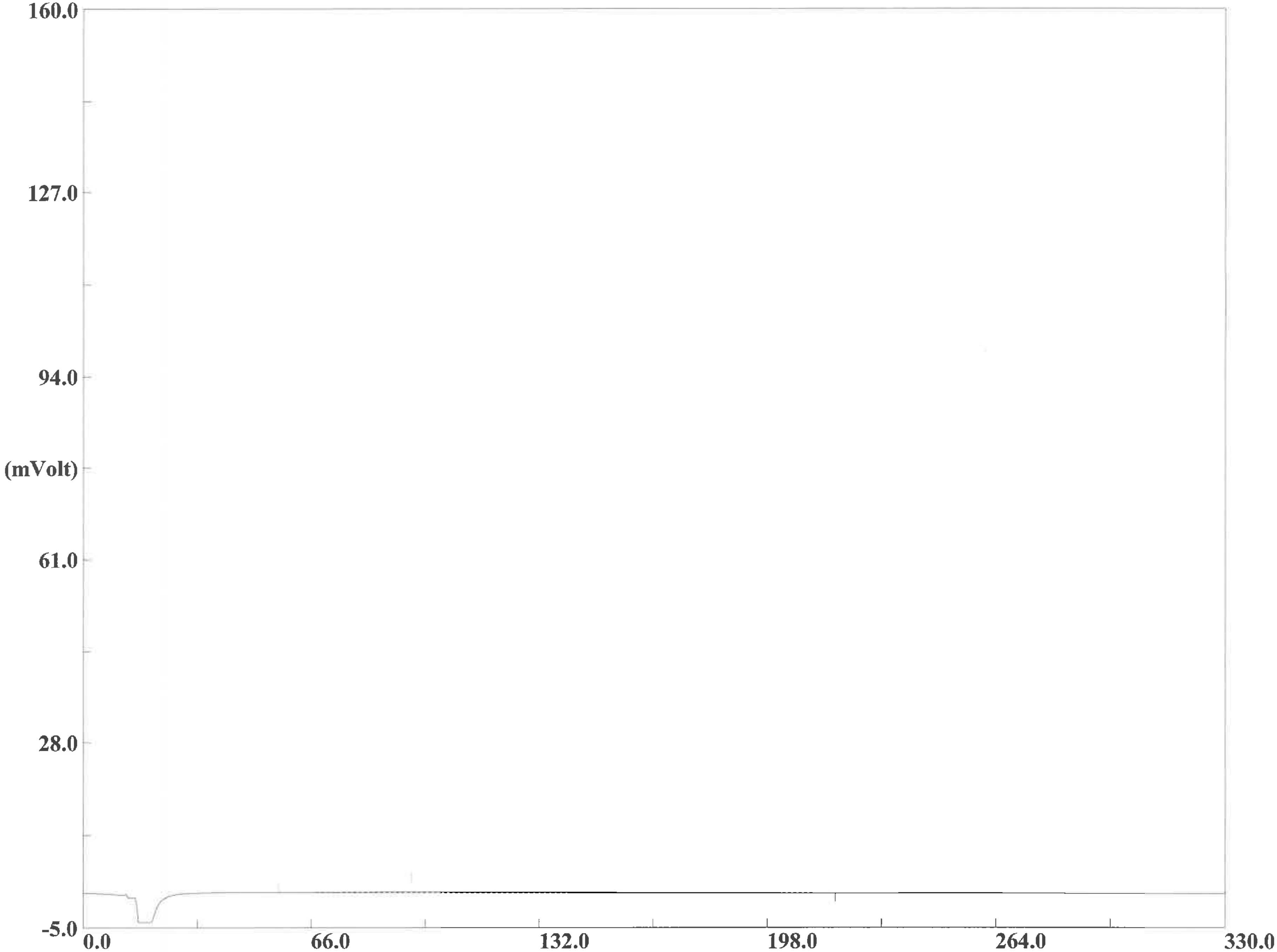
Page: 1   Sample: CCV (A092320017)

Method Name : Lloyd Kahn
Method File : C:\data\January\092320A.mth
Chromatogram : A092320017
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 09/23/2020 15:08   Printed : 9/23/2020 15:14
Sample ID : CCV (# 12)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 100

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.9923	230	5157272	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320018.dat
Sample name :CCB   Analysed :09/23/2020 15:14

Eager 300 Report

Page: 1   Sample: CCB (A092320018)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\092320A.mth
Chromatogram   : A092320018
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 09/23/2020 15:14   Printed   : 9/23/2020 15:20
Sample ID   : CCB (# 13)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 20

Calib. method : using 'Least Squares to Linear fit'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor

Eager Xperience

Method name : Lloyd Kahn
Method filename : C:\data\January\012921A.mth

Sample table

Chromatogram overwrite : Enabled

Don Ferguson 1/29/21 BATCH 345159

#	Sample name	Filename	Type	Weight	Hum.%
1	BYPASS	A092320006	ByP	-	0
2	BLANK	A092320007	Blk	-	0
3	BLANK	A092320008	Blk	-	0
4	1,000 KHP CT#3785365	A092320009	Std	200	0
5	2,500 KHP CT#3785364	A092320010	Std	50	0
6	5,000 KHP CT#3785364	A092320011	Std	100	0
7	10,000 KHP CT#3785364	A092320012	Std	200	0
8	25,000 KHP CT#3785363	A092320013	Std	50	0
9	50,000 KHP CT#3785363	A092320014	Std	100	0
10	100,000 KHP CT#3785363	A092320015	Std	200	0
11	ICV 37,810 KHP CT#3742673	A092320016	Unk	11.6	0
12	Rinse	A012921001	Unk	1	0
13	Rinse	A012921001B	Unk	1	0
14	CCV	A012921002	Unk	100	0
15	CCB	A012921003	Unk	20	0
16	MB	A012921004	Unk	24.5	0
17	MB	A012921005	Unk	22.6	0
18	LCS	A012921006	Unk	9.7	0
19	LCS	A012921007	Unk	9.8	0
20	180-116461-A-7	A012921008	Unk	21.2	0
21	180-116461-A-7	A012921009	Unk	19.5	0
22	Rinse	A012921010	Unk	1	0
23	180-116528-A-1	A012921011	Unk	15.6	0
24	180-116528-A-1	A012921012	Unk	15.3	0
25	Rinse	A012921013	Unk	1	0
26	180-116528-A-2	A012921014	Unk	16.2	0
27	180-116528-A-2	A012921015	Unk	16.9	0
28	Rinse	A012921016	Unk	1	0
29	180-116528-A-3	A012921017	Unk	16.8	0
30	180-116528-A-3	A012921018	Unk	16.7	0
31	Rinse	A012921019	Unk	1	0
32	Rinse	A012921020	Unk	1	0
33	180-116528-A-4	A012921021	Unk	16.5	0
34	180-116528-A-4	A012921022	Unk	15.5	0
35	Rinse	A012921023	Unk	1	0
36	CCV	A012921024	Unk	100	0
37	CCB	A012921025	Unk	20	0

#	Sample name	Filename	Type	Weight	Hum.%
38	180-116528-A-5	A012921026	Unk	16.8	0
39	180-116528-A-5	A012921027	Unk	16	0
40	Rinse	A012921028	Unk	1	0
41	180-116528-A-6	A012921029	Unk	16.5	0
42	180-116528-A-6	A012921030	Unk	16.3	0
43	Rinse	A012921031	Unk	1	0
44	Rinse	A012921032	Unk	1	0
45	180-116528-A-7	A012921033	Unk	13.9	0
46	180-116528-A-7	A012921034	Unk	15.3	0
47	Rinse	A012921035	Unk	1	0
48	180-116528-A-7 MS	A012921036	Unk	14.4	0
49	180-116528-A-7 MS	A012921037	Unk	12.4	0
50	Rinse	A012921038	Unk	1	0
51	180-116528-A-7 MSD	A012921039	Unk	13.9	0
52	180-116528-A-7 MSD	A012921040	Unk	14.4	0
53	Rinse	A012921041	Unk	1	0
54	Rinse	A012921042	Unk	1	0
55	180-116551-B-8	A012921043	Unk	19.9	0
56	180-116551-B-8	A012921044	Unk	19.7	0
57	Rinse	A012921045	Unk	1	0
58	CCV	A012921046	Unk	100	0
59	CCB	A012921047	Unk	20	0
60	180-116551-B-13	A012921048	Unk	17.9	0
61	180-116551-B-13	A012921049	Unk	17.4	0
62	Rinse	A012921050	Unk	1	0
63	180-116551-B-19	A012921051	Unk	18.8	0
64	180-116551-B-19	A012921052	Unk	21.1	0
65	Rinse	A012921053	Unk	1	0
66	Rinse	A012921054	Unk	1	0
67	180-116551-B-20	A012921055	Unk	17.6	0
68	180-116551-B-20	A012921056	Unk	16.5	0
69	Rinse	A012921057	Unk	1	0
70	180-116551-B-25	A012921058	Unk	19.2	0
71	180-116551-B-25	A012921059	Unk	18.5	0
72	Rinse	A012921060	Unk	1	0
73	Rinse	A012921061	Unk	1	0
74	180-116564-C-1	A012921062	Unk	9.3	0
75	180-116564-C-1	A012921063	Unk	8.1	0
76	Rinse	A012921064	Unk	1	0
77	Rinse	A012921065	Unk	1	0
78	CCV	A012921066	Unk	100	0
79	CCB	A012921067	Unk	20	0
80	180-116564-B-3	A012921068	Unk	10.5	0
81	180-116564-B-3	A012921069	Unk	9.3	0
82	Rinse	A012921070	Unk	1	0
83	Rinse	A012921071	Unk	1	0

#	Sample name	Filename	Type	Weight	Hum.%
84	180-116564-B-4	A012921072	Unk	8.2	0
85	180-116564-B-4	A012921073	Unk	7.5	0
86	Rinse	A012921074	Unk	1	0
87	Rinse	A012921075	Unk	1	0
88	180-116564-B-5	A012921076	Unk	7.8	0
89	180-116564-B-5	A012921077	Unk	7.4	0
90	Rinse	A012921078	Unk	1	0
91	Rinse	A012921079	Unk	1	0
92	180-116564-B-7	A012921080	Unk	14.1	0
93	180-116564-B-7	A012921081	Unk	13.7	0
94	Rinse	A012921082	Unk	1	0
95	Rinse	A012921083	Unk	1	0
96	CCV	A012921084	Unk	100	0
97	CCB	A012921085	Unk	20	0
REJECT 98	180-116526-B-1	A012921086	Unk	5.7	0
99	180-116526-B-1	A012921087	Unk	6.4	0
100	Rinse	A012921088	Unk	1	0
101	Rinse	A012921089	Unk	1	0
102	180-116527-A-1	A012921090	Unk	6	0
103	180-116527-A-1	A012921091	Unk	5.3	0
104	Rinse	A012921092	Unk	1	0
105	Rinse	A012921093	Unk	1	0
106	CCV	A012921094	Unk	100	0
107	CCB	A012921095	Unk	20	0

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Pittsburgh Lab Lloyd Kahn SRM Prep Log BATCH 345159

Analyst: Don Ferguson Date: 1/29/21

Job No.	Sample ID	Weight (mg)	Average Weights
	MB	24.5	
	MB	22.6	23.55
	LCS	9.7	
	LCS	9.8	9.75
180-116528-7	116528-7	13.9	
	-7	15.3	14.6
	116528-7MS	14.4+7.9	
	-7MS	12.4+7.7	13.4 + 7.8
	116528-7MSD	13.9+8.0	
	-7MSD	14.4+7.8	14.15+ 7.9

N:\SOPs\Forms\Lloyd Kahn Sample Prep form_Rev.1.doc
Rev. 1, 06/13/11

1/29/21

BATCH 345159

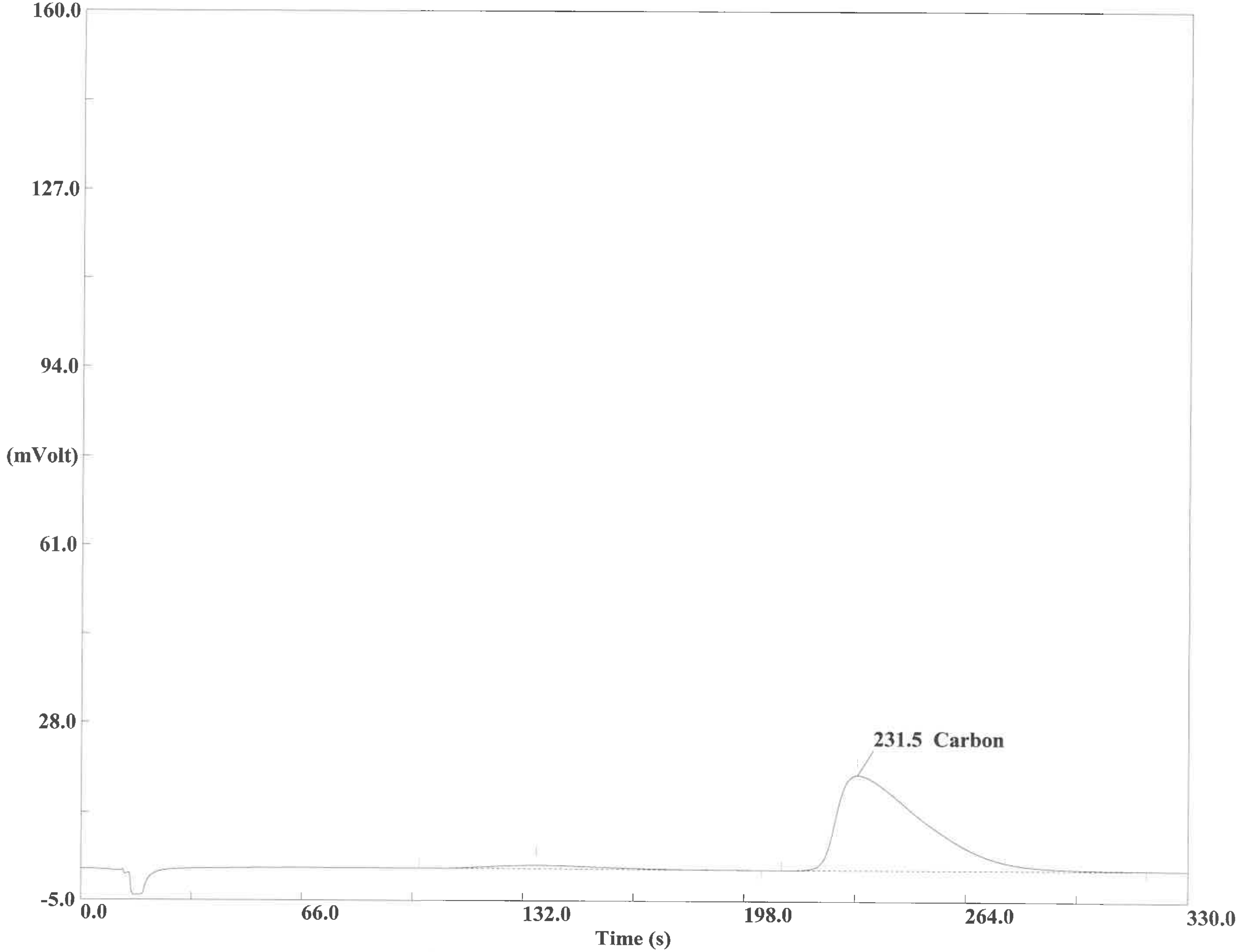
Lloyd Kahn %RPD Replicate Calculation Spreadsheet

Units: mg/kg

Batch#	Sample#	Results	Average	RPD
	MB	0		
	MB	0	0.000	#DIV/0!
	LCS	3.29761195		
	LCS	3.66726923	3.482	10.61
	180-116461-A-7	0.81781489		
	180-116461-A-7	0.7697503	0.794	6.06
	180-116528-A-1	1.89850175		
	180-116528-A-1	2.78647232	2.342	37.91
	180-116528-A-2	2.16105843		
	180-116528-A-2	2.1030643	2.132	2.72
	180-116528-A-3	1.71678245		
	180-116528-A-3	1.83865702	1.778	6.86
	180-116528-A-4	2.27882791		
	180-116528-A-4	2.15428042	2.217	5.62
	180-116528-A-5	1.0046072		
	180-116528-A-5	1.0189662	1.012	1.42
	180-116528-A-6	1.20383883		
	180-116528-A-6	1.21004975	1.207	0.51
	180-116528-A-7	1.31756318		
	180-116528-A-7	1.11278844	1.215	16.85
	180-116528-A-7 MS	3.36596942		
	180-116528-A-7 MS	3.14951658	3.258	6.64
	180-116528-A-7 MSD	3.19769645		
	180-116528-A-7 MSD	3.46076369	3.329	7.90
	180-116551-B-8	0.58511418		
	180-116551-B-8	0.55640584	0.571	5.03
	180-116551-B-13	0.15937118		
	180-116551-B-13	0.21861075	0.189	31.35
	180-116551-B-19	0.44499066		
	180-116551-B-19	0.48102891	0.463	7.78
	180-116551-B-20	0.10138346		
	180-116551-B-20	0.09725357	0.099	4.16
	180-116551-B-25	0.21199048		
	180-116551-B-25	0.17476811	0.193	19.25
	180-116564-C-1	1.35551906		
	180-116564-C-1	1.57996118	1.468	15.29
	180-116564-B-3	1.32210231		
	180-116564-B-3	1.26250529	1.292	4.61
	180-116564-B-4	1.42882705		
	180-116564-B-4	1.24119186	1.335	14.05
	180-116564-B-5	1.9645983		
	180-116564-B-5	1.72257888	1.844	13.13
	180-116564-B-7	0.14985855		
	180-116564-B-7	0.16781029	0.159	11.30
	180-116526-B-1	4.14871883		
	180-116526-B-1	15.8348846	9.992	116.96
	180-116527-A-1	15.3016186		
	180-116527-A-1	48.9498329	32.126	104.74
			#DIV/0!	#DIV/0!

REJECTED

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921002.DAT
Sample name :CCV   Analysed :01/29/2021 13:18

Eager 300 Report

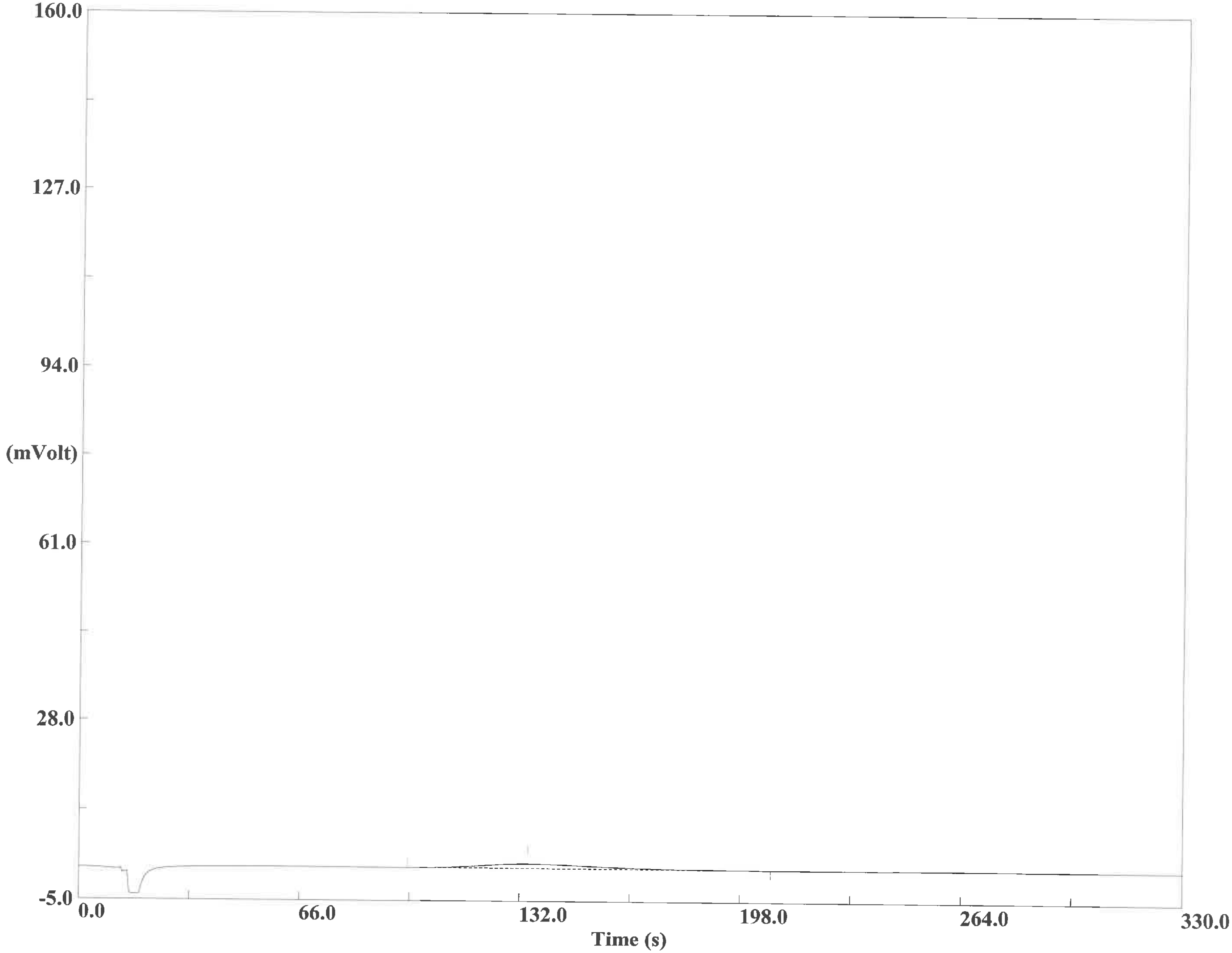
Page: 1 Sample: CCV (A012921002)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921002
Operator ID : DON FERGUSON
Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 13:18
Printed : 2/1/2021 07:07
Sample ID : CCV (# 14)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)
Sample weight : 100

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.0079	232	5238845	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921003.DAT
Sample name :CCB   Analysed :01/29/2021 13:23

Eager 300 Report

Page: 1   Sample: CCB (A012921003)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921003
Operator ID : DON FERGUSON
Analysed : 01/29/2021 13:23
Sample ID : CCB (# 15)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)

Company Name : Eurofins TA Pitt
Printed : 2/1/2021 07:08

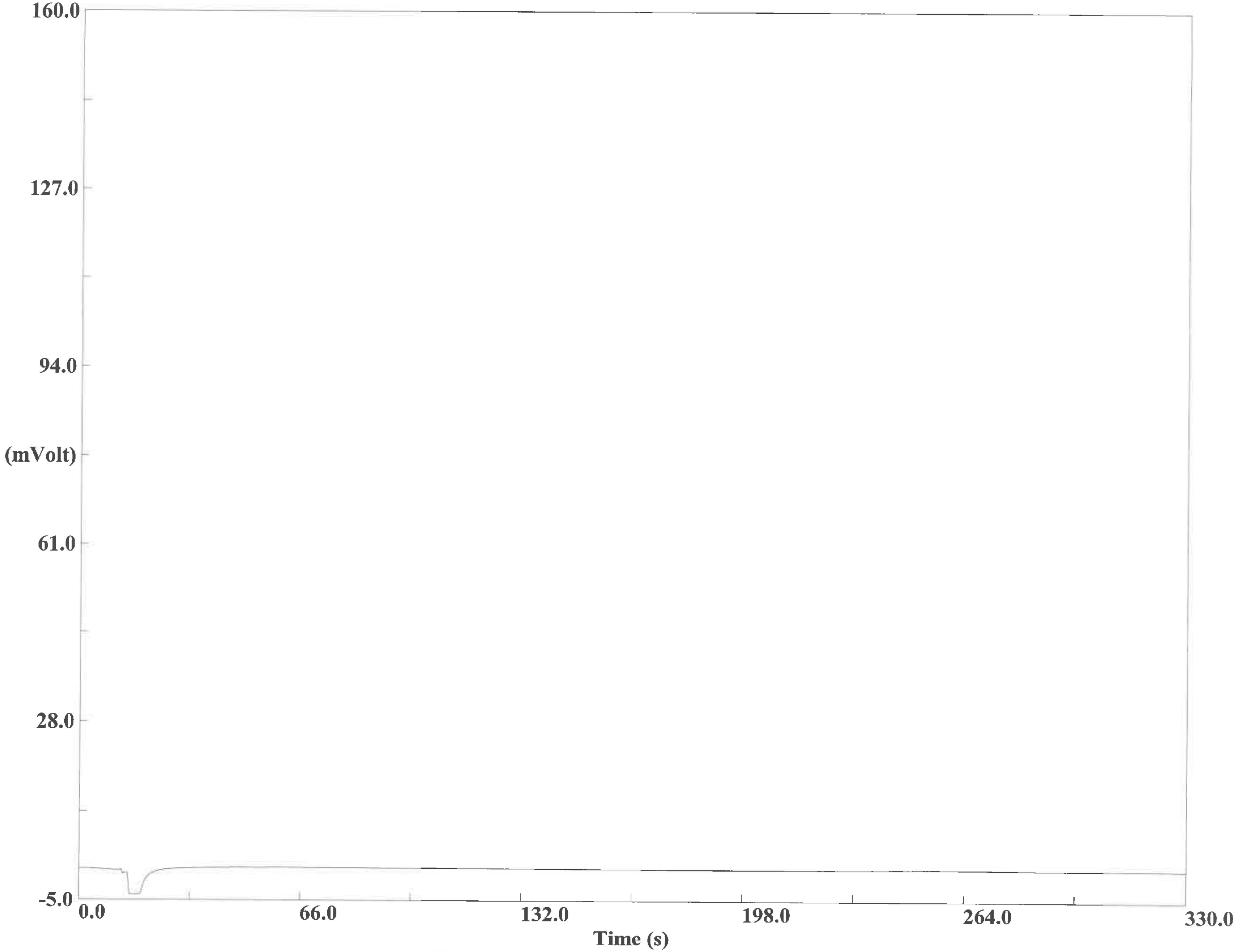
Sample weight : 20

Calib. method : using 'Least Squares to Linear fit'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921004.DAT
Sample name :MB   Analysed :01/29/2021 13:31

Eager 300 Report

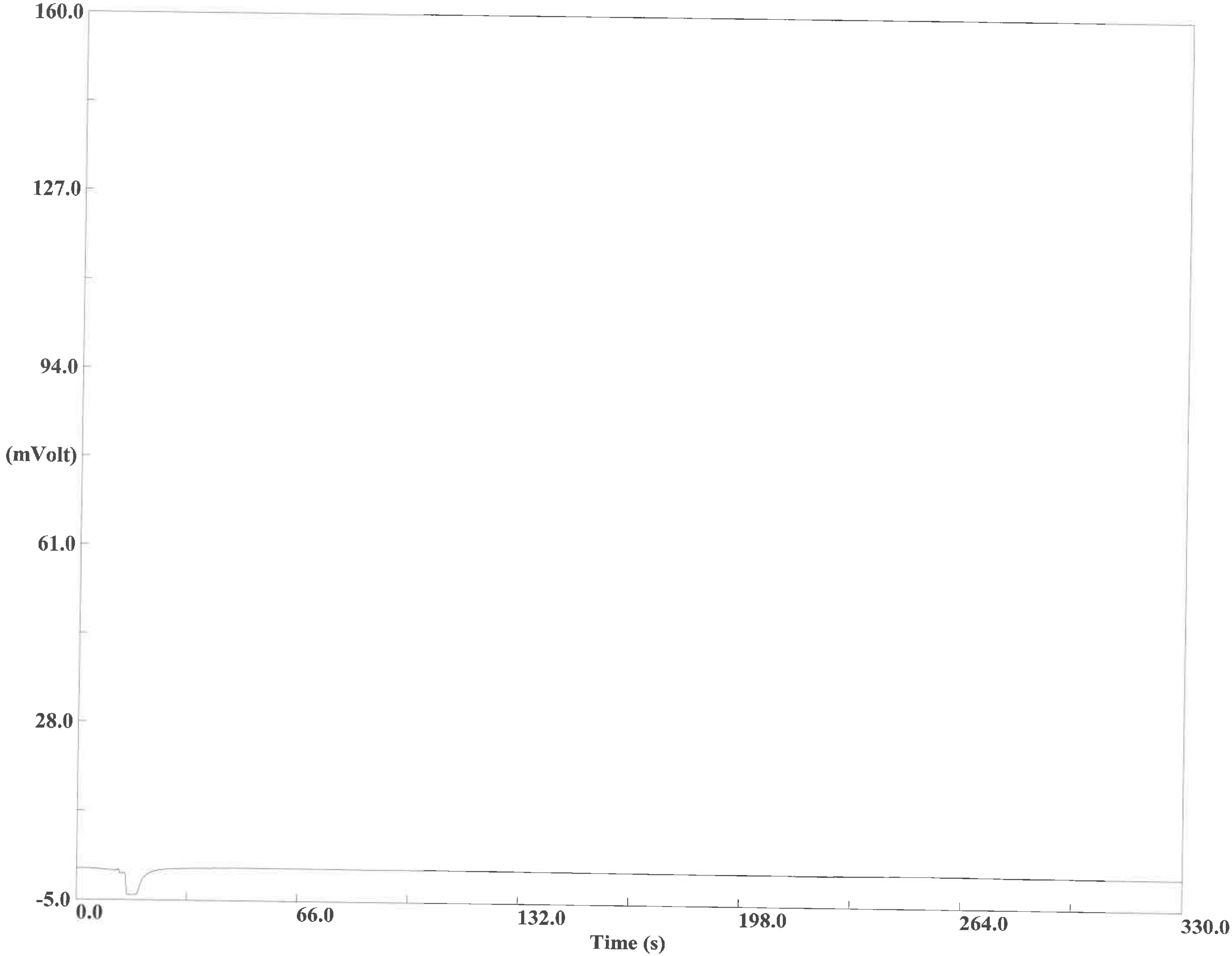
Page: 1 Sample: MB (A012921004)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921004
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 13:31   Printed : 2/1/2021 07:08
Sample ID : MB (# 16)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 24.5

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921005.DAT
Sample name :MB   Analysed :01/29/2021 13:37

Eager 300 Report

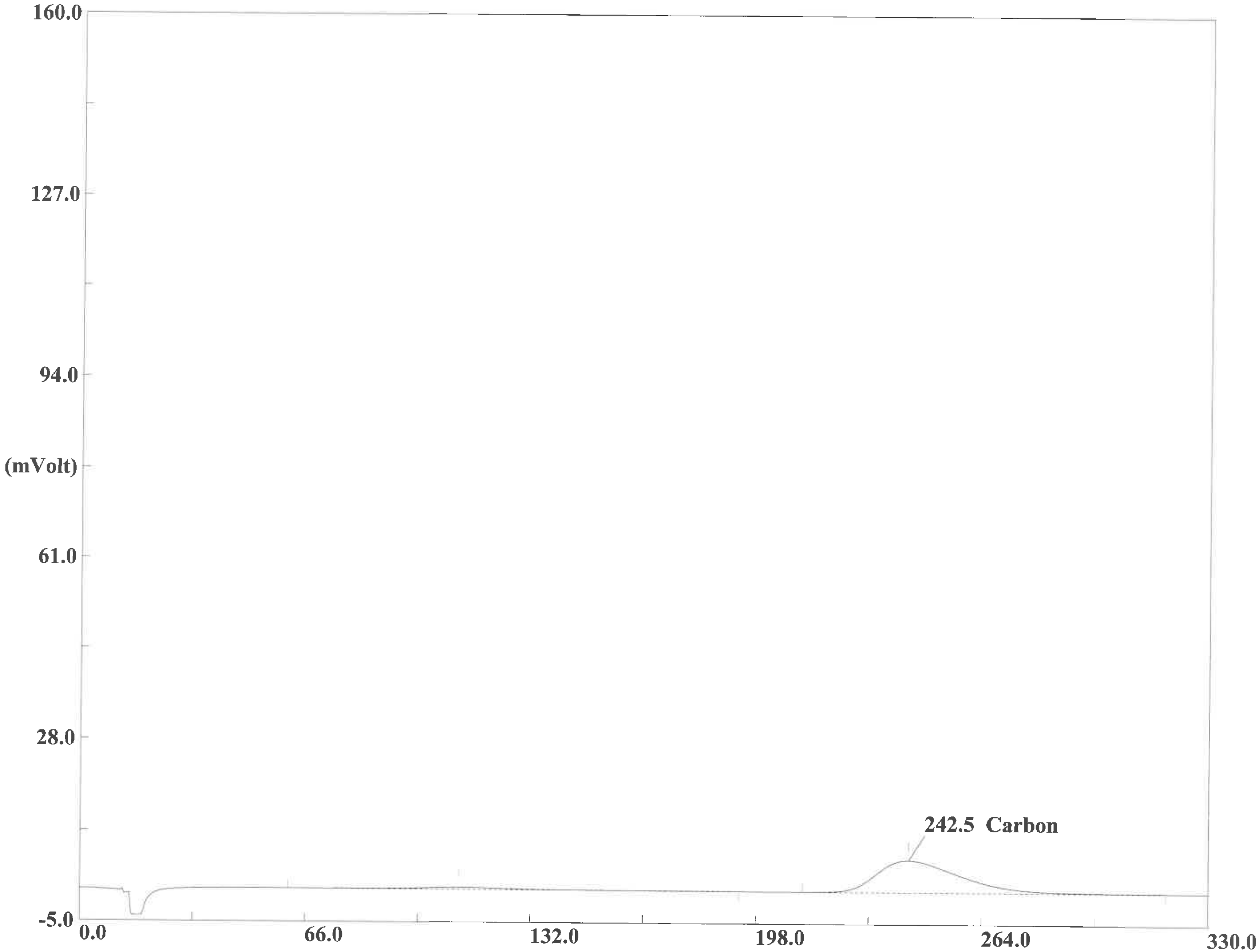
Page: 1   Sample: MB (A012921005)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\012921A.mth
Chromatogram   : A012921005
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 01/29/2021 13:37   Printed   : 2/1/2021 07:08
Sample ID   : MB (# 17)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 22.6

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921006.DAT
Sample name :LCS   Analysed :01/29/2021 13:42

Eager 300 Report

Page: 1   Sample: LCS (A012921006)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921006
Operator ID : DON FERGUSON
Analysed : 01/29/2021 13:42
Sample ID : LCS (# 18)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)

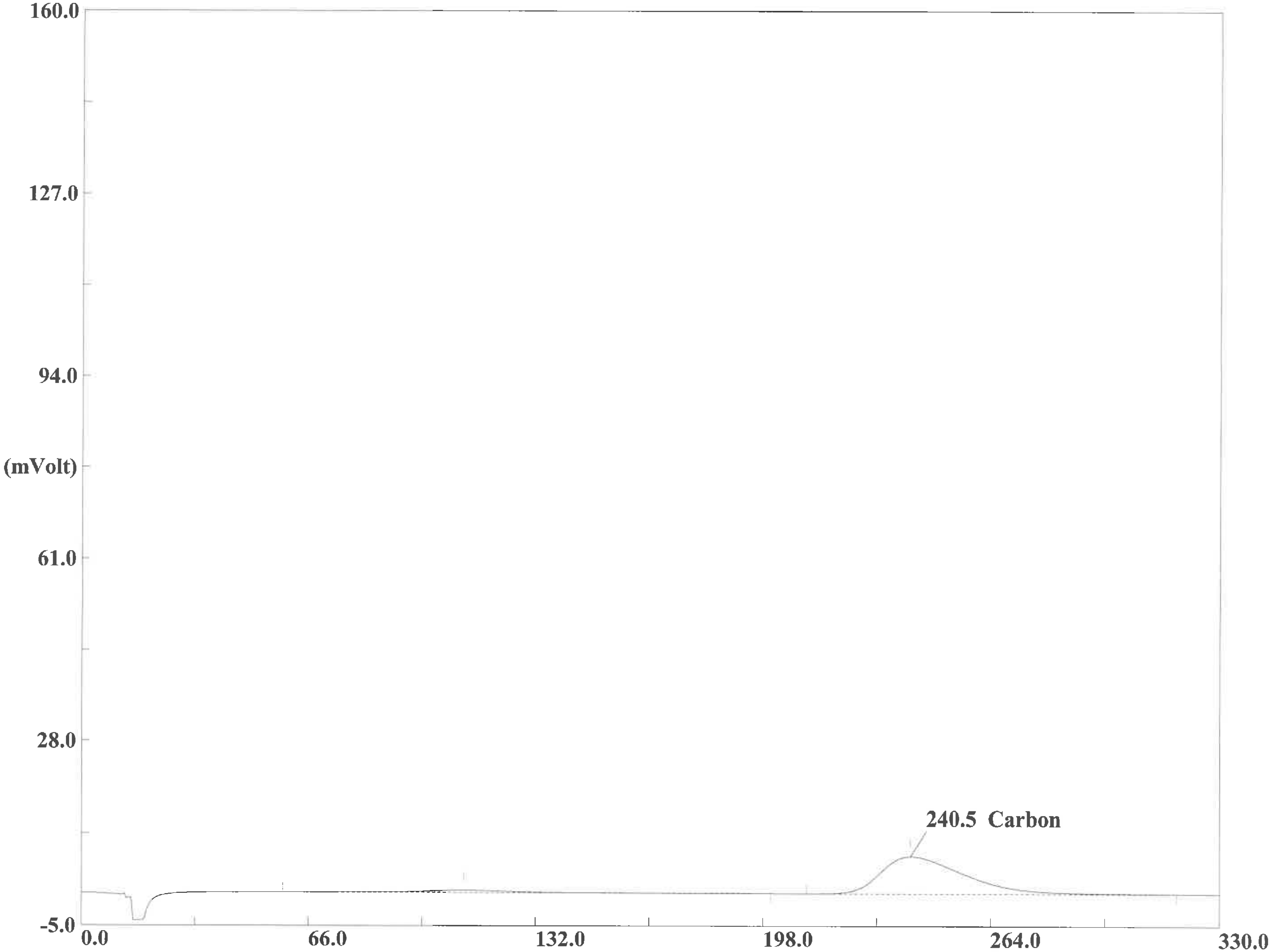
Company Name : Eurofins TA Pitt
Printed : 2/1/2021 07:08

Sample weight : 9.7

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	3.2976	243	1646490	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921007.DAT
Sample name :LCS   Analysed :01/29/2021 13:48

Eager 300 Report

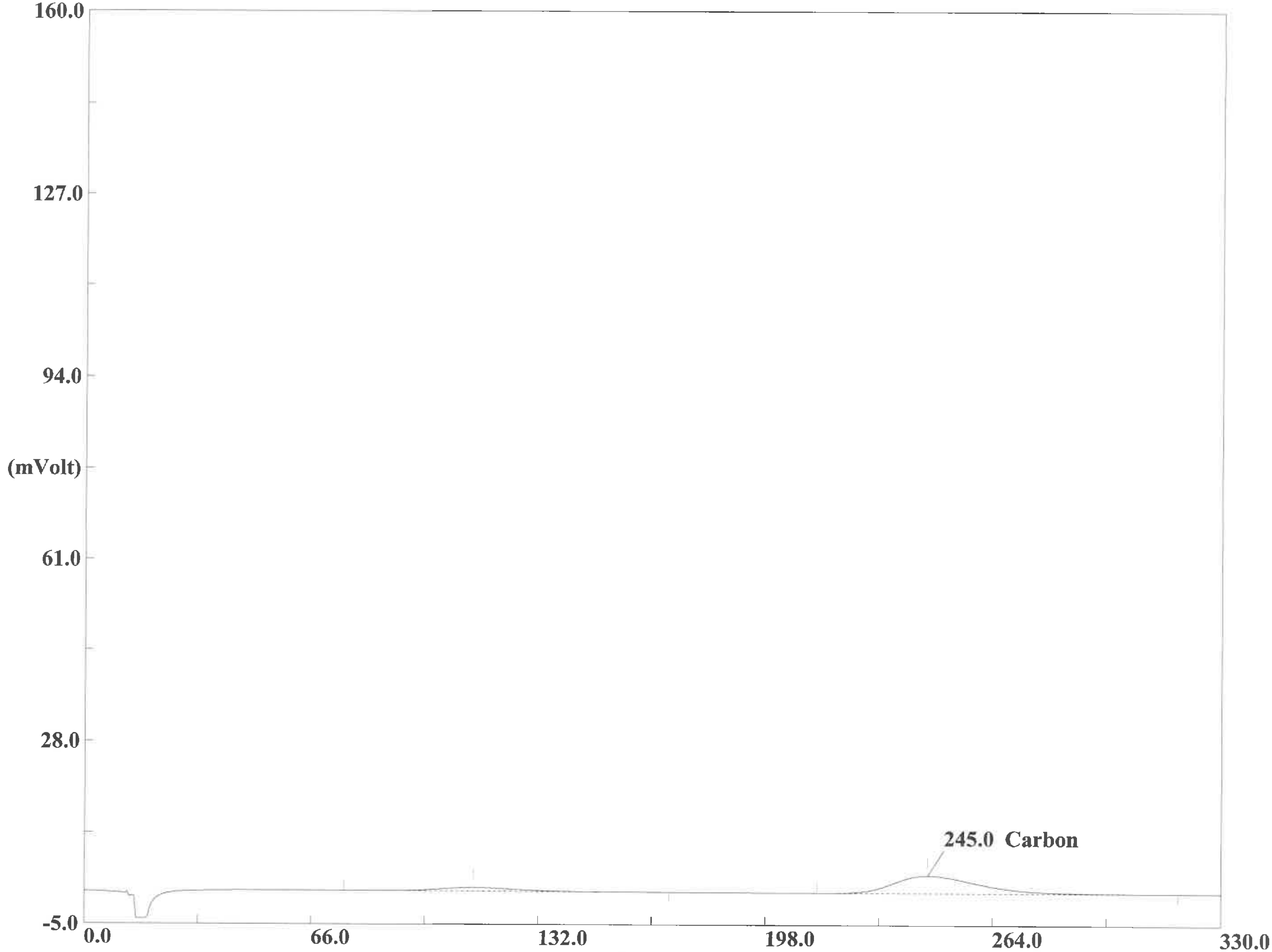
Page: 1 Sample: LCS (A012921007)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921007
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 13:48 Printed : 2/1/2021 07:09
Sample ID : LCS (# 19)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 9.8

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	3.6673	241	1852849	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921008.DAT
Sample name :180-116461-A-7 Analysed :01/29/2021 13:53

Eager 300 Report

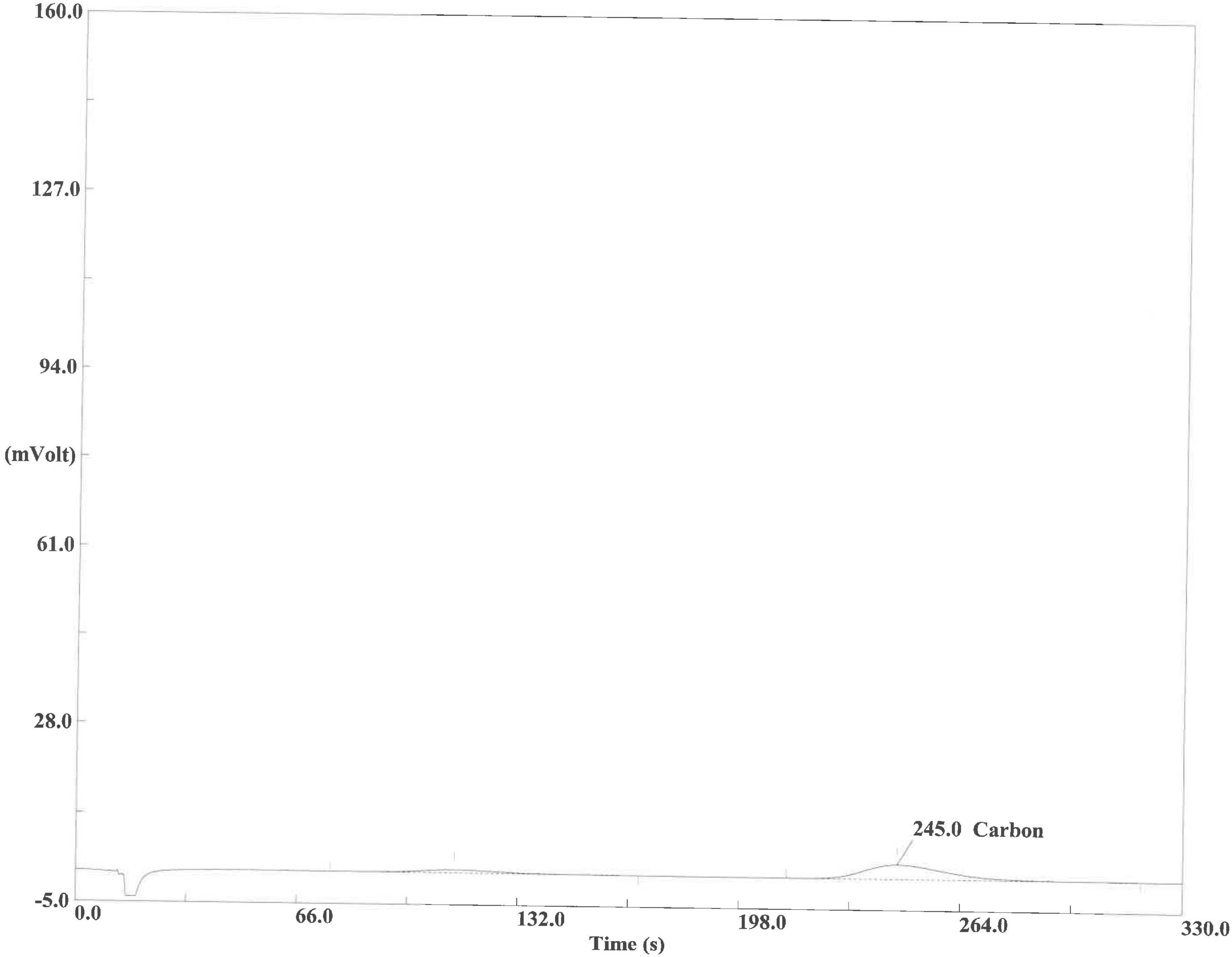
Page: 1   Sample: 180-116461-A-7 (A012921008)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921008
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 13:53   Printed : 2/1/2021 07:09
Sample ID : 180-116461-A-7 (# 20)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 21.2

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.8178	245	881643	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921009.DAT
Sample name :180-116461-A-7 Analysed :01/29/2021 13:59

Eager 300 Report

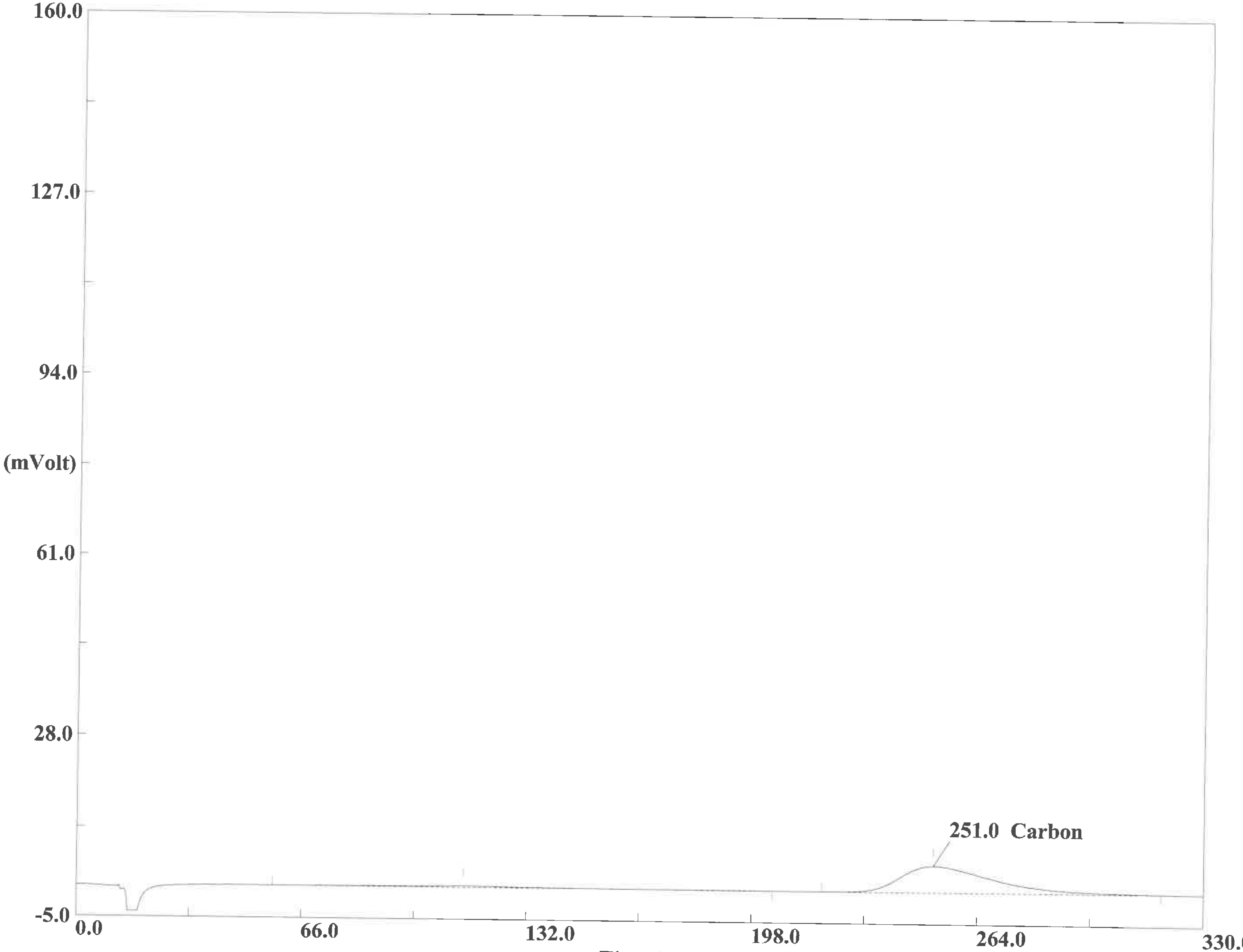
Page: 1 Sample: 180-116461-A-7 (A012921009)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921009
Operator ID : DON FERGUSON
Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 13:59
Printed : 2/1/2021 07:09
Sample ID : 180-116461-A-7 (# 21)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)
Sample weight : 19.5

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.7698	245	760119	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921011.DAT
Sample name :180-116528-A-1 Analysed :01/29/2021 14:10

Eager 300 Report

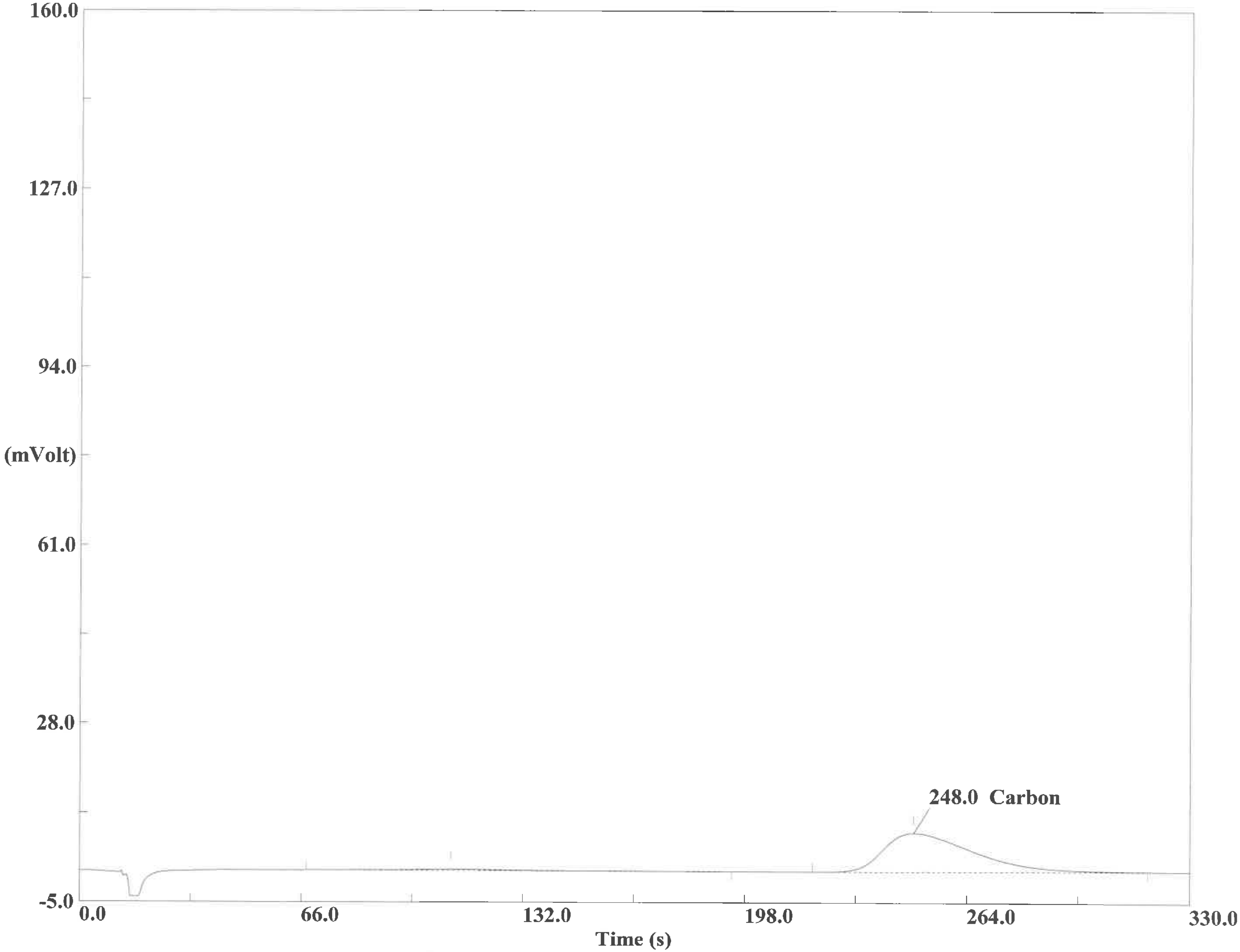
Page: 1   Sample: 180-116528-A-1 (A012921011)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921011
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 14:10   Printed : 2/1/2021 07:10
Sample ID : 180-116528-A-1 (# 23)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 15.6

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.8985	251	1522739	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921012.DAT
Sample name :180-116528-A-1 Analysed :01/29/2021 14:16

Eager 300 Report

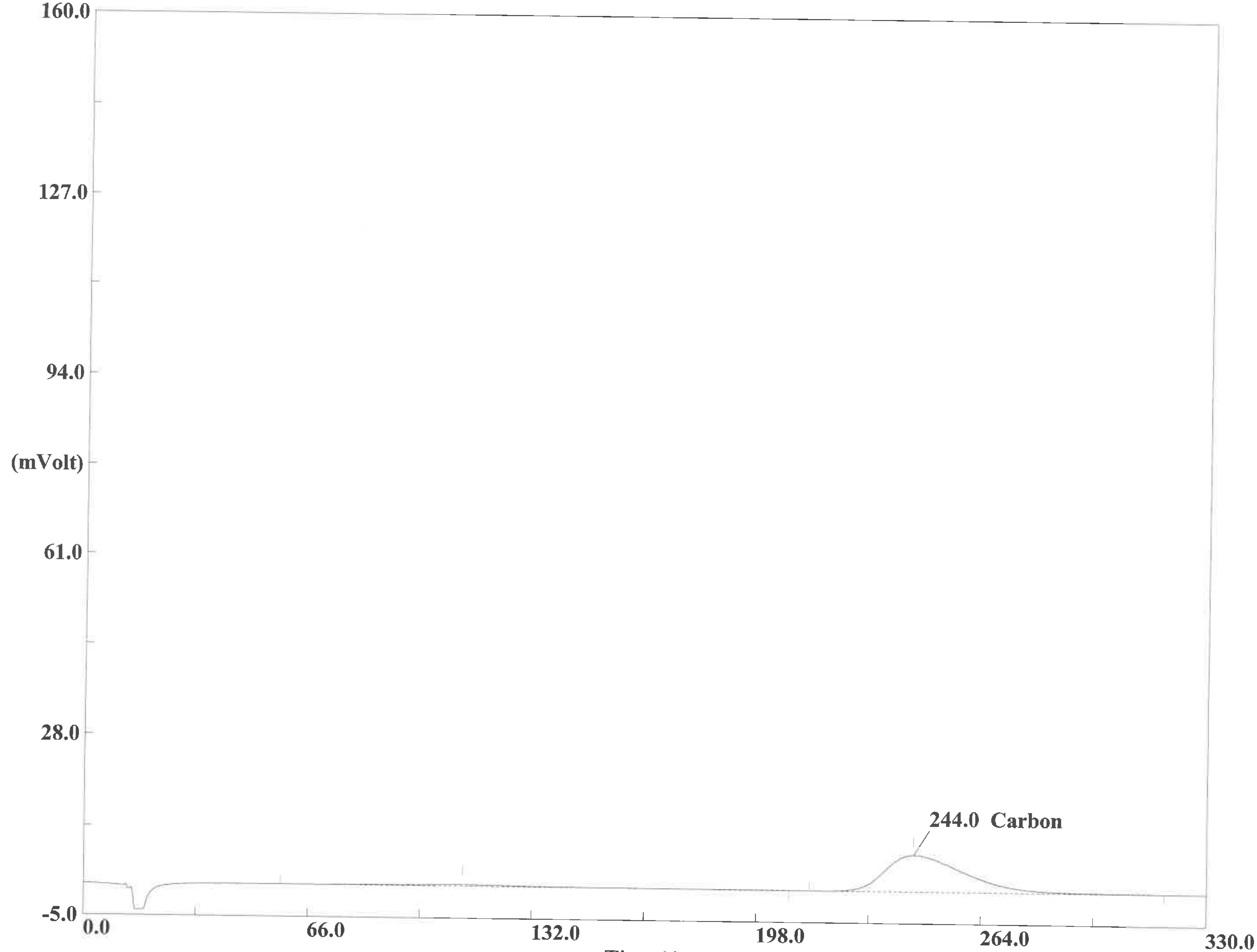
Page: 1 Sample: 180-116528-A-1 (A012921012)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921012
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 14:16 Printed : 2/1/2021 07:10
Sample ID : 180-116528-A-1 (# 24)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 15.3

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	2.7865	248	2202339	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921014.DAT
Sample name :180-116528-A-2 Analysed :01/29/2021 14:27

Eager 300 Report

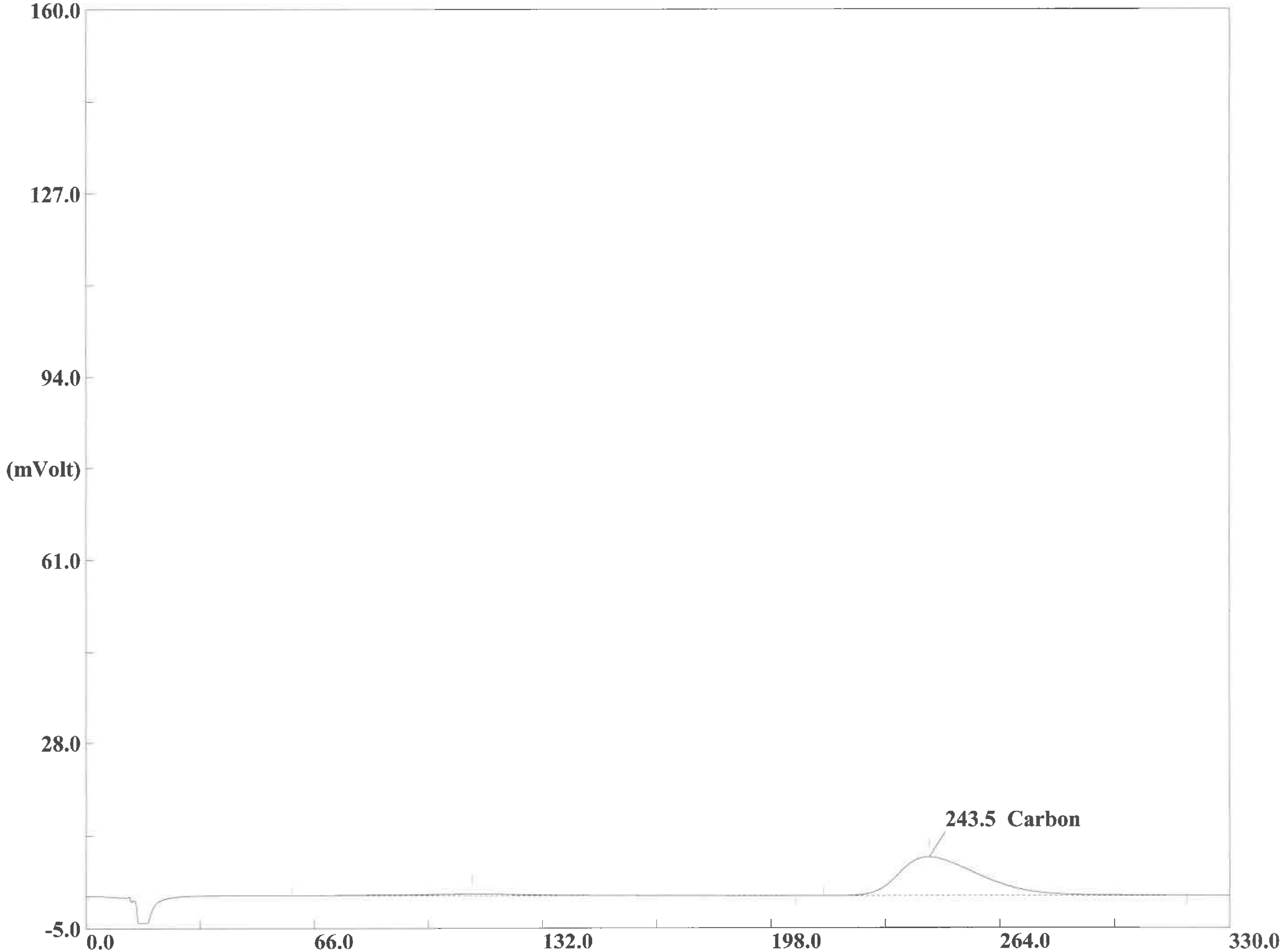
Page: 1   Sample: 180-116528-A-2 (A012921014)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921014
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 14:27   Printed : 2/1/2021 07:11
Sample ID : 180-116528-A-2 (# 26)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 16.2

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	2.1611	244	1804288	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921015.DAT
Sample name :180-116528-A-2 Analysed :01/29/2021 14:33

Eager 300 Report

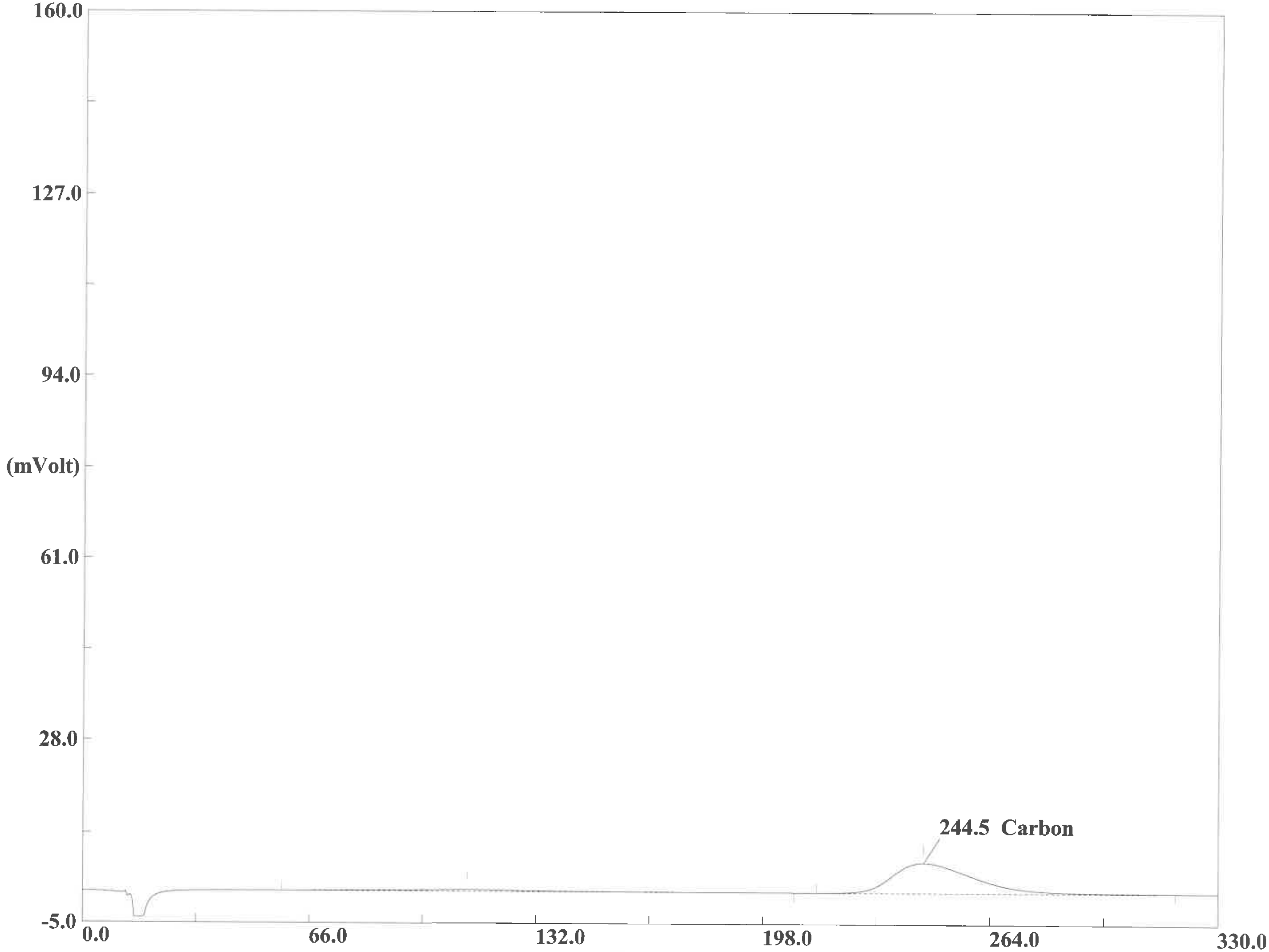
Page: 1   Sample: 180-116528-A-2 (A012921015)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\012921A.mth
Chromatogram   : A012921015
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 01/29/2021 14:33   Printed   : 2/1/2021 07:11
Sample ID   : 180-116528-A-2 (# 27)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 16.9

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	2.1031	244	1832098	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921017.DAT
Sample name :180-116528-A-3 Analysed :01/29/2021 14:44

Eager 300 Report

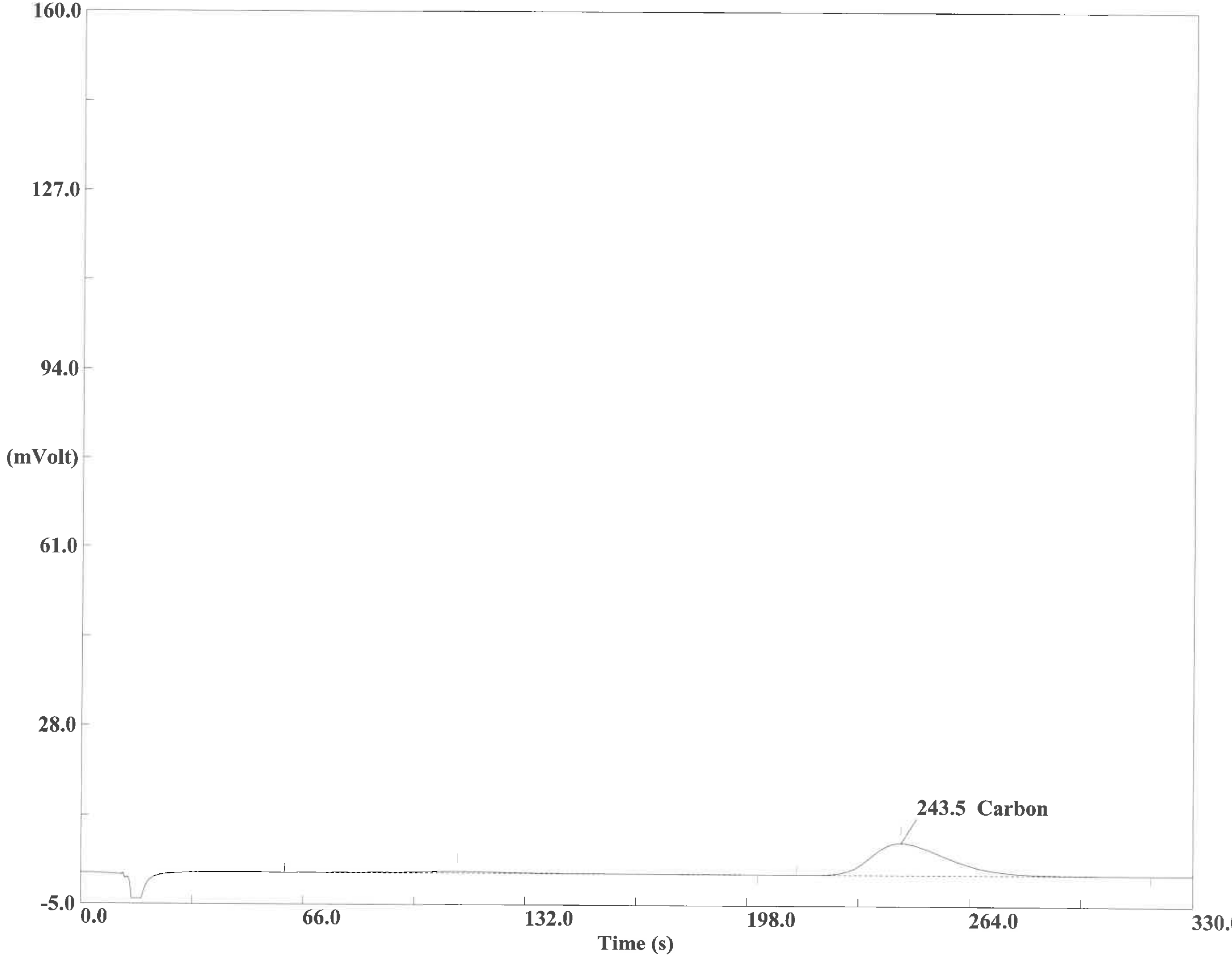
Page: 1   Sample: 180-116528-A-3 (A012921017)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\012921A.mth
Chromatogram   : A012921017
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 01/29/2021 14:44   Printed   : 2/1/2021 07:11
Sample ID   : 180-116528-A-3 (# 29)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 16.8

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.7168	245	1482292	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921018.DAT
Sample name :180-116528-A-3 Analysed :01/29/2021 14:49

Eager 300 Report

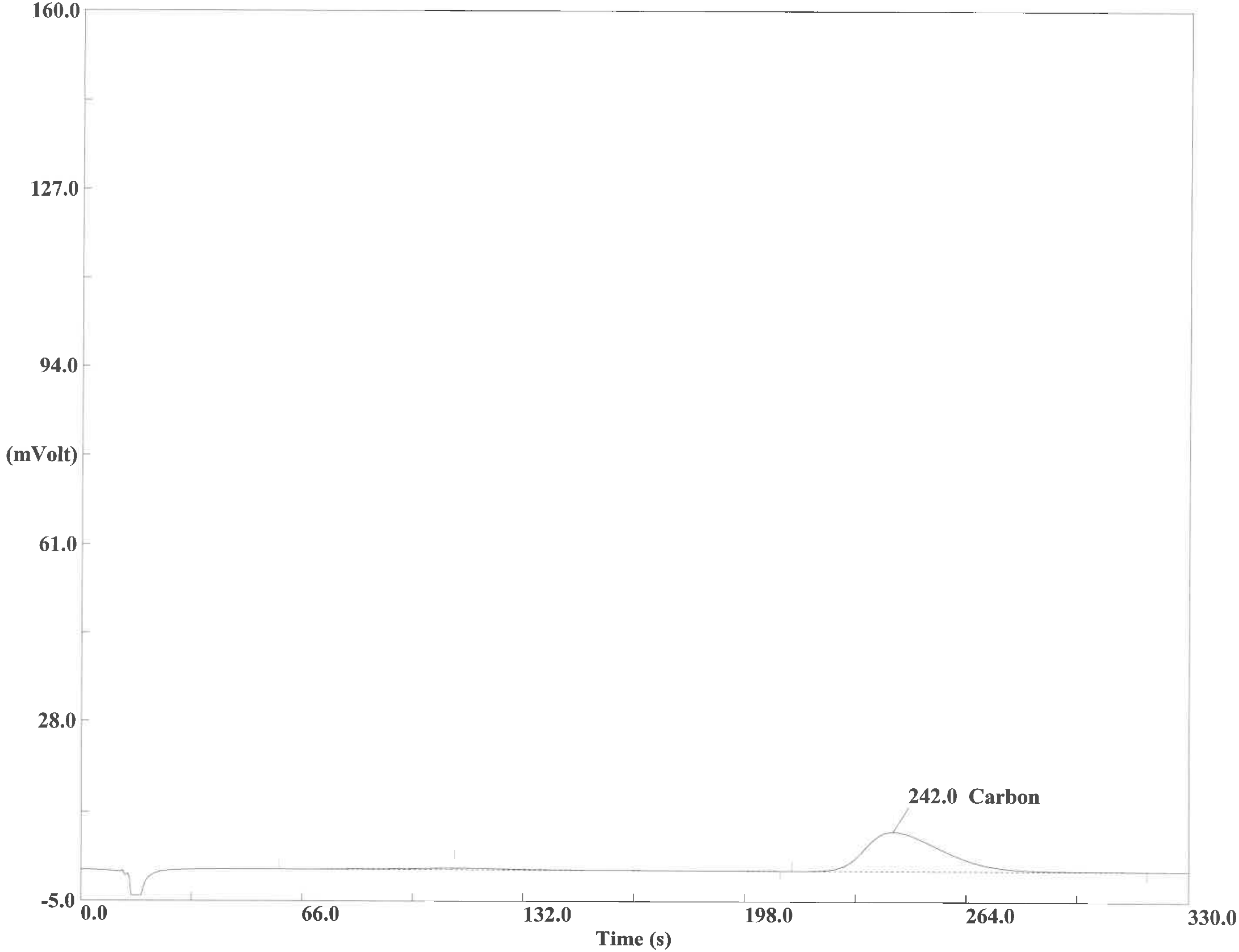
Page: 1   Sample: 180-116528-A-3 (A012921018)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921018
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 14:49   Printed : 2/1/2021 07:12
Sample ID : 180-116528-A-3 (# 30)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 16.7

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.8387	244	1579594	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921021.DAT

Sample name :180-116528-A-4 Analysed :01/29/2021 15:06

Eager 300 Report

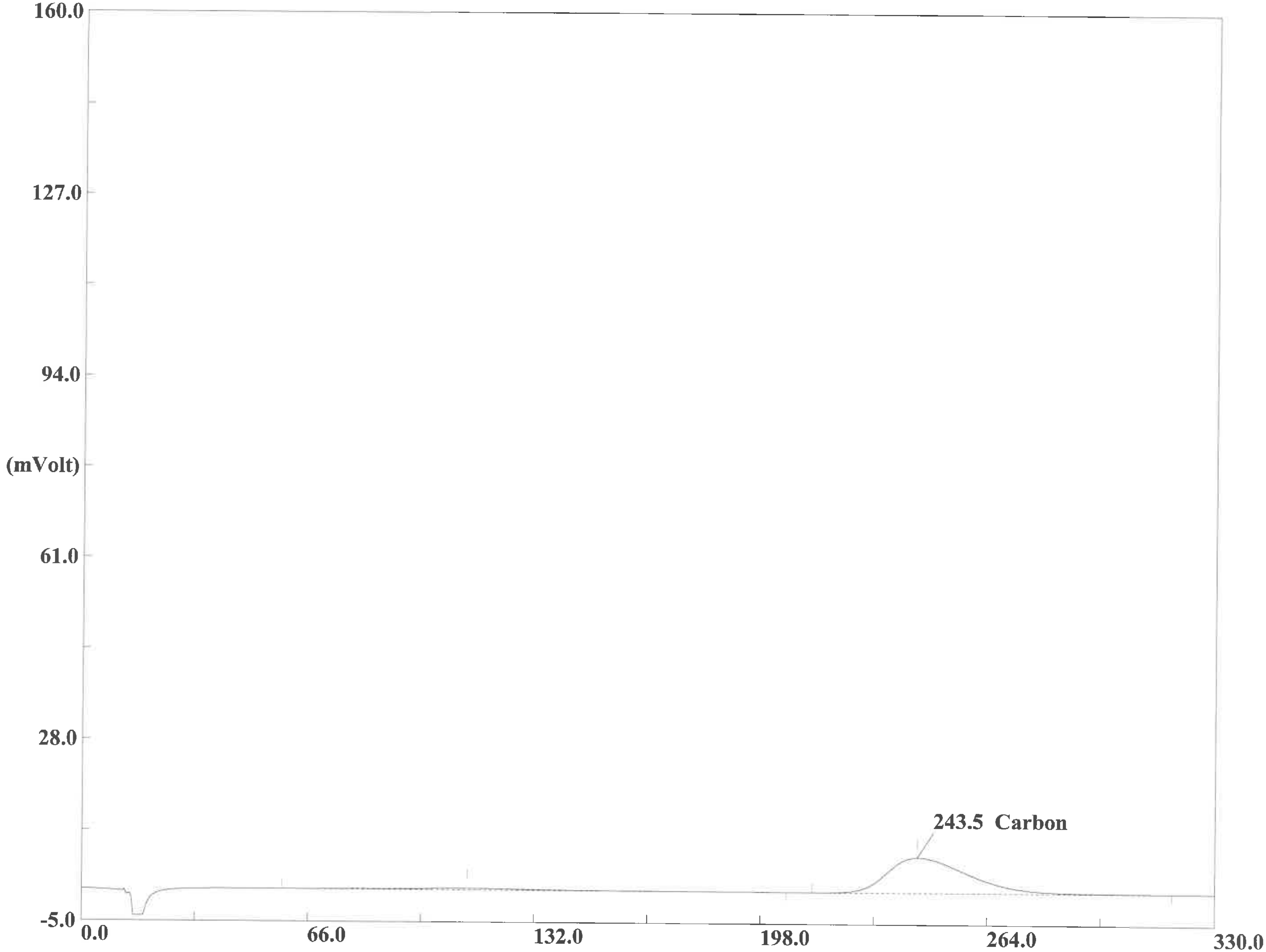
Page: 1   Sample: 180-116528-A-4 (A012921021)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921021
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 15:06   Printed : 2/1/2021 07:13
Sample ID : 180-116528-A-4 (# 33)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 16.5

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	2.2788	242	1939594	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921022.DAT
Sample name :180-116528-A-4   Analysed :01/29/2021 15:12

Eager 300 Report

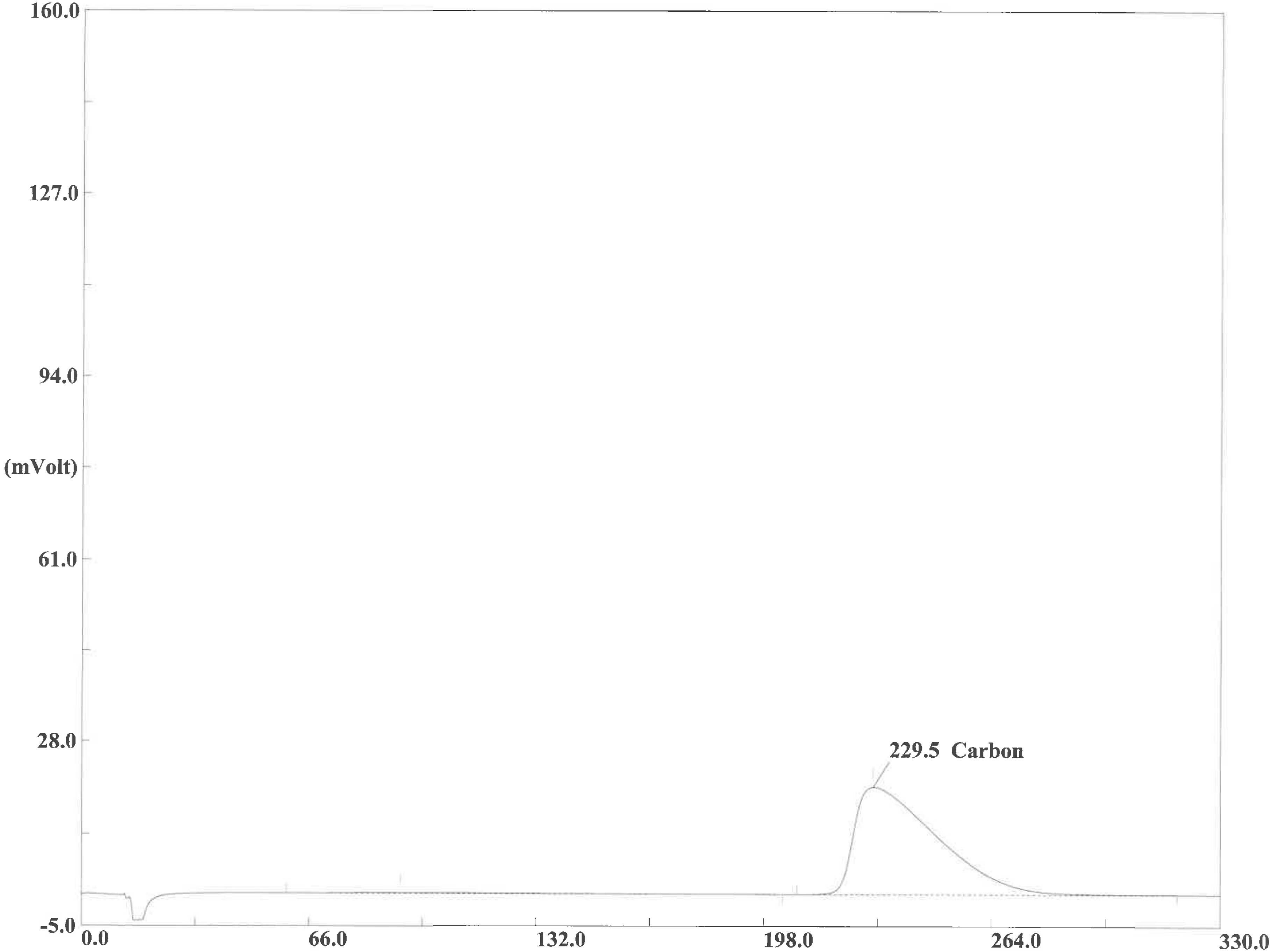
Page: 1   Sample: 180-116528-A-4 (A012921022)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921022
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 15:12   Printed : 2/1/2021 07:13
Sample ID : 180-116528-A-4 (# 34)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 15.5

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	2.1543	244	1719821	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921024.DAT
Sample name :CCV   Analysed :01/29/2021 15:23

Eager 300 Report

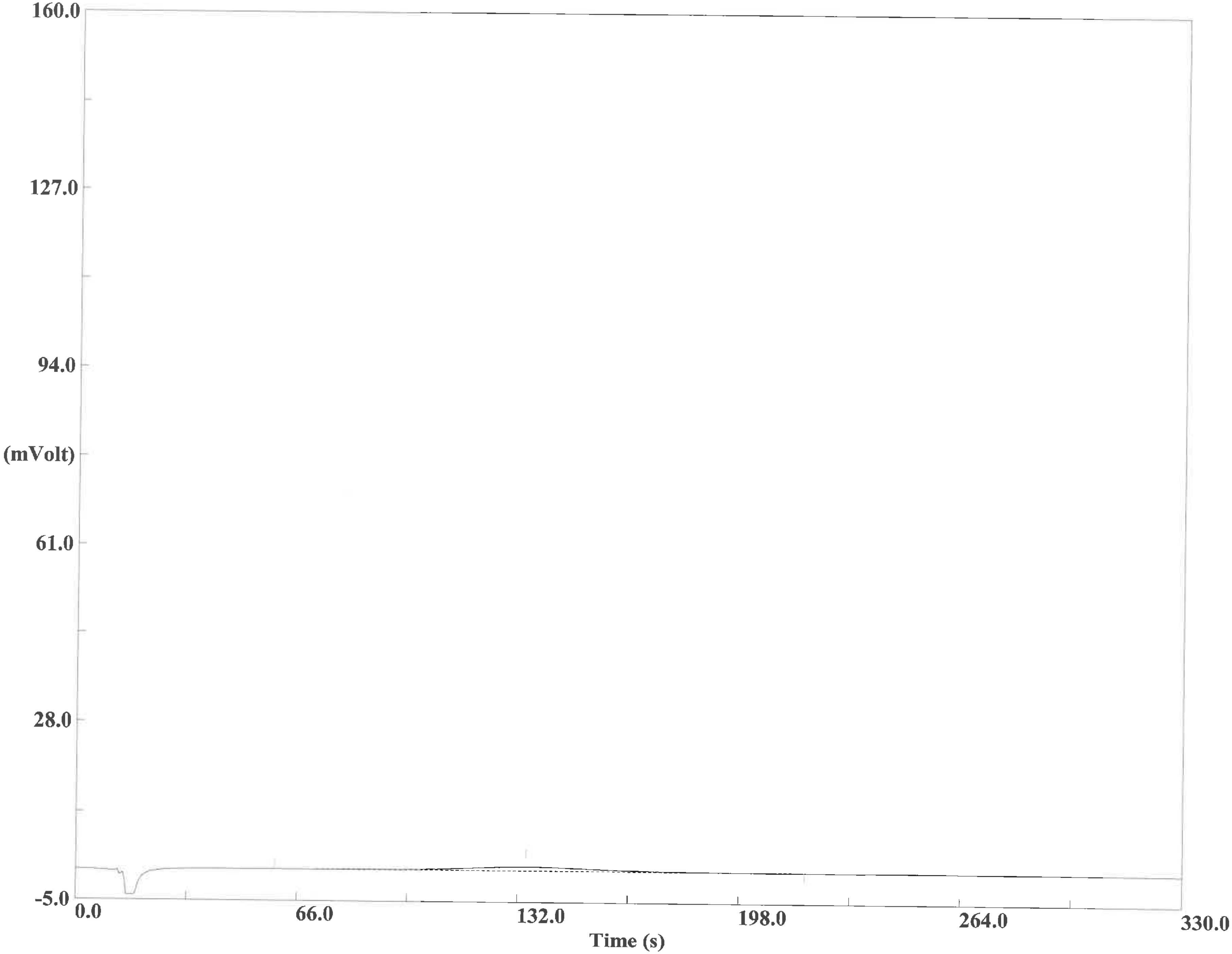
Page: 1   Sample: CCV (A012921024)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\012921A.mth
Chromatogram   : A012921024
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 01/29/2021 15:23   Printed   : 2/1/2021 07:13
Sample ID   : CCV (# 36)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 100

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.0224	230	5314222	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921025.DAT
Sample name :CCB Analysed :01/29/2021 15:28

Eager 300 Report

Page: 1 Sample: CCB (A012921025)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921025
Operator ID : DON FERGUSON
Analysed : 01/29/2021 15:28
Sample ID : CCB (# 37)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)

Company Name : Eurofins TA Pitt
Printed : 2/1/2021 07:14

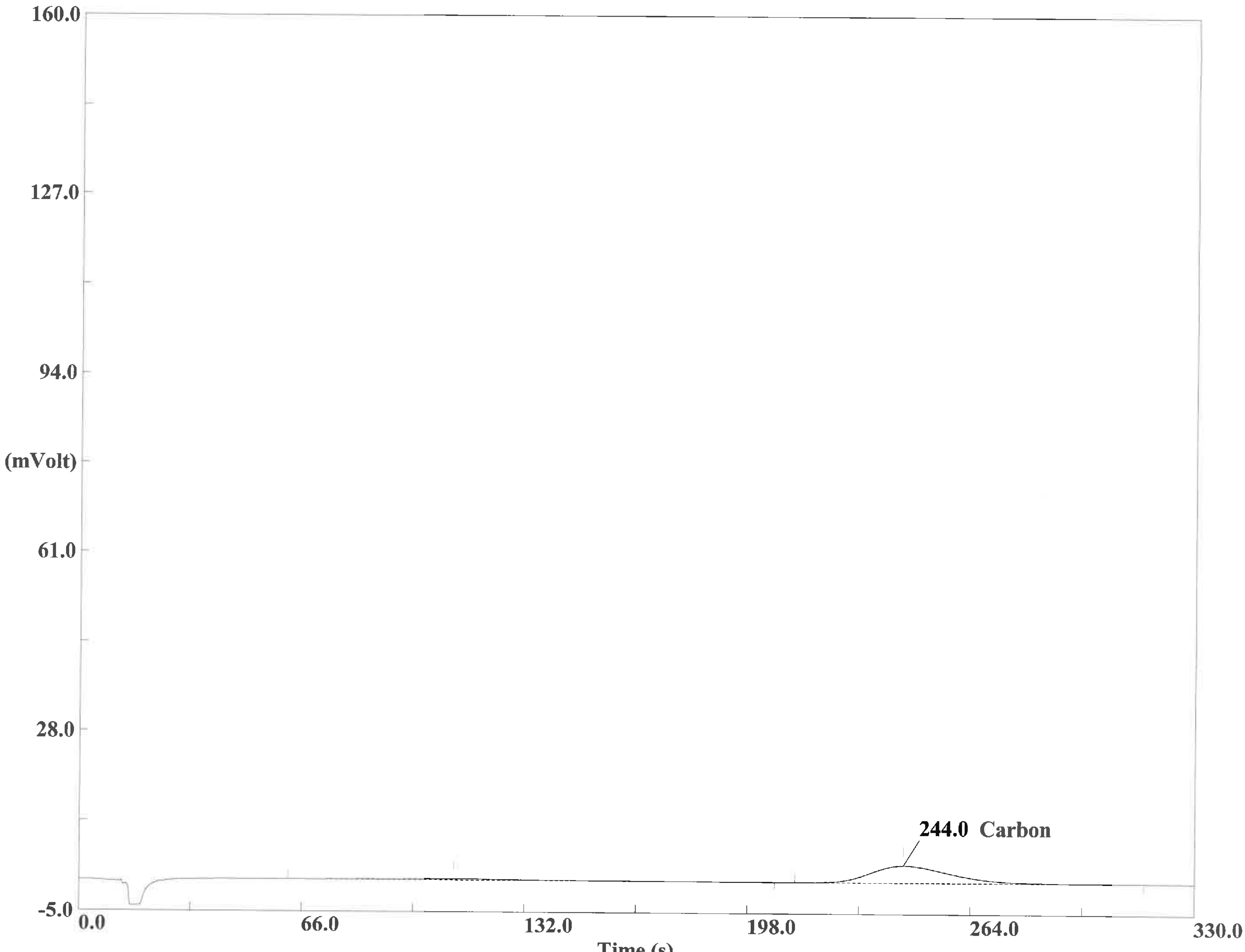
Sample weight : 20

Calib. method : using 'Least Squares to Linear fit'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921026.DAT
Sample name :180-116528-A-5   Analysed :01/29/2021 15:36

Eager 300 Report

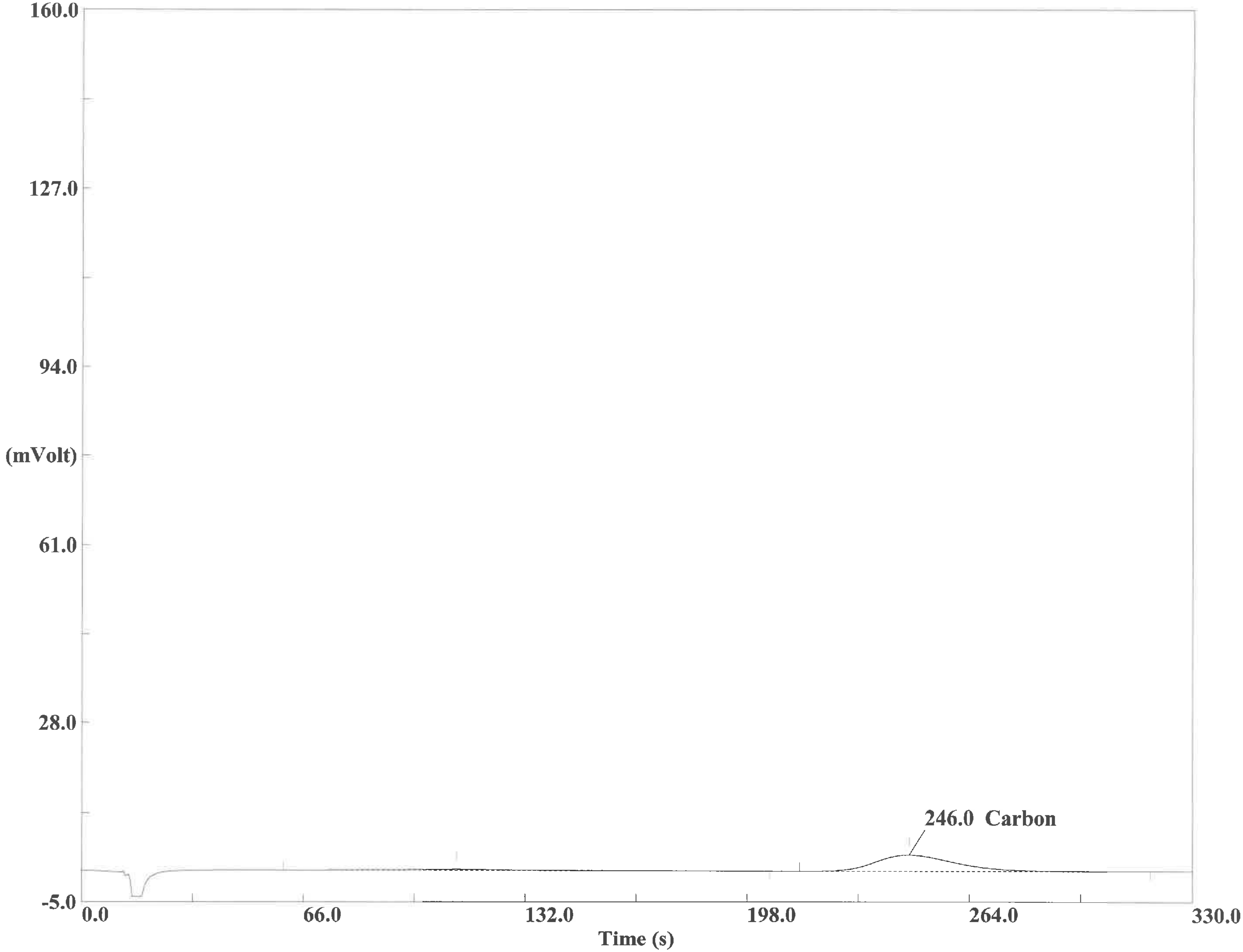
Page: 1   Sample: 180-116528-A-5 (A012921026)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\012921A.mth
Chromatogram   : A012921026
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 01/29/2021 15:36   Printed   : 2/1/2021 07:14
Sample ID   : 180-116528-A-5 (# 38)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 16.8

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.0046	244	857611	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921027.DAT
Sample name :180-116528-A-5   Analysed :01/29/2021 15:42

Eager 300 Report

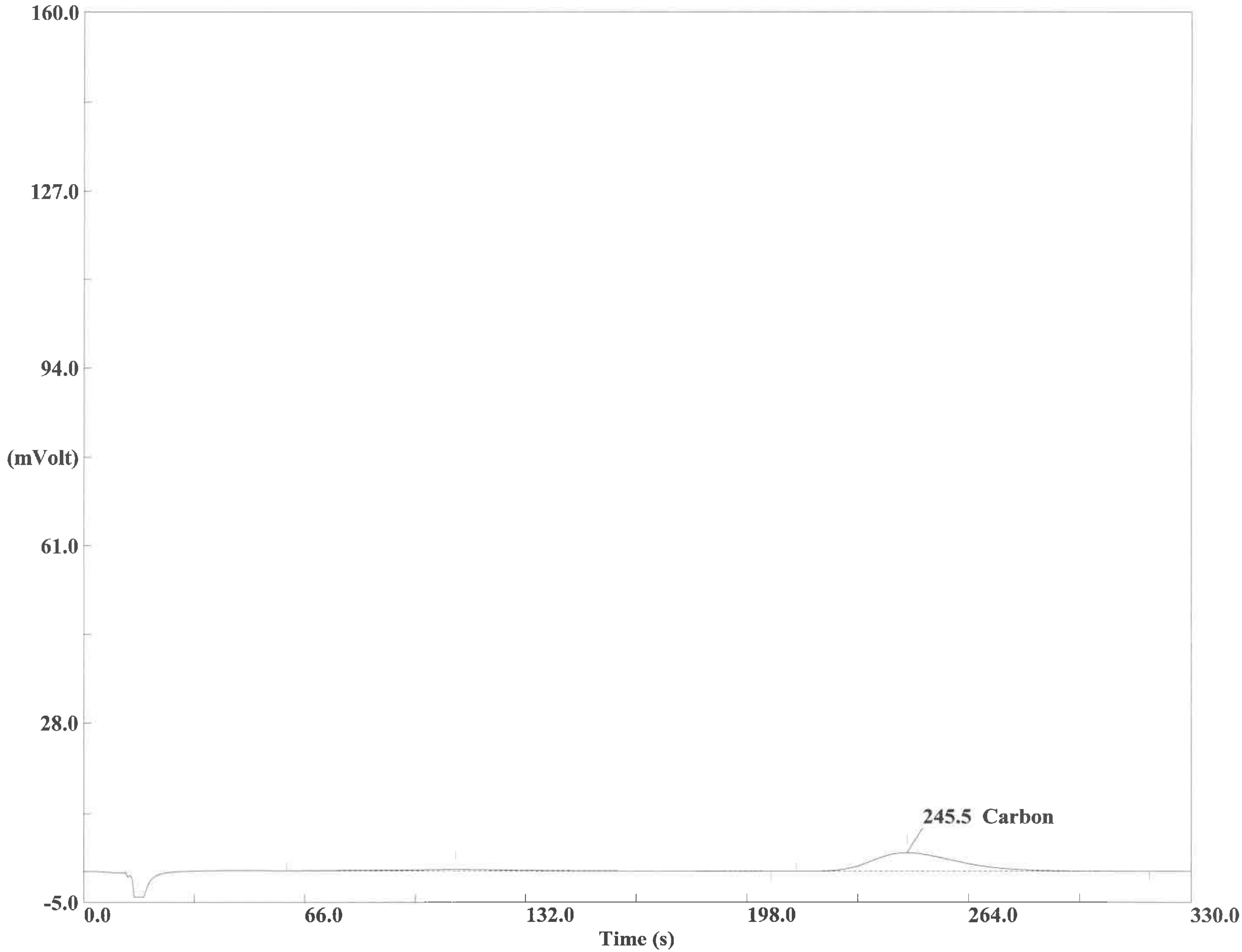
Page: 1   Sample: 180-116528-A-5 (A012921027)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921027
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 15:42   Printed : 2/1/2021 07:14
Sample ID : 180-116528-A-5 (# 39)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 16

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.0190	246	827645	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921029.DAT
Sample name :180-116528-A-6 Analysed :01/29/2021 15:53

Eager 300 Report

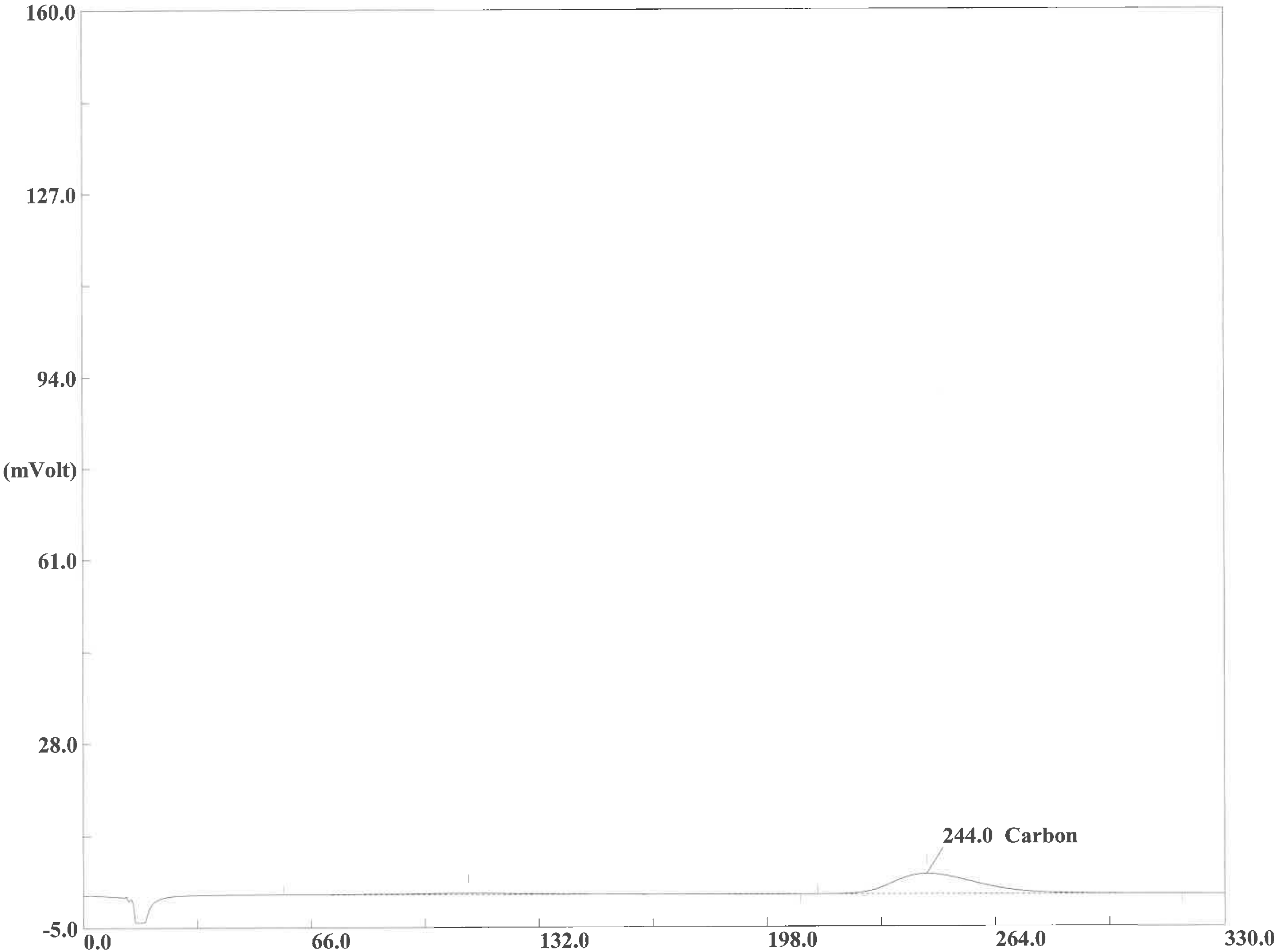
Page: 1   Sample: 180-116528-A-6 (A012921029)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921029
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 15:53   Printed : 2/1/2021 07:15
Sample ID : 180-116528-A-6 (# 41)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 16.5

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.2038	246	1013510	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921030.DAT

Sample name :180-116528-A-6 Analysed :01/29/2021 15:59

Eager 300 Report

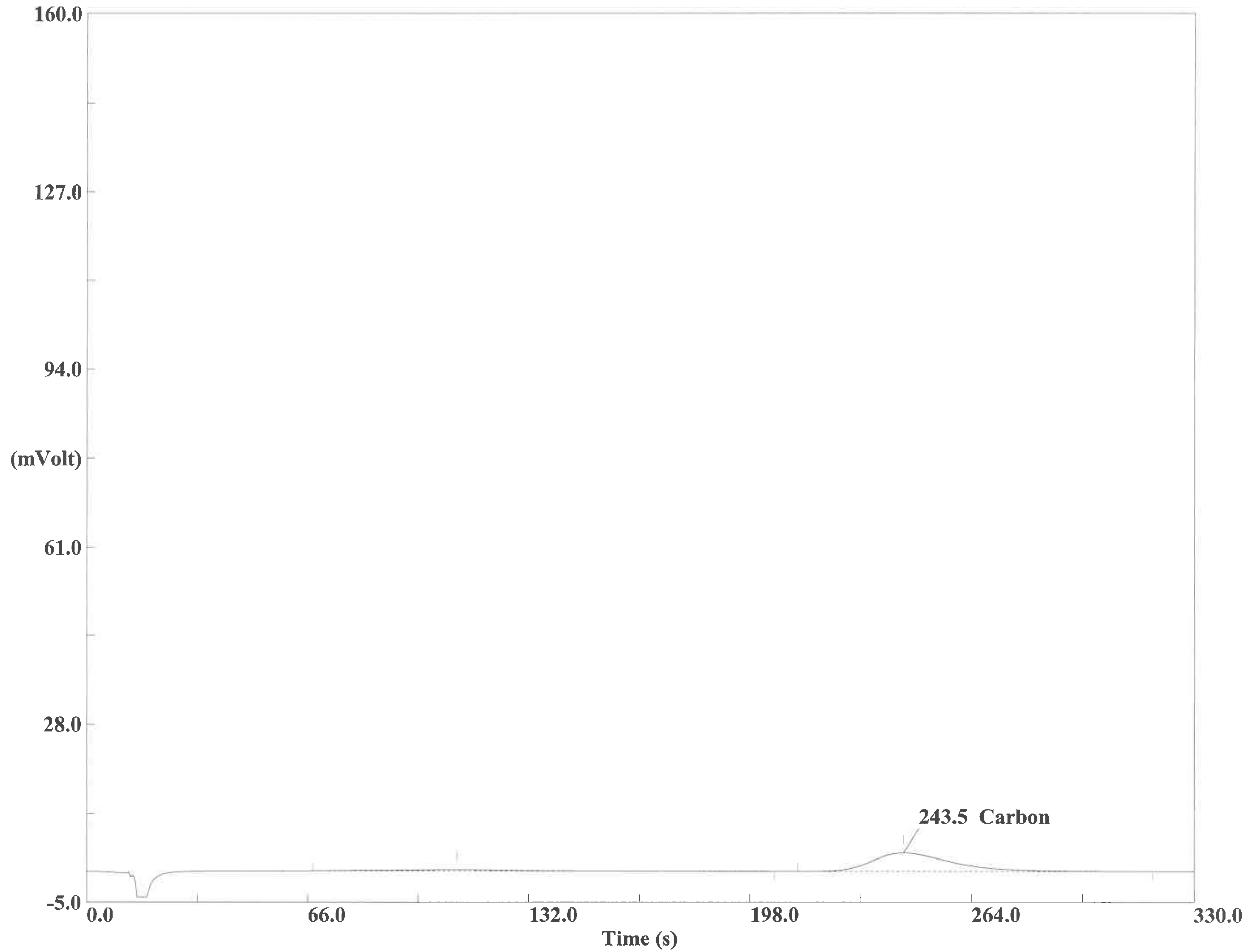
Page: 1   Sample: 180-116528-A-6 (A012921030)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921030
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 15:59   Printed : 2/1/2021 07:15
Sample ID : 180-116528-A-6 (# 42)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 16.3

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.2101	244	1006225	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921033.DAT
Sample name :180-116528-A-7 Analysed :01/29/2021 16:16

Eager 300 Report

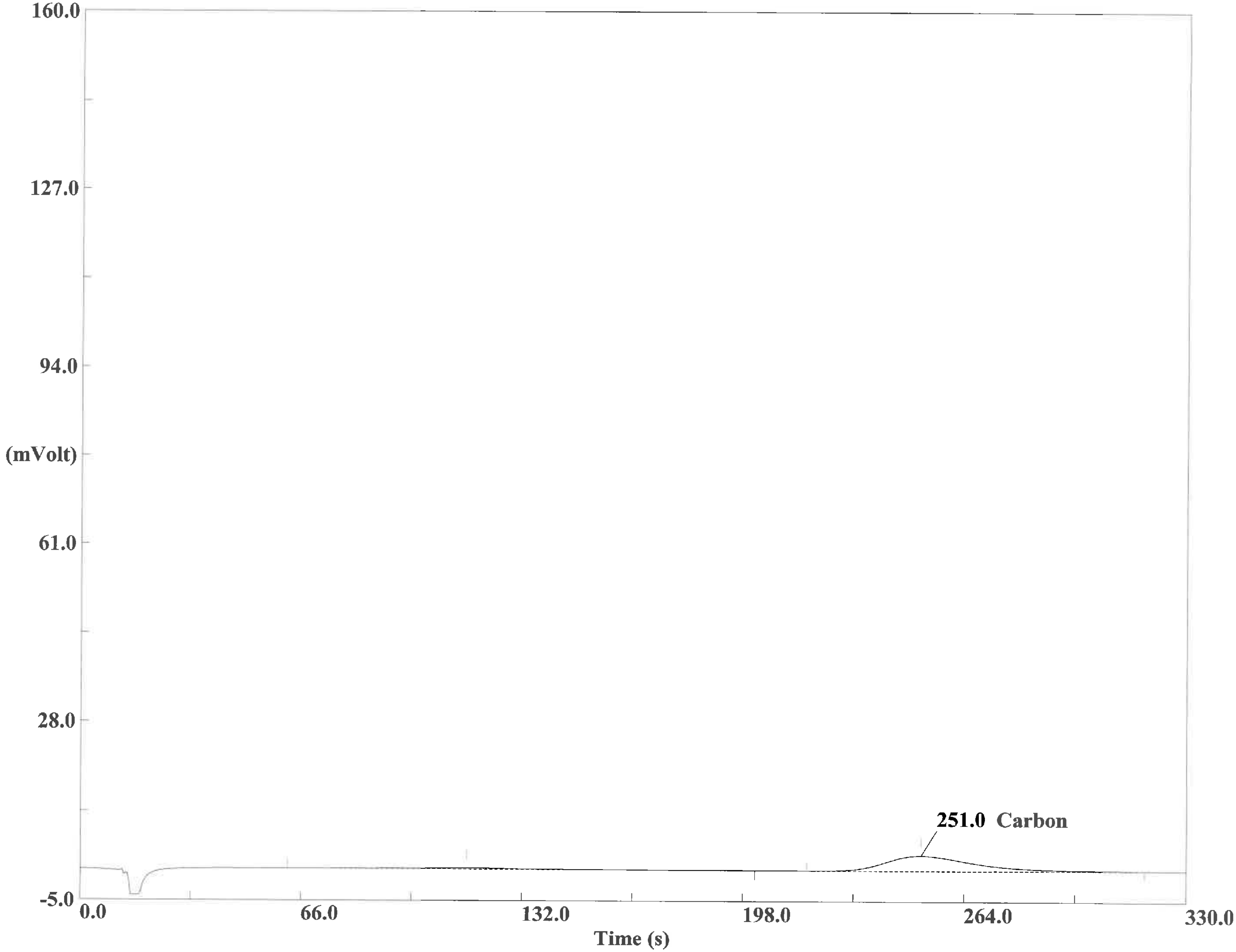
Page: 1 Sample: 180-116528-A-7 (A012921033)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921033
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 16:16 Printed : 2/1/2021 07:16
Sample ID : 180-116528-A-7 (# 45)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 13.9

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.3176	244	932624	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921034.DAT
Sample name :180-116528-A-7 Analysed :01/29/2021 16:21

Eager 300 Report

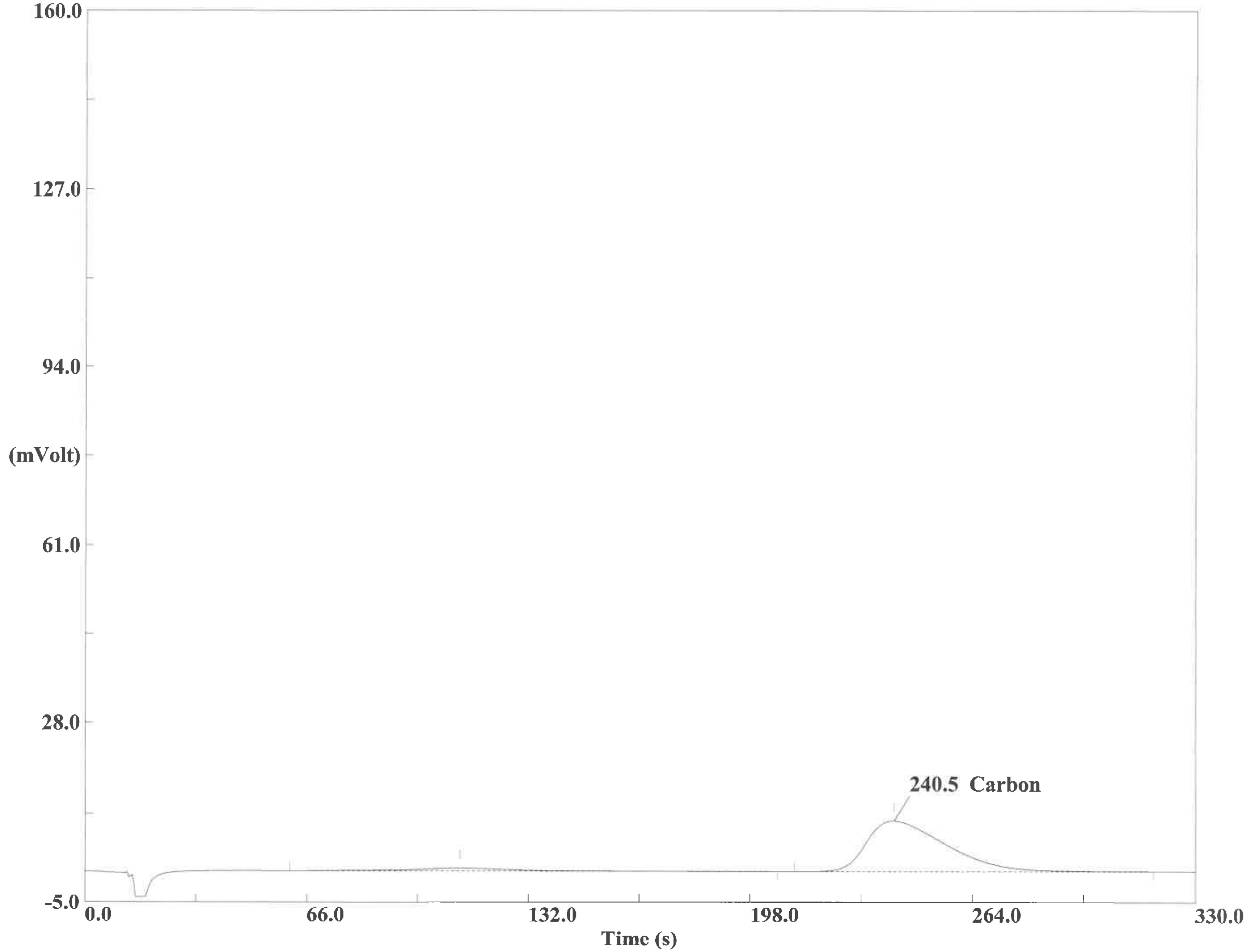
Page: 1   Sample: 180-116528-A-7 (A012921034)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921034
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 16:21   Printed : 2/1/2021 07:16
Sample ID : 180-116528-A-7 (# 46)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 15.3

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.1128	251	865352	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921036.DAT
Sample name :180-116528-A-7 MS   Analysed :01/29/2021 16:32

Eager 300 Report

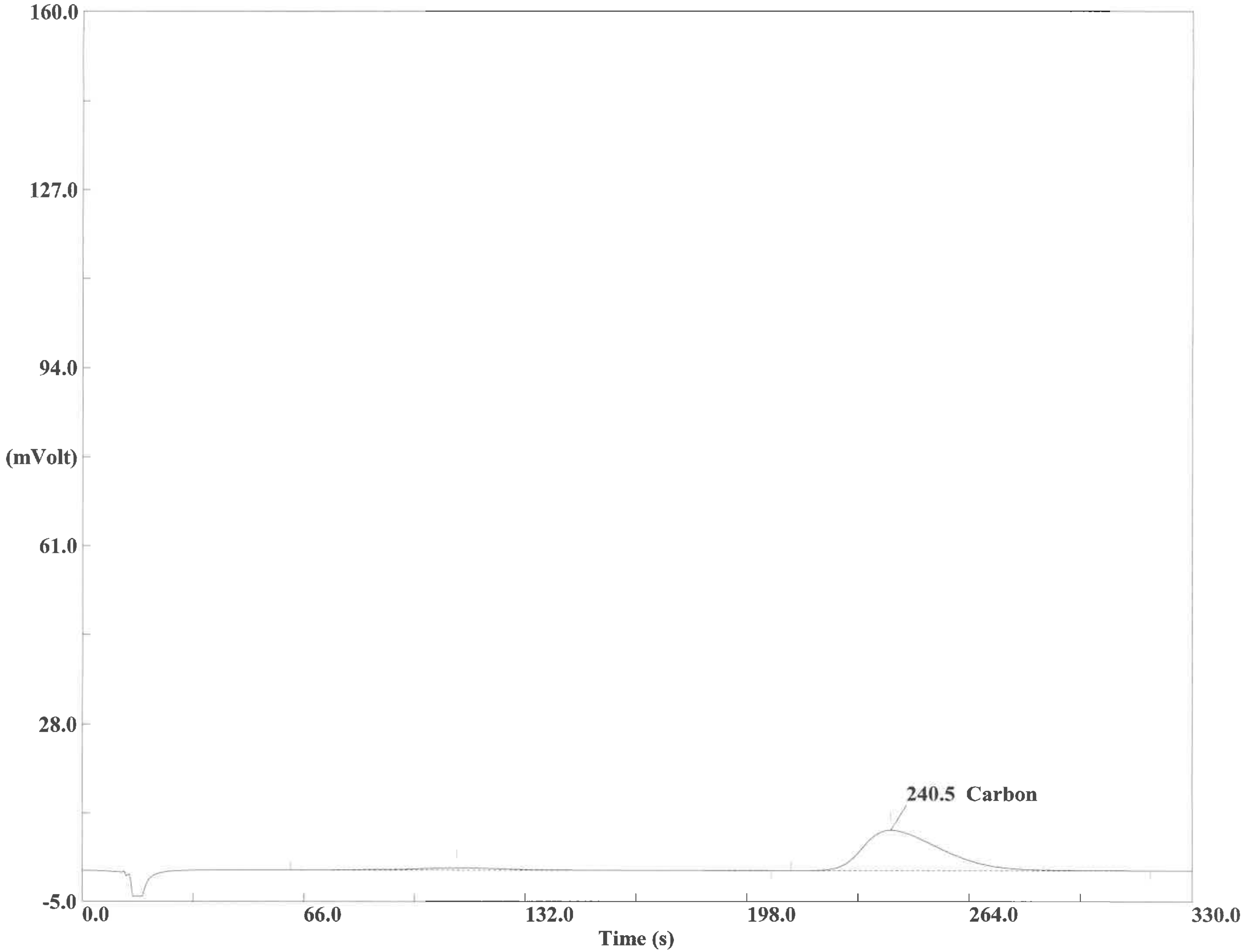
Page: 1 Sample: 180-116528-A-7 MS (A012921036)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921036
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 16:32 Printed : 2/1/2021 07:17
Sample ID : 180-116528-A-7 MS (# 48)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 14.4

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	3.3660	241	2507091	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921037.DAT
Sample name :180-116528-A-7 MS   Analysed :01/29/2021 16:38

Eager 300 Report

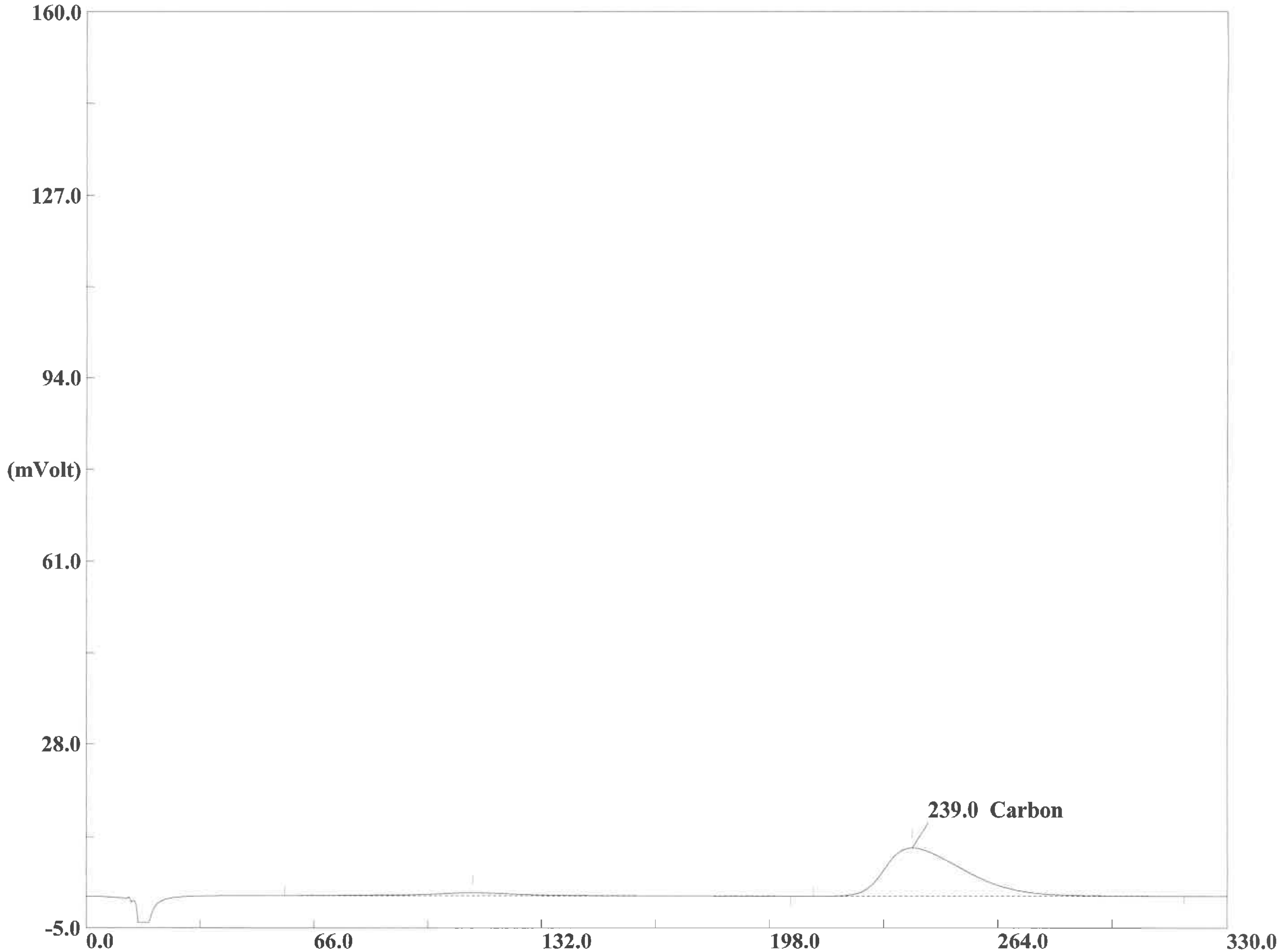
Page: 1   Sample: 180-116528-A-7 MS (A012921037)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921037
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 16:38   Printed : 2/1/2021 07:17
Sample ID : 180-116528-A-7 MS (# 49)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 12.4

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	3.1495	241	2015474	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Time (s)

Filename C:\data\January\A012921039.DAT

Sample name :180-116528-A-7 MSD   Analysed :01/29/2021 16:49

Eager 300 Report

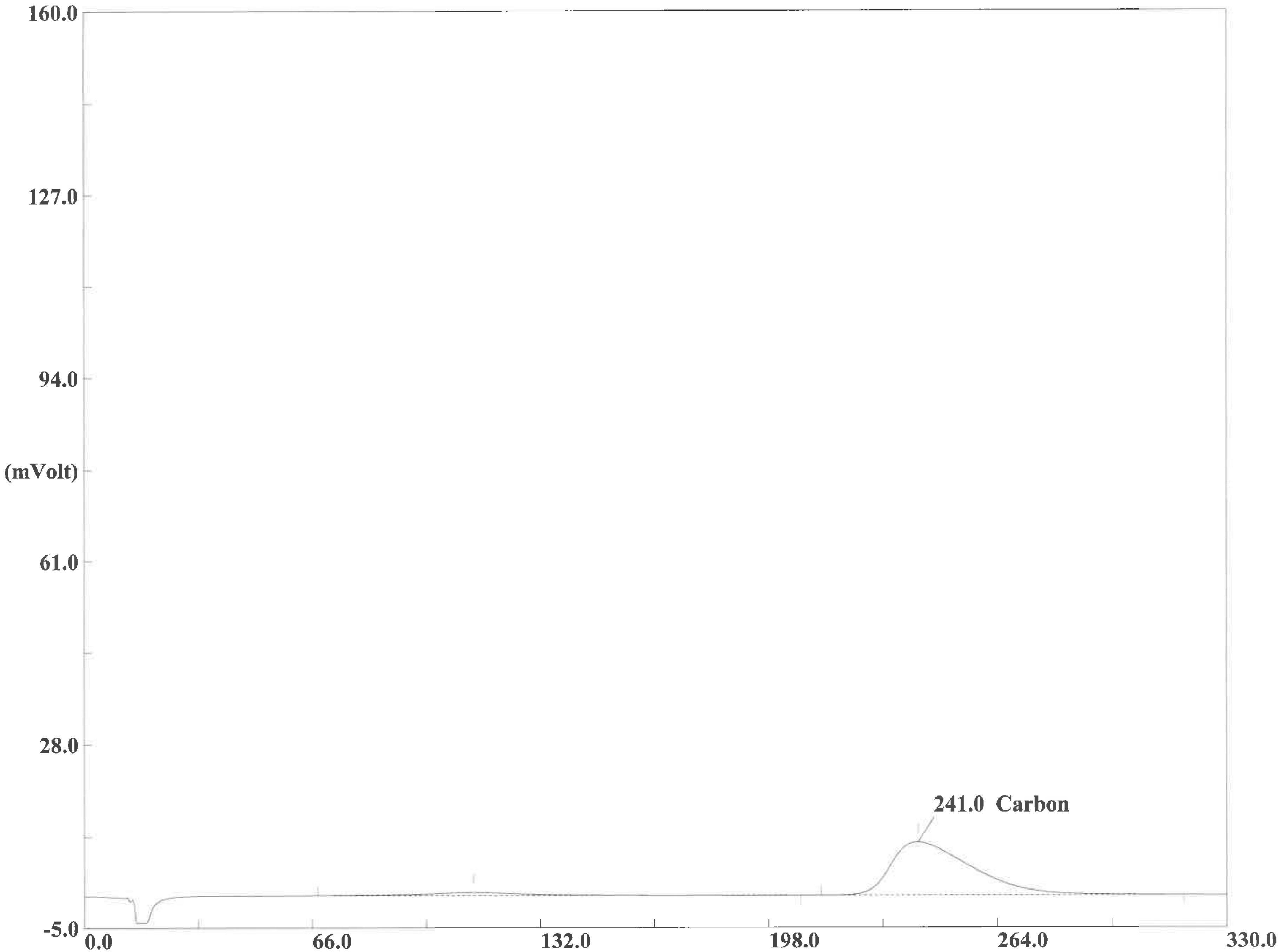
Page: 1   Sample: 180-116528-A-7 MSD (A012921039)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921039
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 16:49   Printed : 2/1/2021 07:17
Sample ID : 180-116528-A-7 MSD (# 51)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 13.9

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	3.1977	239	2297099	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921040.DAT

Sample name :180-116528-A-7 MSD Analysed :01/29/2021 16:55

Eager 300 Report

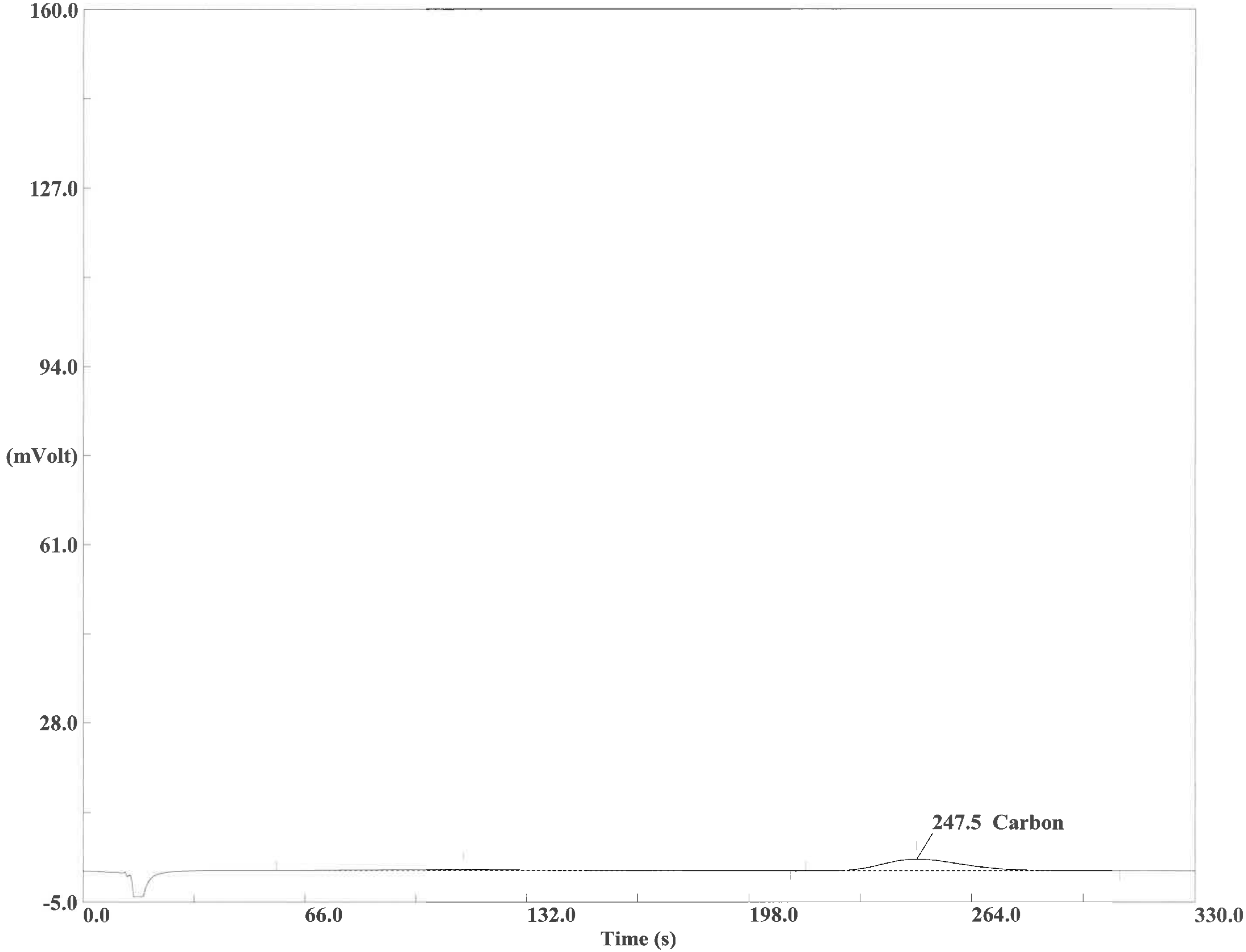
Page: 1   Sample: 180-116528-A-7 MSD (A012921040)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921040
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 16:55   Printed : 2/1/2021 07:18
Sample ID : 180-116528-A-7 MSD (# 52)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 14.4

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	3.4608	241	2578361	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921043.DAT
Sample name :180-116551-B-8 Analysed :01/29/2021 17:11

Eager 300 Report

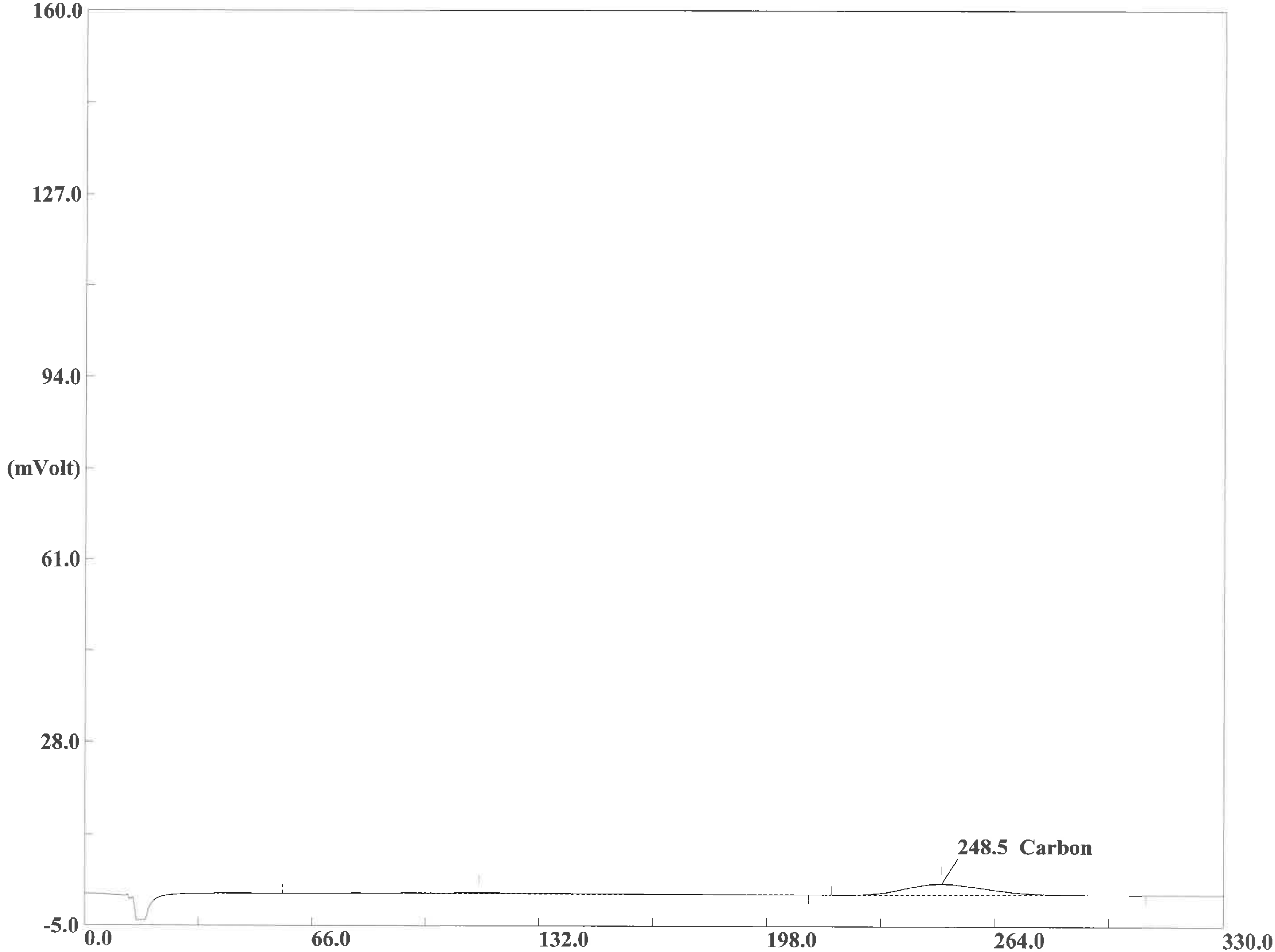
Page: 1   Sample: 180-116551-B-8 (A012921043)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921043
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 17:11   Printed : 2/1/2021 07:19
Sample ID : 180-116551-B-8 (# 55)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 19.9

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.5851	248	584358	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921044.DAT
Sample name :180-116551-B-8   Analysed :01/29/2021 17:17

Eager 300 Report

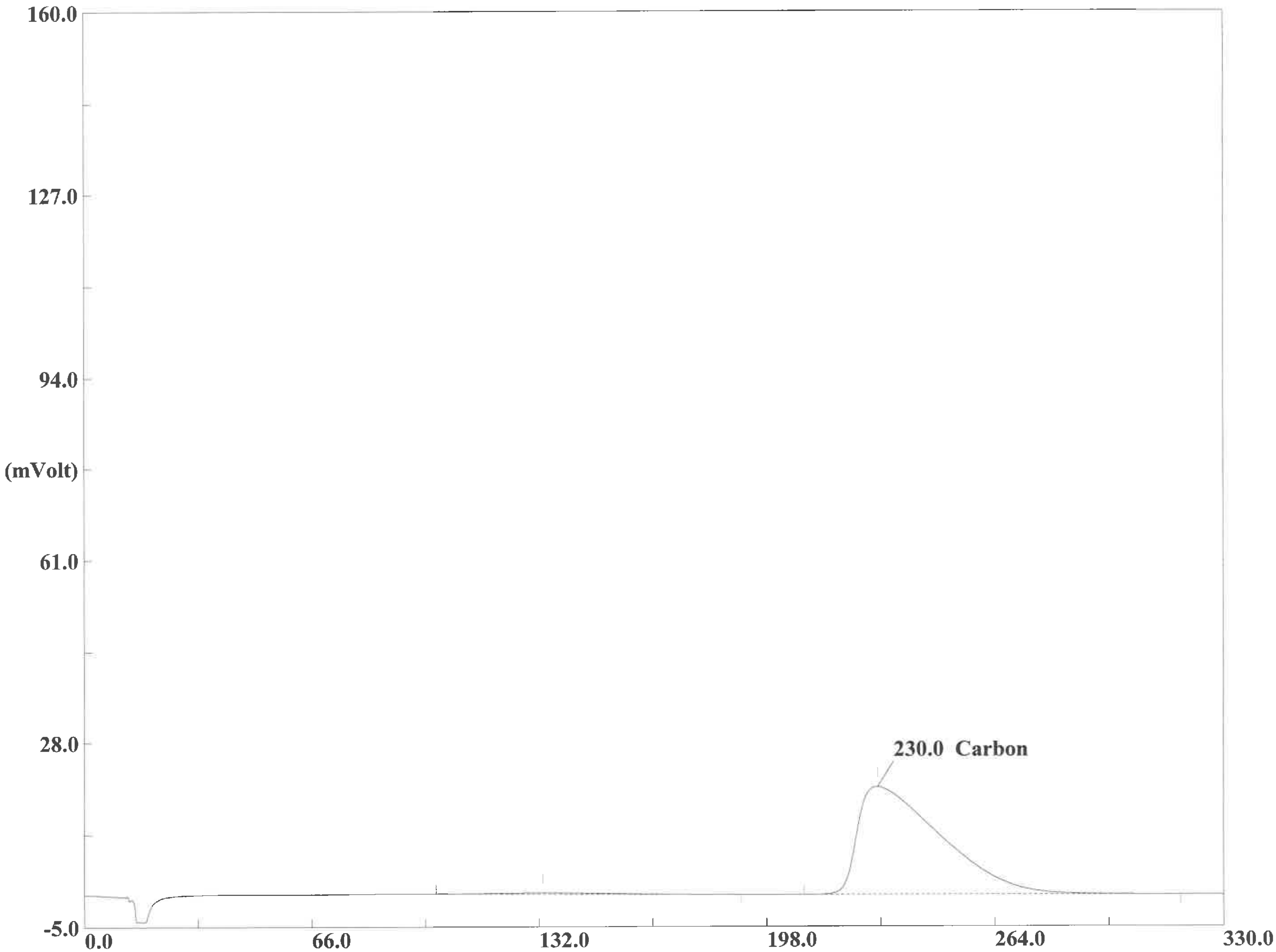
Page: 1 Sample: 180-116551-B-8 (A012921044)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921044
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 17:17 Printed : 2/1/2021 07:19
Sample ID : 180-116551-B-8 (# 56)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 19.7

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.5564	249	548720	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921046.DAT
Sample name :CCV   Analysed :01/29/2021 17:28

Eager 300 Report

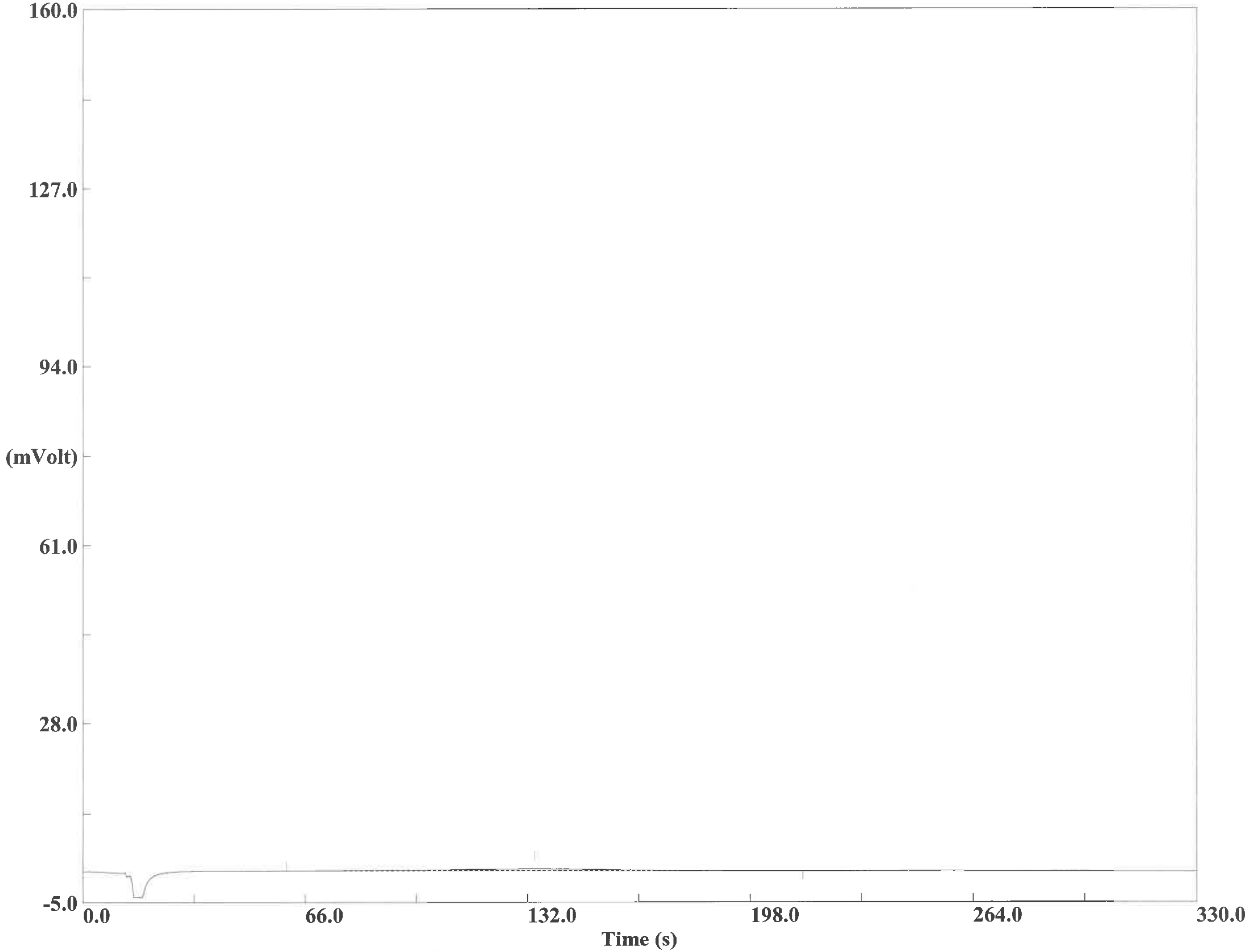
Page: 1   Sample: CCV (A012921046)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\012921A.mth
Chromatogram   : A012921046
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 01/29/2021 17:28   Printed   : 2/1/2021 07:19
Sample ID   : CCV (# 58)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 100

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.0228	230	5316382	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921047.DAT

Sample name :CCB   Analysed :01/29/2021 17:34

Eager 300 Report

Page: 1   Sample: CCB (A012921047)

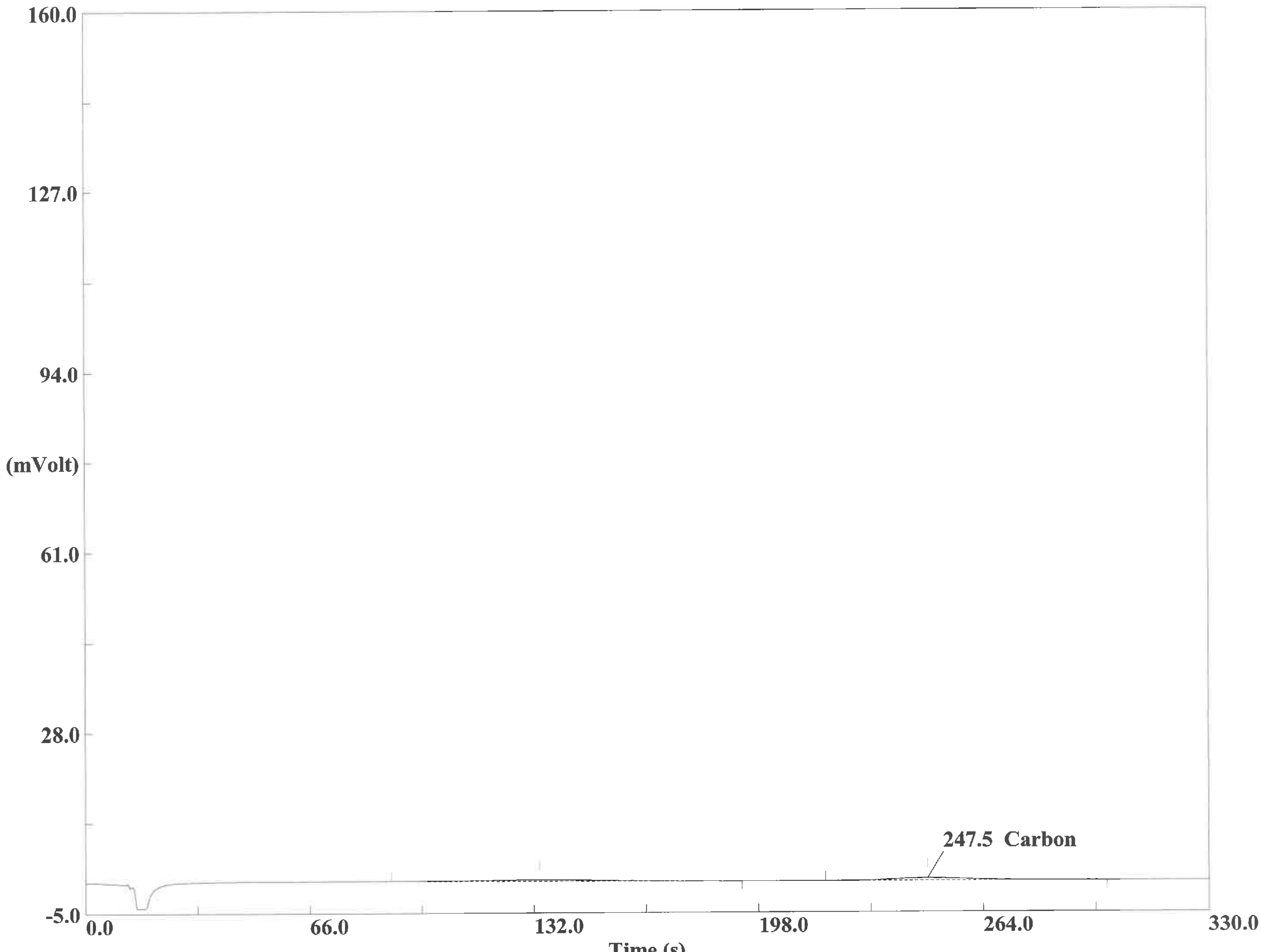
Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921047
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 17:34   Printed : 2/1/2021 07:20
Sample ID : CCB (# 59)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 20

Calib. method : using 'Least Squares to Linear fit'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921048.DAT
Sample name :180-116551-B-13 Analysed :01/29/2021 17:39

Eager 300 Report

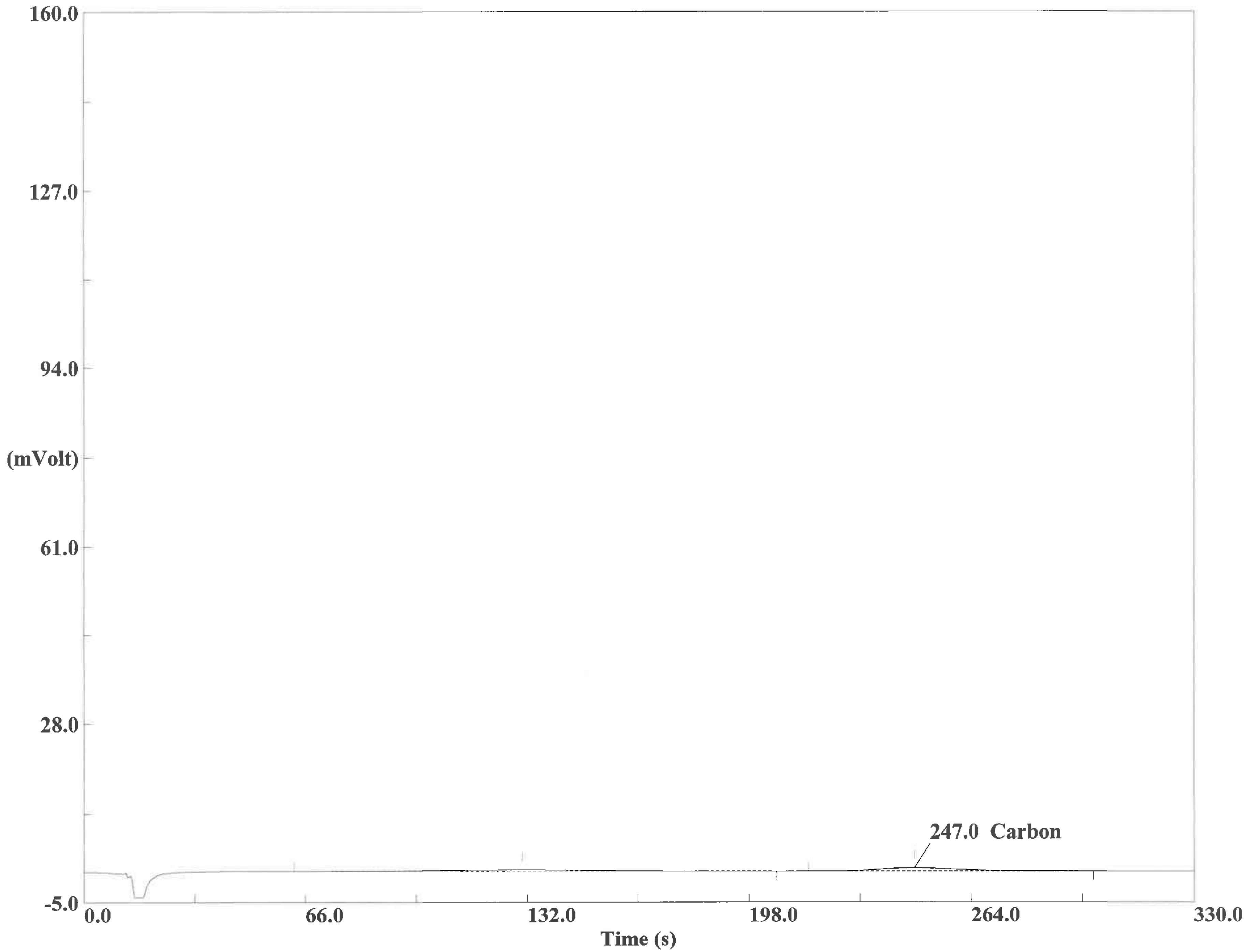
Page: 1   Sample: 180-116551-B-13 (A012921048)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\012921A.mth
Chromatogram   : A012921048
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 01/29/2021 17:39   Printed   : 2/1/2021 07:20
Sample ID   : 180-116551-B-13 (# 60)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 17.9

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.1594	248	125370	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921049.DAT

Sample name :180-116551-B-13 Analysed :01/29/2021 17:45

Eager 300 Report

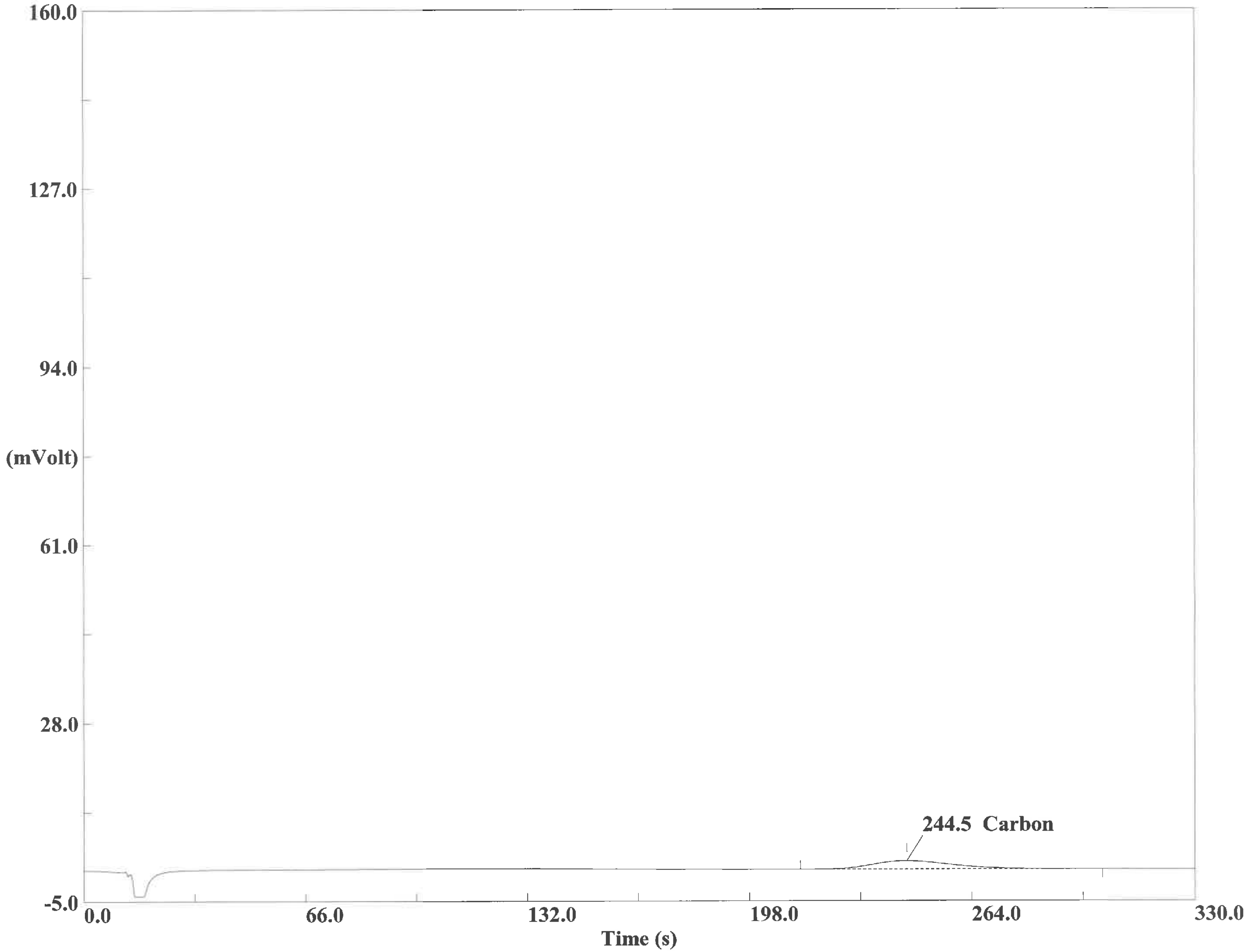
Page: 1   Sample: 180-116551-B-13 (A012921049)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921049
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 17:45   Printed : 2/1/2021 07:20
Sample ID : 180-116551-B-13 (# 61)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 17.4

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.2186	247	175027	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921051.DAT

Sample name :180-116551-B-19   Analysed :01/29/2021 17:56

Eager 300 Report

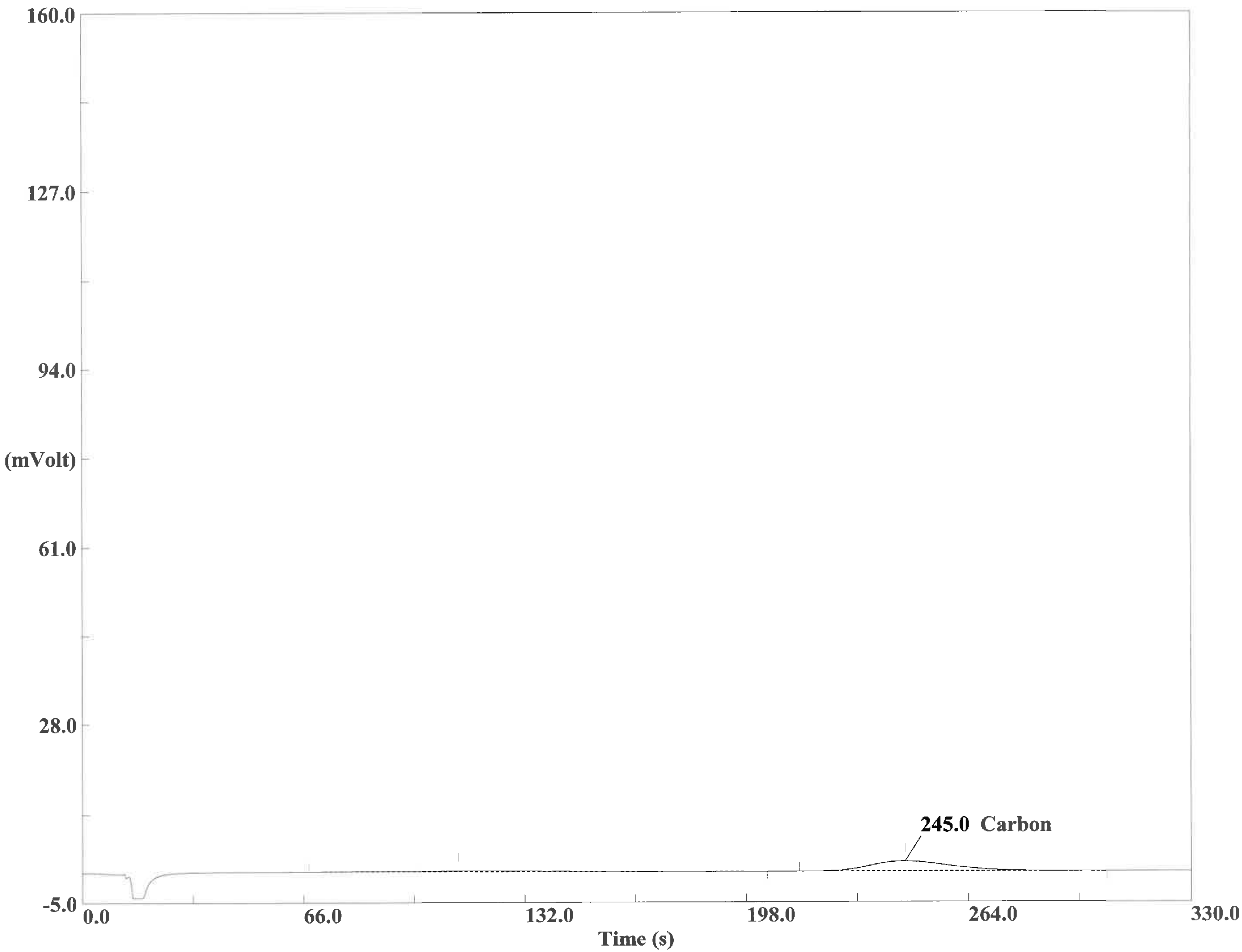
Page: 1   Sample: 180-116551-B-19 (A012921051)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921051
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 17:56   Printed : 2/1/2021 07:21
Sample ID : 180-116551-B-19 (# 63)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 18.8

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.4450	245	413213	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921052.DAT
Sample name :180-116551-B-19 Analysed :01/29/2021 18:02

Eager 300 Report

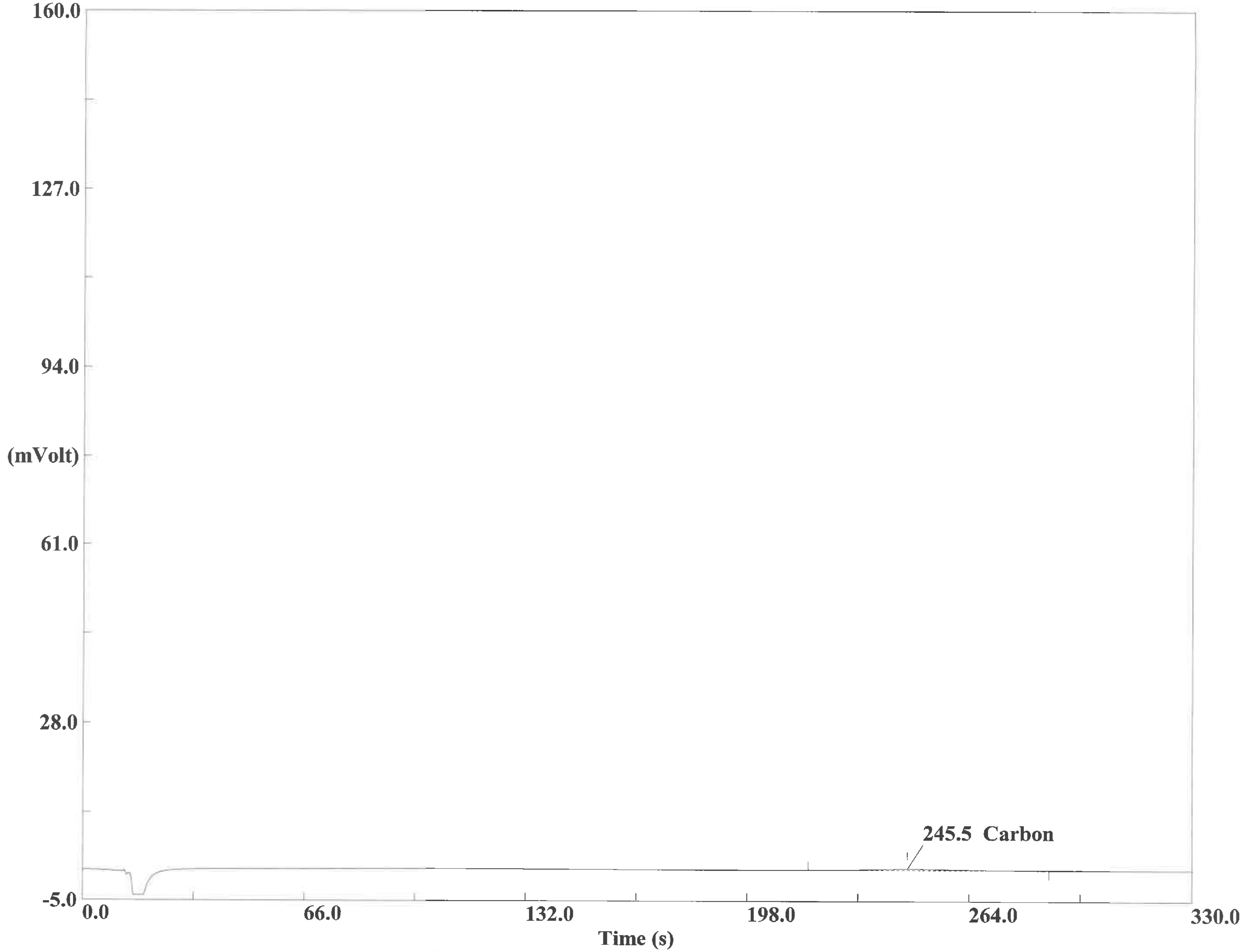
Page: 1   Sample: 180-116551-B-19 (A012921052)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921052
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 18:02   Printed : 2/1/2021 07:21
Sample ID : 180-116551-B-19 (# 64)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 21.1

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.4810	245	506352	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921055.DAT
Sample name :180-116551-B-20 Analysed :01/29/2021 18:18

Eager 300 Report

Page: 1   Sample: 180-116551-B-20 (A012921055)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921055
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 18:18   Printed : 2/1/2021 07:22
Sample ID : 180-116551-B-20 (# 67)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 17.6

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.1014	246	69588	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021

Filename C:\data\January\A012921056.DAT
Sample name :180-116551-B-20 Analysed :01/29/2021 18:24

Eager 300 Report

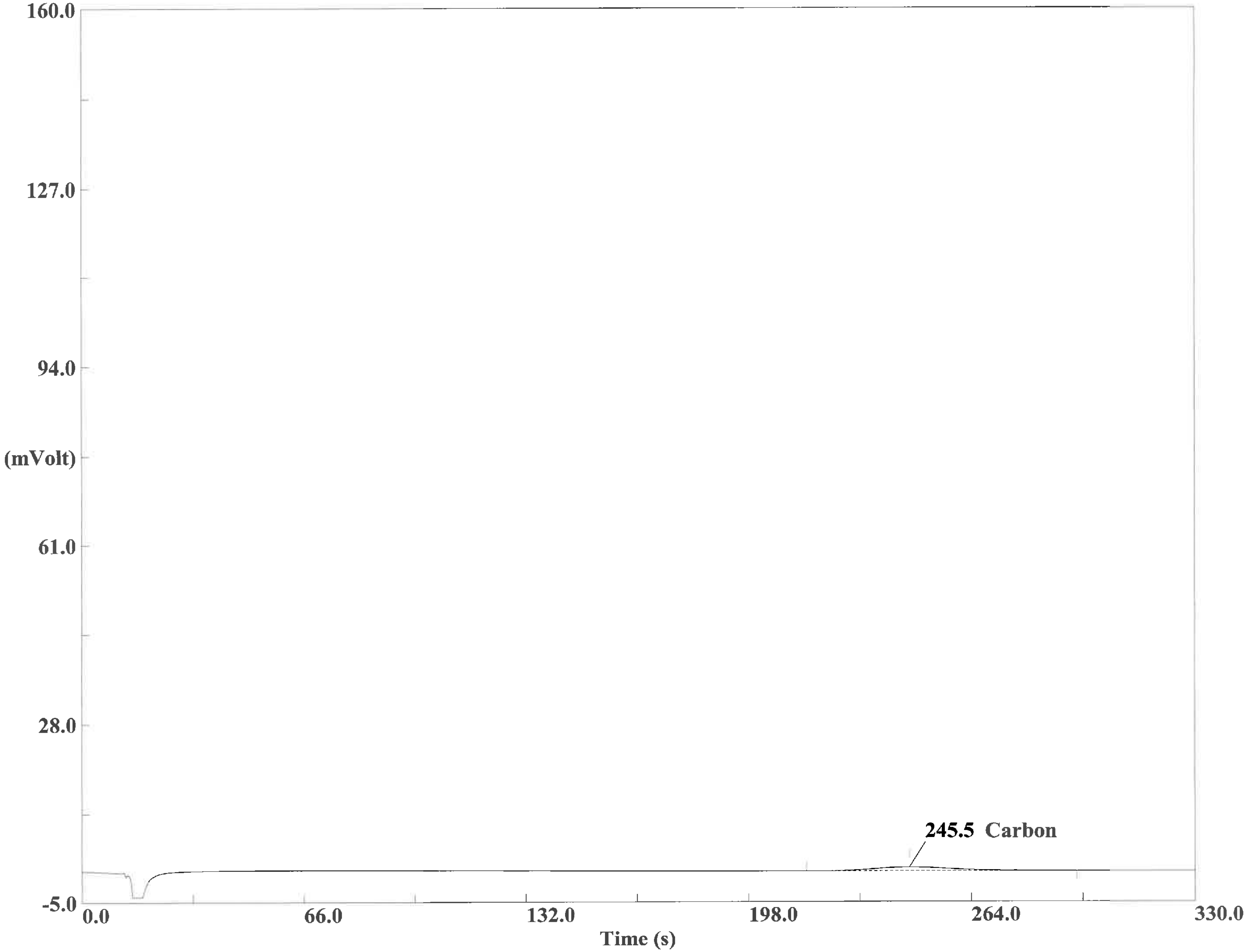
Page: 1   Sample: 180-116551-B-20 (A012921056)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921056
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 18:24   Printed : 2/1/2021 07:22
Sample ID : 180-116551-B-20 (# 68)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 16.5

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.0973	246	60207	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921058.DAT
Sample name :180-116551-B-25 Analysed :01/29/2021 18:35

Eager 300 Report

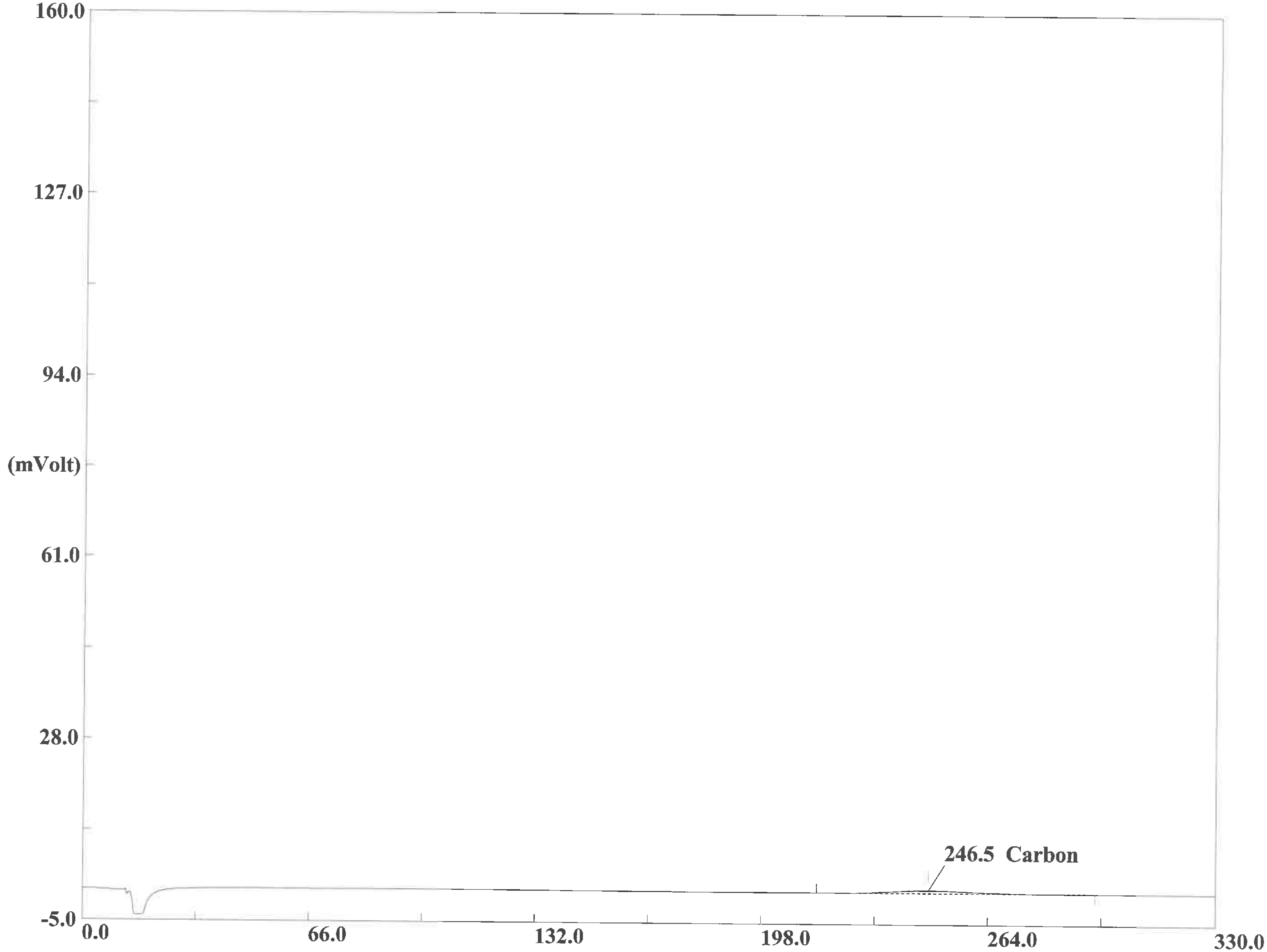
Page: 1   Sample: 180-116551-B-25 (A012921058)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921058
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 18:35   Printed : 2/1/2021 07:23
Sample ID : 180-116551-B-25 (# 70)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 19.2

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.2120	246	188935	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921059.DAT

Sample name :180-116551-B-25 Analysed :01/29/2021 18:41

Eager 300 Report

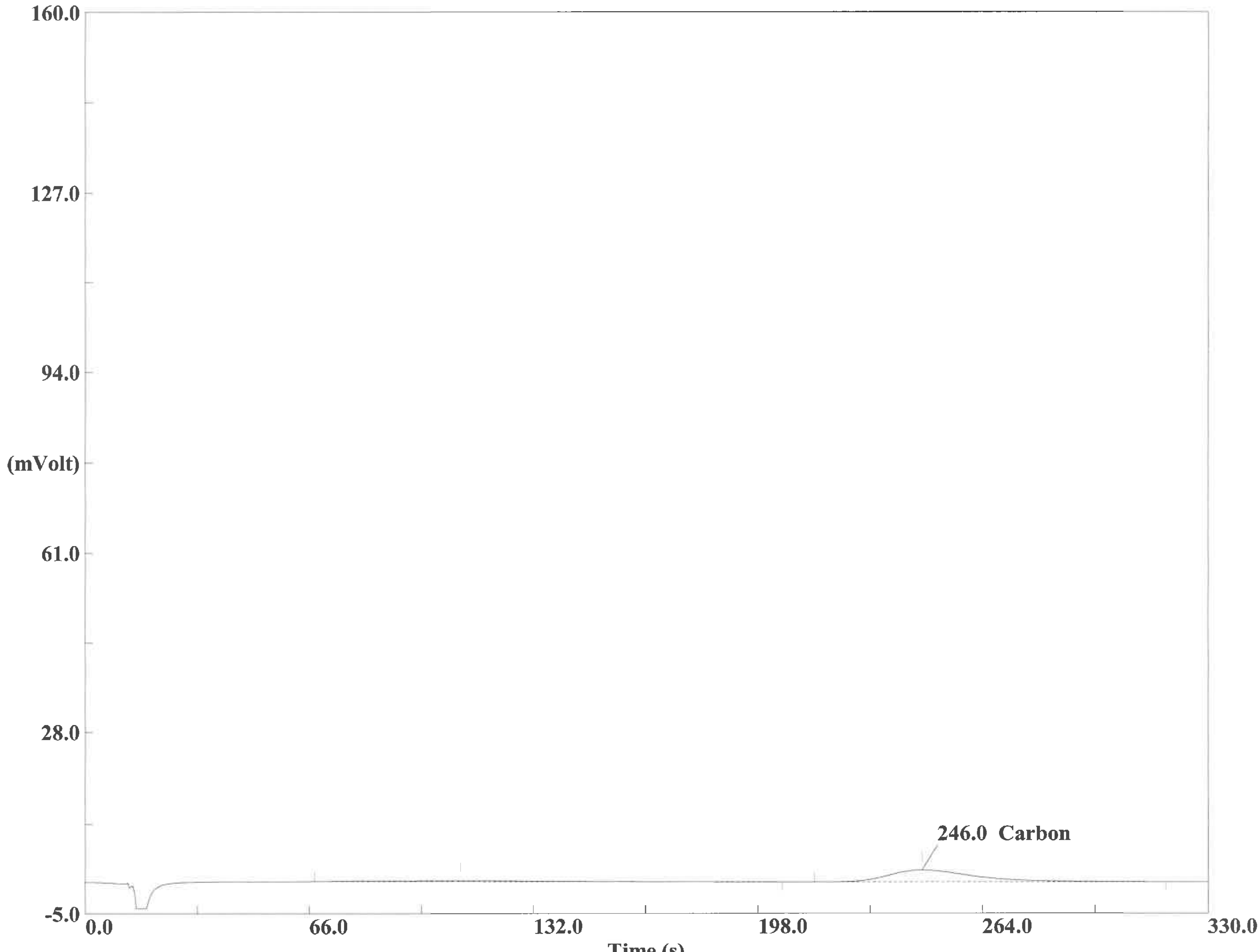
Page: 1   Sample: 180-116551-B-25 (A012921059)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\012921A.mth
Chromatogram   : A012921059
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 01/29/2021 18:41   Printed   : 2/1/2021 07:23
Sample ID   : 180-116551-B-25 (# 71)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 18.5

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.1748	247	145234	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921062.DAT

Sample name :180-116564-C-1 Analysed :01/29/2021 18:57

Eager 300 Report

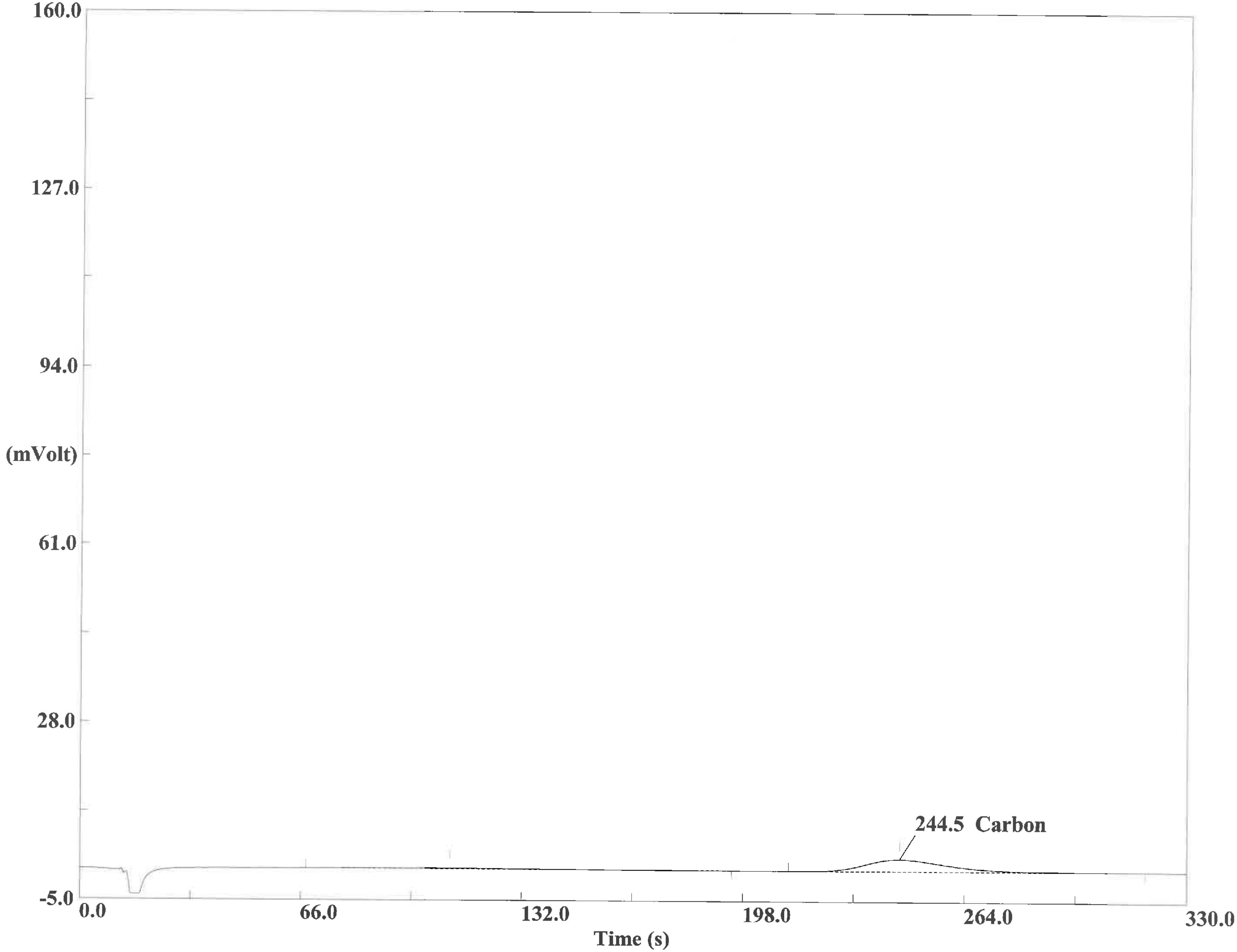
Page: 1   Sample: 180-116564-C-1 (A012921062)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921062
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 18:57   Printed : 2/1/2021 07:24
Sample ID : 180-116564-C-1 (# 74)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 9.3

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.3555	246	634614	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921063.DAT
Sample name :180-116564-C-1 Analysed :01/29/2021 19:03

Eager 300 Report

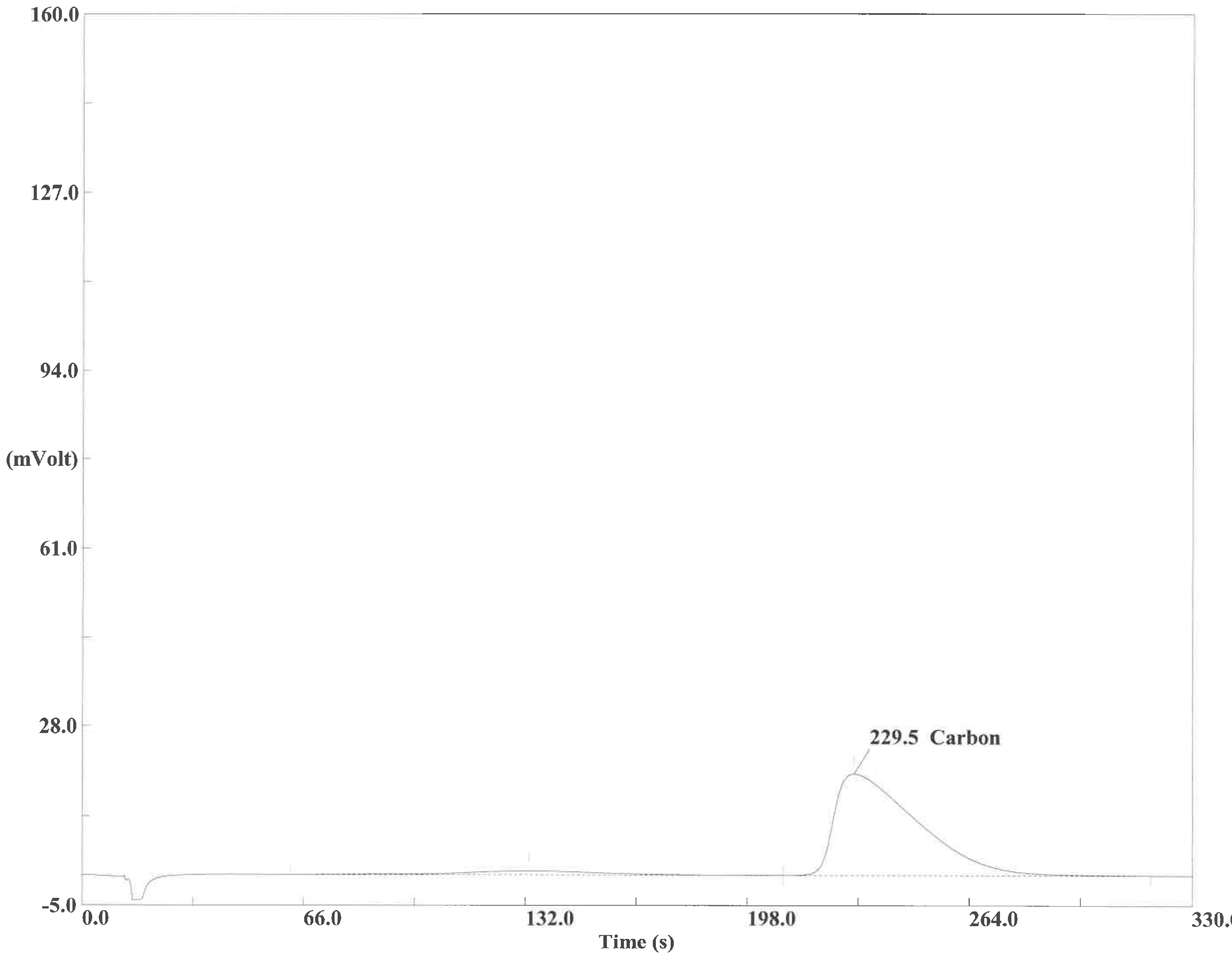
Page: 1 Sample: 180-116564-C-1 (A012921063)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921063
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 01/29/2021 19:03   Printed : 2/1/2021 07:24
Sample ID : 180-116564-C-1 (# 75)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 8.1

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.5800	245	644605	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921066.DAT
Sample name :CCV Analysed :02/01/2021 07:56

Eager 300 Report

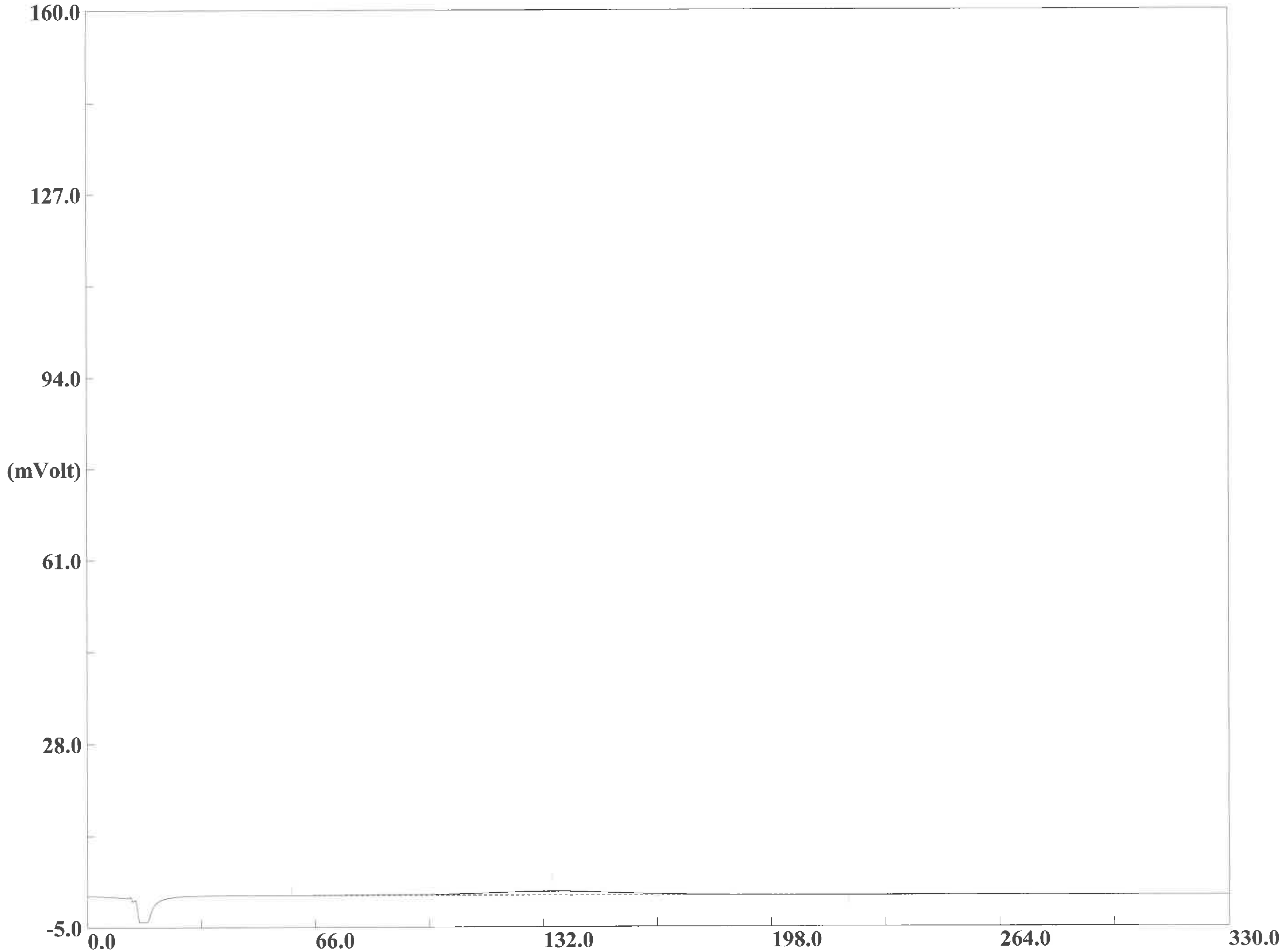
Page: 1   Sample: CCV (A012921066)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\012921A.mth
Chromatogram   : A012921066
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 02/01/2021 07:56   Printed   : 2/1/2021 11:00
Sample ID   : CCV (# 78)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 100

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.0143	230	5272158	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921067.DAT
Sample name :CCB   Analysed :02/01/2021 08:02

Eager 300 Report

Page: 1   Sample: CCB (A012921067)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921067
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 02/01/2021 08:02   Printed : 2/1/2021 11:00
Sample ID : CCB (# 79)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 20

Calib. method : using 'Least Squares to Linear fit'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021

Filename C:\data\January\A012921068.DAT
Sample name :180-116564-B-3 Analysed :02/01/2021 08:08

Eager 300 Report

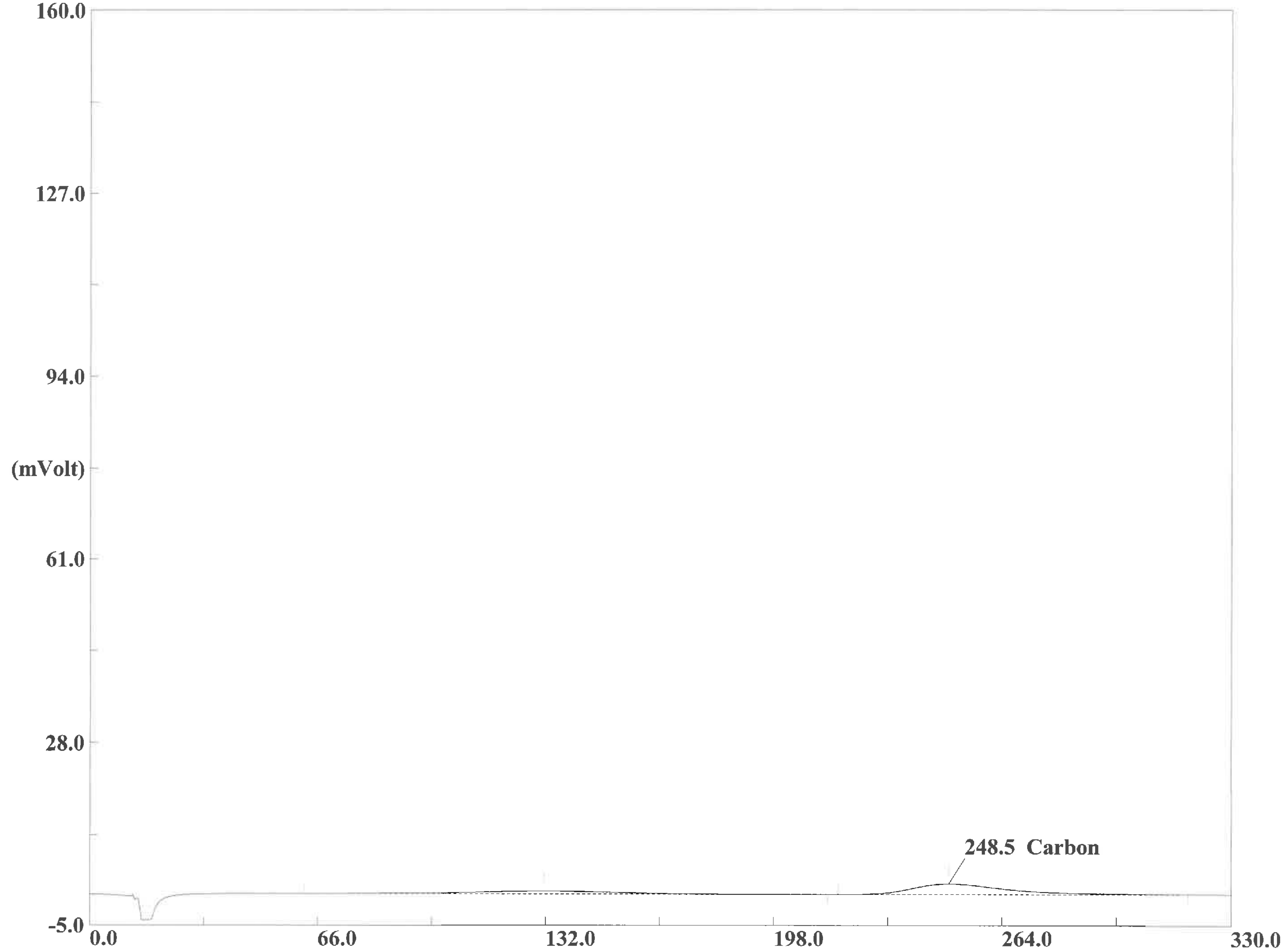
Page: 1 Sample: 180-116564-B-3 (A012921068)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921068
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 02/01/2021 08:08 Printed : 2/1/2021 11:00
Sample ID : 180-116564-B-3 (# 80)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 10.5

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.3221	246	701222	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921069.DAT
Sample name :180-116564-B-3 Analysed :02/01/2021 08:14

Eager 300 Report

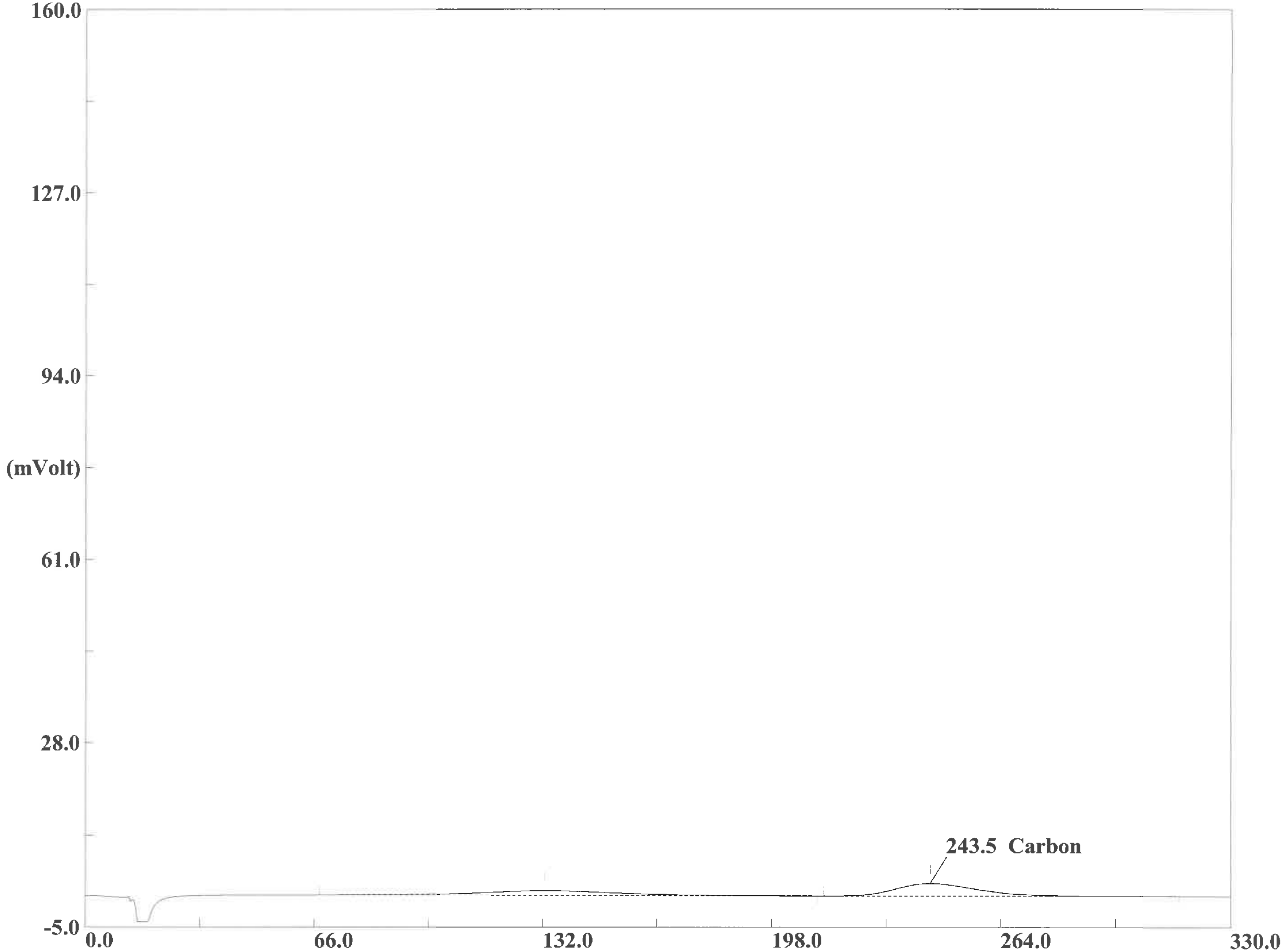
Page: 1 Sample: 180-116564-B-3 (A012921069)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921069
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 02/01/2021 08:14 Printed : 2/1/2021 11:01
Sample ID : 180-116564-B-3 (# 81)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 9.3

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.2625	249	589450	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Time (s)

Filename C:\data\January\A012921072.DAT

Sample name :180-116564-B-4 Analysed :02/01/2021 08:31

Eager 300 Report

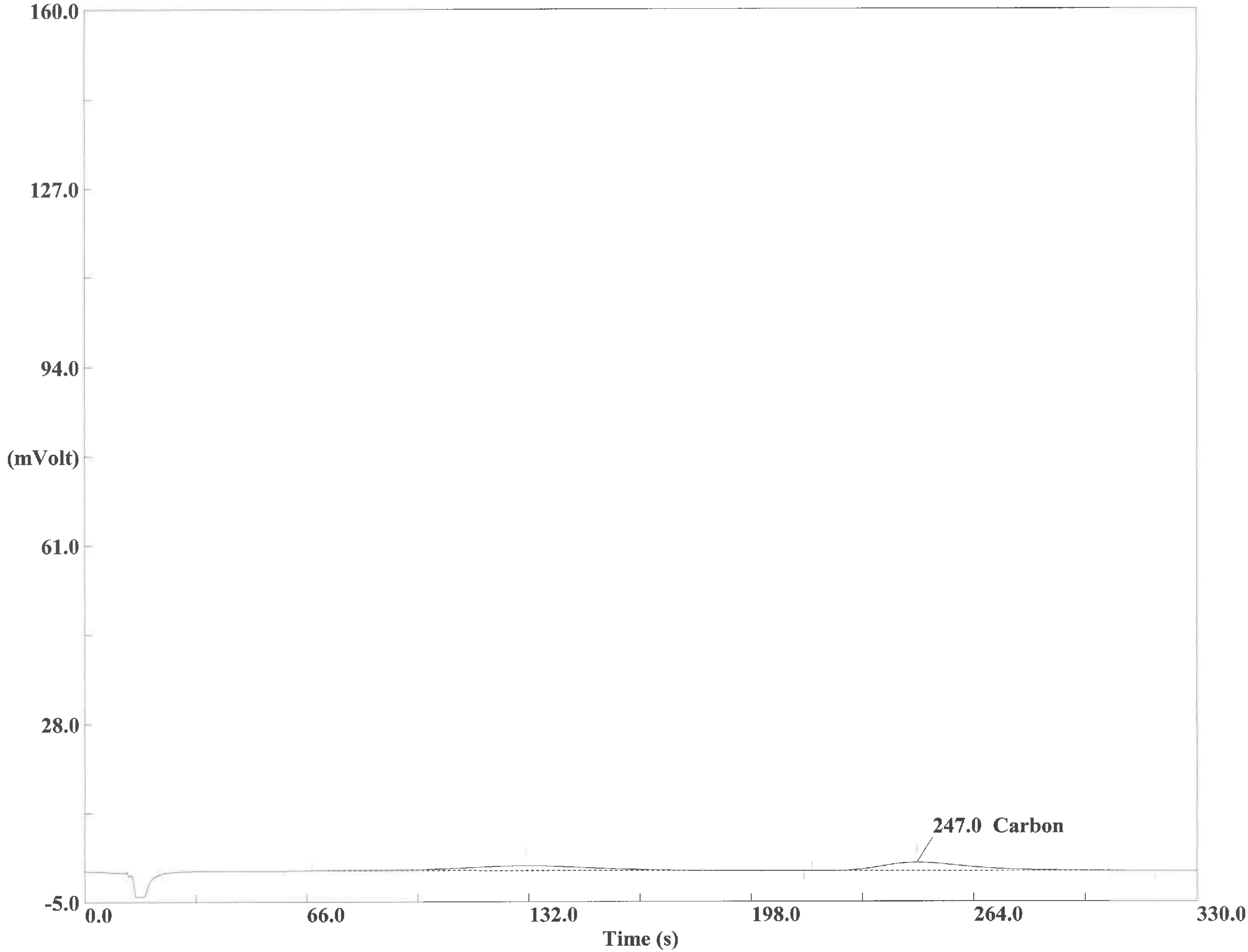
Page: 1   Sample: 180-116564-B-4 (A012921072)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921072
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 02/01/2021 08:31   Printed : 2/1/2021 11:01
Sample ID : 180-116564-B-4 (# 84)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 8.2

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.4288	244	588149	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921073.DAT
Sample name :180-116564-B-4 Analysed :02/01/2021 08:36

Eager 300 Report

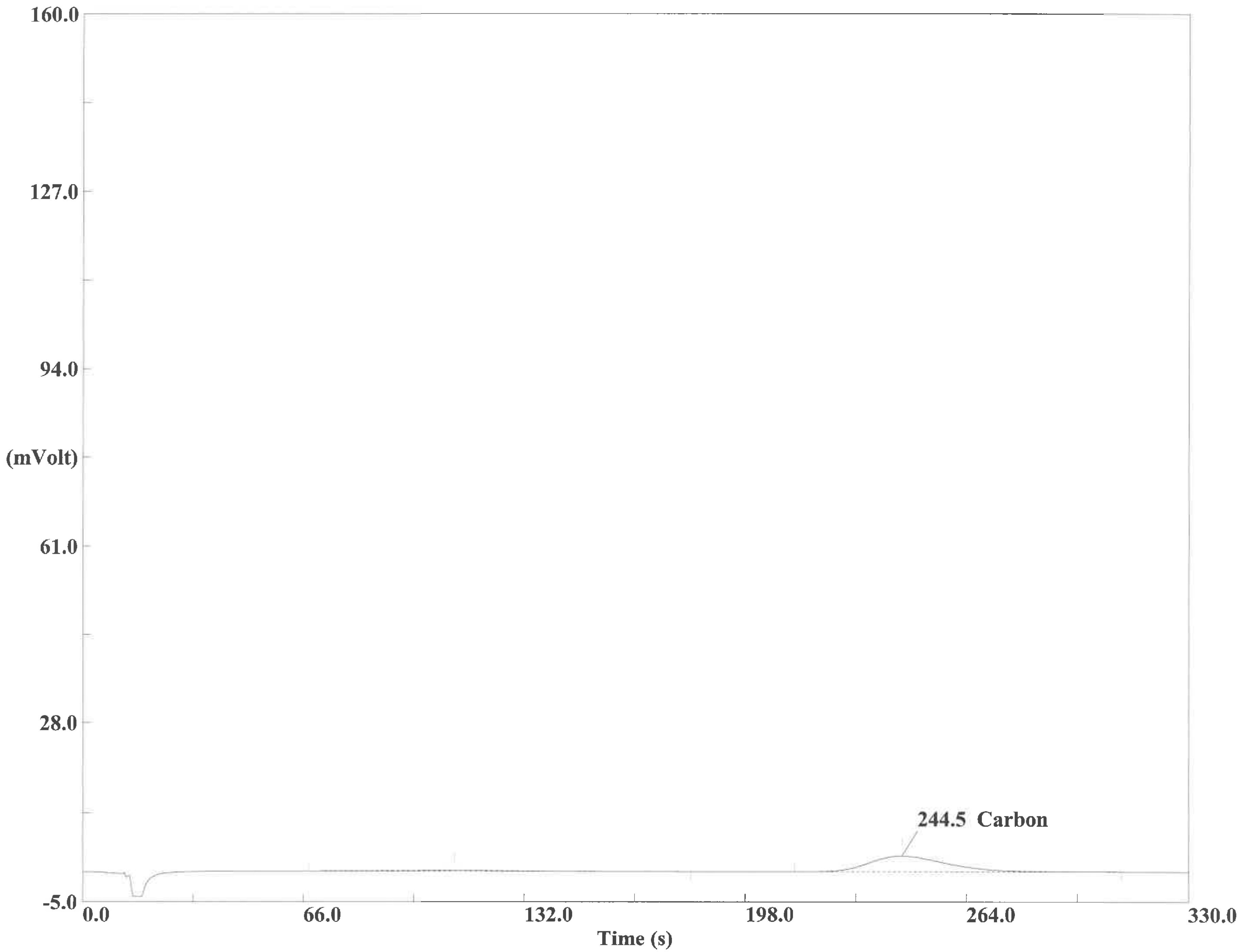
Page: 1 Sample: 180-116564-B-4 (A012921073)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921073
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 02/01/2021 08:36 Printed : 2/1/2021 11:02
Sample ID : 180-116564-B-4 (# 85)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 7.5

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.2412	247	462454	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921076.DAT
Sample name :180-116564-B-5   Analysed :02/01/2021 08:53

Eager 300 Report

Page: 1   Sample: 180-116564-B-5 (A012921076)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\012921A.mth
Chromatogram   : A012921076
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 02/01/2021 08:53   Printed   : 2/1/2021 11:03
Sample ID   : 180-116564-B-5 (# 88)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 7.8

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.9646	245	776500	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021

Filename C:\data\January\A012921077.DAT
Sample name :180-116564-B-5   Analysed :02/01/2021 08:59

Eager 300 Report

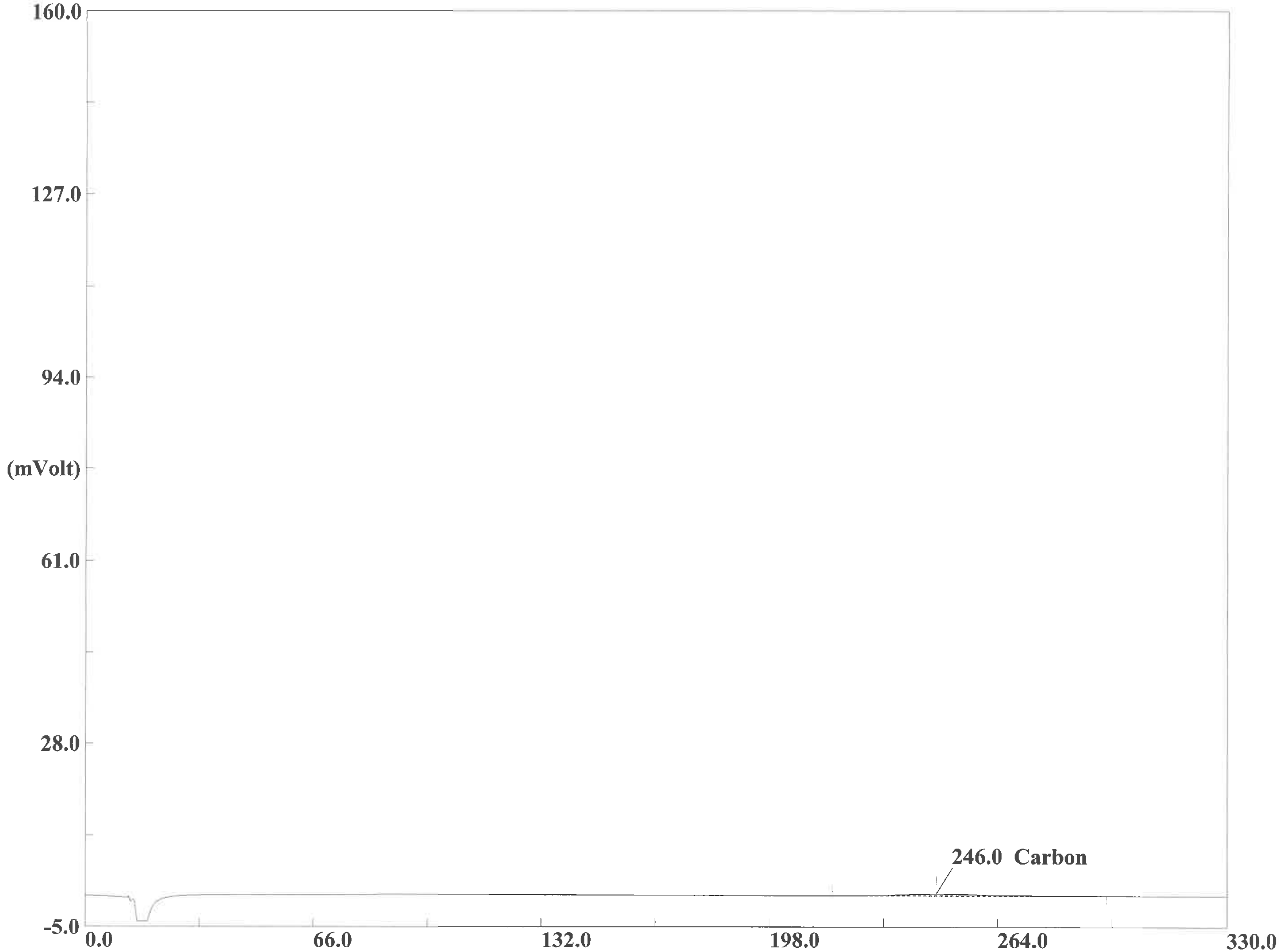
Page: 1   Sample: 180-116564-B-5 (A012921077)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\012921A.mth
Chromatogram   : A012921077
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 02/01/2021 08:59   Printed   : 2/1/2021 11:03
Sample ID   : 180-116564-B-5 (# 89)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 7.4

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.7226	245	641963	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921080.DAT
Sample name :180-116564-B-7 Analysed :02/01/2021 09:15

Eager 300 Report

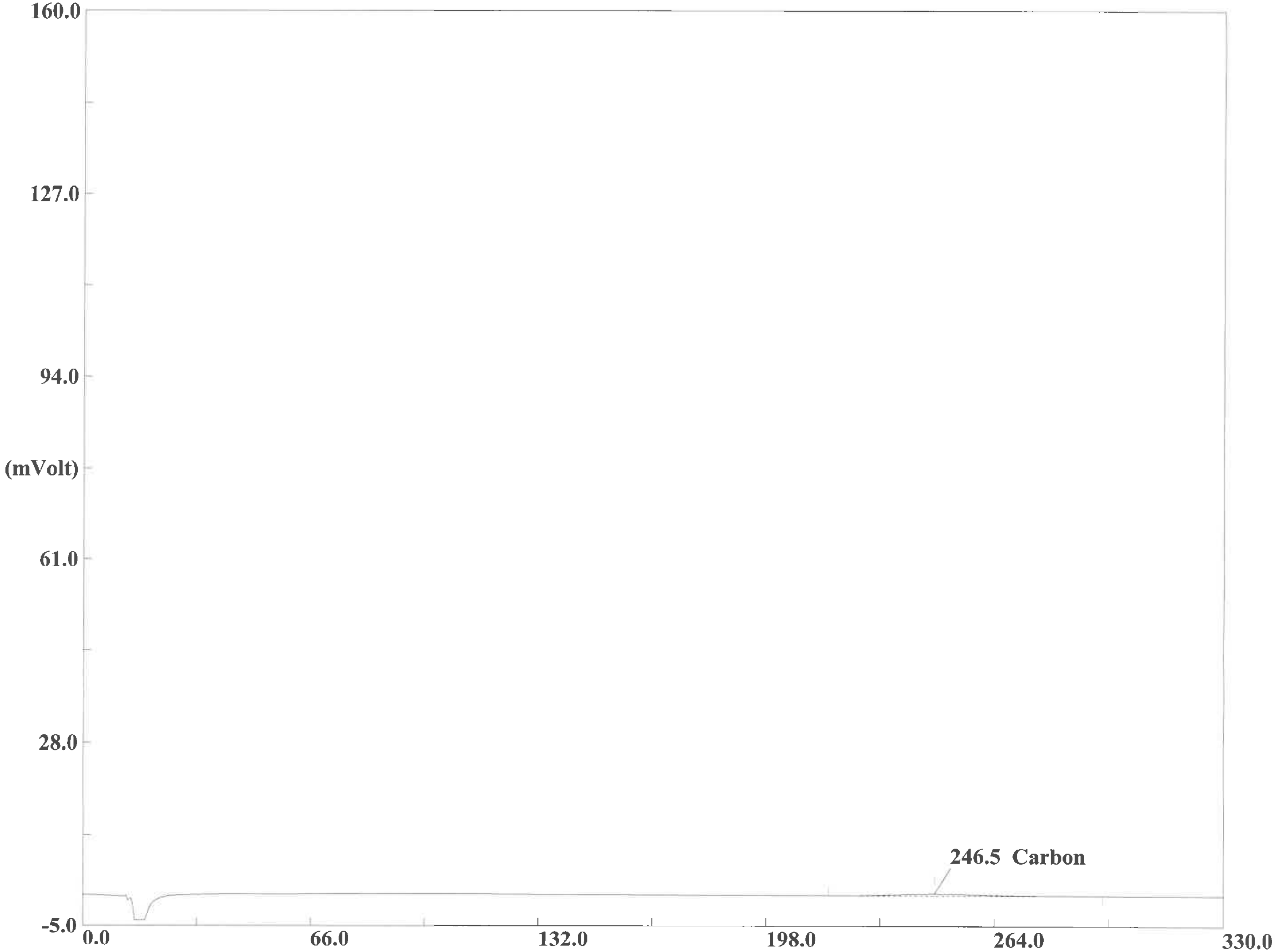
Page: 1   Sample: 180-116564-B-7 (A012921080)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\012921A.mth
Chromatogram : A012921080
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 02/01/2021 09:15   Printed   : 2/1/2021 11:04
Sample ID   : 180-116564-B-7 (# 92)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 14.1

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.1499	246	86747	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921081.DAT
Sample name :180-116564-B-7 Analysed :02/01/2021 09:21

Eager 300 Report

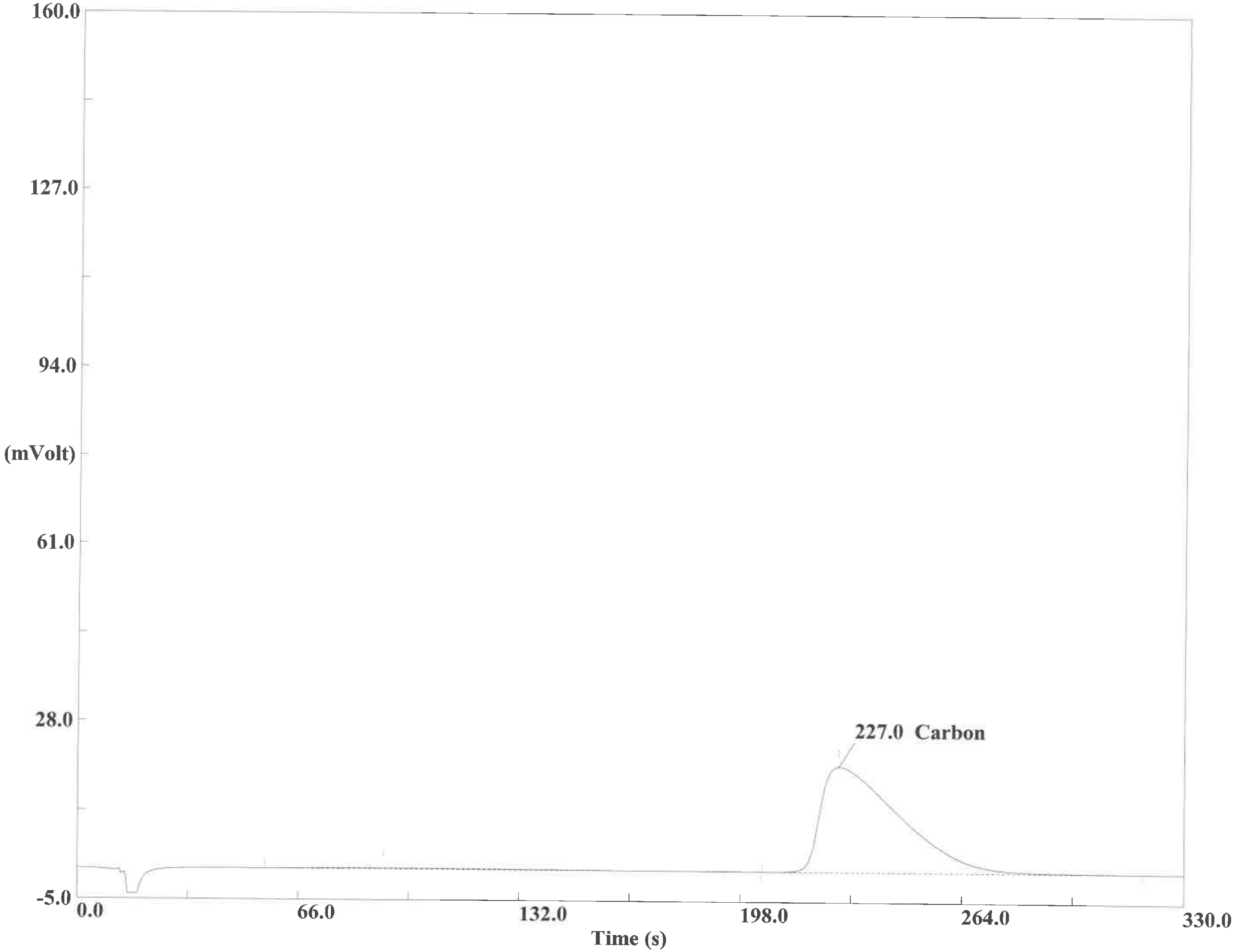
Page: 1 Sample: 180-116564-B-7 (A012921081)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921081
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 02/01/2021 09:21 Printed : 2/1/2021 11:04
Sample ID : 180-116564-B-7 (# 93)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 13.7

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.1678	247	96458	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021



Filename C:\data\January\A012921084.DAT

Sample name :CCV   Analysed :02/01/2021 09:38

Eager 300 Report

Page: 1   Sample: CCV (A012921084)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\012921A.mth
Chromatogram   : A012921084
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 02/01/2021 09:38   Printed   : 2/1/2021 11:05
Sample ID   : CCV (# 96)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 100

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.0204	227	5303861	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/01/2021

Filename C:\data\January\A012921085.DAT
Sample name :CCB   Analysed :02/01/2021 09:43

Eager 300 Report

Page: 1   Sample: CCB (A012921085)

Method Name : Lloyd Kahn
Method File : C:\data\January\012921A.mth
Chromatogram : A012921085
Operator ID : DON FERGUSON
Analysed : 02/01/2021 09:43
Sample ID : CCB (# 97)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)

Company Name : Eurofins TA Pitt
Printed : 2/1/2021 11:05

Sample weight : 20

Calib. method : using 'Least Squares to Linear fit'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor

Eager Xperience

Method name : Lloyd Kahn
Method filename : C:\data\January\020421A.mth

Sample table

Chromatogram overwrite : Enabled

Dan Ferguson 2/4/21 BATCH 345656

#	Sample name	Filename	Type	Weight	Hum.%
1	BYPASS	A092320006	ByP	-	0
2	BLANK	A092320007	Blk	-	0
3	BLANK	A092320008	Blk	-	0
4	1,000 KHP CT#3785365	A092320009	Std	200	0
5	2,500 KHP CT#3785364	A092320010	Std	50	0
6	5,000 KHP CT#3785364	A092320011	Std	100	0
7	10,000 KHP CT#3785364	A092320012	Std	200	0
8	25,000 KHP CT#3785363	A092320013	Std	50	0
9	50,000 KHP CT#3785363	A092320014	Std	100	0
10	100,000 KHP CT#3785363	A092320015	Std	200	0
11	ICV 37,810 KHP CT#3742673	A092320016	Unk	11.6	0
12	Rinse	A020421001	Unk	1	0
13	CCV	A020421002	Unk	100	0
14	CCB	A020421003	Unk	20	0
15	MB	A020421004	Unk	20	0
16	MB	A020421005	Unk	20.4	0
17	LCS	A020421006	Unk	10.2	0
18	LCS	A020421007	Unk	10.7	0
19	180-116528-B-8	A020421008	Unk	15.1	0
20	180-116528-B-8	A020421009	Unk	15.8	0
21	Rinse	A020421010	Unk	1	0
22	Rinse	A020421011	Unk	1	0
23	180-116528-B-10	A020421012	Unk	14.3	0
24	180-116528-B-10	A020421013	Unk	15.1	0
25	Rinse	A020421014	Unk	1	0
26	Rinse	A020421015	Unk	1	0
27	180-116528-B-10MS	A020421016	Unk	12.5	0
28	180-116528-B-10MS	A020421017	Unk	13.6	0
29	Rinse	A020421018	Unk	1	0
30	Rinse	A020421019	Unk	1	0
31	180-116528-B-10MSD	A020421020	Unk	13.1	0
32	180-116528-B-10MSD	A020421021	Unk	13	0
33	Rinse	A020421022	Unk	1	0
34	Rinse	A020421023	Unk	1	0
35	CCV	A020421024	Unk	100	0
36	CCB	A020421025	Unk	20	0
37	180-116528-B-9	A020421026	Unk	15.8	0

#	Sample name	Filename	Type	Weight	Hum.%
38	180-116528-B-9	A020421027	Unk	15.9	0
39	Rinse	A020421028	Unk	1	0
40	Rinse	A020421029	Unk	1	0
41	Rinse	A020421030	Unk	1	0
42	180-116628-A-1	A020421031	Unk	3.7	0
43	180-116628-A-1	A020421032	Unk	4.9	0
44	Rinse	A020421033	Unk	1	0
45	Rinse	A020421034	Unk	1	0
46	Rinse	A020421035	Unk	1	0
47	Rinse	A020421036	Unk	1	0
48	Rinse	A020421037	Unk	1	0
49	CCV	A020421038	Unk	100	0
50	CCB	A020421039	Unk	20	0

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Pittsburgh Lab Lloyd Kahn SRM Prep Log BATCH 345656

Analyst: DON FERGUSON **Date:** 2/4/21

Job No.	Sample ID	Weight (mg)	Average Weights
	MB	20.0	
	MB	20.4	20.2
	LCS	10.2	
	LCS	10.7	10.45
180-116528-10	116528-10	14.3	
	-10	15.1	14.7
	116528-10MS	12.5+7.6	
	-10MS	13.6+8.6	13.05 + 8.1
	116528-10MSD	13.1+8.5	
	-10MSD	13.0+7.2	13.05 + 7.85

N:\SOPs\Forms\Lloyd Kahn Sample Prep form_Rev.1.doc
Rev. 1, 06/13/11

2/4/21
BATCH 345656

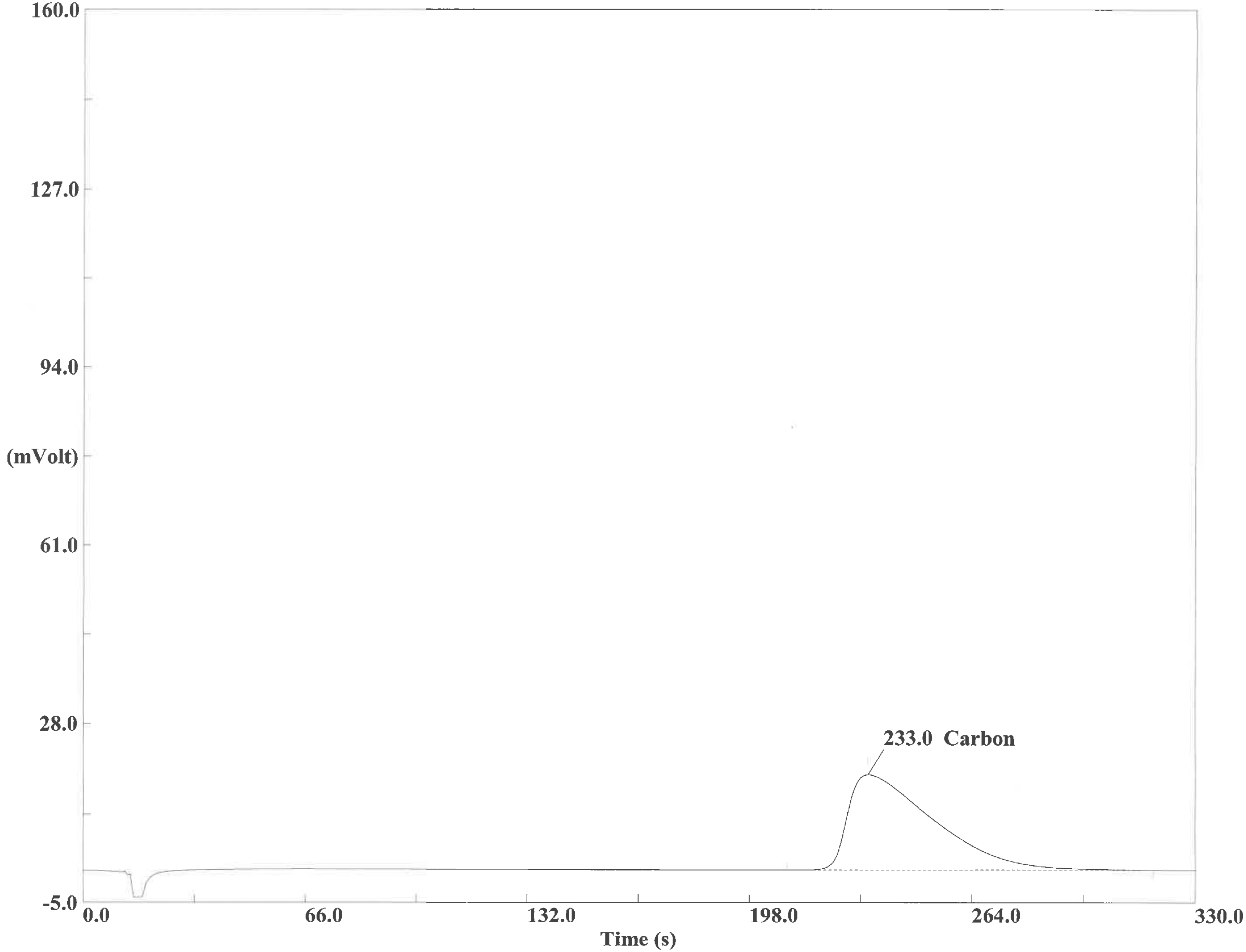
Lloyd Kahn %RPD Replicate Calculation Spreadsheet

Units: mg/kg

Batch#	Sample#	Results	Average	RPD
	MB	0		
	MB	0	0.000	#DIV/0!
	LCS	3.74508476		
	LCS	3.91504788	3.830	4.44
	180-116528-B-8	2.08398223		
	180-116528-B-8	3.38337016	2.734	47.53
	180-116528-B-10	0.95576137		
	180-116528-B-10	0.81742877	0.887	15.60
	180-116528-B-10MS	3.14542246		
	180-116528-B-10MS	2.85932827	3.002	9.53
	180-116528-B-10MSD	2.9746232		
	180-116528-B-10MSD	3.14633751	3.060	5.61
	180-116528-B-9	1.94470417		
	180-116528-B-9	2.46469498	2.205	23.59
	180-116628-A-1	49.5680008		
	180-116628-A-1	27.1335735	38.351	58.50
			#DIV/0!	#DIV/0!
			#DIV/0!	#DIV/0!
			#DIV/0!	#DIV/0!
			#DIV/0!	#DIV/0!
			#DIV/0!	#DIV/0!
			#DIV/0!	#DIV/0!
			#DIV/0!	#DIV/0!
			#DIV/0!	#DIV/0!
			#DIV/0!	#DIV/0!
			#DIV/0!	#DIV/0!
			#DIV/0!	#DIV/0!
			#DIV/0!	#DIV/0!
			#DIV/0!	#DIV/0!
			#DIV/0!	#DIV/0!
			#DIV/0!	#DIV/0!
			#DIV/0!	#DIV/0!
			#DIV/0!	#DIV/0!

NCM

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421002.DAT
Sample name :CCV Analysed :02/04/2021 11:25

Eager 300 Report

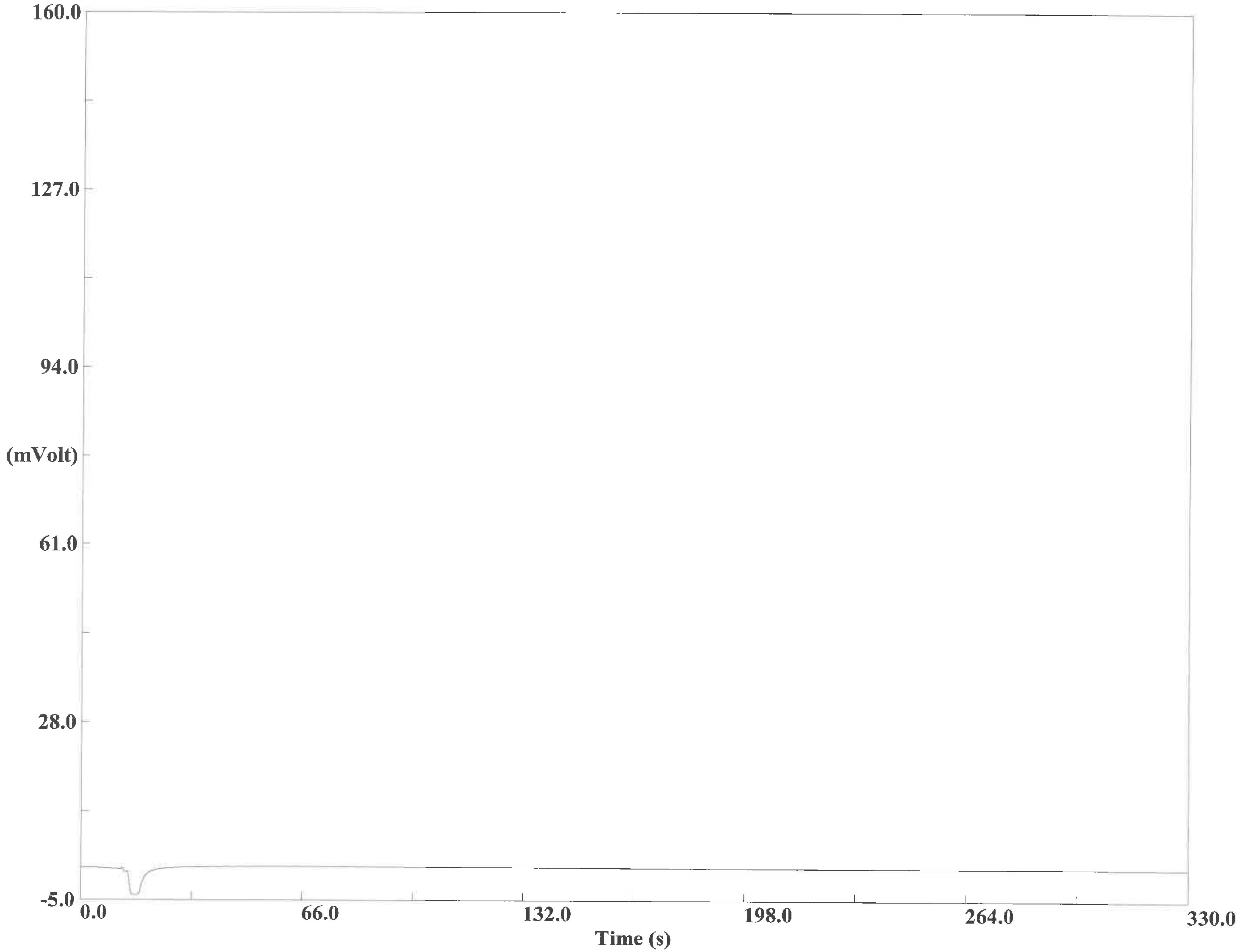
Page: 1 Sample: CCV (A020421002)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421002
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 11:25 Printed : 2/5/2021 06:58
Sample ID : CCV (# 13)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 100

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.0059	233	5228378	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421003.DAT
Sample name :CCB   Analysed :02/04/2021 11:31

Eager 300 Report

Page: 1   Sample: CCB (A020421003)

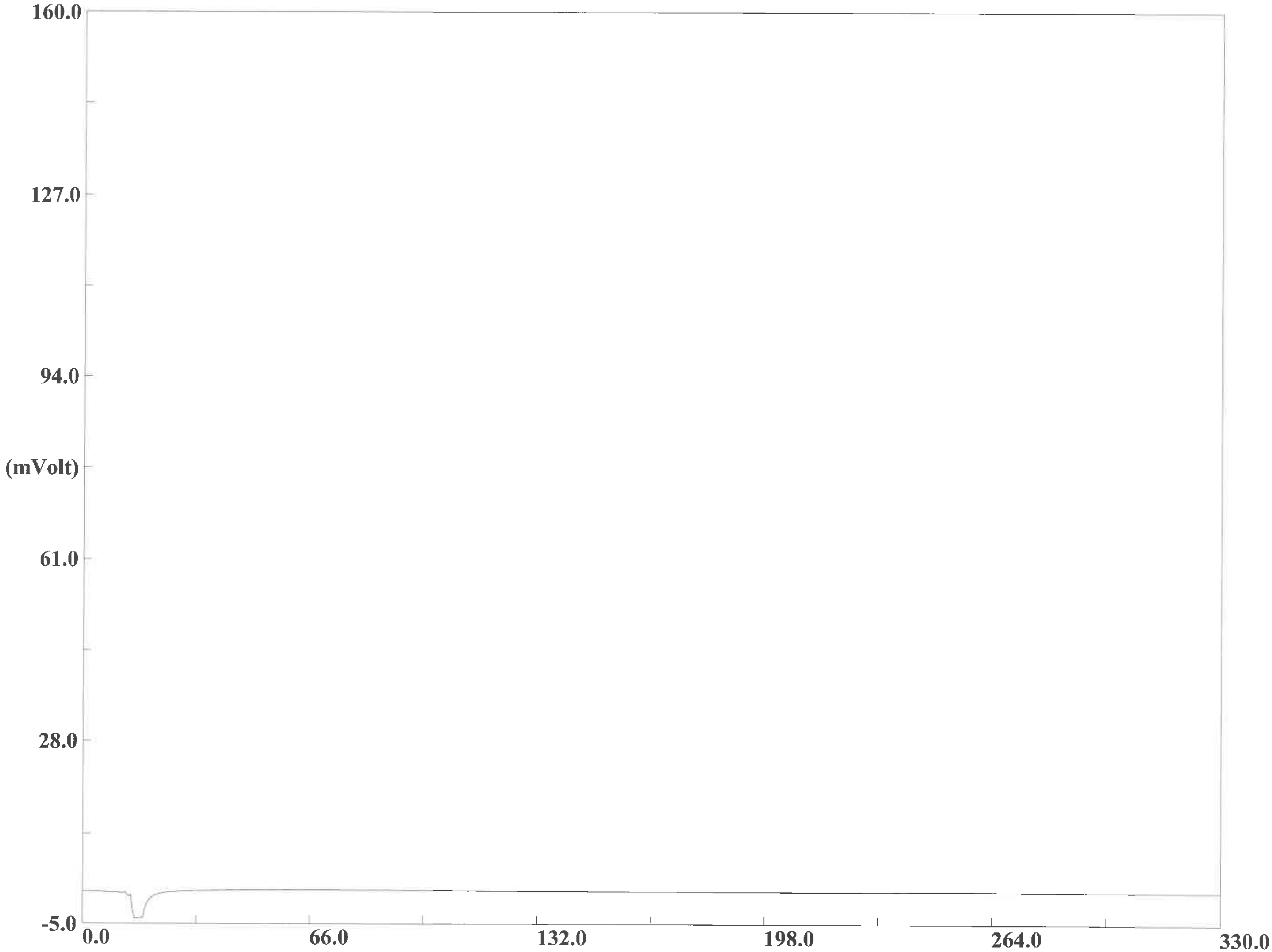
Method Name   : Lloyd Kahn
Method File   : C:\data\January\020421A.mth
Chromatogram   : A020421003
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 02/04/2021 11:31   Printed   : 2/5/2021 06:59
Sample ID   : CCB (# 14)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 20

Calib. method : using 'Least Squares to Linear fit'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421004.DAT
Sample name :MB   Analysed :02/04/2021 11:37

Eager 300 Report

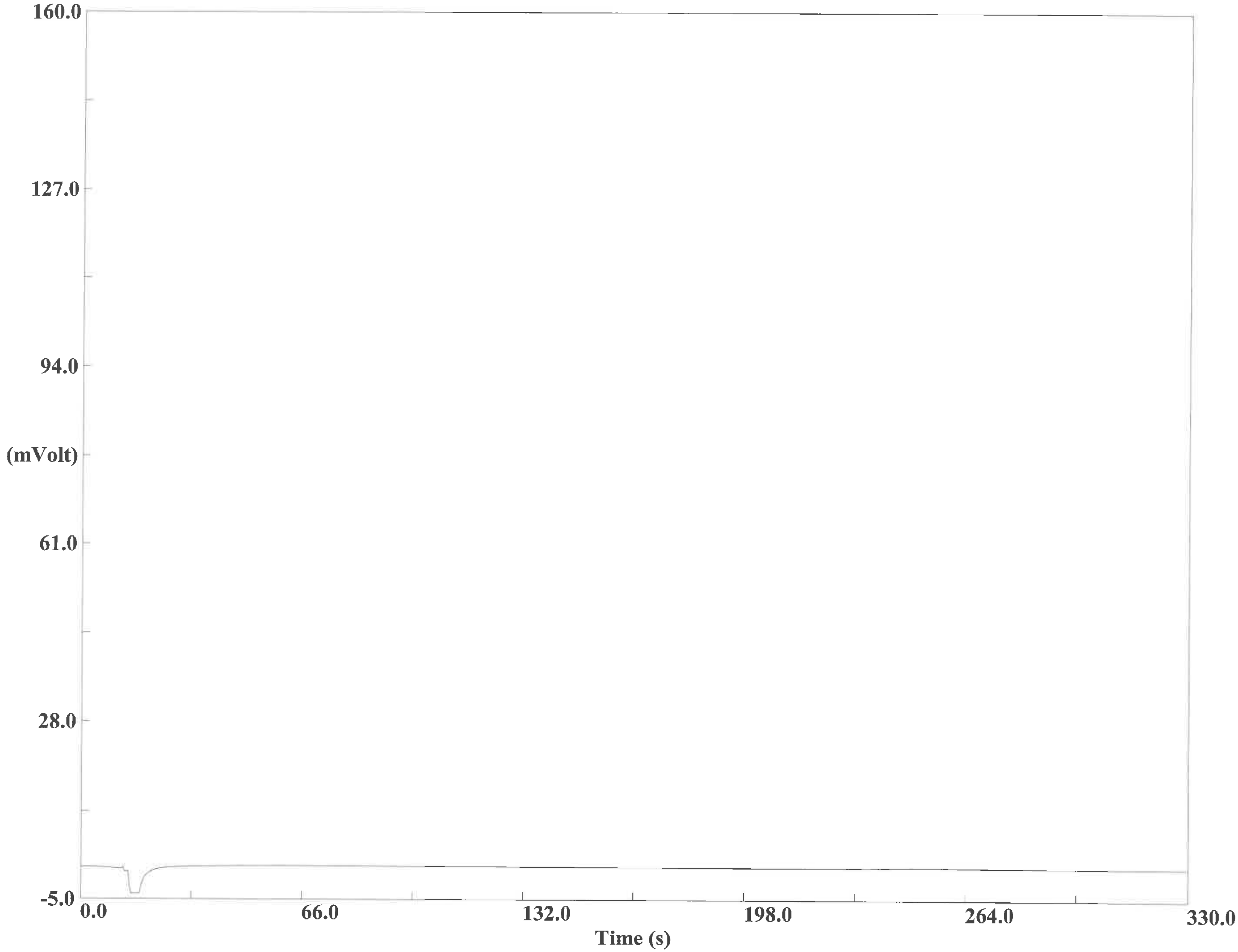
Page: 1 Sample: MB (A020421004)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421004
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 11:37 Printed : 2/5/2021 06:59
Sample ID : MB (# 15)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 20

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421005.DAT
Sample name :MB Analysed :02/04/2021 11:43

Eager 300 Report

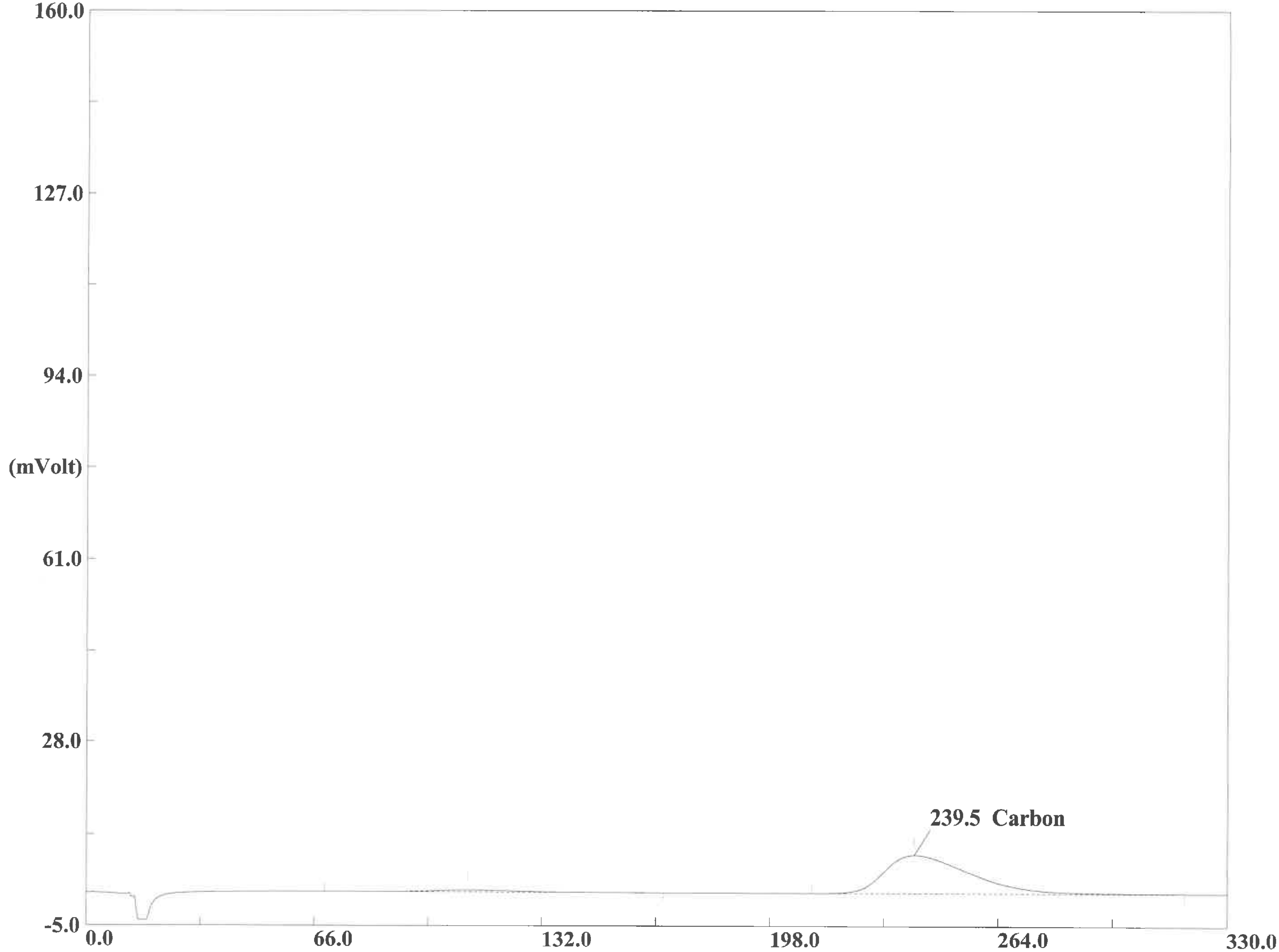
Page: 1 Sample: MB (A020421005)

Method Name	: Lloyd Kahn		
Method File	: C:\data\January\020421A.mth		
Chromatogram	: A020421005		
Operator ID	: DON FERGUSON	Company Name	: Eurofins TA Pitt
Analysed	: 02/04/2021 11:43	Printed	: 2/5/2021 06:59
Sample ID	: MB (# 16)		
Instrument N.	: Instrument #1		
Analysis Type	: UnkNown (Area)	Sample weight	: 20.4

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421006.DAT
Sample name :LCS   Analysed :02/04/2021 11:48

Eager 300 Report

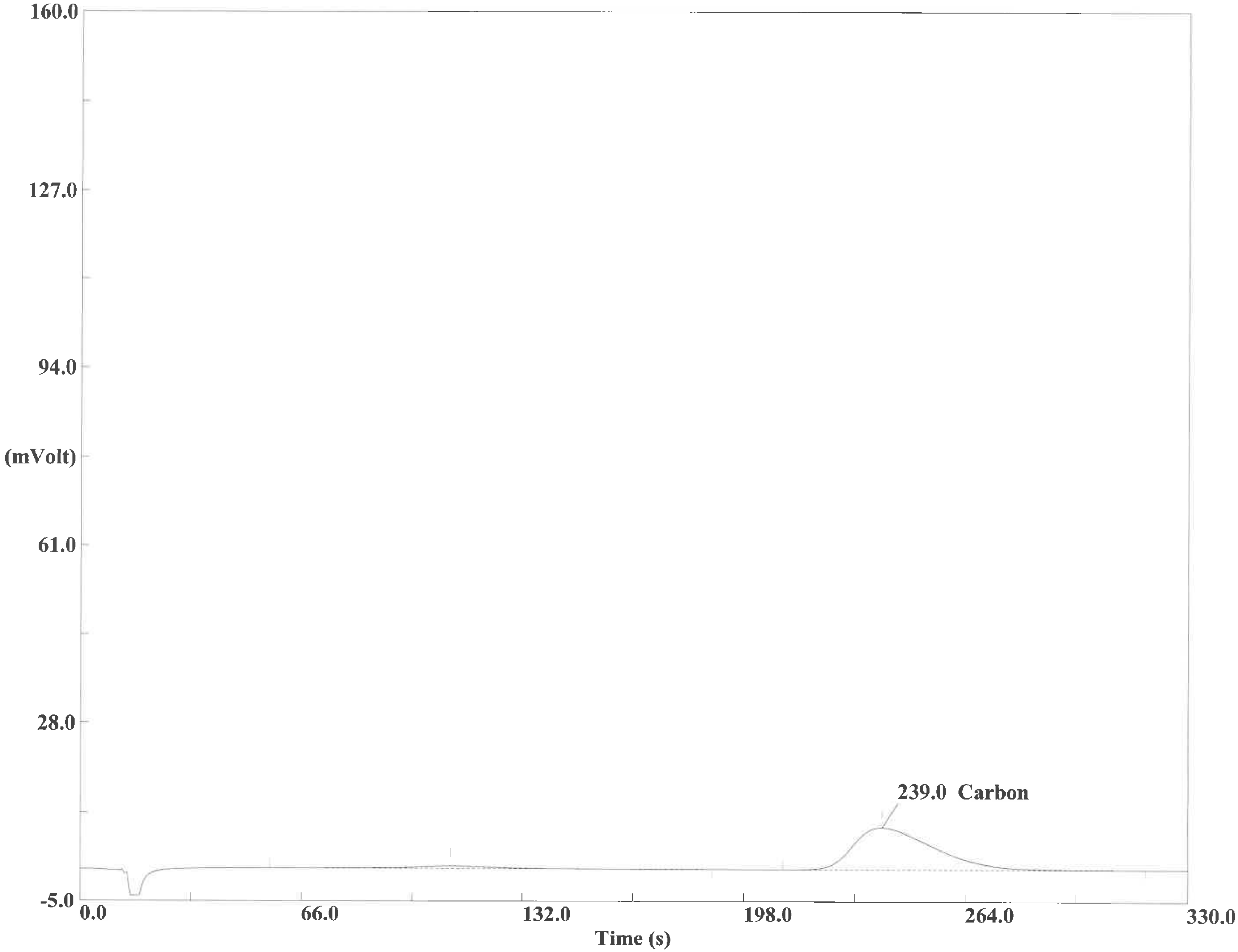
Page: 1 Sample: LCS (A020421006)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421006
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 11:48 Printed : 2/5/2021 06:59
Sample ID : LCS (# 17)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 10.2

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	3.7451	240	1970879	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421007.DAT
Sample name :LCS   Analysed :02/04/2021 11:54

Eager 300 Report

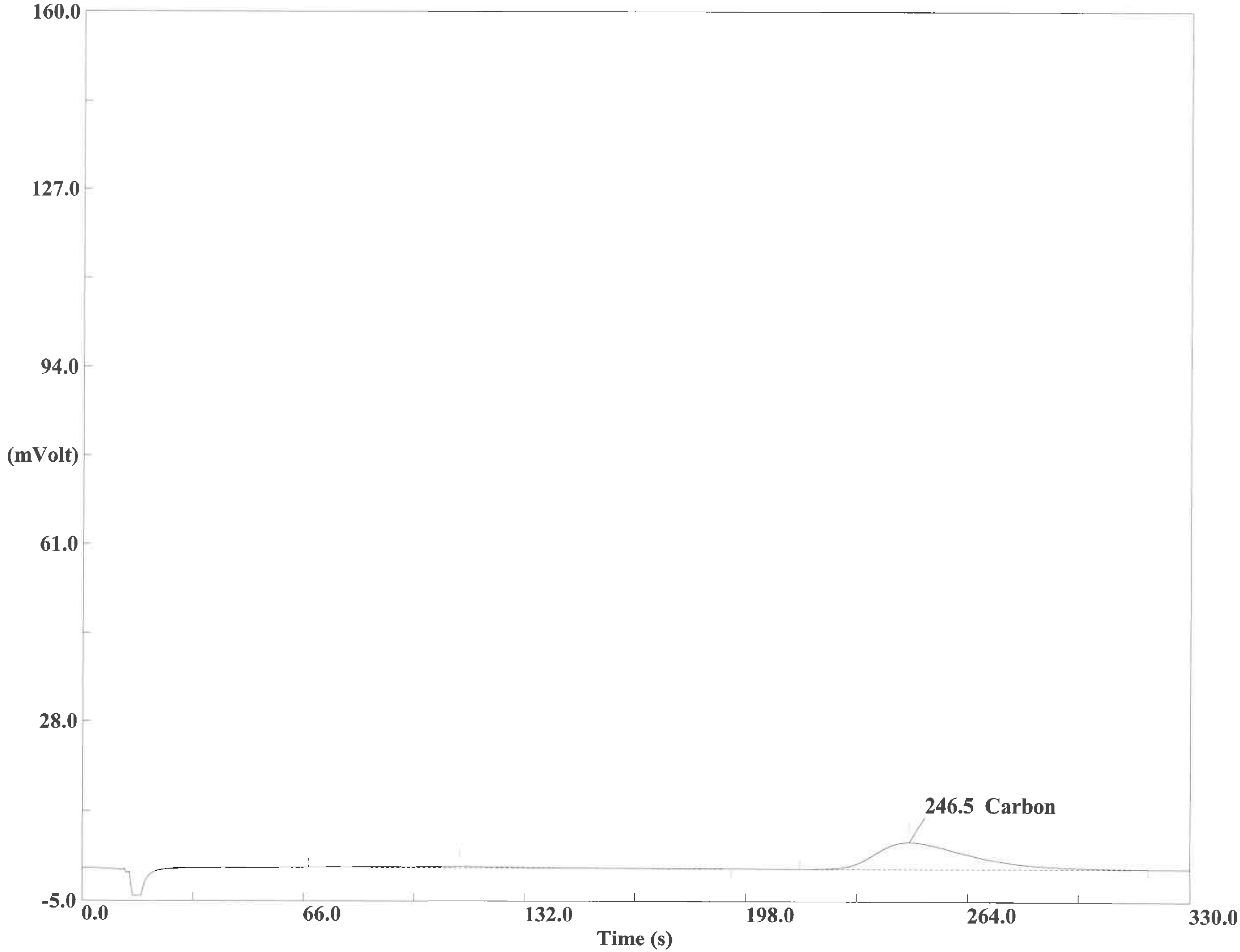
Page: 1   Sample: LCS (A020421007)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421007
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 11:54   Printed : 2/5/2021 07:00
Sample ID : LCS (# 18)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 10.7

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	3.9150	239	2163597	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421008.DAT
Sample name :180-116528-B-8 Analysed :02/04/2021 11:59

Eager 300 Report

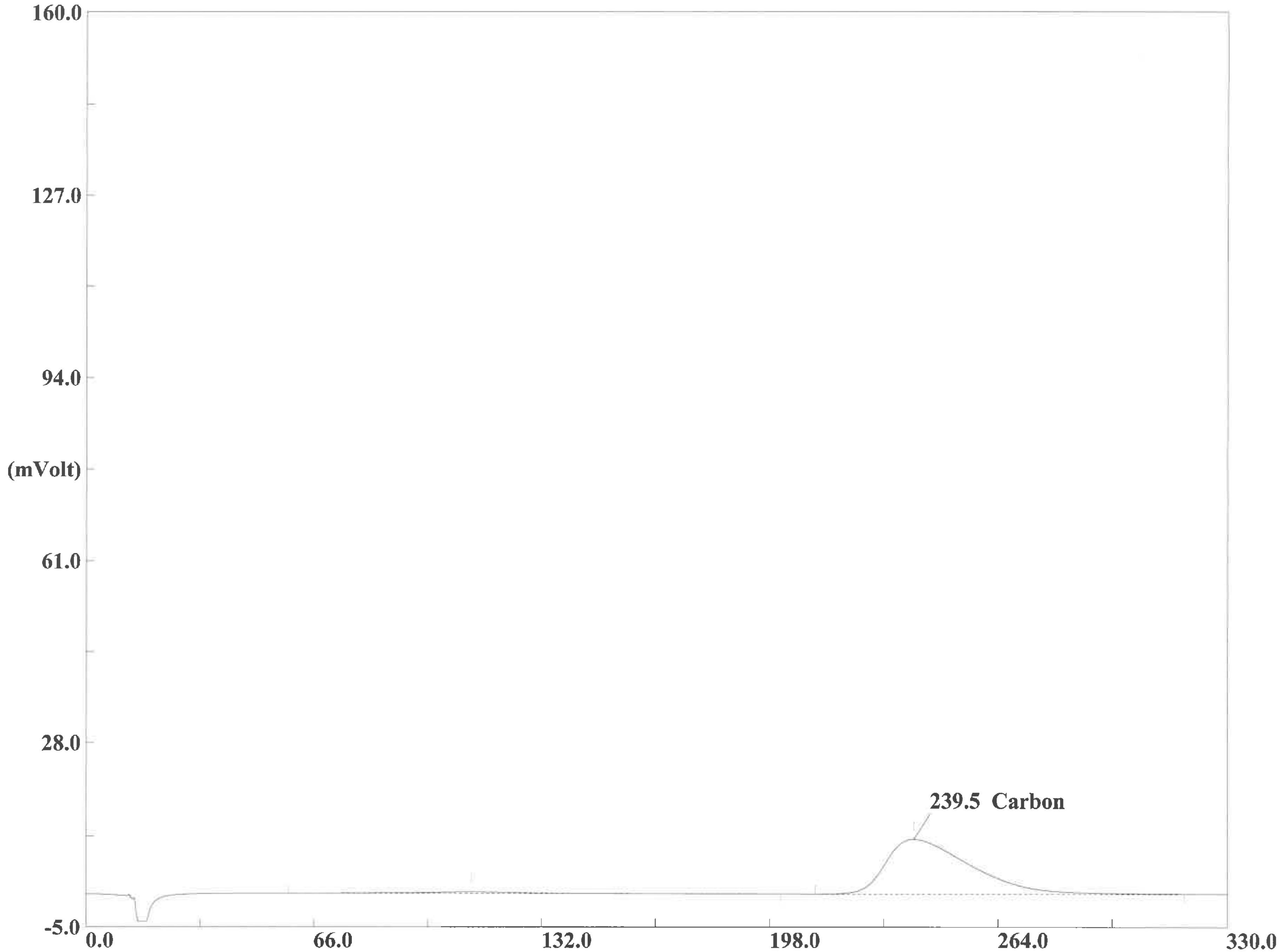
Page: 1 Sample: 180-116528-B-8 (A020421008)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421008
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 11:59 Printed : 2/5/2021 07:00
Sample ID : 180-116528-B-8 (# 19)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 15.1

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	2.0840	247	1619408	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421009.DAT
Sample name :180-116528-B-8 Analysed :02/04/2021 12:05

Eager 300 Report

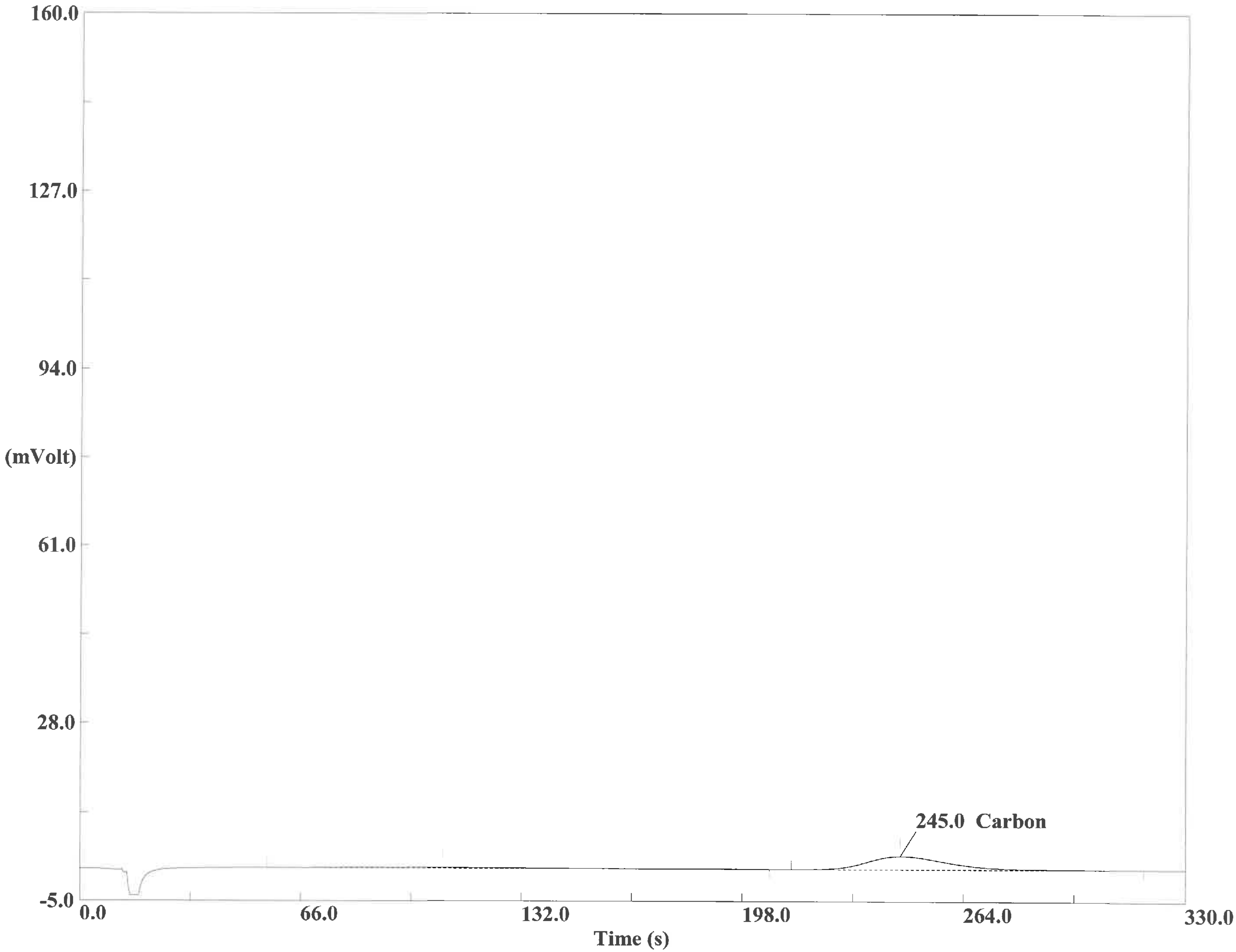
Page: 1 Sample: 180-116528-B-8 (A020421009)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421009
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 12:05 Printed : 2/5/2021 07:00
Sample ID : 180-116528-B-8 (# 20)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 15.8

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	3.3834	240	2767482	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421012.DAT
Sample name :180-116528-B-10   Analysed :02/04/2021 12:22

Eager 300 Report

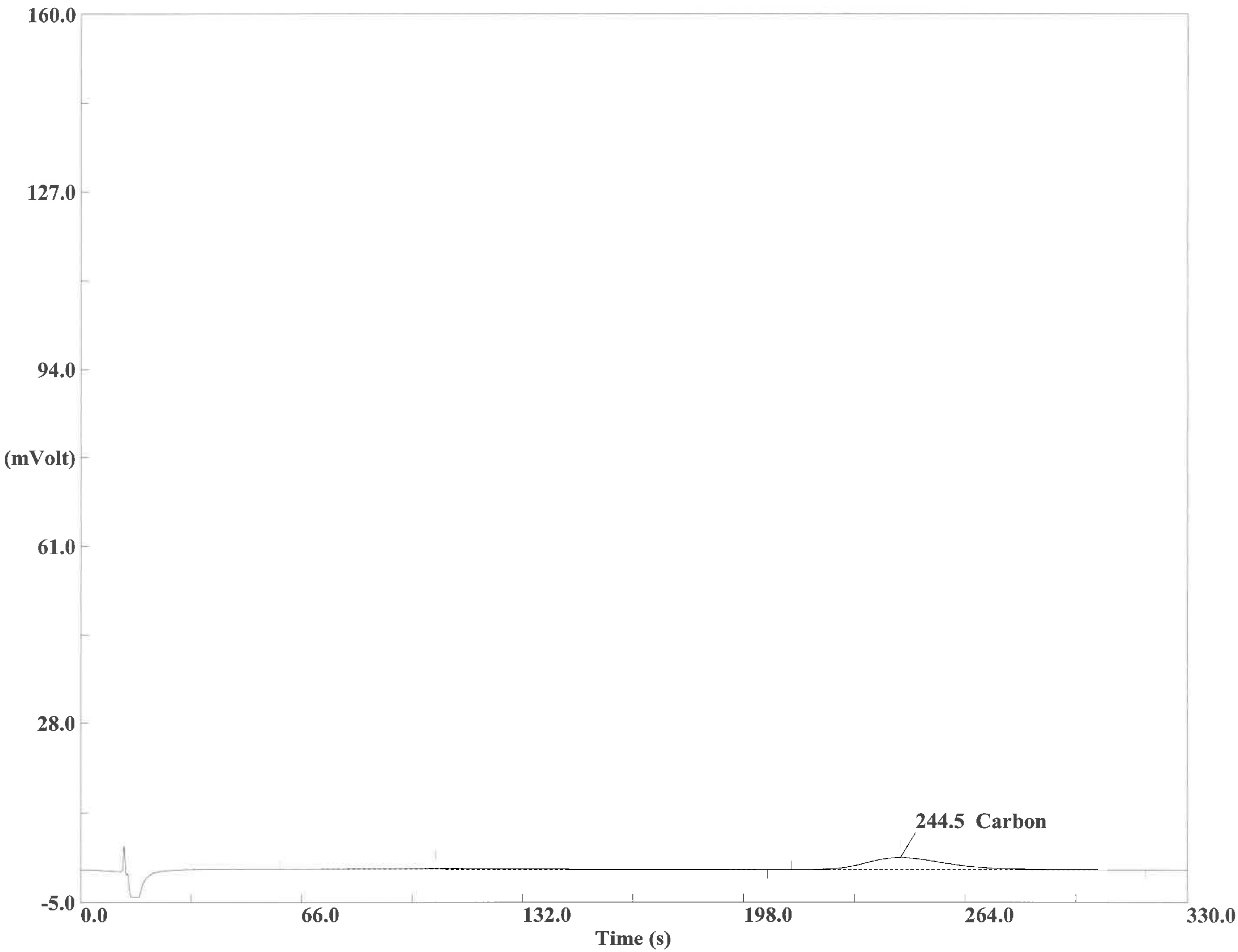
Page: 1   Sample: 180-116528-B-10 (A020421012)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421012
Operator ID : DON FERGUSON
Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 12:22
Printed : 2/5/2021 07:01
Sample ID : 180-116528-B-10 (# 23)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)
Sample weight : 14.3

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.9558	245	690013	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421013.DAT
Sample name :180-116528-B-10 Analysed :02/04/2021 12:27

Eager 300 Report

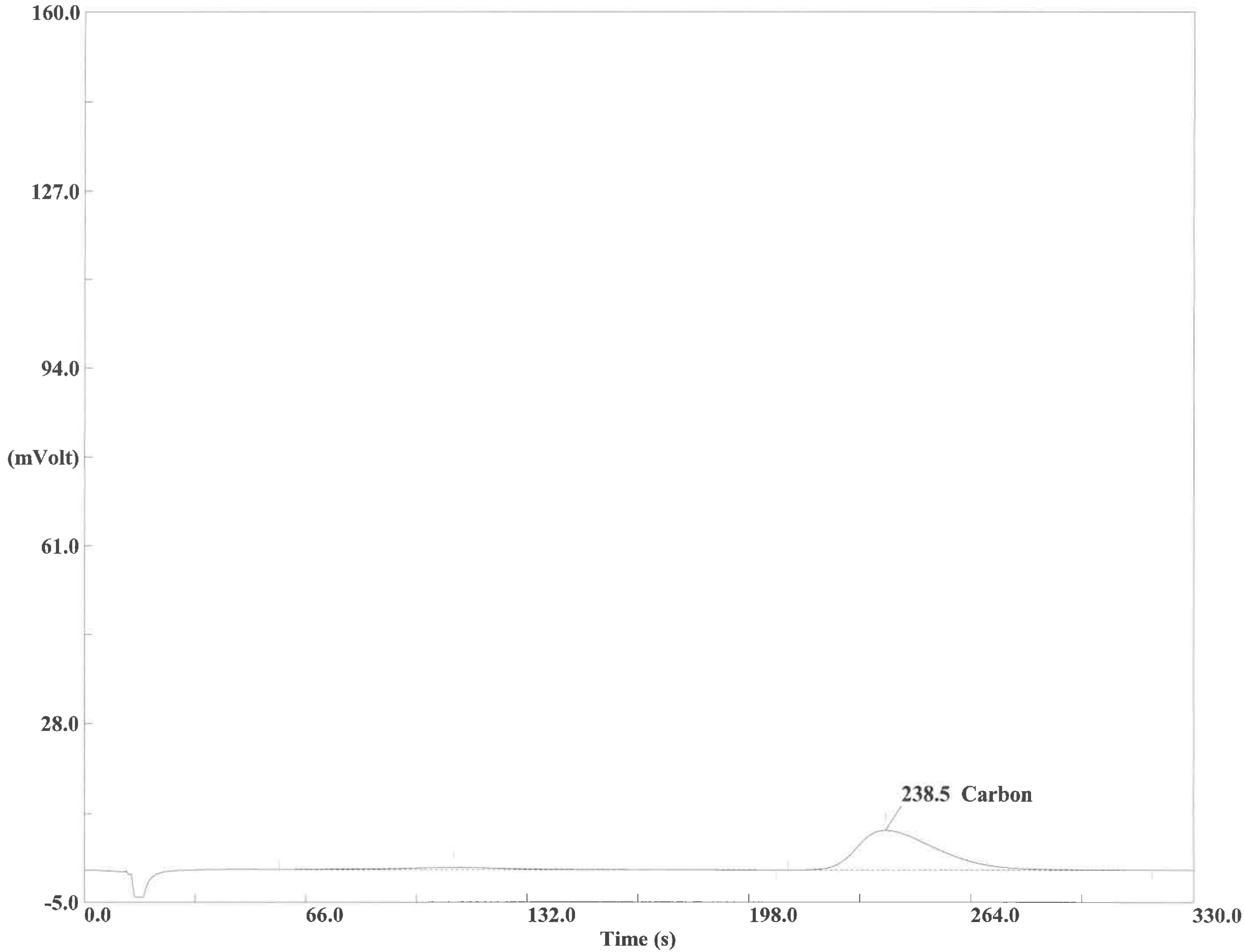
Page: 1   Sample: 180-116528-B-10 (A020421013)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421013
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 12:27   Printed : 2/5/2021 07:01
Sample ID : 180-116528-B-10 (# 24)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 15.1

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.8174	245	620875	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421016.DAT
Sample name :180-116528-B-10MS   Analysed :02/04/2021 12:44

Eager 300 Report

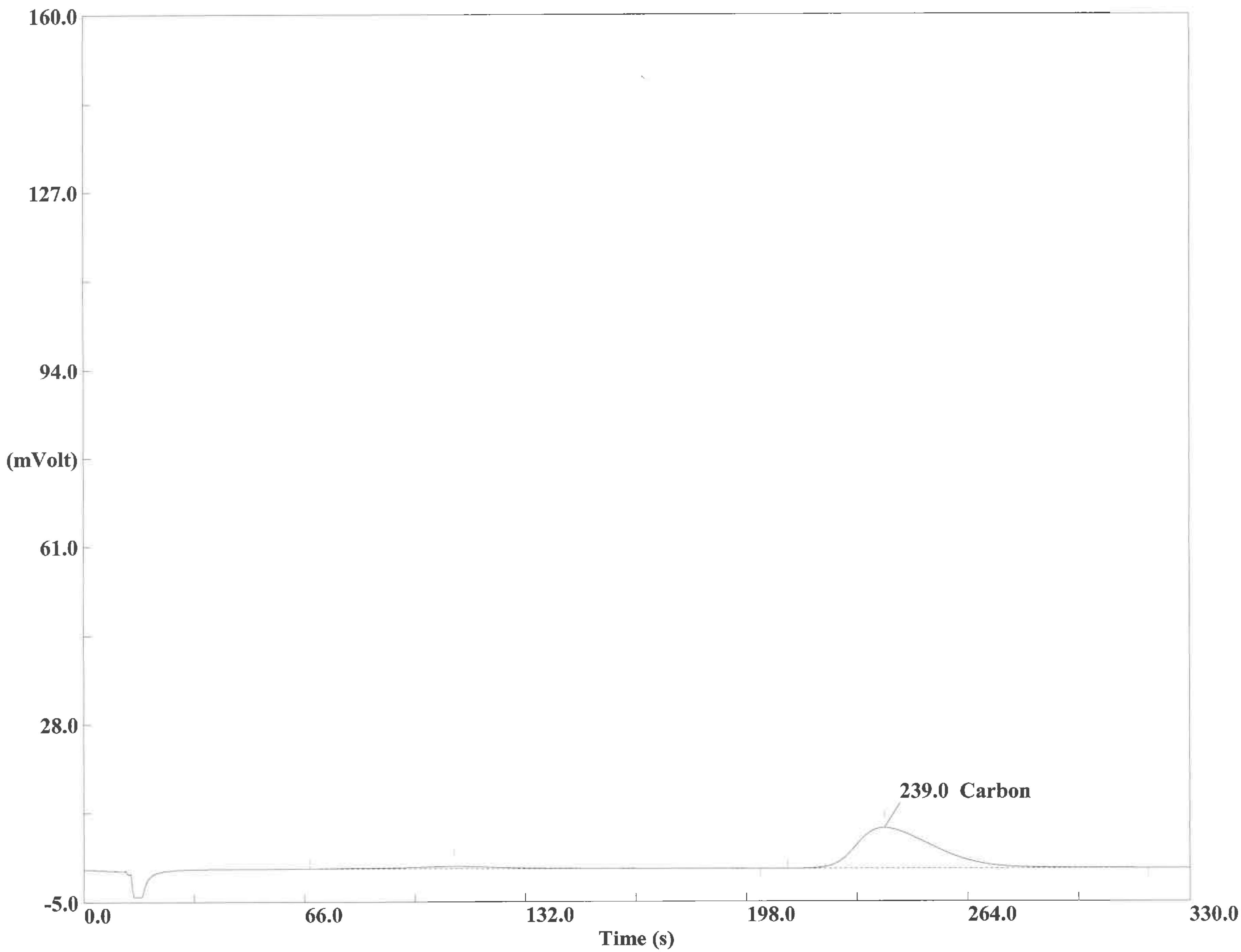
Page: 1 Sample: 180-116528-B-10MS (A020421016)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421016
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 12:44 Printed : 2/5/2021 07:02
Sample ID : 180-116528-B-10MS (# 27)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 12.5

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	3.1454	239	2029246	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421017.DAT
Sample name :180-116528-B-10MS Analysed :02/04/2021 12:50

Eager 300 Report

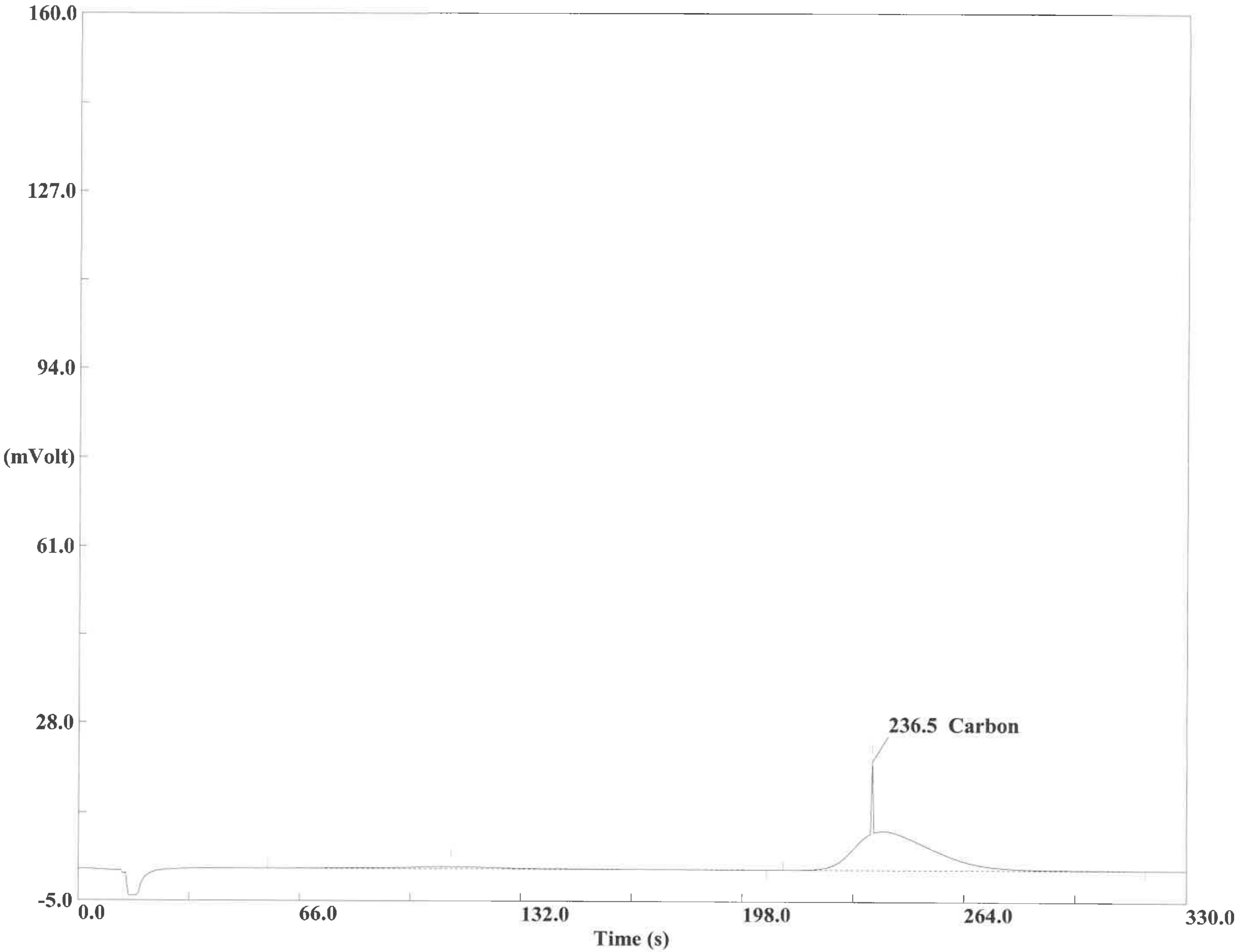
Page: 1 Sample: 180-116528-B-10MS (A020421017)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421017
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 12:50 Printed : 2/5/2021 07:03
Sample ID : 180-116528-B-10MS (# 28)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 13.6

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	2.8593	239	2006748	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421020.DAT

Sample name :180-116528-B-10MSD Analysed :02/04/2021 13:07

Eager 300 Report

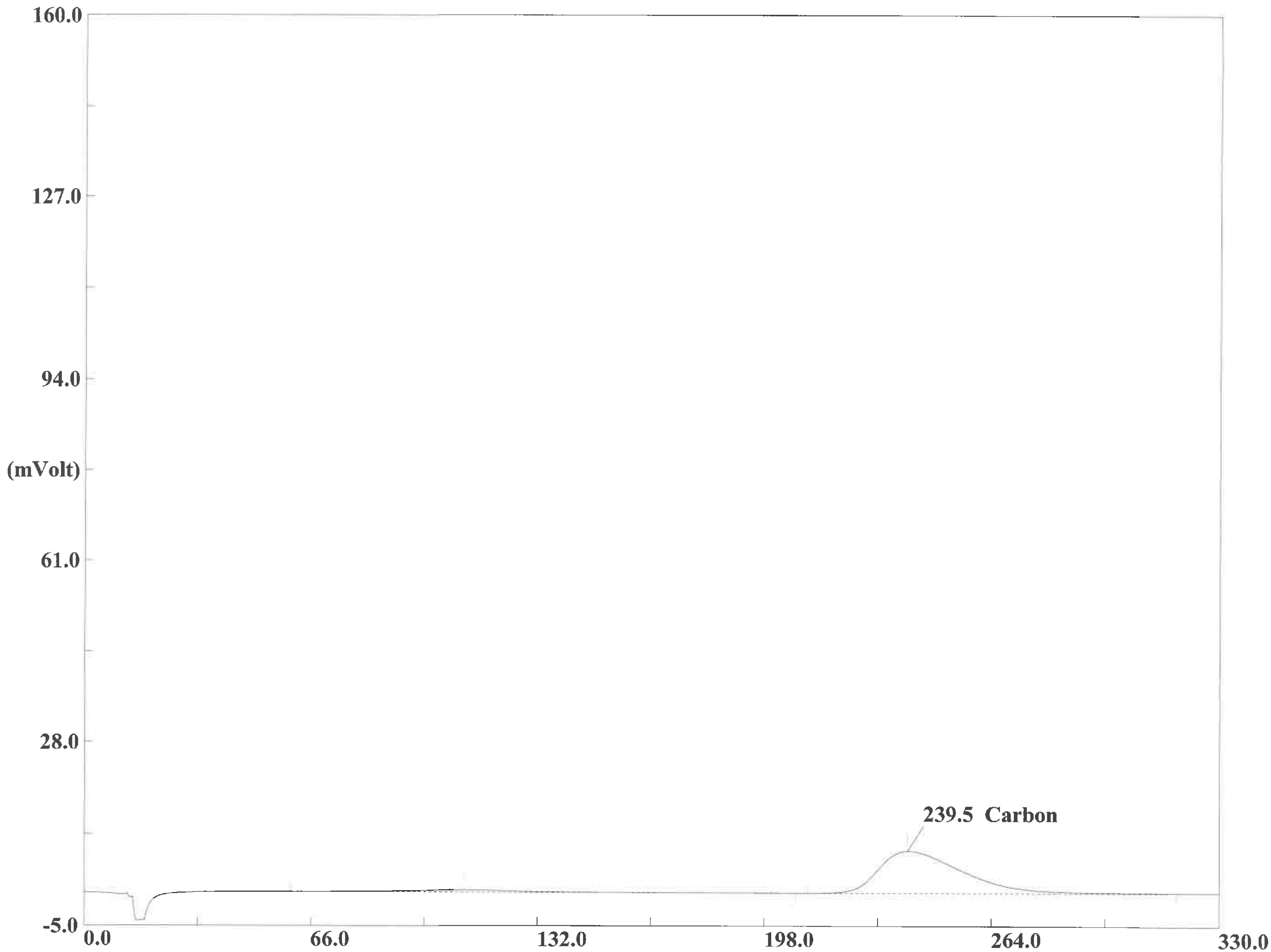
Page: 1   Sample: 180-116528-B-10MSD (A020421020)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\020421A.mth
Chromatogram   : A020421020
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 02/04/2021 13:07   Printed   : 2/5/2021 07:03
Sample ID   : 180-116528-B-10MSD (# 31)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 13.1

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	2.9746	237	2010961	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421021.DAT
Sample name :180-116528-B-10MSD Analysed :02/04/2021 13:12

Eager 300 Report

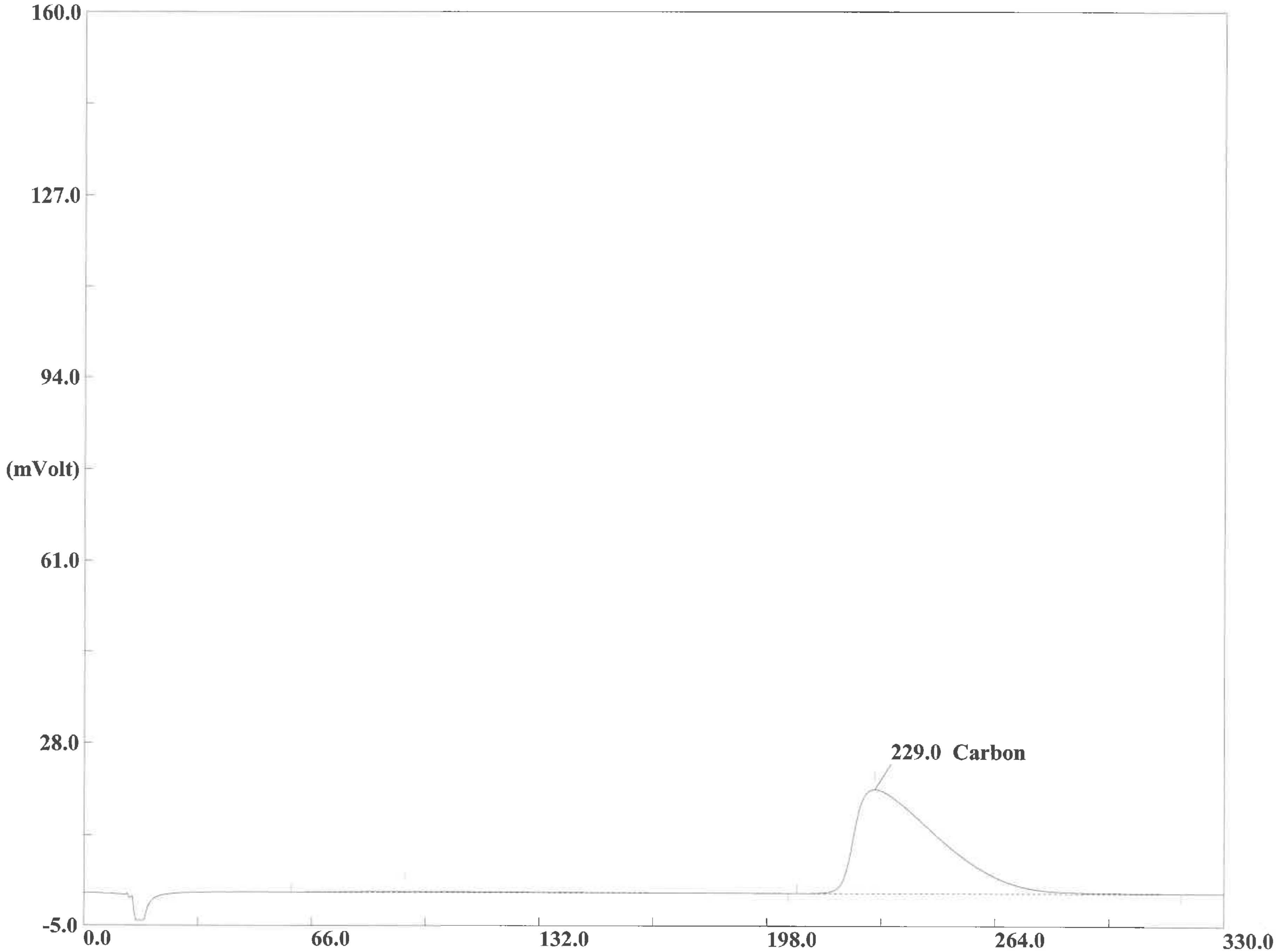
Page: 1 Sample: 180-116528-B-10MSD (A020421021)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421021
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 13:12 Printed : 2/5/2021 07:04
Sample ID : 180-116528-B-10MSD (# 32)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 13

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	3.1463	240	2111980	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421024.DAT
Sample name :CCV Analysed :02/04/2021 13:29

Eager 300 Report

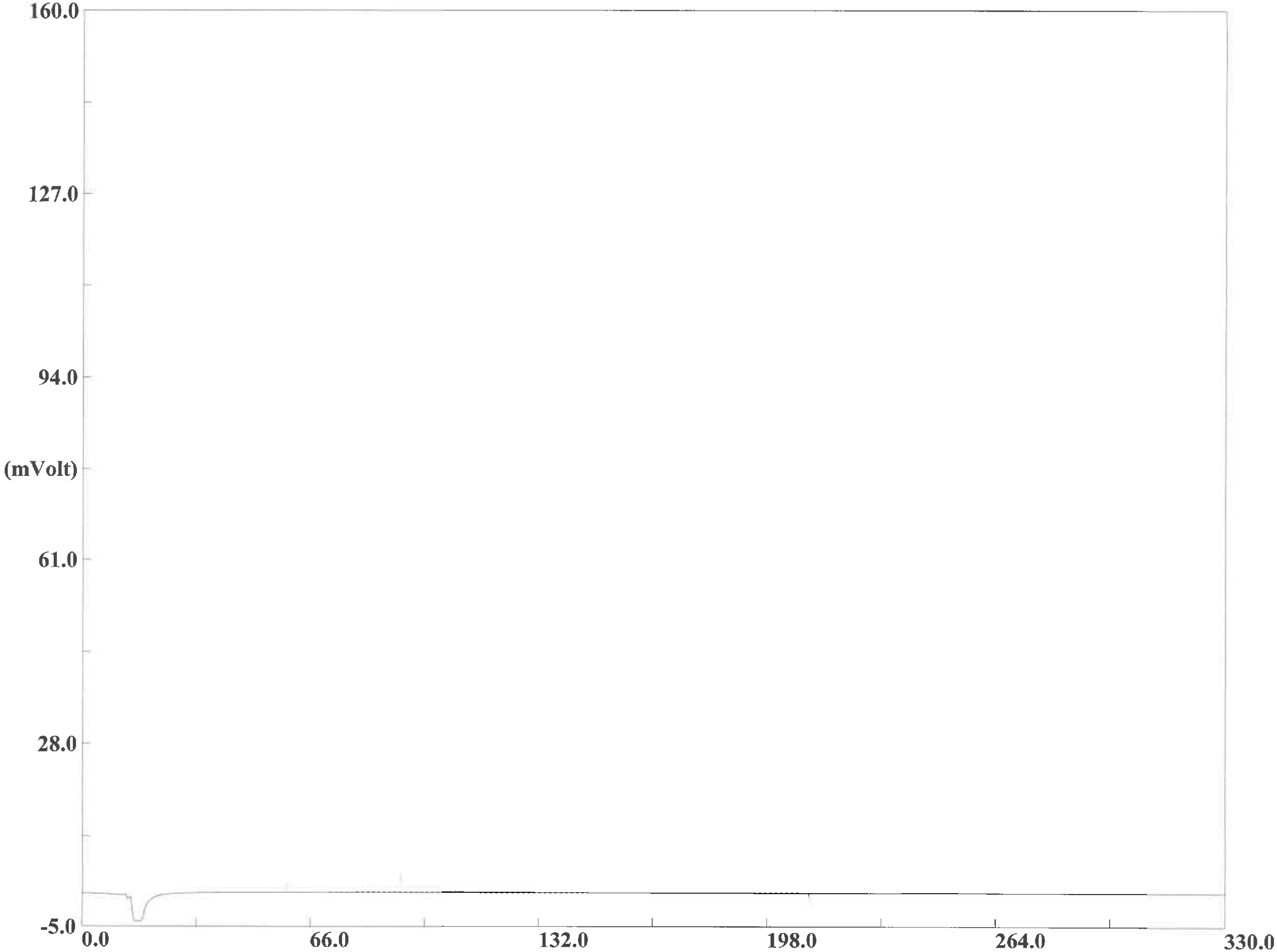
Page: 1   Sample: CCV (A020421024)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421024
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 13:29   Printed : 2/5/2021 07:04
Sample ID : CCV (# 35)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 100

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.0096	229	5247670	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421025.DAT
Sample name :CCB   Analysed :02/04/2021 13:35

Eager 300 Report

Page: 1 Sample: CCB (A020421025)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421025
Operator ID : DON FERGUSON
Analysed : 02/04/2021 13:35
Sample ID : CCB (# 36)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)

Company Name : Eurofins TA Pitt
Printed : 2/5/2021 07:05

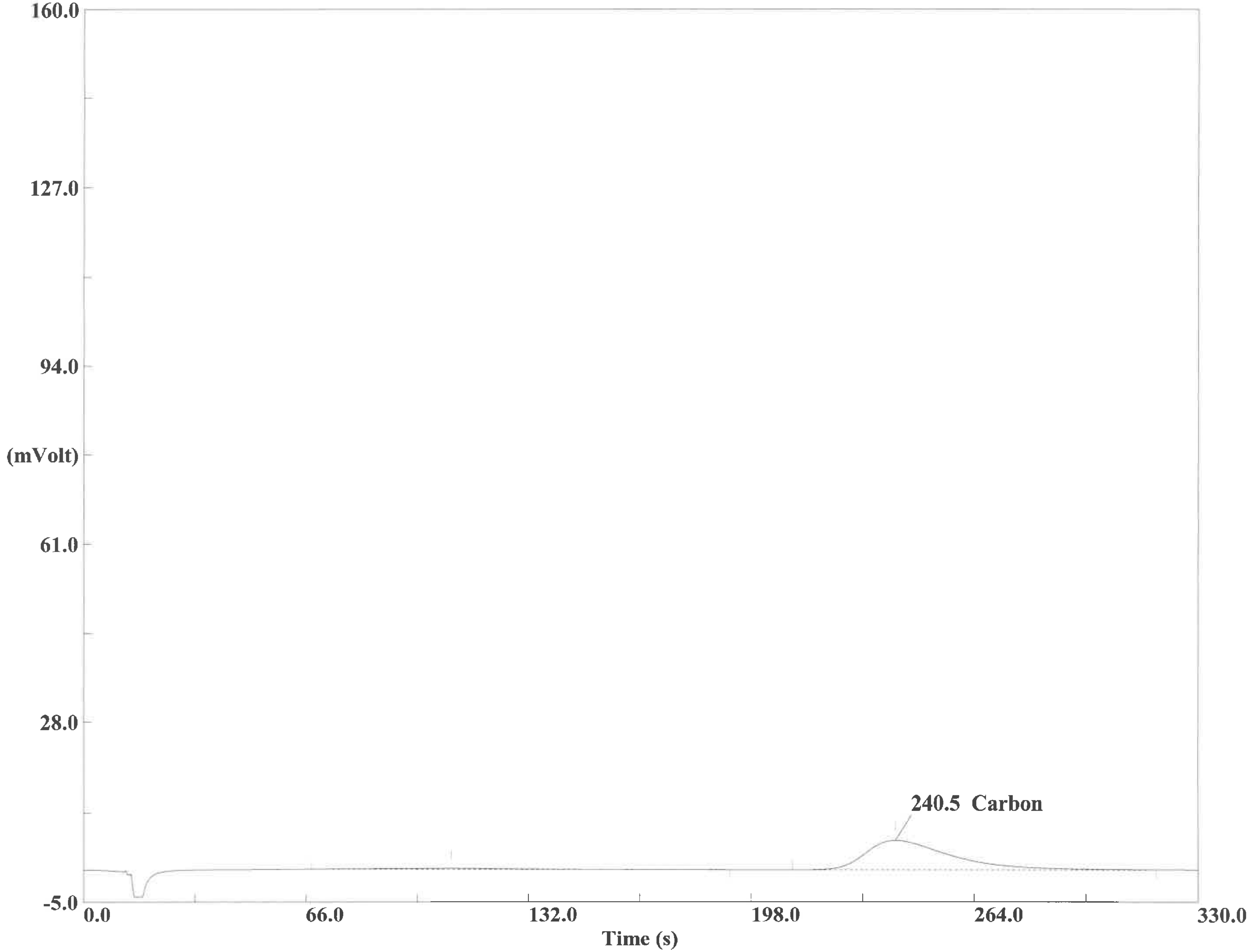
Sample weight : 20

Calib. method : using 'Least Squares to Linear fit'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421026.DAT
Sample name :180-116528-B-9 Analysed :02/04/2021 13:41

Eager 300 Report

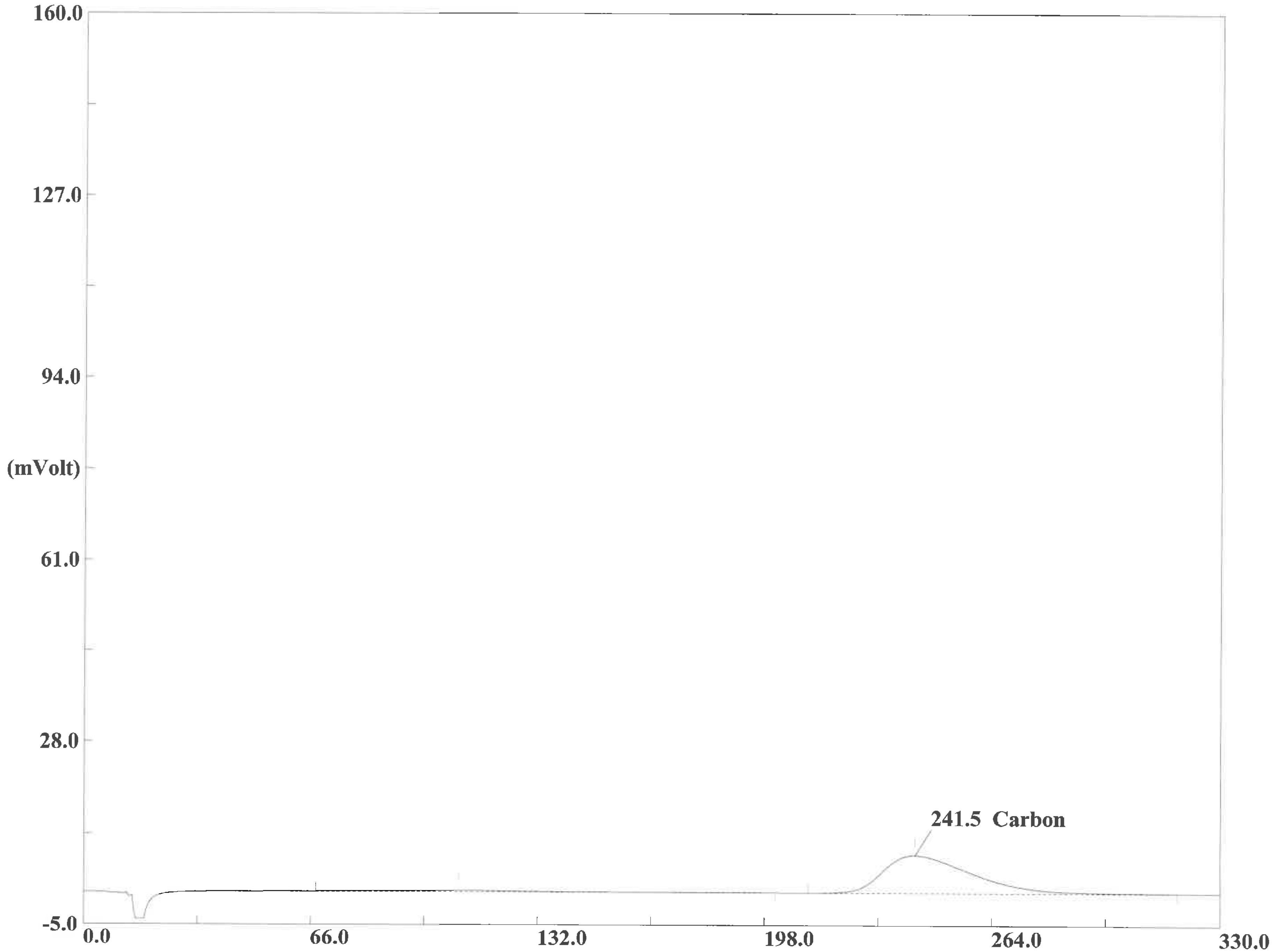
Page: 1 Sample: 180-116528-B-9 (A020421026)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421026
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 13:41 Printed : 2/5/2021 07:05
Sample ID : 180-116528-B-9 (# 37)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 15.8

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.9447	241	1580678	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Time (s)
Filename C:\data\January\A020421027.DAT
Sample name :180-116528-B-9   Analysed :02/04/2021 13:46

Eager 300 Report

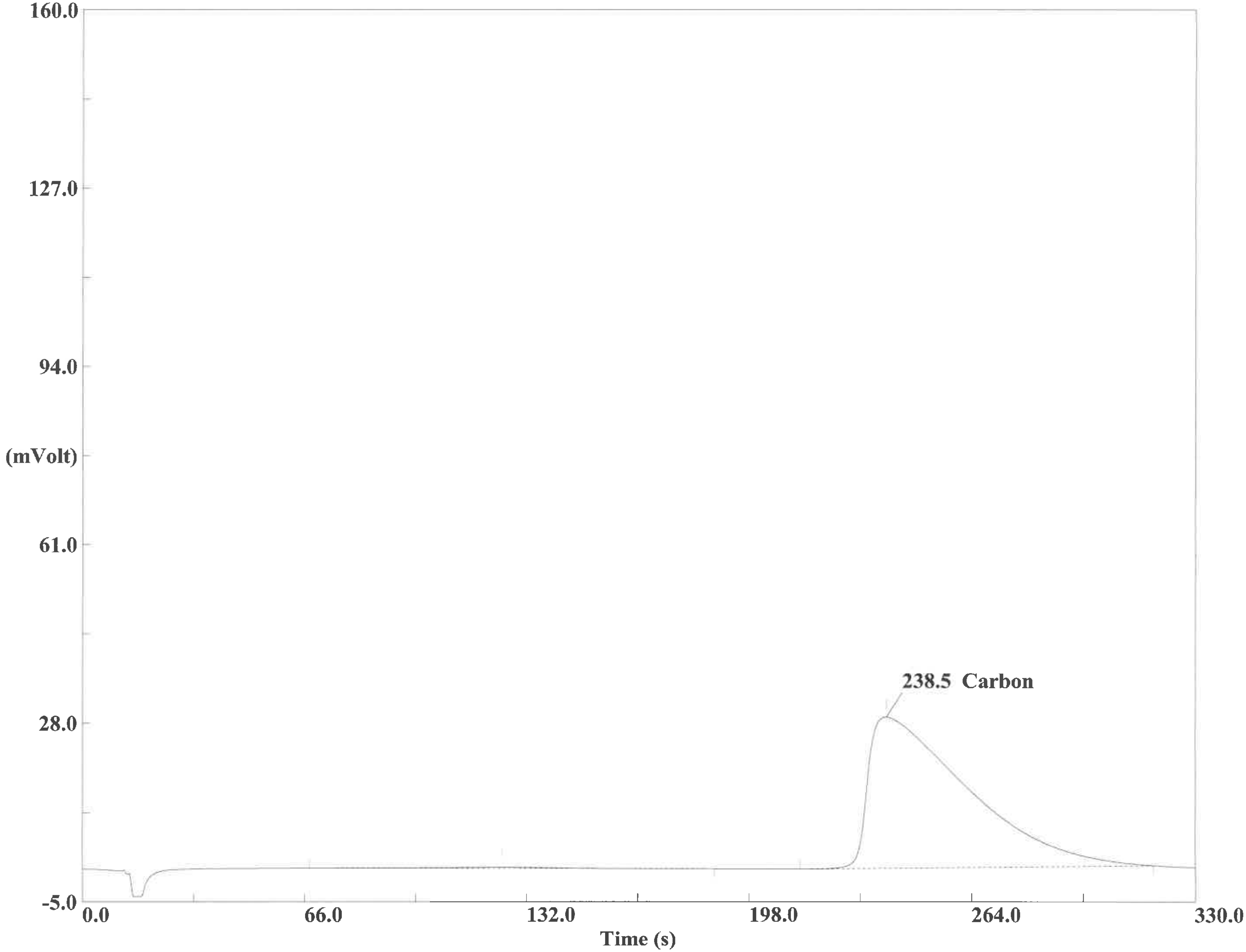
Page: 1 Sample: 180-116528-B-9 (A020421027)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421027
Operator ID : DON FERGUSON
Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 13:46
Printed : 2/5/2021 07:05
Sample ID : 180-116528-B-9 (# 38)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)
Sample weight : 15.9

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	2.4647	242	2022504	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421031.DAT
Sample name :180-116628-A-1 Analysed :02/04/2021 14:09

Eager 300 Report

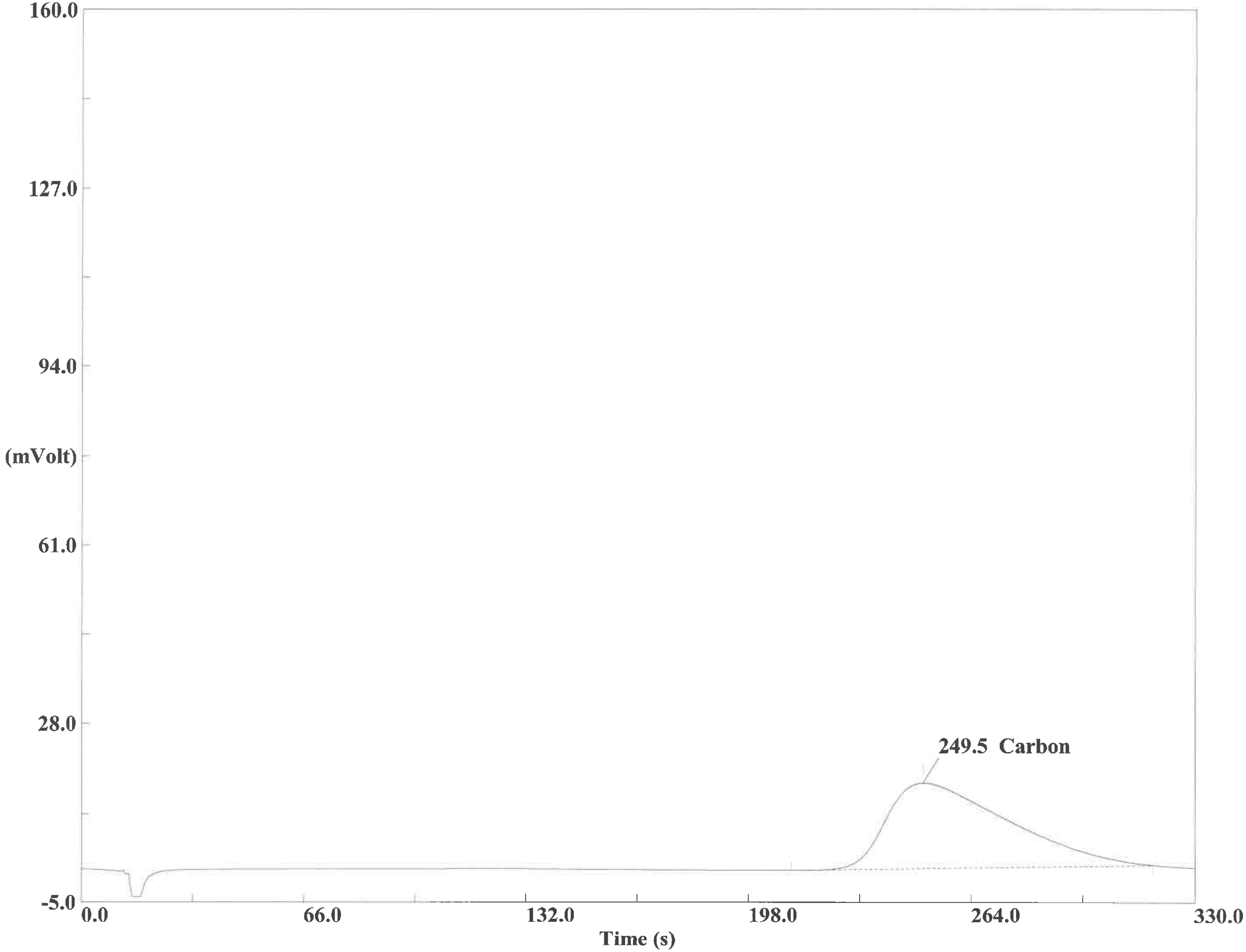
Page: 1   Sample: 180-116628-A-1 (A020421031)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421031
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 14:09   Printed : 2/5/2021 07:08
Sample ID : 180-116628-A-1 (# 42)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 3.7

Calib. method : using 'Least Squares to Linear fit'

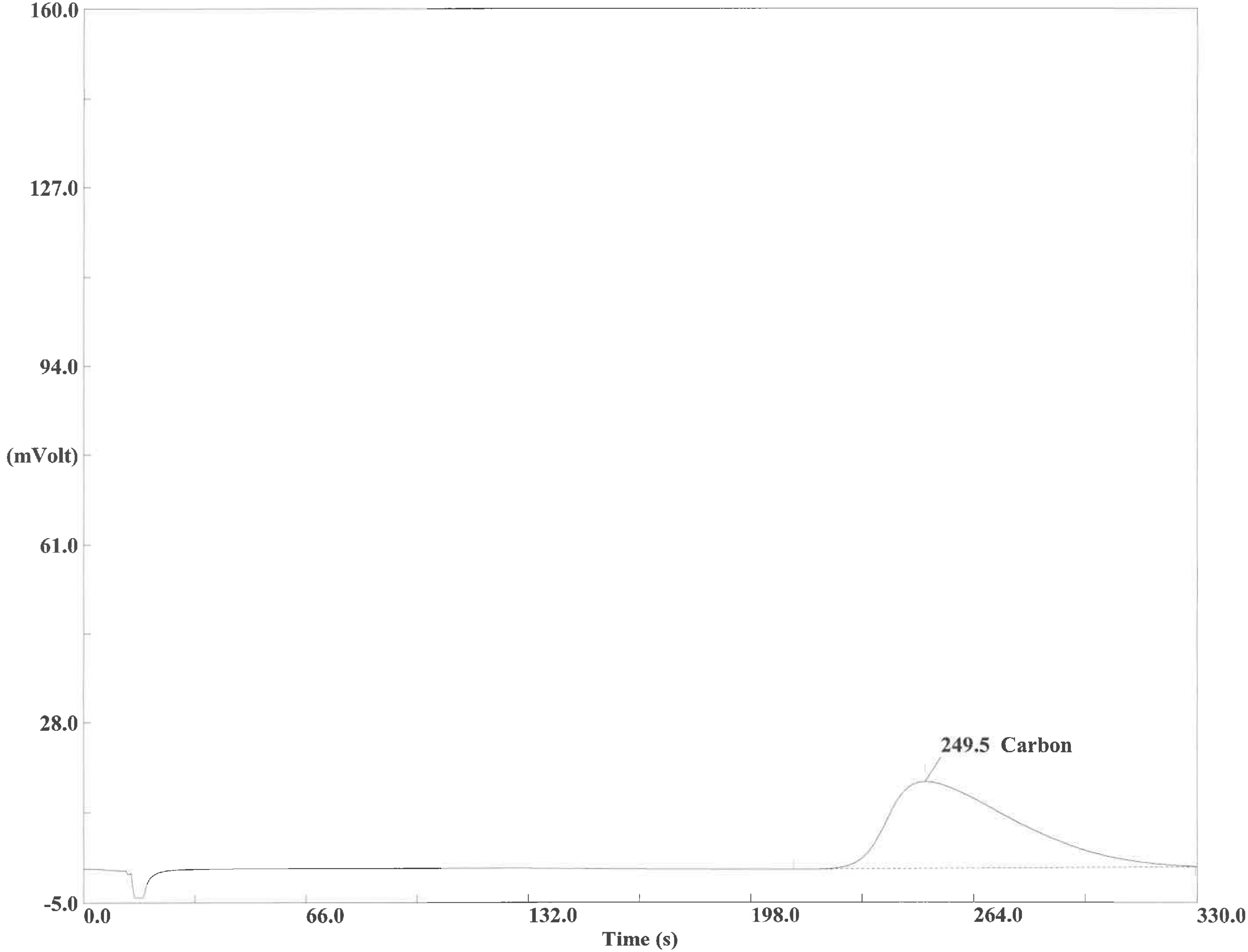
Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	49.5680	239	9552009	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421032.DAT
Sample name :180-116628-A-1 Analysed :02/04/2021 14:14

MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421032.DAT
Sample name :180-116628-A-1 Analysed :02/04/2021 14:14

Eager 300 Report

Page: 1 Sample: 180-116628-A-1 (A020421032)

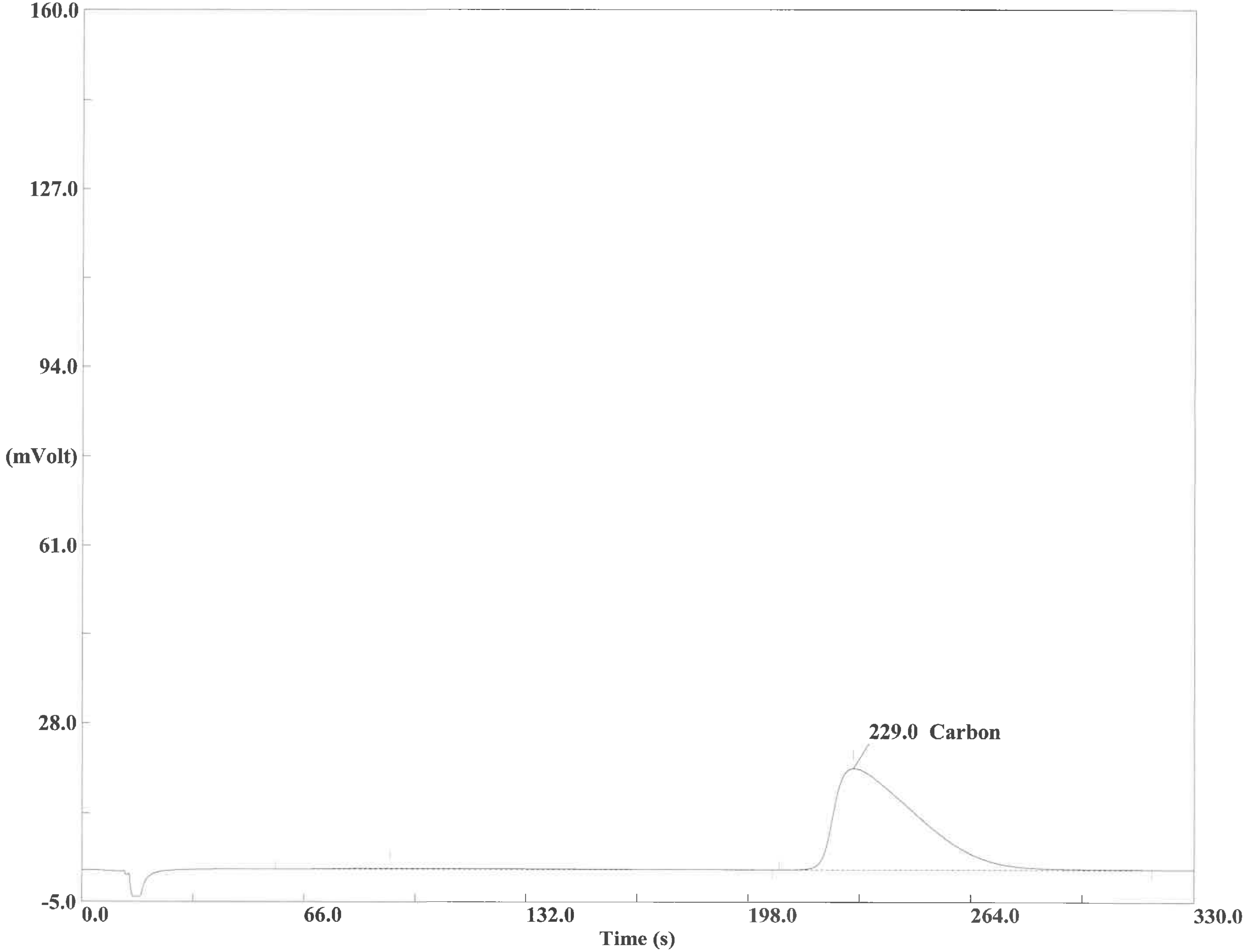
Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421032
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 14:14 Printed : 2/5/2021 07:12
Sample ID : 180-116628-A-1 (# 43)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 4.9

Calib. method : using 'Least Squares to Linear fit'

Warning Chromatogram has been subjected to manual integration.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	27.1336	250	6918115	mi	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421038.DAT
Sample name :CCV   Analysed :02/04/2021 14:48

Eager 300 Report

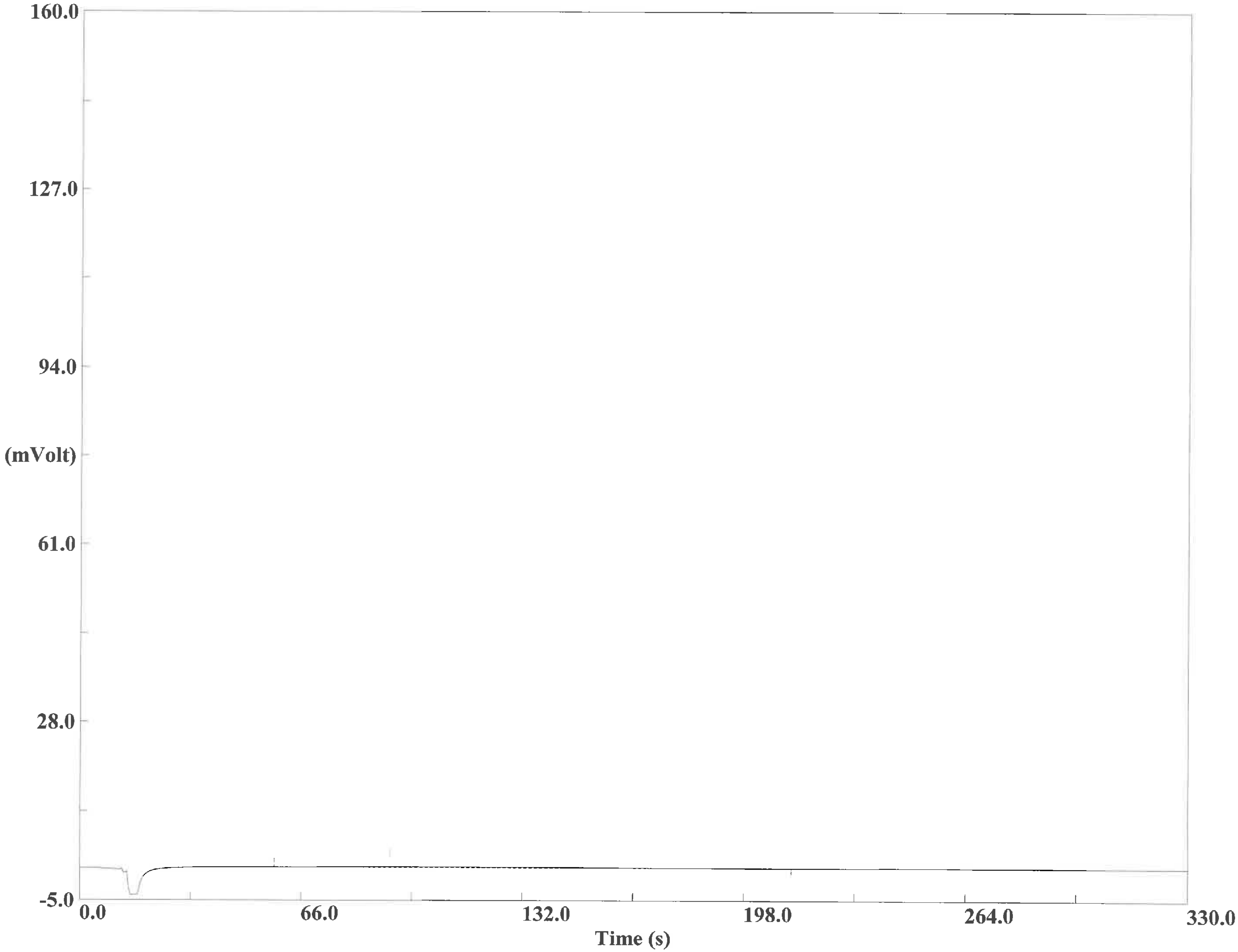
Page: 1 Sample: CCV (A020421038)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421038
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 14:48 Printed : 2/5/2021 07:09
Sample ID : CCV (# 49)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 100

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.0106	229	5252751	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 02/05/2021



Filename C:\data\January\A020421039.DAT
Sample name :CCB   Analysed :02/04/2021 14:53

Eager 300 Report

Page: 1 Sample: CCB (A020421039)

Method Name : Lloyd Kahn
Method File : C:\data\January\020421A.mth
Chromatogram : A020421039
Operator ID : DON FERGUSON
Company Name : Eurofins TA Pitt
Analysed : 02/04/2021 14:53
Printed : 2/5/2021 07:09
Sample ID : CCB (# 50)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)
Sample weight : 20

Calib. method : using 'Least Squares to Linear fit'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor

Eager Xperience

Method name : Lloyd Kahn
Method filename : C:\data\January\092320A.mth

Sample table

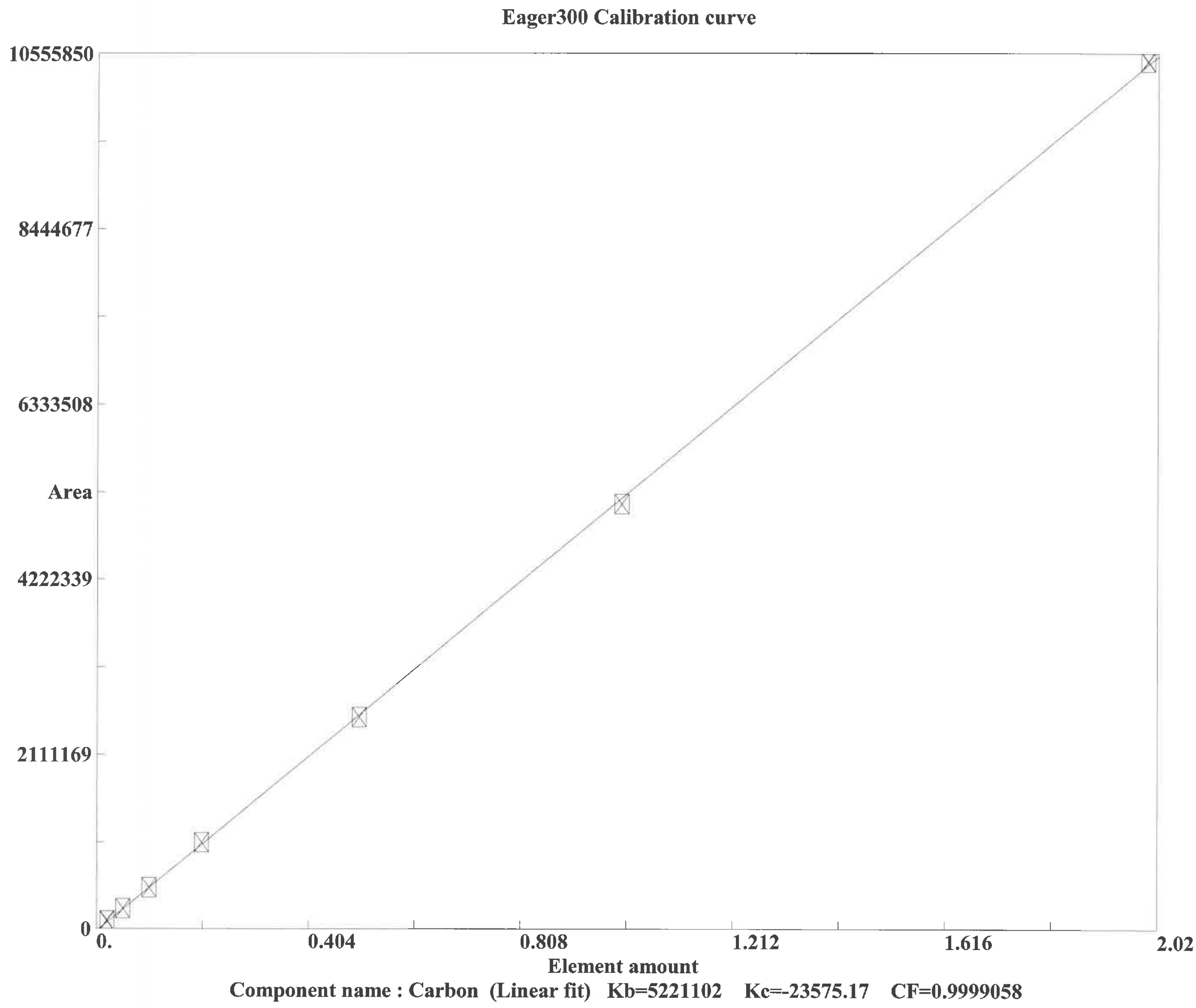
Chromatogram overwrite : Enabled

#	Sample name	Filename	Type	Weight	Hum.%
1	BYPASS	A092320006	ByP	-	0
2	BLANK	A092320007	Blk	-	0
3	BLANK	A092320008	Blk	-	0
4	1,000 KHP CT#3785365	A092320009	Std	200	0
5	2,500 KHP CT#3785364	A092320010	Std	50	0
6	5,000 KHP CT#3785364	A092320011	Std	100	0
7	10,000 KHP CT#3785364	A092320012	Std	200	0
8	25,000 KHP CT#3785363	A092320013	Std	50	0
9	50,000 KHP CT#3785363	A092320014	Std	100	0
10	100,000 KHP CT#3785363	A092320015	Std	200	0
11	ICV 37,810 KHP CT#3742673	A092320016	Unk	11.6	0
12	CCV	A092320017	Unk	100	0
13	CCB	A092320018	Unk	20	0
14	MB	A092320019	Unk	21.1	0
15	MB	A092320020	Unk	24.4	0
16	LCS	A092320021	Unk	12.7	0
17	LCS	A092320022	Unk	9.8	0
18	180-110583-A-9	A092320023	Unk	18.2	0
19	180-110583-A-9	A092320024	Unk	18	0
20	Rinse	A092320025	Unk	1	0
21	180-110583-B-14	A092320026	Unk	10.6	0
22	180-110583-B-14	A092320027	Unk	7.4	0
23	Rinse	A092320028	Unk	1	0
24	180-110583-B-14 MS	A092320029	Unk	8.3	0
25	180-110583-B-14 MS	A092320030	Unk	6.6	0
26	Rinse	A092320031	Unk	1	0
27	180-110583-B-14 MSD	A092320032	Unk	7.7	0
28	180-110583-B-14 MSD	A092320033	Unk	7.8	0
29	Rinse	A092320034	Unk	1	0
30	180-110583-A-19	A092320035	Unk	13.1	0
31	180-110583-A-19	A092320036	Unk	16.6	0
32	Rinse	A092320037	Unk	1	0
33	CCV	A092320038	Unk	100	0
34	CCB	A092320039	Unk	20	0
35	180-110583-A-20	A092320040	Unk	11.9	0
36	180-110583-A-20	A092320041	Unk	9.1	0
37	Rinse	A092320042	Unk	1	0

Llyod Kahn %Readback Error Calculation Spreadsheet

ICAL Std (ppm)	ICAL ID	Average Area	% Actual Carbon of Std.	%Readback Error	%Readback Criteria
1000	092320LK_ICAL	99423	0.0073	27.364	≤50%
2500	092320LK_ICAL	247009	0.0856	14.411	≤30%
5000	092320LK_ICAL	499611	0.0912	8.825	≤30%
10000	092320LK_ICAL	1048607	0.0982	1.838	≤30%
25000	092320LK_ICAL	2561375	0.9721	2.787	≤30%
50000	092320LK_ICAL	5128187	0.9777	2.231	≤30%
100000	092320LK_ICAL	10456420	0.9991	0.090	≤30%

Kb Value	Ke Value	Volume Cal Standard Injected	True Value Carbon Std in %
[illegible]	[illegible]	200	0.01
		50	0.10
		100	0.10
		200	0.10
		50	1.00
		100	1.00
		200	1.00


Eager300 Calibration curve
10555850
8444677
6333508
Area
4222339
2111169
0
0.
0.404
0.808
1.212
1.616
2.02
Element amount
Component name : Carbon (Linear fit) Kb=5221102 Kc=-23575.17 CF=0.9999058

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20

Filename C:\data\January\A092320009.dat

Sample name :1,000 KHP CT#3785365   Analysed :09/23/2020 14:23

Eager 300 Report

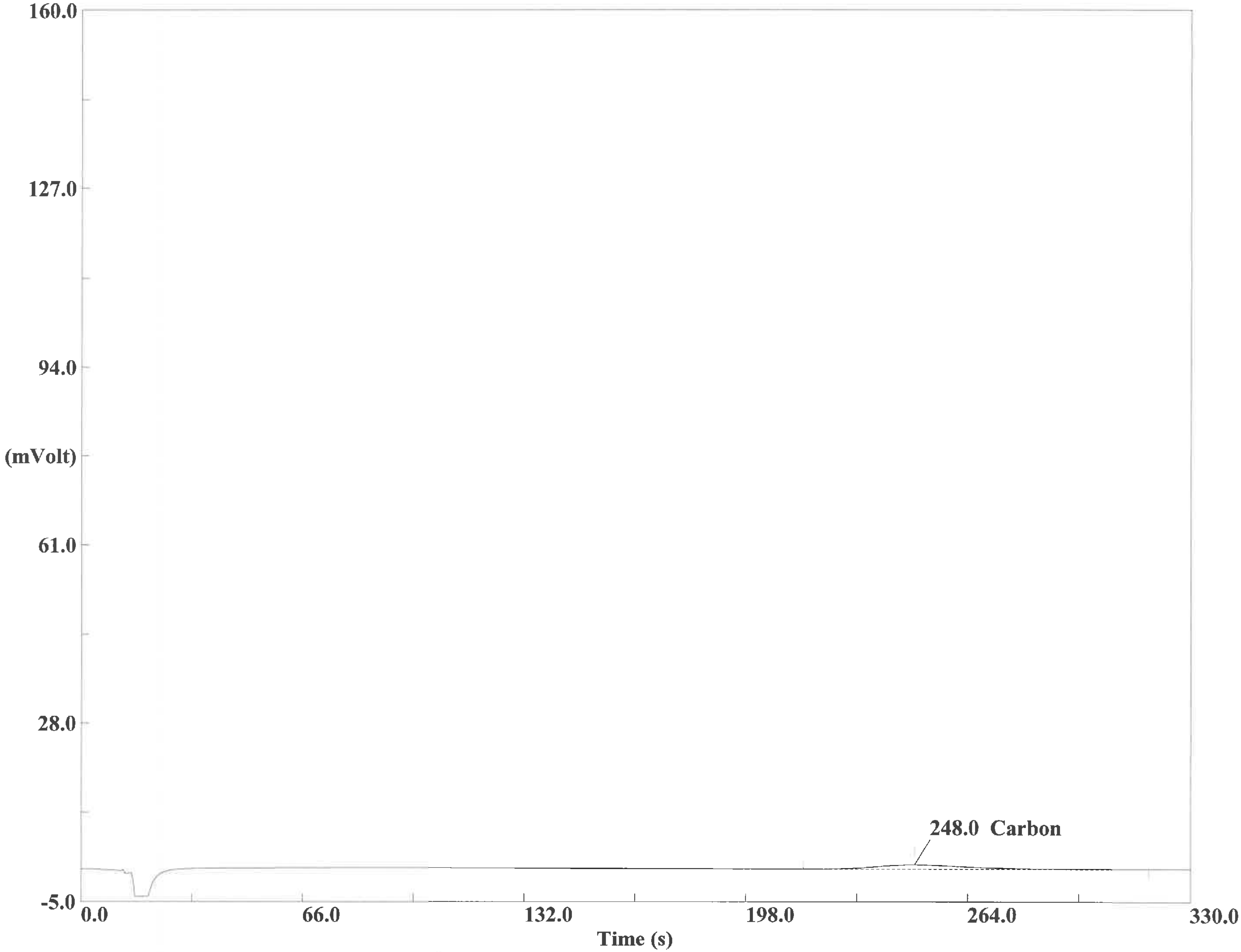
Page: 1   Sample: 1,000 KHP CT#3785365 (A092320009)

Method Name : Lloyd Kahn
Method File : C:\data\January\092320A.mth
Chromatogram : A092320009
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 09/23/2020 14:23   Printed : 9/23/2020 14:29
Sample ID : 1,000 KHP CT#3785365 (# 4)
Instrument N. : Instrument #1
Analysis Type : Calibration (Area)   Sample weight : 200

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.0100	251	99423	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320010.dat

Sample name :2,500 KHP CT#3785364 Analysed :09/23/2020 14:29

Eager 300 Report

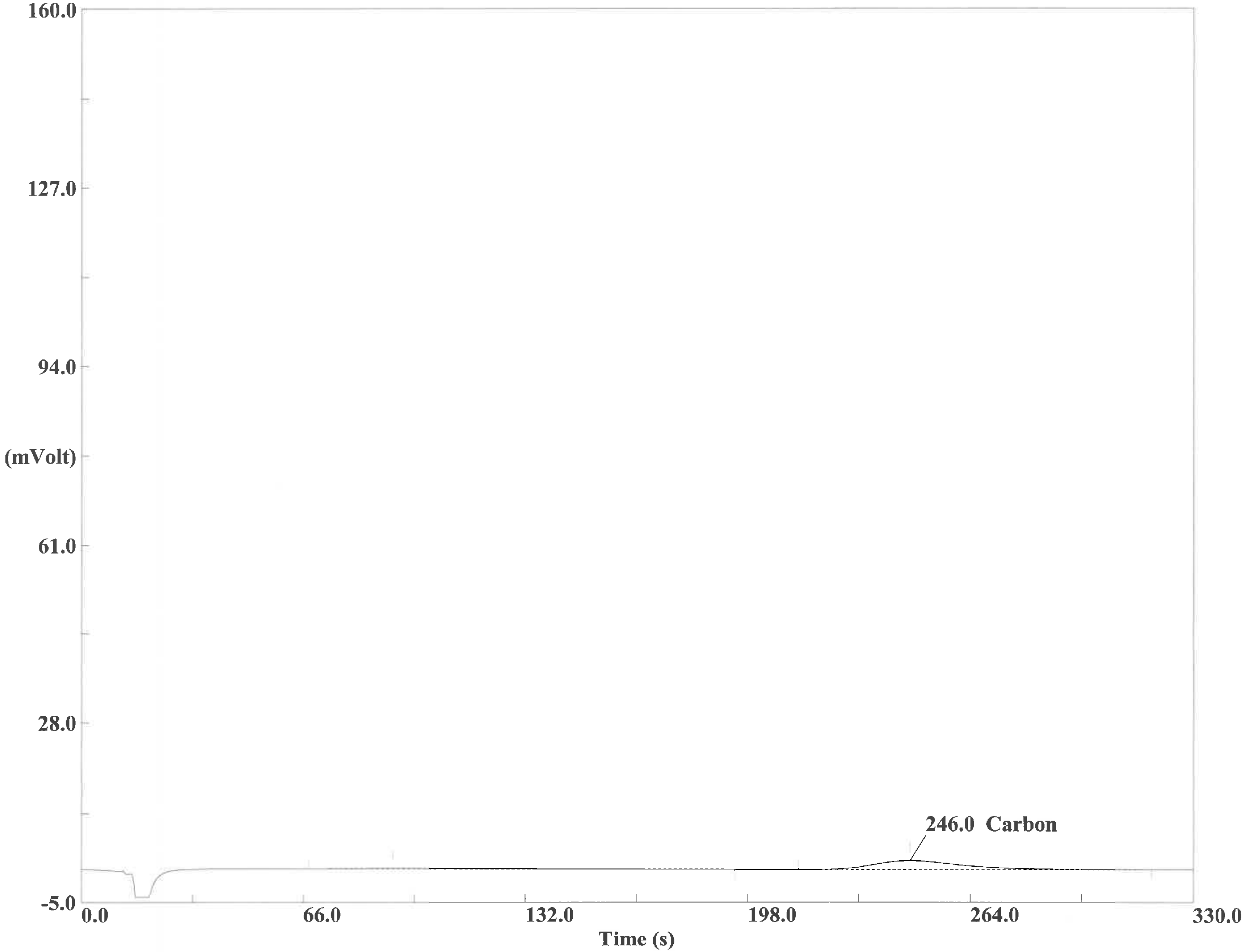
Page: 1   Sample: 2,500 KHP CT#3785364 (A092320010)

Method Name : Lloyd Kahn
Method File : C:\data\January\092320A.mth
Chromatogram : A092320010
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 09/23/2020 14:29   Printed : 9/23/2020 14:34
Sample ID : 2,500 KHP CT#3785364 (# 5)
Instrument N. : Instrument #1
Analysis Type : Calibration (Area)   Sample weight : 50

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.1000	248	247009	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320011.dat
Sample name :5,000 KHP CT#3785364 Analysed :09/23/2020 14:34

Eager 300 Report

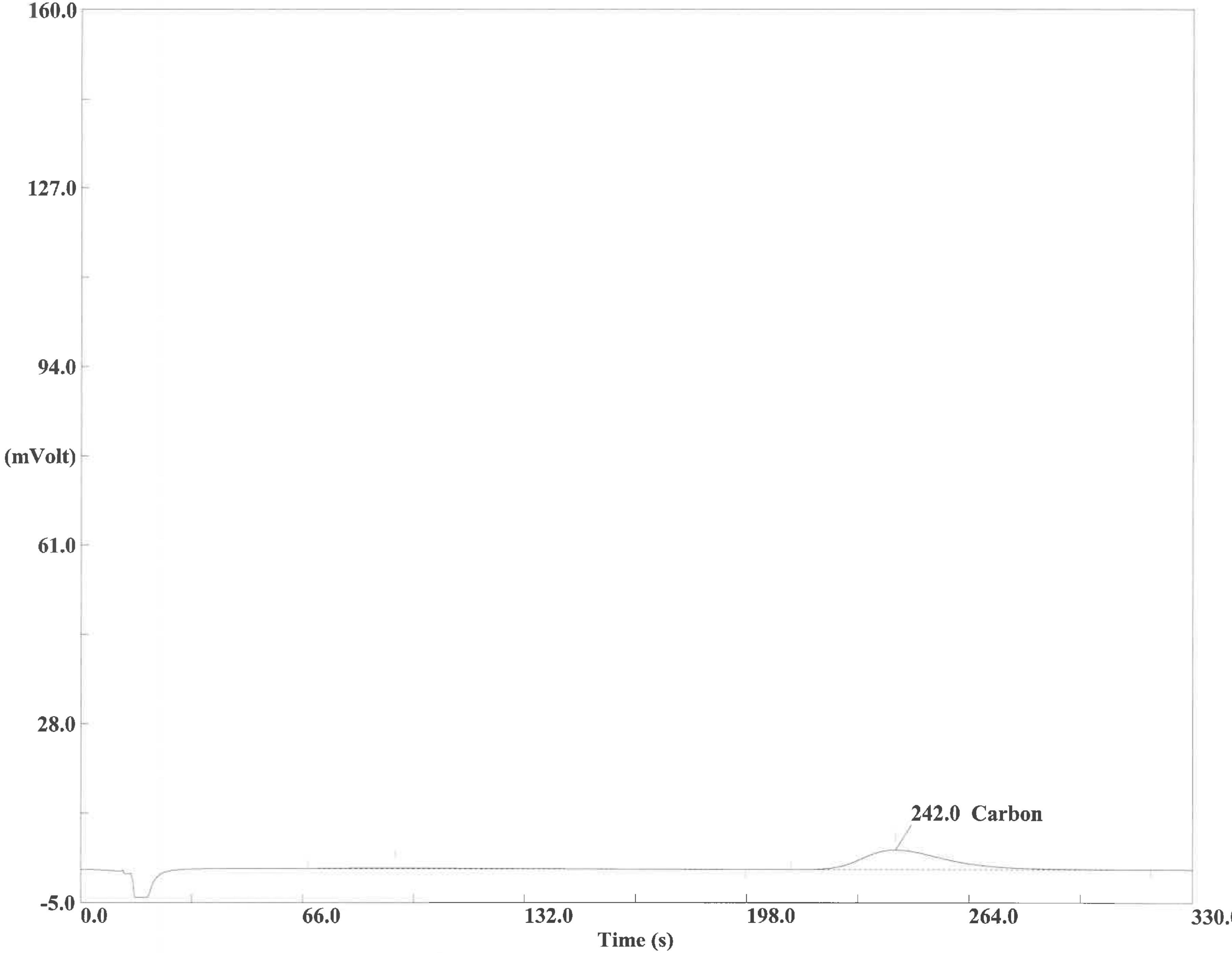
Page: 1   Sample: 5,000 KHP CT#3785364 (A092320011)

Method Name : Lloyd Kahn
Method File : C:\data\January\092320A.mth
Chromatogram : A092320011
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 09/23/2020 14:34   Printed : 9/23/2020 14:40
Sample ID : 5,000 KHP CT#3785364 (# 6)
Instrument N. : Instrument #1
Analysis Type : Calibration (Area)   Sample weight : 100

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.1000	246	499611	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320012.dat
Sample name :10,000 KHP CT#3785364 Analysed :09/23/2020 14:40

Eager 300 Report

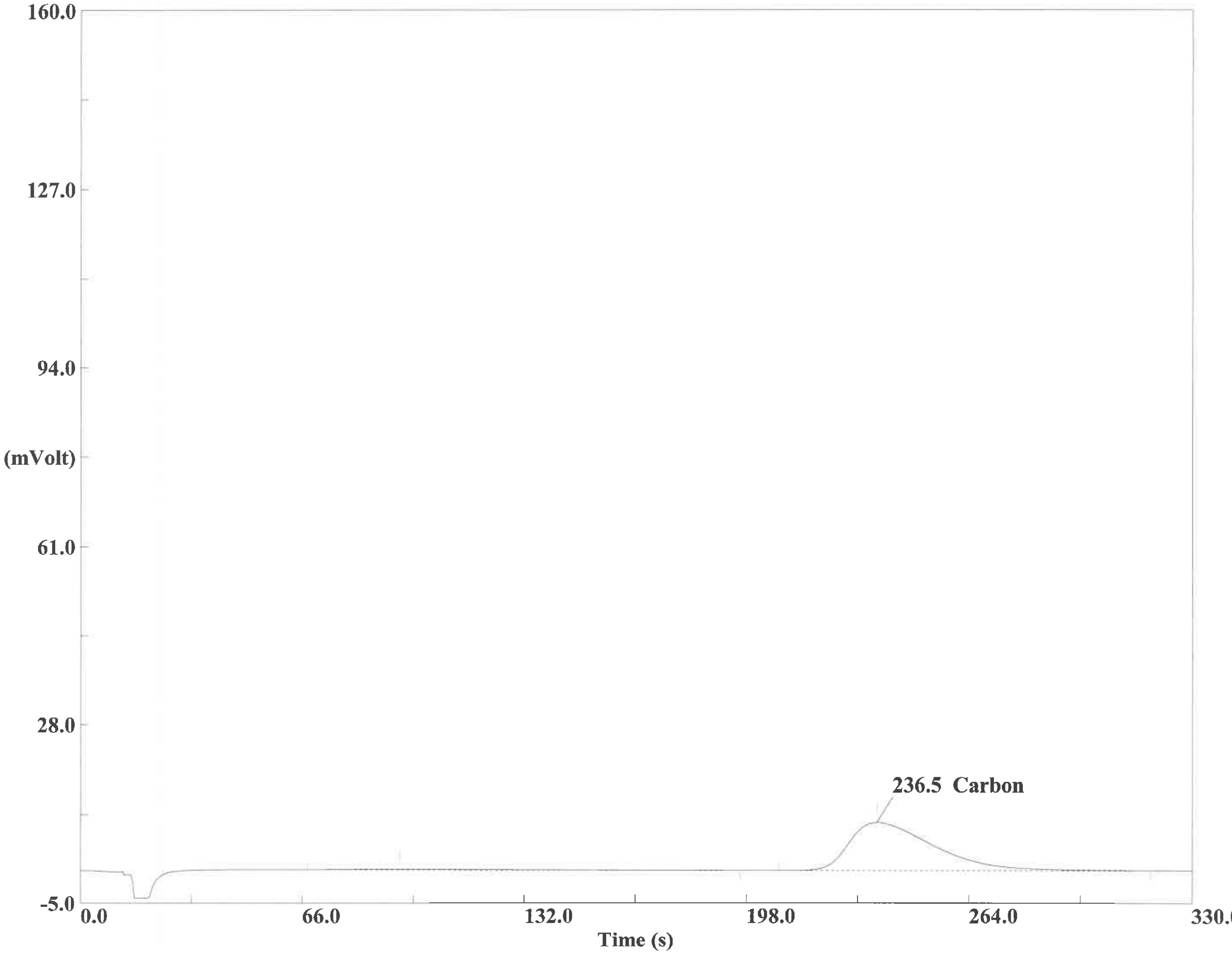
Page: 1   Sample: 10,000 KHP CT#3785364 (A092320012)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\092320A.mth
Chromatogram   : A092320012
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 09/23/2020 14:40   Printed   : 9/23/2020 14:46
Sample ID   : 10,000 KHP CT#3785364 (# 7)
Instrument N. : Instrument #1
Analysis Type : Calibration (Area)   Sample weight : 200

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.1000	242	1048607	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320013.dat
Sample name :25,000 KHP CT#3785363 Analysed :09/23/2020 14:46

Eager 300 Report

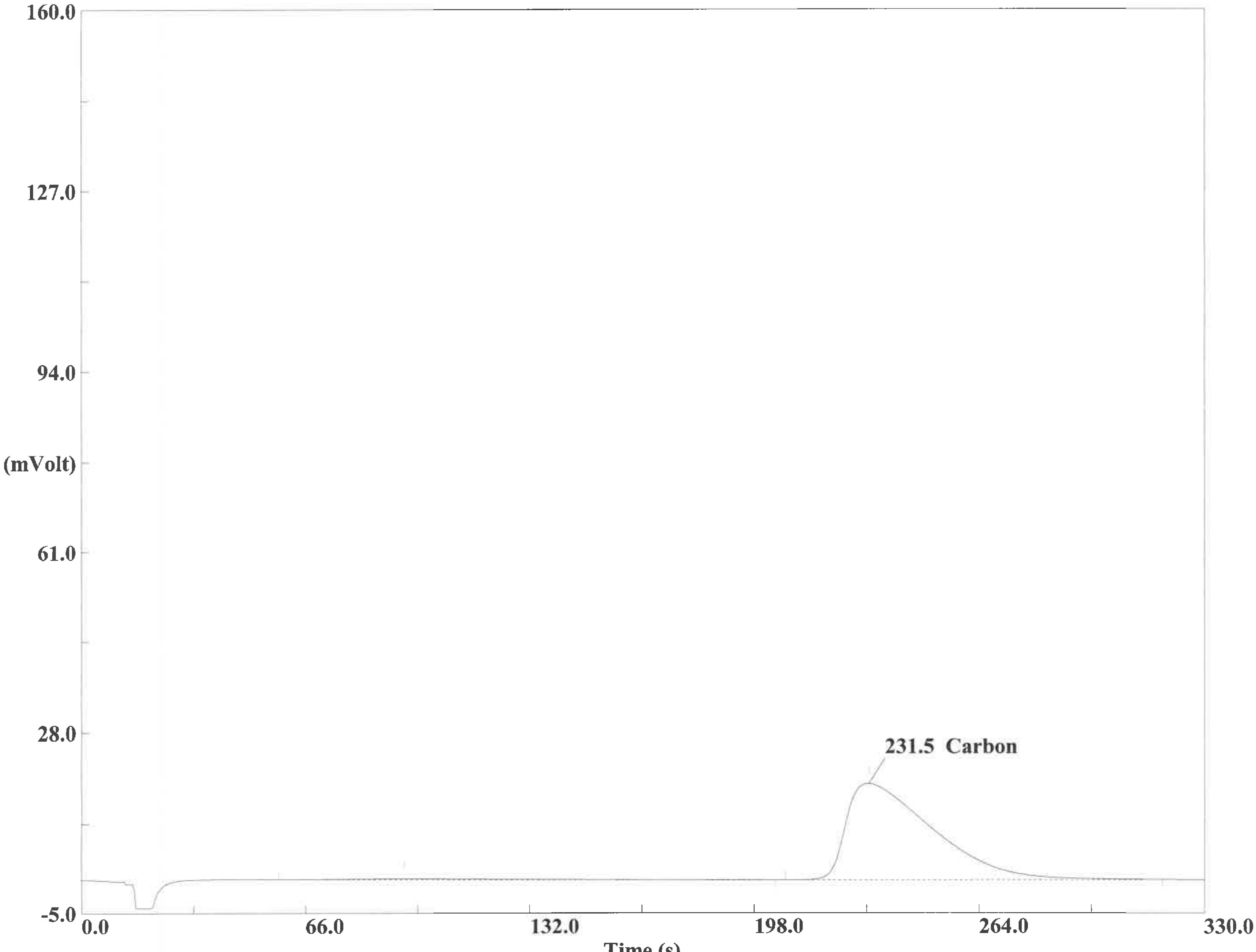
Page: 1 Sample: 25,000 KHP CT#3785363 (A092320013)

Method Name : Lloyd Kahn
Method File : C:\data\January\092320A.mth
Chromatogram : A092320013
Operator ID : DON FERGUSON Company Name : Eurofins TA Pitt
Analysed : 09/23/2020 14:46 Printed : 9/23/2020 14:51
Sample ID : 25,000 KHP CT#3785363 (# 8)
Instrument N. : Instrument #1
Analysis Type : Calibration (Area) Sample weight : 50

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.0000	237	2561375	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320014.dat

Sample name :50,000 KHP CT#3785363 Analysed :09/23/2020 14:51

Eager 300 Report

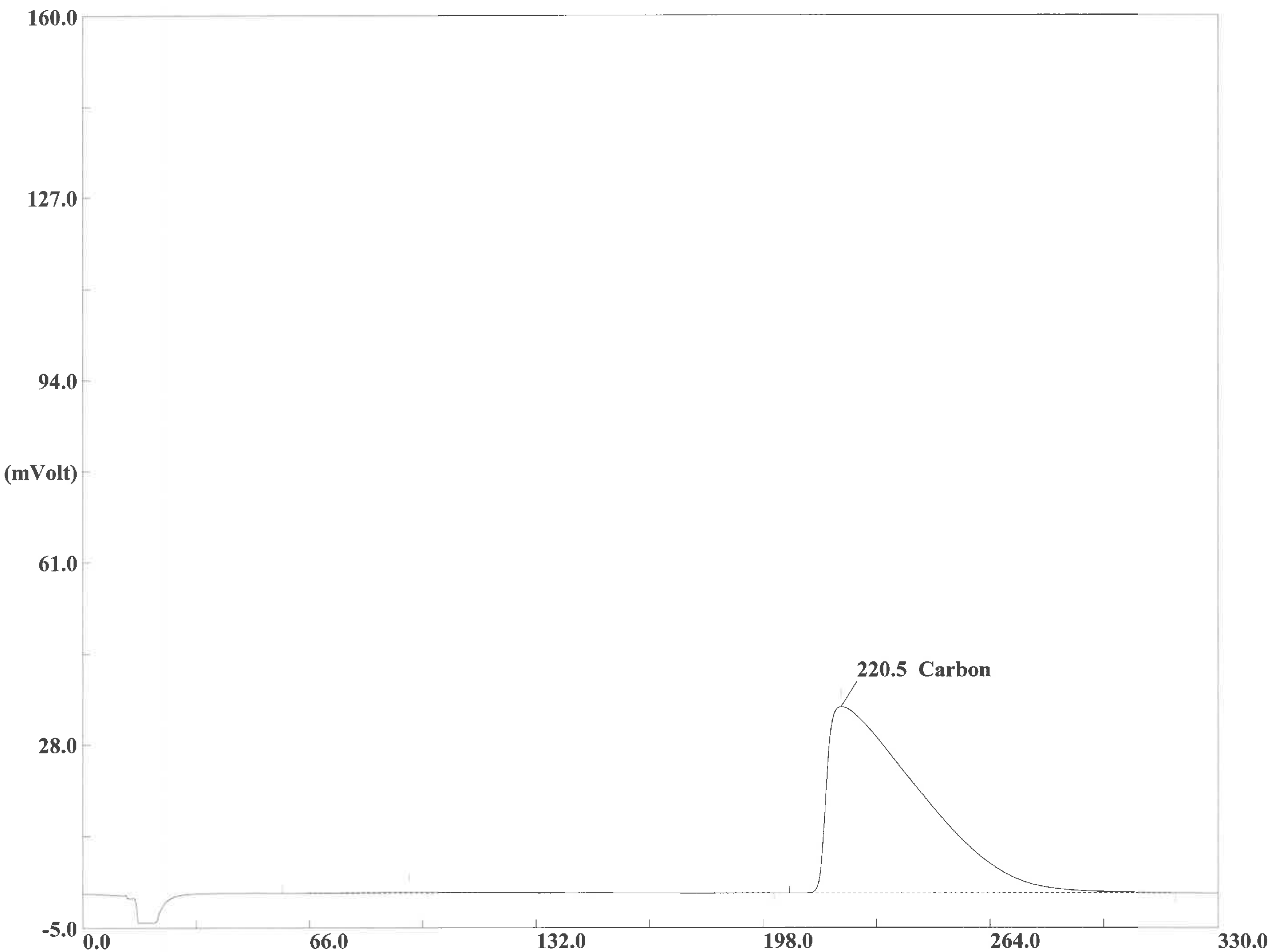
Page: 1   Sample: 50,000 KHP CT#3785363 (A092320014)

Method Name : Lloyd Kahn
Method File : C:\data\January\092320A.mth
Chromatogram : A092320014
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 09/23/2020 14:51   Printed : 9/23/2020 14:57
Sample ID : 50,000 KHP CT#3785363 (# 9)
Instrument N. : Instrument #1
Analysis Type : Calibration (Area)   Sample weight : 100

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.0000	232	5128187	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320015.dat

Sample name :100,000 KHP CT#3785363 Analysed :09/23/2020 14:57

Eager 300 Report

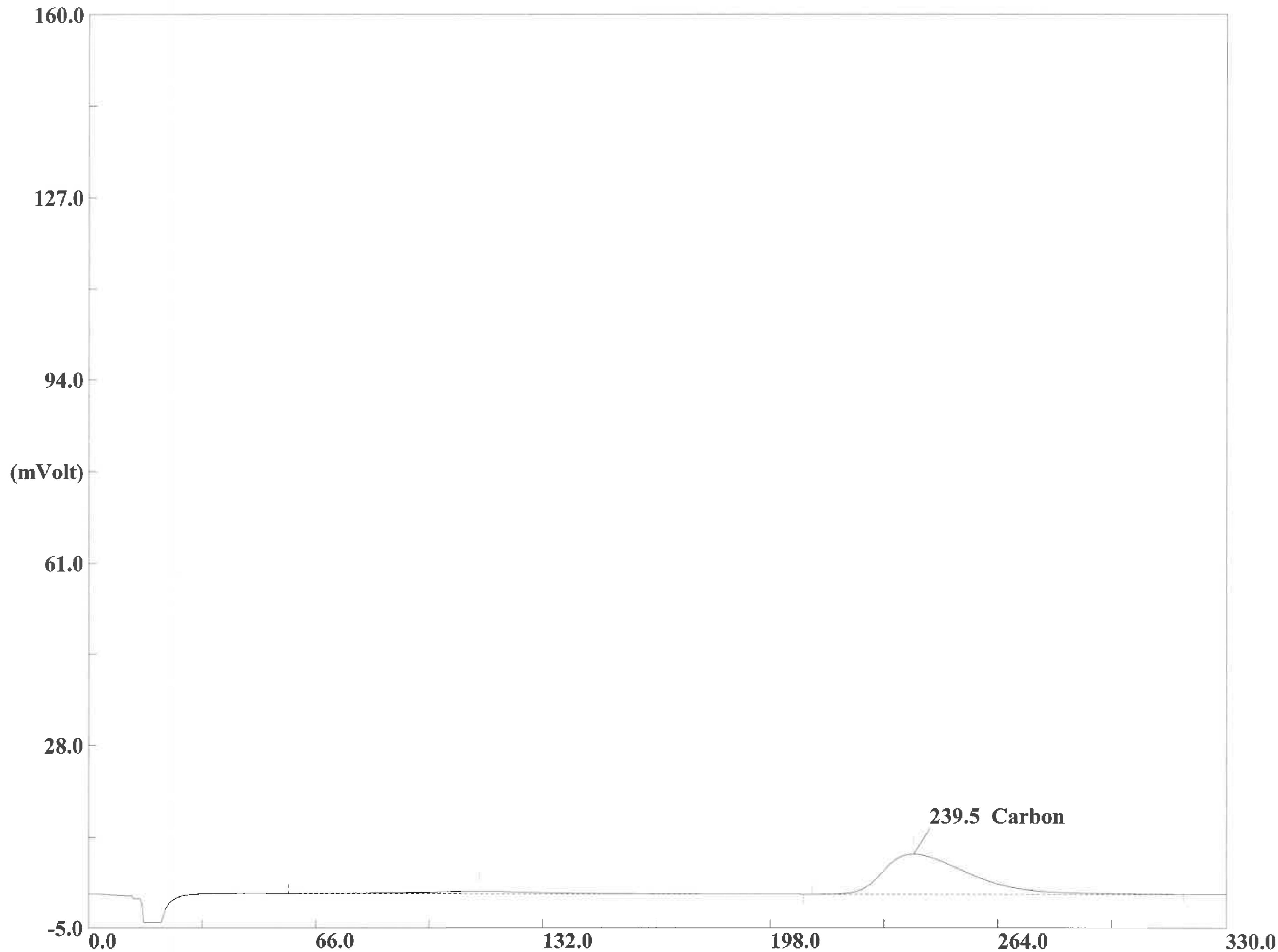
Page: 1   Sample: 100,000 KHP CT#3785363 (A092320015)

```
Method Name    : Lloyd Kahn
Method File    : C:\data\January\092320A.mth
Chromatogram   : A092320015
Operator ID    : DON FERGUSON           Company  Name : Eurofins TA Pitt
Analysed       : 09/23/2020  14:57      Printed       : 9/23/2020  15:03
Sample ID      : 100,000 KHP CT#3785363 (# 10)
Instrument N.  : Instrument #1
Analysis Type  : Calibration (Area)     Sample weight : 200

Calib. method : using 'Least Squares to Linear fit'
```

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	1.0000	221	10456420	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320016.dat
Sample name :ICV 37,810 KHP CT#3742673 Analysed :09/23/2020 15:03

Eager 300 Report

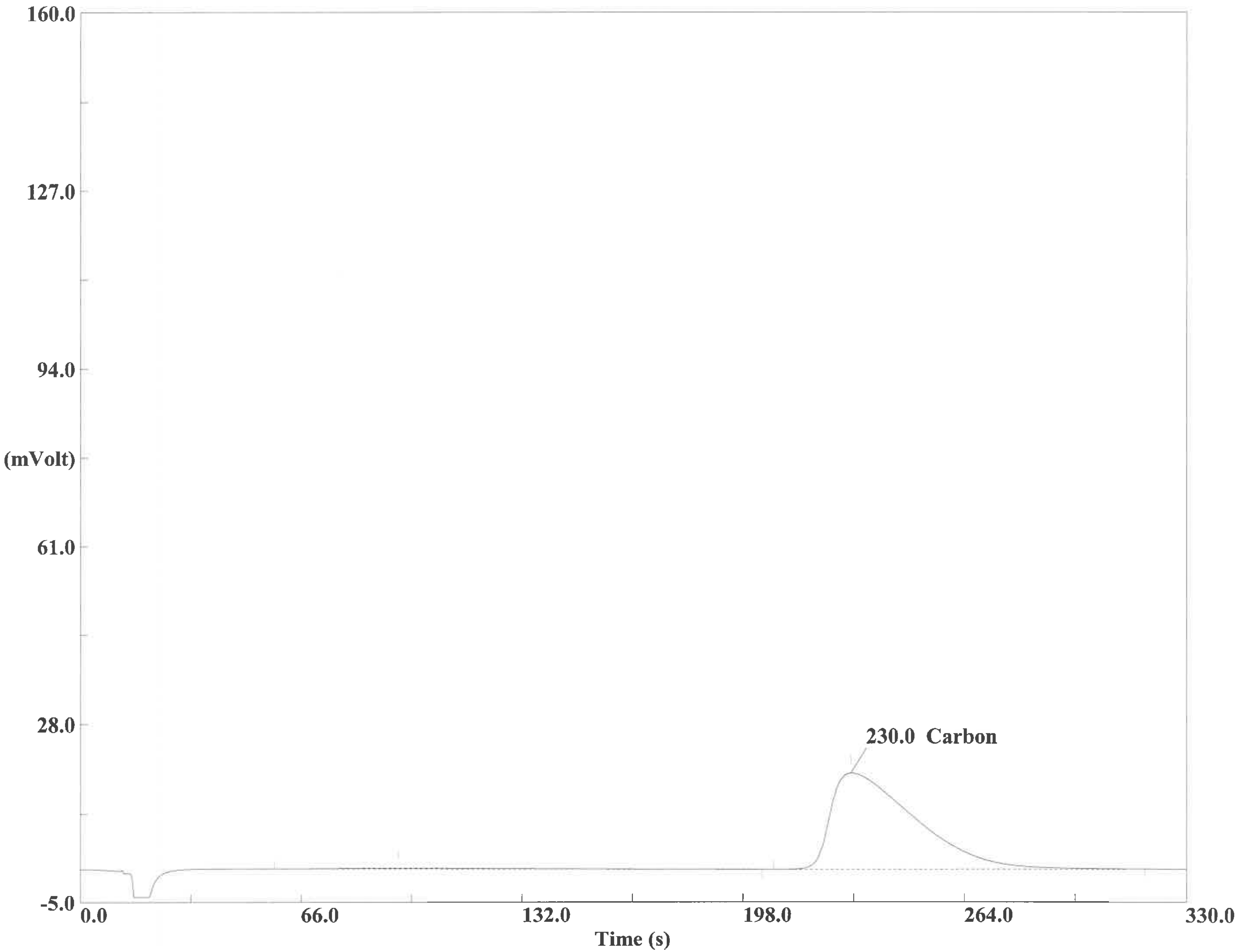
Page: 1   Sample: ICV 37,810 KHP CT#3742673 (A092320016)

Method Name : Lloyd Kahn
Method File : C:\data\January\092320A.mth
Chromatogram : A092320016
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 09/23/2020 15:03   Printed : 9/23/2020 15:08
Sample ID : ICV 37,810 KHP CT#3742673 (# 11)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 11.6

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	3.4865	240	2087987	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320017.dat
Sample name :CCV   Analysed :09/23/2020 15:08

Eager 300 Report

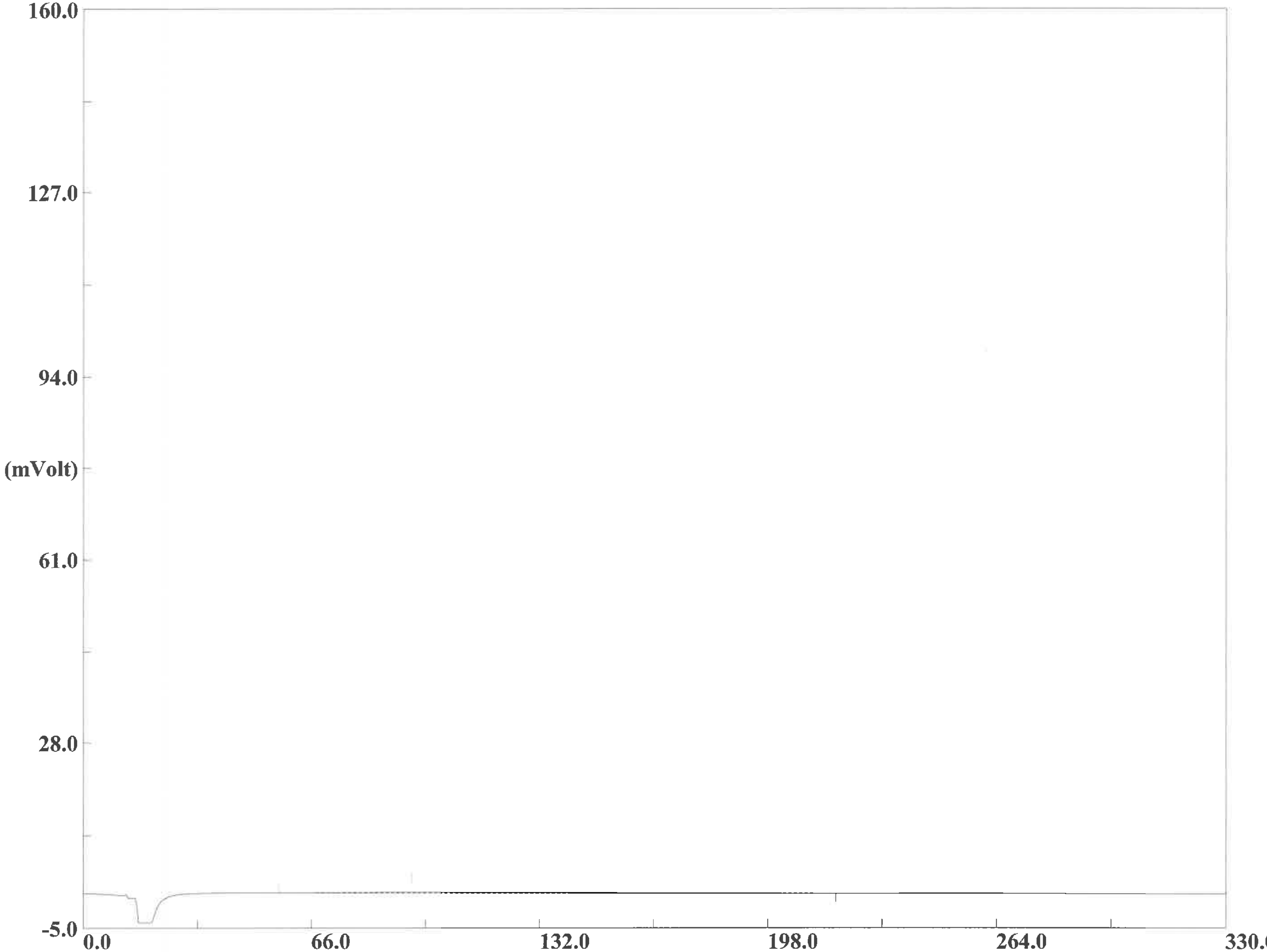
Page: 1   Sample: CCV (A092320017)

Method Name : Lloyd Kahn
Method File : C:\data\January\092320A.mth
Chromatogram : A092320017
Operator ID : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed : 09/23/2020 15:08   Printed : 9/23/2020 15:14
Sample ID : CCV (# 12)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 100

Calib. method : using 'Least Squares to Linear fit'

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Carbon	0.9923	230	5157272	RS	1.000000	

NO MANUAL INTEGRATIONS PERFORMED DLF 09/23/20



Filename C:\data\January\A092320018.dat
Sample name :CCB   Analysed :09/23/2020 15:14

Eager 300 Report

Page: 1   Sample: CCB (A092320018)

Method Name   : Lloyd Kahn
Method File   : C:\data\January\092320A.mth
Chromatogram   : A092320018
Operator ID   : DON FERGUSON   Company Name : Eurofins TA Pitt
Analysed   : 09/23/2020 15:14   Printed   : 9/23/2020 15:20
Sample ID   : CCB (# 13)
Instrument N. : Instrument #1
Analysis Type : UnkNown (Area)   Sample weight : 20

Calib. method : using 'Least Squares to Linear fit'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor

Shipping and Receiving Documents

wood.

Wood E&IS
511 Congress Street
Portland, ME 04101
(207) 828-3367

SHIP TO:
Eurofins Pitts.
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Atten: Carrie Gamber
Lab Phone# (412) 963-2428

CHAIN OF CUSTODY

DATE: 1/28/2021
COC #:
PAGE: 1 **OF** 1

Project Name: Penobscot River 2020	Project Contact:	Denise King	Bill To: Denise King, Wood E&IS	Disposal Instructions:	LAB
Project Number: 3617207486.03.****	Phone Number:	508-789-1738	271 Mill Rd	Shipment Method:	FED EX
Project Manager: Rod Pendelton	Project Phase:	Sediment Monitoring	Chelmsford, MA 01824	Waybill Number:	N/A

Sample Information — **Methods for Analysis** — **RUSH**

No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	TOC Lloyd-Kahn	STANDARD - 21 days	48 Hour	72 Hour	5 Days	TOTAL BOTTLES	HOLD All Analyses
1	MMBKD-01_012521_SED_00-01	01/25/2021, 1525	SED	N	N	X	X				1	
2	MMBKD-01_012521_SED_01-03	01/25/2021, 1535	SED	N	N	X	X				1	
3	MMBKD-01_012521_SED_03-05	01/25/2021, 1540	SED	N	N	X	X				1	
4	MMBKD-01_012521_SED_01-03_DUP	01/25/2021, 1200	SED	N	N	X	X				1	
5	FRB-02_012621_SED_00-01	01/26/2021, 1500	SED	N	N	X	X				1	
6	FRB-02_012621_SED_01-03	01/26/2021, 1515	SED	N	N	X	X				1	
7	FRB-02_012621_SED_03-05	01/26/2021, 1530	SED	N	Y	X	X				1	
8	ES-13_012621_SED_00-01	01/26/2021, 1845	SED	N	N	~~H~~	X				1	H
9	ES-13_012621_SED_01-03	01/26/2021, 1855	SED	N	N	~~H~~	X				1	H
10	ES-13_012621_SED_03-05	01/26/2021, 1905	SED	N	N	~~H~~	X				1	H
11												
12						TG						

180-1 16528 Chain of Custody

Take off hold and analyze. 02/02/21 DMK

TG

	Date:	Time:
Sampler's Signature: [signature]	1/28/21	0930
Relinquished By/Affiliation: TOM GERHARD, WOOD E+IS	1/28/21	0936
Received By: FEDEX	1/28/21	0930
Relinquished By/Affiliation:		
Received By: [signature] ETA PH	1/29/21	800
Relinquished By/Affiliation:		
Received By (LAB):		

For Lab Use

Does COC match samples:	Y or N
Broken Container:	Y or N
COC seal intact:	Y or N
Other problems:	Y or N
WSDOT contacted:	Y or N
Date contacted:	
Cooler Temperature at receipt:	°C

Comments:
X=Analyze H=Hold Analysis Request

PO # C012906205

TOC Frozen until Shipment
Extra volume for MS/MSD

NUMBER OF COOLERS SENT: 1

wood.

Wood E&IS
511 Congress Street
Portland, ME 04101
(207) 828-3367

SHIP TO:
Eurofins Pitts.
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Atten: Carrie Gamber
Lab Phone# (412) 963-2428

CHAIN OF CUSTODY

DATE: 1/28/2021
COC #:
PAGE: 1 **OF** 1

Project Name:	Penobscot River 2020	Project Contact:	Denise King	Bill To: Denise King, Wood E&IS	Disposal Instructions: LAB
Project Number:	3617207486.03.****	Phone Number:	508-789-1738	271 Mill Rd	Shipment Method: FED EX
Project Manager:	Rod Pendelton	Project Phase:	Sediment Monitoring	Chelmsford, MA 01824	Waybill Number: N/A

Sample Information | **Methods for Analysis** | **RUSH**

No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	TOC Lloyd-Kahn	STANDARD - 21 days	48 Hour	72 Hour	5 Days	TOTAL BOTTLES	HOLD All Analyses
1	MMBKD-01_012521_SED_00-01	01/25/2021, 1525	SED	N	N	X	X				1	
2	MMBKD-01_012521_SED_01-03	01/25/2021, 1535	SED	N	N	X	X				1	
3	MMBKD-01_012521_SED_03-05	01/25/2021, 1540	SED	N	N	X	X				1	
4	MMBKD-01_012521_SED_01-03_DUP	01/25/2021, 1200	SED	N	N	X	X				1	
5	FRB-02_012621_SED_00-01	01/26/2021, 1500	SED	N	N	X	X				1	
6	FRB-02_012621_SED_01-03	01/26/2021, 1515	SED	N	N	X	X				1	
7	FRB-02_012621_SED_03-05	01/26/2021, 1530	SED	N	Y	X	X				1	
8	ES-13_012621_SED_00-01	01/26/2021, 1845	SED	N	N	H	X				1	H
9	ES-13_012621_SED_01-03	01/26/2021, 1855	SED	N	N	H	X				1	H
10	ES-13_012621_SED_03-05	01/26/2021, 1905	SED	N	N	H	X				1	H
11												
12						TG						

TG

180-116528 Chain of Custody

Sampler's Signature:	Date: 1/28/21	Time: 0930
Relinquished By/Affiliation: TOM GERHARD, WOOD E+IS	Date: 1/28/21	Time: 0936
Received By: FEDEX	Date: 1/28/21	Time: 0930
Relinquished By/Affiliation:	Date:	Time:
Received By: ETA PH	Date: 1/29/21	Time: 800
Relinquished By/Affiliation:	Date:	Time:
Received By (LAB):	Date:	Time:

For Lab Use

Does COC match samples:	Y or N
Broken Container:	Y or N
COC seal intact:	Y or N
Other problems:	Y or N
WSDOT contacted:	Y or N
Date contacted:	
Cooler Temperature at receipt:	°C

Comments:
X=Analyze H=Hold Analysis Request

PO # C012906205

TOC Frozen until Shipment
Extra volume for MS/MSD

NUMBER OF COOLERS SENT: 1

Using This Tag

ORIGIN ID:BGRA (207) 828-3460
WOOD PLC
511 CONGRESS ST

PORTLAND, ME 04101
UNITED STATES US

SHIP DATE: 28JAN21
ACTWGT: 18.35 LB
CAD: 006993790/SSFE2121
DIMS: 15x8x14 IN

BILL THIRD PARTY

TO **ATN: CARRIE GAMBER**
EUROFINS PITTS
301 ALPHA DRIVE RIDC PARK
REF #3617207486.04
PITTSBURGH PA 15238

800

(412) 963--2428 REF:
INV:
PO: DEPT:

FedEx
Express

E

J211121011901uv

FRI - 29 JAN 8:30A
FIRST OVERNIGHT

TRK# 0201 **7831 1593 8466**

AHS
15238
PIT
PA-US

X1 AGCA

Uncorrected temp 2.9 °C
Thermometer ID 14
CF 0 Initials cml
PT-WI-SR-001 effective 11/8/18

180-116528 Waybill

Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 180-116528-1

Login Number: 116528
List Number: 1
Creator: Kovitch, Christina M

List Source: Eurofins TestAmerica, Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX D-2
BLACK DUCK BLOOD LARS

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

16 March 2021

Rod Pendleton
Wood - MA
271 Mill Road
Chelmsford, MA 01824

RE: Penobscot

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Patrick Garcia-Strickland
Business Unit Manager

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	Reported:
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MMBKD-01_012521_ABD_01_BL	1B00003-01	Tissue	25-Jan-21 09:51	02-Feb-21 09:31
MMBKD-01_012521_ABD_02_BL	1B00003-02	Tissue	25-Jan-21 10:08	02-Feb-21 09:31
MMBKD-01_012521_ABD_03_BL	1B00003-03	Tissue	25-Jan-21 10:30	02-Feb-21 09:31
MMBKD-01_012521_ABD_04_BL	1B00003-04	Tissue	25-Jan-21 10:40	02-Feb-21 09:31
MMBKD-01_012521_ABD_05_BL	1B00003-05	Tissue	25-Jan-21 10:51	02-Feb-21 09:31
MMBKD-01_012521_ABD_06_BL	1B00003-06	Tissue	25-Jan-21 11:07	02-Feb-21 09:31
MMBKD-01_012521_ABD_07_BL	1B00003-07	Tissue	25-Jan-21 11:20	02-Feb-21 09:31
MMBKD-01_012521_ABD_08_BL	1B00003-08	Tissue	25-Jan-21 11:30	02-Feb-21 09:31
MMBKD-01_012521_ABD_09_BL	1B00003-09	Tissue	25-Jan-21 11:38	02-Feb-21 09:31
MMBKD-01_012521_ABD_10_BL	1B00003-10	Tissue	25-Jan-21 11:45	02-Feb-21 09:31
MMBKD-01_012521_ABD_11_BL	1B00003-11	Tissue	25-Jan-21 11:54	02-Feb-21 09:31
MMBKD-01_012521_ABD_12_BL	1B00003-12	Tissue	25-Jan-21 12:04	02-Feb-21 09:31
MMBKD-01_012521_ABD_13_BL	1B00003-13	Tissue	25-Jan-21 12:17	02-Feb-21 09:31
MMBKD-01_012521_ABD_14_BL	1B00003-14	Tissue	25-Jan-21 12:28	02-Feb-21 09:31
MMBKD-01_012521_ABD_15_BL	1B00003-15	Tissue	25-Jan-21 12:33	02-Feb-21 09:31
ES-13_013021_ABD_01_BL	1B00003-16	Tissue	30-Jan-21 16:34	02-Feb-21 09:31
ES-13_013021_ABD_02_BL	1B00003-17	Tissue	30-Jan-21 16:45	02-Feb-21 09:31
ES-13_013021_ABD_03_BL	1B00003-18	Tissue	30-Jan-21 16:54	02-Feb-21 09:31
ES-13_013021_ABD_04_BL	1B00003-19	Tissue	30-Jan-21 17:04	02-Feb-21 09:31
ES-13_013021_ABD_05_BL	1B00003-20	Tissue	30-Jan-21 17:14	02-Feb-21 09:31
ES-13_013021_ABD_06_BL	1B00003-21	Tissue	30-Jan-21 17:22	02-Feb-21 09:31
ES-13_013021_ABD_07_BL	1B00003-22	Tissue	30-Jan-21 17:29	02-Feb-21 09:31
ES-13_013021_ABD_08_BL	1B00003-23	Tissue	30-Jan-21 17:40	02-Feb-21 09:31
ES-13_013021_ABD_09_BL	1B00003-24	Tissue	30-Jan-21 17:52	02-Feb-21 09:31
ES-13_013021_ABD_10_BL	1B00003-25	Tissue	30-Jan-21 17:58	02-Feb-21 09:31
ES-13_013021_ABD_11_BL	1B00003-26	Tissue	30-Jan-21 18:06	02-Feb-21 09:31

eurofins
Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
ES-13_013021_ABD_12_BL	1B00003-27	Tissue	30-Jan-21 18:16	02-Feb-21 09:31
ES-13_013021_ABD_13_BL	1B00003-28	Tissue	30-Jan-21 18:25	02-Feb-21 09:31
ES-13_013021_ABD_14_BL	1B00003-29	Tissue	30-Jan-21 18:36	02-Feb-21 09:31
ES-13_013021_ABD_15_BL	1B00003-30	Tissue	30-Jan-21 18:45	02-Feb-21 09:31
FRB-02_012621_ABD_01_BL	1B00003-31	Tissue	26-Jan-21 10:45	02-Feb-21 09:31
FRB-02_012621_ABD_02_BL	1B00003-32	Tissue	26-Jan-21 11:15	02-Feb-21 09:31
FRB-02_012721_ABD_03_BL	1B00003-33	Tissue	27-Jan-21 12:20	02-Feb-21 09:31
FRB-02_012721_ABD_04_BL	1B00003-34	Tissue	27-Jan-21 12:40	02-Feb-21 09:31
FRB-02_012721_ABD_05_BL	1B00003-35	Tissue	27-Jan-21 12:55	02-Feb-21 09:31
EB_CAPILLARY_013021_ABD_QC	1B00003-36	Tissue	30-Jan-21 18:50	02-Feb-21 09:31
CORN_012521_ABD-BAIT	1B00003-37	Tissue	25-Jan-21 13:30	02-Feb-21 09:31

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Business Unit Manager

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 02-Feb-21 09:31. The samples were received intact, on-ice within a sealed cooler at

Cooler	Temp C°
Default Cooler	-53.0

SAMPLE PREPARATION AND ANALYSIS

Tissue samples were homogenized per EFGS SOP5141 prior to digestion.

Total mercury preparation and analysis was performed by flow injection atomic fluorescence spectrometry (FI-AFS) in accordance with EPA 1631B (EFGS SOP2822).

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries. All of the relative percent differences established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

eurofins | Frontier Global Sciences

Sample Receipt Checklist

Client: Wood   Date & Time Received: 0931 2/2/21   Date Labeled: 2/2/2021   Labeled By:

Matrix: Tissue (Animal Blood)   Received By: Label Verified By: 2-2-21

# of Coolers Received: 1   Samples Arrived By: ✓ Shipping Service ___ Courier ___ Hand ___ Other (Specify: ___)

Coolant: ☐ None/Ambient ☐ Loose Ice ☐ Gel Ice ☑ Dry Ice   Coolant Required: Y / N   Temp Blank Used: Y/N   for Cooler(s): ___

Notify Project Manager if packages/coolers are received without coolant or with thawed coolant and at a temperature in excess of 6°C. PM notified: Y/N

Samples from Wisconsin have special requirements. Shipment received includes samples from Wisconsin: Y/N

Cooler Information:	Y/N/NA	Comments
The coolers do not appear to be tampered with:	Y	
Custody Seals are present and intact:	Y	
Custody seals signed:	Y	

TID: 3018787	CF: -0.3 °C	Date/time: 2/2/21 0940	By:
Cooler 1: -50 °C	w/ CF: -53 °C	Cooler 4: °C	w/ CF: °C
Cooler 2: °C	w/ CF: °C	Cooler 5: °C	w/ CF: °C
Cooler 3: °C	w/ CF: °C	Cooler 6: °C	w/ CF: °C

Chain of Custody:	Y/N/NA	Comments
Sample ID/Description:	Y	
Date and time of collection:	Y	
Sampled by:	Y	
Preservation type:	Y	
Requested analyses:	Y	
Required signatures:	Y	
Internal COC required:	N	

Sample Condition/Integrity:	Y/N/NA	Comments
Sample containers intact/present:	N	1B00003-13, 1B00003-12A, 1B00003-11A.
Sample labels are present and legible:	Y	
Sample ID on container/bag matches COC:	Y	
Correct sample containers used:	Y	
Samples received within holding times:	Y	
Sample volume sufficient for requested analyses:	Y	
Correct preservative used for requested analyses:	Y	

Anomalies/Non-conformances (attach additional pages if needed):

1B00003

Wood E&IS
511 Congress Street
Portland, ME 04101
(207) 828-3367

SHIP TO:
Eurofins
5755 8th St E
Tacoma, WA, 98424
Atten: P. Garcia-Strickland
Lab Phone# 206-351-9522

CHAIN OF CUSTODY

DATE: 2/1/2021
COC #:
PAGE: 1 OF 4

Project Name:	Penobscot River 2020	Project Contact	Denise King	Bill To	Denise King, Wood E&IS
Project Number	3617207486 04 ****	Phone Number	508-789-1738		271 Mill Rd
Project Manager:	Rod Pendelton	Project Phase	Biota Monitoring		Chelmsford, MA 01824

Disposal Instructions	LAB
Shipment Method	FED EX
Waybill Number	N/A

Sample Information / Methods for Analysis / RUSH

No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Total Hg 1631e	STANDARD - 21 days	48 Hour	72 Hour	5 Days	TOTAL CONTAINERS	HOLD All Analyses
1	MMBKD-01_012521_ABD_01_BL	01/25/2021, 0951	BL	N	N	X	X				1	
2	MMBKD-01_012521_ABD_02_BL	01/25/2021, 1008	BL	N	N	X	X				1	
3	MMBKD-01_012521_ABD_03_BL	01/25/2021, 1030	BL	N	N	X	X				1	
4	MMBKD-01_012521_ABD_04_BL	01/25/2021, 1040	BL	N	N	X	X				1	
5	MMBKD-01_012521_ABD_05_BL	01/25/2021, 1051	BL	N	N	X	X				1	
6	MMBKD-01_012521_ABD_06_BL	01/25/2021, 1107	BL	N	N	X	X				1	
7	MMBKD-01_012521_ABD_07_BL	01/25/2021, 1120	BL	N	Y	X	X				1	
8	MMBKD-01_012521_ABD_08_BL	01/25/2021, 1130	BL	N	N	X	X				1	
9	MMBKD-01_012521_ABD_09_BL	01/25/2021, 1138	BL	N	N	X	X				1	
10	MMBKD-01_012521_ABD_10_BL	01/25/2021, 1145	BL	N	N	X	X				1	
11	MMBKD-01_012521_ABD_11_BL	01/25/2021, 1154	BL	N	N	X	X				1	
12	MMBKD-01_012521_ABD_12_BL	01/25/2021, 1204	BL	N	N	X	X				1	

TG

		Date:	Time:
Sampler's Signature:		2/1/2021	1230
Relinquished By/Affiliation:	WOOD E+IS – TOM GERHARD	2/1/2021	1230
Received By:	FEDEX	2/1/2021	1230
Relinquished By/Affiliation:			
Received By:			
Relinquished By/Affiliation:			
Received By (LAB):		2/2/21	0931

For Lab Use

Does COC match samples:	Y or N
Broken Container:	Y or N
COC seal intact:	Y or N
Other problems:	Y or N
WSDOT contacted:	Y or N
Date contacted:	
Cooler Temperature at receipt:	°C

Comments:
X=Analyze H=Hold Analysis Request

PO # C012906205

All samples frozen prior to and during shipment.
Extra volume for MS/MSD samples

NUMBER OF COOLERS SENT: 1

7832-5141-0953

wood.

Wood E&IS
511 Congress Street
Portland, ME 04101
(207) 828-3367

SHIP TO:
Eurofins
5755 8th St E
Tacoma, WA, 98424
Atten: P. Garcia-Strickland
Lab Phone# 206-351-9522

CHAIN OF CUSTODY

DATE: 2/1/2021
COC #:
PAGE: 2 OF 4

Project Name:	Penobscot River 2020	Project Contact	Denise King	Bill To	Denise King, Wood E&IS
Project Number	3617207488.04 ****	Phone Number	508-789-1738		271 Mill Rd
Project Manager	Rod Pendelton	Project Phase	Biota Monitoring		Chelmsford, MA 01824

Disposal Instructions	LAB
Shipment Method	FED EX
Waybill Number	N/A

Sample Information / Methods for Analysis / RUSH

No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Total Hg 1631e	STANDARD - 21 days	48 Hour	72 Hour	5 Days	TOTAL CONTAINERS	HOLD All Analyses
1	MMBKD-01_012521_ABD_13_BL	01/25/2021, 1217	BL	N	N	X	X				1	
2	MMBKD-01_012521_ABD_14_BL	01/25/2021, 1228	BL	N	N	X	X				1	
3	MMBKD-01_012521_ABD_15_BL	01/25/2021, 1233	BL	N	N	X	X				1	
4	ES-13_013021_ABD_01_BL	01/30/2021, 1634	BL	N	N	X	X				1	
5	ES-13_013021_ABD_02_BL	01/30/2021, 1645	BL	N	N	X	X				1	
6	ES-13_013021_ABD_03_BL	01/30/2021, 1654	BL	N	N	X	X				1	
7	ES-13_013021_ABD_04_BL	01/30/2021, 1704	BL	N	N	X	X				1	
8	ES-13_013021_ABD_05_BL	01/30/2021, 1714	BL	N	N	X	X				1	
9	ES-13_013021_ABD_06_BL	01/30/2021, 1722	BL	N	N	X	X				1	
10	ES-13_013021_ABD_07_BL	01/30/2021, 1729	BL	N	N	X	X				1	
11	ES-13_013021_ABD_08_BL	01/30/2021, 1740	BL	N	N	X	X				1	
12	ES-13_013021_ABD_09_BL	01/30/2021, 1752	BL	N	N	X	X				1	

TG

		Date:	Time:
Sampler's Signature:	[signature]	2/1/2021	1230
Relinquished By/Affiliation:	WOOD E+IS - Tom Gerhard	2/1/2021	1230
Received By:	FED EX	2/1/2021	1230
Relinquished By/Affiliation:			
Received By:			
Relinquished By/Affiliation:			
Received By (LAB):	[signature]	2/2/21	0921

For Lab Use

Does COC match samples:	Y or N
Broken Container:	Y or N
COC seal intact:	Y or N
Other problems:	Y or N
WSDOT contacted:	Y or N
Date contacted:	
Cooler Temperature at receipt:	°C

Comments:
X=Analyze H=Hold Analysis Request

PO # C012906205

All samples frozen prior to and during shipment.
Extra volume for MS/MSD samples

NUMBER OF COOLERS SENT: 1

wood.

Wood E&IS
511 Congress Street
Portland, ME 04101
(207) 828-3367

SHIP TO:
Eurofins
5755 8th St E
Tacoma, WA, 98424
Atten: P. Garcia-Strickland
Lab Phone# 206-351-9522

CHAIN OF CUSTODY

DATE: 2/1/2021
COC #:
PAGE: 3 OF 4

Project Name:	Penobscot River 2020	Project Contact	Denise King	Bill To	Denise King, Wood E&IS
Project Number	3617207486.04 ****	Phone Number	508-789-1738		271 Mill Rd
Project Manager	Rod Pendelton	Project Phase	Biota Monitoring		Chelmsford, MA 01824

Disposal Instructions	LAB
Shipment Method	FED EX
Waybill Number	N/A

Sample Information | Methods for Analysis | RUSH

No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Total Hg 1631e	STANDARD - 21 days	48 Hour	72 Hour	5 Days	TOTAL CONTAINERS	HOLD All Analyses
1	ES-13_013021_ABD_10_BL	01/30/2021, 1758	BL	N	N	X	X				1	
2	ES-13_013021_ABD_11_BL	01/30/2021, 1806	BL	N	N	X	X				1	
3	ES-13_013021_ABD_12_BL	01/30/2021, 1816	BL	N	N	X	X				1	
4	ES-13_013021_ABD_13_BL	01/30/2021, 1825	BL	N	N	X	X				1	
5	ES-13_013021_ABD_14_BL	01/30/2021, 1836	BL	N	Y	X	X				1	
6	ES-13_013021_ABD_15_BL	01/30/2021, 1845	BL	N	N	X	X				1	
7	FRB-02_012621_ABD_01_BL	01/26/2021, 1045	BL	N	Y	X	X				1	
8	FRB-02_012621_ABD_02_BL	01/26/2021, 1115	BL	N	N	X	X				1	
9	FRB-02_012721_ABD_03_BL	01/27/2021, 1220	BL	N	N	X	X				1	
10	FRB-02_012721_ABD_04_BL	01/27/2021, 1240	BL	N	N	X	X				1	
11	FRB-02_012721_ABD_05_BL	01/27/2021, 1255	BL	N	N	X	X				1	
12	EB_Capillary_013021_ABD_QC	01/30/2021, 1850	AQ	EB	N	X Add DI at lab to make blank	X				1	

TG

	Date:	Time:
Sampler's Signature: [signature]	2/1/2021	1230
Relinquished By/Affiliation: WOOD E+IS — Tom Gerhard	2/1/2021	1230
Received By: FedEx	2/1/2021	1230
Relinquished By/Affiliation:		
Received By:		
Relinquished By/Affiliation:		
Received By (LAB): [signature]	2/2/21	0921

For Lab Use

Does COC match samples:	Y or N
Broken Container:	Y or N
COC seal intact:	Y or N
Other problems:	Y or N
WSDOT contacted:	Y or N
Date contacted:	______
Cooler Temperature at receipt:	______ °C

Comments:
X=Analyze H=Hold Analysis Request

PO # C012906205

All samples frozen prior to and during shipment.
Extra volume for MS/MSD samples

NUMBER OF COOLERS SENT: 1

Wood E&IS
511 Congress Street
Portland, ME 04101
(207) 828-3367

SHIP TO:
Eurofins
5755 8th St E
Tacoma, WA, 98424
Atten: P. Garcia-Strickland
Lab Phone# 206-351-9522

CHAIN OF CUSTODY

DATE: 2/1/2021
COC #:
PAGE: 4 OF 4

Project Name: Penobscot River 2020	Project Contact: Denise King	Bill To: Denise King, Wood E&IS	Disposal Instructions: LAB
Project Number: 3617207486.04 ****	Phone Number: 508-789-1738	271 Mill Rd	Shipment Method: FED EX
Project Manager: Rod Pendelton	Project Phase: Biota Monitoring	Chelmsford, MA 01824	Waybill Number: N/A

No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Total Hg 1631e	STANDARD - 21 days	48 Hour	72 Hour	5 Days	TOTAL CONTAINERS	HOLD All Analyses
1	CORN_012521_ABD_BAIT	01/25/2021, 1330	SOLID	QC	N	X	X				1	
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

TG TG

Sampler's Signature: [signature]	Date: 2/1/2021	Time: 1230
Relinquished By/Affiliation: WOOD E+IS - TOM GERHARD	Date: 2/1/2021	Time: 1230
Received By: FED EX	Date: 2/1/2021	Time: 1230
Relinquished By/Affiliation:	Date:	Time:
Received By:	Date:	Time:
Relinquished By/Affiliation:	Date:	Time:
Received By (LAB): [signature]	Date: 2/2/21	Time: 0834

For Lab Use

Does COC match samples:	Y or N
Broken Container:	Y or N
COC seal intact:	Y or N
Other problems:	Y or N
WSDOT contacted:	Y or N
Date contacted:	
Cooler Temperature at receipt:	°C

Comments:
X=Analyze H=Hold Analysis Request

PO # C012906205

All samples frozen prior to and during shipment.
Extra volume for MS/MSD samples

NUMBER OF COOLERS SENT: 1

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

MMBKD-01_012521_ABD_01_BL

1B00003-01

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**804**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

MMBKD-01_012521_ABD_02_BL

1B00003-02

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**385**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

MMBKD-01_012521_ABD_03_BL

1B00003-03

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**795**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

MMBKD-01_012521_ABD_04_BL

1B00003-04

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**404**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Business Unit Manager

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

MMBKD-01_012521_ABD_05_BL

1B00003-05

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**592**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Business Unit Manager

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

MMBKD-01_012521_ABD_06_BL

1B00003-06

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**236**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

MMBKD-01_012521_ABD_07_BL

1B00003-07

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**223**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Business Unit Manager

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

MMBKD-01_012521_ABD_08_BL

1B00003-08

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**290**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

Eurofins Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

MMBKD-01_012521_ABD_09_BL

1B00003-09

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**434**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

Frontier Global Sciences
5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

MMBKD-01_012521_ABD_10_BL

1B00003-10

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**551**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

Eurofins Frontier Global Sciences, LLC

Patrick Garcia-Strickland, Business Unit Manager

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Frontier Global Sciences

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

MMBKD-01_012521_ABD_11_BL

1B00003-11

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**255**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Business Unit Manager

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

MMBKD-01_012521_ABD_12_BL

1B00003-12

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**390**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

MMBKD-01_012521_ABD_13_BL

1B00003-13

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**271**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

MMBKD-01_012521_ABD_14_BL

1B00003-14

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**232**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

MMBKD-01_012521_ABD_15_BL

1B00003-15

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**281**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

ES-13_013021_ABD_01_BL

1B00003-16

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**50.0**	4.48	40.0	ng/g	1000	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

eurofins
Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

ES-13_013021_ABD_02_BL

1B00003-17

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**198**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

eurofins
Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	Reported:
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

ES-13_013021_ABD_03_BL

1B00003-18

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	ND	4.48	40.0	ng/g	1000	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	U

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

ES-13_013021_ABD_04_BL

1B00003-19

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**353**	11.2	100	ng/g	2500	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

ES-13_013021_ABD_05_BL

1B00003-20

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**180**	9.68	86.4	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	

eurofins
Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

ES-13_013021_ABD_06_BL

1B00003-21

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**360**	13.3	119	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	

eurofins
Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

ES-13_013021_ABD_07_BL

1B00003-22

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**366**	12.6	112	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA 271 Mill Road Chelmsford MA, 01824	Project: Penobscot Project Number: 3617207486.04 Project Manager: Rod Pendleton	**Reported:** 16-Mar-21 11:55

ES-13_013021_ABD_08_BL

1B00003-23

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**291**	16.4	146	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Business Unit Manager

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

ES-13_013021_ABD_09_BL

1B00003-24

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**176**	16.3	146	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

ES-13_013021_ABD_10_BL

1B00003-25

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**216**	8.99	80.2	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	

Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

ES-13_013021_ABD_11_BL

1B00003-26

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**172**	12.8	115	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

ES-13_013021_ABD_12_BL

1B00003-27

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**99.4**	12.4	111	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	J

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

ES-13_013021_ABD_13_BL

1B00003-28

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**161**	18.1	161	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

ES-13_013021_ABD_14_BL

1B00003-29

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**237**	9.96	89.0	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

ES-13_013021_ABD_15_BL

1B00003-30

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**289**	14.3	128	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

FRB-02_012621_ABD_01_BL

1B00003-31

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**99.8**	19.0	170	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	J

eurofins
Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

FRB-02_012621_ABD_02_BL

1B00003-32

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**58.4**	7.97	71.2	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	J

eurofins

Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

FRB-02_012721_ABD_03_BL

1B00003-33

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**75.8**	11.3	101	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	J

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

FRB-02_012721_ABD_04_BL

1B00003-34

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**69.5**	22.2	198	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	J

eurofins

Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

FRB-02_012721_ABD_05_BL

1B00003-35

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	**87.7**	26.2	234	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	J

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	Reported:
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

EB_CAPILLARY_013021_ABD_QC

1B00003-36

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	ND	11.2	99.9	ng/g	2500	F102336	22-Feb-21	1B25008	24-Feb-21	EPA 1631B	U

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

CORN_012521_ABD-BAIT

1B00003-37

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EPA 1631B											
Mercury	ND	4.48	40.0	ng/g	1000	F102329	18-Feb-21	1C05005	04-Mar-21	EPA 1631B	U

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1B25008 - F102336											
Cal Standard (1B25008-CAL1)					Prepared & Analyzed: 24-Feb-21						
Mercury	0.615	-		ng/L	0.50000		123				
Cal Standard (1B25008-CAL2)					Prepared & Analyzed: 24-Feb-21						
Mercury	1.048	-		ng/L	1.0000		105				
Cal Standard (1B25008-CAL3)					Prepared & Analyzed: 24-Feb-21						
Mercury	4.535	-		ng/L	5.0000		90.7				
Cal Standard (1B25008-CAL4)					Prepared & Analyzed: 24-Feb-21						
Mercury	18.08	-		ng/L	20.000		90.4				
Cal Standard (1B25008-CAL5)					Prepared & Analyzed: 24-Feb-21						
Mercury	36.46	-		ng/L	40.000		91.1				
Calibration Blank (1B25008-CCB1)					Prepared & Analyzed: 24-Feb-21						
Mercury	0.204	-		ng/L							
Calibration Blank (1B25008-CCB2)					Prepared & Analyzed: 24-Feb-21						
Mercury	0.250	-		ng/L							
Calibration Blank (1B25008-CCB3)					Prepared & Analyzed: 24-Feb-21						
Mercury	0.029	-		ng/L							
Calibration Blank (1B25008-CCB4)					Prepared & Analyzed: 24-Feb-21						
Mercury	0.002	-		ng/L							
Calibration Blank (1B25008-CCB5)					Prepared & Analyzed: 24-Feb-21						
Mercury	0.009	-		ng/L							

eurofins
Frontier Global Sciences
5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	Reported:
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1B25008 - F102336											
Calibration Blank (1B25008-CCB6)					Prepared & Analyzed: 24-Feb-21						
Mercury	0.186	-		ng/L							
Calibration Blank (1B25008-CCB7)					Prepared & Analyzed: 24-Feb-21						
Mercury	-0.053	-		ng/L							U
Calibration Check (1B25008-CCV1)					Prepared & Analyzed: 24-Feb-21						
Mercury	4.410	-		ng/L	4.9950		88.3	77-123			
Calibration Check (1B25008-CCV2)					Prepared & Analyzed: 24-Feb-21						
Mercury	4.466	-		ng/L	4.9950		89.4	77-123			
Calibration Check (1B25008-CCV3)					Prepared & Analyzed: 24-Feb-21						
Mercury	4.275	-		ng/L	4.9950		85.6	77-123			
Calibration Check (1B25008-CCV4)					Prepared & Analyzed: 24-Feb-21						
Mercury	4.152	-		ng/L	4.9950		83.1	77-123			
Calibration Check (1B25008-CCV5)					Prepared & Analyzed: 24-Feb-21						
Mercury	4.118	-		ng/L	4.9950		82.4	77-123			
Calibration Check (1B25008-CCV6)					Prepared & Analyzed: 24-Feb-21						
Mercury	3.896	-		ng/L	4.9950		78.0	77-123			
Calibration Check (1B25008-CCV7)					Prepared & Analyzed: 24-Feb-21						
Mercury	4.033	-		ng/L	4.9950		80.7	77-123			
Instrument Blank (1B25008-IBL1)					Prepared & Analyzed: 24-Feb-21						
Mercury	ND	0.004	0.040	ng/L							U

eurofins
Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA 271 Mill Road Chelmsford MA, 01824	Project: Penobscot Project Number: 3617207486.04 Project Manager: Rod Pendleton	**Reported:** 16-Mar-21 11:55

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1B25008 - F102336											
Instrument Blank (1B25008-IBL2)					Prepared & Analyzed: 24-Feb-21						
Mercury	ND	0.004	0.040	ng/L							U
Instrument Blank (1B25008-IBL3)					Prepared & Analyzed: 24-Feb-21						
Mercury	ND	0.004	0.040	ng/L							U
Initial Cal Blank (1B25008-ICB1)					Prepared & Analyzed: 24-Feb-21						
Mercury	0.239	-		ng/L							
Initial Cal Check (1B25008-ICV1)					Prepared & Analyzed: 24-Feb-21						
Mercury	4.804	-		ng/L	4.9950		96.2	79-121			
Batch 1C05005 - F102329											
Cal Standard (1C05005-CAL1)					Prepared & Analyzed: 04-Mar-21						
Mercury	0.563	-		ng/L	0.50000		113				
Cal Standard (1C05005-CAL2)					Prepared & Analyzed: 04-Mar-21						
Mercury	0.908	-		ng/L	1.0000		90.8				
Cal Standard (1C05005-CAL3)					Prepared & Analyzed: 04-Mar-21						
Mercury	4.795	-		ng/L	5.0000		95.9				
Cal Standard (1C05005-CAL4)					Prepared & Analyzed: 04-Mar-21						
Mercury	19.93	-		ng/L	20.000		99.6				
Cal Standard (1C05005-CAL5)					Prepared & Analyzed: 04-Mar-21						
Mercury	40.43	-		ng/L	40.000		101				

eurofins | Frontier Global Sciences

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	Reported:
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C05005 - F102329											
Calibration Blank (1C05005-CCB1)					Prepared & Analyzed: 04-Mar-21						
Mercury	-0.238	-		ng/L							U
Calibration Blank (1C05005-CCB2)					Prepared & Analyzed: 04-Mar-21						
Mercury	-0.367	-		ng/L							U
Calibration Blank (1C05005-CCB3)					Prepared & Analyzed: 04-Mar-21						
Mercury	-0.240	-		ng/L							U
Calibration Blank (1C05005-CCB4)					Prepared & Analyzed: 04-Mar-21						
Mercury	-0.353	-		ng/L							U
Calibration Blank (1C05005-CCB5)					Prepared & Analyzed: 04-Mar-21						
Mercury	0.050	-		ng/L							
Calibration Blank (1C05005-CCB6)					Prepared & Analyzed: 04-Mar-21						
Mercury	-0.234	-		ng/L							U
Calibration Blank (1C05005-CCB7)					Prepared & Analyzed: 04-Mar-21						
Mercury	-0.247	-		ng/L							U
Calibration Blank (1C05005-CCB8)					Prepared & Analyzed: 04-Mar-21						
Mercury	-0.316	-		ng/L							U
Calibration Blank (1C05005-CCB9)					Prepared & Analyzed: 04-Mar-21						
Mercury	-0.362	-		ng/L							U
Calibration Blank (1C05005-CCBA)					Prepared & Analyzed: 04-Mar-21						
Mercury	-0.325	-		ng/L							U

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C05005 - F102329											
Calibration Check (1C05005-CCV1)					Prepared & Analyzed: 04-Mar-21						
Mercury	4.672	-		ng/L	4.9950		93.5	77-123			
Calibration Check (1C05005-CCV2)					Prepared & Analyzed: 04-Mar-21						
Mercury	4.402	-		ng/L	4.9950		88.1	77-123			
Calibration Check (1C05005-CCV3)					Prepared & Analyzed: 04-Mar-21						
Mercury	4.446	-		ng/L	4.9950		89.0	77-123			
Calibration Check (1C05005-CCV4)					Prepared & Analyzed: 04-Mar-21						
Mercury	4.472	-		ng/L	4.9950		89.5	77-123			
Calibration Check (1C05005-CCV5)					Prepared & Analyzed: 04-Mar-21						
Mercury	4.457	-		ng/L	4.9950		89.2	77-123			
Calibration Check (1C05005-CCV6)					Prepared & Analyzed: 04-Mar-21						
Mercury	4.533	-		ng/L	4.9950		90.8	77-123			
Calibration Check (1C05005-CCV7)					Prepared & Analyzed: 04-Mar-21						
Mercury	4.204	-		ng/L	4.9950		84.2	77-123			
Calibration Check (1C05005-CCV8)					Prepared & Analyzed: 04-Mar-21						
Mercury	4.227	-		ng/L	4.9950		84.6	77-123			
Calibration Check (1C05005-CCV9)					Prepared & Analyzed: 04-Mar-21						
Mercury	4.608	-		ng/L	4.9950		92.3	77-123			
Calibration Check (1C05005-CCVA)					Prepared & Analyzed: 04-Mar-21						
Mercury	4.254	-		ng/L	4.9950		85.2	77-123			

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C05005 - F102329											
Instrument Blank (1C05005-IBL1)					Prepared & Analyzed: 04-Mar-21						
Mercury	ND	0.004	0.040	ng/L							U
Instrument Blank (1C05005-IBL2)					Prepared & Analyzed: 04-Mar-21						
Mercury	ND	0.004	0.040	ng/L							U
Instrument Blank (1C05005-IBL3)					Prepared & Analyzed: 04-Mar-21						
Mercury	ND	0.004	0.040	ng/L							U
Initial Cal Blank (1C05005-ICB1)					Prepared & Analyzed: 04-Mar-21						
Mercury	0.073	-		ng/L							
Initial Cal Check (1C05005-ICV1)					Prepared & Analyzed: 04-Mar-21						
Mercury	5.076	-		ng/L	4.9950		102	79-121			
Batch F102329 - EFGS SOP2795 Nitric/Sulfuric Hg Digestion											
Blank (F102329-BLK1)					Prepared: 18-Feb-21 Analyzed: 04-Mar-21						
Mercury	ND	0.090	0.800	ng/g							U
Blank (F102329-BLK2)					Prepared: 18-Feb-21 Analyzed: 04-Mar-21						
Mercury	ND	0.090	0.800	ng/g							U
Blank (F102329-BLK3)					Prepared: 18-Feb-21 Analyzed: 04-Mar-21						
Mercury	0.428	0.090	0.800	ng/g							J
LCS (F102329-BS1)					Prepared: 18-Feb-21 Analyzed: 04-Mar-21						
Mercury	7.658	0.090	0.800	ng/g	8.0000		95.7	75-125			

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F102329 - EFGS SOP2795 Nitric/Sulfuric Hg Digestion											
LCS Dup (F102329-BSD1)					Prepared: 18-Feb-21 Analyzed: 04-Mar-21						
Mercury	7.651	0.090	0.800	ng/g	8.0000		95.6	75-125	0.0958	24	
Matrix Spike (F102329-MS1)		**Source: 1B00003-37RE1**			Prepared: 18-Feb-21 Analyzed: 04-Mar-21						
Mercury	463.6	11.2	100	ng/g	799.20	ND	58.0	71-125			QM-07
Matrix Spike (F102329-MS2)		**Source: 1B00003-07**			Prepared: 18-Feb-21 Analyzed: 04-Mar-21						
Mercury	707.4	11.2	100	ng/g	399.60	223.3	121	71-125			
Matrix Spike Dup (F102329-MSD1)		**Source: 1B00003-37RE1**			Prepared: 18-Feb-21 Analyzed: 04-Mar-21						
Mercury	428.3	11.2	100	ng/g	799.20	ND	53.6	71-125	7.91	24	QM-07
Matrix Spike Dup (F102329-MSD2)		**Source: 1B00003-07**			Prepared: 18-Feb-21 Analyzed: 04-Mar-21						
Mercury	863.1	11.2	100	ng/g	399.60	223.3	160	71-125	27.7	24	QM-07
Batch F102336 - EFGS SOP2795 Nitric/Sulfuric Hg Digestion											
Blank (F102336-BLK1)					Prepared: 22-Feb-21 Analyzed: 24-Feb-21						
Mercury	0.626	0.090	0.800	ng/g							J
Blank (F102336-BLK2)					Prepared: 22-Feb-21 Analyzed: 24-Feb-21						
Mercury	0.098	0.090	0.800	ng/g							J
Blank (F102336-BLK3)					Prepared: 22-Feb-21 Analyzed: 24-Feb-21						
Mercury	0.151	0.090	0.800	ng/g							J
LCS (F102336-BS1)					Prepared: 22-Feb-21 Analyzed: 24-Feb-21						
Mercury	7.321	0.090	0.800	ng/g	8.0000		91.5	75-125			

5755 8th Street East
Tacoma, WA 98424
Phone: (253) 922-2310

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F102336 - EFGS SOP2795 Nitric/Sulfuric Hg Digestion											
LCS Dup (F102336-BSD1)					Prepared: 22-Feb-21 Analyzed: 24-Feb-21						
Mercury	6.972	0.090	0.800	ng/g	8.0000		87.2	75-125	4.88	24	
Matrix Spike (F102336-MS1)		**Source: 1B00003-31**			Prepared: 22-Feb-21 Analyzed: 24-Feb-21						
Mercury	598.3	16.4	147	ng/g	585.58	99.81	85.1	71-125			
Matrix Spike (F102336-MS2)		**Source: 1B00003-34**			Prepared: 22-Feb-21 Analyzed: 24-Feb-21						
Mercury	562.1	29.2	260	ng/g	1040.6	69.46	47.3	71-125			QM-05
Matrix Spike Dup (F102336-MSD1)		**Source: 1B00003-31**			Prepared: 22-Feb-21 Analyzed: 24-Feb-21						
Mercury	438.1	23.2	207	ng/g	828.36	99.81	40.8	71-125	70.3	24	QM-05
Matrix Spike Dup (F102336-MSD2)		**Source: 1B00003-34**			Prepared: 22-Feb-21 Analyzed: 24-Feb-21						
Mercury	765.2	26.4	235	ng/g	940.68	69.46	74.0	71-125	43.9	24	QM-05

Wood - MA	Project: Penobscot	
271 Mill Road	Project Number: 3617207486.04	**Reported:**
Chelmsford MA, 01824	Project Manager: Rod Pendleton	16-Mar-21 11:55

Notes and Definitions

U	Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample.
QM-07	The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
QM-05	The spike recovery was outside acceptance limits for the MS/MSD and or AS/ASD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
J	The result is an estimated concentration.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the method detection limit if reported to the MDL or above the reporting limit if reported to the MRL.
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

ANALYSIS SEQUENCE

1B25008

1B25007
Attached

Instrument: Hg2600-3

Calibration ID: UNASSIGNED **Analyzed: 2/24/2021**

Lab Number	Analysis	Order	STD ID	ISTD ID	Comments
1B25008-IBL1	QC	1			
1B25008-IBL2	QC	2			
1B25008-IBL3	QC	3			
1B25008-CAL1	QC	4	2100111		
1B25008-CAL2	QC	5	2100112		QUALITY ASSURANCE
1B25008-CAL3	QC	6	2100344		PEER REVIEWED
1B25008-CAL4	QC	7	2100345		
1B25008-CAL5	QC	8	2100346		INITIALS: PGS
1B25008-ICV1	QC	9	2002777		
1B25008-ICB1	QC	10			
1B25008-CCV1	QC	11	2002777		
1B25008-CCB1	QC	12			
1B25008-CCV2	QC	13	2002777		
1B25008-CCB2	QC	14			
1B25008-CCV3	QC	15	2002777		
1B25008-CCB3	QC	16			
F102336-BS1	QC	17		1204925	
F102336-BSD1	QC	18		1204925	
F102336-BLK1	QC	19		1204925	
F102336-BLK2	QC	20		1204925	
F102336-BLK3	QC	21		1204925	
1B00003-31	Hg-CVAFS-T-7030	22			
F102336-MS1	QC	23		1204925	
F102336-MSD1	QC	24		1204925	
1B00003-34	Hg-CVAFS-T-7030	25			
1B25008-CCV4	QC	26	2002777		
1B25008-CCB4	QC	27			
F102336-MS2	QC	28		1204925	
F102336-MSD2	QC	29		1204925	
1B00003-20	Hg-CVAFS-T-7030	30			
1B00003-21	Hg-CVAFS-T-7030	31			
1B00003-22	Hg-CVAFS-T-7030	32			
1B00003-23	Hg-CVAFS-T-7030	33			
1B00003-24	Hg-CVAFS-T-7030	34			
1B00003-25	Hg-CVAFS-T-7030	35			
1B00003-26	Hg-CVAFS-T-7030	36			

ANALYSIS SEQUENCE

1B25008

Instrument: Hg2600-3

Calibration ID: UNASSIGNED **Analyzed: 2/24/2021**

Lab Number	Analysis	Order	STD ID	ISTD ID	Comments
1B00003-27	Hg-CVAFS-T-7030	37			
1B25008-CCV5	QC	38	2002777		
1B25008-CCB5	QC	39			
1B00003-28	Hg-CVAFS-T-7030	40			
1B00003-29	Hg-CVAFS-T-7030	41			
1B00003-30	Hg-CVAFS-T-7030	42			
1B00003-32	Hg-CVAFS-T-7030	43			
1B00003-33	Hg-CVAFS-T-7030	44			
1B00003-35	Hg-CVAFS-T-7030	45			
1B00003-36	Hg-CVAFS-T-7030	46			
1B25008-CCV6	QC	47	2002777		
1B25008-CCB6	QC	48			
1B25008-CCV7	QC	49	2002777		
1B25008-CCB7	QC	50			
1B25008-CCV8	QC	51	2002777		
1B25008-CCB8	QC	52			

02/25/21

Samples Loaded By Date

2/25/21

Data Processed By Date

Peer Review Check List for THg by 2600 CV-AFS (SOP2822) 2016 Rev 1 (04/1/2016)

Analyst:	AH/MV2(DE)	**Sequence(s) #:**	1B25008
Reviewer:		**Dataset ID(s):**	THg26003-210224-2
Date:	2/25/2021	**WO (s) #:**	Multiple
Batch #(s):	F102336		

• **Select the correct preparation method.**

Analyte	Prep Method		Matrix
☐ THg	EFAFS-T-AFS-SOP2985	FSTM Trap 70:30 Digest	Air/Gas
☐ THg	EFAFS-T-AFS-SOP2807	Modified Cold Aqua Regia	Sed/Soil
☐ THg	EFAFS-T-AFS-SOP2821	Shared Bomb-HF/HNO3/HCl Digest	Sed/Soil
☐ THg	EFTM-T-TM-SOP2825	Nitric Acid Oven Bomb	Sed/Soil
☑ THg	EFAFS-T-AFS-SOP2795	70:30 Digest	Tissue
☐ THg	EFAFS-T-AFS-SOP2800	KCl Trap BrCl Oxidation	Air/Gas
☐ THg	EFTM-T-TM-SOP2837	Shared Nitric	Tissue
☐ THg	EFSR-P-SP-SOP2796	BrCl Oxidation	Water
☐ Hg0	NA	NA	Water
☐ Inorg Hg	NA	NA	Water

Analyst Initials: MV **Reviewer Initials** PGS

1. Compare SampleID with Benchsheet/Sequence/Raw Data (Have all samples been imported?)	☑ YES	☐ NO		☐
2. Check for transcription errors from Excel spreadsheet (or Prep Benchsheet)/Raw data	☑ YES	☐ NO		☐
(a) On raw data (instrument print-out), does correct file (dataset ID#) name appear in description? Naming convention: THg26001-yymmdd-1 or THg26002-yymmdd-1	☑ YES	☐ NO		☐
(b) Check 5% of transcription from Instrument print-out and Excel file. Compare the "Dilute" and "Peak (raw)" columns to "Dilution" and "Uncorrected Result" in Excel	☑ YES	☐ NO		☐
(c) Check standards & reagents in sequence & bench sheet for correct usage (expiries).	☑ YES	☐ NO	☐ N/A	☐
(d) Check and compare masses (review prep benchsheet)	☑ YES	☐ NO	☐ N/A	☐
(e) Check & compare initial & final volumes	☐ YES	☐ NO	☑ N/A	☐
(f) Do aliquots and dilutions written on benchsheet match those in Excel? 50 ml / aliquot = Excel dilution value	☑ YES	☐ NO	☐ N/A	☐
(g) Is the sequence #, analyst, date, and instrument # on the QC page?	☑ YES	☐ NO		☐
(h) Is the analysis status correct? (analyzed/initial review/reviewed)	☑ YES	☐ NO		☐
(i) Original prep bench sheet added to data package?	☑ YES	☐ NO		☐
(j) Benchsheet prep date MUST match actual prep date (check if re-shot vs re-extract)	☑ YES	☐ NO		☐
3. High QA? WO#(s)/Client(s):	☐ YES	☑ NO		☐
4. Client specific QC? (if Yes, refer to Project Notes/LIMS)	☐ YES	☑ NO		☐
(a) Have the QC requirements been met for all WO#s?	☑ YES	☐ NO		
(b) Prep blanks corrections/assigned properly	☑ YES	☐ NO		☐
5a. 20 or fewer samples in batch?	☑ YES	☐ NO		☐
(i) 3 PBs, 1 LCS(or BS), 1 LCSD(or BSD), 1 DUP/Batch 1 MS/MSD (or AS/ASD)/10 samples?	☑ YES	☐ NO		☐
(ii) 1 CCV and 1 CCB every 10 analytical runs?	☐ YES	☐ NO		☐

Peer Review Check List for THg by 2600 CV-AFS (SOP2822) 2016 Rev 1 (04/1/2016)

Analyst:	AH/MV2(DE)	**Sequence(s) #:**	1B25008
Reviewer:		**Dataset ID(s):**	THg26003-210224-2
Date:	2/25/2021	**WO (s) #:**	Multiple
Batch #(s):	F102336		

Analyst Initials ____ **Reviewer Initials** PCS

Item				
5b. Has the B/C section data been uploaded?	☐ YES	☐ NO	☑ N/A	☐
QA/QC Data Checked				
6. RSD CF (≤ 15%)	☑ PASS	☐ FAIL		☐
Comments:				
7. The calibration curve included a minimum of 5 Standards	☑ YES	☐ NO		☐
Comments:				
8. 1st Calibration Standard % Recoveries EPA 1631E (75-125%)	☑ PASS	☐ FAIL		☐
9. ICV and CCV % Recoveries EPA 1631E (77-123%)	☑ PASS	☐ FAIL		☐
Comments:				
10. Do all calibration points pass acceptance criteria?	☑ YES	☐ NO		☐
Comments:				
11.Are qualifiers consistant with the data review flowcharts?	☑ YES	☐ NO	☐ N/A	☐
Comments:				
12. Explain any items on the failed data report from Element				☐
Comments:				
13. Are the individual Preparation Blanks < PQL or <2.2xMDL for WI (refer to appropriate prep method PQL list)	☑ PASS	☐ FAIL		☐
(a) If not < PQL or <2.2xMDL for WI, note which PB(s) are above control limit:				
(b) Is the mean PB < PQL or <2.2xMDL for WI (for appropriate qualification)?	☑ YES	☐ NO		☐
(c) Was a BrCl Blank analyzed for each preservation level?	☐ YES	☐ NO	☑ N/A	☐
(d) Are Preparation Blanks summarized on QC page?	☑ YES	☐ NO		☐
14. Filtration Blank Prepared (if yes, use FB qualifier)	☐ YES	☑ NO		☐
(a) Filtration Blank prep date same as associated samples' prep date	☐ YES	☐ NO	☑ N/A	☐
(b) Filtration Blank absolute value < PQL or <2.2xMDL for WI	☐ YES	☐ NO	☑ N/A	☐
15. IBLs (3 minimum) individually < 0.50 ng/L, mean < 0.25 ng/L and STD of 0.10 ng/L?	☑ PASS	☐ FAIL		☐
Comments:				
16. CCBs individually < 0.50 ng/L or 2.2 x MDL for WI?	☑ PASS	☐ FAIL		☐
Comments:				
17. Have Total Solids been applied? (If NO, please ensure that they are done or nearly done)	☐ YES	☐ NO	☑ N/A	☐
18. Is the correct 'Source' designated for MD/MS/MSD?	☑ YES	☐ NO		☐
19. For digested preps: was there a spike witness signature & date on the prep bench sheet?	☑ YES	☐ NO	☐ N/A	☐

Peer Review Check List for THg by 2600 CV-AFS (SOP2822) 2016 Rev 1 (04/1/2016)

Analyst:	AH/MV2(DE)	Sequence(s) #:	1B25008
Reviewer:		Dataset ID(s):	THg26003-210224-2
Date:	2/25/2021	WO (s) #:	Multiple
Batch #(s):	F102336		

Analyst Initials ~~MV~~ Reviewer Initials PGS

20. MS/MSD Spiked at least 1-5 X ambient or 5x MRL (whichever is higher) ? ☑ YES ☐ NO ☐
Comments:

21. Are all samples within instrument calibration range? (or at minimum dilution size) ☑ PASS ☐ FAIL ☐
Comments:

22. Are the samples run at the correct dilution level for the method? ☑ YES ☐ NO
Comments:

23. Dissolved < Total (if applicable) ☐ YES ☐ NO ☑ N/A ☐
Comments:

24. Effluent < Influent (visually confirm if needed) ☐ YES ☐ NO ☑ N/A ☐
Comments:

25. Are re-runs noted with reason? ☑ YES ☐ NO ☐ N/A ☐
Comments:

26. FSTM Datasets: Check to ensure the 'Response' & 'Initial Result' columns match in both the Excel dataset & LIMS for the FSTM A (in sequence) & B/C (in batch) traps? ☐ YES ☐ NO ☑ N/A ☐
Comments:

27. Is the B trap <5% A Traps ☐ YES ☐ NO ☑ N/A ☐
Comments:

28. Are spiked trap recoveries75-125% of true value? ☐ YES ☐ NO ☑ N/A ☐
Comments:

29.Have non-reportable samples been imported into LIMS and clicked to non-reportable? ☑ YES ☐ NO ☐ N/A
Comments:

30. Have re-extracts been created for non-reportable samples? ☑ YES ☐ NO ☐ N/A ☐

31. Are there any HIGH QA projects within the data? If so, place data package in QA office before scanning. ☐ YES ☐ NO ☑ N/A ☐

32. Does the data set need scanning? ☐ YES ☑ N/A ☐

33. Does the dataset have an LOQ/LOQ or DOC? ☐ YES ☑ N/A ☐

34. Water samples: has the preservation log been included in dataset for final volume verification? ☐ YES ☐ NO ☑ N/A ☐

35. Water samples-is the final volume correct in the sequence? ☐ YES ☐ NO ☑ N/A ☐

Files located at: \\Cuprum\gen_admin\Quality Assurance\Training Master\DOCs aDJH

36. Date of analyst IDOC/CDOC: 2/17/21 ~~3/1/21~~ IDOC/CDOC within last 12 months? ☑ YES ☐ NO ☐

37. Date of analyst's SOP reading for method: Current SOP revision read? ☐ YES ☐ NO ☐

38. Date of LOD: LOD within last 3 months? ☐ YES ☐ NO ☐

39. Date of LOQ: LOQ within last 3 months? ☐ YES ☐ NO ☐

Data can not be reported without a current IDOC/CDOC, LOD or LOQ.

Peer Review Check List for THg by 2600 CV-AFS (SOP2822) 2016 Rev 1 (04/1/2016)

Analyst:	AH/MV2(DE)	**Sequence(s) #:**	1B25008
Reviewer:		**Dataset ID(s):**	THg26003-210224-2
Date:	2/25/2021	**WO (s) #:**	Multiple
Batch #(s):	F102336		

40. Peer Reviewer's comments (use Peer Review Checklist Additional Comments form if necessary):

Additional Page (s)? ☐ YES

Failing Data Report - 1B25008

Sample ID	Analysis	Result	MRL	Dup Result	Source Result	True Value	Units	% Rec.	Rec. LCL	Rec. UCL	RPD	RPD Limit	Over Cal	Failure	Qualifier
F102336-MSD1	Hg-CVAFS-T-7030	438.1	207	598.346	499.81313	828.36	ng/g	40.8	71.00	125.00	70.3	24.00	PASS-OVER	FAIL-MSD (Rec. and RPD)	QM-05
F102336-MS2	Hg-CVAFS-T-7030	562.1	260		69.45504	1040.6	ng/g	47.3	71.00	125.00			PASS-OVER	FAIL-MS	QM-05
F102336-MSD2	Hg-CVAFS-T-7030	765.2	235	562.084	469.45504	940.68	ng/g	74.0	71.00	125.00	43.9	24.00	PASS-OVER	FAIL-MSD (RPD)	QM-05
1B25008-CCV8	Hg-CVAFS-T-7030	3.536	1.000			4.9950	ng/L	70.8	77.00	123.00			PASS-OVER	FAIL-CCV	

Analyst Reviewed By Date

Peer Reviewed By Date

PREPARATION BENCH SHEET

F102336

Eurofins Frontier Global Sciences, LLC

Matrix: Tissue **Prepared using: Trace Metals - EFGS SOP2795 Nitric/Sulfuric Hg Digestion** **Prepared: 2/22/2021**

Lab Number	Sample ID and Source Sample	Initial (g)	Final (mL)	Spike1 ID	µl Spike1	Spike2 ID	µl Spike2	Extraction Comments
F102336-BLK1	Blank	0.25	20					
F102336-BLK2	Blank	0.25	20					
F102336-BLK3	Blank	0.25	20					
F102336-BS1	LCS	0.25	20	2100109	20			
F102336-BSD1	LCS Dup	0.25	20	2100109	20			
F102336-MS1	Matrix Spike [1B00003-31]	0.0853	10	2002758	50			
F102336-MS2	Matrix Spike [1B00003-34]	0.048	10	2002758	50			
F102336-MSD1	Matrix Spike Dup [1B00003-31]	0.0603	10	2002758	50			
F102336-MSD2	Matrix Spike Dup [1B00003-34]	0.0531	10	2002758	50			

Standard ID(s):	Description:	Expiration:
2002758	THg 1,000ng/mL Secondary Spiking Standard	04-May-21 00:00
2100109	THg 100ng/mL Primary Spiking Standard	12-Apr-21 00:00

Reagent ID(s):	Description:	Expiration:
2003665	Boiling Chips for Trace Metals	29-Jun-21 00:00
2100342	5% BrCl	06-Jul-21 00:00
2100386	70/30 Digestion Acid	21-Aug-21 00:00

PREPARATION BENCH SHEET

F102336

Eurofins Frontier Global Sciences, LLC

Matrix: Tissue **Prepared using: Trace Metals - EFGS SOP2795 Nitric/Sulfuric Hg Digestion** **Prepared: 2/22/2021**

Lab Number	Sample ID	Initial (g)	Final (mL)	QC Sample	Sample Specs.	Location	Sample Comments	Analysis Comments
1B00003-20	ES-13_013021_ABD_05_BL	0.1446	10	-	-	eezer 23 F		
1B00003-21	ES-13_013021_ABD_06_BL	0.1051	10	-	-	eezer 23 F		
1B00003-22	ES-13_013021_ABD_07_BL	0.1112	10	-	-	eezer 23 F		
1B00003-23	ES-13_013021_ABD_08_BL	0.0854	10	-	-	eezer 23 F		
1B00003-24	ES-13_013021_ABD_09_BL	0.0859	10	-	-	eezer 23 F		
1B00003-25	ES-13_013021_ABD_10_BL	0.1558	10	-	-	eezer 23 F		
1B00003-26	ES-13_013021_ABD_11_BL	0.109	10	-	-	eezer 23 F		
1B00003-27	ES-13_013021_ABD_12_BL	0.1129	10	-	-	eezer 23 F		
1B00003-28	ES-13_013021_ABD_13_BL	0.0774	10	-	-	eezer 23 F		
1B00003-29	ES-13_013021_ABD_14_BL	0.1405	10	-	-	eezer 23 F		
1B00003-30	ES-13_013021_ABD_15_BL	0.0978	10	-	-	eezer 23 F		
1B00003-31	FRB-02_012621_ABD_01_BL	0.0735	10	QC	-	eezer 23 F	MS/MSD	
1B00003-32	FRB-02_012621_ABD_02_BL	0.1756	10	-	-	eezer 23 F		
1B00003-33	FRB-02_012721_ABD_03_BL	0.124	10	-	-	eezer 23 F		
1B00003-34	FRB-02_012721_ABD_04_BL	0.063	10	-	-	eezer 23 F		
1B00003-35	FRB-02_012721_ABD_05_BL	0.0534	10	-	-	eezer 23 F		
1B00003-36	EB_CAPILLARY_013021_ABD_QC	0.1251	10	-	-	S&R	Add DI at lab to make blank	

PREPARATION BENCH SHEET

F102336

Eurofins Frontier Global Sciences, LLC

Matrix: Tissue **Prepared using: Trace Metals - EFGS SOP2795 Nitric/Sulfuric Hg Digestion** **Prepared: 2/22/2021**

[redacted]

eurofins | Frontier Global Sciences

Analysis Datasheet for Total Mercury

Date of Analysis: February 24, 2021
Instrument #: Hg2600-3
LIMS Sequence #: 1B25007, 1B25008

Analyst:
Units ng/L

Calibration Statistics:

LabNumber	n	True Val	Area	Uncorrected Response Factor	Corrected Peak Height	Corrected Response Factor	% Recovery
SEQ-CAL1	1	0.50 ng/L	165.72 units	331.45	108.92 units	217.85	123.0 %Rec
SEQ-CAL2	1	1.00 ng/L	242.36 units	242.36	185.56 units	185.56	104.8 %Rec
SEQ-CAL3	1	5.00 ng/L	860.08 units	172.02	803.28 units	160.66	90.7 %Rec
SEQ-CAL4	1	20.00 ng/L	3258.42 units	162.92	3201.62 units	160.08	90.4 %Rec
SEQ-CAL5	1	40.00 ng/L	6513.86 units	162.85	6457.06 units	161.43	91.1 %Rec
SEQ-CAL6	0						
SEQ-CAL7	0						
SEQ-CAL8	0						
SEQ-CAL9	0						

Corr. Mean RF	Corr. St Dev RF	Corr. RSD CF	Uncorr. Mean RF
177.11	+/- 25.19	14.2% RSD	214.32

Blanks:

LabNumber	n	Mean	Std Dev	Mean (ng/L)	Std Dev (ng/L)
SEQ-IBL	3	56.80 units	±8.30	0.27 ng/L	±0.04

Preparation Blanks

Sample Type	Batch ID	n	Mean	Std Dev
BLK	1	3	3.180 ng/L	±1.042
BLK	2	3	3.060 ng/L	±0.387
BLK	3	3	3.645 ng/L	±3.630
BLK	4	0	0.000 ng/L	
BLK	5	0	0.000 ng/L	
BLK	6	0	0.000 ng/L	

Instrument	Analyst	Sample Type	LabNumber	Dilution	Analyzed	FileID	RunEnd	Uncorrected Response	Batch ID	No PB Correction?	RESP	InitialResult	FinalResult	InitialUnits	Comments
Hg2600-3	00	CAL	SEQ-IBL1	1	2/24/2021 11:40:38	15803-1.RAW	11:40:38	62.20			5.4	0.030	0.030	ng/L	
Hg2600-3	00	CAL	SEQ-IBL2	1	2/24/2021 11:44:46	15804-1.RAW	11:44:46	60.96			4.2	0.023	0.023	ng/L	
Hg2600-3	00	CAL	SEQ-IBL3	1	2/24/2021 11:48:55	15805-1.RAW	11:48:55	47.25			-9.6	-0.054	-0.054	ng/L	
Hg2600-3	00	CAL	SEQ-CAL1	1	2/24/2021 11:53:04	15806-1.RAW	11:53:04	165.72			108.9	0.615	0.615	ng/L	
Hg2600-3	00	CAL	SEQ-CAL2	1	2/24/2021 11:57:13	15807-1.RAW	11:57:13	242.36			185.6	1.048	1.048	ng/L	
Hg2600-3	00	CAL	SEQ-CAL3	1	2/24/2021 12:01:21	15808-1.RAW	12:01:21	860.08			803.3	4.535	4.535	ng/L	
Hg2600-3	00	CAL	SEQ-CAL4	1	2/24/2021 12:05:30	15809-1.RAW	12:05:30	3258.42			3201.6	18.077	18.077	ng/L	
Hg2600-3	00	CAL	SEQ-CAL5	1	2/24/2021 12:09:39	15810-1.RAW	12:09:39	6513.86			6457.1	36.457	36.457	ng/L	
Hg2600-3	00	CAL	SEQ-ICV	1	2/24/2021 12:13:50	15811-1.RAW	12:13:50	907.74			850.9	4.804	4.804	ng/L	
Hg2600-3	00	CAL	SEQ-ICB	1	2/24/2021 12:17:59	15812-1.RAW	12:17:59	99.13			42.3	0.239	0.239	ng/L	
Hg2600-3	00	SAM	F102335-BS1	20	2/24/2021 12:22:08	15813-1.RAW	12:22:08	833.74	1		776.9	4.228	84.553	ng/L	F102335
Hg2600-3	00	SAM	F102335-BSD1	20	2/24/2021 12:26:17	15814-1.RAW	12:26:17	909.10	1		852.3	4.653	93.064	ng/L	F102335
Hg2600-3	00	BLK	F102335-BLK1	10	2/24/2021 12:30:26	15815-1.RAW	12:30:26	134.27	1		77.5	0.437	4.374	ng/L	F102335
Hg2600-3	00	BLK	F102335-BLK2	10	2/24/2021 12:34:35	15816-1.RAW	12:34:35	104.80	1		48.0	0.271	2.710	ng/L	F102335
Hg2600-3	00	BLK	F102335-BLK3	10	2/24/2021 12:38:44	15817-1.RAW	12:38:44	100.28	1		43.5	0.246	2.455	ng/L	F102335
Hg2600-3	00	SAM	1A00115-01	100	2/24/2021 12:42:54	15818-1.RAW	12:42:54	478.50	1		421.7	2.349	234.917	ng/L	F102335
Hg2600-3	00	SAM	WS		2/24/2021 12:47:03	15819-1.RAW	12:47:03	40.11	1		-16.7	#DIV/0!	#DIV/0!	ng/L	F102335
Hg2600-3	00	SAM	WS		2/24/2021 12:51:12	15820-1.RAW	12:51:12	37.45	1		-19.3	#DIV/0!	#DIV/0!	ng/L	F102335
Hg2600-3	00	SAM	WS		2/24/2021 12:55:21	15821-1.RAW	12:55:21	37.21			-19.6	Error	#VALUE!	ng/L	
Hg2600-3	00	SAM	WS		2/24/2021 12:59:30	15822-1.RAW	12:59:30	31.51			-25.3	Error	#VALUE!	ng/L	
Hg2600-3	00	CAL	SEQ-CCV1	1	2/24/2021 13:03:39	15823-1.RAW	13:03:39	837.86			781.1	4.410	4.410	ng/L	
Hg2600-3	00	CAL	SEQ-CCB1	1	2/24/2021 13:07:48	15824-1.RAW	13:07:48	92.93			36.1	0.204	0.204	ng/L	
Hg2600-3	00	SAM	F102335-MS1	400	2/24/2021 13:11:58	15825-1.RAW	13:11:58	718.93	1		662.1	3.730	1492.196	ng/L	F102335
Hg2600-3	00	SAM	F102335-MSD1	400	2/24/2021 13:16:07	15826-1.RAW	13:16:07	640.08	1		583.3	3.285	1314.111	ng/L	F102335
Hg2600-3	00	SAM	1A00115-02	50	2/24/2021 13:20:17	15827-1.RAW	13:20:17	633.36	1		576.6	3.192	159.587	ng/L	F102335
Hg2600-3	00	SAM	1A00115-03	50	2/24/2021 13:24:26	15828-1.RAW	13:24:26	202.00	1		145.2	0.756	37.810	ng/L	F102335
Hg2600-3	00	SAM	1A00115-04	50	2/24/2021 13:28:35	15829-1.RAW	13:28:35	563.42	1		506.6	2.797	139.840	ng/L	F102335
Hg2600-3	00	SAM	1A00115-05	50	2/24/2021 13:32:45	15830-1.RAW	13:32:45	109.88	1		53.1	0.236	11.806	ng/L	F102335
Hg2600-3	00	SAM	BLANKTEST	1	2/24/2021 13:36:54	15831-1.RAW	13:36:54	79.01	HG STANDARD DROPF		22.2	Error	#VALUE!	ng/L	HG STANDARD DROP
Hg2600-3	00	SAM	1A00115-06	50	2/24/2021 13:41:04	15832-1.RAW	13:41:04	148.49	1		91.7	0.454	22.704	ng/L	F102335
Hg2600-3	00	SAM	1A00115-07	50	2/24/2021 13:45:13	15833-1.RAW	13:45:13	141.39	1		84.6	0.414	20.700	ng/L	F102335
Hg2600-3	00	SAM	1A00115-08	50	2/24/2021 13:49:23	15834-1.RAW	13:49:23	980.86	1		924.1	5.154	257.685	ng/L	F102335
Hg2600-3	00	SAM	1A00115-10	50	2/24/2021 13:53:32	15835-1.RAW	13:53:32	954.75	1		897.9	5.006	250.315	ng/L	F102335
Hg2600-3	00	CAL	SEQ-CCV2	1	2/24/2021 13:57:41	15836-1.RAW	13:57:41	847.81			791.0	4.466	4.466	ng/L	
Hg2600-3	00	CAL	SEQ-CCB2	1	2/24/2021 14:01:51	15837-1.RAW	14:01:51	101.16			44.4	0.250	0.250	ng/L	
Hg2600-3	00	SAM	1A00115-11	50	2/24/2021 14:06:00	15838-1.RAW	14:06:00	274.70	1		217.9	1.167	58.333	ng/L	F102335
Hg2600-3	00	SAM	F102333-BS1	20	2/24/2021 14:10:10	15839-1.RAW	14:10:10	839.94	2		783.1	4.269	85.374	ng/L	F102333
Hg2600-3	00	SAM	F102333-BSD1	20	2/24/2021 14:14:19	15840-1.RAW	14:14:19	887.34	2		830.5	4.536	90.726	ng/L	F102333
Hg2600-3	00	BLK	F102333-BLK1	20	2/24/2021 14:18:28	15841-1.RAW	14:18:28	85.59	2		28.8	0.163	3.251	ng/L	F102333
Hg2600-3	00	BLK	F102333-BLK2	20	2/24/2021 14:22:38	15842-1.RAW	14:22:38	79.95	2		23.2	0.131	2.614	ng/L	F102333
Hg2600-3	00	BLK	F102333-BLK3	20	2/24/2021 14:26:47	15843-1.RAW	14:26:47	86.16	2		29.4	0.166	3.315	ng/L	F102333
Hg2600-3	00	SAM	1A00104-01	12500	2/24/2021 14:30:57	15844-1.RAW	14:30:57	3410.21	2		3353.4	18.933	236667.520	ng/L	F102333
Hg2600-3	00	SAM	1A00105-01	5000	2/24/2021 14:35:06	15845-1.RAW	14:35:06	8926.27	2		8869.5	50.077	250385.961	ng/L	F102333
Hg2600-3	00	SAM	1B00048-01	20	2/24/2021 14:39:16	15846-1.RAW	14:39:16	658.90	2		602.1	3.246	64.930	ng/L	F102333
Hg2600-3	00	SAM	F102333-MS1	400	2/24/2021 14:43:25	15847-1.RAW	14:43:25	2647.87	2		2591.1	14.622	5848.709	ng/L	
Hg2600-3	00	CAL	SEQ-CCV3	1	2/24/2021 14:47:35	15848-1.RAW	14:47:35	813.94			757.1	4.275	4.275	ng/L	
Hg2600-3	00	CAL	SEQ-CCB3	1	2/24/2021 14:51:45	15849-1.RAW	14:51:45	61.89			5.1	0.029	0.029	ng/L	
Hg2600-3	00	SAM	F102333-MSD1	400	2/24/2021 14:55:54	15850-1.RAW	14:55:54	2568.11	2		2511.3	14.171	5668.567	ng/L	
Hg2600-3	00	SAM	F102336-BS1	20	2/24/2021 15:00:04	15851-1.RAW	15:00:04	899.53	3		842.7	4.576	91.517	ng/L	F102336
Hg2600-3	00	SAM	F102336-BSD1	20	2/24/2021 15:04:14	15852-1.RAW	15:04:14	860.90	3		804.1	4.358	87.155	ng/L	F102336
Hg2600-3	00	BLK	F102336-BLK1	20	2/24/2021 15:08:23	15853-1.RAW	15:08:23	126.05	3		69.2	0.391	7.819	ng/L	F102336
Hg2600-3	00	BLK	F102336-BLK2	20	2/24/2021 15:12:33	15854-1.RAW	15:12:33	67.70	3		10.9	0.062	1.230	ng/L	F102336
Hg2600-3	00	BLK	F102336-BLK3	20	2/24/2021 15:16:43	15855-1.RAW	15:16:43	73.51	3		16.7	0.094	1.886	ng/L	F102336
Hg2600-3	00	SAM	1B00003-31	2500	2/24/2021 15:20:52	15856-1.RAW	15:20:52	109.03	3		52.2	0.293	733.626	ng/L	F102336
Hg2600-3	00	SAM	F102336-MS1	2500	2/24/2021 15:25:02	15857-1.RAW	15:25:02	418.65	3		361.8	2.042	5103.895	ng/L	F102336
Hg2600-3	00	SAM	F102336-MSD1	2500	2/24/2021 15:29:11	15858-1.RAW	15:29:11	244.21	3		187.4	1.057	2641.655	ng/L	F102336
Hg2600-3	00	SAM	1B00003-34	2500	2/24/2021 15:33:21	15859-1.RAW	15:33:21	88.06	3		31.3	0.175	437.567	ng/L	F102336

Instrument	Analyst	Sample Type	LabNumber	Dilution	Analyzed	FileID	RunEnd	Uncorrected Response	Batch ID	No PB Correction?	RESP	InitialResult	FinalResult	InitialUnits	Comments
Hg2600-3	00	CAL	SEQ-CCV4	1	2/24/2021 15:37:31	15860-1.RAW	15:37:31	792.17			735.4	4.152	4.152	ng/L	
Hg2600-3	00	CAL	SEQ-CCB4	1	2/24/2021 15:41:41	15861-1.RAW	15:41:41	57.20			0.4	0.002	0.002	ng/L	
Hg2600-3	00	SAM	F102336-MS2	2500	2/24/2021 15:45:50	15862-1.RAW	15:45:50	248.20	3		191.4	1.079	2698.005	ng/L	F102336
Hg2600-3	00	SAM	F102336-MSD2	2500	2/24/2021 15:50:00	15863-1.RAW	15:50:00	344.92	3		288.1	1.625	4063.257	ng/L	F102336
Hg2600-3	00	SAM	1B00003-20	2500	2/24/2021 15:54:10	15864-1.RAW	15:54:10	241.86	3		185.1	1.043	2608.519	ng/L	F102336
Hg2600-3	00	SAM	1B00003-21	2500	2/24/2021 15:58:20	15865-1.RAW	15:58:20	324.81	3		268.0	1.512	3779.427	ng/L	F102336
Hg2600-3	00	SAM	1B00003-22	2500	2/24/2021 16:02:30	15866-1.RAW	16:02:30	345.44	3		288.6	1.628	4070.566	ng/L	F102336
Hg2600-3	00	SAM	1B00003-23	2500	2/24/2021 16:06:39	15867-1.RAW	16:06:39	233.04	3		176.2	0.994	2483.979	ng/L	F102336
Hg2600-3	00	SAM	1B00003-24	2500	2/24/2021 16:10:49	15868-1.RAW	16:10:49	163.98	3		107.2	0.604	1509.240	ng/L	F102336
Hg2600-3	00	SAM	1B00003-25	2500	2/24/2021 16:14:59	15869-1.RAW	16:14:59	295.92	3		239.1	1.349	3371.584	ng/L	F102336
Hg2600-3	00	SAM	1B00003-26	2500	2/24/2021 16:19:09	15870-1.RAW	16:19:09	189.77	3		133.0	0.749	1873.203	ng/L	F102336
Hg2600-3	00	SAM	1B00003-27	2500	2/24/2021 16:23:19	15871-1.RAW	16:23:19	136.53	3		79.7	0.449	1121.687	ng/L	F102336
Hg2600-3	00	CAL	SEQ-CCV5	1	2/24/2021 16:27:29	15872-1.RAW	16:27:29	786.19			729.4	4.118	4.118	ng/L	
Hg2600-3	00	CAL	SEQ-CCB5	1	2/24/2021 16:31:38	15873-1.RAW	16:31:38	58.38			1.6	0.009	0.009	ng/L	
Hg2600-3	00	SAM	1B00003-28	2500	2/24/2021 16:35:48	15874-1.RAW	16:35:48	145.56	3		88.8	0.500	1249.246	ng/L	F102336
Hg2600-3	00	SAM	1B00003-29	2500	2/24/2021 16:39:58	15875-1.RAW	16:39:58	292.61	3		235.8	1.330	3324.801	ng/L	F102336
Hg2600-3	00	SAM	1B00003-30	2500	2/24/2021 16:44:09	15876-1.RAW	16:44:09	256.96	3		200.2	1.129	2821.582	ng/L	F102336
Hg2600-3	00	SAM	1B00003-32	2500	2/24/2021 16:48:19	15877-1.RAW	16:48:19	129.70	3		72.9	0.410	1025.325	ng/L	F102336
Hg2600-3	00	SAM	1B00003-33	2500	2/24/2021 16:52:29	15878-1.RAW	16:52:29	123.66	3		66.9	0.376	940.032	ng/L	F102336
Hg2600-3	00	SAM	1B00003-35	2500	2/24/2021 16:56:40	15879-1.RAW	16:56:40	90.25	3		33.4	0.187	468.484	ng/L	F102336
Hg2600-3	00	SAM	1B00003-36	2500	2/24/2021 17:00:51	15880-1.RAW	17:00:51	66.10	3		9.3	0.051	127.621	ng/L	F102336
Hg2600-3	00	SAM	1A00105-01RE1	10000	2/24/2021 17:05:01	15881-1.RAW	17:05:01	4024.81	2		3968.0	22.403	224034.005	ng/L	F102333, E
Hg2600-3	00	SAM	1B00048-01RE1	20	2/24/2021 17:09:11	15882-1.RAW	17:09:11	192.03	2		135.2	0.611	12.210	ng/L	F102333,E-01
Hg2600-3	00	SAM	1A00021-02RE1	1000000	2/24/2021 17:13:21	15883-1.RAW	17:13:21	292.54	4		235.7	1.331	1331024.856	ng/L	F101423
Hg2600-3	00	CAL	SEQ-CCV6	1	2/24/2021 17:17:31	15884-1.RAW	17:17:31	746.79			690.0	3.896	3.896	ng/L	
Hg2600-3	00	CAL	SEQ-CCB6	1	2/24/2021 17:21:41	15885-1.RAW	17:21:41	89.67			32.9	0.186	0.186	ng/L	
Hg2600-3	00	SAM	1A00021-03RE1	1000000	2/24/2021 17:25:51	15886-1.RAW	17:25:51	315.45	4		258.6	1.460	1460329.684	ng/L	F101423
Hg2600-3	00	SAM	1A00021-04RE1	2500000	2/24/2021 17:30:01	15887-1.RAW	17:30:01	605.37	4		548.6	3.097	7743233.588	ng/L	F101423
Hg2600-3	00	SAM	1A00021-05RE1	1000000	2/24/2021 17:34:11	15888-1.RAW	17:34:11	429.12	4		372.3	2.102	2102171.244	ng/L	F101423
Hg2600-3	00	SAM	1A00021-06RE1	1000000	2/24/2021 17:38:22	15889-1.RAW	17:38:22	544.73	4		487.9	2.755	2754879.502	ng/L	F101423
Hg2600-3	00	SAM	1A00021-07RE1	1000000	2/24/2021 17:42:33	15890-1.RAW	17:42:33	382.27	4		325.5	1.838	1837641.919	ng/L	F101423
Hg2600-3	00	SAM	1A00021-08RE1	1000000	2/24/2021 17:46:44	15891-1.RAW	17:46:44	220.14	4		163.3	0.922	922235.680	ng/L	F101423
Hg2600-3	00	SAM	1A00021-09RE1	1000000	2/24/2021 17:50:55	15892-1.RAW	17:50:55	218.86	4		162.1	0.915	914987.676	ng/L	F101423
Hg2600-3	00	SAM	1A00021-10RE1	1000000	2/24/2021 17:55:08	15893-1.RAW	17:55:08	216.38	4		159.6	0.901	900989.553	ng/L	F101423
Hg2600-3	00	SAM	1A00021-11RE1	1000000	2/24/2021 17:59:21	15894-1.RAW	17:59:21	185.37	4		128.6	0.726	725899.360	ng/L	F101423
Hg2600-3	00	SAM	1A00021-12RE1	1000000	2/24/2021 18:03:31	15895-1.RAW	18:03:31	178.33	4		121.5	0.686	686175.114	ng/L	F101423
Hg2600-3	00	CAL	SEQ-CCV7	1	2/24/2021 18:07:41	15896-1.RAW	18:07:41	771.16			714.4	4.033	4.033	ng/L	
Hg2600-3	00	CAL	SEQ-CCB7	1	2/24/2021 18:11:51	15897-1.RAW	18:11:51	47.45			-9.4	-0.053	-0.053	ng/L	
Hg2600-3	00	SAM	1A00021-13RE1	1000000	2/24/2021 18:16:01	15898-1.RAW	18:16:01	163.00	4		106.2	0.600	599584.938	ng/L	F101423
Hg2600-3	00	CAL	SEQ-CCV8	1	2/24/2021 18:20:11	15899-1.RAW	18:20:11	683.07			626.3	3.536	3.536	ng/L	
Hg2600-3	00	CAL	SEQ-CCB8	1	2/24/2021 18:24:21	15900-1.RAW	18:24:21	49.74			-7.1	-0.040	-0.040	ng/L	

TotalMercury EPA1631

Operat: AH | BlankS: 56.801 | Calib Eqn: Conc = (Area-56.80 | Run Date: 2/24/2021 | Blank SD: 8.298176019
Worksh THg260(| CalibFa 177.11 | Status: QC Warnings:7/QC E | Run Time: 11:21:11 | Blank RSD%: 14.60923995
Method #### | R: 1 | R²: 1 | CF SD: 25.18733237
Descrip THg26003-210224-2 | CF RSD%: 14.22098742

Sample/ID	Location Rinse	Dilute	Blank	Conc (ppt)	MB%	FinalConc	Rec%	QA	RawData	RunEnd	Peak (Raw)	Control (c/f)	Flags	RunCount	Comment
Clean			0.00	18.54					15799-1.RAW	11:24:03	3284.41	Clean	OK	1	
WS			56.80	0.00					15800-1.RAW	11:28:12	43.28	Sample	OK	1	
WS			56.80	0.00					15801-1.RAW	11:32:20	47.52	Sample	OK	1	
WS			56.80	0.00					15802-1.RAW	11:36:29	38.48	Sample	OK	1	
SEQ-IBL1	A1	1	0.00	0.35					15803-1.RAW	11:40:38	62.20	Sample	OK	1	
SEQ-IBL2	A2	1	0.00	0.34					15804-1.RAW	11:44:46	60.96	Sample	OK	1	
SEQ-IBL3	A3	1	0.00	0.27					15805-1.RAW	11:48:55	47.25	Sample	OK	1	
SEQ-CAL1	A4	1	56.80	0.61			123.00		15806-1.RAW	11:53:04	165.72	Sample	OK	1	
SEQ-CAL2	A5	1	56.80	1.05			104.77		15807-1.RAW	11:57:13	242.36	Sample	OK	1	
SEQ-CAL3	A6	1	56.80	4.54			90.71		15808-1.RAW	12:01:21	860.08	Sample	OK	1	
SEQ-CAL4	A7	1	56.80	18.08			90.38		15809-1.RAW	12:05:30	3258.42	Sample	FB	1	
SEQ-CAL5	A8	1	56.80	36.46			91.14		15810-1.RAW	12:09:39	6513.86	Sample	FB	1	
SEQ-ICV	A9	1	56.80	4.80					15811-1.RAW	12:13:50	907.74	Sample	OK	1	
SEQ-ICB	A10	1	56.80	0.24					15812-1.RAW	12:17:59	99.13	Sample	OK	1	
F102335-BS1	A11	20	56.80	87.73					15813-1.RAW	12:22:08	833.74	Sample	OK	1	F102335
F102335-BSD1	A12	20	56.80	96.24					15814-1.RAW	12:26:17	909.10	Sample	OK	1	F102335
F102335-BLK1	A13	10	56.80	4.37					15815-1.RAW	12:30:26	134.27	Sample	OK	1	F102335
F102335-BLK2	A14	10	56.80	2.71					15816-1.RAW	12:34:35	104.80	Sample	OK	1	F102335
F102335-BLK3	A15	10	56.80	2.46					15817-1.RAW	12:38:44	100.28		OK	1	F102335
1A00115-01	A16	100	56.80	238.10					15818-1.RAW	12:42:54	478.50	Sample	OK	1	F102335
WS			56.80	0.00					15819-1.RAW	12:47:03	40.11	Sample	OK	1	F102335
WS			56.80	0.00					15820-1.RAW	12:51:12	37.45	Sample	OK	1	F102335
WS			56.80	0.00					15821-1.RAW	12:55:21	37.21	Sample	OK	1	
WS			56.80	0.00					15822-1.RAW	12:59:30	31.51	Sample	OK	1	
SEQ-CCV1	A17	1	56.80	4.41			88.20		15823-1.RAW	13:03:39	837.86	Sample	OK	1	
SEQ-CCB1	A18	1	56.80	0.20			0.00		15824-1.RAW	13:07:48	92.93	Sample	OK	1	
F102335-MS1	A19	400	56.80	1495.38			124202.77		15825-1.RAW	13:11:58	718.93	Sample	OK	1	F102335
F102335-MSD1	A20	400	56.80	1317.29					15826-1.RAW	13:16:07	640.08	Sample	OK	1	F102335
1A00115-02	A21	50	56.80	162.77					15827-1.RAW	13:20:17	633.36	Sample	OK	1	F102335
1A00115-03	B1	50	56.80	40.99					15828-1.RAW	13:24:26	202.00	Sample	OK	1	F102335
1A00115-04	B2	50	56.80	143.02					15829-1.RAW	13:28:35	563.42	Sample	OK	1	F102335
1A00115-05	B3	50	56.80	14.99					15830-1.RAW	13:32:45	109.88	Sample	OK	1	F102335
BLANKTEST	B21	1	56.80	0.13					15831-1.RAW	13:36:54	79.01	Sample	OK	1	HG STANDARD DROPPED
1A00115-06	B4	50	56.80	25.88					15832-1.RAW	13:41:04	148.49	Sample	OK	1	F102335
1A00115-07	B5	50	56.80	23.88					15833-1.RAW	13:45:13	141.39	Sample	OK	1	F102335
1A00115-08	B6	50	56.80	260.86					15834-1.RAW	13:49:23	980.86	Sample	OK	1	F102335
1A00115-10	B7	50	56.80	253.49					15835-1.RAW	13:53:32	954.75	Sample	OK	1	F102335
SEQ-CCV2	B8	1	56.80	4.47			89.32		15836-1.RAW	13:57:41	847.81	Sample	OK	1	
SEQ-CCB2	B9	1	56.80	0.25			0.00		15837-1.RAW	14:01:51	101.16	Sample	OK	1	
1A00115-11	B10	50	56.80	61.51					15838-1.RAW	14:06:00	274.70	Sample	OK	1	F102335
F102333-BS1	B11	20	56.80	88.43					15839-1.RAW	14:10:10	839.94	Sample	OK	1	F102333
F102333-BSD1	B12	20	56.80	93.79					15840-1.RAW	14:14:19	887.34	Sample	FB	1	F102333
F102333-BLK1	B13	20	56.80	3.25					15841-1.RAW	14:18:28	85.59	Sample	OK	1	F102333
F102333-BLK2	B14	20	56.80	2.61					15842-1.RAW	14:22:38	79.95	Sample	OK	1	F102333
F102333-BLK3	B15	20	56.80	3.32					15843-1.RAW	14:26:47	86.16	Sample	OK	1	F102333
1A00104-01	B16	12500	56.80	236670.58					15844-1.RAW	14:30:57	3410.21	Sample	FB	1	F102333
1A00105-01	B17	5000	56.80	250389.02					15845-1.RAW	14:35:06	8926.27	Sample	FB	1	F102333
1A00048-01	B18	20	56.80	67.99					15846-1.RAW	14:39:16	658.90	Sample	OK	1	F102333
F102333-MS1	B19	400	56.80	5851.77			8482.09		15847-1.RAW	14:43:25	2647.87	Sample	FB	1	
SEQ-CCV3	C20	1	56.80	4.27			85.50		15848-1.RAW	14:47:35	813.94	Sample	OK	1	
SEQ-CCB3	C21	1	56.80	0.03			0.00		15849-1.RAW	14:51:45	61.89	Sample	OK	1	
F102333-MSD1	B20	400	56.80	5671.63					15850-1.RAW	14:55:54	2568.11	Sample	OK	1	
F102336-BS1	B21	20	56.80	95.16					15851-1.RAW	15:00:04	899.53	Sample	OK	1	F102336

F102336-BSD1	C1	20	56.80	90.80		15852-1.RAW	15:04:14	860.90	Sample	OK	1	F102336
F102336-BLK1	C2	20	56.80	7.82		15853-1.RAW	15:08:23	126.05	Sample	OK	1	F102336
F102336-BLK2	C3	20	56.80	1.23		15854-1.RAW	15:12:33	67.70	Sample	OK	1	F102336
F102336-BLK3	C4	20	56.80	1.89		15855-1.RAW	15:16:43	73.51	Sample	OK	1	F102336
1B00003-31	C5	2500	56.80	737.27		15856-1.RAW	15:20:52	109.03	Sample	OK	1	F102336
F102336-MS1	C6	2500	56.80	5107.54	691.82	15857-1.RAW	15:25:02	418.65	Sample	OK	1	F102336
F102336-MSD1	C7	2500	56.80	2645.30		15858-1.RAW	15:29:11	244.21	Sample	OK	1	F102336
1B00003-34	C8	2500	56.80	441.21		15859-1.RAW	15:33:21	88.06	Sample	OK	1	F102336
SEQ-CCV4	C9	1	56.80	4.15	83.04	15860-1.RAW	15:37:31	792.17	Sample	OK	1	
SEQ-CCB4	C10	1	56.80	0.00	0.00	15861-1.RAW	15:41:41	57.20	Sample	OK	1	
F102336-MS2	C11	2500	56.80	2701.65	134929.79	15862-1.RAW	15:45:50	248.20	Sample	OK	1	F102336
F102336-MSD2	C12	2500	56.80	4066.90		15863-1.RAW	15:50:00	344.92	Sample	OK	1	F102336
1B00003-20	C13	2500	56.80	2612.16		15864-1.RAW	15:54:10	241.86	Sample	OK	1	F102336
1B00003-21	C14	2500	56.80	3783.07		15865-1.RAW	15:58:20	324.81	Sample	OK	1	F102336
1B00003-22	C15	2500	56.80	4074.21		15866-1.RAW	16:02:30	345.44	Sample	OK	1	F102336
1B00003-23	C16	2500	56.80	2487.62		15867-1.RAW	16:06:39	233.04	Sample	OK	1	F102336
1B00003-24	C17	2500	56.80	1512.88		15868-1.RAW	16:10:49	163.98	Sample	OK	1	F102336
1B00003-25	C18	2500	56.80	3375.23		15869-1.RAW	16:14:59	295.92	Sample	OK	1	F102336
1B00003-26	C19	2500	56.80	1876.85		15870-1.RAW	16:19:09	189.77	Sample	OK	1	F102336
1B00003-27	C20	2500	56.80	1125.33		15871-1.RAW	16:23:19	136.53	Sample	OK	1	F102336
SEQ-CCV5	C21	1	56.80	4.12	82.36	15872-1.RAW	16:27:29	786.19	Sample	OK	1	
SEQ-CCB5	A1	1	56.80	0.01	0.00	15873-1.RAW	16:31:38	58.38	Sample	OK	1	
1B00003-28	A2	2500	56.80	1252.89		15874-1.RAW	16:35:48	145.56	Sample	OK	1	F102336
1B00003-29	A3	2500	56.80	3328.45		15875-1.RAW	16:39:58	292.61	Sample	OK	1	F102336
1B00003-30	A4	2500	56.80	2825.23		15876-1.RAW	16:44:09	256.96	Sample	OK	1	F102336
1B00003-32	A5	2500	56.80	1028.97		15877-1.RAW	16:48:19	129.70	Sample	OK	1	F102336
1B00003-33	A6	2500	56.80	943.68		15878-1.RAW	16:52:29	123.66	Sample	OK	1	F102336
1B00003-35	A7	2500	56.80	472.13		15879-1.RAW	16:56:40	90.25	Sample	OK	1	F102336
1B00003-36	A8	2500	56.80	131.27		15880-1.RAW	17:00:51	66.10	Sample	OK	1	F102336
1A00105-01RE1	A9	10000	56.80	224037.07		15881-1.RAW	17:05:01	4024.81	Sample	FB	1	F102333, E
1B00048-01RE1	A10	20	56.80	15.27		15882-1.RAW	17:09:11	192.03	Sample	OK	1	F102333,E-01
1A00021-02RE1	A11	1E+06	56.80	1331024.86		15883-1.RAW	17:13:21	292.54	Sample	OK	1	F101423
SEQ-CCV6	A12	1	56.80	3.90	77.92	15884-1.RAW	17:17:31	746.79	Sample	OK	1	
SEQ-CCB6	A13	1	56.80	0.19	0.00	15885-1.RAW	17:21:41	89.67	Sample	OK	1	
1A00021-03RE1	A14	1E+06	56.80	1460329.68		15886-1.RAW	17:25:51	315.45	Sample	OK	1	F101423
1A00021-04RE1	A15	3E+06	56.80	7743233.59		15887-1.RAW	17:30:01	605.37	Sample	OK	1	F101423
1A00021-05RE1	A16	1E+06	56.80	2102171.24		15888-1.RAW	17:34:11	429.12	Sample	OK	1	F101423
1A00021-06RE1	A17	1E+06	56.80	2754879.50		15889-1.RAW	17:38:22	544.73	Sample	OK	1	F101423
1A00021-07RE1	A18	1E+06	56.80	1837641.92		15890-1.RAW	17:42:33	382.27	Sample	OK	1	F101423
1A00021-08RE1	A19	1E+06	56.80	922235.66		15891-1.RAW	17:46:44	220.14	Sample	OK	1	F101423
1A00021-09RE1	A20	1E+06	56.80	914987.68		15892-1.RAW	17:50:55	218.86	Sample	OK	1	F101423
1A00021-10RE1	A21	1E+06	56.80	900989.55		15893-1.RAW	17:55:08	216.38	Sample	OK	1	F101423
1A00021-11RE1	B1	1E+06	56.80	725899.36		15894-1.RAW	17:59:21	185.37	Sample	OK	1	F101423
1A00021-12RE1	B2	1E+06	56.80	686175.11		15895-1.RAW	18:03:31	178.33	Sample	OK	1	F101423
SEQ-CCV7	B3	1	56.80	4.03	80.67	15896-1.RAW	18:07:41	771.16	Sample	OK	1	
SEQ-CCB7	B4	1	56.80	0.00	0.00	15897-1.RAW	18:11:51	47.45	Sample	OK	1	
1A00021-13RE1	B5	1E+06	56.80	599584.94		15898-1.RAW	18:16:01	163.00	Sample	OK	1	F101423
SEQ-CCV8	B6	1	56.80	3.54	70.72	15899-1.RAW	18:20:11	683.07	Sample	OK	1	
SEQ-CCB8	B7	1	56.80	0.00	0.00	15900-1.RAW	18:24:21	49.74	Sample	OK	1	

SEQ-IBL1		
SEQ-IBL2		
SEQ-IBL3		
SEQ-CAL1		
SEQ-CAL2		
SEQ-CAL3		
SEQ-CAL4		
SEQ-CAL5		
SEQ-ICV		
SEQ-ICB		
F102335-BS1		
F102335-BSD1		
F102335-BLK1		
F102335-BLK2		
F102335-BLK3	1B00003-34	(
1A00115-01	SEQ-CCV4	(
WS	SEQ-CCB4	(
WS	F102336-MS2	(
WS	F102336-MSD2	(
WS	1B00003-20	(
SEQ-CCV1	1B00003-21	(
SEQ-CCB1	1B00003-22	(
F102335-MS1	1B00003-23	(
F102335-MSD1	1B00003-24	(
1A00115-02	1B00003-25	(
1A00115-03	1B00003-26	(
1A00115-04	1B00003-27	(
1A00115-05	SEQ-CCV5	(
BLANKTEST	SEQ-CCB5	A
1A00115-06	1B00003-28	A
1A00115-07	1B00003-29	A
1A00115-08	1B00003-30	A
1A00115-10	1B00003-32	A
SEQ-CCV2	1B00003-33	A
SEQ-CCB2	1B00003-35	A
1A00115-11	1B00003-36	A
F102333-BS1	1A00105-01RE1	A
F102333-BSD1	1B00048-01RE1	A
F102333-BLK1	1A00021-02RE1	A
F102333-BLK2	SEQ-CCV6	A
F102333-BLK3	SEQ-CCB6	A
1A00104-01	1A00021-03RE1	A
1A00105-01	1A00021-04RE1	A
1A00048-01	1A00021-05RE1	A
F102333-MS1	1A00021-06RE1	A
SEQ-CCV3	1A00021-07RE1	A
SEQ-CCB3	1A00021-08RE1	A
F102333-MSD1	1A00021-09RE1	A
F102336-BS1	1A00021-10RE1	A
F102336-BSD1	1A00021-11RE1	B
F102336-BLK1	1A00021-12RE1	B
F102336-BLK2	SEQ-CCV7	B
F102336-BLK3	SEQ-CCB7	B
1B00003-31	1A00021-13RE1	B
F102336-MS1	SEQ-CCV8	B
F102336-MSD1	SEQ-CCB8	B

Mr 2/25/21

ANALYSIS SEQUENCE

1C05005

1C05006 Attached

Instrument: Hg2600-3

Calibration ID: UNASSIGNED

Analyzed: 3/4/2021

Lab Number	Analysis	Order	STD ID	ISTD ID	Comments
1C05005-IBL1	QC	1			
1C05005-IBL2	QC	2			
1C05005-IBL3	QC	3			
1C05005-CAL1	QC	4	2100111		QUALITY ASSURANCE
1C05005-CAL2	QC	5	2100112		
1C05005-CAL3	QC	6	2100468		PEER - REVIEWED
1C05005-CAL4	QC	7	2100469		
1C05005-CAL5	QC	8	2100470		INITIALS: PGS
1C05005-ICV1	QC	9	2002777		
1C05005-ICB1	QC	10			
F102329-BS1	QC	11			
F102329-BSD1	QC	12			
F102329-BLK1	QC	13			
F102329-BLK2	QC	14			
F102329-BLK3	QC	15			
1C05005-CCV1	QC	16	2002777		
1C05005-CCB1	QC	17			
1B00003-37	Hg-CVAFS-T-7030	18			
F102329-MS1	QC	19			
F102329-MSD1	QC	20			
1B00003-07	Hg-CVAFS-T-7030	21			
F102329-MS2	QC	22			
F102329-MSD2	QC	23			
1C05005-CCV2	QC	24	2002777		
1C05005-CCB2	QC	25			
1B00003-01	Hg-CVAFS-T-7030	26			
1B00003-02	Hg-CVAFS-T-7030	27			
1B00003-03	Hg-CVAFS-T-7030	28			
1B00003-04	Hg-CVAFS-T-7030	29			
1B00003-05	Hg-CVAFS-T-7030	30			
1B00003-06	Hg-CVAFS-T-7030	31			
1B00003-08	Hg-CVAFS-T-7030	32			
1B00003-09	Hg-CVAFS-T-7030	33			
1B00003-10	Hg-CVAFS-T-7030	34			
1C05005-CCV3	QC	35	2002777		
1C05005-CCB3	QC	36			

ANALYSIS SEQUENCE

1C05005

Instrument: Hg2600-3

Calibration ID: UNASSIGNED **Analyzed: 3/4/2021**

Lab Number	Analysis	Order	STD ID	ISTD ID	Comments
1B00003-11	Hg-CVAFS-T-7030	37			
1B00003-12	Hg-CVAFS-T-7030	38			
1B00003-13	Hg-CVAFS-T-7030	39			
1B00003-14	Hg-CVAFS-T-7030	40			
1B00003-15	Hg-CVAFS-T-7030	41			
1B00003-16	Hg-CVAFS-T-7030	42			
1B00003-17	Hg-CVAFS-T-7030	43			
1B00003-18	Hg-CVAFS-T-7030	44			
1B00003-19	Hg-CVAFS-T-7030	45			
1C05005-CCV4	QC	46	2002777		
1C05005-CCB4	QC	47			
1C05005-CCV5	QC	48	2002777		
1C05005-CCB5	QC	49			
1C05005-CCV6	QC	50	2002777		
1C05005-CCB6	QC	51			
1C05005-CCV7	QC	52	2002777		
1C05005-CCB7	QC	53			
1C05005-CCV8	QC	54	2002777		
1C05005-CCB8	QC	55			
1C05005-CCV9	QC	56	2002777		
1C05005-CCB9	QC	57			
1C05005-CCVA	QC	58	2002777		
1C05005-CCBA	QC	59			
1C05005-CCVB	QC	60	2002777		
1C05005-CCBB	QC	61			
1C05005-CCVC	QC	62	2002777		
1C05005-CCBC	QC	63			

3-5-2021

Samples Loaded By Date

3/5/21

Data Processed By Date

Peer Review Check List for THg by 2600 CV-AFS (SOP2822) 2016 Rev 1 (04/1/2016)

Analyst:	LEL/MV2(DE)	**Sequence(s) #:**	1C05005
Reviewer:		**Dataset ID(s):**	THg-26003-210304-1
Date:	3/5/2021	**WO (s) #:**	1B0003
Batch #(s):	F101414		

• **Select the correct preparation method.**

	Analyte	Prep Method		Matrix
☐	THg	EFAFS-T-AFS-SOP2985	FSTM Trap 70:30 Digest	Air/Gas
☐	THg	EFAFS-T-AFS-SOP2807	Modified Cold Aqua Regia	Sed/Soil
☐	THg	EFAFS-T-AFS-SOP2821	Shared Bomb-HF/HNO3/HCl Digest	Sed/Soil
☐	THg	EFTM-T-TM-SOP2825	Nitric Acid Oven Bomb	Sed/Soil
☑	THg	EFAFS-T-AFS-SOP2795	70:30 Digest	Tissue
☐	THg	EFAFS-T-AFS-SOP2800	KCl Trap BrCl Oxidation	Air/Gas
☐	THg	EFTM-T-TM-SOP2837	Shared Nitric	Tissue
☐	THg	EFSR-P-SP-SOP2796	BrCl Oxidation	Water
☐	Hg0	NA	NA	Water
☐	Inorg Hg	NA	NA	Water

Analyst Initials: ________ **Reviewer Initials** PGS

Item	YES	NO	N/A	
1. Compare SampleID with Benchsheet/Sequence/Raw Data (Have all samples been imported?)	☑ YES	☐ NO		☐
2. Check for transcription errors from Excel spreadsheet (or Prep Benchsheet)/Raw data	☑ YES	☐ NO		☐
(a) On raw data (instrument print-out), does correct file (dataset ID#) name appear in description? Naming convention: THg26001-yymmdd-1 or THg26002-yymmdd-1	☑ YES	☐ NO		☐
(b) Check 5% of transcription from Instrument print-out and Excel file. Compare the "Dilute" and "Peak (raw)" columns to "Dilution" and "Uncorrected Result" in Excel	☑ YES	☐ NO		☐
(c) Check standards & reagents in sequence & bench sheet for correct usage (expiries).	☑ YES	☐ NO	☐ N/A	☐
(d) Check and compare masses (review prep benchsheet)	☑ YES	☐ NO	~~☐ N/A~~	☐
(e) Check & compare initial & final volumes	☐ YES	☐ NO	☑ N/A	☐
(f) Do aliquots and dilutions written on benchsheet match those in Excel? 50 ml / aliquot = Excel dilution value	☑ YES	☐ NO	☐ N/A	☐
(g) Is the sequence #, analyst, date, and instrument # on the QC page?	☑ YES	☐ NO		☐
(h) Is the analysis status correct? (analyzed/initial review/reviewed)	☑ YES	☐ NO		☐
(i) Original prep bench sheet added to data package?	☑ YES	☐ NO		☐
(j) Benchsheet prep date MUST match actual prep date (check if re-shot vs re-extract)	☑ YES	☐ NO		☐
3. High QA? WO#(s)/Client(s): ________	☐ YES	☑ NO		☐
4. Client specific QC? (if Yes, refer to Project Notes/LIMS)	☑ YES	☐ NO		☐
(a) Have the QC requirements been met for all WO#s?	☑ YES	☐ NO		
(b) Prep blanks corrections/assigned properly	☐ YES	☐ NO		☐
5a. 20 or fewer samples in batch?	☑ YES	☐ NO		☐
(i) 3 PBs, 1 LCS(or BS), 1 LCSD(or BSD), 1 DUP/Batch 1 MS/MSD (or AS/ASD)/10 samples?	☑ YES	☐ NO		☐
(ii) 1 CCV and 1 CCB every 10 analytical runs?	☑ YES	☐ NO		☐

Peer Review Check List for THg by 2600 CV-AFS (SOP2822) 2016 Rev 1 (04/1/2016)

Analyst:	LEL/MV2(DE)	**Sequence(s) #:**	1C05005
Reviewer:		**Dataset ID(s):**	THg-26003-210304-1
Date:	3/5/2021	**WO (s) #:**	1B0003
Batch #(s):	F101414		

Analyst Initials Lr **Reviewer Initials** PGS

Item				
5b. Has the B/C section data been uploaded?	☐ YES	☐ NO	☑ N/A	☐
QA/QC Data Checked				
6. RSD CF (≤ 15%)	☑ PASS	☐ FAIL		☐
Comments:				
7. The calibration curve included a minimum of 5 Standards	☑ YES	☐ NO		☐
Comments:				
8. 1st Calibration Standard % Recoveries EPA 1631E (75-125%)	☑ PASS	☐ FAIL		☐
9. ICV and CCV % Recoveries EPA 1631E (77-123%)	☑ PASS	☐ FAIL		☐
Comments:	mv 3/5/2			
10. Do all calibration points pass acceptance criteria?	~~☑ YES~~	☑ NO		☐
Comments: CCV B3C failed - mv 3/5/21				
11. Are qualifiers consistant with the data review flowcharts?	☐ YES	☐ NO	☐ N/A	☐
Comments:				
12. Explain any items on the failed data report from Element				☐
Comments:				
13. Are the individual Preparation Blanks < PQL or <2.2xMDL for WI (refer to appropriate prep method PQL list)	☑ PASS	☐ FAIL		☐
(a) If not < PQL or <2.2xMDL for WI, note which PB(s) are above control limit:				
(b) Is the mean PB < PQL or <2.2xMDL for WI (for appropriate qualification)?	☑ YES	☐ NO		☐
(c) Was a BrCl Blank analyzed for each preservation level?	☐ YES	☐ NO	☑ N/A	☐
(d) Are Preparation Blanks summarized on QC page?	☑ YES	☐ NO		☐
14. Filtration Blank Prepared (if yes, use FB qualifier)	☐ YES	☑ NO		☐
(a) Filtration Blank prep date same as associated samples' prep date	☐ YES	☐ NO	☑ N/A	☐
(b) Filtration Blank absolute value < PQL or <2.2xMDL for WI	☐ YES	☐ NO	☑ N/A	☐
15. IBLs (3 minimum) individually < 0.50 ng/L, mean < 0.25 ng/L and STD of 0.10 ng/L?	☑ PASS	☐ FAIL		☐
Comments:				
16. CCBs individually < 0.50 ng/L or 2.2 x MDL for WI?	☑ PASS	☐ FAIL		☐
Comments:				
17. Have Total Solids been applied? (If NO, please ensure that they are done or nearly done)	☐ YES	☐ NO	☑ N/A	☐
18. Is the correct 'Source' designated for MD/MS/MSD?	☑ YES	☐ NO		☐
19. For digested preps: was there a spike witness signature & date on the prep bench sheet?	☑ YES	☐ NO	☐ N/A	☐

Peer Review Check List for THg by 2600 CV-AFS (SOP2822) 2016 Rev 1 (04/1/2016)

Analyst:	LEL/MV2(DE)	Sequence(s) #:	1C05005
Reviewer:		Dataset ID(s):	THg-26003-210304-1
Date:	3/5/2021	WO (s) #:	1B0003
Batch #(s):	F101414		

Analyst Initials: lv   Reviewer Initials: PGS

20. MS/MSD Spiked at least 1-5 X ambient or 5x MRL (whichever is higher) ? ☑ YES ☐ NO ☐
Comments:

21. Are all samples within instrument calibration range? (or at minimum dilution size) ☑ PASS ☐ FAIL ☐
Comments:

22. Are the samples run at the correct dilution level for the method? ☑ YES ☐ NO
Comments:

23. Dissolved < Total (if applicable) ☐ YES ☐ NO ☑ N/A ☐
Comments:

24. Effluent < Influent (visually confirm if needed) ☐ YES ☐ NO ☑ N/A ☐
Comments:

25. Are re-runs noted with reason? ☐ YES ☐ NO ☑ N/A ☐
Comments:

26. FSTM Datasets: Check to ensure the 'Response' & 'Initial Result' columns match in both the Excel dataset & LIMS for the FSTM A (in sequence) & B/C (in batch) traps? ☐ YES ☐ NO ☑ N/A ☐
Comments:

27. Is the B trap <5% A Traps ☐ YES ☐ NO ☑ N/A ☐
Comments:

28. Are spiked trap recoveries75-125% of true value? ☐ YES ☐ NO ☑ N/A ☐
Comments:

29.Have non-reportable samples been imported into LIMS and clicked to non-reportable? ☐ YES ☐ NO ☑ N/A
Comments:

30. Have re-extracts been created for non-reportable samples? ☐ YES ☐ NO ☑ N/A ☐

31. Are there any HIGH QA projects within the data? If so, place data package in QA office before scanning. ☐ YES ☐ NO ☑ N/A ☐

32. Does the data set need scanning? ☐ YES ☑ N/A ☐

33. Does the dataset have an LOQ/LOQ or DOC? ☐ YES ☑ N/A ☐

34. Water samples: has the preservation log been included in dataset for final volume verification? ☐ YES ☐ NO ☑ N/A ☐

35. Water samples-is the final volume correct in the sequence? ☐ YES ☐ NO ☑ N/A ☐

Files located at: \\Cuprum\gen_admin\Quality Assurance\Training Master\DOCs

36. Date of analyst IDOC/CDOC: 3-2-2021 lvl IDOC/CDOC within last 12 months? ☑ YES ☐ NO ☐

37. Date of analyst's SOP reading for method: 3-2-2021 lvl Current SOP revision read? ☑ YES ☐ NO ☐

38. Date of LOD: LOD within last 3 months? ☐ YES ☐ NO ☐

39. Date of LOQ: LOQ within last 3 months? ☐ YES ☐ NO ☐

Data can not be reported without a current IDOC/CDOC, LOD or LOQ.

Peer Review Check List for THg by 2600 CV-AFS (SOP2822) 2016 Rev 1 (04/1/2016)

Analyst:	LEL/MV2(DE)	**Sequence(s) #:**	1C05005
Reviewer:		**Dataset ID(s):**	THg-26003-210304-1
Date:	3/5/2021	**WO (s) #:**	1B0003
Batch #(s):	F101414		

40. Peer Reviewer's comments (use Peer Review Checklist Additional Comments form if necessary):

Additional Page (s)? ☐ YES

Failing Data Report - 1C05005

Sample ID	Analysis	Result	MRL	Dup Result	Source Result	True Value	Units	% Rec.	Rec. LCL	Rec. UCL	RPD	RPD Limit	Over Cal	Failure	Qualifier
F102329-MS1	Hg-CVAFS-T-7030	463.6	100		30.05904	799.20	ng/g	54.2	71.00	125.00			PASS-OVER	FAIL-MS	QM-07
F102329-MSD1	Hg-CVAFS-T-7030	428.3	100	463.621	30.05904	799.20	ng/g	49.8	71.00	125.00	8.48	24.00	PASS-OVER	FAIL-MSD (Rec.)	QM-07
F102329-MSD2	Hg-CVAFS-T-7030	863.1	100	707.438	223.3414	399.60	ng/g	160	71.00	125.00	27.7	24.00	PASS-OVER	FAIL-MSD (Rec. and RPD)	QM-07
1C05005-CCVB	Hg-CVAFS-T-7030	9.228	1.000			4.9950	ng/L	185	77.00	123.00			PASS-OVER	FAIL-CCV	
1C05005-CCVC	Hg-CVAFS-T-7030	8.627	1.000			4.9950	ng/L	173	77.00	123.00			PASS-OVER	FAIL-CCV	

Analyst Reviewed By Date

Peer Reviewed By Date

Sample Preparation Review Checklist

Revision: 4
Effective: Dec. 11, 2017

Technician/Date: R 3/1/21
Upload/Date: R 3/1/21
Samples to lab: NA
Reviewer/Date:
Batch #: F1023-1

EFGS Preparation Method				Initials	SOP Date	DOC Date
☐ SOP2836	Oven Digestion (Total Recoverable Metals)	☐ ICPMS	☐ AFS	R	8/31/18	11/4/15
☐ SOP2837	Tissue Nitric Digestion	☐ ICPMS	☐ CVAFS			
☐ SOP2840	Modified Aqua Regia					
☐ SOP2820	RP					
☐ SOP2821	HF Bomb Digestion	☐ ICPMS	☐ CVAFS			
☐ SOP2825	Nitric Bomb Digestion	☐ ICPMS	☐ CVAFS			
☐ SOP2993	Oven Digestion (As , Se Speciation)					
☐ SOP5145	Microwave Digestion (Nutraceuticals)					
☐ SOP5145	Microwave Digestion (3051)					
☐ N/A	Other	w/ Se Ifsic				

Comments:

Conditionally formatted training files located at:
\\us34fila\General and Admin\Quality Assurance\Training\Training Master
(Contact QA for any problems regarding these training files.)

Analytes: Hg

Item					Reviewer Initials	Tertiary Review
1. Is any SOP/DOC expiring within one week of Submission Date? **Data cannot be reported without a current IDOC/CDOC.**		☐ YES		☑ NO	☐	☐
If YES, notify supervisor and technician immediately.						
2. Check prep method		☑ YES			☐	☐
(a) For Ceuticals: Is correct Hg code being used in LIMS?	☐ ICPMS	☐ CV-AFS	☑ 70:30	☐ N/A	☐	☐
3. Compare sample ID & container ID with benchsheet & in LIMS		☑ YES		☐ N/A	☐	☐
4. Check for transcription errors from benchsheet		☑ YES			☐	☐
(a) Check and compare initial and final volumes		☐ YES		☑ N/A	☐	☐
(b) Check and compare mass		☐ YES		☑ N/A	☐	☐
(c) Has the number of pills been documented (Special Info 5 in benchsheet)?		☐ YES		☑ N/A	☐	☐
(d) Have assay logbook copies been attached & avg masses entered?		☐ YES		☑ N/A	☐	☐
(e) For re-digests, have e-mails been attached and verified?		☐ YES		☑ N/A	☐	☐
(f) Benchsheet prep date MUST match actual prep date		☑ YES			☐	☐
5. Samples per Batch? **Check QC Requirements**	☑ ≤ 20	☐ ≤ 10			☐	☐
(a) PBs per batch?	☐ 3 PBs	☑ 2 PBs	☐ 1 PBs		☐	☐
(b) Are pre and post homogenization blanks in batch?		☐ YES		☑ N/A	☐	☐
(c) BS, BS/BSD or CRM in batch?	☐ BS	☑ BS/BSD	☐ CRM		☐	☐
(d) MS/MSD in batch?		☐ YES		☑ N/A	☐	☐
(e) MD in batch?		☐ YES		☑ N/A	☐	☐
(f) Is there at least one duplicate QC source in batch?		☐ YES		☑ N/A	☐	☐
(g) Are there any client specific requests, QC requests, etc? Document:		☐ YES		☑ N/A	☐	☐
(h) Correct LIMS spike ID included for BS, BS/BSD and/or MS/MSD?		☑ YES		☐ N/A	☐	☐
(i) Correct 'source' designated for MD/MS/MSD?		☐ YES		☑ N/A	☐	☐
(j) For EFGS-filtered samples, was a filtration blank included ?		☐ YES		☑ N/A	☐	☐
6. Special prep requirements?		☐ YES		☑ N/A	☐	☐
(a) For 1638: Have samples sat for 48 hours after preservation?		☐ YES		☑ N/A	☐	☐
(b) For 200.8: Have samples sat for 16 hours after preservation?		☐ YES		☑ N/A	☐	☐
(c) For DOD have pipettes been calibrated day of prep?		☐ YES		☑ N/A	☐	☐
7. Are the samples appropriately spiked?		☑ YES		☐ N/A	☐	☐
(a) Is the spike and amount used appropriate and entered into LIMS?		☑ YES		☐ N/A	☐	☐
(b) For <u>all</u> spiking was there a witness? (Initials <u>must</u> be in logbook)		☑ YES		☐ N/A	☐	☐
(c) Spikes added:		☑ YES			☐	☐

NOTE: Due to LIMS software constraints, new LIMS IDs need to be created when multiple/ supplemental spikes are used. Enter new LIMS ID below and use table to list all spikes included in it.

Spike LIMS ID : 2W2758

Spike Name	LIMS ID	µL	Spike Name	LIMS ID	µL
1 ug/mL	2W2758	2w			

PREPARATION BENCH SHEET

F102341

Eurofins Frontier Global Sciences, LLC

Matrix: Air **Prepared using: Trace Metals - EFGS SOP2985 FSTM Trap Nitric/Sulfuric Digestion** **Prepared: 2/24/2021**

Lab Number	Sample ID and Source Sample	Initial (Trap)	Final (mL)	Spike1 ID	ul Spike1	Spike2 ID	ul Spike2	Client	Extraction Comments
F102341-BLK1	Blank	1	100						
F102341-BLK2	Blank	1	100						
F102341-BLK3	Blank	1	100						
F102341-BS1	LCS	1	100	2002758	200				
F102341-BSD1	LCS Dup	1	100	2002758	200				
1B00090-01	09561 R1 A Inlet Spike	1	100					City Of Lynnwood	
1B00090-02	09685 R1 B Inlet	1	100					City Of Lynnwood	
1B00090-03	09689 R1 A Outlet Spike	1	100					City Of Lynnwood	
1B00090-04	09732 R1 B Outlet	1	100					City Of Lynnwood	
1B00090-05	09748 R2 A Inlet Spike	1	100					City Of Lynnwood	
1B00090-06	09765 R2 B Inlet	1	100					City Of Lynnwood	
1B00090-07	09596 R2 A Outlet Spike	1	100					City Of Lynnwood	
1B00090-08	09709 R2 B Outlet	1	100					City Of Lynnwood	

Jar lot #00076735
Start time - 9:00 Temp - 57.7C, CF - 58.8C
End time - 11:00. Temp - 58.1C, CF - 59.2C

Standard ID(s):	Description:	Expiration:
2002758	THg 1,000ng/mL Secondary Spiking Standard	04-May-21 00:00

Reagent ID(s):	Description:	Expiration:
2100386	70/30 Digestion Acid	21-Aug-21 00:00
2100427	5% BrCl	06-Jul-21 00:00

Technician: TL Batch#: F102341 Date: 2/24/21

☐ EFAFS-T-AFS-SOP2986 Tissues - Methyl Mercury - KOH/Methanol: **Hot plate 75±5°C for 2-4 hours.**
☐ EFAFS-T-AFS-SOP2795 Tissues - Total Mercury - 70:30: **Hot plate 75±5°C for two hours.**
☐ EFAFS-T-AFS-SOP5134 Sediments - Methyl Mercury - KBr/CH_2Cl_2: **Heat Block 45°C (nitrogen purge for 30 minutes).**
☐ EFAFS-T-AFS-SOP2807 Solids - Total Mercury - Cold AR: **18-25°C for over four hours.**

Other: SOP 2585 FSIM Nitric/Sulfuric
Balance#: NA Calibrated? ☐ Yes ☐ No
Vial Type: ☒ Glass ☐ Teflon
***Time in:** 9:00 **Actual Temp. (raw):** 57.7 °C w/ CF: 58.8 °C
Therm.#: 17056090 Calibrated? ☒ Yes ☐ No
Time out: 11:00 **Actual Temp. (raw):** 58.1 °C w/ CF: 59.2 °C *Time in can't begin before target temperature is reached

Final vol.: 100 **mL (LIMS ID:** NA **)** **BS Spike vol.:** 200 **µL (LIMS ID:** 2002758 **)**
Spike Witness: m 2/25/21 **(initial and date)** **MS Spike vol.:** NA **µL (LIMS ID:** NA **)**

HCl LIMS ID: NA
HNO_3 LIMS ID: NA
70/30 LIMS ID: 2100386
Other Acid LIMS ID: 2100427
Glass Vial # 00077 6735 Boiling Chip lot # NA

Pipette SN#: NA Calibration Date: NA
Pipette SN#: NA Calibration Date: NA
Dispenser #: 19L 61607 Calibrated? ☒ Yes ☐ No
Dispenser #: 19577355
*Hotblock Position: NA

Vial #	Sample ID Number	Container ID	Sample Size ☐ mL ☐ g	Vial #	Sample ID Number	Container ID	Sample Size ☐ mL ☐ g	CRM LIMS ID ☒ NA
1	F102341 - BLK1	NA	1.0	19	1BOW90-07	B	1.0	
2	F102341 - BLK2	NA	1.0	20	1BOW90-08	A	1.0	
3	F102341 - BLK3	NA	1.0	21	1BOW90-08	B	1.0	
4	F102341 - BS1	NA	1.0	22				
5	F102341 - BSD1	NA	1.0	23				**Comments**
6	1BOW090-01	A	1.0	24				
7	1BOW90-01	B	1.0	25	m			
8	1BOW90-02	A	1.0	26				
9	1BOW90-02	B	1.0	27	2/24/21			m
10	1BOW90-03	A	1.0	28				2/24/21
11	1BOW90-03	B	1.0	29				
12	1BOW90-04	A	1.0	30				
13	1BOW90-04	B	1.0	31				
14	1BOW90-05	A	1.0	32				
15	1BOW90-05	B	1.0	33				
16	1BOW90-06	A	1.0	34				
17	1BOW90-06	B	1.0	35				
18	1BOW90-07	A	1.0	36				

m 2/25/21

*Hotblock diagram located in back of logbook
Verified By: m 2/24/21

PREPARATION BENCH SHEET

F102329

Eurofins Frontier Global Sciences, LLC

Matrix: Tissue **Prepared using: Trace Metals - EFGS SOP2795 Nitric/Sulfuric Hg Digestion** **Prepared: 2/18/2021**

Lab Number	Sample ID and Source Sample	Initial (g)	Final (mL)	Spike1 ID	µl Spike1	Spike2 ID	µl Spike2	Extraction Comments
F102329-BLK1	Blank	0.25	20					
F102329-BLK2	Blank	0.25	20					
F102329-BLK3	Blank	0.25	20					
F102329-BS1	LCS	0.25	20	2100109	20			
F102329-BSD1	LCS Dup	0.25	20	2100109	20			
F102329-MS1	Matrix Spike [1B00003-37RE1]	0.125	10	2002758	100			
F102329-MS2	Matrix Spike [1B00003-07]	0.125	10	2002758	50			
F102329-MSD1	Matrix Spike Dup [1B00003-37RE1]	0.125	10	2002758	100			
F102329-MSD2	Matrix Spike Dup [1B00003-07]	0.125	10	2002758	50			

Standard ID(s):	Description:	Expiration:
2002758	THg 1,000ng/mL Secondary Spiking Standard	04-May-21 00:00
		04-May-21 00:00
2100109	THg 100ng/mL Primary Spiking Standard	12-Apr-21 00:00

Reagent ID(s):	Description:	Expiration:
2003665	Boiling Chips for Trace Metals	29-Jun-21 00:00
2100342	5% BrCl	06-Jul-21 00:00
2100386	70/30 Digestion Acid	21-Aug-21 00:00

PREPARATION BENCH SHEET

F102329

Eurofins Frontier Global Sciences, LLC

Matrix: Tissue **Prepared using: Trace Metals - EFGS SOP2795 Nitric/Sulfuric Hg Digestion** **Prepared: 2/18/2021**

Lab Number	Sample ID	Initial (g)	Final (mL)	QC Sample	Sample Specs.	Location	Sample Comments	Analysis Comments
1B00003-01	MMBKD-01_012521_ABD_01_BL	0.125	10	-	-	eezer 23 F		
1B00003-02	MMBKD-01_012521_ABD_02_BL	0.125	10	-	-	eezer 23 F		
1B00003-03	MMBKD-01_012521_ABD_03_BL	0.125	10	-	-	eezer 23 F		
1B00003-04	MMBKD-01_012521_ABD_04_BL	0.125	10	-	-	eezer 23 F		
1B00003-05	MMBKD-01_012521_ABD_05_BL	0.125	10	-	-	eezer 23 F		
1B00003-06	MMBKD-01_012521_ABD_06_BL	0.125	10	-	-	eezer 23 F		
1B00003-07	MMBKD-01_012521_ABD_07_BL	0.125	10	QC	-	eezer 23 F	Requested MS/MSD	
1B00003-08	MMBKD-01_012521_ABD_08_BL	0.125	10	-	-	eezer 23 F		
1B00003-09	MMBKD-01_012521_ABD_09_BL	0.125	10	-	-	eezer 23 F		
1B00003-10	MMBKD-01_012521_ABD_10_BL	0.125	10	-	-	eezer 23 F		
1B00003-11	MMBKD-01_012521_ABD_11_BL	0.125	10	-	-	eezer 23 F		
1B00003-12	MMBKD-01_012521_ABD_12_BL	0.125	10	-	-	eezer 23 F		
1B00003-13	MMBKD-01_012521_ABD_13_BL	0.125	10	-	-	eezer 23 F		
1B00003-14	MMBKD-01_012521_ABD_14_BL	0.125	10	-	-	eezer 23 F		
1B00003-15	MMBKD-01_012521_ABD_15_BL	0.125	10	-	-	eezer 23 F		
1B00003-16	ES-13_013021_ABD_01_BL	0.125	10	-	-	eezer 23 F		
1B00003-16RE1	ES-13_013021_ABD_01_BL	0.125	10	-	-	eezer 23 F	Added 3/5/2021 by MV2	Added 3/5/2021 by MV2
0003-17	ES-13_013021_ABD_02_BL	0.125	10	-	-	eezer 23 F		
0003-18	ES-13_013021_ABD_03_BL	0.125	10	-	-	eezer 23 F		

ue Date: 3/2/2021

PREPARATION BENCH SHEET

F102329

Eurofins Frontier Global Sciences, LLC

Matrix: Tissue **Prepared using: Trace Metals - EFGS SOP2795 Nitric/Sulfuric Hg Digestion** **Prepared: 2/18/2021**

1B00003-18RE1	ES-13_013021_ABD_03_BL	0.125	10	-	-	eezer 23 F	Added 3/5/2021 by MV2	Added 3/5/2021 by MV2
1B00003-19	ES-13_013021_ABD_04_BL	0.125	10	-	-	eezer 23 F		
1B00003-37	CORN_012521_ABD-BAIT	0.25	20	QC	-	eezer 23 F		
1B00003-37RE1	CORN_012521_ABD-BAIT	0.25	20	QC	-	eezer 23 F	Added 3/5/2021 by MV2	Added 3/5/2021 by MV2

[redacted]

ue Date: 3/2/2021

THg26003-210304-1

eurofins | Frontier Global Sciences

Analysis Datasheet for Total Mercury

Date of Analysis: March 04, 2021
Instrument #: Hg2600-3
LIMS Sequence #:

Analyst: LEL
Units ng/L

Calibration Statistics:

LabNumber	n	True Val	Area	Uncorrected Response Factor	Corrected Peak Height	Corrected Response Factor	% Recovery
SEQ-CAL1	1	0.50 ng/L	159.77 units	319.54	76.22 units	152.44	112.6 %Rec
SEQ-CAL2	1	1.00 ng/L	206.41 units	206.41	122.86 units	122.86	90.8 %Rec
SEQ-CAL3	1	5.00 ng/L	732.53 units	146.51	648.97 units	129.79	95.9 %Rec
SEQ-CAL4	1	20.00 ng/L	2780.44 units	139.02	2696.89 units	134.84	99.6 %Rec
SEQ-CAL5	1	40.00 ng/L	5554.89 units	138.87	5471.34 units	136.78	101.1 %Rec
SEQ-CAL6	0						
SEQ-CAL7	0						
SEQ-CAL8	0						
SEQ-CAL9	0						

Corr. Mean RF	Corr. St Dev RF	Corr. RSD CF	Uncorr. Mean RF
135.34	+/- 10.97	8.1% RSD	190.07

Blanks:

LabNumber	n	Mean	Std Dev	Mean (ng/L)	Std Dev (ng/L)
SEQ-IBL	3	83.55 units	±14.59	0.44 ng/L	±0.08

Preparation Blanks

Sample Type	Batch ID	n	Mean	Std Dev
BLK	1	3	1.648 ng/L	±3.208
BLK	2	3	22.980 ng/L	±19.304
BLK	3	6	-3.277 ng/L	±9.707
BLK	4	0	0.000 ng/L	
BLK	5	0	0.000 ng/L	
BLK	6	0	0.000 ng/L	

Instrument	Analyst	Sample Type	LabNumber	Dilution	Analyzed	FileID	RunEnd	Uncorrected Response	Batch ID	No PB Correction?	RESP	InitialResult	FinalResult	InitialUnits	Comments
Hg2600-3	LEL	CAL	SEQ-IBL1	1	3/4/2021 10:31:11	16549-1.RAW	10:31:11	70.54			-13.0	-0.096	-0.096	ng/L	
Hg2600-3	LEL	CAL	SEQ-IBL2	1	3/4/2021 10:35:19	16550-1.RAW	10:35:19	80.78			-2.8	-0.020	-0.020	ng/L	
Hg2600-3	LEL	CAL	SEQ-IBL3	1	3/4/2021 10:39:28	16551-1.RAW	10:39:28	99.33			15.8	0.117	0.117	ng/L	
Hg2600-3	LEL	CAL	SEQ-CAL1	1	3/4/2021 10:43:37	16552-1.RAW	10:43:37	159.77			76.2	0.563	0.563	ng/L	
Hg2600-3	LEL	CAL	SEQ-CAL2	1	3/4/2021 10:47:46	16553-1.RAW	10:47:46	206.41			122.9	0.908	0.908	ng/L	
Hg2600-3	LEL	CAL	SEQ-CAL3	1	3/4/2021 10:51:55	16554-1.RAW	10:51:55	732.53			649.0	4.795	4.795	ng/L	
Hg2600-3	LEL	CAL	SEQ-CAL4	1	3/4/2021 10:56:04	16555-1.RAW	10:56:04	2780.44			2696.9	19.926	19.926	ng/L	
Hg2600-3	LEL	CAL	SEQ-CAL5	1	3/4/2021 11:00:13	16556-1.RAW	11:00:13	5554.89			5471.3	40.426	40.426	ng/L	
Hg2600-3	LEL	CAL	SEQ-ICV1	1	3/4/2021 11:04:23	16557-1.RAW	11:04:23	770.58			687.0	5.076	5.076	ng/L	
Hg2600-3	LEL	CAL	SEQ-ICB1	1	3/4/2021 11:08:32	16558-1.RAW	11:08:32	93.45			9.9	0.073	0.073	ng/L	
Hg2600-3	LEL	SAM	F102329-BS1	20	3/4/2021 11:12:43	16559-1.RAW	11:12:43	742.53	1		659.0	4.787	95.731	ng/L	
Hg2600-3	LEL	SAM	F102329-BSD1	20	3/4/2021 11:16:52	16560-1.RAW	11:16:52	741.91	1		658.4	4.782	95.639	ng/L	
Hg2600-3	LEL	BLK	F102329-BLK1	20	3/4/2021 11:21:02	16561-1.RAW	11:21:02	81.22	1		-2.3	-0.017	-0.344	ng/L	
Hg2600-3	LEL	BLK	F102329-BLK2	20	3/4/2021 11:25:11	16562-1.RAW	11:25:11	83.14	1		-0.4	-0.003	-0.061	ng/L	
Hg2600-3	LEL	BLK	F102329-BLK3	20	3/4/2021 11:29:21	16563-1.RAW	11:29:21	119.75	1		36.2	0.267	5.348	ng/L	
Hg2600-3	LEL	SAM	1B00028-04RE3	2000	3/4/2021 11:33:30	16564-1.RAW	11:33:30	6608.80	1		6525.2	48.212	96423.194	ng/L	
Hg2600-3	LEL	SAM	1B00028-05RE3	2000	3/4/2021 11:37:39	16565-1.RAW	11:37:39	5606.23	1		5522.7	40.804	81608.063	ng/L	
Hg2600-3	LEL	SAM	1B00028-09RE1	2500	3/4/2021 11:41:49	16566-1.RAW	11:41:49	6594.45	1		6510.9	48.106	120264.420	ng/L	
Hg2600-3	LEL	SAM	WS		3/4/2021 11:45:58	16567-1.RAW	11:45:58	104.58			21.0	Error	#VALUE!	ng/L	
Hg2600-3	LEL	SAM	WS		3/4/2021 11:50:08	16568-1.RAW	11:50:08	88.87			5.3	Error	#VALUE!	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCV1	1	3/4/2021 11:54:17	16569-1.RAW	11:54:17	715.85			632.3	4.672	4.672	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCB1	1	3/4/2021 11:58:26	16570-1.RAW	11:58:26	51.34			-32.2	-0.238	-0.238	ng/L	
Hg2600-3	LEL	SAM	1B00028-04RE4	2500	3/4/2021 12:02:36	16571-1.RAW	12:02:36	5235.43	1		5151.9	38.064	95161.228	ng/L	
Hg2600-3	LEL	SAM	1B00028-05RE4	2500	3/4/2021 12:06:45	16572-1.RAW	12:06:45	4709.69	1		4626.1	34.180	85450.106	ng/L	
Hg2600-3	LEL	SAM	1B00028-09RE2	5000	3/4/2021 12:10:55	16573-1.RAW	12:10:55	3096.61	1		3013.1	22.262	111309.713	ng/L	
Hg2600-3	LEL	SAM	1B00065-07RE3	2000	3/4/2021 12:15:04	16574-1.RAW	12:15:04	115.10	1		31.5	0.232	464.538	ng/L	
Hg2600-3	LEL	SAM	1B00003-37	2500	3/4/2021 12:19:13	16575-1.RAW	12:19:13	103.98	1		20.4	0.150	375.738	ng/L	
Hg2600-3	LEL	SAM	F102329-MS1	2500	3/4/2021 12:23:23	16576-1.RAW	12:23:23	397.38	1		313.8	2.318	5795.261	ng/L	
Hg2600-3	LEL	SAM	F102329-MSD1	2500	3/4/2021 12:27:32	16577-1.RAW	12:27:32	373.51	1		290.0	2.142	5354.301	ng/L	
Hg2600-3	LEL	SAM	1B00003-07	2500	3/4/2021 12:31:41	16578-1.RAW	12:31:41	234.76	1		151.2	1.117	2791.768	ng/L	
Hg2600-3	LEL	SAM	F102329-MS2	2500	3/4/2021 12:35:51	16579-1.RAW	12:35:51	562.36	1		478.8	3.537	8842.974	ng/L	
Hg2600-3	LEL	SAM	F102329-MSD2	2500	3/4/2021 12:40:00	16580-1.RAW	12:40:00	667.69	1		584.1	4.315	10788.236	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCV2	1	3/4/2021 12:44:10	16581-1.RAW	12:44:10	679.37			595.8	4.402	4.402	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCB2	1	3/4/2021 12:48:19	16582-1.RAW	12:48:19	33.85			-49.7	-0.367	-0.367	ng/L	
Hg2600-3	LEL	SAM	1B00065-07RE4	1000	3/4/2021 12:52:29	16583-1.RAW	12:52:29	50.60	1		-33.0	-0.245	-245.113	ng/L	
Hg2600-3	LEL	SAM	1B00003-01	2500	3/4/2021 12:56:38	16584-1.RAW	12:56:38	627.74	1		544.2	4.020	10050.317	ng/L	
Hg2600-3	LEL	SAM	1B00003-02	2500	3/4/2021 13:00:48	16585-1.RAW	13:00:48	344.24	1		260.7	1.925	4813.704	ng/L	
Hg2600-3	LEL	SAM	1B00003-03	2500	3/4/2021 13:04:58	16586-1.RAW	13:04:58	621.34	1		537.8	3.973	9932.171	ng/L	
Hg2600-3	LEL	SAM	1B00003-04	2500	3/4/2021 13:09:08	16587-1.RAW	13:09:08	357.15	1		273.6	2.021	5052.135	ng/L	
Hg2600-3	LEL	SAM	1B00003-05	2500	3/4/2021 13:13:17	16588-1.RAW	13:13:17	484.25	1		400.7	2.960	7399.801	ng/L	
Hg2600-3	LEL	SAM	1B00065-07RE3	1000	3/4/2021 13:17:27	16589-1.RAW	13:17:27	189.22	1		105.7	0.779	779.088	ng/L	
Hg2600-3	LEL	SAM	1B00003-06	2500	3/4/2021 13:21:37	16590-1.RAW	13:21:37	243.44	1		159.9	1.181	2951.762	ng/L	
Hg2600-3	LEL	SAM	1B00003-08	2500	3/4/2021 13:25:47	16591-1.RAW	13:25:47	279.57	1		196.0	1.448	3619.124	ng/L	
Hg2600-3	LEL	SAM	1B00003-09	2500	3/4/2021 13:29:57	16592-1.RAW	13:29:57	377.01	1		293.5	2.168	5418.911	ng/L	
Hg2600-3	LEL	SAM	1B00003-10	2500	3/4/2021 13:34:07	16593-1.RAW	13:34:07	456.70	1		373.2	2.756	6890.999	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCV3	1	3/4/2021 13:38:16	16594-1.RAW	13:38:16	685.26			601.7	4.446	4.446	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCB3	1	3/4/2021 13:42:26	16595-1.RAW	13:42:26	51.12			-32.4	-0.240	-0.240	ng/L	
Hg2600-3	LEL	SAM	1B00003-11	2500	3/4/2021 13:46:35	16596-1.RAW	13:46:35	255.98	1		172.4	1.273	3183.307	ng/L	
Hg2600-3	LEL	SAM	1B00003-12	2500	3/4/2021 13:50:45	16597-1.RAW	13:50:45	347.86	1		264.3	1.952	4880.528	ng/L	
Hg2600-3	LEL	SAM	1B00003-13	2500	3/4/2021 13:54:54	16598-1.RAW	13:54:54	267.31	1		183.8	1.357	3392.677	ng/L	
Hg2600-3	LEL	SAM	1B00003-14	2500	3/4/2021 13:59:04	16599-1.RAW	13:59:04	240.87	1		157.3	1.162	2904.301	ng/L	
Hg2600-3	LEL	SAM	1B00003-15	2500	3/4/2021 14:03:13	16600-1.RAW	14:03:13	273.98	1		190.4	1.406	3515.894	ng/L	
Hg2600-3	LEL	SAM	1B00003-16	2500	3/4/2021 14:07:23	16601-1.RAW	14:07:23	140.34	1		56.8	0.419	1047.381	ng/L	
Hg2600-3	LEL	SAM	1B00003-17	2500	3/4/2021 14:11:33	16602-1.RAW	14:11:33	217.88	1		134.3	0.992	2479.639	ng/L	
Hg2600-3	LEL	SAM	1B00003-18	2500	3/4/2021 14:15:42	16603-1.RAW	14:15:42	133.75	1		50.2	0.370	925.577	ng/L	
Hg2600-3	LEL	SAM	1B00003-19	2500	3/4/2021 14:19:52	16604-1.RAW	14:19:52	322.66	1		239.1	1.766	4415.069	ng/L	
Hg2600-3	LEL	SAM	F101414-BS1	400	3/4/2021 14:24:01	16605-1.RAW	14:24:01	105.74	2		22.2	0.107	42.608	ng/L	

File: THg26003-210304-1

Instrument	Analyst	Sample Type	LabNumber	Dilution	Analyzed	FileID	RunEnd	Uncorrected Response	Batch ID	No PB Correction?	RESP	InitialResult	FinalResult	InitialUnits	Comments
Hg2600-3	LEL	CAL	SEQ-CCV4	1	3/4/2021 14:28:11	16606-1.RAW	14:28:11	688.77			605.2	4.472	4.472	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCB4	1	3/4/2021 14:32:21	16607-1.RAW	14:32:21	35.74			-47.8	-0.353	-0.353	ng/L	
Hg2600-3	LEL	SAM	F101414-BS2	400	3/4/2021 14:36:31	16608-1.RAW	14:36:31	95.14	2		11.6	0.028	11.257	ng/L	
Hg2600-3	LEL	BLK	F101414-BLK1	100	3/4/2021 14:40:41	16609-1.RAW	14:40:41	97.91	2		14.4	0.106	10.607	ng/L	
Hg2600-3	LEL	BLK	F101414-BLK2	100	3/4/2021 14:44:50	16610-1.RAW	14:44:50	101.30	2		17.7	0.131	13.110	ng/L	
Hg2600-3	LEL	BLK	F101414-BLK3	100	3/4/2021 14:49:01	16611-1.RAW	14:49:01	144.76	2		61.2	0.452	45.224	ng/L	
Hg2600-3	LEL	SAM	1A00107-01	100	3/4/2021 14:53:11	16612-1.RAW	14:53:11	115.82	3		32.3	0.271	27.118	ng/L	
Hg2600-3	LEL	SAM	F102341-BS1	400	3/4/2021 14:57:21	16613-1.RAW	14:57:21	658.67	3		575.1	4.258	1703.014	ng/L	
Hg2600-3	LEL	SAM	F102341-BSD1	100	3/4/2021 15:01:31	16614-1.RAW	15:01:31	619.05	3		535.5	3.989	398.937	ng/L	
Hg2600-3	LEL	BLK	F102341-BLK1	100	3/4/2021 15:05:40	16615-1.RAW	15:05:40	75.57	3		-8.0	-0.059	-5.901	ng/L	
Hg2600-3	LEL	BLK	F102341-BLK2	100	3/4/2021 15:09:51	16616-1.RAW	15:09:51	78.36	3		-5.2	-0.038	-3.835	ng/L	
Hg2600-3	LEL	BLK	F102341-BLK3	100	3/4/2021 15:14:00	16617-1.RAW	15:14:00	82.57	3		-1.0	-0.007	-0.728	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCV5	1	3/4/2021 15:18:10	16618-1.RAW	15:18:10	686.82			603.3	4.457	4.457	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCB5	1	3/4/2021 15:22:20	16619-1.RAW	15:22:20	90.30			6.7	0.050	0.050	ng/L	
Hg2600-3	LEL	SAM	F102325-BS1	400	3/4/2021 15:26:30	16620-1.RAW	15:26:30	598.48	3		514.9	3.813	1525.115	ng/L	
Hg2600-3	LEL	SAM	F102325-BSD1	400	3/4/2021 15:30:41	16621-1.RAW	15:30:41	643.87	3		560.3	4.148	1659.256	ng/L	
Hg2600-3	LEL	BLK	F102325-BLK1	100	3/4/2021 15:34:51	16622-1.RAW	15:34:51	62.35	3		-21.2	-0.157	-15.668	ng/L	
Hg2600-3	LEL	BLK	F102325-BLK2	100	3/4/2021 15:39:01	16623-1.RAW	15:39:01	102.10	3		18.5	0.137	13.702	ng/L	
Hg2600-3	LEL	BLK	F102325-BLK3	100	3/4/2021 15:43:11	16624-1.RAW	15:43:11	73.76	3		-9.8	-0.072	-7.233	ng/L	
Hg2600-3	LEL	SAM	1B00052-01	100	3/4/2021 15:47:21	16625-1.RAW	15:47:21	126.30	3		42.7	0.349	34.863	ng/L	
Hg2600-3	LEL	SAM	1B00052-02	100	3/4/2021 15:51:31	16626-1.RAW	15:51:31	105.09	3		21.5	0.192	19.193	ng/L	
Hg2600-3	LEL	SAM	1B00052-03	100	3/4/2021 15:55:42	16627-1.RAW	15:55:42	62.88	3		-20.7	-0.120	-11.999	ng/L	
Hg2600-3	LEL	SAM	1B00052-04	100	3/4/2021 15:59:53	16628-1.RAW	15:59:53	89.31	3		5.8	0.075	7.529	ng/L	
Hg2600-3	LEL	SAM	1B00070-01	100	3/4/2021 16:04:03	16629-1.RAW	16:04:03	79.30	3		-4.3	0.001	0.136	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCV6	1	3/4/2021 16:08:14	16630-1.RAW	16:08:14	697.09			613.5	4.533	4.533	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCB6	1	3/4/2021 16:12:25	16631-1.RAW	16:12:25	51.82			-31.7	-0.234	-0.234	ng/L	
Hg2600-3	LEL	SAM	1B00070-02	100	3/4/2021 16:16:35	16632-1.RAW	16:16:35	81.63	3		-1.9	0.019	1.854	ng/L	
Hg2600-3	LEL	SAM	1B00070-03	100	3/4/2021 16:20:45	16633-1.RAW	16:20:45	149.73	3		66.2	0.522	52.177	ng/L	
Hg2600-3	LEL	SAM	1B00070-04	100	3/4/2021 16:24:56	16634-1.RAW	16:24:56	126.15	3		42.6	0.348	34.752	ng/L	
Hg2600-3	LEL	SAM	1B00090-01	100	3/4/2021 16:29:06	16635-1.RAW	16:29:06	100.17	3		16.6	0.156	15.557	ng/L	
Hg2600-3	LEL	SAM	1B00090-02	100	3/4/2021 16:33:17	16636-1.RAW	16:33:17	91.01	3		7.5	0.088	8.788	ng/L	
Hg2600-3	LEL	SAM	1B00090-03	100	3/4/2021 16:37:27	16637-1.RAW	16:37:27	137.42	3		53.9	0.431	43.080	ng/L	
Hg2600-3	LEL	SAM	1B00090-04	100	3/4/2021 16:41:37	16638-1.RAW	16:41:37	104.61	3		21.1	0.188	18.839	ng/L	
Hg2600-3	LEL	SAM	1B00090-05	100	3/4/2021 16:45:47	16639-1.RAW	16:45:47	127.47	3		43.9	0.357	35.725	ng/L	
Hg2600-3	LEL	SAM	1B00090-06	100	3/4/2021 16:49:57	16640-1.RAW	16:49:57	91.24	3		7.7	0.090	8.956	ng/L	
Hg2600-3	LEL	SAM	1B00090-07	100	3/4/2021 16:54:07	16641-1.RAW	16:54:07	123.26	3		39.7	0.326	32.613	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCV7	1	3/4/2021 16:58:17	16642-1.RAW	16:58:17	652.56			569.0	4.204	4.204	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCB7	1	3/4/2021 17:02:27	16643-1.RAW	17:02:27	50.09			-33.5	-0.247	-0.247	ng/L	
Hg2600-3	LEL	SAM	1B00090-08	100	3/4/2021 17:06:37	16644-1.RAW	17:06:37	67.19	3		-16.4	-0.088	-8.814	ng/L	
Hg2600-3	LEL	SAM	1B00052-01	2500	3/4/2021 17:10:47	16645-1.RAW	17:10:47	130.74	4		47.2	0.349	871.565	ng/L	
Hg2600-3	LEL	SAM	1B00052-02	2500	3/4/2021 17:14:58	16646-1.RAW	17:14:58	130.56	4		47.0	0.347	868.217	ng/L	
Hg2600-3	LEL	SAM	1B00052-03	2500	3/4/2021 17:19:08	16647-1.RAW	17:19:08	714.93	4		631.4	4.665	11662.556	ng/L	
Hg2600-3	LEL	SAM	1B00052-04	2500	3/4/2021 17:23:18	16648-1.RAW	17:23:18	583.07	4		499.5	3.691	9226.756	ng/L	
Hg2600-3	LEL	SAM	1B00070-01	2500	3/4/2021 17:27:29	16649-1.RAW	17:27:29	645.33	4		561.8	4.151	10376.856	ng/L	
Hg2600-3	LEL	SAM	1B00070-02	2500	3/4/2021 17:31:38	16650-1.RAW	17:31:38	638.29	4		554.7	4.099	10246.788	ng/L	
Hg2600-3	LEL	SAM	1B00070-03	2500	3/4/2021 17:35:48	16651-1.RAW	17:35:48	137.73	4		54.2	0.400	1000.809	ng/L	
Hg2600-3	LEL	SAM	1B00070-04	2500	3/4/2021 17:40:01	16652-1.RAW	17:40:01	115.27	4		31.7	0.234	585.850	ng/L	
Hg2600-3	LEL	SAM	1B00090-01	2500	3/4/2021 17:44:11	16653-1.RAW	17:44:11	1080.38	4		996.8	7.365	18412.826	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCV8	1	3/4/2021 17:48:22	16654-1.RAW	17:48:22	655.67			572.1	4.227	4.227	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCB8	1	3/4/2021 17:52:33	16655-1.RAW	17:52:33	40.83			-42.7	-0.316	-0.316	ng/L	
Hg2600-3	LEL	SAM	1B00090-02	2500	3/4/2021 17:56:43	16656-1.RAW	17:56:43	414.54	4		331.0	2.446	6113.820	ng/L	
Hg2600-3	LEL	SAM	1B00090-03	2500	3/4/2021 18:00:54	16657-1.RAW	18:00:54	1145.63	4		1062.1	7.847	19618.085	ng/L	
Hg2600-3	LEL	SAM	1B00090-04	2500	3/4/2021 18:05:04	16658-1.RAW	18:05:04	453.99	4		370.4	2.737	6842.497	ng/L	
Hg2600-3	LEL	SAM	1B00090-05	2500	3/4/2021 18:09:16	16659-1.RAW	18:09:16	1357.59	4		1274.0	9.413	23533.324	ng/L	
Hg2600-3	LEL	SAM	1B00090-06	2500	3/4/2021 18:13:26	16660-1.RAW	18:13:26	419.92	4		336.4	2.485	6213.290	ng/L	
Hg2600-3	LEL	SAM	1B00090-07	2500	3/4/2021 18:17:37	16661-1.RAW	18:17:37	1261.38	4		1177.8	8.702	21756.237	ng/L	
Hg2600-3	LEL	SAM	1B00090-08	2500	3/4/2021 18:21:49	16662-1.RAW	18:21:49	514.28	4		430.7	3.182	7956.161	ng/L	
Hg2600-3	LEL	SAM	1B00052-01	1250	3/4/2021 18:25:59	16663-1.RAW	18:25:59	2840.16	5		2756.6	20.367	25459.295	ng/L	
Hg2600-3	LEL	SAM	1B00052-02	1250	3/4/2021 18:30:09	16664-1.RAW	18:30:09	3046.80	5		2963.2	21.894	27367.795	ng/L	
Hg2600-3	LEL	SAM	1B00052-03	1250	3/4/2021 18:34:21	16665-1.RAW	18:34:21	3063.62	5		2980.1	22.018	27523.118	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCV9	1	3/4/2021 18:38:31	16666-1.RAW	18:38:31	707.22			623.7	4.608	4.608	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCB9	1	3/4/2021 18:42:42	16667-1.RAW	18:42:42	34.61			-48.9	-0.362	-0.362	ng/L	
Hg2600-3	LEL	SAM	1B00052-04	1250	3/4/2021 18:46:52	16668-1.RAW	18:46:52	2461.88	5		2378.3	17.573	21965.657	ng/L	
Hg2600-3	LEL	SAM	1B00070-01	1250	3/4/2021 18:51:03	16669-1.RAW	18:51:03	2689.36	5		2605.8	19.253	24066.619	ng/L	
Hg2600-3	LEL	SAM	1B00070-02	1250	3/4/2021 18:55:13	16670-1.RAW	18:55:13	2706.27	5		2622.7	19.378	24222.724	ng/L	

Printed: 3/5/2021

Instrument	Analyst	Sample Type	LabNumber	Dilution	Analyzed	FileID	RunEnd	Uncorrected Response	Batch ID	No PB Correction?	RESP	InitialResult	FinalResult	InitialUnits	Comments
Hg2600-3	LEL	SAM	1B00070-03	1250	3/4/2021 18:59:24	16671-1.RAW	18:59:24	2906.69	5		2823.1	20.859	26073.796	ng/L	
Hg2600-3	LEL	SAM	1B00070-04	1250	3/4/2021 19:03:34	16672-1.RAW	19:03:34	2774.64	5		2691.1	19.883	24854.243	ng/L	
Hg2600-3	LEL	SAM	1B00003-37RE1	1000	3/4/2021 19:07:45	16673-1.RAW	19:07:45	83.49	5		-0.1	0.000	-0.432	ng/L	
Hg2600-3	LEL	SAM	1B00003-16RE1	1000	3/4/2021 19:11:55	16674-1.RAW	19:11:55	168.19	5		84.6	0.625	625.319	ng/L	
Hg2600-3	LEL	SAM	1B00003-18RE1	1000	3/4/2021 19:16:05	16675-1.RAW	19:16:05	179.51			96.0	Error	#VALUE!	ng/L	
Hg2600-3	LEL	SAM	F101414-BS3	400	3/4/2021 19:20:15	16676-1.RAW	19:20:15	144.03	2		60.5	0.389	155.758	ng/L	
Hg2600-3	LEL	SAM	F101414-BS4	100	3/4/2021 19:24:26	16677-1.RAW	19:24:26	134.24	2		50.7	0.145	14.471	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCVA	1	3/4/2021 19:28:36	16678-1.RAW	19:28:36	659.31			575.8	4.254	4.254	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCBA	1	3/4/2021 19:32:47	16679-1.RAW	19:32:47	39.60			-44.0	-0.325	-0.325	ng/L	
Hg2600-3	LEL	SAM	1B00052-01RE1	1000	3/4/2021 19:36:57	16680-1.RAW	19:36:57	260.96	3		177.4	1.314	1314.082	ng/L	
Hg2600-3	LEL	SAM	1B00052-02RE1	1000	3/4/2021 19:41:09	16681-1.RAW	19:41:09	281.32	3		197.8	1.465	1464.536	ng/L	
Hg2600-3	LEL	SAM	1B00070-03RE1	1000	3/4/2021 19:45:19	16682-1.RAW	19:45:19	299.37	3		215.8	1.598	1597.855	ng/L	
Hg2600-3	LEL	SAM	1B00070-04RE1	1000	3/4/2021 19:49:30	16683-1.RAW	19:49:30	291.88	3		208.3	1.542	1542.360	ng/L	
Hg2600-3	LEL	SAM	1A00021-10RE1	625000	3/4/2021 19:53:40	16684-1.RAW	19:53:40	30.88	6		-52.7	-0.389	-243217.381	ng/L	
Hg2600-3	LEL	SAM	1A00021-11RE1	625000	3/4/2021 19:57:51	16685-1.RAW	19:57:51	45.23	6		-38.3	-0.283	-176986.775	ng/L	
Hg2600-3	LEL	SAM	1A00021-13RE1	625000	3/4/2021 20:02:01	16686-1.RAW	20:02:01	28.81	6		-54.7	-0.404	-252783.719	ng/L	
Hg2600-3	LEL	SAM	1A00021-09RE1	625000	3/4/2021 20:06:11	16687-1.RAW	20:06:11	50.91	6		-32.6	-0.241	-150737.417	ng/L	
Hg2600-3	LEL	SAM	1A00021-12RE1	2000000	3/4/2021 20:10:22	16688-1.RAW	20:10:22	46.56	6		-37.0	-0.273	-546711.229	ng/L	
Hg2600-3	LEL	SAM	1A00021-01RE1	1000000	3/4/2021 20:14:33	16689-1.RAW	20:14:33	31.74	6		-51.8	-0.383	-382834.453	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCVB	1	3/4/2021 20:18:43	16690-1.RAW	20:18:43	1332.48			1248.9	9.228	9.228	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCBB	1	3/4/2021 20:22:54	16691-1.RAW	20:22:54	52.04			-31.5	-0.233	-0.233	ng/L	
Hg2600-3	LEL	SAM	1A00021-10RE1	2000000	3/4/2021 20:27:04	16692-1.RAW	20:27:04	56.71	6		-26.8	-0.198	-396718.829	ng/L	
Hg2600-3	LEL	SAM	1A00021-11RE1	2000000	3/4/2021 20:31:14	16693-1.RAW	20:31:14	220.27	6		136.7	1.010	2020250.475	ng/L	
Hg2600-3	LEL	SAM	1A00021-15RE1	2000	3/4/2021 20:35:25	16694-1.RAW	20:35:25	96.99	6		13.4	0.099	198.562	ng/L	
Hg2600-3	LEL	SAM	1A00021-15RE1	2000	3/4/2021 20:39:35	16695-1.RAW	20:39:35	37.59	6		-46.0	-0.340	-679.118	ng/L	
Hg2600-3	LEL	SAM	1A00021-16RE1	2000	3/4/2021 20:43:45	16696-1.RAW	20:43:45	47.61	6		-35.9	-0.266	-531.132	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCVC	1	3/4/2021 20:47:56	16697-1.RAW	20:47:56	1251.13			1167.6	8.627	8.627	ng/L	
Hg2600-3	LEL	CAL	SEQ-CCBC	1	3/4/2021 20:52:06	16698-1.RAW	20:52:06	45.18			-38.4	-0.283	-0.283	ng/L	

TotalMercury
EPA1631

Operat: LEL | BlankS: 86.028 | Calib Eqn: Conc = (Area-86.02 | Run Date: 3/4/2021 | Blank SD: 12.90128327
Worksh THg260(| CalibFa 133.72 | Status: QC Warnings:6/QC E | Run Time: 10:03:18 | Blank RSD%: 14.99666659
Methoc #### | R: 1 | R²: 0.9999 | CF SD: 9.962053563
Descrip THg26003-210304-1 | CF RSD%: 7.449813955

SampleID	Location Rules	Dilute	Blank	Conc (ppt)	MB%	Final Conc	Rec%	QA	RawData	Runtime	Peak (Raw)	Control (eff)	Flags	RunCount	Comment
Clean			0.00	0.67					16543-1.RAW	10:06:10	88.95	Clean	OK	1	
Clean			0.00	0.12					16544-1.RAW	10:09:02	15.65	Clean	OK	1	
Flush			86.03	0.00					16545-1.RAW	10:14:36	82.56	Flush	OK	1	
WS			86.03	0.04					16546-1.RAW	10:18:45	91.90	Sample	OK	1	
WS			86.03	0.14					16547-1.RAW	10:22:53	105.36	Sample	OK	1	
WS			86.03	0.00					16548-1.RAW	10:27:02	82.65	Sample	OK	1	
SEQ-IBL1	A1	1	0.00	0.53					16549-1.RAW	10:31:11	70.54	Sample	OK	1	
SEQ-IBL2	A2	1	0.00	0.60					16550-1.RAW	10:35:19	80.78	Sample	OK	1	
SEQ-IBL3	A3	1	0.00	0.74					16551-1.RAW	10:39:28	99.33	Sample	OK	1	
SEQ-CAL1	A4	1	86.03	0.55			110.29		16552-1.RAW	10:43:37	159.77	Sample	OK	1	
SEQ-CAL2	A5	1	86.03	0.90			90.02		16553-1.RAW	10:47:46	206.41	Sample	OK	1	
SEQ-CAL3	A6	1	86.03	4.83			96.69		16554-1.RAW	10:51:55	732.53	Sample	OK	1	
SEQ-CAL4	A7	1	86.03	20.15			100.75		16555-1.RAW	10:56:04	2780.44	Sample	OK	1	
SEQ-CAL5	A8	1	86.03	40.90			102.24		16556-1.RAW	11:00:13	5554.89	Sample	FB	1	
SEQ-ICV1	A9	1	86.03	5.12			102.38		16557-1.RAW	11:04:23	770.58	Sample	OK	1	
SEQ-ICB1	A10	1	0.00	0.70					16558-1.RAW	11:08:32	93.45	Sample	OK	1	
F102329-BS1	A11	20	86.03	98.19					16559-1.RAW	11:12:43	742.53	Sample	OK	1	
F102329-BSD1	A12	20	86.03	98.10					16560-1.RAW	11:16:52	741.91	Sample	OK	1	
F102329-BLK1	A13	20	86.03	0.00					16561-1.RAW	11:21:02	81.22	Sample	OK	1	
F102329-BLK2	A14	20	86.03	0.00					16562-1.RAW	11:25:11	83.14	Sample	OK	1	
F102329-BLK3	A15	20	86.03	5.04					16563-1.RAW	11:29:21	119.75	Sample	OK	1	
1B00028-04RE3	A16	2000	86.03	97557.05					16564-1.RAW	11:33:30	6608.80	Sample	FB	1	A BED, RR 2500X
1B00028-05RE3	A17	2000	86.03	82562.27					16565-1.RAW	11:37:39	5606.23	Sample	FB	1	A BED, RR 2500X
1B00028-09RE1	A18	2500	86.03	121678.11					16566-1.RAW	11:41:49	6594.45	Sample	FB	1	A BED, RR 5000X
WS			86.03	0.14					16567-1.RAW	11:45:58	104.58	Sample	OK	1	
WS			86.03	0.02					16568-1.RAW	11:50:08	88.87	Sample	OK	1	
SEQ-CCV1	A21	1	86.03	4.71			94.20		16569-1.RAW	11:54:17	715.85	Sample	OK	1	
SEQ-CCB1	B1	1	86.03	0.00			0.00		16570-1.RAW	11:58:26	51.34	Sample	OK	1	
1B00028-04RE4	A19	2500	86.03	96270.52					16571-1.RAW	12:02:36	5235.43	Sample	FB	1	A BED
1B00028-05RE4	A20	2500	86.03	86441.64					16572-1.RAW	12:06:45	4709.69	Sample	FB	1	A BED
1B00028-09RE2	B2	5000	86.03	112568.54					16573-1.RAW	12:10:55	3096.61	Sample	OK	1	A BED
1B00065-07RE3	B3	2000	86.03	434.81					16574-1.RAW	12:15:04	115.10	Sample	OK	1	A BED, RR 1000X
1B00003-37	B4	2500	86.03	335.68					16575-1.RAW	12:19:13	103.98	Sample	OK	1	RR, 1000X
F102329-MS1	B5	2500	86.03	5820.92			1728.92		16576-1.RAW	12:23:23	397.38	Sample	OK	1	
F102329-MSD1	B6	2500	86.03	5374.61					16577-1.RAW	12:27:32	373.51	Sample	OK	1	
1B00003-07	B7	2500	86.03	2761.01					16578-1.RAW	12:31:41	234.78	Sample	OK	1	
F102329-MS2	B8	2500	86.03	8905.59			320.00		16579-1.RAW	12:35:51	562.38	Sample	OK	1	
F102329-MSD2	B9	2500	86.03	10874.44					16580-1.RAW	12:40:00	667.69	Sample	OK	1	
SEQ-CCV2	B10	1	86.03	4.44			88.74		16581-1.RAW	12:44:10	679.37	Sample	OK	1	
SEQ-CCB2	B11	1	86.03	0.00			0.00		16582-1.RAW	12:48:19	33.85	Sample	OK	1	
1B00065-07RE4	B21	1000	86.03	0.00					16583-1.RAW	12:52:29	50.60	Sample	OK	1	A BED, RR 1000X, SUSPECT DILUTION ERROR
1B00003-01	B12	2500	86.03	10127.57					16584-1.RAW	12:56:38	627.74	Sample	OK	1	
1B00003-02	B13	2500	86.03	4827.46					16585-1.RAW	13:00:48	344.24	Sample	OK	1	
1B00003-03	B14	2500	86.03	10007.99					16586-1.RAW	13:04:58	621.34	Sample	OK	1	
1B00003-04	B15	2500	86.03	5068.78					16587-1.RAW	13:09:08	357.15	Sample	OK	1	
1B00003-05	B16	2500	86.03	7444.92					16588-1.RAW	13:13:17	484.25	Sample	OK	1	
1B00065-07RE3	B17	1000	86.03	771.69					16589-1.RAW	13:17:27	189.22	Sample	OK	1	A BED, CONFIRMATION RR
1B00003-06	C18	2500	86.03	2942.94					16590-1.RAW	13:21:37	243.44	Sample	OK	1	
1B00003-08	B18	2500	86.03	3618.40					16591-1.RAW	13:25:47	279.57	Sample	OK	1	
1B00003-09	B19	2500	86.03	5440.01					16592-1.RAW	13:29:57	377.01	Sample	OK	1	
1B00003-10	B20	2500	86.03	6929.94					16593-1.RAW	13:34:07	456.70	Sample	OK	1	
SEQ-CCV3	C1	1	86.03	4.48			89.62		16594-1.RAW	13:38:16	685.26	Sample	OK	1	
SEQ-CCB3	C2	1	86.03	0.00			0.00		16595-1.RAW	13:42:26	51.12	Sample	OK	1	
1B00003-11	C3	2500	86.03	3177.29					16596-1.RAW	13:46:35	255.98	Sample	OK	1	
1B00003-12	C4	2500	86.03	4895.09					16597-1.RAW	13:50:45	347.86	Sample	OK	1	
1B00003-13	C5	2500	86.03	3389.20					16598-1.RAW	13:54:54	267.31	Sample	OK	1	
1B00003-14	C6	2500	86.03	2894.90					16599-1.RAW	13:59:04	240.87	Sample	OK	1	
1B00003-15	C7	2500	86.03	3513.91					16600-1.RAW	14:03:13	273.98	Sample	OK	1	
1B00003-16	C8	2500	86.03	1015.47					16601-1.RAW	14:07:23	140.34	Sample	OK	1	RR 1000X

1B00003-17	C9	2500	86.03	2465.09		16602-1.RAW	14:11:33	217.88	Sample	OK	1	
1B00003-18	C10	2500	86.03	892.19		16603-1.RAW	14:15:42	133.75	Sample	OK	1	RR 1000X
1B00003-19	C11	2500	86.03	4423.99		16604-1.RAW	14:19:52	322.66	Sample	OK	1	
F101414-BS1	C12	400	86.03	58.98		16605-1.RAW	14:24:01	105.74	Sample	OK	1	LOD, TRAP, RR
SEQ-CCV4	C13	1	86.03	4.51	90.15	16606-1.RAW	14:28:11	688.77	Sample	OK	1	
SEQ-CCB4	C14	1	86.03	0.00	0.00	16607-1.RAW	14:32:21	35.74	Sample	OK	1	
F101414-BS2	C15	400	86.03	27.25		16608-1.RAW	14:36:31	95.14	Sample	OK	1	LOQ, TRAP, RR
F101414-BLK1	C16	100	86.03	8.88		16609-1.RAW	14:40:41	97.91	Sample	OK	1	
F101414-BLK2	C17	100	86.03	11.42		16610-1.RAW	14:44:50	101.30	Sample	OK	1	
F101414-BLK3	C19	100	86.03	43.92		16611-1.RAW	14:49:01	144.76	Sample	OK	1	
1A00107-01	C20	100	86.03	22.28		16612-1.RAW	14:53:11	115.82	Sample	OK	1	
F102341-BS1	C21	400	86.03	1712.94		16613-1.RAW	14:57:21	658.67	Sample	OK	1	
F102341-3SD1	A1	100	86.03	398.61		16614-1.RAW	15:01:31	619.05	Sample	OK	1	
F102341-BLK1	A2	100	86.03	0.00		16615-1.RAW	15:05:40	75.57	Sample	OK	1	
F102341-BLK2	A3	100	86.03	0.00		16616-1.RAW	15:09:51	78.36	Sample	OK	1	
F102341-BLK3	A4	100	86.03	0.00		16617-1.RAW	15:14:00	82.57	Sample	OK	1	
SEQ-CCV5	A5	1	86.03	4.49	89.86	16618-1.RAW	15:18:10	686.82	Sample	OK	1	
SEQ-CCB5	A6	1	86.03	0.03	0.00	16619-1.RAW	15:22:20	90.30	Sample	OK	1	
F102325-BS1	A7	400	86.03	1532.89		16620-1.RAW	15:26:30	598.48	Sample	OK	1	
F102325-BSD1	A8	400	86.03	1668.65		16621-1.RAW	15:30:41	643.87	Sample	OK	1	
F102325-BLK1	A9	100	86.03	0.00		16622-1.RAW	15:34:51	62.35	Sample	OK	1	
F102325-BLK2	A10	100	86.03	12.02		16623-1.RAW	15:39:01	102.10	Sample	OK	1	
F102325-BLK3	A11	100	86.03	0.00		16624-1.RAW	15:43:11	73.76	Sample	OK	1	
1B00052-01	A12	100	86.03	30.12		16625-1.RAW	15:47:21	126.30	Sample	OK	1	B BED, F102325
1B00052-02	A13	100	86.03	14.26		16626-1.RAW	15:51:31	105.09	Sample	OK	1	B BED, F102325
1B00052-03	A14	100	86.03	0.00		16627-1.RAW	15:55:42	62.88	Sample	OK	1	B BED, F102325
1B00052-04	A15	100	86.03	2.45		16628-1.RAW	15:59:53	89.31	Sample	OK	1	B BED, F102325
1B00070-01	A16	100	86.03	0.00		16629-1.RAW	16:04:03	79.30	Sample	OK	1	B BED, F102325
SEQ-CCV6	A17	1	86.03	4.57	91.39	16630-1.RAW	16:08:14	697.09	Sample	OK	1	
SEQ-CCB6	A18	1	86.03	0.00	0.00	16631-1.RAW	16:12:25	51.82	Sample	OK	1	
1B00070-02	A19	100	86.03	0.00		16632-1.RAW	16:16:35	81.63	Sample	OK	1	B BED, F102325
1B00070-03	A20	100	86.03	47.64		16633-1.RAW	16:20:45	149.73	Sample	OK	1	B BED, F102325
1B00070-04	A21	100	86.03	30.01		16634-1.RAW	16:24:56	126.15	Sample	OK	1	B BED, F102325
1B00090-01	B1	100	86.03	10.58		16635-1.RAW	16:29:06	100.17	Sample	OK	1	B BED, F102341
1B00090-02	B2	100	86.03	3.73		16636-1.RAW	16:33:17	91.01	Sample	OK	1	B BED, F102341
1B00090-03	B3	100	86.03	38.43		16637-1.RAW	16:37:27	137.42	Sample	OK	1	B BED, F102341
1B00090-04	B4	100	86.03	13.90		16638-1.RAW	16:41:37	104.61	Sample	OK	1	B BED, F102341
1B00090-05	B5	100	86.03	30.99		16639-1.RAW	16:45:47	127.47	Sample	OK	1	B BED, F102341
1B00090-06	B6	100	86.03	3.90		16640-1.RAW	16:49:57	91.24	Sample	OK	1	B BED, F102341
1B00090-07	B7	100	86.03	27.84		16641-1.RAW	16:54:07	123.26	Sample	OK	1	B BED, F102341
SEQ-CCV7	B8	1	86.03	4.24	84.73	16642-1.RAW	16:58:17	652.56	Sample	OK	1	
SEQ-CCB7	B9	1	86.03	0.00	0.00	16643-1.RAW	17:02:27	50.09	Sample	OK	1	
1B00090-08	B10	100	86.03	0.00		16644-1.RAW	17:06:37	67.19	Sample	OK	1	B BED, F102341
1B00052-01	B11	2500	86.03	835.85		16645-1.RAW	17:10:47	130.74	Sample	OK	1	A BED, F102325
1B00052-02	B12	2500	86.03	832.46		16646-1.RAW	17:14:58	130.56	Sample	OK	1	A BED, F102325
1B00052-03	B13	2500	86.03	11757.69		16647-1.RAW	17:19:08	714.93	Sample	OK	1	A BED, F102325
1B00052-04	B14	2500	86.03	9292.36		16648-1.RAW	17:23:18	583.07	Sample	OK	1	A BED, F102325
1B00070-01	B15	2500	86.03	10456.40		16649-1.RAW	17:27:29	645.33	Sample	OK	1	A BED, F102325
1B00070-02	B16	2500	86.03	10324.76		16650-1.RAW	17:31:38	638.29	Sample	OK	1	A BED, F102325
1B00070-03	B17	2500	86.03	966.66		16651-1.RAW	17:35:48	137.73	Sample	OK	1	A BED, F102325
1B00070-04	B18	2500	86.03	546.67		16652-1.RAW	17:40:01	115.27	Sample	OK	1	A BED, F102325
1B00090-01	B19	2500	86.03	18589.81		16653-1.RAW	17:44:11	1080.38	Sample	OK	1	A BED, F102341
SEQ-CCV8	B20	1	86.03	4.26	85.20	16654-1.RAW	17:48:22	655.67	Sample	OK	1	
SEQ-CCB8	B21	1	86.03	0.00	0.00	16655-1.RAW	17:52:33	40.83	Sample	OK	1	
1B00090-02	C1	2500	86.03	6141.67		16656-1.RAW	17:56:43	414.54	Sample	OK	1	A BED, F102341
1B00090-03	C2	2500	86.03	19809.69		16657-1.RAW	18:00:54	1145.63	Sample	OK	1	A BED, F102341
1B00090-04	C3	2500	86.03	6879.19		16658-1.RAW	18:05:04	453.99	Sample	OK	1	A BED, F102341
1B00090-05	C4	2500	86.03	23772.40		16659-1.RAW	18:09:16	1357.59	Sample	OK	1	A BED, F102341
1B00090-06	C5	2500	86.03	6242.35		16660-1.RAW	18:13:26	419.92	Sample	OK	1	A BED, F102341
1B00090-07	C6	2500	86.03	21973.77		16661-1.RAW	18:17:37	1281.38	Sample	OK	1	A BED, F102341
1B00090-08	C7	2500	86.03	8006.35		16662-1.RAW	18:21:49	514.28	Sample	OK	1	A BED, F102341
1B00052-01	C8	1250	86.03	25744.87		16663-1.RAW	18:25:59	2840.16	Sample	OK	1	C BED, F102325
1B00052-02	C9	1250	86.03	27676.51		16664-1.RAW	18:30:09	3046.80	Sample	OK	1	C BED, F102325
1B00052-03	C10	1250	86.03	27833.72		16665-1.RAW	18:34:21	3063.62	Sample	OK	1	C BED, F102325

SEQ-CCV9	C11	1	86.03	4.65	92.91	16666-1.RAW	18:38:31	707.22	Sample	OK	1	
SEQ-CCB9	C12	1	86.03	0.00	0.00	16667-1.RAW	18:42:42	34.61	Sample	OK	1	
1B00052-04	C13	1250	86.03	22208.87		16668-1.RAW	18:46:52	2461.88	Sample	OK	1	C BED, F102325
1B00070-01	C14	1250	86.03	24335.31		16669-1.RAW	18:51:03	2689.36	Sample	OK	1	C BED, F102325
1B00070-02	C15	1250	86.03	24493.30		16670-1.RAW	18:55:13	2706.27	Sample	OK	1	C BED, F102325
1B00070-03	C16	1250	86.03	26366.82		16671-1.RAW	18:59:24	2906.69	Sample	FB	1	C BED, F102325
1B00070-04	C17	1250	86.03	25132.48		16672-1.RAW	19:03:34	2774.64	Sample	OK	1	C BED, F102325
1B00003-37RE1	C18	1000	86.03	0.00		16673-1.RAW	19:07:45	83.49	Sample	OK	1	
1B00003-16RE1	C19	1000	86.03	614.39		16674-1.RAW	19:11:55	168.19	Sample	OK	1	
1B00003-16RE1	C20	1000	86.03	699.04		16675-1.RAW	19:16:05	179.51	Sample	OK	1	
F101414-BS3	C21	400	86.03	173.50		16676-1.RAW	19:20:15	144.03	Sample	OK	1	LOD, TRAP
F101414-BS4	A1	100	86.03	36.05		16677-1.RAW	19:24:26	134.24	Sample	OK	1	LOQ, TRAP
SEQ-CCVA	A2	1	86.03	4.29		16678-1.RAW	19:28:36	659.31	Sample	OK	1	
SEQ-CCBA	A3	1	86.03	0.00		16679-1.RAW	19:32:47	39.60	Sample	OK	1	
1B00052-01RE1	A4	1000	86.03	1308.19		16680-1.RAW	19:36:57	260.96	Sample	OK	1	A BED
1B00052-02RE1	A5	1000	86.03	1460.46		16681-1.RAW	19:41:09	281.32	Sample	OK	1	A BED
1B00070-03RE1	A6	1000	86.03	1595.40		16682-1.RAW	19:45:19	299.37	Sample	OK	1	A BED
1B00070-04RE1	A7	1000	86.03	1539.23		16683-1.RAW	19:49:30	291.86	Sample	OK	1	A BED
1A00021-10RE1	A8	625000	86.03	0.00		16684-1.RAW	19:53:40	30.88	Sample	OK	1	F6
1A00021-11RE1	A9	625000	86.03	0.00		16685-1.RAW	19:57:51	45.23	Sample	OK	1	F6
1A00021-13RE1	A10	625000	86.03	0.00		16686-1.RAW	20:02:01	28.81	Sample	OK	1	F6
1A00021-09RE1	A11	625000	86.03	0.00		16687-1.RAW	20:06:11	50.91	Sample	OK	1	F6
1A00021-12RE1	A12	2E+06	86.03	0.00		16688-1.RAW	20:10:22	46.56	Sample	OK	1	F5
1A00021-01RE1	A13	1E+06	86.03	0.00		16689-1.RAW	20:14:33	31.74	Sample	OK	1	F6
SEQ-CCVB	A14	1	86.03	9.32		16690-1.RAW	20:18:43	1332.48	Sample	OK	1	
SEQ-CCBB	A15	1	86.03	0.00		16691-1.RAW	20:22:54	52.04	Sample	OK	1	
1A00021-10RE1	A16	2E+06	86.03	0.00		16692-1.RAW	20:27:04	56.71	Sample	OK	1	F5
1A00021-11RE1	A17	2E+06	86.03	2007722.26		16693-1.RAW	20:31:14	220.27	Sample	OK	1	F5
1A00021-15RE1	A18	2000	86.03	163.94		16694-1.RAW	20:35:25	96.99	Sample	OK	1	F5
1A00021-15RE1	A19	2000	86.03	0.00		16695-1.RAW	20:39:35	37.59	Sample	OK	1	F6
1A00021-16RE1	A20	2000	86.03	0.00		16696-1.RAW	20:43:45	47.61	Sample	OK	1	F6
SEQ-CCVC	A21	1	86.03	8.71		16697-1.RAW	20:47:56	1251.13	Sample	OK	1	
SEQ-CCBC	B1	1	86.03	0.00		16698-1.RAW	20:52:06	45.18	Sample	OK	1	

SEQ-IBL1	F101414-BS1
SEQ-IBL2	SEQ-CCV4
SEQ-IBL3	SEQ-CCB4
SEQ-CAL1	F101414-BS2
SEQ-CAL2	F101414-BLK1
SEQ-CAL3	F101414-BLK2
SEQ-CAL4	F101414-BLK3
SEQ-CAL5	1A00107-01
SEQ-ICV1	F102341-BS1
SEQ-ICB1	F102341-BSD1
F102329-BS1	F102341-BLK1
F102329-BSD1	F102341-BLK2
F102329-BLK1	F102341-BLK3
F102329-BLK2	SEQ-CCV5
F102329-BLK3	SEQ-CCB5
1B00028-04RE3	F102325-BS1
1B00028-05RE3	F102325-BSD1
1B00028-09RE1	F102325-BLK1
WS	F102325-BLK2
WS	F102325-BLK3
SEQ-CCV1	1B00052-01
SEQ-CCB1	1B00052-02
1B00028-04RE4	1B00052-03
1B00028-05RE4	1B00052-04
1B00028-09RE2	1B00070-01
1B00065-07RE3	SEQ-CCV6
1B00003-37	SEQ-CCB6
F102329-MS1	1B00070-02
F102329-MSD1	1B00070-03
1B00003-07	1B00070-04
F102329-MS2	1B00090-01
F102329-MSD2	1B00090-02
SEQ-CCV2	1B00090-03
SEQ-CCB2	1B00090-04
1B00065-07RE4	1B00090-05
1B00003-01	1B00090-06
1B00003-02	1B00090-07
1B00003-03	SEQ-CCV7
1B00003-04	SEQ-CCB7
1B00003-05	1B00090-08
1B00065-07RE3	1B00052-01
1B00003-06	1B00052-02
1B00003-08	1B00052-03
1B00003-09	1B00052-04
1B00003-10	1B00070-01
SEQ-CCV3	1B00070-02
SEQ-CCB3	1B00070-03
1B00003-11	1B00070-04
1B00003-12	1B00090-01
1B00003-13	SEQ-CCV8
1B00003-14	SEQ-CCB8
1B00003-15	1B00090-02
1B00003-16	1B00090-03
1B00003-17	1B00090-04
1B00003-18	1B00090-05
1B00003-19	1B00090-06

1B00090-07
1B00090-08
1B00052-01
1B00052-02
1B00052-03
SEQ-CCV9
SEQ-CCB9
1B00052-04
1B00070-01
1B00070-02
1B00070-03
1B00070-04
1B00003-37RE1
1B00003-16RE1
1B00003-18RE1
F101414-BS3
F101414-BS4
SEQ-CCVA
SEQ-CCBA
1B00052-01RE1
1B00052-02RE1
1B00070-03RE1
1B00070-04RE1
1A00021-10RE1
1A00021-11RE1
1A00021-13RE1
1A00021-09RE1
1A00021-12RE1
1A00021-01RE1
SEQ-CCVB
SEQ-CCBB
1A00021-10RE1
1A00021-11RE1
1A00021-15RE1
1A00021-15RE1
1A00021-16RE1
SEQ-CCVC
SEQ-CCBC

3/5/01

APPENDIX E
ANALYTICAL DATA VALIDATION REPORTS

APPENDIX E
2021 DUCK AND CO-LOCATED SEDIMENT SAMPLING DATA VALIDATION SUMMARY

Data Validation Summary
2021 Duck and Co-Located Sediment Sampling
Penobscot River 2021 Monitoring
Penobscot River, Maine

1.0 INTRODUCTION

Duck blood biota samples and co-located sediment samples were collected in January 2021 from the Penobscot River located in Maine. Samples were analyzed by Eurofins Frontier Global Sciences, Inc. (Eurofins) located in Tacoma, Washington and included in sample delivery groups (SDG) 1A00115, 1B00003, and 1B00004. Samples were analyzed by Eurofins TestAmerica (TestAmerica) located in Pittsburg, Pennsylvania and are included in SDG J116528. Samples were analyzed by one or more of the following: Clean Water Act (CWA, 2012) and United States Environment Protection Agency (USEPA) Lloyd Kahn Method (USEPA, 1988):

Laboratory	Parameter	Analytical Method	Validation Level
Eurofins	Mercury, total	CWA 1631B and E	10% Stage III/ 90% Stage IIB
Eurofins	Methyl mercury, total	CWA 1630	10% Stage III/ 90% Stage IIB
TestAmerica	Total Organic Carbon (TOC)	Lloyd Kahn	10% Stage III/ 90% Stage IIB

A Stage IIb data validation was completed on SDGs 1A00115, 1B00003, and J116528. A Stage III data validation was performed on ten percent of samples from these SDGs. Data from equipment blanks did not undergo validation because results from these samples are only used to assess data usability for field samples. Data validation was completed using National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2017) and EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures (USEPA, 2013) where applicable. Data quality evaluations were completed using quality control (QC) limits specified in the Draft Quality Assurance Project Plan (QAPP) Penobscot River 2020 Monitoring [Wood, 2020]. The project laboratory reported results using a combination of two detection limits including the reporting limit (RL) and the method detection limit (MDL). Results for compounds that are not detected in samples are reported as U qualified results at the RL. Positive detections between the MDL and RL are qualified as estimated (J) by the laboratory.

Data validation review and qualification actions are discussed in the following subsections. It should be noted that only instances that result in an impact to data quality are presented in this report. There may be QC elements outside of QAPP and/or method control limits not presented in this report since there is no impact to data quality. Samples included in this data evaluation are presented in Table 1.

Data qualifications were completed if necessary, in accordance with the guidelines or the professional judgment of the project chemist. The following qualifiers as applied during data validation or reported by the laboratory are included in the final data set:

J = The reported concentration is considered an estimated value
U = The target compound was not detected above the method detection limit
UJ = The target compound was not detected above the method detection limit and is considered an estimated value.

Validation reason codes were applied to results associated with QC measurements outside project QC goals. The validation qualification actions, and associated validation reason codes applied to sample results are summarized on Table 2. The following data validation reason codes were applied to one or more sample results:

LR = Laboratory replicate relative percent difference (RPD) limit exceeded
MS-H = Matrix spike (MS) and/or MS duplicate (MSD) recovery high
MS-L = MS and/or MSD recovery low
MS-RPD = MS/MSD RPD limit exceeded

A complete summary of final sample results is provided in Table 3.

Data were evaluated based on the following parameters:

- * Data Completeness and Chain of Custody
- * Holding Times and Preservation
- * Blanks
- * Initial Calibration
- * Continuing Calibration
- * LCS and LCS Duplicate (LCSD)
- MS/MSD
- Laboratory Duplicates/ Replicates
- * Field Duplicates
- * Detection Limits
- * Sample Result Verification/Electronic Evaluation Verification (EDD)
- * Ongoing Precision Recovery

* = indicates that criteria were met and/or no impact to data quality for this parameter

With the exception of the following items discussed below, results were determined to be usable as reported by the laboratory.

2.0 Mercury – 1631

Matrix Spike

SDG 1A00115 – MMBKD-01_012521_SED_00-01 was selected by the laboratory for MS/MSD analysis; however, sample FRB-02_012621_SED_03-05 was requested on the chain of custody. No impact to data quality.

SDG 1B00003 – Sample MMBKD-01_012521_ABD_07_BL was used as the source for the MS/MSD analysis. The MSD recovery for total mercury (160%) was above the QC limit of 125%. Sample results for MMBKD-01_012521_ABD_01_BL, MMBKD-01_012521_ABD_02_BL, MMBKD-01_012521_ABD_03_BL, MMBKD-01_012521_ABD_04_BL, MMBKD-01_012521_ABD_05_BL, MMBKD-01_012521_ABD_06_BL, MMBKD-01_012521_ABD_07_BL, MMBKD-01_012521_ABD_08_BL, MMBKD-01_012521_ABD_09_BL, MMBKD-01_012521_ABD_10_BL, MMBKD-01_012521_ABD_11_BL, MMBKD-01_012521_ABD_12_BL, MMBKD-01_012521_ABD_13_BL, MMBKD-01_012521_ABD_14_BL, MMBKD-01_012521_ABD_15_BL, ES-13_013021_ABD_01_BL, ES-13_013021_ABD_02_BL, and ES-13_013021_ABD_04_BL were qualified as estimated (J) due to the potential high bias. (J – MS-H)

SDG 1B00003 – Sample FRB-02_012621_ABD_01_BL was used as the source for the MS/MSD analysis. The MSD recovery for total mercury (40.8%) was below the QC limit of 71%. Sample results for ES-13_013021_ABD_05_BL, ES-13_013021_ABD_06_BL, ES-13_013021_ABD_07_BL, ES-13_013021_ABD_08_BL, ES-13_013021_ABD_09_BL, ES-13_013021_ABD_10_BL, ES-13_013021_ABD_11_BL, ES-13_013021_ABD_12_BL, ES-13_013021_ABD_13_BL, ES-13_013021_ABD_14_BL, ES-13_013021_ABD_15_BL, FRB-02_012621_ABD_01_BL, FRB-02_012621_ABD_02_BL, FRB-02_012721_ABD_03_BL, FRB-02_012721_ABD_04_BL, and FRB-02_012721_ABD_05_BL were qualified as estimated (J) due to the potential low bias. (J – MS-L)

Additionally, the MS/MSD RPD was elevated (70.3%) above the QC limit of 24%. The laboratory is calculating the RPD based on MS and MSD recoveries instead of concentrations detected in the MS and MSD. Wood re-calculated RPDs between the MS and MSD results to confirm that precision values were within limits. The RPD was still outside of criteria at (53.6%). The detected sample results for ES-13_013021_ABD_05_BL, ES-13_013021_ABD_06_BL, ES-13_013021_ABD_07_BL, ES-13_013021_ABD_08_BL, ES-13_013021_ABD_09_BL, ES-13_013021_ABD_10_BL, ES-13_013021_ABD_11_BL, ES-13_013021_ABD_12_BL, ES-13_013021_ABD_13_BL, ES-13_013021_ABD_14_BL, ES-13_013021_ABD_15_BL, FRB-02_012621_ABD_01_BL, FRB-02_012621_ABD_02_BL, FRB-02_012721_ABD_03_BL, FRB-02_012721_ABD_04_BL, and FRB-02_012721_ABD_05_BL were qualified as estimated (J) due to the imprecision. (J – MS-RPD)

SDG 1B00003 – Sample FRB-02_012621_ABD_04_BL was used as the source for the MS/MSD analysis. The MS recovery for total mercury (47.3%) was below the QC limit of 71%. Sample results for ES-13_013021_ABD_05_BL, ES-13_013021_ABD_06_BL, ES-13_013021_ABD_07_BL, ES-13_013021_ABD_08_BL, ES-13_013021_ABD_09_BL, ES-13_013021_ABD_10_BL, ES-13_013021_ABD_11_BL, ES-13_013021_ABD_12_BL, ES-13_013021_ABD_13_BL, ES-13_013021_ABD_14_BL, ES-13_013021_ABD_15_BL,

FRB-02_012621_ABD_01_BL, FRB-02_012621_ABD_02_BL, FRB-02_012721_ABD_03_BL, FRB-02_012721_ABD_04_BL, and FRB-02_012721_ABD_05_BL were qualified as an estimated concentration (J) due to the potential low bias. (J – MS-L)

Additionally, the MS/MSD RPD was elevated (43.9%) above the QC limit of 24%. The laboratory is calculating the RPD based on MS and MSD recoveries instead of concentrations detected in the MS and MSD. Wood re-calculated RPDs between the MS and MSD results to confirm that precision values were within limits. The RPD was still outside of criteria at (72.3%). The detected sample results for ES-13_013021_ABD_05_BL, ES-13_013021_ABD_06_BL, ES-13_013021_ABD_07_BL, ES-13_013021_ABD_08_BL, ES-13_013021_ABD_09_BL, ES-13_013021_ABD_10_BL, ES-13_013021_ABD_11_BL, ES-13_013021_ABD_12_BL, ES-13_013021_ABD_13_BL, ES-13_013021_ABD_14_BL, ES-13_013021_ABD_15_BL, FRB-02_012621_ABD_01_BL, FRB-02_012621_ABD_02_BL, FRB-02_012721_ABD_03_BL, FRB-02_012721_ABD_04_BL, and FRB-02_012721_ABD_05_BL were qualified as estimated (J) due to the imprecision. (J – MS-RPD)

SDG 1B00003 – Sample CORN_012521_ABD_BAIT was used as the source for the MS/MSD analysis. The MS/MSD recovery for total mercury (58.0%/53.6%) was below the QC limit of 71%. Sample result for CORN_012521_ABD_BAIT was qualified as having an estimated reporting limit (UJ) due to the potential low bias. (UJ – MS-L)

3.0 Methyl Mercury – 1630

Matrix Spike

SDG 1A00115 – Wood did not request a sample for MS/MSD analysis on the chain of custody and the lab did not select a project sample for MS/MSD analysis. No qualifications are warranted.

4.0 Total Organic Carbon – Lloyd Kahn

Lab Replicate

SDG 180-116528-1 – The sample replicate RPD was above the QC acceptance criteria of 30%, in sample MMBKD-01_012521_SED_00-01, at 38%. The TOC result for this sample was qualified as estimated due to the imprecision. (J-LR)

References:

U.S. Environmental Protection Agency (USEPA), 2009. "Guidance for Labeling Externally Validated Laboratory Analytical data for Superfund Use"; Office of Solid Waste and Emergency Response; EPA 540-R-08-005; January 13, 2009.

U.S. Environmental Protection Agency (USEPA), 2013. "EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures"; Quality Assurance Unit Staff; Office of Environmental Measurement and Evaluation; April 22, 2013.

U.S. Environmental Protection Agency (USEPA), 2017. "National Functional Guidelines for Inorganic Superfund Methods Data Review"; Office of Superfund Remediation and Technology Innovation; EPA-540-R-2017-001; January 2017.

Wood, 2020. "Draft Quality Assurance Project Plan Penobscot River 2020 Monitoring", Penobscot River, Maine, June 2020.

Eurofins, 2017. "AMEC Sediment Lab Homogenization and Subsampling Procedure." Work Instruction EFSR-P-SP-WI15953; August 8, 2017.

U.S. Environmental Protection Agency (USEPA), 2004. "Final Update IIIB and Method 9071B of Final Update IIIA"; Test Methods for Evaluating Solid Waste Physical/Chemical Methods SW-846; Office of Solid Waste and Emergency Response, EPA-SW-846-03-03B; November 2004.

U.S. Environment Protection Agency (USEPA), 1988. "Determination of Total Organic Carbon in Sediment", Lloyd Kahn, Quality Assurance Specialist; July 27, 1988.

Data Validator: Denise King March 17, 2021

Denise King

Reviewer: Elizabeth Penta March 17, 2021

elizabeth penta

TABLE 1
DATA VALIDATION REPORT
SAMPLE AND ANALYSIS SUMMARY
2021 DUCK SAMPLING and CO-LOCATED SEDIMENT SAMPLING
PENOBSCOT RIVER 2021 MONITORING
PENOBSCOT RIVER, MAINE
SDGs 01A00115, 1B00003, 1B00004 and 180-116528-1

						Method Class	% Solids	TOC	Mercury	Methyl Mercury
						Analysis Method	SM 2540G	Lloyd Kahn	EPA 1631	EPA 1630
SDG	Media	Location	Field Sample ID	Lab Sample ID	Sample Date	QC Code				
180-116528-1 / 1A00115	SED	ES-13	ES-13_012621_SED_00-01	180-116528-8 / 1A00115-08	1/26/2021	FS	1	1	1	1
180-116528-1 / 1A00115	SED	ES-13	ES-13_012621_SED_01-03	180-116528-9 / 1A00115-10	1/26/2021	FS	1	1	1	1
180-116528-1 / 1A00115	SED	ES-13	ES-13_012621_SED_03-05	180-116528-10/ 1A00115-11	1/26/2021	FS	1	1	1	
180-116528-1 / 1A00115	SED	FRB-02	FRB-02_012621_SED_00-01	180-116528-5 / 1A00115-05	1/26/2021	FS	1	1	1	1
180-116528-1 / 1A00115	SED	FRB-02	FRB-02_012621_SED_01-03	180-116528-6/ 1A00115-06	1/26/2021	FS	1	1	1	1
180-116528-1 / 1A00115	SED	FRB-02	FRB-02_012621_SED_03-05	180-116528-7 / 1A00115-07	1/26/2021	FS	1	1	1	
180-116528-1 / 1A00115	SED	MMBKD-01a	MMBKD-01_012521_SED_00-01	180-116528-1 / 1A00115-01	1/25/2021	FS	1	1	1	1
180-116528-1 / 1A00115	SED	MMBKD-01a	MMBKD-01_012521_SED_01-03	180-116528-2 / 1A00115-02	1/25/2021	FS	1	1	1	1
180-116528-1 / 1A00115	SED	MMBKD-01a	MMBKD-01_012521_SED_01-03_DUP	180-116528-4 / 1A00115-04	1/25/2021	FD	1	1	1	1
180-116528-1 / 1A00115	SED	MMBKD-01a	MMBKD-01_012521_SED_03-05	180-116528-3 / 1A00115-03	1/25/2021	FS	1	1	1	
1B00003	BL	ES-13	ES-13_013021_ABD_01_BL	1B00003-16RE1	1/30/2021	FS			1	
1B00003	BL	ES-13	ES-13_013021_ABD_02_BL	1B00003-17	1/30/2021	FS			1	
1B00003	BL	ES-13	ES-13_013021_ABD_03_BL	1B00003-18RE1	1/30/2021	FS			1	
1B00003	BL	ES-13	ES-13_013021_ABD_04_BL	1B00003-19	1/30/2021	FS			1	
1B00003	BL	ES-13	ES-13_013021_ABD_05_BL	1B00003-20	1/30/2021	FS			1	

Prepared by: BCG 03/10/2021
Reviewed by: DMK 03/17/2021

TABLE 1
DATA VALIDATION REPORT
SAMPLE AND ANALYSIS SUMMARY
2021 DUCK SAMPLING and CO-LOCATED SEDIMENT SAMPLING
PENOBSCOT RIVER 2021 MONITORING
PENOBSCOT RIVER, MAINE
SDGs 01A00115, 1B00003, 1B00004 and 180-116528-1

						Method Class	% Solids	TOC	Mercury	Methyl Mercury
						Analysis Method	SM 2540G	Lloyd Kahn	EPA 1631	EPA 1630
SDG	Media	Location	Field Sample ID	Lab Sample ID	Sample Date	QC Code				
1B00003	BL	ES-13	ES-13_013021_ABD_06_BL	1B00003-21	1/30/2021	FS			1	
1B00003	BL	ES-13	ES-13_013021_ABD_07_BL	1B00003-22	1/30/2021	FS			1	
1B00003	BL	ES-13	ES-13_013021_ABD_08_BL	1B00003-23	1/30/2021	FS			1	
1B00003	BL	ES-13	ES-13_013021_ABD_09_BL	1B00003-24	1/30/2021	FS			1	
1B00003	BL	ES-13	ES-13_013021_ABD_10_BL	1B00003-25	1/30/2021	FS			1	
1B00003	BL	ES-13	ES-13_013021_ABD_11_BL	1B00003-26	1/30/2021	FS			1	
1B00003	BL	ES-13	ES-13_013021_ABD_12_BL	1B00003-27	1/30/2021	FS			1	
1B00003	BL	ES-13	ES-13_013021_ABD_13_BL	1B00003-28	1/30/2021	FS			1	
1B00003	BL	ES-13	ES-13_013021_ABD_14_BL	1B00003-29	1/30/2021	FS			1	
1B00003	BL	ES-13	ES-13_013021_ABD_15_BL	1B00003-30	1/30/2021	FS			1	
1B00003	BL	FRB-02	FRB-02_012621_ABD_01_BL	1B00003-31	1/26/2021	FS			1	
1B00003	BL	FRB-02	FRB-02_012621_ABD_02_BL	1B00003-32	1/26/2021	FS			1	
1B00003	BL	FRB-02	FRB-02_012721_ABD_03_BL	1B00003-33	1/27/2021	FS			1	
1B00003	BL	FRB-02	FRB-02_012721_ABD_04_BL	1B00003-34	1/27/2021	FS			1	
1B00003	BL	FRB-02	FRB-02_012721_ABD_05_BL	1B00003-35	1/27/2021	FS			1	
1B00003	BL	MMBKD-01a	MMBKD-01_012521_ABD_01_BL	1B00003-01	1/25/2021	FS			1	
1B00003	BL	MMBKD-01a	MMBKD-01_012521_ABD_02_BL	1B00003-02	1/25/2021	FS			1	
1B00003	BL	MMBKD-01a	MMBKD-01_012521_ABD_03_BL	1B00003-03	1/25/2021	FS			1	
1B00003	BL	MMBKD-01a	MMBKD-01_012521_ABD_04_BL	1B00003-04	1/25/2021	FS			1	
1B00003	BL	MMBKD-01a	MMBKD-01_012521_ABD_05_BL	1B00003-05	1/25/2021	FS			1	
1B00003	BL	MMBKD-01a	MMBKD-01_012521_ABD_06_BL	1B00003-06	1/25/2021	FS			1	
1B00003	BL	MMBKD-01a	MMBKD-01_012521_ABD_07_BL	1B00003-07	1/25/2021	FS			1	
1B00003	BL	MMBKD-01a	MMBKD-01_012521_ABD_08_BL	1B00003-08	1/25/2021	FS			1	
1B00003	BL	MMBKD-01a	MMBKD-01_012521_ABD_09_BL	1B00003-09	1/25/2021	FS			1	

Prepared by: BCG 03/10/2021
Reviewed by: DMK 03/17/2021

X:\Projects\USDC - Penobscot River 2020 Monitoring-3617207486\3.0_Site_Data\3.4_Test_Results\Validation_Files\Avian and Co-Located Sediment\
Penobscot - Black Duck and Co-Located Sediment - Table_1

TABLE 1
DATA VALIDATION REPORT
SAMPLE AND ANALYSIS SUMMARY
2021 DUCK SAMPLING and CO-LOCATED SEDIMENT SAMPLING
PENOBSCOT RIVER 2021 MONITORING
PENOBSCOT RIVER, MAINE
SDGs 01A00115, 1B00003, 1B00004 and 180-116528-1

						Method Class	% Solids	TOC	Mercury	Methyl Mercury
						Analysis Method	SM 2540G	Lloyd Kahn	EPA 1631	EPA 1630
SDG	**Media**	**Location**	**Field Sample ID**	**Lab Sample ID**	**Sample Date**	**QC Code**				
1B00003	BL	MMBKD-01a	MMBKD-01_012521_ABD_10_BL	1B00003-10	1/25/2021	FS			1	
1B00003	BL	MMBKD-01a	MMBKD-01_012521_ABD_11_BL	1B00003-11	1/25/2021	FS			1	
1B00003	BL	MMBKD-01a	MMBKD-01_012521_ABD_12_BL	1B00003-12	1/25/2021	FS			1	
1B00003	BL	MMBKD-01a	MMBKD-01_012521_ABD_13_BL	1B00003-13	1/25/2021	FS			1	
1B00003	BL	MMBKD-01a	MMBKD-01_012521_ABD_14_BL	1B00003-14	1/25/2021	FS			1	
1B00003	BL	MMBKD-01a	MMBKD-01_012521_ABD_15_BL	1B00003-15	1/25/2021	FS			1	
1B00003	Solid	QC	CORN_012521_ABD-BAIT	1B00003-37RE1	1/25/2021	Bait			1	
1B00003	BS	QC	EB_CAPILLARY_013021_ABD_QC	1B00003-36	1/30/2021	EB			1	
1B00004	BW	QC	EB_DeconlinerHSBowl_020121_SED_QC	1B00004-01	2/1/2021	EB			1	1

Notes:

BL = Blood
BS = Blank Solid
BW = Blank Water
EB = Equipment Blank
EPA = US Environmental Protection Agency
FS = Field Sample
ID = Identification
QC = Quality Contol
SED = Sediment
SDG = Sample Delivery Group
SM = Standard Methods
TOC = Total Organic Carbon

Prepared by: BCG 03/10/2021
Reviewed by: DMK 03/17/2021

TABLE 2
DATA VALIDATION REPORT
DATA VALIDATION QUALIFIERS ADDED
2021 BLACK DUCK AND CO-LOCATED SEDIMENT SAMPLING
PENOBSCOT RIVER 2021 MONITORING
PENOBSCOT RIVER, MAINE

Method	Lab Sample ID	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validated Qualifier	Validation Reason Code	Units
E1631	1B00003-37RE1	CORN_012521_ABD-BAIT	Mercury	40	U	40	UJ	MS-L	NG/G
E1631	1B00003-16RE1	ES-13_013021_ABD_01_BL	Mercury	50		50	J	MS-H	NG/G
E1631	1B00003-17	ES-13_013021_ABD_02_BL	Mercury	198		198	J	MS-H	NG/G
E1631	1B00003-19	ES-13_013021_ABD_04_BL	Mercury	353		353	J	MS-H	NG/G
E1631	1B00003-20	ES-13_013021_ABD_05_BL	Mercury	180		180	J	MS-L, MS-RPD	NG/G
E1631	1B00003-21	ES-13_013021_ABD_06_BL	Mercury	360		360	J	MS-L, MS-RPD	NG/G
E1631	1B00003-22	ES-13_013021_ABD_07_BL	Mercury	366		366	J	MS-L, MS-RPD	NG/G
E1631	1B00003-23	ES-13_013021_ABD_08_BL	Mercury	291		291	J	MS-L, MS-RPD	NG/G
E1631	1B00003-24	ES-13_013021_ABD_09_BL	Mercury	176		176	J	MS-L, MS-RPD	NG/G
E1631	1B00003-25	ES-13_013021_ABD_10_BL	Mercury	216		216	J	MS-L, MS-RPD	NG/G
E1631	1B00003-26	ES-13_013021_ABD_11_BL	Mercury	172		172	J	MS-L, MS-RPD	NG/G
E1631	1B00003-27	ES-13_013021_ABD_12_BL	Mercury	99.4	J	99.4	J	MS-L, MS-RPD	NG/G
E1631	1B00003-28	ES-13_013021_ABD_13_BL	Mercury	161		161	J	MS-L, MS-RPD	NG/G
E1631	1B00003-29	ES-13_013021_ABD_14_BL	Mercury	237		237	J	MS-L, MS-RPD	NG/G
E1631	1B00003-30	ES-13_013021_ABD_15_BL	Mercury	289		289	J	MS-L, MS-RPD	NG/G
E1631	1B00003-31	FRB-02_012621_ABD_01_BL	Mercury	99.8	J	99.8	J	MS-L, MS-RPD	NG/G
E1631	1B00003-32	FRB-02_012621_ABD_02_BL	Mercury	58.4	J	58.4	J	MS-L, MS-RPD	NG/G
E1631	1B00003-33	FRB-02_012721_ABD_03_BL	Mercury	75.8	J	75.8	J	MS-L, MS-RPD	NG/G
E1631	1B00003-34	FRB-02_012721_ABD_04_BL	Mercury	69.5	J	69.5	J	MS-L, MS-RPD	NG/G
E1631	1B00003-35	FRB-02_012721_ABD_05_BL	Mercury	87.7	J	87.7	J	MS-L, MS-RPD	NG/G
E1631	1B00003-01	MMBKD-01_012521_ABD_01_BL	Mercury	804		804	J	MS-H	NG/G
E1631	1B00003-02	MMBKD-01_012521_ABD_02_BL	Mercury	385		385	J	MS-H	NG/G
E1631	1B00003-03	MMBKD-01_012521_ABD_03_BL	Mercury	795		795	J	MS-H	NG/G
E1631	1B00003-04	MMBKD-01_012521_ABD_04_BL	Mercury	404		404	J	MS-H	NG/G
E1631	1B00003-05	MMBKD-01_012521_ABD_05_BL	Mercury	592		592	J	MS-H	NG/G

TABLE 2
DATA VALIDATION REPORT
DATA VALIDATION QUALIFIERS ADDED
2021 BLACK DUCK AND CO-LOCATED SEDIMENT SAMPLING
PENOBSCOT RIVER 2021 MONITORING
PENOBSCOT RIVER, MAINE

Method	Lab Sample ID	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validated Qualifier	Validation Reason Code	Units
E1631	1B00003-06	MMBKD-01_012521_ABD_06_BL	Mercury	236		236	J	MS-H	NG/G
E1631	1B00003-07	MMBKD-01_012521_ABD_07_BL	Mercury	223		223	J	MS-H	NG/G
E1631	1B00003-08	MMBKD-01_012521_ABD_08_BL	Mercury	290		290	J	MS-H	NG/G
E1631	1B00003-09	MMBKD-01_012521_ABD_09_BL	Mercury	434		434	J	MS-H	NG/G
E1631	1B00003-10	MMBKD-01_012521_ABD_10_BL	Mercury	551		551	J	MS-H	NG/G
E1631	1B00003-11	MMBKD-01_012521_ABD_11_BL	Mercury	255		255	J	MS-H	NG/G
E1631	1B00003-12	MMBKD-01_012521_ABD_12_BL	Mercury	390		390	J	MS-H	NG/G
E1631	1B00003-13	MMBKD-01_012521_ABD_13_BL	Mercury	271		271	J	MS-H	NG/G
E1631	1B00003-14	MMBKD-01_012521_ABD_14_BL	Mercury	232		232	J	MS-H	NG/G
E1631	1B00003-15	MMBKD-01_012521_ABD_15_BL	Mercury	281		281	J	MS-H	NG/G
EPA-Lloyd Kahn	180-116528-1	MMBKD-01_012521_SED_00-01	Carbon	94,000		94,000	J	LR	MG/KG

<u>Units</u>
MG/KG = Nanogram per gram
NG/G = Nanogram per gram

<u>Notes</u>
EPA = US Environmental Protection Agency
ID = Identification
RPD = Relative percent difference

<u>Validation Qualifier</u>
J = Value is estimated
U = The target compound was not detected above the method detection limit
UJ = The target compound was not detected above the method detection limit and is considered an estimated value.

<u>Validation Reason Codes</u>
LR = Laboratory replicate RPD limit exceeded
MS-H = Matrix spike (MS) and/or MS duplicate (MSD) recovery high
MS-L = MS and/or MSD recovery low
MS-RPD = MS/MSD RPD limit exceeded

TABLE 3
DATA VALIDATION REPORT
VALIDATED SAMPLE RESULTS
2021 DUCK AND CO-LOCATED SEDIMENT SAMPLING
PENOBSCOT RIVER 2021 MONITORING
PENOBSCOT RIVER, MAINE

			Lab	Eurofins Frontier Global Sciences		Eurofins Frontier Global Sciences		Eurofins Frontier Global Sciences		Eurofins Frontier Global Sciences		Eurofins Pittsburgh	
			Method	% Solids		7474_1631		E1631		KOH_1630		EPA-Lloyd Kahn	
			Parameter	Percent Solids		Mercury		Mercury		Methyl Mercury		Carbon	
			Units	Percent		NG/G		NG/G		NG/G		MG/KG	
Location	**Sample Date**	**Field Sample ID**	**QC Code**	**Final Result**	**Final Qualifier**	**Final Result**	**Final Qualifier**	**Final Result**	**Final Qualifier**	**Final Result**	**Final Qualifier**	**Final Result**	**Final Qualifier**
ES-13	1/26/2021	ES-13_012621_SED_00-01	FS	40		253				12.3		66,000	
ES-13	1/26/2021	ES-13_012621_SED_01-03	FS	40.7		239				8.6	J	44,000	
ES-13	1/26/2021	ES-13_012621_SED_03-05	FS	72.6		32.1						12,000	
ES-13	1/30/2021	ES-13_013021_ABD_01_BL	FS					50	J				
ES-13	1/30/2021	ES-13_013021_ABD_02_BL	FS					198	J				
ES-13	1/30/2021	ES-13_013021_ABD_03_BL	FS					40	U				
ES-13	1/30/2021	ES-13_013021_ABD_04_BL	FS					353	J				
ES-13	1/30/2021	ES-13_013021_ABD_05_BL	FS					180	J				
ES-13	1/30/2021	ES-13_013021_ABD_06_BL	FS					360	J				
ES-13	1/30/2021	ES-13_013021_ABD_07_BL	FS					366	J				
ES-13	1/30/2021	ES-13_013021_ABD_08_BL	FS					291	J				
ES-13	1/30/2021	ES-13_013021_ABD_09_BL	FS					176	J				
ES-13	1/30/2021	ES-13_013021_ABD_10_BL	FS					216	J				
ES-13	1/30/2021	ES-13_013021_ABD_11_BL	FS					172	J				
ES-13	1/30/2021	ES-13_013021_ABD_12_BL	FS					99.4	J				
ES-13	1/30/2021	ES-13_013021_ABD_13_BL	FS					161	J				
ES-13	1/30/2021	ES-13_013021_ABD_14_BL	FS					237	J				
ES-13	1/30/2021	ES-13_013021_ABD_15_BL	FS					289	J				
FRB-02	1/26/2021	FRB-02_012621_ABD_01_BL	FS					99.8	J				
FRB-02	1/26/2021	FRB-02_012621_ABD_02_BL	FS					58.4	J				
FRB-02	1/26/2021	FRB-02_012621_SED_00-01	FS	50.1		8.94	J			7.8	U	21,000	
FRB-02	1/26/2021	FRB-02_012621_SED_01-03	FS	50.9		16.9	J			7.4	U	24,000	
FRB-02	1/26/2021	FRB-02_012621_SED_03-05	FS	54.9		14.2	J					22,000	
FRB-02	1/27/2021	FRB-02_012721_ABD_03_BL	FS					75.8	J				
FRB-02	1/27/2021	FRB-02_012721_ABD_04_BL	FS					69.5	J				

TABLE 3
DATA VALIDATION REPORT
VALIDATED SAMPLE RESULTS
2021 DUCK AND CO-LOCATED SEDIMENT SAMPLING
PENOBSCOT RIVER 2021 MONITORING
PENOBSCOT RIVER, MAINE

			Lab	Eurofins Frontier Global Sciences		Eurofins Frontier Global Sciences		Eurofins Frontier Global Sciences		Eurofins Frontier Global Sciences		Eurofins Pittsburgh	
			Method	% Solids		7474_1631		E1631		KOH_1630		EPA-Lloyd Kahn	
			Parameter	Percent Solids		Mercury		Mercury		Methyl Mercury		Carbon	
			Units	Percent		NG/G		NG/G		NG/G		MG/KG	
Location	**Sample Date**	**Field Sample ID**	**QC Code**	**Final Result**	**Final Qualifier**	**Final Result**	**Final Qualifier**	**Final Result**	**Final Qualifier**	**Final Result**	**Final Qualifier**	**Final Result**	**Final Qualifier**
FRB-02	1/27/2021	FRB-02_012721_ABD_05_BL	FS					87.7	J				
MMBKD-01a	1/25/2021	MMBKD-01_012521_ABD_01_BL	FS					804	J				
MMBKD-01a	1/25/2021	MMBKD-01_012521_ABD_02_BL	FS					385	J				
MMBKD-01a	1/25/2021	MMBKD-01_012521_ABD_03_BL	FS					795	J				
MMBKD-01a	1/25/2021	MMBKD-01_012521_ABD_04_BL	FS					404	J				
MMBKD-01a	1/25/2021	MMBKD-01_012521_ABD_05_BL	FS					592	J				
MMBKD-01a	1/25/2021	MMBKD-01_012521_ABD_06_BL	FS					236	J				
MMBKD-01a	1/25/2021	MMBKD-01_012521_ABD_07_BL	FS					223	J				
MMBKD-01a	1/25/2021	MMBKD-01_012521_ABD_08_BL	FS					290	J				
MMBKD-01a	1/25/2021	MMBKD-01_012521_ABD_09_BL	FS					434	J				
MMBKD-01a	1/25/2021	MMBKD-01_012521_ABD_10_BL	FS					551	J				
MMBKD-01a	1/25/2021	MMBKD-01_012521_ABD_11_BL	FS					255	J				
MMBKD-01a	1/25/2021	MMBKD-01_012521_SED_01-03_DUP	FD	38.5		142				10.2	U	56,000	
MMBKD-01a	1/25/2021	MMBKD-01_012521_ABD_12_BL	FS					390	J				
MMBKD-01a	1/25/2021	MMBKD-01_012521_ABD_13_BL	FS					271	J				
MMBKD-01a	1/25/2021	MMBKD-01_012521_ABD_14_BL	FS					232	J				
MMBKD-01a	1/25/2021	MMBKD-01_012521_ABD_15_BL	FS					281	J				
MMBKD-01a	1/25/2021	MMBKD-01_012521_SED_00-01	FS	25		360				14.9	U	94,000	J
MMBKD-01a	1/25/2021	MMBKD-01_012521_SED_01-03	FS	41.1		149				9.5	U	54,000	
MMBKD-01a	1/25/2021	MMBKD-01_012521_SED_03-05	FS	52.4		28.7	J					34,000	
QC	1/25/2021	CORN_012521_ABD-BAIT	FS					40	UJ				

Units

MG/KG = Nanogram per gram

NG/G = Nanogram per gram

Validation Qualifier

J = Value is estimated

U = The target compound was not detected above the method detection limit.

UJ = The target compound was not detected above the method detection limit and is considered an estimated value.

Notes

EPA = US Environmental Protection Agency

FD = Field duplicate

FS = Field sample

ID = Identification

KOH = Potassium hydroxide