DEPARTMENT OF THE NAVY
COMMANDER
NAVY REGION HAWAII
850 TICONDEROGA ST STE 110
JBPHH, HAWAII 96860-5101

DEC 20 2019

5090
N45
December 11, 2019

Ms. Joanna Seto, Chief
Hawaii State Department of Health
Environmental Management Division
Safe Drinking Water Branch
2385 Waimano Home Road
Uluakupu Building 4
Pearl City, HI 96782

Dear Ms. Seto:

SUBJECT: THIRD QUARTER 2019 DRINKING WATER MONITORING RESULTS FOR RED HILL, JOINT BASE PEARL HARBOR-HICKAM WATER SYSTEM (PWS NO. 360)

As required by the Transition Plan for Tank 5 Red Hill Release drinking water samples were collected at the Red Hill Shaft on September 10, 2019. After receiving the results, we discovered that the JP8 sample was analyzed by a laboratory that is not certified by the State of Hawaii. As a result, we took another water sample on November 22, 2019 to analyze JP8 at a certified laboratory. We apologize for the time lapse between samples and not having everything analyzed within the third quarter of 2019.

A summary of the laboratory results that are enclosed is provided in the table below.

Lab Report Number	Sample Location(s)	Sample Date	Laboratory Methods
465180	360-011, TAP OUTSIDE CL2 BLDG	09/10/19	200.8, 524.2, 525.2
90862	360-011, TAP OUTSIDE CL2 BLDG	11/22/19	8015B

No contaminants were detected. Should you have any questions regarding this matter, please contact Mr. Dean Setiono at (808) 471-4811.

Sincerely,

AARON Y. POENTIS
Director
Regional Environmental Department
By direction of the
Commander

Enclosures: 1. Eurofins Lab Reports for Samples Collected on 09/10/19 (25 pages)
2. APPL Lab Reports for Samples Collected on 11/22/19 (71 pages)

5090
N45
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Copy to:

Department of Health, Solid and Hazardous Waste Branch, Underground Storage Tank Section
(Hard copy w/ enclosures)

Electronic copy to:

Mr. John Floyd, NAVSUP Fleet Logistics Center Pearl Harbor Deputy Director, Fuel and Facility Management

Mr. Ralph Wells, DLA Energy Pacific

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LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

ENCLOSURE(1)

STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN00035	New Jersey*	IN598
Colorado Radiochemistry	IN00035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-18-12
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA014	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

*NELAP/TNI Recognized Accreditation Bodies

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110 South Hill Street
South Bend, IN 46617
Tel: (574) 233-4777
Fax: (574) 233-8207
1 800 332 4345

Laboratory Report

Client: NAVFAC Hawaii

Attn: Duane Morita
Environmental Lab, Code PRJ411
Building 1423, Central Avenue
JBPHH, HI 96860

Report: 465180
Priority: Rush Verbal
Status: Final
PWS ID: HI0000360

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
4419182	19-10376,JBPHHRed Hill,TP001	524.2	09/10/19 08:20	Client	09/13/19 08:45
4419183	19-10376,JBPHHRed Hill,TP001	525.2	09/10/19 08:20	Client	09/13/19 08:45
4419184	19-10376,JBPHHRed Hill,TP001	200.8	09/10/19 08:20	Client	09/13/19 08:45

Report Summary

Note: The sample submitted for Method 524.2 analysis was received above the method required pH of < 2.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Kelly Blackburn at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Kelly Blackburn ASM

Authorized Signature | Title | 09/20/2019 Date

Client Name: NAVFAC Hawaii
Report #: 465180

Client Name: NAVFAC Hawaii Report #: 465180

Sampling Point: 19-10376,JBPHHRed Hill,TP001 PWS ID: HI0000360

Metals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
7439-92-1	Lead	200.8	15 t	1.0	1.1	ug/L	---	09/16/19 13:26	4419184

Semi-volatile Organic Chemicals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	EEA ID #
83-32-9	Acenaphthene $	525.2	---	0.1	< 0.1	ug/L	09/17/19 07:46	09/17/19 23:52	4419183
208-96-8	Acenaphthylene $	525.2	---	0.1	< 0.1	ug/L	09/17/19 07:46	09/17/19 23:52	4419183
120-12-7	Anthracene $	525.2	---	0.1	< 0.1	ug/L	09/17/19 07:46	09/17/19 23:52	4419183
50-32-8	Benzo(a)pyrene	525.2	0.2 *	0.02	< 0.02	ug/L	09/17/19 07:46	09/17/19 23:52	4419183
103-23-1	Di(2-ethylhexyl)adipate	525.2	400 *	0.6	< 0.6	ug/L	09/17/19 07:46	09/17/19 23:52	4419183
117-81-7	Di(2-ethylhexyl)phthalate	525.2	6 *	0.6	< 0.6	ug/L	09/17/19 07:46	09/17/19 23:52	4419183
206-44-0	Fluoranthene $	525.2	---	0.1	< 0.1	ug/L	09/17/19 07:46	09/17/19 23:52	4419183
85-01-8	Phenanthrene $	525.2	---	0.1	< 0.1	ug/L	09/17/19 07:46	09/17/19 23:52	4419183
129-00-0	Pyrene $	525.2	---	0.1	< 0.1	ug/L	09/17/19 07:46	09/17/19 23:52	4419183

Volatile Organic Chemicals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
71-43-2	Benzene	524.2	5 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
56-23-5	Carbon tetrachloride	524.2	5 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
108-90-7	Chlorobenzene	524.2	100 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
95-50-1	1,2-Dichlorobenzene	524.2	600 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
106-46-7	1,4-Dichlorobenzene	524.2	75 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
107-06-2	1,2-Dichloroethane	524.2	5 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
75-35-4	1,1-Dichloroethylene	524.2	7 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
156-59-2	cis-1,2-Dichloroethylene	524.2	70 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
156-60-5	trans-1,2-Dichloroethylene	524.2	100 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
75-09-2	Dichloromethane	524.2	5 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
78-87-5	1,2-Dichloropropane	524.2	5 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
100-41-4	Ethylbenzene	524.2	700 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
91-20-3	Naphthalene	524.2	---	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
100-42-5	Styrene	524.2	100 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
127-18-4	Tetrachloroethylene	524.2	5 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
108-88-3	Toluene	524.2	1000 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
120-82-1	1,2,4-Trichlorobenzene	524.2	70 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
71-55-6	1,1,1-Trichloroethane	524.2	200 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
79-00-5	1,1,2-Trichloroethane	524.2	5 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
79-01-6	Trichloroethylene	524.2	5 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
75-01-4	Vinyl chloride	524.2	2 *	0.2	< 0.2	ug/L	---	09/13/19 21:45	4419182
95-47-6	1,2-Xylene	524.2	---	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
179601-23-1	1,3 + 1,4-Xylene	524.2	---	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182
1330-20-7	Xylenes, Total	524.2	10000 *	0.5	< 0.5	ug/L	---	09/13/19 21:45	4419182

$ The state of origin does not offer certification for this parameter.

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

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110 S. Hill Street
South Bend, IN 46617
T: 1.800.332.4345
F: 1.574.233.8207

Order # 367938

Batch # 465180

www.eatonanalytical.com

Shaded area for EEA use only

CHAIN OF CUSTODY RECORD

Page 1 of 21

55 9-13-19

REPORT TO	SAMPLER (Signature)	PWS ID #	STATE (sample origin)	PROJECT NAME	PO#
NAVFAC Hawaii		HI0000360	HI		

BILL TO	COMPLIANCE MONITORING	Yes	No	POPULATION SERVED	SOURCE WATER
NAVFAC Hawaii		X			GW

	LAB Number	COLLECTION DATE	TIME	AM	PM	SAMPLING SITE	TEST NAME	SAMPLE REMARKS	CHLORINATED YES	CHLORINATED NO	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
1	4419.182	09/10/19	0820	X		19-10376, JBPHH Red Hill	Volatiles (524.2) See attached list		X		3	DW	RV
2						TP001360-011							
3	183						Semivolatiles (525.2) See attached list		X		2	DW	RV
4													
5	184						Lead (200.8)		X		1	DW	RV
6													
7													
8													
9	185	08/26/19				19-10377	Volatiles (524.2)		X		2	DW	RV
10						Trip Blank							
11													
12													
13													
14													

RUSH VERBAL

RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
	9/11/19	1400 AM PM	Fedex		AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
		AM PM			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED FOR LABORATORY BY	DATE	TIME
		AM PM		9-13-19	0845 AM PM

LAB RESERVES THE RIGHT TO RETURN UNUSED PORTIONS OF NON AQUEOUS SAMPLES TO CLIENT

LAB COMMENTS

LTB
VIALS CONTAIN ACCEPTABLE BUBBLES

CONDITIONS UPON RECEIPT (check one): X Iced: Wet/Blue ____ Ambient 3.8 °C Upon Receipt____ N/A

MATRIX CODES:

DW-DRINKING WATER
RW-REAGENT WATER
GW-GROUND WATER
EW-EXPOSURE WATER
SW-SURFACE WATER
PW-POOL WATER
WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES

SW = Standard Written (15 working days)	0%	IV* = Immediate Verbal (3 working days)	100%
RV* = Rush Verbal (5 working days)	50%	IW* = Immediate Written (3 working days)	125%
RW* = Rush Written (5 working days)	75%	SP* = Weekend, Holiday	CALL
		STAT* = Less than 48 hours	CALL

* Please call, expedited service not available for all testing

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges.

06-LO-F0435 Issue 4.0 Effective Date: 2014-05-01

Sample analysis will be provided according to the standard EEA/Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agree to in writing by EEA.

VOCs tested (EPA Method 524.2)
Benzene
Carbon tetrachloride
Chlorobenzene
1,2-Dichlorobenzene
1,4-Dichlorobenzene
1,2-Dichloroethane
1,1-Dichloroethylene
cis-1,2-Dichloroethylene
trans-1,2-Dichloroethylene
Dichloromethane
1,2-Dichloropropane
Ethylbenzene
Napththalene (unregulated)
Styrene
Tetrachloroethylene
Toluene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene
Vinyl chloride
Xylenes, Total

SVOCs tested (EPA Method 525.2)
Benzo(a)pyrene
Di(2-ethylhexyl)adipate
Di(2-ethylhexyl)phthalate
Acenaphthene (unregulated)
Acenaphthylene (unregulated)
Anthracene (unregulated)
Phenanthrene (unregulated)
Fluoranthene (unregulated)
Pyrene (unregulated)

TPH as Diesel (JP-8) (SW846 8015 GCMS)

NAVFAC HAWAII ENVIRONMENTAL SERVICES LABORATORY CHAIN-OF-CUSTODY

Navy Facilities Engineering Command, Hawaii, Pearl Harbor, Hawaii Phone: (808) 474-3704, FAX: (808) 471-4534

JON: 178014602019	ESM:	POC: Kyle Teraoka	PH#: 473-3160	FAX#: 473-1545
Report To: Kyle Teraoka		Copy To: Brian Yamada	Copy To:	
NAVFAC HI OPBP6		NAVFAC HI EV11		
kyle.teraoka@navy.mil		brian.m.yamada@navy.mil		

Sample ID	Sample Description	Matrix Code	Sampling Date	Sampling Time	Container Vol	Container Type	Analysis Required	Preservative / Res. Cl (ppm)	FOR LAB USE ONLY pH	FOR LAB USE ONLY Lab Number	FOR LAB USE ONLY Ext.	FOR LAB USE ONLY Ltn.	Cond. A	Cond. U
Joint Base Pearl Harbor-Hickam (360-011)	Red Hill, TP001, Tnp outside the Cl2 Bldg	DW	9/10/19	0820	3x40mL	Glass	Volatiles (524.2)	Ascorbic, HCl		19-10376	1-3	C	✓	
					2x1L	Glass	Semi-Volatiles (525.2)	Sulfite, HCl 0.3			4-5	C	✓	
					1L	Glass	TPH as Diesel (JP-8) (8015)				6	C	✓	
					125mL	Plastic	Lead (200.8)	HNO3 pH<2			7	C	✓	
Trip Blank			8/26/2019		2x40mL	Glass	Volatiles	Ascorbic, HCl		19-10377	1-2	C	✓	

Sampling Information		Transportation Information		Unused Sample Disposition	Sample Condition
Location Sampled:		Transported/Stored in:	Cooler Temp:	[ ] Return to customer	[✓] Received with CoC
Red Hill		Cooler with ice	°C	[X] Dispose at 60 Days	[ ] Received with Custody Seals
Sampler(s): (Print names clearly)		Air bill/Carrier ID#:		[ ] Archive for ___ Days	[ ] Seals Required [ ] Seals Intact
K. Miyaki				[ ] Contact before disposal	[✓] Labels and CoC agree

Remarks: Any EPA approved drinking water method for organic chemicals, 40 CFR 141.24, may be used.
Laboratory must certified by the Hawaii State DOH Drinking Water Program.

Relinquished By: (Print clearly & Sign)	Date	Time	Received By: (Print clearly & Sign)	Date	Time
K. Miyaki K. Miyaki	9/10/19	1325	L. Lamey J. Jung	9/10/19	1325

PH-NAVFAC HI 6280/5 (Rev 04-05)

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Eurofins Eaton Analytical
Run Log
Run ID: **264717** Method: **200.8**

Type	Sample Id	Sample Site	Matrix	Instrument ID	Analysis Date	Calibration File
QCS	4421401		RW	FQ	09/16/2019 12:47	
ICV	4421402		RW	FQ	09/16/2019 12:49	
ICB	4421403		RW	FQ	09/16/2019 12:52	
LRB	4421405		RW	FQ	09/16/2019 12:57	
LFB	4421407		RW	FQ	09/16/2019 13:01	
FS	4419184	19-10376,JBPHHRed Hill,TP001	DW	FQ	09/16/2019 13:26	
CCV	4421410		RW	FQ	09/16/2019 13:33	
CCB	4421411		RW	FQ	09/16/2019 13:36	
CCV	4421414		RW	FQ	09/16/2019 14:08	
CCB	4421415		RW	FQ	09/16/2019 14:10	
LRB	4421416		RW	FQ	09/16/2019 14:13	
LFB	4421417		RW	FQ	09/16/2019 14:15	
CCV	4421420		RW	FQ	09/16/2019 14:47	
CCB	4421421		RW	FQ	09/16/2019 14:50	
CCV	4421424		RW	FQ	09/16/2019 15:22	
CCB	4421425		RW	FQ	09/16/2019 15:24	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
QCS	IS-Bismuth	200.8	N/A	---		1.0229	1.0	N/A	102	60 - 125	---	---	1.0	---	09/16/2019 12:47	4421401
QCS	Lead	200.8	1.0	---		50.0978	50.0	ug/L	100	90 - 110	---	---	1.0	---	09/16/2019 12:47	4421401
QCS	IS-Yttrium	200.8	N/A	---		0.9969	1.0	N/A	100	60 - 125	---	---	1.0	---	09/16/2019 12:47	4421401
ICV	IS-Bismuth	200.8	N/A	---		1.0303	1.0	N/A	103	60 - 125	---	---	1.0	---	09/16/2019 12:49	4421402
ICV	Lead	200.8	1.0	---		50.8652	50.0	ug/L	102	90 - 110	---	---	1.0	---	09/16/2019 12:49	4421402
ICV	IS-Yttrium	200.8	N/A	---		1.0036	1.0	N/A	100	60 - 125	---	---	1.0	---	09/16/2019 12:49	4421402
ICB	IS-Bismuth	200.8	N/A	---		1.0330	1.0	N/A	103	60 - 125	---	---	1.0	---	09/16/2019 12:52	4421403
ICB	Lead	200.8	1.0	---	<	1.0		ug/L			---	---	1.0	---	09/16/2019 12:52	4421403
ICB	IS-Yttrium	200.8	N/A	---		1.0006	1.0	N/A	100	60 - 125	---	---	1.0	---	09/16/2019 12:52	4421403
LRB	IS-Bismuth	200.8	N/A	---		1.0534	1.0	N/A	105	60 - 125	---	---	1.0	---	09/16/2019 12:57	4421405
LRB	Lead	200.8	1.0	---	<	1.0		ug/L	---	---	---	---	1.0	---	09/16/2019 12:57	4421405
LRB	IS-Yttrium	200.8	N/A	---		1.0085	1.0	N/A	101	60 - 125	---	---	1.0	---	09/16/2019 12:57	4421405
LFB	IS-Bismuth	200.8	N/A	---		1.0401	1.0	N/A	104	60 - 125	---	---	1.0	---	09/16/2019 13:01	4421407
LFB	Lead	200.8	1.0	---		49.6798	50.0	ug/L	99	85 - 115	---	---	1.0	---	09/16/2019 13:01	4421407
LFB	IS-Yttrium	200.8	N/A	---		1.0067	1.0	N/A	101	60 - 125	---	---	1.0	---	09/16/2019 13:01	4421407
FS	IS-Bismuth	200.8	N/A	19-10376,JBPHHRed Hill,TP001		0.9890	1.0	N/A	99	60 - 125	---	---	1.0	---	09/16/2019 13:26	4419184
FS	Lead	200.8	1.0	19-10376,JBPHHRed Hill,TP001		1.1		ug/L	---	---	---	---	1.0	---	09/16/2019 13:26	4419184
FS	IS-Yttrium	200.8	N/A	19-10376,JBPHHRed Hill,TP001		0.9980	1.0	N/A	100	60 - 125	---	---	1.0	---	09/16/2019 13:26	4419184
CCV	IS-Bismuth	200.8	N/A	---		1.0486	1.0	N/A	105	60 - 125	---	---	1.0	---	09/16/2019 13:33	4421410
CCV	Lead	200.8	1.0	---		50.3541	50.0	ug/L	101	85 - 115	---	---	1.0	---	09/16/2019 13:33	4421410
CCV	IS-Yttrium	200.8	N/A	---		1.0159	1.0	N/A	102	60 - 125	---	---	1.0	---	09/16/2019 13:33	4421410
CCB	IS-Bismuth	200.8	N/A	---		1.0542	1.0	N/A	105	60 - 125	---	---	1.0	---	09/16/2019 13:36	4421411
CCB	Lead	200.8	1.0	---	<	1.0		ug/L	---	---	---	---	1.0	---	09/16/2019 13:36	4421411
CCB	IS-Yttrium	200.8	N/A	---		1.0102	1.0	N/A	101	60 - 125	---	---	1.0	---	09/16/2019 13:36	4421411
CCV	IS-Bismuth	200.8	N/A	---		0.9930	1.0	N/A	99	60 - 125	---	---	1.0	---	09/16/2019 14:08	4421414
CCV	Lead	200.8	1.0	---		50.7650	50.0	ug/L	102	85 - 115	---	---	1.0	---	09/16/2019 14:08	4421414
CCV	IS-Yttrium	200.8	N/A	---		0.9994	1.0	N/A	100	60 - 125	---	---	1.0	---	09/16/2019 14:08	4421414
CCB	IS-Bismuth	200.8	N/A	---		1.0039	1.0	N/A	100	60 - 125	---	---	1.0	---	09/16/2019 14:10	4421415
CCB	Lead	200.8	1.0	---	<	1.0		ug/L	---	---	---	---	1.0	---	09/16/2019 14:10	4421415
CCB	IS-Yttrium	200.8	N/A	---		1.0105	1.0	N/A	101	60 - 125	---	---	1.0	---	09/16/2019 14:10	4421415
LRB	IS-Bismuth	200.8	N/A	---		0.9954	1.0	N/A	100	60 - 125	---	---	1.0	---	09/16/2019 14:13	4421416
LRB	Lead	200.8	1.0	---	<	1.0		ug/L	---	---	---	---	1.0	---	09/16/2019 14:13	4421416
LRB	IS-Yttrium	200.8	N/A	---		0.9961	1.0	N/A	100	60 - 125	---	---	1.0	---	09/16/2019 14:13	4421416
LFB	IS-Bismuth	200.8	N/A	---		0.9863	1.0	N/A	99	60 - 125	---	---	1.0	---	09/16/2019 14:15	4421417
LFB	Lead	200.8	1.0	---		50.1223	50.0	ug/L	100	85 - 115	---	---	1.0	---	09/16/2019 14:15	4421417
LFB	IS-Yttrium	200.8	N/A	---		1.0015	1.0	N/A	100	60 - 125	---	---	1.0	---	09/16/2019 14:15	4421417
CCV	IS-Bismuth	200.8	N/A	---		0.9558	1.0	N/A	96	60 - 125	---	---	1.0	---	09/16/2019 14:47	4421420
CCV	Lead	200.8	1.0	---		49.3015	50.0	ug/L	99	85 - 115	---	---	1.0	---	09/16/2019 14:47	4421420
CCV	IS-Yttrium	200.8	N/A	---		0.9879	1.0	N/A	99	60 - 125	---	---	1.0	---	09/16/2019 14:47	4421420
CCB	IS-Bismuth	200.8	N/A	---		0.9449	1.0	N/A	94	60 - 125	---	---	1.0	---	09/16/2019 14:50	4421421

QC Summary Report (cont.)

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
CCB	Lead	200.8	1.0	---	<	1.0		ug/L	---	---	---	---	1.0	---	09/16/2019 14:50	4421421
CCB	IS-Yttrium	200.8	N/A	---		0.9807	1.0	N/A	98	60 - 125	---	---	1.0	---	09/16/2019 14:50	4421421
CCV	IS-Bismuth	200.8	N/A	---		0.8390	1.0	N/A	84	60 - 125	---	---	1.0	---	09/16/2019 15:22	4421424
CCV	Lead	200.8	1.0	---		49.2773	50.0	ug/L	99	85 - 115	---	---	1.0	---	09/16/2019 15:22	4421424
CCV	IS-Yttrium	200.8	N/A	---		0.9036	1.0	N/A	90	60 - 125	---	---	1.0	---	09/16/2019 15:22	4421424
CCB	IS-Bismuth	200.8	N/A	---		0.8178	1.0	N/A	82	60 - 125	---	---	1.0	---	09/16/2019 15:24	4421425
CCB	Lead	200.8	1.0	---	<	1.0		ug/L	---	---	---	---	1.0	---	09/16/2019 15:24	4421425
CCB	IS-Yttrium	200.8	N/A	---		0.8835	1.0	N/A	88	60 - 125	---	---	1.0	---	09/16/2019 15:24	4421425

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Run Log
Run ID: **264694** Method: **524.2**

Type	Sample Id	Sample Site	Matrix	Instrument ID	Analysis Date	Calibration File
CCL	4410738		RW	PW2	09/13/2019 09:58	524 2-080519-PW2.mth
LMB	4398139		RW	PW2	09/13/2019 11:05	524 2-080519-PW2.mth
CCC	4410723		RW	PW2	09/13/2019 18:26	524 2-080519-PW2.mth
LMB	4398140		RW	PW2	09/13/2019 20:05	524 2-080519-PW2.mth
LTB	4419185	19-10377 LTB-08/26/19	RW	PW2	09/13/2019 21:12	524 2-080519-PW2.mth
FS	4419182	19-10376,JBPHHRed Hill,TP001	DW	PW2	09/13/2019 21:45	524 2-080519-PW2.mth
CCC	4419946		RW	PW2	09/14/2019 02:10	524 2-080519-PW2.mth

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
CCL	IS-1,4-Difluorobenzene	524.2	N/A	---		234560	234560	ug/L	100	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	SS-Bromofluorobenzene	524.2	N/A	---		4.9520	5.0	ug/L	99	70 - 130	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	SS-1,2-Dichlorobenzene-d4	524.2	N/A	---		9.9020	10.0	ug/L	99	70 - 130	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	SS-1,2-Dichloroethane-d4	524.2	N/A	---		10.2430	10.0	ug/L	102	70 - 130	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	SS-Toluene-d8	524.2	N/A	---		10.1450	10.0	ug/L	101	70 - 130	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	Benzene	524.2	0.5	---		0.5490	0.5	ug/L	110	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	Carbon tetrachloride	524.2	0.5	---		0.3850	0.5	ug/L	77	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	Chlorobenzene	524.2	0.5	---		0.5820	0.5	ug/L	116	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	1,2-Dichlorobenzene	524.2	0.5	---		0.5830	0.5	ug/L	117	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	1,4-Dichlorobenzene	524.2	0.5	---		0.5360	0.5	ug/L	107	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	1,2-Dichloroethane	524.2	0.5	---		0.5250	0.5	ug/L	105	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	1,1-Dichloroethylene	524.2	0.5	---		0.4880	0.5	ug/L	98	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	cis-1,2-Dichloroethylene	524.2	0.5	---		0.4940	0.5	ug/L	99	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	trans-1,2-Dichloroethylene	524.2	0.5	---		0.5010	0.5	ug/L	100	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	Dichloromethane	524.2	0.5	---		0.4030	0.5	ug/L	81	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	1,2-Dichloropropane	524.2	0.5	---		0.4760	0.5	ug/L	95	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	Ethylbenzene	524.2	0.5	---		0.5120	0.5	ug/L	102	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	Styrene	524.2	0.5	---		0.4770	0.5	ug/L	95	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	Tetrachloroethylene	524.2	0.5	---		0.4900	0.5	ug/L	98	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	Toluene	524.2	0.5	---		0.5520	0.5	ug/L	110	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	1,2,4-Trichlorobenzene	524.2	0.5	---		0.5950	0.5	ug/L	119	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	1,1,1-Trichloroethane	524.2	0.5	---		0.4900	0.5	ug/L	98	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	1,1,2-Trichloroethane	524.2	0.5	---		0.4850	0.5	ug/L	97	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	Trichloroethylene	524.2	0.5	---		0.4760	0.5	ug/L	95	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	Vinyl chloride	524.2	0.2	---		0.4400	0.5	ug/L	88	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	1,2-Xylene	524.2	0.5	---		0.5110	0.5	ug/L	102	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
CCL	1,3 + 1,4-Xylene	524.2	0.5	---		1.0070	1.0	ug/L	101	50 - 150	---	---	1.0	---	09/13/2019 09:58	4410738
LMB	IS-1,4-Difluorobenzene	524.2	N/A	---		238730	234560	ug/L	102	70 - 130	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	SS-Bromofluorobenzene	524.2	N/A	---		4.8530	5.0	ug/L	97	70 - 130	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	SS-1,2-Dichlorobenzene-d4	524.2	N/A	---		9.2890	10.0	ug/L	93	70 - 130	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	SS-1,2-Dichloroethane-d4	524.2	N/A	---		10.1540	10.0	ug/L	102	70 - 130	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	SS-Toluene-d8	524.2	N/A	---		9.7880	10.0	ug/L	98	70 - 130	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	Benzene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	Carbon tetrachloride	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	Chlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	1,2-Dichlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	1,4-Dichlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	1,2-Dichloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	1,1-Dichloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	cis-1,2-Dichloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139

QC Summary Report (cont.)

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
LMB	trans-1,2-Dichloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	Dichloromethane	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	1,2-Dichloropropane	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	Ethylbenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	Naphthalene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	Styrene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	Tetrachloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	Toluene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	1,2,4-Trichlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	1,1,1-Trichloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	1,1,2-Trichloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	Trichloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	Vinyl chloride	524.2	0.2	---	<	0.2		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	1,2-Xylene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
LMB	1,3 + 1,4-Xylene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 11:05	4398139
CCC	IS-1,4-Difluorobenzene	524.2	N/A	---		238337	238337	ug/L	100	50 - 150	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	SS-Bromofluorobenzene	524.2	N/A	---		5.0600	5.0	ug/L	101	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	SS-1,2-Dichlorobenzene-d4	524.2	N/A	---		10.0620	10.0	ug/L	101	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	SS-1,2-Dichloroethane-d4	524.2	N/A	---		9.9980	10.0	ug/L	100	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	SS-Toluene-d8	524.2	N/A	---		10.2660	10.0	ug/L	103	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	Benzene	524.2	0.5	---		9.8710	10.0	ug/L	99	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	Carbon tetrachloride	524.2	0.5	---		9.3000	10.0	ug/L	93	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	Chlorobenzene	524.2	0.5	---		9.6660	10.0	ug/L	97	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	1,2-Dichlorobenzene	524.2	0.5	---		9.7030	10.0	ug/L	97	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	1,4-Dichlorobenzene	524.2	0.5	---		9.7860	10.0	ug/L	98	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	1,2-Dichloroethane	524.2	0.5	---		9.7530	10.0	ug/L	98	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	1,1-Dichloroethylene	524.2	0.5	---		9.1890	10.0	ug/L	92	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	cis-1,2-Dichloroethylene	524.2	0.5	---		9.6720	10.0	ug/L	97	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	trans-1,2-Dichloroethylene	524.2	0.5	---		9.7590	10.0	ug/L	98	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	Dichloromethane	524.2	0.5	---		9.5590	10.0	ug/L	96	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	1,2-Dichloropropane	524.2	0.5	---		9.6280	10.0	ug/L	96	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	Ethylbenzene	524.2	0.5	---		9.7790	10.0	ug/L	98	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	Naphthalene	524.2	0.5	---		11.4380	10.0	ug/L	114	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	Styrene	524.2	0.5	---		9.7600	10.0	ug/L	98	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	Tetrachloroethylene	524.2	0.5	---		9.3910	10.0	ug/L	94	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	Toluene	524.2	0.5	---		10.1110	10.0	ug/L	101	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	1,2,4-Trichlorobenzene	524.2	0.5	---		9.9990	10.0	ug/L	100	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	1,1,1-Trichloroethane	524.2	0.5	---		9.6980	10.0	ug/L	97	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	1,1,2-Trichloroethane	524.2	0.5	---		9.7700	10.0	ug/L	98	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	Trichloroethylene	524.2	0.5	---		9.2310	10.0	ug/L	92	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	Vinyl chloride	524.2	0.2	---		8.5070	10.0	ug/L	85	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723

QC Summary Report (cont.)

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
CCC	1,2-Xylene	524.2	0.5	---		10.0320	10.0	ug/L	100	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
CCC	1,3 + 1,4-Xylene	524.2	0.5	---		19.7290	20.0	ug/L	99	70 - 130	---	---	1.0	---	09/13/2019 18:26	4410723
LMB	IS-1,4-Difluorobenzene	524.2	N/A	---		232682	238337	ug/L	98	70 - 130	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	SS-Bromofluorobenzene	524.2	N/A	---		4.7880	5.0	ug/L	96	70 - 130	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	SS-1,2-Dichlorobenzene-d4	524.2	N/A	---		9.6490	10.0	ug/L	96	70 - 130	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	SS-1,2-Dichloroethane-d4	524.2	N/A	---		10.0800	10.0	ug/L	101	70 - 130	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	SS-Toluene-d8	524.2	N/A	---		10.0370	10.0	ug/L	100	70 - 130	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	Benzene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	Carbon tetrachloride	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	Chlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	1,2-Dichlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	1,4-Dichlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	1,2-Dichloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	1,1-Dichloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	cis-1,2-Dichloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	trans-1,2-Dichloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	Dichloromethane	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	1,2-Dichloropropane	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	Ethylbenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	Naphthalene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	Styrene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	Tetrachloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	Toluene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	1,2,4-Trichlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	1,1,1-Trichloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	1,1,2-Trichloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	Trichloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	Vinyl chloride	524.2	0.2	---	<	0.2		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	1,2-Xylene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LMB	1,3 + 1,4-Xylene	524.2	0.5	---	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 20:05	4398140
LTB	IS-1,4-Difluorobenzene	524.2	N/A	19-10377 LTB-08/26/19		238998	238337	ug/L	100	70 - 130	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	SS-Bromofluorobenzene	524.2	N/A	19-10377 LTB-08/26/19		4.7760	5.0	ug/L	96	70 - 130	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	SS-1,2-Dichlorobenzene-d4	524.2	N/A	19-10377 LTB-08/26/19		9.6780	10.0	ug/L	97	70 - 130	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	SS-1,2-Dichloroethane-d4	524.2	N/A	19-10377 LTB-08/26/19		9.9440	10.0	ug/L	99	70 - 130	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	SS-Toluene-d8	524.2	N/A	19-10377 LTB-08/26/19		9.8370	10.0	ug/L	98	70 - 130	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	Benzene	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	Carbon tetrachloride	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	Chlorobenzene	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	1,2-Dichlorobenzene	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	1,4-Dichlorobenzene	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	1,2-Dichloroethane	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185

QC Summary Report (cont.)

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
LTB	1,1-Dichloroethylene	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	cis-1,2-Dichloroethylene	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	trans-1,2-Dichloroethylene	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	Dichloromethane	524.2	0.5	19-10377 LTB-08/26/19		2.1		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	1,2-Dichloropropane	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	Ethylbenzene	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	Naphthalene	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	Styrene	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	Tetrachloroethylene	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	Toluene	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	1,2,4-Trichlorobenzene	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	1,1,1-Trichloroethane	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	1,1,2-Trichloroethane	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	Vinyl chloride	524.2	0.2	19-10377 LTB-08/26/19	<	0.2		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	1,2-Xylene	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	1,3 + 1,4-Xylene	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
LTB	Xylenes, Total	524.2	0.5	19-10377 LTB-08/26/19	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:12	4419185
FS	IS-1,4-Difluorobenzene	524.2	N/A	19-10376 JBPHHRed Hall,TP001		228347	238337	ug/L	96	70 - 130	---	---	1.0	---	09/13/2019 21:45	4419182
FS	SS-Bromofluorobenzene	524.2	N/A	19-10376 JBPHHRed Hall,TP001		4.9720	5.0	ug/L	99	70 - 130	---	---	1.0	---	09/13/2019 21:45	4419182
FS	SS-1,2-Dichlorobenzene-d4	524.2	N/A	19-10376 JBPHHRed Hall,TP001		9.7660	10.0	ug/L	98	70 - 130	---	---	1.0	---	09/13/2019 21:45	4419182
FS	SS-1,2-Dichloroethane-d4	524.2	N/A	19-10376 JBPHHRed Hall,TP001		10.2510	10.0	ug/L	103	70 - 130	---	---	1.0	---	09/13/2019 21:45	4419182
FS	SS-Toluene-d8	524.2	N/A	19-10376 JBPHHRed Hall,TP001		10.2280	10.0	ug/L	102	70 - 130	---	---	1.0	---	09/13/2019 21:45	4419182
FS	Benzene	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	Carbon tetrachloride	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	Chlorobenzene	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	1,2-Dichlorobenzene	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	1,4-Dichlorobenzene	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	1,2-Dichloroethane	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	1,1-Dichloroethylene	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	cis-1,2-Dichloroethylene	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	trans-1,2-Dichloroethylene	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	Dichloromethane	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	1,2-Dichloropropane	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	Ethylbenzene	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	Naphthalene	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	Styrene	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	Tetrachloroethylene	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	Toluene	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	1,2,4-Trichlorobenzene	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	1,1,1-Trichloroethane	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	1,1,2-Trichloroethane	524.2	0.5	19-10376 JBPHHRed Hall,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182

QC Summary Report (cont.)

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Trichloroethylene	524.2	0.5	19-10376 JBPHNRed Hill,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	Vinyl chloride	524.2	0.2	19-10376 JBPHNRed Hill,TP001	<	0.2		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	1,2-Xylene	524.2	0.5	19-10376 JBPHNRed Hill,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	1,3 + 1,4-Xylene	524.2	0.5	19-10376 JBPHNRed Hill,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
FS	Xylenes, Total	524.2	0.5	19-10376 JBPHNRed Hill,TP001	<	0.5		ug/L	---	---	---	---	1.0	---	09/13/2019 21:45	4419182
CCC	IS-1,4-Difluorobenzene	524.2	N/A	---		229914	229914	ug/L	100	50 - 150	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	SS-Bromofluorobenzene	524.2	N/A	---		5.3090	5.0	ug/L	106	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	SS-1,2-Dichlorobenzene-d4	524.2	N/A	---		10.5010	10.0	ug/L	105	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	SS-1,2-Dichloroethane-d4	524.2	N/A	---		10.3550	10.0	ug/L	104	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	SS-Toluene-d8	524.2	N/A	---		10.2430	10.0	ug/L	102	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	Benzene	524.2	0.5	---		18.0930	18.0	ug/L	101	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	Carbon tetrachloride	524.2	0.5	---		17.4620	18.0	ug/L	97	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	Chlorobenzene	524.2	0.5	---		17.1890	18.0	ug/L	95	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	1,2-Dichlorobenzene	524.2	0.5	---		17.5980	18.0	ug/L	98	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	1,4-Dichlorobenzene	524.2	0.5	---		17.7780	18.0	ug/L	99	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	1,2-Dichloroethane	524.2	0.5	---		17.7070	18.0	ug/L	98	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	1,1-Dichloroethylene	524.2	0.5	---		17.3990	18.0	ug/L	97	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	cis-1,2-Dichloroethylene	524.2	0.5	---		17.6150	18.0	ug/L	98	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	trans-1,2-Dichloroethylene	524.2	0.5	---		17.7320	18.0	ug/L	99	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	Dichloromethane	524.2	0.5	---		17.4580	18.0	ug/L	97	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	1,2-Dichloropropane	524.2	0.5	---		17.3120	18.0	ug/L	96	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	Ethylbenzene	524.2	0.5	---		17.7020	18.0	ug/L	98	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	Naphthalene	524.2	0.5	---		20.3480	18.0	ug/L	113	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	Styrene	524.2	0.5	---		17.9180	18.0	ug/L	100	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	Tetrachloroethylene	524.2	0.5	---		17.4680	18.0	ug/L	97	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	Toluene	524.2	0.5	---		18.4640	18.0	ug/L	103	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	1,2,4-Trichlorobenzene	524.2	0.5	---		18.4610	18.0	ug/L	103	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	1,1,1-Trichloroethane	524.2	0.5	---		17.4670	18.0	ug/L	97	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	1,1,2-Trichloroethane	524.2	0.5	---		18.3490	18.0	ug/L	102	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	Trichloroethylene	524.2	0.5	---		16.7260	18.0	ug/L	93	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	Vinyl chloride	524.2	0.2	---		14.9230	18.0	ug/L	83	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	1,2-Xylene	524.2	0.5	---		17.9910	18.0	ug/L	100	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946
CCC	1,3 + 1,4-Xylene	524.2	0.5	---		36.1800	36.0	ug/L	100	70 - 130	---	---	1.0	---	09/14/2019 02:10	4419946

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Run Log
Run ID: **264927** Method: **525.2**

Type	Sample Id	Sample Site	Matrix	Instrument ID	Analysis Date	Calibration File
CCC	4422790		OS	DO	09/17/2019 18:58	525 2-DO-101018a-up2.mth
CCC	4422791		OS	DO	09/17/2019 19:40	525 2-DO-101018a-up2.mth
CCC	4422792		OS	DO	09/17/2019 20:22	525 2-DO-101018a-up2.mth
LFB	4422771		RW	DO	09/17/2019 21:04	525 2-DO-101018a-up2.mth
LFB	4422772		RW	DO	09/17/2019 21:46	525 2-DO-101018a-up2.mth
LFB	4422773		RW	DO	09/17/2019 22:28	525 2-DO-101018a-up2.mth
LMB	4422770		RW	DO	09/17/2019 23:10	525 2-DO-101018a-up2.mth
FS	4419183	19-10376,JBPHHRed Hill,TP001	DW	DO	09/17/2019 23:52	525 2-DO-101018a-up2.mth
CCC	4423328		OS	DO	09/18/2019 07:50	525 2-DO-101018a-up2.mth
CCC	4423329		OS	DO	09/18/2019 08:32	525 2-DO-101018a-up2.mth
CCC	4423330		OS	DO	09/18/2019 09:15	525 2-DO-101018a-up2.mth

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
CCC	IS-Chrysene-d12	525.2	N/A	---		1241000	1241000	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/17/2019 18:58	4422790
CCC	IS-Phenanthrene-d10	525.2	N/A	---		1699000	1699000	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/17/2019 18:58	4422790
CCC	IS-Pyrene-d10	525.2	N/A	---		1306000	1306000	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/17/2019 18:58	4422790
CCC	SS-4,4'-Dichlorobiphenyl	525.2	N/A	---		4.3840	5.0	ug/L	88	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 18:58	4422790
CCC	SS-2,4,5,6-Tetrachloro-m-xylene	525.2	N/A	---		5.4850	5.0	ug/L	110	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 18:58	4422790
CCC	SS-Triphenylphosphate	525.2	N/A	---		4.9180	5.0	ug/L	98	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 18:58	4422790
CCC	Acenaphthene	525.2	0.1	---		4.9400	5.0	ug/L	99	65 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 18:58	4422790
CCC	Acenaphthylene	525.2	0.1	---		5.1410	5.0	ug/L	103	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 18:58	4422790
CCC	Anthracene	525.2	0.1	---		5.0350	5.0	ug/L	101	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 18:58	4422790
CCC	Phenanthrene	525.2	0.1	---		5.1410	5.0	ug/L	103	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 18:58	4422790
CCC	Pyrene	525.2	0.1	---		5.1520	5.0	ug/L	103	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 18:58	4422790
CCC	IS-Chrysene-d12	525.2	N/A	---		1049000	1049000	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/17/2019 19:40	4422791
CCC	IS-Phenanthrene-d10	525.2	N/A	---		1538000	1538000	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/17/2019 19:40	4422791
CCC	IS-Pyrene-d10	525.2	N/A	---		1127000	1127000	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/17/2019 19:40	4422791
CCC	SS-4,4'-Dichlorobiphenyl	525.2	N/A	---		5.2060	5.0	ug/L	104	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 19:40	4422791
CCC	SS-2,4,5,6-Tetrachloro-m-xylene	525.2	N/A	---		5.2510	5.0	ug/L	105	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 19:40	4422791
CCC	SS-Triphenylphosphate	525.2	N/A	---		5.2090	5.0	ug/L	104	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 19:40	4422791
CCC	Fluoranthene	525.2	0.1	---		4.9940	5.0	ug/L	100	65 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 19:40	4422791
CCC	IS-Chrysene-d12	525.2	N/A	---		1003000	1003000	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/17/2019 20:22	4422792
CCC	IS-Phenanthrene-d10	525.2	N/A	---		1346000	1346000	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/17/2019 20:22	4422792
CCC	IS-Pyrene-d10	525.2	N/A	---		1030000	1030000	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/17/2019 20:22	4422792
CCC	SS-4,4'-Dichlorobiphenyl	525.2	N/A	---		5.5270	5.0	ug/L	111	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 20:22	4422792
CCC	SS-2,4,5,6-Tetrachloro-m-xylene	525.2	N/A	---		5.1320	5.0	ug/L	103	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 20:22	4422792
CCC	SS-Triphenylphosphate	525.2	N/A	---		5.2060	5.0	ug/L	104	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 20:22	4422792
CCC	Benzo(a)pyrene	525.2	0.02	---		5.1710	5.0	ug/L	103	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 20:22	4422792
CCC	Di(2-ethylhexyl)adipate	525.2	0.6	---		5.4620	5.0	ug/L	109	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 20:22	4422792
CCC	Di(2-ethylhexyl)phthalate	525.2	0.6	---		5.4010	5.0	ug/L	108	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 20:22	4422792
LFB	IS-Chrysene-d12	525.2	N/A	---		994295	1003000	ug/L	99	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 21:04	4422771
LFB	IS-Phenanthrene-d10	525.2	N/A	---		1486000	1346000	ug/L	110	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 21:04	4422771
LFB	IS-Pyrene-d10	525.2	N/A	---		1164000	1030000	ug/L	113	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 21:04	4422771
LFB	SS-4,4'-Dichlorobiphenyl	525.2	N/A	---		5.3710	5.0	ug/L	107	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 21:04	4422771
LFB	SS-2,4,5,6-Tetrachloro-m-xylene	525.2	N/A	---		4.8330	5.0	ug/L	97	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 21:04	4422771
LFB	SS-Triphenylphosphate	525.2	N/A	---		5.2810	5.0	ug/L	106	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 21:04	4422771
LFB	Fluoranthene	525.2	0.1	---		4.9520	5.0	ug/L	99	64 - 139	---	---	1.0	09/17/2019 07:46	09/17/2019 21:04	4422771
LFB	IS-Chrysene-d12	525.2	N/A	---		954139	1003000	ug/L	95	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 21:46	4422772
LFB	IS-Phenanthrene-d10	525.2	N/A	---		1375000	1346000	ug/L	102	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 21:46	4422772
LFB	IS-Pyrene-d10	525.2	N/A	---		1145000	1030000	ug/L	111	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 21:46	4422772
LFB	SS-4,4'-Dichlorobiphenyl	525.2	N/A	---		5.5500	5.0	ug/L	111	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 21:46	4422772
LFB	SS-2,4,5,6-Tetrachloro-m-xylene	525.2	N/A	---		4.7150	5.0	ug/L	94	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 21:46	4422772
LFB	SS-Triphenylphosphate	525.2	N/A	---		5.5060	5.0	ug/L	110	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 21:46	4422772

QC Summary Report (cont.)

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
LFB	Benzo(a)pyrene	525.2	0.02	---		4.1840	5.0	ug/L	84	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 21:46	4422772
LFB	Di(2-ethylhexyl)adipate	525.2	0.6	---		5.9260	5.0	ug/L	119	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 21:46	4422772
LFB	Di(2-ethylhexyl)phthalate	525.2	0.6	---		5.6600	5.0	ug/L	113	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 21:46	4422772
LFB	IS-Chrysene-d12	525.2	N/A	---		1037000	1003000	ug/L	103	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 22:28	4422773
LFB	IS-Phenanthrene-d10	525.2	N/A	---		1432000	1346000	ug/L	106	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 22:28	4422773
LFB	IS-Pyrene-d10	525.2	N/A	---		1177000	1030000	ug/L	114	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 22:28	4422773
LFB	SS-4,4'-Dichlorobiphenyl	525.2	N/A	---		4.6000	5.0	ug/L	92	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 22:28	4422773
LFB	SS-2,4,5,6-Tetrachloro-m-xylene	525.2	N/A	---		5.3760	5.0	ug/L	108	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 22:28	4422773
LFB	SS-Triphenylphosphate	525.2	N/A	---		5.1480	5.0	ug/L	103	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 22:28	4422773
LFB	Acenaphthene	525.2	0.1	---		5.0940	5.0	ug/L	102	57 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 22:28	4422773
LFB	Acenaphthylene	525.2	0.1	---		5.1460	5.0	ug/L	103	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 22:28	4422773
LFB	Anthracene	525.2	0.1	---		3.8430	5.0	ug/L	77	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 22:28	4422773
LFB	Phenanthrene	525.2	0.1	---		5.4480	5.0	ug/L	109	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 22:28	4422773
LFB	Pyrene	525.2	0.1	---		5.4200	5.0	ug/L	108	70 - 130	---	---	1.0	09/17/2019 07:46	09/17/2019 22:28	4422773
LMB	IS-Chrysene-d12	525.2	N/A	---		929191	1003000	ug/L	93	70 - 130	---	---	0.97	09/17/2019 07:46	09/17/2019 23:10	4422770
LMB	IS-Phenanthrene-d10	525.2	N/A	---		1374000	1346000	ug/L	102	70 - 130	---	---	0.97	09/17/2019 07:46	09/17/2019 23:10	4422770
LMB	IS-Pyrene-d10	525.2	N/A	---		1068000	1030000	ug/L	104	70 - 130	---	---	0.97	09/17/2019 07:46	09/17/2019 23:10	4422770
LMB	SS-4,4'-Dichlorobiphenyl	525.2	N/A	---		5.4290	5.0	ug/L	112	70 - 130	---	---	0.97	09/17/2019 07:46	09/17/2019 23:10	4422770
LMB	SS-2,4,5,6-Tetrachloro-m-xylene	525.2	N/A	---		5.2470	5.0	ug/L	108	70 - 130	---	---	0.97	09/17/2019 07:46	09/17/2019 23:10	4422770
LMB	SS-Triphenylphosphate	525.2	N/A	---		5.0690	5.0	ug/L	105	70 - 130	---	---	0.97	09/17/2019 07:46	09/17/2019 23:10	4422770
LMB	Acenaphthene	525.2	0.1	---	<	0.1		ug/L	---	---	---	---	0.97	09/17/2019 07:46	09/17/2019 23:10	4422770
LMB	Acenaphthylene	525.2	0.1	---	<	0.1		ug/L	---	---	---	---	0.97	09/17/2019 07:46	09/17/2019 23:10	4422770
LMB	Anthracene	525.2	0.1	---	<	0.1		ug/L	---	---	---	---	0.97	09/17/2019 07:46	09/17/2019 23:10	4422770
LMB	Benzo(a)pyrene	525.2	0.02	---	<	0.02		ug/L	---	---	---	---	0.97	09/17/2019 07:46	09/17/2019 23:10	4422770
LMB	Di(2-ethylhexyl)adipate	525.2	0.6	---	<	0.6		ug/L	---	---	---	---	0.97	09/17/2019 07:46	09/17/2019 23:10	4422770
LMB	Di(2-ethylhexyl)phthalate	525.2	0.6	---	<	0.6		ug/L	---	---	---	---	0.97	09/17/2019 07:46	09/17/2019 23:10	4422770
LMB	Fluoranthene	525.2	0.1	---	<	0.1		ug/L	---	---	---	---	0.97	09/17/2019 07:46	09/17/2019 23:10	4422770
LMB	Phenanthrene	525.2	0.1	---	<	0.1		ug/L	---	---	---	---	0.97	09/17/2019 07:46	09/17/2019 23:10	4422770
LMB	Pyrene	525.2	0.1	---	<	0.1		ug/L	---	---	---	---	0.97	09/17/2019 07:46	09/17/2019 23:10	4422770
FS	IS-Chrysene-d12	525.2	N/A	19-10376 JBPHHRed Hill TP001		953310	1003000	ug/L	95	70 - 130	---	---	0.96	09/17/2019 07:46	09/17/2019 23:52	4419183
FS	IS-Phenanthrene-d10	525.2	N/A	19-10376 JBPHHRed Hill TP001		1426000	1346000	ug/L	106	70 - 130	---	---	0.96	09/17/2019 07:46	09/17/2019 23:52	4419183
FS	IS-Pyrene-d10	525.2	N/A	19-10376 JBPHHRed Hill TP001		1154000	1030000	ug/L	112	70 - 130	---	---	0.96	09/17/2019 07:46	09/17/2019 23:52	4419183
FS	SS-4,4'-Dichlorobiphenyl	525.2	N/A	19-10376 JBPHHRed Hill TP001		5.4130	5.0	ug/L	113	70 - 130	---	---	0.96	09/17/2019 07:46	09/17/2019 23:52	4419183
FS	SS-2,4,5,6-Tetrachloro-m-xylene	525.2	N/A	19-10376 JBPHHRed Hill TP001		5.2060	5.0	ug/L	108	70 - 130	---	---	0.96	09/17/2019 07:46	09/17/2019 23:52	4419183
FS	SS-Triphenylphosphate	525.2	N/A	19-10376 JBPHHRed Hill TP001		5.0710	5.0	ug/L	106	70 - 130	---	---	0.96	09/17/2019 07:46	09/17/2019 23:52	4419183
FS	Acenaphthene	525.2	0.1	19-10376 JBPHHRed Hill TP001	<	0.1		ug/L	---	---	---	---	0.96	09/17/2019 07:46	09/17/2019 23:52	4419183
FS	Acenaphthylene	525.2	0.1	19-10376 JBPHHRed Hill TP001	<	0.1		ug/L	---	---	---	---	0.96	09/17/2019 07:46	09/17/2019 23:52	4419183
FS	Anthracene	525.2	0.1	19-10376 JBPHHRed Hill TP001	<	0.1		ug/L	---	---	---	---	0.96	09/17/2019 07:46	09/17/2019 23:52	4419183
FS	Benzo(a)pyrene	525.2	0.02	19-10376 JBPHHRed Hill TP001	<	0.02		ug/L	---	---	---	---	0.96	09/17/2019 07:46	09/17/2019 23:52	4419183
FS	Di(2-ethylhexyl)adipate	525.2	0.6	19-10376 JBPHHRed Hill TP001	<	0.6		ug/L	---	---	---	---	0.96	09/17/2019 07:46	09/17/2019 23:52	4419183
FS	Di(2-ethylhexyl)phthalate	525.2	0.6	19-10376 JBPHHRed Hill TP001	<	0.6		ug/L	---	---	---	---	0.96	09/17/2019 07:46	09/17/2019 23:52	4419183

QC Summary Report (cont.)

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Fluoranthene	525.2	0.1	19-10378 JBPHHRed Hill,TP001	<	0.1		ug/L	---	---	---	---	0.96	09/17/2019 07:46	09/17/2019 23:52	4419183
FS	Phenanthrene	525.2	0.1	19-10378 JBPHHRed Hill,TP001	<	0.1		ug/L	---	---	---	---	0.96	09/17/2019 07:46	09/17/2019 23:52	4419183
FS	Pyrene	525.2	0.1	19-10378 JBPHHRed Hill,TP001	<	0.1		ug/L	---	---	---	---	0.96	09/17/2019 07:46	09/17/2019 23:52	4419183
CCC	IS-Chrysene-d12	525.2	N/A	---		1008000	1008000	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/18/2019 07:50	4423328
CCC	IS-Phenanthrene-d10	525.2	N/A	---		1287000	1287000	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/18/2019 07:50	4423328
CCC	IS-Pyrene-d10	525.2	N/A	---		995977	995977	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/18/2019 07:50	4423328
CCC	SS-4,4'-Dichlorobiphenyl	525.2	N/A	---		4.5370	5.0	ug/L	91	70 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 07:50	4423328
CCC	SS-2,4,5,6-Tetrachloro-m-xylene	525.2	N/A	---		5.7410	5.0	ug/L	115	70 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 07:50	4423328
CCC	SS-Triphenylphosphate	525.2	N/A	---		5.0680	5.0	ug/L	101	70 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 07:50	4423328
CCC	Acenaphthene	525.2	0.1	---		4.9850	5.0	ug/L	100	65 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 07:50	4423328
CCC	Acenaphthylene	525.2	0.1	---		5.0200	5.0	ug/L	100	70 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 07:50	4423328
CCC	Anthracene	525.2	0.1	---		5.1290	5.0	ug/L	103	70 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 07:50	4423328
CCC	Phenanthrene	525.2	0.1	---		5.0990	5.0	ug/L	102	70 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 07:50	4423328
CCC	Pyrene	525.2	0.1	---		5.4990	5.0	ug/L	110	70 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 07:50	4423328
CCC	IS-Chrysene-d12	525.2	N/A	---		917977	917977	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/18/2019 08:32	4423329
CCC	IS-Phenanthrene-d10	525.2	N/A	---		1343000	1343000	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/18/2019 08:32	4423329
CCC	IS-Pyrene-d10	525.2	N/A	---		991067	991067	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/18/2019 08:32	4423329
CCC	SS-4,4'-Dichlorobiphenyl	525.2	N/A	---		5.2330	5.0	ug/L	105	70 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 08:32	4423329
CCC	SS-2,4,5,6-Tetrachloro-m-xylene	525.2	N/A	---		5.1020	5.0	ug/L	102	70 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 08:32	4423329
CCC	SS-Triphenylphosphate	525.2	N/A	---		5.1520	5.0	ug/L	103	70 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 08:32	4423329
CCC	Fluoranthene	525.2	0.1	---		5.1040	5.0	ug/L	102	65 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 08:32	4423329
CCC	IS-Chrysene-d12	525.2	N/A	---		939484	939484	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/18/2019 09:15	4423330
CCC	IS-Phenanthrene-d10	525.2	N/A	---		1312000	1312000	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/18/2019 09:15	4423330
CCC	IS-Pyrene-d10	525.2	N/A	---		987625	987625	ug/L	100	50 - 150	---	---	1.0	09/17/2019 07:46	09/18/2019 09:15	4423330
CCC	SS-4,4'-Dichlorobiphenyl	525.2	N/A	---		5.6190	5.0	ug/L	112	70 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 09:15	4423330
CCC	SS-2,4,5,6-Tetrachloro-m-xylene	525.2	N/A	---		5.1950	5.0	ug/L	104	70 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 09:15	4423330
CCC	SS-Triphenylphosphate	525.2	N/A	---		5.1870	5.0	ug/L	104	70 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 09:15	4423330
CCC	Benzo(a)pyrene	525.2	0.02	---		5.0110	5.0	ug/L	100	70 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 09:15	4423330
CCC	Di(2-ethylhexyl)adipate	525.2	0.6	---		5.5330	5.0	ug/L	111	70 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 09:15	4423330
CCC	Di(2-ethylhexyl)phthalate	525.2	0.6	---		5.3590	5.0	ug/L	107	70 - 130	---	---	1.0	09/17/2019 07:46	09/18/2019 09:15	4423330

Sample Type Key

Type (Abbr.)	Sample Type	Type (Abbr.)	Sample Type
CCV	Continuing Cali. Verification		
CCB	Continuing Calibration Blank		
CCC	Continuing Calibration Check		
CCL	Continuing Calibration Low		
FS	Field Sample		
ICV	Initial Cali. Verification		
ICB	Initial Calibration Blank		
LFB	Laboratory Fortified Blank		
LMB	Laboratory Method Blank		
LRB	Laboratory Reagent Blank		
LTB	Laboratory Trip Blank		
QCS	Quality Control Sample		

END OF REPORT

NAVFAC HAWAII ENVIRONMENTAL SERVICES LABORATORY CHAIN-OF-CUSTODY

Navy Facilities Engineering Command, Hawaii, Pearl Harbor, Hawaii Phone: (808) 474-3704, FAX: (808) 471-4534

JON: 178014602019	ESM:	POC: Kyle Teraoka	PH#: 473-3160	FAX#: 473-1545
Report To: Kyle Teraoka		Copy To: Brian Yamada	Copy To:	
NAVFAC HI OPBP6		NAVFAC HI EV11		
kyle.teraoka@navy.mil		brian.m.yamada@navy.mil		

Sample ID	Sample Description	Matrix Code	Sampling Date	Sampling Time	Container Vol	Container Type	Analysis Required	Preservative / Res. Cl (ppm)	FOR LAB USE ONLY pH	FOR LAB USE ONLY Lab Number	FOR LAB USE ONLY Ext.	FOR LAB USE ONLY Lctn.	Cond. A	Cond. U
Joint Base Pearl Harbor-Hickam (360-011)	Red Hill, TP001, Tap outside the Cl2 Bldg	DW	9/10/19	0820	3x40mL	Glass	Volatiles (524.2)	Ascorbic, HCl		19-10376	1-3	C	✓	
					2x1L	Glass	Semi-Volatiles (525.2)	Sulfite, HCl / 0.3			4-5	C	✓	
					1L	Glass	TPH as Diesel (JP-8) (8015)				6	C	✓	
					125mL	Plastic	Lead (200.8)	HNO_3 pH<2			7	C	✓	
Trip Blank			8/26/2019		2x40mL	Glass	Volatiles	Ascorbic, HCl		19-10377	1-2	C	✓	

Sampling Information	Transportation Information		Unused Sample Disposition	Sample Condition
Location Sampled: Red Hill	Transported/Stored in: Cooler with ice	Cooler Temp: °C	[ ] Return to customer	[✓] Received with CoC
Sampler(s): (Print names clearly) K. Miyaki	Air bill/Carrier ID#:		[X] Dispose at 60 Days	[ ] Received with Custody Seals
			[ ] Archive for ____ Days	[ ] Seals Required [ ] Seals Intact
			[ ] Contact before disposal	[✓] Labels and CoC agree

Remarks: Any EPA approved drinking water method for organic chemicals, 40 CFR 141.24, may be used.

Laboratory must certified by the Hawaii State DOH Drinking Water Program.

Relinquished By: (Print clearly & Sign)	Date	Time	Received By: (Print clearly & Sign)	Date	Time
K. Miyaki K Miyaki	9/10/19	1325	L. Laney J. Jung	9/10/19	1325

PH-NAVFAC HI 6280/5 (Rev. 04-05)

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

Certification Number: CA1312
NELAP Certification number: CA00046
DoD-ELAP Certificate number: 4064.01

Data Validatable Report

December 2, 2019

AECOM
1001 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Attn: Margie Pascua

Title: Report of Data: Case 90862

Project: 60571032 CV18F0126 Red Hill Fuel Storage. HI

Contract #: Prime contract # for DoD: NAVY CLEAN N62742-17-F-1800, CV18F0126
Subcontract: 18S-22209-HI27

Dear Ms. Pascua:

Two water samples were received November 23, 2019. Written results for the requested analyses are being provided on this December 2, 2019.

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

If you have any questions or require further information, please contact your APPL Project Manager, Libby Cheeseborough, libby@applinc.com, at your convenience. Thank you for choosing APPL, Inc.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC and DoD QSM. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

Paula McCartney

Paula McCartney, Laboratory Director
APPL, Inc.

PM/lac
Enclosure
cc: File

ENCLOSURE(2)

Data Validation Package
for
60481245 CIV 0053 Red Hill Fuel Storage
APPL SDG 90862
TABLE OF CONTENTS

LABORATORY NAME: *APPL, Inc.*

CASE NARRATIVE

Case Narrative

ARF: 90862

Project: 60571032 CV18F0126 Red Hill Fuel Storage. HI

Sample Receipt Information:

Two water samples were received November 23, 2019, at 2.4°C. The sample group was assigned Analytical Request Form (ARF) number 90862.

Sample Preparation and Analysis Information:

For the EPA 8015B analysis, the sample was extracted according to EPA method 3510C. The sample extracts were silica gel cleaned according to APPL's SOP CLN004 and placed on hold.

Only the portion of the injection log relative to these samples is included. A full sequence log is available upon request. Measurement uncertainty can be reported upon request.

Analytical Exceptions, Deviations and Abnormalities.

EPA 8015B:. Manual integrations were performed in accordance with APPL's SOP. Chromatograms of before and after manual integration are enclosed.

SDG	Received	Client ID	APPL ID	Collected DateTime	Matrix	Method	Method Description	Prep DateTime	Analysis DateTime
90862	11/23/2019	ERH965	BA03545	11/22/2019 10:51:00 AM	WATER	EPA 8015B-eLL	EPA 8015B TPH LIQ-LIQ		
90862	11/23/2019	ERH965	BA03545	11/22/2019 10:51:00 AM	WATER	EPA 8015B-eLL	EPA 8015B TPH LIQ-LIQ		
90862	11/23/2019	ERH965	BA03545	11/22/2019 10:51:00 AM	WATER	EPA 8015B-eLL	EPA 8015B TPH LIQ-LIQ	11/25/2019 3:15:00 PM	11/26/2019 12:45:00 PM
90862	11/23/2019	ERH966	BA03546	11/22/2019 10:51:00 AM	WATER	EPA 8015B-eLL	EPA 8015B TPH LIQ-LIQ	11/25/2019 3:15:00 PM	11/26/2019 1:44:00 PM

APPL Inc.
Abbreviations and Flags

FLAG	DESCRIPTION
#	Recovery or RPD outside control limits
*	Recovery or RPD outside control limits
B	Analyte detected in associated method blank
C1	Reason for correction: wrote incorrect response
C2	Reason for correction: calculated incorrectly
C3	Reason for correction: needs to be rechecked
C4	Reason for correction: data not usable
DO	Diluted out
E	Exceeds linear range
F	Estimated value
G1	Includes a wide range of hydrocarbons which does not match our gasoline standard
G10	Includes a match to hydrocarbon profiles within the range of mineral spirits
G11	Includes a match to hydrocarbon profiles within the range of JP-4
G12	Pattern does not match the gasoline standard; the carbon range for this sample is consistent with JP8
G13	Closely resembles the hydrocarbon profile of aviation gasoline
G14	Analyte concentration may be biased due to carry over
G2	Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline
G3	Includes higher boiling hydrocarbons
G4	Includes dominant peak(s) not indicative of petroleum hydrocarbons
G5	Is mainly dominant peak(s) not indicative of petroleum hydrocarbons
G6	Contains recognizable contaminant peak(s) which has been removed from quantitation
G7	Is mainly a match to hydrocarbons within the range of gasoline
G8	Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline
G9	Includes hydrocarbons within the range of kerosene
J	Estimated value
M	Matrix effect
MI1	Manual integration: integration does not follow baseline
MI2	Manual integration: non-target peak interference
MI3	Manual integration: to split a peak that was integrated as one peak by the computer.
MI4	Manual integration: to integrate a split peak
MI5	Manual integration: the whole peak or part of the peak was not integrated
MI6	Manual integration: computer integrated wrong peak
MI7	Manual integration: other – (See case narrative)
MDL	Method detection limit
ND	Not detected
NT	Non-target
Q	Acceptance criteria not met
T1 I	Includes wide range of hydrocarbons not indicative of diesel
T1 M	Is mainly wide range of hydrocarbons not necessarily indicative of diesel
T2 I	Includes lower boiling hydrocarbons, e.g. mineral spirits, kerosene, stoddard solvent, white gas
T2 M	Is mainly lower boiling hydrocarbons, e.g. mineral spirits, kerosene, stoddard solvent, white gas
T3 I	Includes higher boiling hydrocarbons, e.g. asphaltene, waste oil, motor oil, or weathered diesel fuel
T3 M	Is mainly higher boiling hydrocarbons, e.g. asphaltene, waste oil, motor oil, or weathered diesel fuel
T4 I	Includes dominant peak(s) not indicative of hydrocarbons
T4 M	Is mainly dominant peak(s) not indicative of hydrocarbons
T5	Contains recognizable contaminant peak(s) which has been removed from quantitation
T6	Is mainly a match to hydrocarbons within range of diesel fuel
T7	Closely resembles the boiling point hydrocarbon profile consistent with diesel fuel
T8	Includes a match to hydrocarbon profiles within range of diesel and kerosene fuel
T9 I	Includes non-diesel hydrocarbons within boiling point range of diesel fuel
T9 M	Is mainly non-diesel hydrocarbons within boiling point range of diesel fuel
U	Not detected
Y	Percent difference between primary and confirmation column > 40%

SAMPLE RECORDS MANAGEMENT

CHAIN OF CUSTODY,

ARF, CRF, AND

CLIENT COMMUNICATION

APPL - Analysis Request Form 90862

Client: AECOM
Address: 1001 Bishop Street, Suite 1600
Honolulu, HI 96813
Attn: Margie Pascua
Phone: 808-356-5373 Fax: 808-523-8950
Job: 60571032 CV18F0126 Red Hill Fuel Storage
PO #: 18S-22209-HI27 PO# 102604
Chain of Custody (Y/N): Y # 135
RAD Screen (Y/N): Y pH (Y/N): N
Turn Around Type: 24 HOURS

Received by: AAR
Date Received: 11/23/19 Time: 10:15
Delivered by: FEDEX
Shuttle Custody Seals (Y/N): Y Time Zone: -10
Chest Temp(s): 2.4°C
Color: F-Pink
Samples Chilled until Placed in Refrig/Freezer: Y
Project Manager: Libby Cheesebor
QC Report Type: DVP4DOD/EQUIS/HI
Due Date: 11/25/19

Comments:
PM: login and F1s to Margie.Pascua@aecom.com
AN: 24hr TAT for Form 1s; 21 day TAT for PKG STYLE 1; DOD v5.1; DOD Forms: LOD database
TPH D & O: both w/ and w/o sgc; reverse surrogate for the SGC; analyze SGC if detections
FR: email ftp info to Margie, Stella, trommelfanger@lab-data.com & jcanlas@lab-data.com
EDD: AECOM EQuIS EDD 2.5.3 Red Hill 87DMEE->3535A to Margie.Pascua@aecom.com & jecklund@lab-data.com

Sample Distribution:
GC: 2-$DOC53W5LIQ
Extractions: 2- SEP011LLSGC

Charges:

Invoice To:
ACCOUNTS PAYABLE
1001 Bishop Street, Ste 1600
USAPImaging@aecom.com
mary.basano@aecom.com

	Client ID		APPL ID	Sampled	Analyses Requested
1.	ERH965	MS/MSD	BA03545W	11/22/19 10:51	$DOC53W5LIQ
2.	ERH966	LCSD	BA03546W	11/22/19 10:51	$DOC53W5LIQ

Note: All times, excluding sample collection times, are Pacific Time Zone unless noted otherwise. Collection times are in: -10 UTC
Page 1 Client Code: AECOM-REDHILL *Printed 11/26/19 7:20:39 AM* Computer: APPL-LC **# 90862**

APPL Sample Receipt Form

ARF# **90862**

Sample	Container Type	Count	p
BA03545	17 Amber Liter	4	NA
BA03546	17 Amber Liter	2	NA

Sample	Container Type	Count	p

90862

APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611
www.applinc.com

Phone: (559) 275-2175
Fax: (559) 275-4422
coc@applinc.com

CHAIN OF CUSTODY RECORD

C.O.C. 135

Report to: PLEASE PRINT	Invoice to: PLEASE PRINT
Company Name: AECOM Phone: 808-356-5373	Company Name: AECOM Phone: 808-529-7249
Address: 1001 Bishop St, Suite 1600 Honolulu, HI 96813 Fax: 808-523-8950	Address: 1001 Bishop St, Suite 1600 Honolulu, HI 96813 Fax: 808-523-8950
Attn: Margie Pascua	Attn: Mary Basano
Email: margie.pascua@aecom.com	Email: mary.basano@aecom.com; usapimaging@aecom.com

Project Name/Number: CV18F0126 / 60571032
Purchase Order Number: 102604
Sampler (Print): JK
Sampler (Signature): MP for JK

Date Shipped: MM/DD/YY
Carrier: FedEx
Waybill No.:
Comments:

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Scd.	Soil	8260C BTEX,TPH-g	8260C DCA 8011 EDB	8015C TPH-d/o	3630/8015C TPH-d/o w/ SGT	8270DSIM PAHs short list	8270D Phenol, TICs	8270D 2-(2-methoxy ethoxy)-ethanol	RSK175M Methane	SM3500-Fe Ferrous Iron	353.2 Nitrate-Nitrite N	SM2320B Alkalinity 300.0 Nitrate,Sulfate,Chloride	300.0 Bromide/Fluoride 6010 Total Ca,Mg,Mn,K,Na SM4500 Total & Dissolved Silica	9060A TOC	
ERH 965	Drinking water	11/22/19	1051	HST	4	X					X	X*										rush! MS/MSD
ERH 966	Drinking water	11/22/19	1051	HST	2	X					X	X*										rush!

MP 11/22/19

*Analyze TPH w/SGT only if TPH-d/o detected.

TPH-d/o & PAHs need liquid-liquid extraction.

Shuttle Temperature: RH = 2/2.4°C

Turnaround Requested: Check one
☐ Standard 2-3 wk ☒ One week ☐ 3 days ☒ 24/48 Hrs. ☐ Other: _____
MP 11/21/19

Sample Disposal:
☐ Return to client ☒ Disposal by Lab (30-day retention)

Relinquished by sampler:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by:
Kenneth Miyake AECOM	11/22/19	1100	AECOM				
Relinquished by: Margie Pascua AECOM	Date 11/22/19	Time 12:30	Received by:	Relinquished by:	Date 11/23/19	Time 10:15	Received at lab by: Daniel Salcedo

See page 2 for Container Preservative and Sampling Information

COOLER RECEIPT FORM **ARF: 90862**

1) Project: 60571032 CV18F0126 Red Hill Fuel Storage Date Received: 11/23/19

2) Coolers: Number of Coolers: 1

3) YES Were custody seals present and intact?
How many? 2 Name/Date on seal? see below

4) YES Was there a shipping slip? Carrier name: FEDEX

5) Type of packing in cooler: X bubble wrap __ popcorn __ foam X plastic bags __ other
X wet ice __ dry ice __ no ice __ gel ice

6) YES Were cooler temperatures acceptable?

7) Serial number of certified NIST thermometer use R4 @ +0.4°C

8) Cooler temp(s): In °C: Thermometer Temp / Corrected Temp

1: 2.0°C/ 2.4°C	2:	3:	4:	5:	6:
7:	8:	9:	10:	11:	12:

Chain of custody:

9) YES Was a chain of custody received?

10) YES Were the custody papers complete/signed in the appropriate places?

Sample Labels:

11) YES Were all sample labels complete (sample ID, date/time of sampling, etc.)?

12) YES Did all container labels agree with custody papers?

Sample Containers:

13) YES Were all containers sealed in separate bags?

14) YES Did all containers arrive in good condition:(unbroken, no leakage, no cracked/broken lids)?

15) YES Were correct containers and preservatives used for the tests indicated?

16) YES Was a sufficient amount of sample sent for tests indicated?

17) NA Were bubbles present in volatile samples?
If yes, the following were received with air bubbles:
Larger than a pea: _____
Smaller than a pea: _____

Preservation Hold time:

18) Yes Was a sufficient amount of holding time remaining to analyze the samples?

19) NA Was the pH taken of all non-VOA preserved samples and written on the sample container?

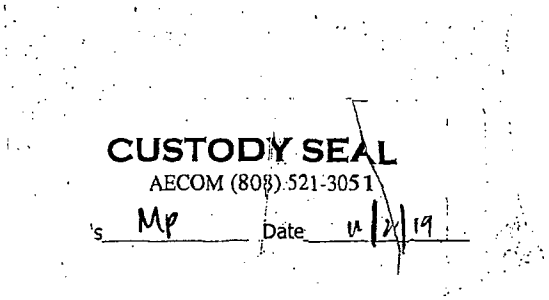
20) NA Was the pH of acid preserved non-VOA samples < 2?

21) NA Was the pH of sodium hydroxide preserved samples for Cyanide > 12 and Sulfide >9?

22) NO Were unpreserved VOA Vials received?

23) NA Are unpreserved VOA vials noted in the ADD TEST FIELD on the ARF?
pH strip lot number: _____
Lab notified if pH was not adequate: _____

Notes/Deficiencies:



Personnel receiving samples: ZG Second reviewer: AA

Personnel labeling samples: ZG

Project manager notified: AA Date/Time of notification 11/25/19

Name of client notified: _____ Date/Time of notification _____

SAMPLE RESULTS

EPA 8015B TPH LIQ-LIQ

AECOM
1001 Bishop Street, Suite 1600
Honolulu, HI 96813

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Margie Pascua

Project: 60571032 CV18F0126 Red Hill Fuel Storage

ARF: 90862

Sample ID: ERH965

APPL ID: BA03545

Sample Collection Date: 11/22/19

QCG: #DOC53-191125A-247601

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015B-eL	DIESEL (C10-C24)	25.00 U	40.0	25.00	13.07	ug/L	11/25/19	11/26/19
EPA 8015B-eL	OIL (C24-C40)	40.00 U	40.0	40.00	5.54	ug/L	11/25/19	11/26/19
EPA 8015B-eL	SURROGATE: OCTACOSANE (S)	73.8	60-142			%	11/25/19	11/26/19
EPA 8015B-eL	SURROGATE: ORTHO-TERPHENYL (S)	79.9	56-125			%	11/25/19	11/26/19

Quant Method: DOC1114.M
Run #: 1121118
Instrument: Apollo
Sequence: 191121
Dilution Factor: 1
Initials: LPO

Printed: 11/26/19 2:31:53 PM
APPL-F1-SC-NoMC-REG MDLs-DOD

EPA 8015B TPH LIQ-LIQ

AECOM
1001 Bishop Street, Suite 1600
Honolulu, HI 96813

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Margie Pascua

Project: 60571032 CV18F0126 Red Hill Fuel Storage

ARF: 90862

Sample ID: ERH966

APPL ID: BA03546

Sample Collection Date: 11/22/19

QCG: #DOC53-191125A-247601

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015B-eL	DIESEL (C10-C24)	25.00 U	40.0	25.00	13.07	ug/L	11/25/19	11/26/19
EPA 8015B-eL	OIL (C24-C40)	40.00 U	40.0	40.00	5.54	ug/L	11/25/19	11/26/19
EPA 8015B-eL	SURROGATE: OCTACOSANE (S)	111	60-142			%	11/25/19	11/26/19
EPA 8015B-eL	SURROGATE: ORTHO-TERPHENYL (S)	83.9	56-125			%	11/25/19	11/26/19

Quant Method: DOC1114.M
Run #: 1121121
Instrument: Apollo
Sequence: 191121
Dilution Factor: 1
Initials: LPO

Printed: 11/26/19 2:31:53 PM
APPL-F1-SC-NoMC-REG MDLs-DOD

QC FORMS

EPA 8015B-eLL

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 90862

Case No: 90862 Date Analyzed: 11/26/19

Matrix: WATER Instrument: Apollo

APPL ID.	Client Sample No.	SURROGATE: OCTACOSANE (S)			SURROGATE: ORTHO-TERPHENYL (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
191125A-BLK	Blank	60-142	64.4		56-125	72.2	
191125A-LCS	Lab Control Spike	60-142	60.5		56-125	73.2	
191125A-LCSD	Lab Control SpikeD	60-142	65.9		56-125	83.2	
BA03545	ERH965	60-142	73.8		56-125	79.9	
BA03545-MS	Matrix Spike	60-142	88.3		56-125	100	
BA03545-MSD	Matrix SpikeD	60-142	87.9		56-125	94.1	
BA03546	ERH966	60-142	111		56-125	83.9	

Comments: Batch: #DOC53-191125A

EPA 8015B-eL

Form 4

Blank Summary

Lab Name: APPL, Inc. SDG No: 90862

Case No: 90862 Date Analyzed: 11/26/19

Matrix: WATER Instrument: Apollo

Blank ID: 191125A-BLK Time Analyzed: 1146

APPL ID.	Client Sample No.	File ID.	Date Analyzed
191125A-BLK	Blank	1121115	11/26/19 1146
191125A-LCS	Lab Control Spike	1121116	11/26/19 1206
191125A-LCSD	Lab Control SpikeD	1121117	11/26/19 1225
BA03545	ERH965	1121118	11/26/19 1245
191125A-MS	Matrix Spike	1121119	11/26/19 1305
191125A-MSD	Matrix SpikeD	1121120	11/26/19 1325
BA03546	ERH966	1121121	11/26/19 1344

Comments: Batch: #DOC53-191125A

Printed: 11/26/19 2:32:14 PM
Form 4, Blank Summary

Method Blank
EPA 8015B TPH LIQ-LIQ

Blank Name/QCG: **191125W-03545 - 247601**
Batch ID: #DOC53-191125A

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	DIESEL (C10-C24)	25.00 U	40.0	25.00	13.07	ug/L	11/25/19	11/26/19
BLANK	OIL (C24-C40)	40.00 U	40.0	40.00	5.54	ug/L	11/25/19	11/26/19
BLANK	SURROGATE: OCTACOSANE (S)	64.4	60-142			%	11/25/19	11/26/19
BLANK	SURROGATE: ORTHO-TERPHEN	72.2	56-125			%	11/25/19	11/26/19

Quant Method: DOC1114.M
Run #: 1121115
Instrument: Apollo
Sequence: 191121
Initials: LPO

GC SC-Blank-REG MDLs-DOD
Printed: 11/26/19 2:31:52 PM

EPA 8015B-eL

Form 4

LCS Summary

Lab Name: APPL, Inc. SDG No: 90862

Case No: 90862 Date Analyzed: 11/26/19

Matrix: WATER Instrument: Apollo

LCS ID: 191125A-LCS Time Analyzed: 1206

APPL ID.	Client Sample No.	File ID.	Date Analyzed
191125A-BLK	Blank	1121115	11/26/19 1146
191125A-LCS	Lab Control Spike	1121116	11/26/19 1206
191125A-LCSD	Lab Control SpikeD	1121117	11/26/19 1225
BA03545	ERH965	1121118	11/26/19 1245
191125A-MS	Matrix Spike	1121119	11/26/19 1305
191125A-MSD	Matrix SpikeD	1121120	11/26/19 1325
BA03546	ERH966	1121121	11/26/19 1344

Comments: Batch: #DOC53-191125A

Printed: 11/26/19 2:32:15 PM
Form 4, LCS Summary

Laboratory Control Spike Recoveries
EPA 8015B TPH LIQ-LIQ

APPL ID: **191125W-03545 LCS - 247601**
Batch ID: #DOC53-191125A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Lvl ug/L	SPK Result ug/L	DUP Result ug/L	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
DIESEL (C10-C24)	1000	591	677	59.1	67.7	36-132	13.6	30
OIL (C24-C40)	1000	609	705	60.9	70.5	41-113	14.6	30
SURROGATE: OCTACOSANE (S)	75.0	45.4	49.4	60.5	65.9	60-142		
SURROGATE: ORTHO-TERPHENYL (S)	75.0	54.9	62.4	73.2	83.2	56-125		

Comments: _____

Primary	SPK	DUP
Quant Method :	DOC1114.M	DOC1114.M
Extraction Date :	11/25/19	11/25/19
Analysis Date :	11/26/19	11/26/19
Instrument :	Apollo	Apollo
Run :	1121116	1121117
Initials :	LPO	

Printed: 11/26/19 2:31:59 PM
APPL Standard LCSD

Matrix Spike Recoveries

EPA 8015B TPH LIQ-LIQ

APPL ID: **191125W-03545 MS - 247601**
Batch ID: #DOC53-191125A
Sample ID: BA03545
Client ID: ERH965

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Lvl ug/L	Matrix Result ug/L	SPK Result ug/L	DUP Result ug/L	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
DIESEL (C10-C24)	1000	ND	852	774	85.2	77.4	36-132	9.6	30
OIL (C24-C40)	1000	ND	818	799	81.8	79.9	41-113	2.4	30
SURROGATE: OCTACOSANE (S)	75.0	NA	66.2	65.9	88.3	87.9	60-142		
SURROGATE: ORTHO-TERPHENYL (S)	75.0	NA	75.2	70.6	100	94.1	56-125		

Comments: _____

Primary	SPK	DUP
Quant Method :	DOC1114.M	DOC1114.M
Extraction Date :	11/25/19	11/25/19
Analysis Date :	11/26/19	11/26/19
Instrument :	Apollo	Apollo
Run :	1121119	1121120
Initials :	LPO	

Printed: 11/26/19 2:32:08 PM
APPL MSD SCII

ORGANICS
Calibration Data

TPH Extractables
DOC1114

Form 6
Initial Calibration

Lab Name: APPL, Inc. SDG No:
Case No: Initial Cal. Date: 11/14/19
Matrix: Water Instrument: Apollo
Initials:

			1114003.D	1114004.D	1114005 D	1114006 D	1114007 D	1114008.D									
		Compound	1	2	3	4	5	6					Avg	%RSD	Type	r^2	Q
1	HATM	Diesel (C10-C24)	2027964	1336430	1489661	1454530	1384113	1359697					1508733	17	HATM		
2	HBTM	Motor Oil (C24-C40)	776455	819947	771703	744158	810038	798760					786843	3.6	HBTM		
3	SAL	Ortho-Terphenyl(S)	2345827	1504455	1492939	1513819	1376726	1360942					1599118	23	SA	0.997	
4	SA	Octacosane(S)	1517911	1093917	1010508	997320	1111697	1064489					1132640	17	SA		
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35																	

1.749733

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\191114\1114003.D Vial: 3
Acq On : 11-14-19 19:39:49 Operator: BT
Sample : Diesel Motor Oil - 1 11/14/19 Inst : Apollo
Misc : water Multiplr: 1.00
IntFile : events.e
Quant Time: Nov 15 9:20 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Nov 15 09:19:04 2019
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

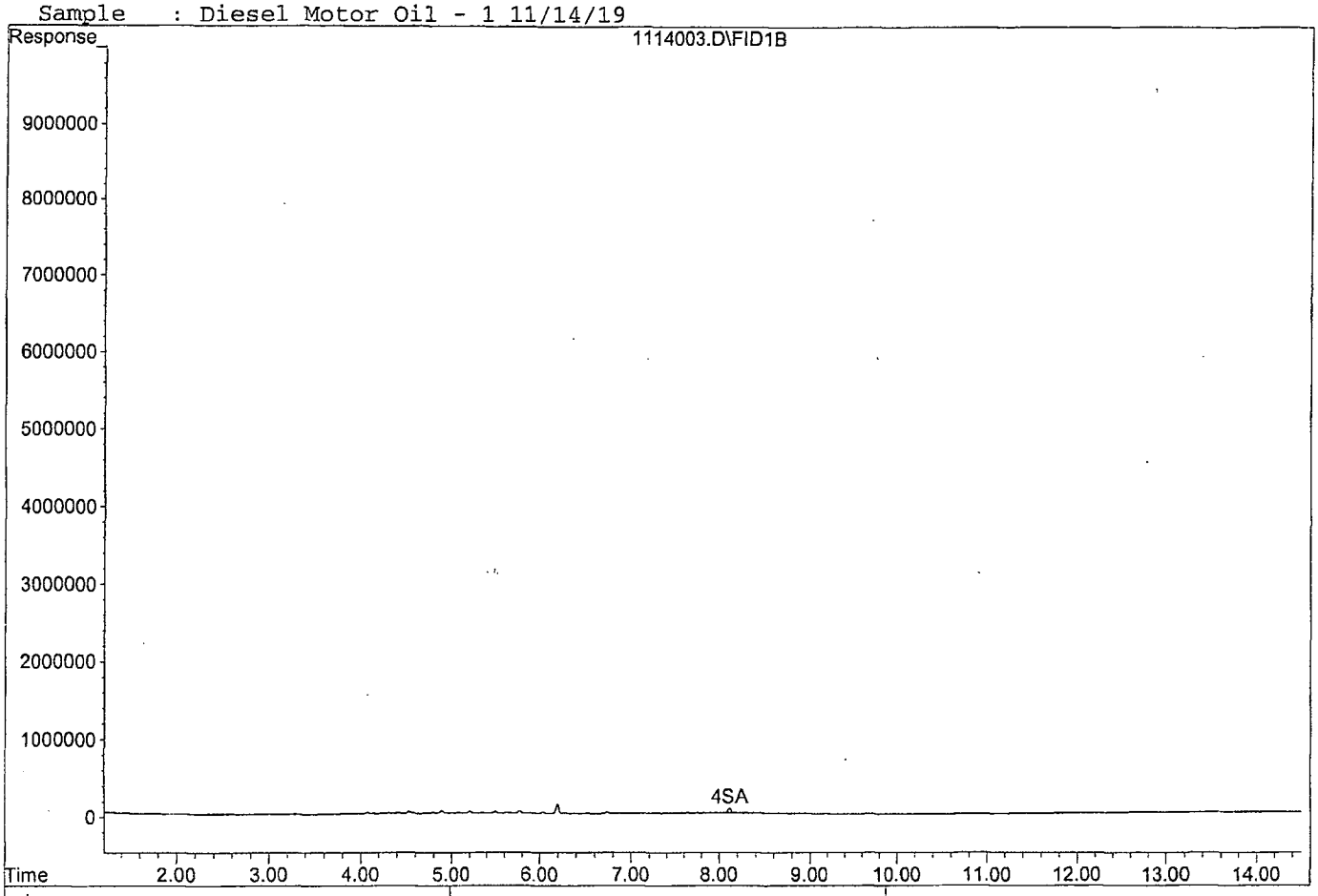
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	6.20	2345827	N.D. ppb
Surrogate Spike 30.000	Recovery =		0.00%
4) SA Octacosane(S)	8.11	1517911	0.670 ppb
Surrogate Spike 30.000	Recovery =		2.23%
Target Compounds			
1) HATM Diesel (C10-C24)	4.42	40559274	13.446 ppb
2) HBTM Motor Oil (C24-C40)	9.01	15529092	9.868 ppb

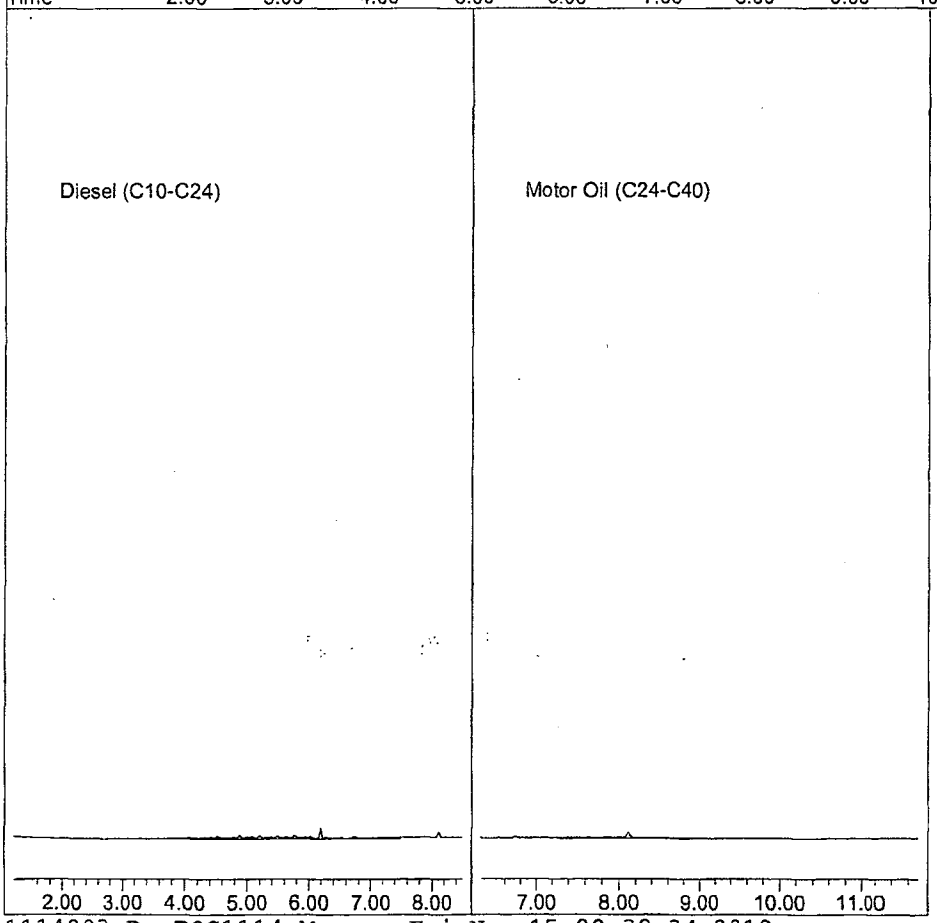
Target Compounds

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\191114\1114003.D
Sample : Diesel Motor Oil - 1 11/14/19

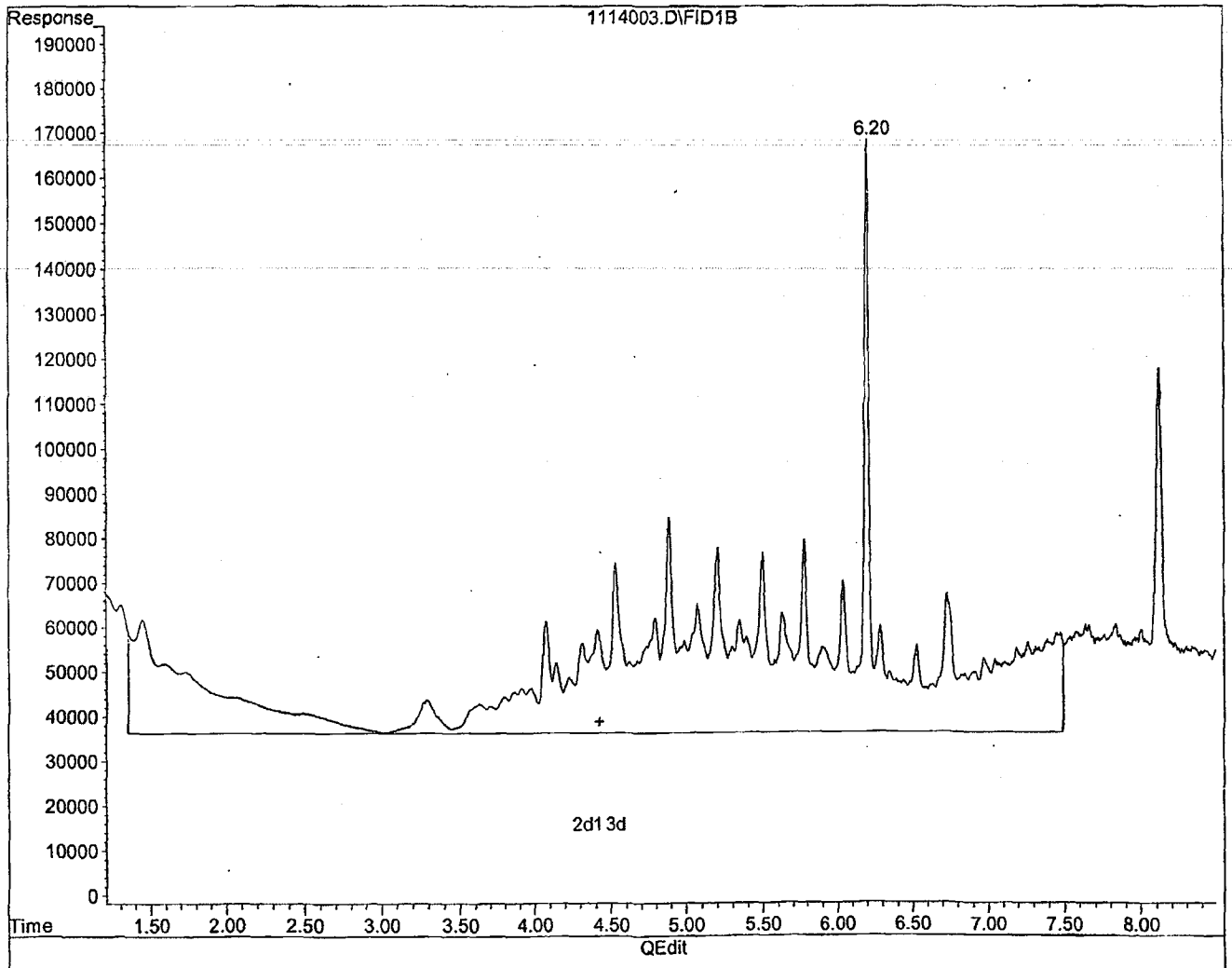




Quantitation Report

Data File : G:\APOLLO\DATA\191114\1114003.D Vial: 3
Acq On : 11-14-19 19:39:49 Operator: BT
Sample : Diesel Motor Oil - 1 11/14/19 Inst : Apollo
Misc : water Multiplr: 1.00
IntFile : events.e
Quant Time: Nov 15 9:19 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Nov 15 09:19:04 2019
Response via : Multiple Level Calibration



(1) Diesel (C10-C24) (HATM)

4.42min 16.132ppb m

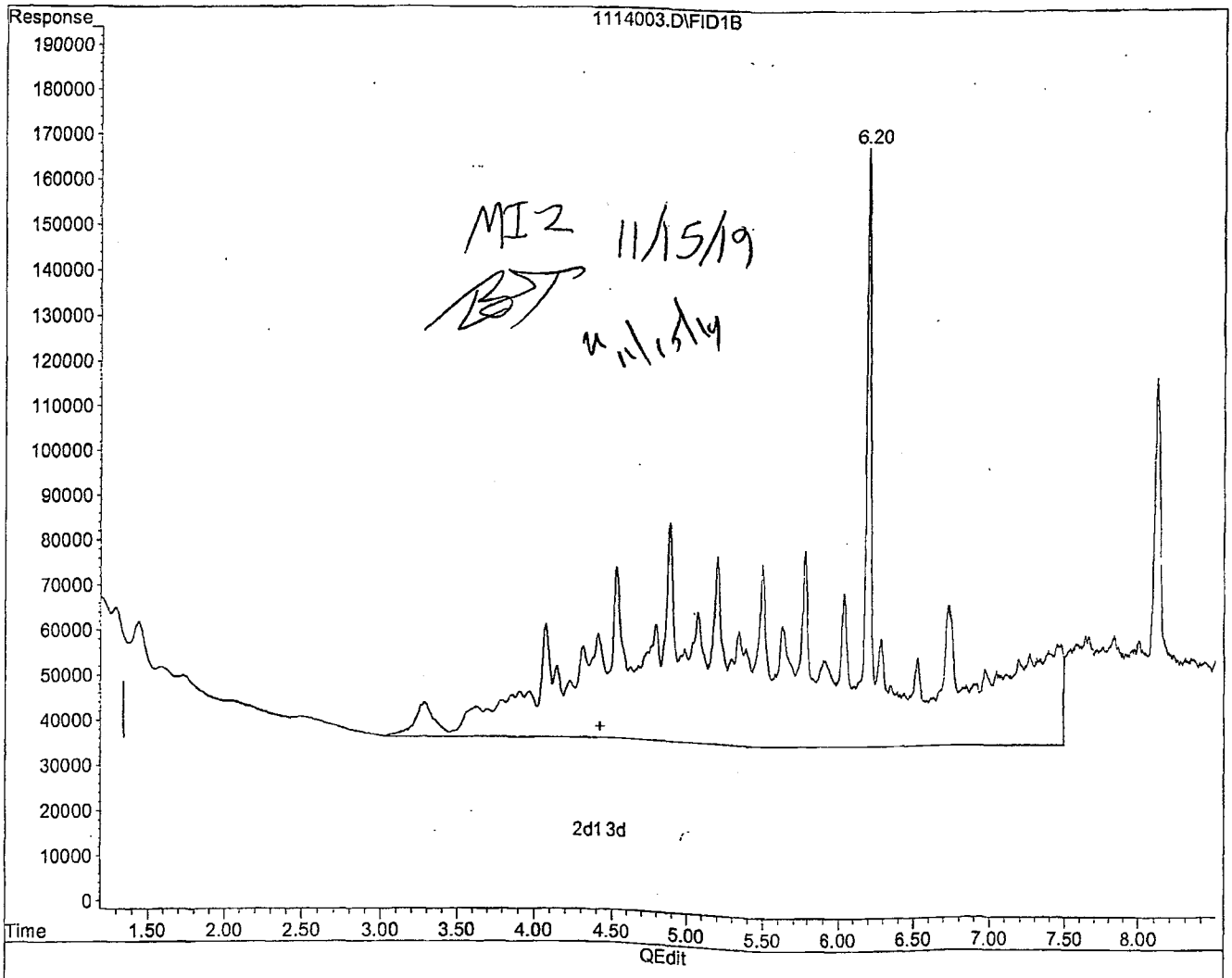
response 48662424

(+) = Expected Retention Time
1114003.D DOC1114.M Fri Nov 15 09:20:13 2019

Quantitation Report

Data File : G:\APOLLO\DATA\191114\1114003.D Vial: 3
Acq On : 11-14-19 19:39:49 Operator: BT
Sample : Diesel Motor Oil - 1 11/14/19 Inst : Apollo
Misc : water Multiplr: 1.00
IntFile : events.e
Quant Time: Nov 15 9:19 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Nov 15 09:19:04 2019
Response via : Multiple Level Calibration



(1) Diesel (C10-C24) (HATM)

4.42min 13.446ppb m

response 40559274

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\191114\1114004.D Vial: 4
Acq On : 11-14-19 19:59:46 Operator: BT
Sample : Diesel Motor Oil - 2 11/14/19 Inst : Apollo
Misc : water Multiplr: 1.00
IntFile : events.e
Quant Time: Nov 15 9:21 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Nov 15 09:19:04 2019
Response via : Multiple Level Calibration

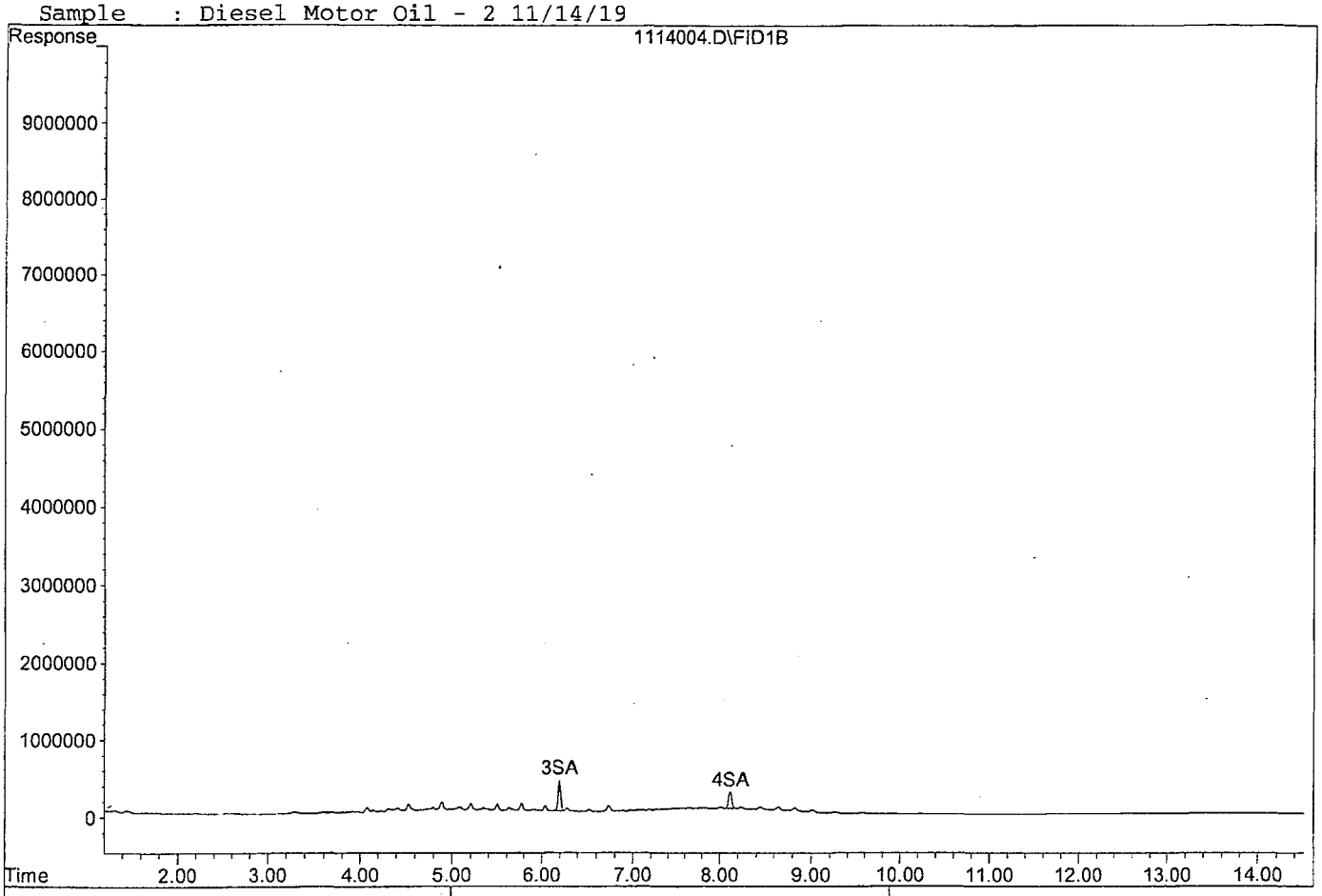
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

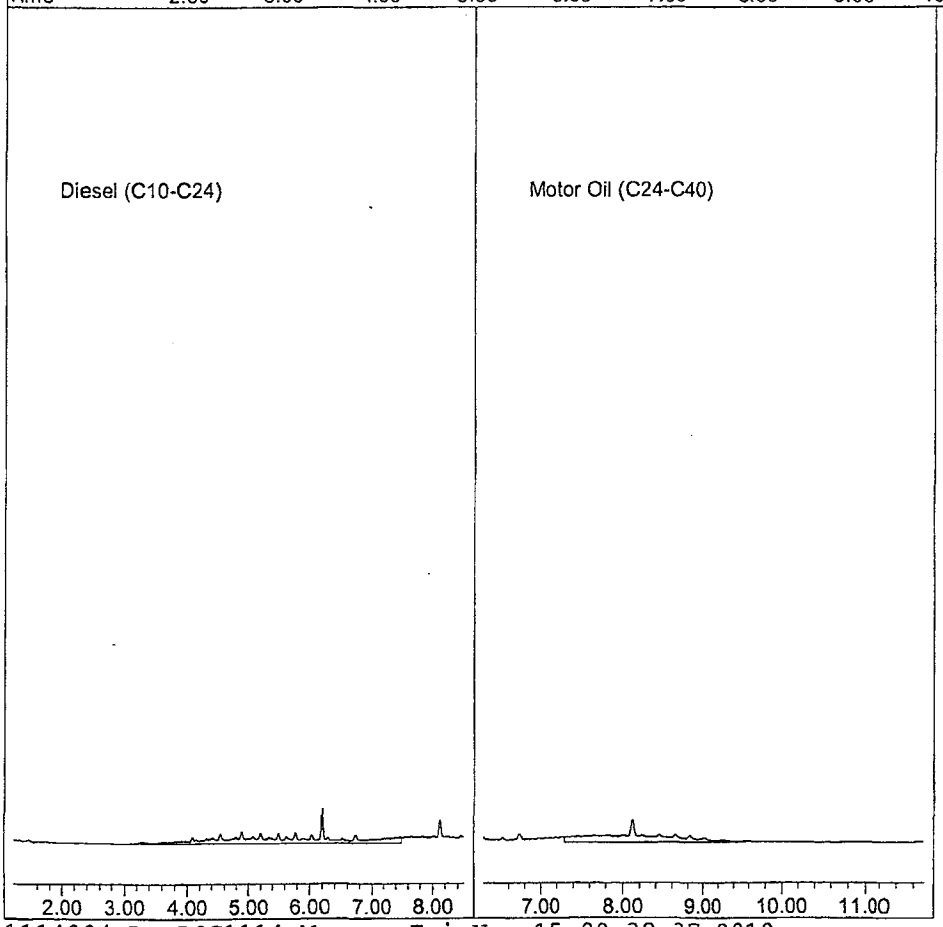
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	6.20	7522274	1.503 ppb
Surrogate Spike 30.000		Recovery =	5.01%
4) SA Octacosane(S)	8.12	5469585	2.415 ppb
Surrogate Spike 30.000		Recovery =	8.05%
Target Compounds			
1) HATM Diesel (C10-C24)	4.42	133643009	44.304 ppb
2) HBTM Motor Oil (C24-C40)	9.01	81994744	52.104 ppb

Target Compounds

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: G:\APOLLO\DATA\191114\1114004.D
Sample : Diesel Motor Oil - 2 11/14/19

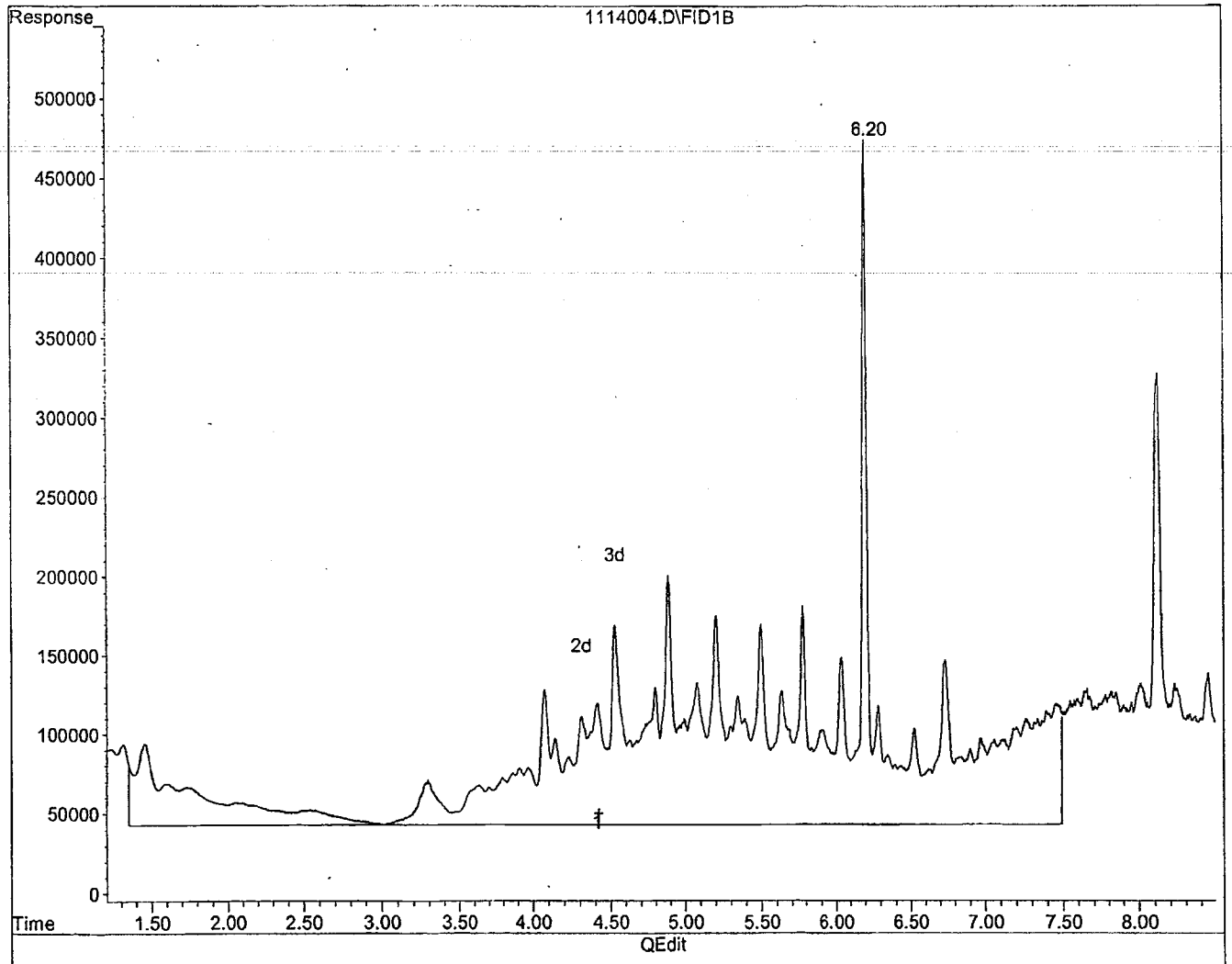




Quantitation Report

Data File : G:\APOLLO\DATA\191114\1114004.D Vial: 4
Acq On : 11-14-19 19:59:46 Operator: BT
Sample : Diesel Motor Oil - 2 11/14/19 Inst : Apollo
Misc : water Multiplr: 1.00
IntFile : events.e
Quant Time: Nov 15 9:19 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Nov 15 09:19:04 2019
Response via : Multiple Level Calibration



(1) Diesel (C10-C24) (HATM)

4.42min 48.922ppb m

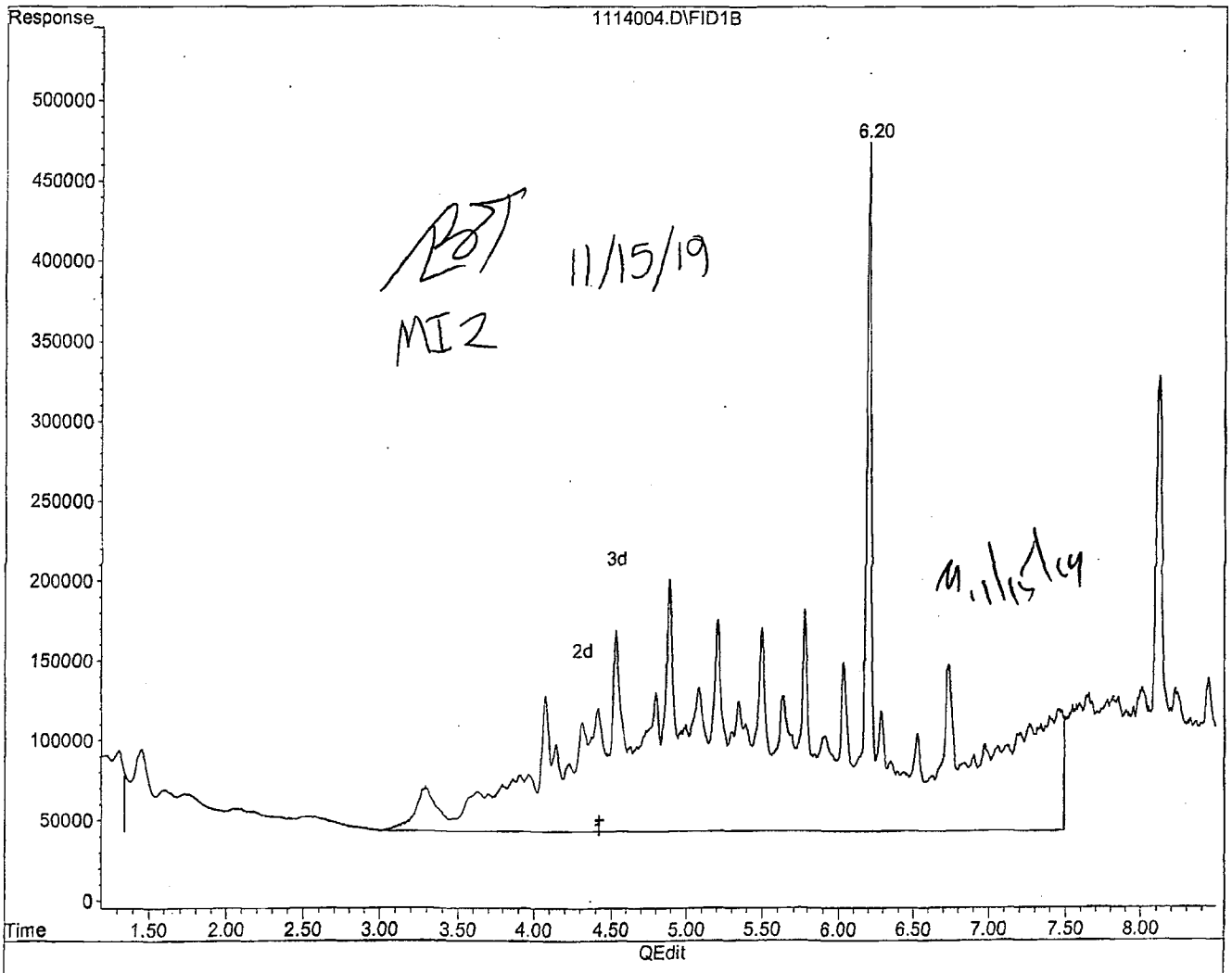
response 147576006

(+) = Expected Retention Time

Quantitation Report

Data File : G:\APOLLO\DATA\191114\1114004.D Vial: 4
Acq On : 11-14-19 19:59:46 Operator: BT
Sample : Diesel Motor Oil - 2 11/14/19 Inst : Apollo
Misc : water Multiplr: 1.00
IntFile : events.e
Quant Time: Nov 15 9:19 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Nov 15 09:19:04 2019
Response via : Multiple Level Calibration



(1) Diesel (C10-C24) (HATM)

4.42min 44.304ppb m

response 133643009

(+) = Expected Retention Time

1114004.D DOC1114.M Fri Nov 15 09:21:28 2019

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\191114\1114005.D Vial: 5
Acq On : 11-14-19 20:19:39 Operator: BT
Sample : Diesel Motor Oil - 3 11/14/19 Inst : Apollo
Misc : water Multiplr: 1.00
IntFile : events.e
Quant Time: Nov 15 9:19 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Nov 15 09:19:04 2019
Response via : Multiple Level Calibration

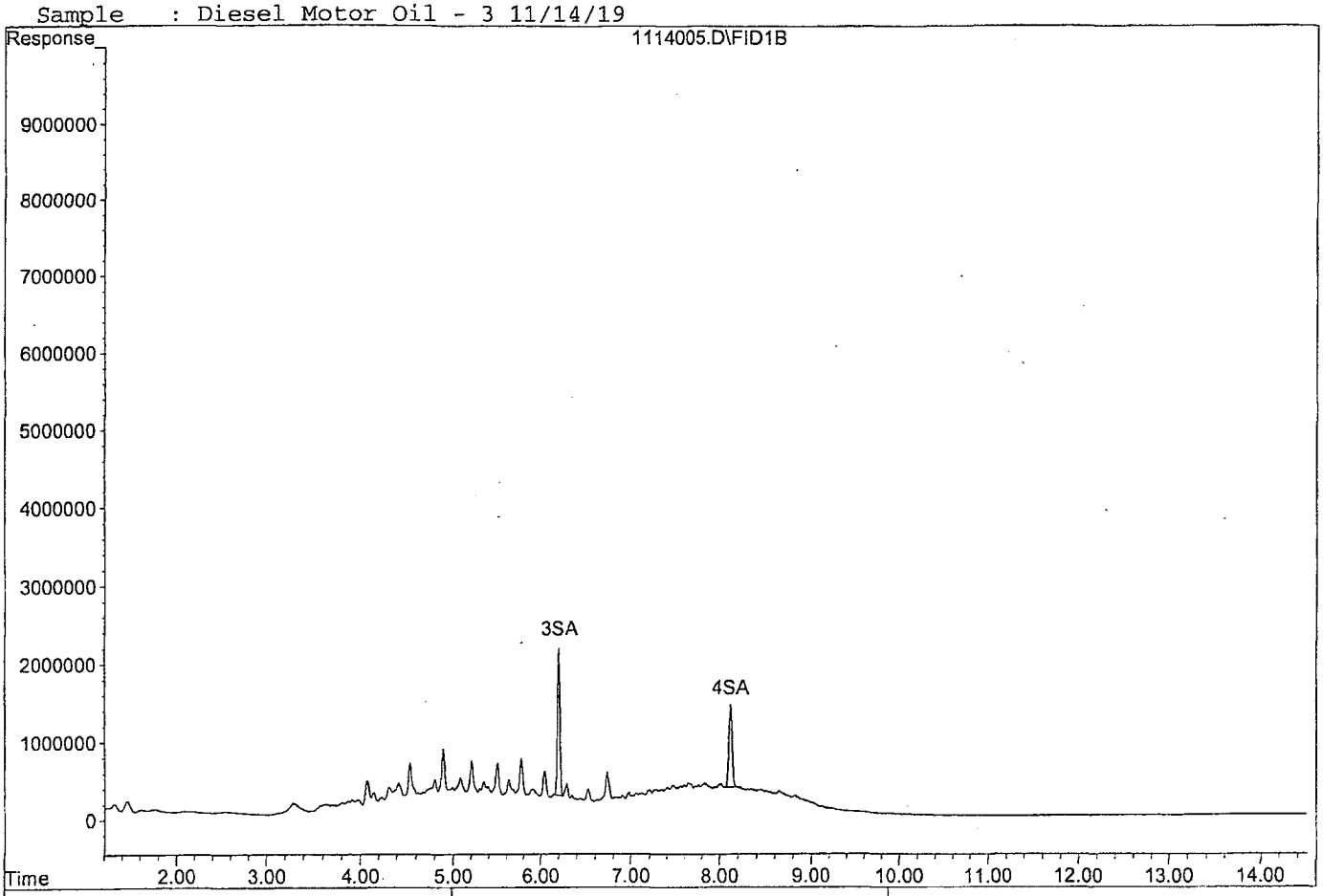
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

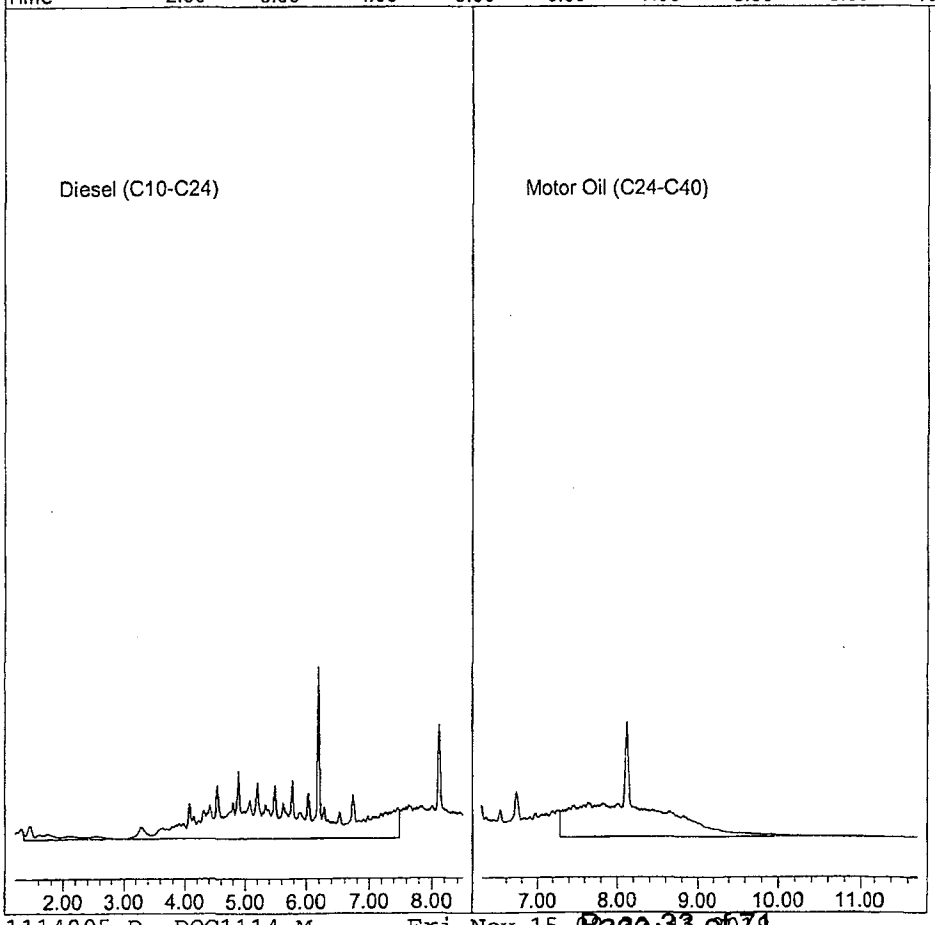
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	6.20	37323483	12.416 ppb
Surrogate Spike 30.000	Recovery =		41.39%
4) SA Octacosane(S)	8.12	25262712	11.152 ppb
Surrogate Spike 30.000	Recovery =		37.17%
Target Compounds			
1) HATM Diesel (C10-C24)	4.42	744830742	246.917 ppb
2) HBTM Motor Oil (C24-C40)	9.01	385851504	245.190 ppb
Target Compounds			

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\191114\1114005.D
Sample : Diesel Motor Oil - 3 11/14/19





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\191114\1114006.D Vial: 6
Acq On : 11-14-19 20:39:34 Operator: BT
Sample : Diesel Motor Oil - 4 11/14/19 Inst : Apollo
Misc : water Multiplr: 1.00
IntFile : events.e
Quant Time: Nov 15 9:19 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Nov 15 09:19:04 2019
Response via : Multiple Level Calibration

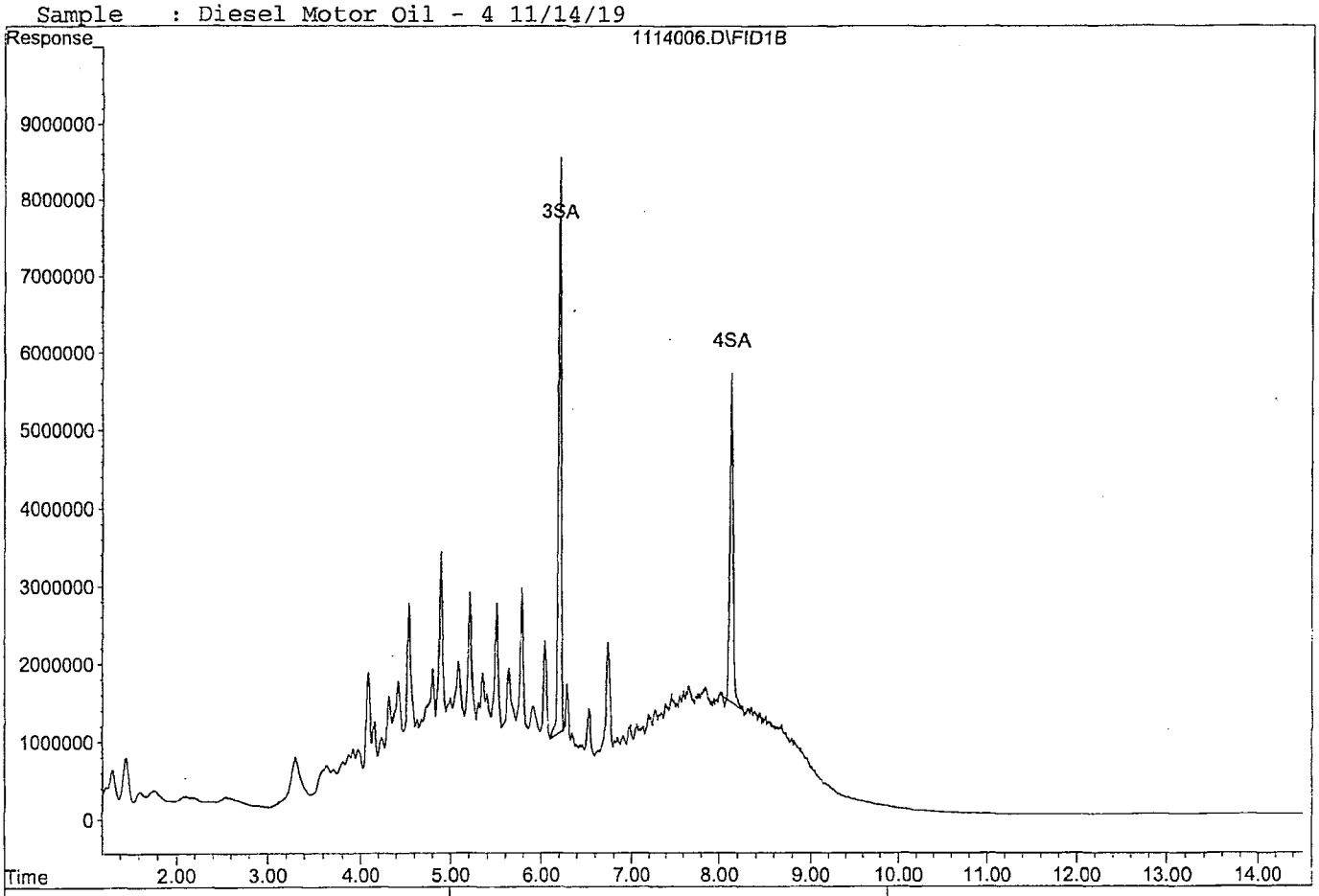
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

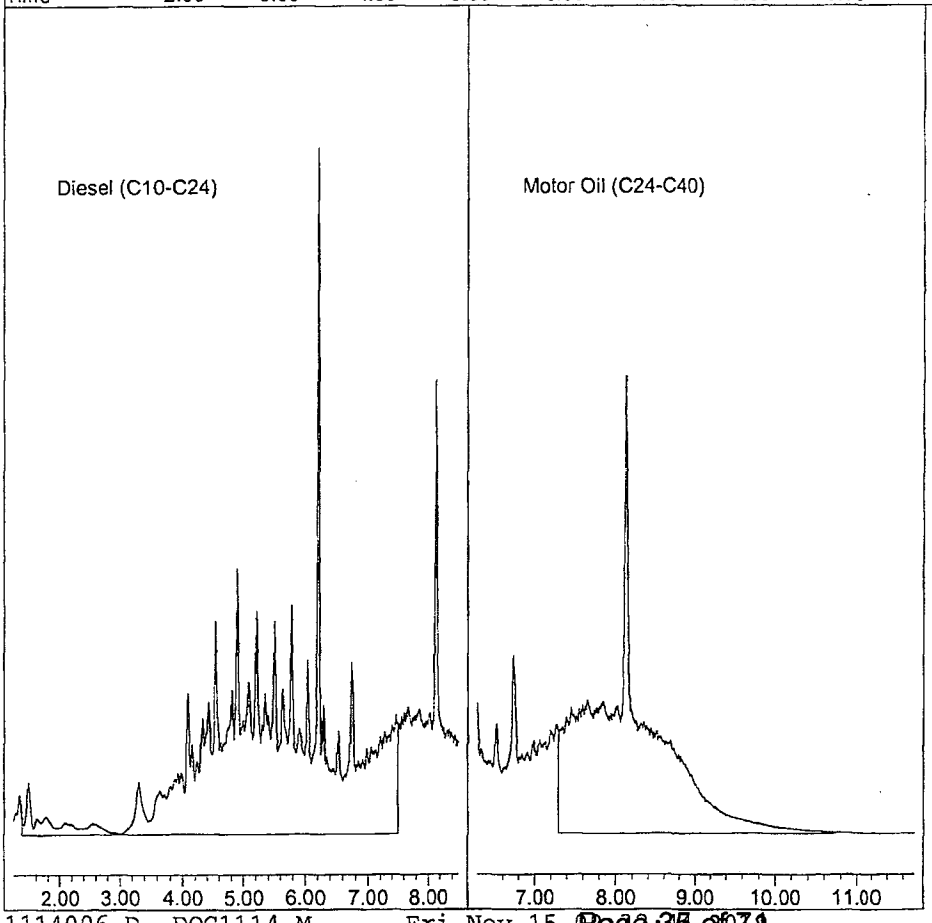
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	6.21	151381863	54.183 ppb
Surrogate Spike 30.000		Recovery =	180.61%
4) SA Octacosane(S)	8.12	99731952	44.026 ppb
Surrogate Spike 30.000		Recovery =	146.75%
Target Compounds			
1) HATM Diesel (C10-C24)	4.42	2909060509	964.374 ppb
2) HBTM Motor Oil (C24-C40)	9.01	1488315692	945.751 ppb

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\191114\1114006.D
Sample : Diesel Motor Oil - 4 11/14/19





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\191114\1114007.D Vial: 7
Acq On : 11-14-19 20:59:26 Operator: BT
Sample : Diesel Motor Oil - 5 11/14/19 Inst : Apollo
Misc : water Multiplr: 1.00
IntFile : events.e
Quant Time: Nov 15 9:19 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Nov 15 09:19:04 2019
Response via : Multiple Level Calibration

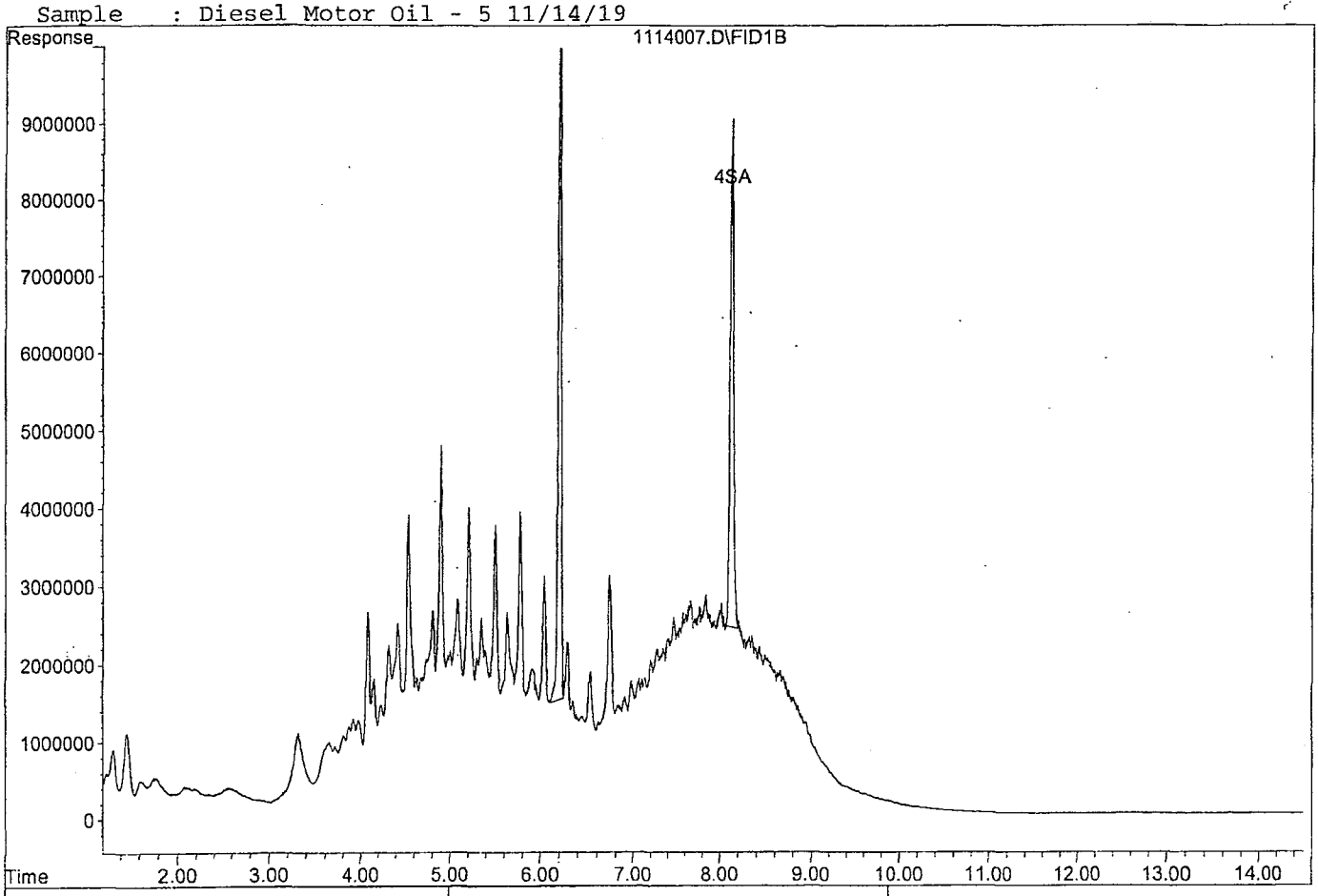
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

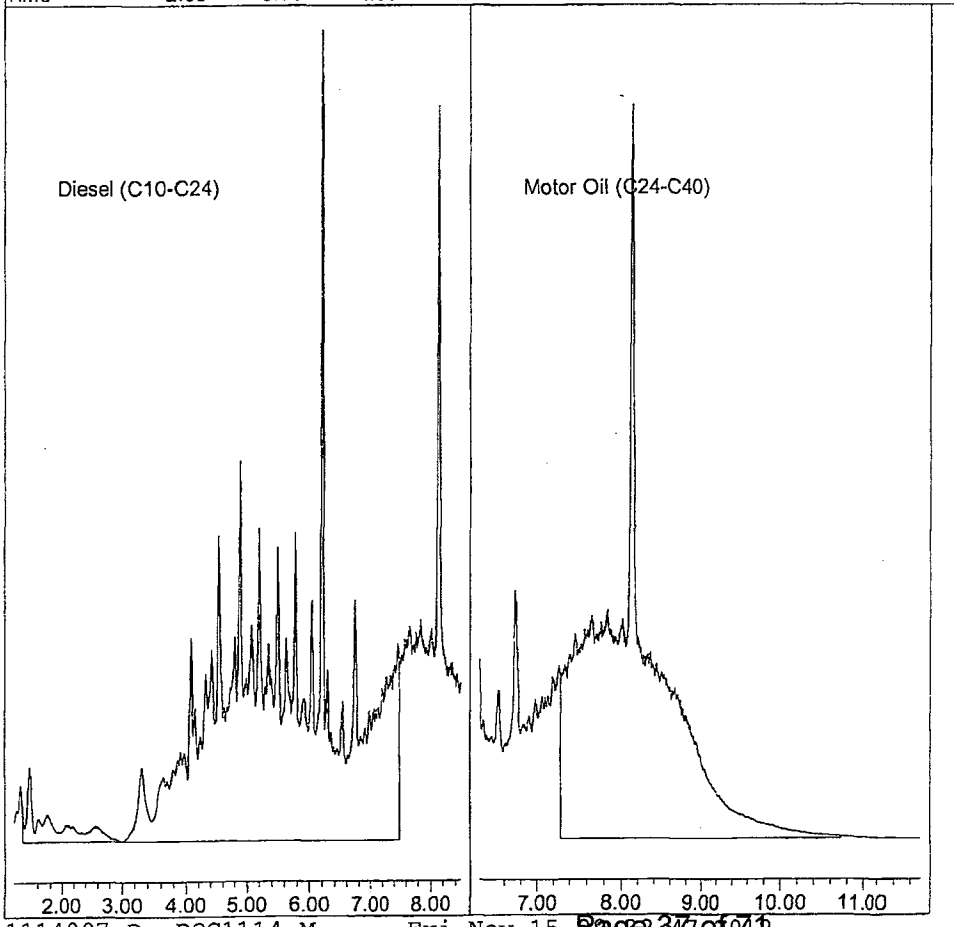
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	6.21	206508954	74.370 ppb
Surrogate Spike 30.000		Recovery =	247.90%
4) SA Octacosane(S)	8.13	166754564	73.613 ppb
Surrogate Spike 30.000		Recovery =	245.38%
Target Compounds			
1) HATM Diesel (C10-C24)	4.42	4152339086	1376.529 ppb
2) HBTM Motor Oil (C24-C40)	9.01	2430112740	1544.216 ppb

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\191114\1114007.D
Sample : Diesel Motor Oil - 5 11/14/19





1114007.D DOC1114.M Fri Nov 15 Page 34 of 71

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\191114\1114008.D Vial: 8
Acq On : 11-14-19 21:19:19 Operator: BT
Sample : Diesel Motor Oil - 6 11/14/19 Inst : Apollo
Misc : water Multiplr: 1.00
IntFile : events.e
Quant Time: Nov 15 9:19 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Nov 15 09:19:04 2019
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

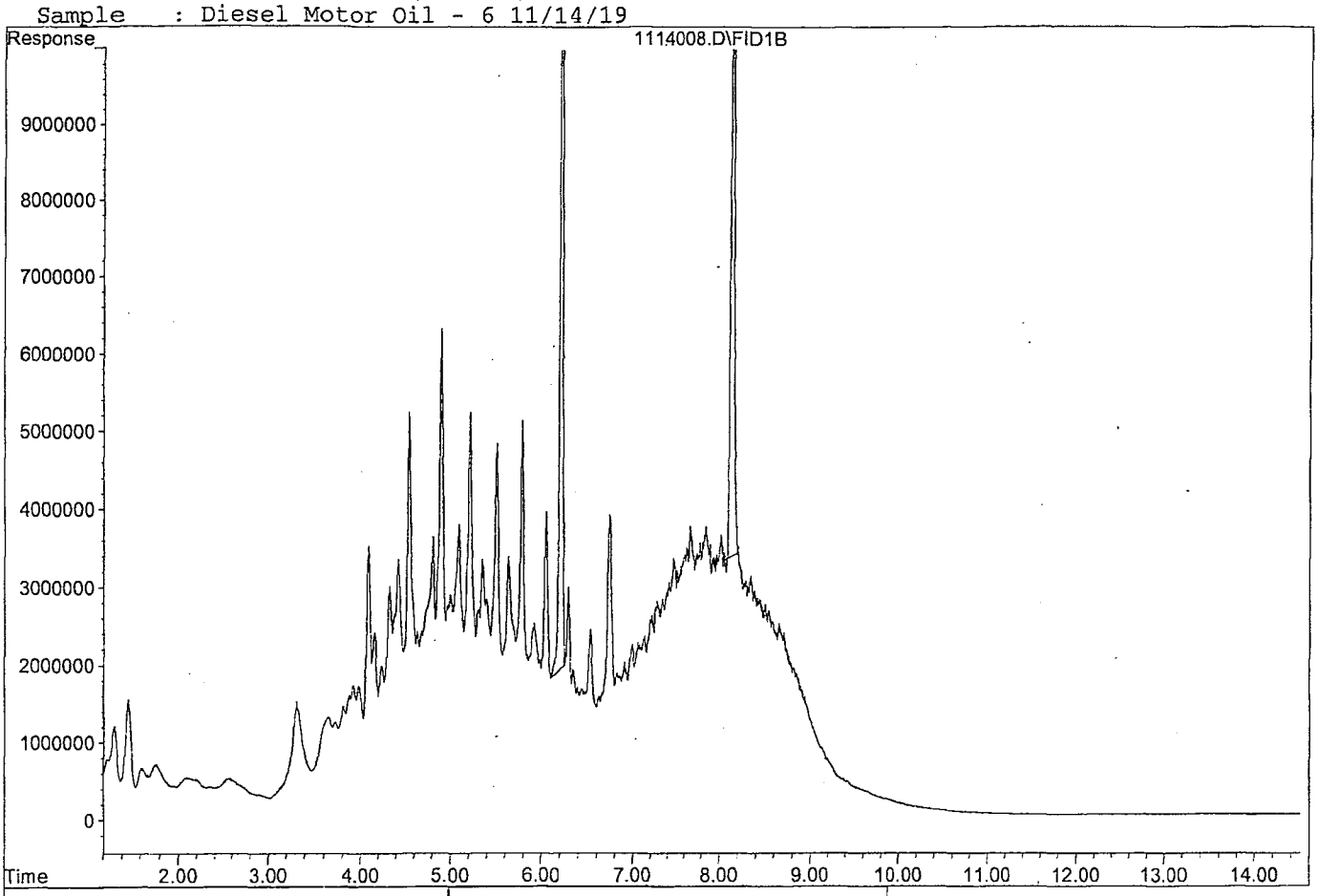
Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
3) SA Ortho-Terphenyl(S)	6.21	272188350	98.421	ppb
Surrogate Spike 30.000		Recovery =	328.07%	
4) SA Octacosane(S)	8.14	212897820	93.983	ppb
Surrogate Spike 30.000		Recovery =	313.28%	
Target Compounds				
1) HATM Diesel (C10-C24)	4.42	5438788689	1802.996	ppb
2) HBTM Motor Oil (C24-C40)	9.01	3195039251	2030.289	ppb

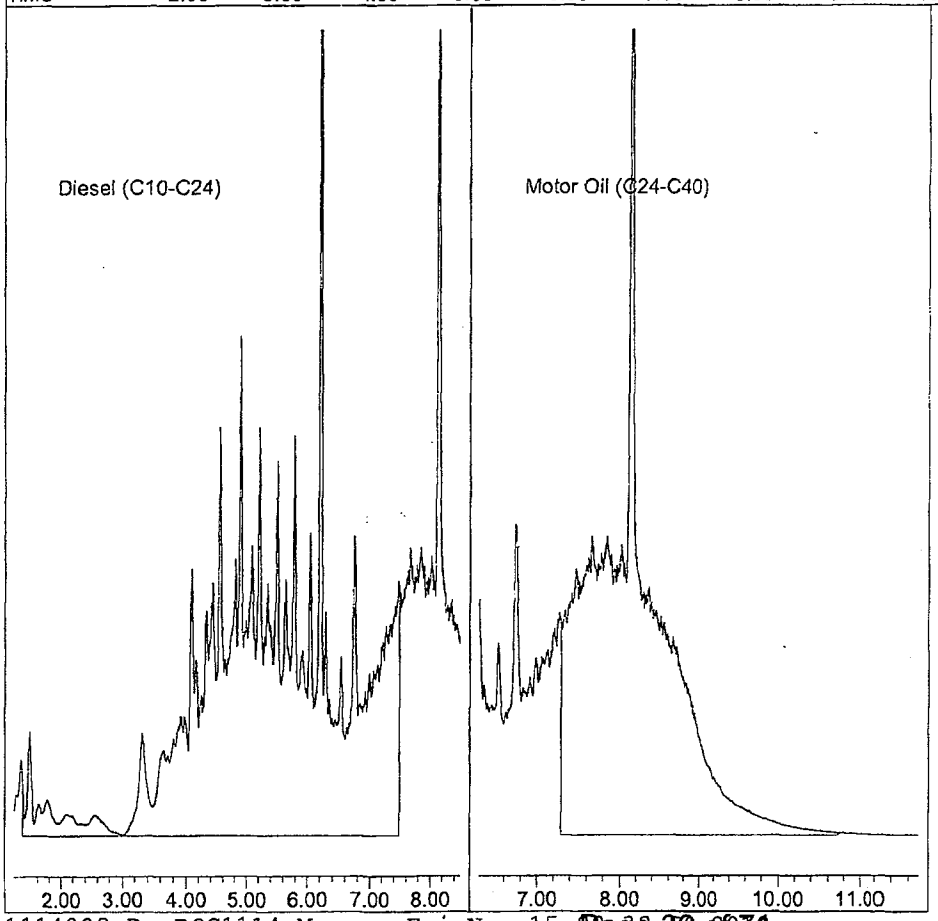
Target Compounds

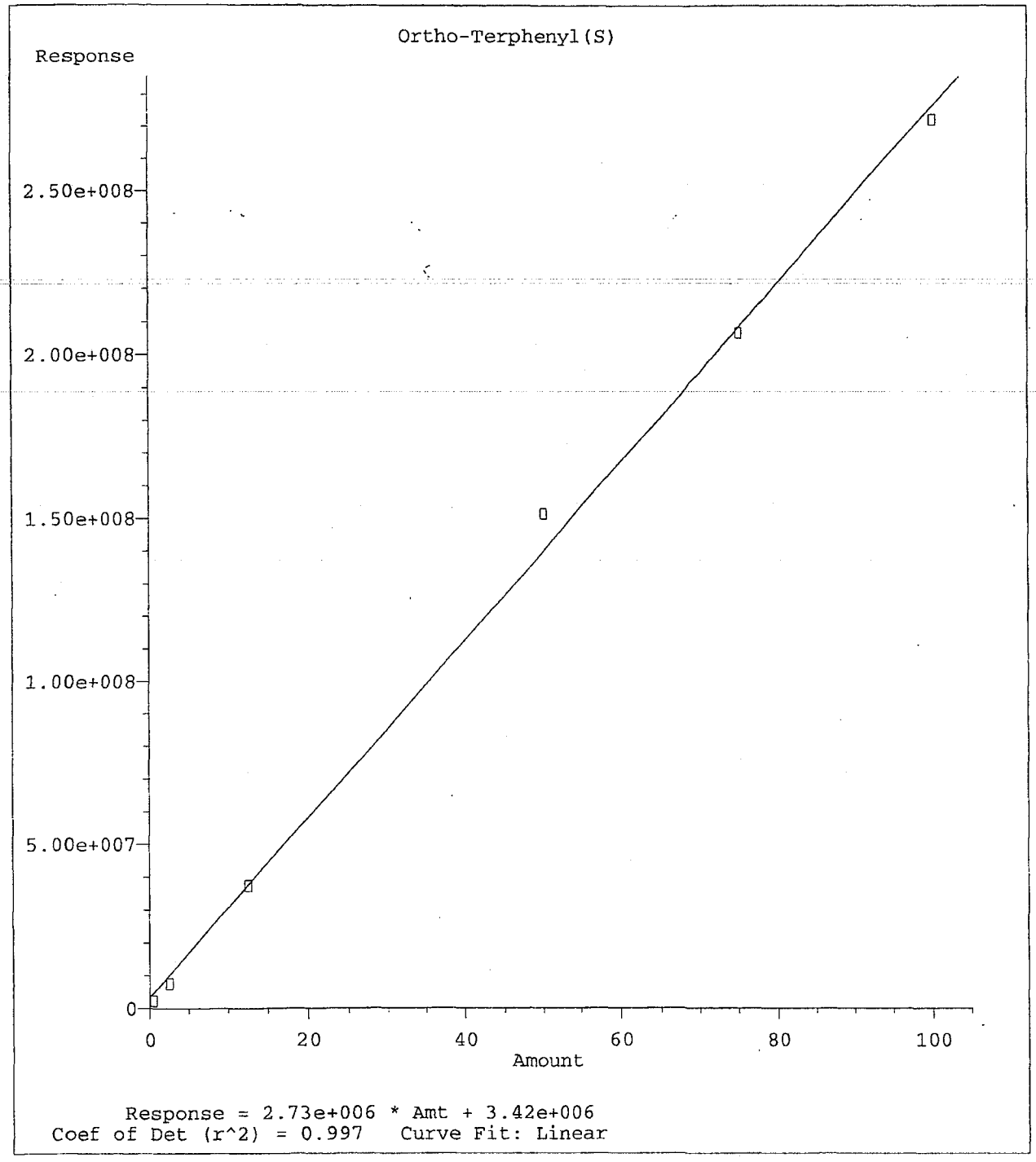
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\191114\1114008.D
Sample : Diesel Motor Oil - 6 11/14/19







Method Name: G:\APOLLO\DATA\191114\DOC1114.M
Calibration Table Last Updated: Fri Nov 15 09:19:04 2019

TPH Extractables
DOC1114

Form-7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 11/14/19
Instrument: Apollo
Initial Cal. Date: 11/14/19
Data File: 1114009.D

		Compound	MEAN	CCRF	%D		%Drift
1	HATM	Diesel (C10-C24)	1508730	1766620	17	HATM	
2	HBTM	Motor Oil (C24-C40)	786843	841695	7.0	HBTM	
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39							
40							
		Average			12.0		

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\191114\1114009.D Vial: 9
Acq On : 11-14-19 21:39:10 Operator: BT
Sample : Diesel Motor Oil Second Source 1/15/19 Inst : Apollo
Misc : water Multiplr: 1.00
IntFile : events.e
Quant Time: Nov 15 9:29 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Nov 15 09:19:04 2019
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

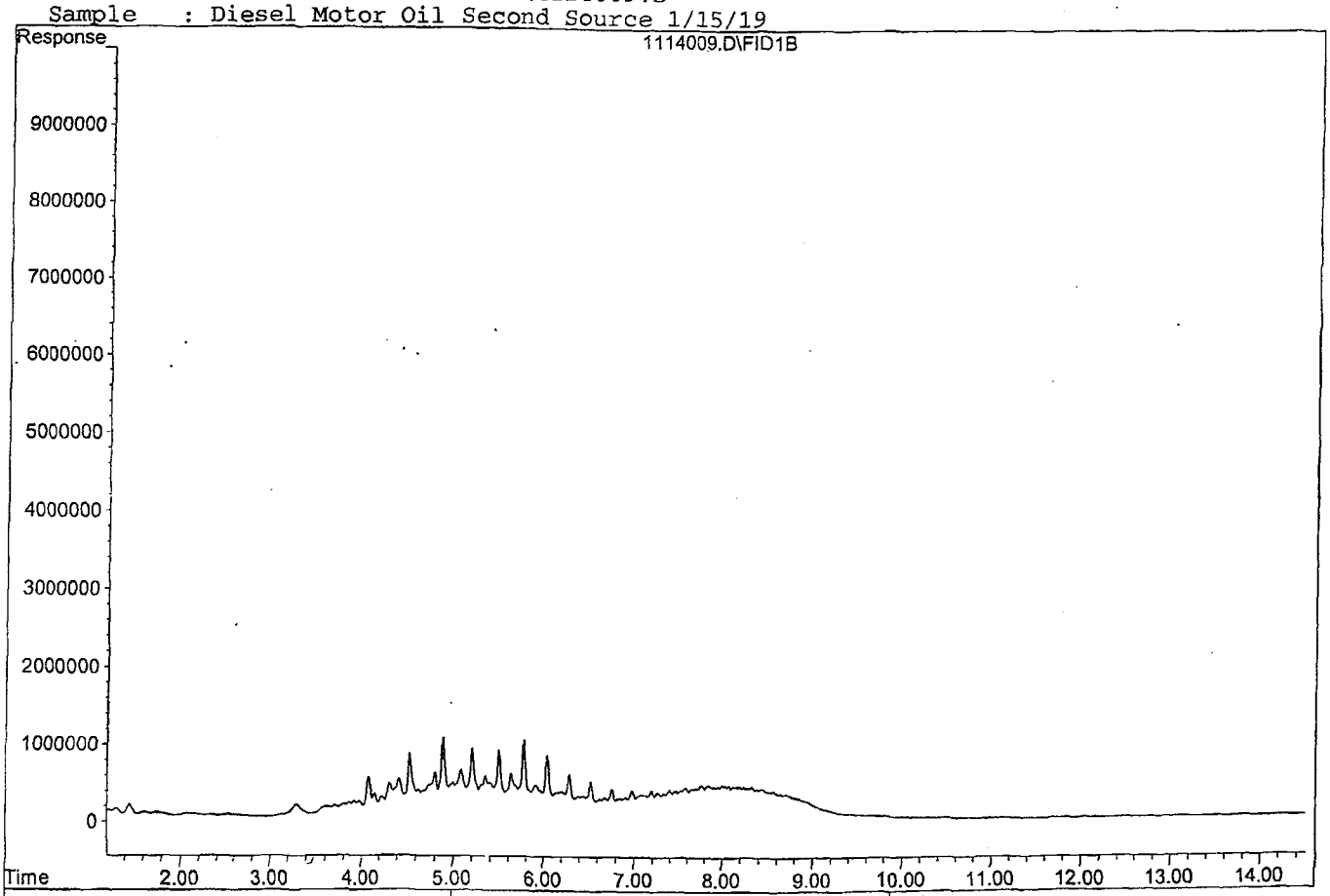
Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
3) SA Ortho-Terphenyl(S)	0.00	0	N.D.	ppb	d
Surrogate Spike 30.000	Recovery	=	0.00%		
4) SA Octacosane(S)	0.00	0	N.D.	ppb	d
Surrogate Spike 30.000	Recovery	=	0.00%		
Target Compounds					
1) HATM Diesel (C10-C24)	4.42	883311718	292.733	ppb	
2) HBTM Motor Oil (C24-C40)	9.01	420847463	267.428	ppb	

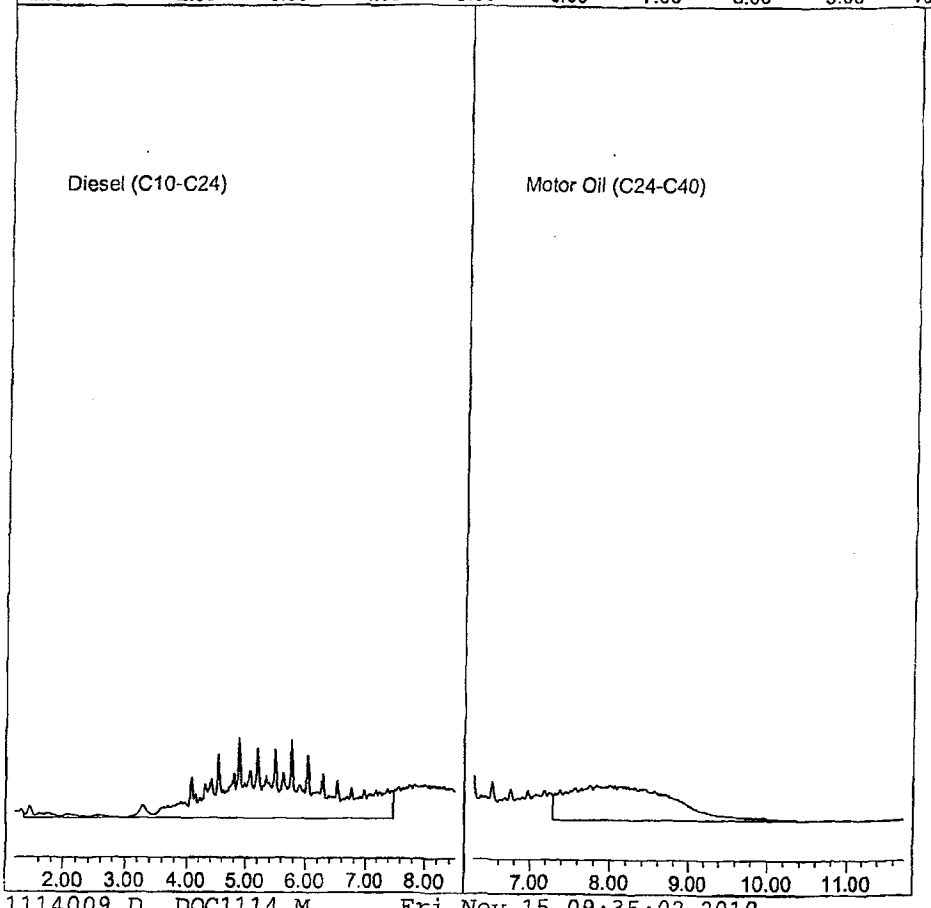
Target Compounds

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\191114\1114009.D
Sample : Diesel Motor Oil Second Source 1/15/19





1114009.D DOC1114.M Fri Nov 15 09:35:02 2019

TPH Extractables
DOC1114

Form 7

Continuing Calibration

Lab Name: APPL, Inc. SDG No:
Case No: Date Analyzed: 11/26/19
Matrix: Water Instrument: Apollo
Initial Cal. Date: 11/14/19
Data File: 1121114.D

		Compound	MEAN	CCRF	%D	%Drift	
1	HATM	Diesel (C10-C24)	1508730	1533840	1.7	HATM	
2	HBTM	Motor Oil (C24-C40)	786843	713336	9.3	HBTM	
3	SAL	Ortho-Terphenyl(S)	1599120	1519190	5.0	SAL	1.2
4	SA	Octacosane(S)	1132640	980195	13	SA	
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
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34							
35							
36							
37							
38							
39							
40							
		Average			7.3		

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\191121\1121114.D
Acq On : 11-26-19 11:26:59
Sample : Diesel Motor Oil CCV 11/14/19
Misc : water
IntFile : events.e
Quant Time: Nov 26 13:10 2019 Quant Results File: DOC1114.RES

Vial: 14
Operator: BT
Inst : Apollo
Multiplr: 1.00

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Tue Nov 26 13:55:50 2019
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

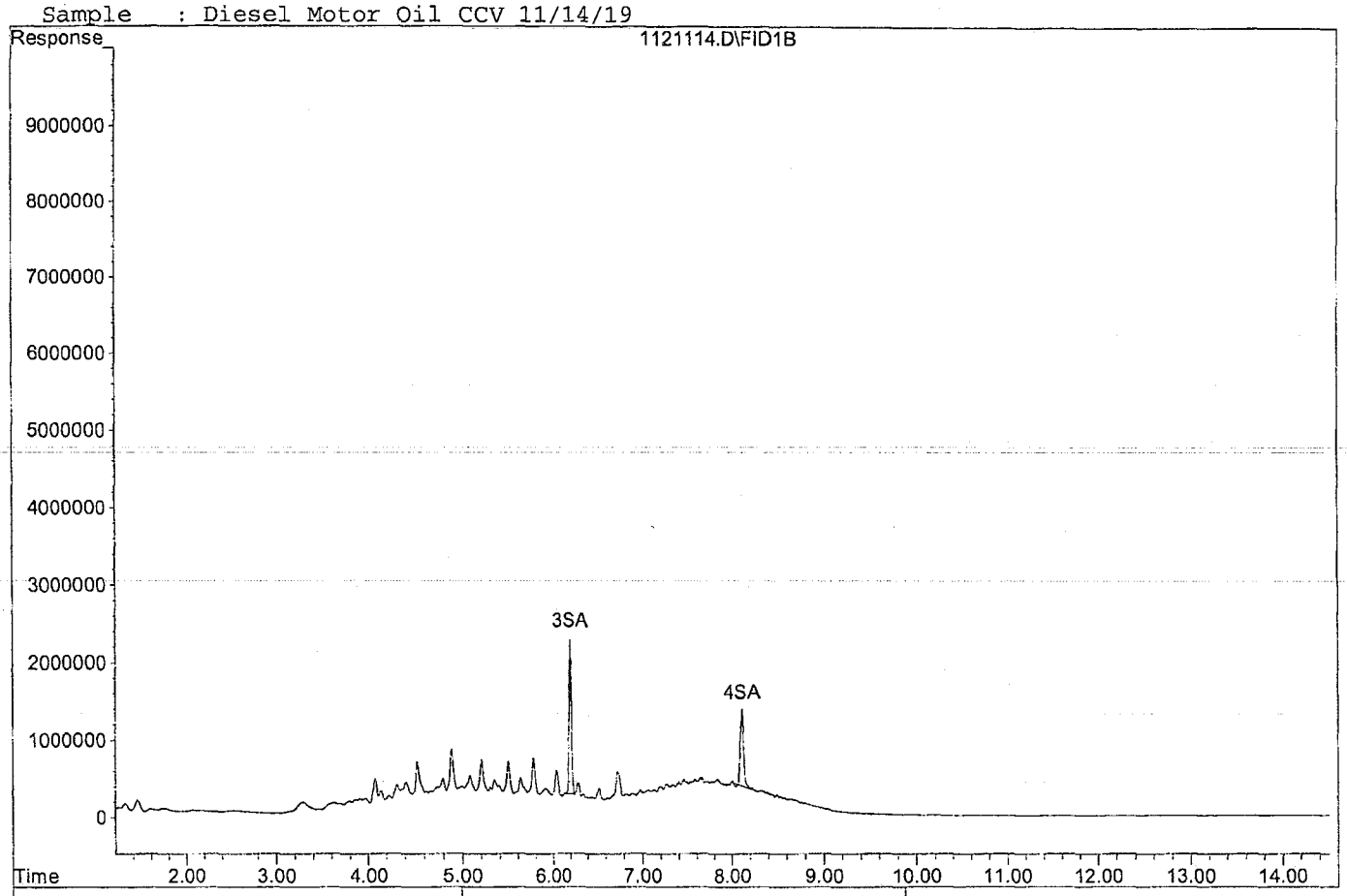
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	6.20	37979782	12.656 ppb
Surrogate Spike 30.000	Recovery =		42.19%
4) SA Octacosane(S)	8.11	24504887	10.818 ppb
Surrogate Spike 30.000	Recovery =		36.06%
Target Compounds			
1) HATM Diesel (C10-C24)	4.42	766918978	254.160 ppb
2) HBTM Motor Oil (C24-C40)	9.01	356667871	226.645 ppb

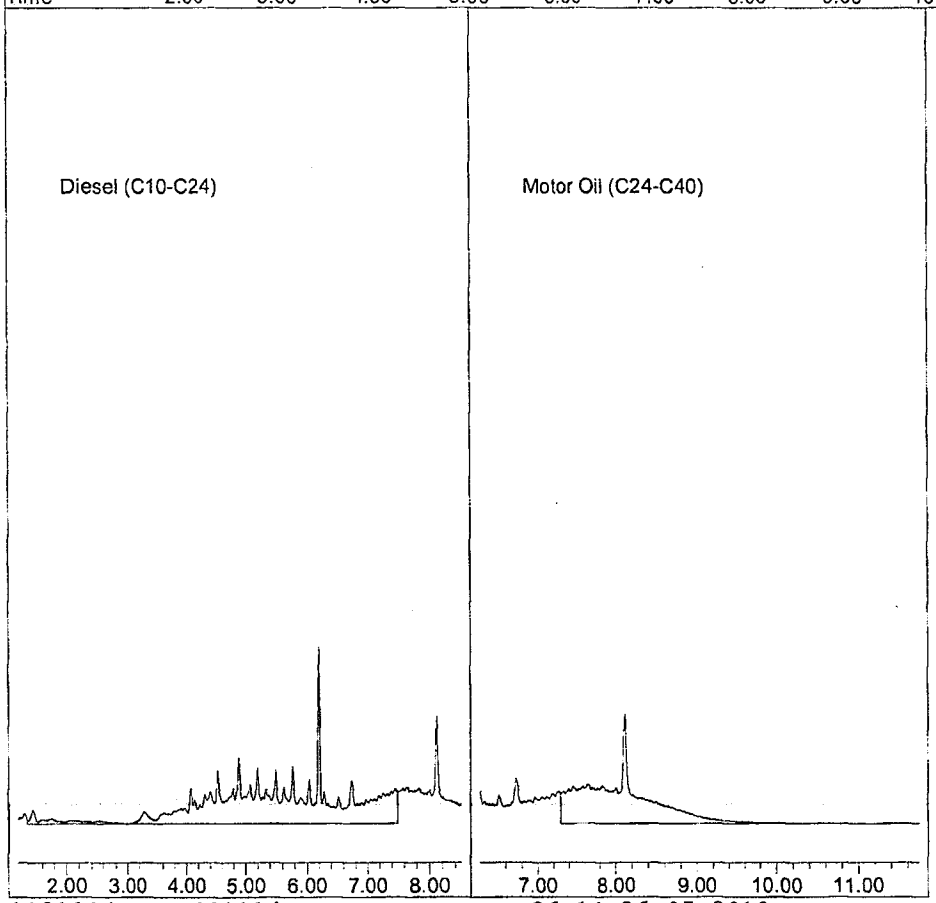
Target Compounds

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\191121\1121114.D
Sample : Diesel Motor Oil CCV 11/14/19





1121114.D DOC1114.M Tue Nov 26 14:26:05 2019 Page 2

TPH Extractables
DOC1114

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 11/26/19
Instrument: Apollo
Initial Cal. Date: 11/14/19
Data File: 1121122.D

		Compound	MEAN	CCRF	%D		%Drift
1	HATM	Diesel (C10-C24)	1508730	1537090	1.9	HATM	
2	HBTM	Motor Oil (C24-C40)	786843	737546	6.3	HBTM	
3	SAL	Ortho-Terphenyl(S)	1599120	1592180	0.43	SAL	6.6
4	SA	Octacosane(S)	1132640	967713	15	SA	
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
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33							
34							
35							
36							
37							
38							
39							
40							
		Average			5.9		

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\191121\1121122.D Vial: 22
Acq On : 11-26-19 14:04:32 Operator: BT
Sample : Diesel Motor Oil CCV 11/14/19 Inst : Apollo
Misc : water Multiplr: 1.00
IntFile : events.e
Quant Time: Nov 26 14:22 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Tue Nov 26 13:55:50 2019
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

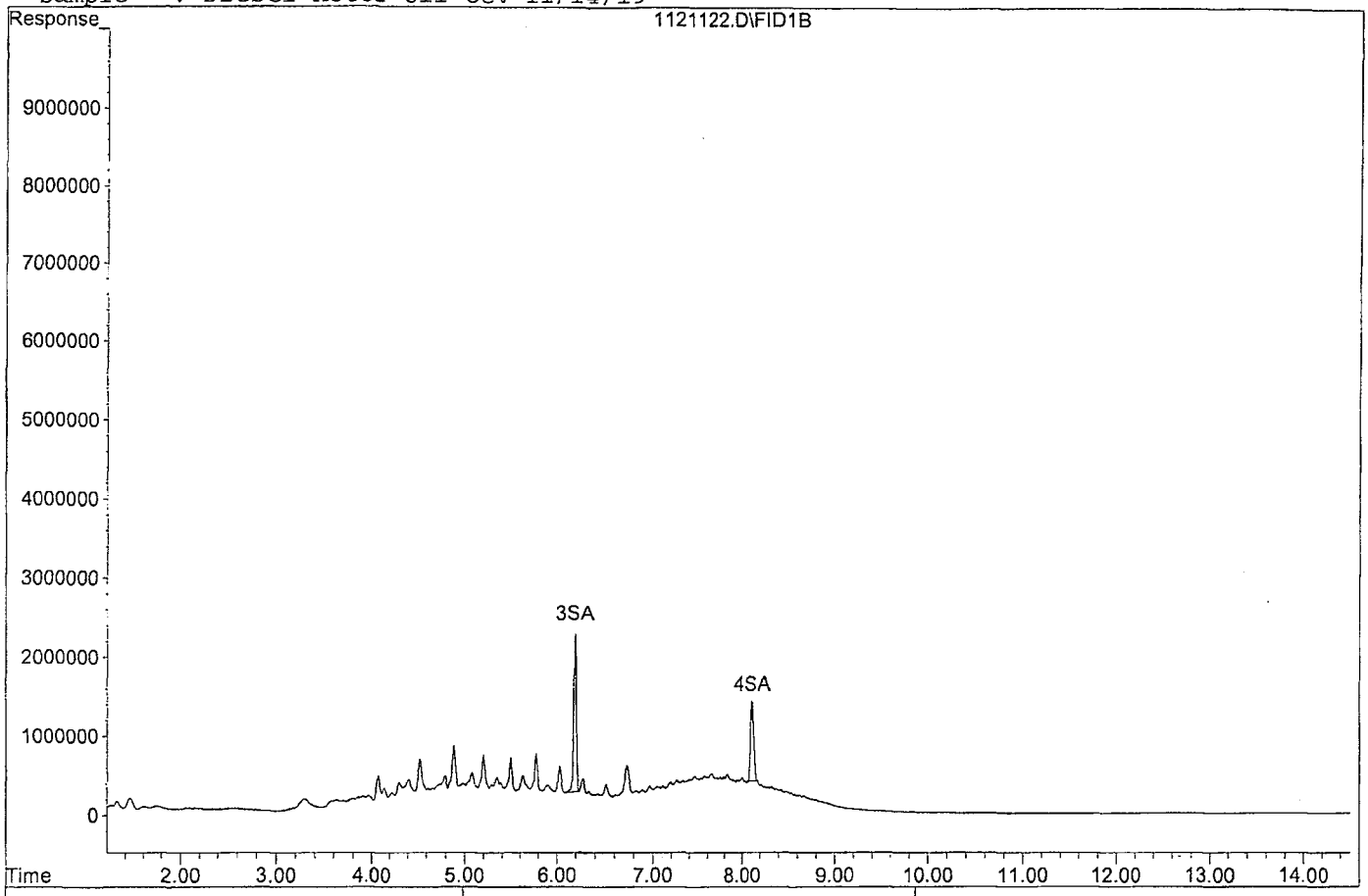
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	6.20	39804511	13.324 ppb
Surrogate Spike 37.500	Recovery =		35.53%
4) SA Octacosane(S)	8.11	24192824	10.680 ppb
Surrogate Spike 37.500	Recovery =		28.48%
Target Compounds			
1) HATM Diesel (C10-C24)	4.42	768544115	254.699 ppb
2) HBTM Motor Oil (C24-C40)	9.01	368773104	234.337 ppb

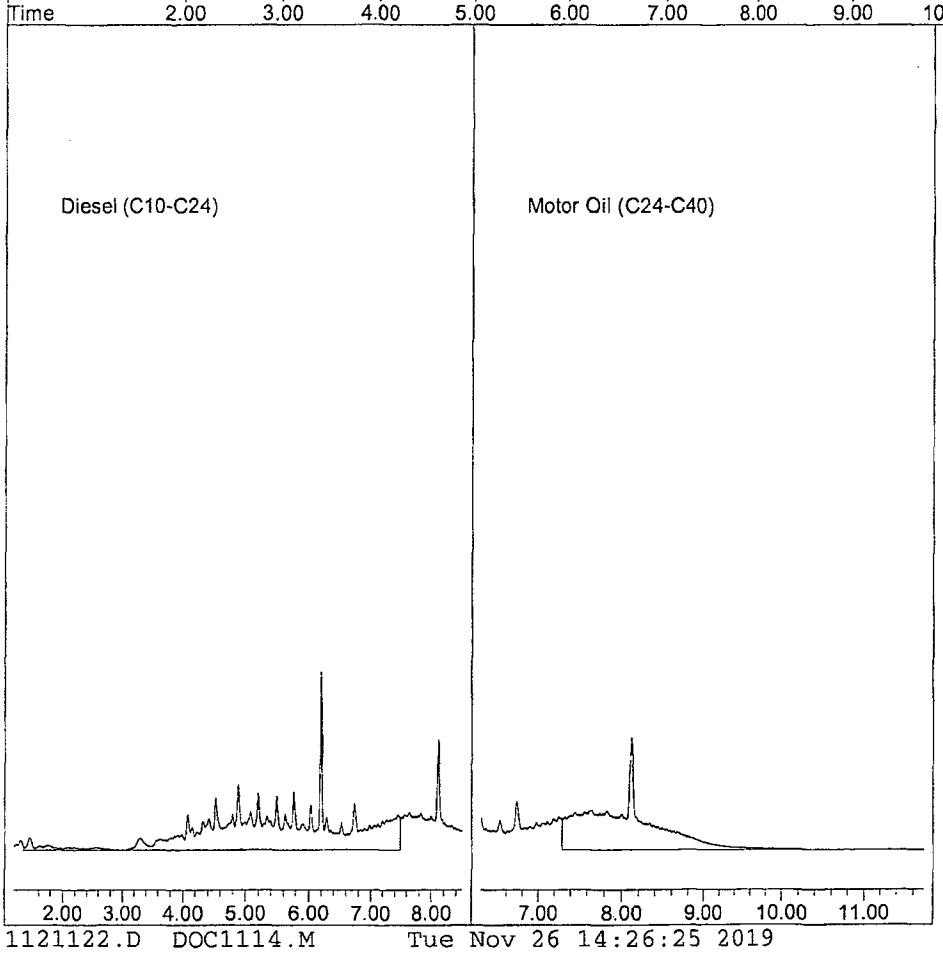
Target Compounds

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\191121\1121122.D
Sample : Diesel Motor Oil CCV 11/14/19





1121122.D DOC1114.M Tue Nov 26 14:26:25 2019 Page 2

ORGANICS
Raw Data

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\191121\1121118.D Vial: 18
Acq On : 11-26-19 12:45:32 Operator: BT
Sample : BA03545W01 2/890 Inst : Apollo
Misc : water Multiplr: 2.25
IntFile : events.e
Quant Time: Nov 26 13:56 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Tue Nov 26 13:55:50 2019
Response via : Multiple Level Calibration

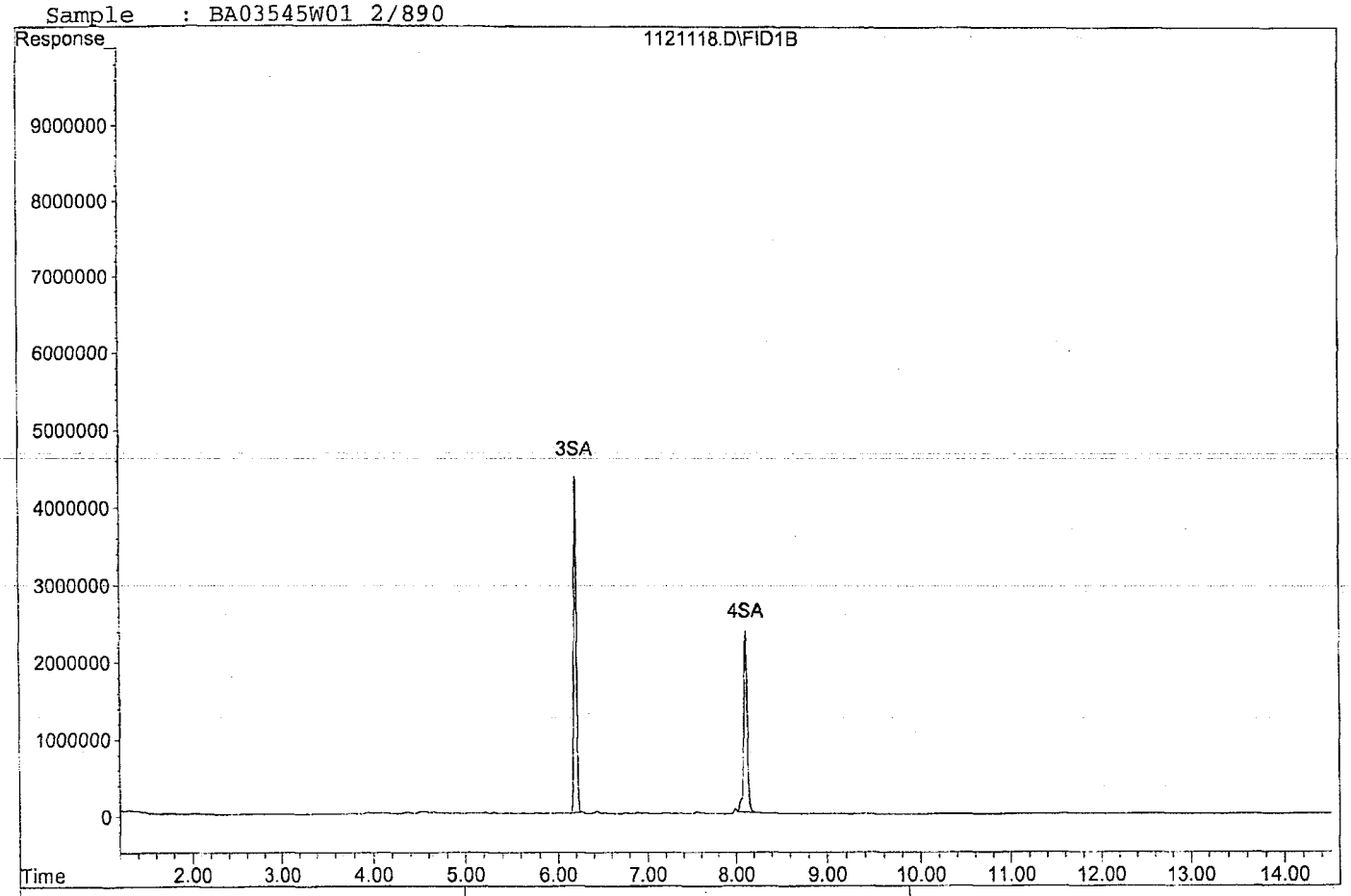
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

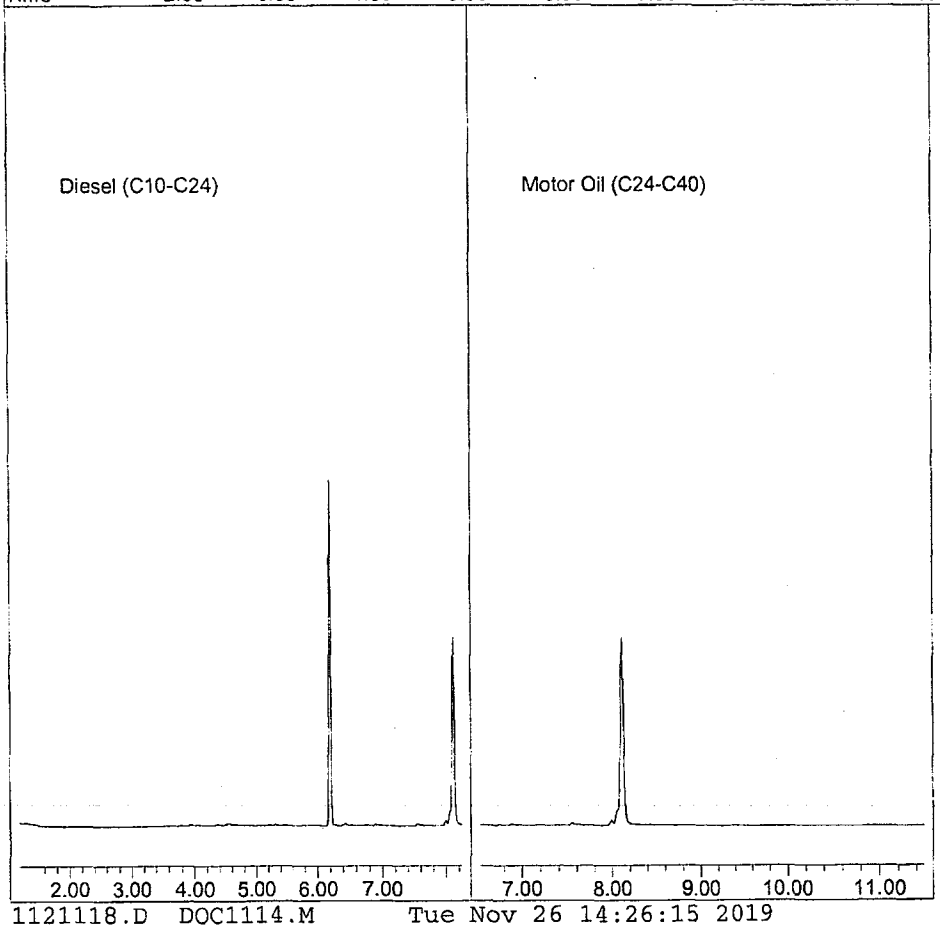
Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
3) SA Ortho-Terphenyl(S)	6.20	85262854	67.350	ppb
Surrogate Spike 84.270	Recovery =		79.92%	
4) SA Octacosane(S)	8.11	62696335	62.196	ppb
Surrogate Spike 84.270	Recovery =		73.81%	
Target Compounds				
Target Compounds				
1) HATM Diesel (C10-C24)	0.00	0	N.D.	ppb
2) HBTM Motor Oil (C24-C40)	0.00	0	N.D.	ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\191121\1121118.D
Sample : BA03545W01 2/890





1121118.D DOC1114.M Tue Nov 26 14:26:15 2019 Page 2

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\191121\1121121.D Vial: 21
Acq On : 11-26-19 13:44:47 Operator: BT
Sample : BA03546W01 2/890 Inst : Apollo
Misc : water Multiplr: 2.25
IntFile : events.e
Quant Time: Nov 26 14:12 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Tue Nov 26 13:55:50 2019
Response via : Multiple Level Calibration

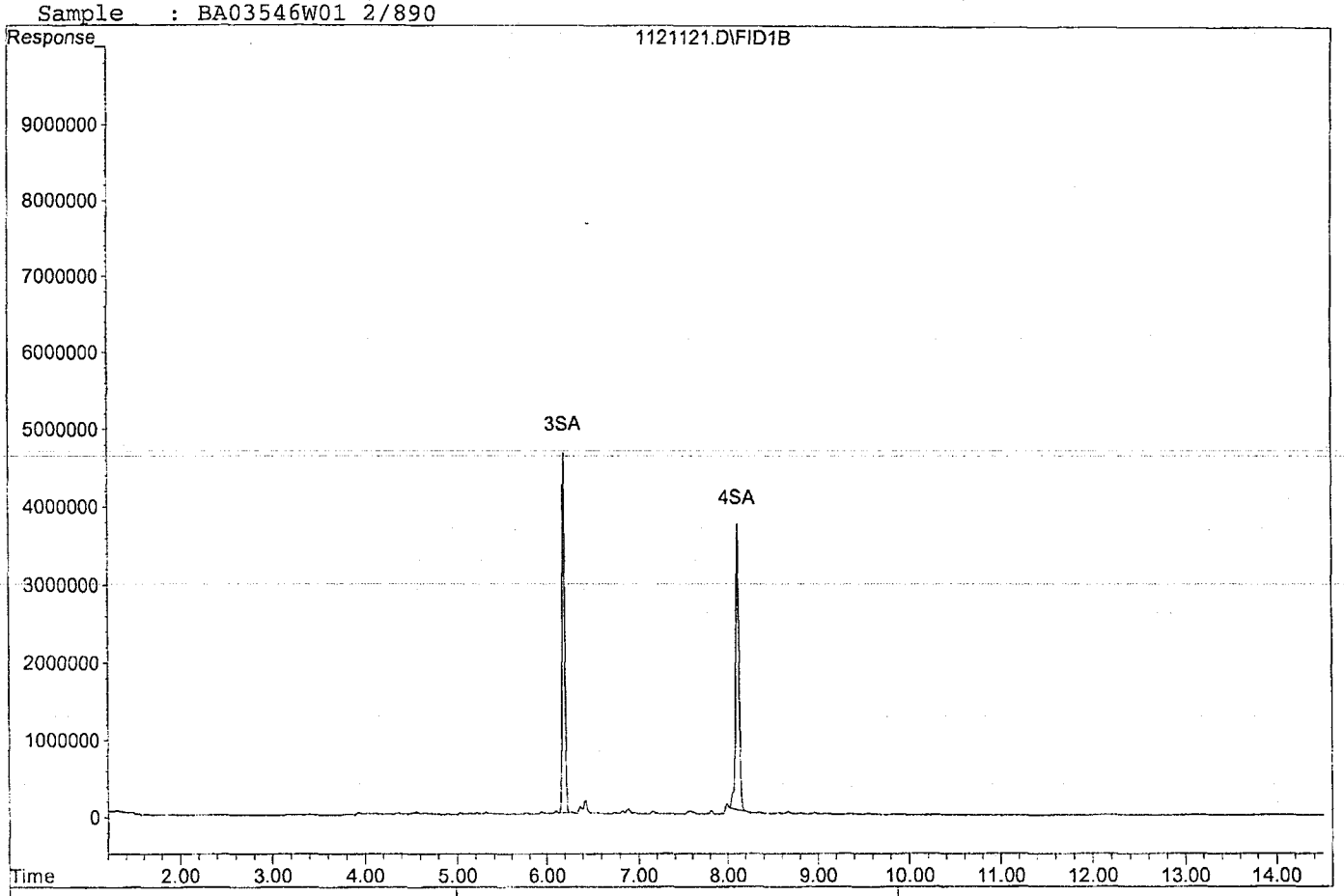
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

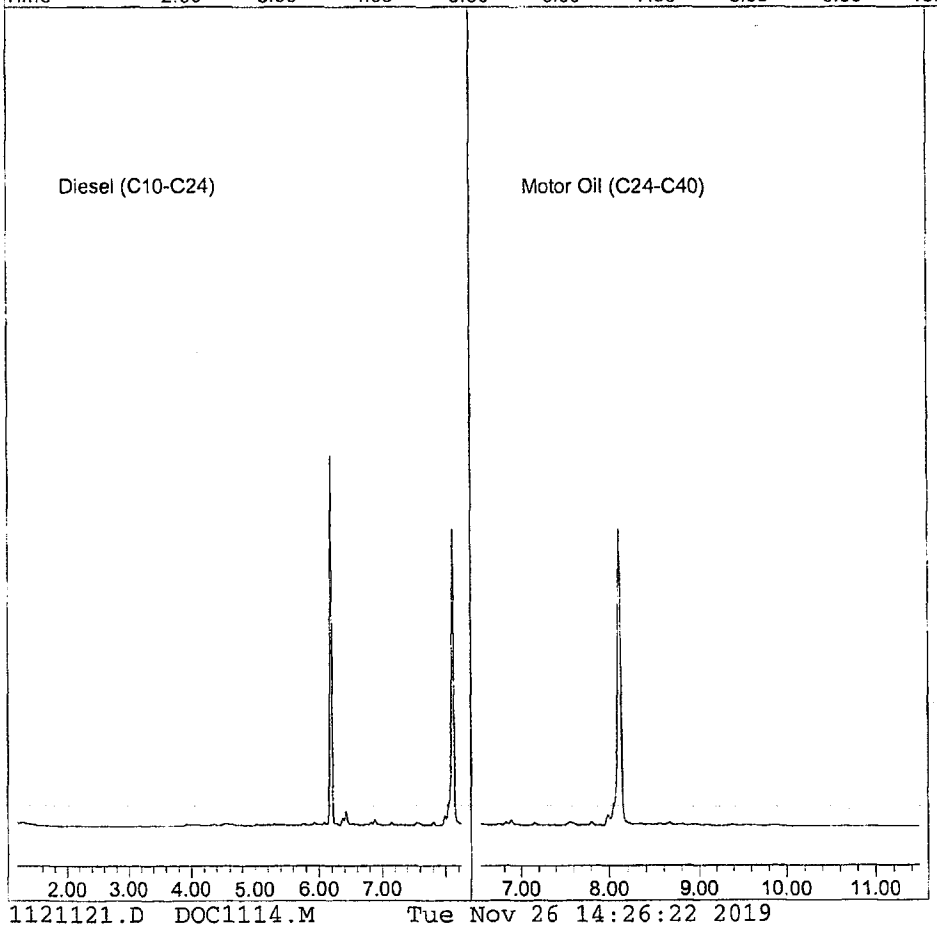
Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
3) SA Ortho-Terphenyl(S)	6.20	89381999	70.740	ppb
Surrogate Spike 84.270	Recovery	=	83.94%	
4) SA Octacosane(S)	8.12	93950658	93.200	ppb
Surrogate Spike 84.270	Recovery	=	110.60%	
Target Compounds				
Target Compounds				
1) HATM Diesel (C10-C24)	0.00	0	N.D.	ppb
2) HBTM Motor Oil (C24-C40)	0.00	0	N.D.	ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\191121\1121121.D
Sample : BA03546W01 2/890





1121121.D DOC1114.M Tue Nov 26 14:26:22 2019

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\191121\1121115.D Vial: 15
Acq On : 11-26-19 11:46:32 Operator: BT
Sample : 191125A BLK 2/1000 Inst : Apollo
Misc : water Multiplr: 2.00
IntFile : events.e
Quant Time: Nov 26 13:56 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Tue Nov 26 13:55:50 2019
Response via : Multiple Level Calibration

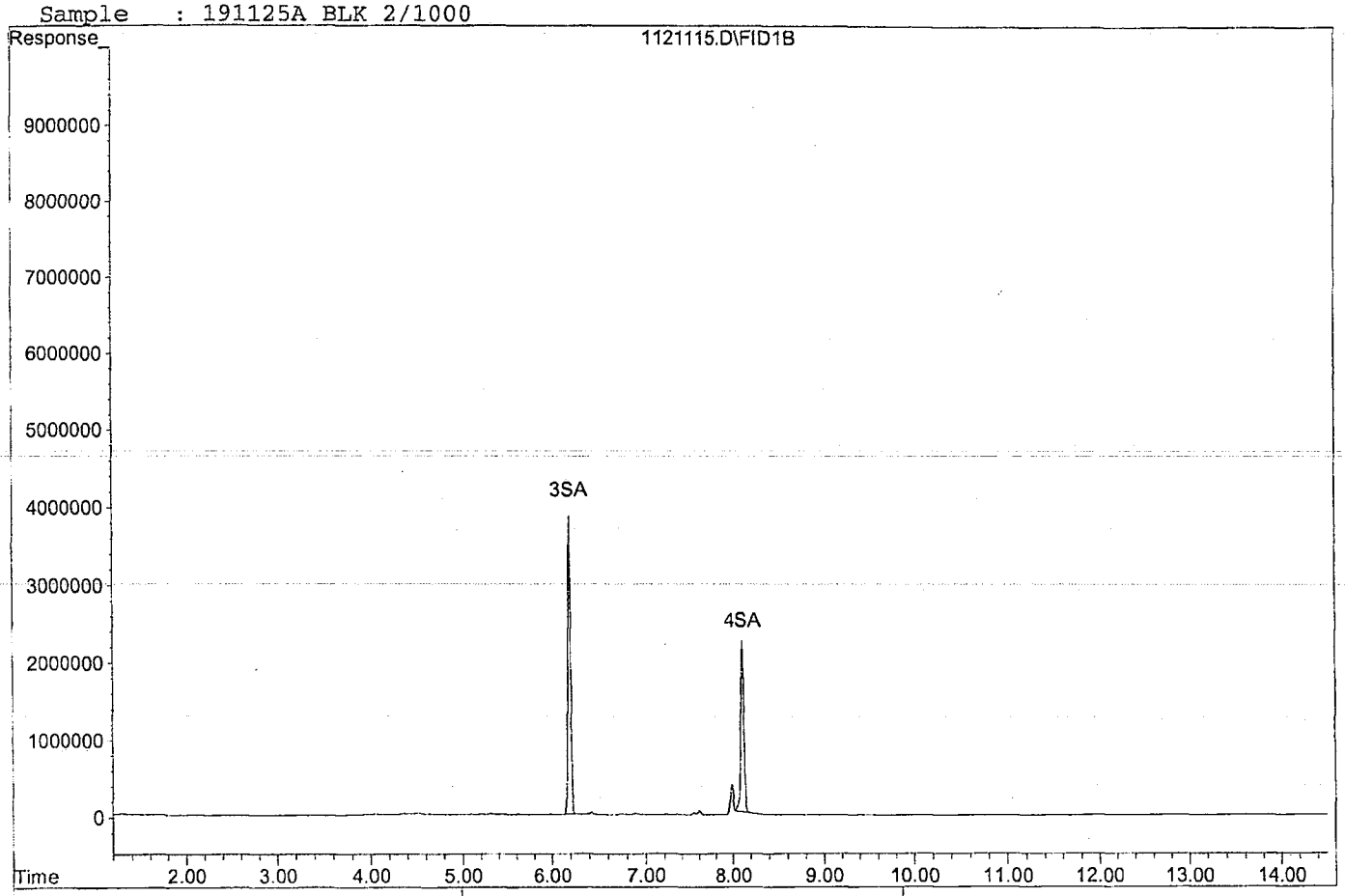
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

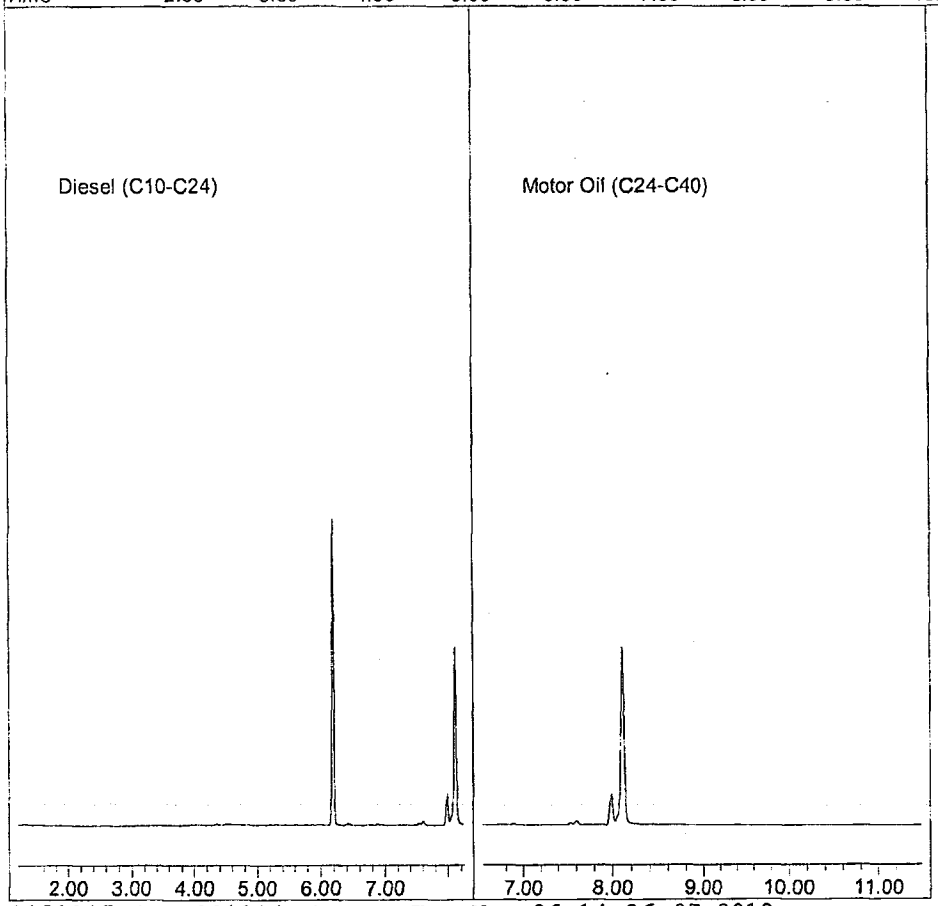
Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
3) SA Ortho-Terphenyl(S)	6.20	77313437	54.120	ppb
Surrogate Spike 75.000	Recovery =		72.16%	
4) SA Octacosane(S)	8.11	54698524	48.293	ppb
Surrogate Spike 75.000	Recovery =		64.39%	
Target Compounds				
Target Compounds				
1) HATM Diesel (C10-C24)	0.00	0	N.D.	ppb
2) HBTM Motor Oil (C24-C40)	0.00	0	N.D.	ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\191121\1121115.D
Sample : 191125A BLK 2/1000





1121115.D DOC1114.M Tue Nov 26 14:26:07 2019 Page 2

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\191121\1121116.D Vial: 16
Acq On : 11-26-19 12:06:08 Operator: BT
Sample : 191125A LCS-1 2/1000 Inst : Apollo
Misc : water Multiplr: 2.00
IntFile : events.e
Quant Time: Nov 26 13:56 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Tue Nov 26 13:55:50 2019
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

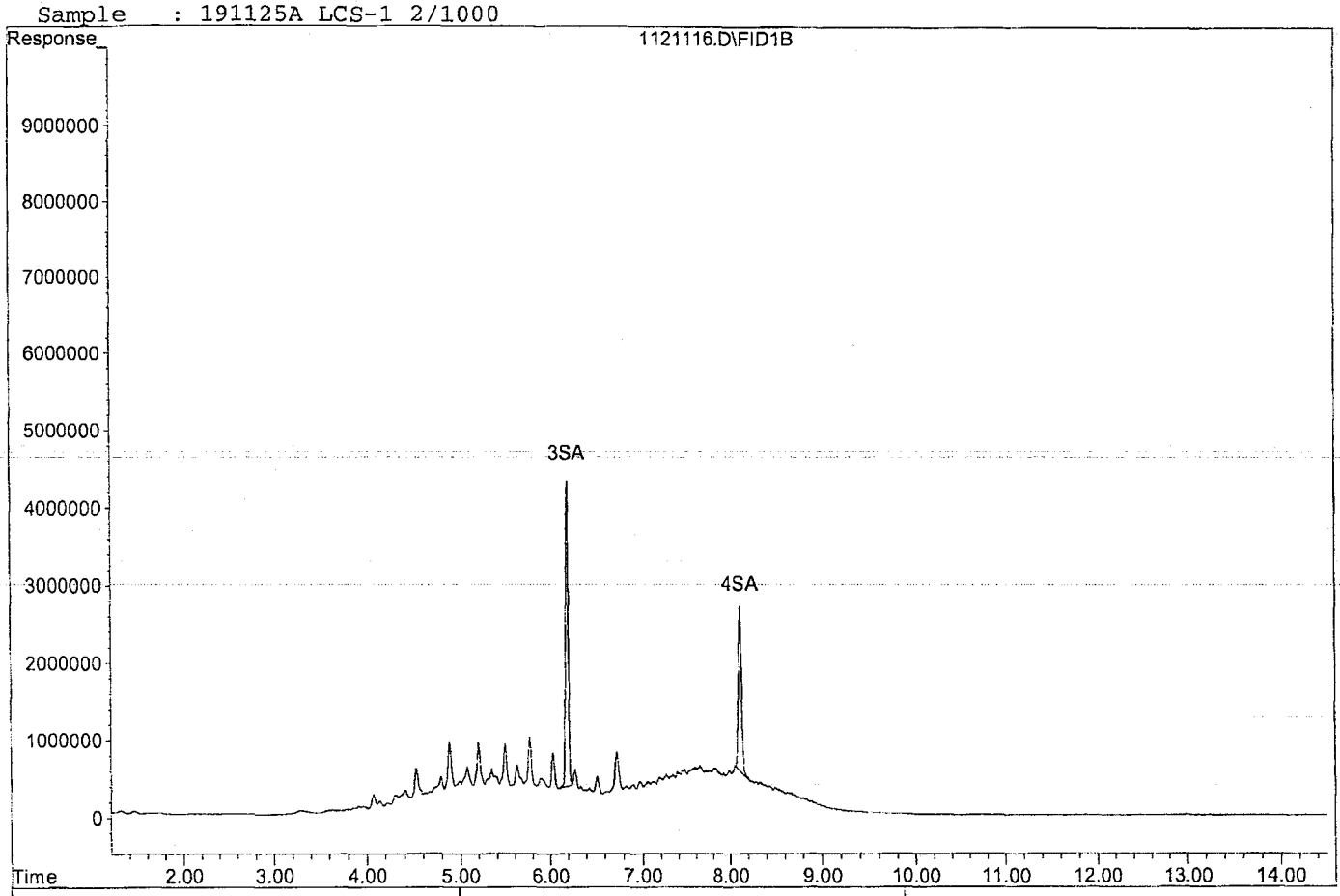
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	6.20	78400851	54.916 ppb
Surrogate Spike 75.000	Recovery =		73.22%
4) SA Octacosane(S)	8.11	51425973	45.404 ppb
Surrogate Spike 75.000	Recovery =		60.54%
Target Compounds			
1) HATM Diesel (C10-C24)	4.42	891065763	590.605 ppb
2) HBTM Motor Oil (C24-C40)	9.01	479559023	609.472 ppb

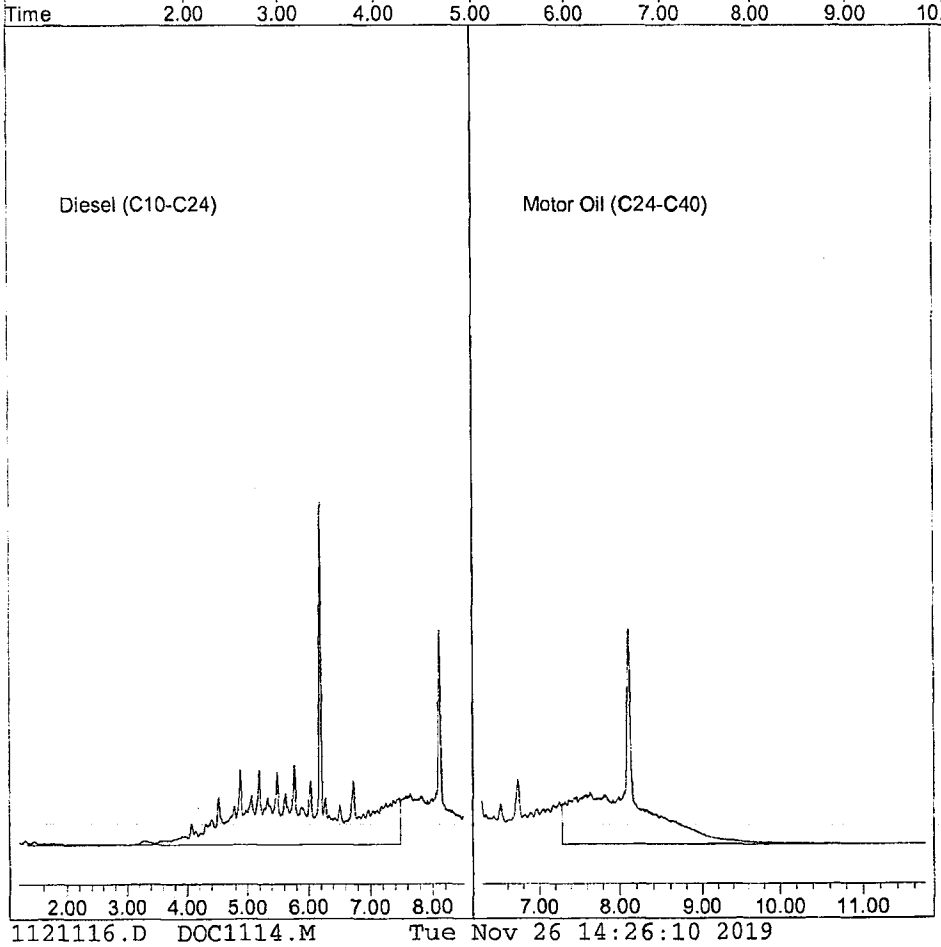
Target Compounds

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\191121\1121116.D
Sample : 191125A LCS-1 2/1000





1121116.D DOC1114.M Tue Nov 26 14:26:10 2019

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\191121\1121117.D Vial: 17
Acq On : 11-26-19 12:25:49 Operator: BT
Sample : 191125A LCSD-1 2/1000 Inst : Apollo
Misc : water Multiplr: 2.00
IntFile : events.e
Quant Time: Nov 26 13:56 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Tue Nov 26 13:55:50 2019
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

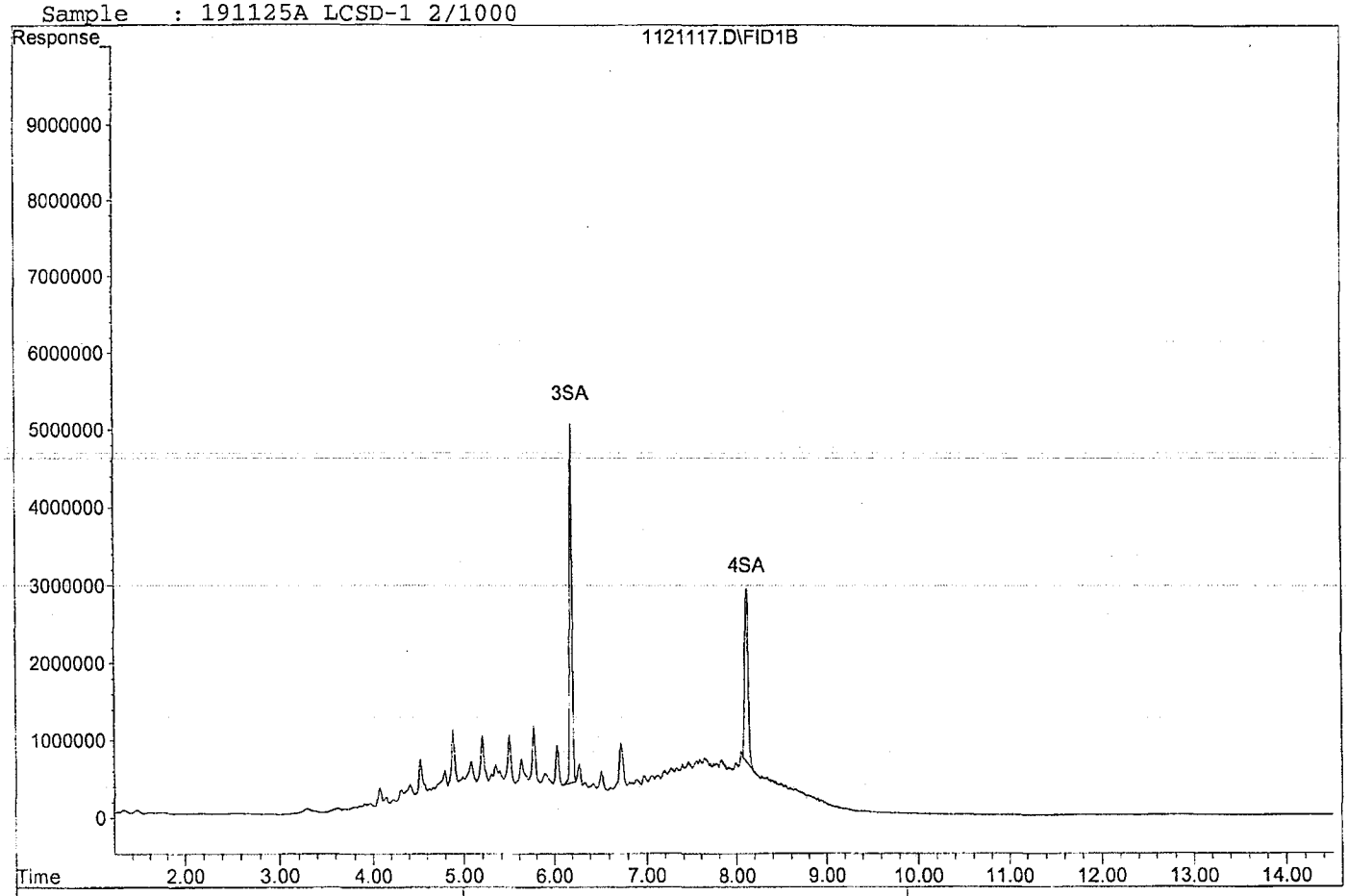
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	6.20	88585368	62.375 ppb
Surrogate Spike 75.000	Recovery =		83.17%
4) SA Octacosane(S)	8.12	55987897	49.431 ppb
Surrogate Spike 75.000	Recovery =		65.91%
Target Compounds			
1) HATM Diesel (C10-C24)	4.42	1021555961	677.095 ppb
2) HBTM Motor Oil (C24-C40)	9.01	554875639	705.192 ppb

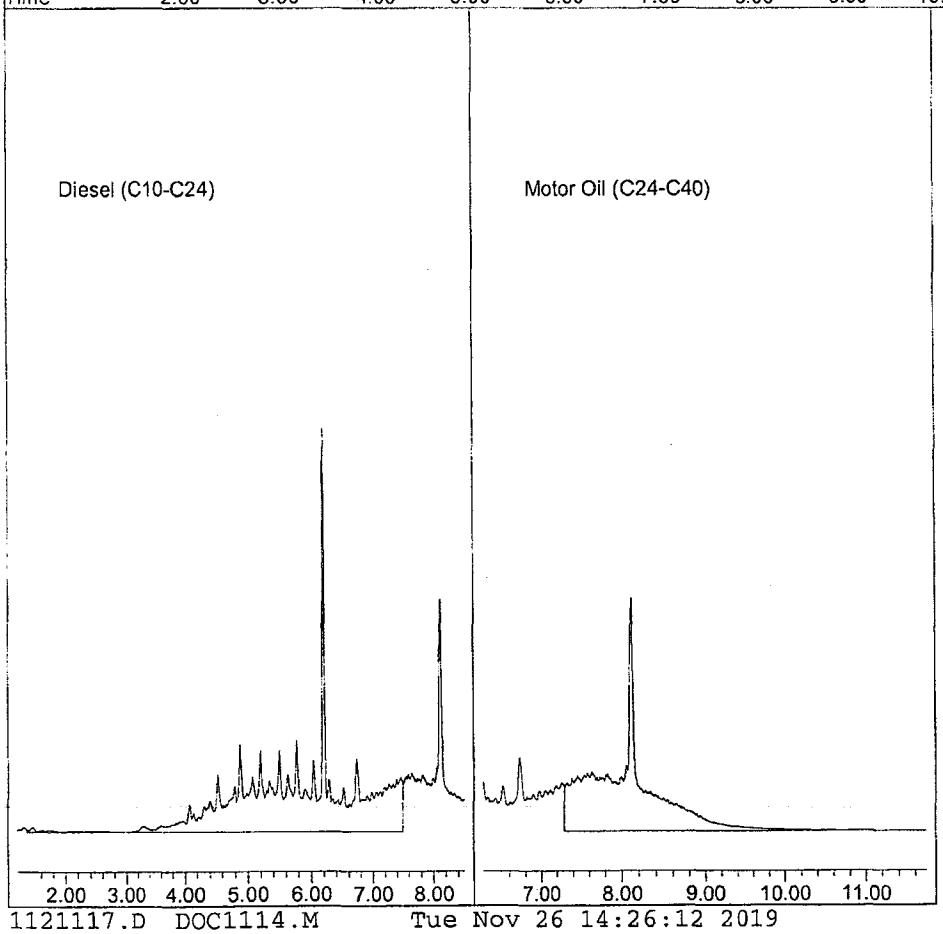
Target Compounds

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\191121\1121117.D
Sample : 191125A LCSD-1 2/1000





1121117.D DOC1114.M Tue Nov 26 14:26:12 2019 Page 2

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\191121\1121119.D Vial: 19
Acq On : 11-26-19 13:05:16 Operator: BT
Sample : BA03545W03 MS-1 2/820 Inst : Apollo
Misc : water Multiplr: 2.44
IntFile : events.e
Quant Time: Nov 26 13:56 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Tue Nov 26 13:55:50 2019
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

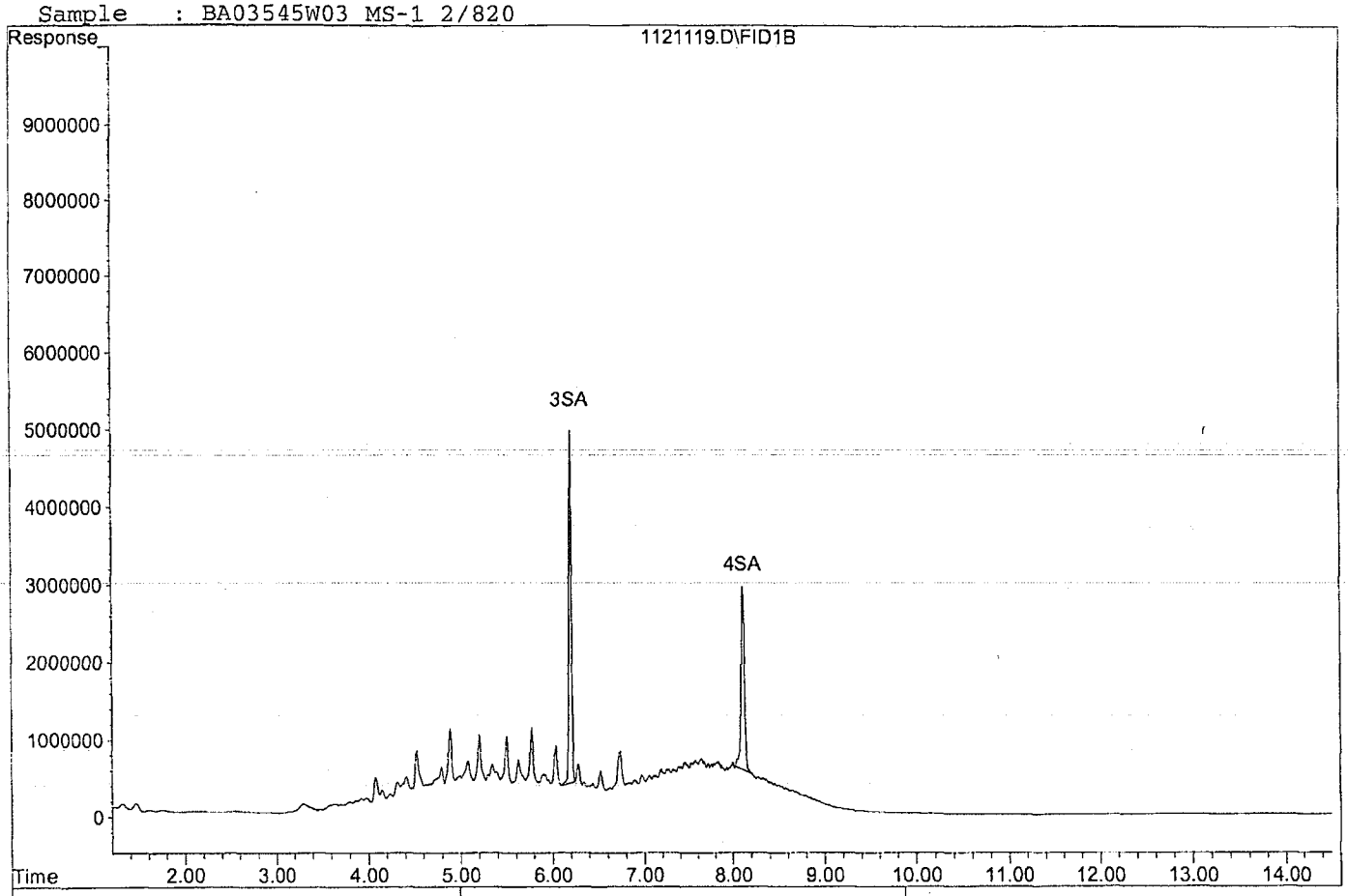
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	6.20	87646401	75.228 ppb
Surrogate Spike 91.463	Recovery =		82.25%
4) SA Octacosane(S)	8.11	61487801	66.204 ppb
Surrogate Spike 91.463	Recovery =		72.38%
Target Compounds			
1) HATM Diesel (C10-C24)	4.42	1053573262	851.604 ppb
2) HBTM Motor Oil (C24-C40)	9.01	527629076	817.760 ppb

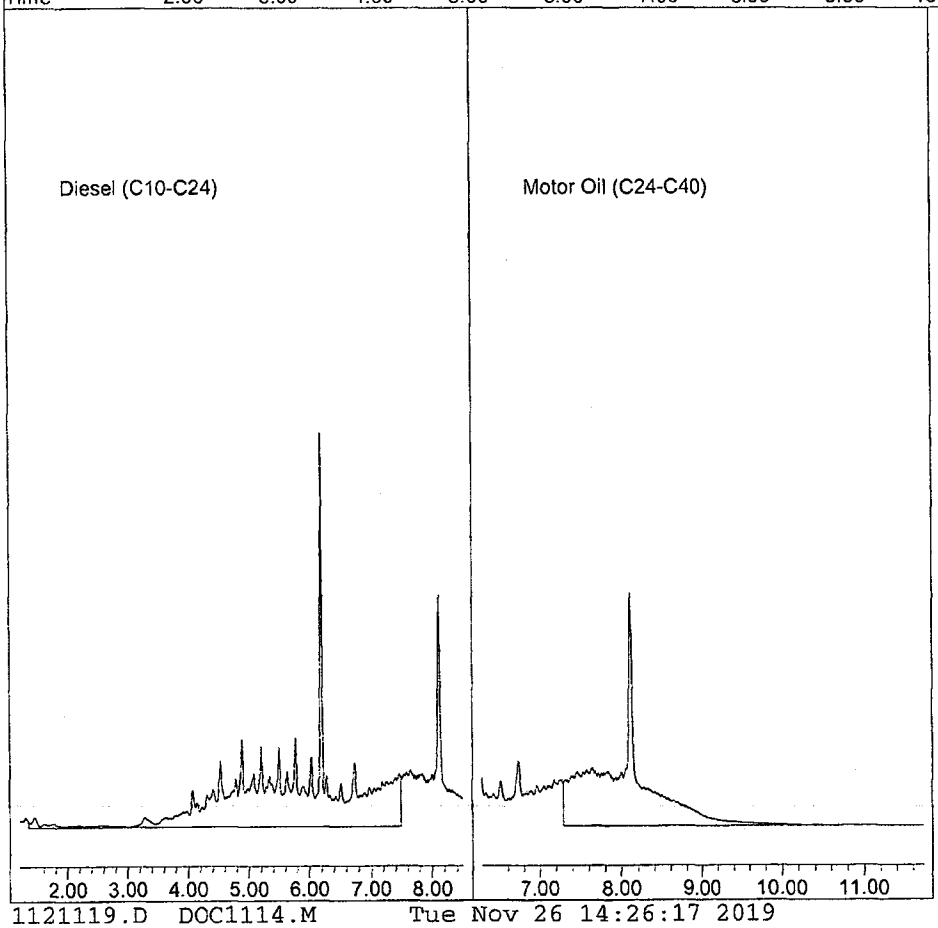
Target Compounds

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\191121\1121119.D
Sample : BA03545W03 MS-1 2/820





1121119.D DOC1114.M Tue Nov 26 14:26:17 2019 Page 2

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\191121\1121120.D Vial: 20
Acq On : 11-26-19 13:25:02 Operator: BT
Sample : BA03545W02 MSD-1 2/820 Inst : Apollo
Misc : water Multiplr: 2.44
IntFile : events.e
Quant Time: Nov 26 13:56 2019 Quant Results File: DOC1114.RES

Method : G:\APOLLO\DATA\191114\DOC1114.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Tue Nov 26 13:55:50 2019
Response via : Multiple Level Calibration

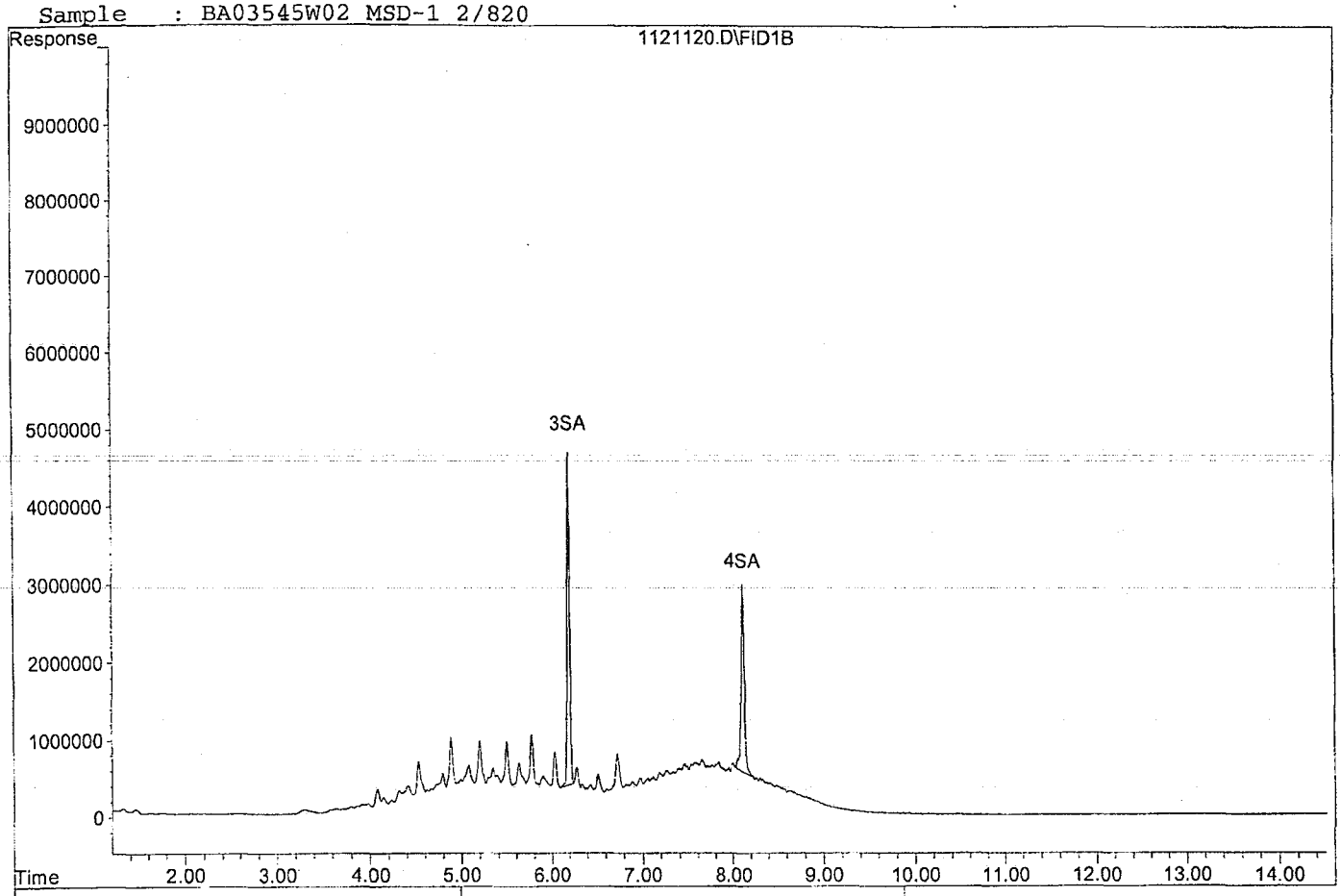
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

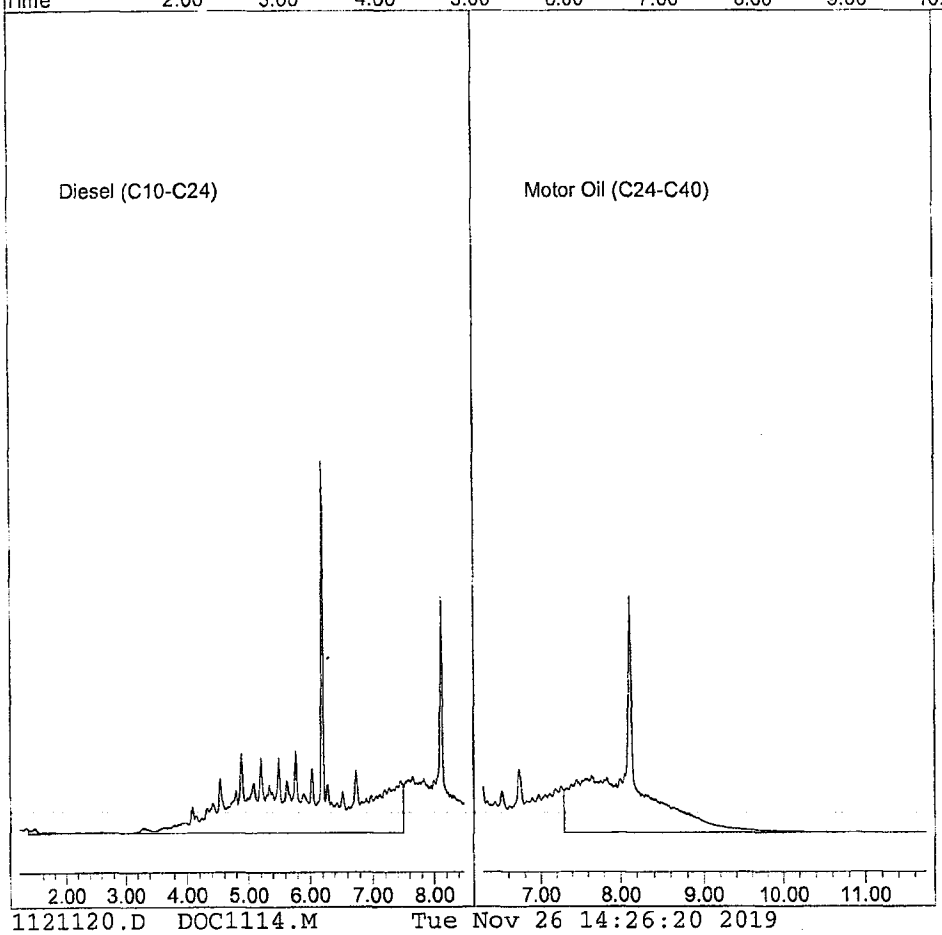
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	6.20	82512128	70.643 ppb
Surrogate Spike 91.463	Recovery =		77.24%
4) SA Octacosane(S)	8.12	61180006	65.872 ppb
Surrogate Spike 91.463	Recovery =		72.02%
Target Compounds			
1) HATM Diesel (C10-C24)	4.42	957237657	773.736 ppb
2) HBTM Motor Oil (C24-C40)	9.01	515717361	799.298 ppb
Target Compounds			

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\191121\1121120.D
Sample : BA03545W02 MSD-1 2/820





1121120.D DOC1114.M Tue Nov 26 14:26:20 2019 Page 2

Diesel / Motor Oil Calibration Curve

Prepared: 11/14/19

Expires: 05/13/20

Prepared By (Initials): BT

Methylene Chloride Lot No. 58059

Initial Standard Information							Final Standard Information			
Name of Initial Standard (QAU Label)	Supplier	APPL Mix Name	Conc. (ug/mL)	Reference to APPL Prep Date	Exp. Date	Exp. Date (Manufacturer)	Aliquot From Stock	Final Volume	Solvent	Final Standard Conc. (ug/mL)
Diesel / Motor Oil Calibration STD	APPL	Diesel / Motor Oil - 1	2,000	Prepared 11/14/19	09/11/20	N/A	5uL	1mL	MC	10
Diesel / Motor Oil Calibration STD	APPL	Diesel / Motor Oil -2	2,000	Prepared 11/14/19	09/11/20	N/A	25uL	1mL	MC	50
Diesel / Motor Oil Calibration STD	APPL	Diesel / Motor Oil - 3	2,000	Prepared 11/14/19	09/11/20	N/A	125uL	1mL	MC	250
Diesel / Motor Oil Calibration STD	APPL	Diesel / Motor Oil - 4	2,000	Prepared 11/14/19	09/11/20	N/A	500uL	1mL	MC	1000
Diesel / Motor Oil Calibration STD	APPL	Diesel / Motor Oil - 5	2,000	Prepared 11/14/19	09/11/20	N/A	750uL	1mL	MC	1500
Diesel / Motor Oil Calibration STD	APPL	Diesel / Motor Oil - 6	2,000	Prepared 11/14/19	09/11/20	N/A	100uL	100uL	N/A	2,000

Diesel / Motor Oil Calibration Standard

Prepared: 11/14/19

Expires: 09/11/20

Prepared By (Initials): BT

Methylene Chloride Lot No. 58059

Initial Standard Information							Final Standard Information			
Name of Initial Standard (QAU Label)	Supplier	Supplier Part No.	Conc. (ug/mL)	Lot Number - QA Number	Exp. Date (1 yr.)	Exp. Date (Manufacturer)	Aliquot From Stock	Final Volume	Solvent	Final Standard Conc. (ug/mL)
Diesel Fuel #2	Restek	31258	50,000	A0149066-41325	09/24/20	06/03/26	400uL	10mL	MC	2000
Motor Oil	Restek	31464	50,000	A0147736-41330	09/11/20	05/31/26	400uL			2000
THC Surrogate	Phenova	ALO-130161	600	CL13256-49449	11/13/20	11/28/24	1666uL			100

Motor Oil Spike

Prepared: 11/13/19

Expires: 11/13/20

Prepared By (Initials): BT

Initial Standard Information							Final Standard Information			
Name of Initial Standard (QAU Label)	Supplier	Supplier Part No.	Conc. (ug/mL)	Lot Number - QA Number	Exp. Date (1 yr.)	Exp. Date (Manufacturer)	Aliquot From Stock	Final Volume	Solvent	Final Standard Conc. (ug/mL)
Motor Oil Composite	Restek	31464	50,000	**A0147736-41327**	**11/13/20**	**05/31/26**	N/A	N/A	N/A	50,000

Diesel Spike

Prepared: 11/14/19

Expires: 11/14/20

Prepared By (Initials): BT

Initial Standard Information							Final Standard Information			
Name of Initial Standard (QAU Label)	Supplier	Supplier Part No.	Conc. (ug/mL)	Lot Number - QA Number	Exp. Date (1 yr.)	Exp. Date (Manufacturer)	From Stock	Final Volume	Solvent	Final Standard Conc. (ug/mL)
Diesel Fuel #2	Restek	31258	50,000	**A0149066-41317**	**11/14/20**	**06/03/26**	N/A	N/A	N/A	50,000

THC Surrogate

Prepared: 11/12/19

Expires: 11/12/20

Prepared By (Initials): BT

Initial Standard Information							Final Standard Information			
Name of Initial Standard (QAU Label)	Supplier	Supplier Part No.	Conc. (ug/mL)	Lot Number - QA Number	Exp. Date (1 yr.)	Exp. Date (Manufacturer)	Aliquot From Stock	Final Volume	Solvent	Final Standard Conc. (ug/mL)
O-terphenyl / Octacosane Mix	Phenova	ALO-130161	600	CL13256-49447	11/12/20	02/31/2024	N/A	N/A	N/A	600

_SEP011LL

Organic Extraction Worksheet

Method	THC Sep Fun Ext 3510C (LOW LEVEL)	Extraction Set	191125A	Extraction Method	SEP011LL	Units	mL

Spiked ID 1	Diesel Spike		Surrogate ID 1	THC Surrogate	
Spiked ID 2	Motor Oil Spike		Surrogate ID 2		
Spiked ID 3	Decanoic Acid @ 0.050		Surrogate ID 3		
Spiked ID 4			Surrogate ID 4		
Spiked ID 5			Surrogate ID 5		
Spiked ID 6			Sufficient Vol for Matrix QC:		
Spiked ID 7			Ext. Start Time:	11/25/19 15:15	
Spiked ID 8			Ext. End Time:	11/25/19 19:00	
			GC Requires Extract By:		

pH1			Water Bath Temp 1 °C	
pH2			Water Bath Temp 2 °C	
pH3			Water Bath Temp 3 °C	

Spiked By: SS **Date** 11/25/19 **Witnessed By:** KS **Date** 11/25/19

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
1	191125A Blk				0.125	1	1000	2	2Y	11/25/19 15:15	
						equip	DV-1				
2	191125A LCS-1		0.020	1,2	0.125	1	1000	2	2Y	11/25/19 15:15	
						equip	DV-2				
3	191125A LCSD-1		0.020	1,2	0.125	1	1000	2	2Y	11/25/19 15:15	
						equip	DV-3				
4	BA03545 MS-1	BA03545W03	0.020	1,2	0.125	1	820	2	2Y	11/25/19 15:15	
						equip	DV-5				
5	BA03545 MSD-1	BA03545W02	0.020	1,2	0.125	1	820	2	2Y	11/25/19 15:15	
						equip	DV-6				
6	BA03545	BA03545W01			0.125	1	890	2	2Y	11/25/19 15:15	90862
						equip	DV-4				
7	BA03546	BA03546W01			0.125	1	890	2	2Y	11/25/19 15:15	90862
						equip	DV-7				

Solvent and Lot#	
ph-indicator strips	hc863463
DCM	59130
B. Na2SO4	2019020631
Filter Paper	400171
Silica Gel (*)	11-4-19

Extraction COC Transfer	
Extraction lab employee Initials	KY
GC analyst's initials	SS
Date	
Time	
Refrigerator	HOBART

	Technician's Initials
Scanned By	SS
Sample Preparation	ERR
Extraction	ERR
Concentration	SS,ERR

Modified	11/30/19 4:53:31 AM

Reviewed By: **Date**

Injection Log

Directory: G:\APOLLO\DATA\191114\

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	3	1114003.D	1	Diesel Motor Oil - 1 11/14/19	water	11-14-19 19:39:49
2	4	1114004.D	1	Diesel Motor Oil - 2 11/14/19	water	11-14-19 19:59:46
3	5	1114005.D	1	Diesel Motor Oil - 3 11/14/19	water	11-14-19 20:19:39
4	6	1114006.D	1	Diesel Motor Oil - 4 11/14/19	water	11-14-19 20:39:34
5	7	1114007.D	1	Diesel Motor Oil - 5 11/14/19	water	11-14-19 20:59:26
6	8	1114008.D	1	Diesel Motor Oil - 6 11/14/19	water	11-14-19 21:19:19
7	9	1114009.D	1	Diesel Motor Oil Second Source 1/15/19	water	11-14-19 21:39:10
8	14	1121114.D	1	Diesel Motor Oil CCV 11/14/19	water	11-26-19 11:26:59
9	15	1121115.D	2	191125A BLK 2/1000	water	11-26-19 11:46:32
10	16	1121116.D	2	191125A LCS-1 2/1000	water	11-26-19 12:06:08
11	17	1121117.D	2	191125A LCSD-1 2/1000	water	11-26-19 12:25:49
12	18	1121118.D	2.24719	BA03545W01 2/890	water	11-26-19 12:45:32
13	19	1121119.D	2.43902	BA03545W03 MS-1 2/820	water	11-26-19 13:05:16
14	20	1121120.D	2.43902	BA03545W02 MSD-1 2/820	water	11-26-19 13:25:02
15	21	1121121.D	2.24719	BA03546W01 2/890	water	11-26-19 13:44:47
16	22	1121122.D	1	Diesel Motor Oil CCV 11/14/19	water	11-26-19 14:04:32