ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division
Fort Collins, Colorado

Total Extractable Petroleum Hydrocarbons (Diesel)

Case Narrative

COGCC

DCU6-Orphan

Work Order Number: 1007167

1. This report consists of 1 water sample. The sample was received cool and intact by ALS on 07/16/2010.

2. The water sample was extracted using separatory funnels according to SOP 626 Revision 9 based on Method 3510C.

3. The extract was then analyzed using GC with a DB-5.625 capillary column and a flame ionization detector (FID) according to SOP 406 Revision 14 generally based on SW-846 Method 8000B and Method 8015B and specifically on the California LUFT Field Manual (October 1989 revision). The procedures are based on this general method because SW-846 does not have a specific method for total extractable petroleum hydrocarbons (TEPH) or diesel range organics. The only true modification from this method is that TEPH is a multicomponent mixture and is quantitated by integrating across the entire range, rather than summing areas of individual peaks. All positive results were quantitated using the responses from the initial calibration curve using the external standard technique. Also, a confirmation column is not used, because the analyte is a multicomponent mixture and the specific carbon range of the peaks detected is specified on the individual sample reporting forms.

4. All initial and continuing calibration criteria were met.

5. The method blank associated with this project was below the MDL for diesel range organics.

6. All laboratory control sample and laboratory control sample duplicate recoveries and RPDs were within the acceptance criteria.

7. Matrix spikes and matrix spike duplicates could not be performed because of insufficient sample. A laboratory control sample and laboratory control sample duplicate were performed instead.

8. The sample was extracted and analyzed within the established holding time.

9. All surrogate recoveries were within the acceptance criteria.

10. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in SOP 939 Revision 3.

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.

mindy norton
Mindy Norton
Organics Primary Data Reviewer

8.11.10
Date

Joe Nolte
Organics Final Data Reviewer

8/13/10
Date

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
Data Qualifier Flags
Chromatography and Mass Spectrometry

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 data indicate the presence of a compound that meets the 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 outside the control criteria.**
+:	**This flag indicates that the relative percent difference (RPD) exceeds the control criteria.**

ALS Laboratory Group -- FC

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 1007167
Client Name: COGCC
Client Project Name: DCU6-Orphan
Client Project Number:
Client PO Number: OE PHA 11000000014

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
DCU #6	1007167-1		WATER	15-Jul-10	12:00
Trip Blank	1007167-2		WATER	15-Jul-10	

Fed Ex # 8732 9441 9890

ALS Laboratory Group

225 Commerce Drive, Fort Collins, CO 80524
TF: 800-443-1511 PH: 970-490-1511 FX: 970-490-1522

Chain-of-Custody

Date		Page	1	of	1	Lab ID	1007167

Project Name/No.	DCUL Orphan
REPORT TO:	Linda Spry O'Rourke
PHONE:	970 625 2497
FAX:	970 625 5682
E-MAIL:	linda.spryorourke@state.co.us
COMPANY:	COGCC
ADDRESS:	707 Wapiti Ct Suite 204 Rifle Co 81650

Sampler(s):

Turnaround: (Standard) or Due ____

Disposal: By Lab or Return to Client

Provide additional information as needed in Comments below.

Circle Analytical Method Above:

Sample ID	Date	Time*	Lab ID	Matrix	Preservative (Type HCl, etc.)	No. of Containers	TPH (SW8015B (GRO DRO) Other)	VOCs (SW8260C)	BTEX + MtBE (SW8260C)	SVOCs ((SW8270D) ~~TEPH~~ ~~coo~~ ~~7/14/10~~; RSO 7/14/10)	~~OC Pesticides~~ TOC (~~SW8081A~~ RSO 7/14/10)	PCBs (SW8082) RSO 6/24/10	~~Herbicides~~ RSK 175 (~~SW8151A~~ methane/ethane/ethene) RSO 6/24/10	Explosives (SW8330 SW8330B SW8321 by LC/MS/MS)	TCLP Organics SW1311 (SW8260C SW8270D SW8081A SW8151A)	TCLP Metals SW1311 (SW6010B SW7470A)	Total Metals (ICP) or Hg (SW6010B 7470A/7471A E200.7 E245.1)	Dissolved Metals (ICP) or Hg ((SW6010B) 7470A/7471A E200.7 E245.1)	Total Metals (ICP-MS) (SW6020A E200.8)	Dissolved Metals (ICP-MS) ((SW6020A) E200.8)	Hexavalent Chromium (SW7196A Alkaline Digestion? Y / N)	Inorganic Anions (SW9056 (E300.0))	Solids ((TDS: E160.1) TSS: E160.2 Total: E160.3)	pH (SW9040B SW9045C E150.1) RSO 6/24/10	~~Perchlorate~~ Conductivity (~~SW6850 by LC/MS/MS E314~~) RSO 6/24/10	Alkalinity - Total, HCO3, CO3	Actinides (Circle: Am / Cm / Pu / Th / U)	Gamma Isotopes (E901.1)	Gross Alpha / Beta (SW9310 E900.0)	Total Alpha-Emitting Radium (SW9315 E903.0)	Radium 226 (E903.1)	Radium 228 (SW9320 E904.0)	Strontium 90 (Total RadioSr) (D5811)	Tritium (E906.0)	Radon 222 (SM7500Rn)	SAR calc.	Cation/anion balance
DCU #6	7/15/10	1200	(1)	gw			X	X		X	X		X					X		X		X	X	X		X										X	X

*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 analyte list below.

Comments:
anions - Br, Cl, F, NO2, NO3, SO4
6010B/200.7 = Ba, Be, B, Ca, Cr, Co, Cu, Fe, Li, Mg, Mn, Ni, K, Si, Sr, V, Zn
6020/200.8 - Sb, As, Cd, Pb, Mo, Se, Ag, Tl, U
Return cooler to us - address inside lid
Sample at time of collection was 89°F -

Relinquished By: (1)		Relinquished By: (2)	
Signature	[signature]	Signature	Linda Spry O'Rourke
Printed Name	Kevin King	Printed Name	to Fedex
Date	7/15/10 Time 16:00	Date	7/15/10 Time 1800
Company		Company	

Received By: (1)		Received By: (2)	
Signature	Linda Spry O'Rourke	Signature	[signature]
Printed Name	Linda Spry O'Rourke	Printed Name	Lauren Schmitt
Date	7/15/10 Time 1600	Date	7/16/10 Time 1005
Company		Company	ALS

Originator: Retain pink page or a photocopy!

Form 202r7 (5/19/09)

ALS Laboratory Group - Fort Collins

CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC Workorder No: 1007167

Project Manager: ARW Initials: LAS Date: 7/16/10

1. Does this project require any **special handling** in addition to standard Paragon procedures?		YES	(NO)
2. Are custody **seals** on **shipping containers** intact?	NONE	(YES)	NO
3. Are Custody seals on **sample containers** intact?	(NONE)	YES	NO
4. Is there a **COC (Chain-of-Custody) present** or other representative documents?		(YES)	NO
5. Are the **COC and bottle labels complete and legible**?		(YES)	NO
6. Is the **COC in agreement** with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		(YES)	NO
7. Were **airbills / shipping documents** present and/or removable?	DROP OFF	(YES)	NO
8. Are all aqueous **samples requiring preservation preserved correctly?** (excluding volatiles)	N/A	YES	(NO) *
9. Are all aqueous **non-preserved samples pH 4-9**?	N/A	(YES)	NO
10. Is there **sufficient sample** for the requested analyses?		(YES)	NO
11. Were all samples placed in the **proper containers** for the requested analyses?		(YES)	NO
12. Are all samples within **holding times** for the requested analyses?		(YES)	NO
13. Were all sample containers received **intact**? (not broken or leaking, etc.)		(YES)	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	N/A	YES	(NO) *
15. Do perchlorate LCMS-MS samples **have** headspace? (at least 1/3 of container required)	(N/A)	YES	NO
16. Were samples checked for and free from the presence of **residual chlorine?** (Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.)	(N/A)	YES	NO
17. Were the samples **shipped on ice**?		(YES)	NO
18. Were cooler temperatures measured at 0.1-6.0°C? **IR gun used*:** (#2) #4	RAD ONLY	(YES)	NO

Cooler #:	1
Temperature (°C):	2.6
No. of custody seals on cooler:	2
DOT Survey/ Acceptance Information — External µR/hr reading:	12
Background µR/hr reading:	10

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? (YES) / NO / NA (If no, see Form 008.)

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

(*8) 1007167-1-10 (DCU#6) 125ml amber initial pH = 7
0.4mL H_2SO_4 (Lot #49245) added by LAS @ 1040 7/16/10
Final pH < 2

(*14) 1007167-1-5, 1-6 40mL voas for GRO have headspace < pea size

If applicable, was the client contacted? (YES) / NO / NA Contact: Linda Spry Dronke Date/Time: 7/19/10 e-mail

Project Manager Signature / Date: 7/19/10

*IR Gun #2: Oakton, SN 29922500201-0066 *IR Gun #4: Oakton, SN 2372220101-0002

Form 201r22.xls (6/1/09)

Total Extractable Hydrocarbons

Method SW8015MCALUFTB

Method Blank

Lab Name: ALS Laboratory Group -- FC
Work Order Number: 1007167
Client Name: COGCC
ClientProject ID: DCU6-Orphan

Lab ID: EX100721-6MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 21-Jul-10
Date Analyzed: 01-Aug-10
Prep Method: SW3510 Rev C

Prep Batch: EX100721-6
QCBatchID: EX100721-6-1
Run ID: HCD100801-3A
Cleanup: NONE
Basis: N/A
File Name: F3F36778

Sample Aliquot: 1000 ml
Final Volume: 2.5 ml
Result Units: mg/l
Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
68334-30-5	DIESEL RANGE ORGANICS	1	0.05	0.05	U	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
84-15-1	O-TERPHENYL	0.178		0.25	71	60 - 140

Data Package ID: *HCD1007167-1*

Total Extractable Hydrocarbons

Method SW8015MCALUFTB

Sample Results

Lab Name: ALS Laboratory Group -- FC
Work Order Number: 1007167
Client Name: COGCC
ClientProject ID: DCU6-Orphan

Field ID: DCU #6
Lab ID: 1007167-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 15-Jul-10
Date Extracted: 21-Jul-10
Date Analyzed: 01-Aug-10
Prep Method: SW3510 Rev C

Prep Batch: EX100721-6
QCBatchID: EX100721-6-1
Run ID: HCD100801-3A
Cleanup: NONE
Basis: As Received
File Name: F3F36782

Sample Aliquot: 1060 ml
Final Volume: 2.5 ml
Result Units: mg/l
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
68334-30-5	DIESEL RANGE ORGANICS	1	0.037	0.047	J	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
84-15-1	O-TERPHENYL	0.178		0.236	75	60 - 140

Data Package ID: *HCD1007167-1*

Total Extractable Hydrocarbons

Method SW8015MCALUFTB

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Laboratory Group -- FC
Work Order Number: 1007167
Client Name: COGCC
ClientProject ID: DCU6-Orphan

Lab ID: EX100721-6LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/21/2010
Date Analyzed: 08/01/2010
Prep Method: SW3510C

Prep Batch: EX100721-6
QCBatchID: EX100721-6-1
Run ID: HCD100801-3A
Cleanup: NONE
Basis: N/A
File Name: F3F36779

Sample Aliquot: 1000 ml
Final Volume: 2.5 ml
Result Units: mg/l
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
68334-30-5	DIESEL RANGE ORGANICS	1	0.729	0.05		73	60 - 140%

Lab ID: EX100721-6LCSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/21/2010
Date Analyzed: 08/01/2010
Prep Method: SW3510C

Prep Batch: EX100721-6
QCBatchID: EX100721-6-1
Run ID: HCD100801-3A
Cleanup: NONE
Basis: N/A
File Name: F3F36780

Sample Aliquot: 1000 ml
Final Volume: 2.5 ml
Result Units: mg/l
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	1	0.728	0.05		73	50	0

Surrogate Recovery LCS/LCSD

CASNO	Target Analyte	Spike Added	LCS % Rec.	LCS Flag	LCSD % Rec.	LCSD Flag	Control Limits
84-15-1	O-TERPHENYL	0.25	78		76		60 - 140

Data Package ID: *HCD1007167-1*

Quantitation Report

Data File : C:\HPCHEM\5\DATA\08012010\F3F36778.D Vial: 3
Acq On : 01 Aug 10 06:59 PM Operator: jfn
Sample : EX100721-6MB Inst : FUELS 3
Misc : water Multiplr: 1.00
Quant Time: Aug 3 16:52 19110

Method : C:\HPCHEM\5\METHODS\D042810A.M
Title : 8015Bmod, CALuft
Last Update : Sat Jul 31 20:06:51 2010
Response via : Multiple Level Calibration

Volume Inj. : 1uL
Signal Phase : DB-5.625, 30m, 0.25mm 0.5µm
Signal Info : FID

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
2) S o-terphenyl	14.05	461613	71.38 µg/ml
	Recovery	=	~~142.76%~~
Target Compounds			
1) H TEPH	15.00	70214	~~11.90~~ µg/ml < MRL

(f)=RT Delta > 1/2 Window (m)=manual int.
F3F36778.D D042810A.M Tue Aug 03 16:52:19 2010 Page 1

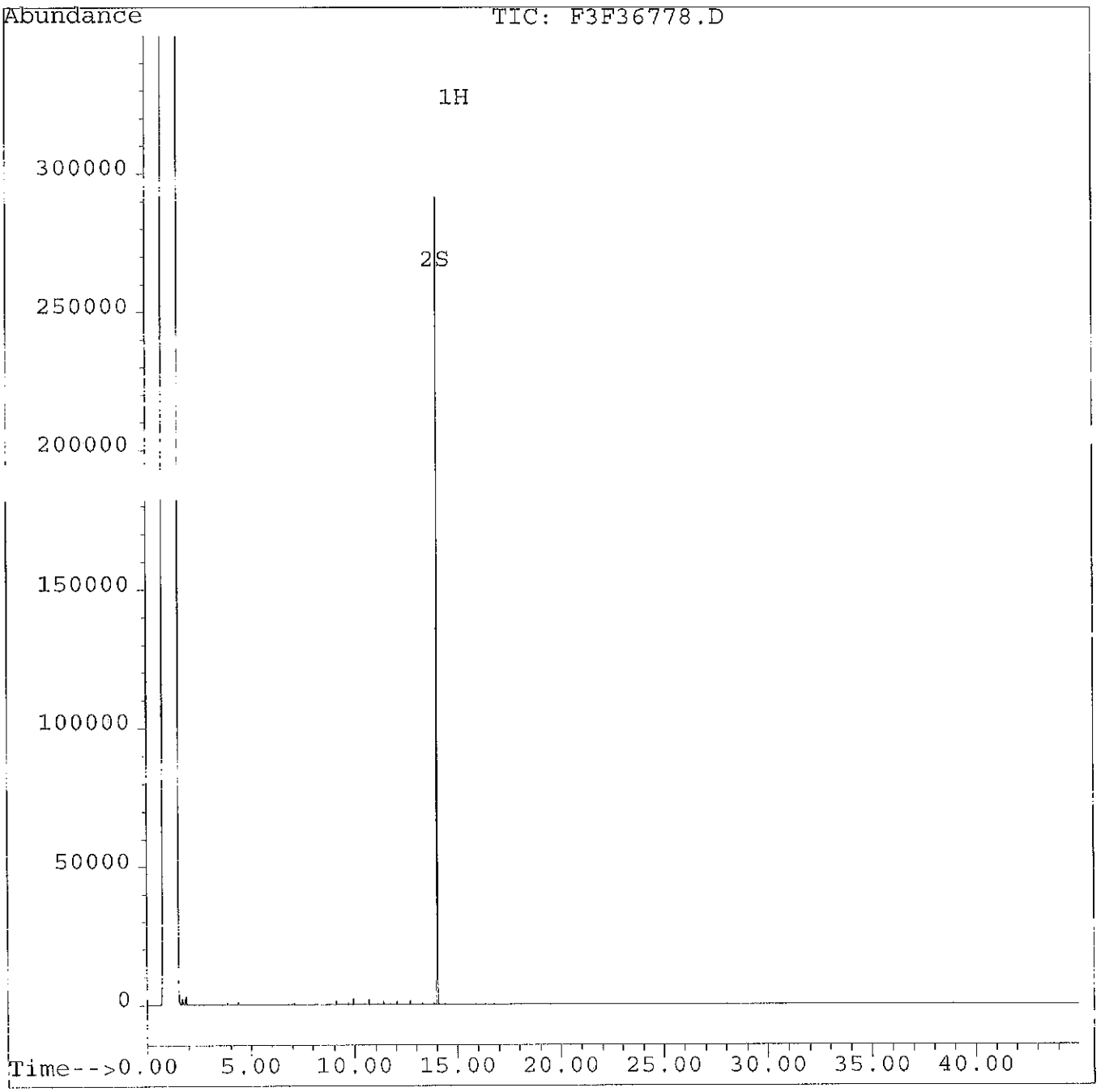
Quantitation Report

Data File : C:\HPCHEM\5\DATA\08012010\F3F36778.D
Acq On : 01 Aug 10 06:59 PM
Sample : EX100721-6MB
Misc : water
Quant Time: Aug 3 16:52 19110

Vial: 3
Operator: jfn
Inst : FUELS 3
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\D042810A.M
Title : 8015Bmod, CALuft
Last Update : Sat Jul 31 20:06:51 2010
Response via : Multiple Level Calibration

Volume Inj. : 1uL
Signal Phase : DB-5.625, 30m, 0.25mm 0.5µm
Signal Info : FID



Quantitation Report

Data File : C:\HPCHEM\5\DATA\08012010\F3F36782.D
Acq On : 01 Aug 10 10:32 PM
Sample : 1007167-1
Misc : water
Quant Time: Aug 3 16:52 19110

Vial: 7
Operator: jfn
Inst : FUELS 3
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\D042810A.M
Title : 8015Bmod, CALuft
Last Update : Sat Jul 31 20:06:51 2010
Response via : Multiple Level Calibration

Volume Inj. : 1uL
Signal Phase : DB-5.625, 30m, 0.25mm 0.5µm
Signal Info : FID

JW 8/3/10

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
2) S o-terphenyl	14.05	487011	75.31 µg/ml
	Recovery	=	~~150.62%~~ JW 8/3/10
Target Compounds			
1) H TEPH	15.00	91905	15.51 µg/ml

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

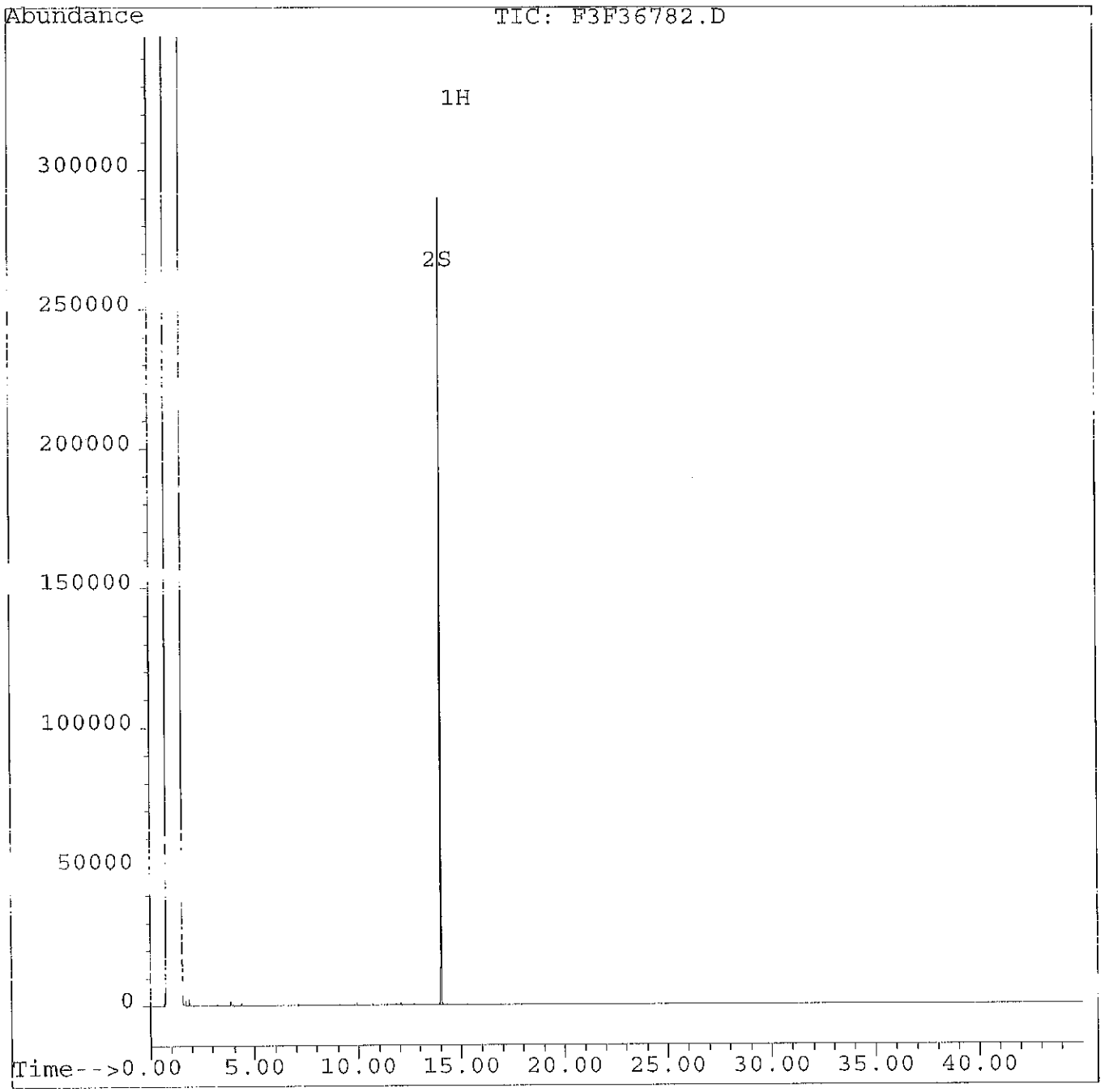
Quantitation Report

Data File : C:\HPCHEM\5\DATA\08012010\F3F36782.D
Acq On : 01 Aug 10 10:32 PM
Sample : 1007167-1
Misc : water
Quant Time: Aug 3 16:52 19110

Vial: 7
Operator: jfn
Inst : FUELS 3
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\D042810A.M
Title : 8015Bmod, CALuft
Last Update : Sat Jul 31 20:06:51 2010
Response via : Multiple Level Calibration

Volume Inj. : 1uL
Signal Phase : DB-5.625, 30m, 0.25mm 0.5µm
Signal Info : FID



Quantitation Report

Data File : C:\HPCHEM\5\DATA\08012010\F3F36779.D
Acq On : 01 Aug 10 07:52 PM
Sample : EX100721-6LCS
Misc : water
Quant Time: Aug 3 16:52 19110

Vial: 4
Operator: jfn
Inst : FUELS 3
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\D042810A.M
Title : 8015Bmod, CALuft
Last Update : Sat Jul 31 20:06:51 2010
Response via : Multiple Level Calibration

Volume Inj. : 1uL
Signal Phase : DB-5.625, 30m, 0.25mm 0.5µm
Signal Info : FID

7W 8310

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
2) S o-terphenyl	14.05	502339	77.68 µg/ml
	Recovery	=	~~155.36%~~ W 8310
Target Compounds			
1) H TEPH	15.00	1749411	291.67 µg/ml

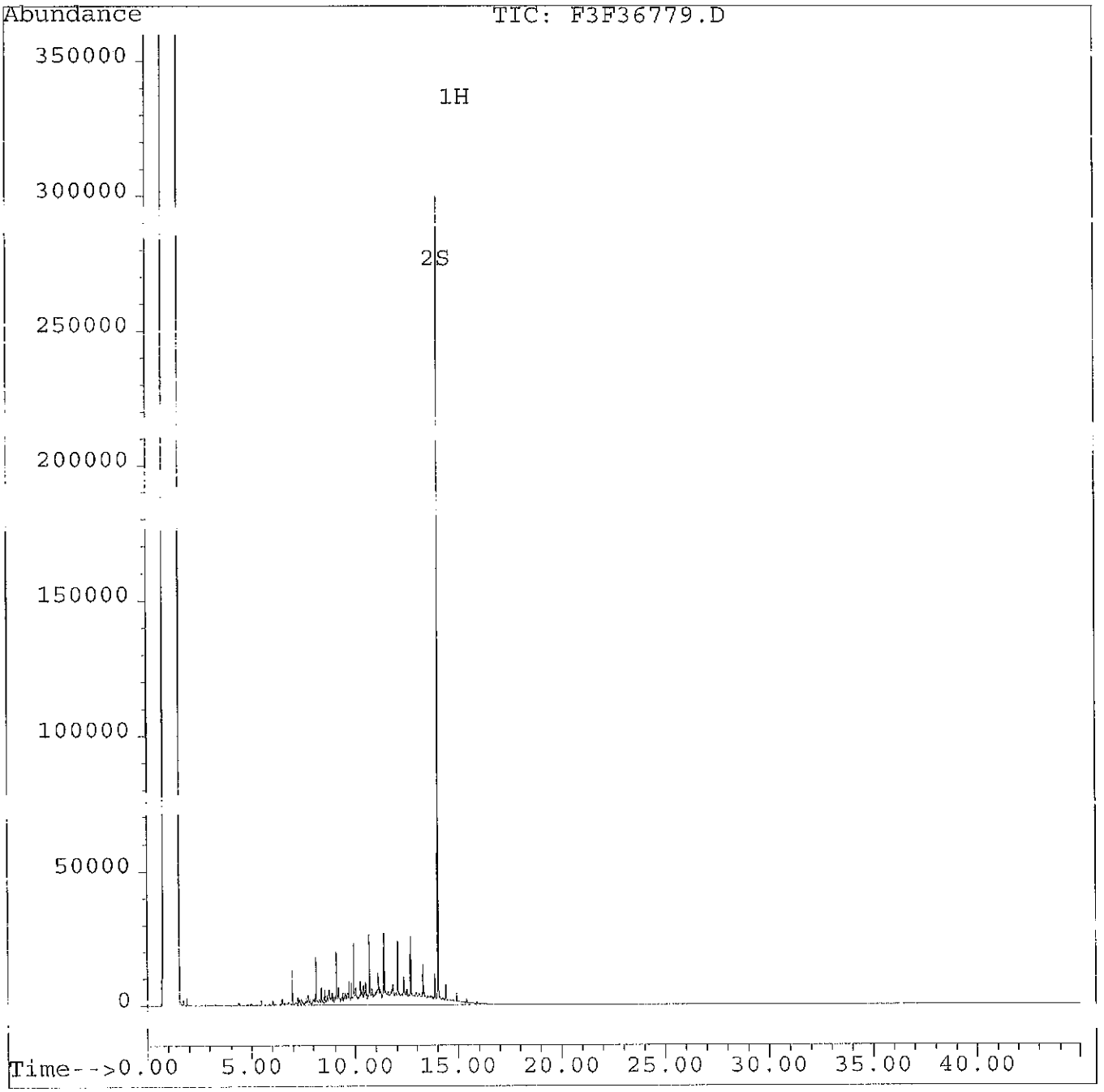
(f)=RT Delta > 1/2 Window (m)=manual int.

Data File : C:\HPCHEM\5\DATA\08012010\F3F36779.D
Acq On : 01 Aug 10 07:52 PM
Sample : EX100721-6LCS
Misc : water
Quant Time: Aug 3 16:52 19110

Vial: 4
Operator: jfn
Inst : FUELS 3
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\D042810A.M
Title : 8015Bmod, CALuft
Last Update : Sat Jul 31 20:06:51 2010
Response via : Multiple Level Calibration

Volume Inj. : 1uL
Signal Phase : DB-5.625, 30m, 0.25mm 0.5µm
Signal Info : FID



Quantitation Report

Data File : C:\HPCHEM\5\DATA\08012010\F3F36780.D
Acq On : 01 Aug 10 08:45 PM
Sample : EX100721-6LCSD
Misc : water
Quant Time: Aug 3 16:52 19110

Vial: 5
Operator: jfn
Inst : FUELS 3
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\D042810A.M
Title : 8015Bmod, CALuft
Last Update : Sat Jul 31 20:06:51 2010
Response via : Multiple Level Calibration

Volume Inj. : 1uL
Signal Phase : DB-5.625, 30m, 0.25mm 0.5µm
Signal Info : FID

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
2) S o-terphenyl	14.05	494000	76.39 µg/ml
	Recovery	=	~~152.78%~~
Target Compounds			
1) H TEPH	15.00	1747420	291.34 µg/ml

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

Quantitation Report

Data File : C:\HPCHEM\5\DATA\08012010\F3F36780.D
Acq On : 01 Aug 10 08:45 PM
Sample : EX100721-6LCSD
Misc : water
Quant Time: Aug 3 16:52 19110

Vial: 5
Operator: jfn
Inst : FUELS 3
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\D042810A.M
Title : 8015Bmod, CALuft
Last Update : Sat Jul 31 20:06:51 2010
Response via : Multiple Level Calibration

Volume Inj. : 1uL
Signal Phase : DB-5.625, 30m, 0.25mm 0.5µm
Signal Info : FID