



Total Extractable Petroleum Hydrocarbons (Diesel)

Case Narrative

COGCC

Charles C Bell TB

Work Order Number: 1607160

1. This report consists of 1 oil sample. The sample was received intact at ambient temperature by ALS on 07/11/16.
2. The oil sample was diluted with hexane and submitted for analysis.
3. The sample was analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C₁₀ to C₂₈.
4. All initial and continuing calibration criteria were met.
5. All method blank criteria were met.
6. All laboratory control sample and laboratory control sample duplicate recoveries and RPD were within the acceptance criteria.
7. A matrix spike and matrix spike duplicate were not performed for this analysis. A laboratory control sample and laboratory control sample duplicate were performed instead.
8. The sample was analyzed beyond the holding time requirements, because it was received by ALS after the holding time had lapsed.
9. Due to dilution requirements, the surrogate for sample 1607160-1 was not recoverable. All other surrogate recoveries were within acceptance criteria.



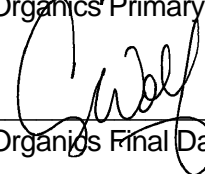
10. Due to the concentration of the target analyte, the sample was analyzed at a dilution. The reporting limits have been adjusted accordingly.
11. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in the current revision of SOP 939. Whenever manual integrations are performed, before and after chromatograms of the peak that was manually integrated are included in the report along with the reason why the re-integration was necessary.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.



Emily Knodel
Organics Primary Data Reviewer

7/31/16
Date



Organics Final Data Reviewer

7/31/16
Date

ALS
Data Qualifier Flags
Organics

- U or ND:** This flag indicates that the compound was analyzed for but not detected.
- J:** This flag indicates an estimated value. This flag is used as follows : (1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the reporting limit (RL) but greater than the method detection limit (MDL); (3) when the retention time data indicate the presence of a compound that meets the GC identification criteria, and the result is less than the RL but greater than the MDL; and (4) the reported value is estimated.
- B:** This flag is used when the analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user. This flag shall be used for a tentatively identified compound (TIC) as well as for a positively identified target compound.
- E:** This flag identifies compounds whose concentration exceeds the upper level of the calibration range.
- A:** This flag indicates that a tentatively identified compound is a suspected aldol-condensation product.
- X:** This flag indicates that the analyte was diluted below an accurate quantitation level.
- *:** This flag indicates that a spike recovery is equal to or outside the control criteria used.
- +:** This flag indicates that the relative percent difference (RPD) equals or exceeds the control criteria.

ALS
Data Qualifier Flags
Fuels

- G:** This flag indicates that a pattern resembling gasoline was detected in this sample.
- D:** This flag indicates that a pattern resembling diesel was detected in this sample.
- M:** This flag indicates that a pattern resembling motor oil was detected in this sample.
- C:** This flag indicates that a pattern resembling crude oil was detected in this sample.
- 4:** This flag indicates that a pattern resembling JP-4 was detected in this sample.
- 5:** This flag indicates that a pattern resembling JP-5 was detected in this sample.
- H:** This flag indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
- L:** This flag indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
- Z:** This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
gasoline
JP-8
diesel
mineral spirits
motor oil
Stoddard solvent
bunker C
- Multiple flags may be used to indicate the presence of more than one product or component.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 1607160

Client Name: COGCC

Client Project Name: Charles C Bell TB

Client Project Number:

Client PO Number: CT 2016-141

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
754964 Bell TB	1607160-1		OIL	24-Jun-16	8:18
754964 Bell TB	1607160-2		WATER	24-Jun-16	8:18



Chain-of-Custody

Form 202r8

*Time Zone (Circle): EST CST MST PST (Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter)

For metals or anions, please detail analytes below.

Comments: analyze oil phase analyze diluted H ₂ O phase 6 of 6 separator	QC PACKAGE (check below)	
	LEVEL II (Standard QC)	<input checked="" type="checkbox"/>
	LEVEL III (Std QC + forms)	<input type="checkbox"/>
	LEVEL IV (Std QC + forms + raw data)	<input type="checkbox"/>
		<input type="checkbox"/>
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-NaHSO ₄ 7-Other 8-4 degrees C 9-5035		



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC

Workorder No: 1607160

Project Manager: AW

Initials: COT Date: 7-11-16

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<u>NO</u>
2. Are custody seals on shipping containers intact?	<u>NONE</u>	YES	NO
3. Are Custody seals on sample containers intact?	<u>NONE</u>	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<u>YES</u>	NO
5. Are the COC and bottle labels complete and legible?		<u>YES</u>	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<u>YES</u>	NO
7. Were airbills / shipping documents present and/or removable?	<u>DROP OFF</u>	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	<u>N/A</u>	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	<u>N/A</u>	YES	NO
10. Is there sufficient sample for the requested analyses?		YES	<u>NO</u>
11. Were all samples placed in the proper containers for the requested analyses?		<u>YES</u>	NO
12. Are all samples within holding times for the requested analyses?		<u>YES</u>	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<u>YES</u>	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	<u>N/A</u>	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	<u>N/A</u>	YES	<u>NO</u>
16. Were the samples shipped on ice?		YES	<u>NO</u>
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4		YES	<u>NO</u>
Cooler #: <u>1</u>			
Temperature (°C): <u>Amb</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>NA</u>			
Background µR/hr reading: <u>NA</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO <u>NA</u> (If no, see Form 008.)			

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? YES / NO NA Contact: _____ Date/Time: _____

Project Manager Signature / Date: Cody 7/24/16

Diesel Range Organics

Method SW8015MD

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1607160

Client Name: COGCC

ClientProject ID: Charles C Bell TB

Lab ID: HC160729-100MB

Sample Matrix: OIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 29-Jul-16

Date Analyzed: 29-Jul-16

Prep Batch: HC160729-100

QCBatchID: HC160729-100-1

Run ID: HC160729-100

Cleanup: NONE

Basis: N/A

File Name: 02817.dat

Sample Aliquot: 1 g

Final Volume: 10 ml

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
68334-30-5	Diesel Range Organics	1	200	200	60	U	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
84-15-1	O-TERPHENYL	232		250	93	49 - 114

Data Package ID: DRO1607160-1

Date Printed: Sunday, July 31, 2016

ALS -- Fort Collins

LIMS Version: 6.820

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Diesel Range Organics

Method SW8015MD

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607160

Client Name: COGCC

ClientProject ID: Charles C Bell TB

Field ID: 754964 Bell TB

Lab ID: 1607160-1

Sample Matrix: OIL

% Moisture: N/A

Date Collected: 24-Jun-16

Date Extracted: 29-Jul-16

Date Analyzed: 29-Jul-16

Prep Method: METHOD

Prep Batch: HC160729-100

QCBatchID: HC160729-100-1

Run ID: HC160729-100

Cleanup: NONE

Basis: As Received

File Name: 02820.dat

Analyst: Joel F. Nolte

Sample Aliquot: 1 g

Final Volume: 10 ml

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
68334-30-5	Diesel Range Organics	100	470000	20000	6000	DMH	

The chromatogram for Diesel Range Organics indicates the presence of hydrocarbons in the range of C10-C40+.

Data Package ID: DRO1607160-1

Date Printed: Sunday, July 31, 2016

ALS -- Fort Collins

LIMS Version: 6.820

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Diesel Range Organics

Method SW8015MD

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins

Work Order Number: 1607160

Client Name: COGCC

ClientProject ID: Charles C Bell TB

Lab ID: HC160729-100LCS

Sample Matrix: OIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 07/29/2016

Date Analyzed: 07/29/2016

Prep Method: METHOD

Prep Batch: HC160729-100

QCBatchID: HC160729-100-1

Run ID: HC160729-100

Cleanup: NONE

Basis: N/A

File Name: 02818.dat

Sample Aliquot: 1 g

Final Volume: 10 ml

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
68334-30-5	Diesel Range Organics	2500	2330	200		93	81 - 129%

Lab ID: HC160729-100LCSD

Sample Matrix: OIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 07/29/2016

Date Analyzed: 07/29/2016

Prep Method: METHOD

Prep Batch: HC160729-100

QCBatchID: HC160729-100-1

Run ID: HC160729-100

Cleanup: NONE

Basis: N/A

File Name: 02819.dat

Sample Aliquot: 1 g

Final Volume: 10 ml

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
68334-30-5	Diesel Range Organics	2500	2280	200		91	20	2

Surrogate Recovery LCS/LCSD

CASNO	Target Analyte	Spike Added	LCS % Rec.	LCS Flag	LCSD % Rec.	LCSD Flag	Control Limits
84-15-1	O-TERPHENYL	250	94		92		49 - 114

Data Package ID: DRO1607160-1

Total Extractable Petroleum Hydrocarbons / DRO (8015) Quantitation Report

ALSLG-Fort Collins

Sample : HC160729-100MB

Filename : \\gcserver\gcdata\Projects\GC8\Data\2016\dro160729\02817.dat

Acquisition Date : 7/29/2016 11:36:54 AM

Quantitation Date : 7/29/2016 2:43:52 PM

Last Method Update : 7/29/2016 2:42:34 PM

Method : \\gcserver\gcdata\Projects\GC8\Method\2016\dro160630p.met Inj. Vol. (uL) : 2

Sequence : \\gcserver\gcdata\Projects\GC8\Sequence\2016\dro160729.seq

Data Description : solid

Instrument : GC8

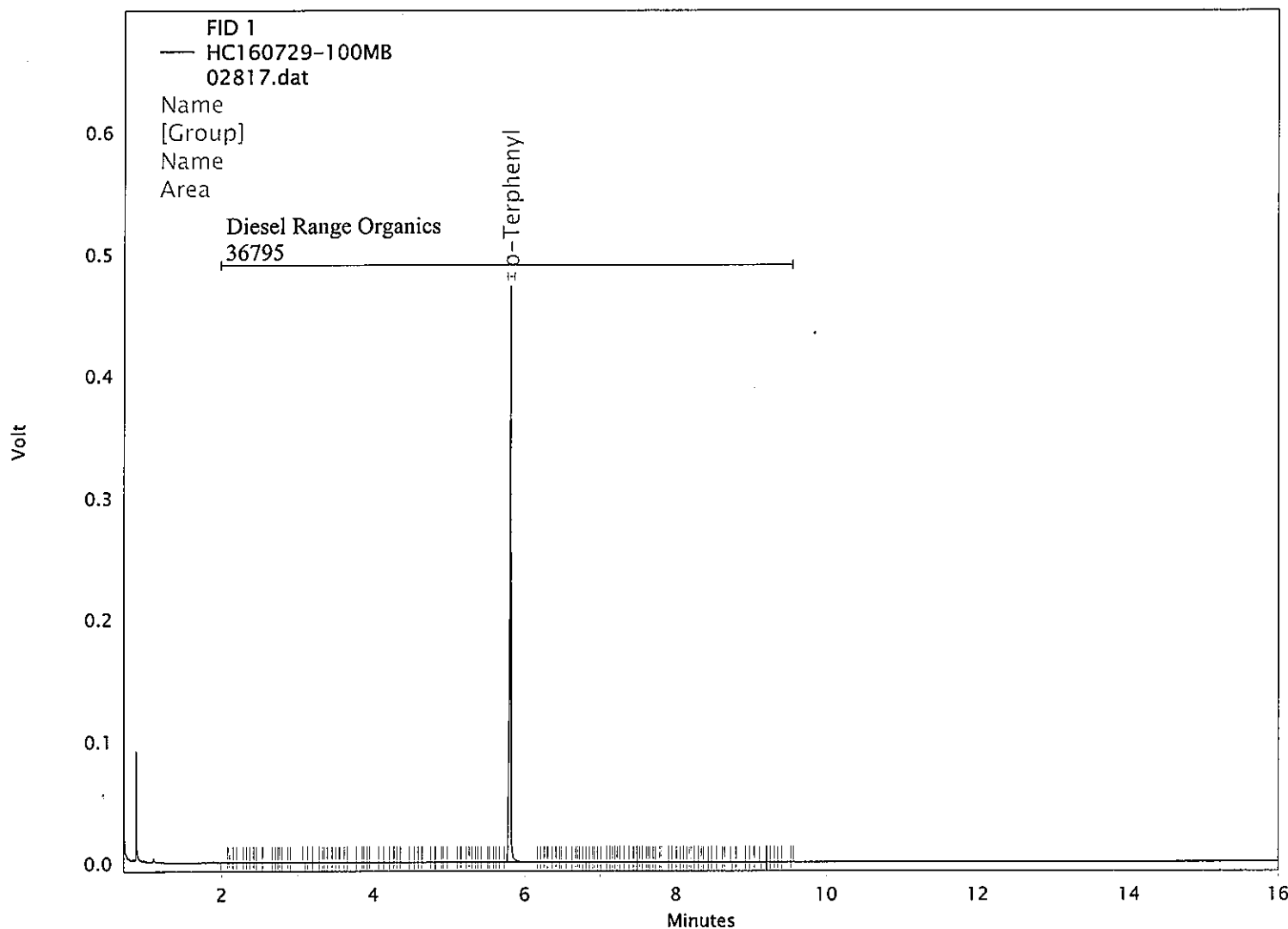
Data Acquired By : noltej

Data Processed By : noltej

Vial : 2

FID 1 Results

Compound Name	RT	Expected RT	Peak Area	Integration Codes	Conc.	Conc. Units
o-Terphenyl	5.81	5.81	591724	LL	23.230	ug/mL
Diesel Range Organics			36795		0.000	ug/mL



Column : Rxi-5Sil MS (30M x 0.32mm x 1.0u)

(1st int. code is for peak start, 2nd int code is for peak stop) B=baseline, f=force start or stop, l=ended by int. off event, N=begin negative peak, P=end negative peak, H=forward horiz, h=backward horiz, M=manual baseline or peak, m=move baseline start/stop, S=shoulder, T=tangent skim, V=valley, v=forced valley point, x=split peak, E=end of chromatogram encountered, R=reset baseline, L=lowest point horiz.

Printed On : 7/29/2016 2:43:53 PM

Total Extractable Petroleum Hydrocarbons / DRO (8015) Quantitation Report

ALSLG-Fort Collins

Sample : HC160729-100LCS

Filename : \\gcserver\gcdata\Projects\GC8\Data\2016\dro160729\02818.dat

Acquisition Date : 7/29/2016 12:02:58 PM

Instrument : GC8

Quantitation Date : 7/29/2016 2:43:57 PM

Data Acquired By : noltej

Last Method Update : 7/29/2016 2:42:34 PM

Data Processed By : noltej

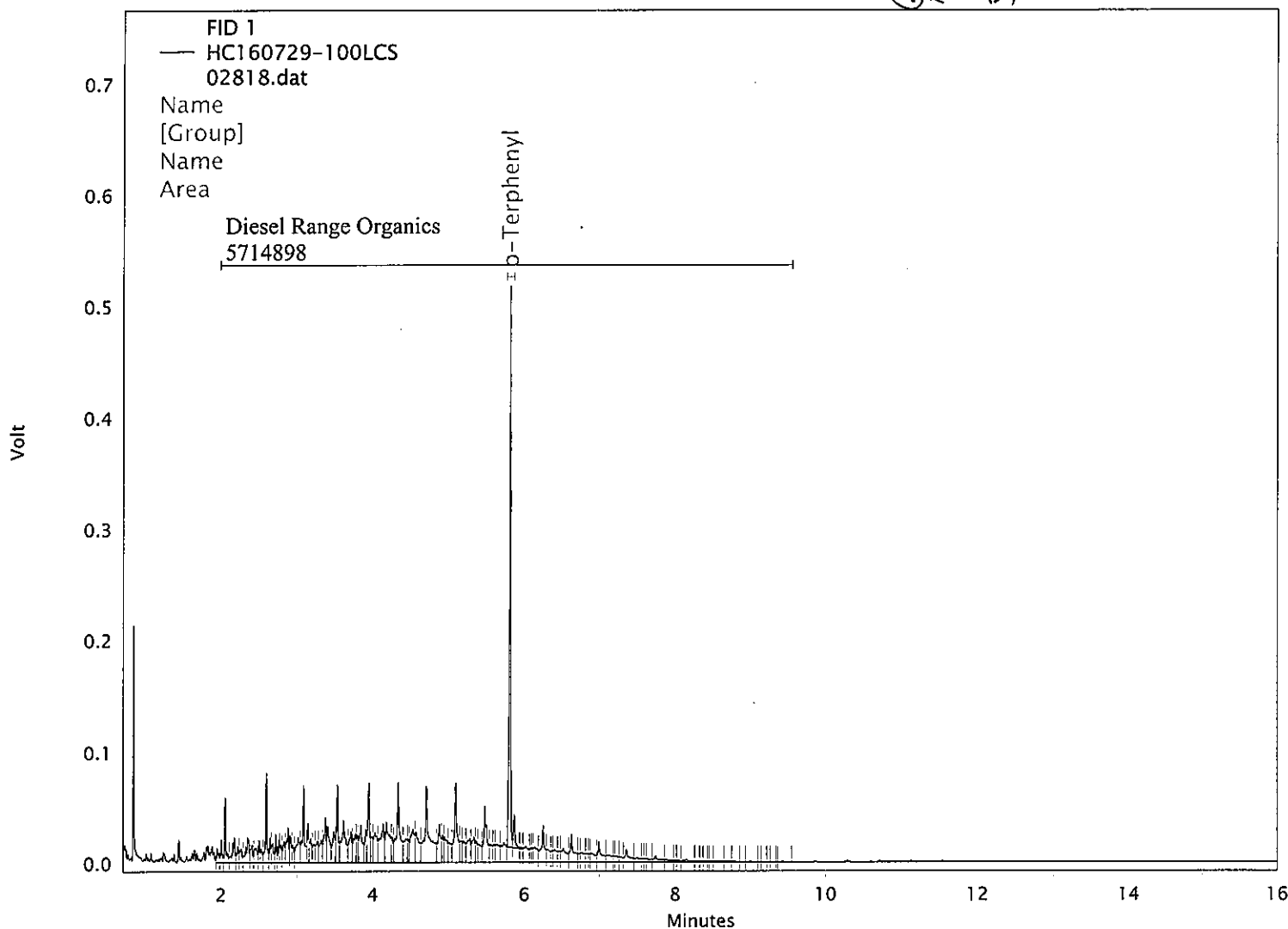
Method : \\gcserver\gcdata\Projects\GC8\Method\2016\dro160630p.met Inj. Vol. (uL) : 2

Sequence : \\gcserver\gcdata\Projects\GC8\Sequence\2016\dro160729.seq Vial : 3

Data Description : solid, 250ppm

FID 1 Results

Compound Name	RT	Expected RT	Peak Area	Integration Codes	Conc.	Conc. Units
o-Terphenyl	5.81	5.81	598198	LL 94%	23.484	ug/mL
Diesel Range Organics			5714898	93%	233.044	ug/mL



Column : Rxi-5Sil MS (30M x 0.32mm x 1.0u)

(1st int. code is for peak start, 2nd int code is for peak stop) B=baseline, f=force start or stop, l=ended by int. off event, N=begin negative peak, P=end negative peak, H=forward horiz, h=backward horiz, M=manual baseline or peak, m=move baseline start/stop, S=shoulder, T=tangent skim, V=valley, v=forced valley point, x=split peak, E=end of chromatogram encountered, R=reset baseline, L=lowest point horiz.

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Total Extractable Petroleum Hydrocarbons / DRO (8015) Quantitation Report

ALSLG-Fort Collins

Sample : HC160729-100LCSD

Filename : \\gcserver\gcdata\Projects\GC8\Data\2016\dro160729\02819.dat

Acquisition Date : 7/29/2016 12:29:33 PM

Instrument : GC8

Quantitation Date : 7/29/2016 2:44:02 PM

Data Acquired By : noltej

Last Method Update : 7/29/2016 2:42:34 PM

Data Processed By : noltej

Method : \\gcserver\gcdata\Projects\GC8\Method\2016\dro160630p.met Inj. Vol. (uL) : 2

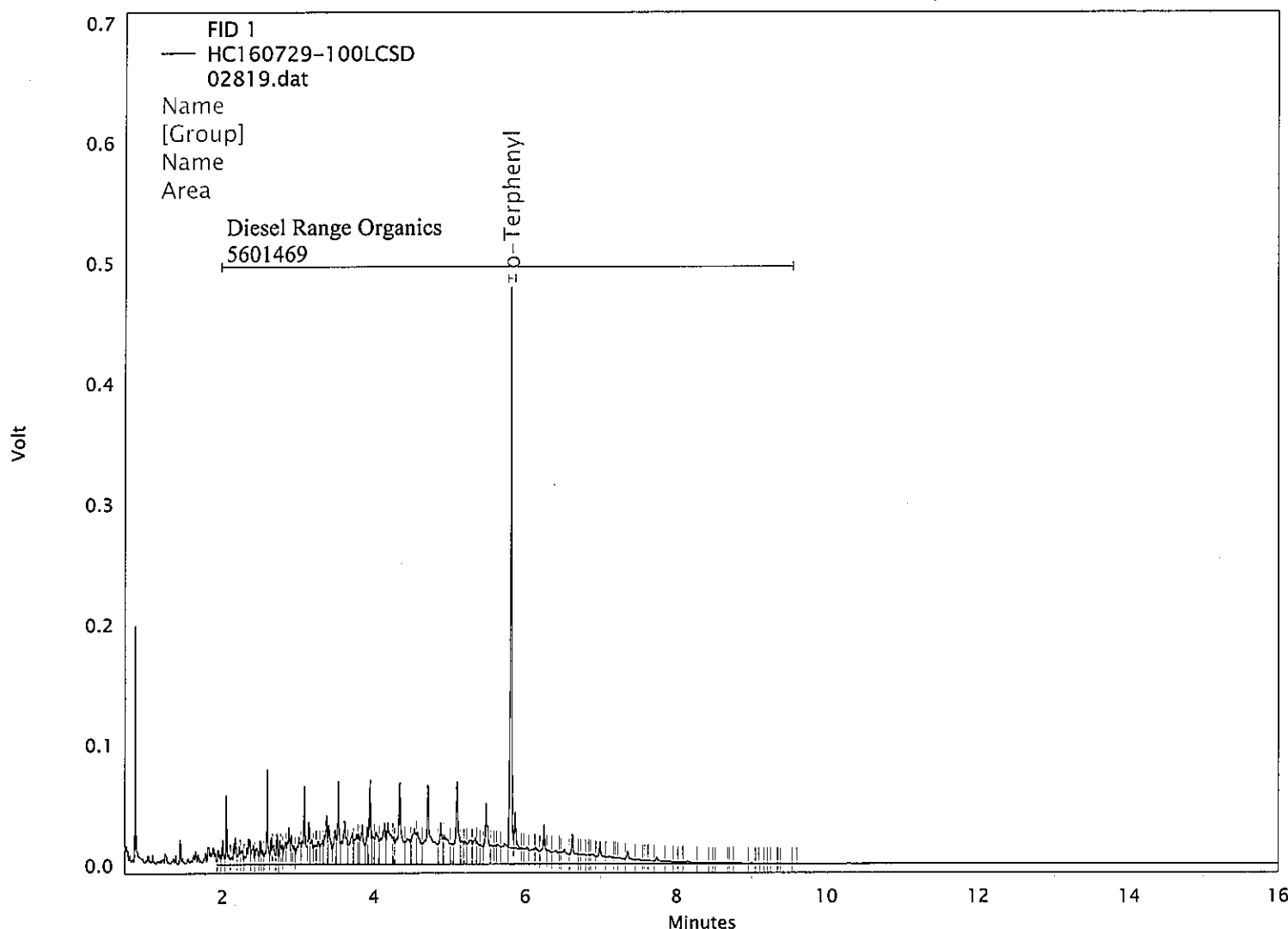
Sequence : \\gcserver\gcdata\Projects\GC8\Sequence\2016\dro160729.seq

Vial : 4

Data Description : solid, 250ppm

FID 1 Results

Compound Name	RT	Expected RT	Peak Area	Integration Codes	Conc.	Conc. Units
o-Terphenyl	5.81	5.81	583357	LL	22.902	ug/mL
Diesel Range Organics			5601469	92% 91%	228.264	ug/mL



Column : Rxi-5Sil MS (30M x 0.32mm x 1.0u)

(1st int. code is for peak start, 2nd int code is for peak stop) B=baseline, f=force start or stop, l=ended by int. off event, N=begin negative peak, P=end negative peak, H=forward horiz, h=backward horiz, M=manual baseline or peak, m=move baseline start/stop, S=shoulder, T=tangent skim, V=valley, v=forced valley point, x=split peak, E=end of chromatogram encountered, R=reset baseline, L=lowest point horiz.

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Total Extractable Petroleum Hydrocarbons / DRO (8015) Quantitation Report

ALSLG-Fort Collins

Sample : 1607160-1 100x

Filename : \\gcserver\gcdata\Projects\GC8\Data\2016\dro160729\02820.dat

Acquisition Date : 7/29/2016 12:55:41 PM

Instrument : GC8

Quantitation Date : 7/29/2016 2:44:06 PM

Data Acquired By : noltej

Last Method Update : 7/29/2016 2:42:34 PM

Data Processed By : noltej

Method : \\gcserver\gcdata\Projects\GC8\Method\2016\dro160630p.met Inj. Vol. (uL) : 2

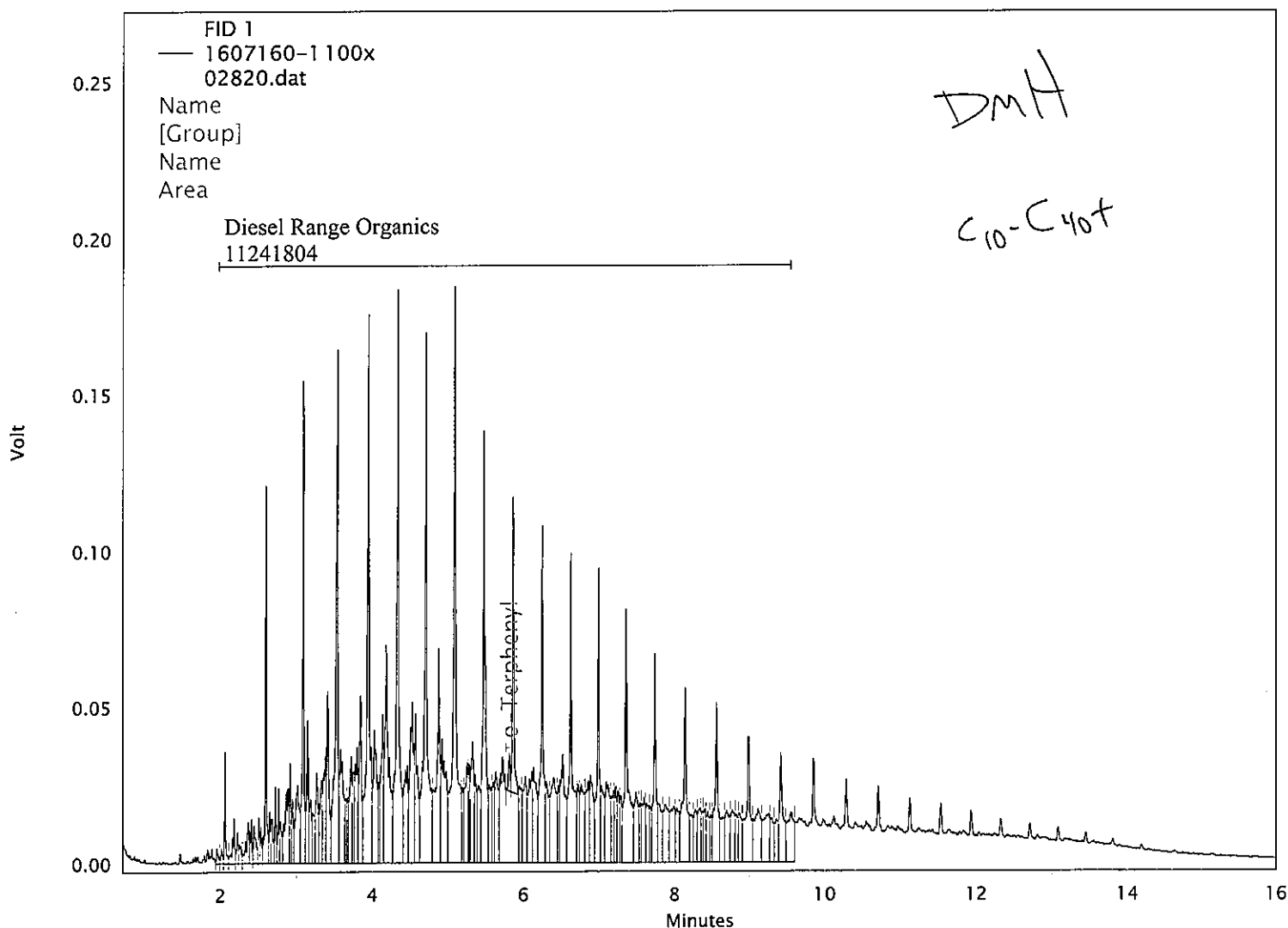
Sequence : \\gcserver\gcdata\Projects\GC8\Sequence\2016\dro160729.seq

Vial : 5

Data Description : solid, 15uL/1.5mL

FID 1 Results

Compound Name	RT	Expected RT	Peak Area	Integration Codes	Conc. (Sample Diluted out)	Conc. Units
o-Terphenyl	5.82	5.81	17895	LL	0.730	ug/mL
Diesel Range Organics			11241804		465.920	ug/mL



Column : Rxi-5Sil MS (30M x 0.32mm x 1.0u)

(1st int. code is for peak start, 2nd int code is for peak stop) B=baseline, f=force start or stop, l=ended by int. off event, N=begin negative peak, P=end negative peak, H=forward horiz, h=backward horiz, M=manual baseline or peak, m=move baseline start/stop, S=shoulder, T=tangent skim, V=valley, v=forced valley point, x=split peak, E=end of chromatogram encountered, R=reset baseline, L=lowest point horiz.

Printed On : 7/29/2016 2:44:07 PM