

# Energy Laboratories Inc

# ANALYTICAL RUN Summary

03-Nov-21

Run ID GCFID-HP5-B\_211102A

<b>Run Start Date:</b> 11/2/2021
<b>Analyst:</b> Ann Nebel
<b>Ical:</b>
<b>Column ID:</b>
<b>Comments:</b> ICAL for 8015C_DRO211002IA

Std ID	Std Name	Std Amount	Std Units	Samp Amount	Samp Units	SampType	Expiration Date
DRO211012A	Diesel Fuel #2 50,000 ug/mL in DCM					CAL-DIESE	4/30/2023
DRO211012B	#2 Diesel in Acetone 150,000 ug/mL					SECOND S	11/5/2023
DRO211025A	ALI CCV Mix-200ug/mL					MARKER	5/31/2022
DRO211101A	OTP-4000 ug/mL DCM					CAL-SURR	9/30/2024

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist						
14822192	CCV_1102HP50	HC-8015-DRO-	CCV		11/2/2021 8:31:3	1	R369667		0	0							
<b>Analyte</b>		<b>T</b>	<b>Units</b>	<b>RAW</b>	<b>Final</b>	<b>Text</b>	<b>Spike</b>	<b>SPKref</b>	<b>RPDref</b>	<b>MDL</b>	<b>PQL</b>	<b>UQL</b>	<b>%REC</b>	<b>LOW</b>	<b>HIGH</b>	<b>%RPD</b>	<b>Q</b>
Total Extractable Hydrocarbons		A	mg/L		3.665751		15	0	0	0.0749	0.3	50	24%	80	120	0%	S
o-Terphenyl		S	mg/L		0.2015393		0.2	0	0	0.000429	0.002	0	101%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist						
14822193	CCV_1102HP50	HC-8015-DRO-	CAL1		11/2/2021 9:57:0	1	R369667		0	0							
<b>Analyte</b>		<b>T</b>	<b>Units</b>	<b>RAW</b>	<b>Final</b>	<b>Text</b>	<b>Spike</b>	<b>SPKref</b>	<b>RPDref</b>	<b>MDL</b>	<b>PQL</b>	<b>UQL</b>	<b>%REC</b>	<b>LOW</b>	<b>HIGH</b>	<b>%RPD</b>	<b>Q</b>
o-Terphenyl		S	mg/L		0.00195342		0.002	0	0	0.000429	0.002	0	98%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist						
14822194	CCV_1102HP50	HC-8015-DRO-	CAL2		11/2/2021 10:39:	1	R369667		0	0							
<b>Analyte</b>		<b>T</b>	<b>Units</b>	<b>RAW</b>	<b>Final</b>	<b>Text</b>	<b>Spike</b>	<b>SPKref</b>	<b>RPDref</b>	<b>MDL</b>	<b>PQL</b>	<b>UQL</b>	<b>%REC</b>	<b>LOW</b>	<b>HIGH</b>	<b>%RPD</b>	<b>Q</b>
o-Terphenyl		S	mg/L		0.04992196		0.05	0	0	0.000429	0.002	0	100%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14822195	CCV_1102HP50	HC-8015-DRO-	CAL3		11/2/2021 11:22:	1	R369667		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
o-Terphenyl	S	mg/L		0.1939565		0.2	0	0	0.000429	0.002	0	97%	80	120	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14822196	CCV_1102HP50	HC-8015-DRO-	CAL4		11/2/2021 12:05:	1	R369667		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
o-Terphenyl	S	mg/L		0.5113316		0.5	0	0	0.000429	0.002	0	102%	80	120	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14822197	CCV_1102HP50	HC-8015-DRO-	CAL5		11/2/2021 12:49:	1	R369667		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
o-Terphenyl	S	mg/L		1.032406		1	0	0	0.000429	0.002	0	103%	80	120	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14822198	CCV_1102HP51	HC-8015-DRO-	CAL1		11/2/2021 1:32:0	1	R369667		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Total Extractable Hydrocarbons	A	mg/L		0.1551854		0.15	0	0	0.0749	0.3	50	103%	80	120	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14822199	CCV_1102HP51	HC-8015-DRO-	CAL2		11/2/2021 2:15:0	1	R369667		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Total Extractable Hydrocarbons	A	mg/L		3.698073		3.75	0	0	0.0749	0.3	50	99%	80	120	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14822200	CCV_1102HP51	HC-8015-DRO-	CAL3		11/2/2021 2:58:2	1	R369667		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Total Extractable Hydrocarbons	A	mg/L		15.26249		15	0	0	0.0749	0.3	50	102%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14822201	CCV_1102HP51	HC-8015-DRO-	CAL4		11/2/2021 3:41:3	1	R369667		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Total Extractable Hydrocarbons	A	mg/L		36.59341		37.5	0	0	0.0749	0.3	50	98%	80	120	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14822202	CCV_1102HP51	HC-8015-DRO-	CAL5		11/2/2021 4:24:5	1	R369667		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Total Extractable Hydrocarbons	A	mg/L		49.2977		50	0	0	0.0749	0.3	50	99%	80	120	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14822203	CCV_1102HP51	HC-8015-DRO-	ICV		11/2/2021 5:51:3	1	R369667		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Total Extractable Hydrocarbons	A	mg/L		14.98994		15	0	0	0.0749	0.3	50	100%	80	120	0%	

Write Sequence	Data File	Sample Name	Method	Weight	Dil Factor	Amt Inj.	IS	Cal ID
		CCV_1102HP508r, DRO ;1102HP5 , DRO211025A	G:\Org\HP5\Methods\DC_8015-IA-L%.met	1	1	1	1	0
		DCM-Baseline Check-V04	G:\Org\HP5\Methods\DR_8015-HP-LEXP.met	1	1	1	1	0
		CCV_1102HP505r, CAL1 ;1102HP5 , 2 ug per mL OTP (10 uL of Cal3 + 990 uL DCM(14408)	G:\Org\HP5\Methods\DS_8015-IA-L#.met	1	1	1	1	0
		CCV_1102HP506r, CAL2 ;1102HP5 , 50 ug per mL OTP (100 uL Cal4 + 900 uL of DCM(14408)	G:\Org\HP5\Methods\DS_8015-IA-L#.met	1	1	1	1	0
		CCV_1102HP507r, CAL3 ;1102HP5 , 200 ug per mL OTP (100uL of Cal5 + 400 uL DCM(14408)	G:\Org\HP5\Methods\DS_8015-IA-L#.met	1	1	1	1	0
		CCV_1102HP508r, CAL4 ;1102HP5 , 500 ug per mL OTP (250uL of Cal5 + 250 uL DCM(14408)	G:\Org\HP5\Methods\DS_8015-IA-L#.met	1	1	1	1	0
		CCV_1102HP509r, CAL5 ;1102HP5 , 1000 ug per mL OTP (250 uL 4000 ug/mL OTP DRO21101A + 750 DCM(14408)	G:\Org\HP5\Methods\DS_8015-IA-L#.met	1	1	1	1	0
		CCV_1102HP510r, CAL1 ;1102HP5 , 150 ug per mL Diesel (10 uL of Cal3 + 990 uL DCM(14408),	G:\Org\HP5\Methods\DC_8015-IA-L%.met	1	1	1	1	0
		CCV_1102HP511r, CAL2 ;1102HP5 , 3750 ug per mL Diesel (100 uL Cal4 + 900 uL of DCM(14408)	G:\Org\HP5\Methods\DC_8015-IA-L%.met	1	1	1	1	0
		CCV_1102HP512r, CAL3 ;1102HP5 , 15000 ug per mL Diesel (300 uL of DRO211012A + 700 uL DCM(14408)	G:\Org\HP5\Methods\DC_8015-IA-L%.met	1	1	1	1	0
		CCV_1102HP513r, CAL4 ;1102HP5 , 37500ug per mL Diesel (750 uL of DRO211012A + 250 uL DCM(14408)	G:\Org\HP5\Methods\DC_8015-IA-L%.met	1	1	1	1	0
		CCV_1102HP514r, CAL5 ;1102HP5 , 50000 ug per mL Diesel (200 uL of DRO211012A)	G:\Org\HP5\Methods\DC_8015-IA-L%.met	1	1	1	1	0
		DCM-Baseline Check-V15	G:\Org\HP5\Methods\DR_8015-HP-LEXP.met	1	1	1	1	0
		CCV_1102HP516r, Second Source ;1102HP5 , 15000 ug per mL (100uL of DRO211012B + 900uL DCM(14408)	G:\Org\HP5\Methods\DC_8015-IA-L%.met	1	1	1	1	0

File Name: G:\Org\HP5\Cals\SW8015C\_DRO211102IA.CAL

Version: 14

Creator: AMN 11/02/2021

Description: 8015C-DRO. New ICal Per 1102HP5 (2021)-2 uL Inj.; COD added using OTP RFs

Reason for change:

External standard calibration

Standard injection volume: 1

Standard sample weight: 1

Area reject threshold: 500

Reference peak area reject threshold: 500

Amount units: nanograms

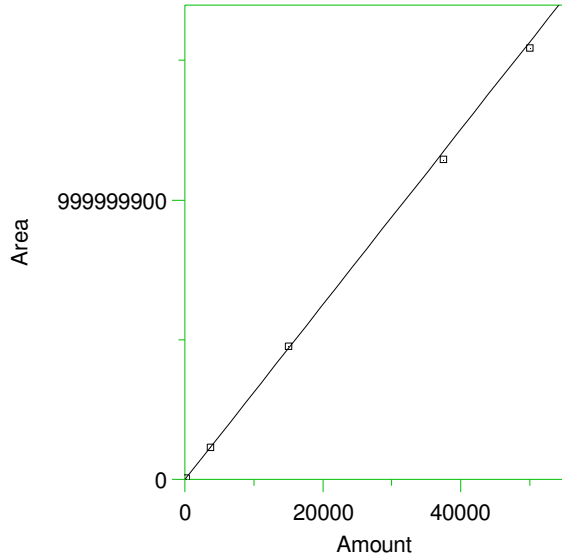
No default component

Method of calculating data point averages: Equal weight for all updates

No calibration update report

All levels are normal data points.

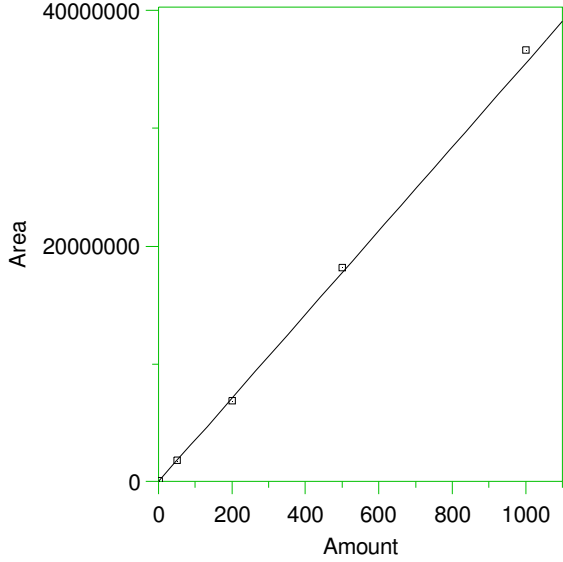
1 DRO Range Start



Expected retention time: 6.64 minutes  
 Search window: 0.05 minutes  
 No retention time reference component  
 Group number: 0  
 High alarm limit: 0  
 Low alarm limit: 0  
 Component constant: 0  
 Single peak quantification by area  
 $Y = 31353.19 X + 0$   
 Average CF fit with equal weighting, forced to origin  
 Coefficient of determination: 0.9992341  
 Average error: 2.083%  
 Average CF: 31353.19  
 RSD: 2.487%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	150	4865557	32437.05	3.457	Manual	11/3/2021 6:44:55 AM
2	3750	1.159464E+08	30919.04	-1.385	Manual	11/3/2021 6:45:31 AM
3	15000	4.785279E+08	31901.86	1.750	Manual	11/3/2021 6:46:08 AM
4	37500	1.14732E+09	30595.2	-2.418	Manual	11/3/2021 6:45:45 AM
5	50000	1.54564E+09	30912.8	-1.405	Manual	11/3/2021 6:45:18 AM

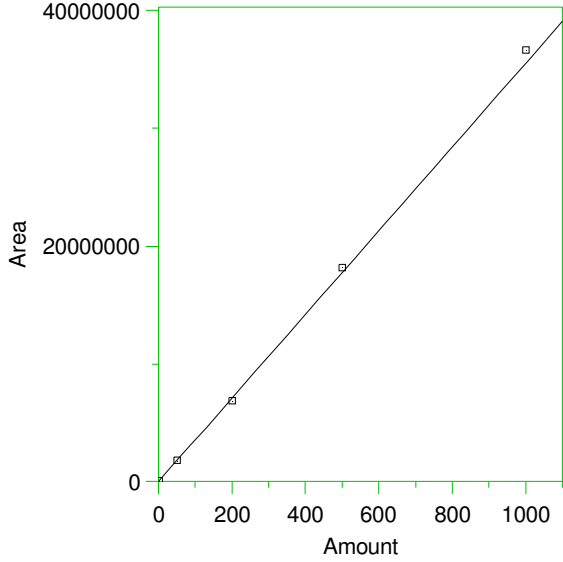
2 \*o-Terphenyl



Expected retention time: 12.29 minutes  
 Search window: 0.05 minutes  
 No retention time reference component  
 Group number: 0  
 High alarm limit: 0  
 Low alarm limit: 0  
 Component constant: 0  
 Single peak quantification by area  
 Y = 35509.21 X + 0  
 Average CF fit with equal weighting, forced to origin  
 Coefficient of determination: 0.9983284  
 Average error: 2.203%  
 Average CF: 35509.21  
 RSD: 2.749%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	2	69364.34	34682.17	-2.329	G:\Org\HP5\DAT\HP5110221_b\1102HP5.0005.BND	11/2/2021 2:21:29 PM
2	50	1772689	35453.78	-0.156	G:\Org\HP5\DAT\HP5110221_b\1102HP5.0006.BND	11/2/2021 2:21:35 PM
3	200	6887244	34436.22	-3.022	G:\Org\HP5\DAT\HP5110221_b\1102HP5.0007.BND	11/2/2021 2:21:41 PM
4	500	1.815698E+07	36313.96	2.266	G:\Org\HP5\DAT\HP5110221_b\1102HP5.0008.BND	11/2/2021 2:21:47 PM
5	1000	3.665993E+07	36659.93	3.241	G:\Org\HP5\DAT\HP5110221_b\1102HP5.0009.BND	11/2/2021 2:21:52 PM

3 \*1-Chlorooctadecane



Expected retention time: 13.1 minutes  
 Search window: 0.05 minutes  
 No retention time reference component  
 Group number: 0  
 High alarm limit: 0  
 Low alarm limit: 0  
 Component constant: 0

Single peak quantification by area

$Y = 35509.21 X + 0$

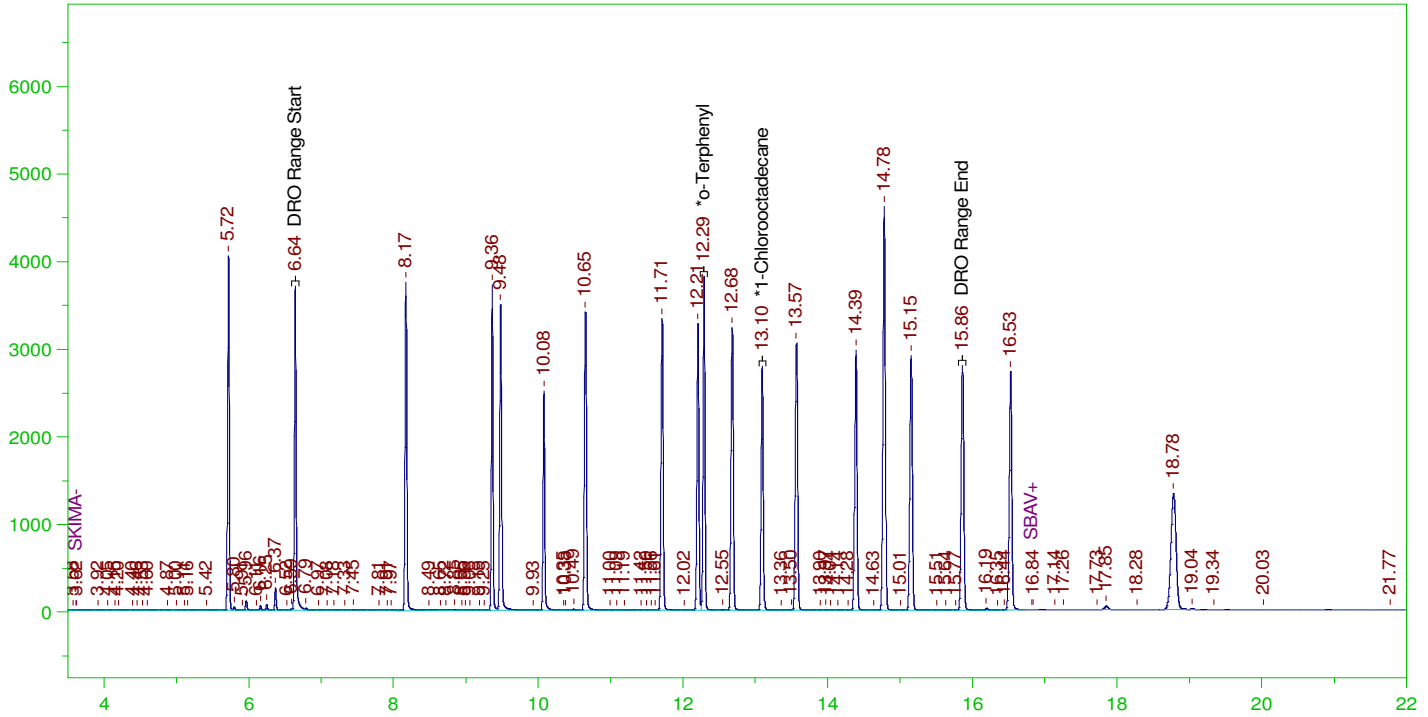
Average CF fit with equal weighting, forced to origin  
 Coefficient of determination: 0.9983284  
 Average error: 2.203%  
 Average CF: 35509.21  
 RSD: 2.749%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	2	69364.34	34682.17	-2.329	Manual	11/2/2021 2:21:57 PM
2	50	1772689	35453.78	-0.156	Manual	11/2/2021 2:21:58 PM
3	200	6887244	34436.22	-3.022	Manual	11/2/2021 2:22:00 PM
4	500	1.815698E+07	36313.96	2.266	Manual	11/2/2021 2:22:02 PM
5	1000	3.665993E+07	36659.93	3.241	Manual	11/2/2021 2:22:04 PM



G:\org\HP5\DAT\HP5110221\_b\1102HP5.0003.RAW

CCV\_1102HP508r, DRO ;1102HP5 , DRO211025A



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1102HP508r, DRO ;1102HP5 , DRO211025A  
 Raw File: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0003.RAW  
 Date & Time Acquired: 11/2/2021 8:31:35 AM  
 Method File: G:\Org\HP5\Methods\DC\_8015-IA-L%.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.59 to 15.91

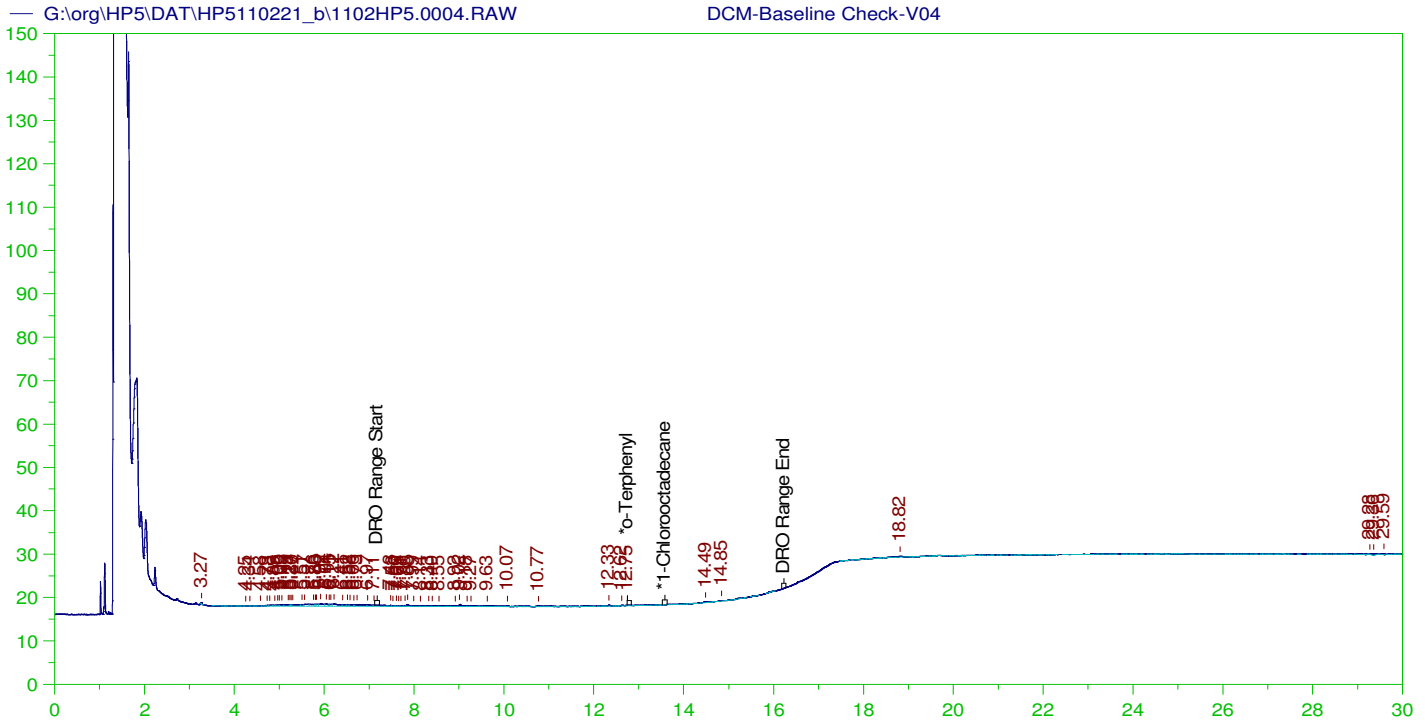
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.292	200.	201.539	100.77
*1-Chlorooctadecane	13.095	200.	163.573	81.79

DRO Area: 9.38791E+07 DRO Amount: 2994.244  
 TEH Area: 1.14933E+08 TEH Amount: 3665.75

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0003.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	3665.75	24.44	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.292	200.	201.539	100.77	85-115
*1-Chlorooctadecane	13.095	200.	163.573	81.79	85-115



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: DCM-Baseline Check-V04  
 Raw File: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0004.RAW  
 Date & Time Acquired: 11/2/2021 9:14:27 AM  
 Method File: G:\Org\HP5\Methods\DR\_8015-HP-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO210108HP.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

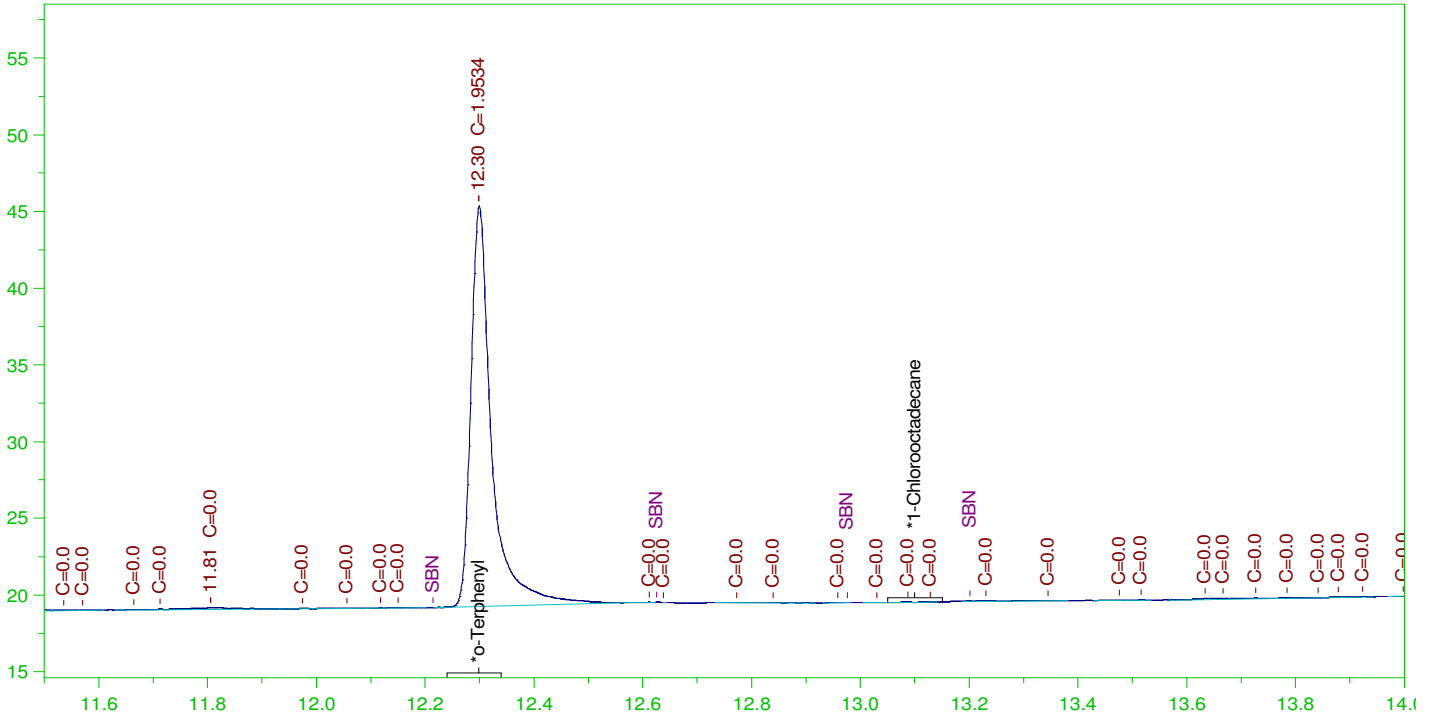
Mean RF for TEH: 29457.33  
 Rt range for Diesel Range Organics: 7.125 to 16.28

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.746	200.	.026	.01
*1-Chlorooctadecane	29.929	200.	.	.

DRO Area: 35138 DRO Amount: 1.192844  
 TEH Area: 110269.4 TEH Amount: 3.74336

G:\org\HP5\DAT\HP5110221\_b\1102HP5.0005.RAW

CCV\_1102HP505r, CAL1 ;1102HP5 , 2 ug per mL OTP



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1102HP505r, CAL1 ;1102HP5 , 2 ug per mL OTP  
 Raw File: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0005.RAW  
 Date & Time Acquired: 11/2/2021 9:57:01 AM  
 Method File: G:\Org\HP5\Methods\DS\_8015-IA-L#.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.59 to 15.91

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.299	200.	1.953	.98	-
*1-Chlorooctadecane	15.561	200.	.	.	-

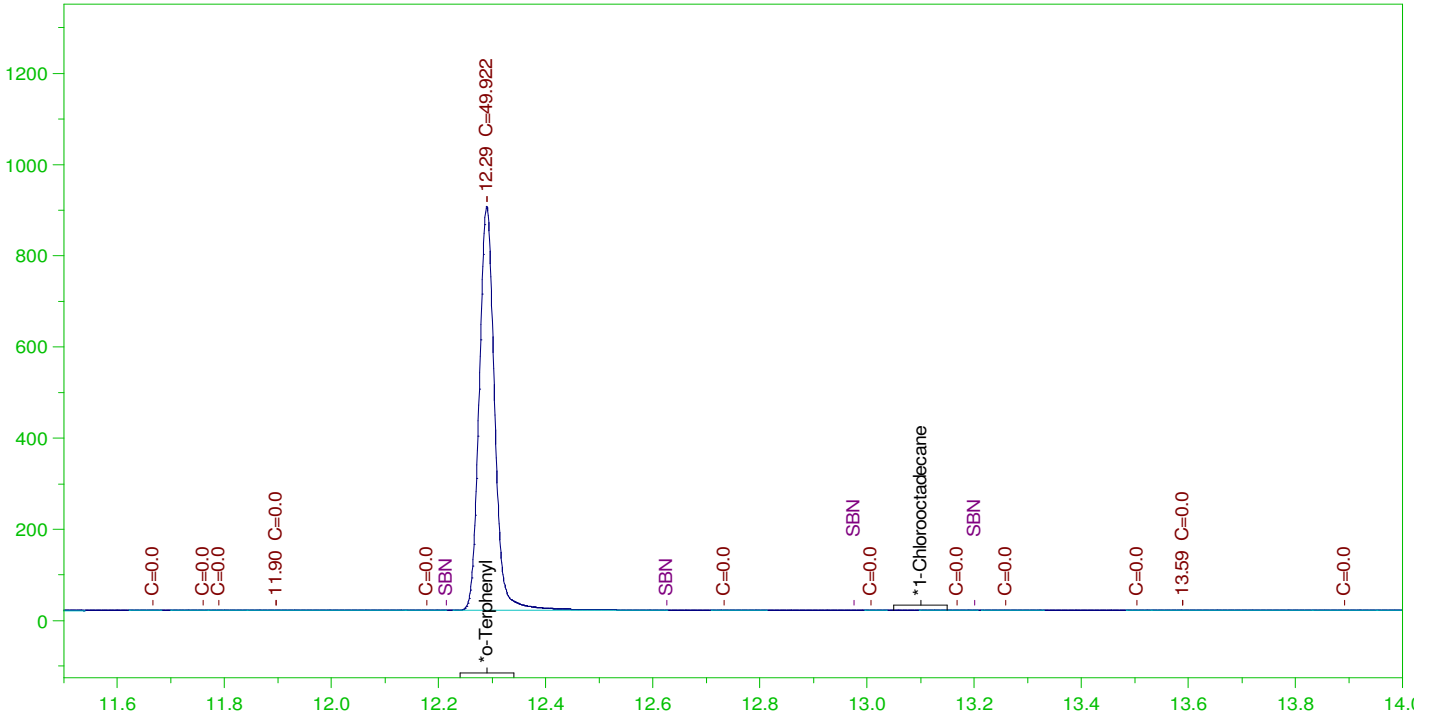
DRO Area:37026.36 DRO Amount: 1.180944  
 TEH Area:88429.33 TEH Amount: 2.820425

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0005.RAW  
 COMPOUND ACTUAL (NG) MEASURED (NG) %RECOVERY LIMITS  
 TOTAL DRO 15000. . . 85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.299	200.	1.953	.98	85-115
*1-Chlorooctadecane	15.561	200.	.	.	85-115

G:\org\HP5\DAT\HP5110221\_b\1102HP5.0006.RAW

CCV\_1102HP506r, CAL2 ;1102HP5 , 50 ug per mL OTP



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1102HP506r, CAL2 ;1102HP5 , 50 ug per mL OTP  
 Raw File: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0006.RAW  
 Date & Time Acquired: 11/2/2021 10:39:43 AM  
 Method File: G:\Org\HP5\Methods\DS\_8015-IA-L#.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.59 to 15.91

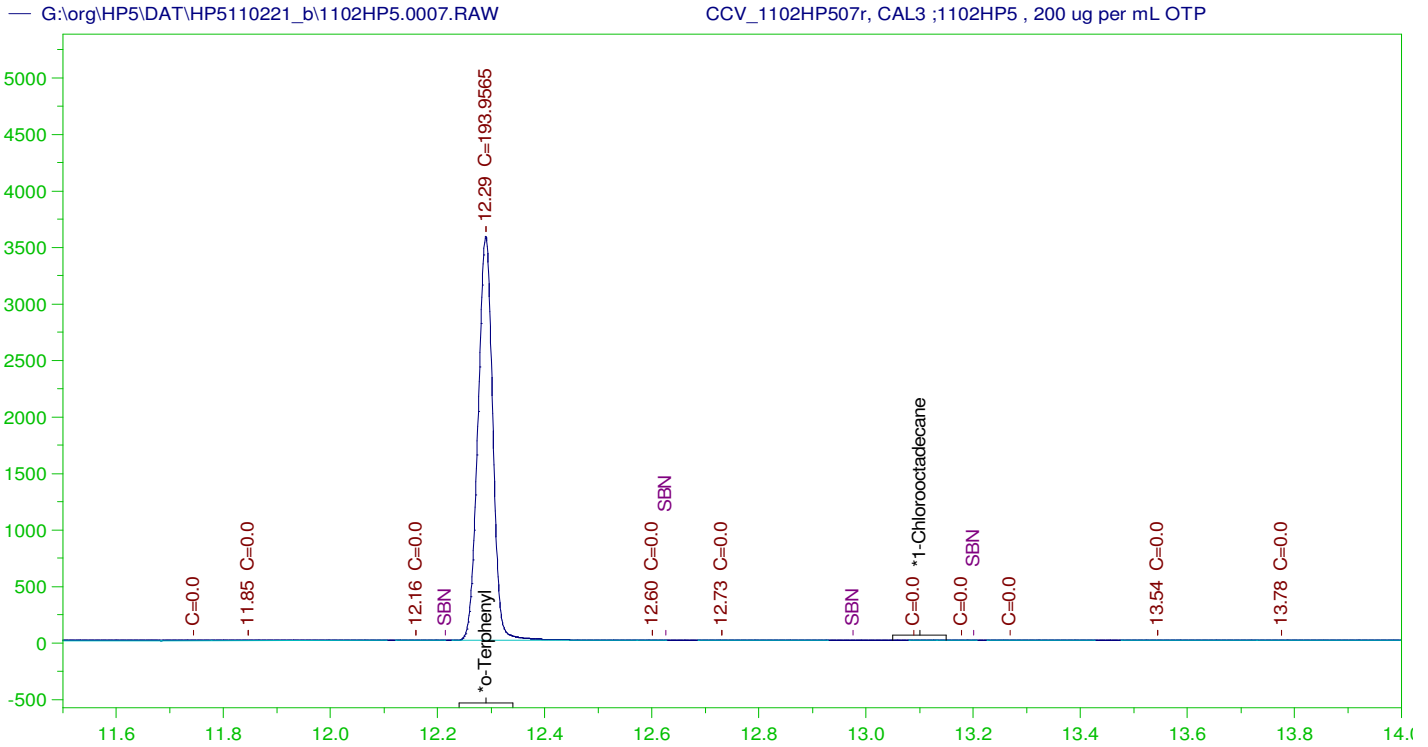
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.29	200.	49.922	24.96	-
*1-Chlorooctadecane	15.697	200.	.	.	-

DRO Area:141449.5 DRO Amount: 4.511485  
 TEH Area:310030.7 TEH Amount: 9.88833

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0006.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	.	.	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.29	200.	49.922	24.96	85-115
*1-Chlorooctadecane	15.697	200.	.	.	85-115



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1102HP507r, CAL3 ;1102HP5 , 200 ug per mL OTP  
 Raw File: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0007.RAW  
 Date & Time Acquired: 11/2/2021 11:22:37 AM  
 Method File: G:\Org\HP5\Methods\DS\_8015-IA-L#.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.59 to 15.91

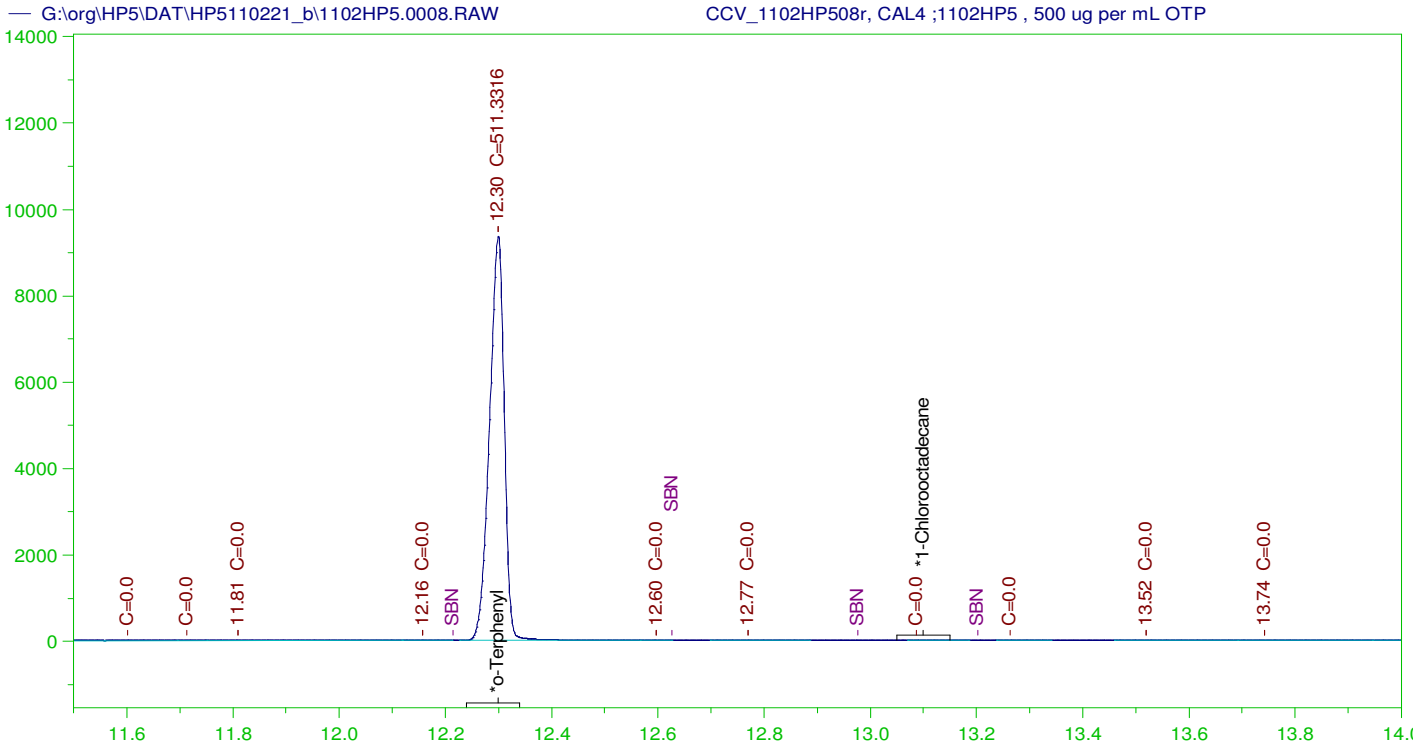
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.29	200.	193.957	96.98
*1-Chlorooctadecane	15.779	200.	.	-

DRO Area:338082.7 DRO Amount: 10.78304  
 TEH Area:638415.8 TEH Amount: 20.36207

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0007.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	20.36	.14	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.29	200.	193.957	96.98	85-115
*1-Chlorooctadecane	15.779	200.	.	.	85-115



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1102HP508r, CAL4 ;1102HP5 , 500 ug per mL OTP  
 Raw File: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0008.RAW  
 Date & Time Acquired: 11/2/2021 12:05:44 PM  
 Method File: G:\Org\HP5\Methods\DS\_8015-IA-L#.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.59 to 15.91

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.3	200.	511.332	255.67	-
*1-Chlorooctadecane	15.798	200.	.	.	-

DRO Area:456992 DRO Amount: 14.57561  
 TEH Area:825752.1 TEH Amount: 26.3371

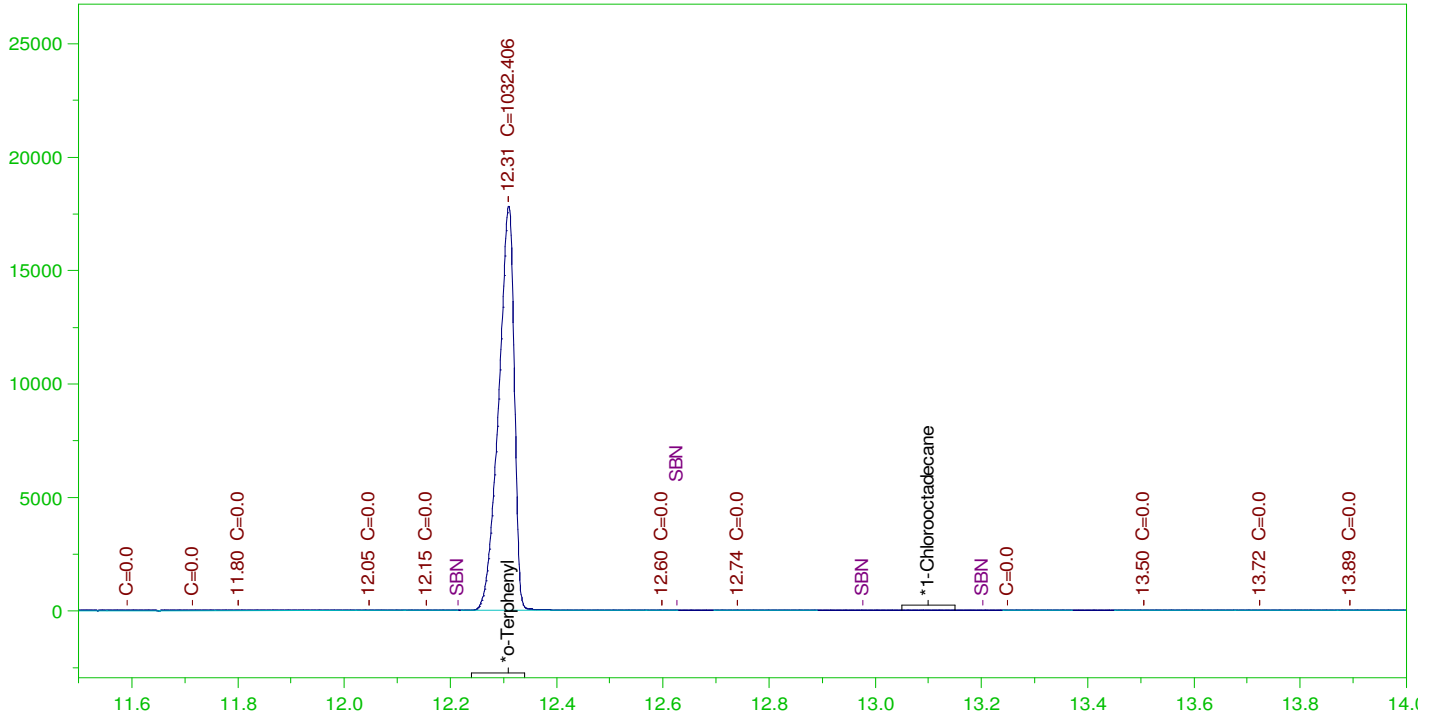
CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0008.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	26.34	.18	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.3	200.	511.332	255.67	85-115
*1-Chlorooctadecane	15.798	200.	.	.	85-115

G:\org\HP5\DAT\HP5110221\_b\1102HP5.0009.RAW

CCV\_1102HP509r, CAL5 ;1102HP5 , 1000 ug per mL OTP



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1102HP509r, CAL5 ;1102HP5 , 1000 ug per mL OTP  
 Raw File: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0009.RAW  
 Date & Time Acquired: 11/2/2021 12:49:02 PM  
 Method File: G:\Org\HP5\Methods\DS\_8015-IA-L#.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.59 to 15.91

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.31	200.	1032.406	516.2	-
*1-Chlorooctadecane	15.803	200.	.	.	-

DRO Area:461032.4 DRO Amount: 14.70448  
 TEH Area:724020.4 TEH Amount: 23.0924

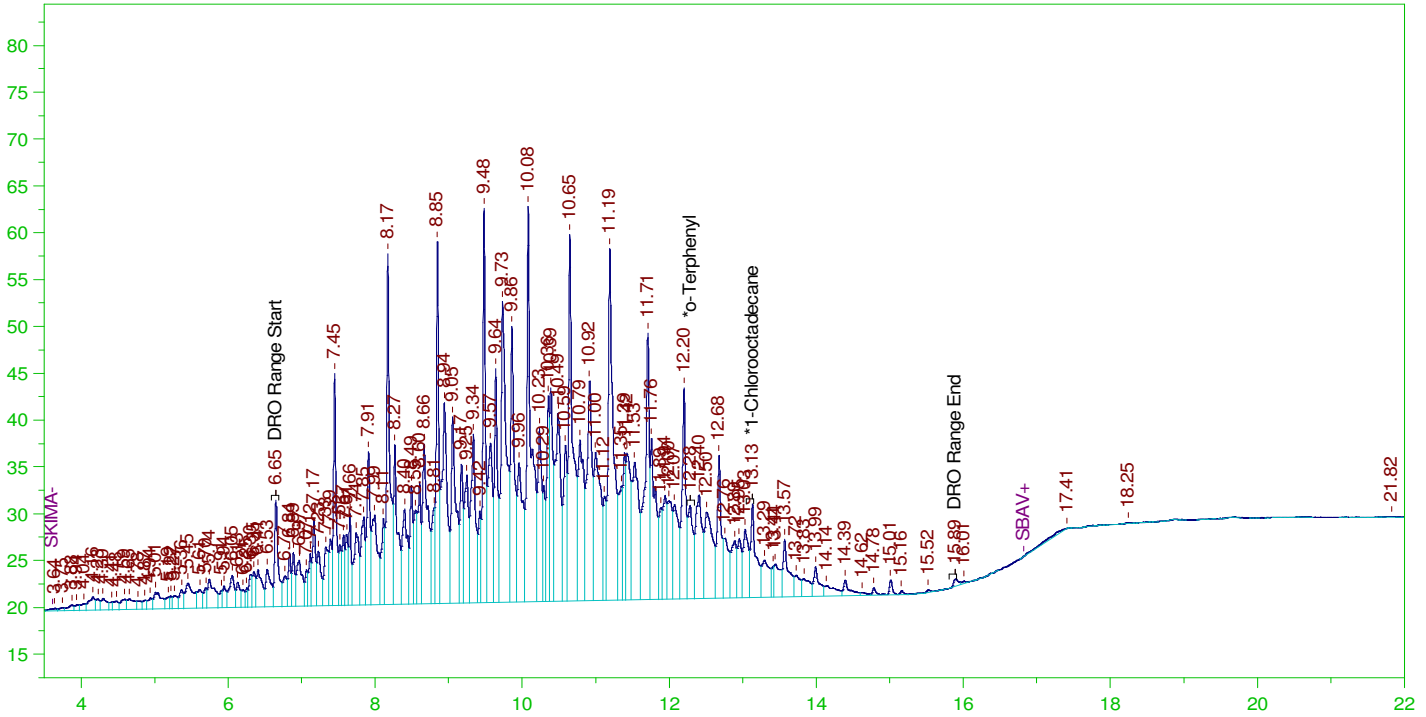
CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0009.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	23.09	.15	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.31	200.	1032.406	516.2	85-115
*1-Chlorooctadecane	15.803	200.	.	.	85-115

G:\org\HP5\DAT\HP5110221\_b\1102HP5.0010.RAW

CCV\_1102HP510r, CAL1 ;1102HP5 , 150 ug per mL Diesel



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1102HP510r, CAL1 ;1102HP5 , 150 ug per mL Diesel  
 Raw File: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0010.RAW  
 Date & Time Acquired: 11/2/2021 1:32:06 PM  
 Method File: G:\Org\HP5\Methods\DC\_8015-IA-L%.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.59 to 15.91

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.285	200.	1.416	.71	-
*1-Chlorooctadecane	13.13	200.	1.44	.72	-

DRO Area:4571415 DRO Amount: 145.8038  
 TEH Area:4865557 TEH Amount: 155.1854

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0010.RAW

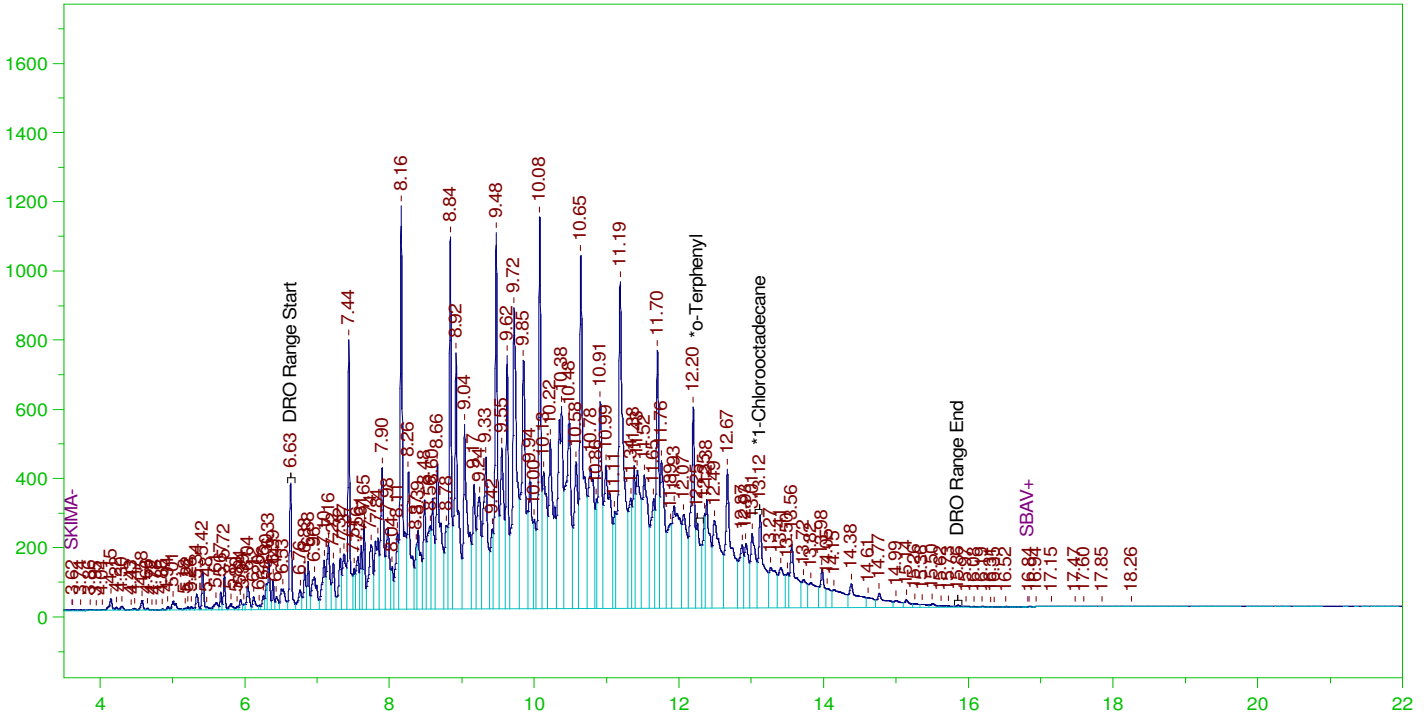
COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	155.19	1.03	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.285	200.	1.416	.71	85-115
*1-Chlorooctadecane	13.13	200.	1.44	.72	85-115



G:\org\HP5\DAT\HP5110221\_b\1102HP5.0011.RAW

CCV\_1102HP511r, CAL2 ;1102HP5 , 3750 ug per mL Diesel



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1102HP511r, CAL2 ;1102HP5 , 3750 ug per mL Diesel  
 Raw File: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0011.RAW  
 Date & Time Acquired: 11/2/2021 2:15:08 PM  
 Method File: G:\Org\HP5\Methods\DC\_8015-IA-L%.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.59 to 15.91

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.252	200.	28.988	14.49	-
*1-Chlorooctadecane	13.122	200.	39.19	19.59	-

DRO Area: 1.131291E+08 DRO Amount: 3608.216  
 TEH Area: 1.159464E+08 TEH Amount: 3698.073

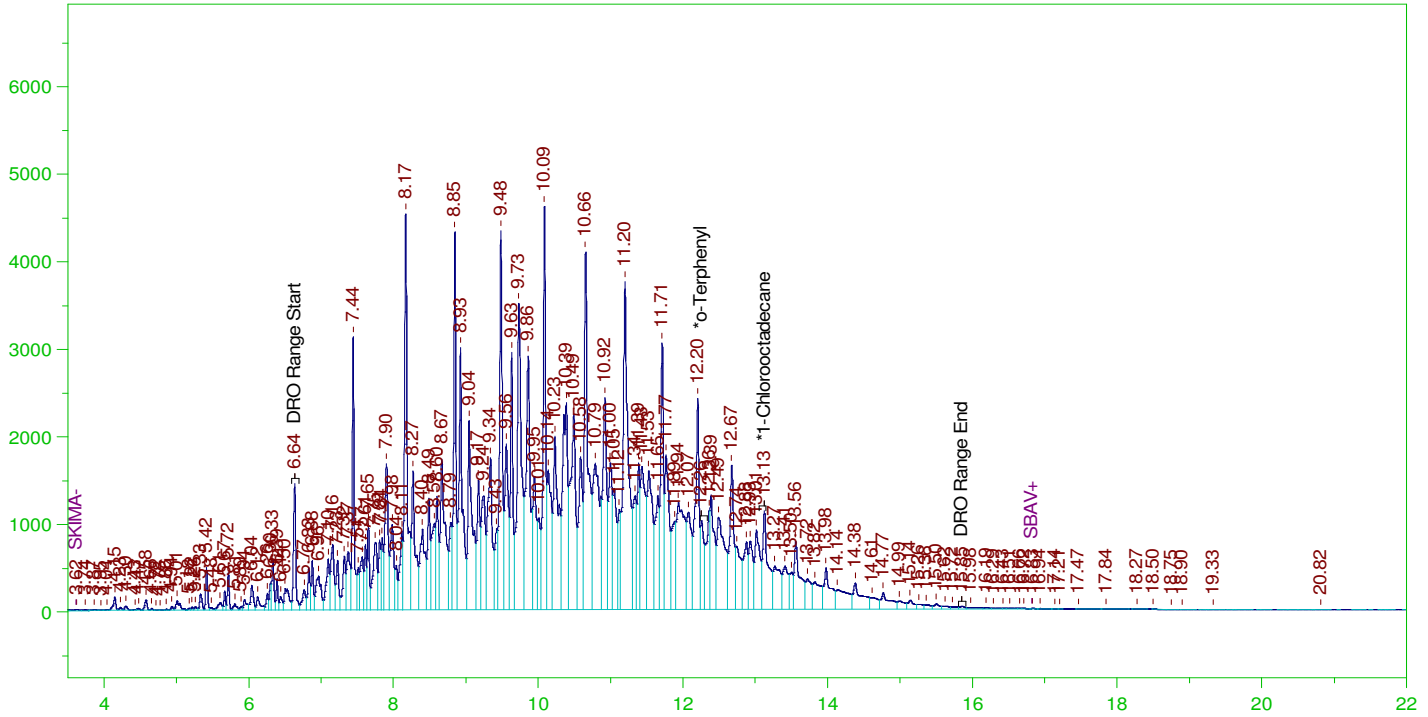
CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0011.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	3698.07	24.65	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.252	200.	28.988	14.49	85-115
*1-Chlorooctadecane	13.122	200.	39.19	19.59	85-115

G:\org\HP5\DAT\HP5110221\_b\1102HP5.0012.RAW

CCV\_1102HP512r, CAL3 ;1102HP5 , 15000 ug per mL Diesel



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1102HP512r, CAL3 ;1102HP5 , 15000 ug per mL Diesel  
 Raw File: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0012.RAW  
 Date & Time Acquired: 11/2/2021 2:58:26 PM  
 Method File: G:\Org\HP5\Methods\DC\_8015-IA-L%.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.59 to 15.91

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.257	200.	92.35	46.18	-
*1-Chlorooctadecane	13.125	200.	158.994	79.5	-

DRO Area: 4.667999E+08 DRO Amount: 14888.43  
 TEH Area: 4.785279E+08 TEH Amount: 15262.49

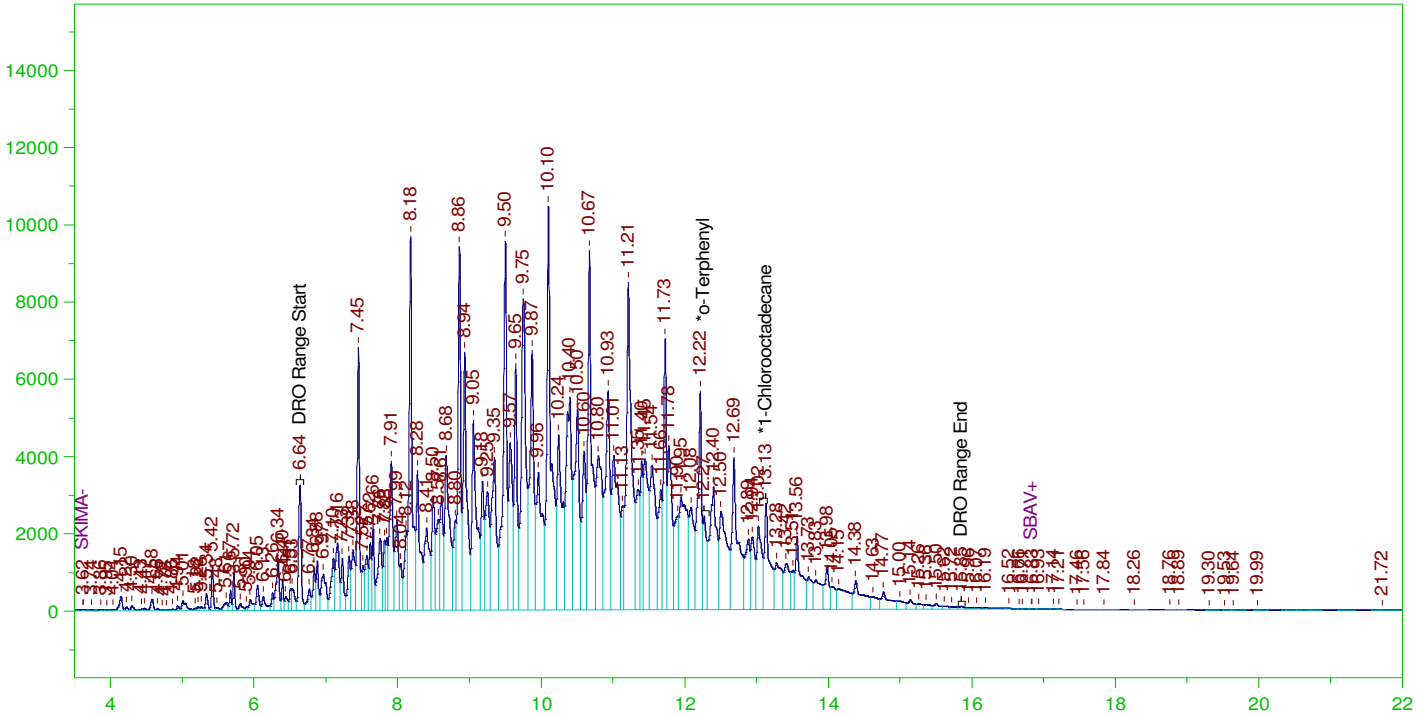
CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0012.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	15262.49	101.75	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.257	200.	92.35	46.18	85-115
*1-Chlorooctadecane	13.125	200.	158.994	79.5	85-115

G:\org\HP5\DAT\HP5110221\_b\1102HP5.0013.RAW

CCV\_1102HP513r, CAL4 ;1102HP5 , 37500ug per mL Diesel



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1102HP513r, CAL4 ;1102HP5 , 37500ug per mL Diesel  
 Raw File: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0013.RAW  
 Date & Time Acquired: 11/2/2021 3:41:37 PM  
 Method File: G:\Org\HP5\Methods\DC\_8015-IA-L%.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.59 to 15.91

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.268	200.	238.956	119.48
*1-Chlorooctadecane	13.133	200.	386.008	193.

DRO Area:1.118993E+09 DRO Amount: 35689.91  
 TEH Area:1.14732E+09 TEH Amount: 36593.41

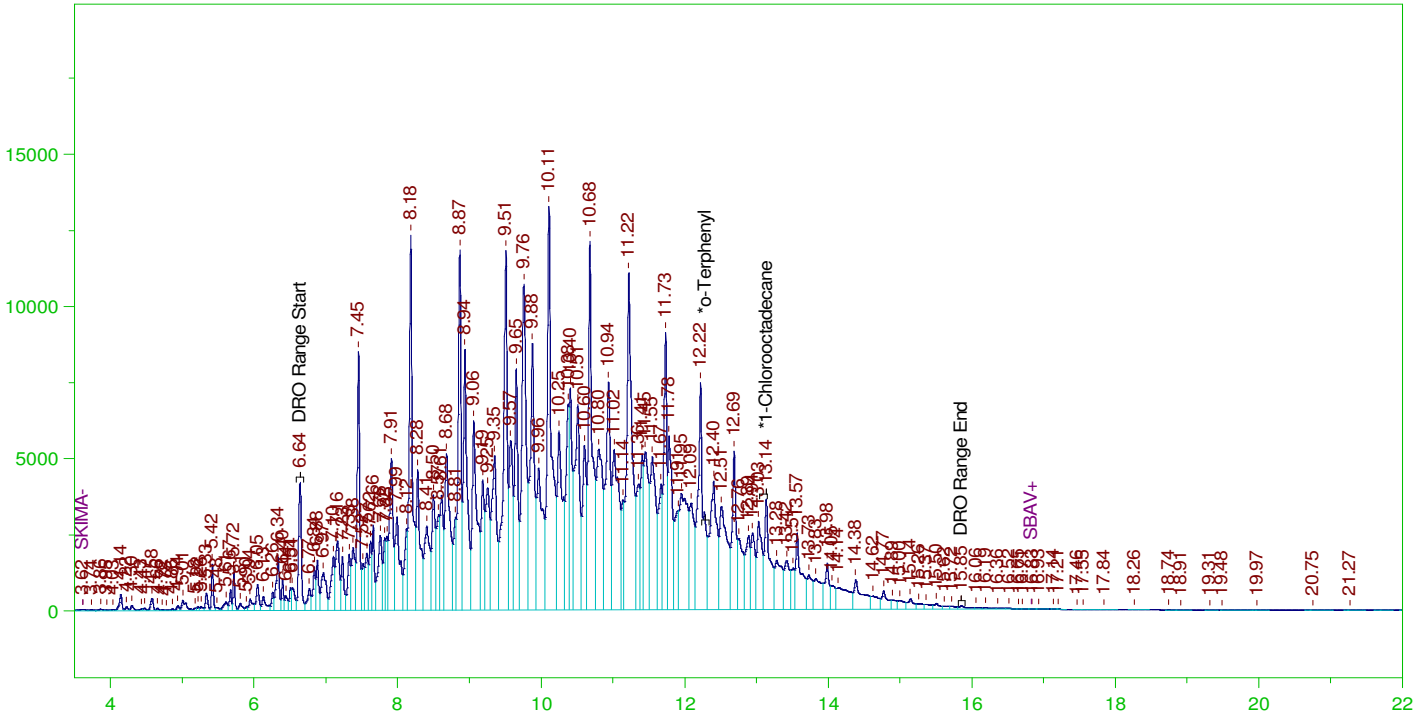
CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0013.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	36593.41	243.96	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.268	200.	238.956	119.48	85-115
*1-Chlorooctadecane	13.133	200.	386.008	193.	85-115

G:\org\HP5\DAT\HP5110221\_b\1102HP5.0014.RAW

CCV\_1102HP514r, CAL5 ;1102HP5 , 50000 ug per mL Diesel



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1102HP514r, CAL5 ;1102HP5 , 50000 ug per mL Diesel  
 Raw File: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0014.RAW  
 Date & Time Acquired: 11/2/2021 4:24:53 PM  
 Method File: G:\Org\HP5\Methods\DC\_8015-IA-L%.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.59 to 15.91

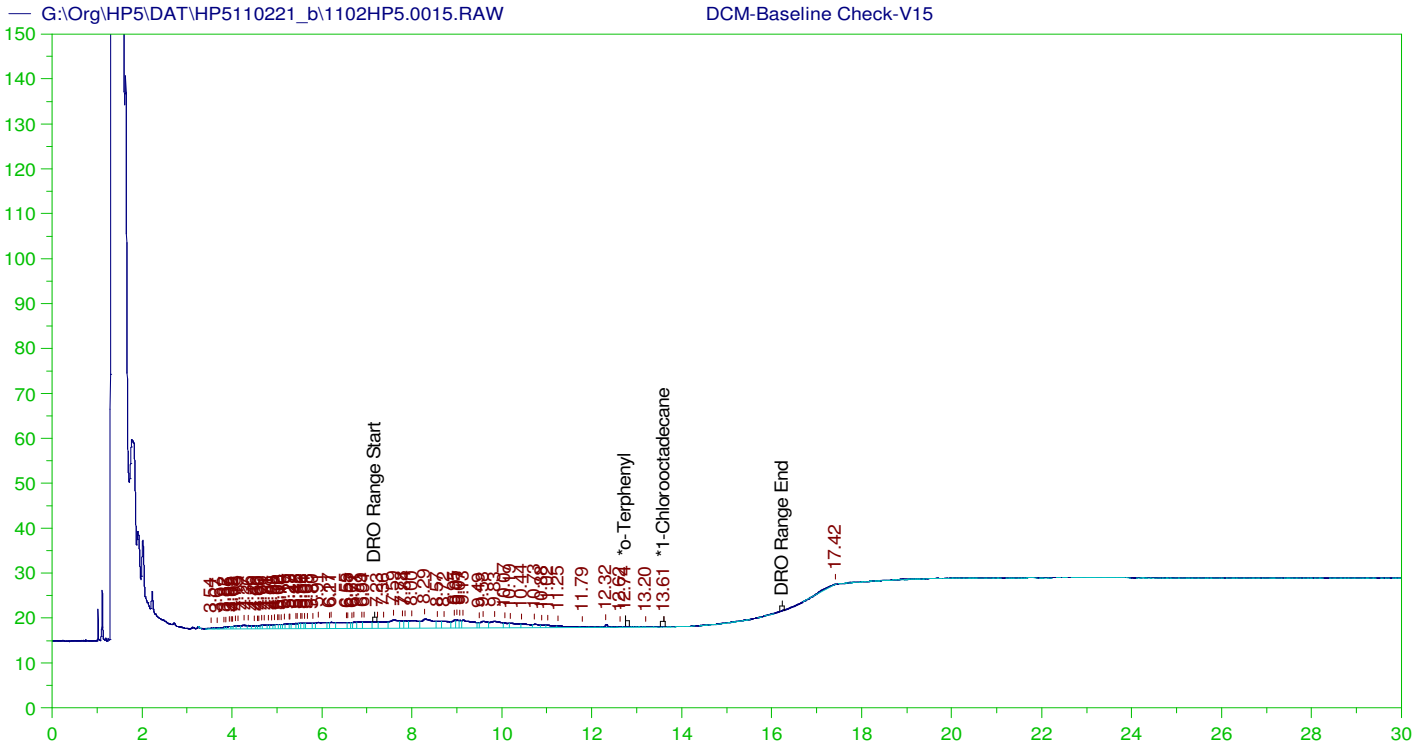
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	29.921	200.	.	-
*1-Chlorooctadecane	13.135	200.	512.63	256.31

DRO Area: 1.507978E+09 DRO Amount: 48096.49  
 TEH Area: 1.54564E+09 TEH Amount: 49297.7

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0014.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	49297.7	328.65	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	29.921	200.	.	.	85-115
*1-Chlorooctadecane	13.135	200.	512.63	256.31	85-115



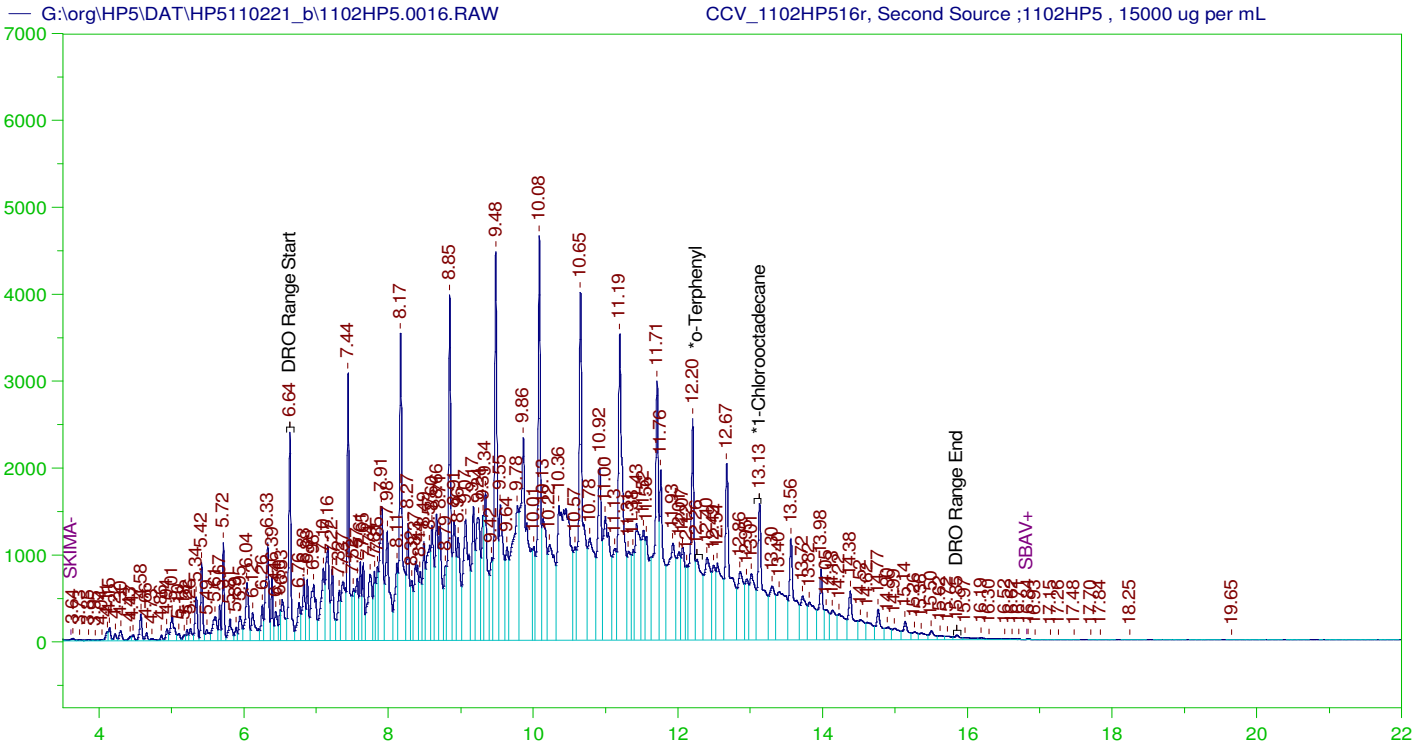
**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: DCM-Baseline Check-V15  
 Raw File: G:\Org\HP5\DAT\HP5110221\_b\1102HP5.0015.RAW  
 Date & Time Acquired: 11/2/2021 5:08:11 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-HP-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO210108HP.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 29457.33  
 Rt range for Diesel Range Organics: 7.125 to 16.28

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.744	200.	.041	.02	-
*1-Chlorooctadecane	13.606	200.	.017	.01	-

DRO Area:305831.5 DRO Amount: 10.38219  
 TEH Area:517467.1 TEH Amount: 17.56667



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1102HP516r, Second Source ;1102HP5 , 15000 ug per mL  
 Raw File: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0016.RAW  
 Date & Time Acquired: 11/2/2021 5:51:31 PM  
 Method File: G:\Org\HP5\Methods\DC\_8015-IA-L%.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.59 to 15.91

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.261	200.	146.398	73.2 -
*1-Chlorooctadecane	13.127	200.	209.876	104.94 -

DRO Area: 4.432555E+08 DRO Amount: 14137.49  
 TEH Area: 4.699825E+08 TEH Amount: 14989.94

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5110221\_b\1102HP5.0016.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	14989.94	99.93	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.261	200.	146.398	73.2	85-115
*1-Chlorooctadecane	13.127	200.	209.876	104.94	85-115

Write Sequence	Data File	Sample Name	Method	Weight	Dil Factor	Amt Inj.	IS	Cal ID	Manul Integrations
		CCV_1102HP508r, DRO ;1102HP5 , DRO211025A	G:\Org\HP5-Methods\DC_8015-IA-L%.met	1	1	1	1	0	No integrations
		DCM-Baseline Check-V04	G:\Org\HP5-Methods\DR_8015-HP-LEXP.met	1	1	1	1	0	No integrations
		CCV_1102HP505r, CAL1 ;1102HP5 , 2 ug per mL OTP (10 uL of Cal3 + 990 uL DCM(14408))	G:\Org\HP5-Methods\DS_8015-IA-L#.met	1	1	1	1	0	Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 12.21 and slightly after the surrogate peak at 12.63 and scaling showing surrogate peak from 11.5-14.
		CCV_1102HP506r, CAL2 ;1102HP5 , 50 ug per mL OTP (100 uL Cal4 + 900 uL of DCM(14408))	G:\Org\HP5-Methods\DS_8015-IA-L#.met	1	1	1	1	0	Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 12.21 and slightly after the surrogate peak at 12.63 and scaling showing surrogate peak from 11.5-14.
		CCV_1102HP507r, CAL3 ;1102HP5 , 200 ug per mL OTP (100uL of Cal5 + 400 uL DCM(14408))	G:\Org\HP5-Methods\DS_8015-IA-L#.met	1	1	1	1	0	Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 12.21 and slightly after the surrogate peak at 12.63 and scaling showing surrogate peak from 11.5-14.
		CCV_1102HP508r, CAL4 ;1102HP5 , 500 ug per mL OTP (250uL of Cal5 + 250 uL DCM(14408))	G:\Org\HP5-Methods\DS_8015-IA-L#.met	1	1	1	1	0	Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 12.21 and slightly after the surrogate peak at 12.63 and scaling showing surrogate peak from 11.5-14.
		CCV_1102HP509r, CAL5 ;1102HP5 , 1000 ug per mL OTP (250 uL 4000 ug/mL OTP DRO211011A + 750 DCM(14408))	G:\Org\HP5-Methods\DS_8015-IA-L#.met	1	1	1	1	0	Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 12.21 and slightly after the surrogate peak at 12.63 and scaling showing surrogate peak from 11.5-14.
		CCV_1102HP510r, CAL1 ;1102HP5 , 150 ug per mL Diesel (10 uL of Cal3 + 990 uL DCM(14408),	G:\Org\HP5-Methods\DC_8015-IA-L%.met	1	1	1	1	0	The integration of Diesel Range Organics and Total Extractable Hydrocarbons is the hydrocarbon response with reference to the baseline. Assigned Set Baseline All Valley on at 16.83
		CCV_1102HP511r, CAL2 ;1102HP5 , 3750 ug per mL Diesel (100 uL Cal4 + 900 uL of DCM(14408))	G:\Org\HP5-Methods\DC_8015-IA-L%.met	1	1	1	1	0	The integration of Diesel Range Organics and Total Extractable Hydrocarbons is the hydrocarbon response with reference to the baseline. Assigned Set Baseline All Valley on at 17.5
		CCV_1102HP512r, CAL3 ;1102HP5 , 15000 ug per mL Diesel (300 uL of DRO211012A + 700 uL DCM(14408))	G:\Org\HP5-Methods\DC_8015-IA-L%.met	1	1	1	1	0	The integration of Diesel Range Organics and Total Extractable Hydrocarbons is the hydrocarbon response with reference to the baseline. Assigned Set Baseline All Valley on at 17.5
		CCV_1102HP513r, CAL4 ;1102HP5 , 37500ug per mL Diesel (750 uL of DRO211012A + 250 uL DCM(14408))	G:\Org\HP5-Methods\DC_8015-IA-L%.met	1	1	1	1	0	The integration of Diesel Range Organics and Total Extractable Hydrocarbons is the hydrocarbon response with reference to the baseline. Assigned Set Baseline All Valley on at 17.5
		CCV_1102HP514r, CAL5 ;1102HP5 , 50000 ug per mL Diesel (200 uL of DRO211012A)	G:\Org\HP5-Methods\DC_8015-IA-L%.met	1	1	1	1	0	The integration of Diesel Range Organics and Total Extractable Hydrocarbons is the hydrocarbon response with reference to the baseline. Assigned Set Baseline All Valley on at 17.5
		DCM-Baseline Check-V15	G:\Org\HP5-Methods\DR_8015-HP-LEXP.met	1	1	1	1	0	No integrations
		CCV_1102HP516r, Second Source ;1102HP5 , 15000 ug per mL (100uL of DRO211012B + 900uL DCM(14408))	G:\Org\HP5-Methods\DC_8015-IA-L%.met	1	1	1	1	0	The integration of Diesel Range Organics and Total Extractable Hydrocarbons is the hydrocarbon response with reference to the baseline. Assigned Set Baseline All Valley on at 17.5

*Ann Nebel*

Digitally signed by  
Ann Nebel  
Date: 2021.11.09 12:32:44 -07:00

# Energy Laboratories Inc

# ANALYTICAL RUN Summary

31-Mar-21

Run ID GCFID-HP5-B\_210218B

<b>Run Start Date:</b> 2/18/2021
<b>Analyst:</b> Ann Nebel
<b>Ical:</b>
<b>Column ID:</b>
<b>Comments:</b> 8015 OIL range calibration SW8015_OIL210218

Std ID	Std Name	Std Amount	Std Units	Samp Amount	Samp Units	SampType	Expiration Date
DRO180918C	50,000 ug/mL Oil Std For AK103 RRO-In DCM					CAL	8/31/2025
DRO210204A	Carbon Scan STD					MARKER	3/5/2028
DRO210217A	20,000 ug/mL Oil Std For AK103 RRO-In DCM					ICV	8/23/2021

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14282665	CCV_0218HP50	HC-8015-DRO-	CAL1		2/18/2021 12:03:	1	R356533		0	0						
<b>Analyte</b>	<b>T</b>	<b>Units</b>	<b>RAW</b>	<b>Final</b>	<b>Text</b>	<b>Spike</b>	<b>SPKref</b>	<b>RPDref</b>	<b>MDL</b>	<b>PQL</b>	<b>UQL</b>	<b>%REC</b>	<b>LOW</b>	<b>HIGH</b>	<b>%RPD</b>	<b>Q</b>
TEH(Oil Range)	A	mg/L		0.1468323		0.15	0	0	0	0.3	0	98%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14282666	CCV_0218HP50	HC-8015-DRO-	CAL2		2/18/2021 1:27:3	1	R356533		0	0						
<b>Analyte</b>	<b>T</b>	<b>Units</b>	<b>RAW</b>	<b>Final</b>	<b>Text</b>	<b>Spike</b>	<b>SPKref</b>	<b>RPDref</b>	<b>MDL</b>	<b>PQL</b>	<b>UQL</b>	<b>%REC</b>	<b>LOW</b>	<b>HIGH</b>	<b>%RPD</b>	<b>Q</b>
TEH(Oil Range)	A	mg/L		1.062811		1	0	0	0.15	0.3	0	106%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14282667	CCV_0218HP50	HC-8015-DRO-	CAL3		2/18/2021 2:51:0	1	R356533		0	0						
<b>Analyte</b>	<b>T</b>	<b>Units</b>	<b>RAW</b>	<b>Final</b>	<b>Text</b>	<b>Spike</b>	<b>SPKref</b>	<b>RPDref</b>	<b>MDL</b>	<b>PQL</b>	<b>UQL</b>	<b>%REC</b>	<b>LOW</b>	<b>HIGH</b>	<b>%RPD</b>	<b>Q</b>
TEH(Oil Range)	A	mg/L		5.035713		5	0	0	0.15	0.3	0	101%	80	120	0%	



Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14282668	CCV_0218HP50	HC-8015-DRO-	CAL4		2/18/2021 4:14:3	1	R356533		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
TEH(Oil Range)	A	mg/L		14.69295		15	0	0	0.15	0.3	0	98%	80	120	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14282669	CCV_0218HP51	HC-8015-DRO-	CAL5		2/18/2021 5:38:3	1	R356533		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
TEH(Oil Range)	A	mg/L		28.20769		30	0	0	0.15	0.3	0	94%	80	120	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14282670	CCV_0218HP51	HC-8015-DRO-	ICV		2/18/2021 8:27:3	1	R356533		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
TEH(Oil Range)	A	mg/L		5.474465		5	0	0	0.15	0.3	0	109%	80	120	0%	

Write Sequence	Data File	Sample Name	Method	Weight	Dil Factor	Amt Inj.	IS	Cal ID
		Marker_0218HP501r, DRO C40_0218HP5_ , DRO210204A	G:\Org\HP5\Methods\CSC210212.met	1	1	1	1	0
		DCM-Baseline Check-V02	G:\Org\HP5\Methods\DR_8015-HE-LEXP.met	1	1	1	1	0
		CCV_0218HP503r, CAL1_0218HP5_ , 150 ug per mL Oil (10 uL of Cal4 + 990 uL DCM(13510)	G:\Org\HP5\Methods\DR_OIL-021803-AA-L0.MET	1	1	1	1	0
		DCM-Baseline Check-V04	G:\Org\HP5\Methods\DR_8015-HE-LEXP.met	1	1	1	1	0
		CCV_0218HP505r, CAL2_0218HP5_ , 1000 ug per mL Oil (200 uL of Cal 3 +800 uL DCM(13510)	G:\Org\HP5\Methods\DR_OIL-021805-AA-L0.MET	1	1	1	1	0
		DCM-Baseline Check-V06	G:\Org\HP5\Methods\DR_8015-HE-LEXP.met	1	1	1	1	0
		CCV_0218HP507r, CAL3_0218HP5_ , 5000 ug per mL Oil (100 uL of DRO180918C + 900 uL DCM(13510)	G:\Org\HP5\Methods\DR_OIL-021807-AA-L0.MET	1	1	1	1	0
		DCM-Baseline Check-V08	G:\Org\HP5\Methods\DR_8015-HE-LEXP.met	1	1	1	1	0
		CCV_0218HP509r, CAL4_0218HP5_ , 15000 ug per mL Oil (200 uL of CAL5 + 200 uL DCM(13510)	G:\Org\HP5\Methods\DR_OIL-021807-AA-L0.MET	1	1	1	1	0
		DCM-Baseline Check-V10	G:\Org\HP5\Methods\DR_8015-HE-LEXP.met	1	1	1	1	0
		CCV_0218HP511r, CAL5_0218HP5_ , 30000 ug per mL Oil (600 uL of DRO180918C + 400 uL of DCM)	G:\Org\HP5\Methods\DR_OIL-021811-AA-L0.MET	1	1	1	1	0
		DCM-Baseline Check-V12	G:\Org\HP5\Methods\DR_8015-HE-LEXP.met	1	1	1	1	0
		DCM-Baseline Check-V13	G:\Org\HP5\Methods\DR_8015-HE-LEXP.met	1	1	1	1	0
		DCM-Baseline Check-V14	G:\Org\HP5\Methods\DR_8015-HE-LEXP.met	1	1	1	1	0
		CCV_0218HP515r, Second Source_0218HP5_ , 5000 ug per mL (100uL of DRO210217A + 300uL DCM(13510)	G:\Org\HP5\Methods\DR_OIL-021811-AA-L0.MET	1	1	1	1	0

File Name: G:\Org\HP5\Cals\SW8015C\_OIL210218AA.CAL

Version: 4

Creator: AMN 3/31/2021

Description: DRO-8015-Oil range. New ICal Per 0218HP5 (2021)-2 uL Inj.; COD added using OTP RFs

Reason for change:

External standard calibration

Standard injection volume: 1

Standard sample weight: 1

Area reject threshold: 500

Reference peak area reject threshold: 500

Amount units: nanograms

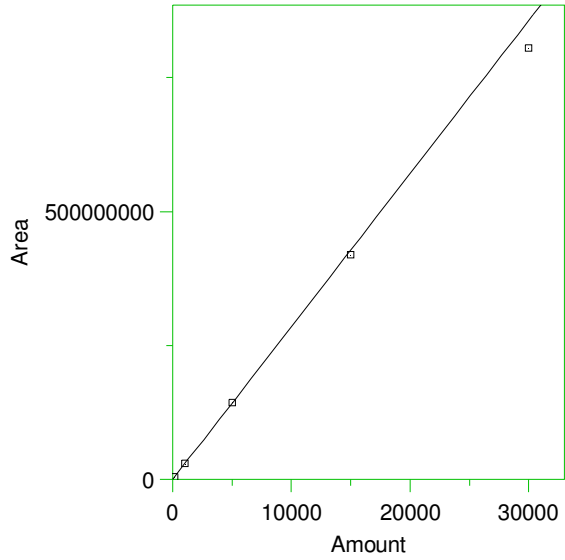
No default component

Method of calculating data point averages: Equal weight for all updates

No calibration update report

All levels are normal data points.

1 DRO Range Start



Expected retention time: 6.54 minutes  
 Search window: 0.05 minutes  
 No retention time reference component  
 Group number: 0  
 High alarm limit: 0  
 Low alarm limit: 0  
 Component constant: 0

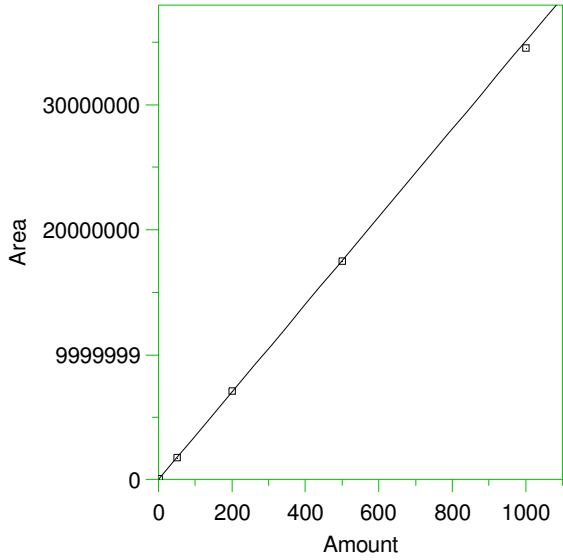
Single peak quantification by area

$Y = 28542.41 X + 0$

Average CF fit with equal weighting, forced to origin  
 Coefficient of determination: 0.9940317  
 Average error: 3.209%  
 Average CF: 28542.41  
 RSD: 4.497%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	150	4325287	28835.25	1.026	Manual	3/30/2021 11:50:57 AM
2	1000	3.03352E+07	30335.2	6.281	Manual	3/30/2021 11:51:41 AM
3	5000	1.437314E+08	28746.28	0.714	Manual	3/30/2021 11:52:00 AM
4	15000	4.193721E+08	27958.14	-2.047	Manual	3/30/2021 11:52:55 AM
5	30000	8.051155E+08	26837.18	-5.974	Manual	3/30/2021 11:52:32 AM

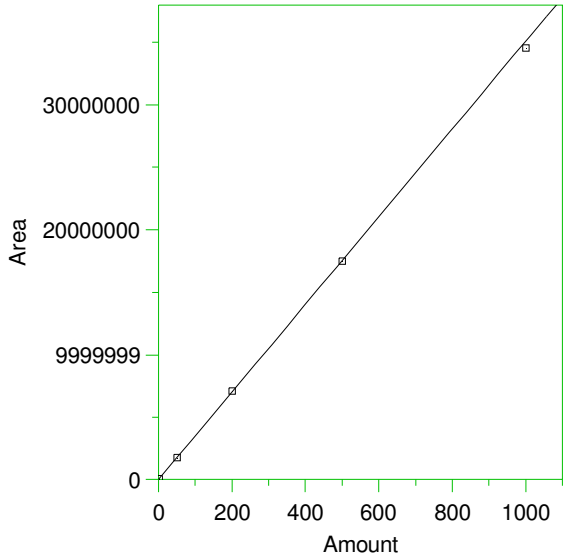
2 \*o-Terphenyl



Expected retention time: 12.14 minutes  
 Search window: 0.05 minutes  
 No retention time reference component  
 Group number: 0  
 High alarm limit: 0  
 Low alarm limit: 0  
 Component constant: 0  
 Single peak quantification by area  
 Y = 35071.26 X + 0  
 Average CF fit with equal weighting, forced to origin  
 Coefficient of determination: 0.9996535  
 Average error: 0.838%  
 Average CF: 35071.26  
 RSD: 1.097%

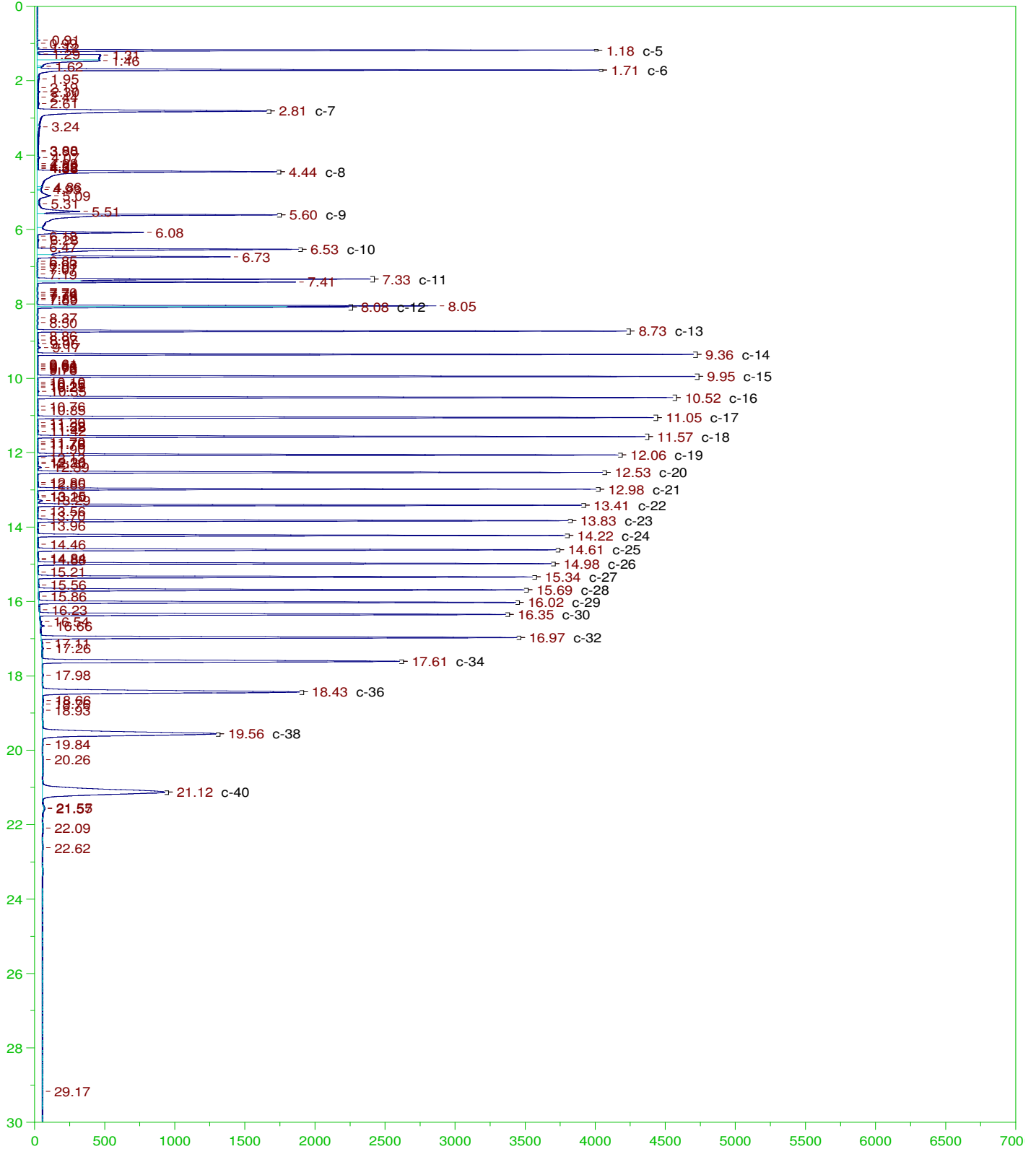
Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	2	70648.41	35324.2	0.721	G:\Org\HP5\DAT\HP5010821_b\0108HP5.0011.BND	1/11/2021 9:44:43 AM
2	50	1746406	34928.12	-0.408	G:\Org\HP5\DAT\HP5010821_b\0108HP5.0012.BND	1/11/2021 9:44:50 AM
3	200	7110604	35553.02	1.374	G:\Org\HP5\DAT\HP5010821_b\0108HP5.0013.BND	1/11/2021 9:44:58 AM
4	500	1.749965E+07	34999.3	-0.205	G:\Org\HP5\DAT\HP5010821_b\0108HP5.0014.BND	1/11/2021 9:45:02 AM
5	1000	3.455164E+07	34551.64	-1.482	G:\Org\HP5\DAT\HP5010821_b\0108HP5.0015.BND	1/11/2021 9:45:07 AM

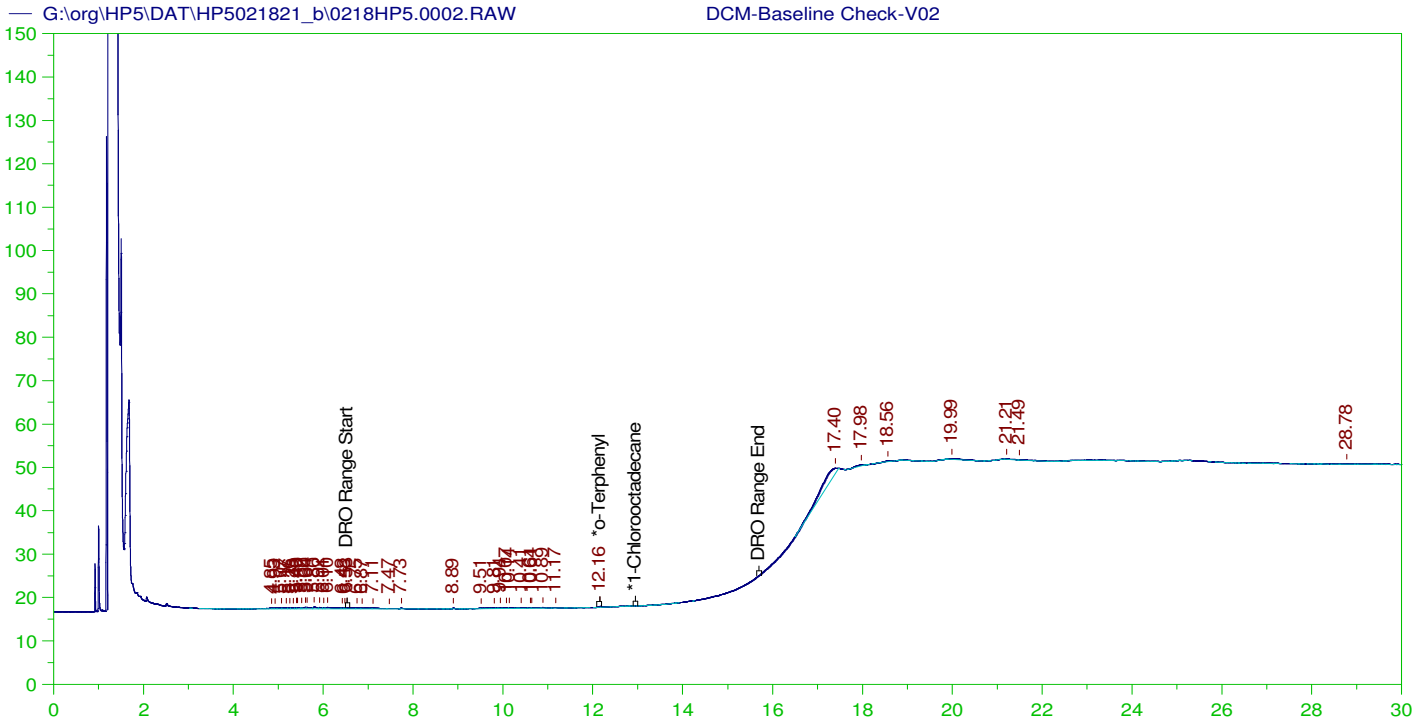
3 \*1-Chlorooctadecane



Expected retention time: 12.95 minutes  
 Search window: 0.05 minutes  
 No retention time reference component  
 Group number: 0  
 High alarm limit: 0  
 Low alarm limit: 0  
 Component constant: 0  
 Single peak quantification by area  
 Y = 35071.26 X + 0  
 Average CF fit with equal weighting, forced to origin  
 Coefficient of determination: 0.9996535  
 Average error: 0.838%  
 Average CF: 35071.26  
 RSD: 1.097%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	2	70648.41	35324.2	0.721	Manual	1/11/2021 9:45:13 AM
2	50	1746406	34928.12	-0.408	Manual	1/11/2021 9:45:15 AM
3	200	7110604	35553.02	1.374	Manual	1/11/2021 9:45:17 AM
4	500	1.749965E+07	34999.3	-0.205	Manual	1/11/2021 9:45:19 AM
5	1000	3.455164E+07	34551.64	-1.482	Manual	1/11/2021 9:45:21 AM





**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: DCM-Baseline Check-V02  
 Raw File: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0002.RAW  
 Date & Time Acquired: 2/18/2021 11:21:40 AM  
 Method File: G:\Org\HP5\Methods\DR\_8015-HE-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO210108HE.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

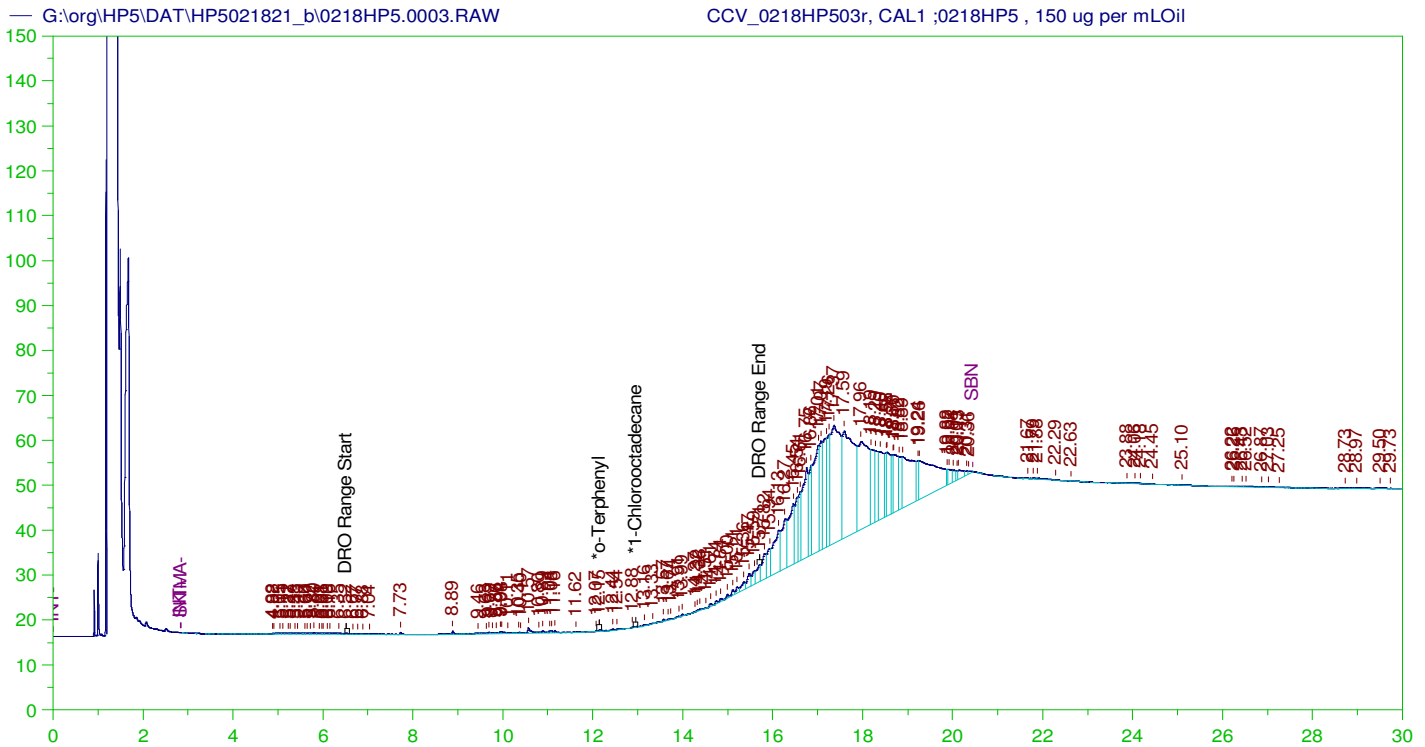
Mean RF for TEH: 29457.33

Rt range for Diesel Range Organics: 6.49 to 15.75

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.158	200.	.034	.02
*1-Chlorooctadecane	29.927	200.	.	.

DRO Area: 29553.31 DRO Amount: 1.003258  
 TEH Area: 144057.3 TEH Amount: 4.890373





**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_0218HP503r, CAL1 ;0218HP5 , 150 ug per mL Oil  
 Raw File: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0003.RAW  
 Date & Time Acquired: 2/18/2021 12:03:33 PM  
 Method File: G:\ORG\HP5\METHODS\DR\_OIL-021803-AA-L0.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_OIL210218AA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 28542.41

Rt range for Diesel Range Organics: 6.49 to 15.75

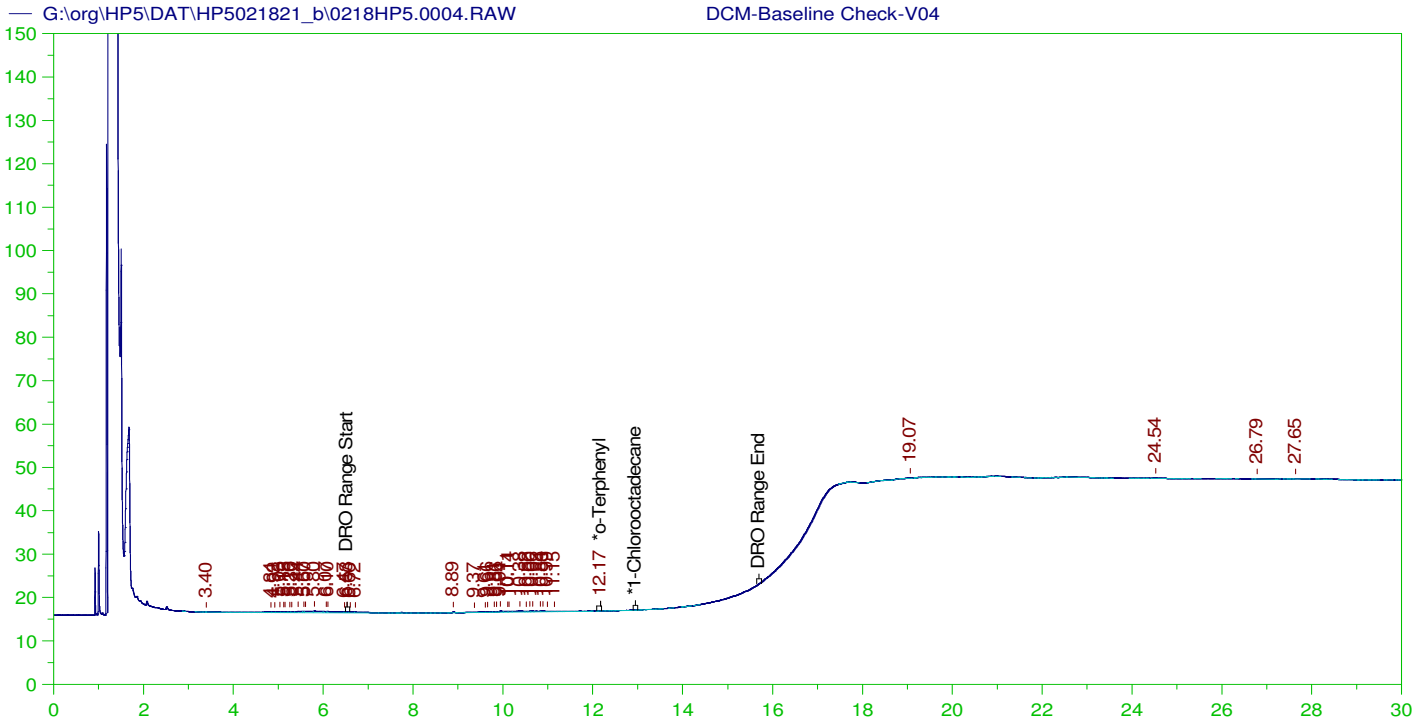
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.146	200.	.02	.01
*1-Chlorooctadecane	29.979	200.	.	.

DRO Area: 141843.8 DRO Amount: 4.969579  
 TEH Area: 3766485 TEH Amount: 131.961

**CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0003.RAW**

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	5000.	131.96	2.64	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.146	200.	.02	.01	85-115
*1-Chlorooctadecane	29.979	200.	.	.	85-115



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

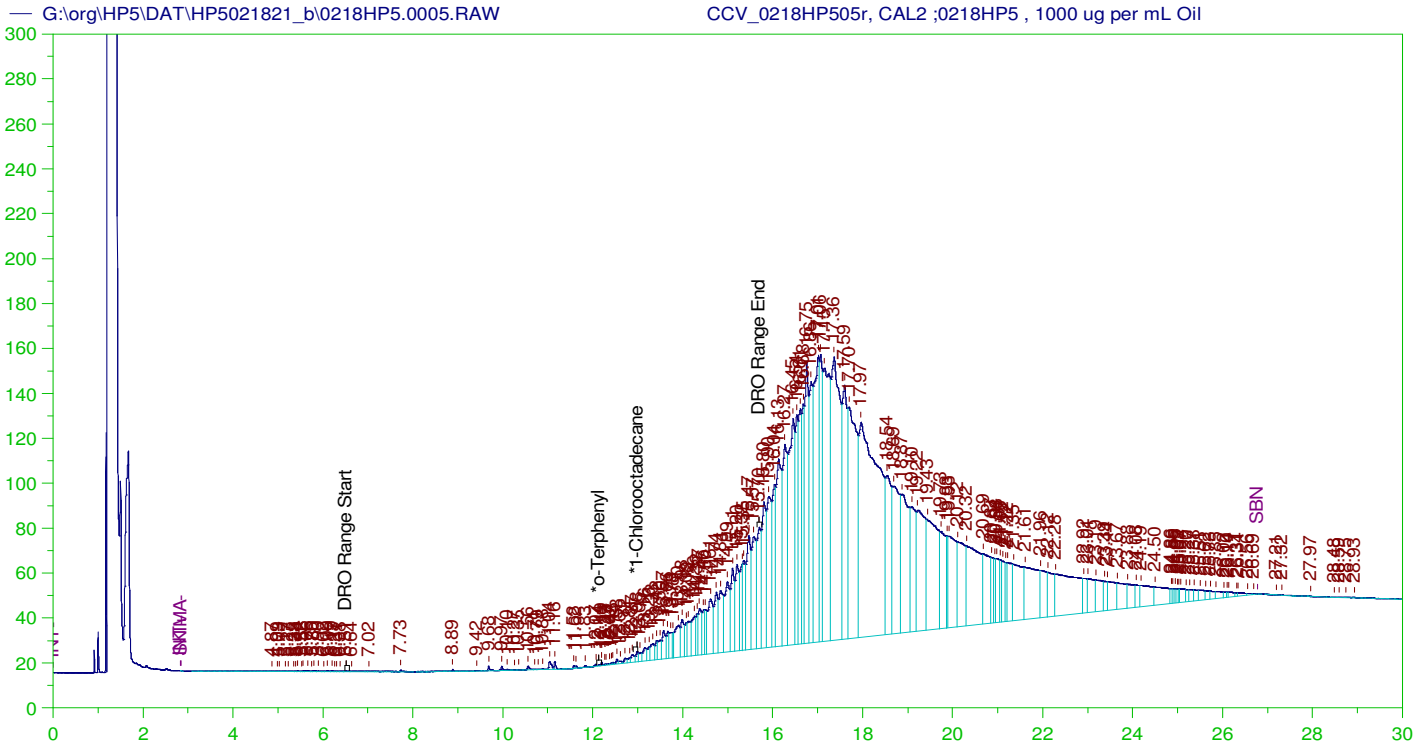
Sample Name: DCM-Baseline Check-V04  
 Raw File: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0004.RAW  
 Date & Time Acquired: 2/18/2021 12:45:36 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-HE-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO210108HE.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 29457.33

Rt range for Diesel Range Organics: 6.49 to 15.75

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.171	200.	.017	.01 -
*1-Chlorooctadecane	29.958	200.	.	. -

DRO Area: 27245.38 DRO Amount: 0.9249101  
 TEH Area: 63574.01 TEH Amount: 2.158173



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_0218HP505r, CAL2 ;0218HP5 , 1000 ug per mL Oil  
 Raw File: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0005.RAW  
 Date & Time Acquired: 2/18/2021 1:27:30 PM  
 Method File: G:\ORG\HP5\METHODS\DR\_OIL-021805-AA-L0.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_OIL210218AA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 28542.41

Rt range for Diesel Range Organics: 6.49 to 15.75

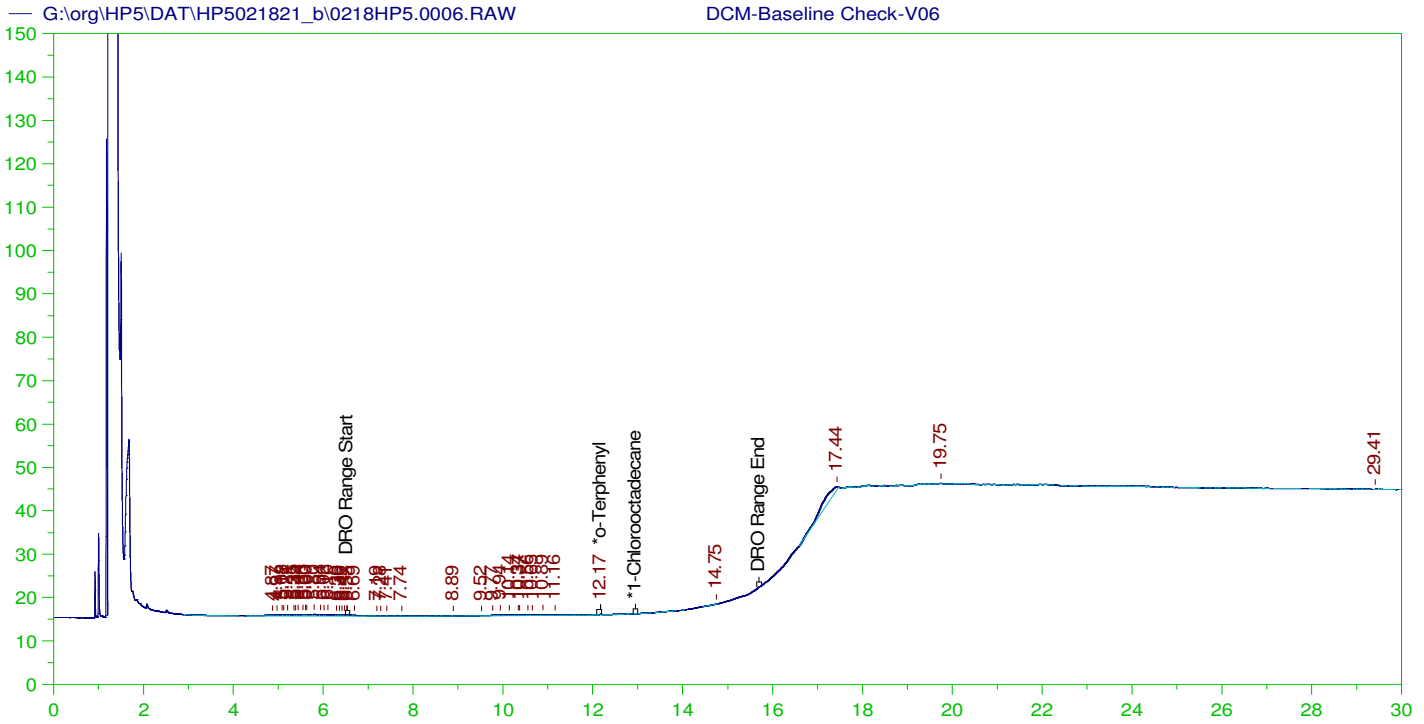
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.136	200.	.034	.02
*1-Chlorooctadecane	12.983	200.	.496	.25

DRO Area: 3721460 DRO Amount: 130.3835  
 TEH Area: 3.03352E+07 TEH Amount: 1062.811

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0005.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	5000.	1062.81	21.26	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.136	200.	.034	.02	85-115
*1-Chlorooctadecane	12.983	200.	.496	.25	85-115



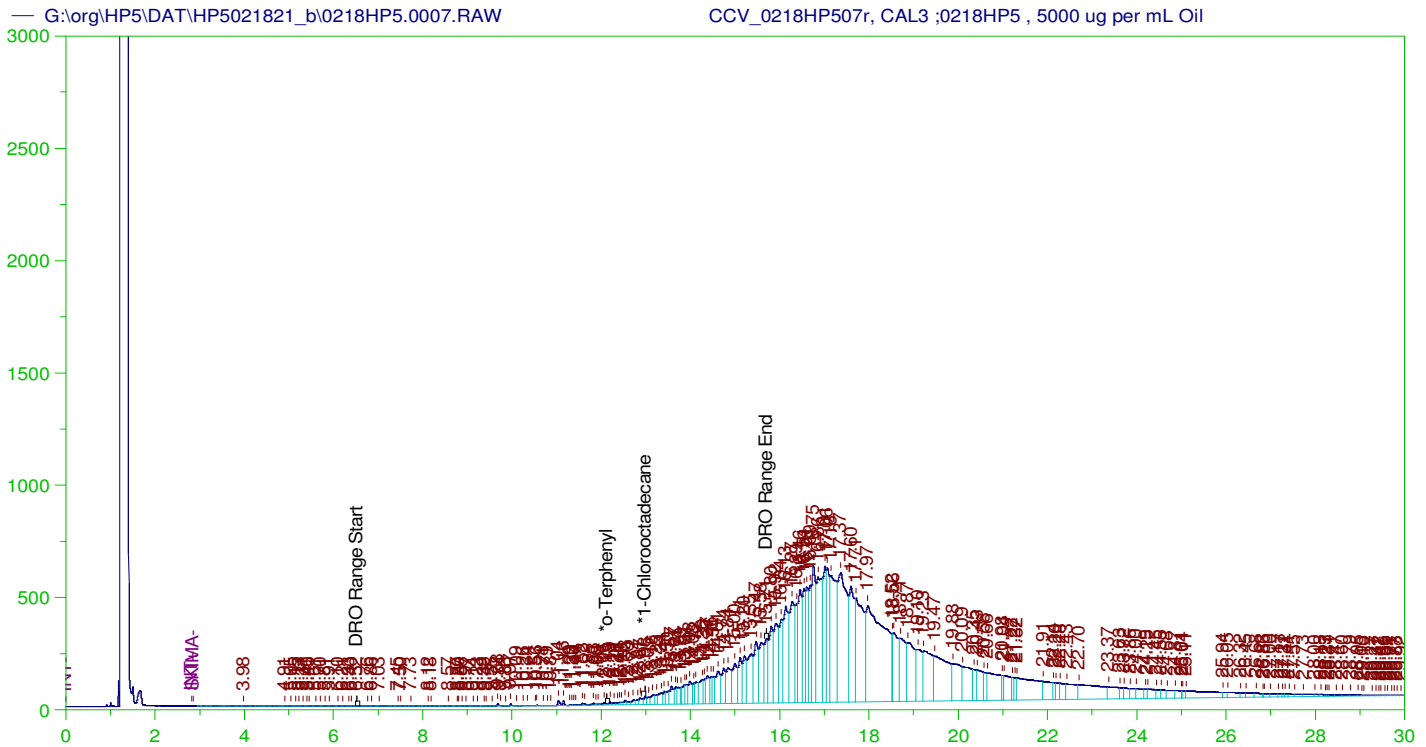
**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: DCM-Baseline Check-V06  
 Raw File: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0006.RAW  
 Date & Time Acquired: 2/18/2021 2:09:12 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-HE-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO210108HE.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 29457.33  
 Rt range for Diesel Range Organics: 6.49 to 15.75

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.17	200.	.017	.01 -
*1-Chlorooctadecane	29.977	200.	.	. -

DRO Area:29249.25 DRO Amount: 0.9929362  
 TEH Area:123949.1 TEH Amount: 4.20775



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_0218HP507r, CAL3 ;0218HP5 , 5000 ug per mL Oil  
 Raw File: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0007.RAW  
 Date & Time Acquired: 2/18/2021 2:51:00 PM  
 Method File: G:\ORG\HP5\METHODS\DR\_OIL-021807-AA-L0.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_OIL210218AA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 28542.41

Rt range for Diesel Range Organics: 6.49 to 15.75

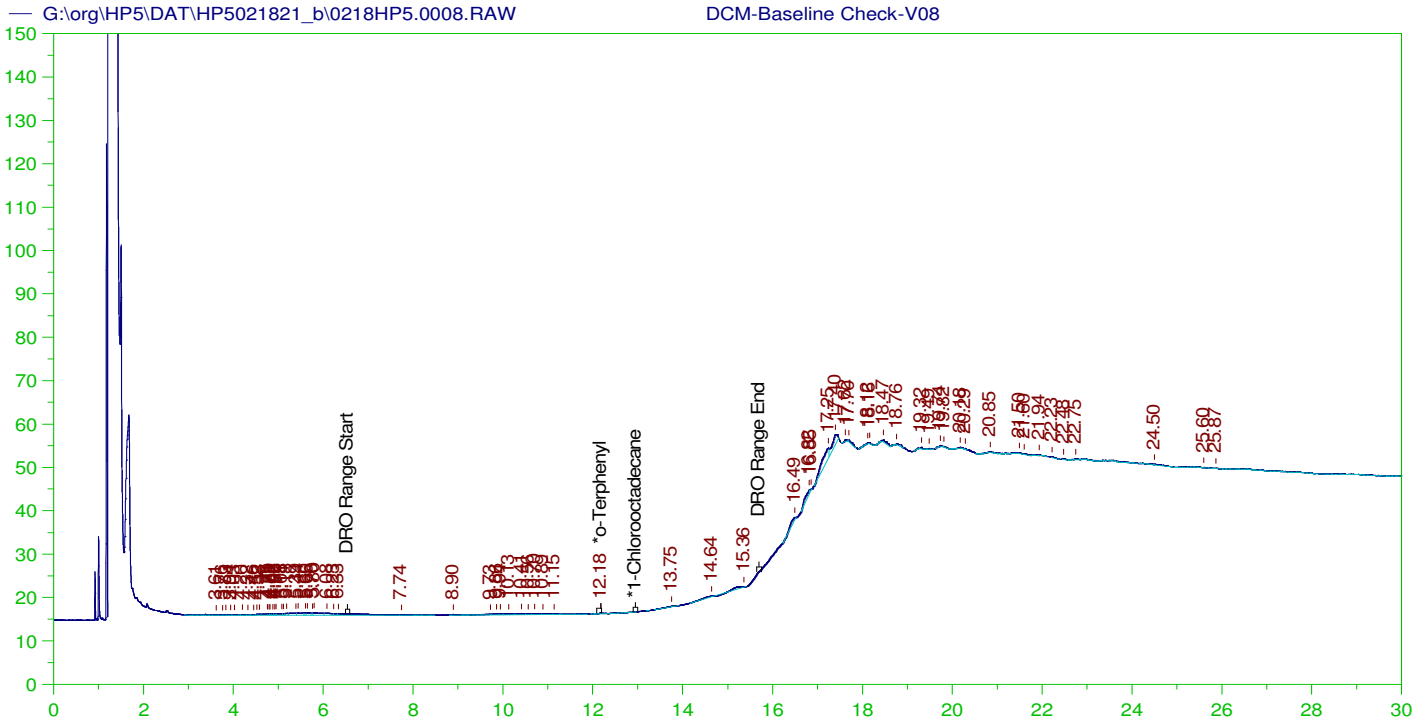
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.129	200.	.538	.27	-
*1-Chlorooctadecane	12.981	200.	4.244	2.12	-

DRO Area: 2.19239E+07 DRO Amount: 768.1166  
 TEH Area: 1.437314E+08 TEH Amount: 5035.713

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0007.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	5000.	5035.71	100.71	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.129	200.	.538	.27	85-115
*1-Chlorooctadecane	12.981	200.	4.244	2.12	85-115



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

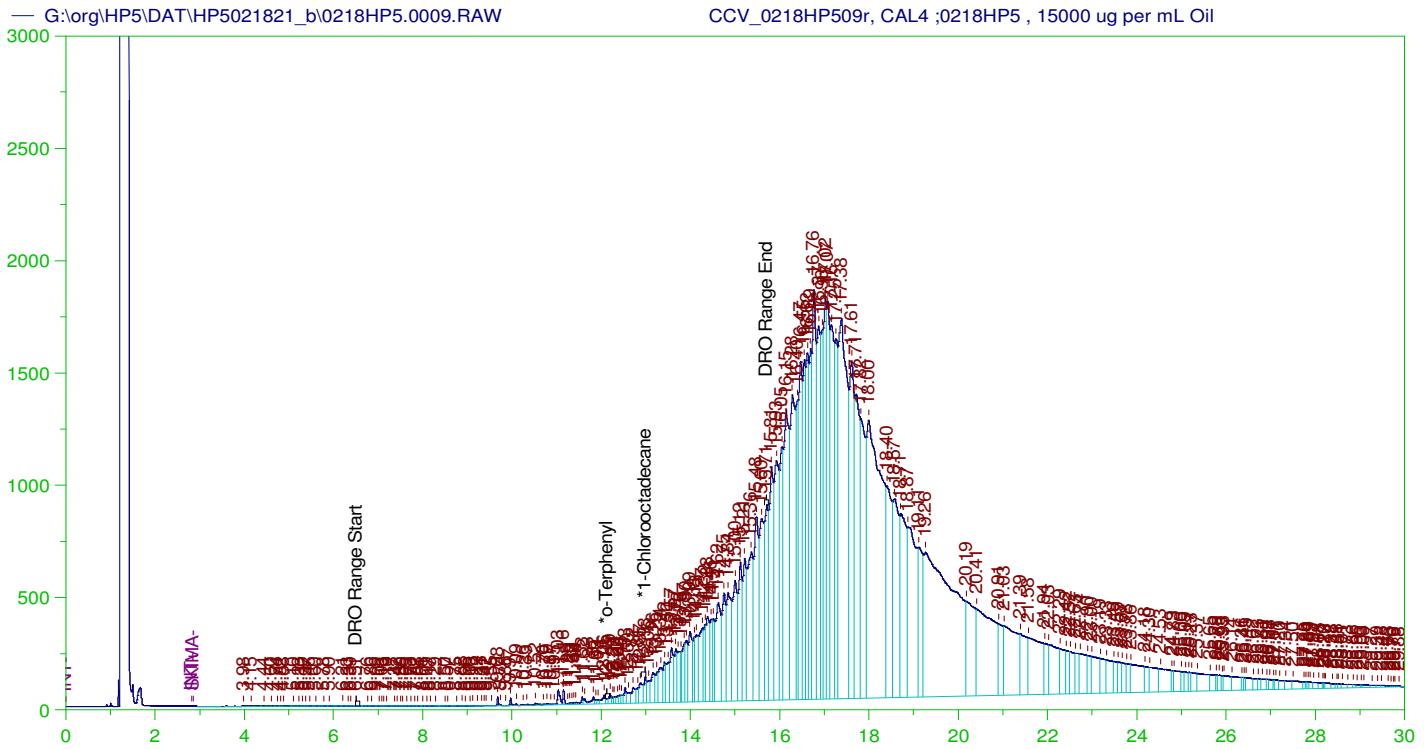
Sample Name: DCM-Baseline Check-V08  
 Raw File: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0008.RAW  
 Date & Time Acquired: 2/18/2021 3:32:46 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-HE-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO210108HE.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 29457.33

Rt range for Diesel Range Organics: 6.49 to 15.75

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.176	200.	.026	.01
*1-Chlorooctadecane	29.982	200.	.	.

DRO Area:30717.07 DRO Amount: 1.042765  
 TEH Area:223672.8 TEH Amount: 7.593112



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_0218HP509r, CAL4 ;0218HP5 , 15000 ug per mL Oil  
 Raw File: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0009.RAW  
 Date & Time Acquired: 2/18/2021 4:14:34 PM  
 Method File: G:\ORG\HP5\METHODS\DR\_OIL-021807-AA-L0.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_OIL210218AA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 28542.41  
 Rt range for Diesel Range Organics: 6.49 to 15.75

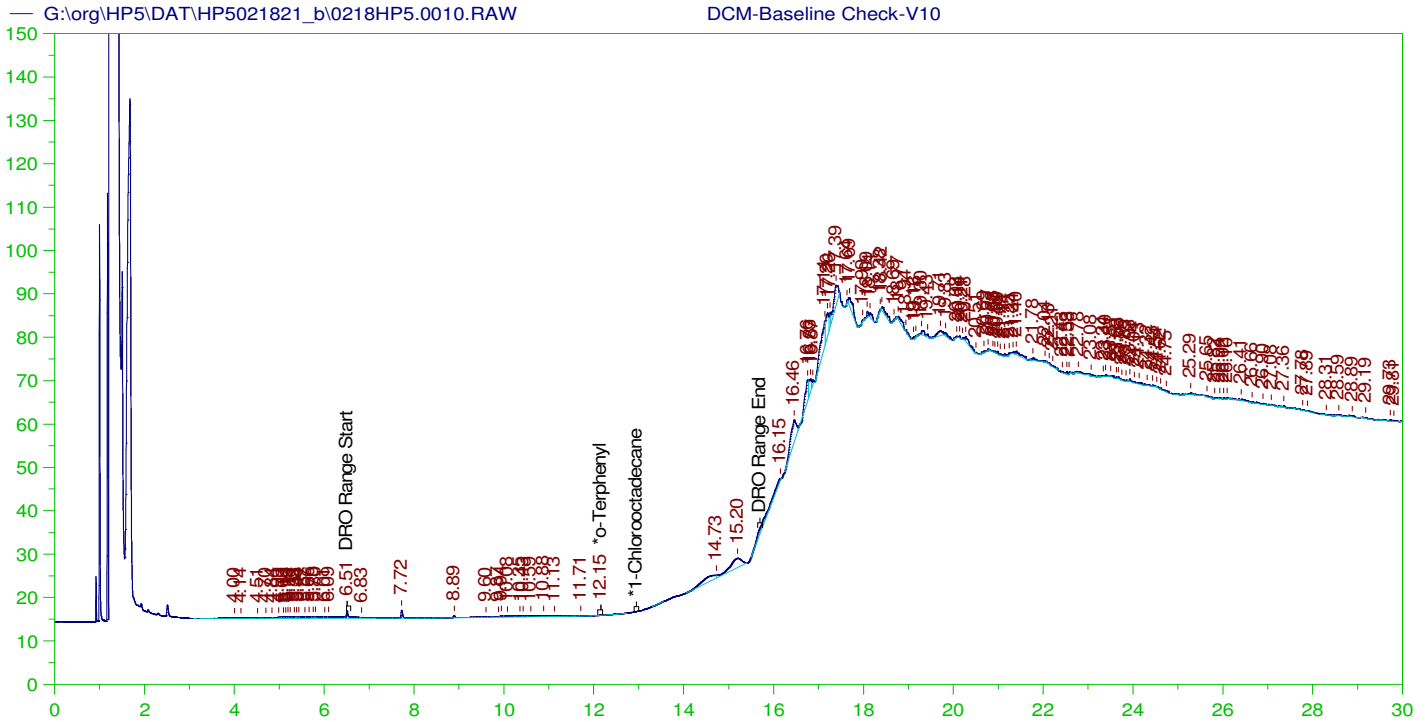
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.124	200.	1.888	.94	-
*1-Chlorooctadecane	12.984	200.	13.129	6.56	-

DRO Area: 6.73131E+07 DRO Amount: 2358.354  
 TEH Area: 4.193721E+08 TEH Amount: 14692.95

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0009.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	5000.	14692.95	293.86	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.124	200.	1.888	.94	85-115
*1-Chlorooctadecane	12.984	200.	13.129	6.56	85-115



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

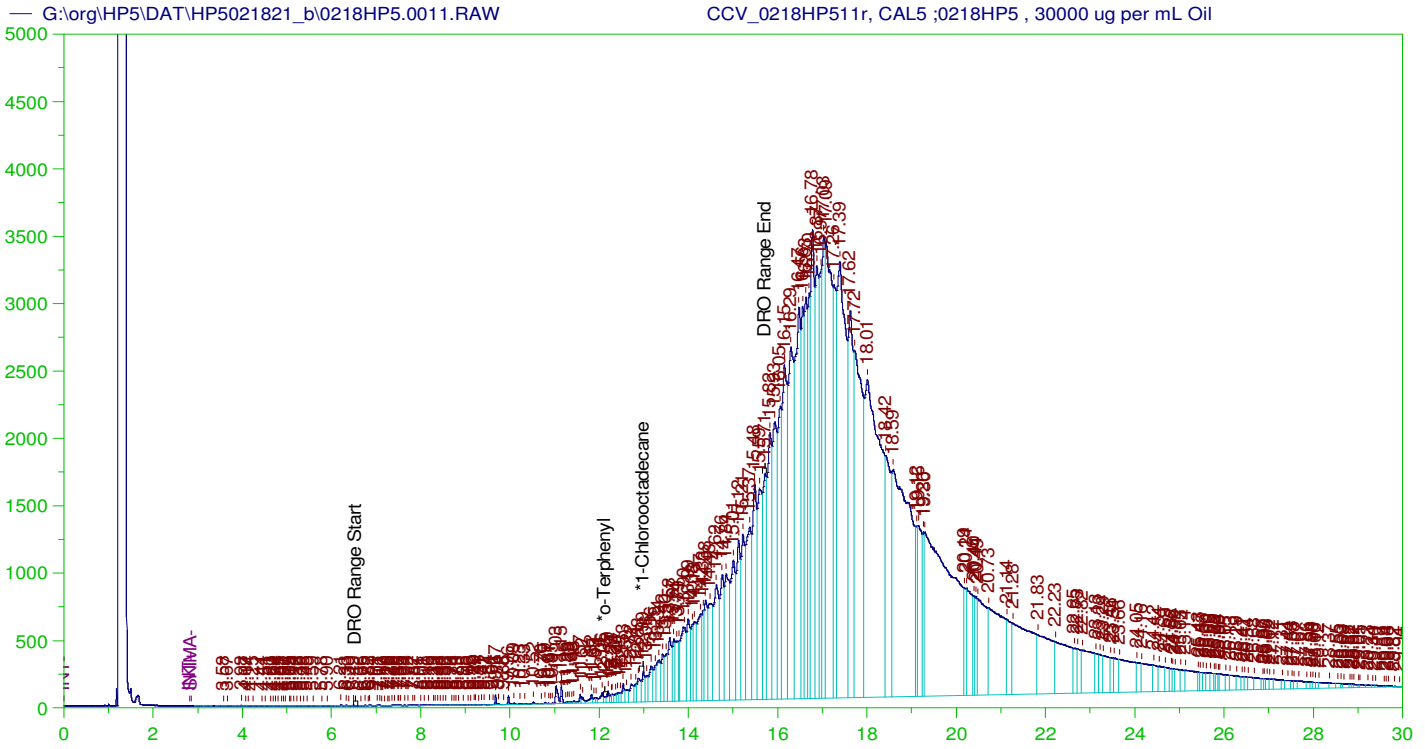
Sample Name: DCM-Baseline Check-V10  
 Raw File: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0010.RAW  
 Date & Time Acquired: 2/18/2021 4:56:16 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-HE-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO210108HE.CAL  
 Sample Weight: 1                    Dilution: 1                    S.A.: 1

Mean RF for TEH: 29457.33  
 Rt range for Diesel Range Organics: 6.49 to 15.75

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.153	200.	.023	.01
*1-Chlorooctadecane	29.957	200.	.	-

DRO Area:108629.1                    DRO Amount: 3.687675  
 TEH Area:543425.7                    TEH Amount: 18.44789





**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_0218HP511r, CAL5 ;0218HP5 , 30000 ug per mL Oil  
 Raw File: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0011.RAW  
 Date & Time Acquired: 2/18/2021 5:38:33 PM  
 Method File: G:\ORG\HP5\METHODS\DR\_OIL-021811-AA-L0.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_OIL210218AA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 28542.41

Rt range for Diesel Range Organics: 6.49 to 15.75

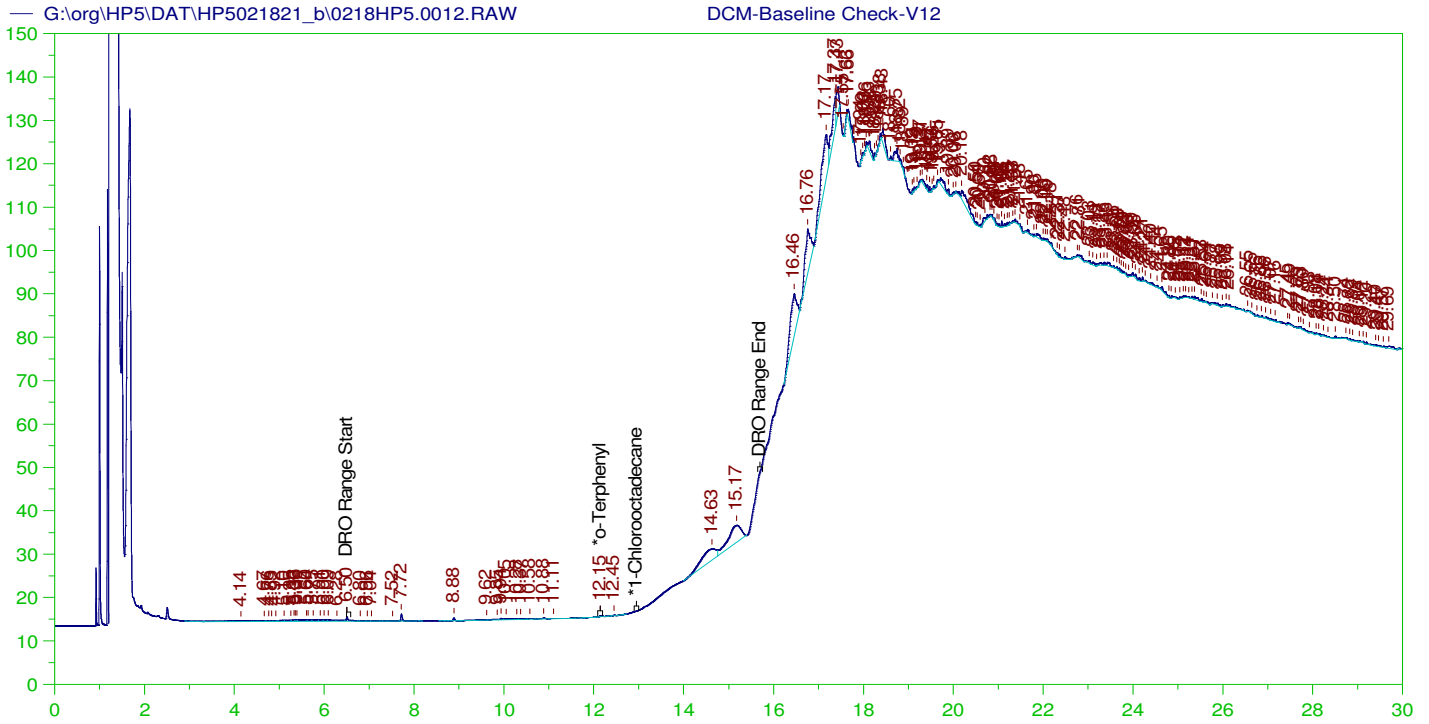
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.128	200.	3.828	1.91
*1-Chlorooctadecane	12.985	200.	28.22	14.11

DRO Area: 1.319327E+08 DRO Amount: 4622.338  
 TEH Area: 8.051155E+08 TEH Amount: 28207.69

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0011.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	5000.	28207.69	564.15	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.128	200.	3.828	1.91	85-115
*1-Chlorooctadecane	12.985	200.	28.22	14.11	85-115

**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

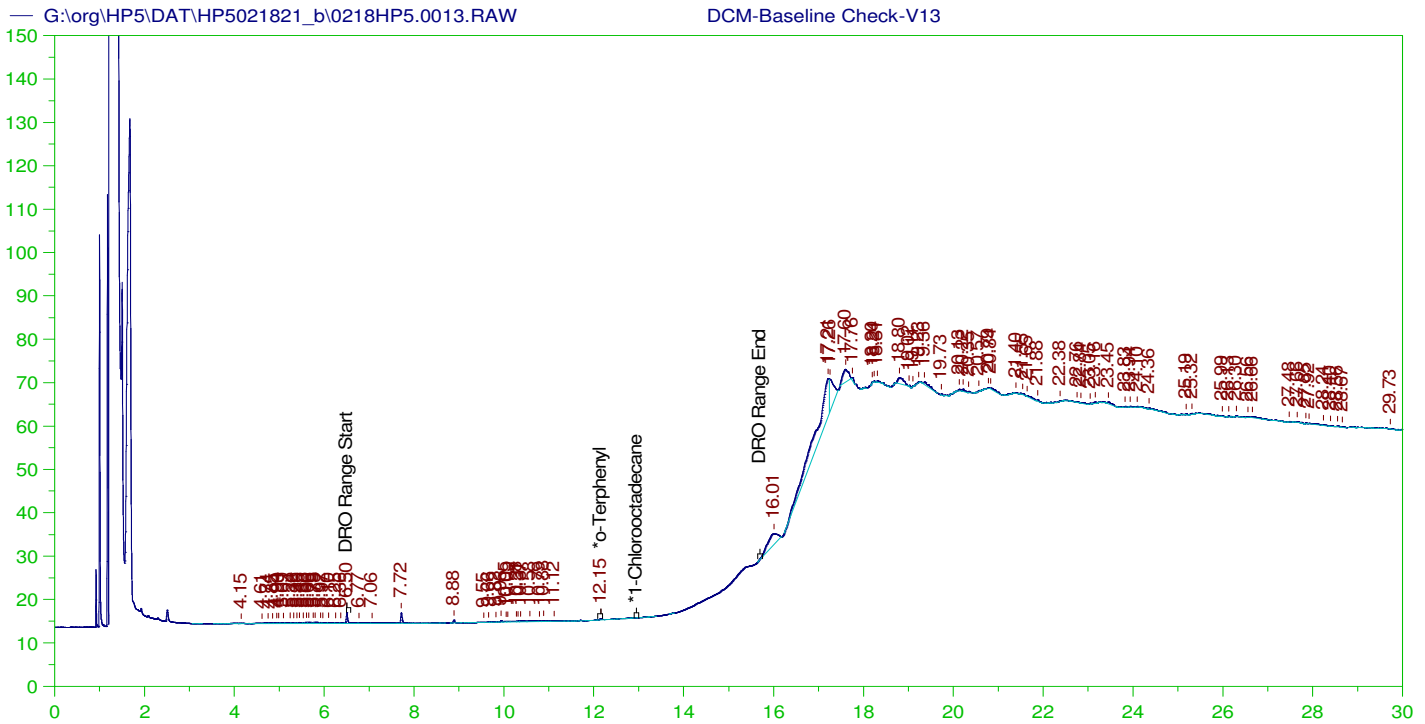
Sample Name: DCM-Baseline Check-V12  
 Raw File: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0012.RAW  
 Date & Time Acquired: 2/18/2021 6:20:48 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-HE-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO210108HE.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 29457.33

Rt range for Diesel Range Organics: 6.49 to 15.75

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.146	200.	.024	.01
*1-Chlorooctadecane	29.981	200.	.	.

DRO Area:186033.1 DRO Amount: 6.31534  
 TEH Area:888262.2 TEH Amount: 30.1542



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

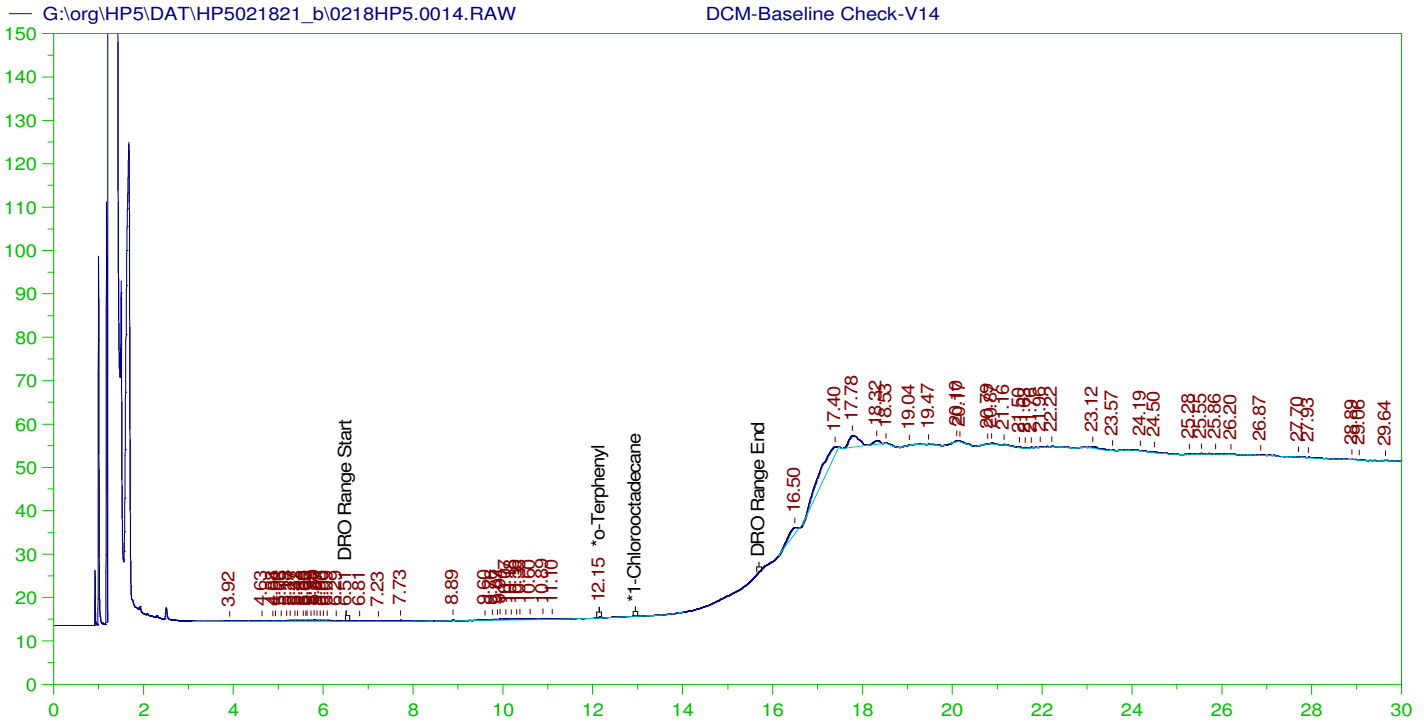
Sample Name: DCM-Baseline Check-V13  
 Raw File: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0013.RAW  
 Date & Time Acquired: 2/18/2021 7:03:01 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-HE-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO210108HE.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 29457.33

Rt range for Diesel Range Organics: 6.49 to 15.75

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.152	200.	.033	.02
*1-Chlorooctadecane	29.967	200.	.	.

DRO Area: 40824.55 DRO Amount: 1.385888  
 TEH Area: 476705.3 TEH Amount: 16.18291



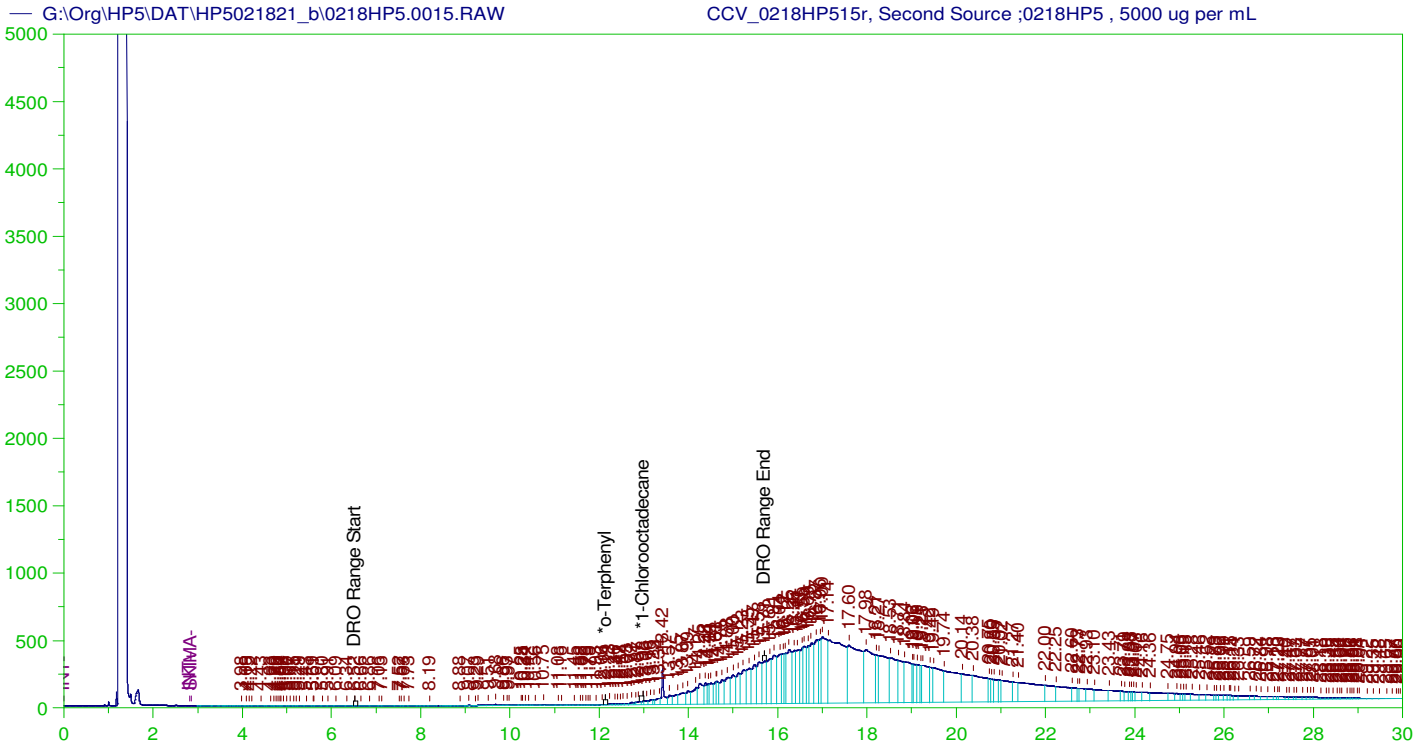
**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: DCM-Baseline Check-V14  
 Raw File: G:\org\HP5\DAT\HP5021821\_b\0218HP5.0014.RAW  
 Date & Time Acquired: 2/18/2021 7:45:21 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-HE-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO210108HE.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 29457.33  
 Rt range for Diesel Range Organics: 6.49 to 15.75

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.148	200.	.03	.01
*1-Chlorooctadecane	29.949	200.	.	.

DRO Area:30445.24 DRO Amount: 1.033537  
 TEH Area:297634.4 TEH Amount: 10.10392



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_0218HP515r, Second Source ;0218HP5 , 5000 ug per mL  
 Raw File: G:\Org\HP5\DAT\HP5021821\_b\0218HP5.0015.RAW  
 Date & Time Acquired: 2/18/2021 8:27:37 PM  
 Method File: G:\ORG\HP5\METHODS\DR\_OIL-021811-AA-L0.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_OIL210218AA.CAL  
 Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for TEH: 28542.41

Rt range for Diesel Range Organics: 6.49 to 15.75

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.137	.2	.19	-
*1-Chlorooctadecane	12.984	.2	.003	1.62

DRO Area: 2.558549E+07 DRO Amount: 0.8964027  
 TEH Area: 1.562544E+08 TEH Amount: 5.474465

CONTINUING CALIBRATION REPORT: G:\Org\HP5\DAT\HP5021821\_b\0218HP5.0015.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	5000.	5.47	.11	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.137	.2	.19	1.62	85-115
*1-Chlorooctadecane	12.984	.2	.003	1.62	85-115

Write Sequence	Data File	Sample Name	Method	Weight	Dil Factor	Amt Inj	IS	Cal ID	Manual Integration
		Marker_0218HP501r, DRO C40 ;0218HP5 , DRO210204A	G:\Org\HP5\Methods\CSC210212.met	1	1	1	1	0	No Integration
		DCM-Baseline Check-V02	G:\Org\HP5\Methods\DR_8015-HE-LEXP.met	1	1	1	1	0	No Integration
		CCV_0218HP503r, CAL1 ;0218HP5 , 150 ug per mL Oil (10 uL of Cal4 + 990 uL DCM(13510))	G:\Org\HP5\Methods\DR_OIL-021803-AA-L0.MET						The integration of Total Extractable Hydrocarbons (OIL) is the hydrocarbon response with reference to the baseline. Assigned Set Baseline All Valley on at 20.91 changed peak width and scale was set at 150 for the Yaxis.
		DCM-Baseline Check-V04	G:\Org\HP5\Methods\DR_8015-HE-LEXP.met	1	1	1	1	0	No Integration
		CCV_0218HP505r, CAL2 ;0218HP5 , 1000 ug per mL Oil (200 uL of Cal 3 +800 uL DCM(13510))	G:\Org\HP5\Methods\DR_OIL-021805-AA-L0.MET						The integration of Total Extractable Hydrocarbons (OIL) is the hydrocarbon response with reference to the baseline. Assigned Set Baseline All Valley on at 26.79 changed peak width and scale was set at 300 for the Yaxis.
		DCM-Baseline Check-V06	G:\Org\HP5\Methods\DR_8015-HE-LEXP.met	1	1	1	1	0	No Integration
		CCV_0218HP507r, CAL3 ;0218HP5 , 5000 ug per mL Oil (100 uL of DRO180918C + 900 uL DCM(13510))	G:\Org\HP5\Methods\DR_OIL-021807-AA-L0.MET						The integration of Total Extractable Hydrocarbons (OIL) is the hydrocarbon response with reference to the baseline. Scale was set at 3000 for the Yaxis.
		DCM-Baseline Check-V08	G:\Org\HP5\Methods\DR_8015-HE-LEXP.met	1	1	1	1	0	No Integration
		CCV_0218HP509r, CAL4 ;0218HP5 , 15000 ug per mL Oil (200 uL of CAL5 + 200 uL DCM(13510))	G:\Org\HP5\Methods\DR_OIL-021807-AA-L0.MET						The integration of Total Extractable Hydrocarbons (OIL) is the hydrocarbon response with reference to the baseline. Scale was set at 3000 for the Yaxis.
		DCM-Baseline Check-V10	G:\Org\HP5\Methods\DR_8015-HE-LEXP.met	1	1	1	1	0	No Integration
		CCV_0218HP511r, CAL5 ;0218HP5 , 30000 ug per mL Oil (600 uL of DRO180918C + 400 uL of DCM)	G:\Org\HP5\Methods\DR_OIL-021811-AA-L0.MET						The integration of Total Extractable Hydrocarbons (OIL) is the hydrocarbon response with reference to the baseline. Scale was set at 5000 for the Yaxis.
		DCM-Baseline Check-V12	G:\Org\HP5\Methods\DR_8015-HE-LEXP.met	1	1	1	1	0	No Integration
		DCM-Baseline Check-V13	G:\Org\HP5\Methods\DR_8015-HE-LEXP.met	1	1	1	1	0	No Integration
		DCM-Baseline Check-V14	G:\Org\HP5\Methods\DR_8015-HE-LEXP.met	1	1	1	1	0	No Integration
		CCV_0218HP515r, Second Source ;0218HP5 , 5000 ug per mL (100uL of DRO210217A + 300uL DCM(13510))	G:\Org\HP5\Methods\DR_OIL-021811-AA-L0.MET						The integration of Total Extractable Hydrocarbons (OIL) is the hydrocarbon response with reference to the baseline. Scale was set at 5000 for the Yaxis.



Digitally signed by  
Ann Nebel  
Date: 2021.10.29 12:03:40 -06:00

# Energy Laboratories Inc

# ANALYTICAL RUN Summary

25-Oct-21

Run ID GCFID-HP5-B\_211017A

<b>Run Start Date:</b> 10/17/2021
<b>Analyst:</b> Ann Nebel
<b>Ical:</b>
<b>Column ID:</b>
<b>Comments:</b> Triacontane ICAL

Std ID	Std Name	Std Amount	Std Units	Samp Amount	Samp Units	SampType	Expiration Date
DRO211006A	Triacontane SURR 2000 ug/mL					SURR	4/6/2026

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
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14777567	CCV_1017HP50	HC-8015-DRO-	CAL1		10/17/2021 3:30:	1	R368813		0	0	
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Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
n-Triacontane	S	mg/L		0.00202757		0.002	0	0	0.002	0.002	0	101%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
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14777568	CCV_1017HP50	HC-8015-DRO-	CAL2		10/17/2021 4:12:	1	R368813		0	0	
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Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
n-Triacontane	S	mg/L		0.04817772		0.05	0	0	0.002	0.002	0	96%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
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14777569	CCV_1017HP50	HC-8015-DRO-	CAL3		10/17/2021 4:55:	1	R368813		0	0	
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Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
n-Triacontane	S	mg/L		0.2231112		0.2	0	0	0.002	0.002	0	112%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
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14777570	CCV_1017HP50	HC-8015-DRO-	CAL4		10/17/2021 5:38:	1	R368813		0	0	
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Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
n-Triacontane	S	mg/L		0.4700634		0.5	0	0	0.002	0.002	0	94%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
14777571	CCV_1017HP50	HC-8015-DRO-	CAL5		10/17/2021 6:20:	1	R368813		0	0						
n-Triacontane	S	mg/L		0.9372648		1	0	0	0.002	0.002	0	94%	80	120	0%	



Write Sequence	Data File	Sample Name	Method	Weight	Dil Factor	Amt Inj.	IS	Cal ID
	G:\org\HP5\DAT\HP5101721_b\1017HP5.01r	DCM-Baseline Check-V01	G:\Org\HP5\Methods\DR_8015-HS-LEXP.met	1	1	1	1	0
	G:\org\HP5\DAT\HP5101721_b\1017HP5.02r	DCM-Baseline Check-V02	G:\Org\HP5\Methods\DR_8015-HS-LEXP.met	1	1	1	1	0
	G:\org\HP5\DAT\HP5101721_b\1017HP5.03r	CCV_1017HP503r, DRO ;1017HP5 , DRO210708A	G:\Org\HP5\Methods\DR_8015-HS-LEXP.met	1	1	1	1	0
	G:\org\HP5\DAT\HP5101721_b\1017HP5.04r	DCM-Baseline Check-V04	G:\Org\HP5\Methods\DR_8015-HS-LEXP.met	1	1	1	1	0
	G:\org\HP5\DAT\HP5101721_b\1017HP5.05r	CCV_1017HP505r, CAL1 ;1017HP5 , 2 ug per mL Triacotane (10 uL of Cal3 + 990 uL DCM(14354)	G:\Org\HP5\Methods\DS_ORO-AA-L0.met	1	1	1	1	0
	G:\org\HP5\DAT\HP5101721_b\1017HP5.06r	CCV_1017HP506r, CAL2 ;1017HP5 , 50 ug per mL Triacotane (100 uL Cal4 + 900 uL of DCM(14354)	G:\Org\HP5\Methods\DS_ORO-AA-L0.met	1	1	1	1	0
	G:\org\HP5\DAT\HP5101721_b\1017HP5.07r	CCV_1017HP507r, CAL3 ;1017HP5 , 200 ug per mL Triacotane (100uL of Cal5 + 400 uL DCM(14354)	G:\Org\HP5\Methods\DS_ORO-AA-L0.met	1	1	1	1	0
	G:\org\HP5\DAT\HP5101721_b\1017HP5.08r	CCV_1017HP508r, CAL4 ;1017HP5 , 500 ug per mL Triacotane (250uL of Cal5 + 250 uL DCM(14354)	G:\Org\HP5\Methods\DS_ORO-AA-L0.met	1	1	1	1	0
	G:\org\HP5\DAT\HP5101721_b\1017HP5.09r	CCV_1017HP509r, CAL5 ;1017HP5 , 1000 ug per mL Triacotane (500 uL 2000 ug/mL Triacotane DRO211006A + 500 DCM(14354)	G:\Org\HP5\Methods\DS_ORO-AA-L0.met	1	1	1	1	0

File Name: G:\Org\HP5\Cals\SW8015C\_ORO211017AA.CAL

Version: 11

Creator: AMN

Description: 8015C-Oil Range. New ICal Per 1017HP5 (2021)-2 uL Inj.; RRO copied from 8015 cal for Oil

Reason for change:

External standard calibration

Standard injection volume: 1

Standard sample weight: 1

Area reject threshold: 500

Reference peak area reject threshold: 500

Amount units: nanograms

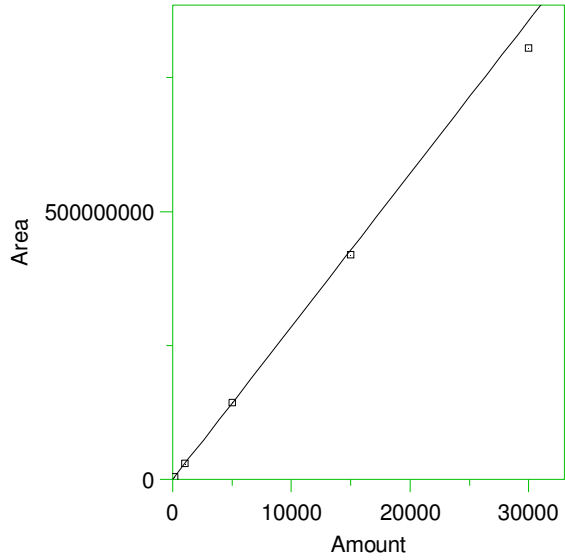
No default component

Method of calculating data point averages: Equal weight for all updates

No calibration update report

All levels are normal data points.

1 \*30-40 Motor Oil



Expected retention time: 6.4 minutes  
 Search window: 0.05 minutes  
 No retention time reference component  
 Group number: 0  
 High alarm limit: 0  
 Low alarm limit: 0  
 Component constant: 0

Single peak quantification by area

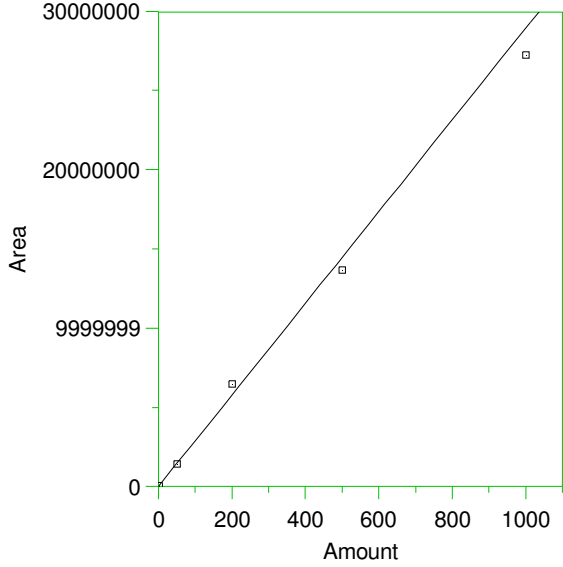
$Y = 28542.41 X + 0$

Average CF fit with equal weighting, forced to origin  
 Coefficient of determination: 0.9940317  
 Average error: 3.209%  
 Average CF: 28542.41  
 RSD: 4.497%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	150	4325287	28835.25	1.026	Manual	10/18/2021 2:26:35 PM
2	1000	3.03352E+07	30335.2	6.281	Manual	10/18/2021 2:26:39 PM
3	5000	1.437314E+08	28746.28	0.714	Manual	10/18/2021 2:26:42 PM
4	15000	4.193721E+08	27958.14	-2.047	Manual	10/18/2021 2:26:45 PM
5	30000	8.051155E+08	26837.18	-5.974	Manual	10/18/2021 2:26:47 PM

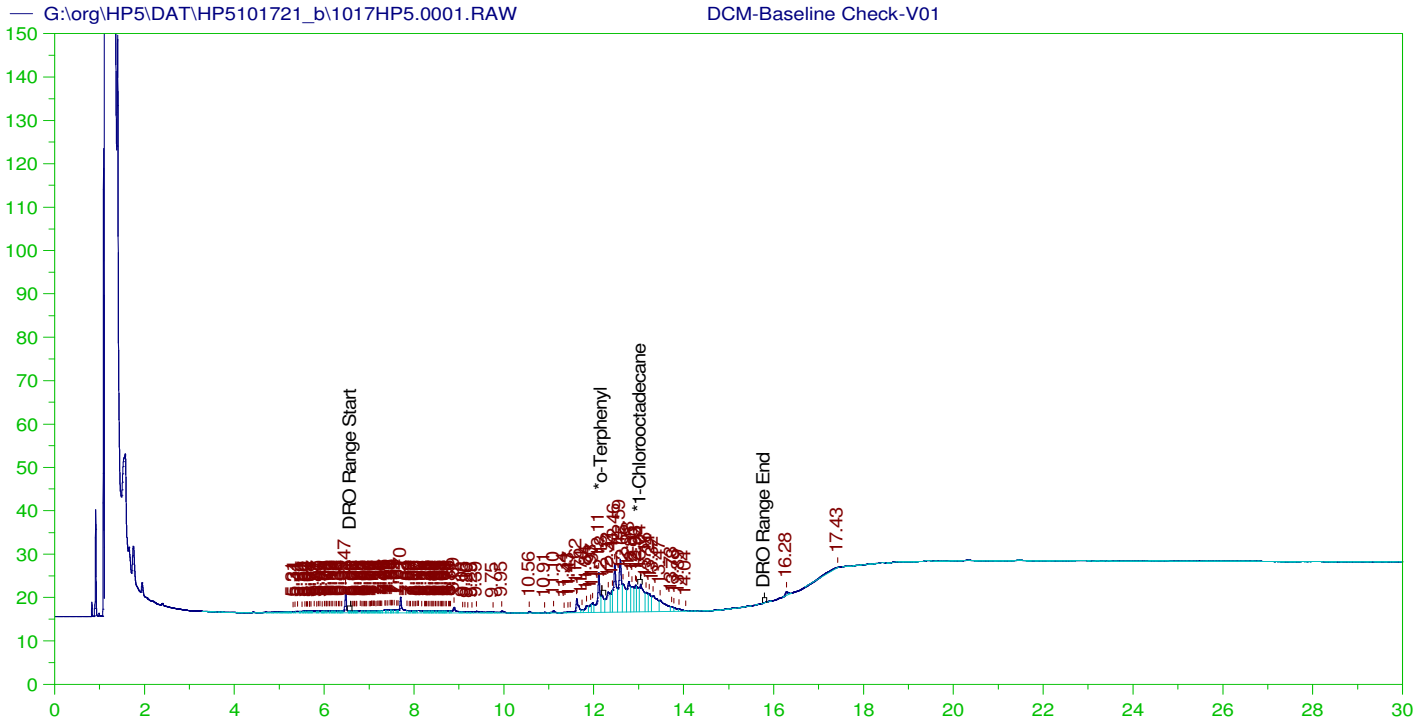
3

\*#Triacontane



Expected retention time: 16.26 minutes  
 Search window: 0.05 minutes  
 No retention time reference component  
 Group number: 0  
 High alarm limit: 0  
 Low alarm limit: 0  
 Component constant: 0  
 Single peak quantification by area  
 Y = 28930.14 X + 0  
 Average CF fit with equal weighting, forced to origin  
 Coefficient of determination: 0.9919451  
 Average error: 5.737%  
 Average CF: 28930.14  
 RSD: 7.577%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	2	59020.1	29510.05	2.005	Manual	10/18/2021 2:42:38 PM
2	50	1403134	28062.68	-2.998	G:\Org\HP4\DAT\HP4100621_b\1006HP4.0015.BND	10/7/2021 12:47:26 PM
3	200	6499949	32499.74	12.339	G:\Org\HP4\DAT\HP4100621_b\1006HP4.0017.BND	10/7/2021 12:47:56 PM
4	500	1.366713E+07	27334.26	-5.516	Manual	10/18/2021 2:44:43 PM
5	1000	2.724398E+07	27243.98	-5.828	Manual	10/18/2021 2:43:45 PM



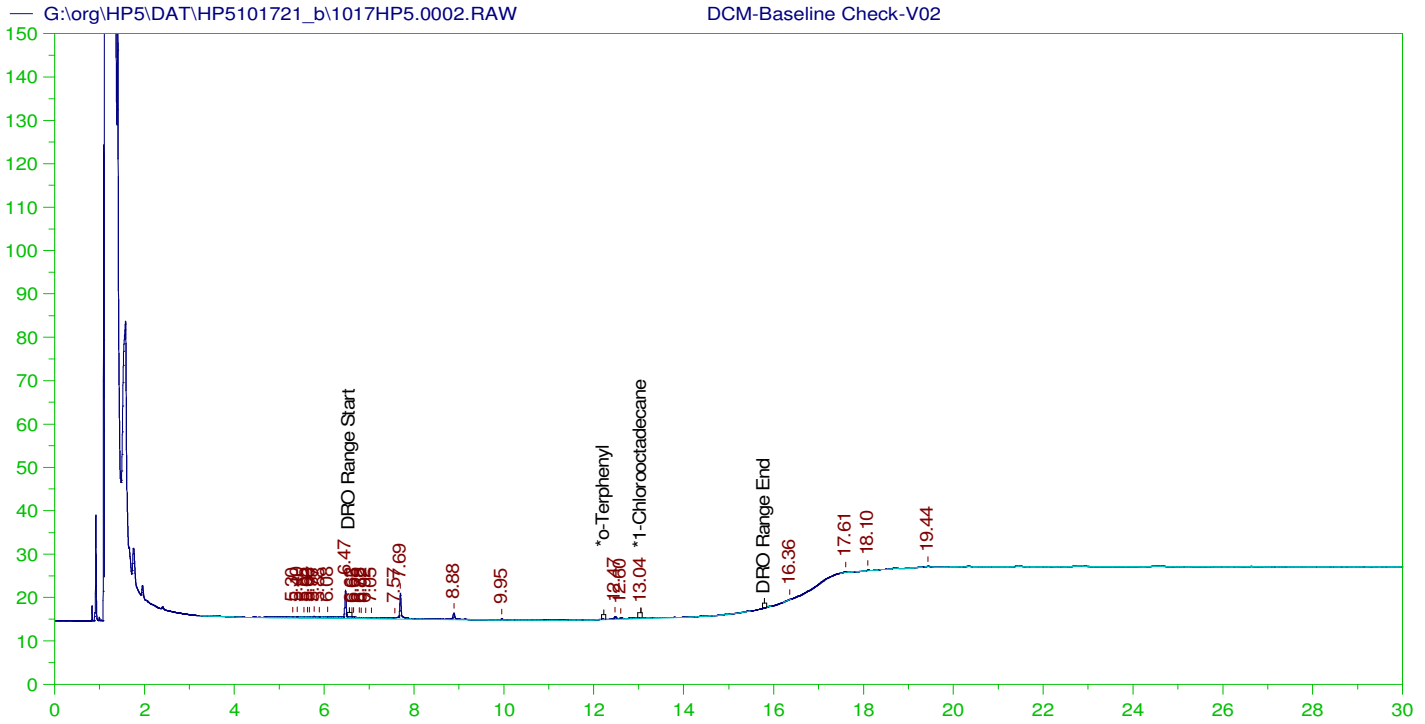
**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: DCM-Baseline Check-V01  
 Raw File: G:\org\HP5\DAT\HP5101721\_b\1017HP5.0001.RAW  
 Date & Time Acquired: 10/17/2021 12:40:02 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-HS-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO210108Hs.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 29457.33  
 Rt range for Diesel Range Organics: 6.51 to 15.85

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.178	200.	.522	.26	-
*1-Chlorooctadecane	13.04	200.	1.235	.62	-

DRO Area:571771.5 DRO Amount: 19.41016  
 TEH Area:639555.1 TEH Amount: 21.71124



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

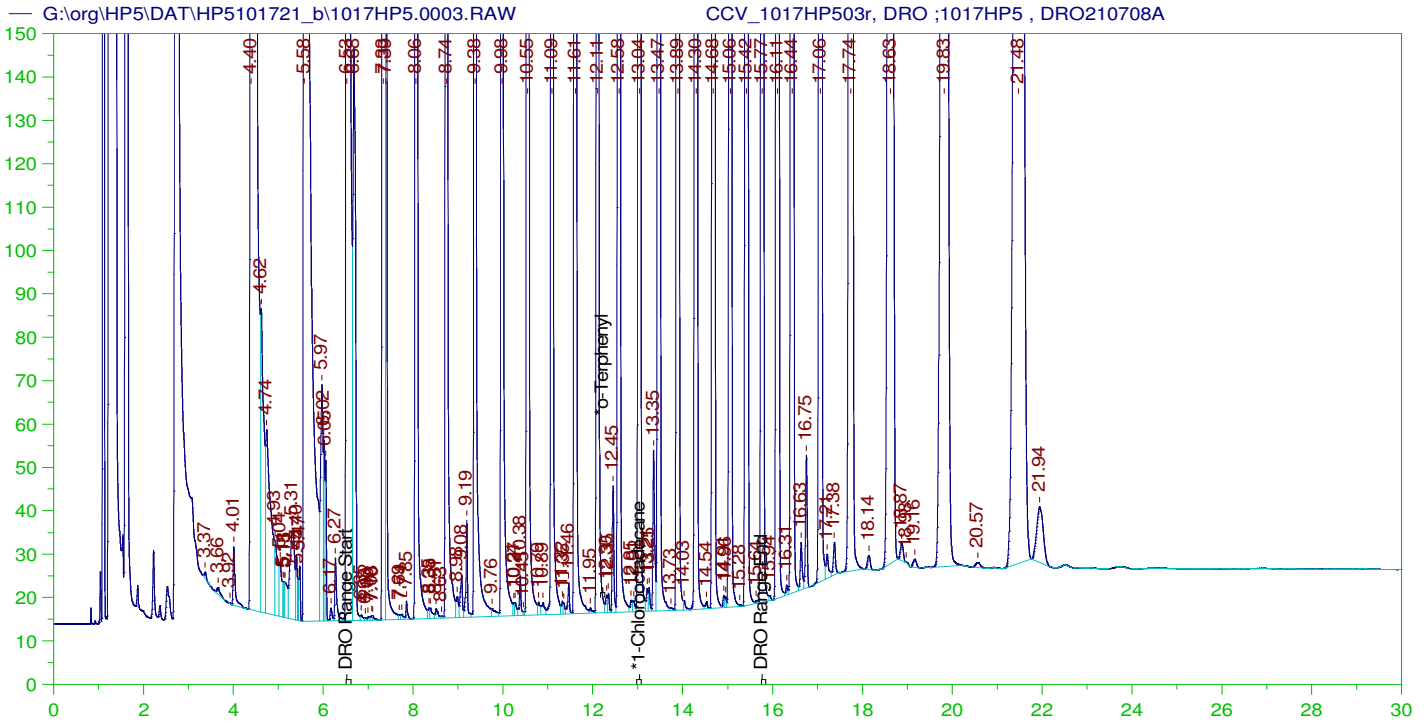
Sample Name: DCM-Baseline Check-V02  
 Raw File: G:\org\HP5\DAT\HP5101721\_b\1017HP5.0002.RAW  
 Date & Time Acquired: 10/17/2021 1:22:21 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-HS-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO210108Hs.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 29457.33

Rt range for Diesel Range Organics: 6.51 to 15.85

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	29.973	200.	.	-
*1-Chlorooctadecane	13.043	200.	.018	.01 -

DRO Area:58862.56 DRO Amount: 1.998231  
 TEH Area:105899.4 TEH Amount: 3.595009



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1017HP503r, DRO ;1017HP5 , DRO210708A  
 Raw File: G:\org\HP5\DAT\HP5101721\_b\1017HP5.0003.RAW  
 Date & Time Acquired: 10/17/2021 2:04:53 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-HS-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO210108Hs.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 29457.33  
 Rt range for Diesel Range Organics: 6.51 to 15.85

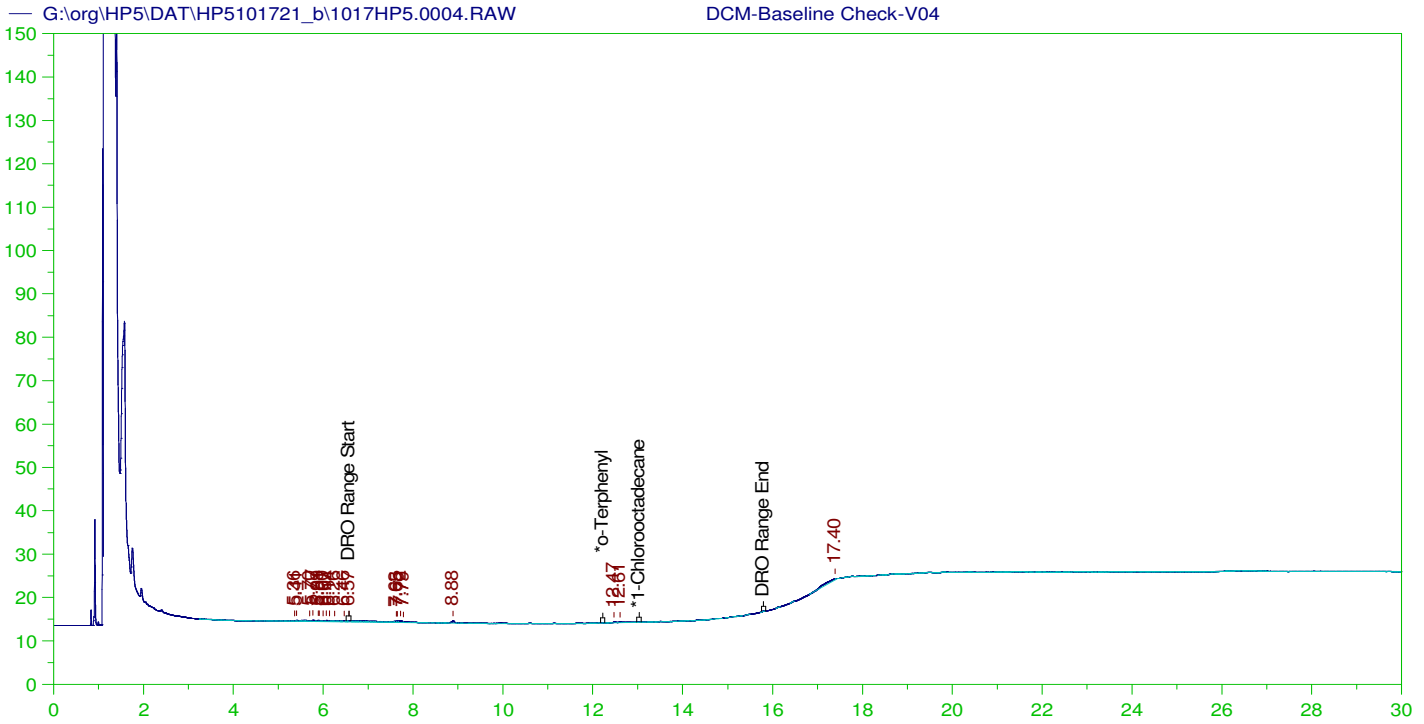
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	29.982	200.	.	-
*1-Chlorooctadecane	13.037	200.	255.634	127.82 -

DRO Area: 1.592713E+08 DRO Amount: 5406.847  
 TEH Area: 2.370861E+08 TEH Amount: 8048.458

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5101721\_b\1017HP5.0003.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	8048.46	53.66	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	29.982	200.	.	.	85-115
*1-Chlorooctadecane	13.037	200.	255.634	127.82	85-115



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

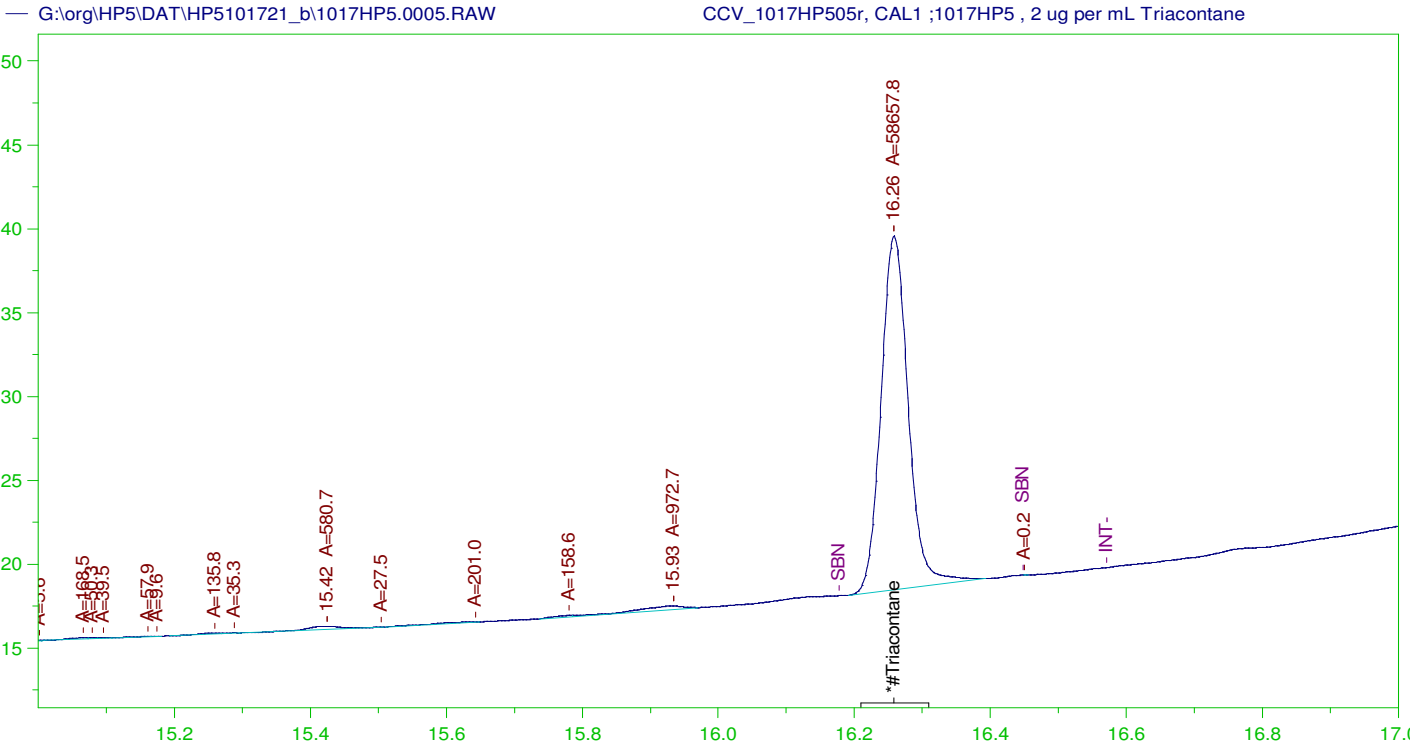
Sample Name: DCM-Baseline Check-V04  
 Raw File: G:\org\HP5\DAT\HP5101721\_b\1017HP5.0004.RAW  
 Date & Time Acquired: 10/17/2021 2:47:29 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-HS-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO210108Hs.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 29457.33  
 Rt range for Diesel Range Organics: 6.51 to 15.85

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	29.987	200.	.	-
*1-Chlorooctadecane	29.987	200.	.	-

DRO Area:32637.46 DRO Amount: 1.107957  
 TEH Area:75218.02 TEH Amount: 2.553457





**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: CCV\_1017HP505r, CAL1 ;1017HP5 , 2 ug per mL Triacontane  
 Raw File: G:\org\HP5\DAT\HP5101721\_b\1017HP5.0005.RAW  
 Date & Time Acquired: 10/17/2021 3:30:16 PM  
 Method File: G:\Org\HP5\Methods\DS\_ORO-AA-L0.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
 Rt range for Residual Range Organics: 12.53 to 30.05

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.258	500.	2.028	.41	-

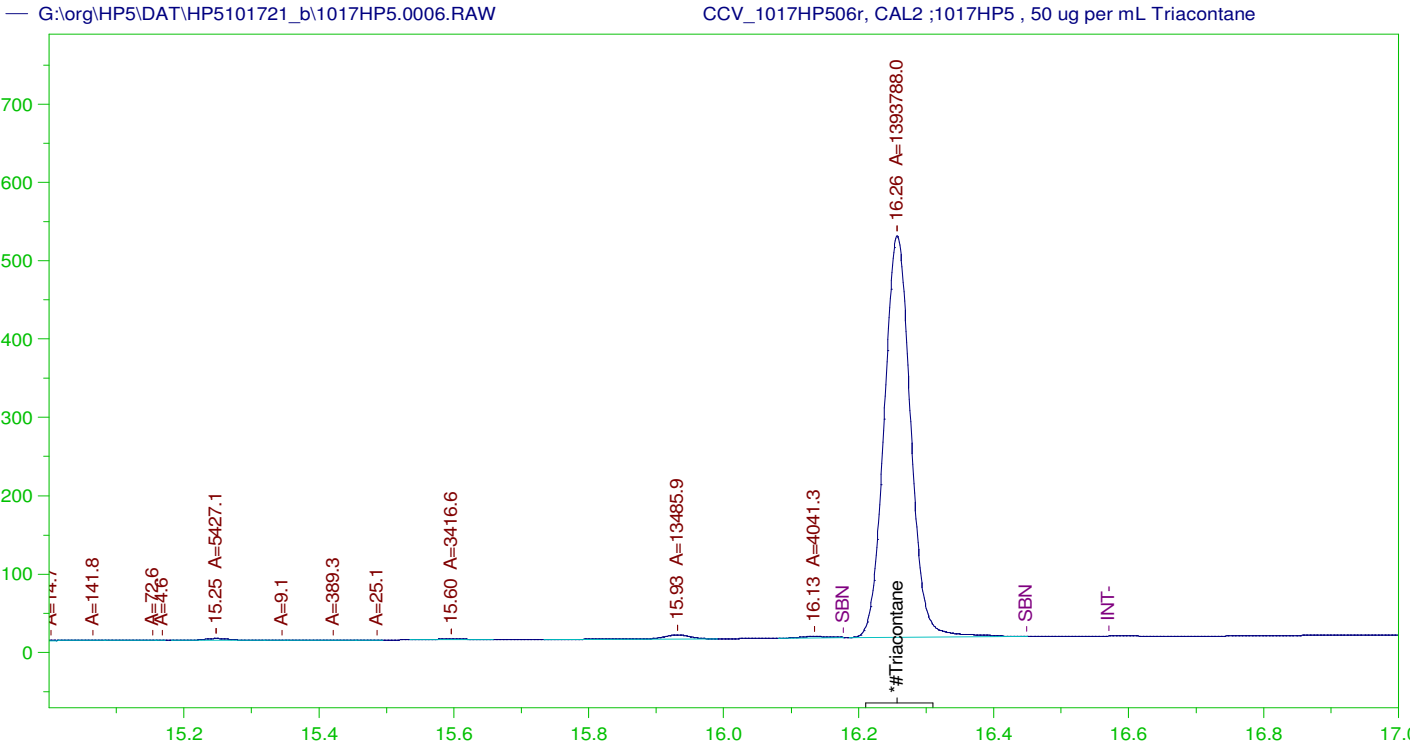
RRO Area:2747.039 RRO AMOUNT: 9.624412E-02

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5101721\_b\1017HP5.0005.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
*30-40 Motor Oil	5000.	.	75-125	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*#Triacontane	16.258	200.	2.028	1.01	75-125



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: CCV\_1017HP506r, CAL2 ;1017HP5 , 50 ug per mL Triacontane  
 Raw File: G:\org\HP5\DAT\HP5101721\_b\1017HP5.0006.RAW  
 Date & Time Acquired: 10/17/2021 4:12:57 PM  
 Method File: G:\Org\HP5\Methods\DS\_ORO-AA-L0.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
 Rt range for Residual Range Organics: 12.53 to 30.05

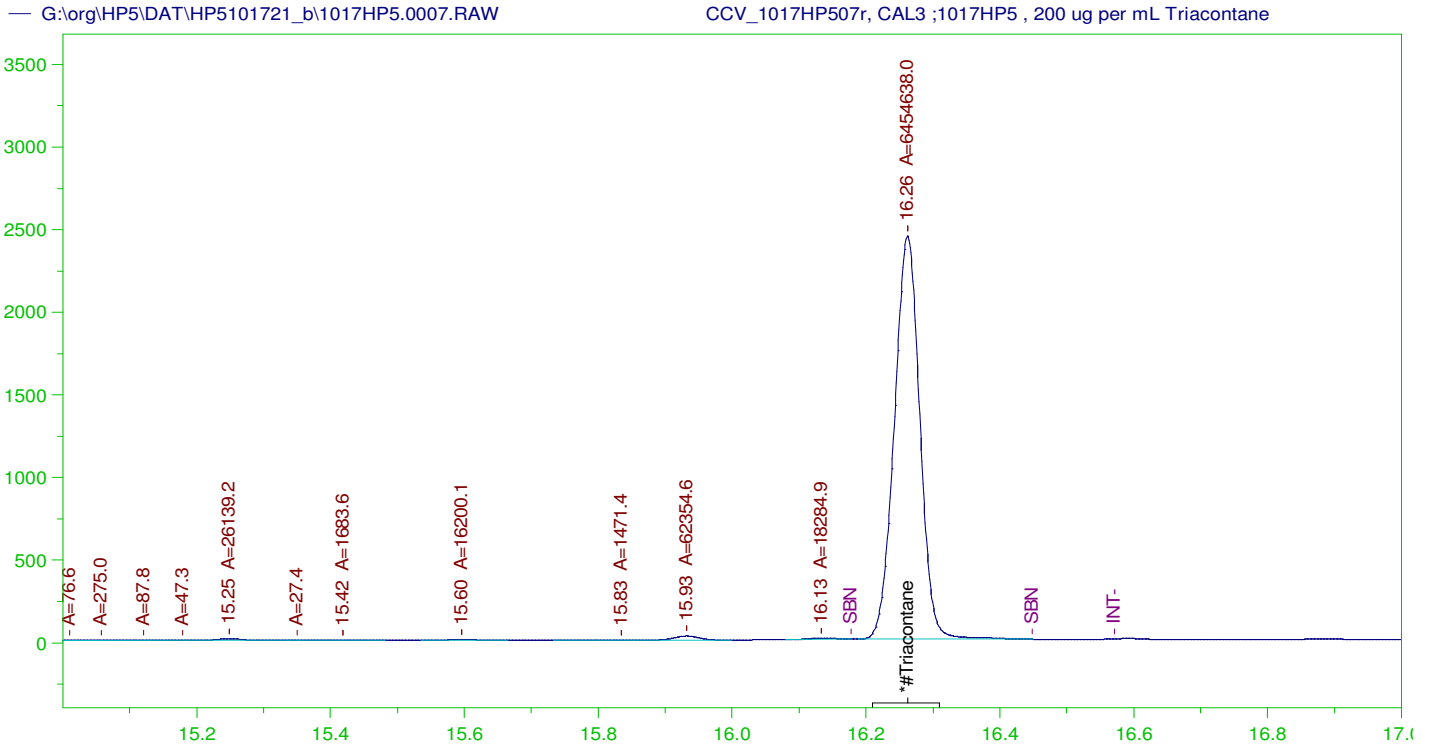
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.257	500.	48.178	9.64	-

RRO Area:45902.25 RRO AMOUNT: 1.608212

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5101721\_b\1017HP5.0006.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
*30-40 Motor Oil	5000.	.	75-125	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*#Triacontane	16.257	200.	48.178	24.09	75-125



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: CCV\_1017HP507r, CAL3 ;1017HP5 , 200 ug per mL Triacontane  
 Raw File: G:\org\HP5\DAT\HP5101721\_b\1017HP5.0007.RAW  
 Date & Time Acquired: 10/17/2021 4:55:33 PM  
 Method File: G:\Org\HP5\Methods\DS\_ORO-AA-L0.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
 Rt range for Residual Range Organics: 12.53 to 30.05

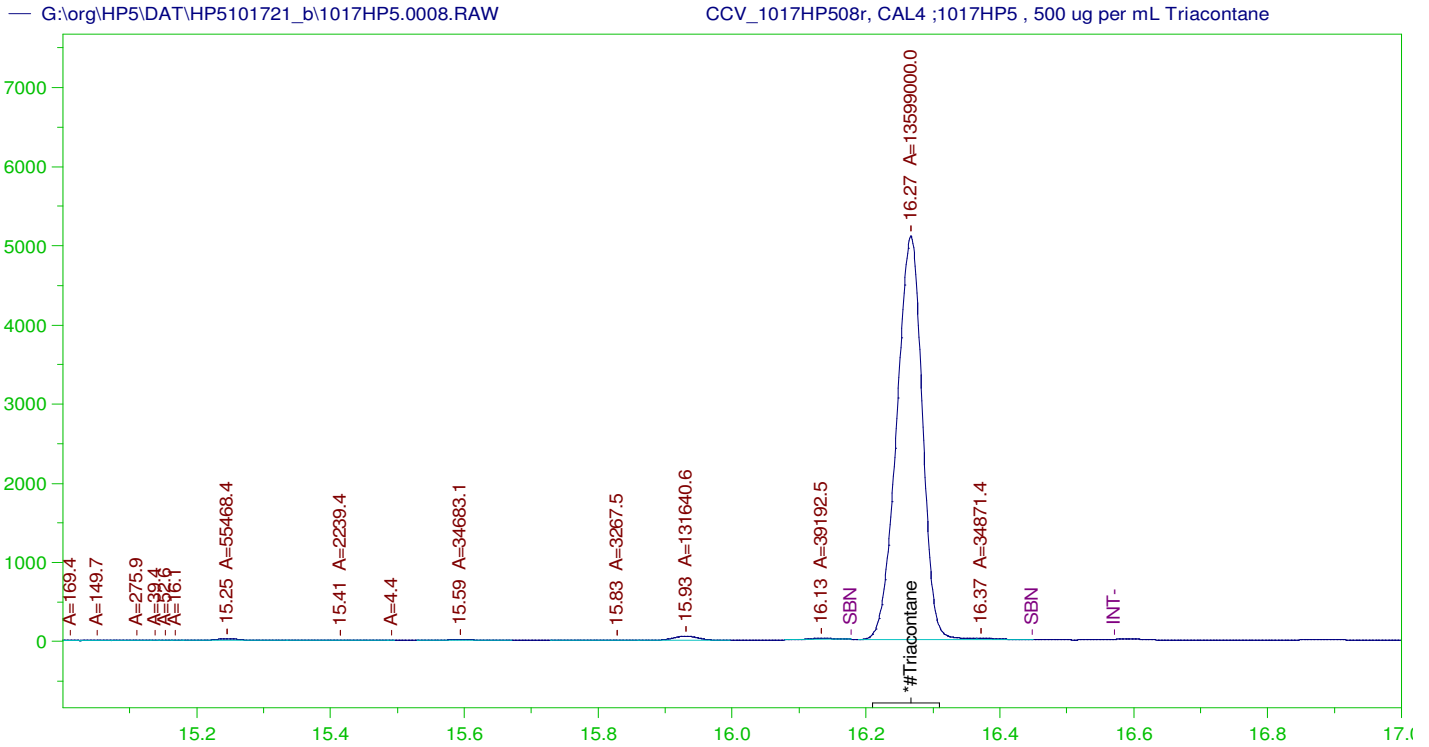
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.262	500.	223.111	44.62	-

RRO Area:219754.5 RRO AMOUNT: 7.699227

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5101721\_b\1017HP5.0007.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
*30-40 Motor Oil	5000.	.	75-125	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*#Triacontane	16.262	200.	223.111	111.56	75-125



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: CCV\_1017HP508r, CAL4 ;1017HP5 , 500 ug per mL Triacontane  
 Raw File: G:\org\HP5\DAT\HP5101721\_b\1017HP5.0008.RAW  
 Date & Time Acquired: 10/17/2021 5:38:10 PM  
 Method File: G:\Org\HP5\Methods\DS\_ORO-AA-L0.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
 Rt range for Residual Range Organics: 12.53 to 30.05

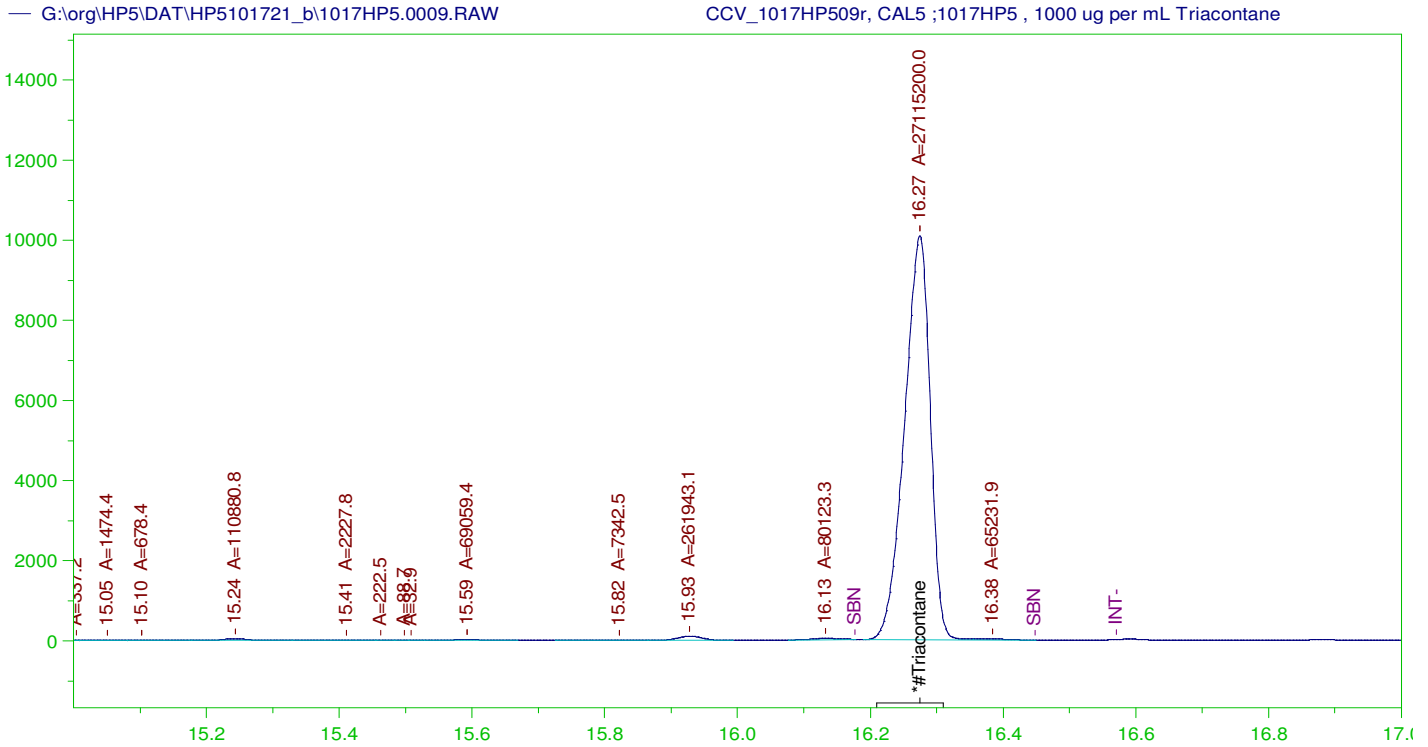
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.267	500.	470.063	94.01

RRO Area:496538.4 RRO AMOUNT: 17.39651

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5101721\_b\1017HP5.0008.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
*30-40 Motor Oil	5000.	.	75-125	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*#Triacontane	16.267	200.	470.063	235.03	75-125



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: CCV\_1017HP509r, CAL5 ;1017HP5 , 1000 ug per mL Triacontane  
 Raw File: G:\org\HP5\DAT\HP5101721\_b\1017HP5.0009.RAW  
 Date & Time Acquired: 10/17/2021 6:20:57 PM  
 Method File: G:\Org\HP5\Methods\DS\_ORO-AA-L0.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AA.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
 Rt range for Residual Range Organics: 12.53 to 30.05

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.275	500.	937.265	187.45

RRO Area:979213.9 RRO AMOUNT: 34.30733

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5101721\_b\1017HP5.0009.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
*30-40 Motor Oil	5000.	.	75-125	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*#Triacontane	16.275	200.	937.265	468.63	75-125

Write Sequence	Data File	Sample Name	Method	Weight	Dil Factor	Amt Inj.	IS	Cal ID	Manual Integration
	G:\org\HP5\DAT\HP5101721_b\1017HP5.01r	DCM-Baseline Check-V01	G:\Org\HP5\Methods\DR_8015-HS-LEXP.met	1	1	1	1	0	No integration
	G:\org\HP5\DAT\HP5101721_b\1017HP5.02r	DCM-Baseline Check-V02	G:\Org\HP5\Methods\DR_8015-HS-LEXP.met	1	1	1	1	0	No integration
	G:\org\HP5\DAT\HP5101721_b\1017HP5.03r	CCV_1017HP503r, DRO :1017HP5 , DRO210708A	G:\Org\HP5\Methods\DR_8015-HS-LEXP.met	1	1	1	1	0	No integration
	G:\org\HP5\DAT\HP5101721_b\1017HP5.04r	DCM-Baseline Check-V04	G:\Org\HP5\Methods\DR_8015-HS-LEXP.met	1	1	1	1	0	No integration
	G:\org\HP5\DAT\HP5101721_b\1017HP5.05r	CCV_1017HP505r, CAL1 ;1017HP5 , 2 ug per mL Triacotane (10 uL of Cal3 + 990 uL DCM(14354)	G:\Org\HP5\Methods\DS_ORO-AA-L0.met	1	1	1	1	0	Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 16.18 and slightly after the surrogate peak at 16.45 and scaling showing surrogate peak from 15.0-17.0
	G:\org\HP5\DAT\HP5101721_b\1017HP5.06r	CCV_1017HP506r, CAL2 ;1017HP5 , 50 ug per mL Triacotane (100 uL Cal4 + 900 uL of DCM(14354)	G:\Org\HP5\Methods\DS_ORO-AA-L0.met	1	1	1	1	0	Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 16.18 and slightly after the surrogate peak at 16.45 and scaling showing surrogate peak from 15.0-17.0
	G:\org\HP5\DAT\HP5101721_b\1017HP5.07r	CCV_1017HP507r, CAL3 ;1017HP5 , 200 ug per mL Triacotane (100uL of Cal5 + 400 uL DCM(14354)	G:\Org\HP5\Methods\DS_ORO-AA-L0.met	1	1	1	1	0	Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 16.18 and slightly after the surrogate peak at 16.45 and scaling showing surrogate peak from 15.0-17.0
	G:\org\HP5\DAT\HP5101721_b\1017HP5.08r	CCV_1017HP508r, CAL4 ;1017HP5 , 500 ug per mL Triacotane (250uL of Cal5 + 250 uL DCM(14354)	G:\Org\HP5\Methods\DS_ORO-AA-L0.met	1	1	1	1	0	Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 16.18 and slightly after the surrogate peak at 16.45 and scaling showing surrogate peak from 15.0-17.0
	G:\org\HP5\DAT\HP5101721_b\1017HP5.09r	CCV_1017HP509r, CAL5 ;1017HP5 , 1000 ug per mL Triacotane (500 uL 2000 ug/mL Triacotane DRO211006A + 500 DCM(14354)	G:\Org\HP5\Methods\DS_ORO-AA-L0.met	1	1	1	1	0	Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 16.18 and slightly after the surrogate peak at 16.45 and scaling showing surrogate peak from 15.0-17.0



Digitally signed by  
Ann Nebel  
Date: 2021.10.25 17:42:58 -06:00

# PREP BATCH REPORT

Prep Code: **HC-3520-DRO**  
 Prep Batch **162502** Prep Temp **NA °C**

Technician: **Ann Nebel**  
 Batch Units: **ML**

Prep Start Date: **12/27/2021 2:11:05 P**  
 Prep End Date: **12/28/2021 3:01:00 P**

Sample ID	Matrix	pH	Initial Samp Amt	Sol Added	Sol Recovered	Final Vol (mL)	Factor	Balance	Prep Start Date	Prep End Date
MB-162502			1000	0	0	1.00	0.001		12/27/2021	12/28/2021
Start time: 12/27/2021 at 2:00 PM. End time: 12/28/2021 at 8:00 AM Sample was SGT on 12/30/2021 by amn using remainder of sample.										
LCS-162502			1000	0	0	1.00	0.001		12/27/2021	12/28/2021
All bottles were completely used, defaced and disposed of on 12/27/2021. Sample was SGT on 12/30/2021 by amn using remainder of sample.										
LCS-162502-RRO			1000	0	0	1.00	0.001		12/27/2021	12/28/2021
Sample was SGT on 12/30/2021 by amn using remainder of sample.										
B21121841-004B	Ground Water	2	1000	0	0	1.00	0.001		12/27/2021	12/28/2021
Bottle 2/2 Clear Sample was SGT on 12/30/2021 by amn using remainder of sample.										
B21121957-001B	Ground Water	2	1050	0	0	1.00	0.000952		12/27/2021	12/28/2021
Bottle 1/2 Clear										
B21121959-001D	Ground Water	2	1000	0	0	1.00	0.001		12/27/2021	12/28/2021
Bottle 1/2 Clear Sample was SGT on 12/30/2021 by amn using remainder of sample.										
B21121961-001D	Ground Water	2	1010	0	0	1.00	0.00099		12/27/2021	12/28/2021
Bottle 1/2 Light sediment. Sample was SGT on 12/30/2021 by amn using remainder of sample.										
B21121965-001D	Ground Water	2	1000	0	0	1.00	0.001		12/27/2021	12/28/2021
Bottle 1/2 Light sediment.										
B21121967-001D	Ground Water	2	1020	0	0	1.00	0.00098		12/27/2021	12/28/2021
Bottle 1/2 Light sediment. Lines 9-10 Start time: 12/27/2021 at 3:45 PM. End time: 12/28/2021 at 9:50 AM										
B21121968-001D	Ground Water	2	1020	0	0	1.00	0.00098		12/27/2021	12/28/2021
Bottle 1/2 Light sediment. Sample was SGT on 12/30/2021 by amn using remainder of sample.										
B21121977-001D	Ground Water	2	1030	0	0	1.00	0.000971		12/27/2021	12/28/2021
Bottle 1/2 Clear Lines 11-12 Start time: 12/27/2021 at 5:20 PM. End time: 12/28/2021 at 12:30 PM Sample was SGT on 12/30/2021 by amn using remainder of sample.										
B21121977-002D	Ground Water	2	1030	0	0	1.00	0.000971		12/27/2021	12/28/2021
Bottle 1/2 Clear Sample was SGT on 12/30/2021 by amn using remainder of sample.										
B21121979-001D	Ground Water	2	1040	0	0	1.00	0.000962		12/27/2021	12/28/2021
Bottle 1/2 Clear Lines 13-23 Start time: 12/27/2021 at 6:15 PM. End time: 12/28/2021 at 12:30 PM Sample was SGT on 12/30/2021 by amn using remainder of sample.										
B21121979-002B	Ground Water	2	1040	0	0	1.00	0.000962		12/27/2021	12/28/2021
Bottle 1/2 Clear Sample was SGT on 12/30/2021 by amn using remainder of sample.										

Number	Reagent Name	Exp Date
11	Carbon Filter Water	1/1/2023
13379	PTFE Boiling Stones 27463755	12/30/2025
14206	pH-indicator Strips 0-14 HC160347	8/26/2026
14563	4ML, Amber Vial, 171001407106	11/30/2022
14647	Dichloromethane EC832	10/28/2023

Spk ID	Spike Name	SampType	AmtAdd	Exp Date
FP211210 14446	DCM RINSED FILTER PAPER	all	1	4/6/2026
Sulfate 12/26/21 (	Baked Sodium Sulfate	all	Varies	11/29/2026
DRO211220D	Triacotane SURR 1000 ug/mL	all except LCS/D,	100 uL	4/6/2026
DRO211112C	OTP/COD SURR 2000 ug/mL	All except RRO-L	100 uL	9/30/2024
DRO211012B	#2 Diesel in Acetone 150,000 ug/mL	LCS, LCSD, MS	100 uL	11/5/2023
DRO210902A	50,000 ug/mL Oil Std for RRO-In D	LCS/D-RRO, MS-	100 uL	9/1/2026
SG211217(13376)	Baked Silica Gel	SGT	5 g	2/28/2030

# PREP BATCH REPORT

Prep Code: **HC-3520-DRO**  
 Prep Batch **162502** Prep Temp **NA °C**

Technician: **Ann Nebel**  
 Batch Units: **ML**

Prep Start Date: **12/27/2021 2:11:05 P**  
 Prep End Date: **12/28/2021 3:01:00 P**

Sample ID	Matrix	pH	Initial Samp Amt	Sol Added	Sol Recovered	Final Vol (mL)	Factor	Balance	Prep Start Date	Prep End Date
B21121979-003D Bottle 1/2 Clear	Ground Water	2	1050	0	0	1.00	0.000952		12/27/2021	12/28/2021
B21121981-001D Bottle 1/6 Clear	Drinking Water	2	1030	0	0	1.00	0.000971		12/27/2021	12/28/2021
Sample was SGT on 12/30/2021 by amn using remainder of sample.										
B21121981-001DMS Bottle 2/6	Drinking Water	2	1040	0	0	1.00	0.000962		12/27/2021	12/28/2021
Light sediment. Sample was SGT on 12/30/2021 by amn using remainder of sample.										
B21121981-001DMSD Bottle 3/6	Drinking Water	2	1040	0	0	1.00	0.000962		12/27/2021	12/28/2021
Light sediment. Sample was SGT on 12/30/2021 by amn using remainder of sample.										
B21121981-001DMSD-RRO Bottle 4/6	Drinking Water	2	1040	0	0	1.00	0.000962		12/27/2021	12/28/2021
Light sediment. Sample was SGT on 12/30/2021 by amn using remainder of sample.										
B21121981-001DMS-RRO Bottle 5/6	Drinking Water	2	1040	0	0	1.00	0.000962		12/27/2021	12/28/2021
Light sediment. Sample was SGT on 12/30/2021 by amn using remainder of sample.										
B21121981-002B Bottle 1/2	Ground Water	2	1050	0	0	1.00	0.000952		12/27/2021	12/28/2021
Clear Sample was SGT on 12/30/2021 by amn using remainder of sample.										
B21121981-003D Bottle 1/2	Ground Water	2	1040	0	0	1.00	0.000962		12/27/2021	12/28/2021
Clear Sample was SGT on 12/30/2021 by amn using remainder of sample.										
B21121981-004D Bottle 1/2	Ground Water	2	1010	0	0	1.00	0.00099		12/27/2021	12/28/2021
Clear Sample was SGT on 12/30/2021 by amn using remainder of sample.										

Number	Reagent Name	Exp Date
11	Carbon Filter Water	1/1/2023
13379	PTFE Boiling Stones 27463755	12/30/2025
14206	pH-indicator Strips 0-14 HC160347	8/26/2026
14563	4ML, Amber Vial, 171001407106	11/30/2022
14647	Dichloromethane EC832	10/28/2023

Spk ID	Spike Name	SampType	AmtAdd	Exp Date
FP211210 14446	DCM RINSED FILTER PAPER	all	1	4/6/2026
Sulfate 12/26/21 (	Baked Sodium Sulfate	all	Varies	11/29/2026
DRO211220D	Triacontane SURR 1000 ug/mL	all except LCS/D,	100 uL	4/6/2026
DRO211112C	OTP/COD SURR 2000 ug/mL	All except RRO-L	100 uL	9/30/2024
DRO211012B	#2 Diesel in Acetone 150,000 ug/mL	LCS, LCSD, MS	100 uL	11/5/2023
DRO210902A	50,000 ug/mL Oil Std for RRO-In D	LCS/D-RRO, MS-	100 uL	9/1/2026
SG211217(13376)	Baked Silica Gel	SGT	5 g	2/28/2030



# Energy Laboratories Inc

# ANALYTICAL RUN Summary

03-Jan-22

Run ID GCFID-HP5-B\_211228B

<b>Run Start Date:</b>	12/28/2021
<b>Analyst:</b>	Ann Nebel
<b>Ical:</b>	
<b>Column ID:</b>	
<b>Comments:</b>	DRO-8015-ICAL information is in Index GCFID-HP5-B_211102A 8015C OIL range calibration GCFID-HP5-B_210218B

Std ID	Std Name	Std Amount	Std Units	Samp Amount	Samp Units	SampType	Expiration Date
DRO211201A	5,000 ug/mL RRO CCV 200 ug/mL Triacontane					CCV	4/6/2026
DRO211203B	ALASKA MARKER-200ug/mL					MARKER	5/31/2022
DRO211220A	8015 CCV-15,000ug/mL + 200 OTP					CCV	4/30/2023
DRO211220B	Carbon Scan STD-Marker					MARKER	3/5/2028
DRO211229A	8015 CCV-15,000ug/mL + 200 OTP/COD					CCV	4/30/2023

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957057	CCV_1228HP51	HC-8015-DRO-	CCV		12/29/2021 1:57:	1	R372550		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
TEH(Oil Range)	A	mg/L		4.61761133		5	0	0	0.0879	0.3	0	92%	80	120	0%	
n-Triacontane	S	mg/L		0.2036208		0.2	0	0	0.000336	0.002	0	102%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957058	CCV_1228HP52	HC-8015-DRO-	CCV		12/29/2021 2:40:	1	R372550		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		14.94098		15	0	0	0.0389	0.3	0	100%	80	120	0%	
Total Extractable Hydrocarbons	A	mg/L		15.47486		15	0	0	0.0749	0.3	50	103%	80	120	0%	
o-Terphenyl	S	mg/L		0.1985501		0.2	0	0	0.000429	0.002	0	99%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957059	Marker_1228HP	HC-8015-DRO-	SAMP		12/29/2021 10:3	1	R372550		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (DRO)	A	mg/L		2906.771		0	0	0	0.0389	0.3	50	0%	0	0	0%	
Total Extractable Hydrocarbons	A	mg/L		4739.249		0	0	0	0.0749	0.3	50	0%	0	0	0%	
o-Terphenyl	S	mg/L		0.2761772		0.2	0	0	0.000429	0.002	0	138%	50	150	0%	
Diesel Range Organics (C10 to C24)	X	mg/L		2906.771		0	0	0	0.0389	0.3	0	0%	0	0	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957060	LCS-162502	HC-8015-DRO-	LCS-DOD		12/29/2021 11:1	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		12.63665		15	0	0	0.0389	0.3	0	84%	36	132	0%	
Total Extractable Hydrocarbons	A	mg/L		13.55417		15	0	0	0.0749	0.3	50	90%	60	132	0%	
o-Terphenyl	S	mg/L		0.1937823		0.2	0	0	0.000429	0.002	0	97%	56	125	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957061	MB-162502	HC-8015-DRO-	MBLK		12/29/2021 11:5	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		0		0	0	0	0.0389	0.15	0	0%	0	0	0%	
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0		0	0	0	0.0879	0.15	0	0%	0	0	0%	
Total Extractable Hydrocarbons	A	mg/L		0		0	0	0	0.0749	0.15	50	0%	0	0	0%	
n-Triacontane	S	mg/L		0.1049		0.1	0	0	0.000336	0.002	0	105%	50	150	0%	
o-Terphenyl	S	mg/L		0.2002727		0.2	0	0	0.000429	0.002	0	100%	56	125	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957062	CCV_1228HP53	HC-8015-DRO-	CCV		12/29/2021 1:22:	1	R372550		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
TEH(Oil Range)	A	mg/L		4.34702539		5	0	0	0.0879	0.3	0	87%	80	120	0%	
n-Triacontane	S	mg/L		0.1967492		0.2	0	0	0.000336	0.002	0	98%	80	120	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957063	CCV_1228HP53	HC-8015-DRO-	CCV		12/29/2021 2:04:	1	R372550		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957063	CCV_1228HP53	HC-8015-DRO-	CCV		12/29/2021 2:04:	1	R372550		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		14.67341		15	0	0	0.0389	0.3	0	98%	80	120	0%	
Total Extractable Hydrocarbons	A	mg/L		15.2255		15	0	0	0.0749	0.3	50	102%	80	120	0%	
o-Terphenyl	S	mg/L		0.1957773		0.2	0	0	0.000429	0.002	0	98%	80	120	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957064	B21121968-001	HC-8015-DRO-	SAMP		12/29/2021 3:29:	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		0		0	0	0	0.038122	0.3	0	0%	0	0	0%	U
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0		0	0	0	0.086142	0.3	0	0%	0	0	0%	U
Total Extractable Hydrocarbons	A	mg/L		0		0	0	0	0.073402	0.3	50	0%	0	0	0%	U
n-Triacontane	S	mg/L		0.1108		0.098	0	0	0.0003293	0.00196	0	113%	50	150	0%	
o-Terphenyl	S	mg/L		0.2090023		0.196	0	0	0.0004204	0.002	0	107%	56	125	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957065	B21121957-001	HC-8015-DRO-	SAMP		12/29/2021 4:12:	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		0		0	0	0	0.0370328	0.3	0	0%	0	0	0%	U
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0		0	0	0	0.0836808	0.3	0	0%	0	0	0%	U
Total Extractable Hydrocarbons	A	mg/L		0		0	0	0	0.0713048	0.3	50	0%	0	0	0%	U
n-Triacontane	S	mg/L		0.104		0.0952	0	0	0.0003199	0.001904	0	109%	50	150	0%	
o-Terphenyl	S	mg/L		0.1998482		0.1904	0	0	0.0004084	0.002	0	105%	56	125	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957066	B21121977-001	HC-8015-DRO-	SAMP		12/29/2021 4:55:	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		0		0	0	0	0.0377719	0.3	0	0%	0	0	0%	U
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0.09909146		0	0	0	0.0853509	0.3	0	0%	0	0	0%	J
Total Extractable Hydrocarbons	A	mg/L		0.1695936		0	0	0	0.0727279	0.3	50	0%	0	0	0%	J
n-Triacontane	S	mg/L		0.0941		0.0971	0	0	0.0003263	0.001942	0	97%	50	150	0%	
o-Terphenyl	S	mg/L		0.1808026		0.1942	0	0	0.0004166	0.002	0	93%	56	125	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957067	B21121977-002	HC-8015-DRO-	SAMP		12/29/2021 5:38:	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		0.0632839		0	0	0	0.0377719	0.3	0	0%	0	0	0%	J
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0.13487095		0	0	0	0.0853509	0.3	0	0%	0	0	0%	J
Total Extractable Hydrocarbons	A	mg/L		0.3079102		0	0	0	0.0727279	0.3	50	0%	0	0	0%	
n-Triacontane	S	mg/L		0.1022		0.0971	0	0	0.0003263	0.001942	0	105%	50	150	0%	
o-Terphenyl	S	mg/L		0.1799419		0.1942	0	0	0.0004166	0.002	0	93%	56	125	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957068	B21121981-001	HC-8015-DRO-	SAMP		12/29/2021 7:04:	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		0.05982391		0	0	0	0.0377719	0.3	0	0%	0	0	0%	J
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0.15118542		0	0	0	0.0853509	0.3	0	0%	0	0	0%	J
Total Extractable Hydrocarbons	A	mg/L		0.2961927		0	0	0	0.0727279	0.3	50	0%	0	0	0%	J
n-Triacontane	S	mg/L		0.1065		0.0971	0	0	0.0003263	0.001942	0	110%	50	150	0%	
o-Terphenyl	S	mg/L		0.1953841		0.1942	0	0	0.0004166	0.002	0	101%	56	125	0%	
TEH(Oil Range)	X	mg/L		0.2222482		0	0	0	0.0853509	0.3	0	0%	0	0	0%	UJ
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957069	B21121981-001	HC-8015-DRO-	MS-DOD		12/29/2021 7:47:	1	162502	12/27/2021	1E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		12.12348		14.43	0.0598239	0	0.0374218	0.3	0	84%	36	132	0%	
Total Extractable Hydrocarbons	A	mg/L		13.07365		14.43	0.2961927	0	0.0720538	0.3	50	89%	60	132	0%	
o-Terphenyl	S	mg/L		0.1826627		0.1924	0	0	0.0004127	0.002	0	95%	56	125	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957070	B21121981-001	HC-8015-DRO-	MSD-DOD		12/29/2021 8:30:	1	162502	12/27/2021	1E+07	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		12.18931		14.43	0.0598239	12.12348	0.0374218	0.3	0	84%	36	132	1%	
Total Extractable Hydrocarbons	A	mg/L		13.54218		14.43	0.2961927	13.07365	0.0720538	0.3	50	92%	60	132	4%	
o-Terphenyl	S	mg/L		0.1622596		0.1924	0	0	0.0004127	0.002	0	84%	56	125	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957071	B21121979-003	HC-8015-DRO-	SAMP		12/29/2021 9:57:	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		0		0	0	0	0.0370328	0.3	0	0%	0	0	0%	U
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0		0	0	0	0.0836808	0.3	0	0%	0	0	0%	U
Total Extractable Hydrocarbons	A	mg/L		0		0	0	0	0.0713048	0.3	50	0%	0	0	0%	U
n-Triacontane	S	mg/L		0.1021		0.0952	0	0	0.0003199	0.001904	0	107%	50	150	0%	
o-Terphenyl	S	mg/L		0.1983972		0.1904	0	0	0.0004084	0.002	0	104%	56	125	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957072	B21121979-001	HC-8015-DRO-	SAMP		12/29/2021 10:4	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		0.05428377		0	0	0	0.0374218	0.3	0	0%	0	0	0%	J
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0.14408493		0	0	0	0.0845598	0.3	0	0%	0	0	0%	J
Total Extractable Hydrocarbons	A	mg/L		0.2242076		0	0	0	0.0720538	0.3	50	0%	0	0	0%	J
n-Triacontane	S	mg/L		0.1007		0.0962	0	0	0.0003232	0.001924	0	105%	50	150	0%	
o-Terphenyl	S	mg/L		0.1893293		0.1924	0	0	0.0004127	0.002	0	98%	56	125	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957073	CCV_1228HP55	HC-8015-DRO-	CCV		12/30/2021 12:4	1	R372550				0	0				
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
TEH(Oil Range)	A	mg/L		4.68440234		5	0	0	0.0879	0.3	0	94%	80	120	0%	
n-Triacontane	S	mg/L		0.2129579		0.2	0	0	0.000336	0.002	0	106%	80	120	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957074	CCV_1228HP53	HC-8015-DRO-	CCV		12/30/2021 1:32:	1	R372550				0	0				
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		14.95864		15	0	0	0.0389	0.3	0	100%	80	120	0%	
Total Extractable Hydrocarbons	A	mg/L		15.51194		15	0	0	0.0749	0.3	50	103%	80	120	0%	
o-Terphenyl	S	mg/L		0.1997788		0.2	0	0	0.000429	0.002	0	100%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957075	B21121979-002	HC-8015-DRO-	SAMP		12/30/2021 2:58:	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		0.06945705		0	0	0	0.0374218	0.3	0	0%	0	0	0%	J
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0.16162641		0	0	0	0.0845598	0.3	0	0%	0	0	0%	J
Total Extractable Hydrocarbons	A	mg/L		0.3094539		0	0	0	0.0720538	0.3	50	0%	0	0	0%	
n-Triacontane	S	mg/L		0.1087		0.0962	0	0	0.0003232	0.001924	0	113%	50	150	0%	
o-Terphenyl	S	mg/L		0.1952787		0.1924	0	0	0.0004127	0.002	0	101%	56	125	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957076	B21121965-001	HC-8015-DRO-	SAMP		12/30/2021 3:41:	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		0.09555712		0	0	0	0.0389	0.3	0	0%	0	0	0%	J
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0.25317219		0	0	0	0.0879	0.3	0	0%	0	0	0%	J
Total Extractable Hydrocarbons	A	mg/L		0.4219448		0	0	0	0.0749	0.3	50	0%	0	0	0%	
n-Triacontane	S	mg/L		0.1048		0.1	0	0	0.000336	0.002	0	105%	50	150	0%	
o-Terphenyl	S	mg/L		0.1041201		0.2	0	0	0.000429	0.002	0	52%	56	125	0%	S
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957077	B21121967-001	HC-8015-DRO-	SAMP		12/30/2021 5:08:	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		0.2121628		0	0	0	0.038122	0.3	0	0%	0	0	0%	J
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0.10651778		0	0	0	0.086142	0.3	0	0%	0	0	0%	J
Total Extractable Hydrocarbons	A	mg/L		0.3431815		0	0	0	0.073402	0.3	50	0%	0	0	0%	
n-Triacontane	S	mg/L		0.1047		0.098	0	0	0.0003293	0.00196	0	107%	50	150	0%	
o-Terphenyl	S	mg/L		0.1618924		0.196	0	0	0.0004204	0.002	0	83%	56	125	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957078	B21121959-001	HC-8015-DRO-	SAMP		12/30/2021 5:51:	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		3.779905		0	0	0	0.0389	0.3	0	0%	0	0	0%	
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0.47597641		0	0	0	0.0879	0.3	0	0%	0	0	0%	
Total Extractable Hydrocarbons	A	mg/L		4.332578		0	0	0	0.0749	0.3	50	0%	0	0	0%	
n-Triacontane	S	mg/L		0.1055		0.1	0	0	0.000336	0.002	0	105%	50	150	0%	

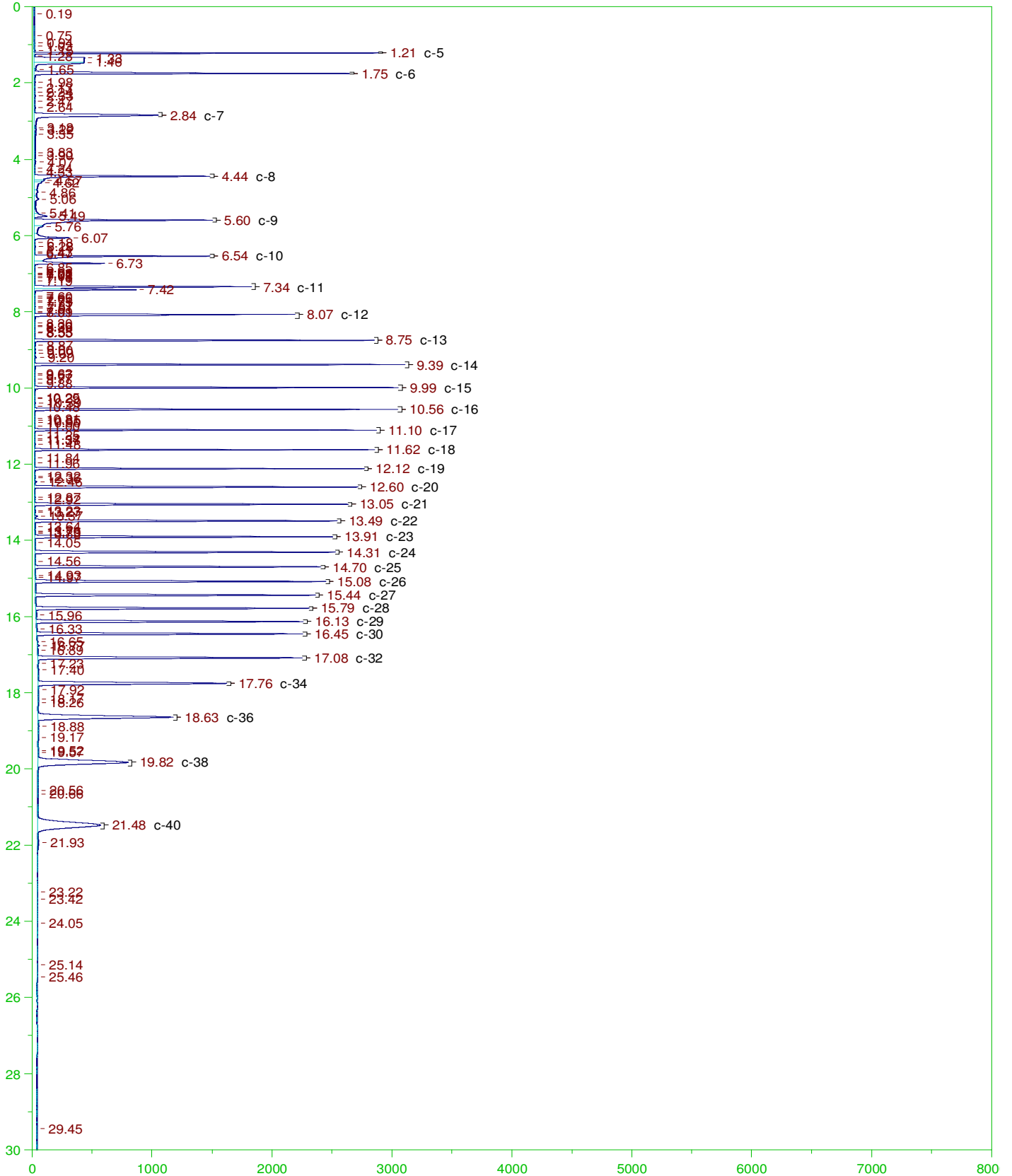
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957078	B21121959-001	HC-8015-DRO-	SAMP		12/30/2021 5:51:	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
o-Terphenyl	S	mg/L		0.188643		0.2	0	0	0.000429	0.002	0	94%	56	125	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957079	B21121981-002	HC-8015-DRO-	SAMP		12/30/2021 7:17:	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		1.187837		0	0	0	0.0370328	0.3	0	0%	0	0	0%	
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0.17000027		0	0	0	0.0836808	0.3	0	0%	0	0	0%	J
Total Extractable Hydrocarbons	A	mg/L		1.415625		0	0	0	0.0713048	0.3	50	0%	0	0	0%	
n-Triacontane	S	mg/L		0.1076		0.0952	0	0	0.0003199	0.001904	0	113%	50	150	0%	
o-Terphenyl	S	mg/L		0.1952107		0.1904	0	0	0.0004084	0.002	0	103%	56	125	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957080	B21121981-003	HC-8015-DRO-	SAMP		12/30/2021 8:01:	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		0.2540348		0	0	0	0.0374218	0.3	0	0%	0	0	0%	J
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0.16901743		0	0	0	0.0845598	0.3	0	0%	0	0	0%	J
Total Extractable Hydrocarbons	A	mg/L		0.4812434		0	0	0	0.0720538	0.3	50	0%	0	0	0%	
n-Triacontane	S	mg/L		0.1055		0.0962	0	0	0.0003232	0.001924	0	110%	50	150	0%	
o-Terphenyl	S	mg/L		0.1919224		0.1924	0	0	0.0004127	0.002	0	100%	56	125	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957081	B21121841-004	HC-8015-DRO-	SAMP		12/30/2021 9:55:	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		0.04372463		0	0	0	0.0389	0.3	0	0%	0	0	0%	J
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0.14092235		0	0	0	0.0879	0.3	0	0%	0	0	0%	J
Total Extractable Hydrocarbons	A	mg/L		0.237187		0	0	0	0.0749	0.3	50	0%	0	0	0%	J
n-Triacontane	S	mg/L		0.102		0.1	0	0	0.000336	0.002	0	102%	50	150	0%	
o-Terphenyl	S	mg/L		0.1916438		0.2	0	0	0.000429	0.002	0	96%	56	125	0%	

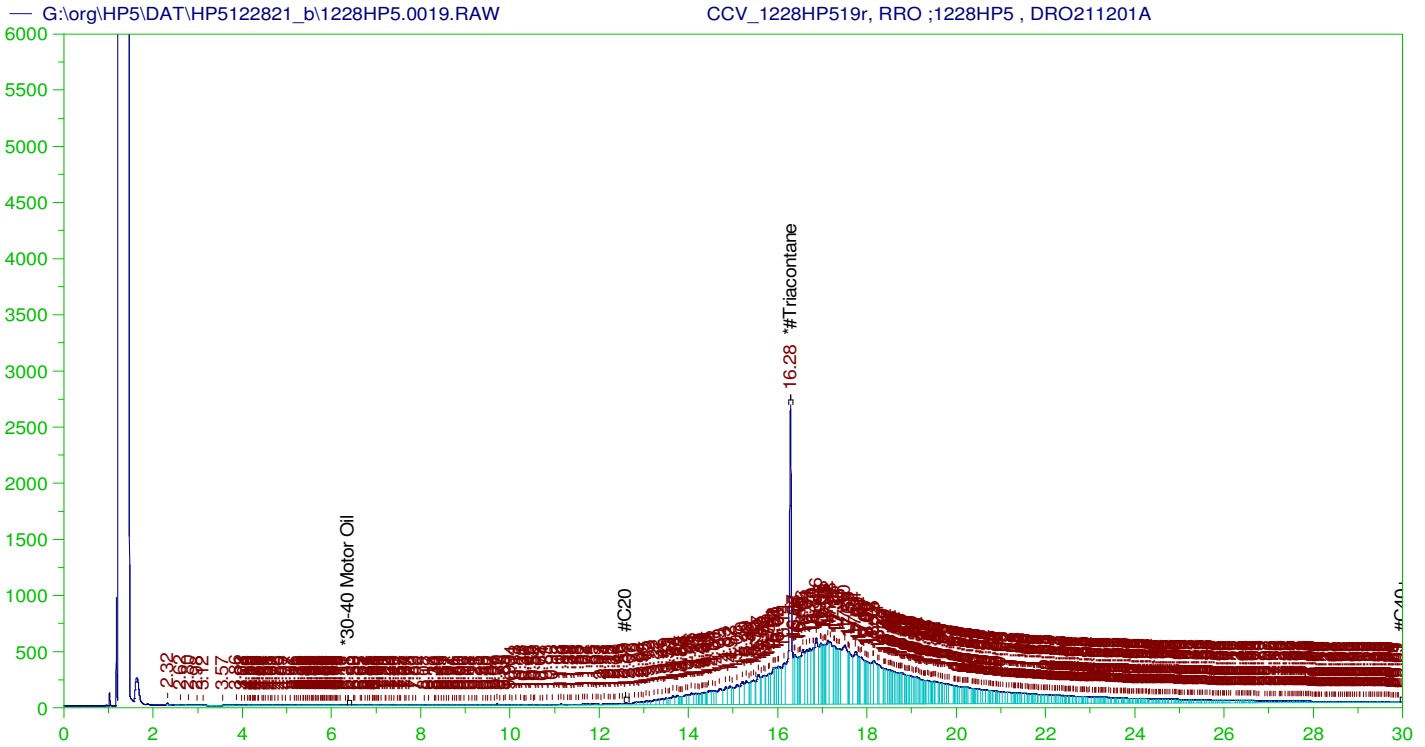
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957082	B21121981-004	HC-8015-DRO-	SAMP		12/30/2021 10:3	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		2.388642		0	0	0	0.038511	0.3	0	0%	0	0	0%	
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0.54239690		0	0	0	0.087021	0.3	0	0%	0	0	0%	
Total Extractable Hydrocarbons	A	mg/L		3.087636		0	0	0	0.074151	0.3	50	0%	0	0	0%	
n-Triacontane	S	mg/L		0.1149		0.099	0	0	0.0003326	0.00198	0	116%	50	150	0%	
o-Terphenyl	S	mg/L		0.2163918		0.198	0	0	0.0004247	0.002	0	109%	56	125	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957083	B21121961-001	HC-8015-DRO-	SAMP		12/30/2021 11:2	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		5.601806		0	0	0	0.038511	0.3	0	0%	0	0	0%	
Oil Range Hydrocarbons (C24 to C40)	A	mg/L		0.39403924		0	0	0	0.087021	0.3	0	0%	0	0	0%	
Total Extractable Hydrocarbons	A	mg/L		6.073369		0	0	0	0.074151	0.3	50	0%	0	0	0%	
n-Triacontane	S	mg/L		0.117		0.099	0	0	0.0003326	0.00198	0	118%	50	150	0%	
o-Terphenyl	S	mg/L		0.2012734		0.198	0	0	0.0004247	0.002	0	102%	56	125	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957084	CCV_1228HP56	HC-8015-DRO-	CCV		12/30/2021 12:4	1	R372550				0	0				
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
TEH(Oil Range)	A	mg/L		4.69755615		5	0	0	0.0879	0.3	0	94%	80	120	0%	
n-Triacontane	S	mg/L		0.2042484		0.2	0	0	0.000336	0.002	0	102%	80	120	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957085	CCV_1228HP56	HC-8015-DRO-	CCV		12/30/2021 1:29:	1	R372550				0	0				
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Diesel Range Organics (C10 to C24)	A	mg/L		14.59209		15	0	0	0.0389	0.3	0	97%	80	120	0%	
Total Extractable Hydrocarbons	A	mg/L		15.11895		15	0	0	0.0749	0.3	50	101%	80	120	0%	
o-Terphenyl	S	mg/L		0.194206		0.2	0	0	0.000429	0.002	0	97%	80	120	0%	



Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957553	LCS-162502-RR	HC-8015-DRO-	LCS		12/30/2021 2:55:	1	162502	12/27/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
TEH(Oil Range)	A	mg/L		4.96938801		5	0	0	0.0879	0.3	0	99%	60	140	0%	
n-Triacontane	S	mg/L		0.1076		0.1	0	0	0.000336	0.002	0	108%	50	150	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957554	B21121981-001	HC-8015-DRO-	MS-DOD		12/30/2021 3:37:	1	162502	12/27/2021	1E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
TEH(Oil Range)	A	mg/L		5.0296464		4.81	0.2222482	0	0.0845598	0.3	0	100%	41	113	0%	
n-Triacontane	S	mg/L		0.1025		0.0962	0	0	0.0003232	0.002	0	107%	50	150	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957555	B21121981-001	HC-8015-DRO-	MSD-DOD		12/30/2021 4:20:	1	162502	12/27/2021	1E+07	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
TEH(Oil Range)	A	mg/L		4.90147591		4.81	0.2222482	5.0296464	0.0845598	0.3	0	97%	41	113	3%	
n-Triacontane	S	mg/L		0.1013		0.0962	0	0	0.0003232	0.002	0	105%	50	150	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14957556	CCV_1228HP57	HC-8015-DRO-	CCV		12/30/2021 5:47:	1	R372550				0	0				
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
TEH(Oil Range)	A	mg/L		4.68569238		5	0	0	0.0879	0.3	0	94%	80	120	0%	
n-Triacontane	S	mg/L		0.2124378		0.2	0	0	0.000336	0.002	0	106%	80	120	0%	







**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: CCV\_1228HP519r, RRO ;1228HP5 , DRO211201A  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0019.RAW  
 Date & Time Acquired: 12/29/2021 1:57:43 AM  
 Method File: G:\Org\HP5\Methods\DC\_ORO-AL-L%.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for for ~~Residual~~ TEH (Oil Range) Organics Calculations: 28542.41  
 Rt range for ~~Residual~~ TEH (Oil Range) Organics: 12.56 to 30.05

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane_____	16.284	500.	335.855	67.17	-

~~RRO~~ TEH (Oil Range) Area:1.317978E+08 ~~RRO~~ TEH (Oil Range) AMOUNT: 4617.611

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0019.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
*30-40 Motor Oil_____	5000.	.059	.	75-125

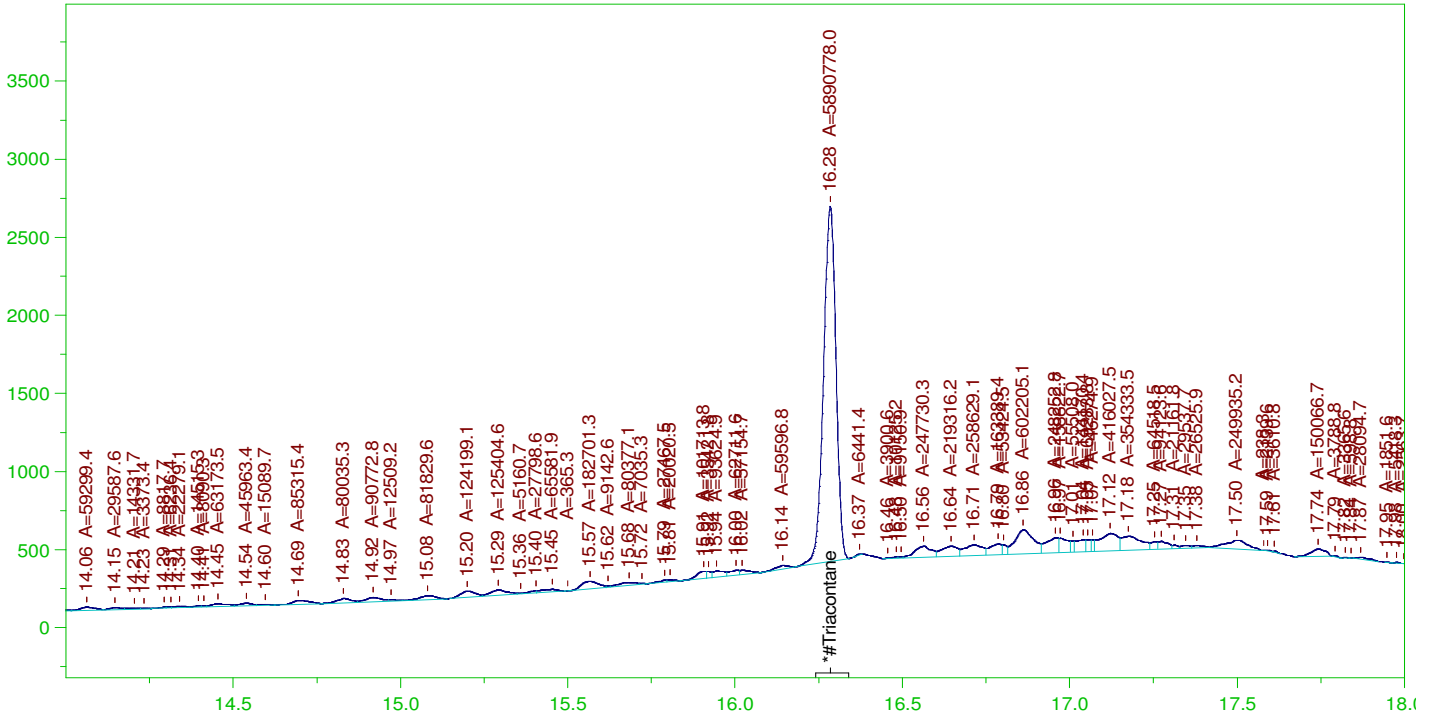
  

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*#Triacontane_____	16.284	200.	335.855	167.93	75-125

AMN 01/24/2022

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0019.RAW

CCV\_1228HP519r, RRO ;1228HP5 , DRO211201A



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: CCV\_1228HP519r, RRO ;1228HP5 , DRO211201A  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0019.RAW  
Date & Time Acquired: 12/29/2021 1:57:43 AM  
Method File: G:\Org\HP5\Methods\DS\_ORO-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL.CAL  
Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 12.56 to 30.05

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.284	500.	203.621	40.72	-

RRO Area:6179074 RRO AMOUNT: 216.4875

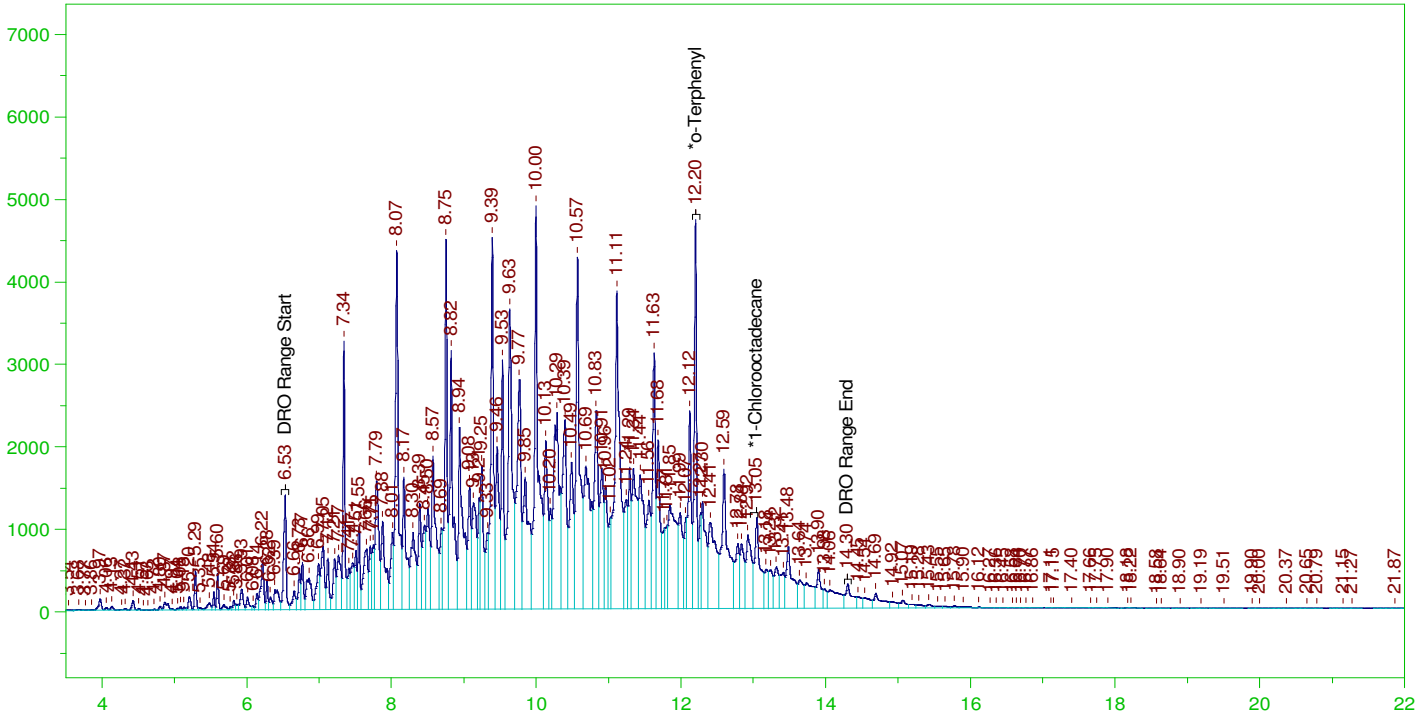
CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0019.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
*30-40 Motor Oil	5000.	.059	.	75-125

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*#Triacontane	16.284	200.	203.621	101.81	75-125

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0020.RAW

CCV\_1228HP520r, DRO ;1228HP5 , DRO211220A



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1228HP520r, DRO ;1228HP5 , DRO211220A  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0020.RAW  
 Date & Time Acquired: 12/29/2021 2:40:51 AM  
 Method File: G:\Org\HP5\Methods\DC\_8015-24-IM-L%.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

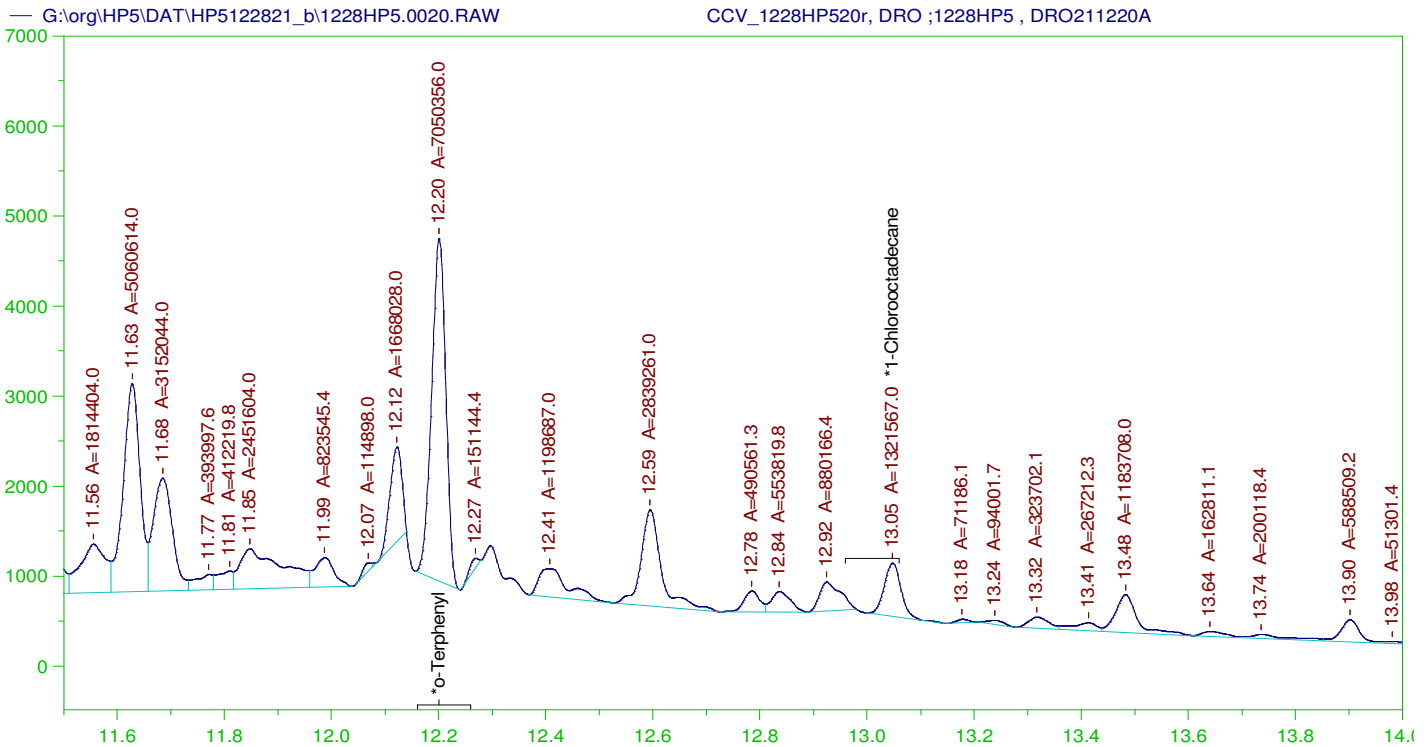
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.201	200.	325.622	162.81
*1-Chlorooctadecane	13.048	200.	158.09	79.04

DRO Area: 4.684474E+08 DRO Amount: 14940.98  
 TEH Area: 4.851862E+08 TEH Amount: 15474.86

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0020.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	15474.86	103.17	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.201	200.	325.622	162.81	85-115
*1-Chlorooctadecane	13.048	200.	158.09	79.04	85-115



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1228HP520r, DRO ;1228HP5 , DRO211220A  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0020.RAW  
 Date & Time Acquired: 12/29/2021 2:40:51 AM  
 Method File: G:\Org\HP5\Methods\DS\_8015-24-IM-L#.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19  
 Rt range for Diesel Range Organics: 6.48 to 14.36

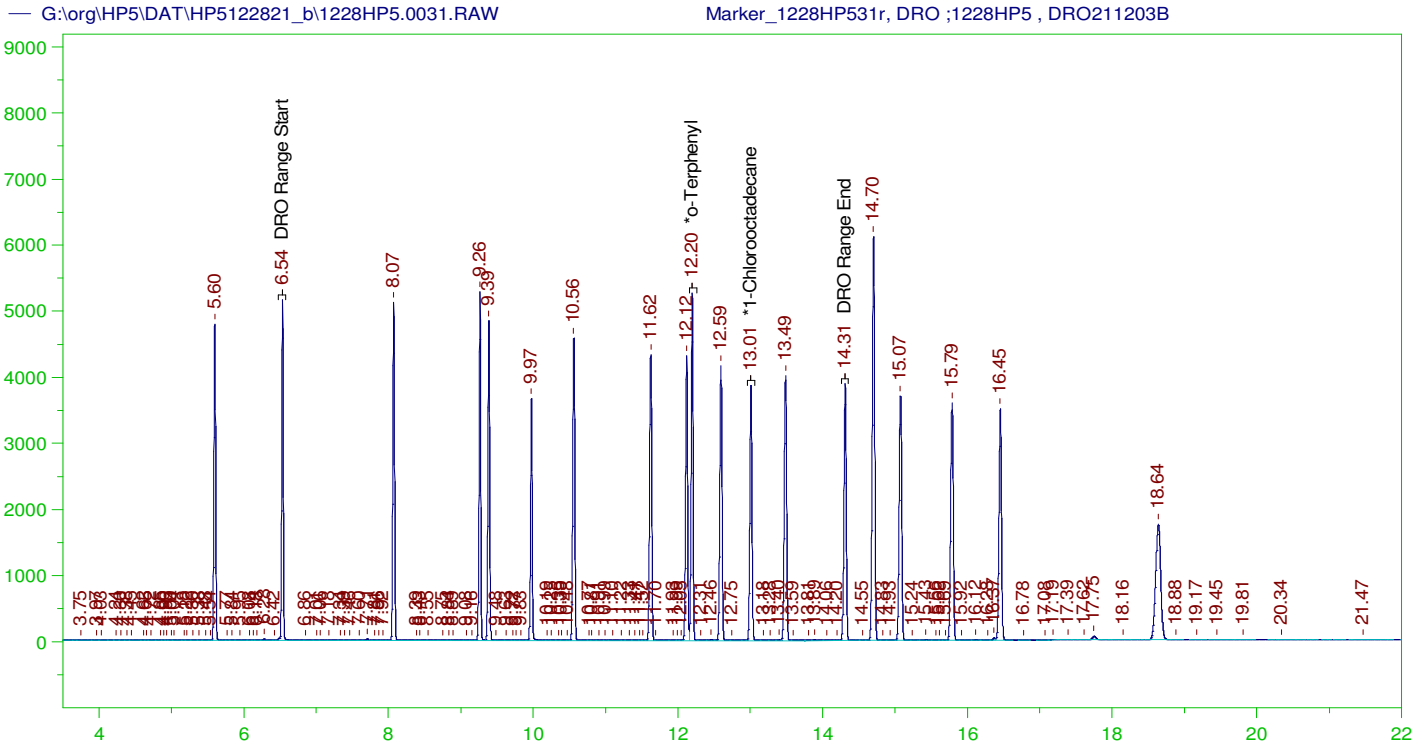
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.201	200.	198.55	99.28
*1-Chlorooctadecane	13.048	200.	37.218	18.61

DRO Area: 2.615284E+08 DRO Amount: 8341.363  
 TEH Area: 2.721808E+08 TEH Amount: 8681.12

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0020.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	8681.12	57.87	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.201	200.	198.55	99.28	85-115
*1-Chlorooctadecane	13.048	200.	37.218	18.61	85-115



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: Marker\_1228HP531r, DRO ;1228HP5 , DRO211203B  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0031.RAW  
 Date & Time Acquired: 12/29/2021 10:32:27 AM  
 Method File: G:\Org\HP5\Methods\DC\_8015-24-IM-L%.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19  
 Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.197	200.	276.177	138.09
*1-Chlorooctadecane	13.009	200.	224.655	112.33

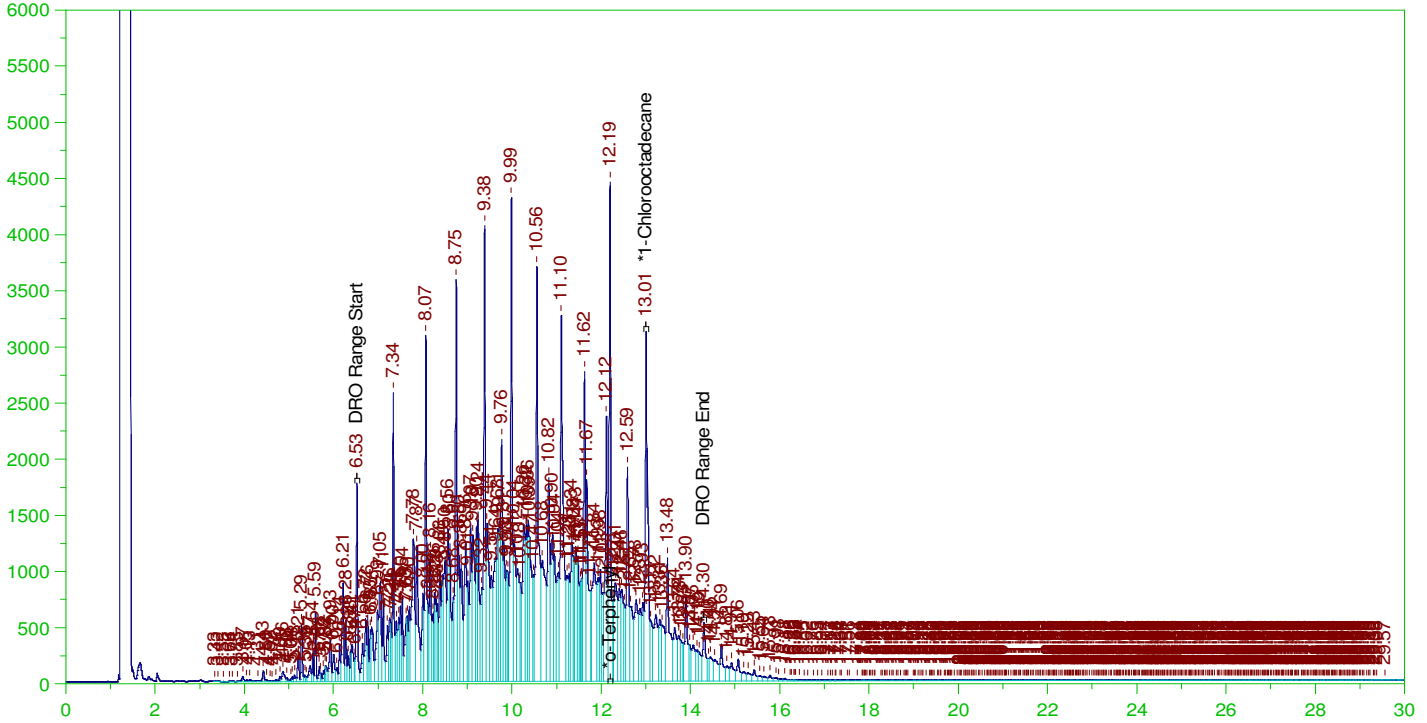
DRO Area: 9.113654E+07 DRO Amount: 2906.771  
 TEH Area: 1.485906E+08 TEH Amount: 4739.249



Batch ID: 162502

LCS-162502 ;1228HP5 ,

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0032.RAW



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

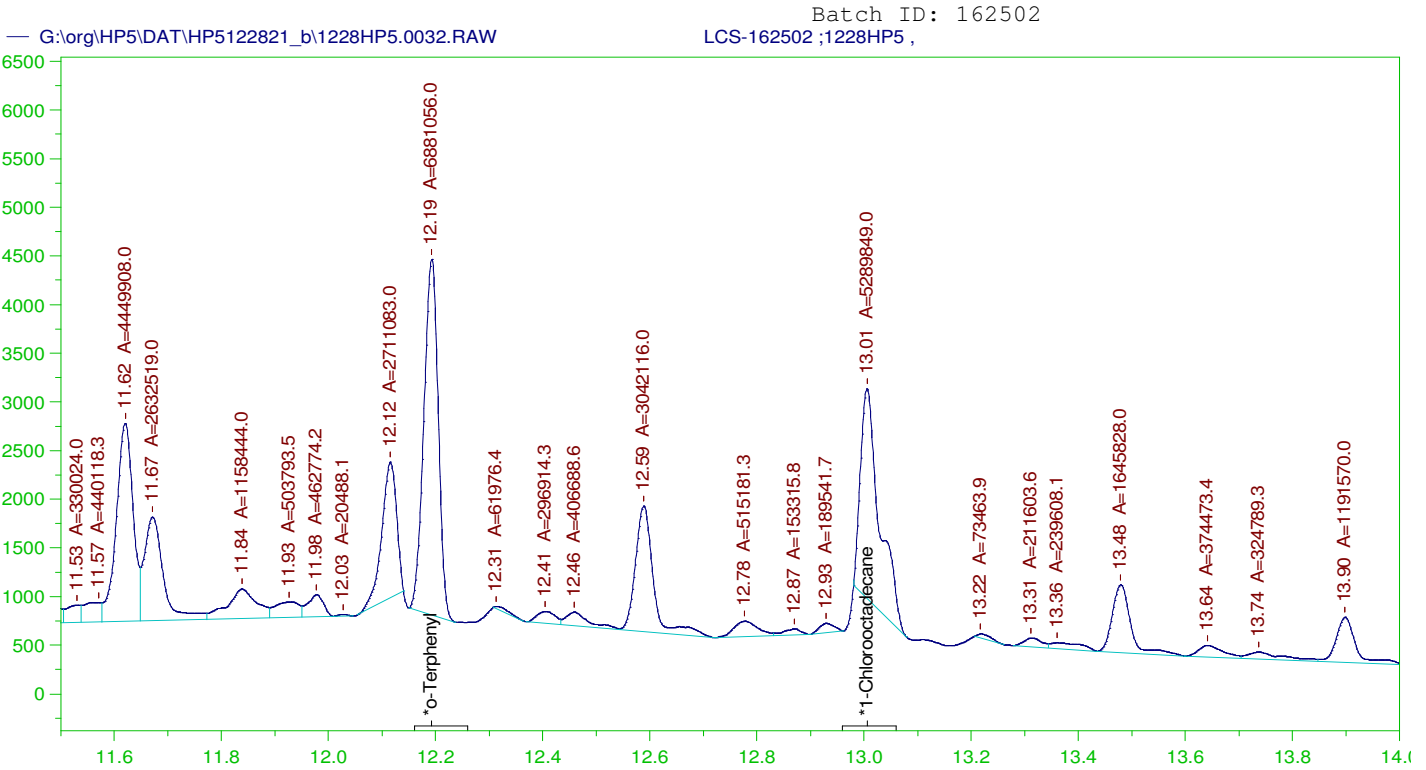
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Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0032.RAW  
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Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24.CAL  
Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.193	.2	.331	165.57
*1-Chlorooctadecane	13.006	.2	.328	163.89

DRO Area: 3.961992E+08 DRO Amount: 12.63665  
TEH Area: 4.249664E+08 TEH Amount: 13.55417



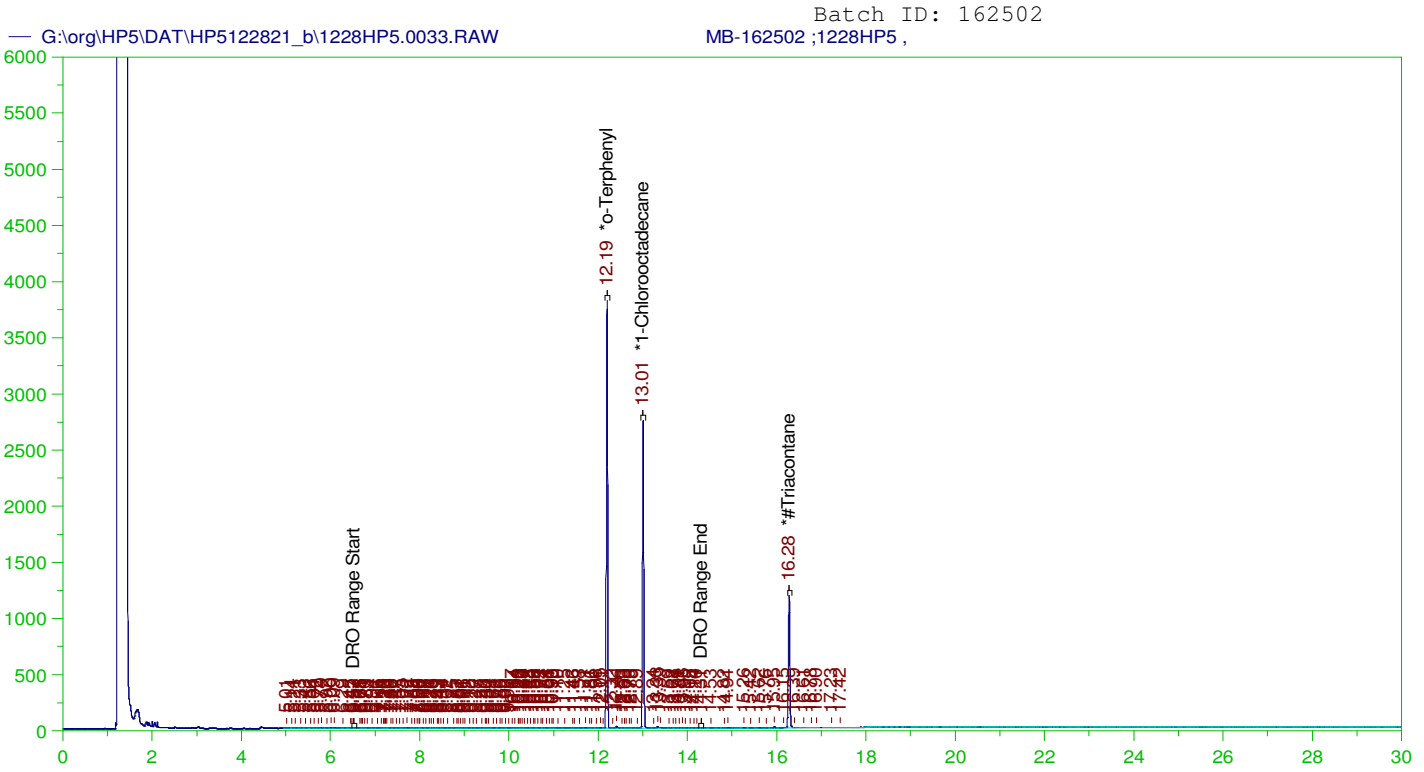
**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: LCS-162502 ;1228HP5 ,  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0032.RAW  
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 Method File: G:\Org\HP5\Methods\DS\_8015-24-IM-L#.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24.CAL  
 Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19  
 Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.193	.2	.194	96.89
*1-Chlorooctadecane	13.006	.2	.149	74.49

DRO Area: 1.967913E+08 DRO Amount: 6.276595  
 TEH Area: 2.114059E+08 TEH Amount: 6.742724



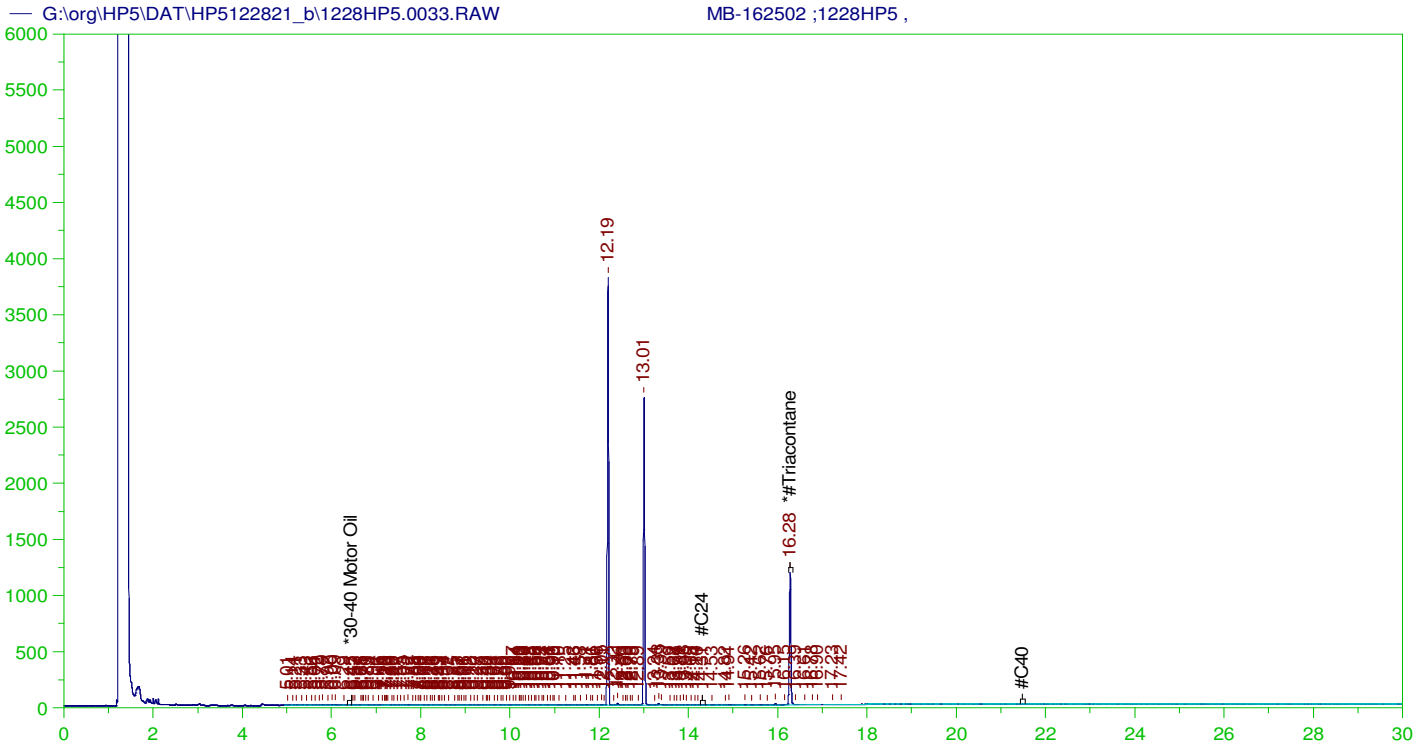
**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: MB-162502 ;1228HP5 ,  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0033.RAW  
 Date & Time Acquired: 12/29/2021 11:57:20 AM  
 Method File: G:\Org\HP5\Methods\DR\_8015-C24T-IM-L%.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
 Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19  
 Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.193	.2	.2	100.25	-
*1-Chlorooctadecane	13.006	.2	.16	80.01	-
*#Triacontane	16.275	.2	.106	53.01	-

DRO Area:703177 DRO Amount: 2.242761E-02  
 TEH Area:975493.1 TEH Amount: 3.111304E-02



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: MB-162502 ;1228HP5 ,  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0033.RAW  
 Date & Time Acquired: 12/29/2021 11:57:20 AM  
 Method File: G:\Org\HP5\Methods\DR\_OROS-AL-L%.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
 Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
 Rt range for Residual Range Organics: 14.27 to 21.54

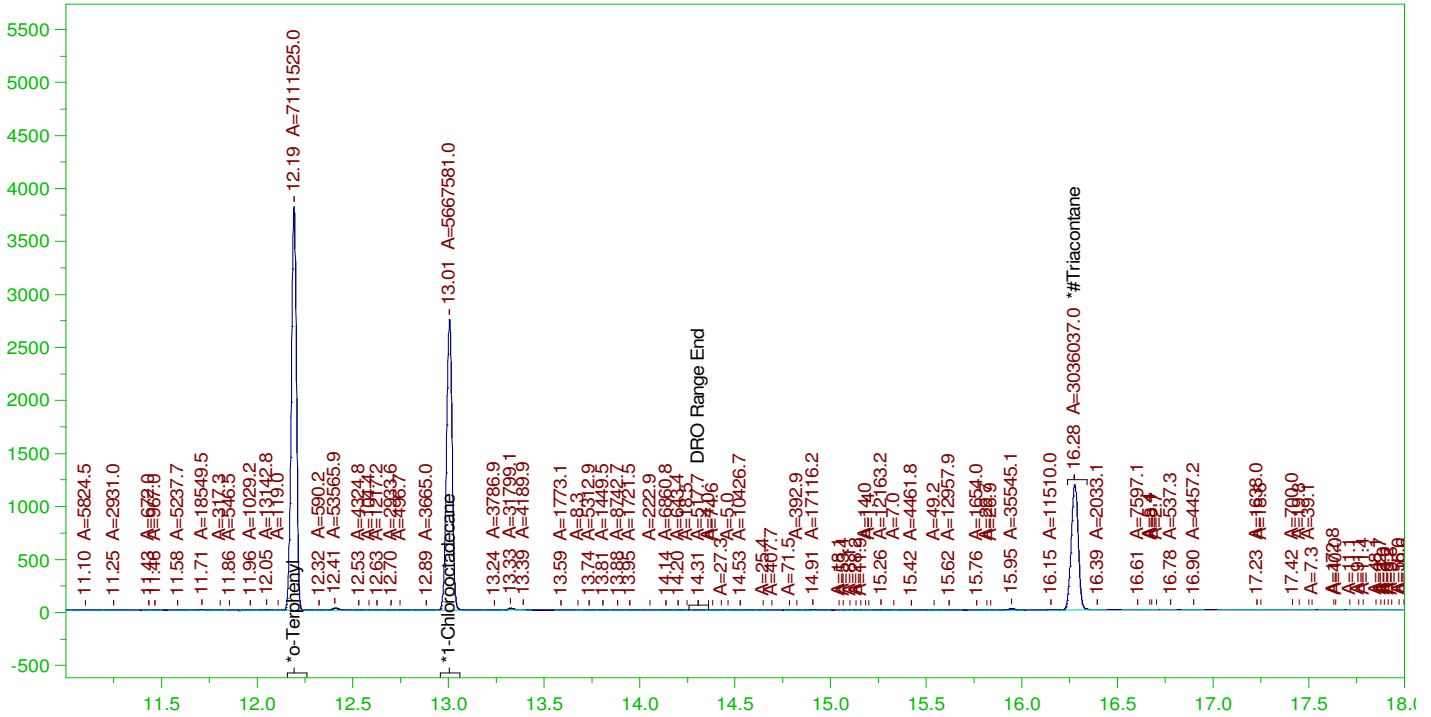
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.275	.5	.106	21.21

RRO Area:160168.8 RRO AMOUNT: 5.611606E-03

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0033.RAW

MB-162502 ;1228HP5 ,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

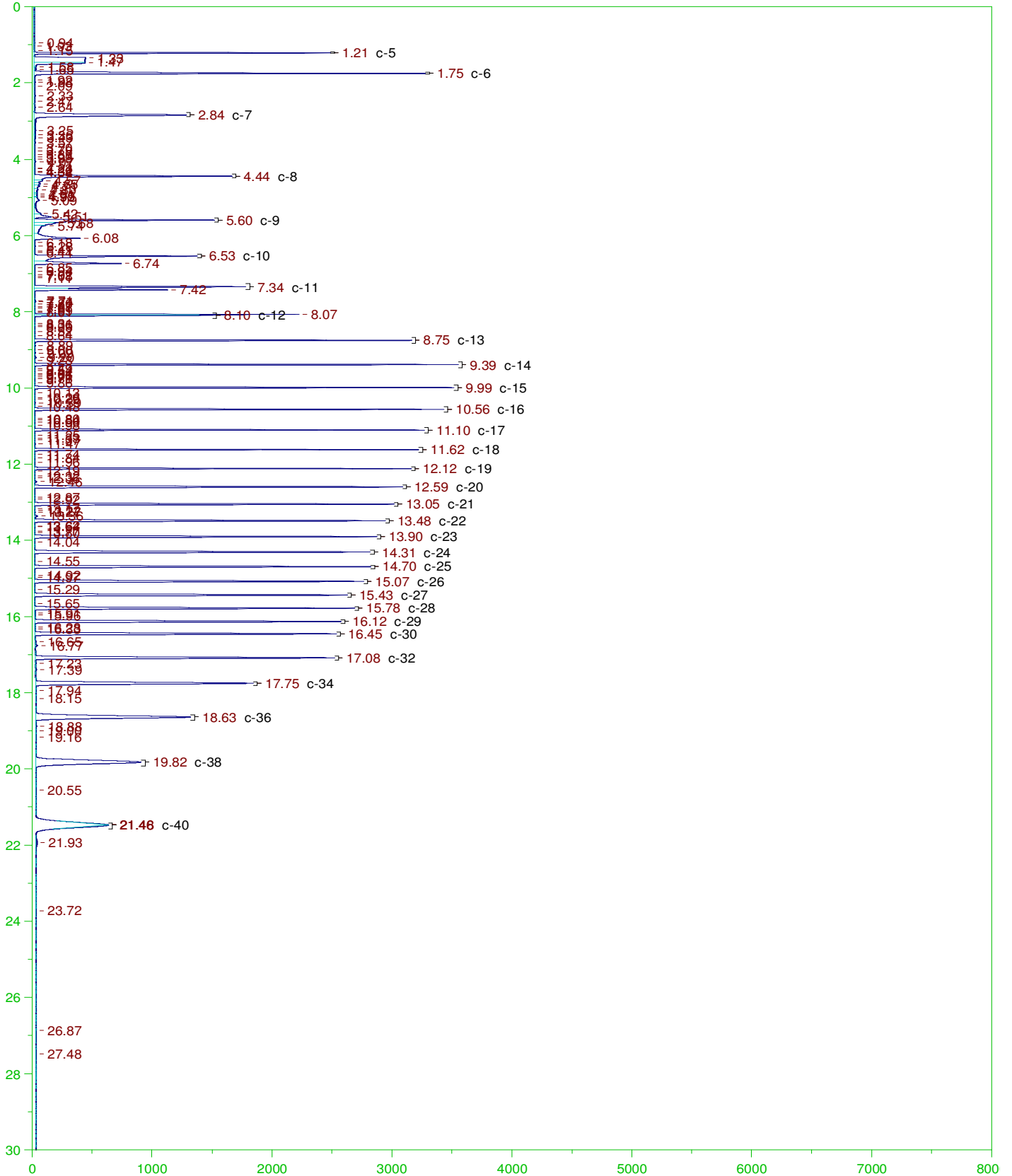
Sample Name: MB-162502 ;1228HP5 ,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0033.RAW  
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Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1000 Dilution: 1 S.A.: 1

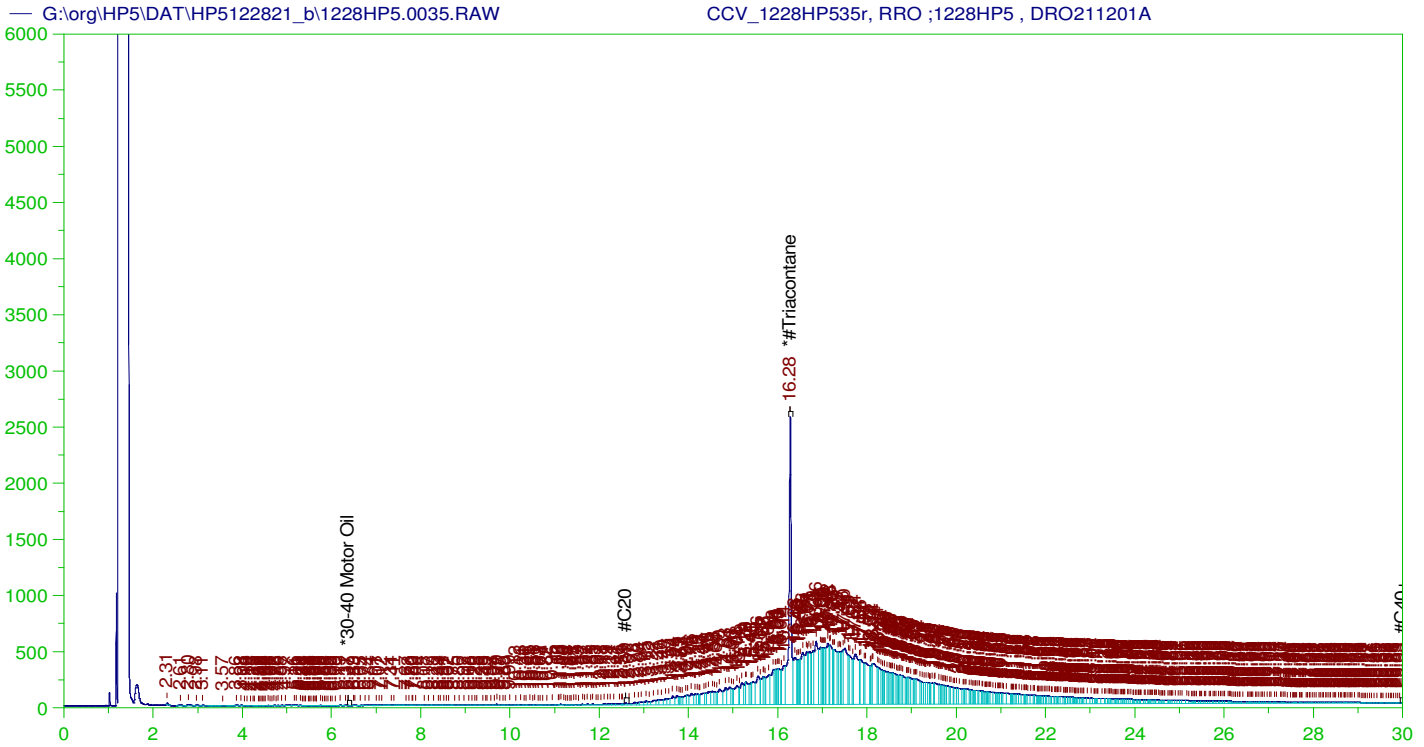
Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.193	.2	.2	100.14	-
*1-Chlorooctadecane	13.006	.2	.16	79.8	-
*Triacontane	16.275	.2	.105	52.47	-

DRO Area:504260.3 DRO Amount: 1.608322E-02  
TEH Area:947534.9 TEH Amount: 3.022132E-02





**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: CCV\_1228HP535r, RRO ;1228HP5 , DRO211201A  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0035.RAW  
 Date & Time Acquired: 12/29/2021 1:22:09 PM  
 Method File: G:\Org\HP5\Methods\DC\_ORO-AL-L%.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for for ~~Residual~~ TEH (Oil Range) Organics Calculations: 28542.41  
 Rt range for ~~Residual~~ TEH (Oil Range) Organics: 12.56 to 30.05

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.279	500.	325.781	65.16	-

~~RRO~~ TEH (Oil Range) Area:1.240746E+08 ~~RRO~~ TEH (Oil Range) AMOUNT: 4347.025

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0035.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
*30-40 Motor Oil	5000.	.032	.	75-125

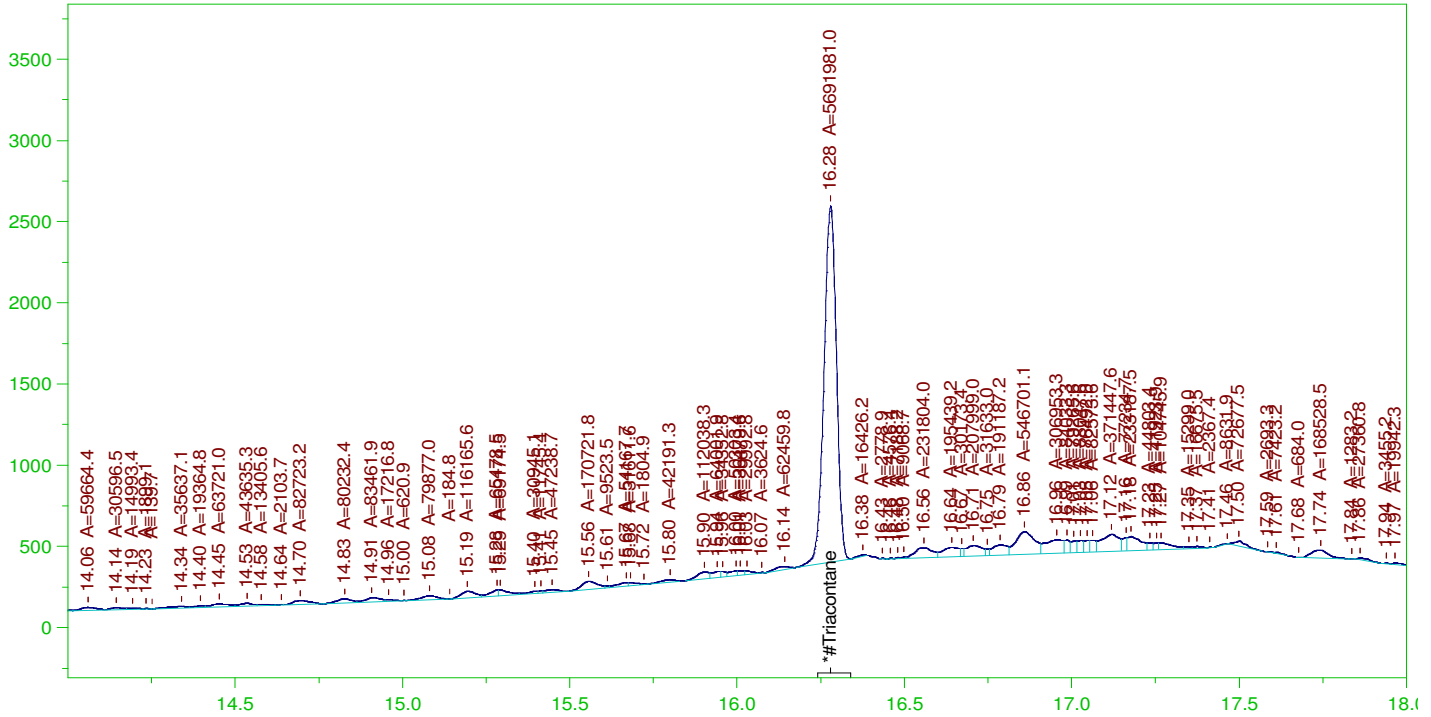
  

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*#Triacontane	16.279	200.	325.781	162.89	75-125

AMN 01/24/2022

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0035.RAW

CCV\_1228HP535r, RRO ;1228HP5 , DRO211201A



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: CCV\_1228HP535r, RRO ;1228HP5 , DRO211201A  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0035.RAW  
 Date & Time Acquired: 12/29/2021 1:22:09 PM  
 Method File: G:\Org\HP5\Methods\DS\_ORO-AL-L%.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
 Rt range for Residual Range Organics: 12.56 to 30.05

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.279	500.	196.749	39.35

RRO Area:5751847 RRO AMOUNT: 201.5193

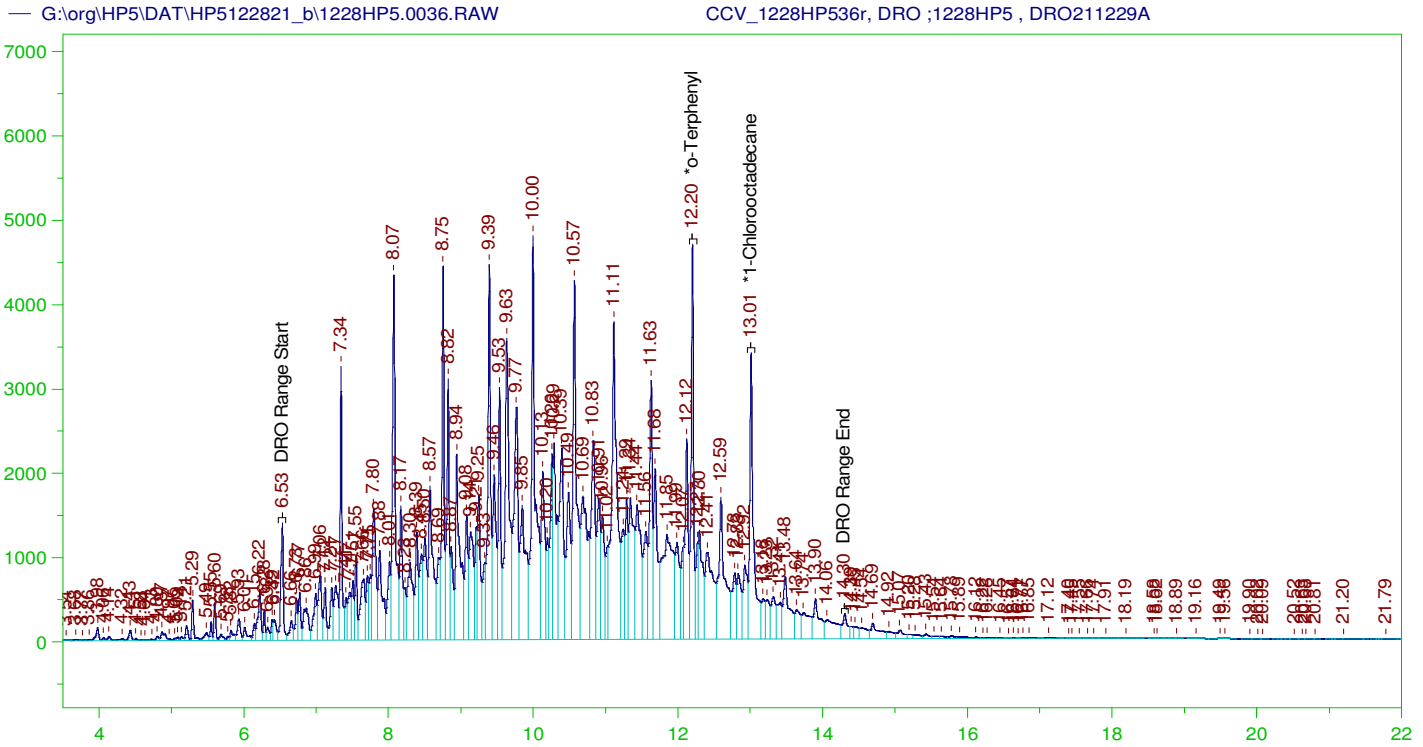
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COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
*30-40 Motor Oil	5000.	.032	.	75-125

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*#Triacontane	16.279	200.	196.749	98.37	75-125





**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1228HP536r, DRO ;1228HP5 , DRO211229A  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0036.RAW  
 Date & Time Acquired: 12/29/2021 2:04:42 PM  
 Method File: G:\Org\HP5\Methods\DC\_8015-24-IM-L%.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19  
 Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.201	200.	320.99	160.49 -
*1-Chlorooctadecane	13.011	200.	352.221	176.11 -

DRO Area: 4.600582E+08 DRO Amount: 14673.41  
 TEH Area: 4.773679E+08 TEH Amount: 15225.5

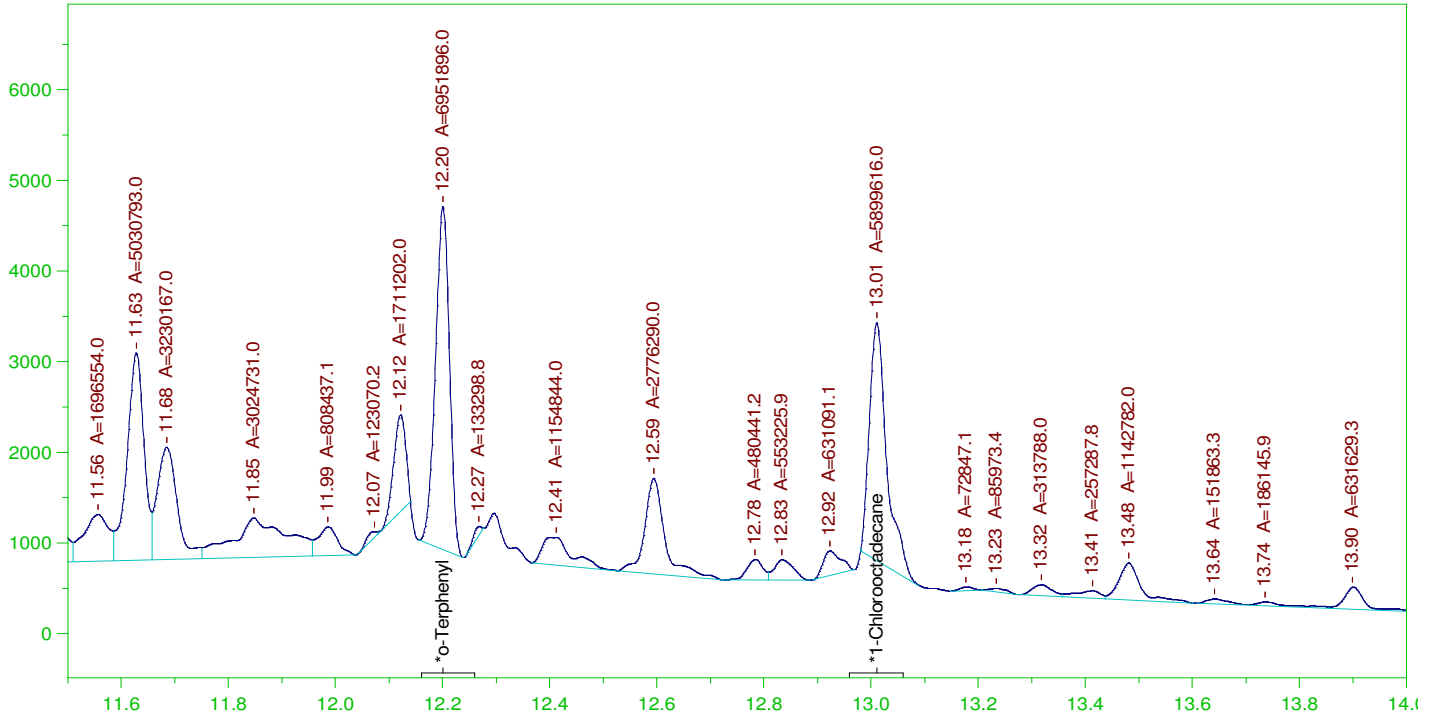
CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0036.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	15225.5	101.5	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.201	200.	320.99	160.49	85-115
*1-Chlorooctadecane	13.011	200.	352.221	176.11	85-115

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0036.RAW

CCV\_1228HP536r, DRO ;1228HP5 , DRO211229A



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1228HP536r, DRO ;1228HP5 , DRO211229A  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0036.RAW  
 Date & Time Acquired: 12/29/2021 2:04:42 PM  
 Method File: G:\Org\HP5\Methods\DS\_8015-24-IM-L#.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

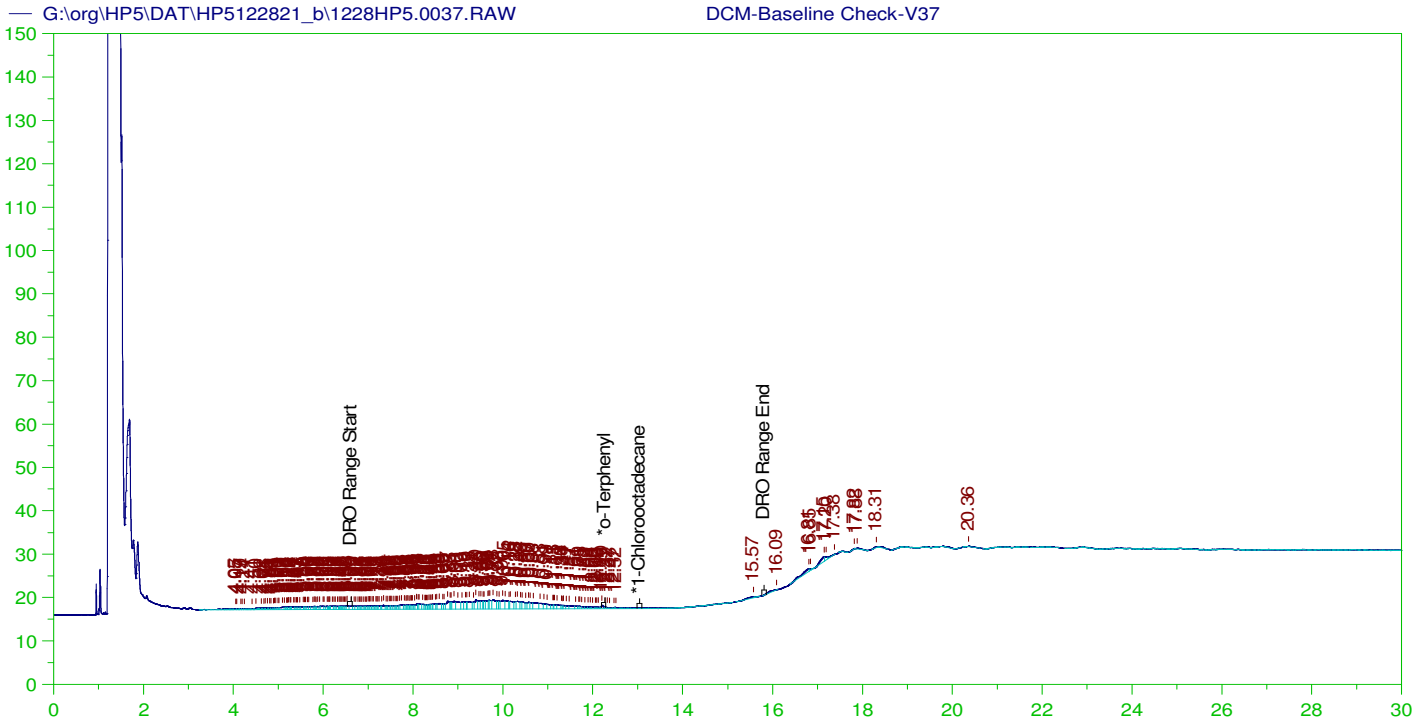
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.201	200.	195.777	97.89
*1-Chlorooctadecane	13.011	200.	166.143	83.07

DRO Area: 2.574778E+08 DRO Amount: 8212.172  
 TEH Area: 2.683066E+08 TEH Amount: 8557.554

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0036.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	8557.55	57.05	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.201	200.	195.777	97.89	85-115
*1-Chlorooctadecane	13.011	200.	166.143	83.07	85-115



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: DCM-Baseline Check-V37  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0037.RAW  
 Date & Time Acquired: 12/29/2021 2:47:21 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-IBb-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IB.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19  
 Rt range for Diesel Range Organics: 6.54 to 15.86

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.271	200.	.019	.01	-
*1-Chlorooctadecane	29.975	200.	.	.	-

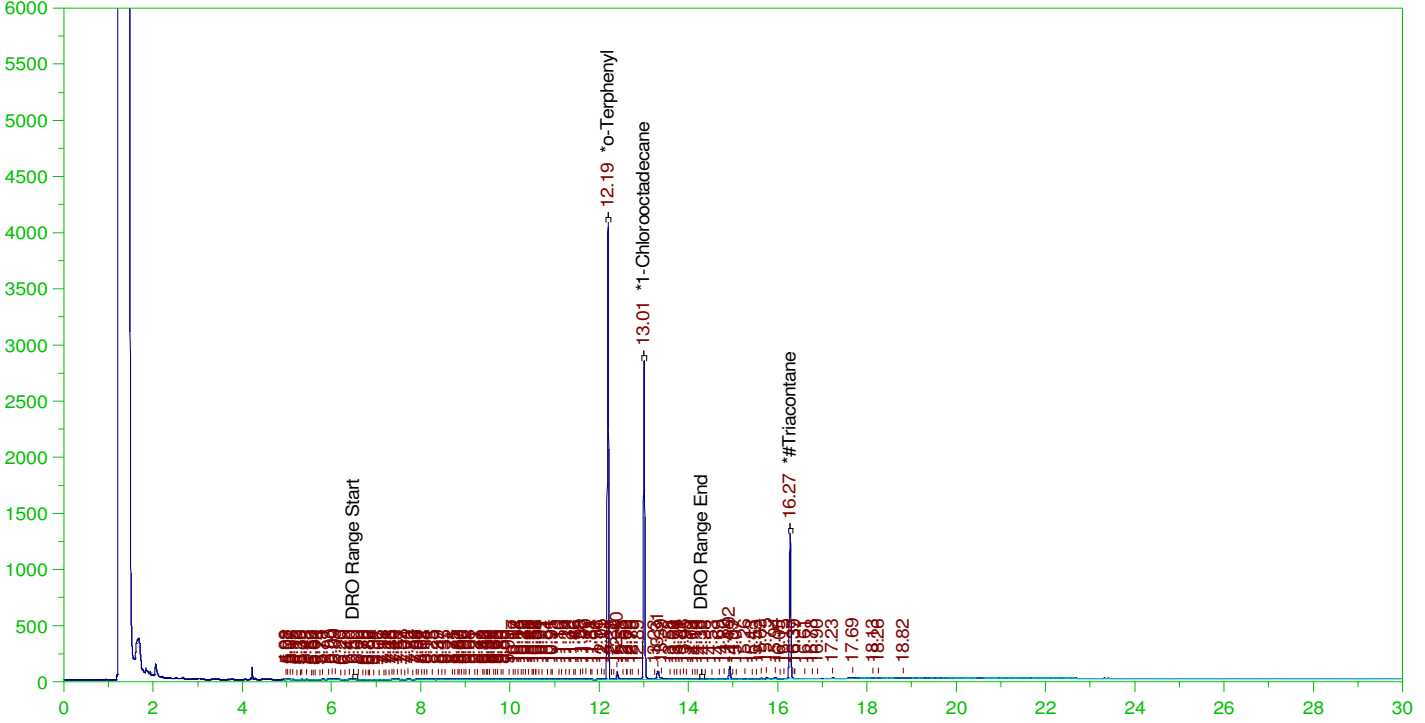
DRO Area:396485.8 DRO Amount: 12.64579  
 TEH Area:522385.7 TEH Amount: 16.66132

ERH2261 (RHMW15-05)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0038.RAW

B21121968-001D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121968-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0038.RAW  
Date & Time Acquired: 12/29/2021 3:29:53 PM  
Method File: G:\Org\HP5\Methods\DR\_8015-C24T-IM-L%.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1020 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.193	.196	.209	106.74	-
*1-Chlorooctadecane	13.006	.196	.164	83.74	-
*#Triacontane	16.274	.196	.112	57.18	-

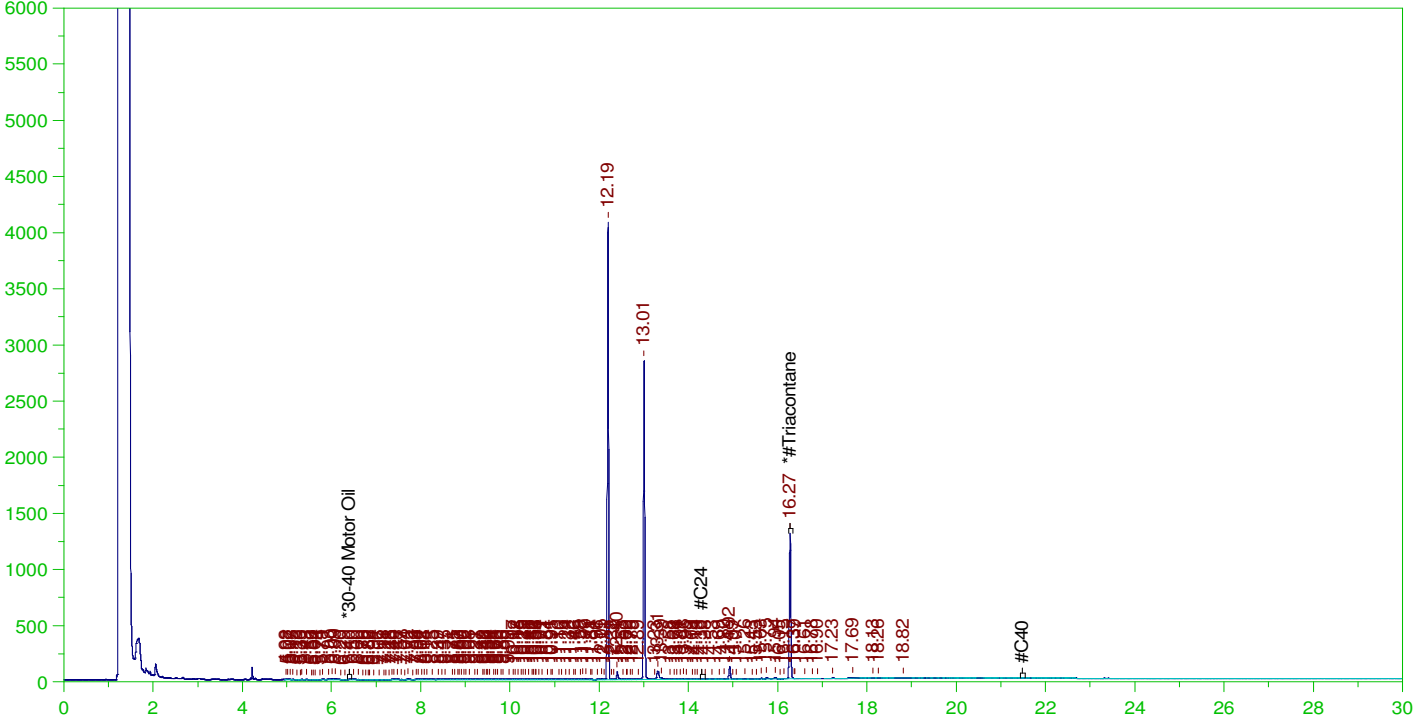
DRO Area:1139163 DRO Amount: 3.562082E-02  
TEH Area:1847500 TEH Amount: 5.777002E-02

ERH2261 (RHMW15-05)

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0038.RAW

Batch ID: 162502

B21121968-001D ;1228HP5 , \$HC-8015-DRO-W,



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121968-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0038.RAW  
Date & Time Acquired: 12/29/2021 3:29:53 PM  
Method File: G:\Org\HP5\Methods\DR\_OROS-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
Sample Weight: 1020 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 14.27 to 21.54

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.274	.49	.112	22.87	-

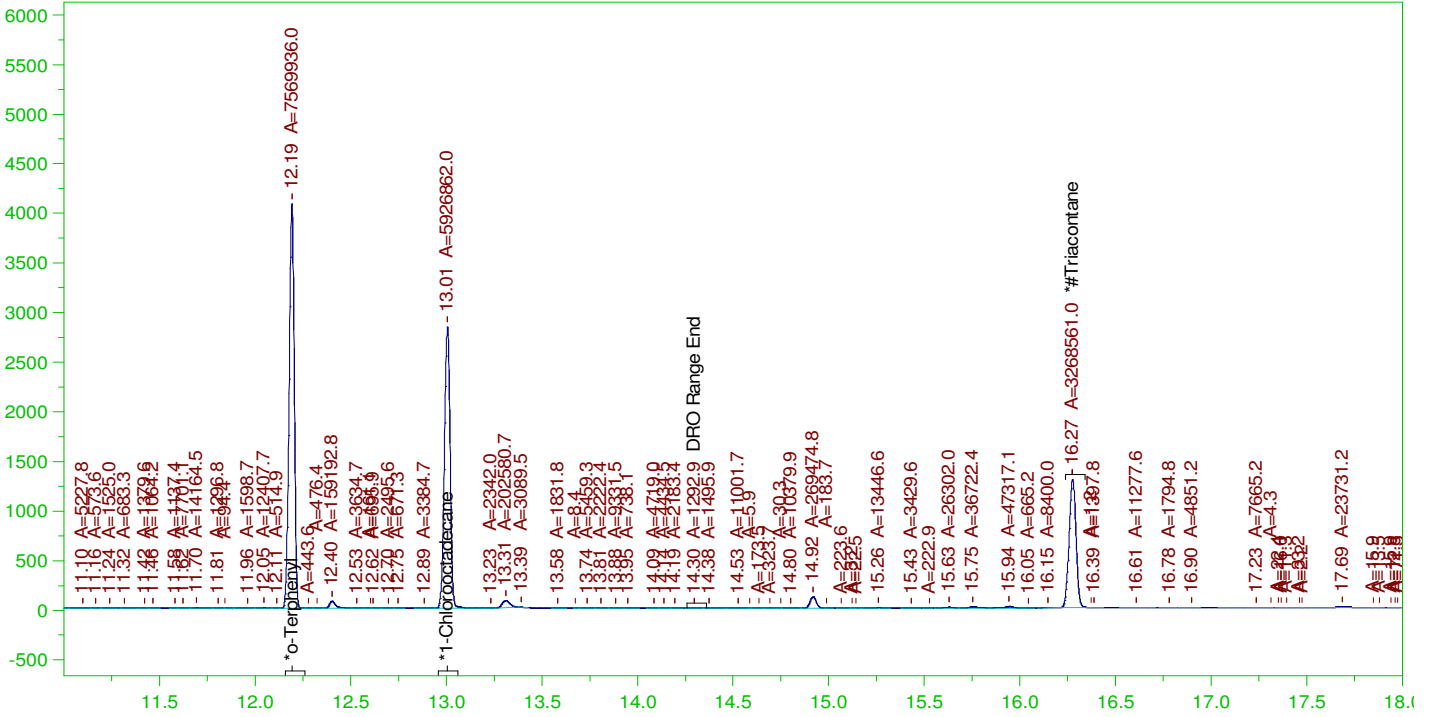
RRO Area:582334 RRO AMOUNT: 2.000237E-02

ERH2261 (RHMW15-05)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0038.RAW

B21121968-001D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121968-001D ;1228HP5 , \$HC-8015-DRO-W,  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0038.RAW  
 Date & Time Acquired: 12/29/2021 3:29:53 PM  
 Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
 Sample Weight: 1020 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.193	.196	.209	106.59
*1-Chlorooctadecane	13.006	.196	.164	83.46
*Triacontane	16.274	.196	.111	56.49

DRO Area:715017.6 DRO Amount: 0.0223581  
 TEH Area:1671005 TEH Amount: 5.225115E-02

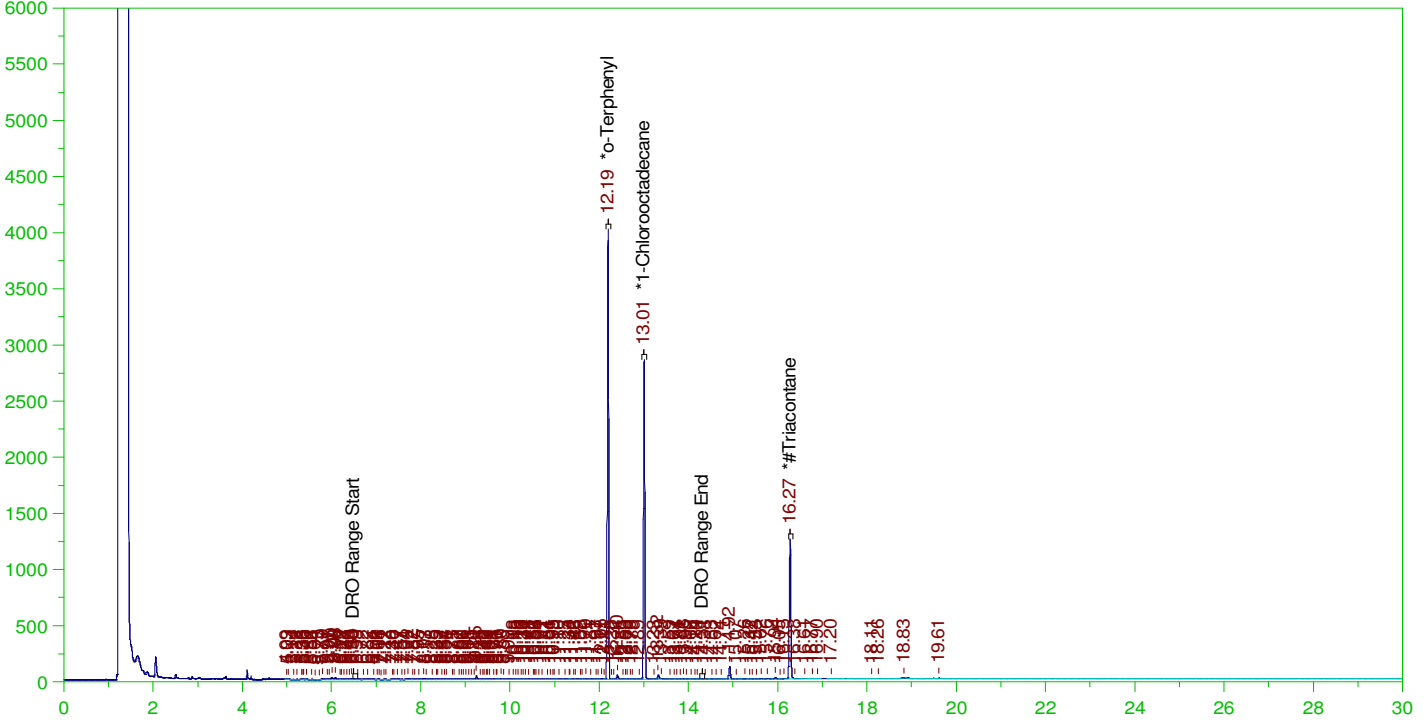


ERH2259 (RHMW14-03)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0039.RAW

B21121957-001B ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121957-001B ;1228HP5 , \$HC-8015-DRO-W,  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0039.RAW  
 Date & Time Acquired: 12/29/2021 4:12:17 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-C24T-IM-L%.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
 Sample Weight: 1050 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.194	.19	.2	105.04	-
*1-Chlorooctadecane	13.007	.19	.16	84.22	-
*#Triacontane	16.274	.19	.105	55.12	-

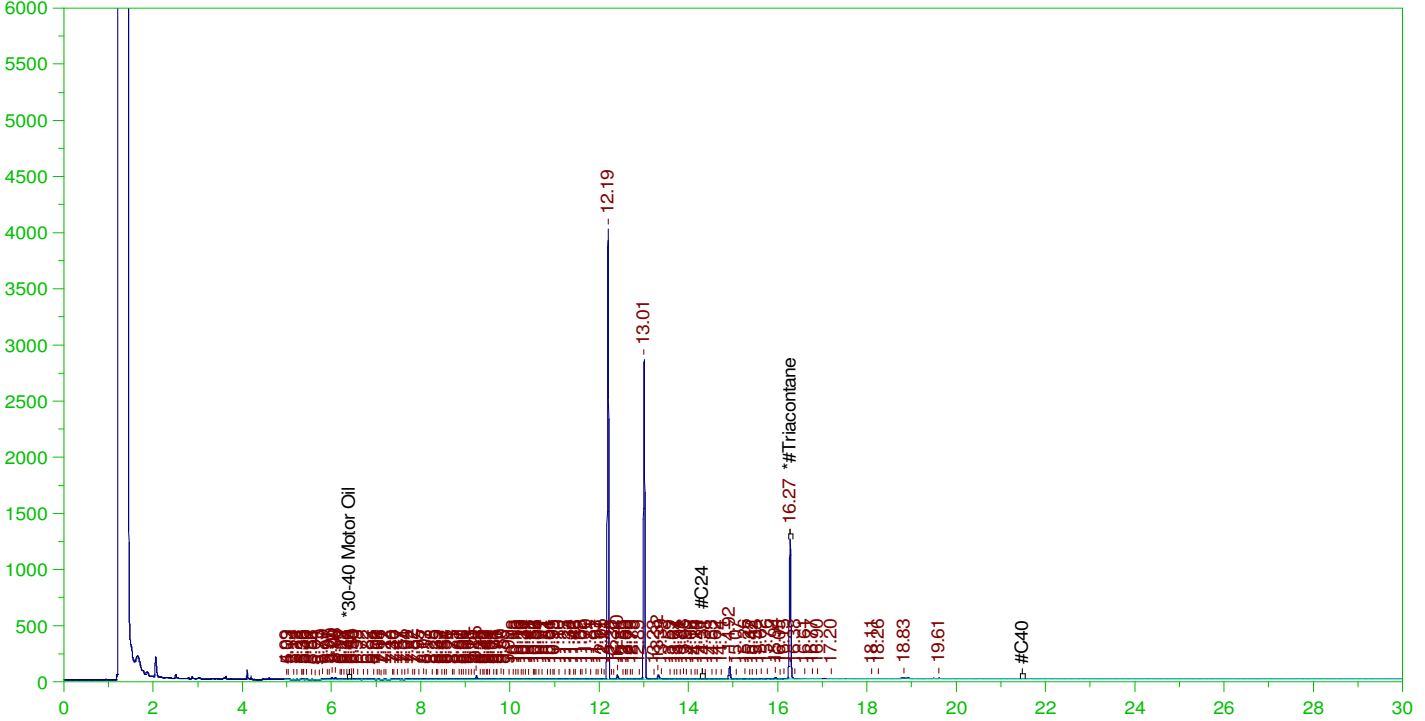
DRO Area: 992427.9      DRO Amount: 3.014588E-02  
 TEH Area: 1672059      TEH Amount: 5.079027E-02

ERH2259 (RHMW14-03)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0039.RAW

B21121957-001B ;1228HP5 , \$HC-8015-DRO-W,



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121957-001B ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0039.RAW  
Date & Time Acquired: 12/29/2021 4:12:17 PM  
Method File: G:\Org\HP5\Methods\DR\_OROS-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
Sample Weight: 1050 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 14.27 to 21.54

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.274	.476	.105	22.05

RRO Area:489432.2 RRO AMOUNT: 1.633099E-02

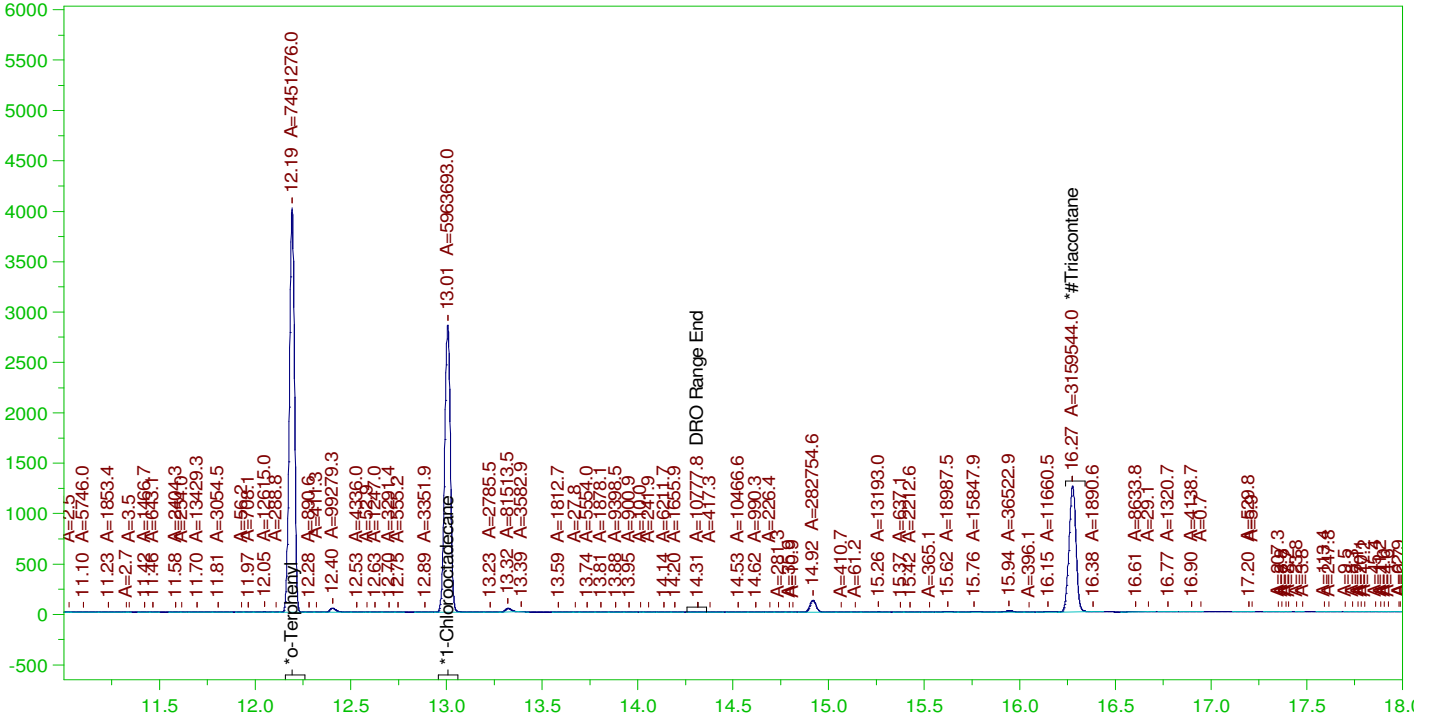


ERH2259 (RHMW14-03)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0039.RAW

B21121957-001B ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121957-001B ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0039.RAW  
Date & Time Acquired: 12/29/2021 4:12:17 PM  
Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1050 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.194	.19	.2	104.92
*1-Chlorooctadecane	13.007	.19	.16	83.97
*#Triacontane	16.274	.19	.104	54.61

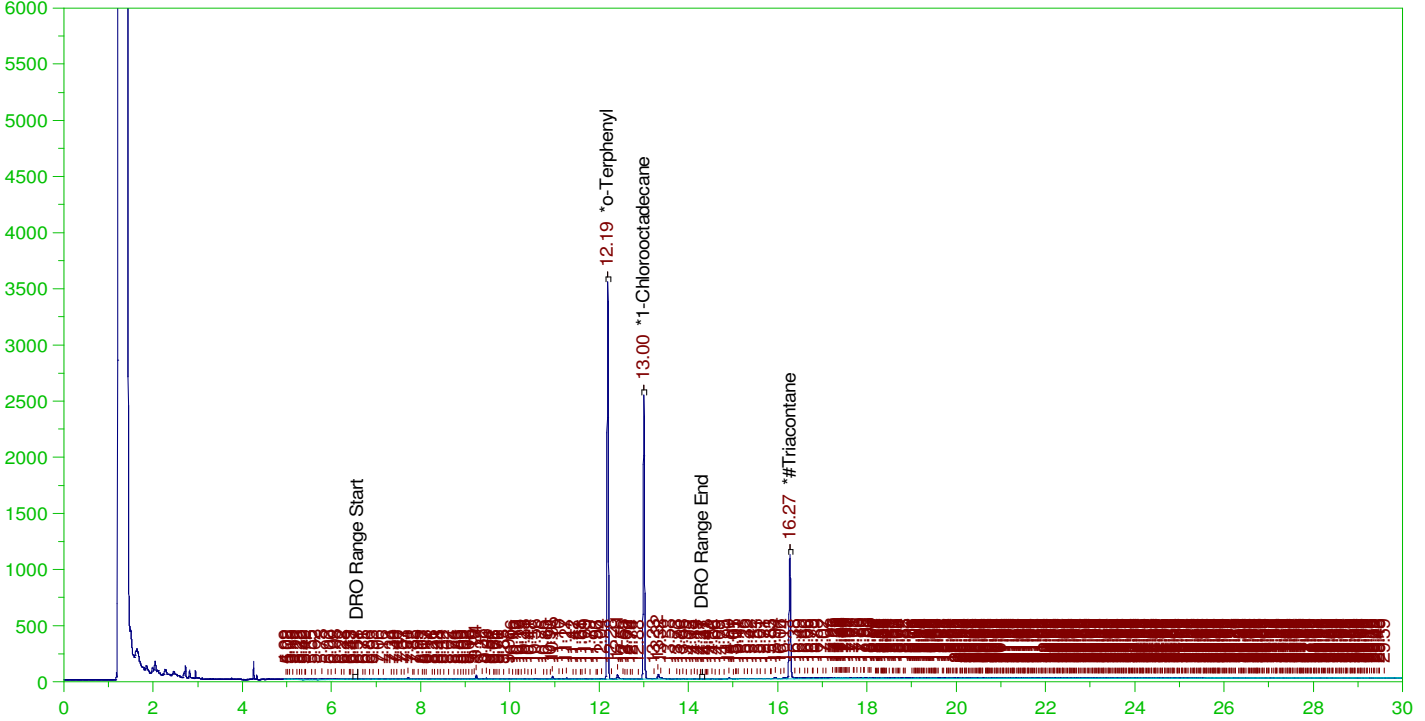
DRO Area:618835.3 DRO Amount: 1.879767E-02  
TEH Area:1710215 TEH Amount: 5.194929E-02

ERH2253 (OWDFMW01)

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0040.RAW

Batch ID: 162502

B21121977-001D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121977-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0040.RAW  
Date & Time Acquired: 12/29/2021 4:55:14 PM  
Method File: G:\Org\HP5\Methods\D3\_8015-C24T-IM-L%.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1030 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.187	.194	.181	93.27	-
*1-Chlorooctadecane	13.001	.194	.144	74.07	-
*#Triacontane	16.27	.194	.097	49.91	-

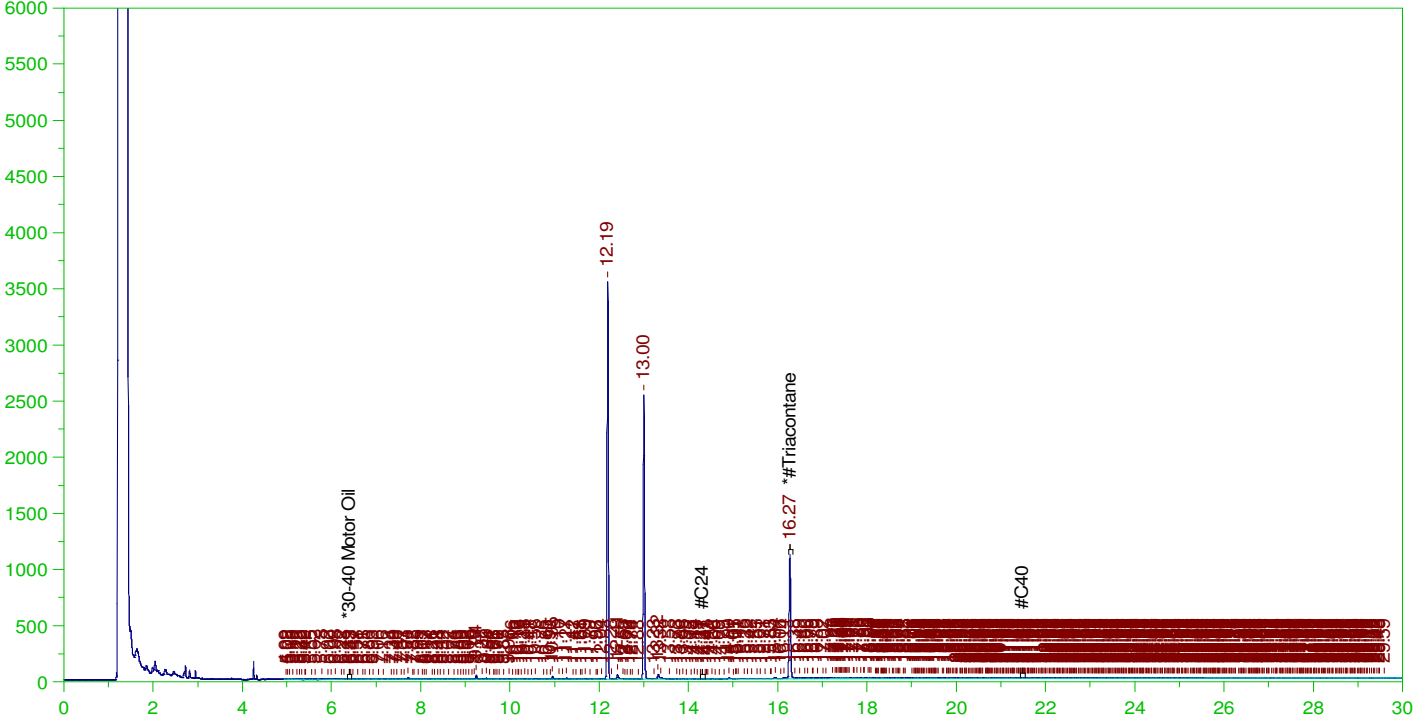
DRO Area:1000002 DRO Amount: 3.096578E-02  
TEH Area:5476820 TEH Amount: 0.1695936

ERH2253 (OWDFMW01)

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0040.RAW

Batch ID: 162502

B21121977-001D ;1228HP5 , \$HC-8015-DRO-W,



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121977-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0040.RAW  
Date & Time Acquired: 12/29/2021 4:55:14 PM  
Method File: G:\Org\HP5\Methods\D3\_OROS-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
Sample Weight: 1030 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 14.27 to 21.54

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.27	.485	.097	19.96

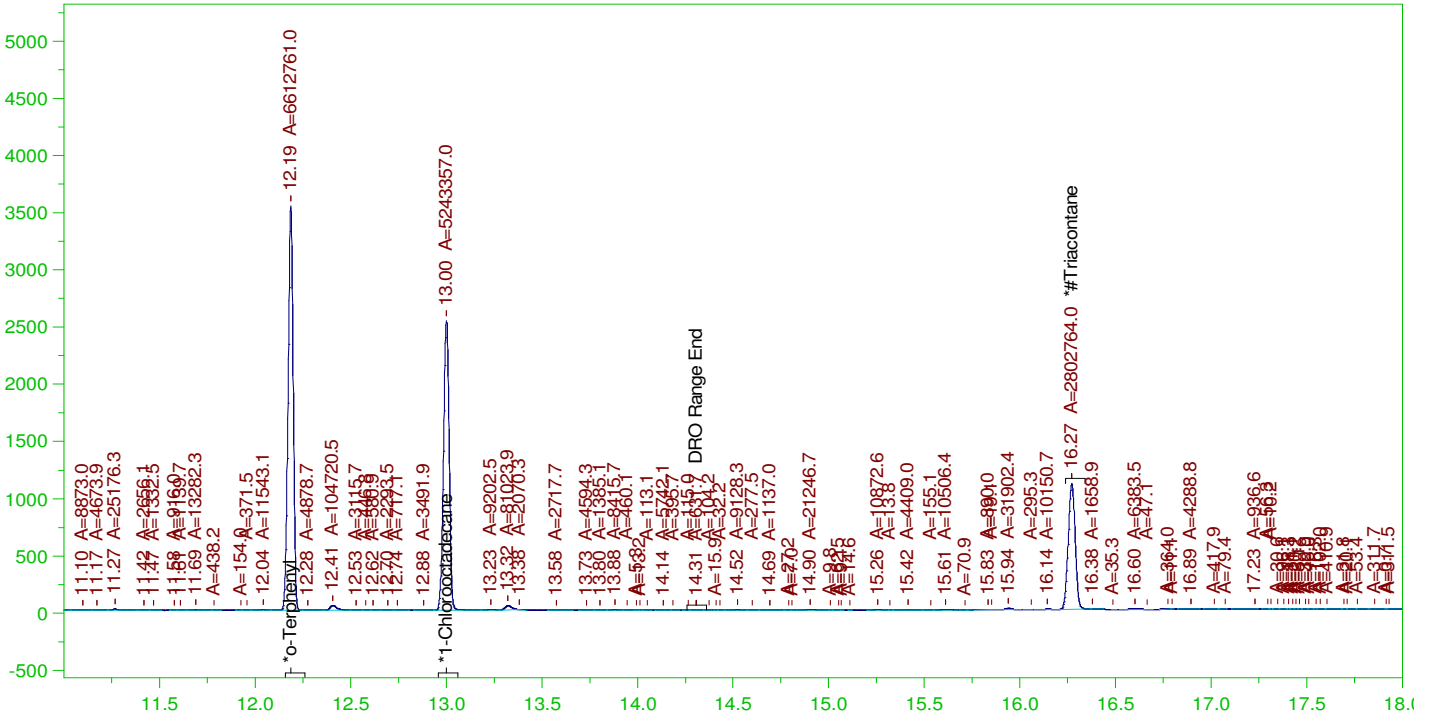
RRO Area:2913158 RRO AMOUNT: 9.909146E-02

ERH2253 (OWDFMW01)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0040.RAW

B21121977-001D ; 1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121977-001D ; 1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0040.RAW  
Date & Time Acquired: 12/29/2021 4:55:14 PM  
Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1030 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.187	.194	.181	93.11
*1-Chlorooctadecane	13.001	.194	.143	73.83
*#Triacontane	16.27	.194	.094	48.44

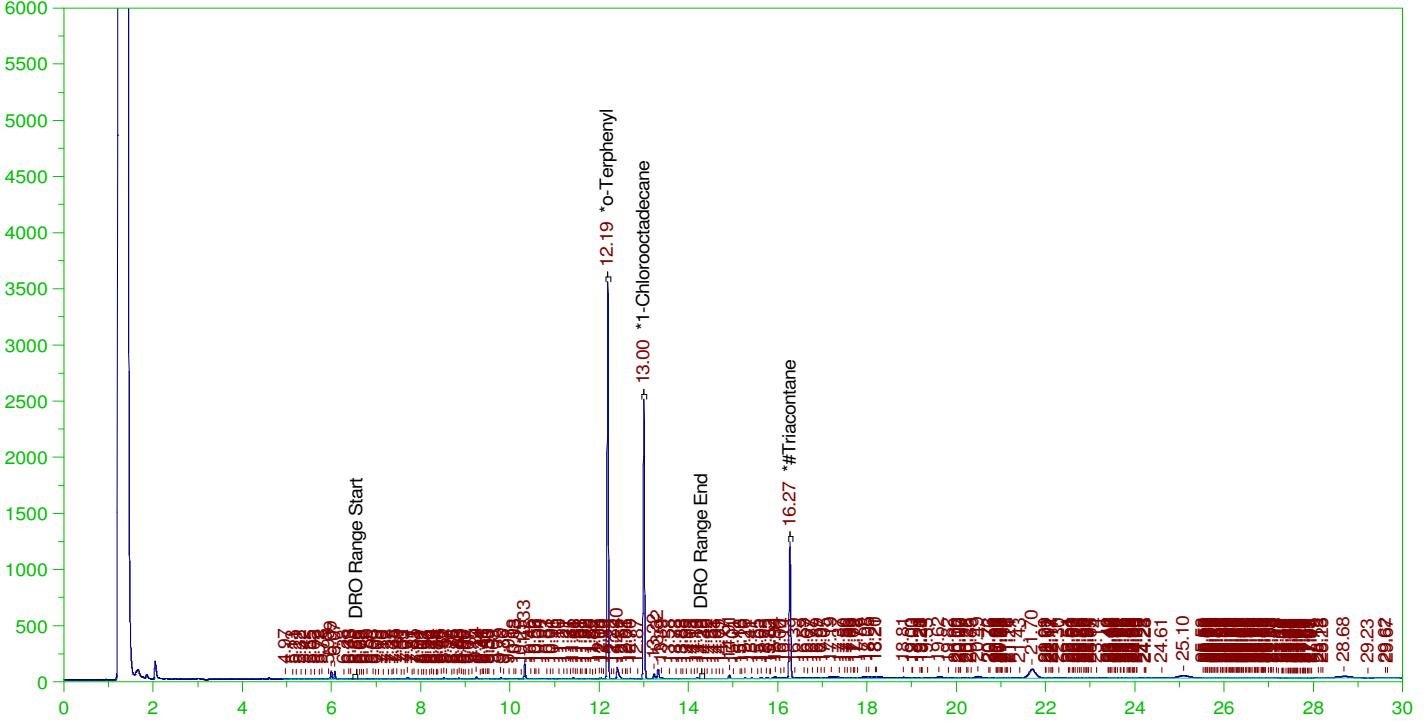
DRO Area: 731440.8 DRO Amount: 2.264958E-02  
TEH Area: 1334874 TEH Amount: 4.133533E-02

ERH2242 (RHMW06)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0041.RAW

B21121977-002D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121977-002D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0041.RAW  
Date & Time Acquired: 12/29/2021 5:38:39 PM  
Method File: G:\Org\HP5\Methods\D3\_8015-C24T-IM-L%.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1030 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.188	.194	.18	92.89	-
*1-Chlorooctadecane	13.	.194	.142	73.	-
*#Triacontane	16.27	.194	.105	54.17	-

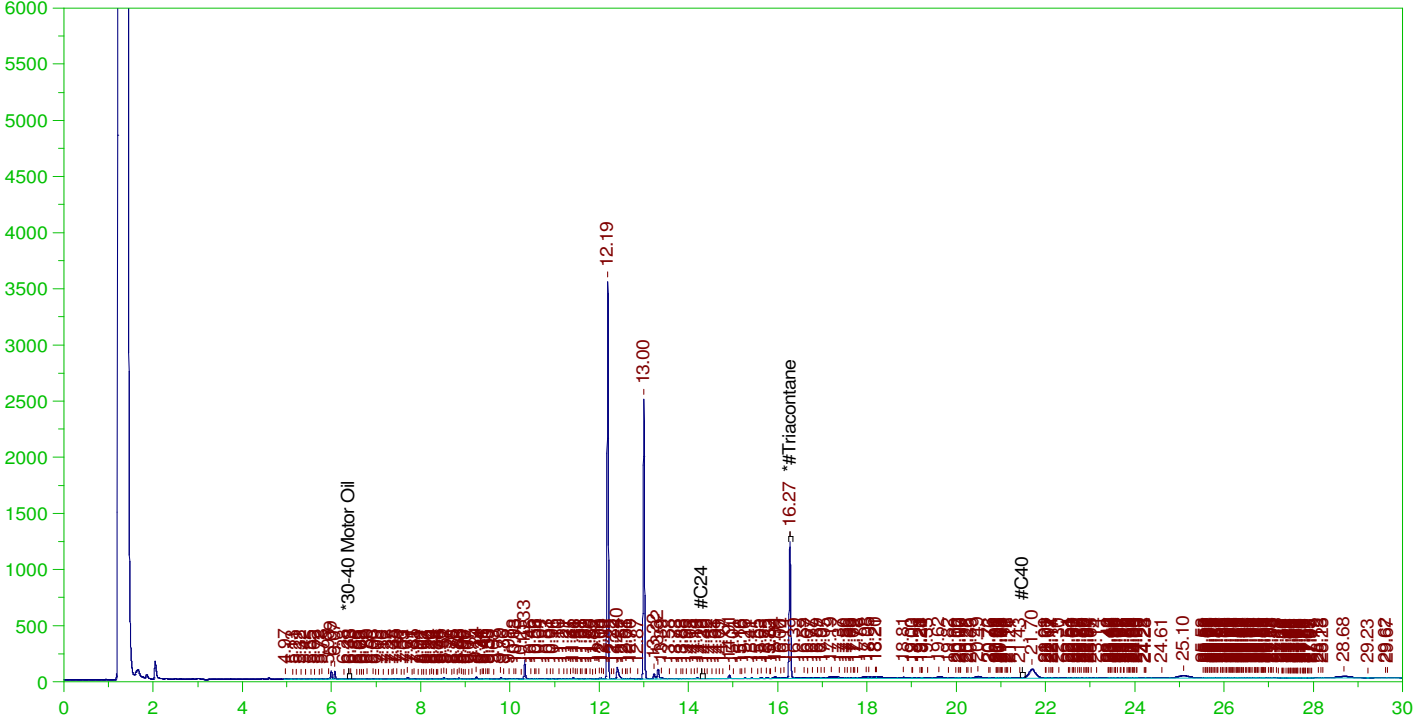
DRO Area:2043677 DRO Amount: 0.0632839  
TEH Area:9943586 TEH Amount: 0.3079102

ERH2242 (RHMW06)

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0041.RAW

Batch ID: 162502

B21121977-002D ;1228HP5 , \$HC-8015-DRO-W,



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121977-002D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0041.RAW  
Date & Time Acquired: 12/29/2021 5:38:39 PM  
Method File: G:\Org\HP5\Methods\D3\_OROS-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
Sample Weight: 1030 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 14.27 to 21.54

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.27	.485	.105	21.67

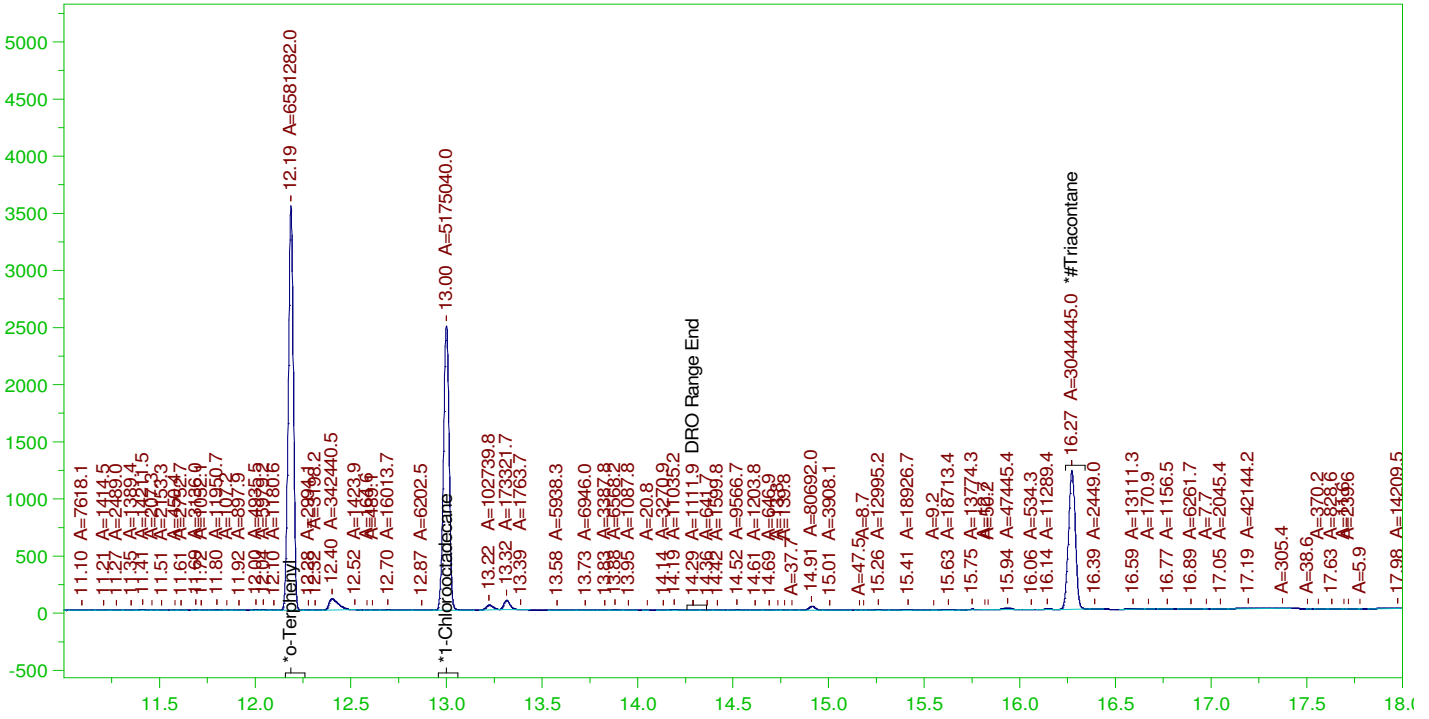
RRO Area:3965028 RRO AMOUNT: 0.1348709

ERH2242 (RHMW06)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0041.RAW

B21121977-002D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

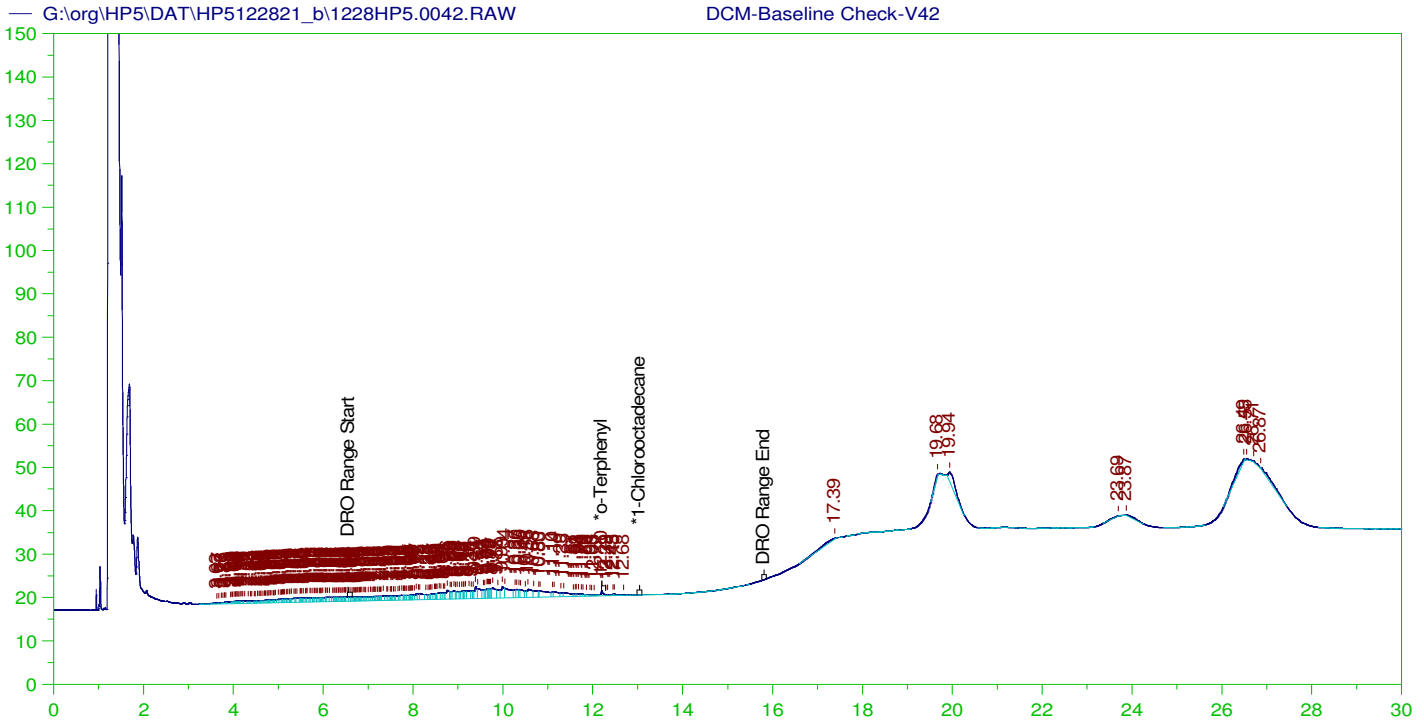
Sample Name: B21121977-002D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0041.RAW  
Date & Time Acquired: 12/29/2021 5:38:39 PM  
Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1030 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.188	.194	.18	92.67	-
*1-Chlorooctadecane	13.	.194	.141	72.87	-
*#Triacontane	16.27	.194	.102	52.62	-

DRO Area:1496878 DRO Amount: 0.0463519  
TEH Area:3916138 TEH Amount: 0.121266



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: DCM-Baseline Check-V42  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0042.RAW  
 Date & Time Acquired: 12/29/2021 6:21:47 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-IBb-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IB.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19  
 Rt range for Diesel Range Organics: 6.54 to 15.86

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.197	200.	.127	.06
*1-Chlorooctadecane	29.984	200.	.	.

DRO Area:427366.8 DRO Amount: 13.63073  
 TEH Area:655029.3 TEH Amount: 20.89195

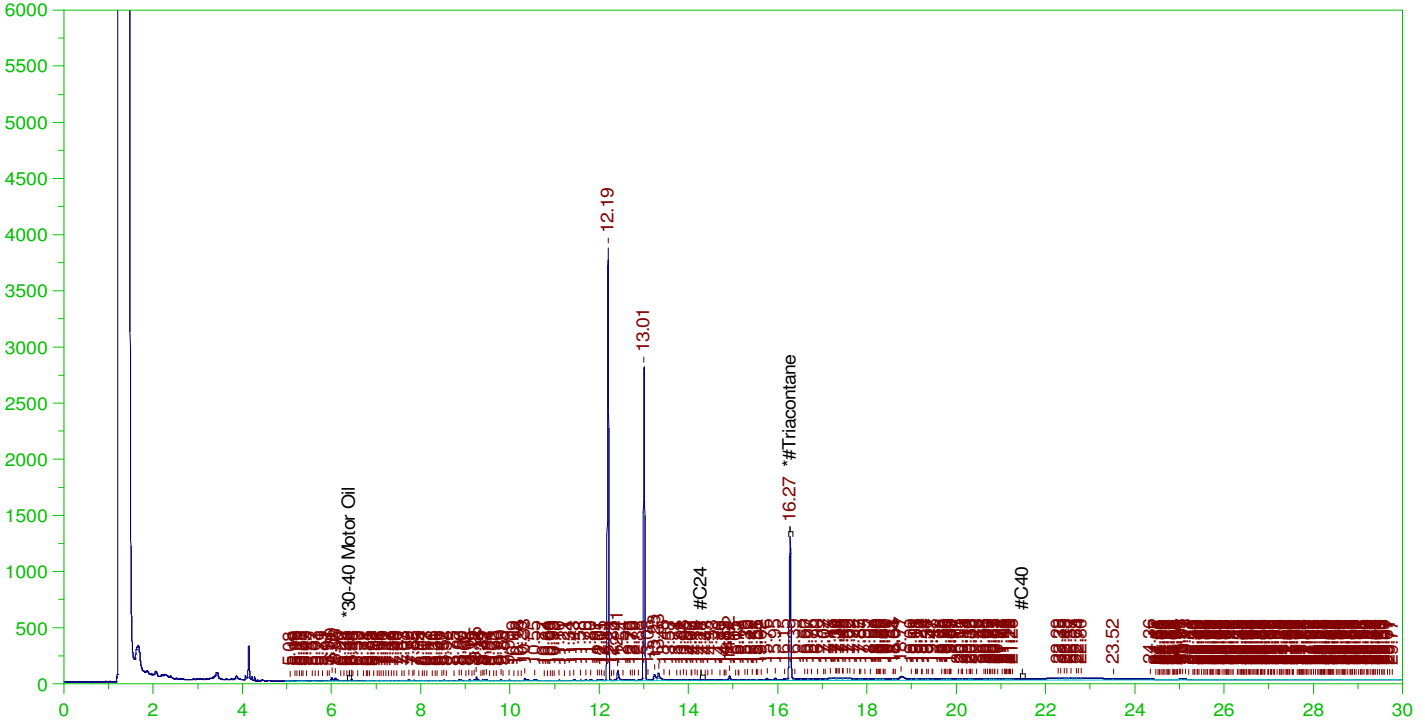


ERH2240 (RHMW05)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0043.RAW

B21121981-001D ;1228HP5 , \$HC-8015-DRO-W,



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121981-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0043.RAW  
Date & Time Acquired: 12/29/2021 7:04:49 PM  
Method File: G:\Org\HP5\Methods\D3\_OROS-122843-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
Sample Weight: 1030 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 14.27 to 21.54

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.274	.485	.111	22.82

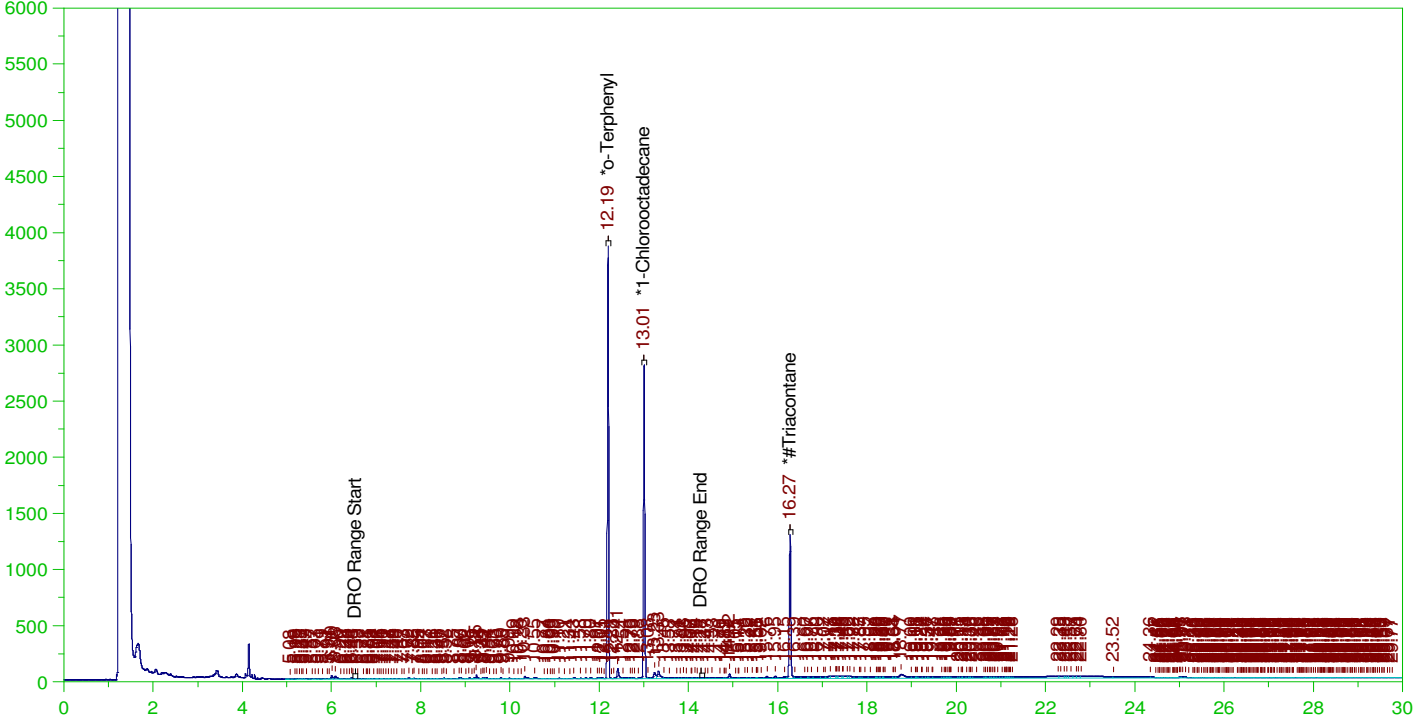
RRO Area:4444653 RRO AMOUNT: 0.1511854

ERH2240 (RHMW05)

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0043.RAW

Batch ID: 162502

B21121981-001D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121981-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0043.RAW  
Date & Time Acquired: 12/29/2021 7:04:49 PM  
Method File: G:\Org\HP5\Methods\DR\_8015-122843-IM-L%.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1030 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.194	.194	.196	100.8	-
*1-Chlorooctadecane	13.006	.194	.158	81.19	-
*#Triacontane	16.274	.194	.111	57.04	-

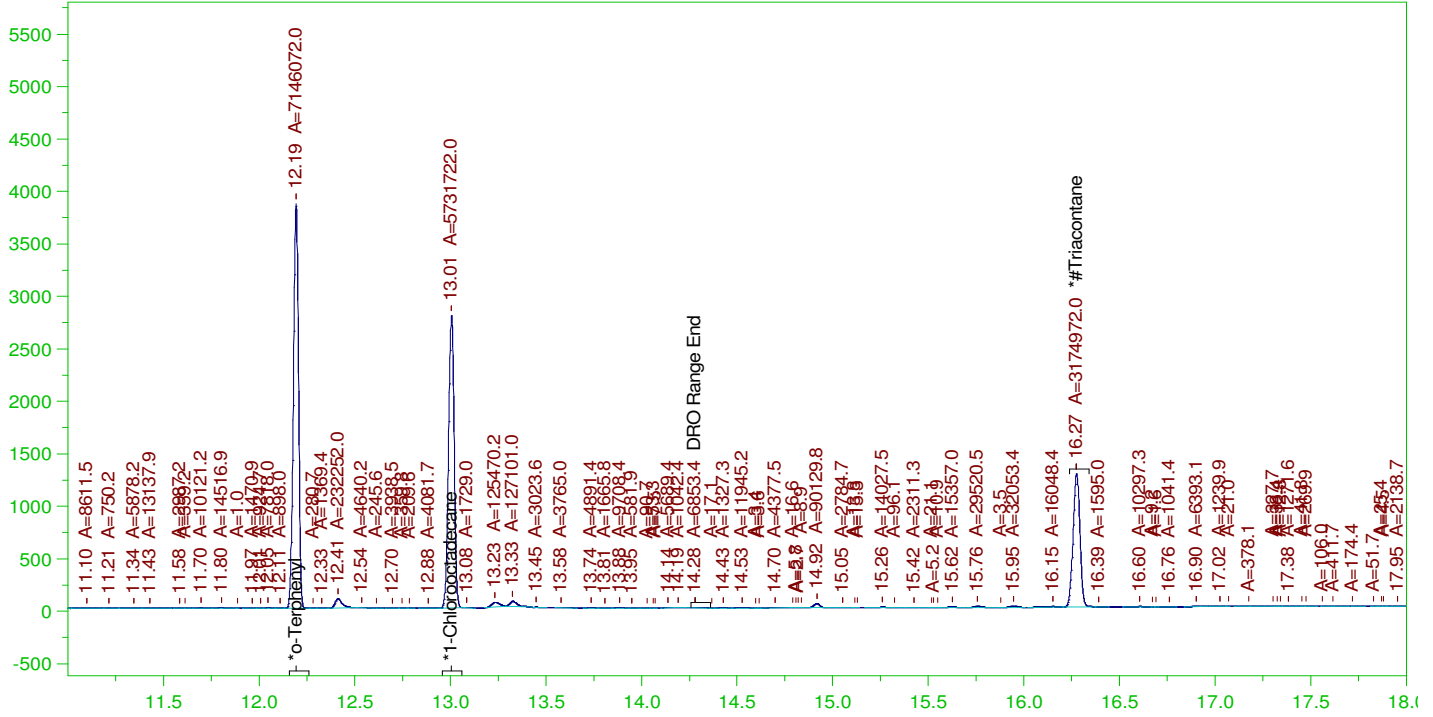
DRO Area:1931941 DRO Amount: 5.982391E-02  
TEH Area:9565184 TEH Amount: 0.2961927

ERH2240 (RHMW05)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0043.RAW

B21121981-001D ; 1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121981-001D ; 1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0043.RAW  
Date & Time Acquired: 12/29/2021 7:04:49 PM  
Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1030 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

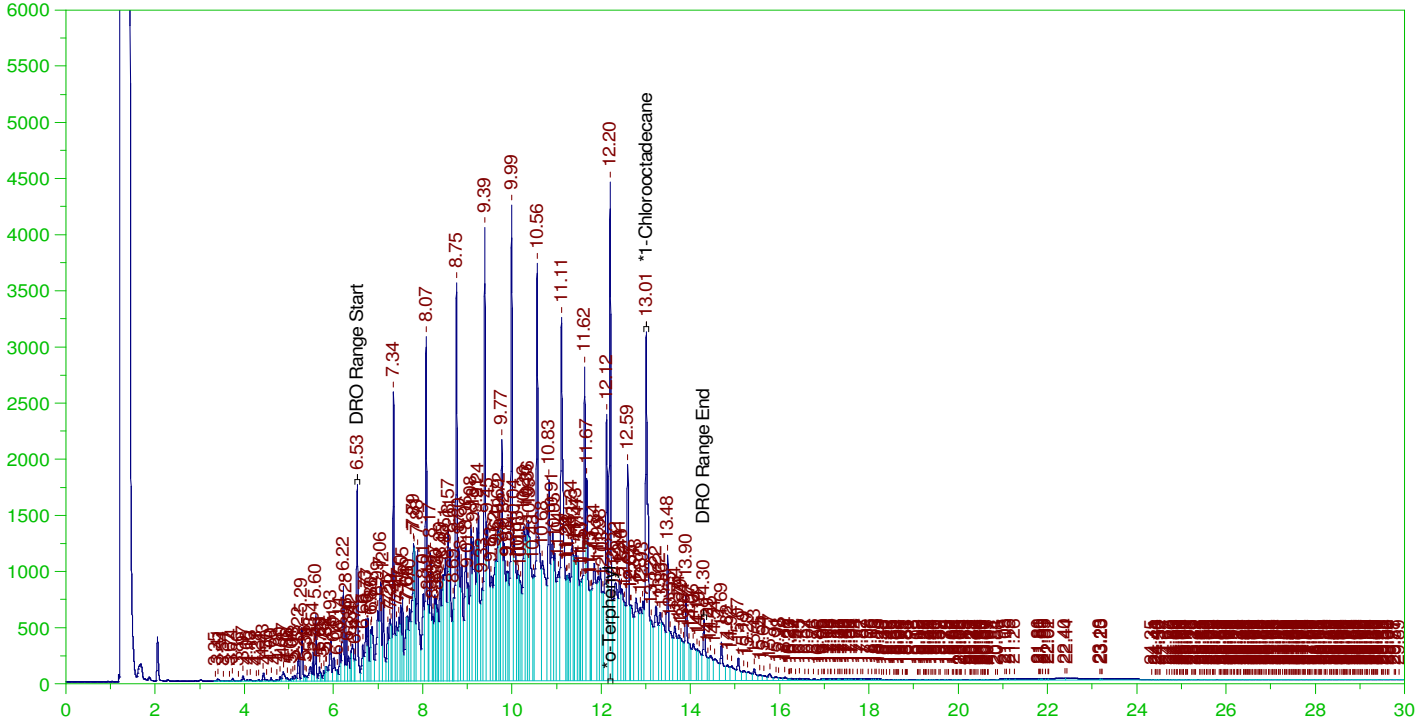
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.194	.194	.195	100.62	-
*1-Chlorooctadecane	13.006	.194	.157	80.71	-
*#Triacotane	16.274	.194	.107	54.87	-

DRO Area:1285117 DRO Amount: 3.979456E-02  
TEH Area:3486827 TEH Amount: 0.1079721

Batch ID: 162502

B21121981-001DMS ;1228HP5 ,

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0044.RAW



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

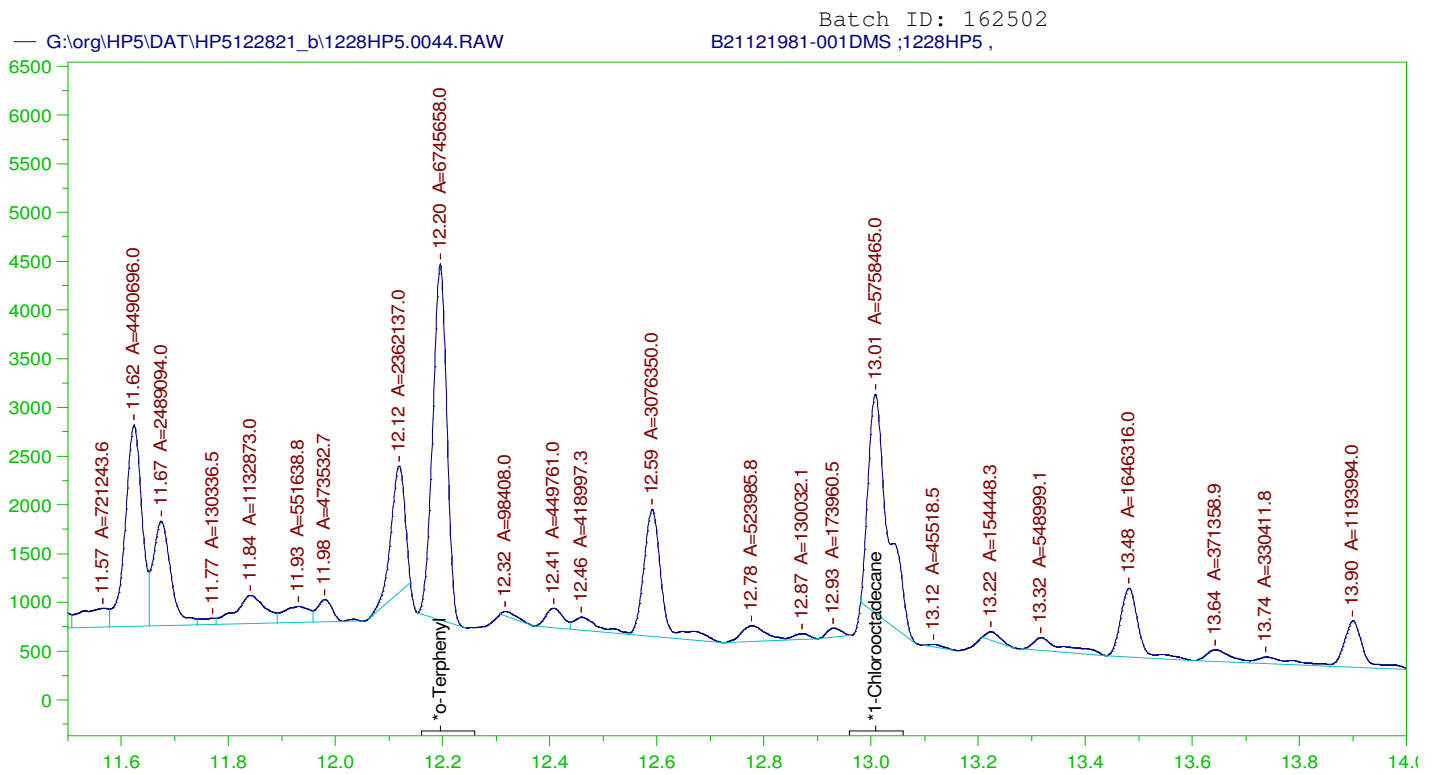
Sample Name: B21121981-001DMS ;1228HP5 ,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0044.RAW  
Date & Time Acquired: 12/29/2021 7:47:47 PM  
Method File: G:\Org\HP5\Methods\D3\_8015-24-IM-L%.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24.CAL  
Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.195	.192	.3	155.87	-
*1-Chlorooctadecane	13.008	.192	.32	166.16	-

DRO Area: 3.953142E+08 DRO Amount: 12.12348  
TEH Area: 4.262968E+08 TEH Amount: 13.07365



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121981-001DMS ;1228HP5 ,  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0044.RAW  
 Date & Time Acquired: 12/29/2021 7:47:47 PM  
 Method File: G:\Org\HP5\Methods\DS\_8015-24-IM-L#.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24.CAL  
 Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19  
 Rt range for Diesel Range Organics: 6.48 to 14.36

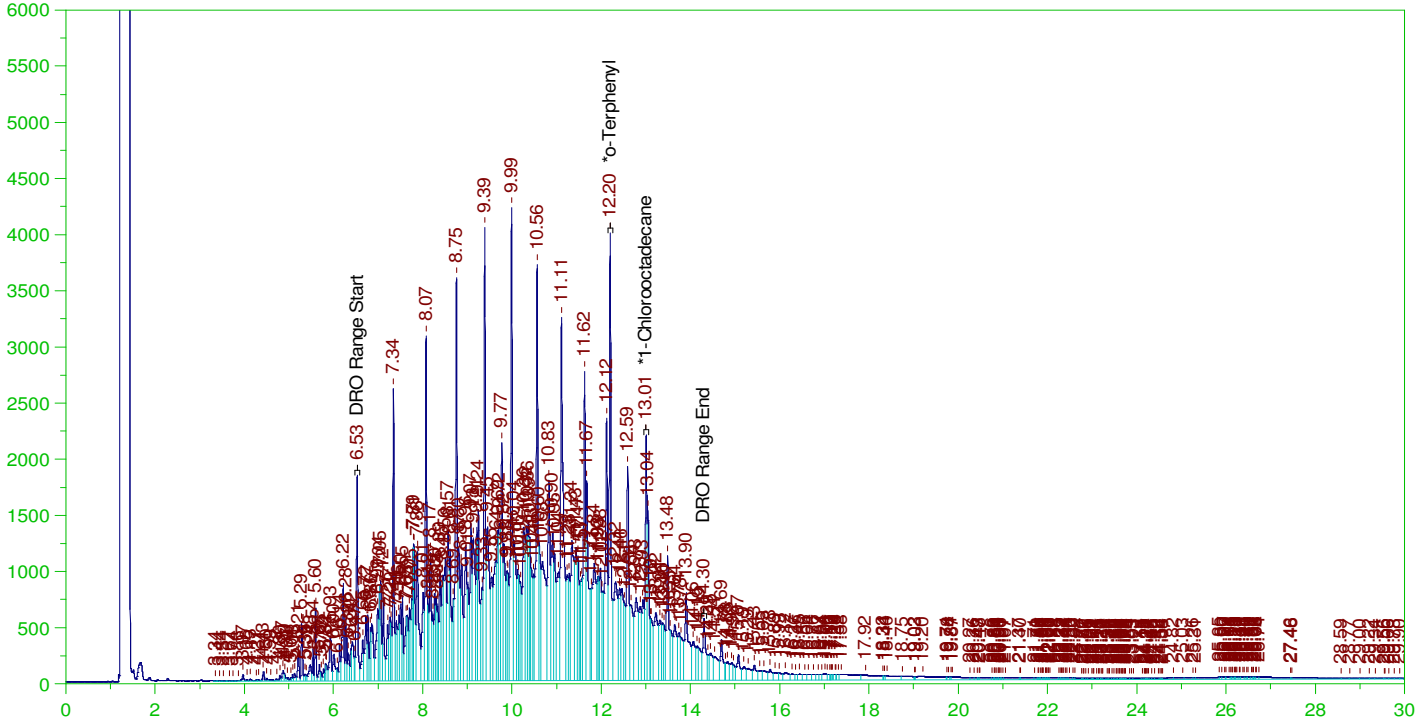
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.195	.192	.183	94.98
*1-Chlorooctadecane	13.008	.192	.156	81.08

DRO Area: 1.941556E+08 DRO Amount: 5.954356  
 TEH Area: 2.080642E+08 TEH Amount: 6.380905

Batch ID: 162502

B21121981-001DMSD ;1228HP5 ,

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0045.RAW



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121981-001DMSD ;1228HP5 ,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0045.RAW  
Date & Time Acquired: 12/29/2021 8:30:48 PM  
Method File: G:\Org\HP5\Methods\D3\_8015-24-IM-L%.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24.CAL  
Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

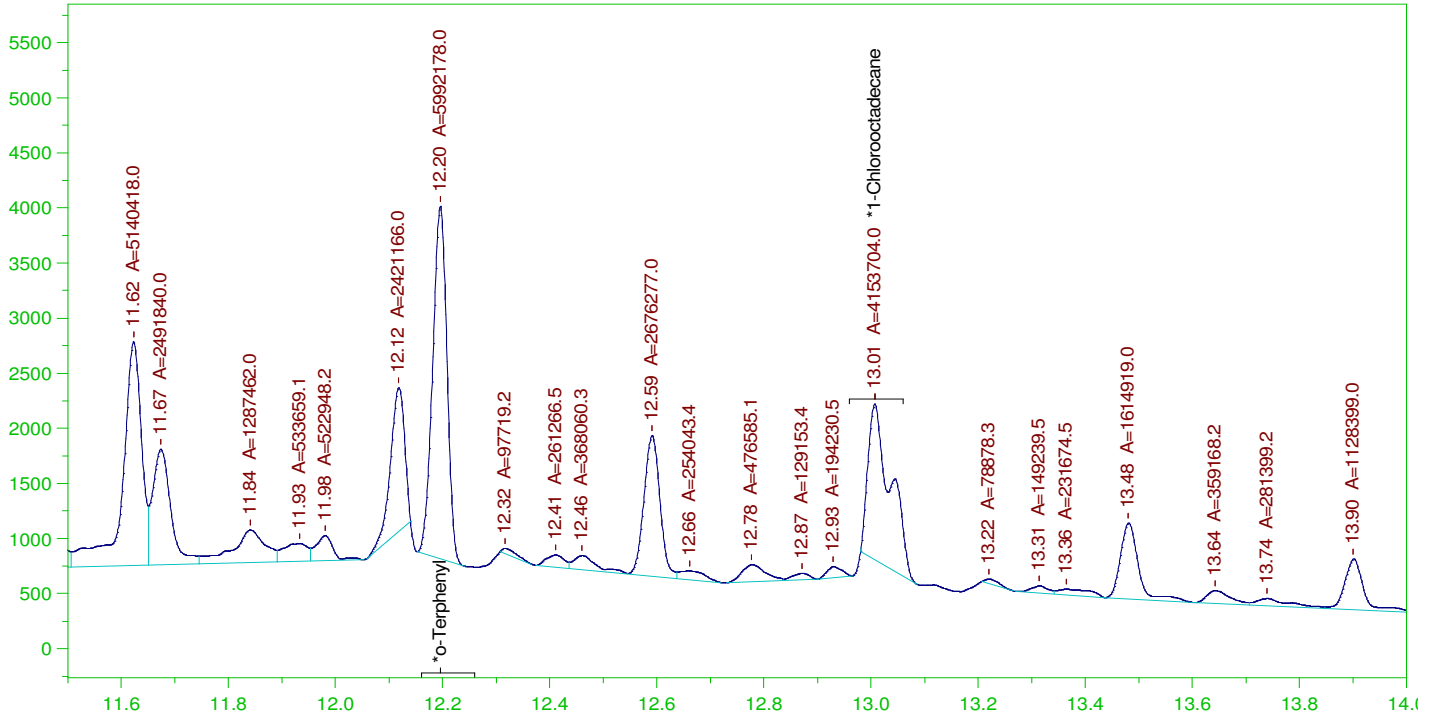
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.195	.192	.302	157.21	-
*1-Chlorooctadecane	13.007	.192	.158	82.24	-

DRO Area: 3.974609E+08 DRO Amount: 12.18931  
TEH Area: 4.415743E+08 TEH Amount: 13.54218

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0045.RAW

B21121981-001DMSD ;1228HP5 ,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

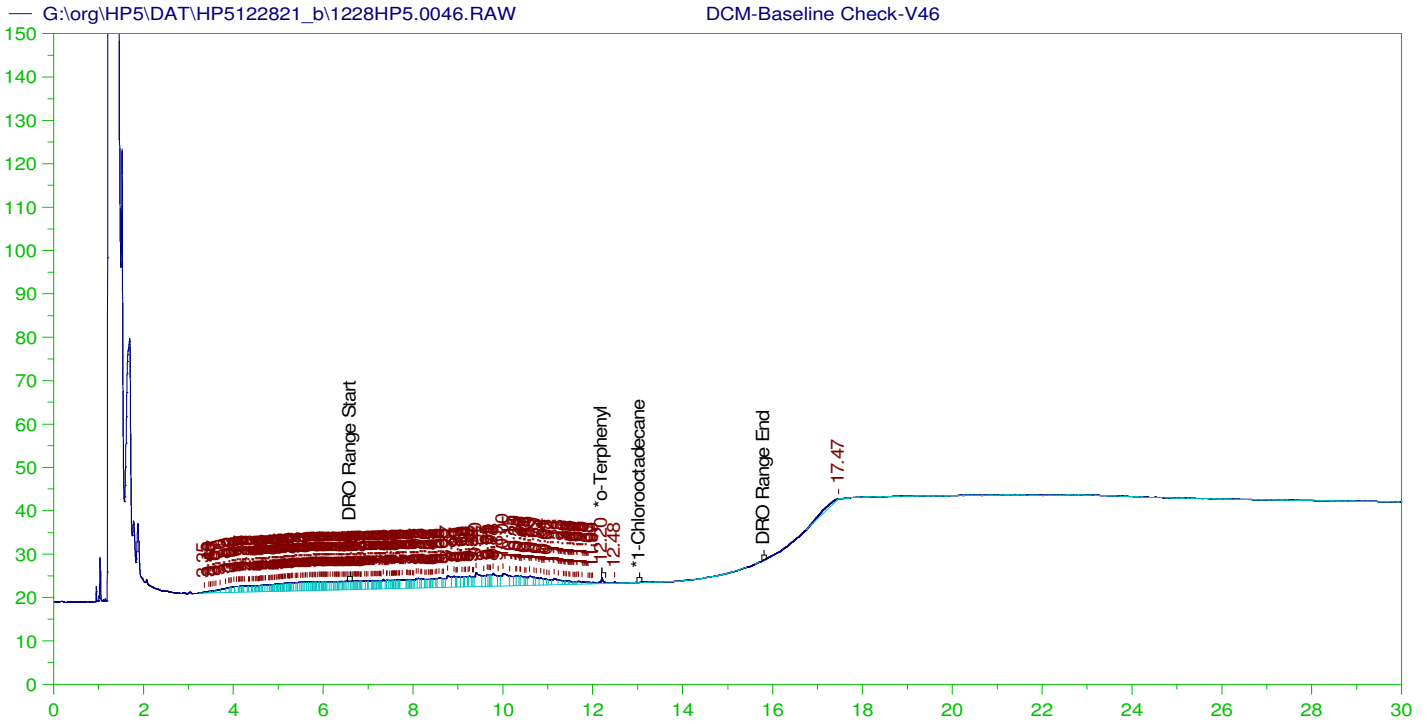
Sample Name: B21121981-001DMSD ;1228HP5 ,  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0045.RAW  
 Date & Time Acquired: 12/29/2021 8:30:48 PM  
 Method File: G:\Org\HP5\Methods\DS\_8015-24-IM-L#.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24.CAL  
 Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.195	.192	.162	84.37
*1-Chlorooctadecane	13.007	.192	.112	58.49

DRO Area:1.875446E+08 DRO Amount: 5.751611  
 TEH Area:2.012494E+08 TEH Amount: 6.171908



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: DCM-Baseline Check-V46  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0046.RAW  
 Date & Time Acquired: 12/29/2021 9:13:55 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-IBb-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IB.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19  
 Rt range for Diesel Range Organics: 6.54 to 15.86

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.2	200.	.162	.08	-
*1-Chlorooctadecane	29.938	200.	.	.	-

DRO Area:610902.4 DRO Amount: 19.48454  
 TEH Area:933927.2 TEH Amount: 29.78731

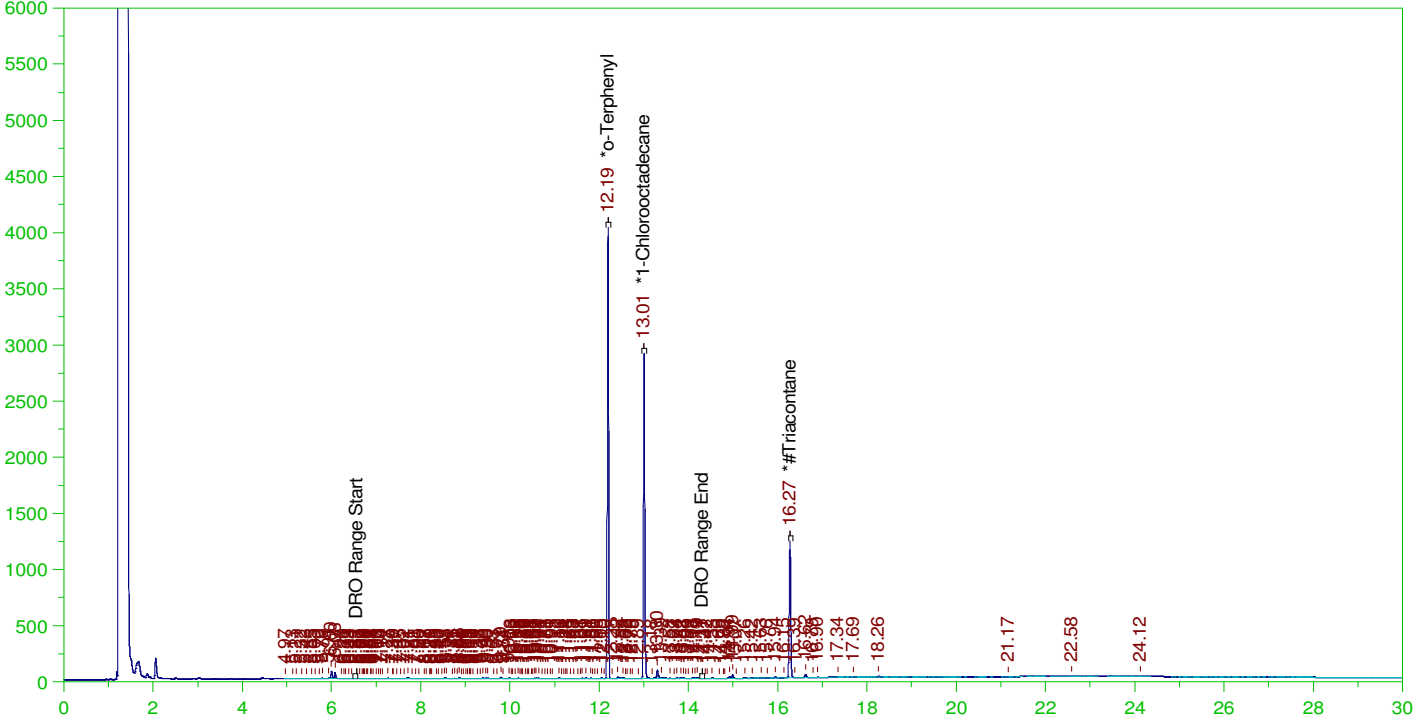


ERH2255 (RHMW11 Zone5)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0047.RAW

B21121979-003D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121979-003D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0047.RAW  
Date & Time Acquired: 12/29/2021 9:57:00 PM  
Method File: G:\Org\HP5\Methods\DR\_8015-C24T-IM-L%.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1050 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.193	.19	.199	104.28	-
*1-Chlorooctadecane	13.006	.19	.161	84.78	-
*#Triacontane	16.272	.19	.103	54.08	-

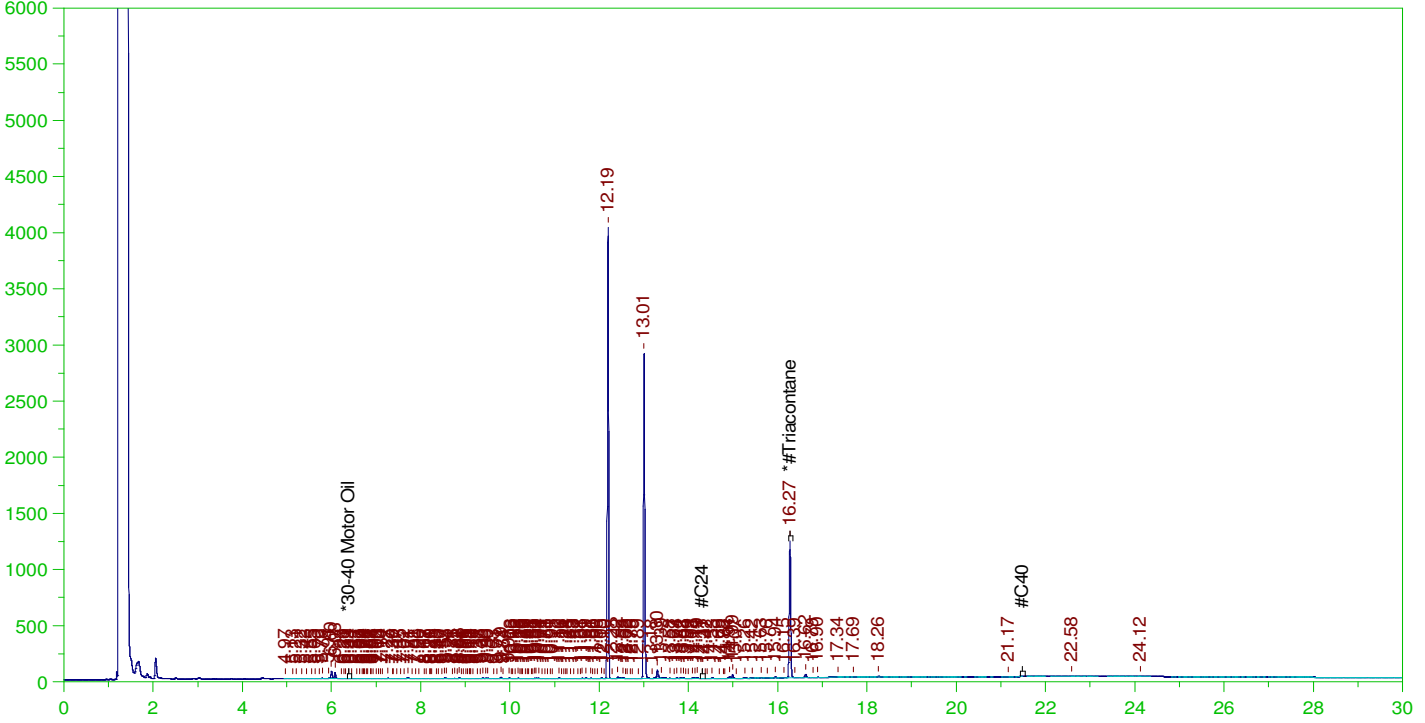
DRO Area:1085897 DRO Amount: 3.298507E-02  
TEH Area:1830544 TEH Amount: 5.560441E-02

ERH2255 (RHMW11 Zone5)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0047.RAW

B21121979-003D ;1228HP5 , \$HC-8015-DRO-W,



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121979-003D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0047.RAW  
Date & Time Acquired: 12/29/2021 9:57:00 PM  
Method File: G:\Org\HP5\Methods\DR\_OROS-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
Sample Weight: 1050 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 14.27 to 21.54

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.272	.476	.103	21.63

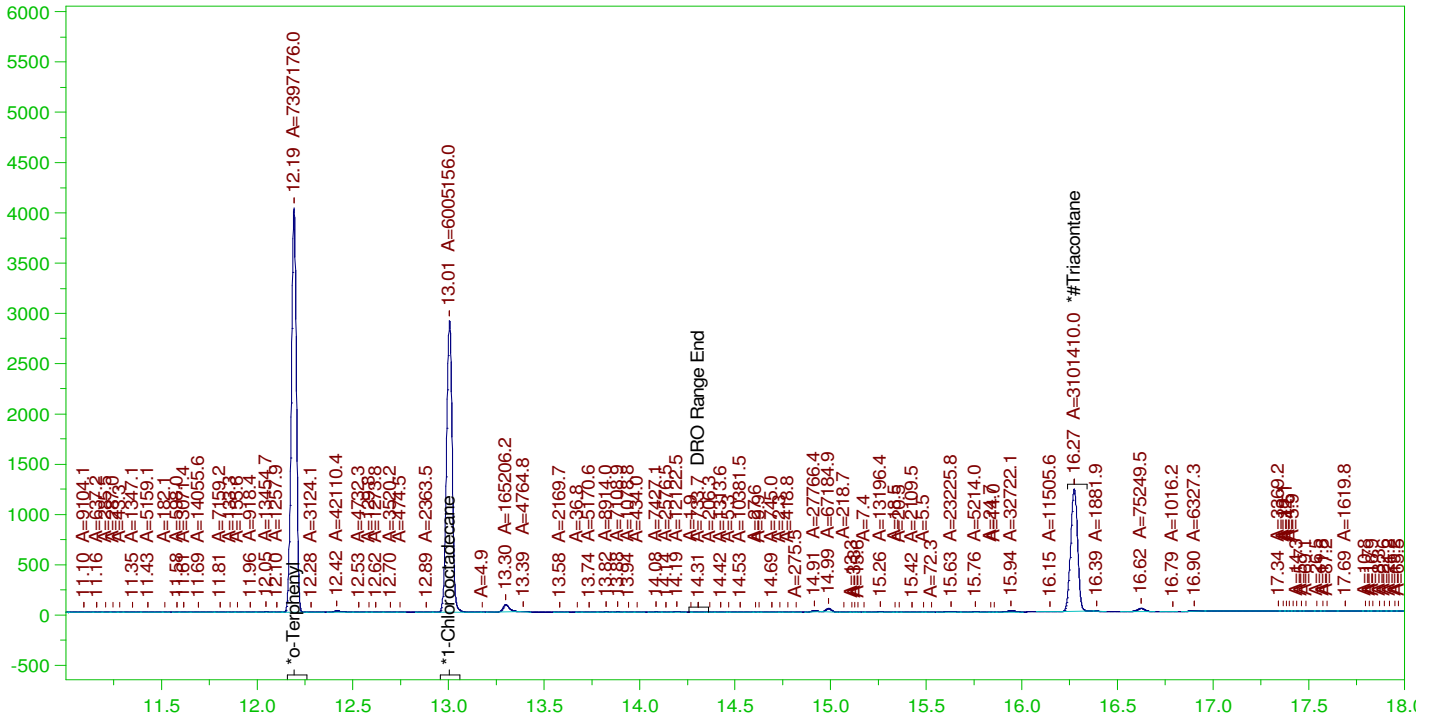
RRO Area:371030.2 RRO AMOUNT: 1.238025E-02

ERH2255 (RHMW11 Zone5)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0047.RAW

B21121979-003D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121979-003D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0047.RAW  
Date & Time Acquired: 12/29/2021 9:57:00 PM  
Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1050 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.193	.19	.198	104.16	-
*1-Chlorooctadecane	13.006	.19	.161	84.56	-
*#Triacontane	16.272	.19	.102	53.6	-

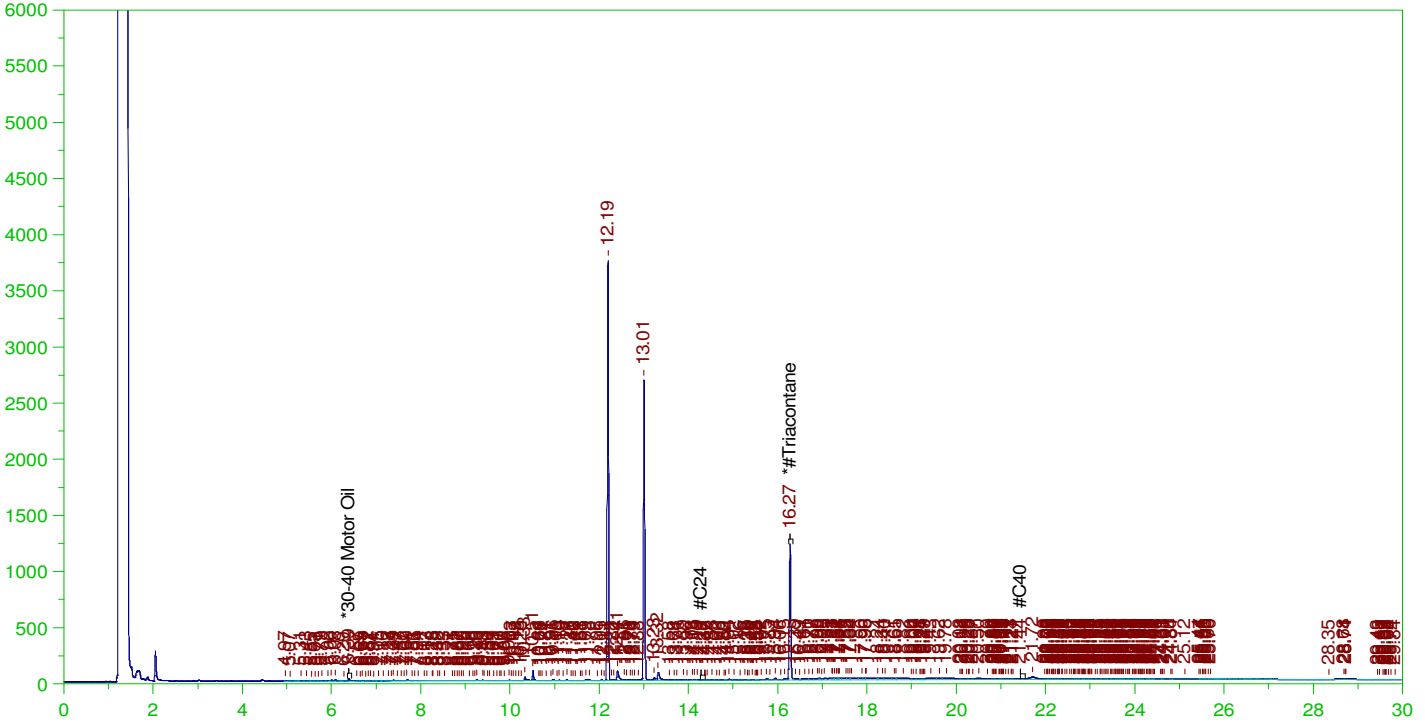
DRO Area:787361.3 DRO Amount: 2.391679E-02  
TEH Area:1790403 TEH Amount: 5.438509E-02

ERH2244 (RHMW08)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0048.RAW

B21121979-001D ;1228HP5 , \$HC-8015-DRO-W,



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121979-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0048.RAW  
Date & Time Acquired: 12/29/2021 10:40:00 PM  
Method File: G:\Org\HP5\Methods\D3\_OROS-122848-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 14.27 to 21.54

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.274	.481	.104	21.54

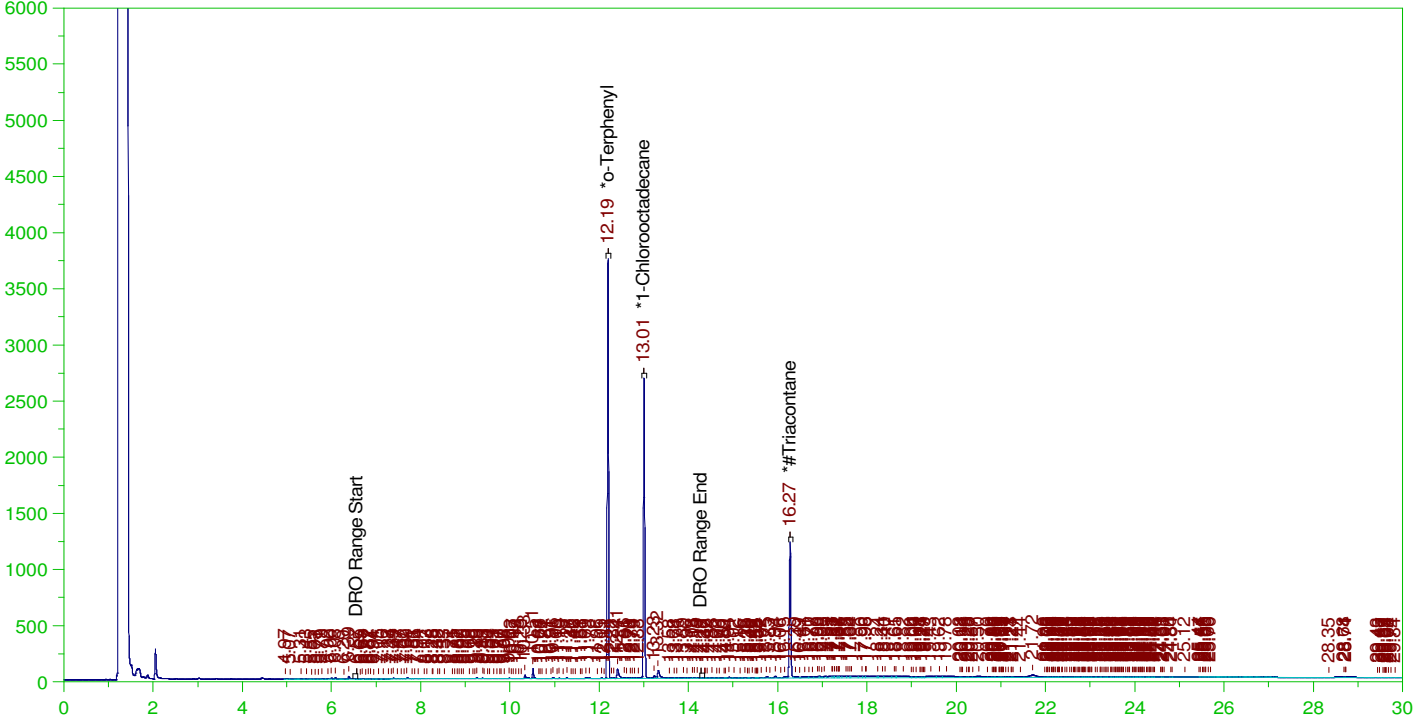
RRO Area:4277033 RRO AMOUNT: 0.1440849

ERH2244 (RHMW08)

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0048.RAW

Batch ID: 162502

B21121979-001D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121979-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0048.RAW  
Date & Time Acquired: 12/29/2021 10:40:00 PM  
Method File: G:\Org\HP5\Methods\DR\_8015-122848-IM-L%.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19  
Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.192	.192	.19	98.59	-
*1-Chlorooctadecane	13.005	.192	.152	78.95	-
*#Triacontane	16.274	.192	.104	53.84	-

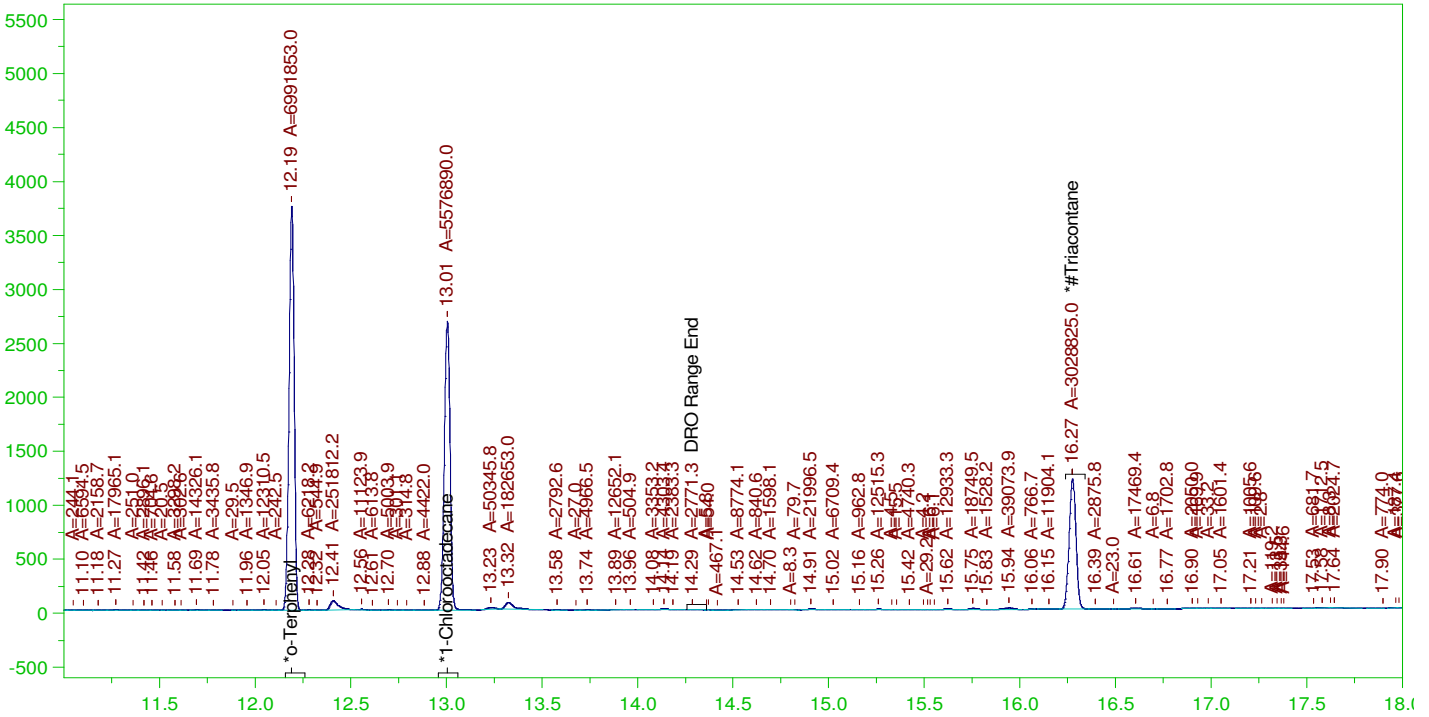
DRO Area:1770048 DRO Amount: 5.428377E-02  
TEH Area:7310808 TEH Amount: 0.2242076

ERH2244 (RHMW08)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0048.RAW

B21121979-001D ; 1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

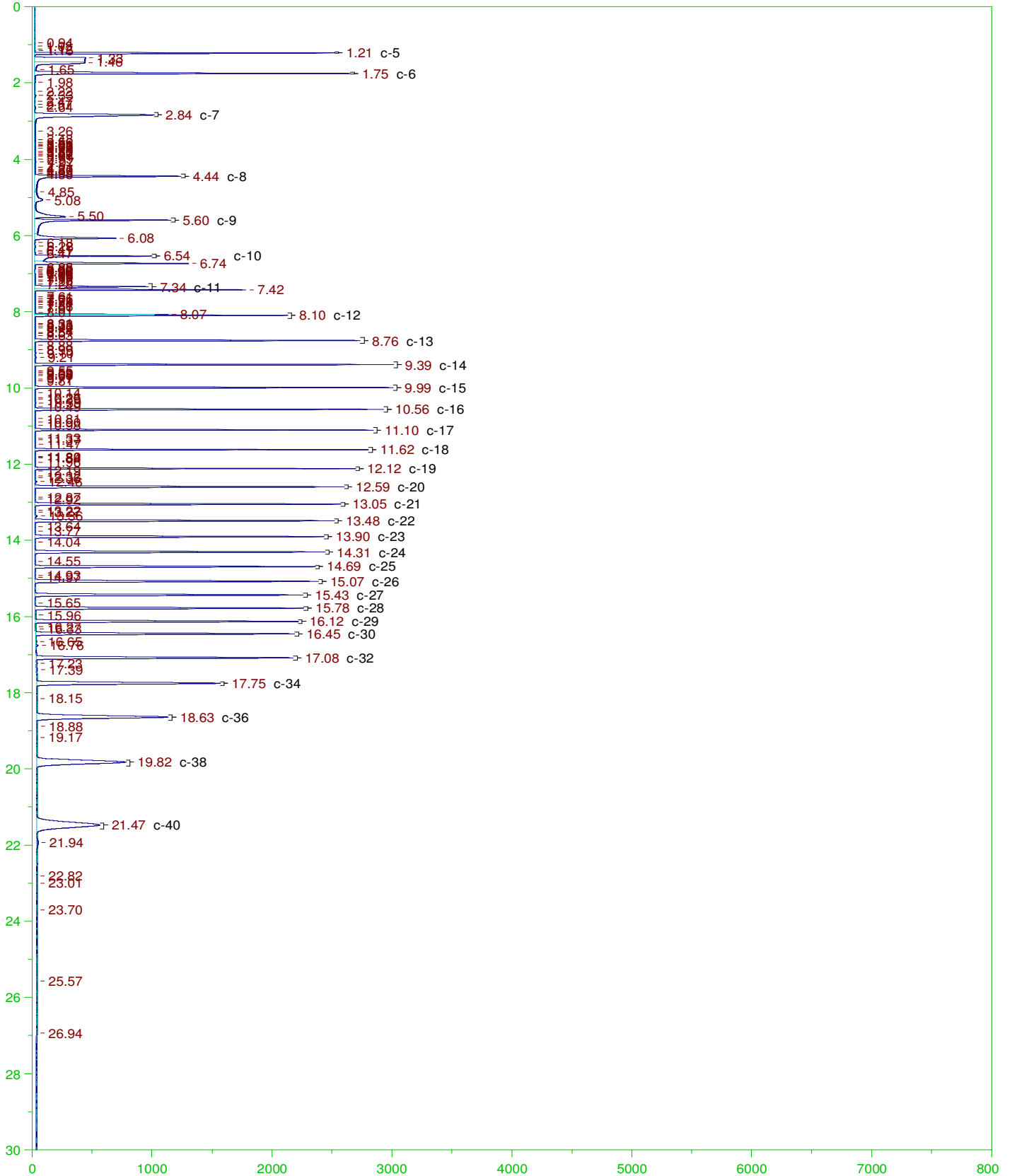
Sample Name: B21121979-001D ; 1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0048.RAW  
Date & Time Acquired: 12/29/2021 10:40:00 PM  
Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1040 Dilution: 1 S.A.: 1

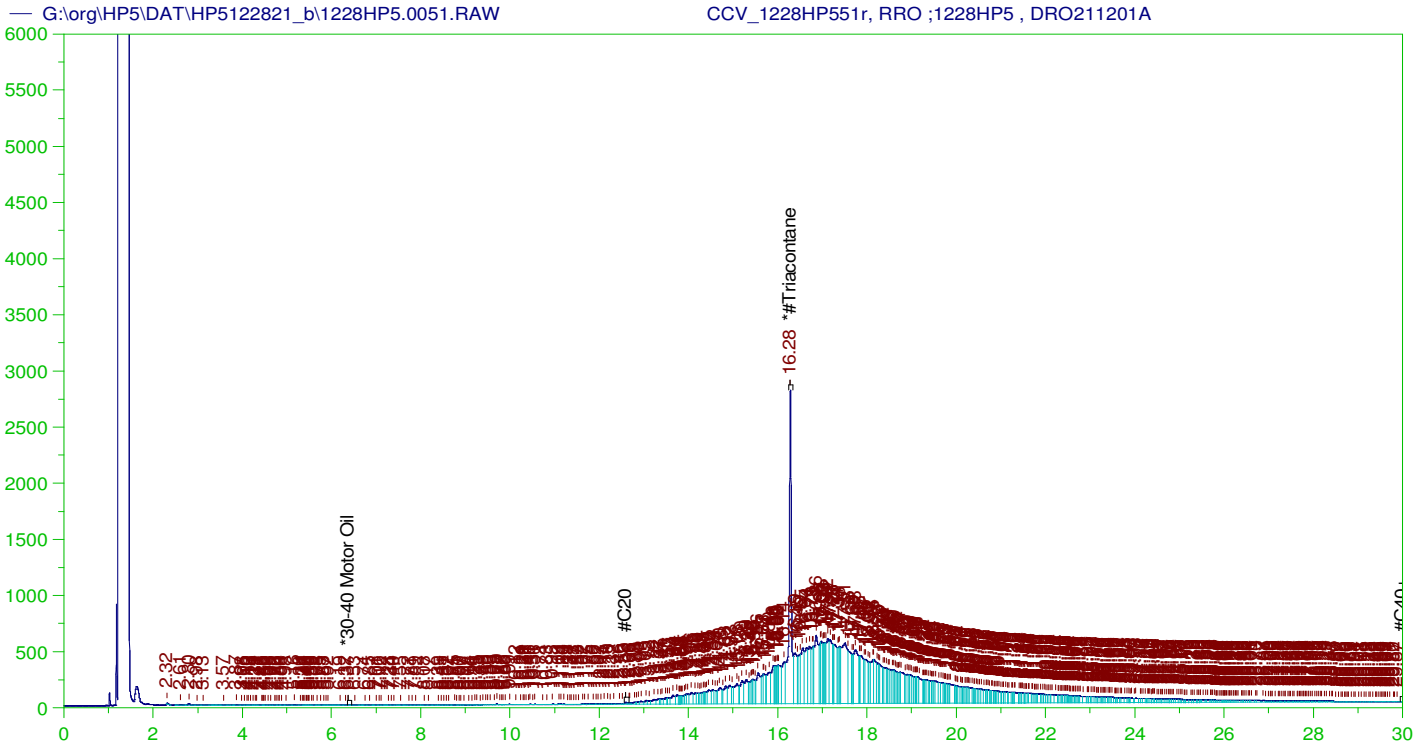
Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.192	.192	.189	98.45	-
*1-Chlorooctadecane	13.005	.192	.151	78.53	-
*#Triacontane	16.274	.192	.101	52.35	-

DRO Area: 1216365 DRO Amount: 3.730342E-02  
TEH Area: 2143718 TEH Amount: 6.574346E-02





**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: CCV\_1228HP551r, RRO ;1228HP5 , DRO211201A  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0051.RAW  
 Date & Time Acquired: 12/30/2021 12:49:23 AM  
 Method File: G:\Org\HP5\Methods\DC\_ORO-AL-L%.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for for ~~Residual~~ TEH (Oil Range) Organics Calculations: 28542.41  
 Rt range for ~~Residual~~ TEH (Oil Range) Organics: 12.56 to 30.05

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.282	500.	358.27	71.65	-

~~RRO~~ TEH (Oil Range) Area:1.337041E+08 ~~RRO~~ TEH (Oil Range) AMOUNT: 4684.402

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0051.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
*30-40 Motor Oil	5000.	.021	.	75-125

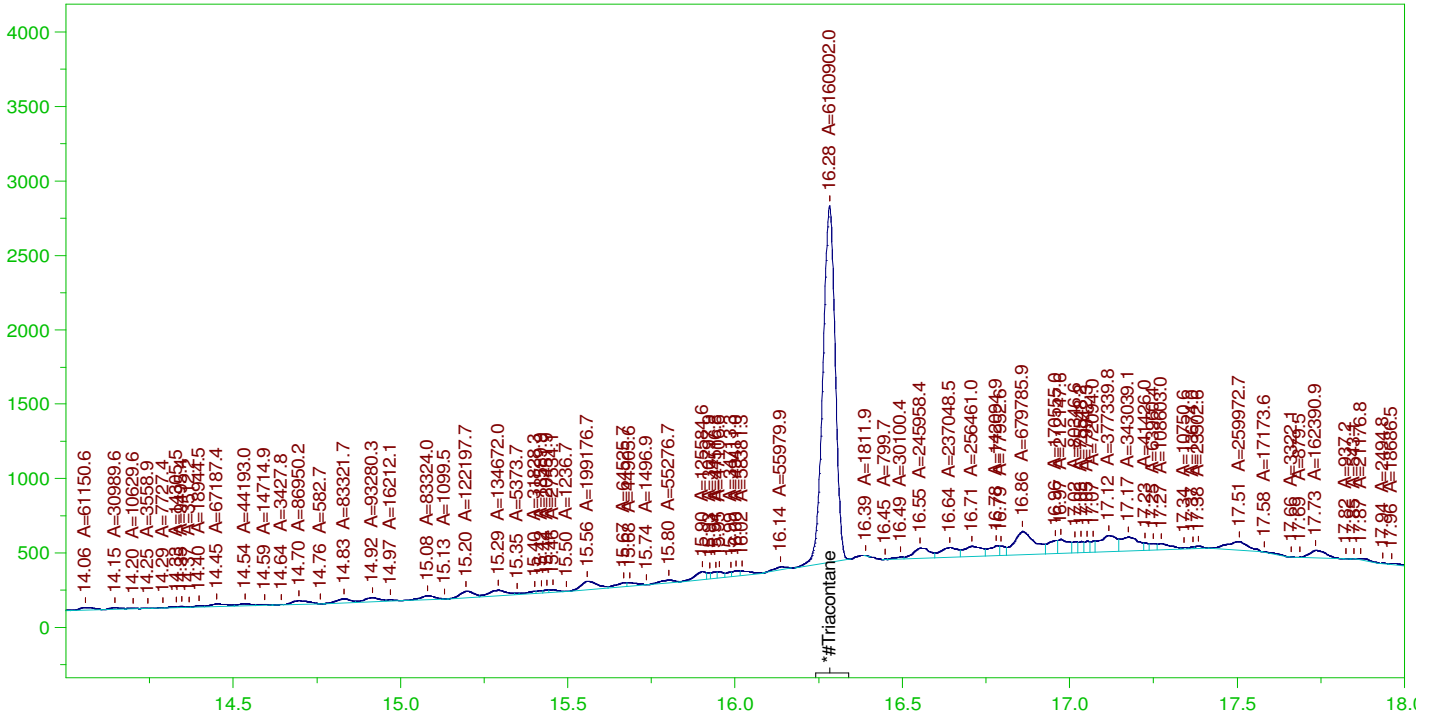
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*#Triacontane	16.282	200.	358.27	179.13	75-125

AMN 01/24/2022



G:\org\HP5\DAT\HP5122821\_b\1228HP5.0051.RAW

CCV\_1228HP551r, RRO ;1228HP5 , DRO211201A



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: CCV\_1228HP551r, RRO ;1228HP5 , DRO211201A  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0051.RAW  
 Date & Time Acquired: 12/30/2021 12:49:23 AM  
 Method File: G:\Org\HP5\Methods\DS\_ORO-AL-L%.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
 Rt range for Residual Range Organics: 12.56 to 30.05

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.282	500.	212.958	42.59

RRO Area:6379990 RRO AMOUNT: 223.5267

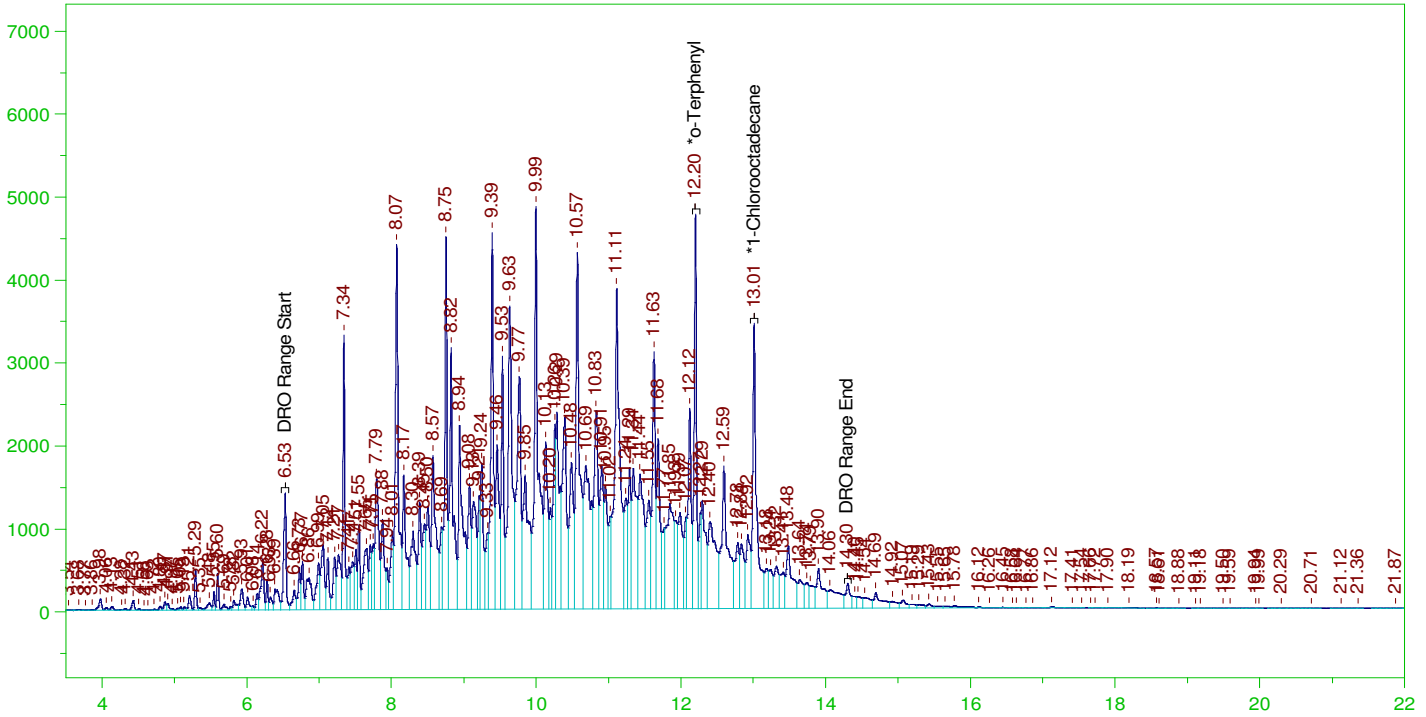
CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0051.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
*30-40 Motor Oil	5000.	.021	.	75-125

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*#Triacontane	16.282	200.	212.958	106.48	75-125

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0052.RAW

CCV\_1228HP536r, DRO ;1228HP5 , DRO211229A



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1228HP536r, DRO ;1228HP5 , DRO211229A  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0052.RAW  
 Date & Time Acquired: 12/30/2021 1:32:34 AM  
 Method File: G:\Org\HP5\Methods\DC\_8015-24-IM-L%.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

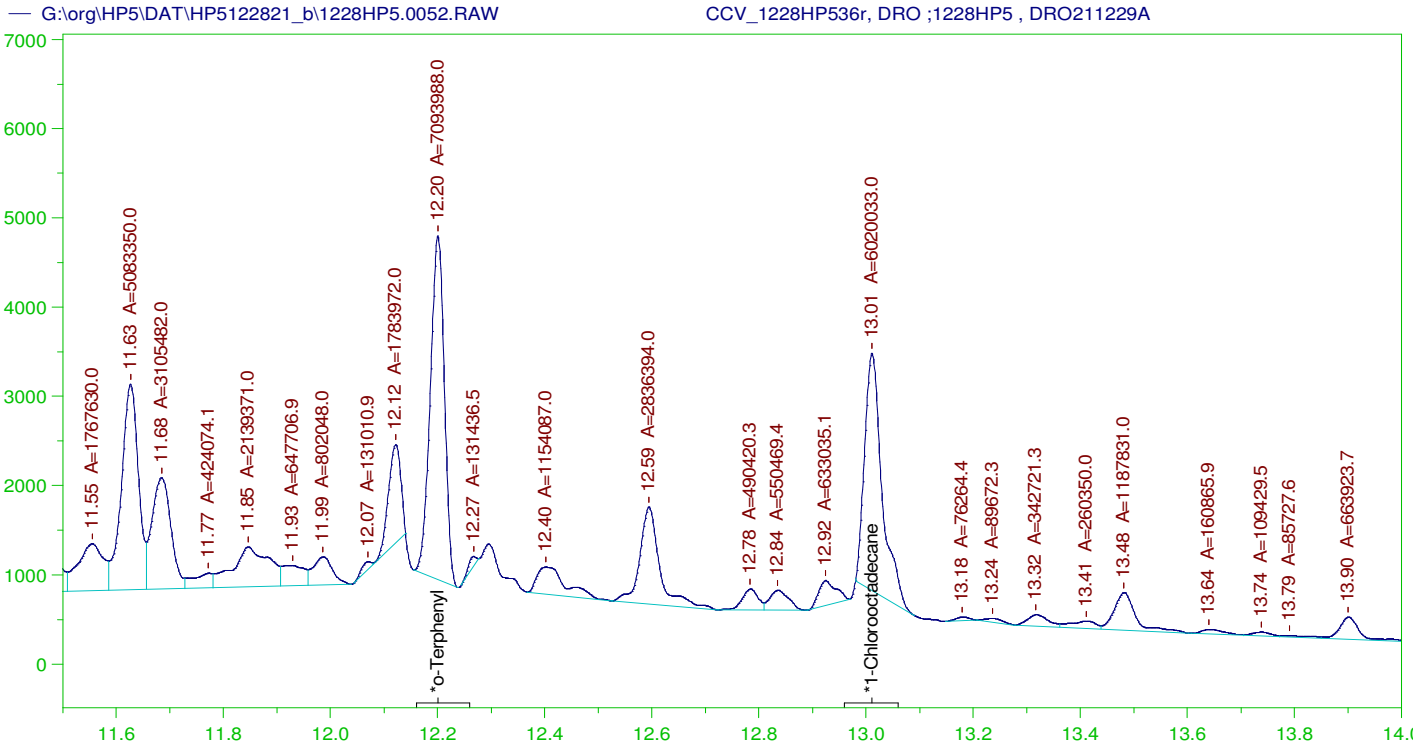
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.2	200.	326.875	163.44
*1-Chlorooctadecane	13.011	200.	356.634	178.32

DRO Area: 4.690012E+08 DRO Amount: 14958.64  
 TEH Area: 4.86349E+08 TEH Amount: 15511.94

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0052.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	15511.94	103.41	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.2	200.	326.875	163.44	85-115
*1-Chlorooctadecane	13.011	200.	356.634	178.32	85-115



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1228HP536r, DRO ;1228HP5 , DRO211229A  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0052.RAW  
 Date & Time Acquired: 12/30/2021 1:32:34 AM  
 Method File: G:\Org\HP5\Methods\DS\_8015-24-IM-L#.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19  
 Rt range for Diesel Range Organics: 6.48 to 14.36

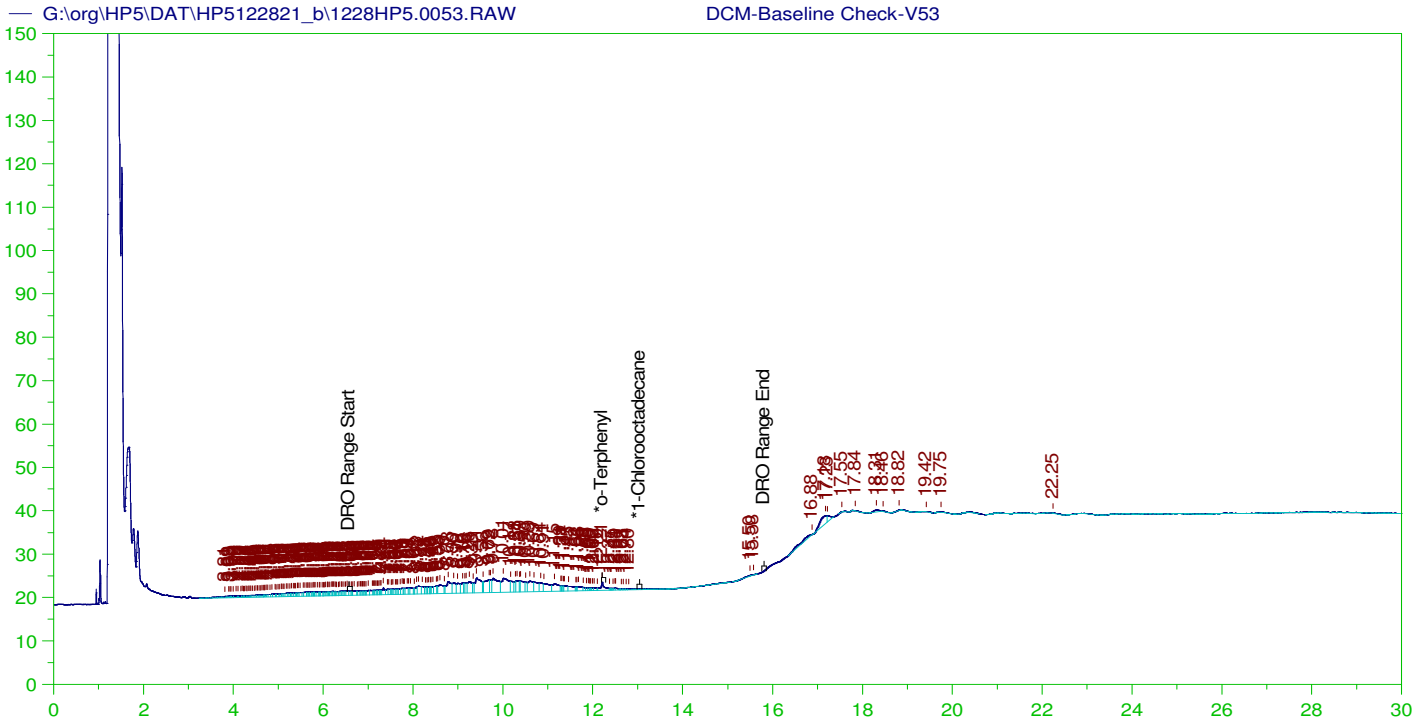
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.2	200.	199.779	99.89
*1-Chlorooctadecane	13.011	200.	169.534	84.77

DRO Area: 2.624867E+08 DRO Amount: 8371.931  
 TEH Area: 2.733825E+08 TEH Amount: 8719.448

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0052.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	8719.45	58.13	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.2	200.	199.779	99.89	85-115
*1-Chlorooctadecane	13.011	200.	169.534	84.77	85-115



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: DCM-Baseline Check-V53  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0053.RAW  
 Date & Time Acquired: 12/30/2021 2:15:42 AM  
 Method File: G:\Org\HP5\Methods\DR\_8015-IBb-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IB.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19  
 Rt range for Diesel Range Organics: 6.54 to 15.86

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.205	200.	.314	.16	-
*1-Chlorooctadecane	29.982	200.	.	.	-

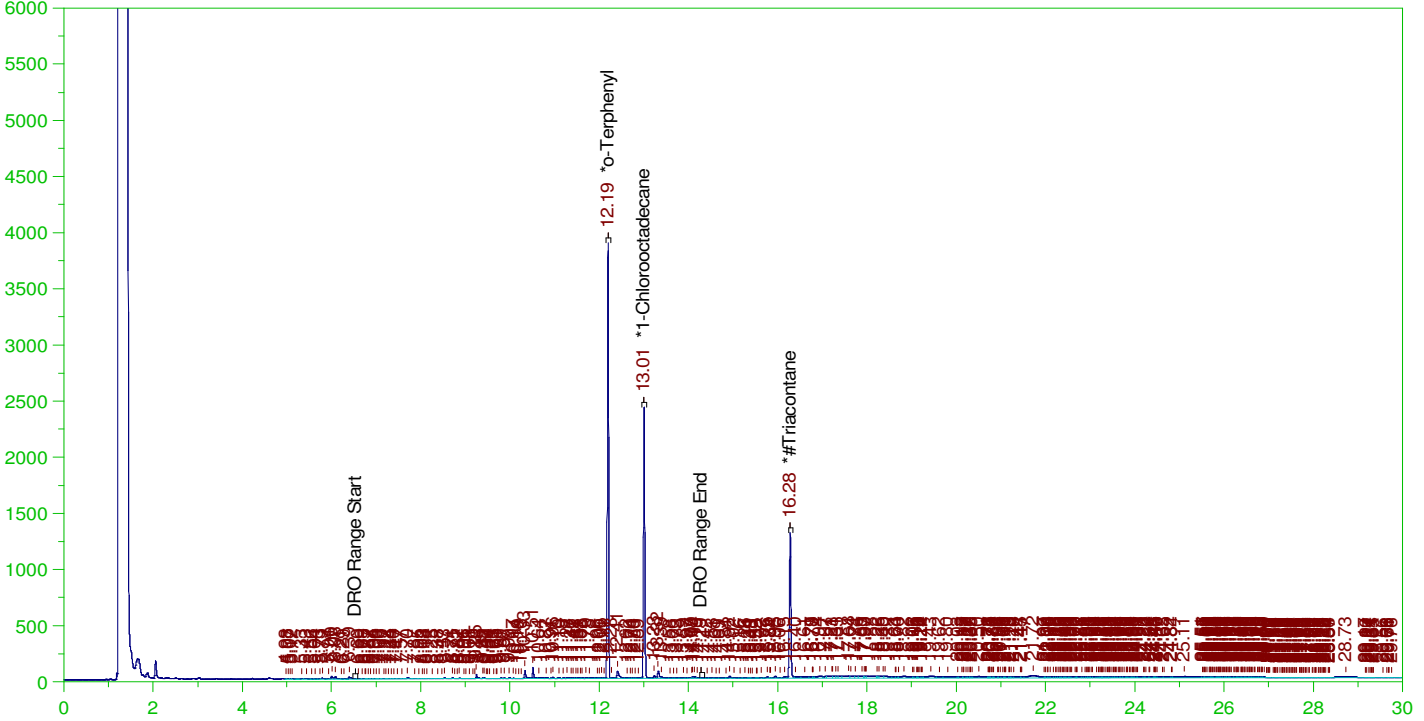
DRO Area:586890.2 DRO Amount: 18.71867  
 TEH Area:764135.8 TEH Amount: 24.37187

ERH2245 (RHMW08)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0054.RAW

B21121979-002B ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121979-002B ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0054.RAW  
Date & Time Acquired: 12/30/2021 2:58:46 AM  
Method File: G:\Org\HP5\Methods\D3\_8015-C24T-IM-L%.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.193	.192	.196	101.93	-
*1-Chlorooctadecane	13.006	.192	.137	71.19	-
*Triacontane	16.276	.192	.113	58.52	-

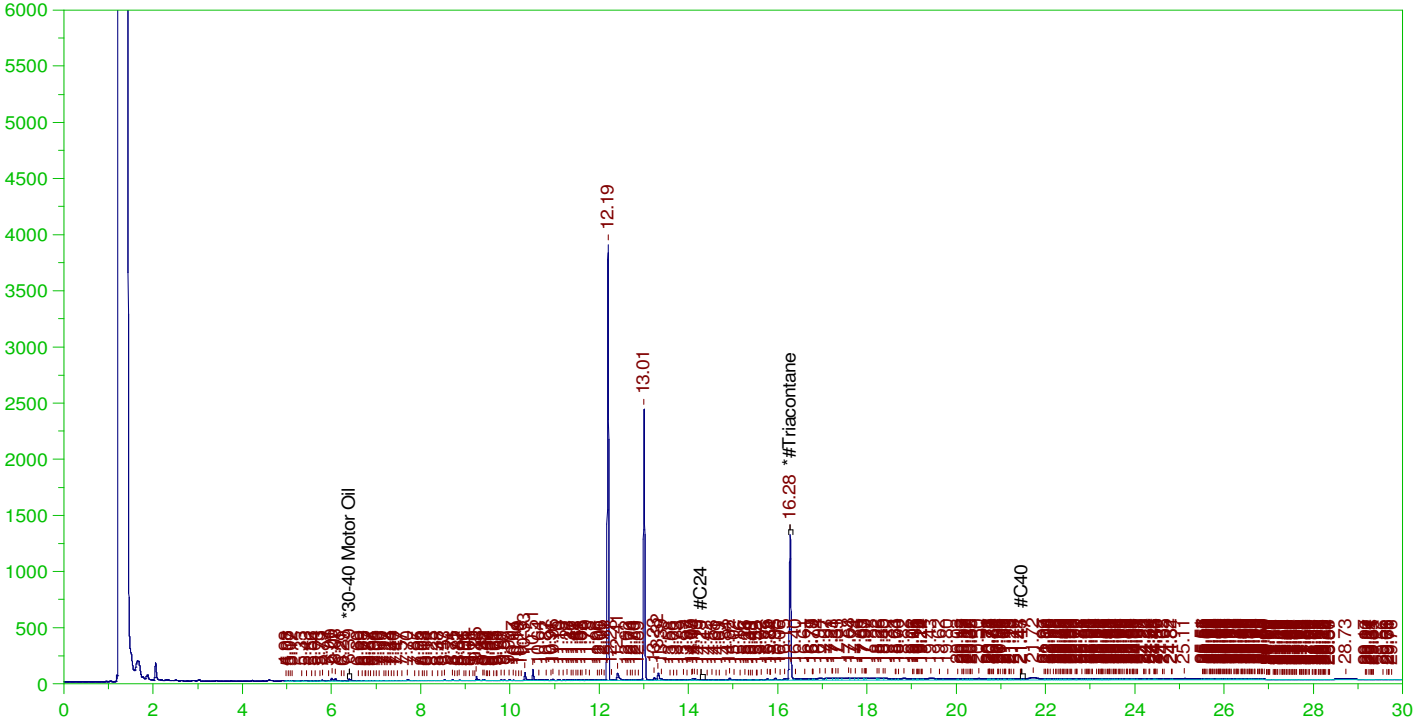
DRO Area:2264808 DRO Amount: 6.945705E-02  
TEH Area:1.009046E+07 TEH Amount: 0.3094539

ERH2245 (RHMW08)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0054.RAW

B21121979-002B ;1228HP5 , \$HC-8015-DRO-W,



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121979-002B ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0054.RAW  
Date & Time Acquired: 12/30/2021 2:58:46 AM  
Method File: G:\Org\HP5\Methods\D3\_OROS-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 14.27 to 21.54

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.276	.481	.113	23.41

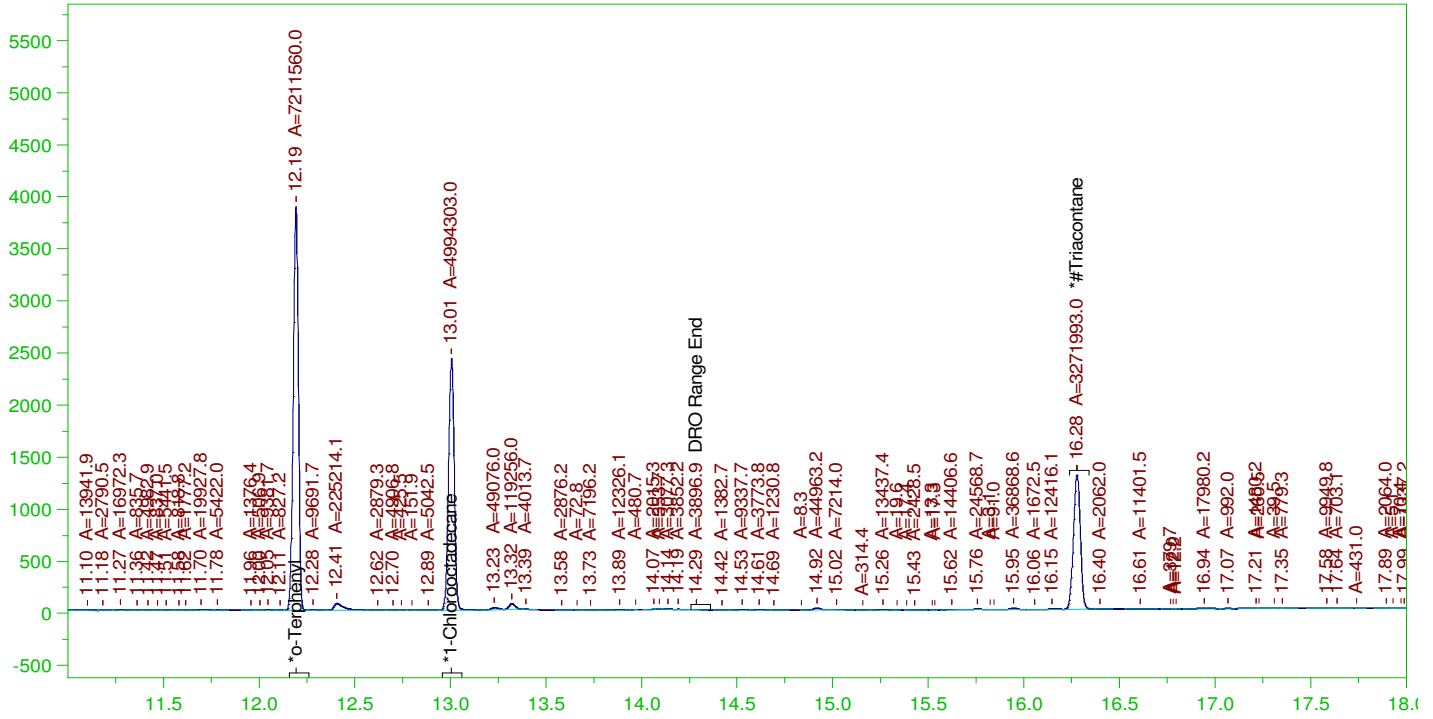
RRO Area:4797736 RRO AMOUNT: 0.1616264

ERH2245 (RHMW08)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0054.RAW

B21121979-002B ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121979-002B ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0054.RAW  
Date & Time Acquired: 12/30/2021 2:58:46 AM  
Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.193	.192	.195	101.54	-
*1-Chlorooctadecane	13.006	.192	.135	70.32	-
*#Triacantane	16.276	.192	.109	56.55	-

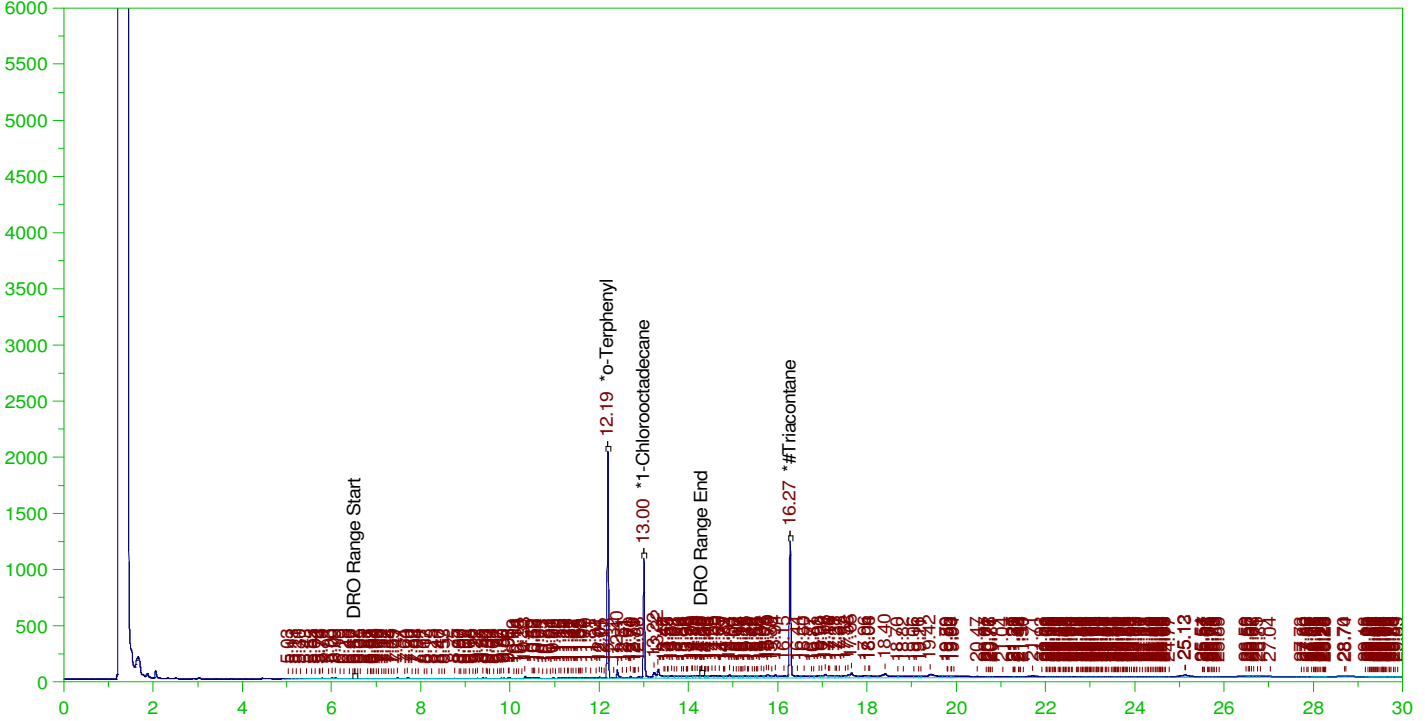
DRO Area:1316481 DRO Amount: 4.037379E-02  
TEH Area:2406055 TEH Amount: 7.378879E-02

ERH2238 (RHMW03)

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0055.RAW

Batch ID: 162502

B21121965-001D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121965-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0055.RAW  
Date & Time Acquired: 12/30/2021 3:41:56 AM  
Method File: G:\Org\HP5\Methods\D3\_8015-C24T-IM-L%.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.19	.2	.105	52.73	-
*1-Chlorooctadecane	13.002	.2	.066	32.89	-
*#Triacontane	16.274	.2	.113	56.29	-

DRO Area:2996021 DRO Amount: 9.555712E-02  
TEH Area:1.322932E+07 TEH Amount: 0.4219448

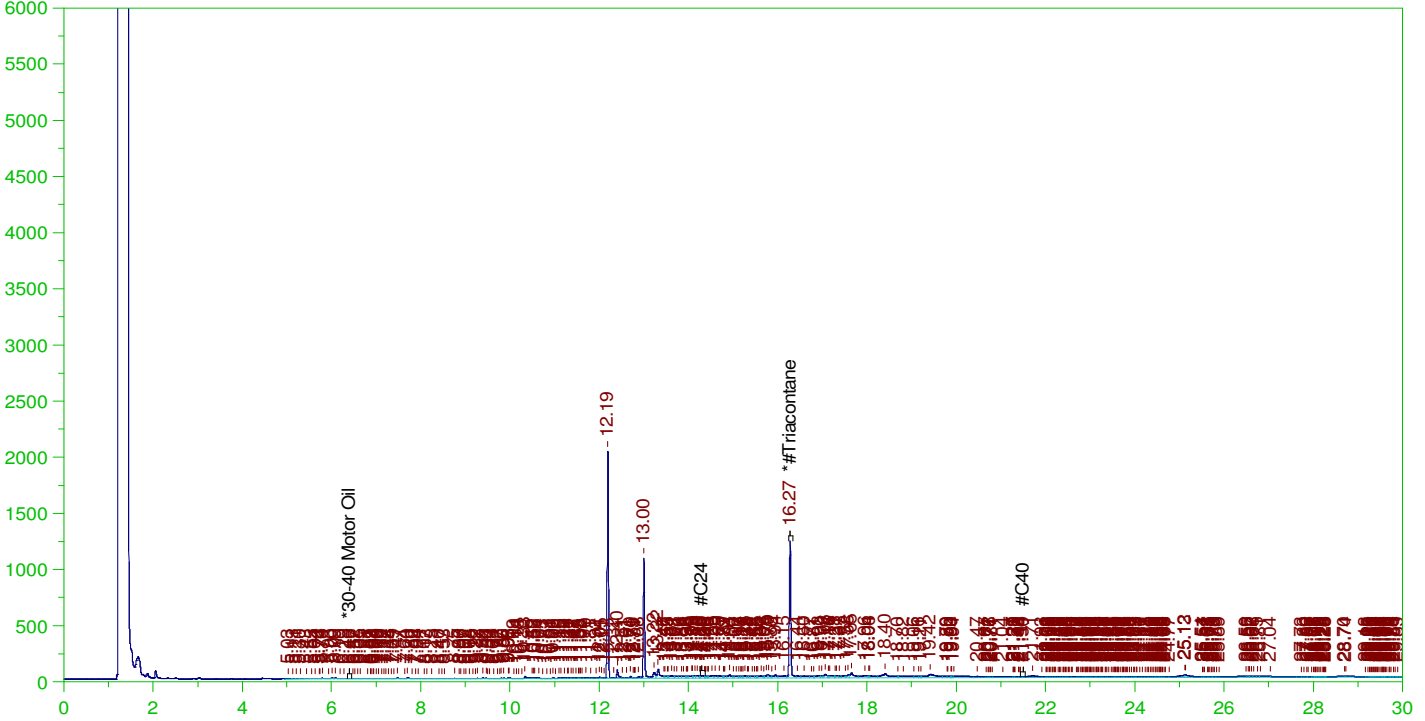


ERH2238 (RHMW03)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0055.RAW

B21121965-001D ;1228HP5 , \$HC-8015-DRO-W,



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121965-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0055.RAW  
Date & Time Acquired: 12/30/2021 3:41:56 AM  
Method File: G:\Org\HP5\Methods\D3\_OROS-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 14.27 to 21.54

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.274	.5	.113	22.52

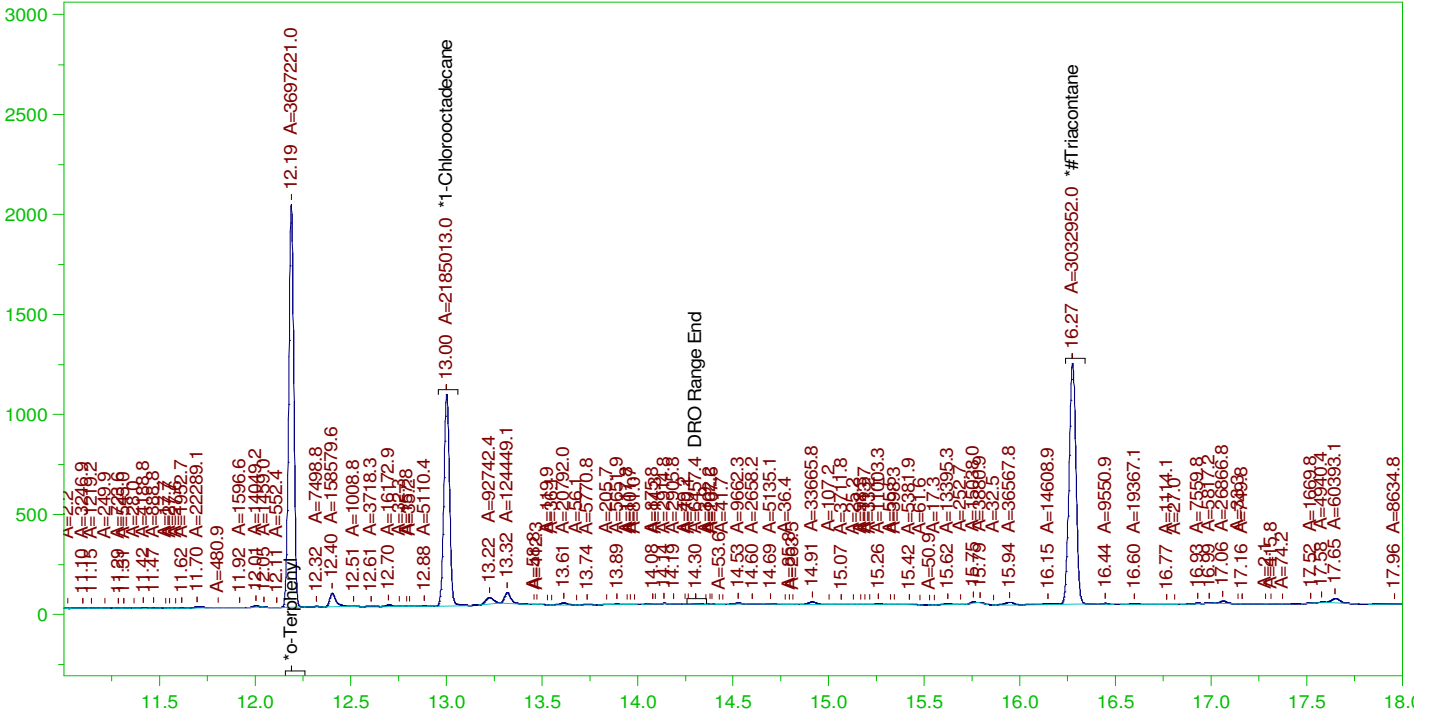
RRO Area:7226144 RRO AMOUNT: 0.2531722

ERH2238 (RHMW03)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0055.RAW

B21121965-001D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

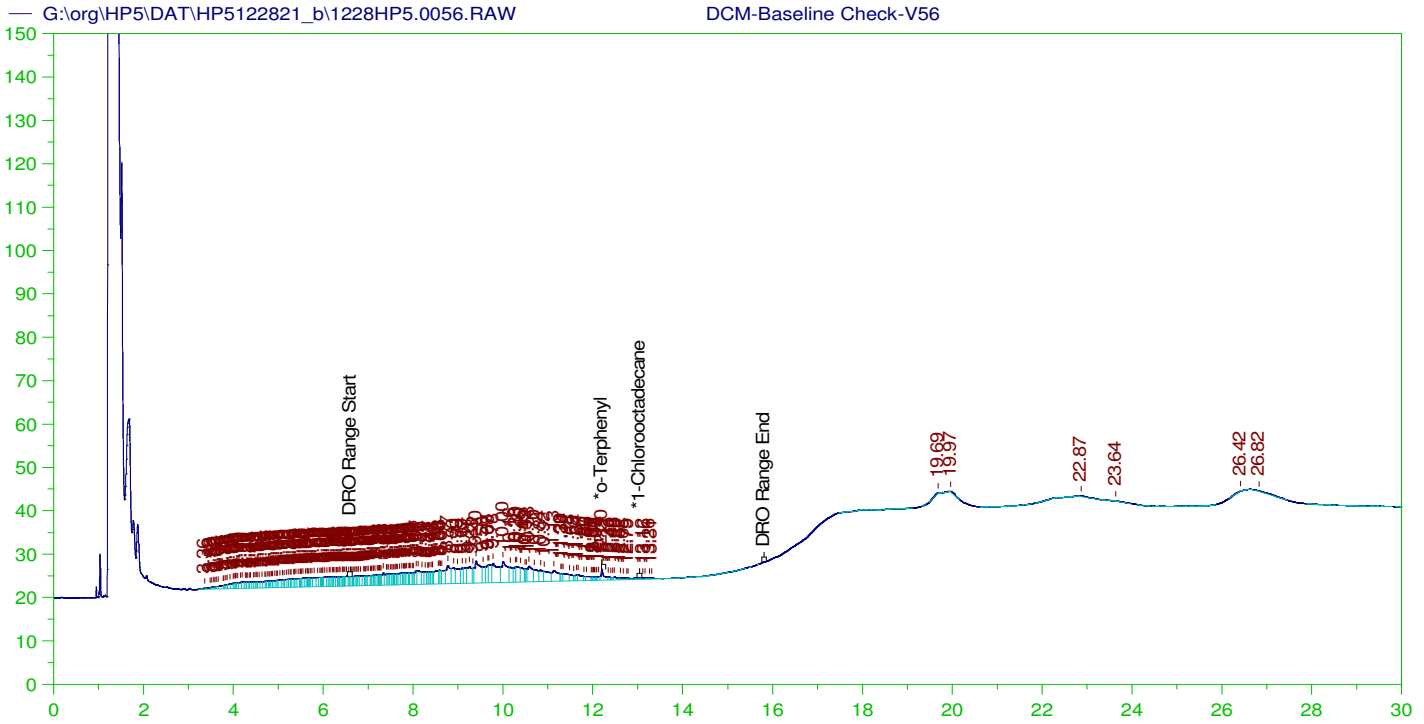
Sample Name: B21121965-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0055.RAW  
Date & Time Acquired: 12/30/2021 3:41:56 AM  
Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.19	.2	.104	52.06	-
*1-Chlorooctadecane	13.002	.2	.062	30.77	-
*#Triacontane	16.274	.2	.105	52.42	-

DRO Area:899444 DRO Amount: 2.868748E-02  
TEH Area:1965420 TEH Amount: 6.268644E-02



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: DCM-Baseline Check-V56  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0056.RAW  
 Date & Time Acquired: 12/30/2021 4:25:10 AM  
 Method File: G:\Org\HP5\Methods\DR\_8015-IBb-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IB.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19  
 Rt range for Diesel Range Organics: 6.54 to 15.86

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.2	200.	.343	.17
*1-Chlorooctadecane	29.983	200.	.	.

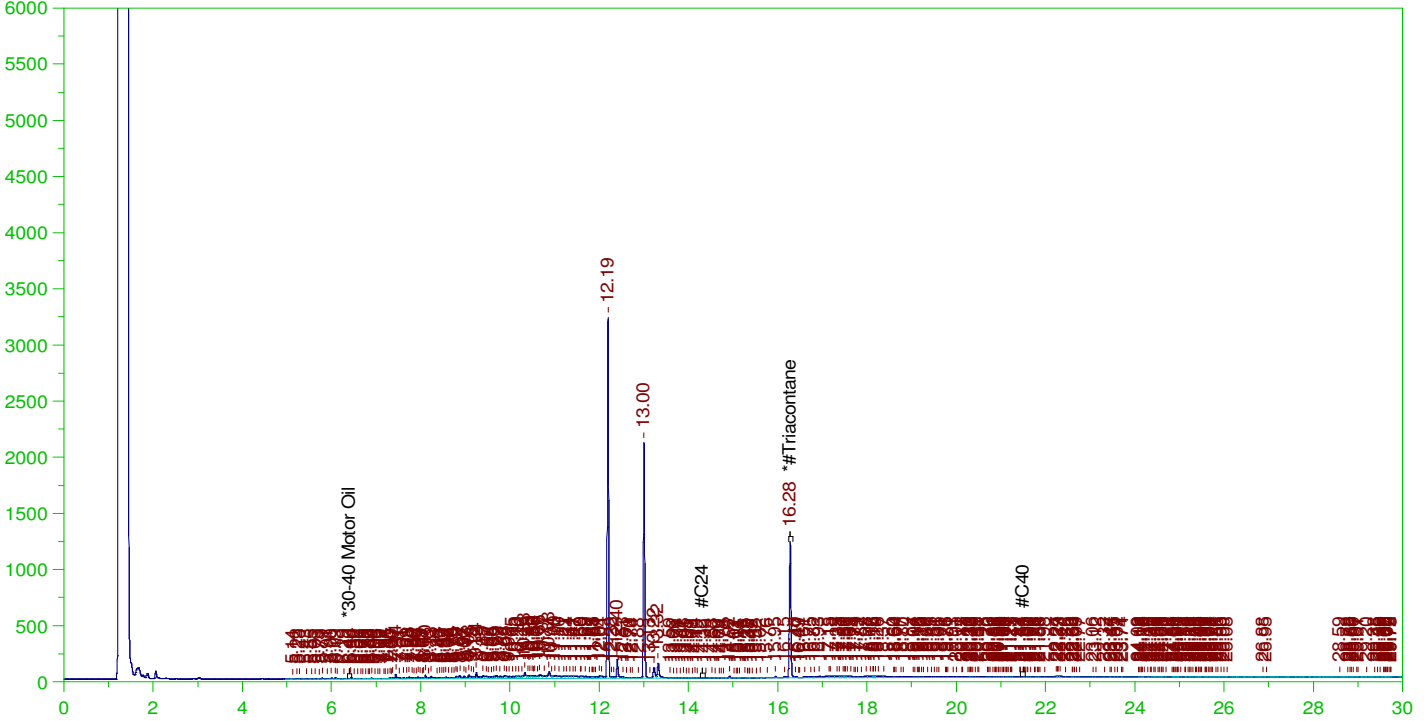
DRO Area: 910868.4 DRO Amount: 29.05186  
 TEH Area: 1225214 TEH Amount: 39.0778

ERH2269 (Sump Adit3 Loc-1)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0057.RAW

B21121967-001D ;1228HP5 , \$HC-8015-DRO-W,



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121967-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0057.RAW  
Date & Time Acquired: 12/30/2021 5:08:25 AM  
Method File: G:\Org\HP5\Methods\D3\_OROS-122843-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
Sample Weight: 1020 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 14.27 to 21.54

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.276	.49	.107	21.88

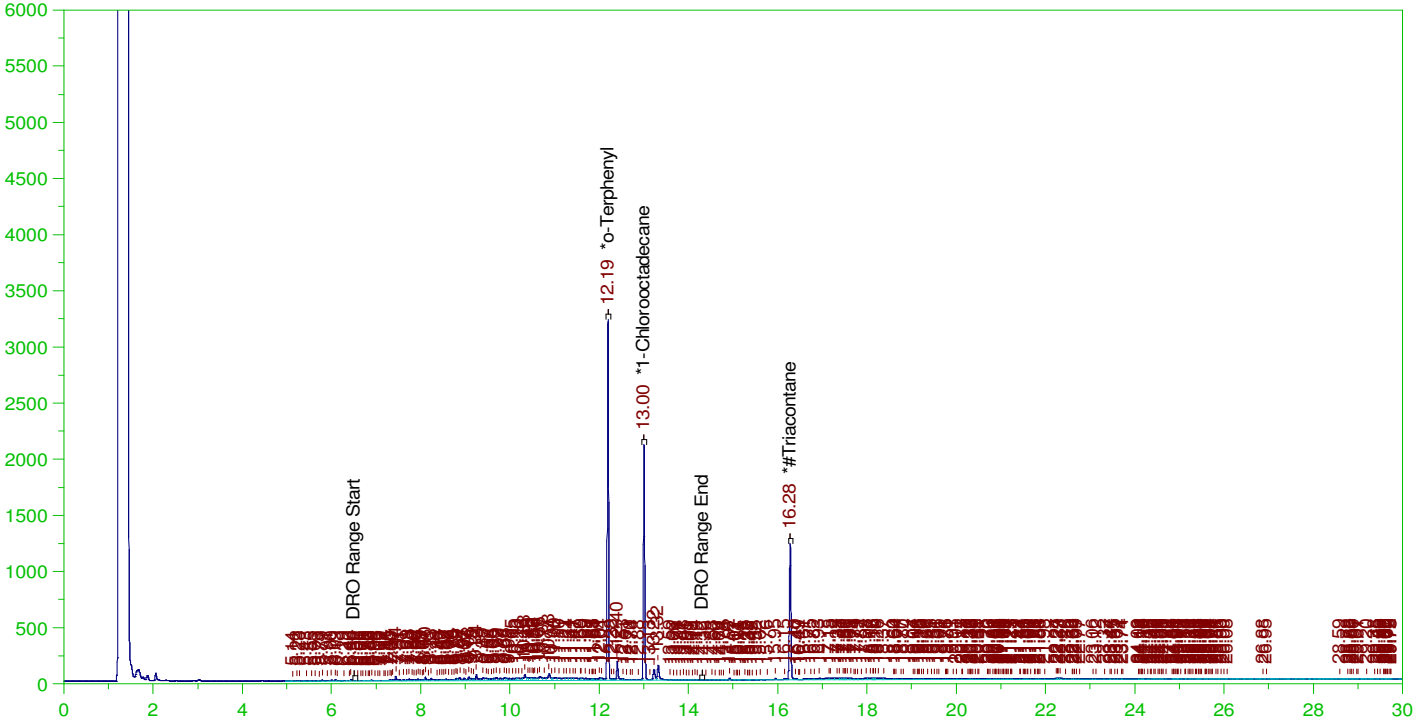
RRO Area:3101080 RRO AMOUNT: 0.1065178

ERH2269 (Sump Adit3 Loc-1)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0057.RAW

B21121967-001D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121967-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0057.RAW  
Date & Time Acquired: 12/30/2021 5:08:25 AM  
Method File: G:\Org\HP5\Methods\DR\_8015-122843-IM-L%.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1020 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.192	.196	.165	84.21	-
*1-Chlorooctadecane	13.005	.196	.121	61.96	-
*#Triacontane	16.276	.196	.107	54.69	-

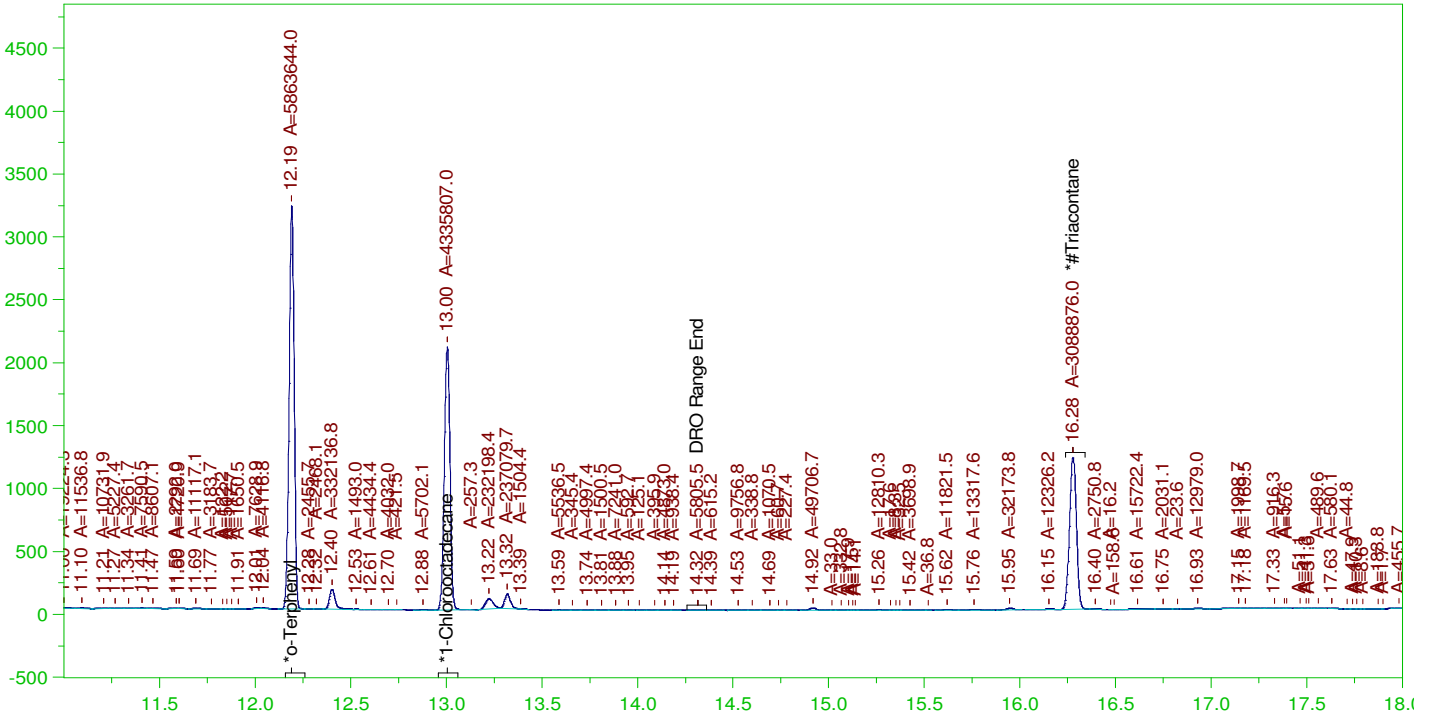
DRO Area:6785022 DRO Amount: 0.2121628  
TEH Area:1.097503E+07 TEH Amount: 0.3431815

ERH2269 (Sump Adit3 Loc-1)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0057.RAW

B21121967-001D ; 1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121967-001D ; 1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0057.RAW  
Date & Time Acquired: 12/30/2021 5:08:25 AM  
Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1020 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.192	.196	.162	82.57
*1-Chlorooctadecane	13.005	.196	.12	61.05
*#Triacontane	16.276	.196	.105	53.39

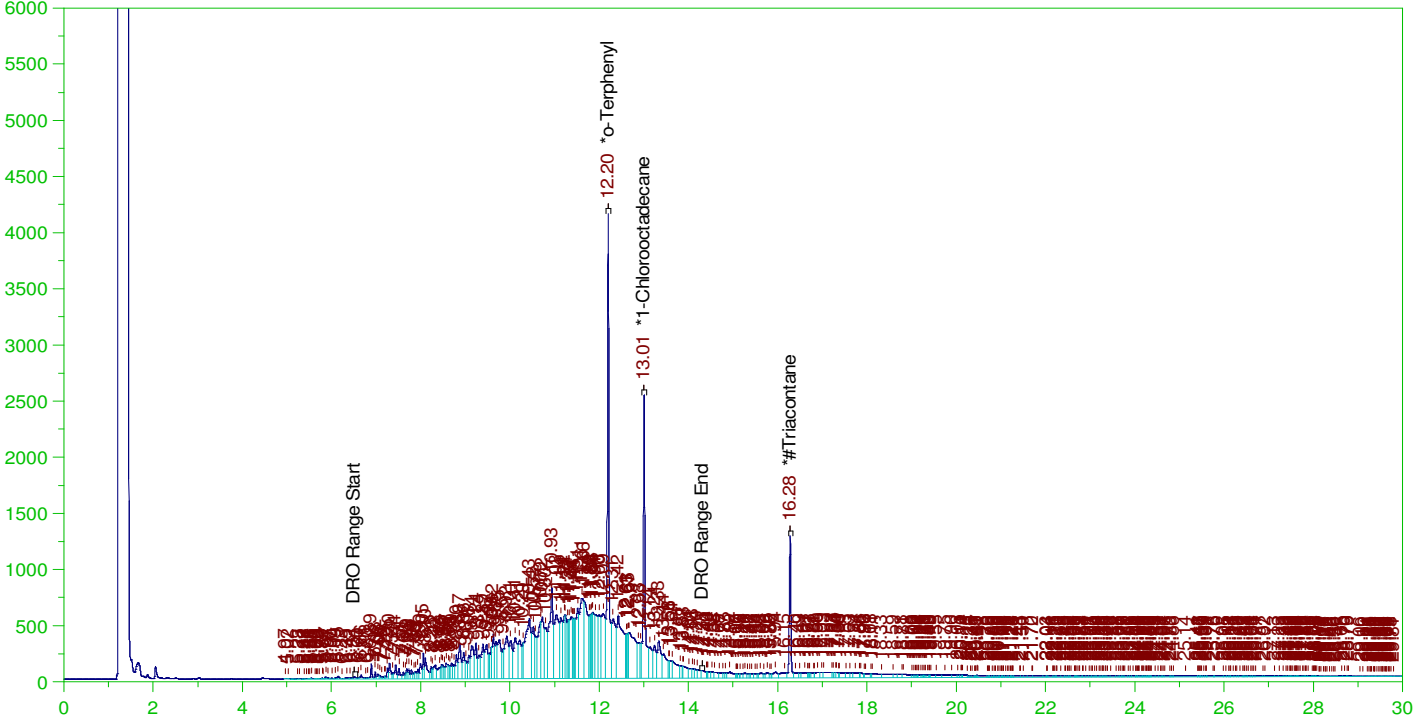
DRO Area: 2431816 DRO Amount: 7.604118E-02  
TEH Area: 2866143 TEH Amount: 8.962226E-02

ERH2236 (RHMW02)

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0058.RAW

Batch ID: 162502

B21121959-001D ; 1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121959-001D ; 1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0058.RAW  
Date & Time Acquired: 12/30/2021 5:51:36 AM  
Method File: G:\Org\HP5\Methods\D3\_8015-C24T-IM-L%.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.197	.2	.297	148.32	-
*1-Chlorooctadecane	13.006	.2	.212	105.78	-
*Triacontane	16.275	.2	.118	59.16	-

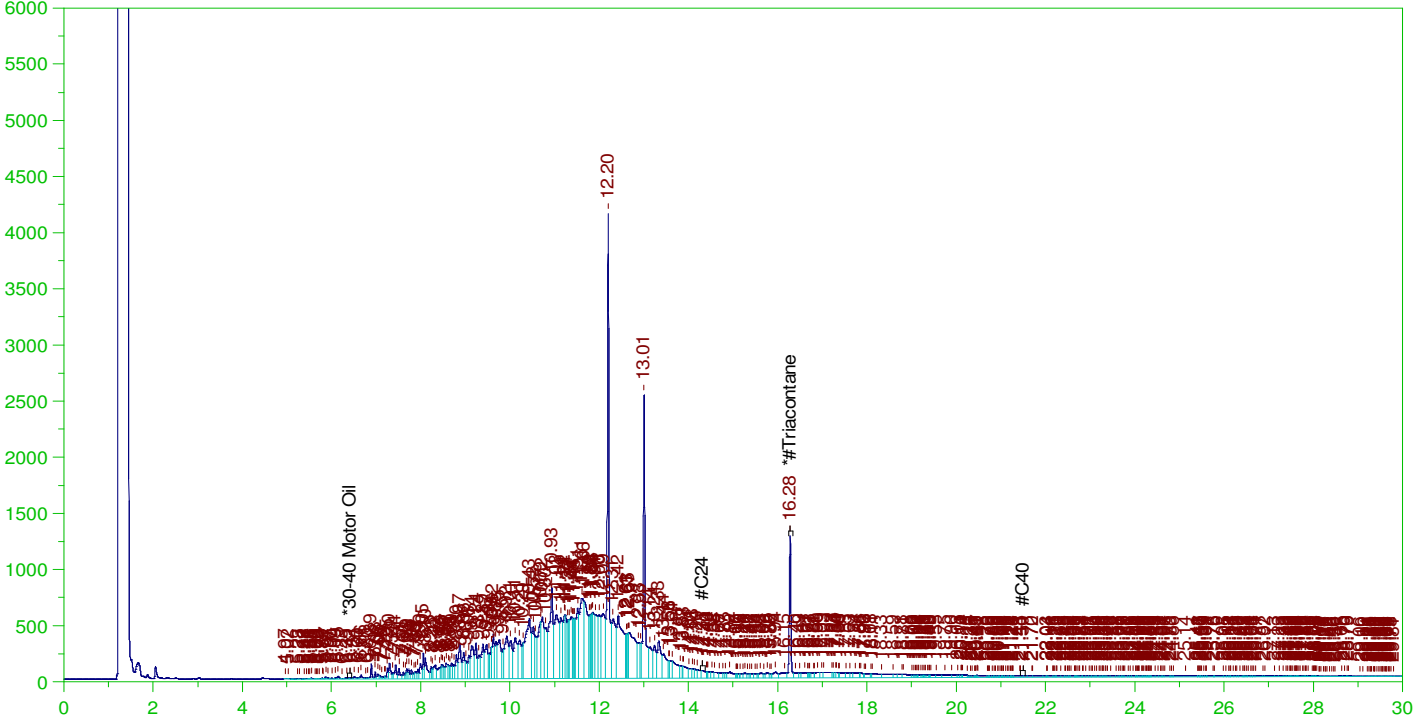
DRO Area: 1.185121E+08 DRO Amount: 3.779905  
TEH Area: 1.358401E+08 TEH Amount: 4.332578

ERH2236 (RHMW02)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0058.RAW

B21121959-001D ;1228HP5 , \$HC-8015-DRO-W,



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121959-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0058.RAW  
Date & Time Acquired: 12/30/2021 5:51:36 AM  
Method File: G:\Org\HP5\Methods\D3\_OROS-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 14.27 to 21.54

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.275	.5	.118	23.66

RRO Area:1.358551E+07 RRO AMOUNT: 0.4759764

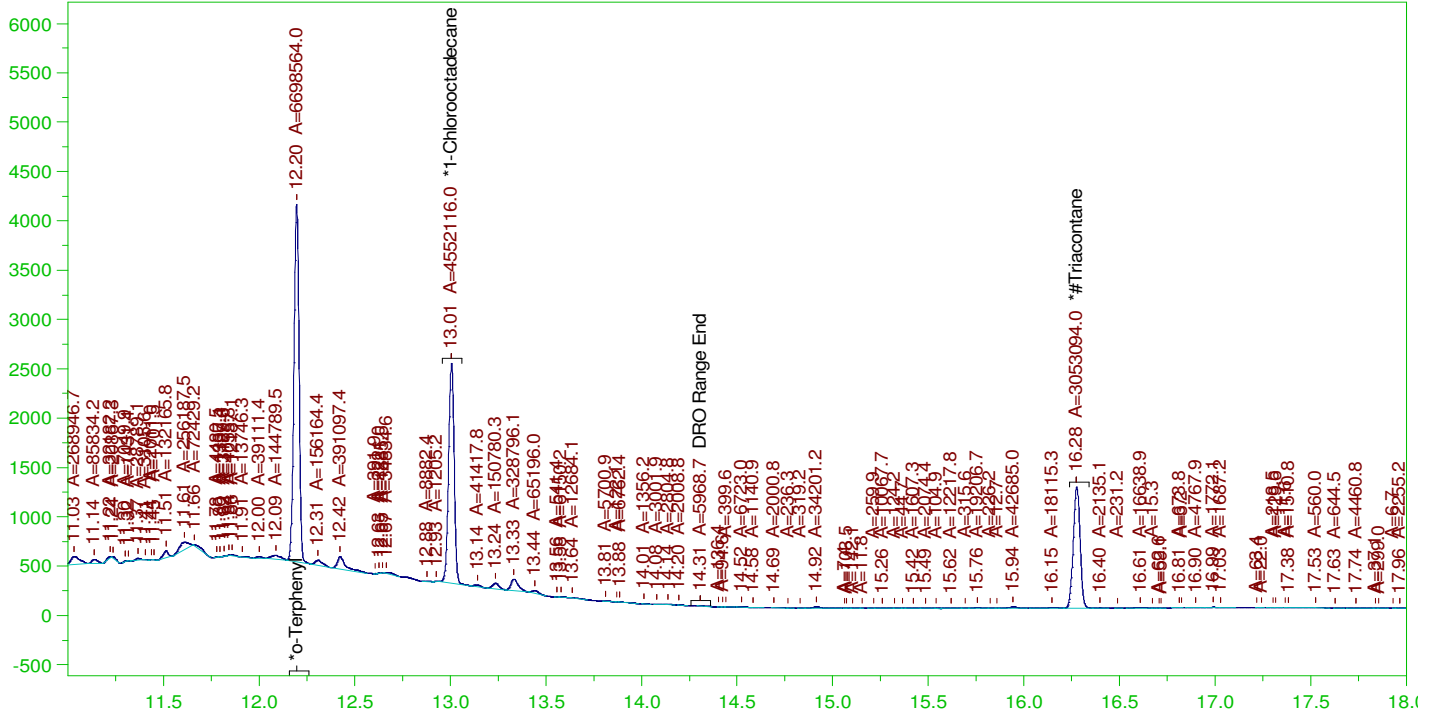


ERH2236 (RHMW02)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0058.RAW

B21121959-001D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

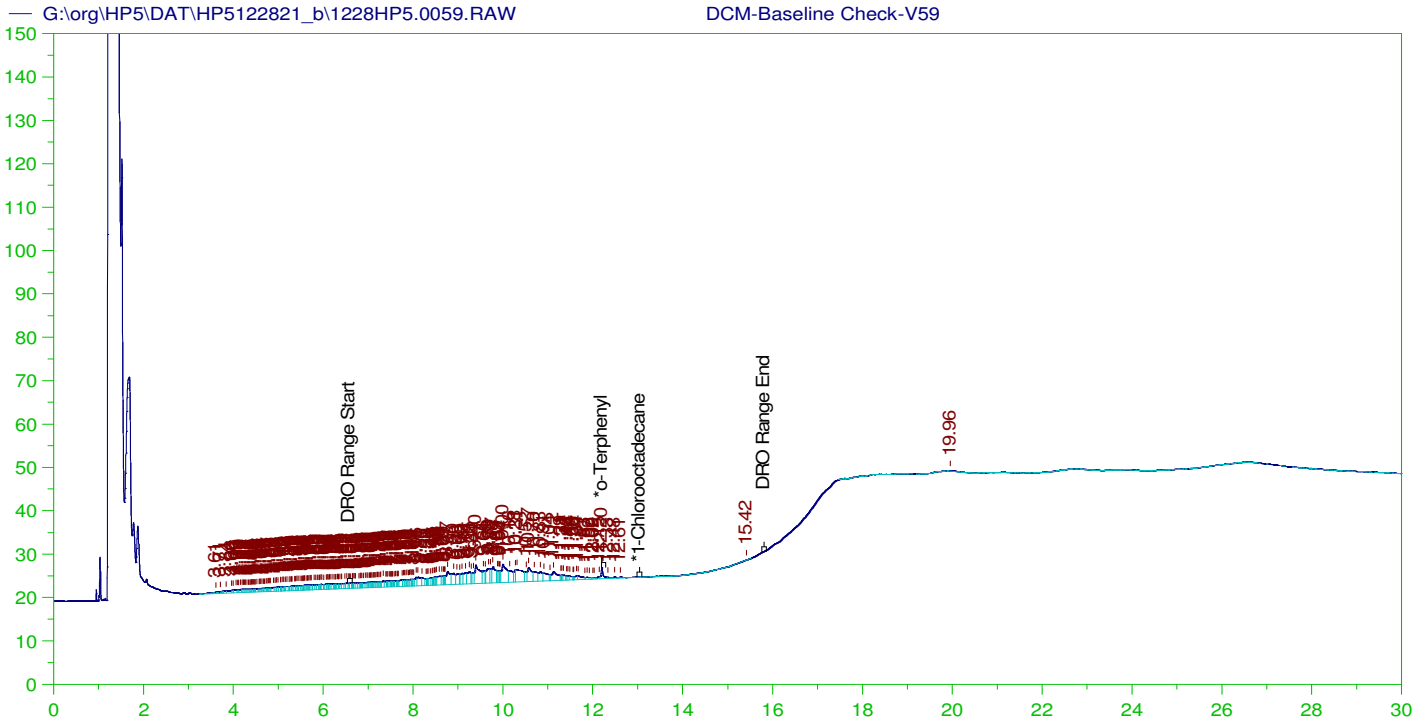
Sample Name: B21121959-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0058.RAW  
Date & Time Acquired: 12/30/2021 5:51:36 AM  
Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.197	.2	.189	94.32	-
*1-Chlorooctadecane	13.006	.2	.128	64.1	-
*#Triacontane	16.275	.2	.106	52.77	-

DRO Area:1.579166E+07 DRO Amount: 0.50367  
TEH Area:1.639919E+07 TEH Amount: 0.5230469



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: DCM-Baseline Check-V59  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0059.RAW  
 Date & Time Acquired: 12/30/2021 6:34:46 AM  
 Method File: G:\Org\HP5\Methods\DR\_8015-IBb-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IB.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

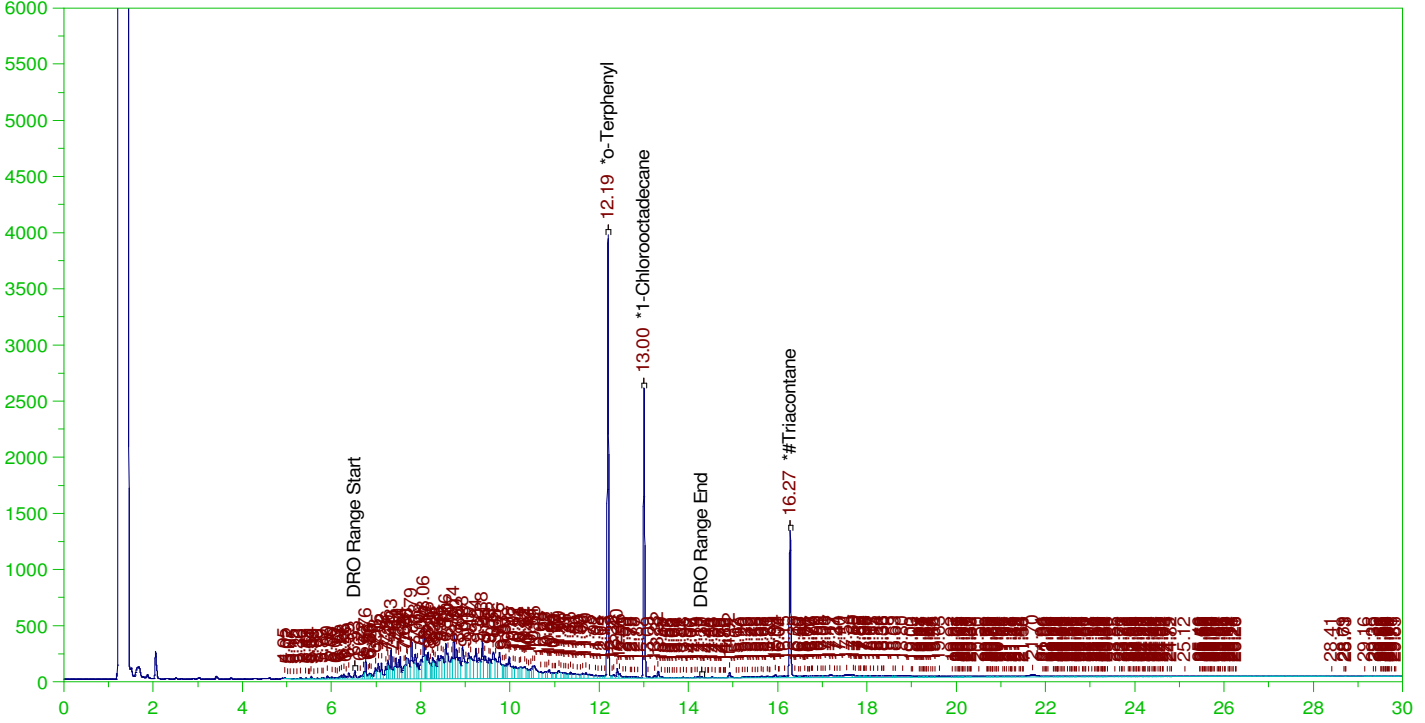
Mean RF for TEH: 31353.19  
 Rt range for Diesel Range Organics: 6.54 to 15.86

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.199	200.	.254	.13	-
*1-Chlorooctadecane	29.953	200.	.	.	-

DRO Area: 621684.8 DRO Amount: 19.82844  
 TEH Area: 792436.5 TEH Amount: 25.27451

ERH2266 (RHMW2254-01 Bailer) FD  
G:\org\HP5\DAT\HP5122821\_b\1228HP5.0060.RAW

Batch ID: 162502  
B21121981-002B ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121981-002B ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0060.RAW  
Date & Time Acquired: 12/30/2021 7:17:55 AM  
Method File: G:\Org\HP5\Methods\D3\_8015-122860-IM-L%.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1050 Dilution: 1 S.A.: 1

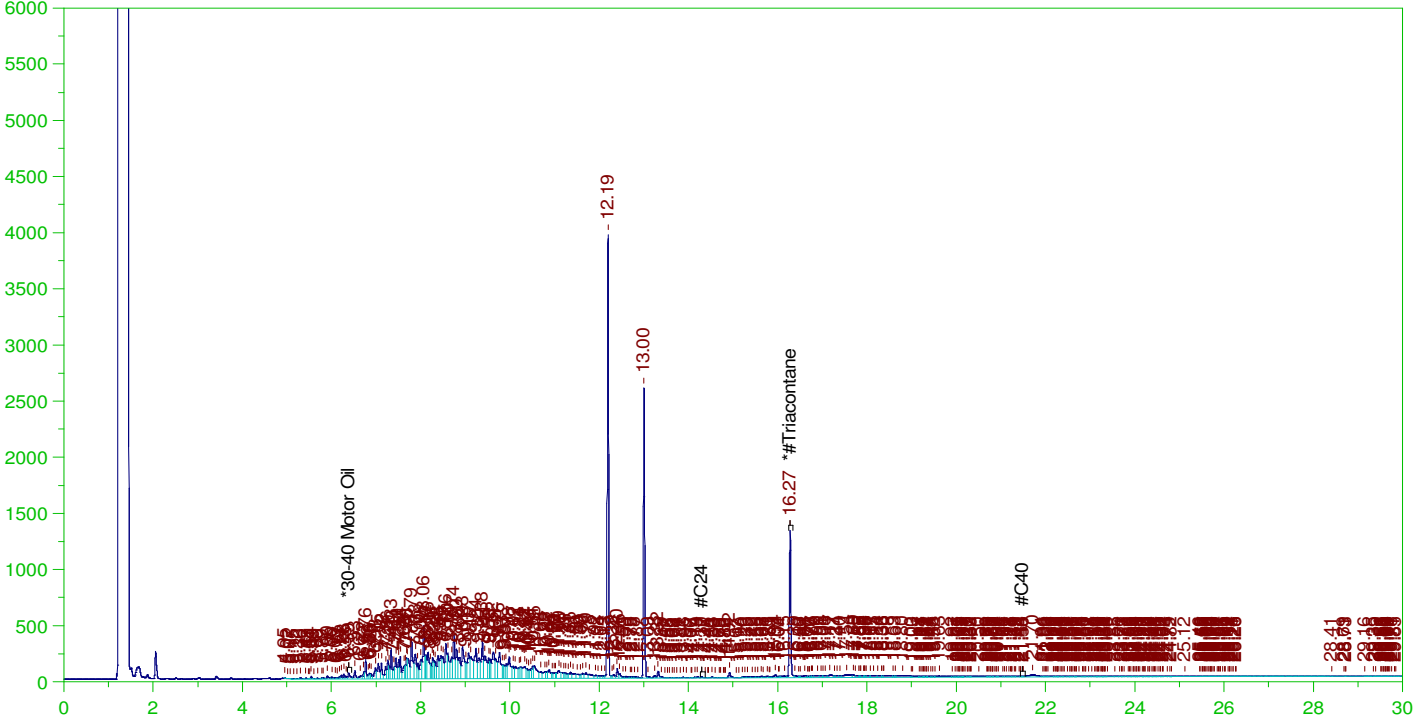
Mean RF for TEH: 31353.19  
Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.192	.19	.2	104.94	-
*1-Chlorooctadecane	13.005	.19	.143	75.2	-
*#Triacontane	16.274	.19	.112	58.92	-

DRO Area: 3.910459E+07 DRO Amount: 1.187837  
TEH Area: 4.660357E+07 TEH Amount: 1.415625

ERH2266 (RHMW2254-01 Bailer) FD  
G:\org\HP5\DAT\HP5122821\_b\1228HP5.0060.RAW

Batch ID: 162502  
B21121981-002B ;1228HP5 , \$HC-8015-DRO-W,



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121981-002B ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0060.RAW  
Date & Time Acquired: 12/30/2021 7:17:55 AM  
Method File: G:\Org\HP5\Methods\D3\_OROS-122860-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
Sample Weight: 1050 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 14.27 to 21.54

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.274	.476	.112	23.57

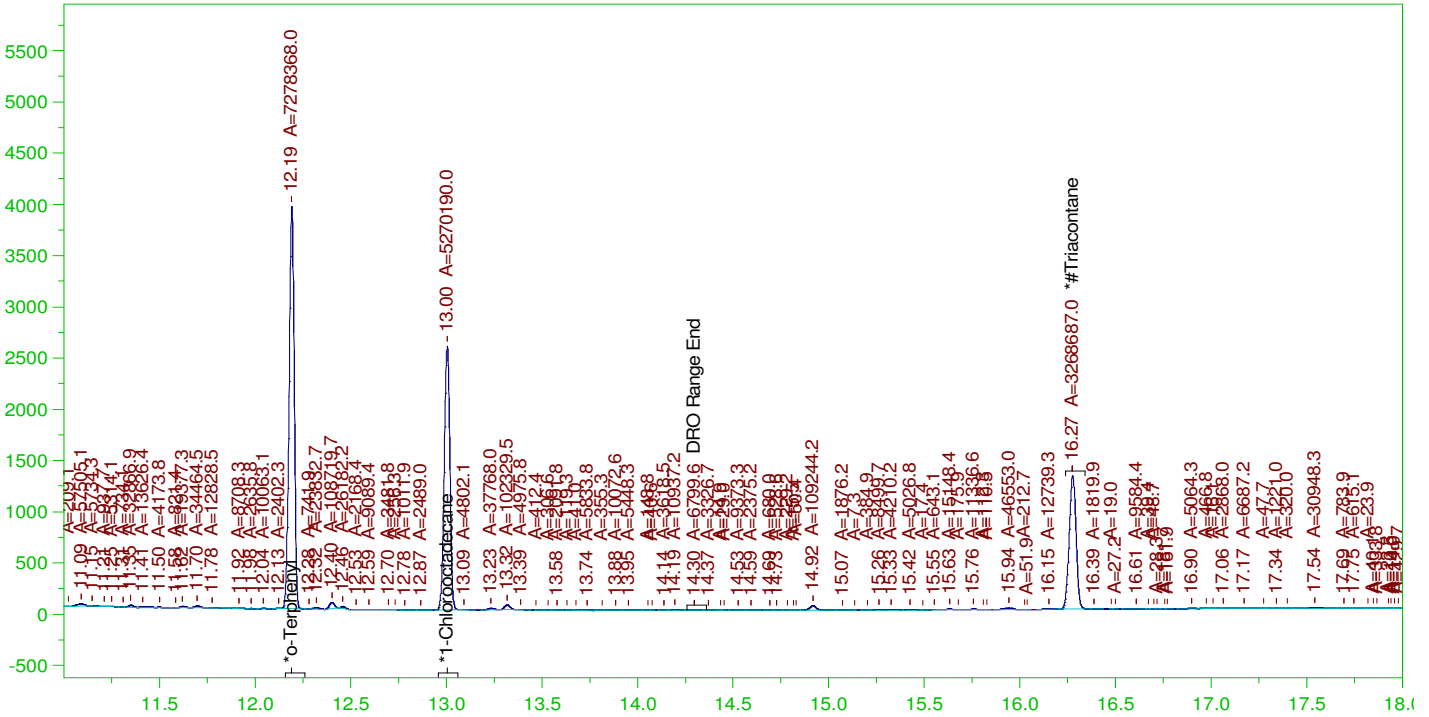
RRO Area:5094829 RRO AMOUNT: 0.1700003

ERH2266 (RHMW2254-01 Bailer) FD

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0060.RAW

B21121981-002B ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121981-002B ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0060.RAW  
Date & Time Acquired: 12/30/2021 7:17:55 AM  
Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1050 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.192	.19	.195	102.49	-
*1-Chlorooctadecane	13.005	.19	.141	74.21	-
*#Triacontane	16.274	.19	.108	56.49	-

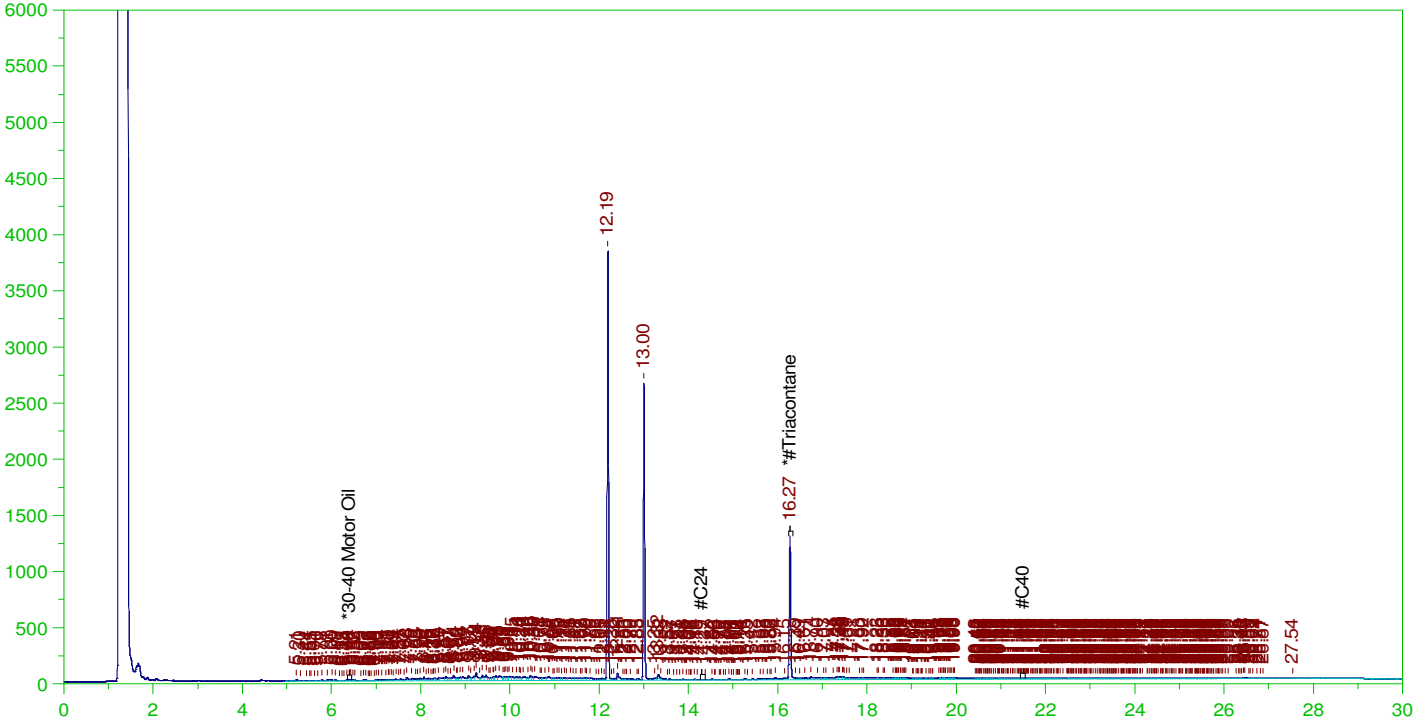
DRO Area: 2.798564E+07 DRO Amount: 0.8500885  
TEH Area: 2.928954E+07 TEH Amount: 0.8896956

ERH2267 (RHMW2254-01 LF)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0061.RAW

B21121981-003D ;1228HP5 , \$HC-8015-DRO-W,



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121981-003D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0061.RAW  
Date & Time Acquired: 12/30/2021 8:01:14 AM  
Method File: G:\Org\HP5\Methods\D3\_OROS-122861-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 14.27 to 21.54

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.273	.481	.11	22.91	-

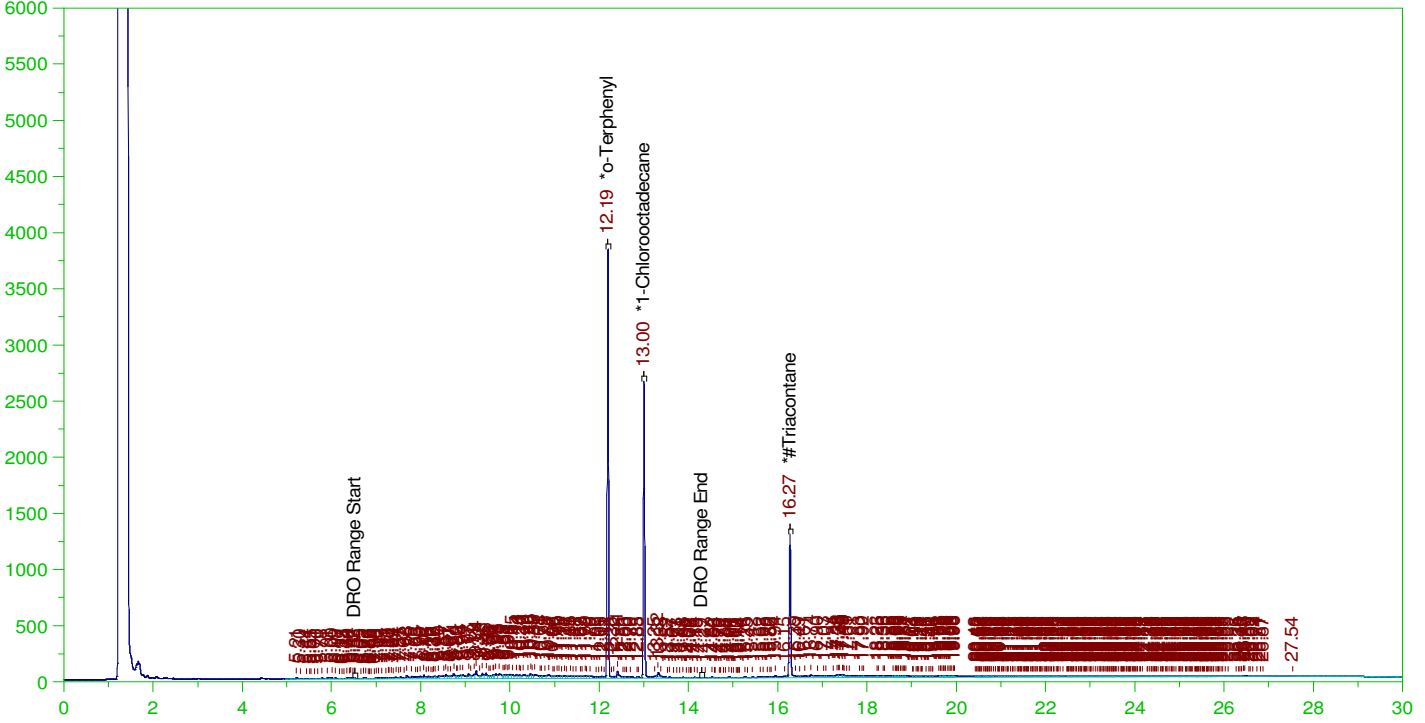
RRO Area:5017132 RRO AMOUNT: 0.1690174

ERH2267 (RHMW2254-01 LF)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0061.RAW

B21121981-003D ; 1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121981-003D ; 1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0061.RAW  
Date & Time Acquired: 12/30/2021 8:01:14 AM  
Method File: G:\Org\HP5\Methods\DR\_8015-122861-IM-L%.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.191	.192	.195	101.4	-
*1-Chlorooctadecane	13.004	.192	.15	77.85	-
*#Triacontane	16.273	.192	.11	57.27	-

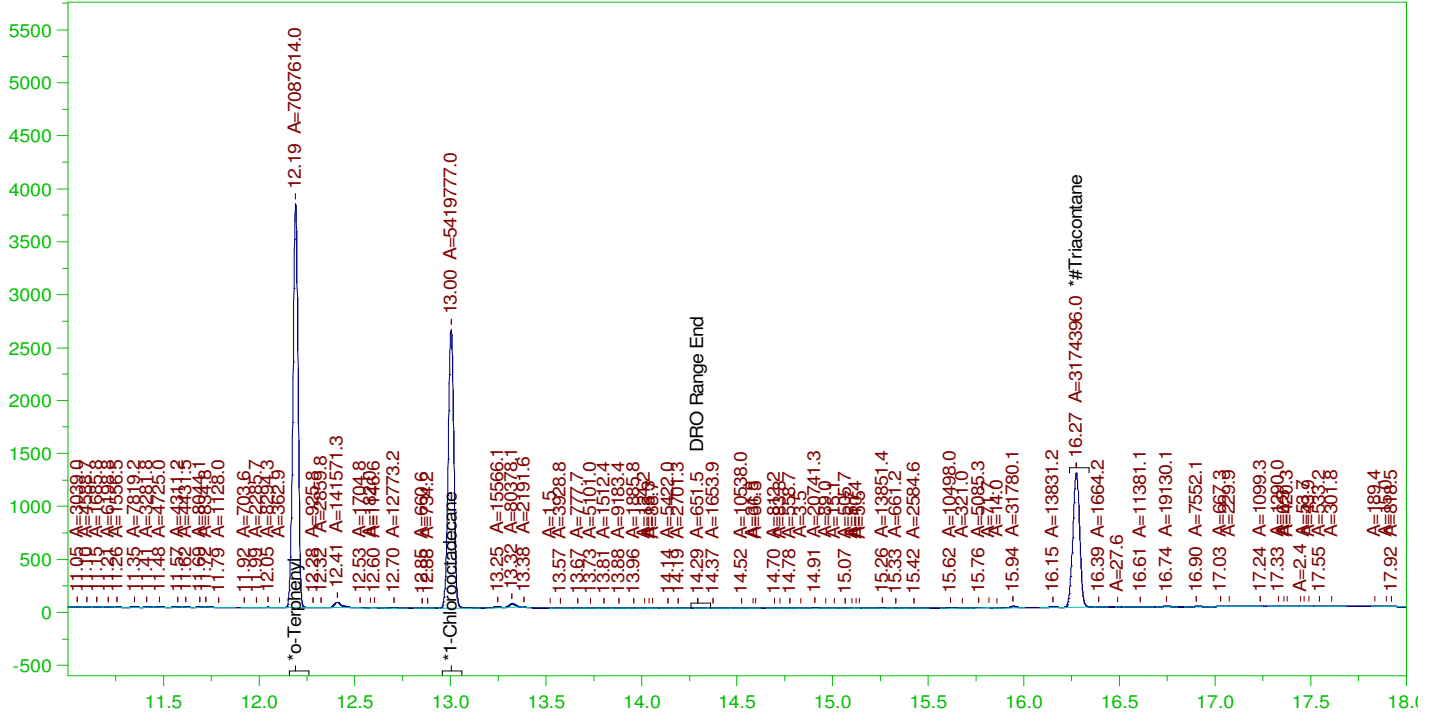
DRO Area: 8283394 DRO Amount: 0.2540348  
TEH Area: 1.569206E+07 TEH Amount: 0.4812434

ERH2267 (RHMW2254-01 LF)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0061.RAW

B21121981-003D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121981-003D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0061.RAW  
Date & Time Acquired: 12/30/2021 8:01:14 AM  
Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1040 Dilution: 1 S.A.: 1

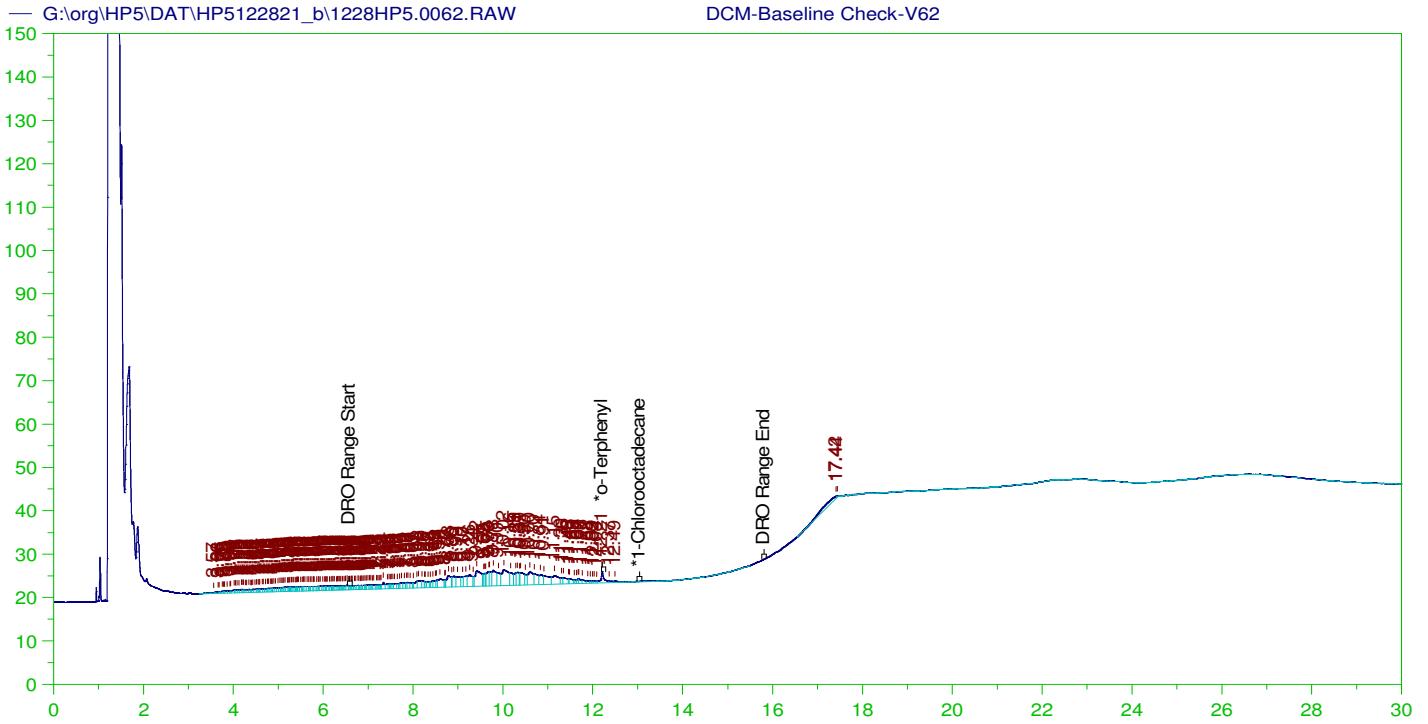
Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.191	.192	.192	99.8	-
*1-Chlorooctadecane	13.004	.192	.147	76.32	-
*#Triaccontane	16.273	.192	.106	54.86	-

DRO Area:3145335 DRO Amount: 9.646101E-02  
TEH Area:3632292 TEH Amount: 0.111395





**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: DCM-Baseline Check-V62  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0062.RAW  
 Date & Time Acquired: 12/30/2021 8:44:34 AM  
 Method File: G:\Org\HP5\Methods\DR\_8015-IBb-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IB.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19  
 Rt range for Diesel Range Organics: 6.54 to 15.86

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.205	200.	.374	.19	-
*1-Chlorooctadecane	29.961	200.	.	.	-

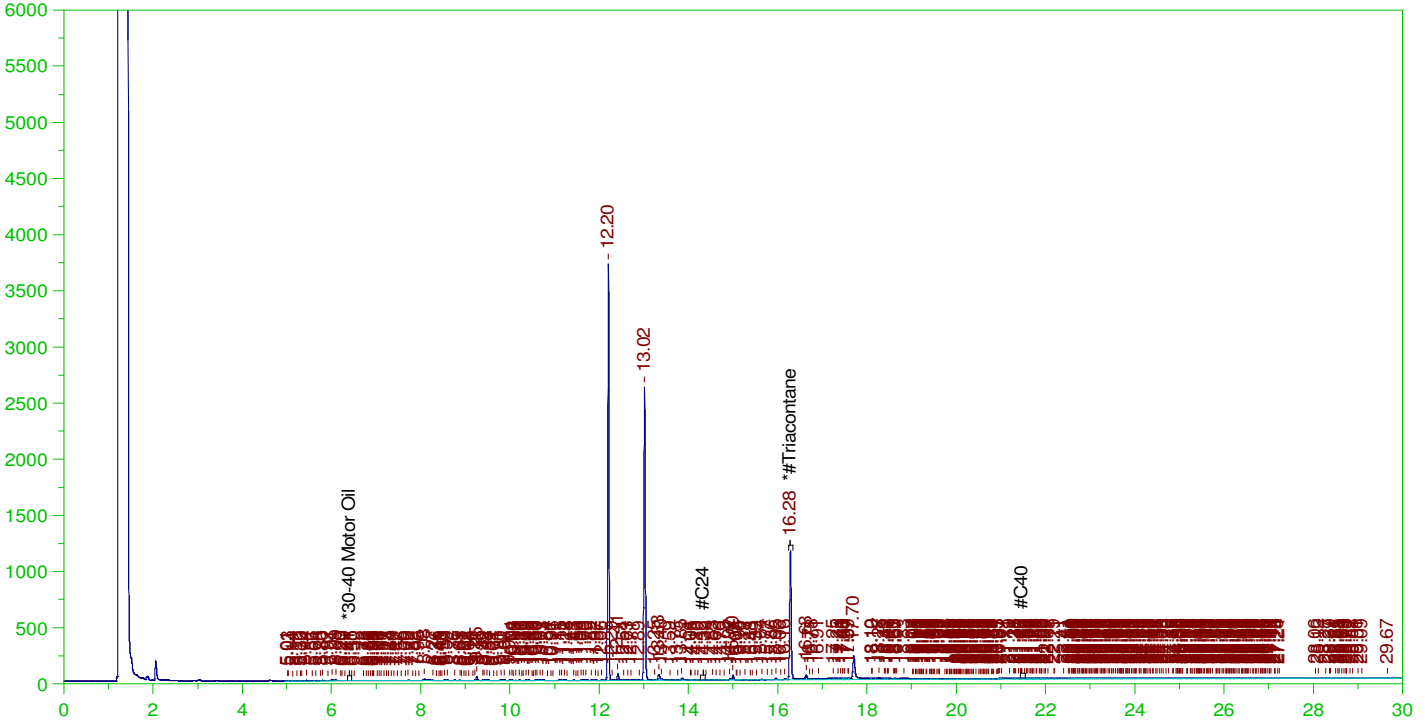
DRO Area: 598183.3 DRO Amount: 19.07886  
 TEH Area: 788475.8 TEH Amount: 25.14818

ERH2199 (RHMW11-5)

Batch ID: 162439

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0063.RAW

B21121841-004B ;1228HP5 , \$HC-8015-DRO-W, RR



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121841-004B ;1228HP5 , \$HC-8015-DRO-W, RR  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0063.RAW  
 Date & Time Acquired: 12/30/2021 9:55:45 AM  
 Method File: G:\Org\HP5\Methods\D3\_OROS-122861-AL-L%.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
 Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
 Rt range for Residual Range Organics: 14.27 to 21.54

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.283	.5	.106	21.29

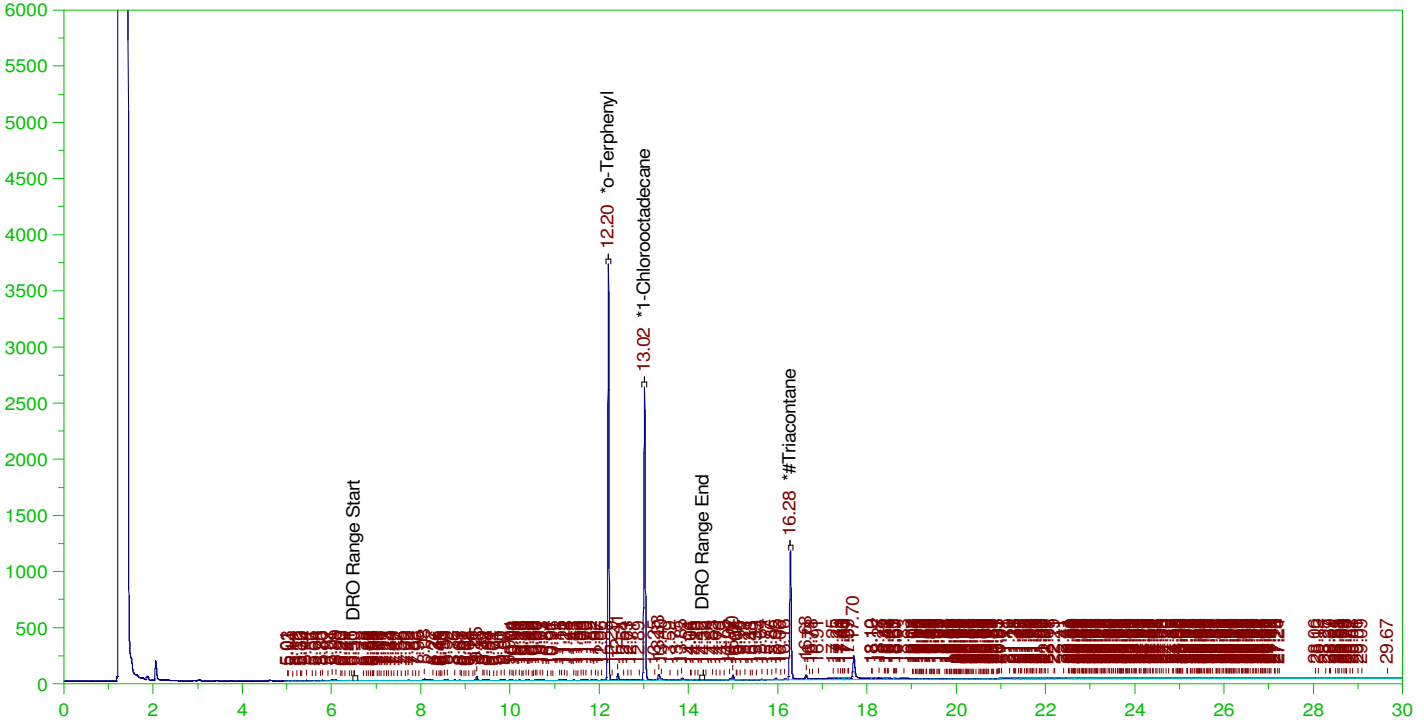
RRO Area:4022263 RRO AMOUNT: 0.1409224

ERH2199 (RHMW11-5)

Batch ID: 162439

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0063.RAW

B21121841-004B ;1228HP5 , \$HC-8015-DRO-W, RR



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121841-004B ;1228HP5 , \$HC-8015-DRO-W, RR  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0063.RAW  
 Date & Time Acquired: 12/30/2021 9:55:45 AM  
 Method File: G:\Org\HP5\Methods\DR\_8015-122861-IM-L%.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
 Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19  
 Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.201	.2	.192	96.16	-
*1-Chlorooctadecane	13.015	.2	.156	77.75	-
*#Triacontane	16.283	.2	.106	53.22	-

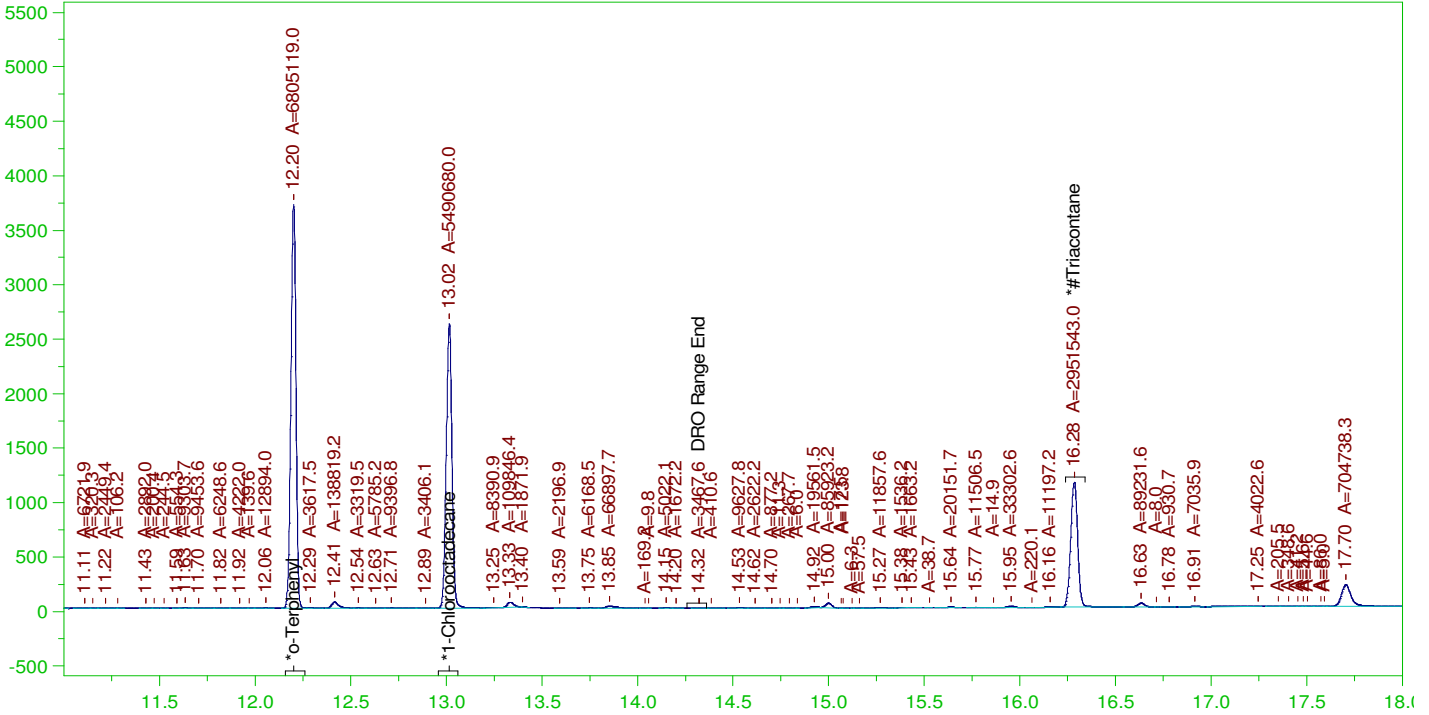
DRO Area:1370907 DRO Amount: 4.372463E-02  
 TEH Area:7436570 TEH Amount: 0.237187

ERH2199 (RHMW11-5)

Batch ID: 162439

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0063.RAW

B21121841-004B ;1228HP5 , \$HC-8015-DRO-W, RR



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121841-004B ;1228HP5 , \$HC-8015-DRO-W, RR  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0063.RAW  
 Date & Time Acquired: 12/30/2021 9:55:45 AM  
 Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
 Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.201	.2	.192	95.82	-
*1-Chlorooctadecane	13.015	.2	.155	77.31	-
*#Triacontane	16.283	.2	.102	51.01	-

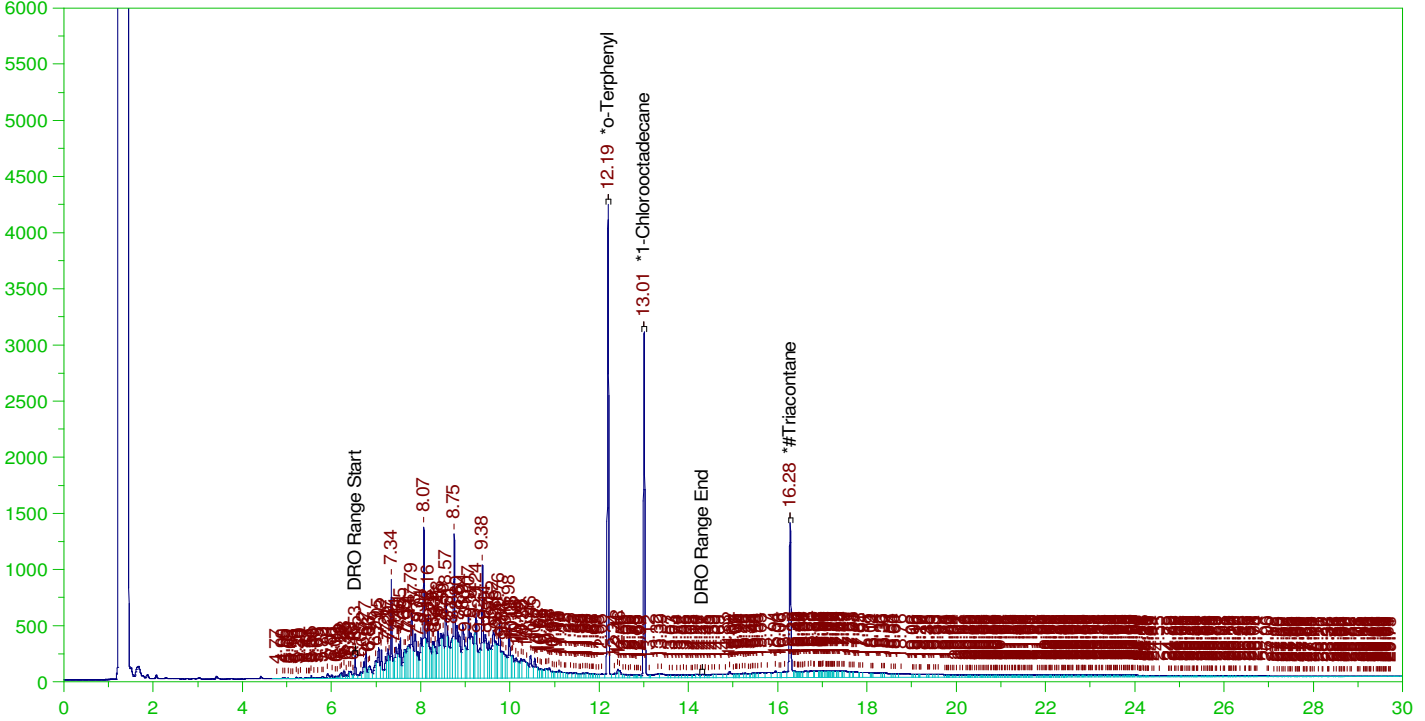
DRO Area:953111.1 DRO Amount: 3.039917E-02  
 TEH Area:2296284 TEH Amount: 7.323924E-02

ERH2265 (RHMW2254-01 Bailer)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0064.RAW

B21121981-004D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121981-004D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0064.RAW  
Date & Time Acquired: 12/30/2021 10:38:37 AM  
Method File: G:\Org\HP5\Methods\D3\_8015-122864-IM-L%.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1010 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.194	.198	.225	113.44	-
*1-Chlorooctadecane	13.007	.198	.182	91.96	-
*#Triacontane	16.275	.198	.131	66.12	-

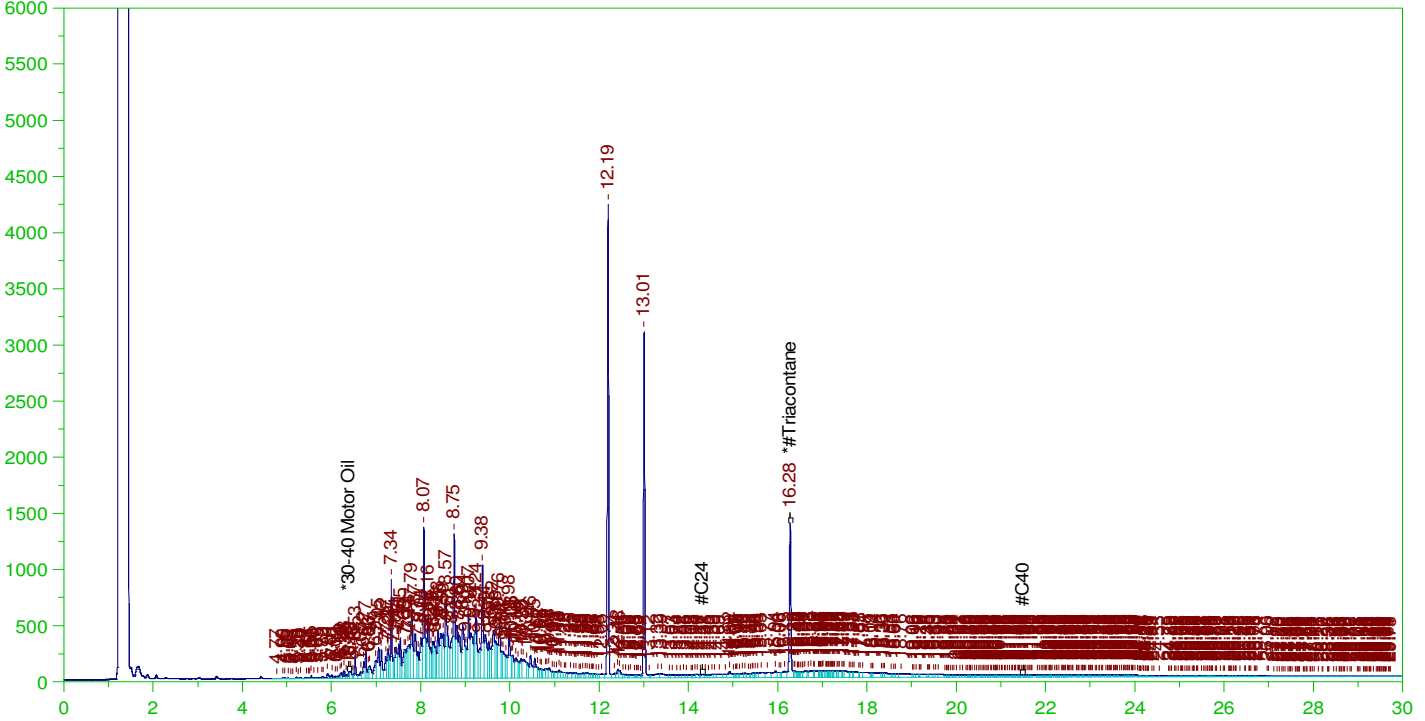
DRO Area: 7.564046E+07 DRO Amount: 2.388642  
TEH Area: 9.777533E+07 TEH Amount: 3.087636

ERH2265 (RHMW2254-01 Bailer)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0064.RAW

B21121981-004D ;1228HP5 , \$HC-8015-DRO-W,



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121981-004D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0064.RAW  
Date & Time Acquired: 12/30/2021 10:38:37 AM  
Method File: G:\Org\HP5\Methods\D3\_OROS-122864-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
Sample Weight: 1010 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 14.27 to 21.54

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.275	.495	.131	26.45

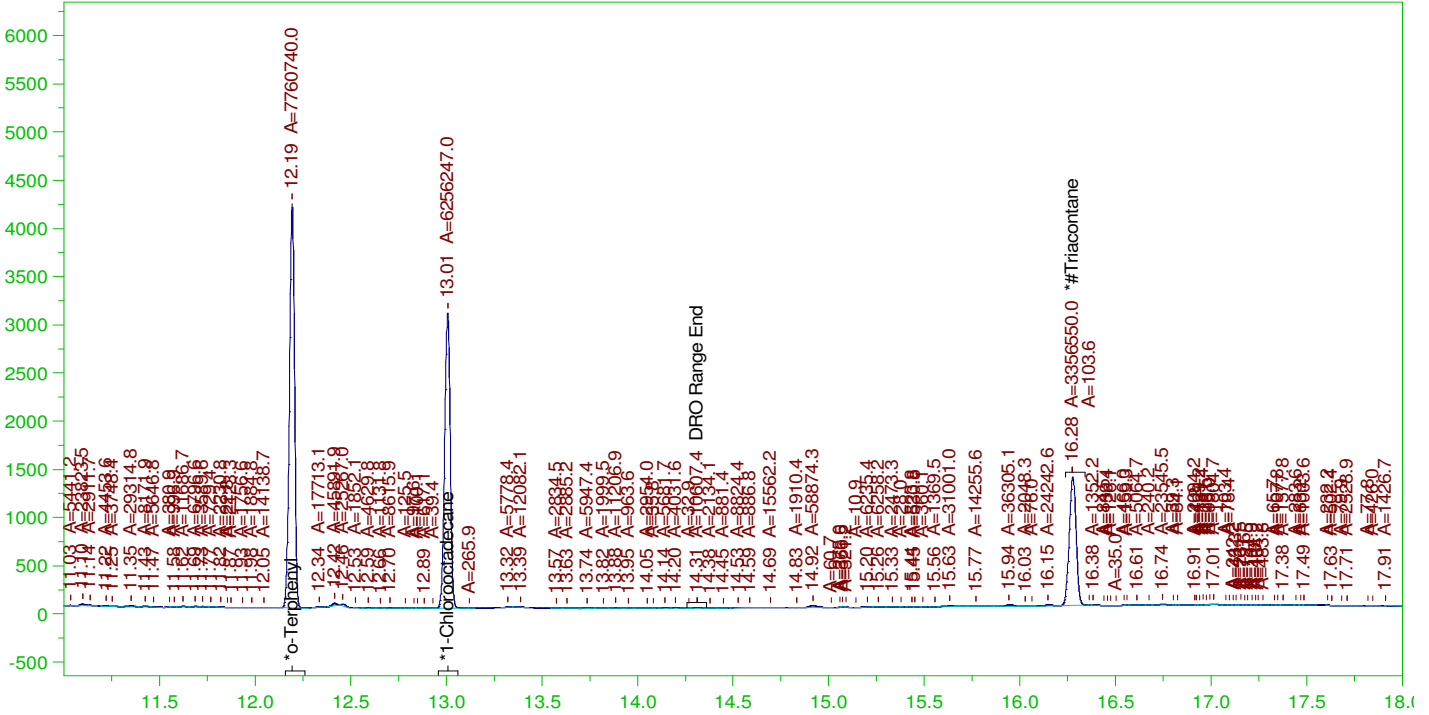
RRO Area:1.563613E+07 RRO AMOUNT: 0.5423969

ERH2265 (RHMW2254-01 Bailer)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0064.RAW

B21121981-004D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121981-004D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0064.RAW  
Date & Time Acquired: 12/30/2021 10:38:37 AM  
Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1010 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.194	.198	.216	109.28	-
*1-Chlorooctadecane	13.007	.198	.174	88.09	-
*#Triacontane	16.275	.198	.115	58.01	-

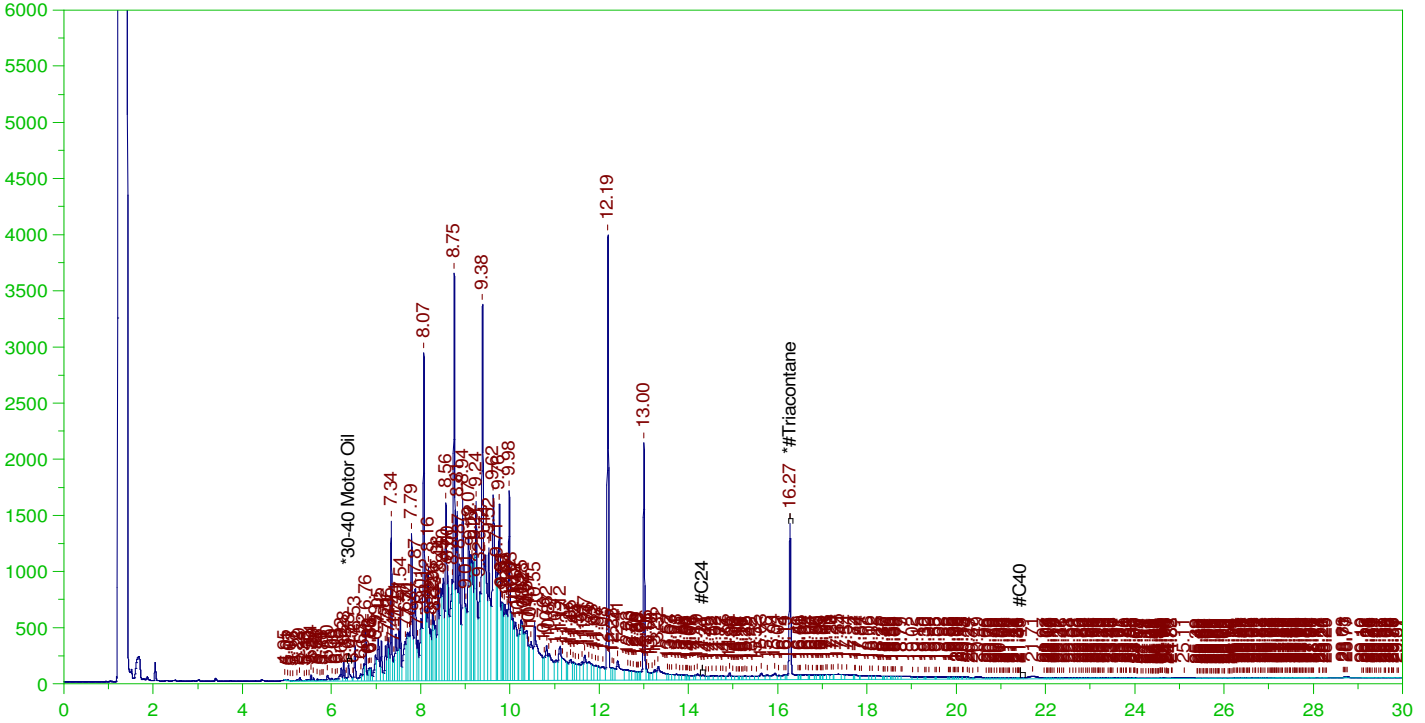
DRO Area:5.741664E+07 DRO Amount: 1.813154  
TEH Area:5.897665E+07 TEH Amount: 1.862417

ERH2234 (RHMW01R)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0065.RAW

B21121961-001D ;1228HP5 , \$HC-8015-DRO-W,



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121961-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0065.RAW  
Date & Time Acquired: 12/30/2021 11:21:17 AM  
Method File: G:\Org\HP5\Methods\D3\_OROS-122843-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL-SAMP.CAL  
Sample Weight: 1010 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 14.27 to 21.54

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.273	.495	.137	27.59

RRO Area:1.13593E+07 RRO AMOUNT: 0.3940392

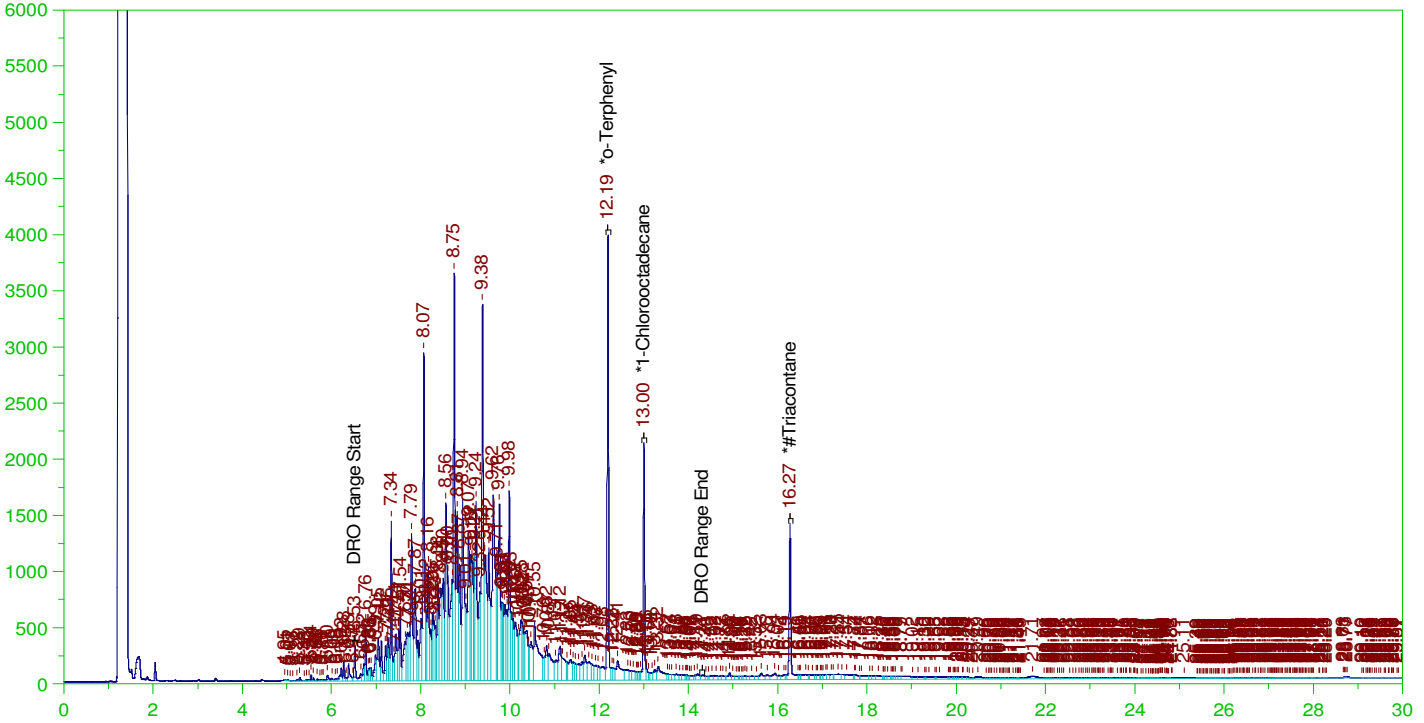


ERH2234 (RHMW01R)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0065.RAW

B21121961-001D ;1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121961-001D ;1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0065.RAW  
Date & Time Acquired: 12/30/2021 11:21:17 AM  
Method File: G:\Org\HP5\Methods\DR\_8015-122843-IM-L%.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1010 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.191	.198	.223	112.58	-
*1-Chlorooctadecane	13.002	.198	.132	66.66	-
*#Triacontane	16.273	.198	.137	68.97	-

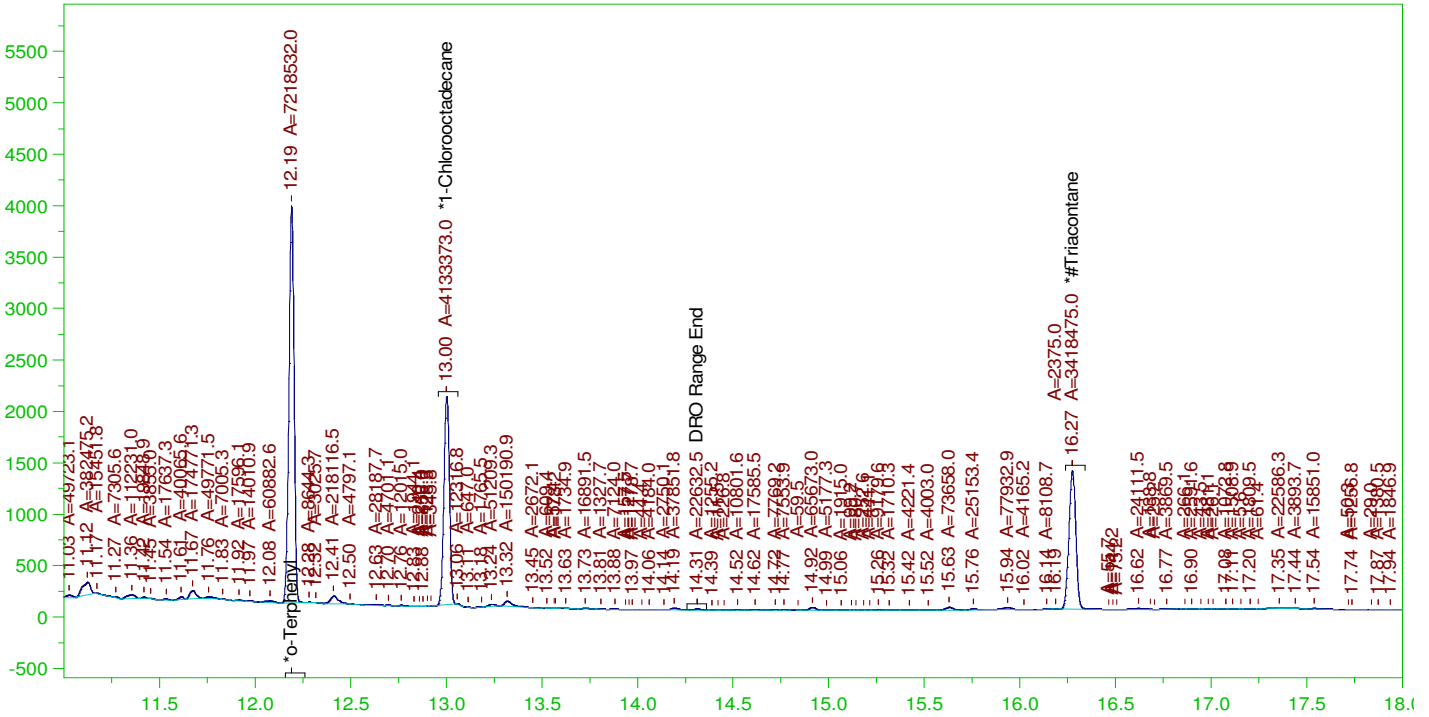
DRO Area:1.773908E+08 DRO Amount: 5.601806  
TEH Area:1.923237E+08 TEH Amount: 6.073369

ERH2234 (RHMW01R)

Batch ID: 162502

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0065.RAW

B21121961-001D ; 1228HP5 , \$HC-8015-DRO-W,



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B21121961-001D ; 1228HP5 , \$HC-8015-DRO-W,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0065.RAW  
Date & Time Acquired: 12/30/2021 11:21:17 AM  
Method File: G:\Org\HP5\Methods\DS\_8015-C24T-IM-L#.met  
Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24-Tri.CAL  
Sample Weight: 1010 Dilution: 1 S.A.: 1

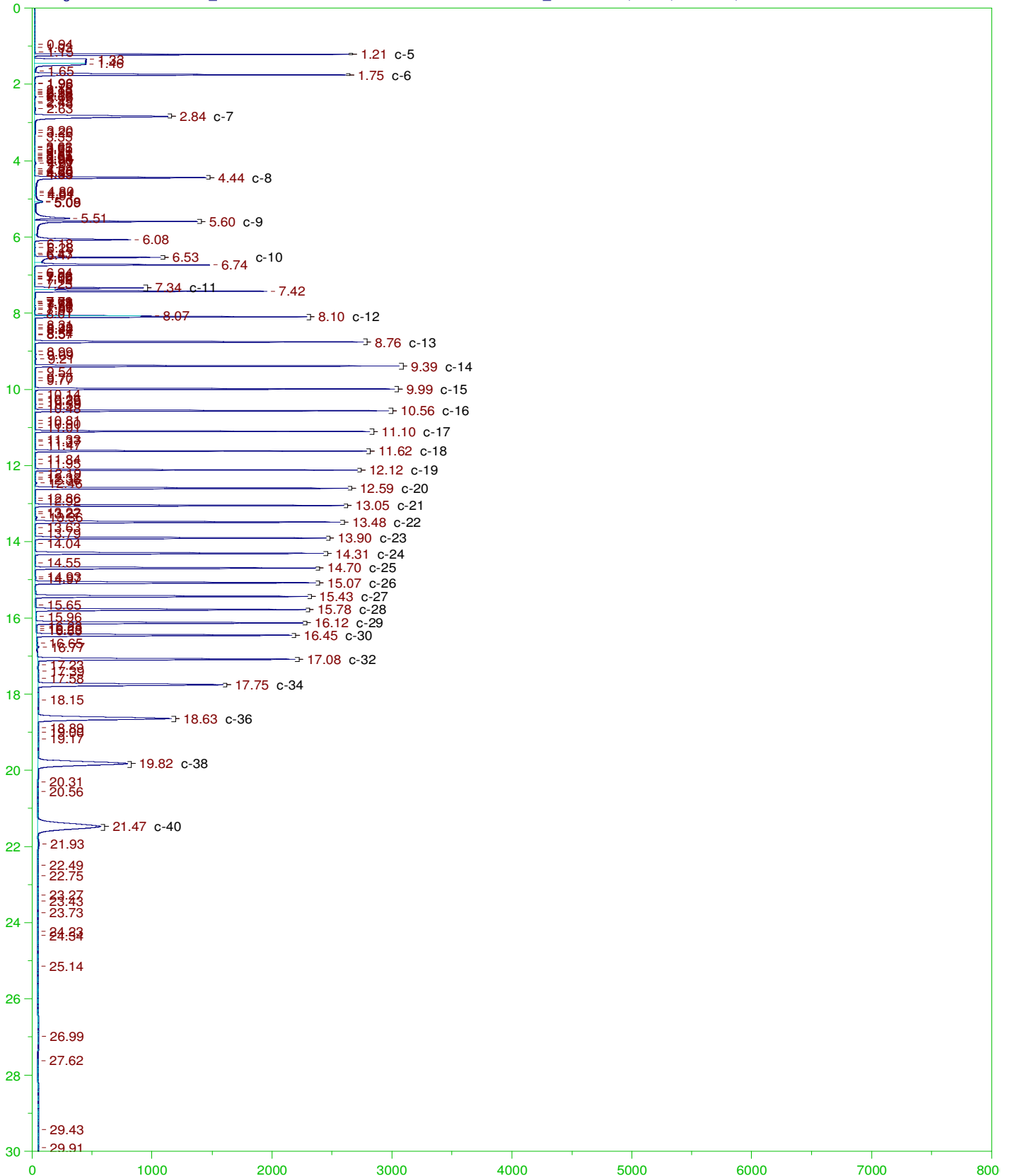
Mean RF for TEH: 31353.19

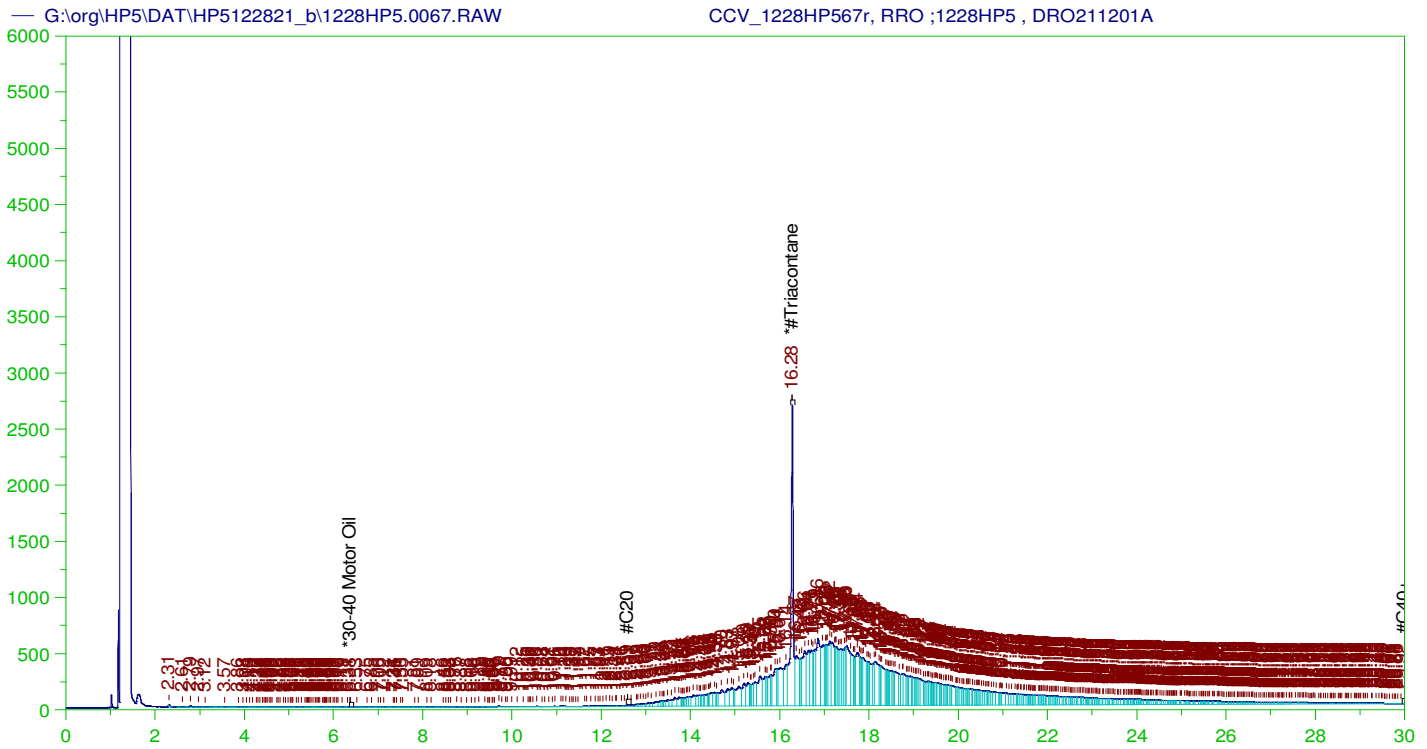
Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.191	.198	.201	101.64	-
*1-Chlorooctadecane	13.002	.198	.115	58.2	-
*#Triacontane	16.273	.198	.117	59.08	-

DRO Area: 1.303793E+08 DRO Amount: 4.117234

TEH Area: 1.326186E+08 TEH Amount: 4.187948





**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: CCV\_1228HP567r, RRO ;1228HP5 , DRO211201A  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0067.RAW  
 Date & Time Acquired: 12/30/2021 12:46:49 PM  
 Method File: G:\Org\HP5\Methods\DC\_ORO-AL-L%.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for for ~~Residual~~ TEH (Oil Range) Organics Calculations: 28542.41  
 Rt range for ~~Residual~~ TEH (Oil Range) Organics: 12.56 to 30.05

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.279	500.	345.161	69.03	-

RRO TEH (Oil Range) Area:1.340796E+08 RRO TEH (Oil Range) AMOUNT: 4697.556

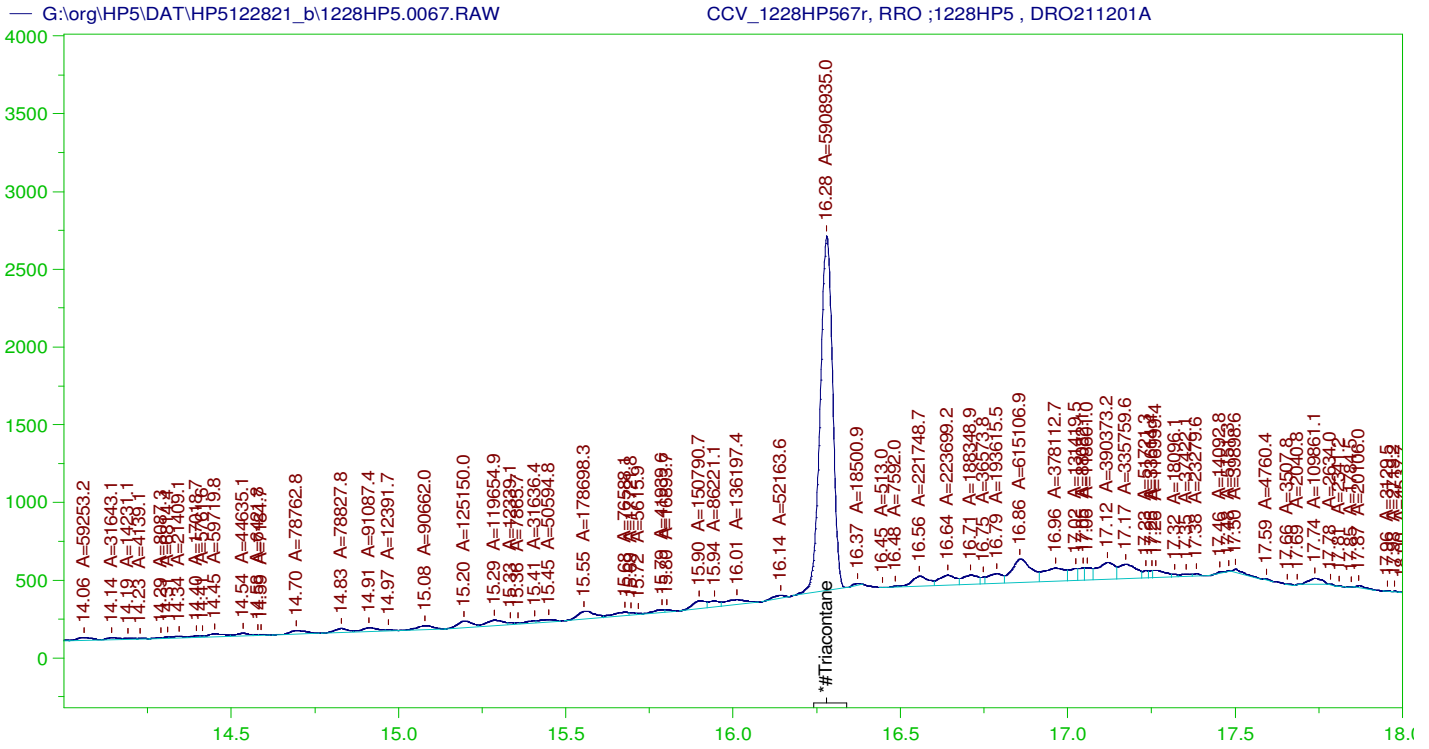
CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0067.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
*30-40 Motor Oil	5000.	.021	.	75-125

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*#Triacontane	16.279	200.	345.161	172.58	75-125

AMN 01/24/2022



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: CCV\_1228HP567r, RRO ;1228HP5 , DRO211201A  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0067.RAW  
 Date & Time Acquired: 12/30/2021 12:46:49 PM  
 Method File: G:\Org\HP5\Methods\DS\_ORO-AL-L%.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
 Rt range for Residual Range Organics: 12.56 to 30.05

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.279	500.	204.248	40.85

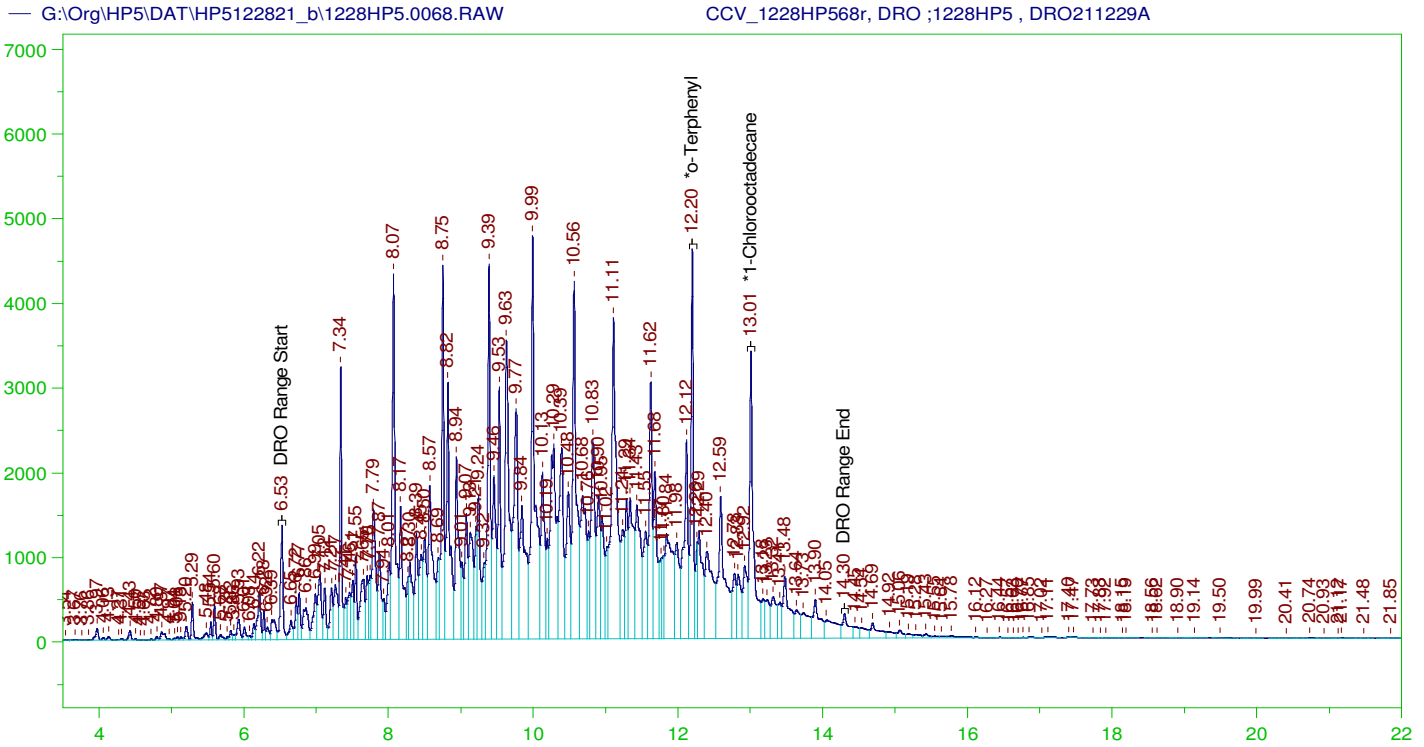
RRO Area:5917183 RRO AMOUNT: 207.3119

CONTINUING CALIBRATION REPORT: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0067.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
*30-40 Motor Oil	5000.	.021	.	75-125

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*#Triacontane	16.279	200.	204.248	102.12	75-125



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1228HP568r, DRO ;1228HP5 , DRO211229A  
 Raw File: G:\Org\HP5\DAT\HP5122821\_b\1228HP5.0068.RAW  
 Date & Time Acquired: 12/30/2021 1:29:28 PM  
 Method File: G:\Org\HP5\Methods\DC\_8015-24-IM-L%.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19  
 Rt range for Diesel Range Organics: 6.48 to 14.36

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.197	200.	319.461	159.73
*1-Chlorooctadecane	13.009	200.	347.08	173.54

DRO Area: 4.575085E+08 DRO Amount: 14592.09  
 TEH Area: 4.740273E+08 TEH Amount: 15118.95

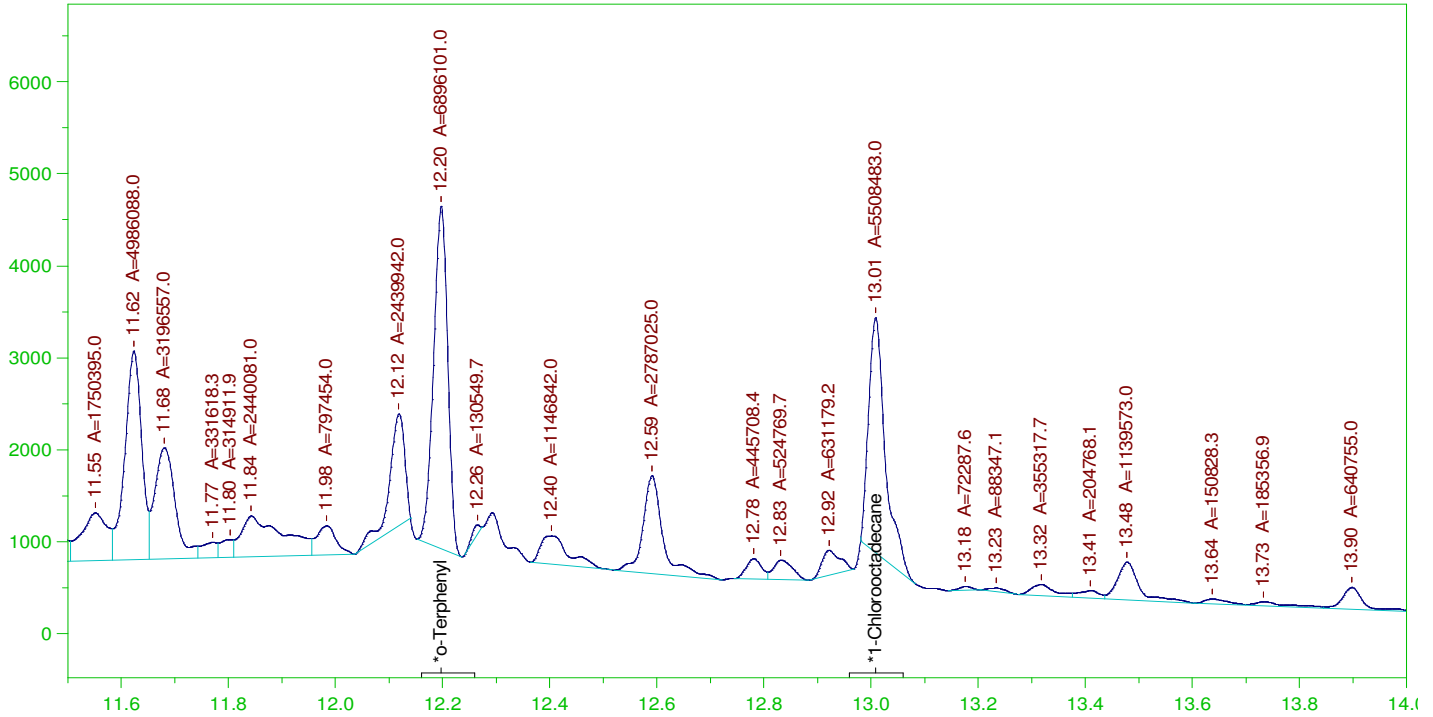
CONTINUING CALIBRATION REPORT: G:\Org\HP5\DAT\HP5122821\_b\1228HP5.0068.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	15118.95	100.79	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.197	200.	319.461	159.73	85-115
*1-Chlorooctadecane	13.009	200.	347.08	173.54	85-115

G:\Org\HP5\DAT\HP5122821\_b\1228HP5.0068.RAW

CCV\_1228HP568r, DRO ;1228HP5 , DRO211229A



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: CCV\_1228HP568r, DRO ;1228HP5 , DRO211229A  
 Raw File: G:\Org\HP5\DAT\HP5122821\_b\1228HP5.0068.RAW  
 Date & Time Acquired: 12/30/2021 1:29:28 PM  
 Method File: G:\Org\HP5\Methods\DS\_8015-24-IM-L#.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IM-24.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.48 to 14.36

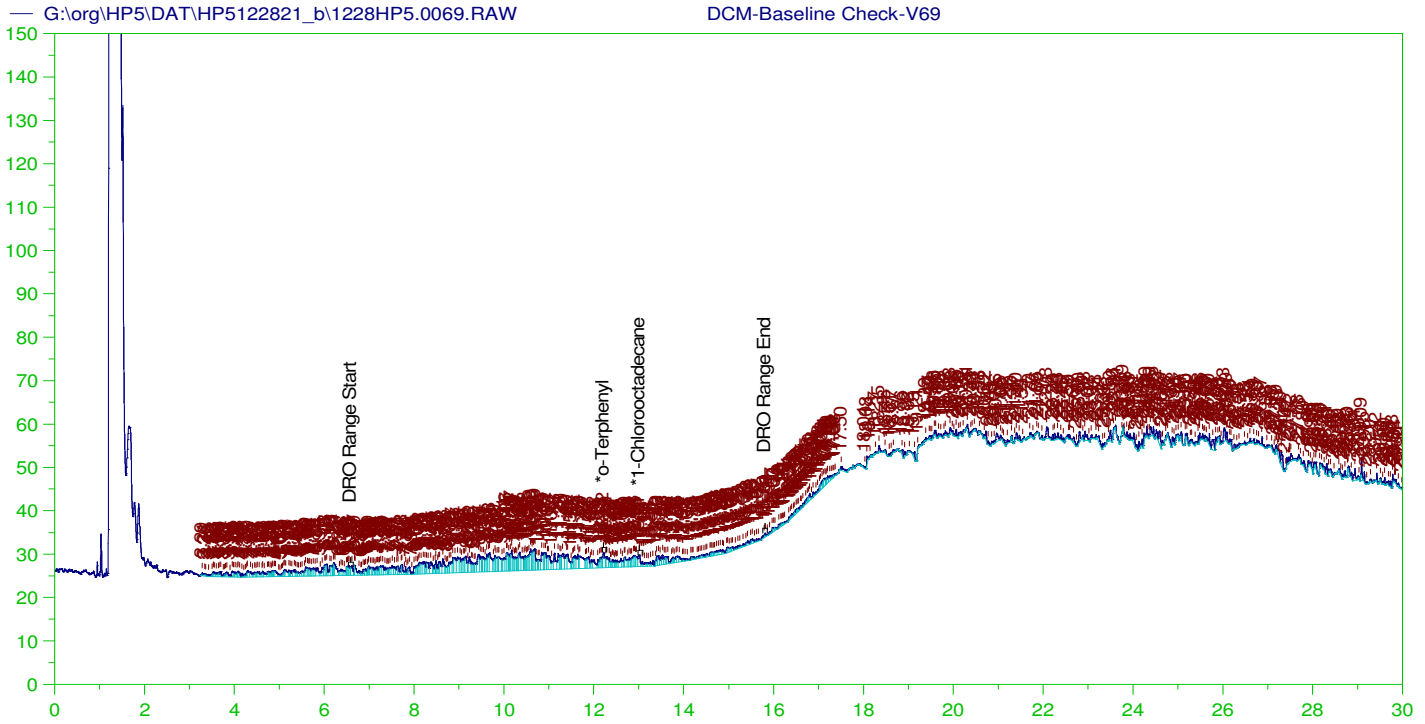
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	12.197	200.	194.206	97.1
*1-Chlorooctadecane	13.009	200.	155.128	77.56

DRO Area: 2.570587E+08 DRO Amount: 8198.804  
 TEH Area: 2.675668E+08 TEH Amount: 8533.956

CONTINUING CALIBRATION REPORT: G:\Org\HP5\DAT\HP5122821\_b\1228HP5.0068.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
TOTAL DRO	15000.	8533.96	56.89	85-115

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*o-Terphenyl	12.197	200.	194.206	97.1	85-115
*1-Chlorooctadecane	13.009	200.	155.128	77.56	85-115



**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: DCM-Baseline Check-V69  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0069.RAW  
 Date & Time Acquired: 12/30/2021 2:12:13 PM  
 Method File: G:\Org\HP5\Methods\DR\_8015-IBb-LEXP.met  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_DRO211102IB.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

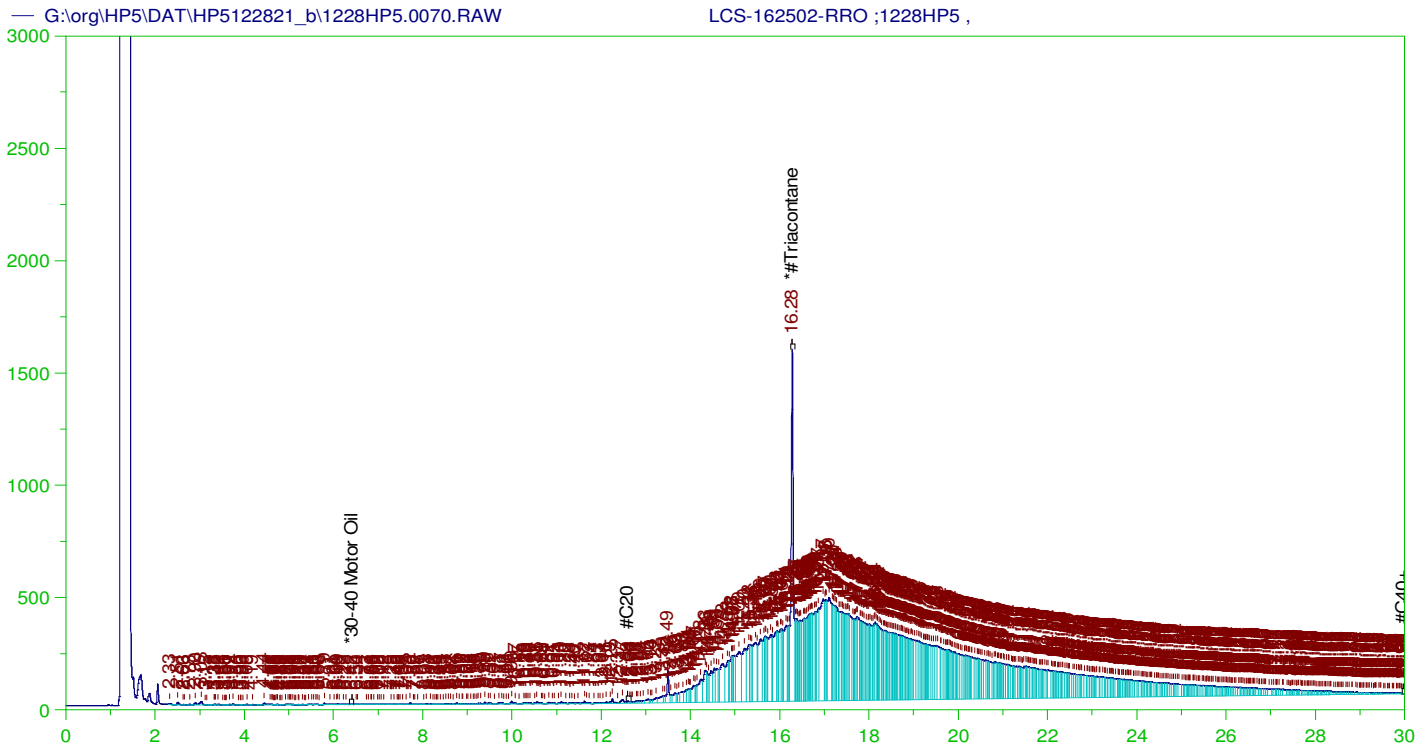
Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.54 to 15.86

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.217	200.	.324	.16	-
*1-Chlorooctadecane	13.011	200.	.221	.11	-

DRO Area: 990720.6 DRO Amount: 31.59872  
 TEH Area: 1669524 TEH Amount: 53.24892





**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: LCS-162502-RRO ;1228HP5 ,  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0070.RAW  
 Date & Time Acquired: 12/30/2021 2:55:00 PM  
 Method File: G:\Org\HP5\Methods\D3\_ORO-AL-L%.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL.CAL  
 Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for for ~~Residual~~ TEH (Oil Range) Organics Calculations: 28542.41  
 Rt range for ~~Residual~~ TEH (Oil Range) Organics: 12.56 to 30.05

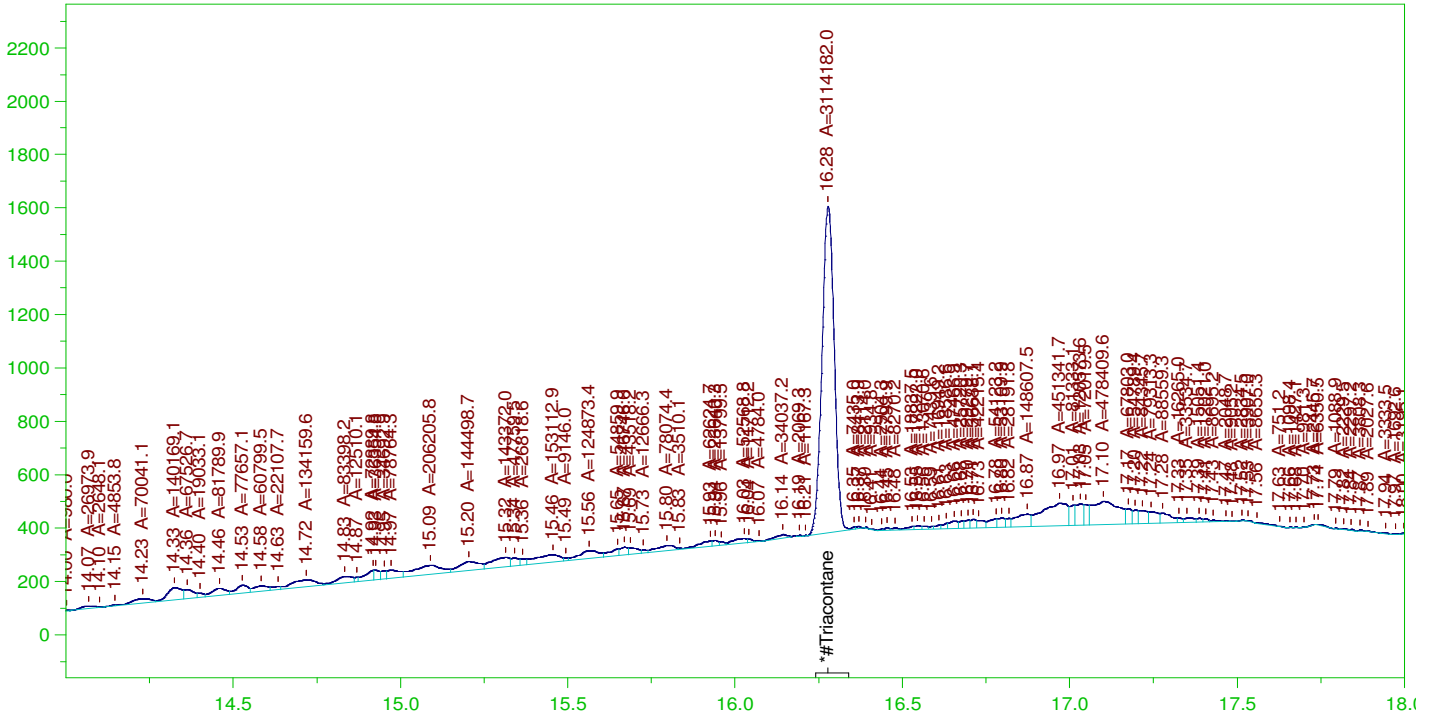
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.278	.5	.197	39.43	-

RRO TEH (Oil Range) Area:1.418383E+08 RRO TEH (Oil Range) AMOUNT: 4.969388

AMN 01/24/2022

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0070.RAW

LCS-162502-RRO ;1228HP5 ,



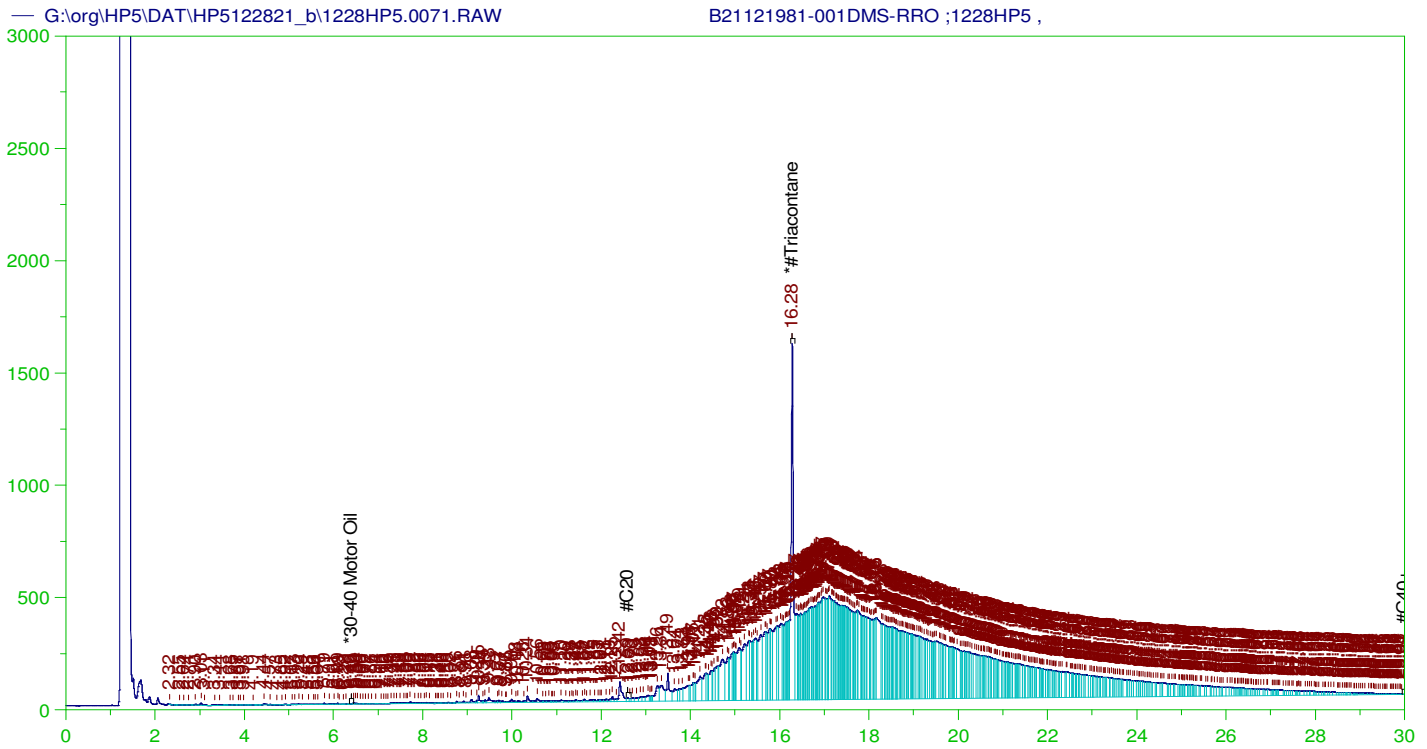
**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: LCS-162502-RRO ;1228HP5 ,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0070.RAW  
Date & Time Acquired: 12/30/2021 2:55:00 PM  
Method File: G:\Org\HP5\Methods\DS\_ORO-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL.CAL  
Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 12.56 to 30.05

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.278	.5	.108	21.53

RRO Area:5234014 RRO AMOUNT: 0.1833767



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121981-001DMS-RRO ;1228HP5 ,  
 Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0071.RAW  
 Date & Time Acquired: 12/30/2021 3:37:54 PM  
 Method File: G:\Org\HP5\Methods\D3\_ORO-AL-L%.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL.CAL  
 Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for for ~~Residual~~ TEH (Oil Range) Organics Calculations: 28542.41  
 Rt range for ~~Residual~~ TEH (Oil Range) Organics: 12.56 to 30.05

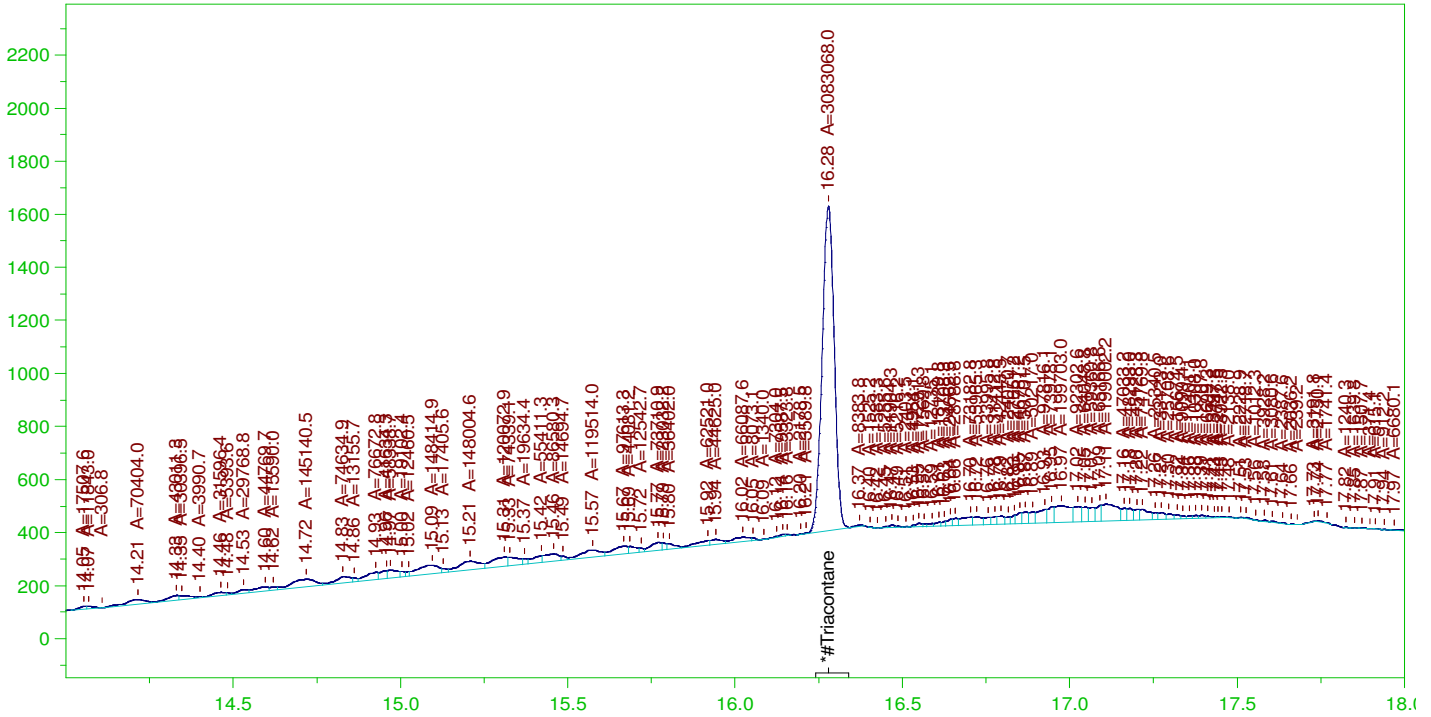
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.278	.481	.192	39.92	-

RRO TEH (Oil Range) Area:1.493006E+08 RRO TEH (Oil Range) AMOUNT: 5.029646

AMN 01/24/2022

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0071.RAW

B21121981-001DMS-RRO ;1228HP5 ,



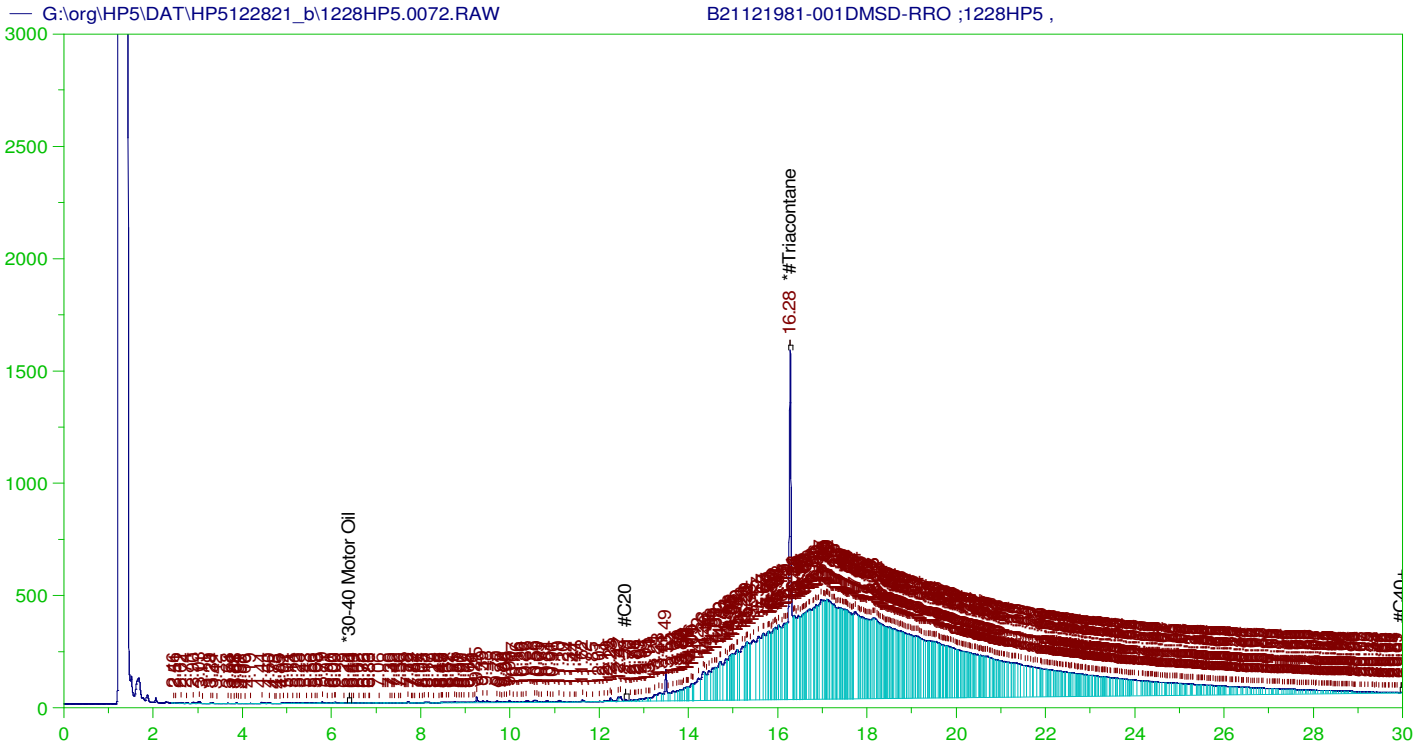
**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121981-001DMS-RRO ;1228HP5 ,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0071.RAW  
Date & Time Acquired: 12/30/2021 3:37:54 PM  
Method File: G:\Org\HP5\Methods\DS\_ORO-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL.CAL  
Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 12.56 to 30.05

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.278	.481	.102	21.31

RRO Area:4765949 RRO AMOUNT: 0.1605556



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B21121981-001DMSD-RRO ;1228HP5 ,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0072.RAW  
Date & Time Acquired: 12/30/2021 4:20:50 PM  
Method File: G:\Org\HP5\Methods\D3\_ORO-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL.CAL  
Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for for ~~Residual~~ TEH (Oil Range) Organics Calculations: 28542.41  
Rt range for ~~Residual~~ TEH (Oil Range) Organics: 12.56 to 30.05

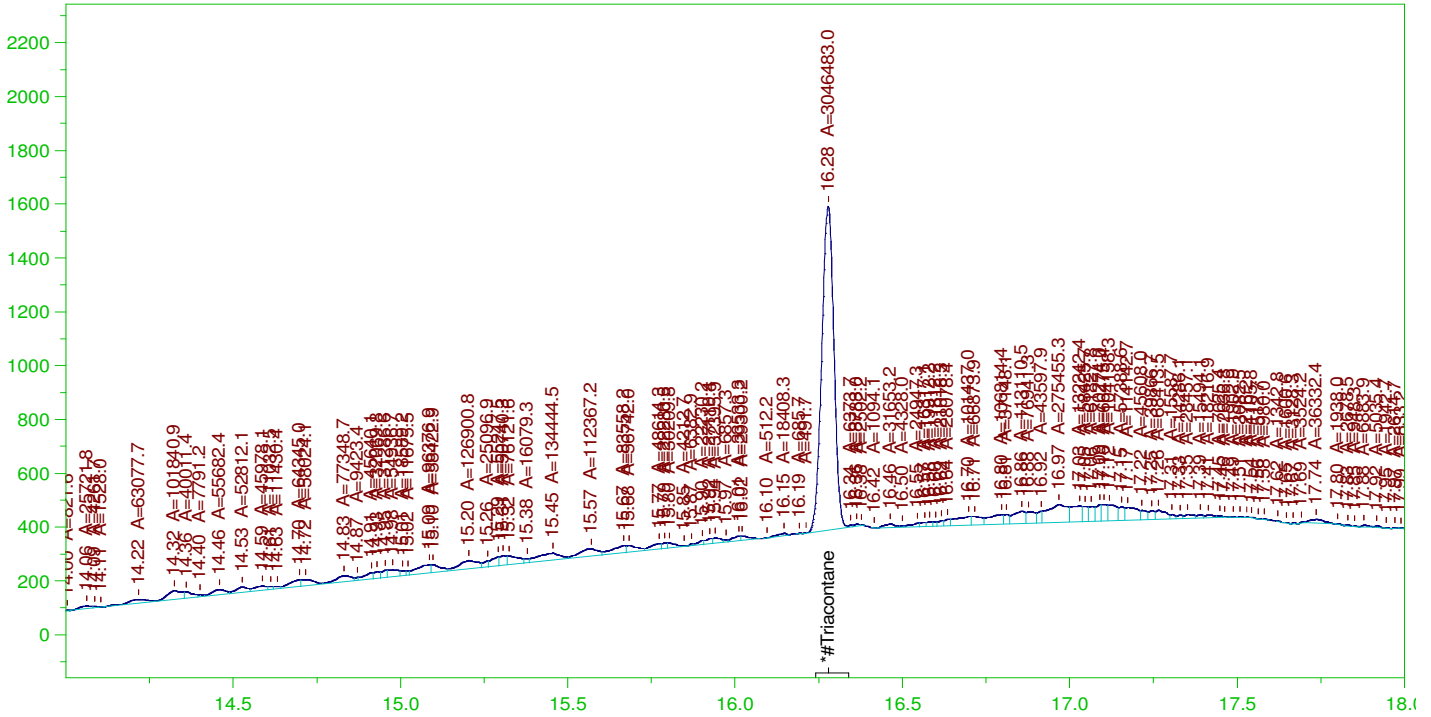
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.278	.481	.185	38.57	-

RRO TEH (Oil Range) Area:1.454959E+08 RRO TEH (Oil Range) AMOUNT: 4.901476

AMN 01/24/2022

G:\org\HP5\DAT\HP5122821\_b\1228HP5.0072.RAW

B21121981-001DMSD-RRO ;1228HP5 ,



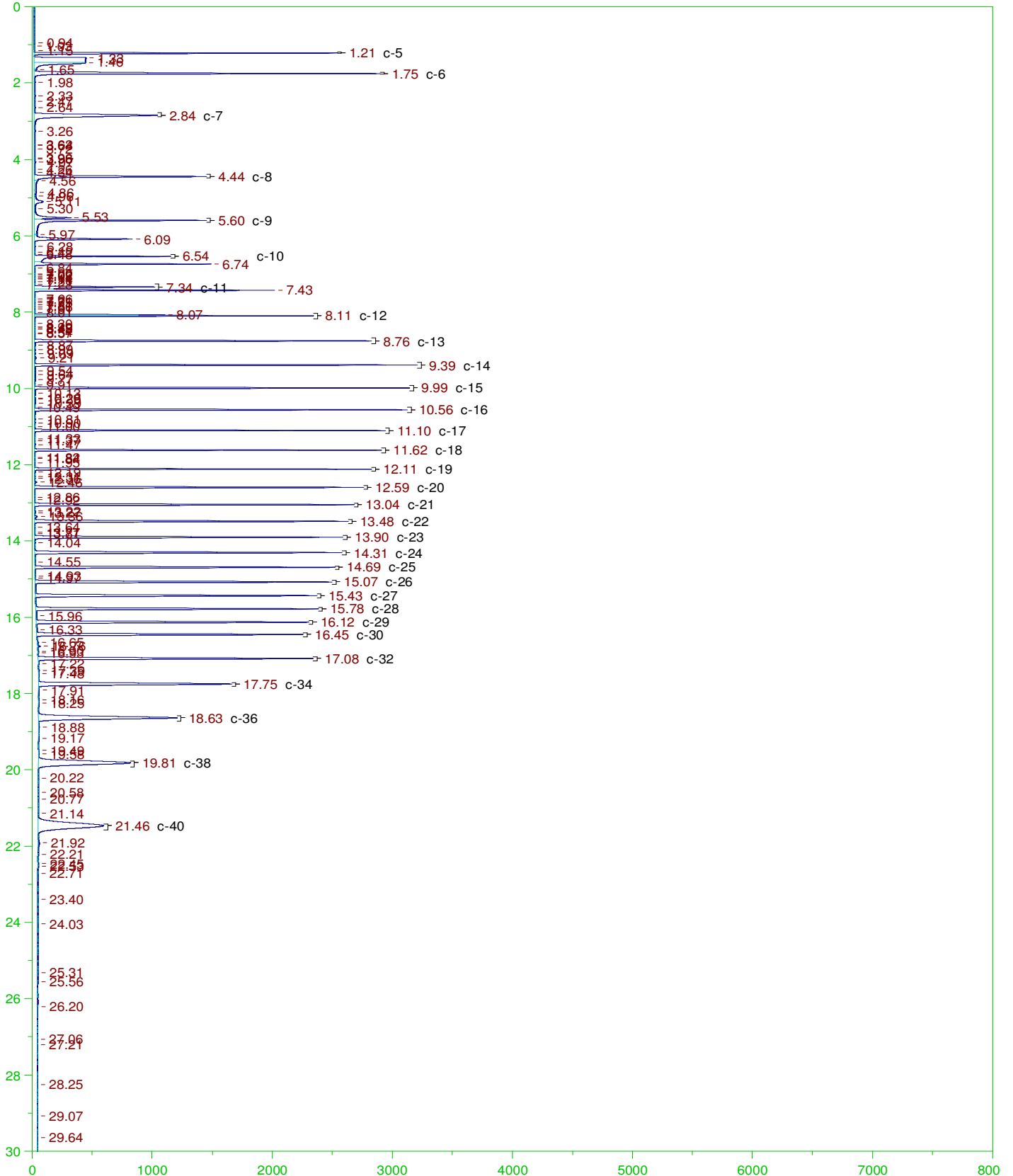
**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

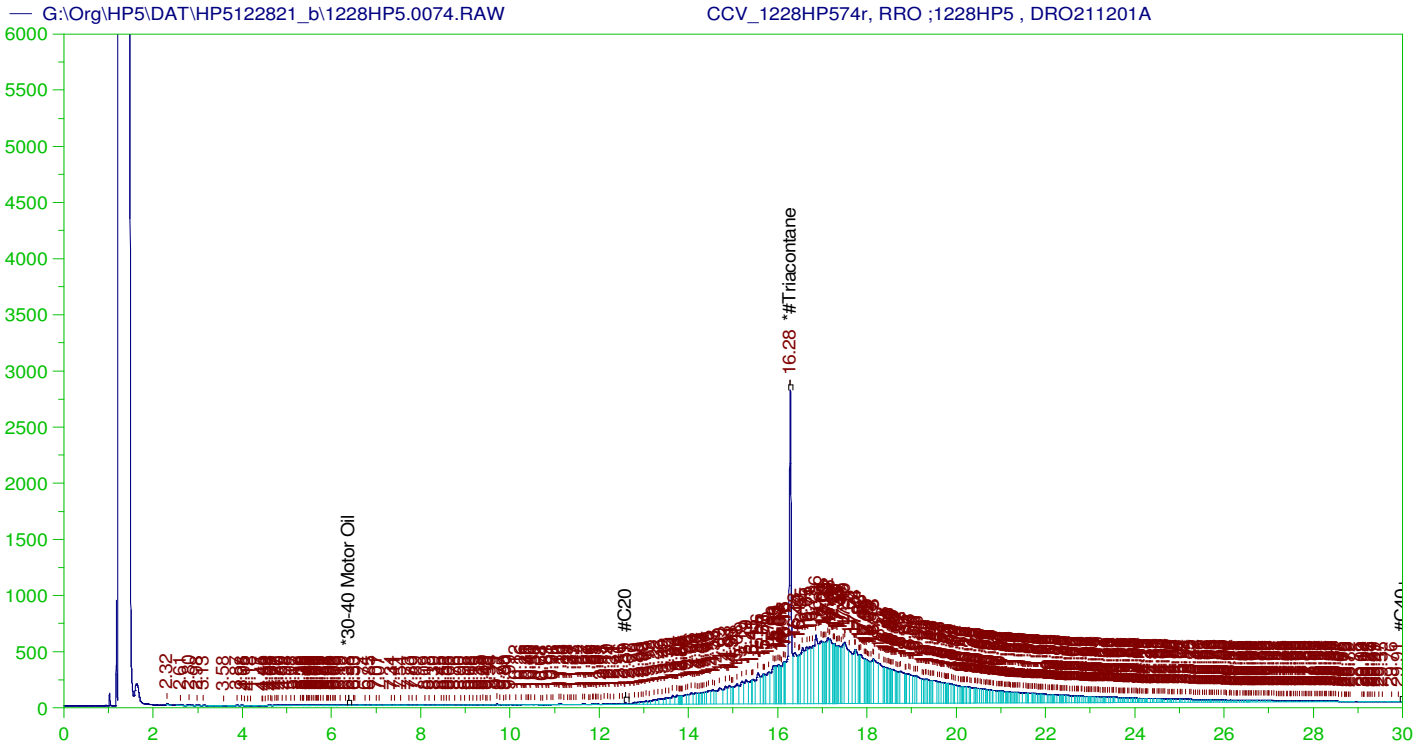
Sample Name: B21121981-001DMSD-RRO ;1228HP5 ,  
Raw File: G:\org\HP5\DAT\HP5122821\_b\1228HP5.0072.RAW  
Date & Time Acquired: 12/30/2021 4:20:50 PM  
Method File: G:\Org\HP5\Methods\DS\_ORO-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL.CAL  
Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 12.56 to 30.05

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.278	.481	.101	21.06

RRO Area:4613222 RRO AMOUNT: 0.1554105





**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: CCV\_1228HP574r, RRO ;1228HP5 , DRO211201A  
 Raw File: G:\Org\HP5\DAT\HP5122821\_b\1228HP5.0074.RAW  
 Date & Time Acquired: 12/30/2021 5:47:21 PM  
 Method File: G:\Org\HP5\Methods\DC\_ORO-AL-L%.MET  
 Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL.CAL  
 Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for for ~~Residual~~ TEH (Oil Range) Organics Calculations: 28542.41  
 Rt range for ~~Residual~~ TEH (Oil Range) Organics: 12.56 to 30.05

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.279	500.	348.774	69.75	-

RRO TEH (Oil Range) Area:1.33741E+08 RRO TEH (Oil Range) AMOUNT: 4685.692

CONTINUING CALIBRATION REPORT: G:\Org\HP5\DAT\HP5122821\_b\1228HP5.0074.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
*30-40 Motor Oil	5000.	.026	.	75-125

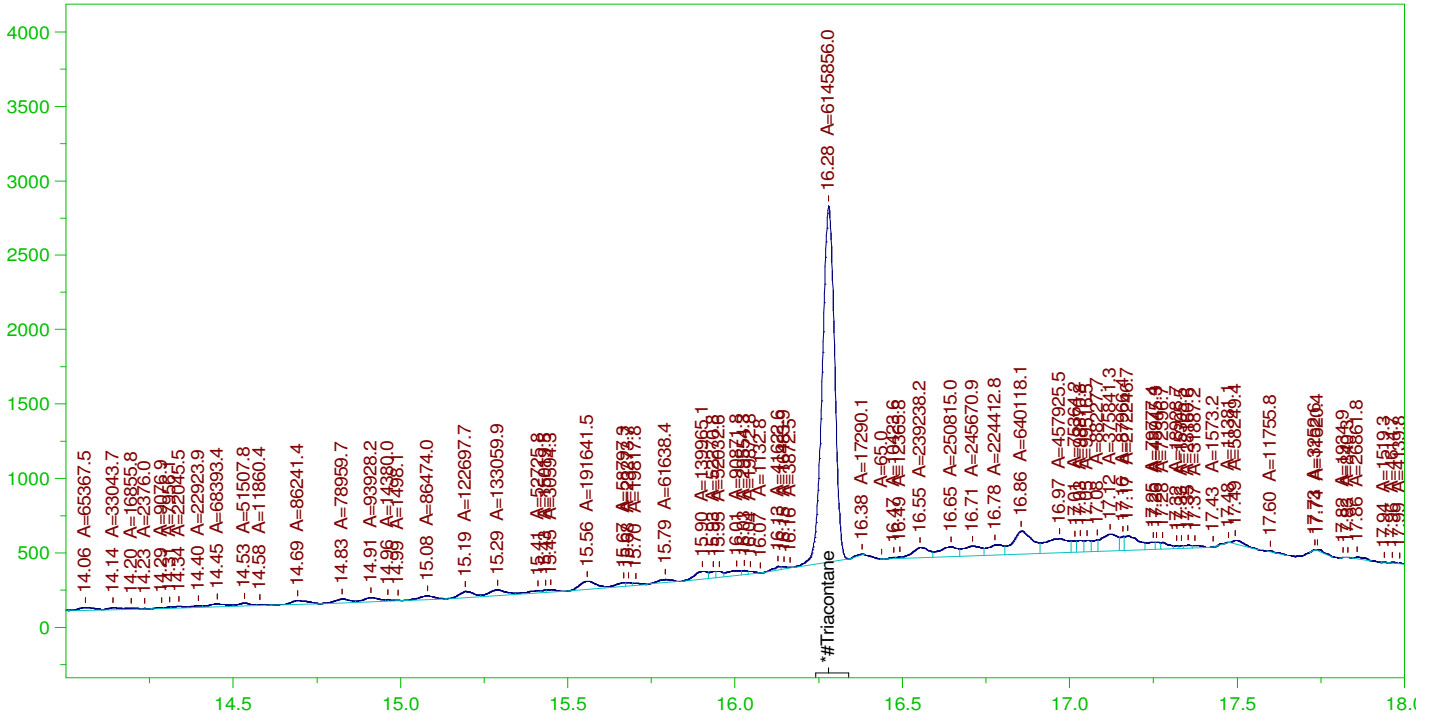
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*#Triacontane	16.279	200.	348.774	174.39	75-125

AMN 01/24/2022



G:\Org\HP5\DAT\HP5122821\_b\1228HP5.0074.RAW

CCV\_1228HP574r, RRO ;1228HP5 , DRO211201A



**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: CCV\_1228HP574r, RRO ;1228HP5 , DRO211201A  
Raw File: G:\Org\HP5\DAT\HP5122821\_b\1228HP5.0074.RAW  
Date & Time Acquired: 12/30/2021 5:47:21 PM  
Method File: G:\Org\HP5\Methods\DS\_ORO-AL-L%.MET  
Calibration File: G:\Org\HP5\Cals\SW8015C\_ORO211017AL.CAL  
Sample Weight: 1 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41  
Rt range for Residual Range Organics: 12.56 to 30.05

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.279	500.	212.438	42.49	-

RRO Area:6226063 RRO AMOUNT: 218.1338

CONTINUING CALIBRATION REPORT: G:\Org\HP5\DAT\HP5122821\_b\1228HP5.0074.RAW

COMPOUND	ACTUAL (NG)	MEASURED (NG)	%RECOVERY	LIMITS
*30-40 Motor Oil	5000.	.026	.	75-125

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	LIMITS
*#Triacontane	16.279	200.	212.438	106.22	75-125



G:\org\HP5\DAT\HP5122821_b11228HP5.58	B21121959-001D ;1228HP5 , \$HC-8015-DRO-W,	G:\Org\HP5\Methods\D3_8015-C24T-IM-L%.met G:\Org\HP5\Methods\D3_OROS-AL-L%.MET G:\Org\HP5\Methods\DS_8015-C24T-IM-LF.met	1000	1	1	1	0	The integration of Diesel Range Organics (C10-C24), C24-C40, and Total Extractable Hydrocarbons (TEH) is the hydrocarbon response with reference to the baseline. Surrogates are integrated using a valley to valley integration using Set Baseline All Valleys on at 10.78 minutes and X-axis scaling showing surrogate peak from 11-18 minutes.
G:\org\HP5\DAT\HP5122821_b11228HP5.59	DCM-Baseline Check-V59	G:\Org\HP5\Methods\DR_8015-IB-L-LEXP.met	1	1	1	1	0	No Integrations
G:\org\HP5\DAT\HP5122821_b11228HP5.60	B21121981-002B ;1228HP5 , \$HC-8015-DRO-W,	G:\Org\HP5\Methods\D3_8015-122860-IM-L%.met G:\Org\HP5\Methods\D3_OROS-122860-AL-L%.MET G:\Org\HP5\Methods\DS_8015-C24T-IM-LF.met	1050	1	1	1	0	The integration of Diesel Range Organics (C10-C24), C24-C40, and Total Extractable Hydrocarbons (TEH) is the hydrocarbon response with reference to the baseline with Set Baseline Now set at 26.4 minutes. Surrogates are integrated using a valley to valley integration using Set Baseline All Valleys on at 10.78 minutes and X-axis scaling showing surrogate peak from 11-18 minutes.
G:\org\HP5\DAT\HP5122821_b11228HP5.61	B21121981-003D ;1228HP5 , \$HC-8015-DRO-W,	G:\Org\HP5\Methods\DR_8015-122861-IM-L%.met G:\Org\HP5\Methods\D3_OROS-122861-AL-L%.MET G:\Org\HP5\Methods\DS_8015-C24T-IM-LF.met	1040	1	1	1	0	The integration of Diesel Range Organics (C10-C24), C24-C40, and Total Extractable Hydrocarbons (TEH) is the hydrocarbon response with reference to the baseline with Set Baseline Now set at 27.62 minutes. Surrogates are integrated using a valley to valley integration using Set Baseline All Valleys on at 10.78 minutes and X-axis scaling showing surrogate peak from 11-18 minutes.
G:\org\HP5\DAT\HP5122821_b11228HP5.62	DCM-Baseline Check-V62	G:\Org\HP5\Methods\DR_8015-IB-L-LEXP.met	1	1	1	1	0	No Integrations
G:\org\HP5\DAT\HP5122821_b11228HP5.63	B21121841-004B ;1228HP5 , \$HC-8015-DRO-W, RR-SGT	G:\Org\HP5\Methods\DR_8015-122861-IM-L%.met G:\Org\HP5\Methods\D3_OROS-122861-AL-L%.MET G:\Org\HP5\Methods\DS_8015-C24T-IM-LF.met	1000	1	1	1	0	The integration of Diesel Range Organics (C10-C24) and Total Extractable Hydrocarbons is the hydrocarbon response with reference to the baseline. Assigned Set Baseline Now at 27.62 minutes. Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 12.14 minutes and slightly after the surrogate peak at 12.31 minutes and X-axis scaling showing surrogate peak from 11.5-14 minutes.
G:\org\HP5\DAT\HP5122821_b11228HP5.64	B21121981-004D ;1228HP5 , \$HC-8015-DRO-W,	G:\Org\HP5\Methods\D3_8015-122864-IM-L%.met G:\Org\HP5\Methods\D3_OROS-122864-AL-L%.MET G:\Org\HP5\Methods\DS_8015-C24T-IM-LF.met	1010	1	1	1	0	The integration of Diesel Range Organics (C10-C24), C24-C40, and Total Extractable Hydrocarbons (TEH) is the hydrocarbon response with reference to the baseline with peak width adjusted. Surrogates are integrated using a valley to valley integration using Set Baseline All Valleys on at 10.78 minutes and X-axis scaling showing surrogate peak from 11-18 minutes.
G:\org\HP5\DAT\HP5122821_b11228HP5.65	B21121961-001D ;1228HP5 , \$HC-8015-DRO-W,	G:\Org\HP5\Methods\DR_8015-122843-IM-L%.met G:\Org\HP5\Methods\D3_OROS-122843-AL-L%.MET G:\Org\HP5\Methods\DS_8015-C24T-IM-LF.met	1010	1	1	1	0	The integration of Diesel Range Organics (C10-C24), C24-C40, and Total Extractable Hydrocarbons (TEH) is the hydrocarbon response with reference to the baseline with peak width adjusted. Surrogates are integrated using a valley to valley integration using Set Baseline All Valleys on at 10.78 minutes and X-axis scaling showing surrogate peak from 11-18 minutes.
G:\org\HP5\DAT\HP5122821_b11228HP5.66	Marker_1228HP566r_DRO ;1228HP5 , DRO211220B	G:\org\HP5\Methods\CSC211228.met	1	1	1	1	0	No Integrations
G:\org\HP5\DAT\HP5122821_b11228HP5.67	CCV_1228HP567r_RRO ;1228HP5 , DRO211201A	G:\Org\HP5\Methods\DC_ORO-AL-L%.MET G:\Org\HP5\Methods\DS_ORO-AL-L%.MET	1	1	1	1	0	The integration of Oil Range hydrocarbon is the hydrocarbon response with reference to the baseline. Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 16.18 minutes and X-axis scaling showing surrogate peak from 14-18 minutes.
G:\org\HP5\DAT\HP5122821_b11228HP5.68	CCV_1228HP568r_DRO ;1228HP5 , DRO211228A	G:\Org\HP5\Methods\DC_8015-24-IM-L%.met G:\Org\HP5\Methods\DS_8015-24-IM-LF.met	1	1	1	1	0	The integration of Diesel Range Organics (C10-C24) and Total Extractable Hydrocarbons is the hydrocarbon response with reference to the baseline. Assigned Set Baseline All Valley on at 16.83 minutes. Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 12.14 minutes and slightly after the surrogate peak at 12.31 minutes and X-axis scaling showing surrogate peak from 11.5-14 minutes.
G:\org\HP5\DAT\HP5122821_b11228HP5.69	DCM-Baseline Check-V69	G:\Org\HP5\Methods\DR_8015-IB-L-LEXP.met	1	1	1	1	0	No Integrations
G:\org\HP5\DAT\HP5122821_b11228HP5.70	LCS-162502-RRO ;1228HP5 ,	G:\Org\HP5\Methods\D3_ORO-AL-L%.MET G:\Org\HP5\Methods\DS_ORO-AL-L%.MET	1000	1	1	1	0	The integration of Oil Range hydrocarbon is the hydrocarbon response with reference to the baseline. Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 16.18 minutes slightly after the surrogate peak at 16.4 minutes and X-axis scaling showing surrogate peak from 14-18 minutes.
G:\org\HP5\DAT\HP5122821_b11228HP5.71	B21121981-001DMS-RRO ;1228HP5 ,	G:\Org\HP5\Methods\D3_ORO-AL-L%.MET G:\Org\HP5\Methods\DS_ORO-AL-L%.MET	1040	1	1	1	0	The integration of Oil Range hydrocarbon is the hydrocarbon response with reference to the baseline. Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 16.18 minutes slightly after the surrogate peak at 16.4 minutes and X-axis scaling showing surrogate peak from 14-18 minutes.
G:\org\HP5\DAT\HP5122821_b11228HP5.72	B21121981-001DMS-RRO ;1228HP5 ,	G:\Org\HP5\Methods\D3_ORO-AL-L%.MET G:\Org\HP5\Methods\DS_ORO-AL-L%.MET	1040	1	1	1	0	The integration of Oil Range hydrocarbon is the hydrocarbon response with reference to the baseline. Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 16.18 minutes slightly after the surrogate peak at 16.4 minutes and X-axis scaling showing surrogate peak from 14-18 minutes.
G:\org\HP5\DAT\HP5122821_b11228HP5.73	Marker_1228HP573r_DRO ;1228HP5 , DRO211220B	G:\org\HP5\Methods\CSC211228.met	1	1	1	1	0	No Integrations
G:\org\HP5\DAT\HP5122821_b11228HP5.74	CCV_1228HP574r_RRO ;1228HP5 , DRO211201A	G:\Org\HP5\Methods\DC_ORO-AL-L%.MET G:\Org\HP5\Methods\DS_ORO-AL-L%.MET	1	1	1	1	0	The integration of Oil Range hydrocarbon is the hydrocarbon response with reference to the baseline. Surrogates are integrated using a valley to valley integration using Set Baseline Now placed slight before at 16.18 minutes slightly after the surrogate peak at 16.4 minutes and X-axis scaling showing surrogate peak from 14-18 minutes.

*Ann Nebel*

Digitally signed by  
Ann Nebel  
Date: 2022.01.24 14:26:06 -07:00

# Energy Laboratories Inc

# Spike LOG

Standard ID: DRO211101A  
Standard Name: OTP-4000 ug/mL DCM  
Date Prepared: 11/1/2021  
Date Expires: 9/30/2024  
Department: dropr  
Vendor:  
Lot Number:  
Balance ID: BAL-DRO  
Comments: Used to Prep DRO-8015 ICAL and CCV Solutions

Type: Secondary  
BY: Ann Nebel  
Status: Open

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Dichloromethane EC328	14408	25	mL	8/19/

**Final Volume:** 25 mL

Stock Source

DRO200430B O-Terphenyl

**Base Units**

ug/mL

**Amount Added**

0.1012 g

Analtes

A O-Terphenyl

**CAS**

84-15-1

Conc:

**ug/mL**

4000

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO200430B  
Standard Name: O-Terphenyl  
Date Prepared: 4/30/2020  
Date Expires: 9/30/2024  
Department: dropr  
Vendor: Chemservice  
Lot Number: 9972100  
Balance ID:  
Comments: ID#: 6271

Type: Neat  
BY: Ann Nebel  
Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
o-Terphenyl	12650	500	mg	9/30/

Final Volume: mL

Stock Source

**Base Units**

**Amount Added**

Analtes

**CAS**

Conc: ug/mL

A O-Terphenyl

84-15-1

1

660 Tower Lane • P.O. Box 599 • West Chester, PA 19381-0599  
1-800-452-9994 • 1-610-692-3026 • Fax 1-610-692-8729  
[info@chemservice.com](mailto:info@chemservice.com) • [www.chemservice.com](http://www.chemservice.com)

## CERTIFICATE OF ANALYSIS

### o-Terphenyl

CATALOG NUMBER N-12693-500MG  
LOT NUMBER 9972100  
DATE CERTIFIED 09/23/19  
EXPIRATION DATE 09/30/24  
CAS NUMBER 84-15-1  
MOLECULAR FORMULA C18H14  
MOLECULAR WEIGHT 230.32  
STORAGE Store in a cool dry place.  
HANDLING See Safety Data Sheet  
INTENDED USE For laboratory use only.

Analytical Test	Value
FT-IR SPECTROSCOPY	CONFORMS TO STRUCTURE
GC/MS SPECTRA ID	MATCHES NIST DATABASE
MELTING POINT (°C)	57.1
% PURITY (GC/FID)	99.5

Chem Service, Inc. guarantees the purity to be +/- 0.5% deviation prior to the expiration date shown on the label and exclusive of any customer contamination.

Certified By:

*Mary Beth O'Donnell*

Mary Beth O'Donnell  
CSM/TC

ID #: 12650

Opened: \_\_\_\_\_

o-Terphenyl

Expires: 9/30/2024

Rec'd: 4/30/2020

Energx Laboratories Inc 1120 So. 27th Street  
Billings MT 59107

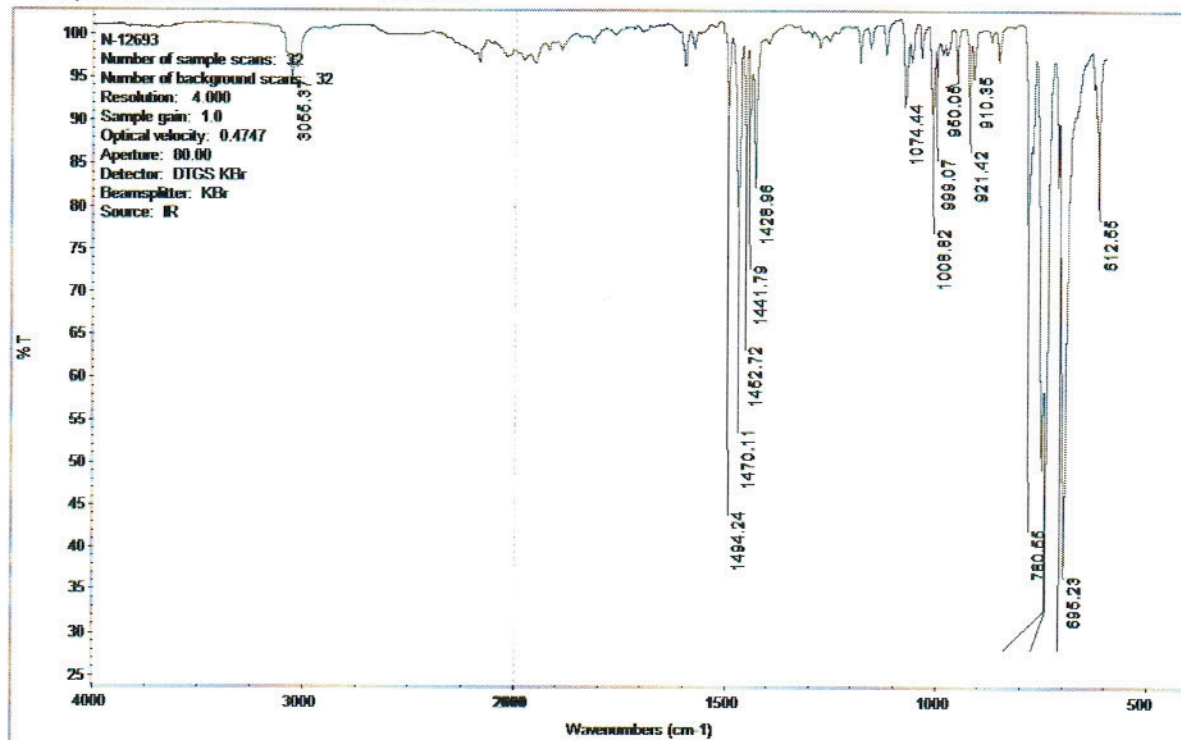
Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 9972100  
Expiration Date: 09/30/24



Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 9972100  
Expiration Date: 09/30/24

Chem Service Inc      Area Percent Report

Data File: D:\msdchem\2019 DATA\0919\0923-01.D  
Acq On : 23 Sep 2019 10:40  
Operator :  
Sample : n-12693  
Misc :  
ALS Vial : 95

Integration Parameters: autoint1.e  
Integrator: ChemStation

DataAcq Meth: SCREEN.M  
Method : D:\msdchem\2019 DATA\0919\0903-09.D\ERIN.M

Signal : TIC: 0923-01.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	11.844	1597	1606	1613	BB	32038221	432253484	100.00%	100.000%

Sum of corrected areas: 432253484

ERIN.M Mon Sep 23 10:55:51 2019



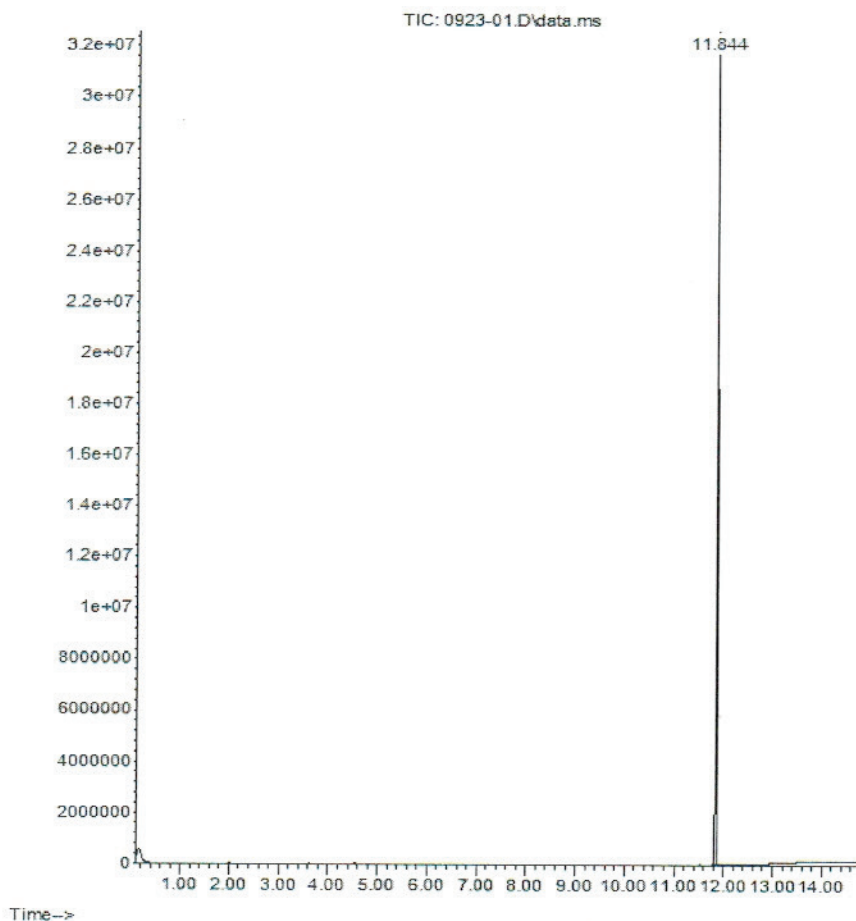
660 Tower Lane • P.O. Box 599 • West Chester, PA 19381-0599  
1-800-452-9994 • 1-610-692-3026 • Fax 1-610-692-8729  
[info@chemservice.com](mailto:info@chemservice.com) • [www.chemservice.com](http://www.chemservice.com)

## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 9972100  
Expiration Date: 09/30/24

Abundance



Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015

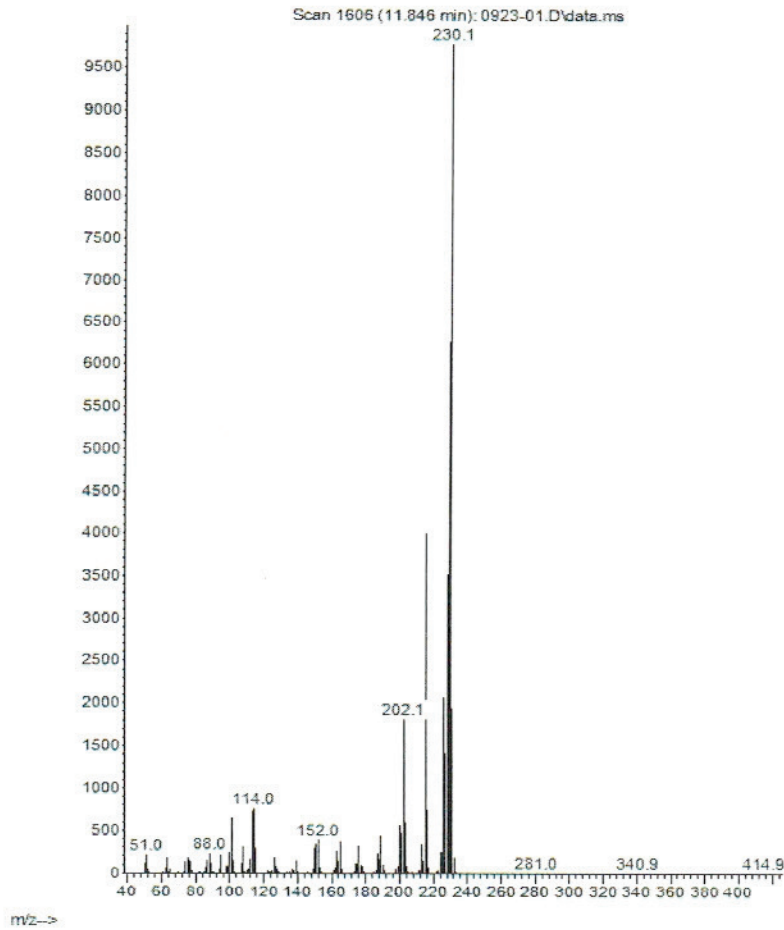


## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 9972100  
Expiration Date: 09/30/24

Abundance



Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015.



660 Tower Lane • P.O. Box 599 • West Chester, PA 19381-0599  
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[info@chemservice.com](mailto:info@chemservice.com) • [www.chemservice.com](http://www.chemservice.com)

## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number:	N-12693-500MG
Description:	o-Terphenyl
Lot Number:	9972100
Expiration Date:	09/30/24

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



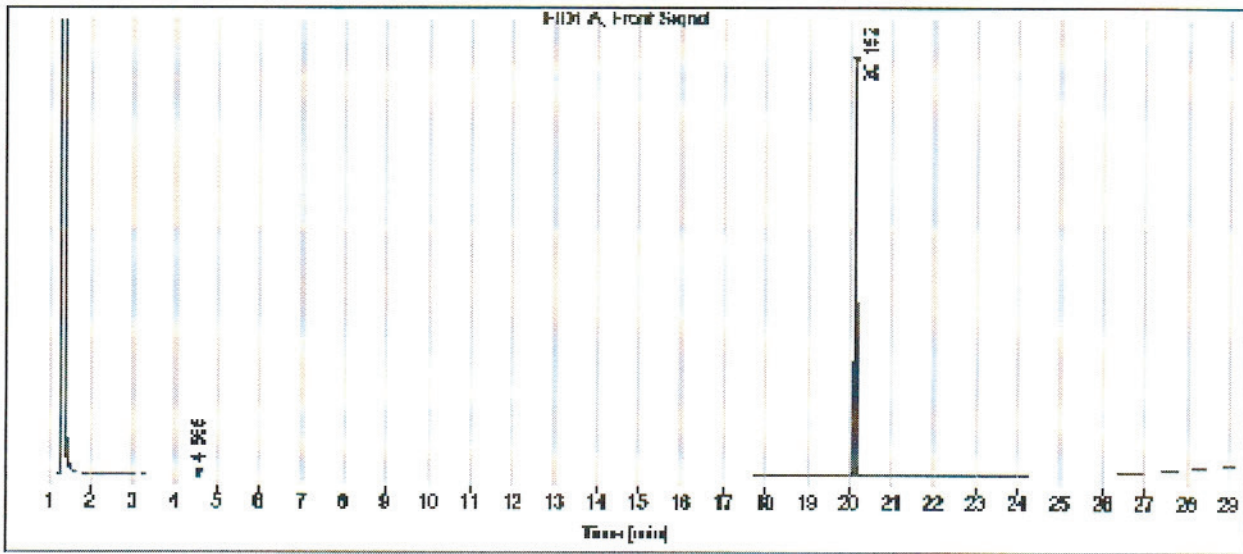
660 Tower Lane • P.O. Box 599 • West Chester, PA 19381-0599  
 1-800-452-9994 • 1-610-692-3026 • Fax 1-610-692-8729  
[info@chemservice.com](mailto:info@chemservice.com) • [www.chemservice.com](http://www.chemservice.com)

Gas

Data file: C:\CHEM3\  
 Sample name: N-12893  
 Instrument: GC 2  
 Injection date: 8/23/2019 9:58:34 AM  
 Acq. method: SCREEN.M  
 Column name: HP-5

## CERTIFICATE OF ANALYSIS

Location: Vial 141  
 Injection volume: 1.0uL



Signal: FID1 A, Front Signal

RT [min]	Type	Width [min]	Area	Height	Area%
4.565	BB	0.0305	1.2408	0.5122	0.11
20.152	BB	0.0391	1171.9556	439.4599	99.89
		Sum	1173.1963		

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO211012A  
Standard Name: Diesel Fuel #2 50,000 ug/mL in DCM  
Date Prepared: 10/12/2021  
Date Expires: 4/30/2023  
Department: dropr  
Vendor: Sigma-Aldrich  
Lot Number: LRAC6316  
Balance ID:  
Comments: Diesel Fuel #2 For CCVs.

Type: Primary  
BY: Ann Nebel  
Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Diesel Fuel No. 2	14376	1	mL	4/30/

Final Volume: mL

**Stock Source**

**Base Units**

**Amount Added**

**Analtes**

**CAS**

Conc: ug/mL

Diesel Fuel #2

0

# Certificate of Analysis

Certified  
Reference  
Material

Diesel Fuel No. 2

## Description

Product ID UST148  
Lot LRAC6316  
Expiration Date April 2023  
Manufacturing Date April 2020  
Storage Conditions Room Temperature  
Solvent/Matrix DICHLOROMETHANE

ID #: 14376

Opened: \_\_\_\_\_

Diesel Fuel No. 2

Expires: 4/30/2023

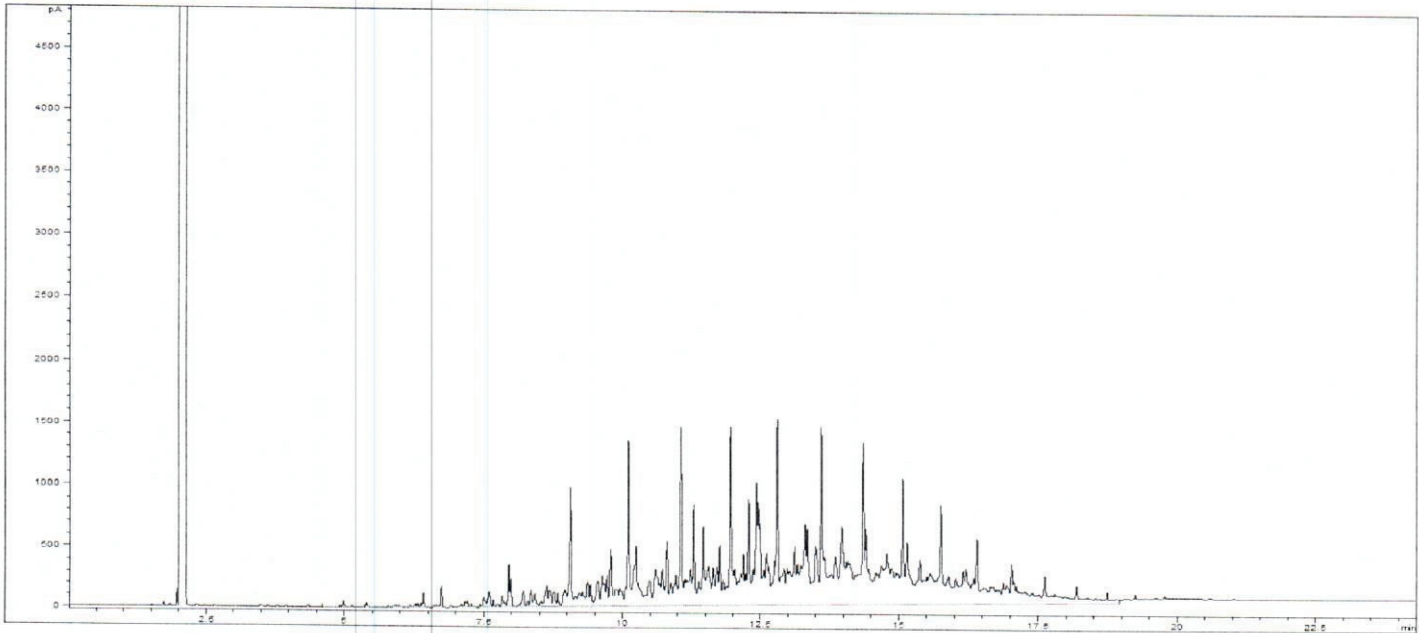
Rec'd: 10/12/2021

Energy Laboratories Inc 1120 So. 27th Street  
Billings MT 59107

## Certified Values

Analyte	Certified Value <sup>1,4</sup>	Units	Raw Material Purity,%	Raw Material Lot	CAS
NO.2 FUEL OIL	50001 ± 2770	µg/mL	100.0	LA80505	68476-34-6

## Informational Values



## Additional Information:

Analytical Method Parameters:

Column: SPB-5, 30 m × 0.53 mm I.D., 1.5 µm film thickness (Column #214)

Carrier Gas: H<sub>2</sub>, Flow: 4.0 mL/min

Inlet Temperature: 250 °C, Injection Volume: 1.0 µL

Injection Mode: Split, Split Ratio: 10:1

Temperature Program: 40 °C (Hold 2 min) @ 15 °C/min to 300 °C (Hold 5 min)

Detector: FID

Detector Temperature: 300 °C



**SIGMA-ALDRICH®**

2931 Soldier Springs Rd. Laramie, Wyoming 82070 USA  
800-325-5832

TechService@milliporesigma.com www.sigma-aldrich.com

## Description

Lot **LRAC6316**  
Expiration Date April 2023  
Manufacturing Date April 2020  
Storage Conditions Room Temperature  
Solvent/Matrix DICHLOROMETHANE

**1 Metrological traceability:** Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.  
**4 Ucrm - Uncertainty values** in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a t-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:

$$u_{CRM} = \sqrt{u_{char}^2 + u_{homogeneity}^2 + u_{stability}^2}$$

**k:** Coverage factor derived from a t-distribution table, based on the degrees of freedom of the data set. Assume 2.0 for a **Confidence interval = 95%**

**6 Analytical Value-** For QC verification of the certified value only- not to be used in calculations. Represents the analytical data obtained by comparison to a standard as analyzed by the method described in the CoA or another acceptable method. The result may differ from the certified value and UCRM based on method uncertainty as well as the uncertainty associated with the standard used for comparison.

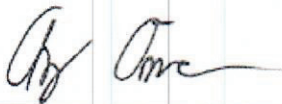
**Traceability:** The standard was manufactured under an ISO/IEC 17025:2017 certified quality system. The balance used to weigh raw materials is accurate to +/- 0.0001g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

**Homogeneity:** Homogeneity was assessed in accordance with ISO 17034:2016. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared using a one-way analysis of variance approach as described by TNI EL-V3-2009 Appendix A.2. See Instructions for minimum sub-sample size.

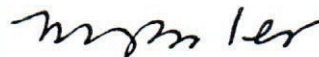
Expiration is at end of month given on certificate and label.

MSDS reports for components comprising greater than 1.0% of the solution or 0.1% for components known to be carcinogens are available upon request.

**THIS PRODUCT WAS DESIGNED, PRODUCED AND VERIFIED FOR ACCURACY AND STABILITY IN ACCORDANCE WITH ISO/IEC 17025:2017 (ANAB Cert AT-1467) and ISO 17034:2016 (ANAB Cert AR-1470).**



Andy Ommen - QC Manager



Mark Pooler - QA Supervisor

**Certification Date** April 30, 2020  
**Version** 0-4302020



# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO180918C  
Standard Name: 50,000 ug/mL Oil Std For AK103 RRO-In DC  
Date Prepared: 9/18/2018  
Date Expires: 8/31/2025  
Department: dropr  
Vendor: Restek  
Lot Number: A0140080  
Balance ID: Sartorius 4 place balance

Type: Primary  
BY: Ann Nebel  
Status: Open

Comments:

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Residual Range Calibration Standard	10787	1	mL	8/31/

Final Volume: 1 mL

Stock Source

Base Units

Amount Added

Analtes

CAS

Conc: ug/mL





# CERTIFIED REFERENCE MATERIAL

110 Benner Circle  
Bellefonte, PA 16823-8812  
Tel: (800)356-1688  
Fax: (814)353-1309

www.restek.com

## Certificate of Analysis



### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

*This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.*

Catalog No. : 31817 Lot No.: A0140080

Description : Residual Range Calibration Standard (RCS)

Residual Range Calib Std (RCS) 50,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL Pkg Amt: > 1 mL

Expiration Date : August 31, 2025 Storage: 25°C nominal

### CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Motor Oil SAE30 & SAE40 Blend (Pennzoil) CAS # 64742-65-0.F (Lot A0126386) Purity ----%	50,113.0 µg/mL	+/- 293.4226	µg/mL	Gravimetric
			+/- 1,492.4284	µg/mL	Unstressed
			+/- 1,591.6738	µg/mL	Stressed

Solvent: Methylene chloride  
CAS # 75-09-2  
Purity 99%

ID #: 10787  
Opened: \_\_\_\_\_  
Residual Range Calibration Standard  
Expires: 8/31/2025  
Rec'd: 9/18/2018  
Eneray Laboratories Inc 1120 So. 27th Street  
Billings MT 59107

**Column:**  
30m x 0.25mm x 0.25µm  
Rtx-5 (cat.#10223)

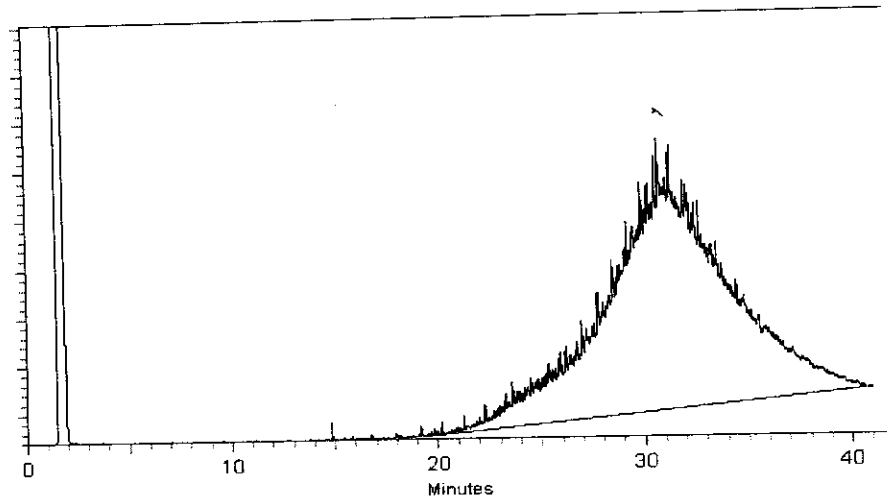
**Carrier Gas:**  
hydrogen-constant pressure 10 psi.

**Temp. Program:**  
40°C (hold 2 min.) to 330°C  
@ 10°C/min. (hold 10 min.)

**Inj. Temp:**  
250°C

**Det. Temp:**  
330°C

**Det. Type:**  
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

*Brandon Reish*  
Brandon Reish - Mix Technician

Date Mixed: 28-Jul-2018

Balance: B345965662

*Diane Shaffer*  
Diane Shaffer - Operations Tech-ARM QC

Date Passed: 30-Jul-2018

Manufactured under Restek's ISO 9001:2015  
Registered Quality System  
Certificate #FM 80397

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO211006A  
Standard Name: Triacontane SURR 2000 ug/mL  
Date Prepared: 10/6/2021  
Date Expires: 4/6/2026  
Department: dropr  
Vendor:  
Lot Number:  
Balance ID: BAL-DRO  
Comments: Triacontane SURR 2000 ug/mL

Type: Secondary  
BY: Jillian L Bostwick  
Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Acetone DZ509	13553	50	mL	7/22/

**Final Volume:** 50 mL

Stock Source  
DRO210406A Triacontane-d62 Surr For AK103 RRO

**Base Units**  
ug/mL

**Amount Added**  
0.1001 g

Analtes  
A Triacontane-d62

**CAS**

Conc: **ug/mL**  
2000

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO210406A  
Standard Name: Triacontane-d62 Surr For AK103 RRO  
Date Prepared: 4/6/2021  
Date Expires: 4/6/2026  
Department: dropr  
Vendor: Sigma-Aldrich  
Lot Number: MBBC4347  
Balance ID:  
Comments: Alaska surr [for AK103 RRO]

Type: Neat  
BY: Ann Nebel  
Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Triacontane-d62-98 atom % D	13736		mL	4/6/2026

Final Volume: mL

Stock Source

**Base Units**

**Amount Added**

Analtes

**CAS**

Conc: ug/mL

A Triacontane-d62

1

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)

Email USA: [techserv@sial.com](mailto:techserv@sial.com)

Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

## Certificate of Analysis

Product Name:  
Triacontane-d62 - 98 atom % D

Product Number: 451789  
 Batch Number: MBBC4347  
 Brand: ALDRICH  
 CAS Number: 93952-07-9  
 MDL Number: MFCD00209794  
 Formula: C30D62  
 Formula Weight: 485.20 g/mol  
 Quality Release Date: 27 APR 2018



ID #: 13736

Opened: \_\_\_\_\_

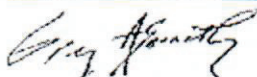
Triacontane-d62-98 atom % D

Expires: 4/6/2026

Rec'd: 4/6/2021

Energx Laboratories Inc 1120 So. 27th Street  
 Billings MT 59107

Test	Specification	Result
Purity (HPLC)	≥ 99.0 %	99.0 %
Proton NMR Spectrum	Conforms to Structure	Conforms
D Enrichment	≥ 98.0 %	99.0 %
Initial Melting Point		60.0 °C
Final Melting Point		62.0 °C



Greg Abernathy, Supervisor  
 Quality Control  
 Miamisburg, Ohio US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO211012B  
Standard Name #2 Diesel in Acetone 150,000 ug/mL Type: Secondary  
Date Prepared 10/12/2021 BY: Ann Nebel  
Date Expires: 11/5/2023  
Department dropr Status: New  
Vendor:  
Lot Number:  
Balance ID: BAL-DRO  
Comments: #2 Diesel in Acetone 150,000 ug/mL.

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Acetone EA662	14050	25	mL	1/7/2

**Final Volume:** 25 mL

**Stock Source**

DRO181105A #2 Diesel (NEAT)

**Base Units**

ug/mL

**Amount Added**

3.7507 g

**Analtes**

A #2 Diesel

**CAS**

68476-34-6

Conc:

**ug/mL**

150000

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO181105A  
Standard Name #2 Diesel (NEAT) Type: Neat  
Date Prepared 11/5/2018 BY: Ann Nebel  
Date Expires: 11/5/2023  
Department dropr Status: New  
Vendor: conoco  
Lot Number:  
Balance ID:  
Comments: -18 Cloud peak. (Conoco Gas Sation 1240 S. 27th Billings, MT) 2nd Source

---

<u>Stock Source</u>	<u>Base Units</u>	<u>Final Volume:</u>	<u>Amount Added</u>
<u>Analvtes</u>	<u>CAS</u>	250 mL	
A #2 Diesel	68476-34-6	Conc:	ug/mL 1

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO210217A  
 Standard Name: 20,000 ug/mL Oil Std For AK103 RRO-In DC  
 Date Prepared: 2/17/2021  
 Date Expires: 8/23/2021  
 Department: dropr  
 Vendor:  
 Lot Number:  
 Balance ID: Sartorius 4 place balance  
 Type: Secondary  
 BY: Ann Nebel  
 Status: Expired  
 Comments:

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Dichloromethane EA342	13510	25	mL	11/17

**Final Volume:** 25 mL

<u>Stock Source</u>	<u>Base Units</u>	<u>Amount Added</u>
DRO160823C 30W Motor Oil-Valvoline	ug/mL	0.2501 g
DRO160823D 40W Motor Oil-Valvoline	ug/mL	0.2527 g

<u>Analtes</u>	<u>CAS</u>	<u>Conc:</u>	<u>ug/mL</u>
A 30W Motor Oil			10000
A 30W-Motor oil			0
A 40W Motor Oil			10000
A 40W-Motor oil			0



# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO160823C  
 Standard Name: 30W Motor Oil-Valvoline  
 Date Prepared: 8/23/2016  
 Date Expires: 8/23/2021  
 Department: dropr  
 Vendor:  
 Lot Number:  
 Balance ID:  
 Comments: Used to make 2nd Source Standard for AK103 method.

Type: Primary  
 BY: Todd C Cooper  
 Status: Expired

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Valvoline SAE 30 Motor Oil	8637		mL	8/23/

Final Volume: mL

Stock Source

Base Units

Amount Added

Analtes

CAS

Conc: ug/mL

A 30W-Motor oil

1

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO160823D  
Standard Name: 40W Motor Oil-Valvoline  
Date Prepared: 8/23/2016  
Date Expires: 8/23/2021  
Department: dropr  
Vendor:  
Lot Number:  
Balance ID:  
Type: Primary  
BY: Todd C Cooper  
Status: Expired  
Comments: Used to Make 2nd Source Standards For Alaska AK103 RRO Method

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Valvoline SAE 40 Motor Oil	8638		mL	8/23/

Final Volume: mL

Stock Source

**Base Units**

**Amount Added**

Analtes

**CAS**

Conc: ug/mL

A 40W-Motor oil

1

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO211220A  
 Standard Name: 8015 CCV-15,000ug/mL + 200 OTP  
 Date Prepared: 12/20/2021  
 Date Expires: 4/30/2023  
 Department: dropr  
 Vendor:  
 Lot Number:  
 Balance ID:  
 Comments: 8015DRO CCV MIX-15,000ug/mL +200 OTP #2 Diesel

Type: Secondary  
 BY: Ann Nebel  
 Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Dichloromethane EC757	14596	2.6	mL	10/20

**Final Volume:** 4 mL

<u>Stock Source</u>	<u>Base Units</u>	<u>Amount Added</u>
DRO211101A OTP-4000 ug/mL DCM	ug/mL	0.2 mL
DRO211102B Diesel Fuel #2 50,000 ug/mL in DCM	ug/mL	1.2 mL

<u>Analtes</u>	<u>CAS</u>	<u>Conc:</u>	<u>ug/mL</u>
A #2 Diesel			15000
Diesel Fuel #2			0
A O-Terphenyl	84-15-1		200

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO211102B  
Standard Name Diesel Fuel #2 50,000 ug/mL in DCM Type: Primary  
Date Prepared 11/2/2021 BY: Ann Nebel  
Date Expires: 4/30/2023  
Department dropr Status: New  
Vendor: Sigma-Aldrich  
Lot Number: LRAC6316  
Balance ID:  
Comments: Diesel Fuel #2 For CCVs.

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Diesel Fuel No. 2	14478	1	mL	4/30/

Final Volume: mL

**Stock Source**

**Base Units**

**Amount Added**

**Analtes**

**CAS**

Conc: ug/mL

Diesel Fuel #2

0

# Certificate of Analysis

Diesel Fuel No. 2

Certified  
Reference  
Material

## Description

Product ID UST148  
Lot LRAC6316  
Expiration Date April 2023  
Manufacturing Date April 2020  
Storage Conditions Room Temperature  
Solvent/Matrix DICHLOROMETHANE

ID #: 14478

Opened: \_\_\_\_\_

Diesel Fuel No. 2

Expires: 4/30/2023

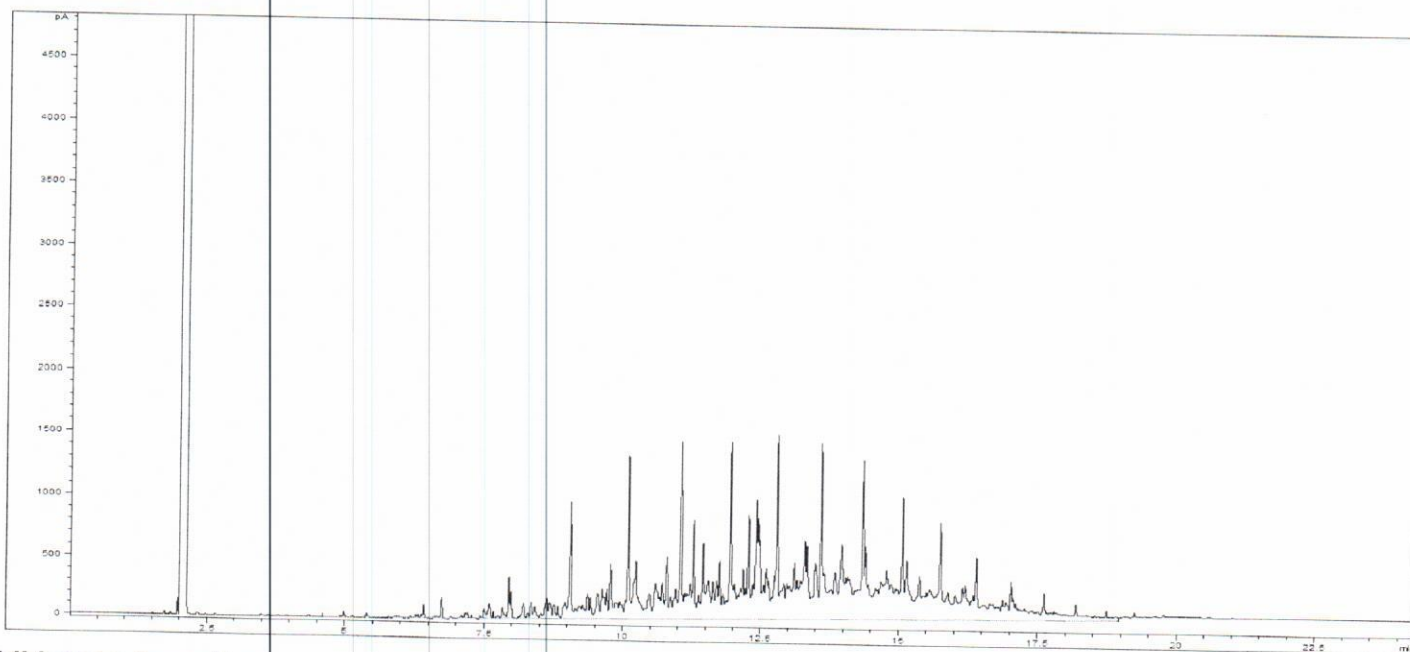
Rec'd: 11/2/2021

Energex Laboratories Inc 1120 So. 27th Street  
Billings MT 59107

## Certified Values

Analyte	Certified Value <sup>1,4</sup>	Units	Raw Material Purity, %	Raw Material Lot	CAS
NO.2 FUEL OIL	50001 ± 2770	µg/mL	100.0	LA80505	68476-34-6

## Informational Values



## Additional Information:

Analytical Method Parameters:

Column: SPB-5, 30 m × 0.53 mm I.D., 1.5 µm film thickness (Column #214)

Carrier Gas: H<sub>2</sub>, Flow: 4.0 mL/min

Inlet Temperature: 250 °C, Injection Volume: 1.0 µL

Injection Mode: Split, Split Ratio: 10: 1

Temperature Program: 40 °C (Hold 2 min) @ 15 °C/min to 300 °C (Hold 5 min)

Detector: FID

Detector Temperature: 300 °C



**SIGMA-ALDRICH**

2931 Soldier Springs Rd. Laramie, Wyoming 82070 USA  
800-325-5832  
TechService@milliporesigma.com www.sigma-aldrich.com

# Description

Lot **LRAC6316**  
Expiration Date April 2023  
Manufacturing Date April 2020  
Storage Conditions Room Temperature  
Solvent/Matrix DICHLOROMETHANE

**1 Metrological traceability:** Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

**4 Ucrm - Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a t-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:**

$$u_{CRM} = \sqrt{u_{char}^2 + u_{homogeneity}^2 + u_{stability}^2}$$

**k:** Coverage factor derived from a t-distribution table, based on the degrees of freedom of the data set. Assume 2.0 for a **Confidence interval = 95%**

**6 Analytical Value-** For QC verification of the certified value only- not to be used in calculations. Represents the analytical data obtained by comparison to a standard as analyzed by the method described in the CoA or another acceptable method. The result may differ from the certified value and UCRM based on method uncertainty as well as the uncertainty associated with the standard used for comparison.

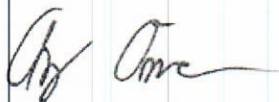
**Traceability:** The standard was manufactured under an ISO/IEC 17025:2017 certified quality system. The balance used to weigh raw materials is accurate to +/- 0.0001g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

**Homogeneity:** Homogeneity was assessed in accordance with ISO 17034:2016. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared using a one-way analysis of variance approach as described by TNI EL-V3-2009 Appendix A.2. See Instructions for minimum sub-sample size.

Expiration is at end of month given on certificate and label.

MSDS reports for components comprising greater than 1.0% of the solution or 0.1% for components known to be carcinogens are available upon request.

THIS PRODUCT WAS DESIGNED, PRODUCED AND VERIFIED FOR ACCURACY AND STABILITY IN ACCORDANCE WITH **ISO/IEC 17025:2017 (ANAB Cert AT-1467)** and **ISO 17034:2016 (ANAB Cert AR-1470)**.



Andy Ommen - QC Manager



Mark Pooler - QA Supervisor

Certification Date April 30, 2020  
Version 0-4302020



# Energy Laboratories Inc

# Spike LOG

Standard ID: DRO211101A  
Standard Name: OTP-4000 ug/mL DCM  
Date Prepared: 11/1/2021  
Date Expires: 9/30/2024  
Department: dropr  
Vendor:  
Lot Number:  
Balance ID: BAL-DRO  
Comments: Used to Prep DRO-8015 ICAL and CCV Solutions

Type: Secondary  
BY: Ann Nebel  
Status: Open

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Dichloromethane EC328	14408	25	mL	8/19/

**Final Volume:** 25 mL

Stock Source

DRO200430B O-Terphenyl

**Base Units**

ug/mL

**Amount Added**

0.1012 g

Analtes

A O-Terphenyl

**CAS**

84-15-1

Conc:

**ug/mL**

4000

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO200430B  
Standard Name: O-Terphenyl  
Date Prepared: 4/30/2020  
Date Expires: 9/30/2024  
Department: dropr  
Vendor: Chemservice  
Lot Number: 9972100  
Balance ID:  
Comments: ID#: 6271

Type: Neat  
BY: Ann Nebel  
Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
o-Terphenyl	12650	500	mg	9/30/

Final Volume: mL

Stock Source

**Base Units**

**Amount Added**

Analtes

**CAS**

Conc: ug/mL

A O-Terphenyl

84-15-1

1



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## CERTIFICATE OF ANALYSIS

### o-Terphenyl

CATALOG NUMBER N-12693-500MG  
LOT NUMBER 9972100  
DATE CERTIFIED 09/23/19  
EXPIRATION DATE 09/30/24  
CAS NUMBER 84-15-1  
MOLECULAR FORMULA C<sub>18</sub>H<sub>14</sub>  
MOLECULAR WEIGHT 230.32  
STORAGE Store in a cool dry place.  
HANDLING See Safety Data Sheet  
INTENDED USE For laboratory use only.

Analytical Test	Value
FT-IR SPECTROSCOPY	CONFORMS TO STRUCTURE
GC/MS SPECTRA ID	MATCHES NIST DATABASE
MELTING POINT (°C)	57.1
% PURITY (GC/FID)	99.5

Chem Service, Inc. guarantees the purity to be +/- 0.5% deviation prior to the expiration date shown on the label and exclusive of any customer contamination.

Certified By:

*Mary Beth O'Donnell*

Mary Beth O'Donnell  
CSM/TC

ID #: 12650

Opened: \_\_\_\_\_

o-Terphenyl

Expires: 9/30/2024

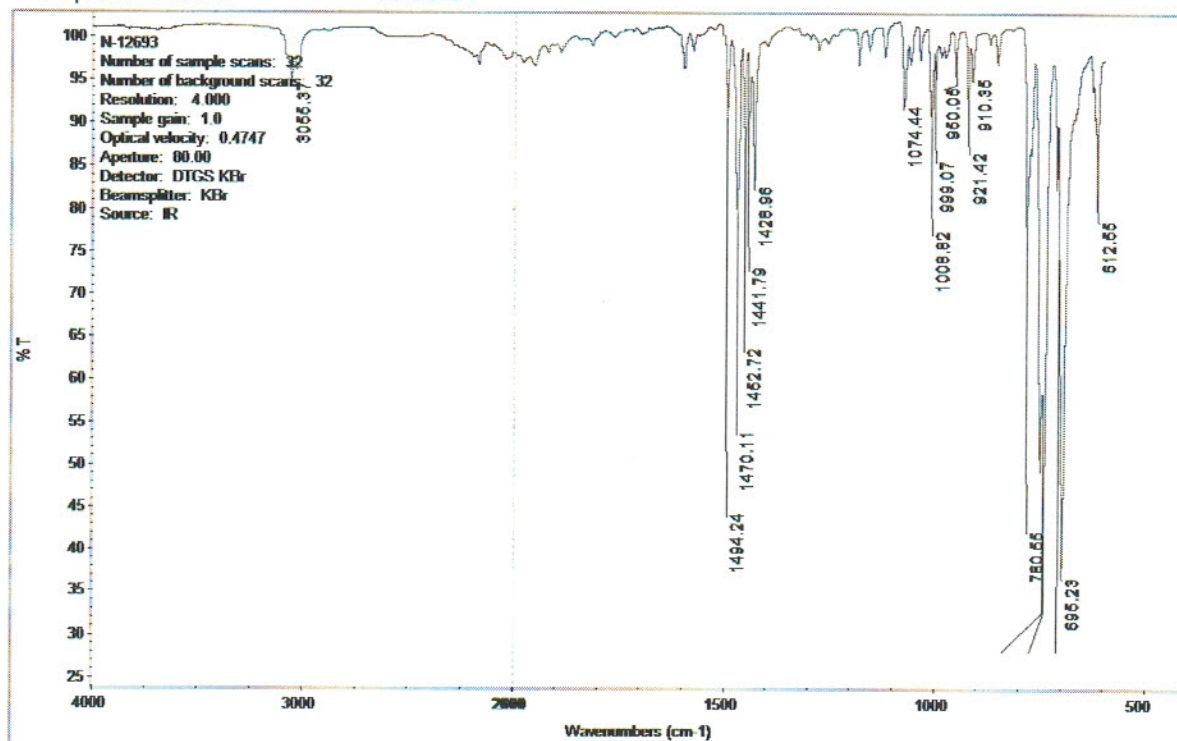
Rec'd: 4/30/2020

Energy Laboratories Inc 1120 So. 27th Street  
Billings MT 59107

## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 9972100  
Expiration Date: 09/30/24



Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



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## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 9972100  
Expiration Date: 09/30/24  
Chem Service Inc      Area Percent Report

Data File: D:\msdchem\2019 DATA\0919\0923-01.D  
Acq On : 23 Sep 2019 10:40  
Operator :  
Sample : n-12693  
Misc :  
ALS Vial : 95

Integration Parameters: autoint1.e  
Integrator: ChemStation

DataAcq Meth: SCREEN.M  
Method : D:\msdchem\2019 DATA\0919\0903-09.D\ERIN.M

Signal : TIC: 0923-01.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	11.844	1597	1606	1613	BB	32038221	432253484	100.00%	100.000%

Sum of corrected areas: 432253484

ERIN.M Mon Sep 23 10:55:51 2019

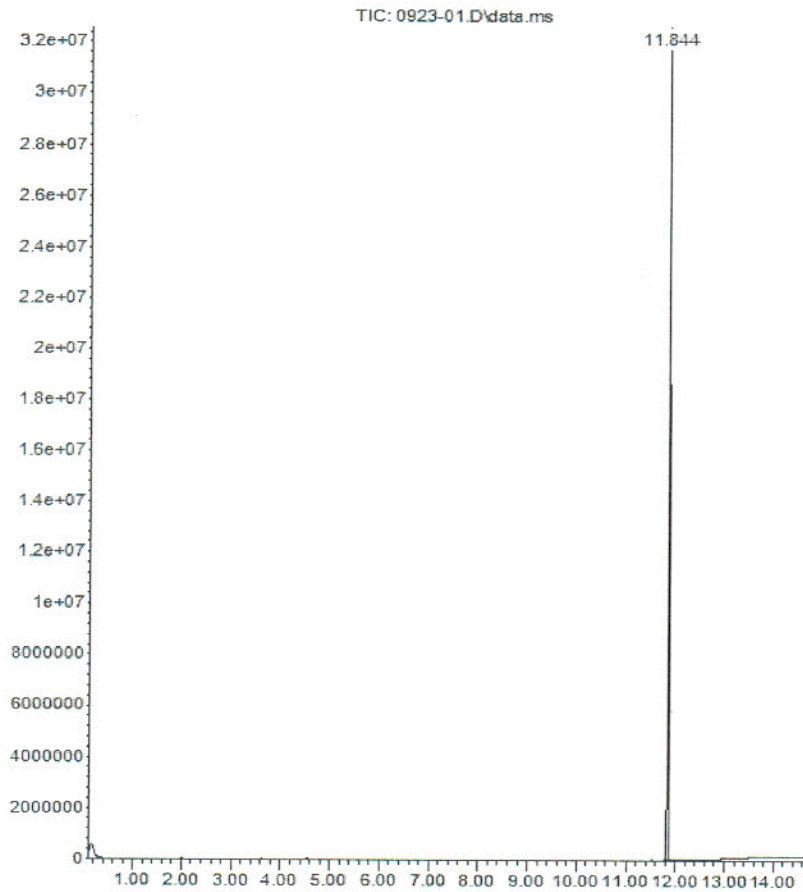
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1-800-452-9994 • 1-610-692-3026 • Fax 1-610-692-8729  
[info@chemservice.com](mailto:info@chemservice.com) • [www.chemservice.com](http://www.chemservice.com)

## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 9972100  
Expiration Date: 09/30/24

Abundance



Chem. Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



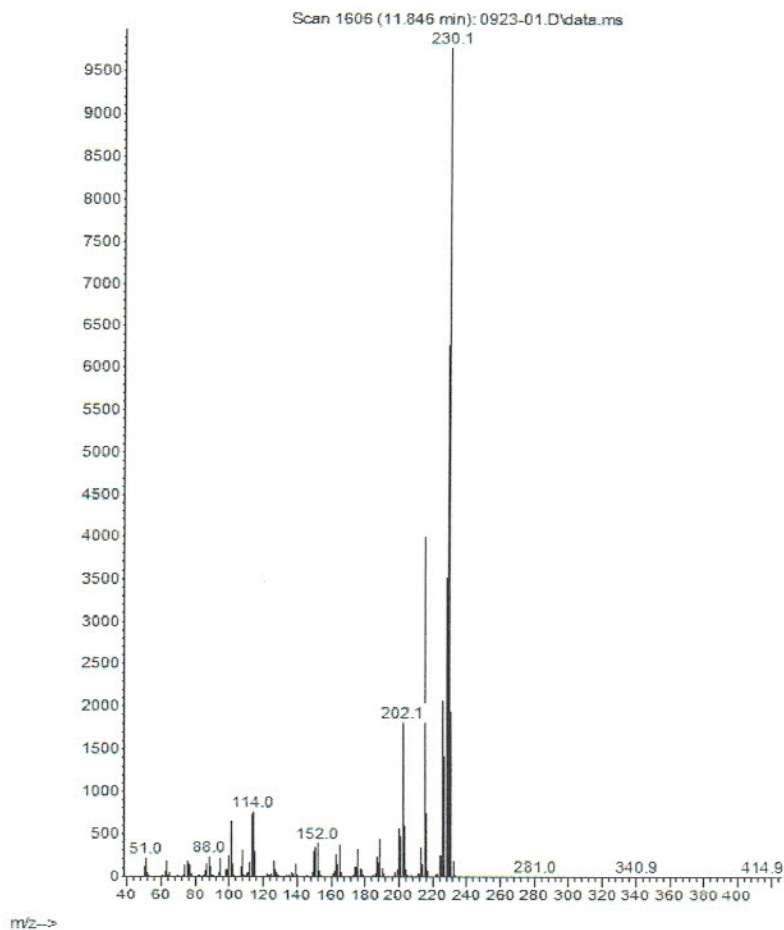
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## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 9972100  
Expiration Date: 09/30/24

Abundance



Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



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## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number:	N-12693-500MG
Description:	o-Terphenyl
Lot Number:	9972100
Expiration Date:	09/30/24

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



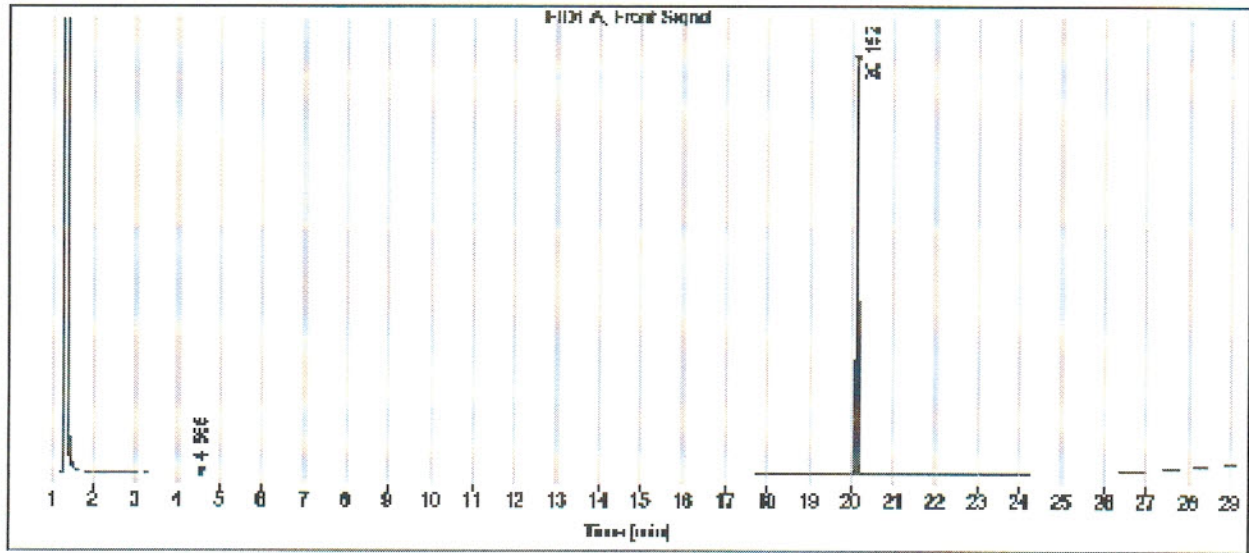
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Gas

Data file: C:\CHEM3\  
 Sample name: N-12683  
 Instrument: GC 2  
 Injection date: 9/23/2019 9:58:34 AM  
 Acq. method: SCREEN.M  
 Column name: HP-5

## CERTIFICATE OF ANALYSIS

Sample type:   
 Location: Vial 141  
 Injection volume: 1.0uL



Signal: FID1 A, Front Signal

RT [min]	Type	Width [min]	Area	Height	Area%
4.565	BB	0.0305	1.2408	0.5122	0.11
20.152	BB	0.0391	1171.9556	439.4599	99.89
		Sum	1173.1963		

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO211229A  
 Standard Name: 8015 CCV-15,000ug/mL + 200 OTP/COD  
 Date Prepared: 12/29/2021  
 Date Expires: 4/30/2023  
 Department: dropr  
 Vendor:  
 Lot Number:  
 Balance ID:  
 Comments: 8015DRO CCV MIX-15,000ug/mL +200 OTP/COD #2 Diesel

Type: Secondary  
 BY: Ann Nebel  
 Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Dichloromethane EC832	14647	2.4	mL	10/28

**Final Volume:** 4 mL

<u>Stock Source</u>	<u>Base Units</u>	<u>Amount Added</u>
DRO211112C OTP/COD SURR 2000 ug/mL	ug/mL	0.4 mL
DRO211102B Diesel Fuel #2 50,000 ug/mL in DCM	ug/mL	1.2 mL

<u>Analtes</u>	<u>CAS</u>	<u>Conc:</u>	<u>ug/mL</u>
A #2 Diesel			15000
A 1-Chlorooctadecane	3386-33-2		200
Diesel Fuel #2			0
A O-Terphenyl	84-15-1		200



# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO211102B  
Standard Name Diesel Fuel #2 50,000 ug/mL in DCM Type: Primary  
Date Prepared 11/2/2021 BY: Ann Nebel  
Date Expires: 4/30/2023  
Department dropr Status: New  
Vendor: Sigma-Aldrich  
Lot Number: LRAC6316  
Balance ID:  
Comments: Diesel Fuel #2 For CCVs.

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Diesel Fuel No. 2	14478	1	mL	4/30/

Final Volume: mL

Stock Source

**Base Units**

**Amount Added**

Analtes

**CAS**

Conc: ug/mL

Diesel Fuel #2

0

# Certificate of Analysis

Diesel Fuel No. 2

Certified  
Reference  
Material

## Description

Product ID UST148  
Lot LRAC6316  
Expiration Date April 2023  
Manufacturing Date April 2020  
Storage Conditions Room Temperature  
Solvent/Matrix DICHLOROMETHANE

ID #: 14478

Opened: \_\_\_\_\_

Diesel Fuel No. 2

Expires: 4/30/2023

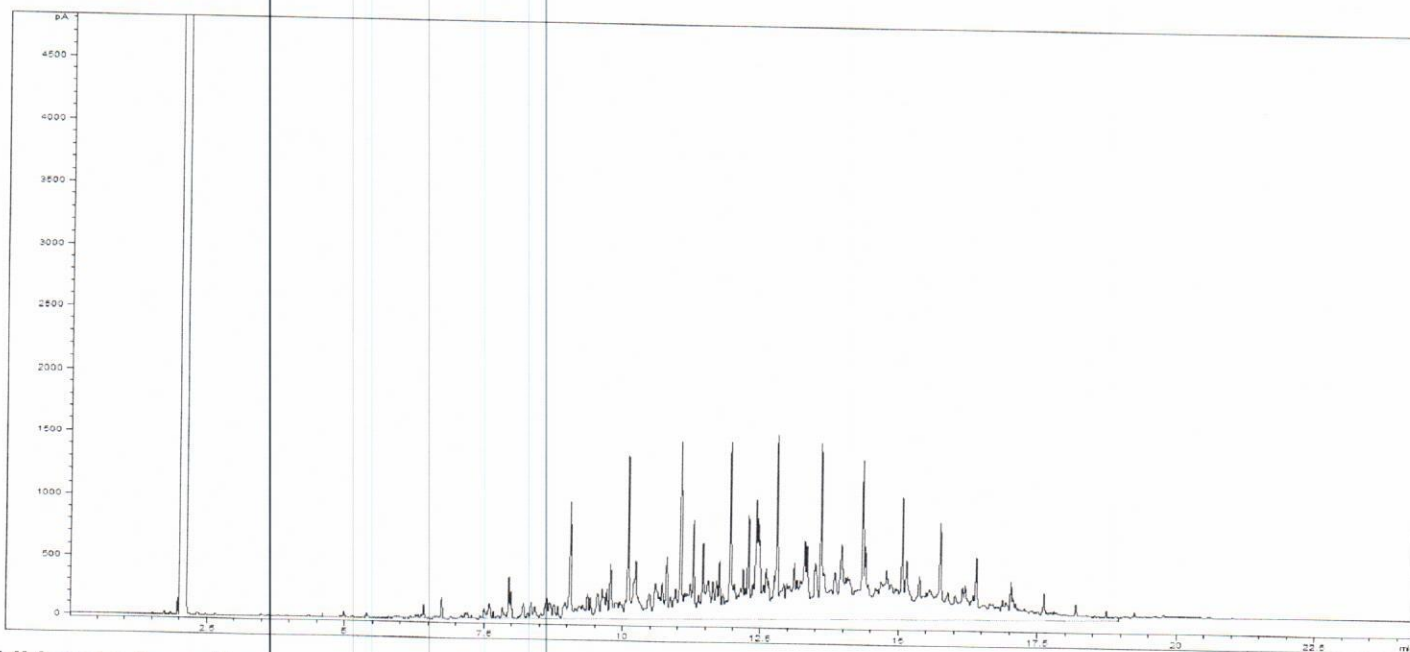
Rec'd: 11/2/2021

Energyl Laboratories Inc 1120 So. 27th Street  
Billings MT 59107

## Certified Values

Analyte	Certified Value <sup>1,4</sup>	Units	Raw Material Purity, %	Raw Material Lot	CAS
NO.2 FUEL OIL	50001 ± 2770	µg/mL	100.0	LA80505	68476-34-6

## Informational Values



## Additional Information:

Analytical Method Parameters:

Column: SPB-5, 30 m × 0.53 mm I.D., 1.5 µm film thickness (Column #214)

Carrier Gas: H<sub>2</sub>, Flow: 4.0 mL/min

Inlet Temperature: 250 °C, Injection Volume: 1.0 µL

Injection Mode: Split, Split Ratio: 10: 1

Temperature Program: 40 °C (Hold 2 min) @ 15 °C/min to 300 °C (Hold 5 min)

Detector: FID

Detector Temperature: 300 °C



**SIGMA-ALDRICH**

2931 Soldier Springs Rd. Laramie, Wyoming 82070 USA  
800-325-5832  
TechService@milliporesigma.com www.sigma-aldrich.com

# Description

Lot **LRAC6316**  
Expiration Date April 2023  
Manufacturing Date April 2020  
Storage Conditions Room Temperature  
Solvent/Matrix DICHLOROMETHANE

**1 Metrological traceability:** Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

**4 Ucrm - Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a t-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:**

$$u_{CRM} = \sqrt{u_{char}^2 + u_{homogeneity}^2 + u_{stability}^2}$$

**k:** Coverage factor derived from a t-distribution table, based on the degrees of freedom of the data set. Assume 2.0 for a **Confidence interval = 95%**

**6 Analytical Value-** For QC verification of the certified value only- not to be used in calculations. Represents the analytical data obtained by comparison to a standard as analyzed by the method described in the CoA or another acceptable method. The result may differ from the certified value and UCRM based on method uncertainty as well as the uncertainty associated with the standard used for comparison.

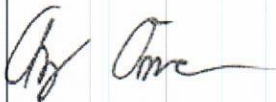
**Traceability:** The standard was manufactured under an ISO/IEC 17025:2017 certified quality system. The balance used to weigh raw materials is accurate to +/- 0.0001g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

**Homogeneity:** Homogeneity was assessed in accordance with ISO 17034:2016. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared using a one-way analysis of variance approach as described by TNI EL-V3-2009 Appendix A.2. See Instructions for minimum sub-sample size.

Expiration is at end of month given on certificate and label.

MSDS reports for components comprising greater than 1.0% of the solution or 0.1% for components known to be carcinogens are available upon request.

THIS PRODUCT WAS DESIGNED, PRODUCED AND VERIFIED FOR ACCURACY AND STABILITY IN ACCORDANCE WITH **ISO/IEC 17025:2017 (ANAB Cert AT-1467)** and **ISO 17034:2016 (ANAB Cert AR-1470)**.



Andy Ommen - QC Manager



Mark Pooler - QA Supervisor

Certification Date April 30, 2020  
Version 0-4302020



# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO211112C  
 Standard Name: OTP/COD SURR 2000 ug/mL  
 Date Prepared: 11/12/2021  
 Date Expires: 9/30/2024  
 Department: dropr  
 Vendor:  
 Lot Number:  
 Balance ID: BAL-DRO  
 Comments: OTP/COD SURR 2000 ug/mL

Type: Secondary  
 BY: Jillian L Bostwick  
 Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Acetone DZ509	13553	100	mL	7/22/

**Final Volume:** 100 mL

<u>Stock Source</u>		<b>Base Units</b>	<b>Amount Added</b>
DRO201014C	1-Chlorooctadecane	ug/mL	0.2 g
DRO201014B	O-Terphenyl	ug/mL	0.061 g
DRO200430B	O-Terphenyl	ug/mL	0.1392 g

<u>Analtes</u>		<b>CAS</b>	<b>Conc:</b> ug/mL
A	1-Chlorooctadecane	3386-33-2	2000
A	O-Terphenyl	84-15-1	2000

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO200430B  
Standard Name: O-Terphenyl  
Date Prepared: 4/30/2020  
Date Expires: 9/30/2024  
Department: dropr  
Vendor: Chemservice  
Lot Number: 9972100  
Balance ID:  
Comments: ID#: 6271

Type: Neat  
BY: Ann Nebel  
Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
o-Terphenyl	12650	500	mg	9/30/

Final Volume: mL

Stock Source

**Base Units**

**Amount Added**

Analtes

**CAS**

Conc: ug/mL

A O-Terphenyl

84-15-1

1

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## CERTIFICATE OF ANALYSIS

### o-Terphenyl

CATALOG NUMBER N-12693-500MG  
LOT NUMBER 9972100  
DATE CERTIFIED 09/23/19  
EXPIRATION DATE 09/30/24  
CAS NUMBER 84-15-1  
MOLECULAR FORMULA C<sub>18</sub>H<sub>14</sub>  
MOLECULAR WEIGHT 230.32  
STORAGE Store in a cool dry place.  
HANDLING See Safety Data Sheet  
INTENDED USE For laboratory use only.

Analytical Test	Value
FT-IR SPECTROSCOPY	CONFORMS TO STRUCTURE
GC/MS SPECTRA ID	MATCHES NIST DATABASE
MELTING POINT (°C)	57.1
% PURITY (GC/FID)	99.5

Chem Service, Inc. guarantees the purity to be +/- 0.5% deviation prior to the expiration date shown on the label and exclusive of any customer contamination.

Certified By:

*Mary Beth O'Donnell*

Mary Beth O'Donnell  
CSM/TC

ID #: 12650

Opened: \_\_\_\_\_

o-Terphenyl

Expires: 9/30/2024

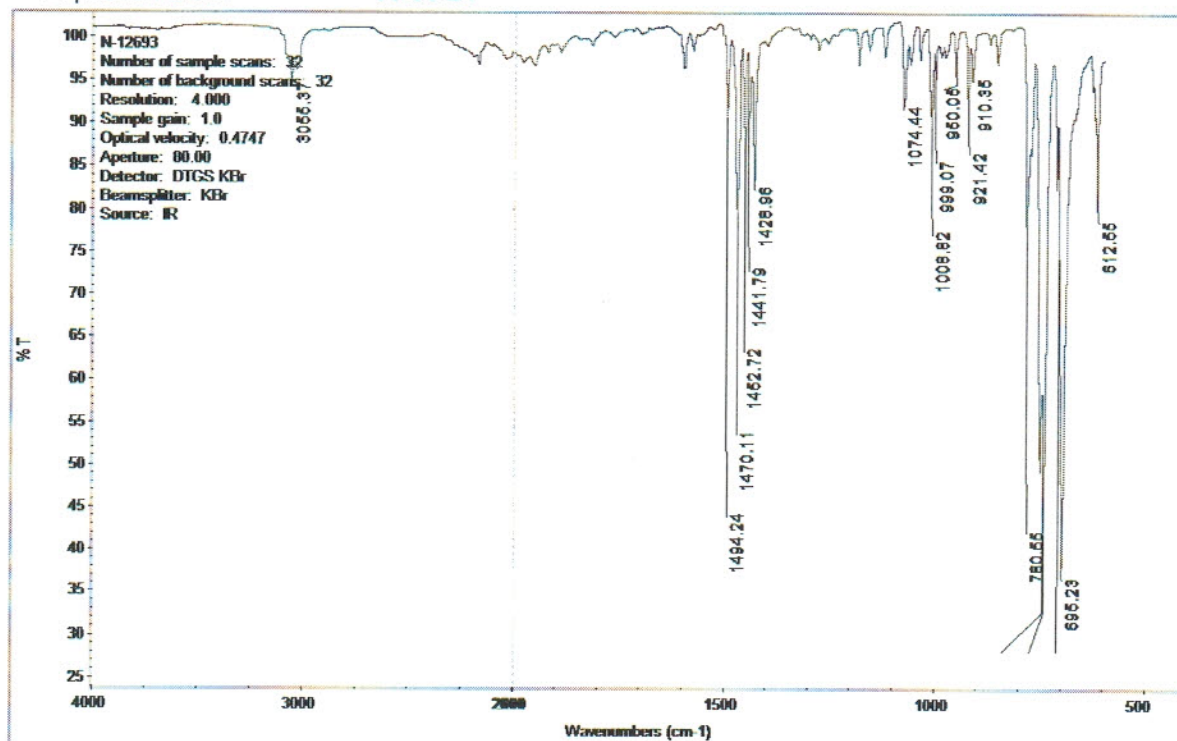
Rec'd: 4/30/2020

Energy Laboratories Inc 1120 So. 27th Street  
Billings MT 59107

## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 9972100  
Expiration Date: 09/30/24



Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



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## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 9972100  
Expiration Date: 09/30/24  
Chem Service Inc Area Percent Report

Data File: D:\msdchem\2019 DATA\0919\0923-01.D  
Acq On : 23 Sep 2019 10:40  
Operator :  
Sample : n-12693  
Misc :  
ALS Vial : 95

Integration Parameters: autoint1.e  
Integrator: ChemStation

DataAcq Meth: SCREEN.M  
Method : D:\msdchem\2019 DATA\0919\0903-09.D\ERIN.M

Signal : TIC: 0923-01.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	11.844	1597	1606	1613	BB	32038221	432253484	100.00%	100.000%

Sum of corrected areas: 432253484

ERIN.M Mon Sep 23 10:55:51 2019

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015





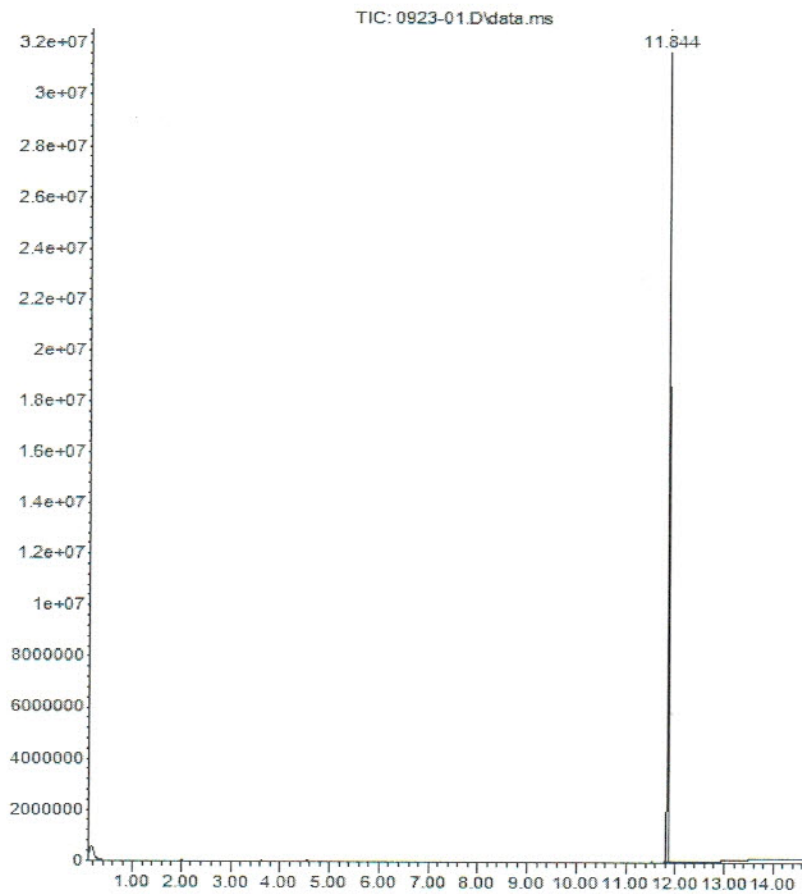
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## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 9972100  
Expiration Date: 09/30/24

Abundance



Time-->

Chem. Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



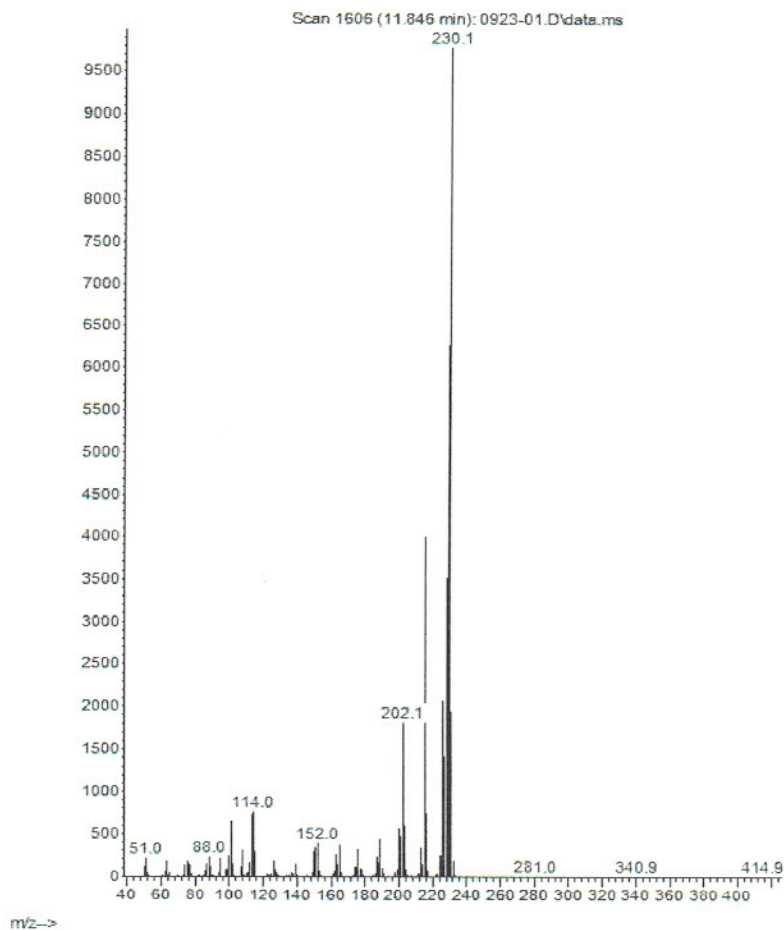
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## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 9972100  
Expiration Date: 09/30/24

Abundance



Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



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## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number:	N-12693-500MG
Description:	o-Terphenyl
Lot Number:	9972100
Expiration Date:	09/30/24

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



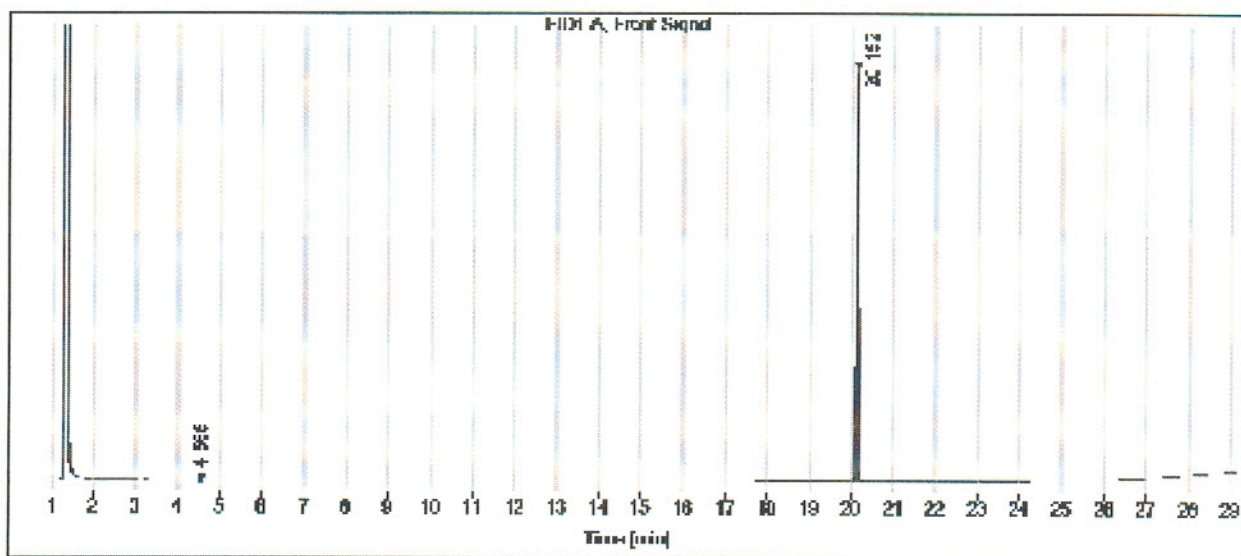
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Gas

Data file: C:\CHEM3\  
 Sample name: N-12683  
 Instrument: GC 2  
 Injection date: 9/23/2019 9:58:34 AM  
 Acq. method: SCREEN.M  
 Column name: HP-5

## CERTIFICATE OF ANALYSIS

Sample type:   
 Location: Vial 141  
 Injection volume: 1.0uL



Signal: FID1 A, Front Signal

RT [min]	Type	Width [min]	Area	Height	Area%
4.565	BB	0.0305	1.2408	0.5122	0.11
20.152	BB	0.0391	1171.9556	439.4599	99.89
		Sum	1173.1963		

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO201014B  
Standard Name: O-Terphenyl  
Date Prepared: 10/14/2020  
Date Expires: 9/30/2024  
Department: dropr  
Vendor: Chemservice  
Lot Number: 10029300  
Balance ID:  
Comments: ID#: 6271

Type: Neat  
BY: Ann Nebel  
Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
o-Terphenyl	13191	500	mg	9/30/

Final Volume: mL

Stock Source

**Base Units**

**Amount Added**

Analtes

**CAS**

Conc: ug/mL

A O-Terphenyl

84-15-1

1

Am

# CHEM SERVICE INC.

660 Tower Lane • P.O. Box 599 • West Chester, PA 19381-0599  
1-800-452-9994 • 1-610-692-3026 • Fax 1-610-692-8729  
[info@chemservice.com](mailto:info@chemservice.com) • [www.chemservice.com](http://www.chemservice.com)

## CERTIFICATE OF ANALYSIS

### o-Terphenyl

CATALOG NUMBER	N-12693-500MG
LOT NUMBER	10029300
DATE CERTIFIED	09/23/19
EXPIRATION DATE	09/30/24
CAS NUMBER	84-15-1
MOLECULAR FORMULA	C18H14
MOLECULAR WEIGHT	230.32
STORAGE	Store at room temperature (20 - 25 °C).
HANDLING	See Safety Data Sheet
INTENDED USE	For laboratory use only.

<u>Analytical Test</u>	<u>Value</u>
FT-IR SPECTROSCOPY	CONFORMS TO STRUCTURE
GC/MS SPECTRA ID	MATCHES NIST DATABASE
MELTING POINT (°C)	57.1
% PURITY (GC/FID)	99.5

Chem Service, Inc. guarantees the purity to be +/- 0.5% deviation prior to the expiration date shown on the label and exclusive of any customer contamination.

Certified By:

*Mary Beth O'Donnell*

Mary Beth O'Donnell  
CSM/TC

**ID #: 13191**  
 Opened: \_\_\_\_\_  
 o-Terphenyl  
**Expires: 9/30/2024**  
 Rec'd: 10/14/2020  
 Enerav Laboratories Inc 1120 So. 27th Street  
 Billings MT 59107

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015

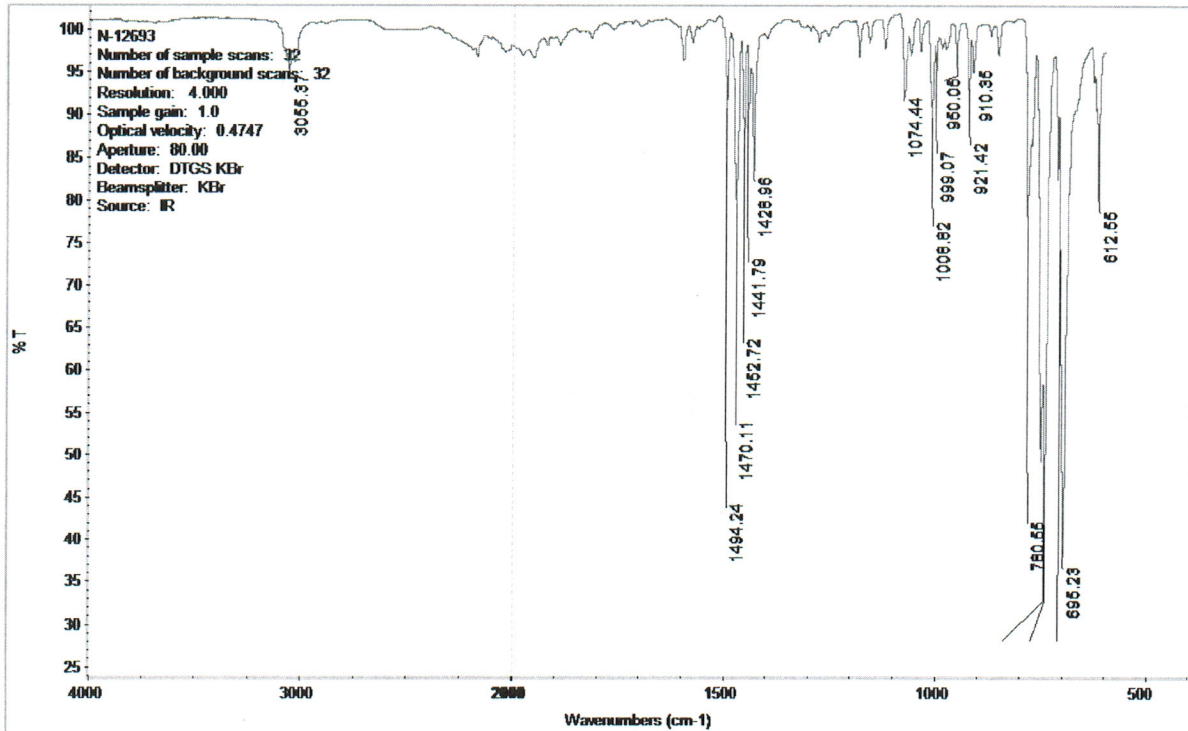
COA Form  
Revision 3 (3/2015)



## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 10029300  
Expiration Date: 09/30/24



Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 10029300  
Expiration Date: 09/30/24  
Chem Service Inc Area Percent Report

Data File: D:\msdchem\2019 DATA\0919\0923-01.D  
Acq On : 23 Sep 2019 10:40  
Operator :  
Sample : n-12693  
Misc :  
ALS Vial : 95

Integration Parameters: autoint1.e  
Integrator: ChemStation

DataAcq Meth: SCREEN.M  
Method : D:\msdchem\2019 DATA\0919\0903-09.D\ERIN.M

Signal : TIC: 0923-01.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	11.844	1597	1606	1613	BB	32038221	432253484	100.00%	100.000%

Sum of corrected areas: 432253484

ERIN.M Mon Sep 23 10:55:51 2019



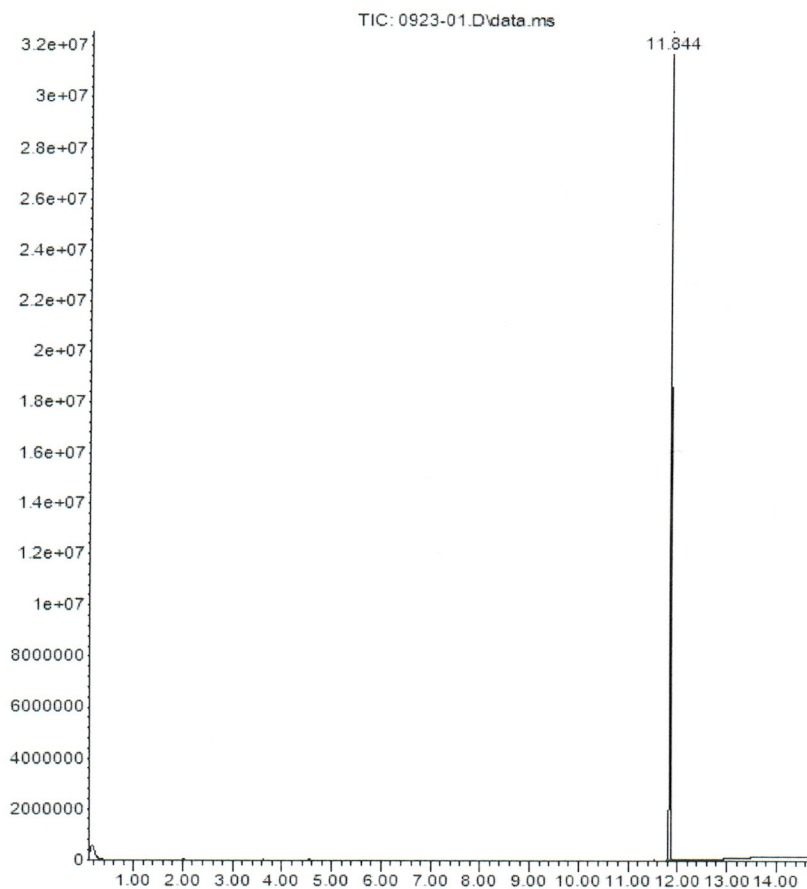
660 Tower Lane • P.O. Box 599 • West Chester, PA 19381-0599  
1-800-452-9994 • 1-610-692-3026 • Fax 1-610-692-8729  
[info@chemservice.com](mailto:info@chemservice.com) • [www.chemservice.com](http://www.chemservice.com)

## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 10029300  
Expiration Date: 09/30/24

Abundance



Time-->

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



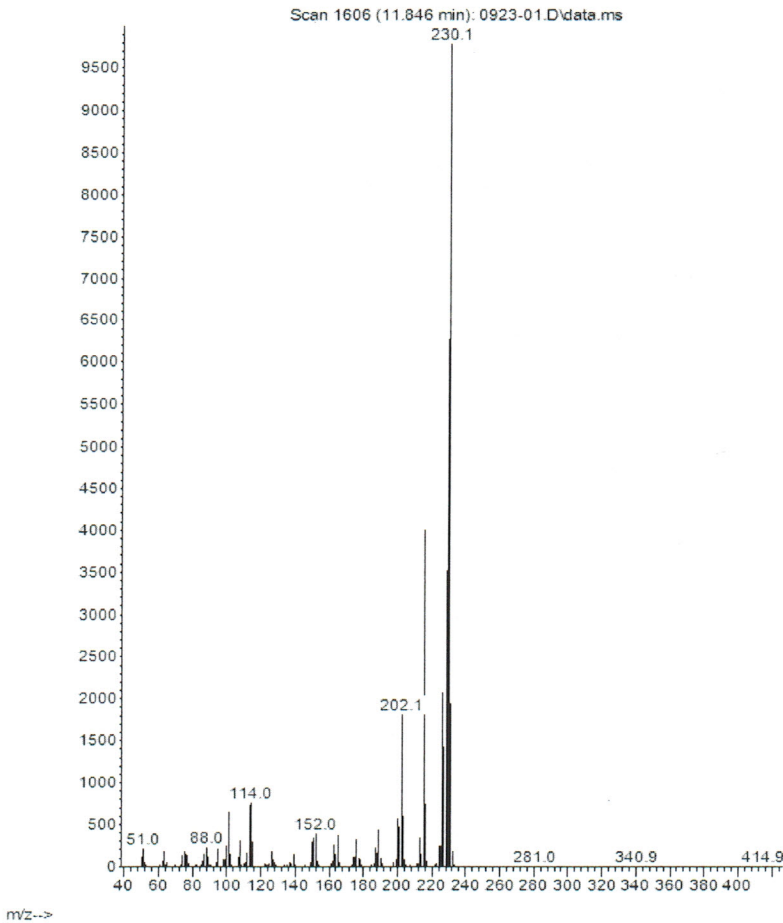
660 Tower Lane • P.O. Box 599 • West Chester, PA 19381-0599  
1-800-452-9994 • 1-610-692-3026 • Fax 1-610-692-8729  
[info@chemservice.com](mailto:info@chemservice.com) • [www.chemservice.com](http://www.chemservice.com)

## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 10029300  
Expiration Date: 09/30/24

Abundance



Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number:	N-12693-500MG
Description:	o-Terphenyl
Lot Number:	10029300
Expiration Date:	09/30/24

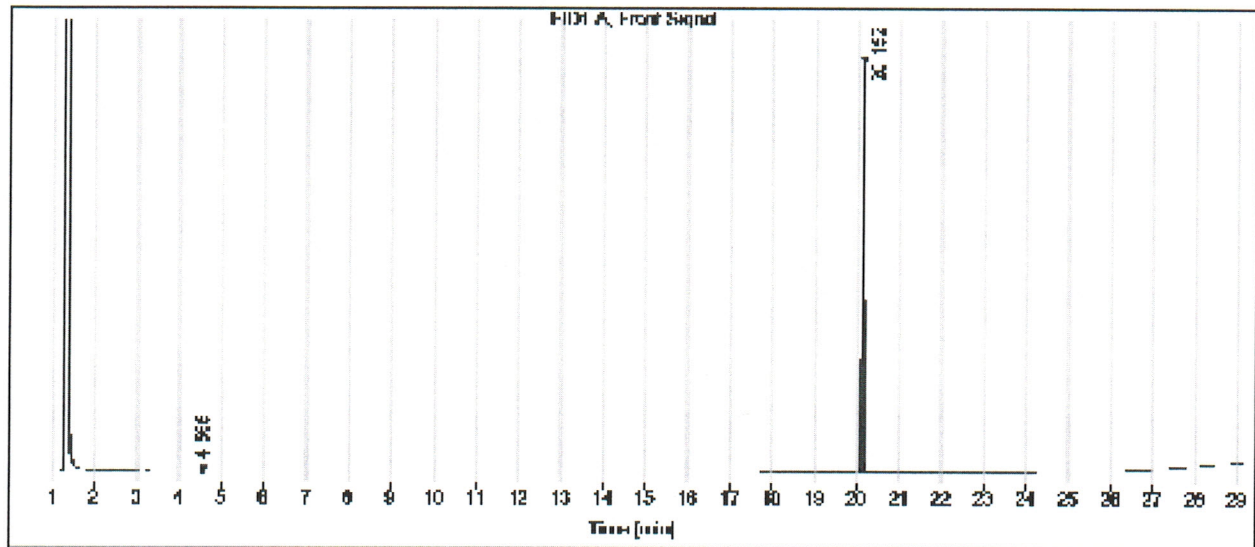
660 Tower Lane • P.O. Box 599 • West Chester, PA 19381-0599  
 1-800-452-9994 • 1-610-692-3026 • Fax 1-610-692-8729  
[info@chemservice.com](mailto:info@chemservice.com) • [www.chemservice.com](http://www.chemservice.com)

Gas

Data file: C:\CHEM3\  
 Sample name: N-12893  
 Instrument: GC 2  
 Injection date: 9/23/2019 9:58:34 AM  
 Acq. method: SCREEN.M  
 Column name: HP-5

## CERTIFICATE OF ANALYSIS

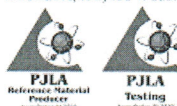
Sample type: Sample  
 Location: Vial 141  
 Injection volume: 1.0uL



Signal: FID1 A, Front Signal

RT [min]	Type	Width [min]	Area	Height	Area%
4.565	BB	0.0305	1.2408	0.5122	0.11
20.152	BB	0.0391	1171.9556	439.4599	99.89
		Sum	1173.1963		

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO211201A  
Standard Name 5,000 ug/mL RRO CCV 200 ug/mL Triaconta Type: Secondary  
Date Prepared 12/1/2021 BY: Ann Nebel  
Date Expires: 4/6/2026  
Department dropr Status: New  
Vendor:  
Lot Number:  
Balance ID: Sartorius 4 place balance  
Comments: CCV for AK102 and 8015C RRO.

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Dichloromethane EC735	14518	2.8	mL	10/14

**Final Volume:** 4 mL

<u>Stock Source</u>		<b>Base Units</b>	<b>Amount Added</b>
DRO210401B	50,000 ug/mL Oil Std For AK103 RRO-I	ug/mL	400 µL
DRO211129A	Triacontane SURR 1000 ug/mL	ug/mL	800 µL

<u>Analtes</u>		<b>CAS</b>	<b>Conc:</b> <b>ug/mL</b>
A	30/40W Motor Oil		5000
A	Triacontane-d62		200

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO210401B  
Standard Name: 50,000 ug/mL Oil Std For AK103 RRO-In DC  
Date Prepared: 4/1/2021  
Date Expires: 1/31/2028  
Department: dropr  
Vendor: Restek  
Lot Number: A0166827  
Balance ID: Sartorius 4 place balance

Type: Primary  
BY: Ann Nebel  
Status: Open

Comments:

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Residual Range Calibration Standard (	13714	1	mL	1/31/

**Final Volume:** 1 mL

Stock Source

**Base Units**

**Amount Added**

Analtes

**CAS**

Conc: **ug/mL**



# CERTIFIED REFERENCE MATERIAL

110 Benner Circle  
Bellefonte, PA 16823-8812  
Tel: (800)356-1688  
Fax: (814)353-1309

www.restek.com

## Certificate of Analysis



### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

*This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.*

**Catalog No. :** 31817 **Lot No.:** A0166827

**Description :** Residual Range Calibration Standard (RCS)  
Residual Range Calib Std (RCS) 50,000µg/mL, Methylene Chloride, 1mL/ampul

**Container Size :** 2 mL **Pkg Amt:** > 1 mL

**Expiration Date :** January 31, 2028 **Storage:** 25°C nominal

**Ship:** Ambient

### CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Motor Oil SAE30 & SAE40 Blend (Pennzoil) CAS # 64742-65-0.F (Lot A0126386) Purity ----%	50,056.0 µg/mL	+/- 293.0889 µg/mL	Gravimetric	
			+/- 1,490.7309 µg/mL	Unstressed	
			+/- 1,589.8634 µg/mL	Stressed	

**Solvent:** Methylene chloride  
**CAS #** 75-09-2  
**Purity** 99%

**ID #: 13714**  
 Opened: \_\_\_\_\_  
 Residual Range Calibration Standard (RCS)  
**Expires: 1/31/2028**  
 Rec'd: 4/1/2021  
 Energy Laboratories Inc 1120 So. 27th Street  
 Billings MT 59107

**Column:**

30m x 0.25mm x 0.25µm  
Rtx-5 (cat.#10223)

**Carrier Gas:**

hydrogen-constant pressure 10 psi.

**Temp. Program:**

40°C (hold 2 min.) to 330°C  
@ 10°C/min. (hold 10 min.)

**Inj. Temp:**

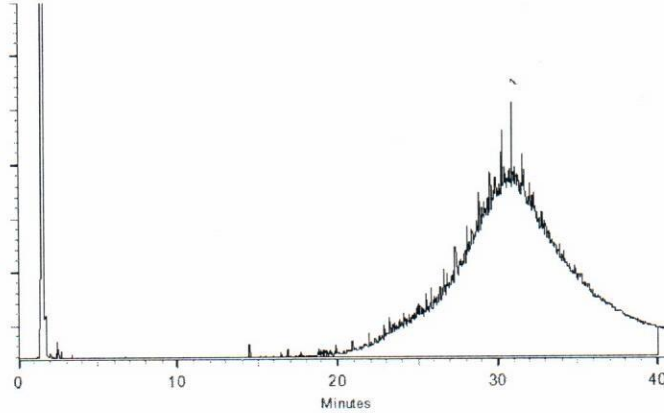
250°C

**Det. Temp:**

330°C

**Det. Type:**

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

*Kylie Struble*  
Kylie Struble - Operations Technician I

**Date Mixed:** 02-Dec-2020

**Balance:** 1128353505

*Justin Albertson*  
Justin Albertson - Operations Tech-ARM QC

**Date Passed:** 07-Dec-2020

Manufactured under Restek's ISO 9001:2015  
Registered Quality System  
Certificate #FM 80397



## General Certified Reference Material Notes

### Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

### Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/ $\mu$ ECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

### Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value ( includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

$k$  is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at [www.restek.com/Contact-Us](http://www.restek.com/Contact-Us) for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at [www.restek.com/Contact-Us](http://www.restek.com/Contact-Us).
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

### Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

### Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO211129A  
Standard Name: Triacotane SURR 1000 ug/mL  
Date Prepared: 11/29/2021  
Date Expires: 4/6/2026  
Department: dropr  
Vendor:  
Lot Number:  
Balance ID: BAL-DRO  
Comments: 2X dilution of Triacotane SURR 2000 ug/mL

Type: Secondary  
BY: Jillian L Bostwick  
Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Dichloromethane EC735	14518	5	mL	10/14

**Final Volume:** 10 mL

**Stock Source**  
DRO211006A Triacotane SURR 2000 ug/mL

**Base Units**  
ug/mL

**Amount Added**  
5 mL

**Analtes**  
A Triacotane-d62

**CAS**

**Conc:** ug/mL  
1000

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO211006A  
Standard Name: Triacontane SURR 2000 ug/mL  
Date Prepared: 10/6/2021  
Date Expires: 4/6/2026  
Department: dropr  
Vendor:  
Lot Number:  
Balance ID: BAL-DRO  
Comments: Triacontane SURR 2000 ug/mL

Type: Secondary  
BY: Jillian L Bostwick  
Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Acetone DZ509	13553	50	mL	7/22/

**Final Volume:** 50 mL

**Stock Source**  
DRO210406A Triacontane-d62 Surr For AK103 RRO

**Base Units**  
ug/mL

**Amount Added**  
0.1001 g

**Analtes**  
A Triacontane-d62

**CAS**

Conc: **ug/mL**  
2000

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO210406A  
Standard Name: Triacontane-d62 Surr For AK103 RRO  
Date Prepared: 4/6/2021  
Date Expires: 4/6/2026  
Department: dropr  
Vendor: Sigma-Aldrich  
Lot Number: MBBC4347  
Balance ID:  
Comments: Alaska surr [for AK103 RRO]

Type: Neat  
BY: Ann Nebel  
Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Triacontane-d62-98 atom % D	13736		mL	4/6/2026

Final Volume: mL

Stock Source

**Base Units**

**Amount Added**

Analtes

**CAS**

Conc: ug/mL

A Triacontane-d62

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)

Email USA: [techserv@sial.com](mailto:techserv@sial.com)

Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

## Certificate of Analysis

Product Name:  
Triacontane-d62 - 98 atom % D

Product Number: 451789  
 Batch Number: MBBC4347  
 Brand: ALDRICH  
 CAS Number: 93952-07-9  
 MDL Number: MFCD00209794  
 Formula: C30D62  
 Formula Weight: 485.20 g/mol  
 Quality Release Date: 27 APR 2018



ID #: 13736

Opened: \_\_\_\_\_

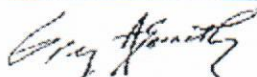
Triacontane-d62-98 atom % D

Expires: 4/6/2026

Rec'd: 4/6/2021

Energy Laboratories Inc 1120 So. 27th Street  
 Billings MT 59107

Test	Specification	Result
Purity (HPLC)	≥ 99.0 %	99.0 %
Proton NMR Spectrum	Conforms to Structure	Conforms
D Enrichment	≥ 98.0 %	99.0 %
Initial Melting Point		60.0 °C
Final Melting Point		62.0 °C



Greg Abernathy, Supervisor  
 Quality Control  
 Miamisburg, Ohio US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO210902A  
 Standard Name: 50,000 ug/mL Oil Std for RRO-In DCM  
 Date Prepared: 9/2/2021  
 Date Expires: 9/1/2026  
 Department: dropr  
 Vendor:  
 Lot Number:  
 Balance ID: BAL-DRO  
 Comments: .625 g of 30W and 40 W each LCS for Oil range

Type: Secondary  
 BY: Jillian L Bostwick  
 Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Dichloromethane EB867	14196	25	mL	6/18/

**Final Volume:** 25 mL

<u>Stock Source</u>	<u>Base Units</u>	<u>Amount Added</u>
DRO210901B 40W Motor Oil-Valvoline	ug/mL	0.6261 g
DRO210901A 30W Motor Oil-Valvoline	ug/mL	0.6254 g

<u>Analtes</u>	<u>CAS</u>	<u>Conc:</u>	<u>ug/mL</u>
A 30W Motor Oil			10000
A 30W-Motor oil			0
A 40W Motor Oil			10000
A 40W-Motor oil			0

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO210901B  
Standard Name: 40W Motor Oil-Valvoline  
Date Prepared: 9/1/2021  
Date Expires: 9/1/2026  
Department: dropr  
Vendor:  
Lot Number:  
Balance ID:

Type: Primary  
BY: Jillian L Bostwick  
Status: New

Comments: Used to Make 2nd Source Standards For Alaska AK103 RRO Method and Oil

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Valvoline SAE 40 Motor Oil	14231		mL	9/1/2026

Final Volume: mL

Stock Source

Base Units

Amount Added

Analtes

CAS

Conc: ug/mL

A 40W-Motor oil

1

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO210901A  
Standard Name: 30W Motor Oil-Valvoline  
Date Prepared: 9/1/2021  
Date Expires: 9/1/2026  
Department: dropr  
Vendor:  
Lot Number:  
Balance ID:

Type: Primary  
BY: Jillian L Bostwick  
Status: New

Comments: Used to make 2nd Source Standard for AK103 method.

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Valvoline SAE 30 Motor Oil	14232		mL	9/1/26

Final Volume: mL

Stock Source

**Base Units**

**Amount Added**

Analtes

**CAS**

Conc: ug/mL

A 30W-Motor oil

1



# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO211220D  
Standard Name: Triacotane SURR 1000 ug/mL  
Date Prepared: 12/20/2021  
Date Expires: 4/6/2026  
Department: dropr  
Vendor:  
Lot Number:  
Balance ID: BAL-DRO  
Comments: 2X dilution of Triacotane SURR 2000 ug/mL

Type: Secondary  
BY: Jillian L Bostwick  
Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Dichloromethane EC757	14596	5	mL	10/20

**Final Volume:** 10 mL

**Stock Source**  
DRO211006A Triacotane SURR 2000 ug/mL

**Base Units**  
ug/mL

**Amount Added**  
5 mL

**Analtes**  
A Triacotane-d62

**CAS**

**Conc:** ug/mL  
1000

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO211006A  
Standard Name: Triacontane SURR 2000 ug/mL  
Date Prepared: 10/6/2021  
Date Expires: 4/6/2026  
Department: dropr  
Vendor:  
Lot Number:  
Balance ID: BAL-DRO  
Comments: Triacontane SURR 2000 ug/mL

Type: Secondary  
BY: Jillian L Bostwick  
Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Acetone DZ509	13553	50	mL	7/22/

**Final Volume:** 50 mL

**Stock Source**  
DRO210406A Triacontane-d62 Surr For AK103 RRO

**Base Units**  
ug/mL

**Amount Added**  
0.1001 g

**Analtes**  
A Triacontane-d62

**CAS**

Conc: **ug/mL**  
2000

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO210406A  
Standard Name: Triacontane-d62 Surr For AK103 RRO  
Date Prepared: 4/6/2021  
Date Expires: 4/6/2026  
Department: dropr  
Vendor: Sigma-Aldrich  
Lot Number: MBBC4347  
Balance ID:  
Comments: Alaska surr [for AK103 RRO]

Type: Neat  
BY: Ann Nebel  
Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Triacontane-d62-98 atom % D	13736		mL	4/6/26

Final Volume: mL

Stock Source

**Base Units**

**Amount Added**

Analtes

**CAS**

Conc: ug/mL

A Triacontane-d62

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)

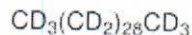
Email USA: [techserv@sial.com](mailto:techserv@sial.com)

Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

## Certificate of Analysis

Product Name:  
Triacontane-d62 - 98 atom % D

Product Number: 451789  
 Batch Number: MBBC4347  
 Brand: ALDRICH  
 CAS Number: 93952-07-9  
 MDL Number: MFCD00209794  
 Formula: C30D62  
 Formula Weight: 485.20 g/mol  
 Quality Release Date: 27 APR 2018



ID #: 13736

Opened: \_\_\_\_\_

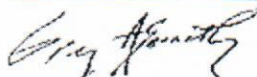
Triacontane-d62-98 atom % D

Expires: 4/6/2026

Rec'd: 4/6/2021

Energy Laboratories Inc 1120 So. 27th Street  
 Billings MT 59107

Test	Specification	Result
Purity (HPLC)	≥ 99.0 %	99.0 %
Proton NMR Spectrum	Conforms to Structure	Conforms
D Enrichment	≥ 98.0 %	99.0 %
Initial Melting Point		60.0 °C
Final Melting Point		62.0 °C



Greg Abernathy, Supervisor  
 Quality Control  
 Miamisburg, Ohio US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO211112C  
 Standard Name: OTP/COD SURR 2000 ug/mL  
 Date Prepared: 11/12/2021  
 Date Expires: 9/30/2024  
 Department: dropr  
 Vendor:  
 Lot Number:  
 Balance ID: BAL-DRO  
 Comments: OTP/COD SURR 2000 ug/mL

Type: Secondary  
 BY: Jillian L Bostwick  
 Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Acetone DZ509	13553	100	mL	7/22/

**Final Volume:** 100 mL

<u>Stock Source</u>	<u>Base Units</u>	<u>Amount Added</u>
DRO201014C 1-Chlorooctadecane	ug/mL	0.2 g
DRO201014B O-Terphenyl	ug/mL	0.061 g
DRO200430B O-Terphenyl	ug/mL	0.1392 g

<u>Analtes</u>	<u>CAS</u>	<u>Conc:</u>	<u>ug/mL</u>
A 1-Chlorooctadecane	3386-33-2		2000
A O-Terphenyl	84-15-1		2000

# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO201014B  
Standard Name: O-Terphenyl  
Date Prepared: 10/14/2020  
Date Expires: 9/30/2024  
Department: dropr  
Vendor: Chemservice  
Lot Number: 10029300  
Balance ID:  
Comments: ID#: 6271

Type: Neat  
BY: Ann Nebel  
Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
o-Terphenyl	13191	500	mg	9/30/

Final Volume: mL

Stock Source

**Base Units**

**Amount Added**

Analtes

**CAS**

Conc: ug/mL

A O-Terphenyl

84-15-1

1

Am

# CHEM SERVICE INC.

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## CERTIFICATE OF ANALYSIS

### o-Terphenyl

CATALOG NUMBER	N-12693-500MG
LOT NUMBER	10029300
DATE CERTIFIED	09/23/19
EXPIRATION DATE	09/30/24
CAS NUMBER	84-15-1
MOLECULAR FORMULA	C18H14
MOLECULAR WEIGHT	230.32
STORAGE	Store at room temperature (20 - 25 °C).
HANDLING	See Safety Data Sheet
INTENDED USE	For laboratory use only.

<u>Analytical Test</u>	<u>Value</u>
FT-IR SPECTROSCOPY	CONFORMS TO STRUCTURE
GC/MS SPECTRA ID	MATCHES NIST DATABASE
MELTING POINT (°C)	57.1
% PURITY (GC/FID)	99.5

Chem Service, Inc. guarantees the purity to be +/- 0.5% deviation prior to the expiration date shown on the label and exclusive of any customer contamination.

Certified By:

*Mary Beth O'Donnell*

Mary Beth O'Donnell  
CSM/TC

**ID #: 13191**  
 Opened: \_\_\_\_\_  
 o-Terphenyl  
**Expires: 9/30/2024**  
 Rec'd: 10/14/2020  
 Enerav Laboratories Inc 1120 So. 27th Street  
 Billings MT 59107

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015

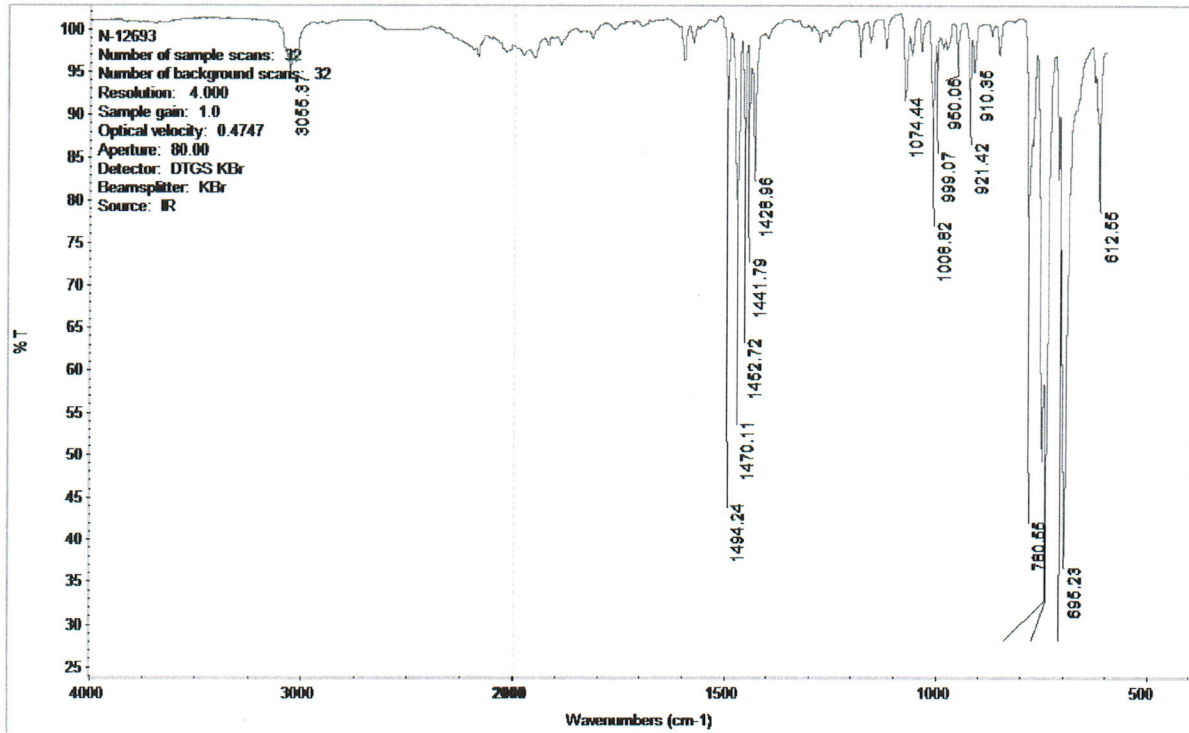
COA Form  
Revision 3 (3/2015)



## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 10029300  
Expiration Date: 09/30/24





## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 10029300  
Expiration Date: 09/30/24  
Chem Service Inc Area Percent Report

Data File: D:\msdchem\2019 DATA\0919\0923-01.D  
Acq On : 23 Sep 2019 10:40  
Operator :  
Sample : n-12693  
Misc :  
ALS Vial : 95

Integration Parameters: autoint1.e  
Integrator: ChemStation

DataAcq Meth: SCREEN.M  
Method : D:\msdchem\2019 DATA\0919\0903-09.D\ERIN.M

Signal : TIC: 0923-01.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	11.844	1597	1606	1613	BB	32038221	432253484	100.00%	100.000%

Sum of corrected areas: 432253484

ERIN.M Mon Sep 23 10:55:51 2019

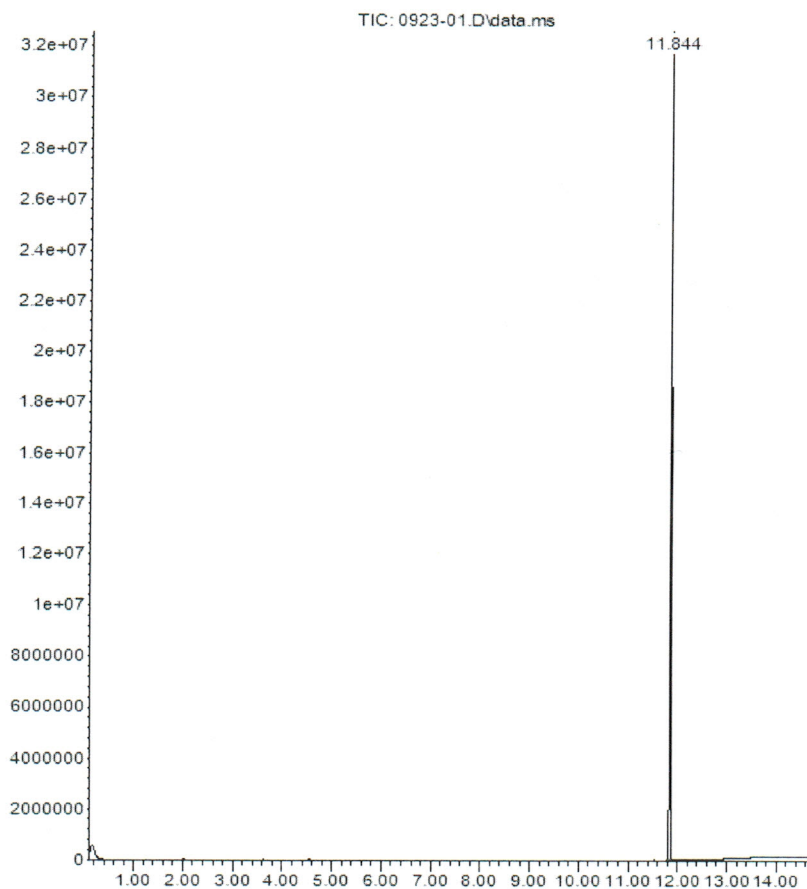
660 Tower Lane • P.O. Box 599 • West Chester, PA 19381-0599  
1-800-452-9994 • 1-610-692-3026 • Fax 1-610-692-8729  
[info@chemservice.com](mailto:info@chemservice.com) • [www.chemservice.com](http://www.chemservice.com)

## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 10029300  
Expiration Date: 09/30/24

Abundance



Time-->

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015

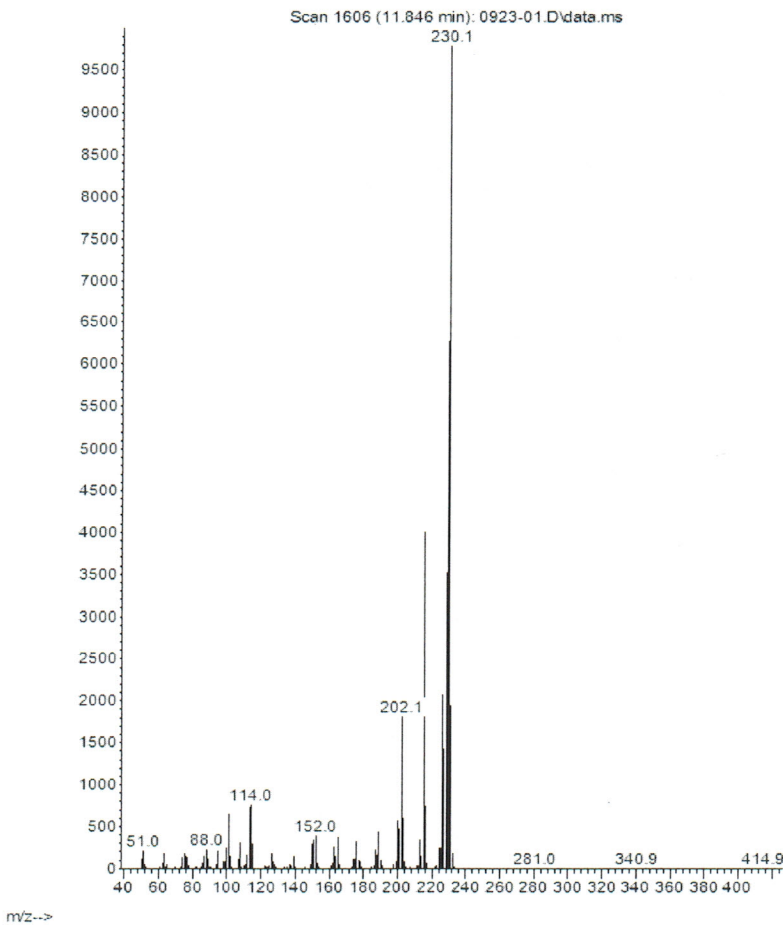


## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 10029300  
Expiration Date: 09/30/24

Abundance



Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number:	N-12693-500MG
Description:	o-Terphenyl
Lot Number:	10029300
Expiration Date:	09/30/24

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Gas

Data file: C:\CHEM3\

Sample name: N-12893

Instrument: GC 2

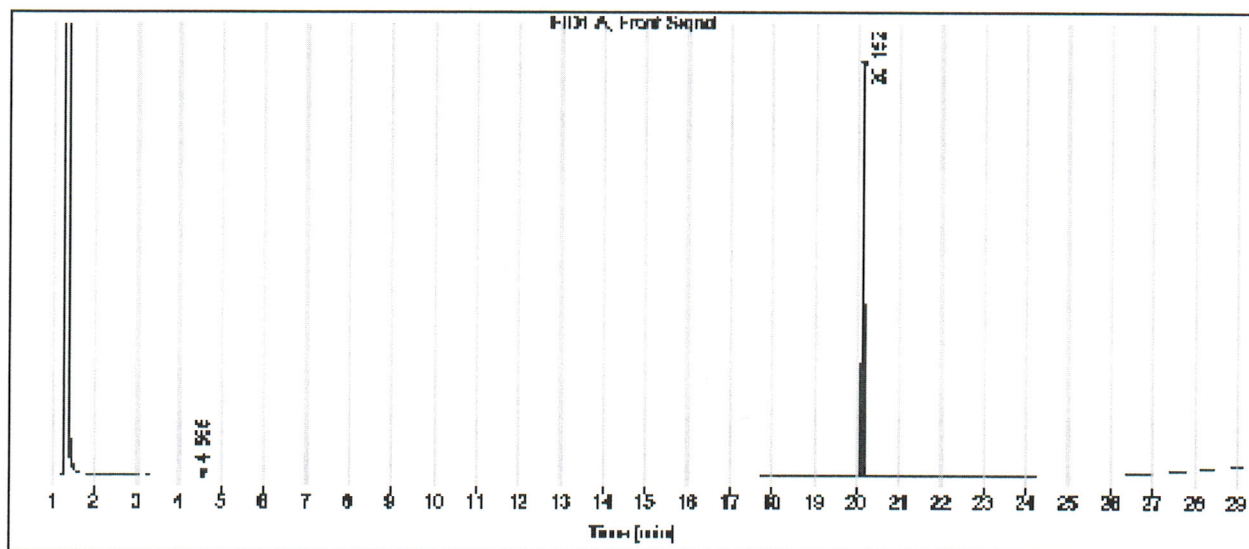
Injection date: 9/23/2019 9:58:34 AM

Acq. method: SCREEN.M

Column name: HP-5

## CERTIFICATE OF ANALYSIS

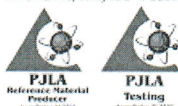
Sample type: Sample  
 Location: Vial 141  
 Injection volume: 1.0uL



Signal: FID1 A, Front Signal

RT [min]	Type	Width [min]	Area	Height	Area%
4.565	BB	0.0305	1.2408	0.5122	0.11
20.152	BB	0.0391	1171.9556	439.4599	99.89
		Sum	1173.1963		

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# Energy Laboratories Inc

# Standard LOG

Standard ID: DRO200430B  
Standard Name: O-Terphenyl  
Date Prepared: 4/30/2020  
Date Expires: 9/30/2024  
Department: dropr  
Vendor: Chemservice  
Lot Number: 9972100  
Balance ID:  
Comments: ID#: 6271

Type: Neat  
BY: Ann Nebel  
Status: New

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
o-Terphenyl	12650	500	mg	9/30/

Final Volume: mL

Stock Source

**Base Units**

**Amount Added**

Analtes

**CAS**

Conc: ug/mL

A O-Terphenyl

84-15-1

1

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## CERTIFICATE OF ANALYSIS

### o-Terphenyl

CATALOG NUMBER N-12693-500MG  
LOT NUMBER 9972100  
DATE CERTIFIED 09/23/19  
EXPIRATION DATE 09/30/24  
CAS NUMBER 84-15-1  
MOLECULAR FORMULA C<sub>18</sub>H<sub>14</sub>  
MOLECULAR WEIGHT 230.32  
STORAGE Store in a cool dry place.  
HANDLING See Safety Data Sheet  
INTENDED USE For laboratory use only.

Analytical Test	Value
FT-IR SPECTROSCOPY	CONFORMS TO STRUCTURE
GC/MS SPECTRA ID	MATCHES NIST DATABASE
MELTING POINT (°C)	57.1
% PURITY (GC/FID)	99.5

Chem Service, Inc. guarantees the purity to be +/- 0.5% deviation prior to the expiration date shown on the label and exclusive of any customer contamination.

Certified By:

*Mary Beth O'Donnell*

Mary Beth O'Donnell  
CSM/TC

ID #: 12650

Opened: \_\_\_\_\_

o-Terphenyl

Expires: 9/30/2024

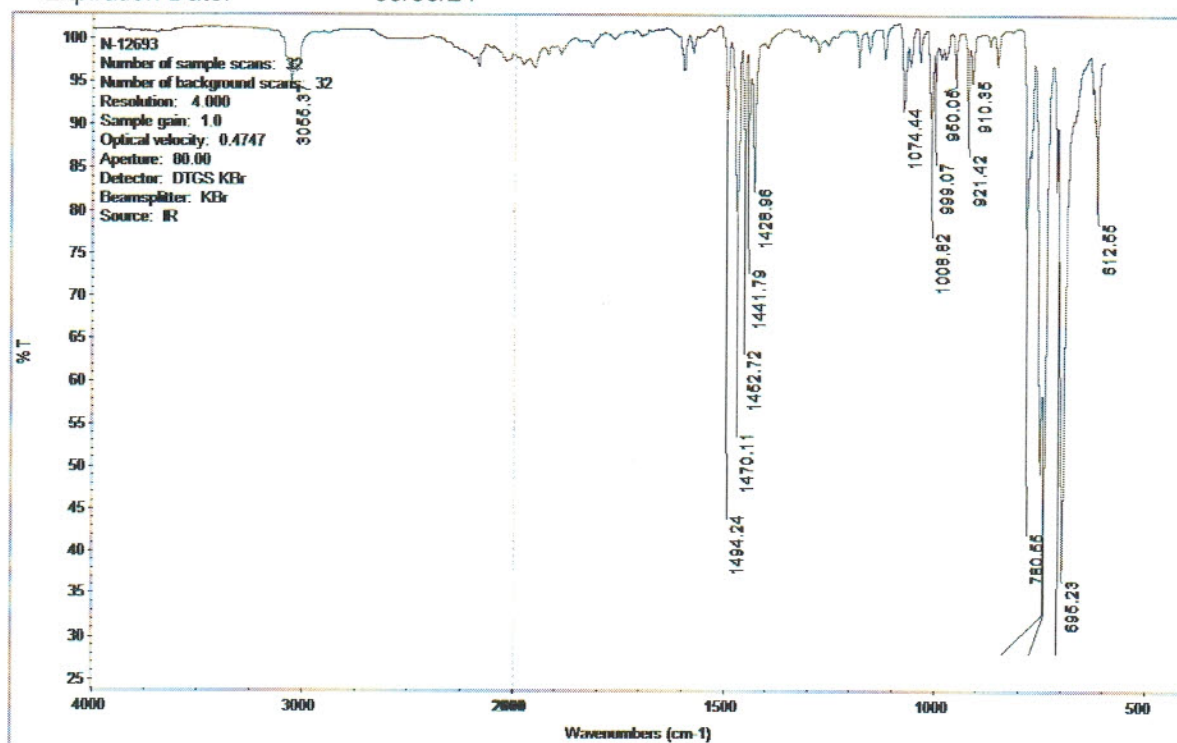
Rec'd: 4/30/2020

Energy Laboratories Inc 1120 So. 27th Street  
Billings MT 59107

## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 9972100  
Expiration Date: 09/30/24



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## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 9972100  
Expiration Date: 09/30/24  
Chem Service Inc      Area Percent Report

Data File: D:\msdchem\2019 DATA\0919\0923-01.D  
Acq On : 23 Sep 2019 10:40  
Operator :  
Sample : n-12693  
Misc :  
ALS Vial : 95

Integration Parameters: autoint1.e  
Integrator: ChemStation

DataAcq Meth: SCREEN.M  
Method : D:\msdchem\2019 DATA\0919\0903-09.D\ERIN.M

Signal : TIC: 0923-01.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	11.844	1597	1606	1613	BB	32038221	432253484	100.00%	100.000%

Sum of corrected areas: 432253484

ERIN.M Mon Sep 23 10:55:51 2019

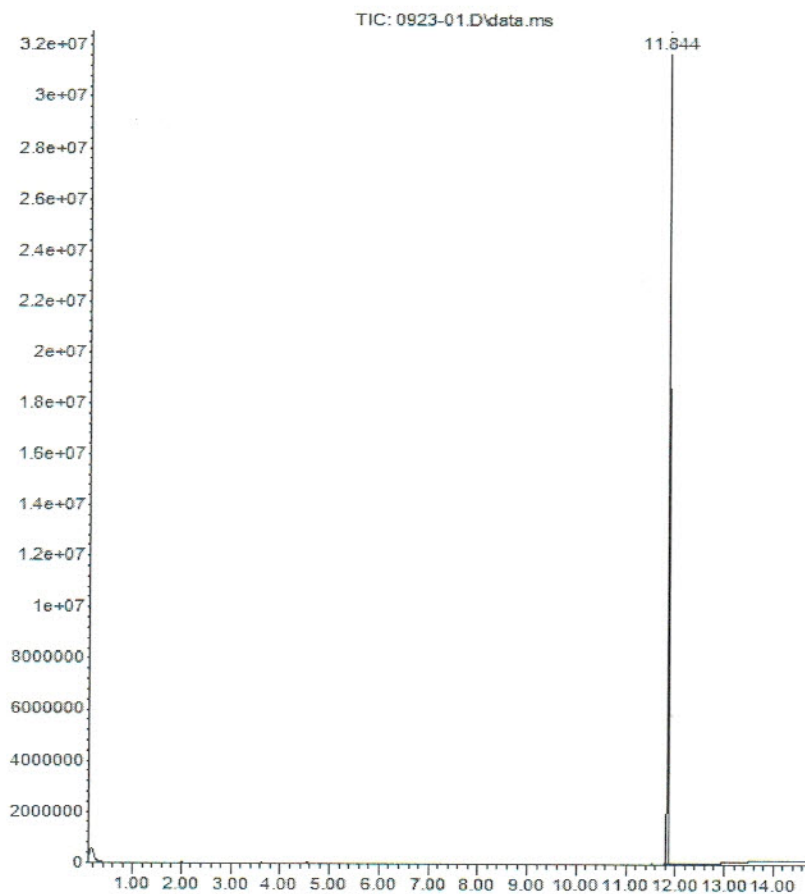
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## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 9972100  
Expiration Date: 09/30/24

Abundance



Time-->

Chem. Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015



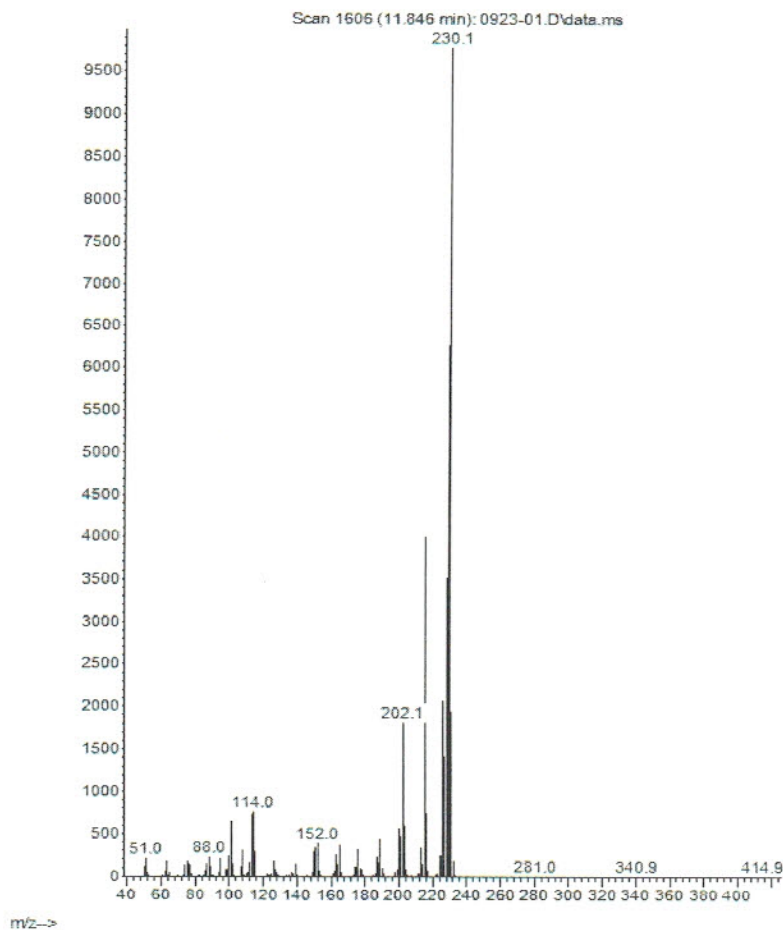
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## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number: N-12693-500MG  
Description: o-Terphenyl  
Lot Number: 9972100  
Expiration Date: 09/30/24

Abundance



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## CERTIFICATE OF ANALYSIS

### Analysis Method:

Catalog Number:	N-12693-500MG
Description:	o-Terphenyl
Lot Number:	9972100
Expiration Date:	09/30/24

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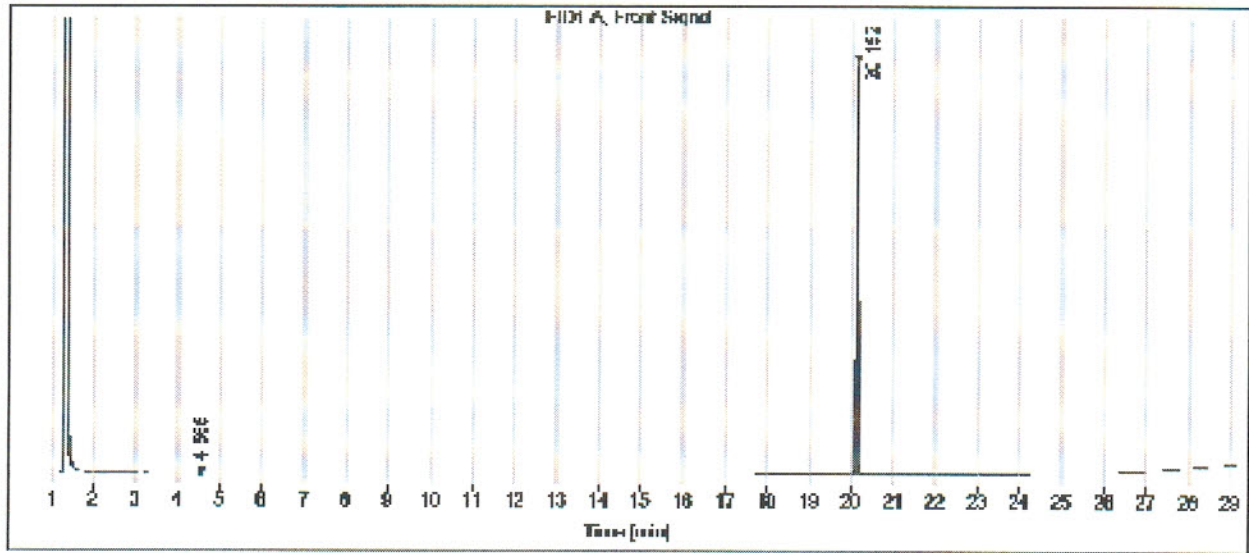
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[info@chemservice.com](mailto:info@chemservice.com) • [www.chemservice.com](http://www.chemservice.com)

Gas

Data file: C:\CHEM3\  
 Sample name: N-12683  
 Instrument: GC 2  
 Injection date: 9/23/2019 9:58:34 AM  
 Acq. method: SCREEN.M  
 Column name: HP-5

## CERTIFICATE OF ANALYSIS

Sample type:   
 Location: Vial 141  
 Injection volume: 1.0uL



Signal: FID1 A, Front Signal

RT [min]	Type	Width [min]	Area	Height	Area%
4.565	BB	0.0305	1.2408	0.5122	0.11
20.152	BB	0.0391	1171.9556	439.4599	99.89
		Sum	1173.1963		

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015

