APPROVED
By Olivia Yu at 1:12 pm, Jul 26, 2018

NMOCD approves of the proposed additional delineation for 1RP-3657. See email correspondence for conditions on proposed remediation.

ARCADIS Design & Consultancy for natural and built assets

Ms. Olivia Yu
New Mexico Oil Conservation Division – District I
Environmental Specialist
1625 N French Drive
Hobbs, New Mexico 88240

Arcadis U.S., Inc.
101 Creekside Ridge Court
Suite 200
Roseville
California 95678
Tel 916 786 0320
Fax 916 786 0366
www.arcadis.com

ENVIRONMENT

Subject:
Response to Comments on the Letter dated June 15, 2018 Regarding 2018 Remediation Activities – Scope of Work, Former Moran Well No. 2-6 Tank Battery, Lea County, New Mexico
Case No. 1RP-3657

Date:
June 28, 2018

Contact:
Brett Krehbiel

Phone:
916 786 5382

Email:
Brett.Krehbiel@arcadis.com

Our ref:
B0048787.0002

Dear Ms. Yu:

On behalf of Chevron U.S.A. Inc. under the direction of Chevron Environmental Management Company (CEMC), Arcadis U.S., Inc. (Arcadis) is providing this letter in response to the New Mexico Oil Conservation Division (NMOCD) comments regarding the 2018 Remediation Activities – Scope of Work, Former Moran Well No. 2-6 Tank Battery (Site), Lea County, New Mexico received on June 15, 2018.

For ease of review, the comments are presented in italicized text, followed by the responses in standard text.

1. *Please verify whether this location will be undergoing reclamation or remediation of the impacted tank battery area. If reclamation, please be advised that the proposed plan of 12-inch lifts to compact the soil "suitable for drill rig operations" will not allow re-vegetation to occur.*

Response:

On August 20, 2014, the Moran No. 2-6 production well was abandoned. The aboveground storage tank (AST) was removed and soil appeared contaminated on May 1, 2015. The soil in the berm area, approximately 75 feet by 60 feet with the base ranging from 8 to 10 feet, underneath the tanks was excavated in June 2015. Confirmation soil samples were collected, visibly impacted soil was disposed, and clean soil was stockpiled on the Site. According to the Mid-Continent Business Unit (MCBU) Safe Digging Plan submitted to the NMOCD on June 2, 2015, reclamation of the Site was initiated in June 2015 (**Attachment 1**).

Analytical results from confirmation soil samples collected at the base of the excavation exhibited concentrations of hydrocarbons and chlorides exceeding applicable NMOCD's recommended remediation action levels (RRALs). **Table 1** provides a summary of the soil analytical results.

As part of the Site reclamation, tasks have been planned to obtain vertical delineation of impacts identified within the former tank battery extents and initiate closure activates allowable within the regulatory framework of NMOCD. Twelve (12)-inch lifts have been proposed to compact soil 4-feet 1-inch below grade for safe drill rig operations within the excavation zone. This compaction zone will be below the root zone. The soil in the upper 3-feet 11-inches will be compacted to some extent, but the percent compaction will be significantly less and will allow re-vegetation to occur.

2. *Where was the stockpiled soil from? If from a prior excavation of the affected area, please note that this 'backfill' will need to be tested every 50 cubic yards for BTEX, TPH extended, and chlorides.*

Response:

The stockpile soil originated from the June 2015 excavated area. In January 2017, five soil samples were collected at approximately 5 feet into the stockpile utilizing a hand auger. Four soil samples were collected around the perimeter of the stockpile (bored into the stockpile sideways) and one soil sample was collected from the top of the stockpile. Sample locations are presented in the field notes (**Attachment 2**) and GPS locations of each borehole was recorded using a handheld GPS unit.

The five soil samples were composited and submitted to Xenco Laboratories, a Texas-certified laboratory, and analyzed for the following compounds:

- Benzene, toluene, ethylene, and xylenes (collectively referred to as BTEX) in accordance with USEPA Method 8021B
- Total petroleum hydrocarbons (TPH) Gasoline Range Organics (GRO), Diesel Range Organics (DRO), and Oil Range Organics (ORO) in accordance with SW8015 Mod
- Chloride in accordance with USEPA Method 300/300.1
- Soil pH in accordance with USEPA Method 9045C
- Flash Point in accordance with Solid Waste (SW) 846-1010
- Reactive Cyanide in accordance with SW 846
- Reactive Sulfide in accordance with SW 9034
- Percent Moisture

TPH, benzene, and toluene were not detected above laboratory reporting limits in the stockpile soil sample. Ethylbenzene, total xylenes, and chlorides were detected at concentrations of 0.01 milligrams per kilogram (mg/kg), 0.04 mg/kg, and 72.1 mg/kg, respectively, below the respective RRALs. **Table 1** provides a summary of the soil analytical results. The chain of custody and the analytical laboratory report are presented in **Attachment 3**.

3. *Generally, NMOCD does not approve of soil blending.*

Response:

Clean fill will be utilized to fill the excavation in the event stockpile soil is not sufficient to fill the excavation due to NMOCD soil blending guidelines.

4. *Will the soil bore at sample location F be outside of the tank battery boundary? In other words, would the proposed 4 ft. excavation and liner emplacement activities for the tank battery area occur independently of the soil borehole activities? According Figure 1, the current dimensions of the excavation is South of Sample Location F. Please be advised that NMOCD recommends the completion of vertical delineation before the emplacement of a properly keyed 40 mil liner at 4 ft. bgs, if Sample Location F is within the boundary of the area to be lined.*

Response:

The sample Location F is located within the tank battery boundary. Soil borehole advancement will occur after backfilling the excavation to 4-foot 1-inch. Arcadis will request a 24-hour turnaround time (TAT) for analytical results prior to liner installation and remaining backfilling activities.

5. *Confirmation sidewalls are required of the proposed excavated area. If the soil is hydrocarbon-impacted at the base of the excavation, NMOCD suggests that a buffer of sand be laid between the plastic liner and the affected soil to delay liner degradation.*

Response:

Sidewall samples will be collected at approximately 4 feet below ground surface based on photoionization detector readings and field observations utilizing a slide hammer or equivalent. In addition, Arcadis will request a 24-hour TAT for analytical results prior to liner installation and remaining backfilling activities occur. Confirmation soil samples will be submitted to Xenco for the following analyses:

- BTEX in accordance with USEPA Method 8260B
- TPH GRO, DRO, and ORO in accordance with USEPA Method 8015M
- Chloride in accordance with USEPA Method 300/300.1
- Percent moisture in accordance with Standard Method (SM) 1540B

6. *Soil bore logs, dated photo documentation, and GPS coordinates of confirmation sample locations will be required.*

Response:

Comment noted. Soil bore logs, dated photo documentation, and GPS coordinates of confirmation sample locations will be submitted as part of subsequent reports.

Sincerely,

Arcadis U.S., Inc.

Brett Krehbiel
Certified Project Manager

Copies:
Jason Michelson, Chevron Environmental Management Company
Amy Barnhill, Mid-Continent Business Unit
Greg Cutshall, Arcadis

Enclosures:

Tables

1 Confirmation and Stockpile Soil Sample Analytical Results

Attachments

1 Moran No. 2-6 Site Reclamation – MCBU Safe Digging Plan
2 Arcadis Field Notes – 1/24/2017
3 Analytical Laboratory Report and Chain of Custody Form

TABLE 1

Soil Analytical Results

Table 1
Soil Analytical Results
Chevron EMC
Moran No. 2-6 Site Assessment
Lea County, New Mexico

Sample ID	Sample Type	Depth	Date	Constituents								
				Volatile Organics - USEPA 8260					Salinity	Hydrocarbons - USEPA 8015		
				Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	Chlorides	TPH GRO C6-C10	TPH DRO >C10-C28	TPH ORO >C28-C35
			Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
			Regulatory Limit	10	--	--	--	50	250	100	100	100
A	Confirmation	3 ft	7/14/2015	--	--	--	--	--	<16	<10	<10	--
		4 ft	7/14/2015	--	--	--	--	--	32	<10	<10	--
B	Confirmation	3 ft	7/14/2015	--	--	--	--	--	144	<10	<10	--
		4 ft	7/14/2015	--	--	--	--	--	112	<10	<10	--
C	Confirmation	3 ft	7/14/2015	--	--	--	--	--	160	**339**	**4360**	--
		4 ft	7/14/2015	--	--	--	--	--	**560**	**137**	**3970**	--
		#3*	8/10/2015	<0.050	<0.050	<0.050	<0.150	<0.300	64	--	--	--
		#4*	8/10/2015	<0.050	<0.050	<0.050	<0.150	<0.300	96	--	--	--
		13 ft	3/8/2016	<0.000257	<0.000173	<0.000128	<0.000306	<0.000128	18.3	<0.980	82.2	**158**
D	Confirmation	3 ft	7/14/2015	--	--	--	--	--	32	13.5	**267**	--
		4 ft	7/14/2015	--	--	--	--	--	16	24.8	**604**	--
		9 ft	3/8/2016	<0.000217	<0.000146	<0.000108	<0.000259	<0.000108	3.22	<0.842	3.59	1.63
E	Confirmation	3 ft	7/14/2015	--	--	--	--	--	48	<10	**126**	--
		4 ft	7/14/2015	--	--	--	--	--	64	<10	**139**	--
		16 ft	3/8/2016	<0.000264	<0.000178	<0.000131	0.00173	0.00173	26.8	<1.02	28.5	12.6
F	Confirmation	3 ft	7/14/2015	--	--	--	--	--	**304**	**3230**	**9920**	--
		4 ft	7/14/2015	--	--	--	--	--	**272**	**6200**	**18100**	--
		#3*	8/10/2015	<5.0	<5.0	32.90	55.6	**88.5**	80	--	--	--
		#4*	8/10/2015	<0.20	0.684	6.28	13.2	20.2	**800**	--	--	--
		25 ft	3/8/2016	<0.00641	0.113	2.65	13.7	16.5	19.1	**1920**	**3930**	**1060**
G	Confirmation	3 ft	7/14/2015	--	--	--	--	--	<16	<10	<10	--
		4 ft	7/14/2015	--	--	--	--	--	<16	<10	<10	--
H	Confirmation	3 ft	7/14/2015	--	--	--	--	--	<16	<10	<10	--
		4 ft	7/14/2015	--	--	--	--	--	<16	<10	<10	--
I	Confirmation	3 ft	7/14/2015	--	--	--	--	--	<16	<100	**2460**	--
		4 ft	7/14/2015	--	--	--	--	--	<16	**141**	**3360**	--
		#3*	8/10/2015	<0.050	<0.050	<0.050	<0.150	<0.300	<16	--	--	--
		#4*	8/10/2015	<0.050	<0.050	<0.050	<0.150	<0.300	<16	--	--	--
		11 ft	3/8/2016	<0.000266	<0.000179	<0.000132	<0.000317	<0.000132	27.6	<1.01	**120**	**132**
SP-S-5'-170124	Stock Pile	5 ft	1/24/2017	<0.000337	<0.00100	0.01	0.0352	0.042	72.1	< 7.99	<8.11	<8.11

Legend:

###	Analytical value is greater than or equal to the regulatory limit.
ft	feet
mg/Kg	milligrams per killigram
BTEX	Benzene, toluene, ethylbenzene, and total xylenes
NMOCD	New Mexico Oil Conservation Division
USEPA	United States Evironmental Protection Agency
TPH-GRO	Total Petroluem Hydrocarbons as Gasoline Range Organics
TPH-DRO	Total Petroluem Hydrocarbons as Diesel Range Organics
--	Not analyzed or not applicable
<	Not detected above indicated laboratory reporting limit
*	Sample depth unknown

Notes:
Regulatory limits are based on the New Mexico Oil Conservation Division "Guidelines for Remedation of Leaks, Spills, and Releases", August 13, 1993

ATTACHMENT 1

Moran #2 Site Reclamation – MCBU Safe Digging Plan

RECEIVED
By OCD District 1 at 2:46 pm, Jun 02, 2015

Moran #2 Site Reclamation

MCBU Safe Digging Plan

1. **Contacts.**
   A. Caleb Weaver, FE, Chevron, 432-235-9382
   B. Russell Dotson, FE, Chevron, 713-516-4977
   C. David Mathews, Construction Rep, Chevron, 318-237-2371
   D. Bobby Hill, Operations Supervisor, Chevron, 575-631-9108
   E. Andrew Barringer, FE Team Lead, Chevron, 432-687-7647
   F. David Frederick, Watson Construction, 432-803-3598

2. **Background Information.**
   The Moran #2 has been plugged and abandoned. The facilities team will be reclaiming the site and cleaning up a spill within the berm area.

3. **Planning**.
   Work scope for this dig plan includes the removal of the caliche from the pad and lease road, and placing a berm along the entrance to the lease road in order to prevent access to the reclaimed site. It also includes removal of contaminated soil from the berm area, and refilling the area with clean topsoil. The site was swept for lines by D&D Professional Line finding services, TexMex line finders, and Watson Construction line finders. There will be no identified line crossings once earth work begins.

4. **Goal.**
   The goal of this project is to safely reclaim the site with incident free operations (IFO). There is always additional time granted for performing the job in the safest manner. You are required to use your Stop Work Authority (SWA) when the situation dictates, conditions change or new hazards are identified.

5. **Remediation Plan.**
   The tanks on the Moran #2 have been removed from the berm area and disposed of. The soil in the berm area underneath these three tanks was found to have been contaminated by oil and produced water. The berm area is 83'x46', and the soil that is visibly contaminated will be removed. Soil samples will then be taken in a grid. These samples will be tested to determine if the soil has been contaminated. If the tests reveal that the soil has been contaminated, we will dig down and remove extra soil. Another round of tests will be taken to determine if there is any contamination in the remaining soil. If the tests show no contamination in the soil, then remediation of the site will continue, and the location will be returned to its natural state.

Location Map/One Call Line Identification

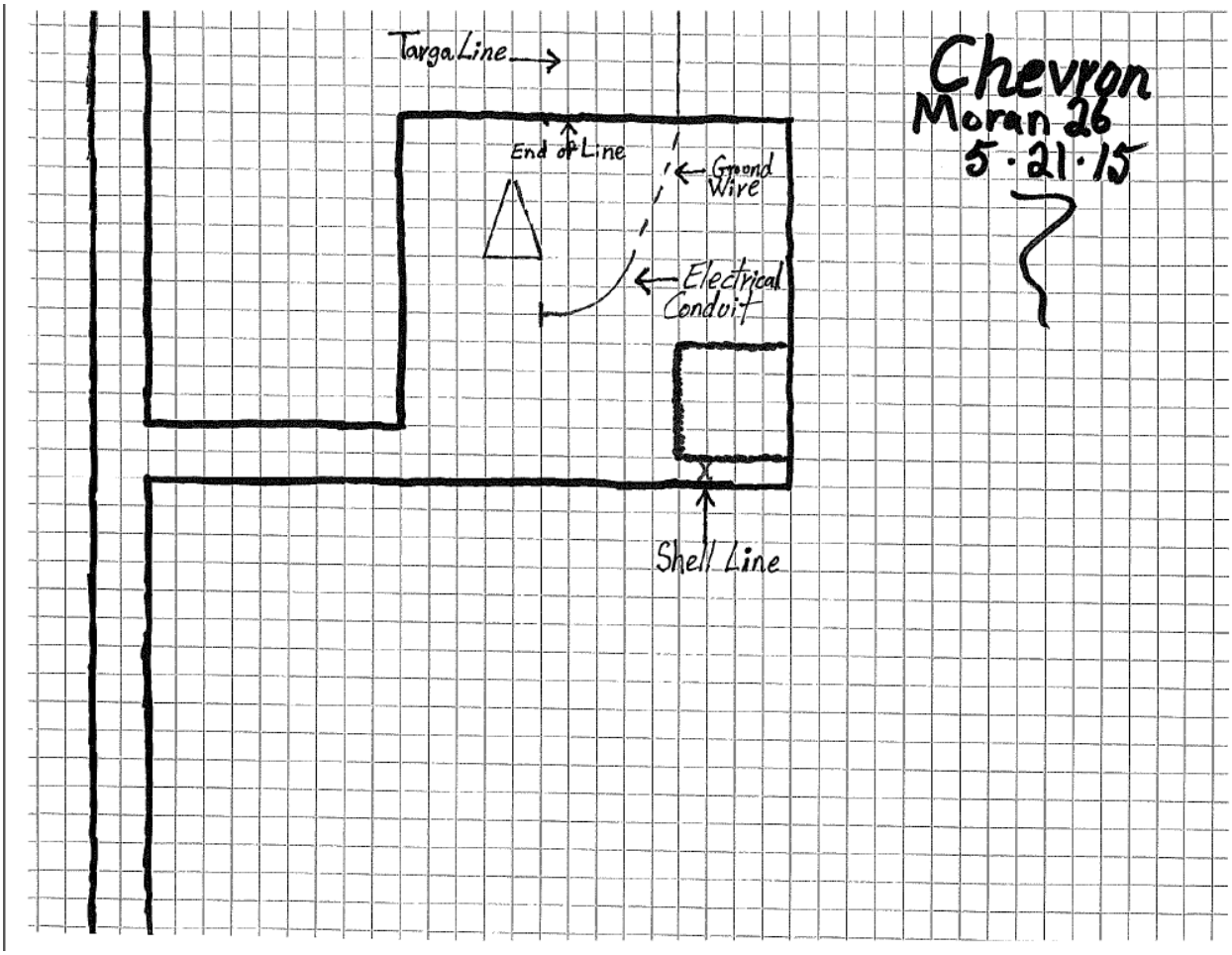
GPS Coordinates: 32.599420, -103.181470

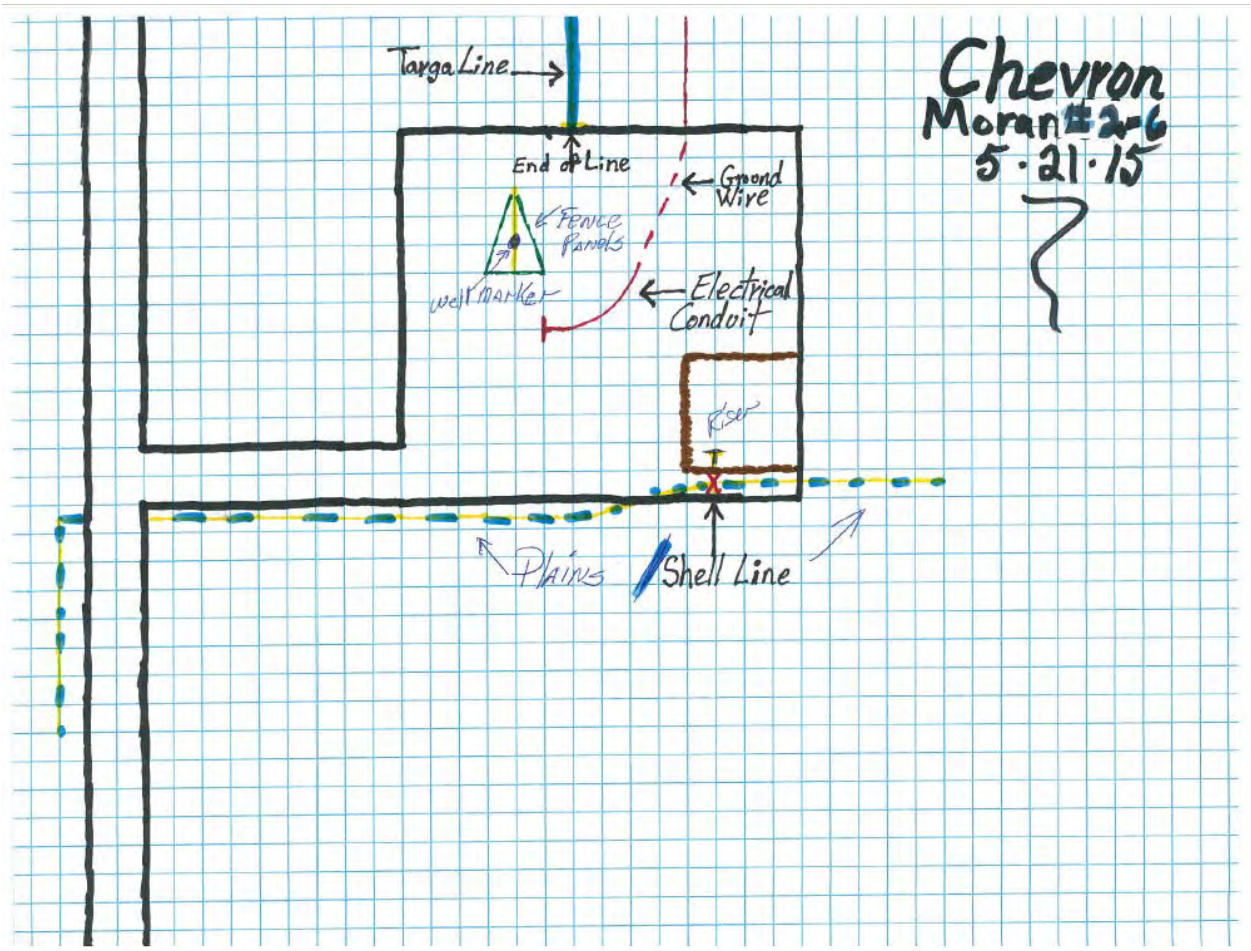

MORAN #002

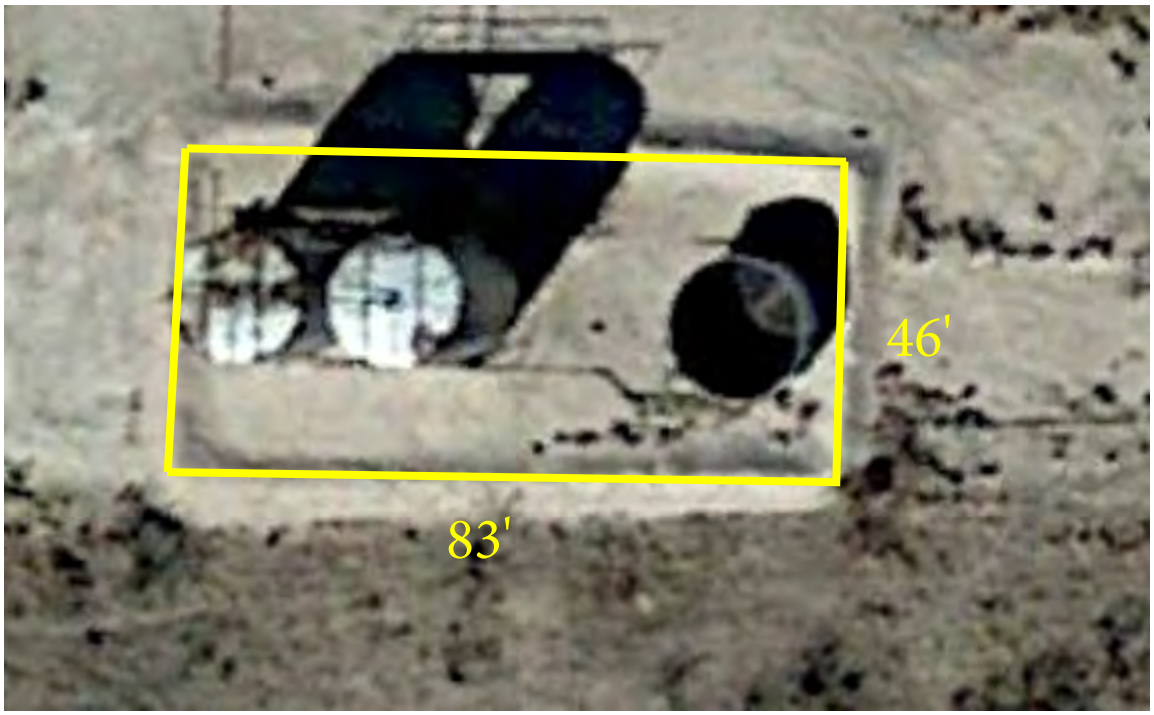
Location relative to Hobbs, NM.

Leave Hobbs, NM, by heading south on Highway 18 for approximately 7.4 miles.
Turn west onto Highway 45 (Billy Walker Rd) and continue straight for approximately 3.5 miles.
Turn north onto Goodson Ln, and continue straight for approximately 0.60 miles.
Turn east onto lease road, and continue straight for approximately 0.35 miles, and location will be on the right (south) side of the road.

Existing lines, line crossings, one call. One call process has been followed. The One Call is available in **Appendix #3**. All known and marked lines have been removed from the location. The lines were removed to a minimum of 30 feet from the edge of the location




Targa Line
End of Line
Ground Wire
4 Fence Panels
Weir Marker
Electrical Conduit
Riser
Plains
Shell Line
Chevron
Moran #2-6
5·21·15



Bermed Area

New Mexico One Call
Locate Request Confirmation Header Code: STANDARD LOCATE
Request Type:
Ticket No: 2015210034 Seq. No: 0
Update of:
Original Call Date: 05/18/2015 Time: 07:51:49 AM OP: 280
Transmit Date: 05/18/2015 Time: 07:53:25 AM
Work to Begin Date: 05/20/2015 Time: 07:51:00 AM

Company: WATSON CONSTRUCTION
Contact Name: DAVID FREDERICK Contact Phone: (575)391-0537
Alternate Contact: Alternate Phone:
Best Time to Call: Fax No: (575)391-3053
Cell Phone: (432)803-3598 Pager No:
Email: kyatwoodwcc@outlook.com

State: NM County: LEA City: RURAL LEA
Address: , MORAN #2
To Address:
Nearest Intersecting Street: GPS: 32.599276, -103.181602
2nd Intersecting Street:
Subdivision:
Latitude: 32.59930850 Longitude: -103.18164100
Zip Code:
Grid:

Location of Work: FRM BILLY WALKER RD & GOODSON LN. GO N ON GOODSON
LN FOR 0.6MI. GO E AT CURVE 0.3MI. TURN S 250FT
INTO LOCATION.
SPOT A 300FT RADIUS OF WELLHEAD.

Remarks: OPEN ACCESS, NO HAZARDS

Type of Work: SOIL REMEDIATION
Private Property: Street: Overhead Lines: Blasting:
Easement: Mechanical Boring: Premarked: Y
Work Being Done For: CHEVRON
The following utility owners have been notified:
RGAS REC3 MONU EUCE EUPL

From: Weaver, Caleb W
To: Jones, Kellie, EMNRD
Subject: Fred Turner #3 and Moran #2
Date: Tuesday, June 02, 2015 5:54:34 PM

Good evening,
As per our conversation, the samples at the Fred Turner #3 and Moran #2 will be tested for the following:

- Benzene
- Toluene
- Ethylbenzene
- Total Xylenes
- Total BTEX
- Chloride
- GRO C6-C10
- DRO C10-C28

Please let me know if there is any other information you need, and we will be glad to send it your way.
Thanks!

Caleb W. Weaver
Facilities Engineer

Chevron North America Exploration & Production
Mid-Continent Business Unit
15 Smith Road, Rm 6216A
Midland, TX 79705
Office: (432) 687-7258
Cell: (432) 235-9382
Caleb.Weaver@chevron.com

ATTACHMENT 2

Moran Field Notes – 1/24/2017

Location _____ Date _____

Project / Client _____

1555 SWS/NSC Environmental - West Texas Picking up the last rolloff Box and Left the Site. (Tank Bottoms)

1-20-17

Note: I Signed the Manifest, made a PDF Scan and collected the generator's copy.

1557 Left the Site (made sure all was secured) and started traveling to Lubbock, Tx

1-20-17

1945 Arrived home

mileage = 482.8 total = 33994

SMC 1-22-18

mileage = 31.1 total = 34025

Moran 1-24-17

0700 Left the house and started driving to the Chevron Hobbs FMT

0755 (NM time) Arrived at the chevron FMT and signed in at front desk. We are waiting for Chris Purcell

0834 Finish Hobbs FMT Site orientation, started traveling to the Site.

0839 Stopped at store to buy Ice for Samples.

Location Hobbs, NM Date 1-24-17

Project / Client Moran Tank Battery / Chevron

(Moran)

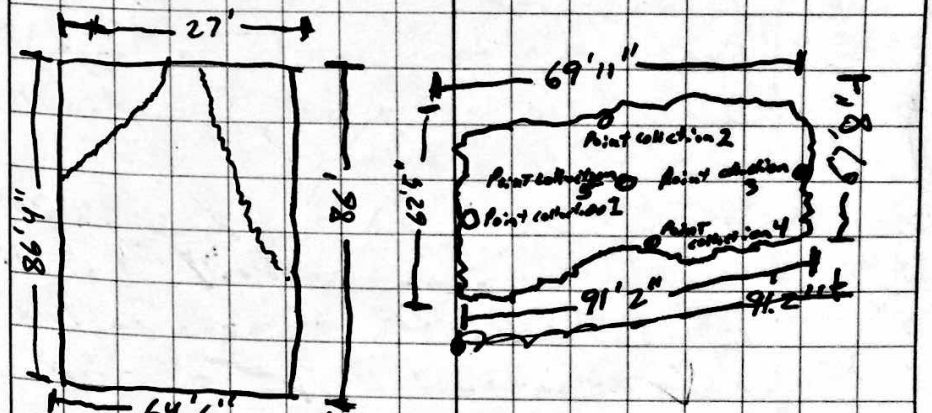
0845 Left the Store (Ice + water) and started driving to the Site.

0909 Arrived on Site and started H&S meeting.

1000 Finished H&S meeting. Called Steve Rice and let him know we were Starting work. I also sent him pictures of the Site (pre-work)

1005 Started Sampling the Soil pile

Note: Point collection height on stock pile is approximately 4'. Soil collected from each point was from 5' into stock pile.



1020 Started calibrating the mini RAE 3000

Rite in the Rain

Location Hobbs, NM Date 1-24-17

Project / Client Moran tank Battery / Chevron

(BM)

Fresh Air Calibration = 0.0ppm (Zero Cal)
Isobutylene calibration = 100ppm (Span Cal)

Note: Meter calibrated "Ok".

1050 SP-2 = 0.8ppm
1108 SP-1 = 0.6ppm
1116 SP-3 = 0.5ppm
1120 SP-4 = 0.1ppm
1131 SP-5 = 0.1ppm.
1137 Sampled SP-5-5'-170124.
1145 Started preparing the trimble GPS Units for Eastern NM and for the Nature of the job.
1200 Mid-Day Safety meeting
1230 Started Setting up the Trimble for Eastern NM (Finishing Settings)
1300 Started collecting GPS coordinates.
1510 Finished collecting GPS data from Soil pile at excavation.
1520 Started Emergency Drill (H2S Hit)
1540 Measured Depth of excavation: 7.5'. Measured Depth of Soil pile: 11'.
1600 Left the Site and Started driving home.

Location Hobbs, NM Date 1-24-17

Project / Client Moran tank Battery / Chevron

(BM)

1922 Arrived home.
Mileage = 245.6 Total = 34560

Eunice, NM 1-30-17

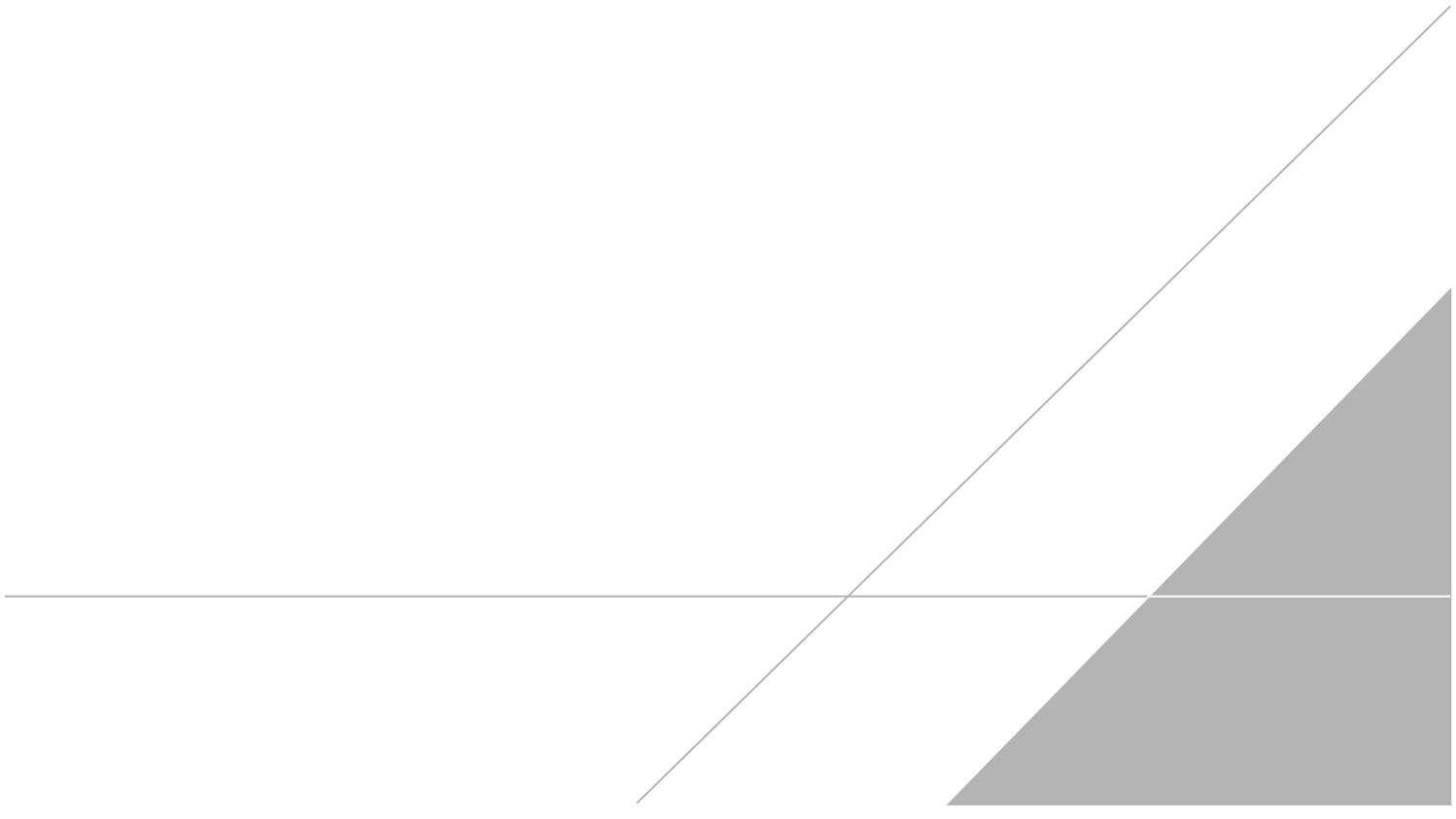
0547 Left the house and started driving to the Arcadis Midland office.
0738 Arrived at the Midland office.
0831 Left the office and started driving to the shop.
0845 Arrived at the shop.
0919 Loaded generator & trailer. Left the shop and started traveling to the middle Eunice Gas Plant.
1047 Arrived at the middle Eunice Gas Plant.

Note: Trailer inspection went well. Trailer is in good shape, Lights operate, tires in good shape, floor in good shape, Load is secure.

1055 Started TARGA site orientation.
1146 Finished orientation and signed in at sign-in sheet. Left the middle Plant and started traveling to the North Plant.
1209 Traveled to MW-69 and started the H2S meeting.

ATTACHMENT 3

Analytical Lab Reports and Chain of Custody Forms



RECEIVED
By OCD District 1 at 12:50 pm, Jul 30, 2015

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

July 20, 2015

DAVID MATTHEWS

CHEVRON - HOBBS

1616 W. BENDER

HOBBS, NM 88240

RE: MORAN 2 - 6

Enclosed are the results of analyses for samples received by the laboratory on 07/14/15 15:13.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CHEVRON - HOBBS
DAVID MATTHEWS
1616 W. BENDER
HOBBS NM, 88240
Fax To:

Received:	07/14/2015	Sampling Date:	07/14/2015
Reported:	07/20/2015	Sampling Type:	Soil
Project Name:	MORAN 2 - 6	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: A - 3' (H501793-01)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/17/2015	ND	432	108	400	7.69	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/16/2015	ND	199	99.7	200	4.27	
DRO >C10-C28	<10.0	10.0	07/16/2015	ND	202	101	200	11.1	

Surrogate: 1-Chlorooctane	*76.3 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*77.0 %*	*52.1-176*

Sample ID: A - 4' (H501793-02)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	07/17/2015	ND	432	108	400	7.69	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/16/2015	ND	199	99.7	200	4.27	
DRO >C10-C28	<10.0	10.0	07/16/2015	ND	202	101	200	11.1	

Surrogate: 1-Chlorooctane	*77.0 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*67.1 %*	*52.1-176*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CHEVRON - HOBBS
DAVID MATTHEWS
1616 W. BENDER
HOBBS NM, 88240
Fax To:

Received:	07/14/2015	Sampling Date:	07/14/2015
Reported:	07/20/2015	Sampling Type:	Soil
Project Name:	MORAN 2 - 6	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: B-3' (H501793-03)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	07/17/2015	ND	432	108	400	7.69	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/16/2015	ND	199	99.7	200	4.27	
DRO >C10-C28	<10.0	10.0	07/16/2015	ND	202	101	200	11.1	

Surrogate: 1-Chlorooctane	*68.9 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*57.5 %*	*52.1-176*

Sample ID: B-4' (H501793-04)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	07/16/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/16/2015	ND	199	99.7	200	4.27	
DRO >C10-C28	<10.0	10.0	07/16/2015	ND	202	101	200	11.1	

Surrogate: 1-Chlorooctane	*74.6 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*78.6 %*	*52.1-176*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CHEVRON - HOBBS
DAVID MATTHEWS
1616 W. BENDER
HOBBS NM, 88240
Fax To:

Received:	07/14/2015	Sampling Date:	07/14/2015
Reported:	07/20/2015	Sampling Type:	Soil
Project Name:	MORAN 2 - 6	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: C-3' (H501793-05)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**160**	16.0	07/16/2015	ND	416	104	400	0.00	

TPH 8015M **mg/kg** **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**339**	10.0	07/16/2015	ND	199	99.7	200	4.27	
DRO >C10-C28	**4360**	10.0	07/16/2015	ND	202	101	200	11.1	

Surrogate: 1-Chlorooctane	*127 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*104 %*	*52.1-176*

Sample ID: C-4' (H501793-06)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**560**	16.0	07/16/2015	ND	416	104	400	0.00	

TPH 8015M **mg/kg** **Analyzed By: MS** **S-06**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**137**	50.0	07/16/2015	ND	199	99.7	200	4.27	
DRO >C10-C28	**3970**	50.0	07/16/2015	ND	202	101	200	11.1	

Surrogate: 1-Chlorooctane	*94.7 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*183 %*	*52.1-176*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CHEVRON - HOBBS
DAVID MATTHEWS
1616 W. BENDER
HOBBS NM, 88240
Fax To:

Received:	07/14/2015	Sampling Date:	07/14/2015
Reported:	07/20/2015	Sampling Type:	Soil
Project Name:	MORAN 2 - 6	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: D-3' (H501793-07)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	07/16/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**13.5**	10.0	07/16/2015	ND	199	99.7	200	4.27	
DRO >C10-C28	**267**	10.0	07/16/2015	ND	202	101	200	11.1	

Surrogate: 1-Chlorooctane	*88.1 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*81.7 %*	*52.1-176*

Sample ID: D-4' (H501793-08)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	07/16/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**24.8**	10.0	07/16/2015	ND	199	99.7	200	4.27	
DRO >C10-C28	**604**	10.0	07/16/2015	ND	202	101	200	11.1	

Surrogate: 1-Chlorooctane	*88.9 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*90.2 %*	*52.1-176*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CHEVRON - HOBBS
DAVID MATTHEWS
1616 W. BENDER
HOBBS NM, 88240
Fax To:

Received:	07/14/2015	Sampling Date:	07/14/2015
Reported:	07/20/2015	Sampling Type:	Soil
Project Name:	MORAN 2 - 6	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: E-3' (H501793-09)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	07/16/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/16/2015	ND	199	99.7	200	4.27	
DRO >C10-C28	**126**	10.0	07/16/2015	ND	202	101	200	11.1	

Surrogate: 1-Chlorooctane	*88.6 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*80.3 %*	*52.1-176*

Sample ID: E-4' (H501793-10)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	07/16/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/17/2015	ND	182	90.8	200	2.44	
DRO >C10-C28	**139**	10.0	07/17/2015	ND	190	94.8	200	2.41	

Surrogate: 1-Chlorooctane	*86.5 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*89.6 %*	*52.1-176*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CHEVRON - HOBBS
DAVID MATTHEWS
1616 W. BENDER
HOBBS NM, 88240
Fax To:

Received:	07/14/2015	Sampling Date:	07/14/2015
Reported:	07/20/2015	Sampling Type:	Soil
Project Name:	MORAN 2 - 6	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: G-3' (H501793-11)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/16/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/17/2015	ND	182	90.8	200	2.44	
DRO >C10-C28	<10.0	10.0	07/17/2015	ND	190	94.8	200	2.41	

Surrogate: 1-Chlorooctane	*66.7 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*76.5 %*	*52.1-176*

Sample ID: G-4' (H501793-12)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/16/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/17/2015	ND	182	90.8	200	2.44	
DRO >C10-C28	<10.0	10.0	07/17/2015	ND	190	94.8	200	2.41	

Surrogate: 1-Chlorooctane	*79.4 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*90.2 %*	*52.1-176*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CHEVRON - HOBBS
DAVID MATTHEWS
1616 W. BENDER
HOBBS NM, 88240
Fax To:

Received:	07/14/2015	Sampling Date:	07/14/2015
Reported:	07/20/2015	Sampling Type:	Soil
Project Name:	MORAN 2 - 6	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: F-3' (H501793-13)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**304**	16.0	07/16/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS** **S-06**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**3230**	100	07/17/2015	ND	182	90.8	200	2.44	
DRO >C10-C28	**9920**	100	07/17/2015	ND	190	94.8	200	2.41	

Surrogate: 1-Chlorooctane	*179 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*149 %*	*52.1-176*

Sample ID: F-4' (H501793-14)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**272**	16.0	07/16/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS** **S-06**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**6200**	100	07/17/2015	ND	182	90.8	200	2.44	
DRO >C10-C28	**18100**	100	07/17/2015	ND	190	94.8	200	2.41	

Surrogate: 1-Chlorooctane	*228 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*238 %*	*52.1-176*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CHEVRON - HOBBS
DAVID MATTHEWS
1616 W. BENDER
HOBBS NM, 88240
Fax To:

Received:	07/14/2015	Sampling Date:	07/14/2015
Reported:	07/20/2015	Sampling Type:	Soil
Project Name:	MORAN 2 - 6	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: H-3' (H501793-15)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/16/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/17/2015	ND	182	90.8	200	2.44	
DRO >C10-C28	<10.0	10.0	07/17/2015	ND	190	94.8	200	2.41	

Surrogate: 1-Chlorooctane	*81.5 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*74.7 %*	*52.1-176*

Sample ID: H-4' (H501793-16)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/16/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/17/2015	ND	182	90.8	200	2.44	
DRO >C10-C28	<10.0	10.0	07/17/2015	ND	190	94.8	200	2.41	

Surrogate: 1-Chlorooctane	*78.8 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*87.2 %*	*52.1-176*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CHEVRON - HOBBS
DAVID MATTHEWS
1616 W. BENDER
HOBBS NM, 88240
Fax To:

Received:	07/14/2015	Sampling Date:	07/14/2015
Reported:	07/20/2015	Sampling Type:	Soil
Project Name:	MORAN 2 - 6	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: I-3' (H501793-17)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/16/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<100	100	07/17/2015	ND	182	90.8	200	2.44	
DRO >C10-C28	**2460**	100	07/17/2015	ND	190	94.8	200	2.41	

Surrogate: 1-Chlorooctane	*76.1 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*167 %*	*52.1-176*

Sample ID: I-4' (H501793-18)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/16/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**141**	50.0	07/17/2015	ND	182	90.8	200	2.44	
DRO >C10-C28	**3360**	50.0	07/17/2015	ND	190	94.8	200	2.41	

Surrogate: 1-Chlorooctane	*97.5 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*120 %*	*52.1-176*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

1 of 2

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	Chevron
Project Manager:	David Matthews Hobbs
Address:	
City:	State: Zip:
Phone #:	Fax #:
Project #:	Project Owner:
Project Name:	Moran 2-6
Project Location:	
Sampler Name:	

BILL TO

P.O. #:	
Company:	
Attn:	
Address:	
City:	
State: Zip:	
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	TPH	Chlorides
H501793																
1	A 3'	G				X							7/14/15	9:00	X	X
2	A 4'	G				X										
3	B 3'	G				X										
4	B 4'	G				X										
5	C 3'	G				X										
6	C 4'	G				X										
7	D 3'	G				X										
8	D 4'	G				X										
9	E 3'	G				X										
10	E 4'	G				X										

Relinquished By: Richard Ackmann	Date:	Received By: Judy Garcia	
Relinquished By:	Time: Date: 7/14/15 Time: 15:13	Received By:	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	1.8	Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials) JG

Phone Result:	☐ Yes	☐ No	Add'l Phone #:
Fax Result:	☐ Yes	☐ No	Add'l Fax #:
REMARKS:			

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

#564

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	Chevron
Project Manager:	David Matthews Hobbs
Address:	
City:	State: Zip:
Phone #:	Fax #:
Project #:	Project Owner:
Project Name:	Moran 2-6
Project Location:	
Sampler Name:	

BILL TO

P.O. #:	
Company:	
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

TPH Chlorides

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME
H501793														
11	G 3'	G				X							7/14/15	9:00
12	G 4'	G				X								
13	F 3'	G				X								
14	F 4'	G				X								
15	H 3'	G				X								
16	H 4'	G				X								
17	I 3'	G				X								
18	I 4'	G				X								

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Richard Attman	Date:	Received By:	
	Time:		
Relinquished By:	Date: 7/14/15	Received By: Jude Garcia	
	Time: 15:13		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

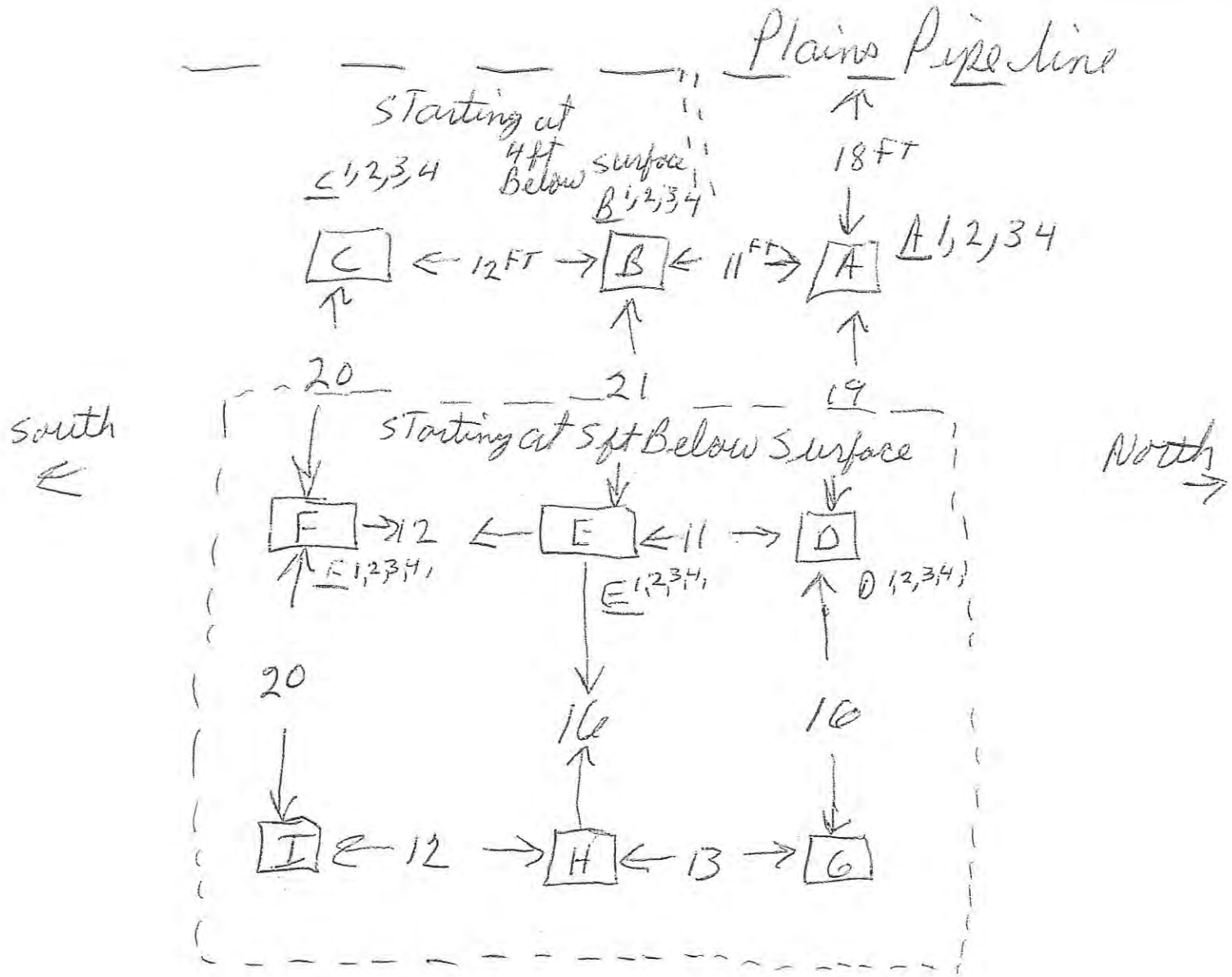
Sample Condition		CHECKED BY: (Initials)
Cool	Intact	
☑ Yes ☐ No	☑ Yes ☐ No	

Phone Result:	☐ Yes	☐ No	Add'l Phone #:
Fax Result:	☐ Yes	☐ No	Add'l Fax #:
REMARKS:			

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

IC #54

West



MORAN #2-6 old Battery site

East

RECEIVED
By OCD District 1 at 9:40 am, Aug 31, 2015

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

August 17, 2015

DAVID MATTHEWS

CHEVRON - HOBBS

1616 W. BENDER

HOBBS, NM 88240

RE: MORAN 2 - 6

Enclosed are the results of analyses for samples received by the laboratory on 08/10/15 14:07.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CHEVRON - HOBBS
DAVID MATTHEWS
1616 W. BENDER
HOBBS NM, 88240
Fax To:

Received:	08/10/2015	Sampling Date:	08/10/2015
Reported:	08/17/2015	Sampling Type:	Soil
Project Name:	MORAN 2 - 6	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Judy Garcia
Project Location:	LEA COUNTY, NM		

Sample ID: C #3 (H502075-01)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/12/2015	ND	2.02	101	2.00	3.51	
Toluene*	<0.050	0.050	08/12/2015	ND	1.93	96.5	2.00	3.57	
Ethylbenzene*	<0.050	0.050	08/12/2015	ND	2.11	106	2.00	4.06	
Total Xylenes*	<0.150	0.150	08/12/2015	ND	5.98	99.7	6.00	4.08	
Total BTEX	<0.300	0.300	08/12/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *85.6-137*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	08/14/2015	ND	384	96.0	400	8.00	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CHEVRON - HOBBS
DAVID MATTHEWS
1616 W. BENDER
HOBBS NM, 88240
Fax To:

Received:	08/10/2015	Sampling Date:	08/10/2015
Reported:	08/17/2015	Sampling Type:	Soil
Project Name:	MORAN 2 - 6	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Judy Garcia
Project Location:	LEA COUNTY, NM		

Sample ID: C #4 (H502075-02)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/12/2015	ND	2.02	101	2.00	3.51	
Toluene*	<0.050	0.050	08/12/2015	ND	1.93	96.5	2.00	3.57	
Ethylbenzene*	<0.050	0.050	08/12/2015	ND	2.11	106	2.00	4.06	
Total Xylenes*	<0.150	0.150	08/12/2015	ND	5.98	99.7	6.00	4.08	
Total BTEX	<0.300	0.300	08/12/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *85.6-137*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	08/14/2015	ND	384	96.0	400	8.00	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CHEVRON - HOBBS
DAVID MATTHEWS
1616 W. BENDER
HOBBS NM, 88240
Fax To:

Received:	08/10/2015	Sampling Date:	08/10/2015
Reported:	08/17/2015	Sampling Type:	Soil
Project Name:	MORAN 2 - 6	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Judy Garcia
Project Location:	LEA COUNTY, NM		

Sample ID: F #3 (H502075-03)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<5.00	5.00	08/12/2015	ND	2.02	101	2.00	3.51	
Toluene*	<5.00	5.00	08/12/2015	ND	1.93	96.5	2.00	3.57	
Ethylbenzene*	**32.9**	5.00	08/12/2015	ND	2.11	106	2.00	4.06	
Total Xylenes*	**55.6**	15.0	08/12/2015	ND	5.98	99.7	6.00	4.08	
Total BTEX	**88.5**	30.0	08/12/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *85.6-137*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	08/14/2015	ND	400	100	400	11.3	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CHEVRON - HOBBS
DAVID MATTHEWS
1616 W. BENDER
HOBBS NM, 88240
Fax To:

Received:	08/10/2015	Sampling Date:	08/10/2015
Reported:	08/17/2015	Sampling Type:	Soil
Project Name:	MORAN 2 - 6	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Judy Garcia
Project Location:	LEA COUNTY, NM		

Sample ID: F #4 (H502075-04)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	08/13/2015	ND	2.18	109	2.00	0.980	
Toluene*	**0.684**	0.200	08/13/2015	ND	2.09	105	2.00	1.34	
Ethylbenzene*	**6.28**	0.200	08/13/2015	ND	2.28	114	2.00	1.31	
Total Xylenes*	**13.2**	0.600	08/13/2015	ND	6.48	108	6.00	0.852	
Total BTEX	**20.2**	1.20	08/13/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID *117 %* *85.6-137*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**800**	16.0	08/14/2015	ND	400	100	400	11.3	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CHEVRON - HOBBS
DAVID MATTHEWS
1616 W. BENDER
HOBBS NM, 88240
Fax To:

Received:	08/10/2015	Sampling Date:	08/10/2015
Reported:	08/17/2015	Sampling Type:	Soil
Project Name:	MORAN 2 - 6	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Judy Garcia
Project Location:	LEA COUNTY, NM		

Sample ID: I #3 (H502075-05)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/13/2015	ND	2.18	109	2.00	0.980	
Toluene*	<0.050	0.050	08/13/2015	ND	2.09	105	2.00	1.34	
Ethylbenzene*	<0.050	0.050	08/13/2015	ND	2.28	114	2.00	1.31	
Total Xylenes*	<0.150	0.150	08/13/2015	ND	6.48	108	6.00	0.852	
Total BTEX	<0.300	0.300	08/13/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *85.6-137*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/14/2015	ND	400	100	400	11.3	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CHEVRON - HOBBS
DAVID MATTHEWS
1616 W. BENDER
HOBBS NM, 88240
Fax To:

Received:	08/10/2015	Sampling Date:	08/10/2015
Reported:	08/17/2015	Sampling Type:	Soil
Project Name:	MORAN 2 - 6	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Judy Garcia
Project Location:	LEA COUNTY, NM		

Sample ID: I #4 (H502075-06)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/13/2015	ND	2.18	109	2.00	0.980	
Toluene*	<0.050	0.050	08/13/2015	ND	2.09	105	2.00	1.34	
Ethylbenzene*	<0.050	0.050	08/13/2015	ND	2.28	114	2.00	1.31	
Total Xylenes*	<0.150	0.150	08/13/2015	ND	6.48	108	6.00	0.852	
Total BTEX	<0.300	0.300	08/13/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *85.6-137*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/14/2015	ND	400	100	400	11.3	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: Chevron
Project Manager: DAVid MATHEWS
Address:
City: State: Zip:
Phone #: 1-318-237-2371 Fax #:
Project #: Project Owner:
Project Name: Maron 2-6
Project Location:
Sampler Name:

BILL TO
P.O. #:
Company: Chevron
Attn:
Address:
City: Eunice
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST
Chlorides
B-TEX

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING DATE	SAMPLING TIME
H502075														
1. C	#3	✓				✓							8-10-15	10:00
2. C	#4													
3. F	#3													
4. F	#4													
5. I	#3													
6. I	#4													

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Richard Altmeyer Date: 8/10/15 Time: 14:07
Received By: Judy Garcia
Relinquished By: Date: Time:
Received By:
Delivered By: (Circle One)
Sampler - UPS - Bus - Other:
Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No
CHECKED BY: (Initials)

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS: DAVid Mathews 1-318-237-2371
DQPO@chevron.com

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

6.0C
#54

Analytical Report 526483

for

ARCADIS

Project Manager: Priscilla Yelvington

Moran No. 2-6 Initial Site Assessment

UWDDB-46009-ABS

25-MAR-16

Collected By: Client

4147 Greenbriar Dr.
Stafford, TX 77477

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534-15-1)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)

ARCADIS, Midland, TX

Moran No. 2-6 Initial Site Assessment

Sample Id: **D-S-9'-160308** Matrix: Soil Date Received:03.09.16 09.30
Lab Sample Id: 526483-002 Date Collected: 03.08.16 16.08 Sample Depth: 9 ft

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: DEP % Moisture: 11.7
Analyst: DEP Date Prep: 03.14.16 11.28 Basis: Dry Weight
Seq Number: 990268

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3.22**	2.23	0.395	mg/kg	03.14.16 23.38		1

Analytical Method: TPH DRO-ORO by SW846-8015 Prep Method: SW3550
Tech: SOK % Moisture: 11.7
Analyst: PKH Date Prep: 03.11.16 15.09 Basis: Dry Weight
Seq Number: 990310

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-DRO (C10-C28)	68334-30-5	**3.59**	1.89	1.18	mg/kg	03.14.16 18.28		1
TPH-ORO (C28-C35) *	C20C38ORO	**1.63**	3.74	1.18	mg/kg	03.14.16 18.28	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Pentacosane	629-99-2	96	%	40-130	03.14.16 18.28	

Analytical Method: BTEX by SW 8260B Prep Method: SW5030B
Tech: JTR % Moisture: 11.7
Analyst: JTR Date Prep: 03.09.16 15.10 Basis: Dry Weight
Seq Number: 989949

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000217	0.00113	0.000217	mg/kg	03.09.16 15.24	U	1
Toluene	108-88-3	<0.000146	0.00113	0.000146	mg/kg	03.09.16 15.24	U	1
Ethylbenzene	100-41-4	<0.000108	0.00113	0.000108	mg/kg	03.09.16 15.24	U	1
m,p-Xylenes	179601-23-1	<0.000409	0.00226	0.000409	mg/kg	03.09.16 15.24	U	1
o-Xylene	95-47-6	<0.000259	0.00113	0.000259	mg/kg	03.09.16 15.24	U	1
Total Xylenes	1330-20-7	<0.000259	0.00113	0.000259	mg/kg	03.09.16 15.24	U	1
Total BTEX		<0.000108	0.00113	0.000108	mg/kg	03.09.16 15.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	99	%	74-126	03.09.16 15.24	
1,2-Dichloroethane-D4	17060-07-0	87	%	80-120	03.09.16 15.24	
Toluene-D8	2037-26-5	89	%	73-132	03.09.16 15.24	

Certificate of Analytical Results 526483

ARCADIS, Midland, TX

Moran No. 2-6 Initial Site Assessment

Sample Id:	**D-S-9'-160308**	Matrix:	Soil	Date Received:	03.09.16 09.30
Lab Sample Id:	526483-002	Date Collected:	03.08.16 16.08	Sample Depth:	9 ft
Analytical Method:	TPH GRO by SW46-8015			Prep Method:	SW5030B
Tech:	SAD			% Moisture:	11.7
Analyst:	SAD	Date Prep:	03.16.16 16.30	Basis:	Dry Weight
Seq Number:	990448				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.842	5.72	0.842	mg/kg	03.16.16 17.54	U	50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	80-120	03.16.16 17.54	

ARCADIS, Midland, TX

Moran No. 2-6 Initial Site Assessment

Sample Id: **F-S-25'-160308** Matrix: Soil Date Received:03.09.16 09.30
Lab Sample Id: 526483-003 Date Collected: 03.08.16 15.39 Sample Depth: 25 ft

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: DEP % Moisture: 25.7
Analyst: DEP Date Prep: 03.14.16 11.28 Basis: Dry Weight
Seq Number: 990268

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**19.1**	2.65	0.469	mg/kg	03.14.16 23.52		1

Analytical Method: TPH DRO-ORO by SW846-8015 Prep Method: SW3550
Tech: SOK % Moisture: 25.7
Analyst: PKH Date Prep: 03.11.16 15.18 Basis: Dry Weight
Seq Number: 990310

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-DRO (C10-C28)	68334-30-5	**3930**	11.2	7.01	mg/kg	03.14.16 19.36		5
TPH-ORO (C28-C35) *	C20C38ORO	**1060**	22.2	7.01	mg/kg	03.14.16 19.36		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Pentacosane	629-99-2	78	%	40-130	03.14.16 19.36	

Analytical Method: BTEX by SW 8260B Prep Method: SW5030B
Tech: JTR % Moisture: 25.7
Analyst: JTR Date Prep: 03.09.16 16.54 Basis: Dry Weight
Seq Number: 989949

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00641	0.0333	0.00641	mg/kg	03.09.16 18.08	U	25
Toluene	108-88-3	**0.113**	0.0333	0.00431	mg/kg	03.09.16 18.08		25
Ethylbenzene	100-41-4	**2.65**	0.0333	0.00318	mg/kg	03.09.16 18.08		25
m,p-Xylenes	179601-23-1	**9.39**	0.0666	0.0121	mg/kg	03.09.16 18.08		25
o-Xylene	95-47-6	**4.31**	0.0333	0.00763	mg/kg	03.09.16 18.08		25
Total Xylenes	1330-20-7	**13.7**	0.0333	0.00763	mg/kg	03.09.16 18.08		25
Total BTEX		**16.5**	0.0333	0.00318	mg/kg	03.09.16 18.08		25

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	82	%	74-126	03.09.16 18.08	
1,2-Dichloroethane-D4	17060-07-0	80	%	80-120	03.09.16 18.08	
Toluene-D8	2037-26-5	84	%	73-132	03.09.16 18.08	

Certificate of Analytical Results 526483

ARCADIS, Midland, TX

Moran No. 2-6 Initial Site Assessment

Sample Id:	**F-S-25'-160308**	Matrix:	Soil	Date Received:	03.09.16 09.30
Lab Sample Id:	526483-003	Date Collected:	03.08.16 15.39	Sample Depth:	25 ft
Analytical Method:	TPH GRO by SW46-8015			Prep Method:	SW5030B
Tech:	SAD			% Moisture:	25.7
Analyst:	SAD	Date Prep:	03.16.16 16.30	Basis:	Dry Weight
Seq Number:	990448				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	**1920**	270	39.8	mg/kg	03.16.16 21.52		2000

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	80-120	03.16.16 21.52	

ARCADIS, Midland, TX

Moran No. 2-6 Initial Site Assessment

Sample Id: **E-S-16'-160308** Matrix: Soil Date Received:03.09.16 09.30
Lab Sample Id: 526483-004 Date Collected: 03.08.16 16.47 Sample Depth: 16 ft

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: DEP % Moisture: 27.9
Analyst: DEP Date Prep: 03.14.16 11.28 Basis: Dry Weight
Seq Number: 990268

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**26.8**	2.77	0.490	mg/kg	03.15.16 00.06		1

Analytical Method: TPH DRO-ORO by SW846-8015 Prep Method: SW3550
Tech: SOK % Moisture: 27.9
Analyst: PKH Date Prep: 03.11.16 15.21 Basis: Dry Weight
Seq Number: 990310

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-DRO (C10-C28)	68334-30-5	**28.5**	2.31	1.44	mg/kg	03.14.16 19.19		1
TPH-ORO (C28-C35) *	C20C38ORO	**12.6**	4.58	1.44	mg/kg	03.14.16 19.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Pentacosane	629-99-2	87	%	40-130	03.14.16 19.19	

Analytical Method: BTEX by SW 8260B Prep Method: SW5030B
Tech: JTR % Moisture: 27.9
Analyst: JTR Date Prep: 03.09.16 15.11 Basis: Dry Weight
Seq Number: 989949

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000264	0.00137	0.000264	mg/kg	03.09.16 15.43	U	1
Toluene	108-88-3	<0.000178	0.00137	0.000178	mg/kg	03.09.16 15.43	U	1
Ethylbenzene	100-41-4	<0.000131	0.00137	0.000131	mg/kg	03.09.16 15.43	U	1
m,p-Xylenes	179601-23-1	**0.00111**	0.00275	0.000497	mg/kg	03.09.16 15.43	J	1
o-Xylene	95-47-6	**0.000618**	0.00137	0.000315	mg/kg	03.09.16 15.43	J	1
Total Xylenes	1330-20-7	**0.00173**	0.00137	0.000315	mg/kg	03.09.16 15.43		1
Total BTEX		**0.00173**	0.00137	0.000131	mg/kg	03.09.16 15.43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	97	%	74-126	03.09.16 15.43	
1,2-Dichloroethane-D4	17060-07-0	81	%	80-120	03.09.16 15.43	
Toluene-D8	2037-26-5	95	%	73-132	03.09.16 15.43	

ARCADIS, Midland, TX

Moran No. 2-6 Initial Site Assessment

Sample Id:	**E-S-16'-160308**	Matrix:	Soil	Date Received:	03.09.16 09.30
Lab Sample Id:	526483-004	Date Collected:	03.08.16 16.47	Sample Depth:	16 ft
Analytical Method:	TPH GRO by SW46-8015			Prep Method:	SW5030B
Tech:	SAD			% Moisture:	27.9
Analyst:	SAD	Date Prep:	03.16.16 16.30	Basis:	Dry Weight
Seq Number:	990448				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<1.02	6.95	1.02	mg/kg	03.16.16 19.23	U	50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	80-120	03.16.16 19.23	

ARCADIS, Midland, TX

Moran No. 2-6 Initial Site Assessment

Sample Id: **I-S-11'-160308** Matrix: Soil Date Received:03.09.16 09.30
Lab Sample Id: 526483-005 Date Collected: 03.08.16 15.25 Sample Depth: 11 ft

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: DEP % Moisture: 27.56
Analyst: DEP Date Prep: 03.14.16 11.28 Basis: Dry Weight
Seq Number: 990268

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**27.6**	2.75	0.487	mg/kg	03.15.16 00.21		1

Analytical Method: TPH DRO-ORO by SW846-8015 Prep Method: SW3550
Tech: SOK % Moisture: 27.56
Analyst: PKH Date Prep: 03.11.16 15.24 Basis: Dry Weight
Seq Number: 990310

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-DRO (C10-C28)	68334-30-5	**120**	11.5	7.17	mg/kg	03.14.16 19.53		5
TPH-ORO (C28-C35) *	C20C38ORO	**132**	22.7	7.17	mg/kg	03.14.16 19.53		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Pentacosane	629-99-2	90	%	40-130	03.14.16 19.53	

Analytical Method: BTEX by SW 8260B Prep Method: SW5030B
Tech: JTR % Moisture: 27.56
Analyst: JTR Date Prep: 03.09.16 16.53 Basis: Dry Weight
Seq Number: 989949

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000266	0.00138	0.000266	mg/kg	03.09.16 17.53	U	1
Toluene	108-88-3	<0.000179	0.00138	0.000179	mg/kg	03.09.16 17.53	U	1
Ethylbenzene	100-41-4	<0.000132	0.00138	0.000132	mg/kg	03.09.16 17.53	U	1
m,p-Xylenes	179601-23-1	<0.000500	0.00277	0.000500	mg/kg	03.09.16 17.53	U	1
o-Xylene	95-47-6	<0.000317	0.00138	0.000317	mg/kg	03.09.16 17.53	U	1
Total Xylenes	1330-20-7	<0.000317	0.00138	0.000317	mg/kg	03.09.16 17.53	U	1
Total BTEX		<0.000132	0.00138	0.000132	mg/kg	03.09.16 17.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	100	%	74-126	03.09.16 17.53	
1,2-Dichloroethane-D4	17060-07-0	98	%	80-120	03.09.16 17.53	
Toluene-D8	2037-26-5	92	%	73-132	03.09.16 17.53	

Certificate of Analytical Results 526483

ARCADIS, Midland, TX

Moran No. 2-6 Initial Site Assessment

Sample Id:	**I-S-11'-160308**	Matrix:	Soil	Date Received:	03.09.16 09.30
Lab Sample Id:	526483-005	Date Collected:	03.08.16 15.25	Sample Depth:	11 ft
Analytical Method:	TPH GRO by SW46-8015			Prep Method:	SW5030B
Tech:	SAD			% Moisture:	27.56
Analyst:	SAD	Date Prep:	03.16.16 16.30	Basis:	Dry Weight
Seq Number:	990448				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<1.01	6.89	1.01	mg/kg	03.16.16 18.24	U	50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	80-120	03.16.16 18.24	

ARCADIS, Midland, TX

Moran No. 2-6 Initial Site Assessment

Sample Id: **C-S-13'-160308** Matrix: Soil Date Received:03.09.16 09.30
Lab Sample Id: 526483-006 Date Collected: 03.08.16 15.20 Sample Depth: 13 ft

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: DEP % Moisture: 25.67
Analyst: DEP Date Prep: 03.14.16 11.28 Basis: Dry Weight
Seq Number: 990268

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**18.3**	2.67	0.473	mg/kg	03.15.16 00.35		1

Analytical Method: TPH DRO-ORO by SW846-8015 Prep Method: SW3550
Tech: SOK % Moisture: 25.67
Analyst: PKH Date Prep: 03.11.16 15.27 Basis: Dry Weight
Seq Number: 990310

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-DRO (C10-C28)	68334-30-5	**82.2**	11.2	7.00	mg/kg	03.14.16 20.10		5
TPH-ORO (C28-C35) *	C20C38ORO	**158**	22.2	7.00	mg/kg	03.14.16 20.10		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Pentacosane	629-99-2	93	%	40-130	03.14.16 20.10	

Analytical Method: BTEX by SW 8260B Prep Method: SW5030B
Tech: JTR % Moisture: 25.67
Analyst: JTR Date Prep: 03.09.16 16.52 Basis: Dry Weight
Seq Number: 989949

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000257	0.00134	0.000257	mg/kg	03.09.16 17.38	U	1
Toluene	108-88-3	<0.000173	0.00134	0.000173	mg/kg	03.09.16 17.38	U	1
Ethylbenzene	100-41-4	<0.000128	0.00134	0.000128	mg/kg	03.09.16 17.38	U	1
m,p-Xylenes	179601-23-1	<0.000484	0.00267	0.000484	mg/kg	03.09.16 17.38	U	1
o-Xylene	95-47-6	<0.000306	0.00134	0.000306	mg/kg	03.09.16 17.38	U	1
Total Xylenes	1330-20-7	<0.000306	0.00134	0.000306	mg/kg	03.09.16 17.38	U	1
Total BTEX		<0.000128	0.00134	0.000128	mg/kg	03.09.16 17.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	97	%	74-126	03.09.16 17.38	
1,2-Dichloroethane-D4	17060-07-0	92	%	80-120	03.09.16 17.38	
Toluene-D8	2037-26-5	106	%	73-132	03.09.16 17.38	

ARCADIS, Midland, TX

Moran No. 2-6 Initial Site Assessment

Sample Id:	**C-S-13'-160308**	Matrix:	Soil	Date Received:	03.09.16 09.30
Lab Sample Id:	526483-006	Date Collected:	03.08.16 15.20	Sample Depth:	13 ft
Analytical Method:	TPH GRO by SW46-8015			Prep Method:	SW5030B
Tech:	SAD			% Moisture:	25.67
Analyst:	SAD	Date Prep:	03.16.16 16.30	Basis:	Dry Weight
Seq Number:	990448				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.980	6.66	0.980	mg/kg	03.16.16 18.53	U	50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	80-120	03.16.16 18.53	

Certificate of Analytical Results 526483

ARCADIS, Midland, TX

Moran No. 2-6 Initial Site Assessment

Sample Id: **Trip Blank**
Lab Sample Id: 526483-007

Matrix: Water
Date Collected: 03.08.16 00.00

Date Received:03.09.16 09.30

Analytical Method: BTEX by SW 8260B
Tech: JTR
Analyst: JTR
Seq Number: 990042

Prep Method: SW5030B
% Moisture:

Date Prep: 03.10.16 12.50

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000147	0.00100	0.000147	mg/L	03.10.16 13.24	U	1
Toluene	108-88-3	<0.000153	0.00100	0.000153	mg/L	03.10.16 13.24	U	1
Ethylbenzene	100-41-4	<0.0000806	0.00100	0.0000806	mg/L	03.10.16 13.24	U	1
m,p-Xylenes	179601-23-1	<0.000366	0.00200	0.000366	mg/L	03.10.16 13.24	U	1
o-Xylene	95-47-6	<0.0000975	0.00100	0.0000975	mg/L	03.10.16 13.24	U	1
Total Xylenes	1330-20-7	<0.0000975	0.00100	0.0000975	mg/L	03.10.16 13.24	U	1
Total BTEX		<0.0000806	0.00100	0.0000806	mg/L	03.10.16 13.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	100	%	75-131	03.10.16 13.24	
1,2-Dichloroethane-D4	17060-07-0	96	%	63-144	03.10.16 13.24	
Toluene-D8	2037-26-5	96	%	80-117	03.10.16 13.24	

ARCADIS

Moran No. 2-6 Initial Site Assessment

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 990268 — Matrix: Solid — Date Prep: 03.14.16
MB Sample Id: 706369-1-BLK — LCS Sample Id: 706369-1-BKS — LCSD Sample Id: 706369-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.354	100	104	104	104	104	90-110	0	20	mg/kg	03.14.16 17:28	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 990268 — Matrix: Soil — Date Prep: 03.14.16
Parent Sample Id: 526285-001 — MS Sample Id: 526285-001 S — MSD Sample Id: 526285-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2150	1980	4140	101	4140	101	80-120	0	20	mg/kg	03.14.16 20:02	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 990268 — Matrix: Soil — Date Prep: 03.14.16
Parent Sample Id: 526285-002 — MS Sample Id: 526285-002 S — MSD Sample Id: 526285-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3340	1960	5280	99	5270	98	80-120	0	20	mg/kg	03.14.16 23:09	

Analytical Method: Percent Moisture
Seq Number: 990097 — Matrix: Solid
MB Sample Id: 990097-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<1.00	%	03.11.16 15:39	

Analytical Method: Percent Moisture
Seq Number: 990097 — Matrix: Soil
Parent Sample Id: 526483-002 — MD Sample Id: 526483-002 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	11.7	12.1	3	20	%	03.11.16 15:39	

Analytical Method: Percent Moisture
Seq Number: 990097 — Matrix: Soil
Parent Sample Id: 526574-006 — MD Sample Id: 526574-006 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	25.1	25.3	1	20	%	03.11.16 15:39	

ARCADIS

Moran No. 2-6 Initial Site Assessment

Analytical Method: TPH DRO-ORO by SW846-8015 — Prep Method: SW3550
Seq Number: 990310 — Matrix: Solid — Date Prep: 03.11.16
MB Sample Id: 706217-1-BLK — LCS Sample Id: 706217-1-BKS — LCSD Sample Id: 706217-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-DRO (C10-C28)	<1.04	33.3	42.0	126	40.7	122	70-130	3	35	mg/kg	03.14.16 17:54	
TPH-ORO (C28-C35)	<1.04	33.3	37.1	111	36.6	110	70-130	1	35	mg/kg	03.14.16 17:54	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Pentacosane	80		87		88		40-130	%	03.14.16 17:54

Analytical Method: TPH DRO-ORO by SW846-8015 — Prep Method: SW3550
Seq Number: 990310 — Matrix: Soil — Date Prep: 03.11.16
Parent Sample Id: 526483-002 — MS Sample Id: 526483-002 S — MSD Sample Id: 526483-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-DRO (C10-C28)	3.59	37.8	44.2	107	43.1	105	70-130	3	35	mg/kg	03.14.16 18:45	
TPH-ORO (C28-C35)	1.63	37.8	32.7	82	31.1	78	70-130	5	35	mg/kg	03.14.16 18:45	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Pentacosane	97		87		40-130	%	03.14.16 18:45

Analytical Method: BTEX by SW 8260B — Prep Method: SW5030B
Seq Number: 989949 — Matrix: Solid — Date Prep: 03.09.16
MB Sample Id: 706164-1-BLK — LCS Sample Id: 706164-1-BKS — LCSD Sample Id: 706164-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000192	0.100	0.0862	86	0.0843	84	62-132	2	25	mg/kg	03.09.16 11:40	
Toluene	<0.000129	0.100	0.0944	94	0.0946	95	66-124	0	25	mg/kg	03.09.16 11:40	
Ethylbenzene	<0.0000955	0.100	0.0998	100	0.0946	95	71-134	5	25	mg/kg	03.09.16 11:40	
m,p-Xylenes	<0.000362	0.200	0.210	105	0.198	99	69-128	6	25	mg/kg	03.09.16 11:40	
o-Xylene	<0.000229	0.100	0.103	103	0.0996	100	72-131	3	25	mg/kg	03.09.16 11:40	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	92		85		92		74-126	%	03.09.16 11:40
1,2-Dichloroethane-D4	82		90		95		80-120	%	03.09.16 11:40
Toluene-D8	96		99		99		73-132	%	03.09.16 11:40

ARCADIS

Moran No. 2-6 Initial Site Assessment

Analytical Method: **BTEX by SW 8260B** Prep Method: SW5030B
Seq Number: 990042 Matrix: Water Date Prep: 03.10.16
MB Sample Id: 706228-1-BLK LCS Sample Id: 706228-1-BKS LCSD Sample Id: 706228-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000147	0.100	0.116	116	0.113	113	66-142	3	20	mg/L	03.10.16 10:07	
Toluene	<0.000153	0.100	0.0995	100	0.0968	97	59-139	3	20	mg/L	03.10.16 10:07	
Ethylbenzene	<0.0000806	0.100	0.103	103	0.0996	100	75-125	3	20	mg/L	03.10.16 10:07	
m,p-Xylenes	<0.000366	0.200	0.207	104	0.199	100	75-125	4	20	mg/L	03.10.16 10:07	
o-Xylene	<0.0000975	0.100	0.105	105	0.101	101	75-125	4	20	mg/L	03.10.16 10:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	98		95		96		75-131	%	03.10.16 10:07
1,2-Dichloroethane-D4	97		107		107		63-144	%	03.10.16 10:07
Toluene-D8	96		102		102		80-117	%	03.10.16 10:07

Analytical Method: **BTEX by SW 8260B** Prep Method: SW5030B
Seq Number: 989949 Matrix: Soil Date Prep: 03.09.16
Parent Sample Id: 526483-002 MS Sample Id: 526483-002 S MSD Sample Id: 526483-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000217	0.113	0.0880	78	0.0941	84	62-132	7	25	mg/kg	03.09.16 16:01	
Toluene	<0.000146	0.113	0.101	89	0.106	95	66-124	5	25	mg/kg	03.09.16 16:01	
Ethylbenzene	<0.000108	0.113	0.106	94	0.106	95	71-134	0	25	mg/kg	03.09.16 16:01	
m,p-Xylenes	<0.000409	0.226	0.225	100	0.224	100	69-128	0	25	mg/kg	03.09.16 16:01	
o-Xylene	<0.000259	0.113	0.111	98	0.112	100	72-131	1	25	mg/kg	03.09.16 16:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	97		94		74-126	%	03.09.16 16:01
1,2-Dichloroethane-D4	108		104		80-120	%	03.09.16 16:01
Toluene-D8	98		100		73-132	%	03.09.16 16:01

Analytical Method: **BTEX by SW 8260B** Prep Method: SW5030B
Seq Number: 990042 Matrix: Water Date Prep: 03.10.16
Parent Sample Id: 526317-001 MS Sample Id: 526317-001 S MSD Sample Id: 526317-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000147	0.100	0.119	119	0.115	115	66-142	3	20	mg/L	03.10.16 15:03	
Toluene	<0.000153	0.100	0.100	100	0.100	100	59-139	0	20	mg/L	03.10.16 15:03	
Ethylbenzene	<0.0000806	0.100	0.105	105	0.103	103	75-125	2	20	mg/L	03.10.16 15:03	
m,p-Xylenes	<0.000366	0.200	0.209	105	0.206	103	75-125	1	20	mg/L	03.10.16 15:03	
o-Xylene	<0.0000975	0.100	0.107	107	0.103	103	75-125	4	20	mg/L	03.10.16 15:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	98		94		75-131	%	03.10.16 15:03
1,2-Dichloroethane-D4	106		96		63-144	%	03.10.16 15:03
Toluene-D8	102		103		80-117	%	03.10.16 15:03

ARCADIS

Moran No. 2-6 Initial Site Assessment

Analytical Method: **TPH GRO by SW46-8015** Prep Method: SW5030B
Seq Number: 990448 Matrix: Solid Date Prep: 03.16.16
MB Sample Id: 706467-1-BLK LCS Sample Id: 706467-1-BKS LCSD Sample Id: 706467-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<0.736	25.0	25.2	101	27.9	112	75-135	10	35	mg/kg	03.16.16 15:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	113		101		98		80-120	%	03.16.16 15:33

Analytical Method: **TPH GRO by SW46-8015** Prep Method: SW5030B
Seq Number: 990448 Matrix: Soil Date Prep: 03.16.16
Parent Sample Id: 526483-002 MS Sample Id: 526483-002 S MSD Sample Id: 526483-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<0.842	28.6	28.9	101	29.5	103	75-135	2	35	mg/kg	03.16.16 19:53	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	109		101		80-120	%	03.16.16 19:53

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200)

Dallas Texas (214-902-0300)

Service Center - San Antonio, Texas (210-509-3334)

Odessa, Texas (432-563-1800)

Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)

Tampa, Florida (813-620-2000)

www.xenco.com

Xenco Quote #

Xenco Job # 520483-1

Client / Reporting Information

Company Name / Branch: Arcadis-US

Company Address: 2929 Briarpark Drive Suite 300 Houston TX 77042

Email: Priscilla.Yelvington@arcadis.com

Phone No: 713-953-4717

Project Contact: Priscilla Yelvington

Samplers's Name Ryan Nanny

Project Information

Project Name/Number: Moran No.2-6 Initial Site Assessment/ UWDDB-A6009-ABS

Project Location:

Invoice To: Chevron

PO Number:

Analytical Information

Matrix Codes

S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
W = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	8015 GRO/DRO/ORO	EPA300 Chlorides	8260 BTEX	% Moisture	Field Comments
1	D-S-16'-160308	16'	3-8-16	1710	S	2								X	X	X	X	X	Hold Sample
2	D-S-9'-160308	9'	3-8-16	1608	S	2								X	X	X	X	X	
3	F-S-25'-160308	25'	3-8-16	1539	S	2								X	X	X	X	X	
4	E-S-16'-160308	16'	3-8-16	1647	S	2								X	X	X	X	X	
5	I-S-11'-160308	11'	3-8-16	1525	S	2								X	X	X	X	X	
6	C-S-13'-160308	13'	3-8-16	1520	S	2								X	X	X	X	X	
7	~~TB~~ 3-8-16 TI-W-O-160308	0'	3-8-16	—	W	3	X										X		
8																			
9																			
10																			

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [x] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [x] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		3-8-16 2000	1	2 FedEx 3911	0930	2 Tanya Harkins
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice

Temp: 3 · COR ID:HOU-025
C/F:+0.2
Corrected Temp: 3.2°C

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negot.

CHAIN-OF-CUSTODY SEAL • CHAIN-OF-CUSTODY SEAL
CHAIN-OF-CUSTODY SEAL • CHAIN-OF-CUSTODY SEAL
ARCADIS

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: ARCADIS

Date/ Time Received: 03/09/2016 09:30:00 AM

Work Order #: 526483

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : hou025

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**N/A**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**N/A**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: th

PH Device/Lot#:

Checklist completed by: Tanya Torres Date: 03/09/2016

Checklist reviewed by: Kelsey Brooks Date: 03/10/2016

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031416A\F0314029.D Vial: 10
Acq On : 14 Mar 2016 6:45 pm Operator: PKH-A38
Sample : 526483-002 S Inst : A38
Misc : SOLID Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 15 8:52 2016 Quant Results File: DR031416.RES

Quant Method : C:\HPCHEM\1\METHODS\DR031416.M (Chemstation Integrator)
Title : SW8015DRO FRONT DETECTOR A38
Last Update : Mon Mar 14 14:35:06 2016
Response via : Initial Calibration
DataAcq Meth : A38FR.M

Volume Inj. :
Signal Phase :
Signal Info :

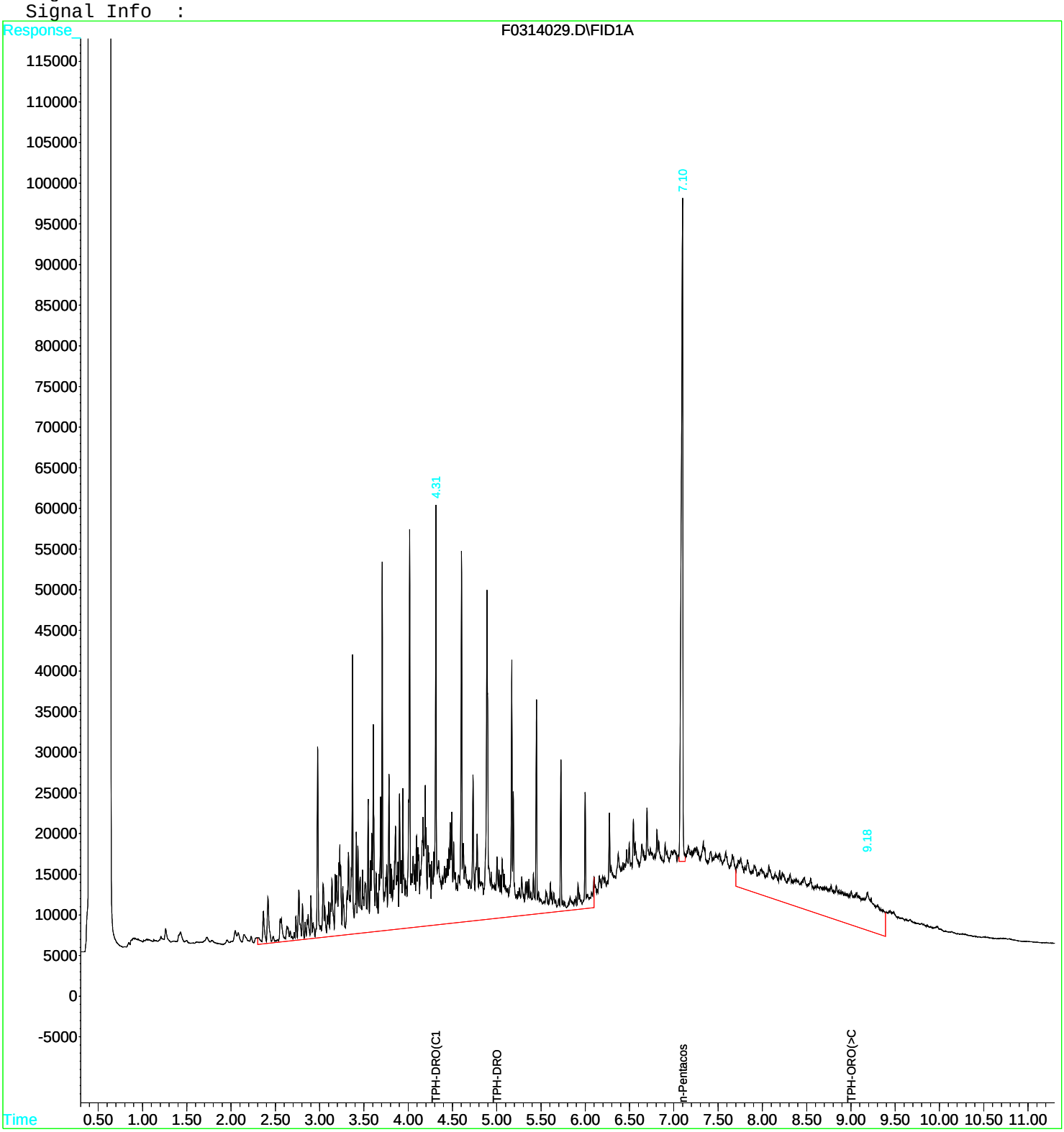
	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
4) S	n-Pentacosane	7.10f	1049734	48.525	PPM	m
	Target Compounds					
1) H	TPH-DRO(C10-C22)	4.30	11317121	948.535	PPM	
2) H	TPH-ORO(>C28-C35)	9.00	3271946	866.159	PPM	
3) H	TPH-DRO	5.00	17125467	1169.858	ppm	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031416A\F0314029.D Vial: 10
Acq On : 14 Mar 2016 6:45 pm Operator: PKH-A38
Sample : 526483-002 S Inst : A38
Misc : SOLID Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 15 8:52 2016 Quant Results File: DR031416.RES

Quant Method : C:\HPCHEM\1\METHODS\DR031416.M (Chemstation Integrator)
Title : SW8015DRO FRONT DETECTOR A38
Last Update : Mon Mar 14 14:35:06 2016
Response via : Multiple Level Calibration
DataAcq Meth : A38FR.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031416A\F0314032.D Vial: 13
Acq On : 14 Mar 2016 7:36 pm Operator: PKH-A38
Sample : 526483-003 *5* Inst : A38
Misc : SOLID Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 15 8:54 2016 Quant Results File: DR031416.RES

Quant Method : C:\HPCHEM\1\METHODS\DR031416.M (Chemstation Integrator)
Title : SW8015DRO FRONT DETECTOR A38
Last Update : Mon Mar 14 14:35:06 2016
Response via : Initial Calibration
DataAcq Meth : A38FR.M

Volume Inj. :
Signal Phase :
Signal Info :

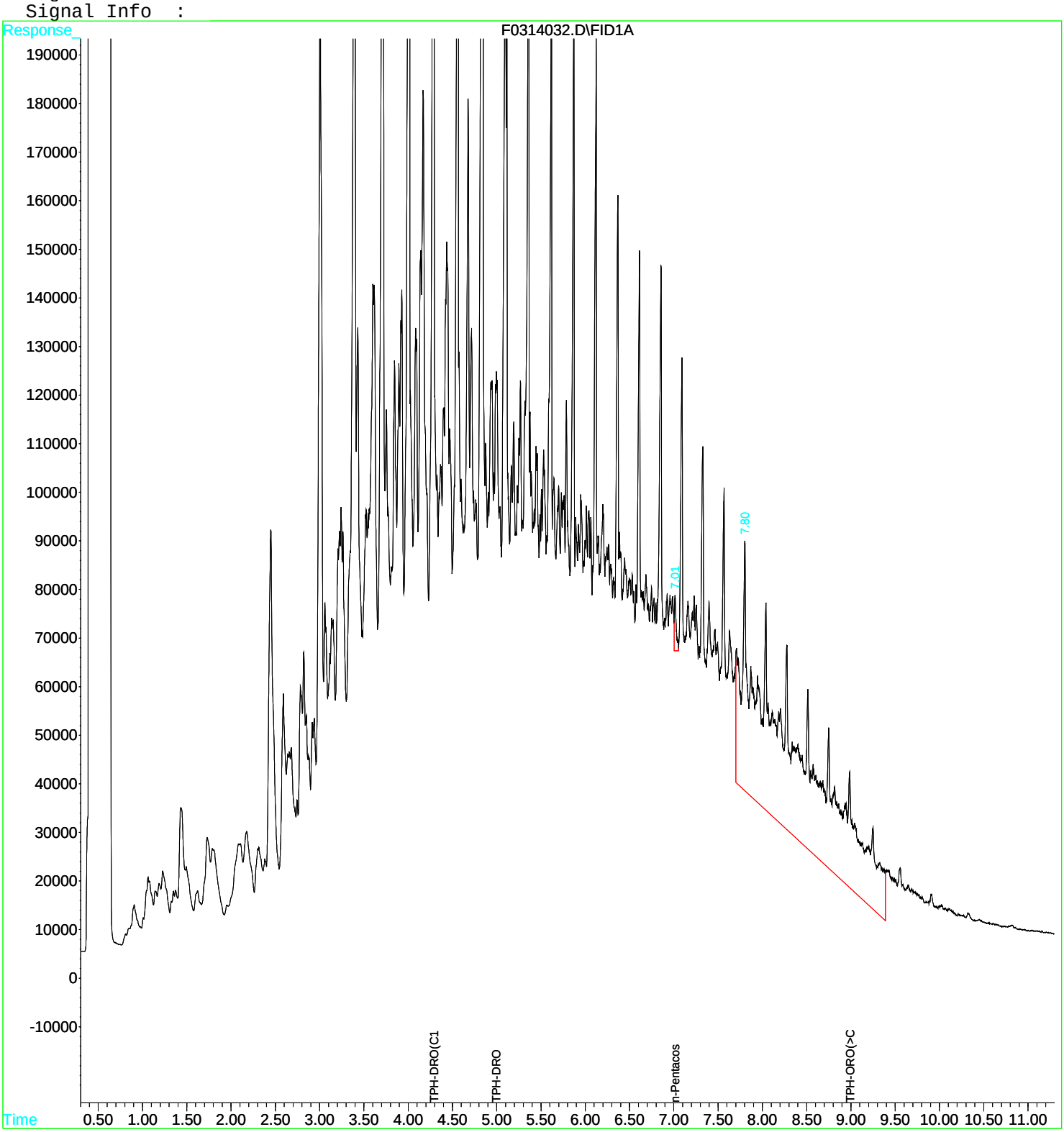
	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
4) S	n-Pentacosane	7.01	168746	7.801	PPM	m
	Target Compounds					
1) H	TPH-DRO(C10-C22)	4.30	137992485	11565.719	PPM	
2) H	TPH-ORO(>C28-C35)	9.00	17877214	4732.511	PPM	
3) H	TPH-DRO	5.00	256134150	17496.784	ppm	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031416A\F0314032.D Vial: 13
Acq On : 14 Mar 2016 7:36 pm Operator: PKH-A38
Sample : 526483-003 *5* Inst : A38
Misc : SOLID Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 15 8:54 2016 Quant Results File: DR031416.RES

Quant Method : C:\HPCHEM\1\METHODS\DR031416.M (Chemstation Integrator)
Title : SW8015DRO FRONT DETECTOR A38
Last Update : Mon Mar 14 14:35:06 2016
Response via : Multiple Level Calibration
DataAcq Meth : A38FR.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031516A\F0315005.D Vial: 4
Acq On : 15 Mar 2016 12:01 pm Operator: PKH-A38
Sample : 526483-003 DL *20* Inst : A38
Misc : Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 15 12:53 2016 Quant Results File: DR031416.RES

Quant Method : C:\HPCHEM\1\METHODS\DR031416.M (Chemstation Integrator)
Title : SW8015DRO FRONT DETECTOR A38
Last Update : Tue Mar 15 12:51:21 2016
Response via : Initial Calibration
DataAcq Meth : A38FR.M

Volume Inj. :
Signal Phase :
Signal Info :

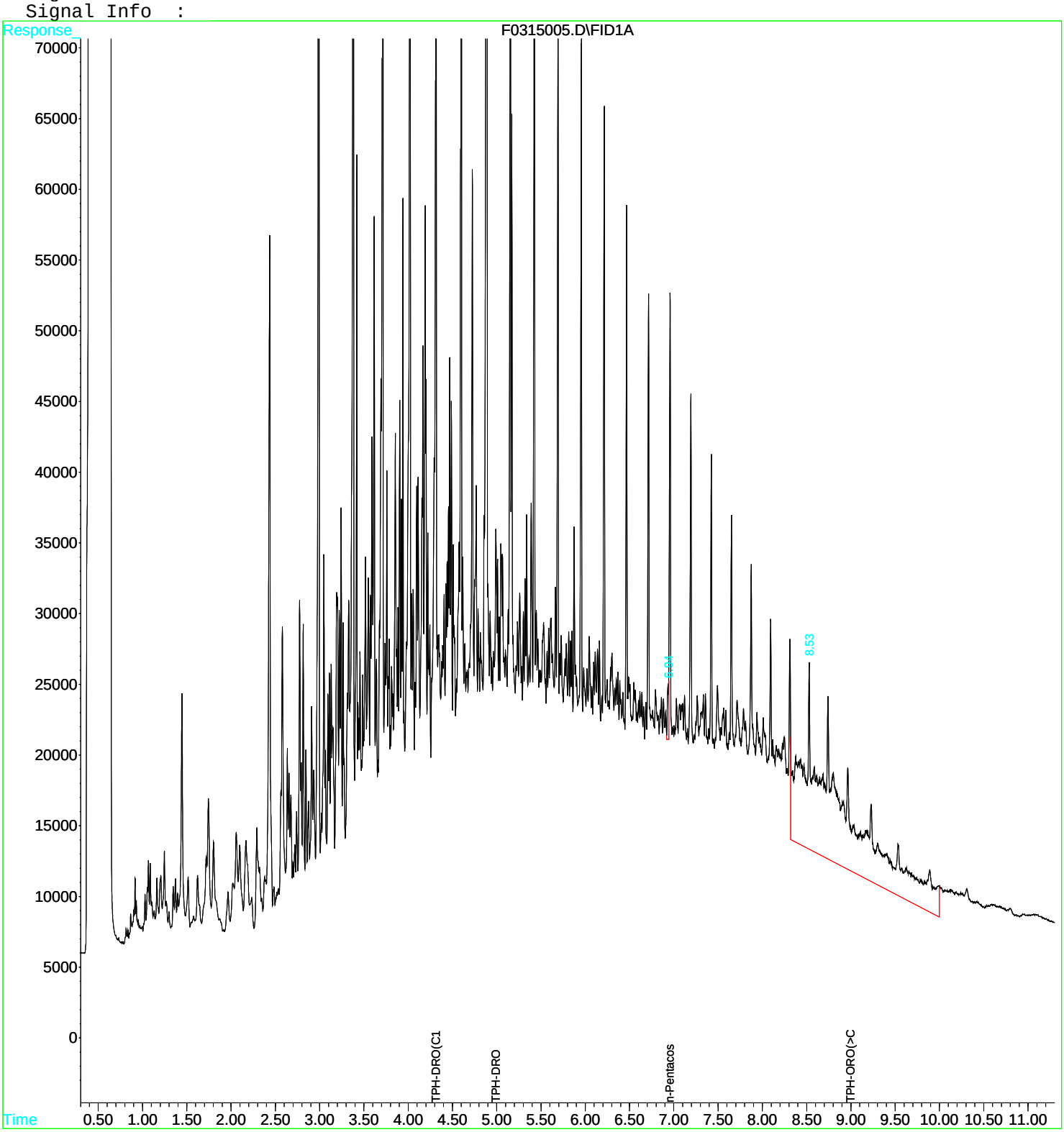
	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
4) S	n-Pentacosane	6.94	37551	1.736	PPM	m
	Target Compounds					
1) H	TPH-DRO(C10-C22)	4.30	32844670	2752.847	PPM	
2) H	TPH-ORO(>C28-C35)	9.00	3572268	945.662	PPM	
3) H	TPH-DRO	5.00	67783622	4630.368	ppm	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031516A\F0315005.D Vial: 4
Acq On : 15 Mar 2016 12:01 pm Operator: PKH-A38
Sample : 526483-003 DL *20* Inst : A38
Misc : Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 15 12:53 2016 Quant Results File: DR031416.RES

Quant Method : C:\HPCHEM\1\METHODS\DR031416.M (Chemstation Integrator)
Title : SW8015DRO FRONT DETECTOR A38
Last Update : Tue Mar 15 12:51:21 2016
Response via : Multiple Level Calibration
DataAcq Meth : A38FR.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031416A\F0314031.D Vial: 12
Acq On : 14 Mar 2016 7:19 pm Operator: PKH-A38
Sample : 526483-004 Inst : A38
Misc : SOLID Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 15 8:53 2016 Quant Results File: DR031416.RES

Quant Method : C:\HPCHEM\1\METHODS\DR031416.M (Chemstation Integrator)
Title : SW8015DRO FRONT DETECTOR A38
Last Update : Mon Mar 14 14:35:06 2016
Response via : Initial Calibration
DataAcq Meth : A38FR.M

Volume Inj. :
Signal Phase :
Signal Info :

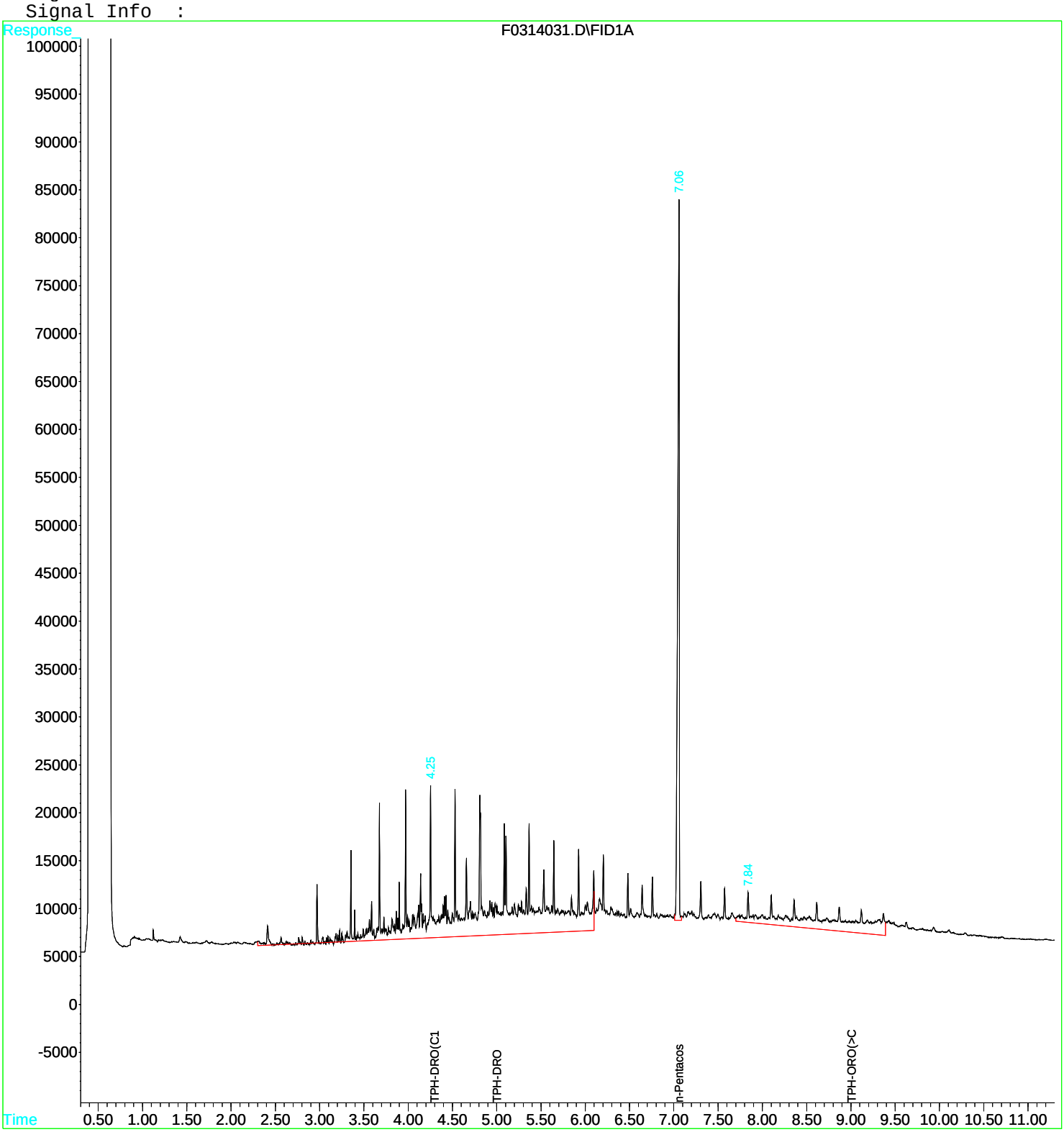
	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
4) S	n-Pentacosane	7.06f	944105	43.643	PPM	m
	Target Compounds					
1) H	TPH-DRO(C10-C22)	4.30	4029022	337.689	PPM	
2) H	TPH-ORO(>C28-C35)	9.00	1030253	272.732	PPM	
3) H	TPH-DRO	5.00	9003734	615.054	ppm	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031416A\F0314031.D Vial: 12
Acq On : 14 Mar 2016 7:19 pm Operator: PKH-A38
Sample : 526483-004 Inst : A38
Misc : SOLID Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 15 8:53 2016 Quant Results File: DR031416.RES

Quant Method : C:\HPCHEM\1\METHODS\DR031416.M (Chemstation Integrator)
Title : SW8015DRO FRONT DETECTOR A38
Last Update : Mon Mar 14 14:35:06 2016
Response via : Multiple Level Calibration
DataAcq Meth : A38FR.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031416A\F0314033.D Vial: 14
Acq On : 14 Mar 2016 7:53 pm Operator: PKH-A38
Sample : 526483-005 *5* Inst : A38
Misc : SOLID Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 15 8:55 2016 Quant Results File: DR031416.RES

Quant Method : C:\HPCHEM\1\METHODS\DR031416.M (Chemstation Integrator)
Title : SW8015DRO FRONT DETECTOR A38
Last Update : Mon Mar 14 14:35:06 2016
Response via : Initial Calibration
DataAcq Meth : A38FR.M

Volume Inj. :
Signal Phase :
Signal Info :

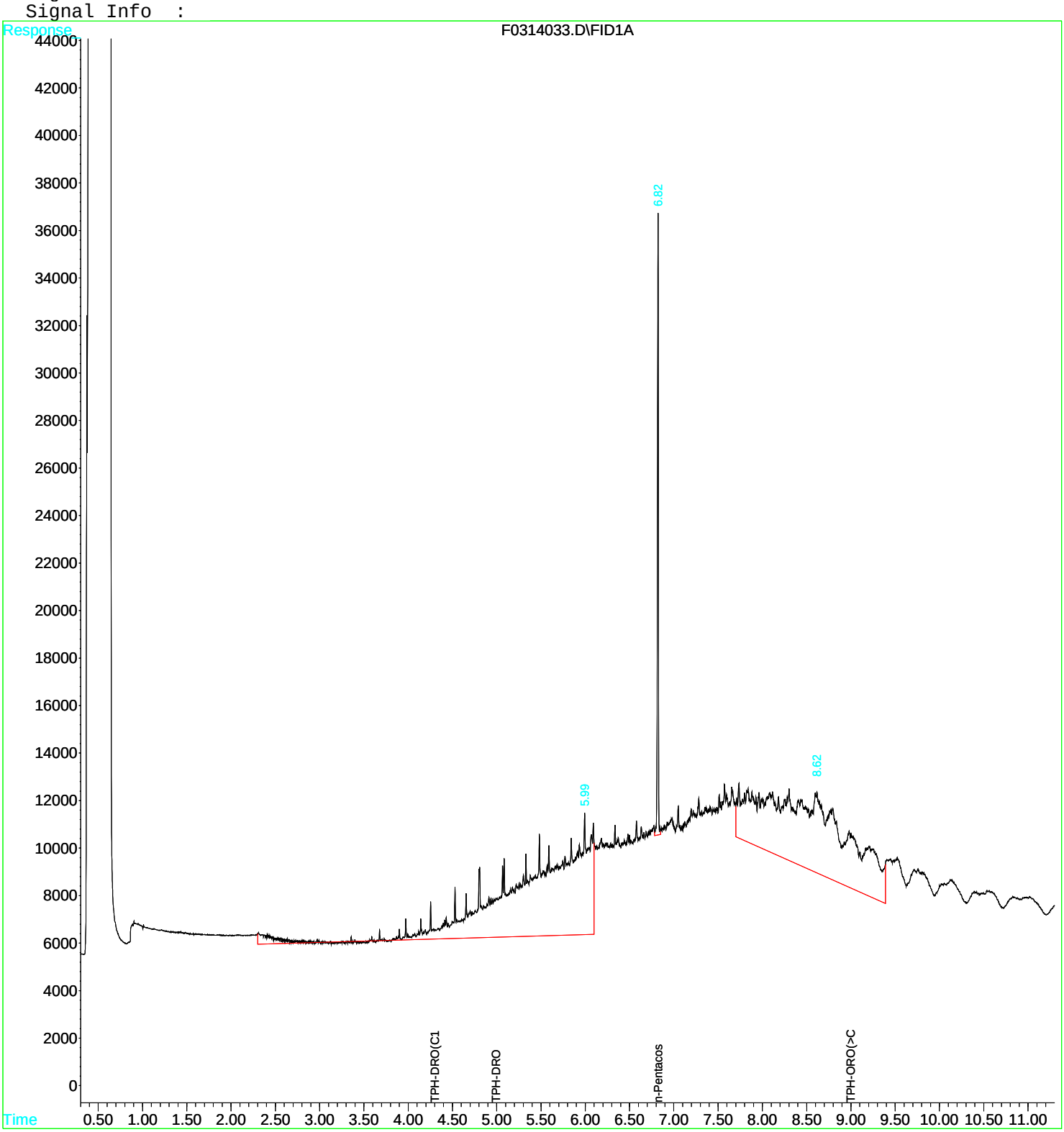
	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
4) S	n-Pentacosane	6.82f	193892	8.963	PPM	m
	Target Compounds					
1) H	TPH-DRO(C10-C22)	4.30	2354794	197.365	PPM	
2) H	TPH-ORO(>C28-C35)	9.00	2167527	573.794	PPM	
3) H	TPH-DRO	5.00	7639631	521.871	ppm	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031416A\F0314033.D Vial: 14
Acq On : 14 Mar 2016 7:53 pm Operator: PKH-A38
Sample : 526483-005 *5* Inst : A38
Misc : SOLID Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 15 8:55 2016 Quant Results File: DR031416.RES

Quant Method : C:\HPCHEM\1\METHODS\DR031416.M (Chemstation Integrator)
Title : SW8015DRO FRONT DETECTOR A38
Last Update : Mon Mar 14 14:35:06 2016
Response via : Multiple Level Calibration
DataAcq Meth : A38FR.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031416A\F0314034.D Vial: 15
Acq On : 14 Mar 2016 8:10 pm Operator: PKH-A38
Sample : 526483-006 *5* Inst : A38
Misc : SOLID Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 15 8:50 2016 Quant Results File: DR031416.RES

Quant Method : C:\HPCHEM\1\METHODS\DR031416.M (Chemstation Integrator)
Title : SW8015DRO FRONT DETECTOR A38
Last Update : Mon Mar 14 14:35:06 2016
Response via : Initial Calibration
DataAcq Meth : A38FR.M

Volume Inj. :
Signal Phase :
Signal Info :

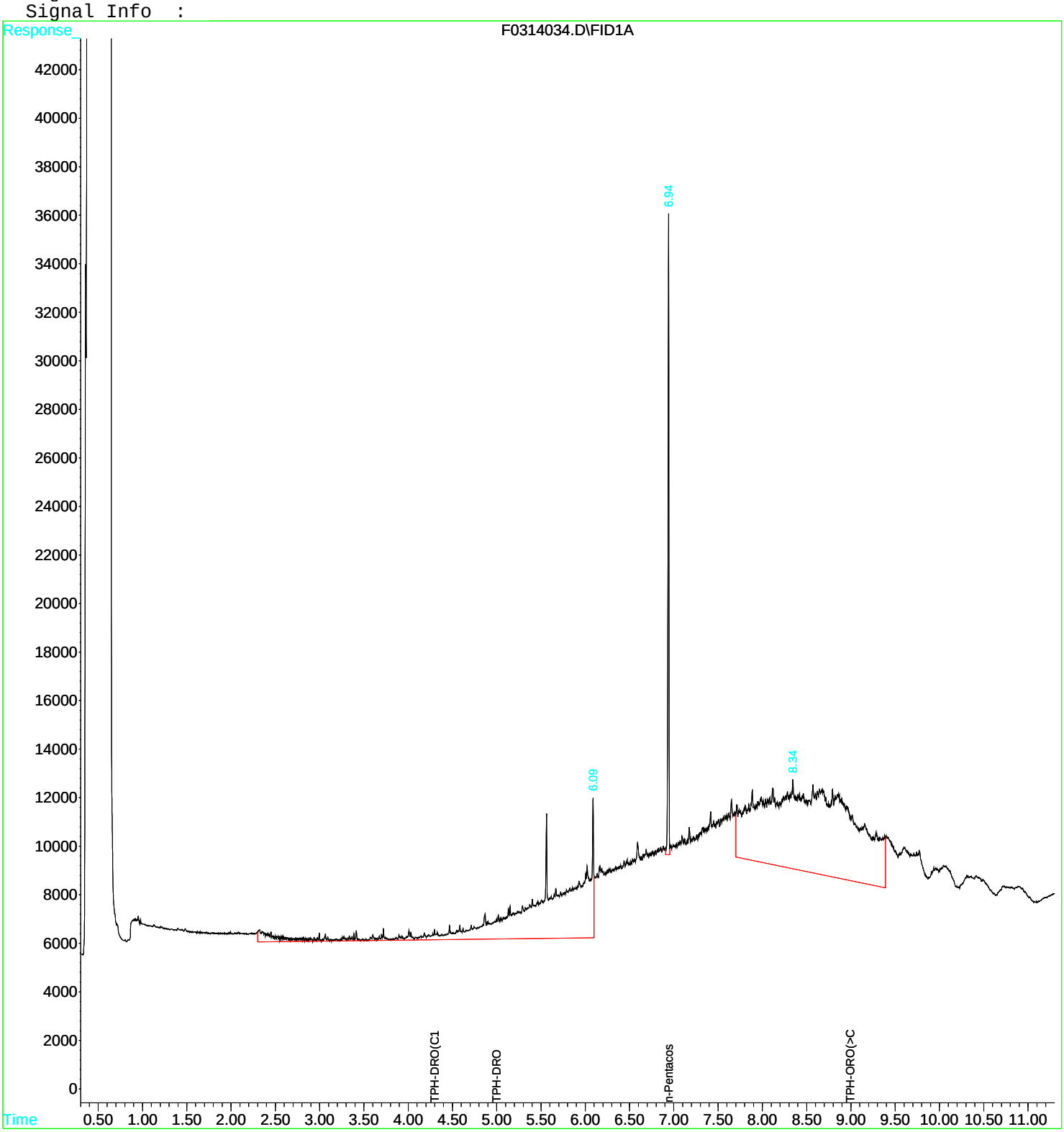
	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
4) S	n-Pentacosane	6.94	201114	9.297	PPM	m
	Target Compounds					
1) H	TPH-DRO(C10-C22)	4.30	1408638	118.064	PPM	
2) H	TPH-ORO(>C28-C35)	9.00	2665555	705.634	PPM	
3) H	TPH-DRO	5.00	5361196	366.229	ppm	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031416A\F0314034.D Vial: 15
Acq On : 14 Mar 2016 8:10 pm Operator: PKH-A38
Sample : 526483-006 *5* Inst : A38
Misc : SOLID Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 15 8:50 2016 Quant Results File: DR031416.RES

Quant Method : C:\HPCHEM\1\METHODS\DR031416.M (Chemstation Integrator)
Title : SW8015DRO FRONT DETECTOR A38
Last Update : Mon Mar 14 14:35:06 2016
Response via : Multiple Level Calibration
DataAcq Meth : A38FR.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031616\H0012421.D Vial: 2
Acq On : 16 Mar 2016 5:54 pm Operator: SAD
Sample : 526483-002-4922 *50* Inst : A25
Misc : 4.95G/5ML,03/16/16,SAD,16:30,SOIL Multiplr: 1.00
IntFile : gro.e
Quant Time: Mar 17 11:09 2016 Quant Results File: 031616S.RES

Quant Method : C:\HPCHEM\1\METHODS\031616S.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 16 15:08:48 2016
Response via : Initial Calibration
DataAcq Meth : 8015.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	Internal Standards					
1) I	a,a,a-Trifluorotoluene	7.98	1820892	30.000	ppb	m
	System Monitoring Compounds					
2) S	1,4-Difluorobenzene	7.13	2958739	32.181	ppb	m
Spiked Amount	30.000	Range 80 - 120	Recovery = 107.27%			
4) S	Bromofluorobenzene	13.66	2351866	33.296	ppb	m
Spiked Amount	30.000	Range 80 - 120	Recovery = 110.99%			
	Target Compounds					

(f)=RT Delta > 1/2 Window (m)=manual SAD Final 1.000

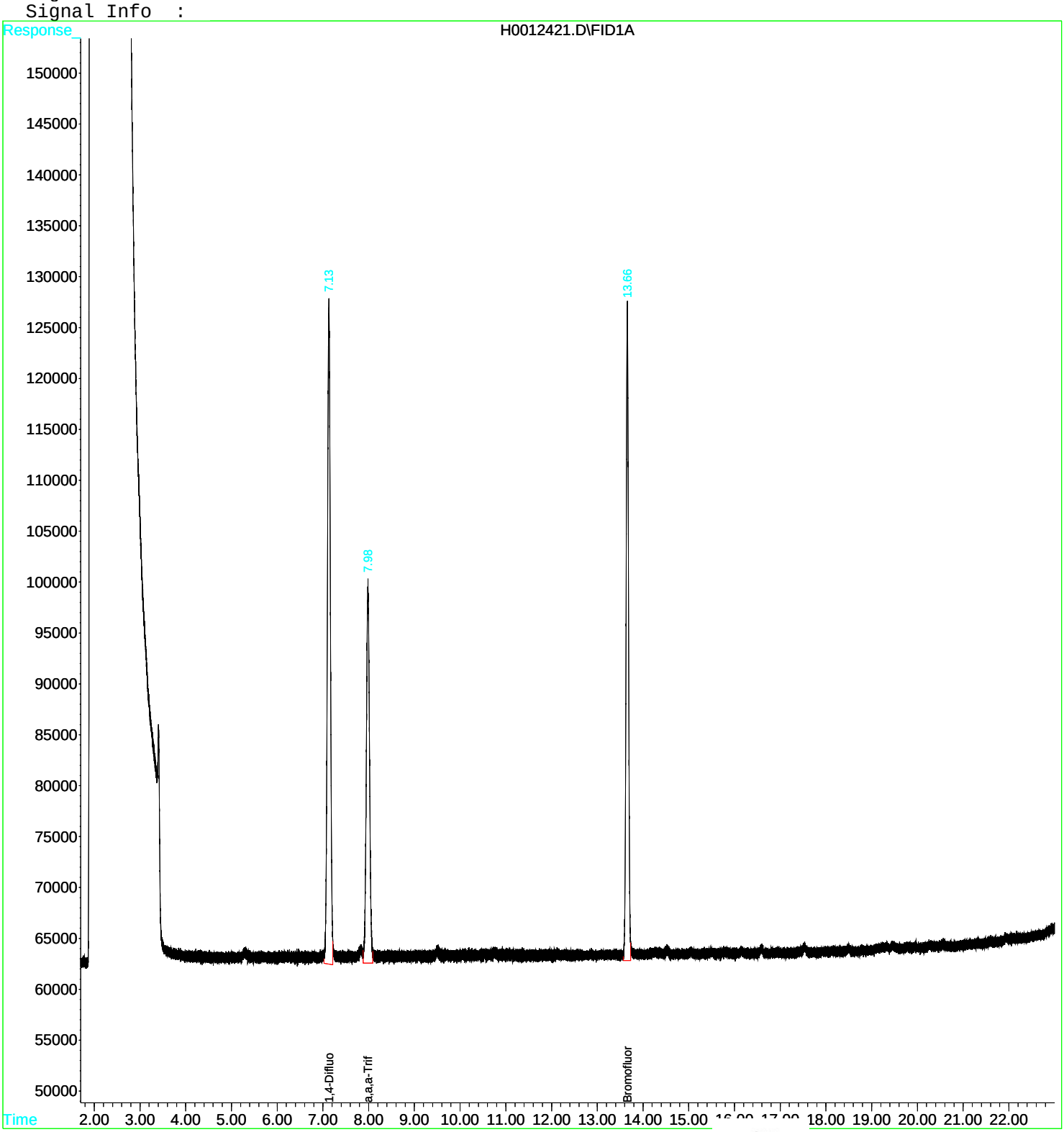
H0012421.D 031616S.M Thu Mar 17 11:22:03 2016 3/17/2016 11:24 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031616\H0012421.D Vial: 2
Acq On : 16 Mar 2016 5:54 pm Operator: SAD
Sample : 526483-002-4922 *50* Inst : A25
Misc : 4.95G/5ML,03/16/16,SAD,16:30,SOIL Multiplr: 1.00
IntFile : gro.e
Quant Time: Mar 17 11:09 2016 Quant Results File: 031616S.RES

Quant Method : C:\HPCHEM\1\METHODS\031616S.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 16 15:08:48 2016
Response via : Multiple Level Calibration
DataAcq Meth : 8015.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031616\H0012429.D Vial: 10
Acq On : 16 Mar 2016 9:52 pm Operator: SAD
Sample : 526483-003-4923 *2,000* Inst : A25
Misc : 4.98G/5ML,03/16/16,SAD,16:30,SOIL Multiplr: 1.00
IntFile : gro.e
Quant Time: Mar 17 11:16 2016 Quant Results File: 031616S.RES

Quant Method : C:\HPCHEM\1\METHODS\031616S.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 16 15:08:48 2016
Response via : Initial Calibration
DataAcq Meth : 8015.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	Internal Standards					
1) I	a,a,a-Trifluorotoluene	7.99	1889709	30.000	ppb	m
	System Monitoring Compounds					
2) S	1,4-Difluorobenzene	7.14	2953190	30.951	ppb	m
Spiked Amount	30.000	Range 80 - 120	Recovery = 103.17%			
4) S	Bromofluorobenzene	13.66	2579765	35.192	ppb	m
Spiked Amount	30.000	Range 80 - 120	Recovery = 117.31%			
	Target Compounds					
3) H	Total Petroleum Hydrocarbo	9.28	33596894	710.536	ppb	

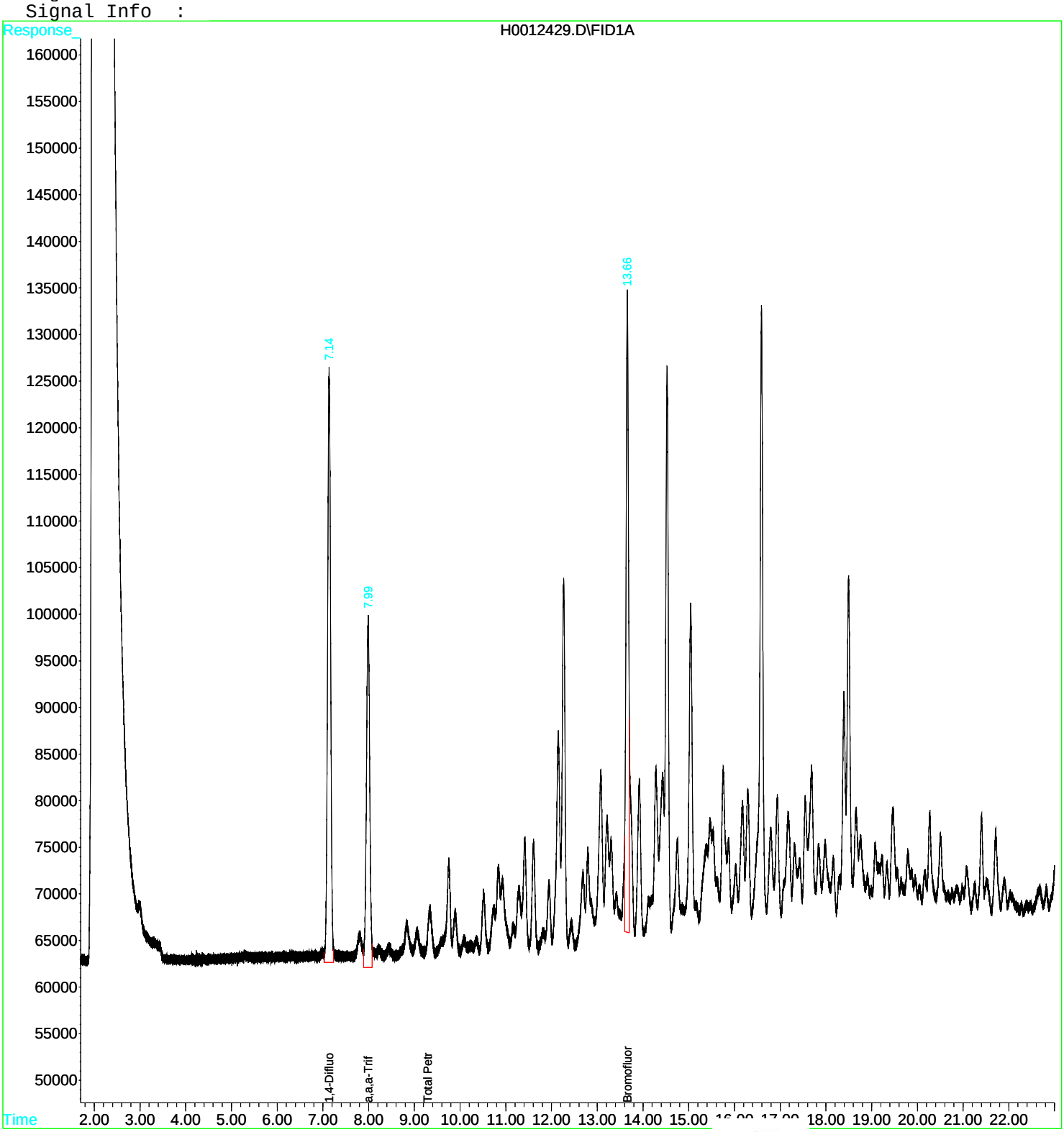
(f)=RT Delta > 1/2 Window (m)=manual SAD Final 1.000

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031616\H0012429.D Vial: 10
Acq On : 16 Mar 2016 9:52 pm Operator: SAD
Sample : 526483-003-4923 *2,000* Inst : A25
Misc : 4.98G/5ML,03/16/16,SAD,16:30,SOIL Multiplr: 1.00
IntFile : gro.e
Quant Time: Mar 17 11:16 2016 Quant Results File: 031616S.RES

Quant Method : C:\HPCHEM\1\METHODS\031616S.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 16 15:08:48 2016
Response via : Multiple Level Calibration
DataAcq Meth : 8015.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031616\H0012424.D Vial: 5
Acq On : 16 Mar 2016 7:23 pm Operator: SAD
Sample : 526483-004-4924 *50* Inst : A25
Misc : 4.99G/5ML,03/16/16,SAD,16:30,SOIL Multiplr: 1.00
IntFile : gro.e
Quant Time: Mar 17 11:11 2016 Quant Results File: 031616S.RES

Quant Method : C:\HPCHEM\1\METHODS\031616S.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 16 15:08:48 2016
Response via : Initial Calibration
DataAcq Meth : 8015.M

Volume Inj. :
Signal Phase :
Signal Info :

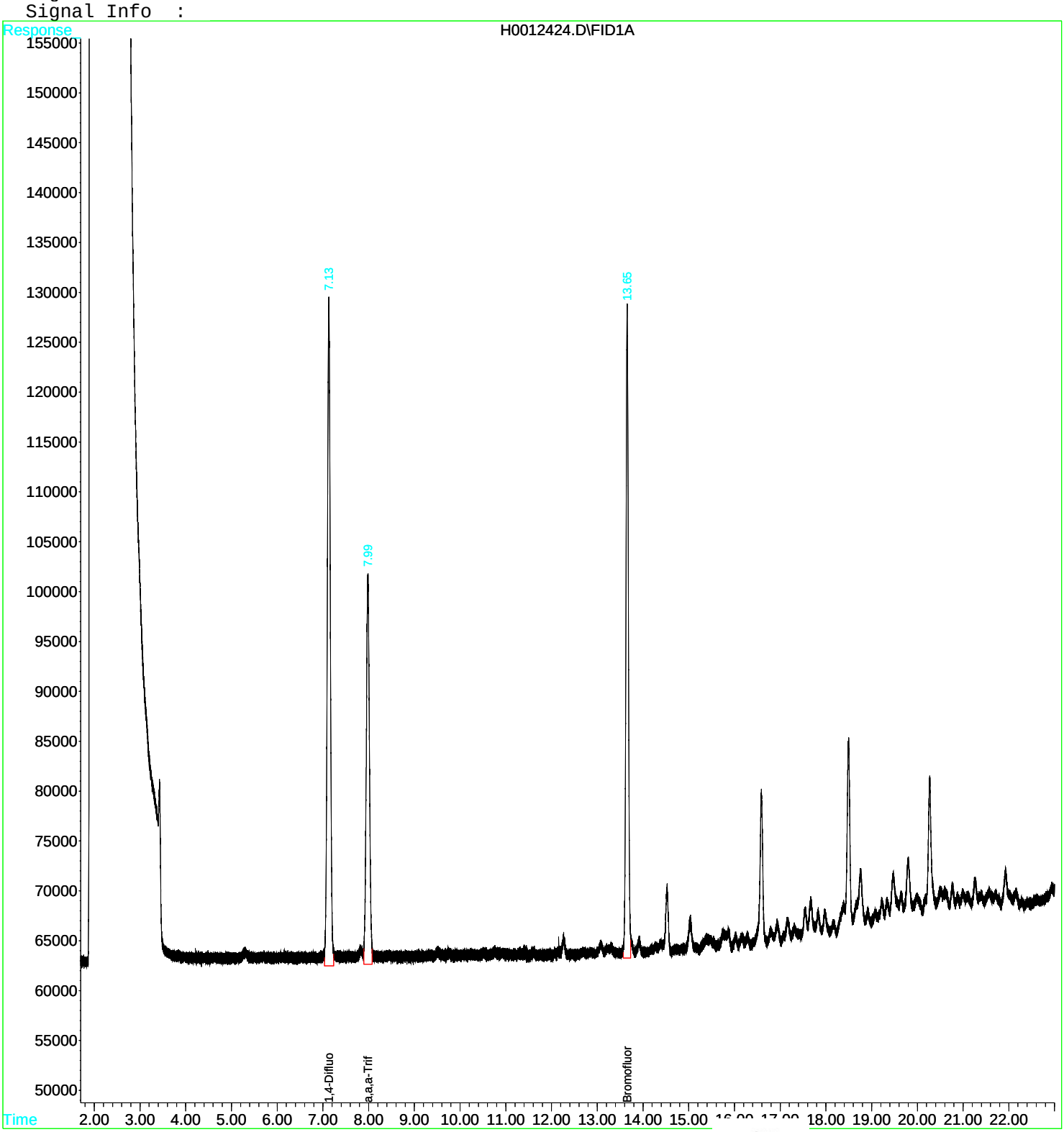
Compound	R.T.	Response	Conc Units
Internal Standards			
1) I a,a,a-Trifluorotoluene	7.99	1898927	30.000 ppb m
System Monitoring Compounds			
2) S 1,4-Difluorobenzene	7.13	3051572	31.827 ppb m
Spiked Amount 30.000	Range 80 - 120	Recovery = 106.09%	
4) S Bromofluorobenzene	13.65	2416877	32.810 ppb m
Spiked Amount 30.000	Range 80 - 120	Recovery = 109.37%	
Target Compounds			

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031616\H0012424.D Vial: 5
Acq On : 16 Mar 2016 7:23 pm Operator: SAD
Sample : 526483-004-4924 *50* Inst : A25
Misc : 4.99G/5ML,03/16/16,SAD,16:30,SOIL Multiplr: 1.00
IntFile : gro.e
Quant Time: Mar 17 11:11 2016 Quant Results File: 031616S.RES

Quant Method : C:\HPCHEM\1\METHODS\031616S.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 16 15:08:48 2016
Response via : Multiple Level Calibration
DataAcq Meth : 8015.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031616\H0012422.D Vial: 3
Acq On : 16 Mar 2016 6:24 pm Operator: SAD
Sample : 526483-005-4925 *50* Inst : A25
Misc : 5.01G/5ML,03/16/16,SAD,16:30,SOIL Multiplr: 1.00
IntFile : gro.e
Quant Time: Mar 17 11:09 2016 Quant Results File: 031616S.RES

Quant Method : C:\HPCHEM\1\METHODS\031616S.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 16 15:08:48 2016
Response via : Initial Calibration
DataAcq Meth : 8015.M

Volume Inj. :
Signal Phase :
Signal Info :

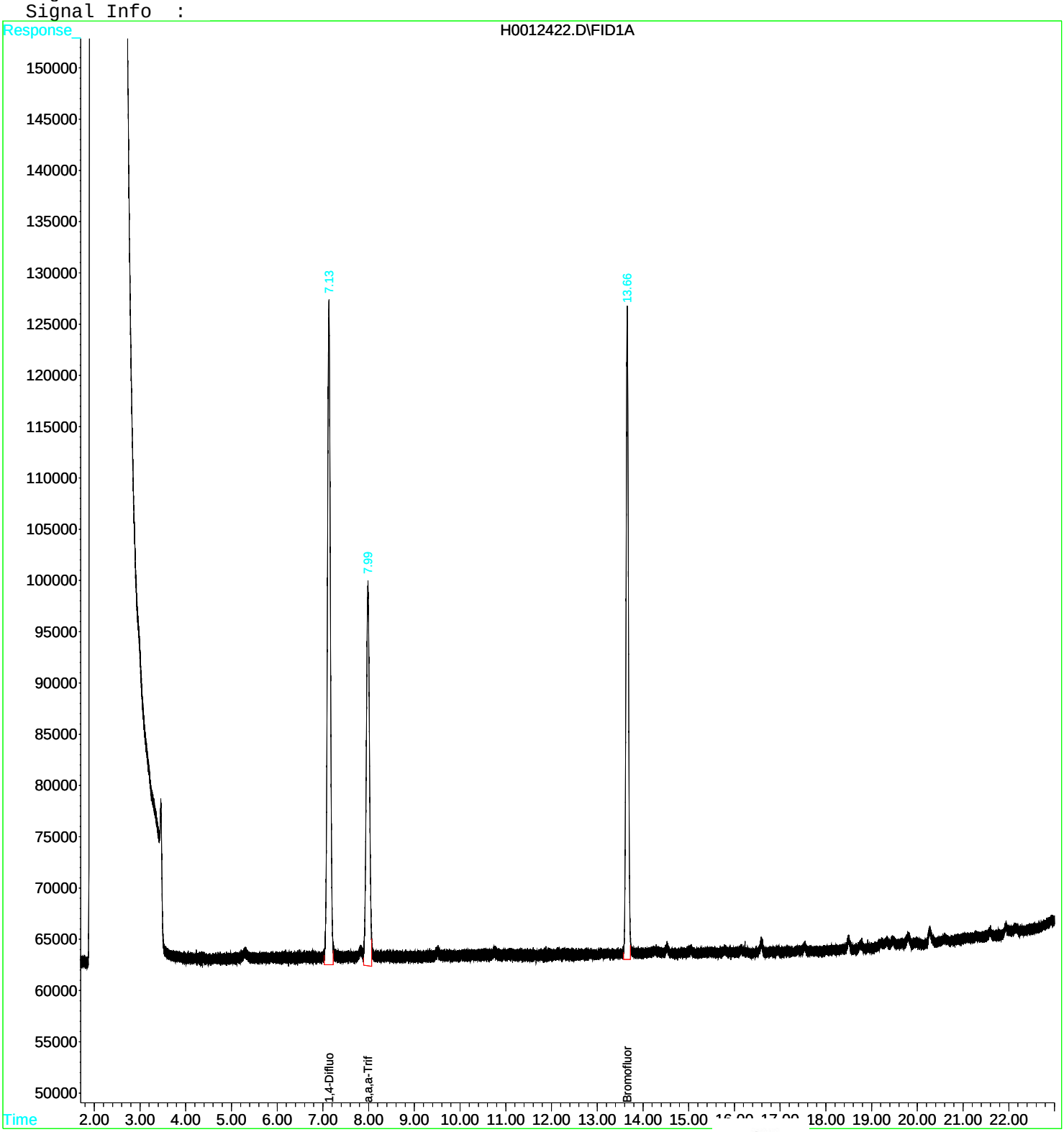
Compound	R.T.	Response	Conc	Units	
Internal Standards					
1) I a,a,a-Trifluorotoluene	7.99	1820599	30.000	ppb	m
System Monitoring Compounds					
2) S 1,4-Difluorobenzene	7.13	2948805	32.078	ppb	m
Spiked Amount 30.000	Range 80 - 120	Recovery = 106.93%			
4) S Bromofluorobenzene	13.66	2310509	32.715	ppb	m
Spiked Amount 30.000	Range 80 - 120	Recovery = 109.05%			
Target Compounds					

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031616\H0012422.D Vial: 3
Acq On : 16 Mar 2016 6:24 pm Operator: SAD
Sample : 526483-005-4925 *50* Inst : A25
Misc : 5.01G/5ML,03/16/16,SAD,16:30,SOIL Multiplr: 1.00
IntFile : gro.e
Quant Time: Mar 17 11:09 2016 Quant Results File: 031616S.RES

Quant Method : C:\HPCHEM\1\METHODS\031616S.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 16 15:08:48 2016
Response via : Multiple Level Calibration
DataAcq Meth : 8015.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031616\H0012423.D Vial: 4
Acq On : 16 Mar 2016 6:53 pm Operator: SAD
Sample : 526483-006-4926 *50* Inst : A25
Misc : 5.05G/5ML,03/16/16,SAD,16:30,SOIL Multiplr: 1.00
IntFile : gro.e
Quant Time: Mar 17 11:10 2016 Quant Results File: 031616S.RES

Quant Method : C:\HPCHEM\1\METHODS\031616S.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 16 15:08:48 2016
Response via : Initial Calibration
DataAcq Meth : 8015.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	Internal Standards					
1) I	a,a,a-Trifluorotoluene	7.98	1871670	30.000	ppb	m
	System Monitoring Compounds					
2) S	1,4-Difluorobenzene	7.13	2902514	30.713	ppb	m
Spiked Amount	30.000	Range 80 - 120	Recovery = 102.38%			
4) S	Bromofluorobenzene	13.65	2255158	31.060	ppb	m
Spiked Amount	30.000	Range 80 - 120	Recovery = 103.53%			
	Target Compounds					

(f)=RT Delta > 1/2 Window (m)=manual SAD Final 1.000

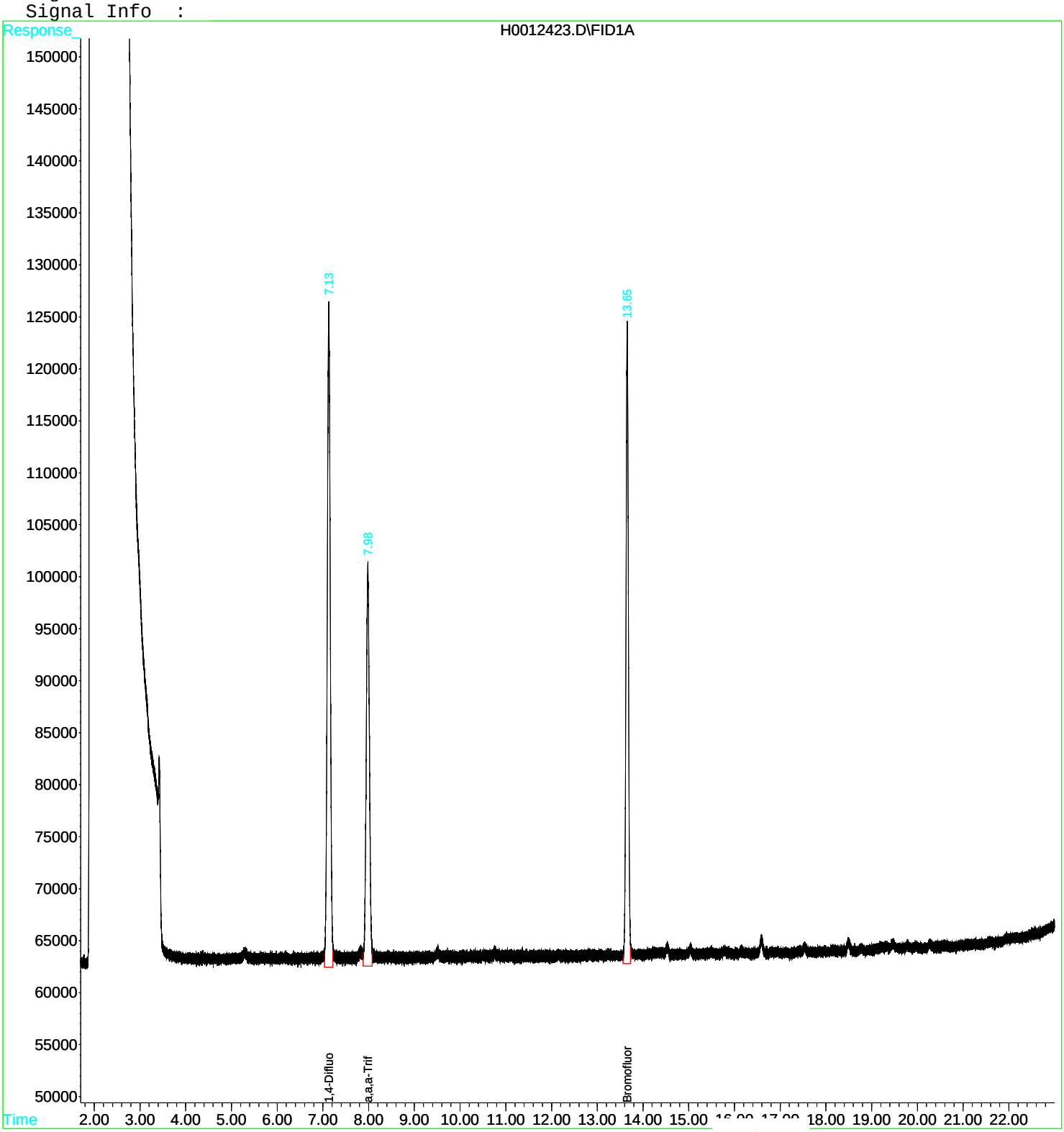
H0012423.D 031616S.M Thu Mar 17 11:22:14 2016 3/17/2016 11:24 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031616\H0012423.D Vial: 4
Acq On : 16 Mar 2016 6:53 pm Operator: SAD
Sample : 526483-006-4926 *50* Inst : A25
Misc : 5.05G/5ML,03/16/16,SAD,16:30,SOIL Multiplr: 1.00
IntFile : gro.e
Quant Time: Mar 17 11:10 2016 Quant Results File: 031616S.RES

Quant Method : C:\HPCHEM\1\METHODS\031616S.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 16 15:08:48 2016
Response via : Multiple Level Calibration
DataAcq Meth : 8015.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\030916\C052050.D Vial: 19
Acq On : 9 Mar 2016 3:24 pm Operator: JTR
Sample : 526483-002-4922 *1* Inst : A140
Misc : 5.01G/5ML,03/09/16,JTR,15:10,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 10 8:48 2016 Quant Results File: 021916S.RES

Quant Method : C:\HPCHEM\1...\021916S.M (RTE Integrator)
Title : 8260
Last Update : Fri Feb 19 13:34:43 2016
Response via : Initial Calibration
DataAcq Meth : BTEX

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	2.17	168	79204	50.00	ppb	0.02
5) 1,4-Difluorobenzene	2.58	114	92936	50.00	ppb	0.03
7) Chlorobenzene-d5	4.87	117	95287	50.00	ppb	0.03
13) 1,4-Dichlorobenzene-d4	7.47	152	93351	50.00	ppb	0.03
System Monitoring Compounds						
3) 1,2-Dichloroethane-d4	2.36	102	7458	43.53	ppb	0.02
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.06%			
4) Dibromofluoromethane	2.17	113	54079	49.50	ppb	0.02
Spiked Amount 50.000	Range 74 - 126		Recovery = 99.00%			
8) Toluene-d8	3.57	98	115719	44.07	ppb	0.03
Spiked Amount 50.000	Range 73 - 132		Recovery = 88.14%			
14) 4-Bromofluorobenzene	6.14	95	54487	44.18	ppb	0.03
Spiked Amount 50.000	Range 58 - 152		Recovery = 88.36%			

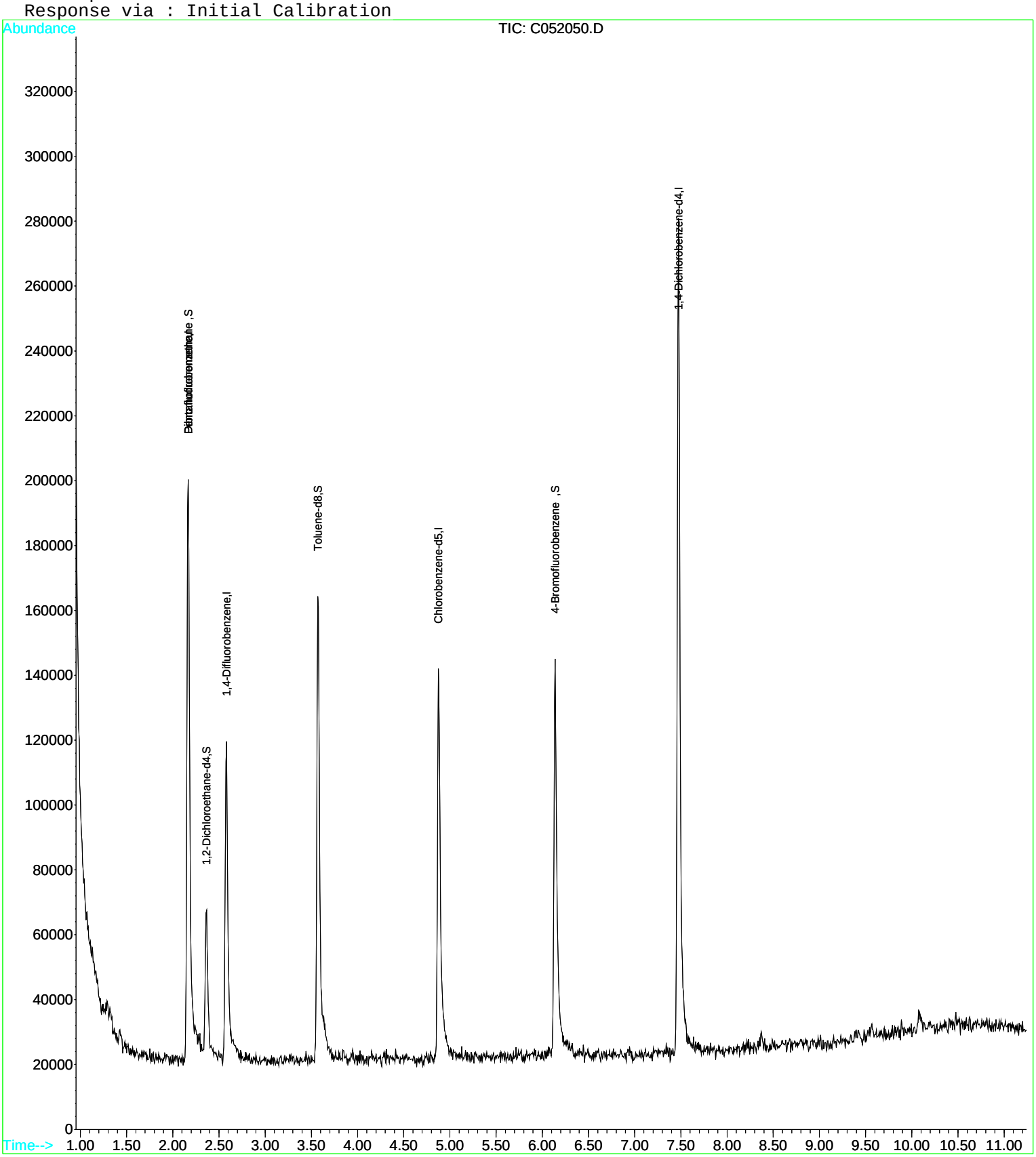
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\2016\030916\C052050.D Vial: 19
Acq On : 9 Mar 2016 3:24 pm Operator: JTR
Sample : 526483-002-4922 *1* Inst : A140
Misc : 5.01G/5ML,03/09/16,JTR,15:10,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 10 8:48 2016 Quant Results File: 021916S.RES

Method : C:\HPCHEM\1\METHODS\2012\021916S.M (RTE Integrator)
Title : 8260
Last Update : Fri Feb 19 13:34:43 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\030916\C052060.D Vial: 29
Acq On : 9 Mar 2016 6:08 pm Operator: JTR
Sample : 526483-003-4923 *25* Inst : A140
Misc : 5.05G/5ML,03/09/16,JTR,16:54,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 10 8:53 2016 Quant Results File: 021916S.RES

Quant Method : C:\HPCHEM\1...\021916S.M (RTE Integrator)
Title : 8260
Last Update : Fri Feb 19 13:34:43 2016
Response via : Initial Calibration
DataAcq Meth : BTEX

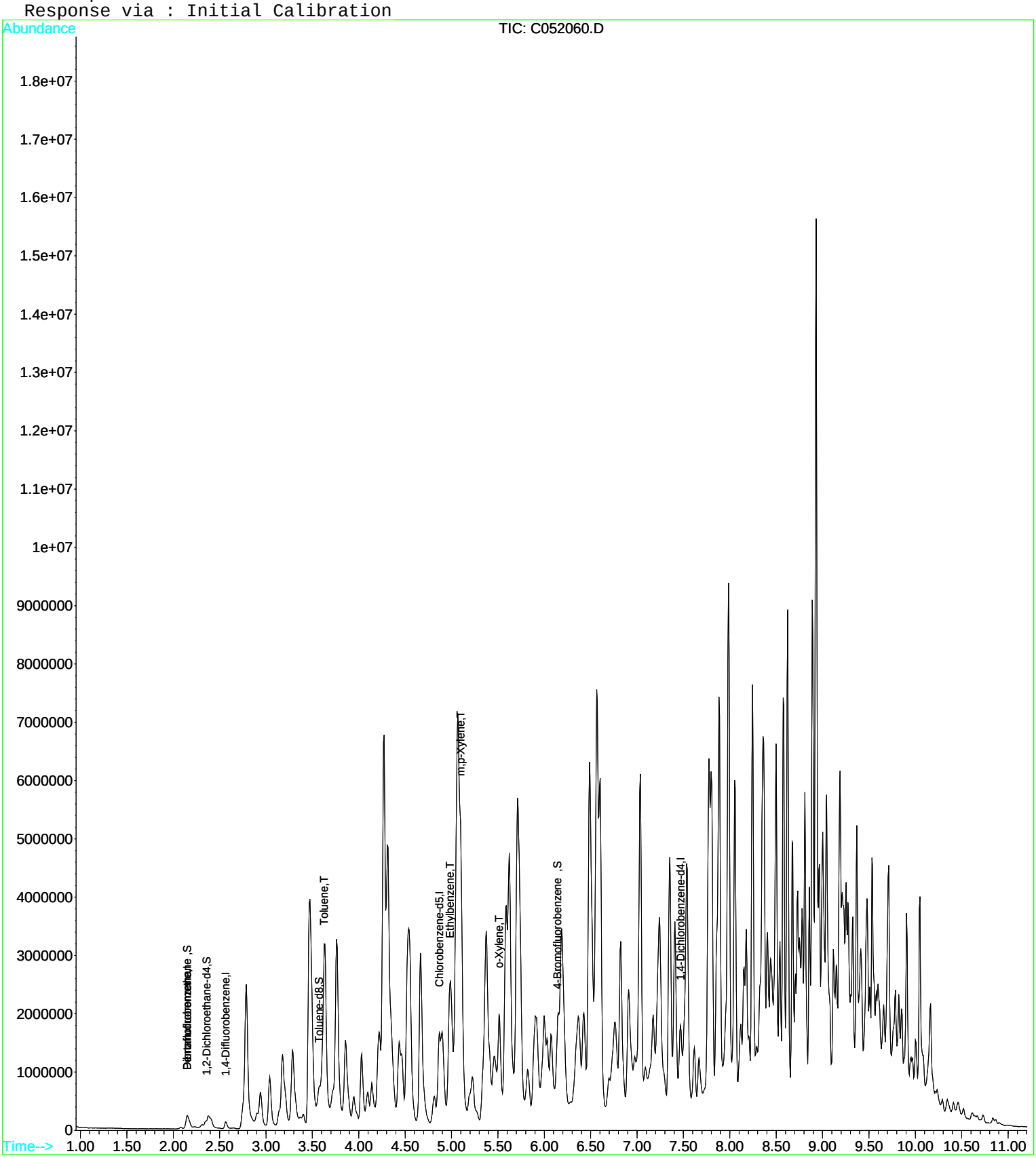
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	2.15	168	81300	50.00	ppb	0.00
5) 1,4-Difluorobenzene	2.56	114	110540	50.00	ppb	0.00
7) Chlorobenzene-d5	4.87	117	154517	50.00	ppb	0.02
13) 1,4-Dichlorobenzene-d4	7.47	152	221153	50.00	ppb	0.02
System Monitoring Compounds						
3) 1,2-Dichloroethane-d4	2.35	102	7074	40.23	ppb	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 80.46%			
4) Dibromofluoromethane	2.15	113	45975	40.99	ppb	0.00
Spiked Amount 50.000	Range 74 - 126		Recovery = 81.98%			
8) Toluene-d8	3.56	98	179472m	42.15	ppb	0.01
Spiked Amount 50.000	Range 73 - 132		Recovery = 84.30%			
14) 4-Bromofluorobenzene	6.13	95	107780	36.89	ppb	0.02
Spiked Amount 50.000	Range 58 - 152		Recovery = 73.78%			
Target Compounds						Qvalue
9) Toluene	3.62	91	17054	3.38	ppb	# 27
10) Ethylbenzene	4.98	91	580788	79.68	ppb	99
11) m,p-Xylene	5.10	106	732039	281.73	ppb	92
12) o-Xylene	5.52	106	531124	129.51	ppb	94

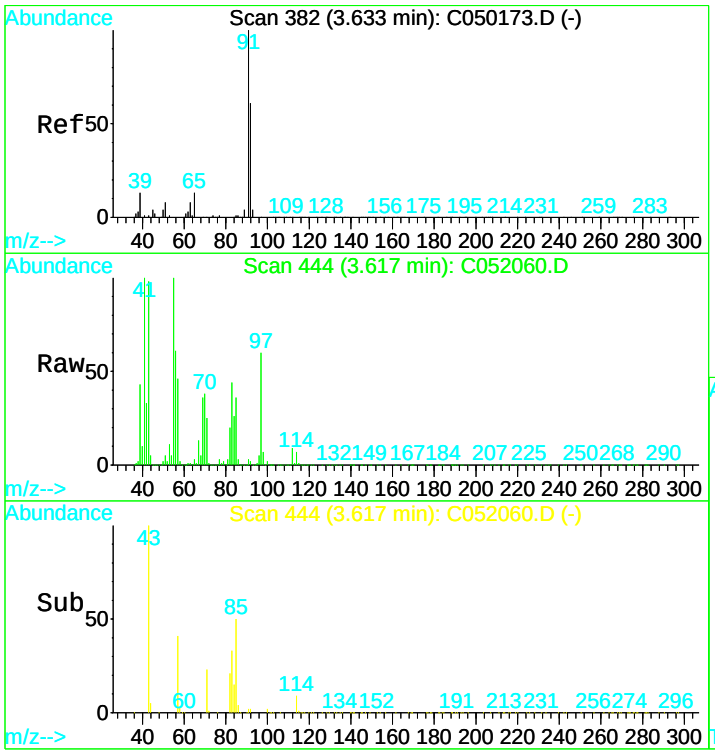
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\2016\030916\C052060.D Vial: 29
Acq On : 9 Mar 2016 6:08 pm Operator: JTR
Sample : 526483-003-4923 *25* Inst : A140
Misc : 5.05G/5ML,03/09/16,JTR,16:54,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 10 8:53 2016 Quant Results File: 021916S.RES

Method : C:\HPCHEM\1\METHODS\2012\021916S.M (RTE Integrator)
Title : 8260
Last Update : Fri Feb 19 13:34:43 2016
Response via : Initial Calibration

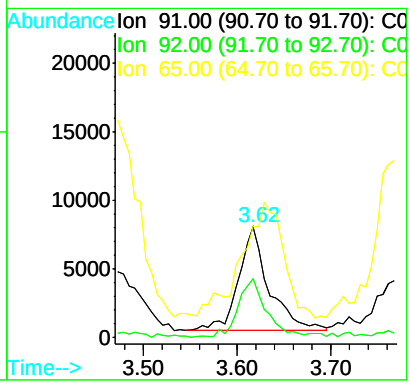


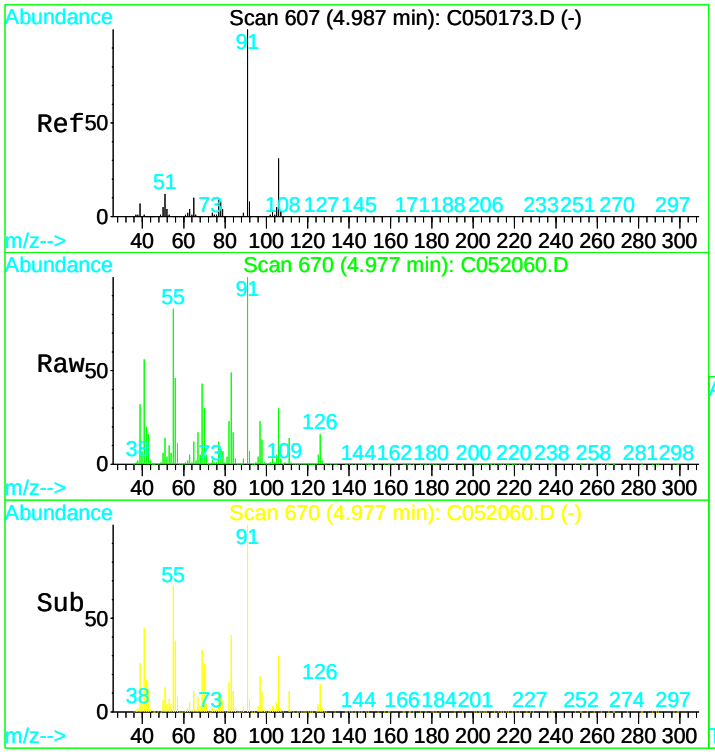


#9
Toluene
Concen: 3.38 ppb
RT: 3.62 min Scan# 444
Delta R.T. 0.01 min
Lab File: C052060.D
Acq: 9 Mar 2016 6:08 pm

Tgt Ion: 91 Resp: 17054

Ion	Ratio	Lower	Upper
91	100		
92	52.7	40.4	80.4
65	154.3	0.0	33.8#

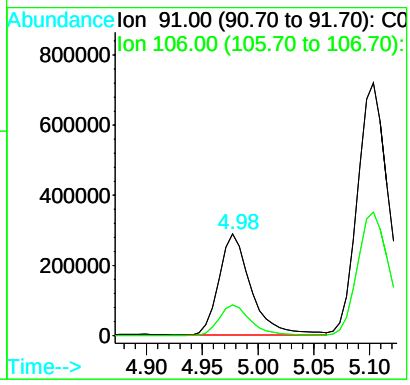


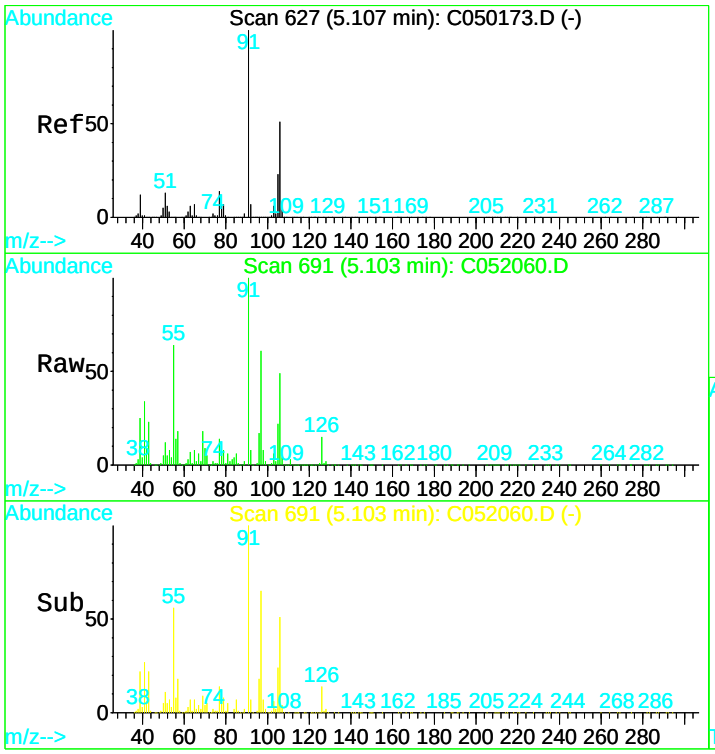


#10
Ethylbenzene
Concen: 79.68 ppb
RT: 4.98 min Scan# 670
Delta R.T. 0.02 min
Lab File: C052060.D
Acq: 9 Mar 2016 6:08 pm

Tgt Ion: 91 Resp: 580788

Ion	Ratio	Lower	Upper
91	100		
106	30.3	0.0	129.7

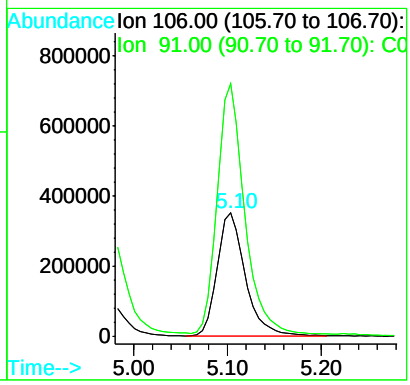


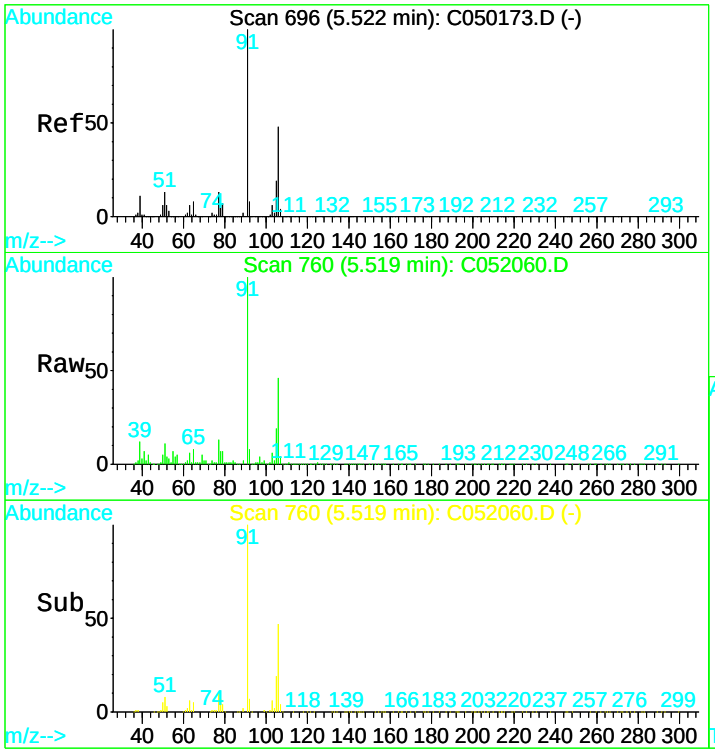


#11
m,p-Xylene
Concen: 281.73 ppb
RT: 5.10 min Scan# 691
Delta R.T. 0.02 min
Lab File: C052060.D
Acq: 9 Mar 2016 6:08 pm

Tgt Ion:106 Resp: 732039

Ion	Ratio	Lower	Upper
106	100		
91	196.7	188.8	228.8

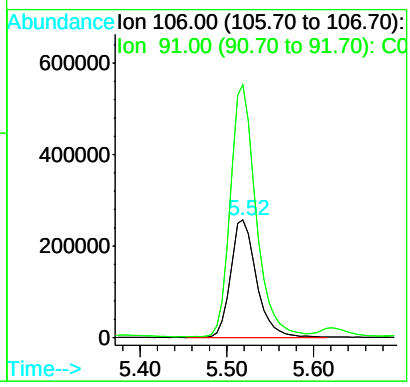




#12
o-Xylene
Concen: 129.51 ppb
RT: 5.52 min Scan# 760
Delta R.T. 0.03 min
Lab File: C052060.D
Acq: 9 Mar 2016 6:08 pm

Tgt Ion:106 Resp: 531124

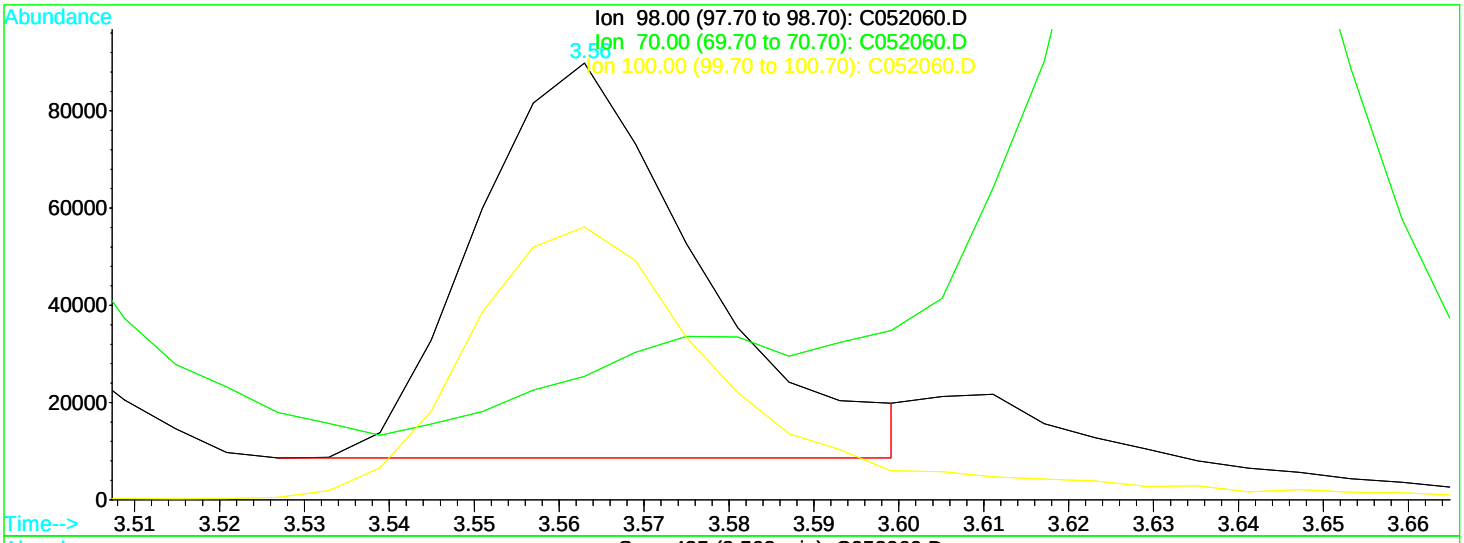
Ion	Ratio	Lower	Upper
106	100		
91	213.0	172.4	272.4

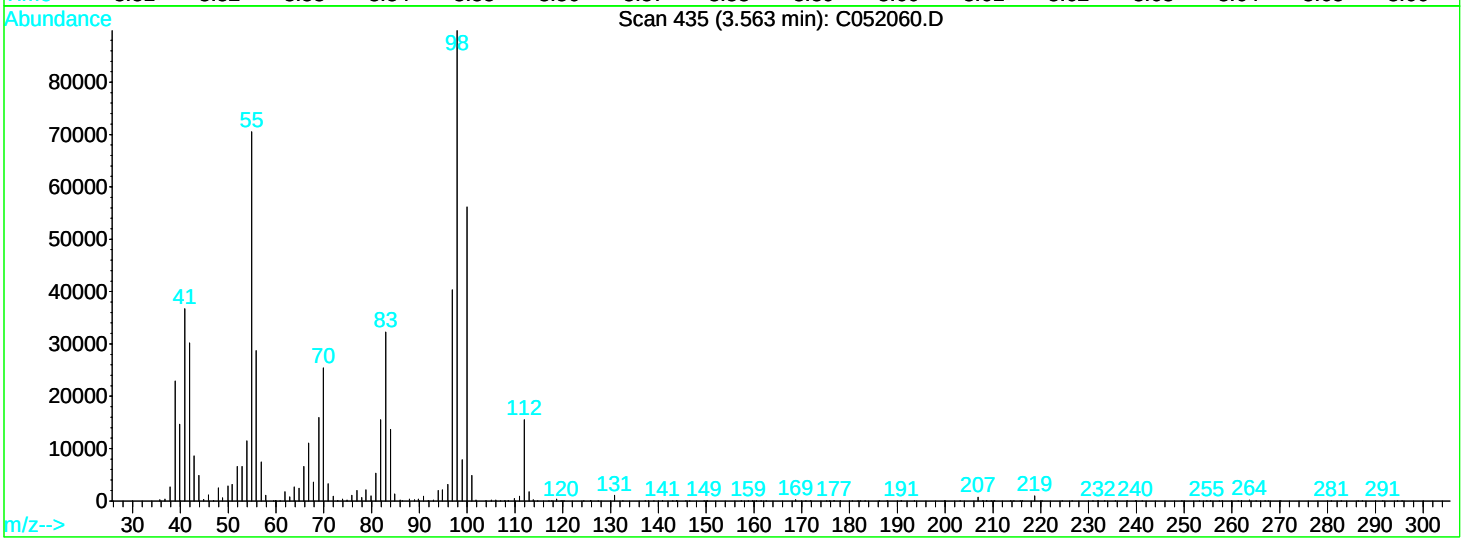


Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\2016\030916\C052060.D Vial: 29
Acq On : 9 Mar 2016 6:08 pm Operator: JTR
Sample : 526483-003-4923 *25* Inst : A140
Misc : 5.05G/5ML,03/09/16,JTR,16:54,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 10 8:53 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\2012\021916S.M (RTE Integrator)
Title : 8260
Last Update : Fri Feb 19 13:34:43 2016
Response via : Multiple Level Calibration





TIC: C052060.D

(8) Toluene-d8 (S)

3.56min 34.69ppb

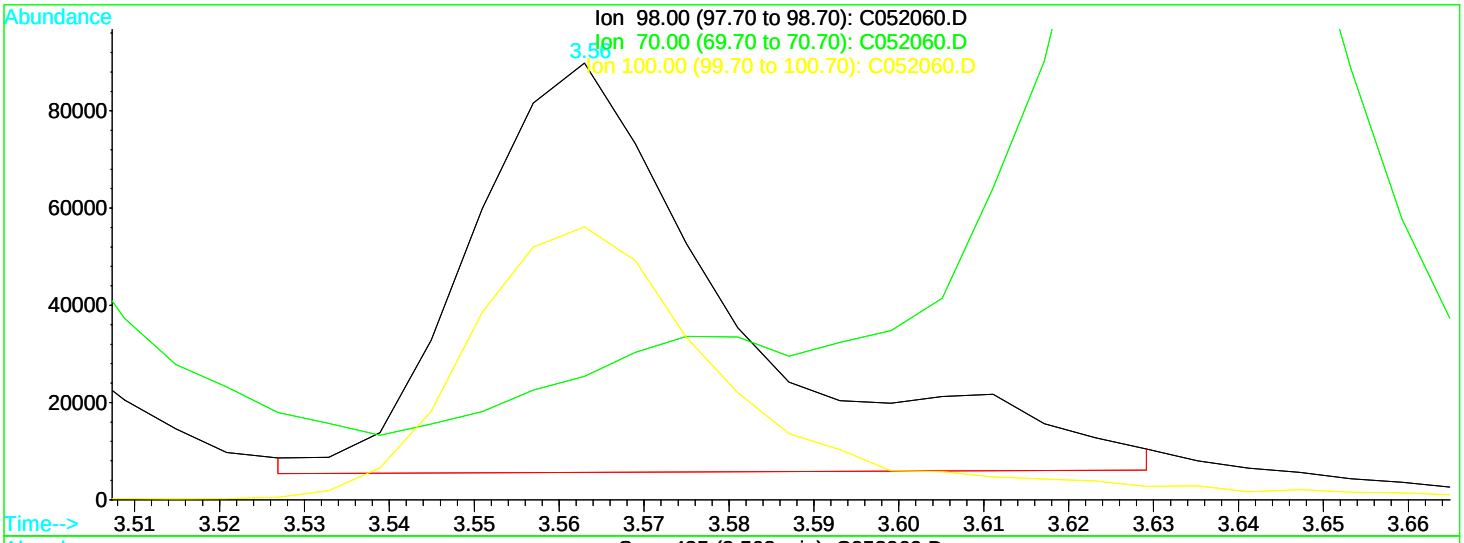
response 147730

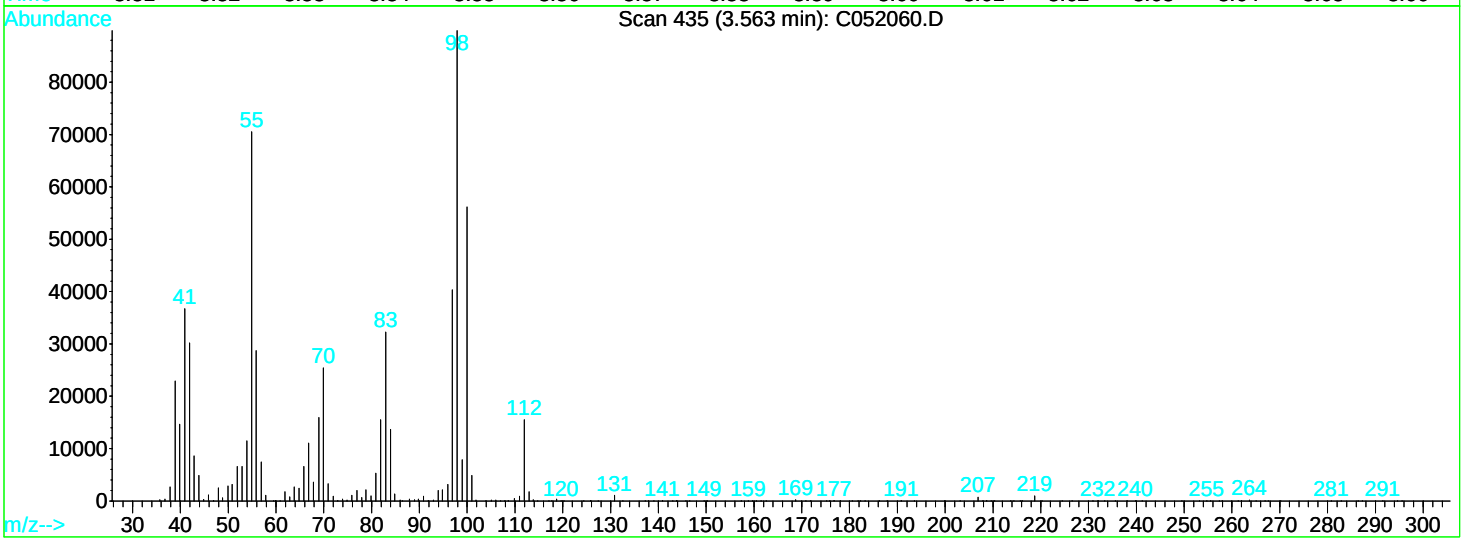
Ion	Exp%	Act%
98.00	100	100
70.00	14.10	25.02
100.00	70.50	82.07
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\2016\030916\C052060.D Vial: 29
Acq On : 9 Mar 2016 6:08 pm Operator: JTR
Sample : 526483-003-4923 *25* Inst : A140
Misc : 5.05G/5ML,03/09/16,JTR,16:54,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 10 8:53 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\2012\021916S.M (RTE Integrator)
Title : 8260
Last Update : Fri Feb 19 13:34:43 2016
Response via : Multiple Level Calibration





TIC: C052060.D

(8) Toluene-d8 (S)

3.56min 42.15ppb m

response 179472

Ion	Exp%	Act%
98.00	100	100
70.00	14.10	20.60
100.00	70.50	67.56
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\030916\C052051.D Vial: 20
Acq On : 9 Mar 2016 3:43 pm Operator: JTR
Sample : 526483-004-4924 *1* Inst : A140
Misc : 5.05G/5ML,03/09/16,JTR,15:11,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 10 8:49 2016 Quant Results File: 021916S.RES

Quant Method : C:\HPCHEM\1...\021916S.M (RTE Integrator)
Title : 8260
Last Update : Fri Feb 19 13:34:43 2016
Response via : Initial Calibration
DataAcq Meth : BTEX

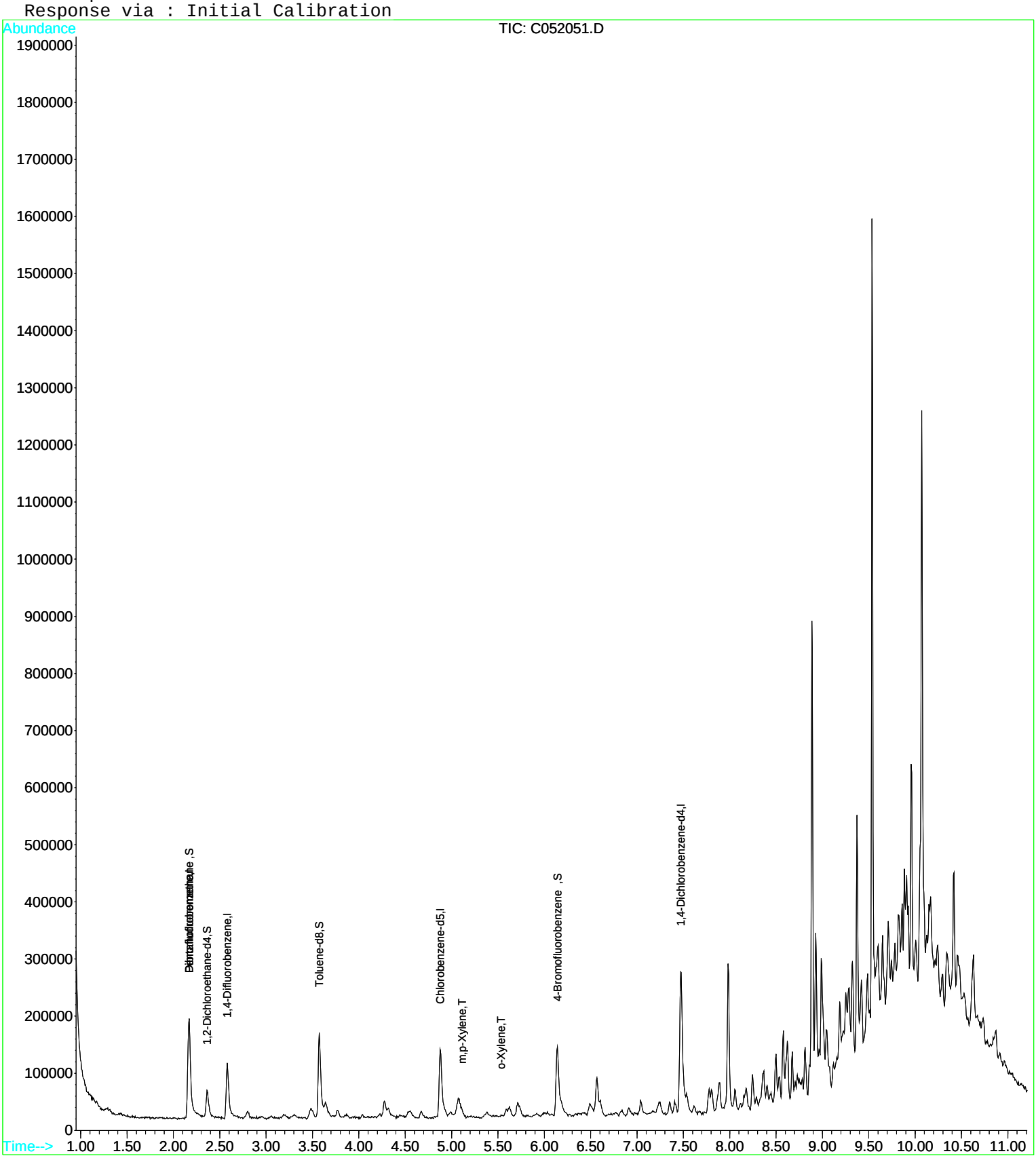
Internal Standards		R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene		2.17	168	77876	50.00	ppb	0.02
5) 1,4-Difluorobenzene		2.58	114	91659	50.00	ppb	0.02
7) Chlorobenzene-d5		4.88	117	89197	50.00	ppb	0.03
13) 1,4-Dichlorobenzene-d4		7.47	152	89772	50.00	ppb	0.02
System Monitoring Compounds							
3) 1,2-Dichloroethane-d4		2.36	102	7046m	41.83	ppb	0.02
Spiked Amount	50.000	Range	80 - 120	Recovery	=	83.66%	
4) Dibromofluoromethane		2.16	113	51945	48.35	ppb	0.02
Spiked Amount	50.000	Range	74 - 126	Recovery	=	96.70%	
8) Toluene-d8		3.57	98	116620	47.44	ppb	0.02
Spiked Amount	50.000	Range	73 - 132	Recovery	=	94.88%	
14) 4-Bromofluorobenzene		6.14	95	51750	43.63	ppb	0.03
Spiked Amount	50.000	Range	58 - 152	Recovery	=	87.26%	
Target Compounds							Qvalue
11) m,p-Xylene		5.12	106	1210	0.81	ppb	97
12) o-Xylene		5.54	106	1057	0.45	ppb	94

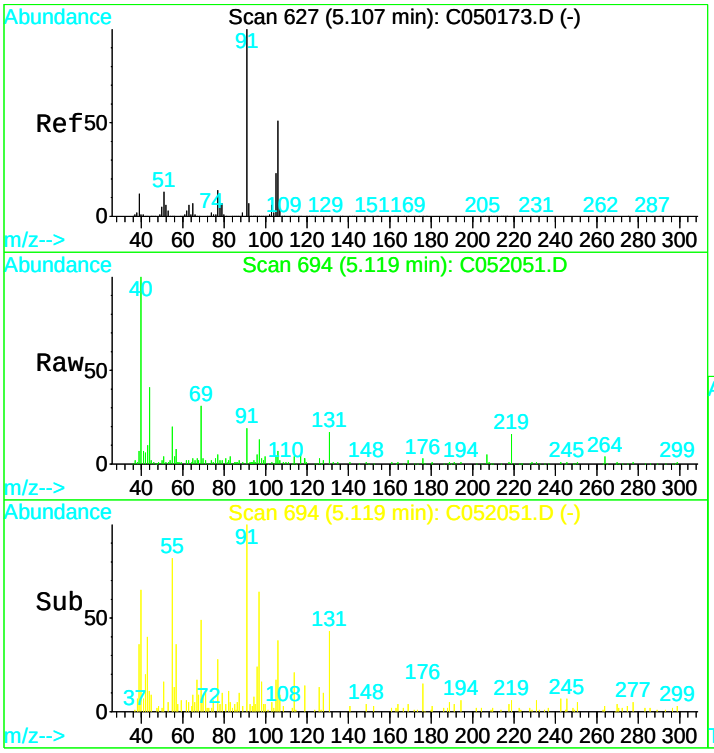
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\2016\030916\C052051.D Vial: 20
Acq On : 9 Mar 2016 3:43 pm Operator: JTR
Sample : 526483-004-4924 *1* Inst : A140
Misc : 5.05G/5ML,03/09/16,JTR,15:11,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 10 8:49 2016 Quant Results File: 021916S.RES

Method : C:\HPCHEM\1\METHODS\2012\021916S.M (RTE Integrator)
Title : 8260
Last Update : Fri Feb 19 13:34:43 2016
Response via : Initial Calibration

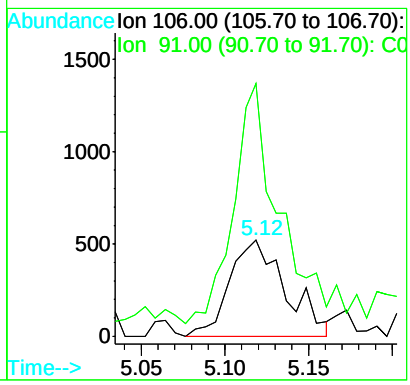


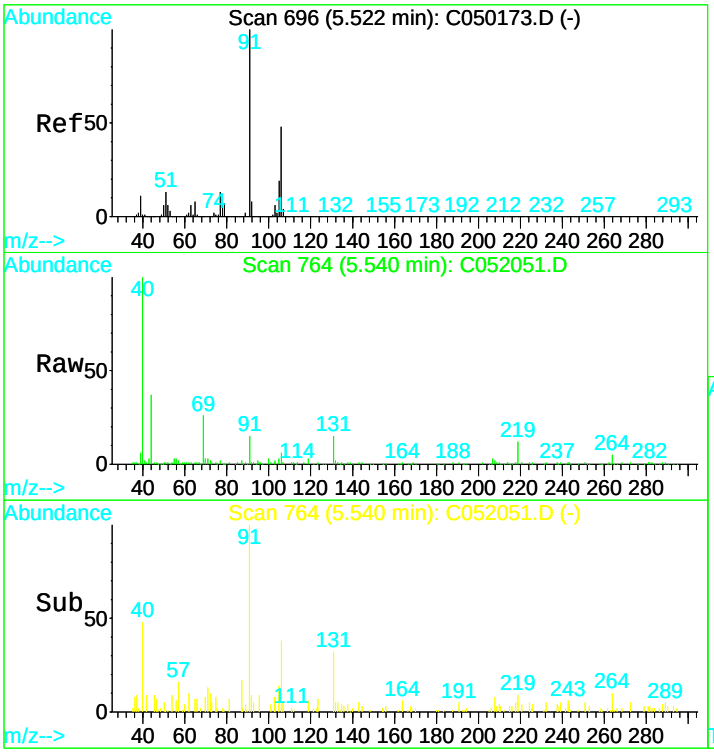


#11
m,p-Xylene
Concen: 0.81 ppb
RT: 5.12 min Scan# 694
Delta R.T. 0.04 min
Lab File: C052051.D
Acq: 9 Mar 2016 3:43 pm

Tgt Ion:106 Resp: 1210

Ion	Ratio	Lower	Upper
106	100		
91	213.2	188.8	228.8

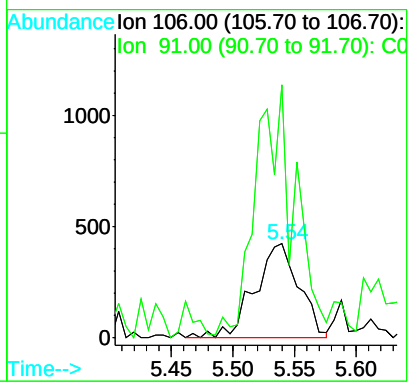




#12
o-Xylene
Concen: 0.45 ppb
RT: 5.54 min Scan# 764
Delta R.T. 0.05 min
Lab File: C052051.D
Acq: 9 Mar 2016 3:43 pm

Tgt Ion:106 Resp: 1057

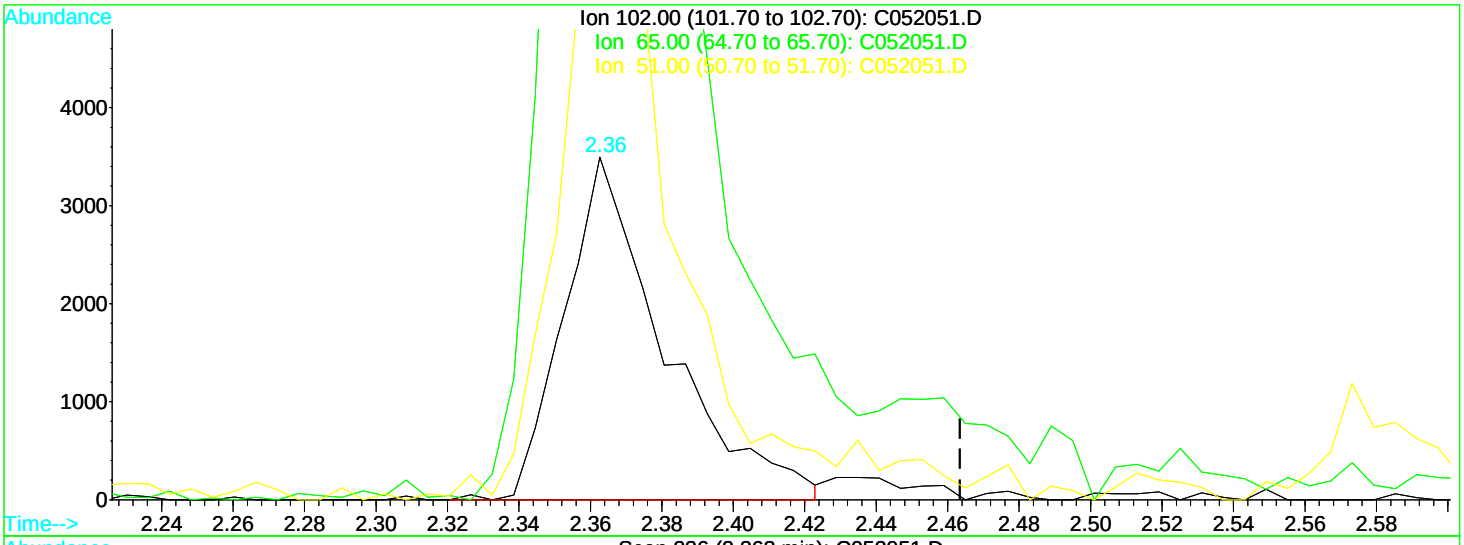
Ion	Ratio	Lower	Upper
106	100		
91	232.0	172.4	272.4

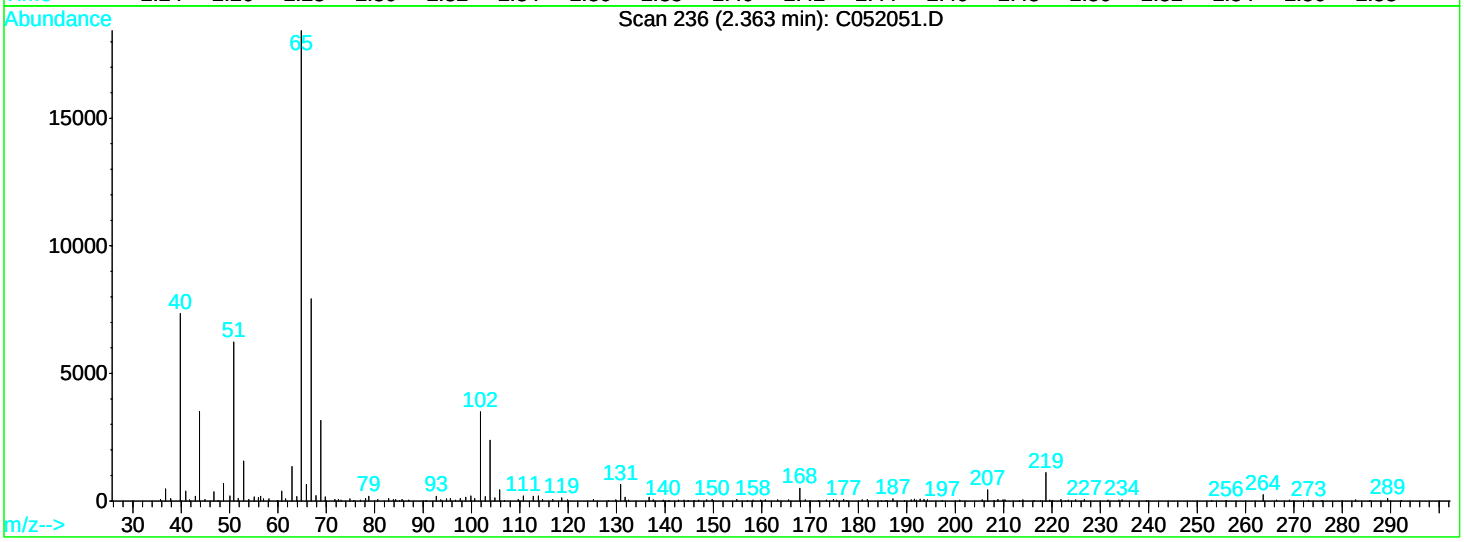


Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\2016\030916\C052051.D Vial: 20
Acq On : 9 Mar 2016 3:43 pm Operator: JTR
Sample : 526483-004-4924 *1* Inst : A140
Misc : 5.05G/5ML,03/09/16,JTR,15:11,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 10 8:49 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\2012\021916S.M (RTE Integrator)
Title : 8260
Last Update : Fri Feb 19 13:34:43 2016
Response via : Multiple Level Calibration





TIC: C052051.D

(3) 1,2-Dichloroethane-d4 (S)

2.36min 40.39ppb

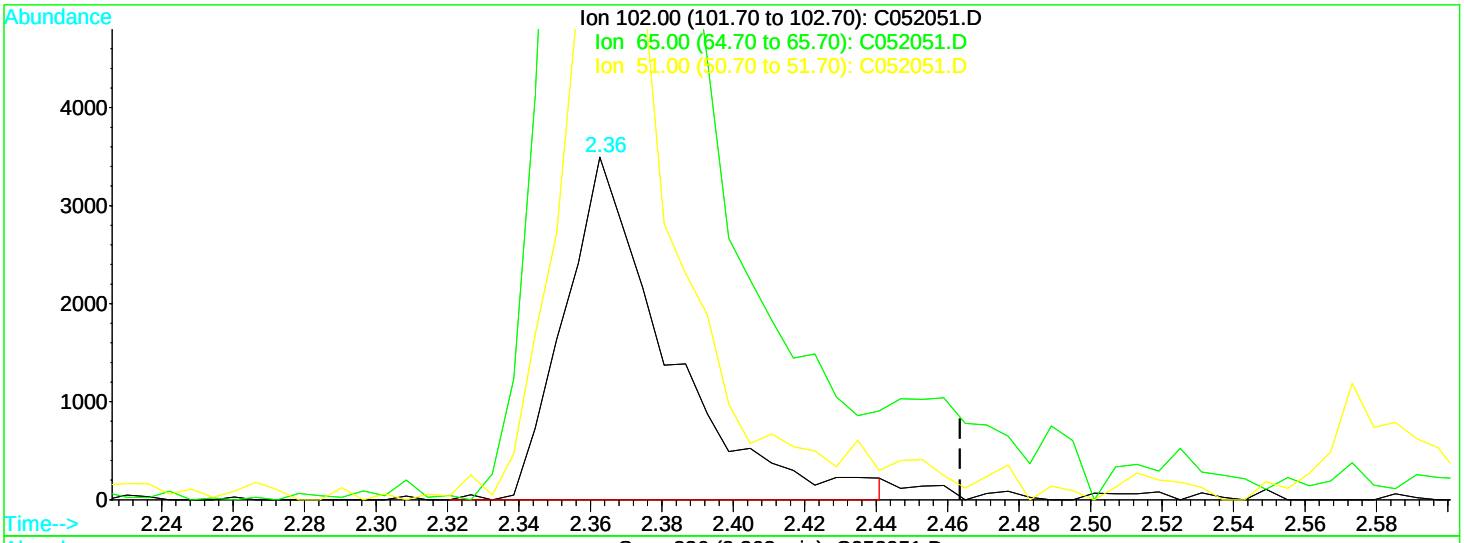
response 6803

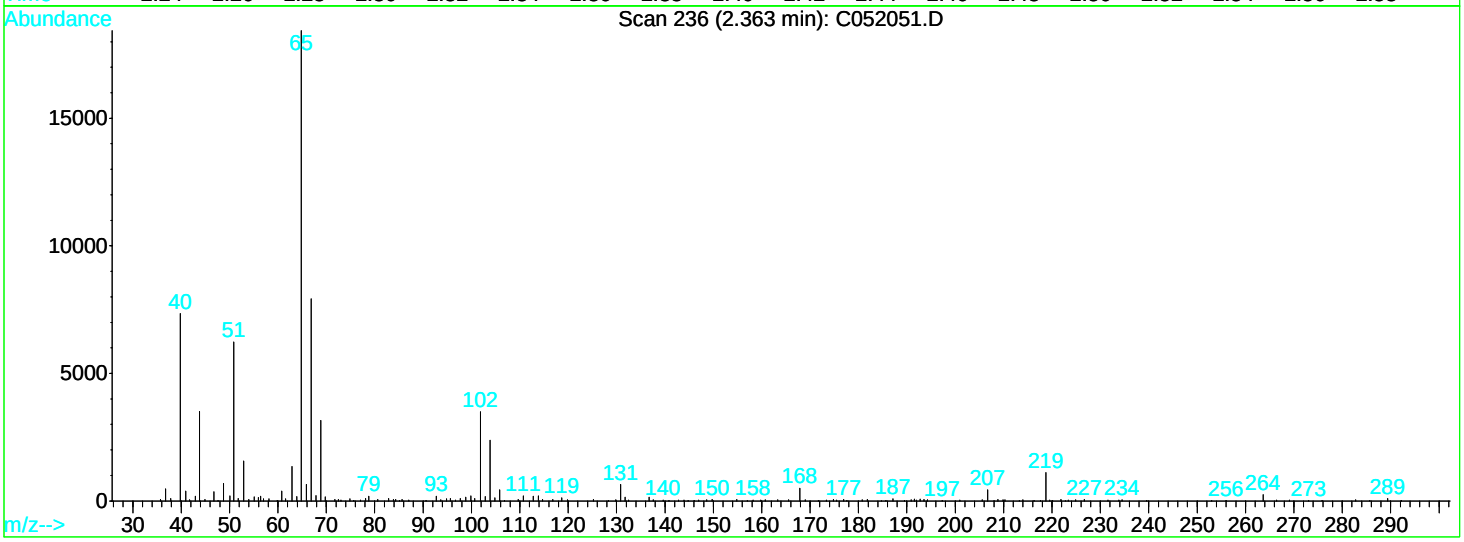
Ion	Exp%	Act%
102.00	100	100
65.00	535.70	585.57#
51.00	1609.20	203.06#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\2016\030916\C052051.D Vial: 20
Acq On : 9 Mar 2016 3:43 pm Operator: JTR
Sample : 526483-004-4924 *1* Inst : A140
Misc : 5.05G/5ML,03/09/16,JTR,15:11,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 10 8:49 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\2012\021916S.M (RTE Integrator)
Title : 8260
Last Update : Fri Feb 19 13:34:43 2016
Response via : Multiple Level Calibration





TIC: C052051.D

(3) 1,2-Dichloroethane-d4 (S)

2.36min 41.83ppb m

response 7046

Ion	Exp%	Act%
102.00	100	100
65.00	535.70	565.37#
51.00	1609.20	196.05#
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\030916\C052059.D Vial: 28
Acq On : 9 Mar 2016 5:53 pm Operator: JTR
Sample : 526483-005-4925 *1* Inst : A140
Misc : 4.99G/5ML,03/09/16,JTR,16:53,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 10 8:52 2016 Quant Results File: 021916S.RES

Quant Method : C:\HPCHEM\1...\021916S.M (RTE Integrator)
Title : 8260
Last Update : Fri Feb 19 13:34:43 2016
Response via : Initial Calibration
DataAcq Meth : BTEX

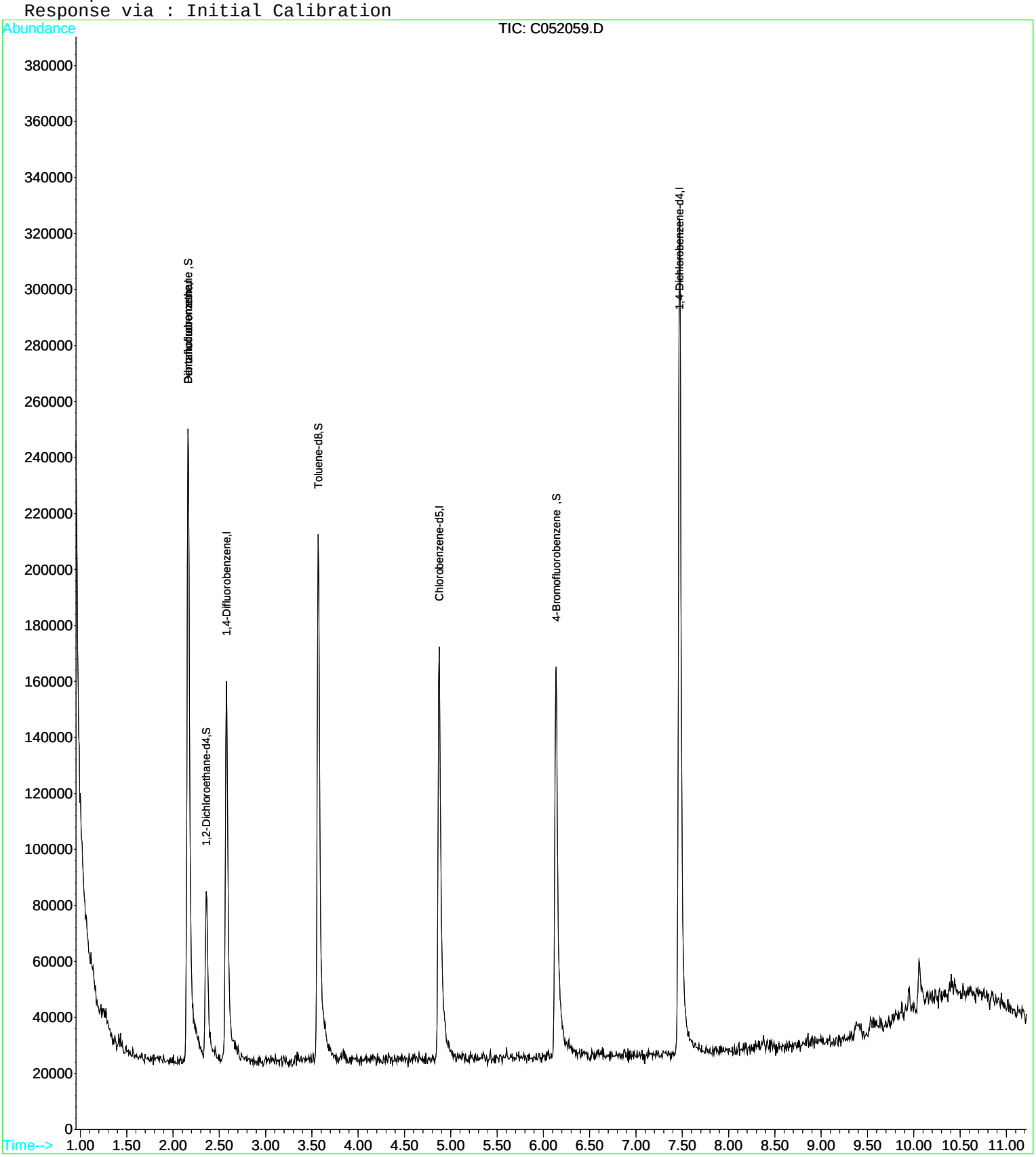
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	2.17	168	99242	50.00	ppb	0.02
5) 1,4-Difluorobenzene	2.58	114	127141	50.00	ppb	0.02
7) Chlorobenzene-d5	4.87	117	120971	50.00	ppb	0.03
13) 1,4-Dichlorobenzene-d4	7.47	152	113917	50.00	ppb	0.03
System Monitoring Compounds						
3) 1,2-Dichloroethane-d4	2.37	102	10520	49.01	ppb	0.03
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.02%			
4) Dibromofluoromethane	2.17	113	68505	50.04	ppb	0.02
Spiked Amount 50.000	Range 74 - 126		Recovery = 100.08%			
8) Toluene-d8	3.57	98	152609	45.78	ppb	0.02
Spiked Amount 50.000	Range 73 - 132		Recovery = 91.56%			
14) 4-Bromofluorobenzene	6.14	95	66128	43.94	ppb	0.03
Spiked Amount 50.000	Range 58 - 152		Recovery = 87.88%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\2016\030916\C052059.D Vial: 28
Acq On : 9 Mar 2016 5:53 pm Operator: JTR
Sample : 526483-005-4925 *1* Inst : A140
Misc : 4.99G/5ML,03/09/16,JTR,16:53,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 10 8:52 2016 Quant Results File: 021916S.RES

Method : C:\HPCHEM\1\METHODS\2012\021916S.M (RTE Integrator)
Title : 8260
Last Update : Fri Feb 19 13:34:43 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\030916\C052058.D Vial: 27
Acq On : 9 Mar 2016 5:38 pm Operator: JTR
Sample : 526483-006-4926 *1* Inst : A140
Misc : 5.03G/5ML,03/09/16,JTR,16:52,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 10 8:51 2016 Quant Results File: 021916S.RES

Quant Method : C:\HPCHEM\1...\021916S.M (RTE Integrator)
Title : 8260
Last Update : Fri Feb 19 13:34:43 2016
Response via : Initial Calibration
DataAcq Meth : BTEX

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	2.16	168	110770	50.00	ppb	0.02
5) 1,4-Difluorobenzene	2.57	114	131197	50.00	ppb	0.02
7) Chlorobenzene-d5	4.87	117	99631	50.00	ppb	0.02
13) 1,4-Dichlorobenzene-d4	7.47	152	50115	50.00	ppb	0.02
System Monitoring Compounds						
3) 1,2-Dichloroethane-d4	2.36	102	11027	46.02	ppb	0.02
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.04%			
4) Dibromofluoromethane	2.16	113	73913	48.37	ppb	0.01
Spiked Amount 50.000	Range 74 - 126		Recovery = 96.74%			
8) Toluene-d8	3.57	98	146063	53.20	ppb	0.02
Spiked Amount 50.000	Range 73 - 132		Recovery = 106.40%			
14) 4-Bromofluorobenzene	6.13	95	44257	66.84	ppb	0.02
Spiked Amount 50.000	Range 58 - 152		Recovery = 133.68%			

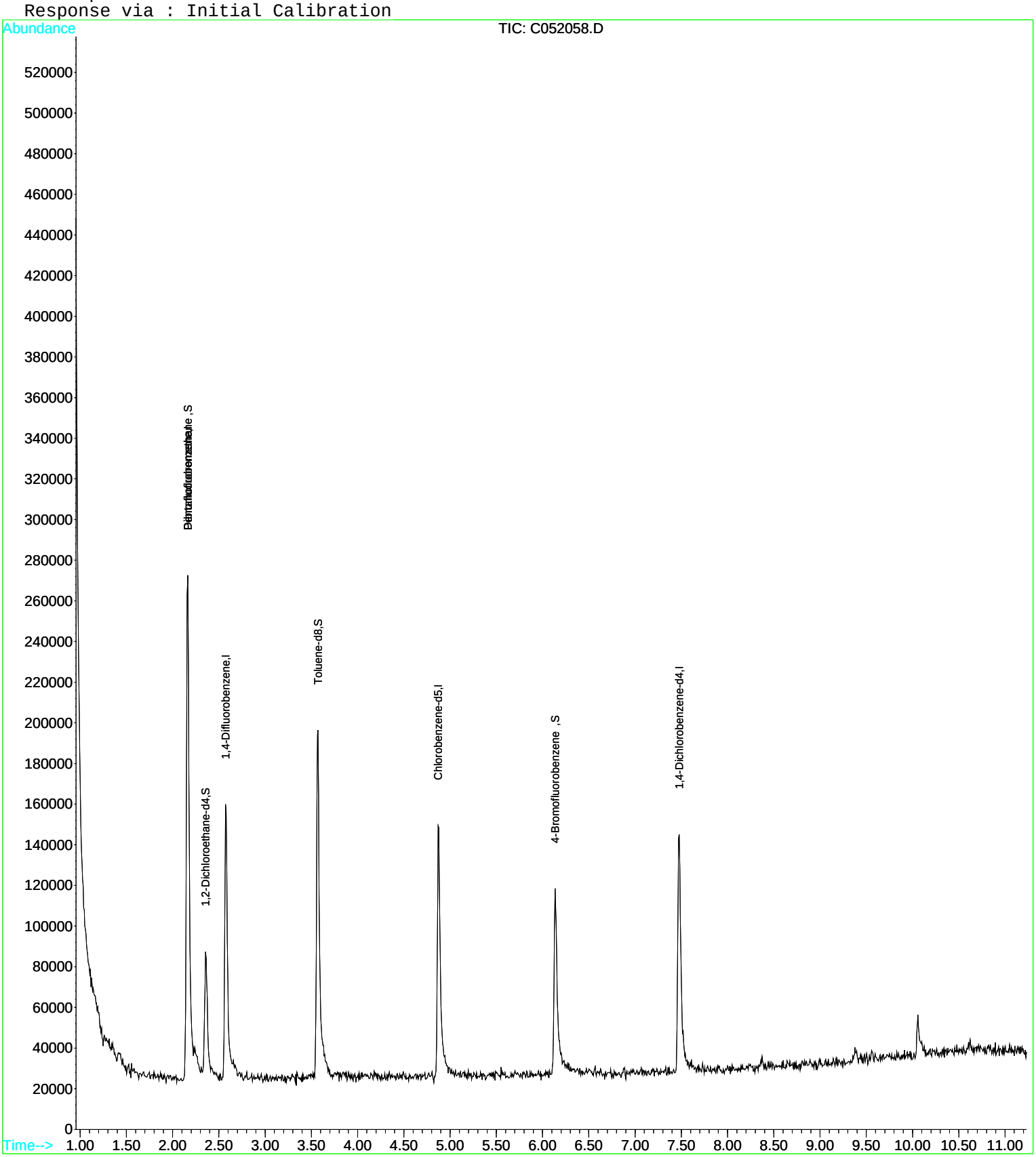
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\2016\030916\C052058.D Vial: 27
Acq On : 9 Mar 2016 5:38 pm Operator: JTR
Sample : 526483-006-4926 *1* Inst : A140
Misc : 5.03G/5ML,03/09/16,JTR,16:52,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 10 8:51 2016 Quant Results File: 021916S.RES

Method : C:\HPCHEM\1\METHODS\2012\021916S.M (RTE Integrator)
Title : 8260
Last Update : Fri Feb 19 13:34:43 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2016\031016\I028802.D Vial: 13
Acq On : 10 Mar 2016 1:24 pm Operator: JTR
Sample : 526483-007-4928 *1* Inst : A102
Misc : 40ML,03/10/16,JTR,12:50 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 10 16:04 2016 Quant Results File: 030916W.RES

Quant Method : C:\HPCHEM\1\METHODS\030916W.M (RTE Integrator)
Title : GC/MS Volatiles (S.O.P. 525)
Last Update : Wed Mar 09 16:11:16 2016
Response via : Initial Calibration
DataAcq Meth : BTEX

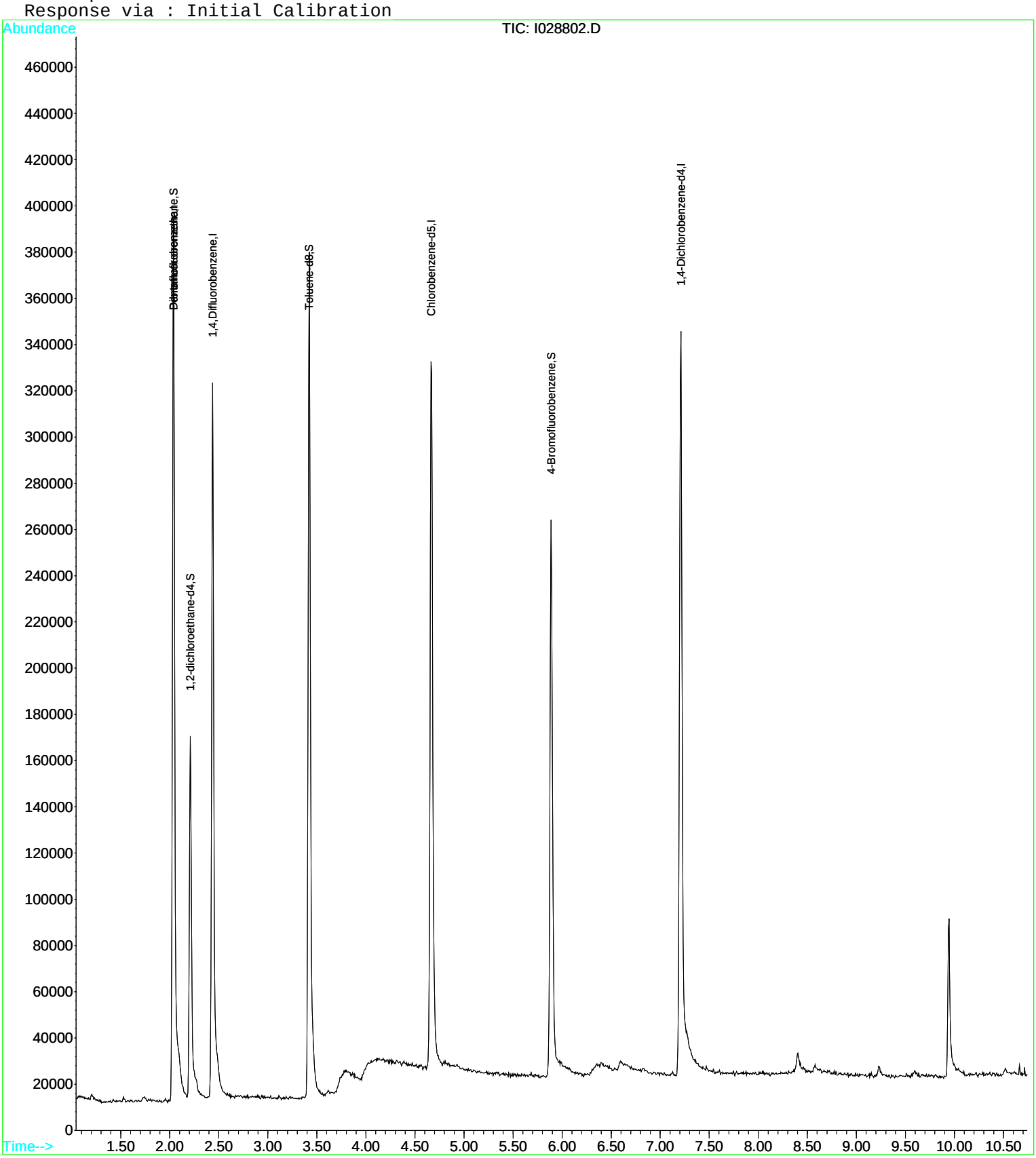
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	2.04	168	132116	50.00	ppb	0.00
4) 1,4,Difluorobenzene	2.44	114	206652	50.00	ppb	0.00
9) Chlorobenzene-d5	4.66	82	107318	50.00	ppb	0.00
13) 1,4-Dichlorobenzene-d4	7.21	152	104033	50.00	ppb	0.00
System Monitoring Compounds						
3) Dibromofluoromethane	2.03	113	84855	50.10	ppb	0.00
Spiked Amount 50.000	Range 75 - 131		Recovery = 100.20%			
5) 1,2-dichloroethane-d4	2.21	65	92633	47.99	ppb	0.00
Spiked Amount 50.000	Range 63 - 144		Recovery = 95.98%			
7) Toluene-d8	3.42	98	223394	47.99	ppb	0.00
Spiked Amount 50.000	Range 80 - 117		Recovery = 95.98%			
14) 4-Bromofluorobenzene	5.89	95	87529	50.53	ppb	0.00
Spiked Amount 50.000	Range 74 - 124		Recovery = 101.06%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\2016\031016\I028802.D Vial: 13
Acq On : 10 Mar 2016 1:24 pm Operator: JTR
Sample : 526483-007-4928 *1* Inst : A102
Misc : 40ML,03/10/16,JTR,12:50 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 10 16:04 2016 Quant Results File: 030916W.RES

Method : C:\HPCHEM\1\METHODS\030916W.M (RTE Integrator)
Title : GC/MS Volatiles (S.O.P. 525)
Last Update : Wed Mar 09 16:11:16 2016
Response via : Initial Calibration



WET CHEM BATCH DATA VALIDATION CHECKLIST

Houston, Texas

ANALYSIS SW9056/E300 INSTRUMENT: A-166 /ICS 2000
A-209/CS 2000

MATRIX: WATER /SOIL SEQUENCE: A166-03-14-16

LIMS METHOD: SM9056/E300 BATCH ID: 706369/990268

BALANCE ID:

QC REQUIREMENT	CHECK		
A. INITIAL CALIBRATION CURVE	☐ 6-POINT, ≤10% RPD	☒ Y ☐ N	☐ Y ☐ N
B. CALIBRATION	☐ ≤10% DIFFERENCE FROM INITIAL	☒ Y ☐ N	☐ Y ☐ N
	☐ ≤10% DIFFERENCE FROM INITIAL CALIBRATION		
C. CONTINUE CALIBRATION VERIFICATION	☐ ANALYZED EACH ANALYTICAL BATCH	☒ Y ☐ N	☐ Y ☐ N
	☐ RECOVERIES 90-110%	☒ Y ☐ N	☐ Y ☐ N
D. LABORATORY CONTROL STANDARD	☐ ANALYZED EACH ANALYTICAL BATCH	☒ Y ☐ N	☐ Y ☐ N
	☐ RECOVERIES 90–110%		
E. METHOD BLANK	☐ ANALYZED EACH ANALYTICAL BATCH	☒ Y ☐ N	☐ Y ☐ N
	☐ ONE PER MATRIX	☒ Y ☐ N	☐ Y ☐ N

G. Ifs the analysis performed with in holding time of ___ days? ☒ Y ☐ N ☐ Y ☐ N

H. Are the standards and reagents used whit-in expiry date? ☒ Y ☐ N ☐ Y ☐ N

I. Are the logbook entries completed accurately? ☒ Y ☐ N ☐ Y ☐ N

J. Are the log books mistake been corrected by single line strike-off, dated &initialed by the analyst? ☒ Y ☐ N ☐ Y ☐ N

K. Has a QNF attached, if needed? ☒ Y ☐ N ☐ Y ☐ N

NOTE: a QNF must be issued for any deviation(S)

ANALYST: DEP DATE: 03-15-16

DATA VALIDATOR: _____ DATE: _____

REVIEWED/DATE_____

ICV/CCV-HIGH PURITY – LOT #1522611/1522610 (ID # 5152058-3/5152058-2)
WET -052-60-09
LCS/LCSD/MS/MSD- CPI INTERNATIONAL LOT # 1078399 (ID # 5152050-7/5152050-6)
WET -024-60-10

Title: TEST1
Datasource: DCJP20B1_local
Location: ICS-2000_2\My Sequences\2016\MARCH
Timebase: ICS-2000_2
#Samples: 90
Created: 3/14/2016 9:46:09 AM by A166
Last Update: 3/15/2016 9:26:06 AM by A166

No.	Name	Type	Program	Status	Inj. Date/Time	Dil. Factor	Comment
1	RINSE	Unknown	ANIONS_2	Finished	3/14/2016 9:46:28 AM	1.0000	
2	RINSE	Unknown	ANIONS_2	Finished	3/14/2016 10:00:52 AM	1.0000	
3	ICV	Unknown	ANIONS_2	Finished	3/14/2016 10:15:17 AM	1.0000	
4	ICB	Unknown	ANIONS_2	Finished	3/14/2016 10:29:41 AM	1.0000	
5	MB	Unknown	ANIONS_2	Finished	3/14/2016 10:44:05 AM	1.0000	
6	LCS	Unknown	ANIONS_2	Finished	3/14/2016 10:58:30 AM	1.0000	
7	LCSD	Unknown	ANIONS_2	Finished	3/14/2016 11:12:54 AM	1.0000	
8	526751-003	Unknown	ANIONS_2	Finished	3/14/2016 11:33:36 AM	5.0000	
9	526751-003 S	Unknown	ANIONS_2	Finished	3/14/2016 11:49:31 AM	5.0000	
10	526751-003 SD	Unknown	ANIONS_2	Finished	3/14/2016 12:03:56 PM	5.0000	
11	526751-001	Unknown	ANIONS_2	Finished	3/14/2016 12:18:20 PM	1.0000	
12	526751-002	Unknown	ANIONS_2	Finished	3/14/2016 12:32:44 PM	1.0000	
13	526747-001	Unknown	ANIONS_2	Finished	3/14/2016 12:47:09 PM	1.0000	
14	526747-002	Unknown	ANIONS_2	Finished	3/14/2016 1:01:33 PM	1.0000	
15	CCV	Unknown	ANIONS_2	Finished	3/14/2016 1:15:57 PM	1.0000	
16	CCB	Unknown	ANIONS_2	Finished	3/14/2016 1:30:22 PM	1.0000	
17	526216-001	Unknown	ANIONS_2	Finished	3/14/2016 1:44:46 PM	10.0000	
18	526216-002	Unknown	ANIONS_2	Finished	3/14/2016 1:59:11 PM	10.0000	
19	526216-003	Unknown	ANIONS_2	Finished	3/14/2016 2:13:35 PM	10.0000	
20	526238-001 DL	Unknown	ANIONS_2	Finished	3/14/2016 2:27:59 PM	100.0000	
21	526215-002	Unknown	ANIONS_2	Finished	3/14/2016 2:42:24 PM	1.0000	
22	525215-001 RE	Unknown	ANIONS_2	Finished	3/14/2016 2:56:48 PM	50.0000	
23	526337-001	Unknown	ANIONS_2	Finished	3/14/2016 3:18:52 PM	50.0000	
24	526337-002	Unknown	ANIONS_2	Finished	3/14/2016 3:33:16 PM	1.0000	
25	526337-003	Unknown	ANIONS_2	Finished	3/14/2016 3:47:40 PM	50.0000	
26	526337-004	Unknown	ANIONS_2	Finished	3/14/2016 4:02:04 PM	50.0000	
27	CCV	Unknown	ANIONS_2	Finished	3/14/2016 4:16:28 PM	1.0000	
28	CCB	Unknown	ANIONS_2	Finished	3/14/2016 4:30:53 PM	1.0000	
29	526337-004 S	Unknown	ANIONS_2	Finished	3/14/2016 4:45:18 PM	50.0000	
30	526337-004 SD	Unknown	ANIONS_2	Finished	3/14/2016 4:59:42 PM	50.0000	
31	MB	Unknown	ANIONS_2	Finished	3/14/2016 5:14:06 PM	1.0000	
32	LCS	Unknown	ANIONS_2	Finished	3/14/2016 5:28:31 PM	1.0000	
33	LCSD	Unknown	ANIONS_2	Finished	3/14/2016 5:42:55 PM	1.0000	
34	526415-005	Unknown	ANIONS_2	Finished	3/14/2016 6:06:47 PM	5.0000	
35	526415-001	Unknown	ANIONS_2	Finished	3/14/2016 6:21:11 PM	500.0000	
36	526415-002	Unknown	ANIONS_2	Finished	3/14/2016 6:35:36 PM	500.0000	
37	526415-003	Unknown	ANIONS_2	Finished	3/14/2016 6:50:00 PM	50.0000	
38	526415-004	Unknown	ANIONS_2	Finished	3/14/2016 7:04:24 PM	500.0000	
39	CCV	Unknown	ANIONS_2	Finished	3/14/2016 7:18:50 PM	1.0000	
40	CCB	Unknown	ANIONS_2	Finished	3/14/2016 7:33:14 PM	1.0000	
41	526285-001	Unknown	ANIONS_2	Finished	3/14/2016 7:47:38 PM	20.0000	
42	526285-001 S	Unknown	ANIONS_2	Finished	3/14/2016 8:02:02 PM	20.0000	

Title: TEST1
Datasource: DCJP20B1_local
Location: ICS-2000_2\My Sequences\2016\MARCH
Timebase: ICS-2000_2
#Samples: 90
Created: 3/14/2016 9:46:09 AM by A166
Last Update: 3/15/2016 9:26:06 AM by A166

No.	Name	Type	Program	Status	Inj. Date/Time	Dil. Factor	Comment
43	526285-001 SD	Unknown	ANIONS_2	Finished	3/14/2016 8:16:26 PM	20.0000	
44	526448-001	Unknown	ANIONS_2	Finished	3/14/2016 8:30:51 PM	20.0000	
45	526448-002	Unknown	ANIONS_2	Finished	3/14/2016 8:45:16 PM	100.0000	
46	526448-002 REXXX	Unknown	ANIONS_2	Finished	3/14/2016 8:59:40 PM	1.0000	
47	526448-003	Unknown	ANIONS_2	Finished	3/14/2016 9:14:04 PM	20.0000	
48	526448-004	Unknown	ANIONS_2	Finished	3/14/2016 9:28:29 PM	20.0000	
49	526448-005	Unknown	ANIONS_2	Finished	3/14/2016 9:42:53 PM	20.0000	
50	526448-006	Unknown	ANIONS_2	Finished	3/14/2016 9:57:17 PM	20.0000	
51	CCV	Unknown	ANIONS_2	Finished	3/14/2016 10:11:42 PM	1.0000	
52	CCB	Unknown	ANIONS_2	Finished	3/14/2016 10:26:06 PM	1.0000	
53	526448-007	Unknown	ANIONS_2	Finished	3/14/2016 10:40:31 PM	20.0000	
54	526285-002	Unknown	ANIONS_2	Finished	3/14/2016 10:54:55 PM	20.0000	
55	526285-002 S	Unknown	ANIONS_2	Finished	3/14/2016 11:09:19 PM	20.0000	
56	526285-002 SD	Unknown	ANIONS_2	Finished	3/14/2016 11:23:44 PM	20.0000	
57	526483-002	Unknown	ANIONS_2	Finished	3/14/2016 11:38:08 PM	1.0000	
58	526483-003	Unknown	ANIONS_2	Finished	3/14/2016 11:52:33 PM	1.0000	
59	526483-004	Unknown	ANIONS_2	Finished	3/15/2016 12:06:57 AM	1.0000	
60	526483-005	Unknown	ANIONS_2	Finished	3/15/2016 12:21:21 AM	1.0000	
61	526483-006	Unknown	ANIONS_2	Finished	3/15/2016 12:35:46 AM	1.0000	
62	526451-001	Unknown	ANIONS_2	Finished	3/15/2016 12:50:10 AM	20.0000	
63	526311-001	Unknown	ANIONS_2	Finished	3/15/2016 1:04:34 AM	100.0000	
64	CCV	Unknown	ANIONS_2	Finished	3/15/2016 1:18:59 AM	1.0000	
65	CCB	Unknown	ANIONS_2	Finished	3/15/2016 1:33:24 AM	1.0000	
66	MB	Unknown	ANIONS_2	Finished	3/15/2016 1:47:48 AM	1.0000	
67	LCS	Unknown	ANIONS_2	Finished	3/15/2016 2:02:12 AM	1.0000	
68	LCSD	Unknown	ANIONS_2	Finished	3/15/2016 2:16:37 AM	1.0000	
69	526737-001	Unknown	ANIONS_2	Finished	3/15/2016 2:31:02 AM	10.0000	
70	526737-001 S	Unknown	ANIONS_2	Finished	3/15/2016 2:45:26 AM	10.0000	
71	526737-001 SD	Unknown	ANIONS_2	Finished	3/15/2016 2:59:51 AM	10.0000	
72	526737-003	Unknown	ANIONS_2	Finished	3/15/2016 3:14:15 AM	10.0000	
73	526487-001 DL	Unknown	ANIONS_2	Finished	3/15/2016 3:28:40 AM	200.0000	
74	526487-002 DL	Unknown	ANIONS_2	Finished	3/15/2016 3:43:04 AM	200.0000	
75	526487-003 DL	Unknown	ANIONS_2	Finished	3/15/2016 3:57:28 AM	200.0000	
76	CCV	Unknown	ANIONS_2	Finished	3/15/2016 4:11:53 AM	1.0000	
77	CCB	Unknown	ANIONS_2	Finished	3/15/2016 4:26:17 AM	1.0000	
78	526638-002 DL	Unknown	ANIONS_2	Finished	3/15/2016 4:40:41 AM	50.0000	
79	526638-003 DL	Unknown	ANIONS_2	Finished	3/15/2016 4:55:06 AM	50.0000	
80	526370-001 DL	Unknown	ANIONS_2	Finished	3/15/2016 5:09:30 AM	10.0000	
81	526370-001 RE	Unknown	ANIONS_2	Finished	3/15/2016 5:23:54 AM	200.0000	
82	526370-002 DL	Unknown	ANIONS_2	Finished	3/15/2016 5:38:19 AM	10.0000	
83	526370-002 RE	Unknown	ANIONS_2	Finished	3/15/2016 5:52:43 AM	200.0000	
84	526633-001 DL	Unknown	ANIONS_2	Finished	3/15/2016 6:07:08 AM	50.0000	

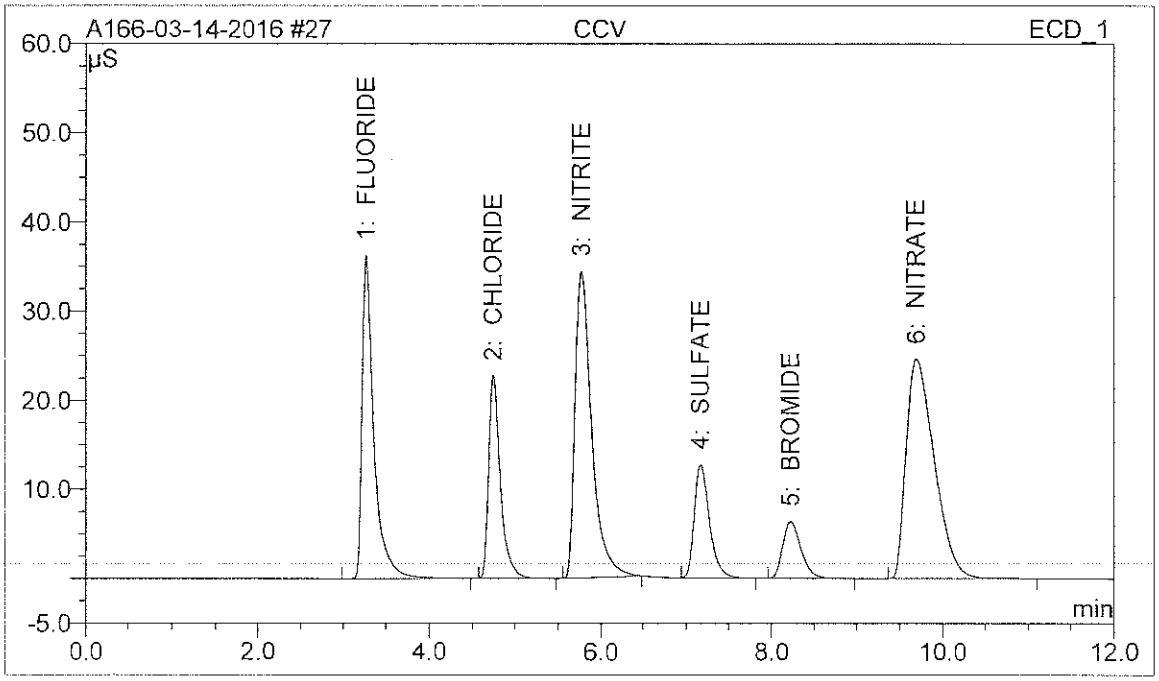
Title: TEST1
Datasource: DCJP20B1_local
Location: ICS-2000_2\My Sequences\2016\MARCH
Timebase: ICS-2000_2 Created: 3/14/2016 9:46:09 AM by A166
#Samples: 90 Last Update: 3/15/2016 9:26:06 AM by A166

No.	Name	Type	Program	Status	Inj. Date/Time	Dil. Factor	Comment
85	526737-002	Unknown	ANIONS_2	Finished	3/15/2016 6:21:32 AM	10.0000	
86	526737-002 S	Unknown	ANIONS_2	Finished	3/15/2016 6:35:57 AM	10.0000	
87	526737-002 SD	Unknown	ANIONS_2	Finished	3/15/2016 6:50:21 AM	10.0000	
88	CCV	Unknown	ANIONS_2	Finished	3/15/2016 7:04:46 AM	1.0000	
89	CCB	Unknown	ANIONS_2	Finished	3/15/2016 7:19:10 AM	1.0000	
90	STOP	Unknown	shutdown2	Finished	3/15/2016 7:33:35 AM	1.0000	

Sample Analysis Report

Sample Name:	CCV	**Sample No.:**	27
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	1.0000
Date Time Collected:	3/14/2016 4:16 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

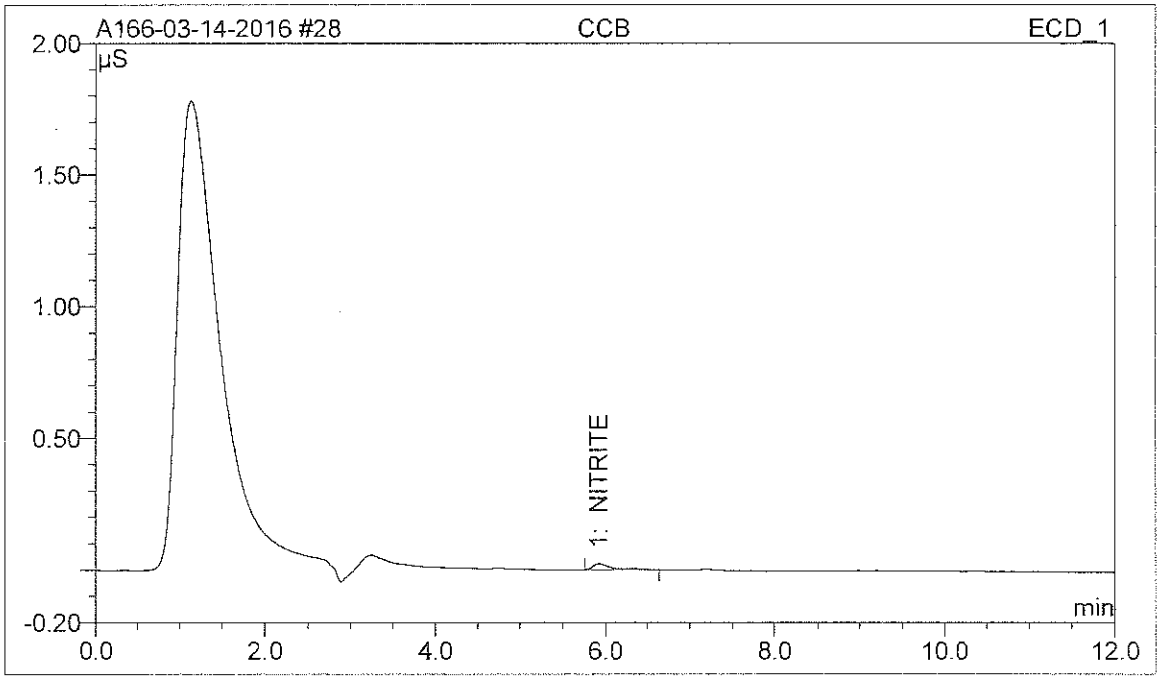
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.27	5.882	36.265	10.5862	17.06
2	CHLORIDE	4.75	3.701	22.773	10.3435	16.66
3	NITRITE	5.77	7.728	34.339	10.6716	17.19
4	SULFATE	7.17	2.660	12.678	9.7849	15.76
5	BROMIDE	8.23	1.561	6.361	10.3578	16.69
6	NITRATE	9.69	9.383	24.677	10.3255	16.64



Sample Analysis Report

Sample Name:	CCB	**Sample No.:**	28
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	1.0000
Date Time Collected:	3/14/2016 4:30 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

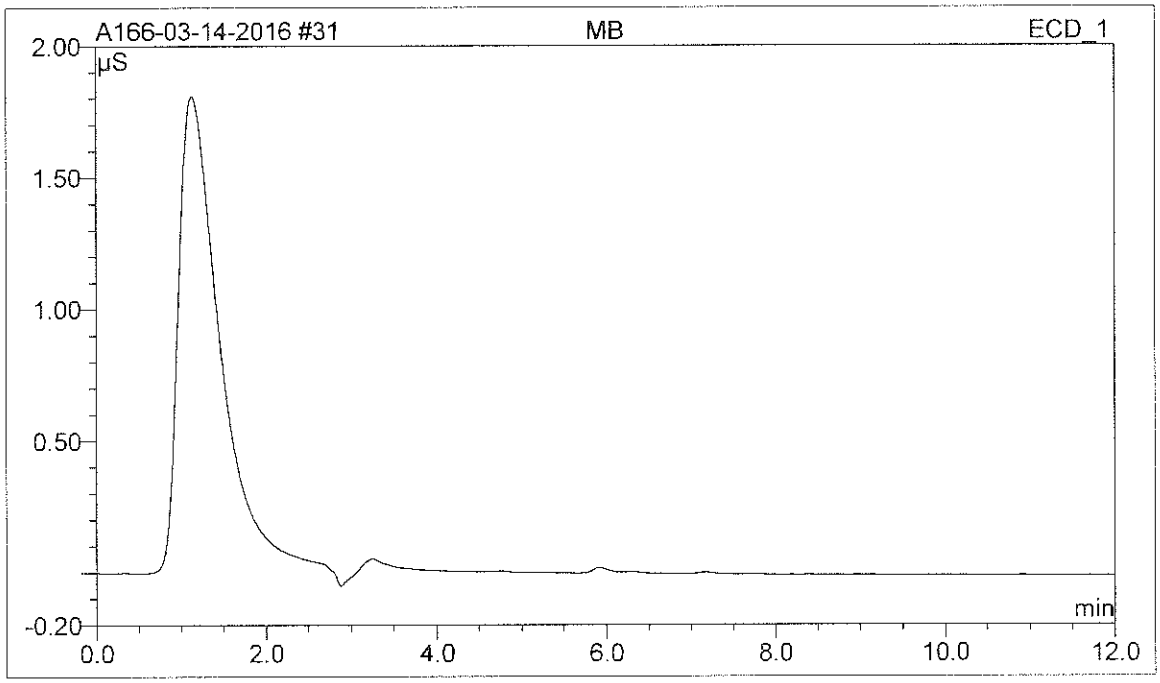
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	NITRITE	5.93	0.006	0.024	-0.0432	n.a.



Sample Analysis Report

Sample Name:	MB	**Sample No.:**	31
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	1.0000
Date Time Collected:	3/14/2016 5:14 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

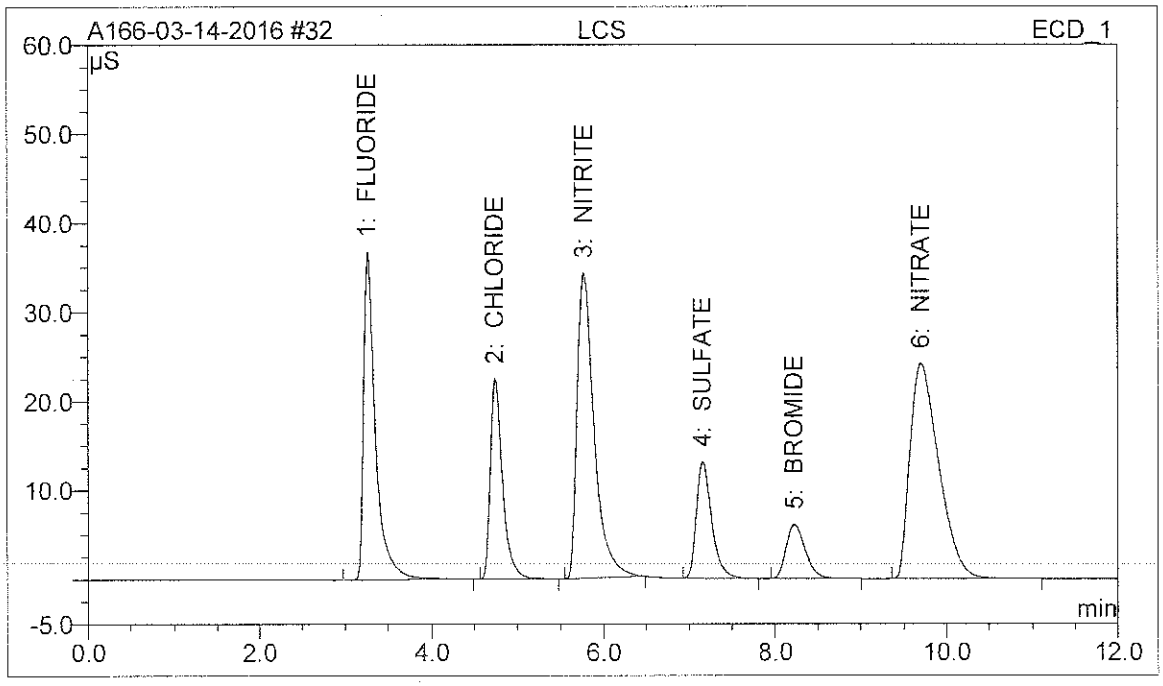
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %



Sample Analysis Report

Sample Name:	LCS	**Sample No.:**	32
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	1.0000
Date Time Collected:	3/14/2016 5:28 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

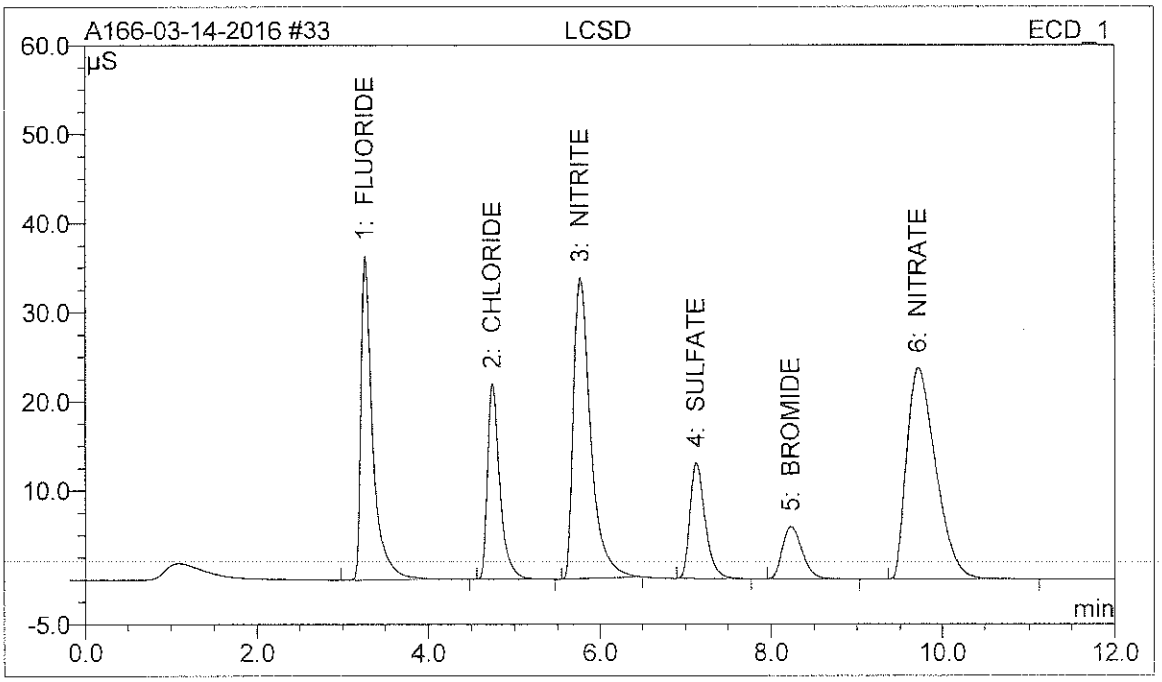
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.27	5.978	36.737	10.7614	17.15
2	CHLORIDE	4.74	3.725	22.473	10.4085	16.59
3	NITRITE	5.77	7.862	34.220	10.8577	17.31
4	SULFATE	7.16	2.722	13.012	10.0082	15.95
5	BROMIDE	8.23	1.552	6.054	10.3020	16.42
6	NITRATE	9.70	9.446	24.157	10.3939	16.57



Sample Analysis Report

Sample Name:	LCSD	**Sample No.:**	33
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	1.0000
Date Time Collected:	3/14/2016 5:42 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

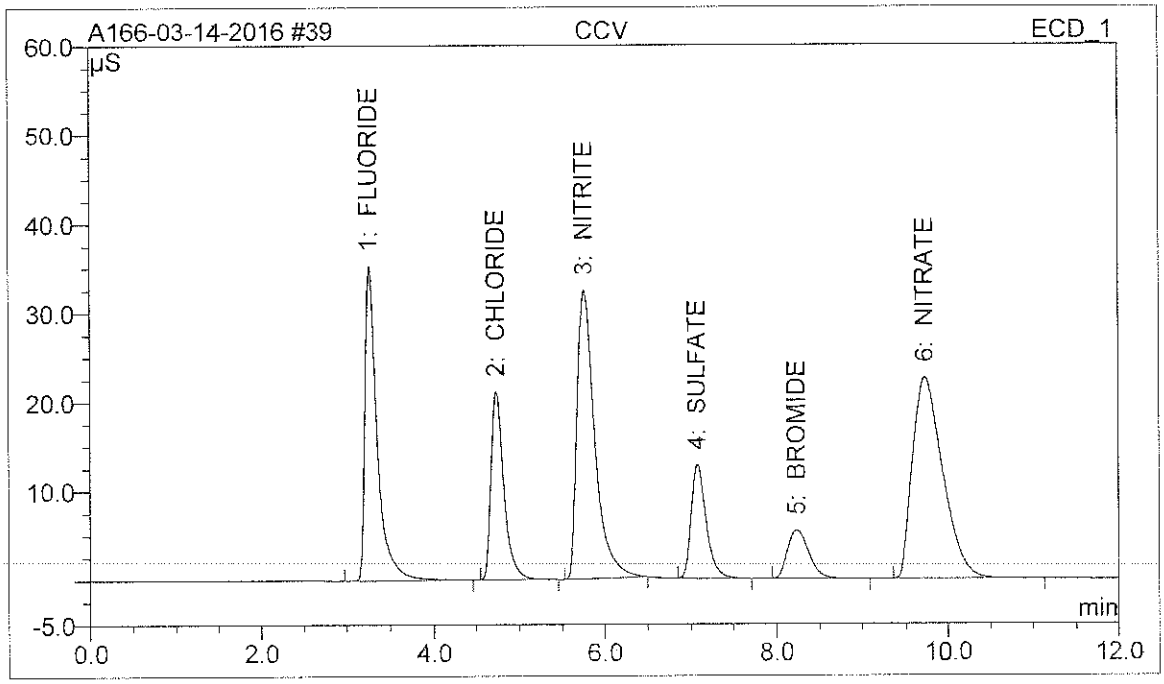
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.27	5.990	36.404	10.7829	17.18
2	CHLORIDE	4.74	3.719	21.981	10.3926	16.56
3	NITRITE	5.77	7.886	33.736	10.8914	17.36
4	SULFATE	7.13	2.719	13.008	9.9984	15.93
5	BROMIDE	8.24	1.552	5.867	10.3023	16.42
6	NITRATE	9.71	9.436	23.742	10.3832	16.55



Sample Analysis Report

Sample Name:	CCV	**Sample No.:**	39
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	1.0000
Date Time Collected:	3/14/2016 7:18 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

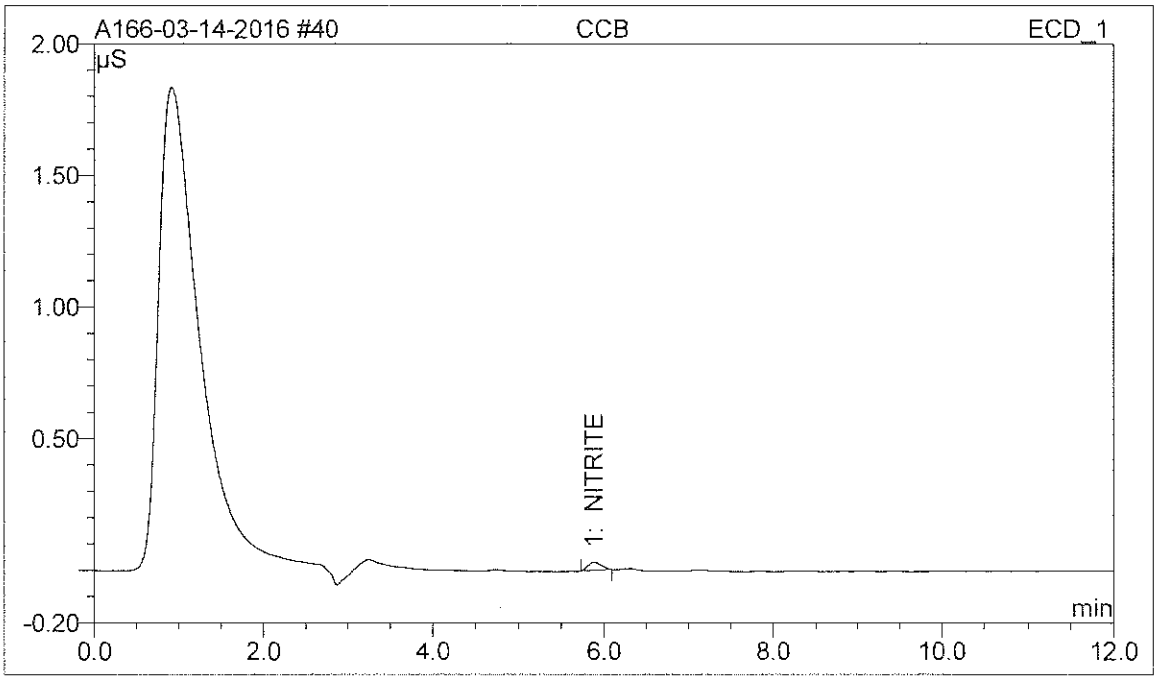
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.26	5.886	35.295	10.5933	17.08
2	CHLORIDE	4.74	3.693	21.131	10.3208	16.64
3	NITRITE	5.77	7.814	32.344	10.7903	17.40
4	SULFATE	7.08	2.647	12.729	9.7380	15.70
5	BROMIDE	8.24	1.546	5.435	10.2657	16.55
6	NITRATE	9.73	9.365	22.616	10.3056	16.62



Sample Analysis Report

Sample Name:	CCB	**Sample No.:**	40
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	1.0000
Date Time Collected:	3/14/2016 7:33 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

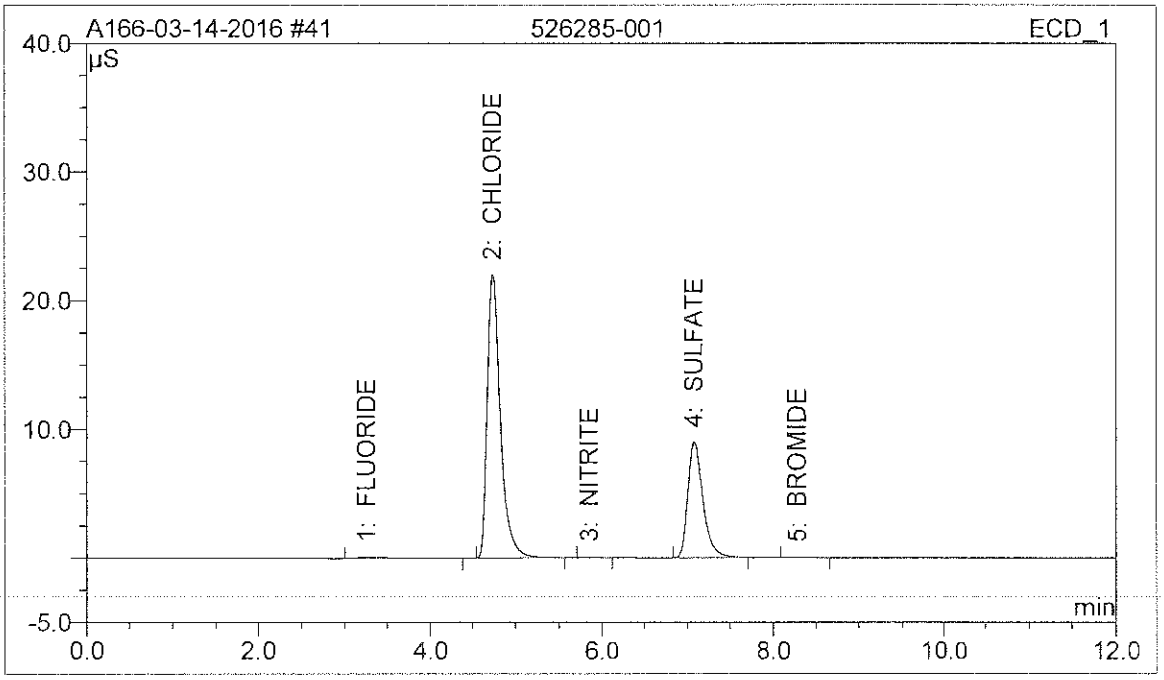
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	NITRITE	5.89	0.005	0.030	-0.0444	n.a.



Sample Analysis Report

Sample Name:	526285-001	**Sample No.:**	41
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	20.0000
Date Time Collected:	3/14/2016 7:47 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

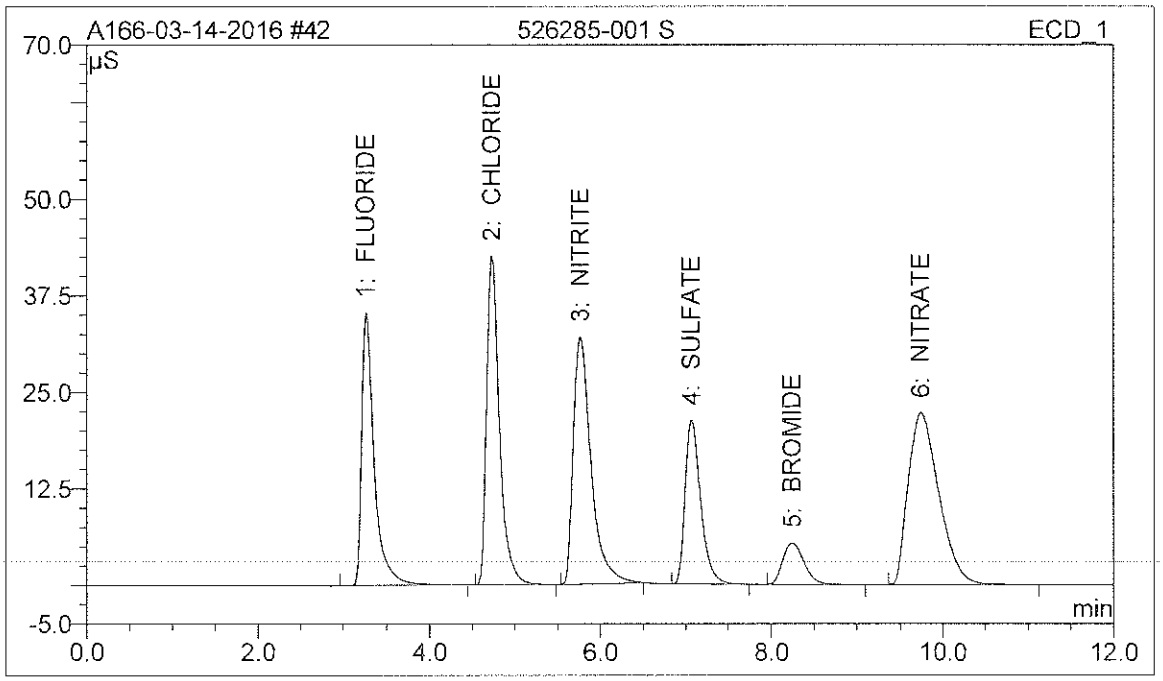
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.26	0.036	0.090	-0.5407	-0.15
2	CHLORIDE	4.74	3.892	22.003	217.4215	60.76
3	NITRITE	5.86	0.011	0.055	-0.7336	-0.21
4	SULFATE	7.08	1.848	8.968	136.8946	38.26
5	BROMIDE	8.29	0.007	0.026	4.7850	1.34



Sample Analysis Report

Sample Name:	526285-001 S	**Sample No.:**	42
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	20.0000
Date Time Collected:	3/14/2016 8:02 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

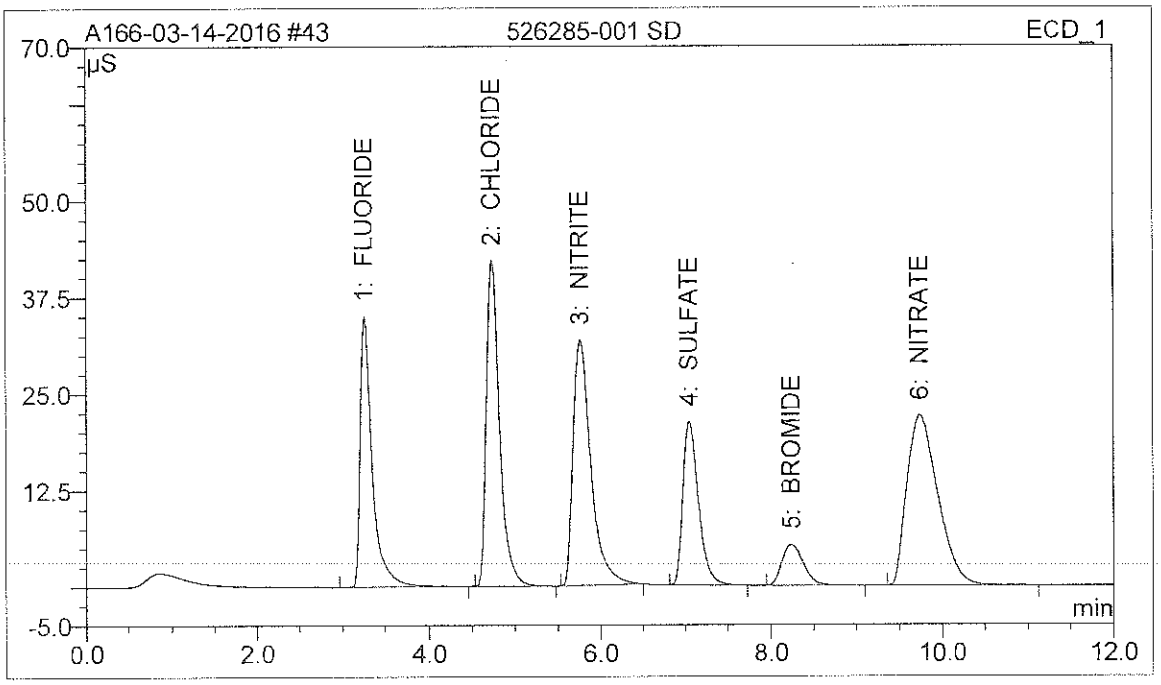
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.26	5.887	35.256	211.9189	13.38
2	CHLORIDE	4.74	7.547	42.601	419.1165	26.47
3	NITRITE	5.77	7.707	31.979	212.8399	13.44
4	SULFATE	7.07	4.558	21.233	333.0869	21.04
5	BROMIDE	8.25	1.525	5.351	202.5864	12.80
6	NITRATE	9.74	9.256	22.281	203.7540	12.87



Sample Analysis Report

Sample Name:	526285-001 SD	**Sample No.:**	43
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	20.0000
Date Time Collected:	3/14/2016 8:16 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

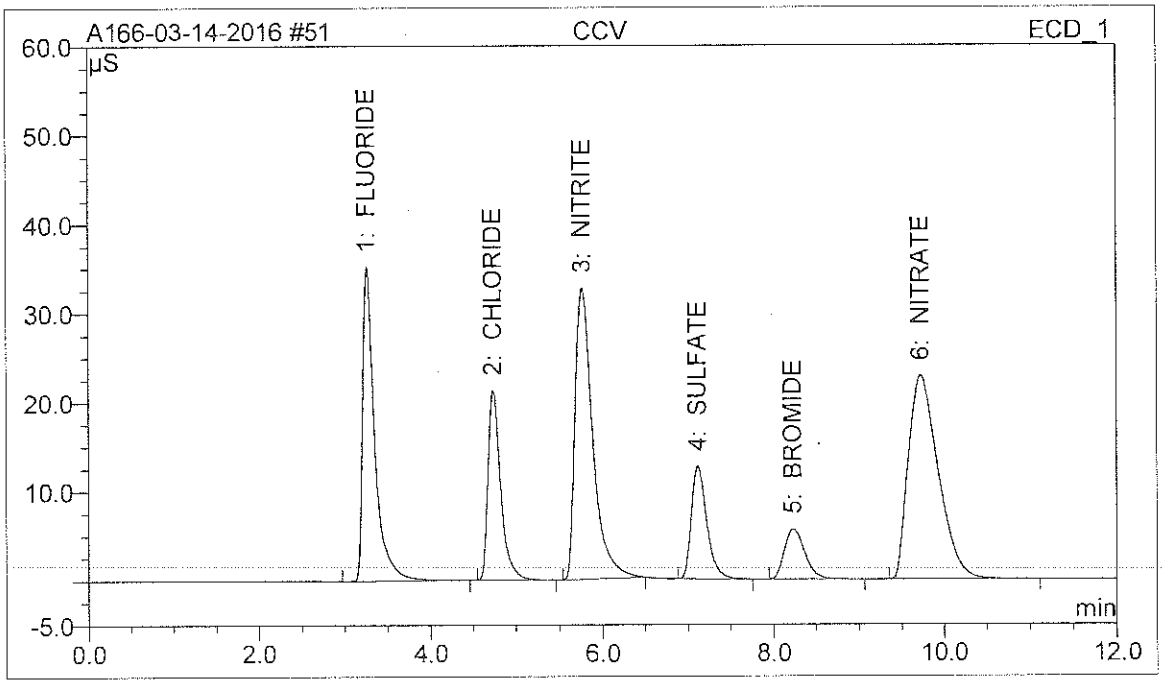
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.26	5.873	35.039	211.3843	13.37
2	CHLORIDE	4.73	7.541	42.215	418.8198	26.49
3	NITRITE	5.77	7.719	31.792	213.1695	13.48
4	SULFATE	7.05	4.553	21.223	332.7757	21.05
5	BROMIDE	8.25	1.520	5.269	201.9198	12.77
6	NITRATE	9.74	9.230	22.081	203.1782	12.85



Sample Analysis Report

Sample Name:	CCV	**Sample No.:**	51
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	1.0000
Date Time Collected:	3/14/2016 10:11 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

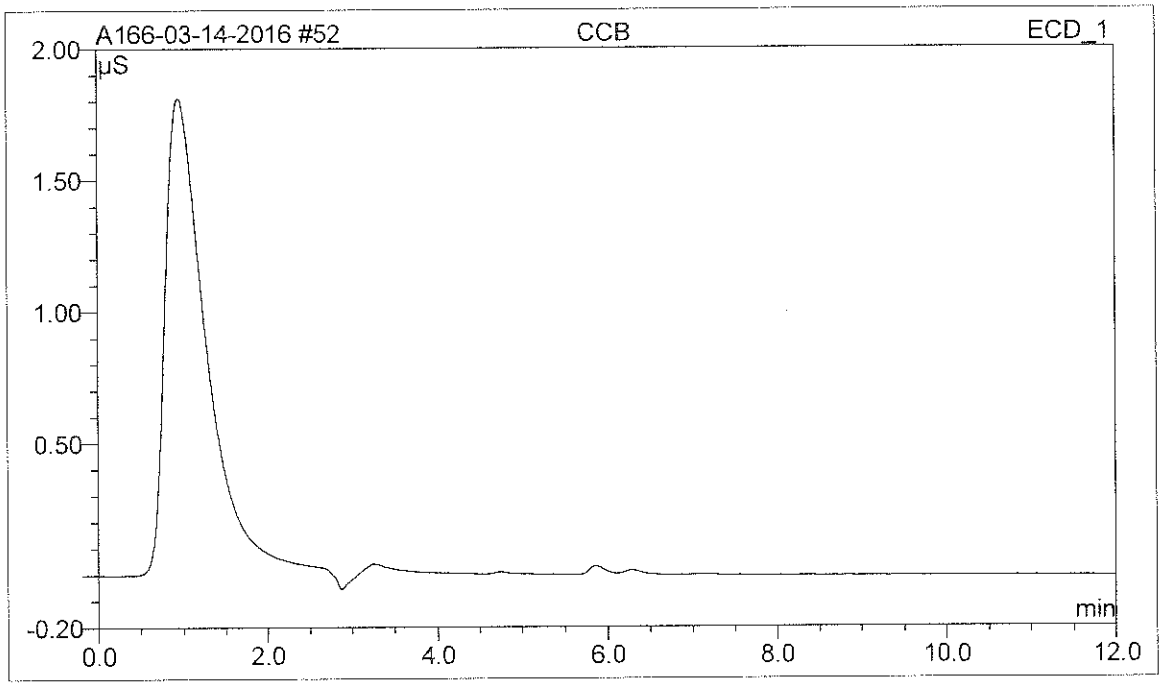
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.26	5.876	35.221	10.5749	17.08
2	CHLORIDE	4.74	3.693	21.329	10.3196	16.67
3	NITRITE	5.77	7.785	32.653	10.7507	17.36
4	SULFATE	7.11	2.644	12.638	9.7249	15.71
5	BROMIDE	8.24	1.546	5.583	10.2610	16.57
6	NITRATE	9.72	9.343	22.877	10.2814	16.61



Sample Analysis Report

Sample Name:	CCB	**Sample No.:**	52
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	1.0000
Date Time Collected:	3/14/2016 10:26 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

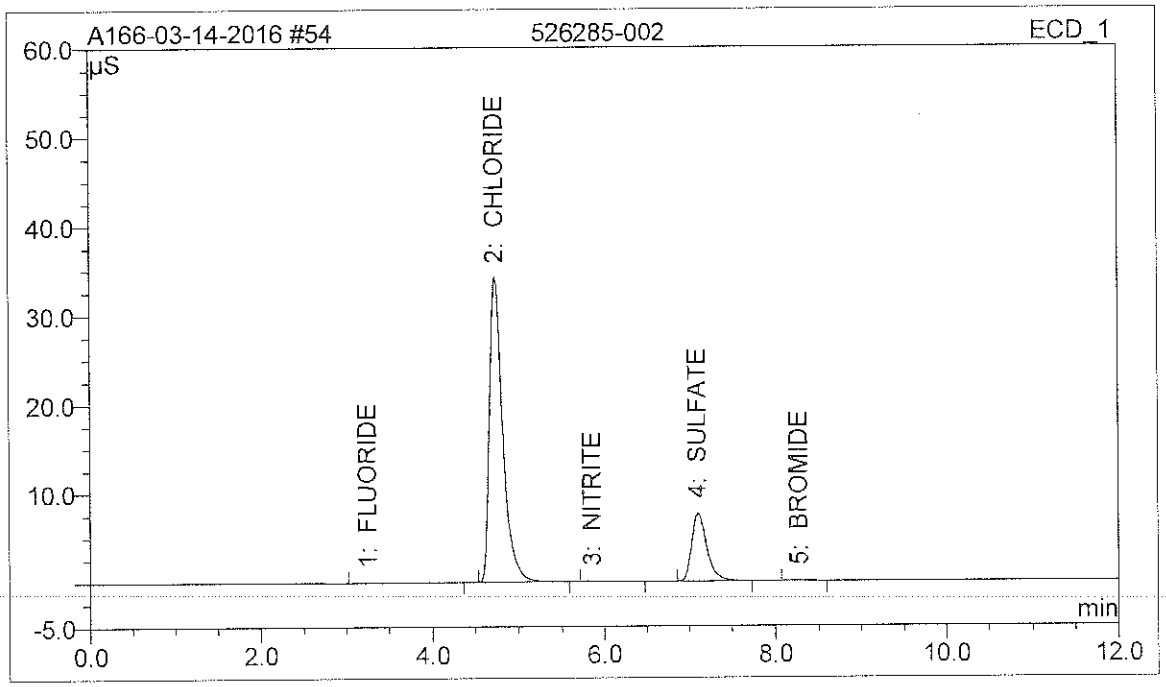
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %



Sample Analysis Report

Sample Name:	526285-002	**Sample No.:**	54
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	20.0000
Date Time Collected:	3/14/2016 10:54 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

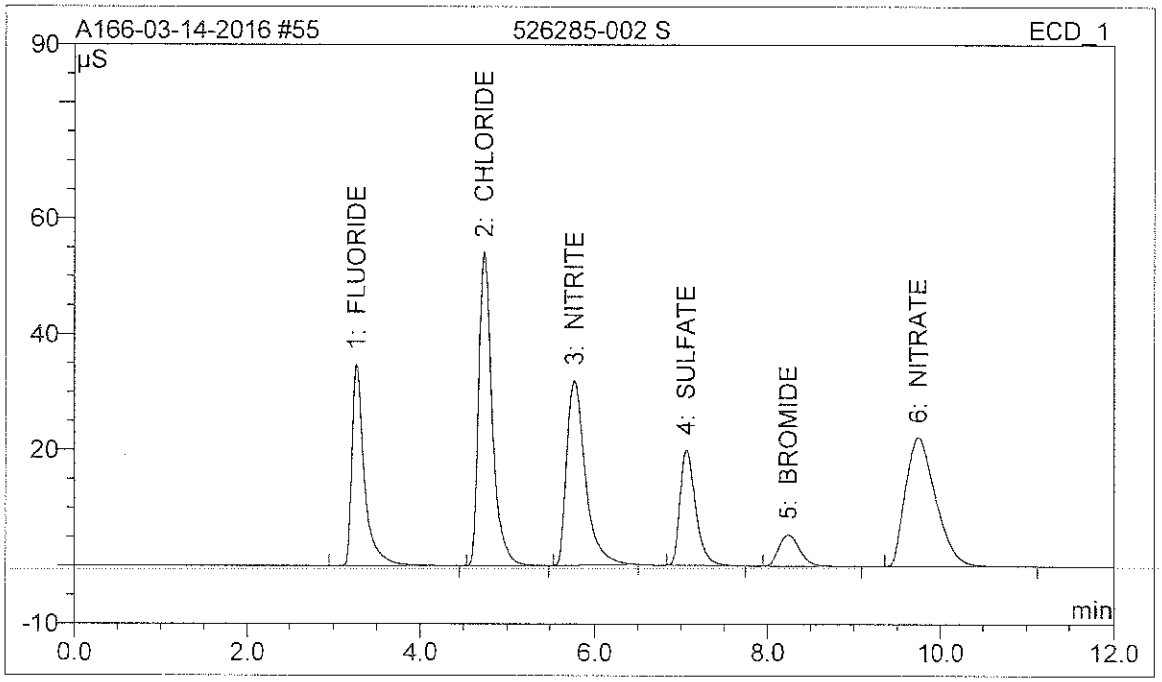
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.26	0.029	0.078	-0.7734	-0.17
2	CHLORIDE	4.74	6.118	34.167	340.2550	73.80
3	NITRITE	5.86	0.012	0.054	-0.6969	-0.15
4	SULFATE	7.10	1.576	7.589	117.1549	25.41
5	BROMIDE	8.28	0.009	0.035	5.0917	1.10



Sample Analysis Report

Sample Name:	526285-002 S	**Sample No.:**	55
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	20.0000
Date Time Collected:	3/14/2016 11:09 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

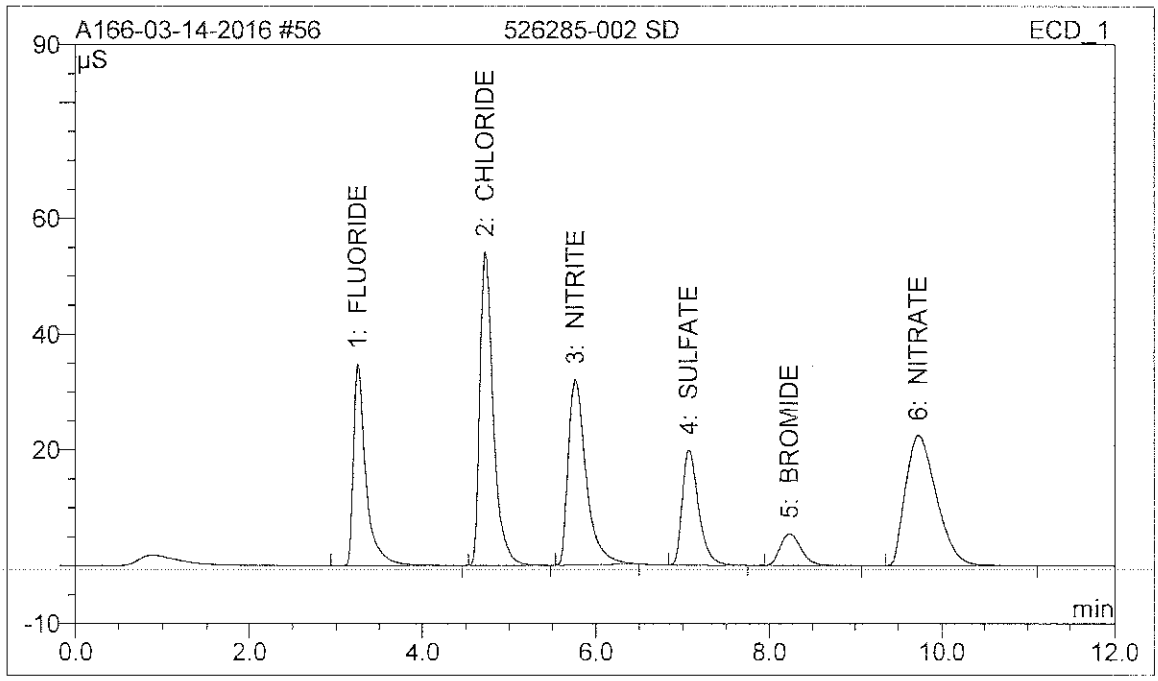
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.26	5.845	34.742	210.3750	12.54
2	CHLORIDE	4.73	9.700	54.142	537.9945	32.07
3	NITRITE	5.77	7.712	31.902	212.9824	12.70
4	SULFATE	7.06	4.266	19.927	311.9846	18.60
5	BROMIDE	8.24	1.520	5.358	201.8915	12.03
6	NITRATE	9.74	9.194	22.238	202.3942	12.06



Sample Analysis Report

Sample Name:	526285-002 SD	**Sample No.:**	56
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	20.0000
Date Time Collected:	3/14/2016 11:23 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

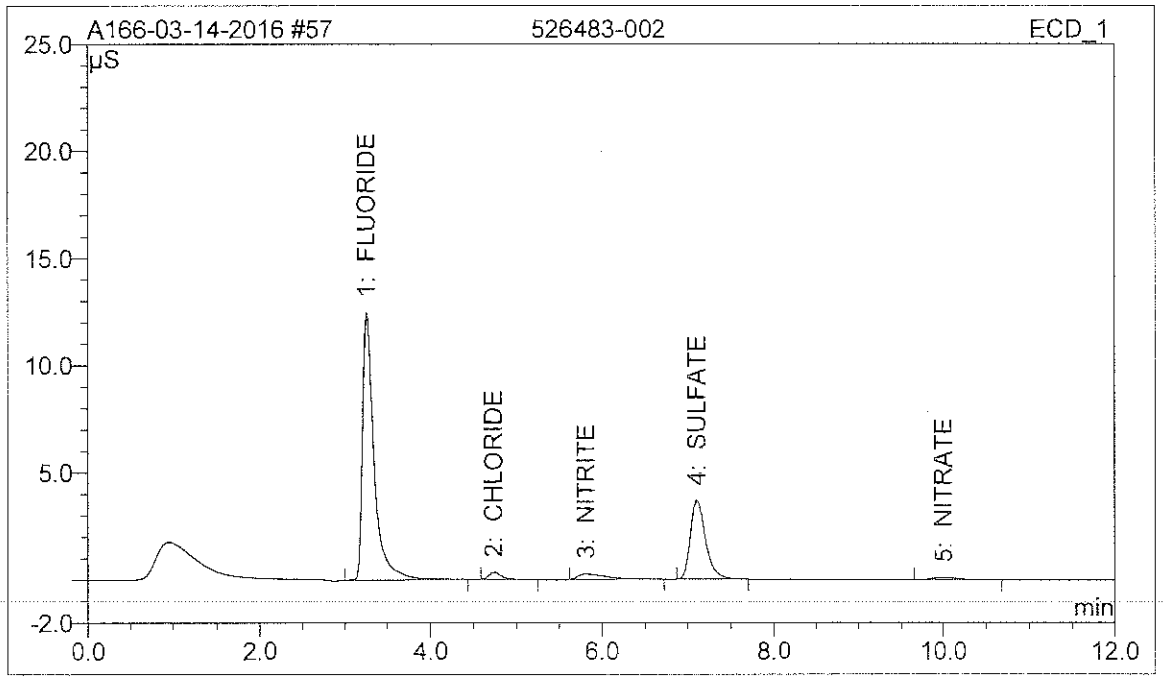
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.26	5.846	34.824	210.4308	12.56
2	CHLORIDE	4.73	9.672	54.163	536.4566	32.02
3	NITRITE	5.77	7.682	32.001	212.1598	12.66
4	SULFATE	7.07	4.262	19.836	311.7057	18.61
5	BROMIDE	8.24	1.523	5.440	202.3165	12.08
6	NITRATE	9.73	9.180	22.492	202.0981	12.06



Sample Analysis Report

Sample Name:	526483-002	**Sample No.:**	57
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	1.0000
Date Time Collected:	3/14/2016 11:38 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

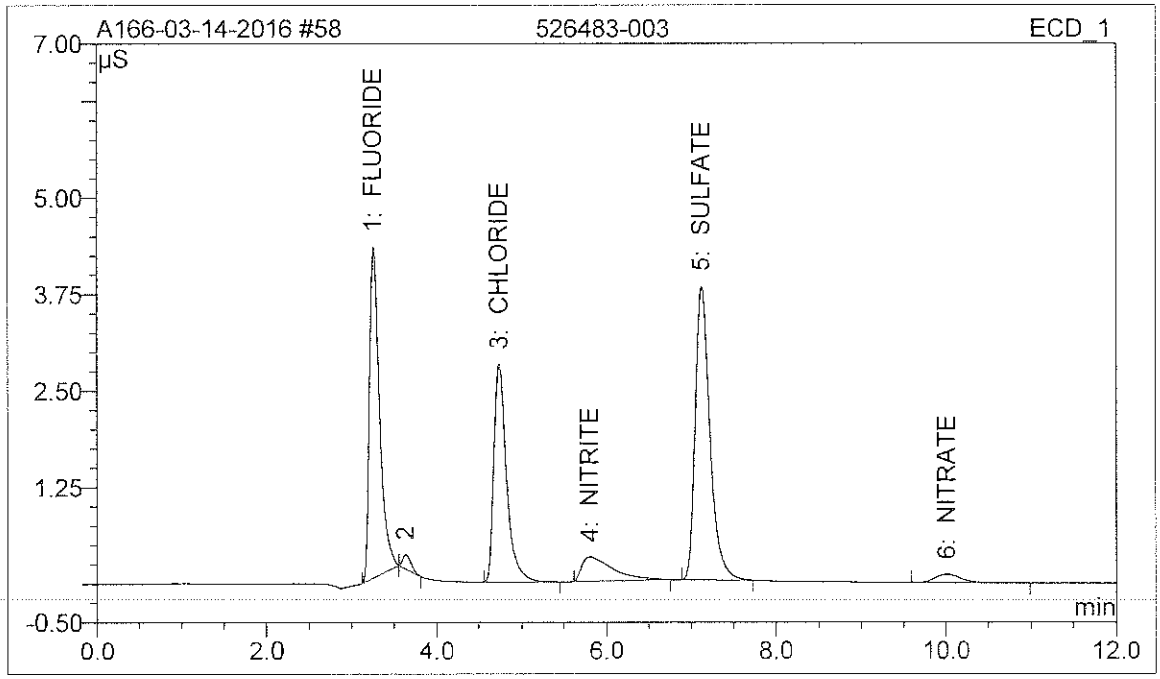
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.26	1.998	12.482	3.5357	50.97
2	CHLORIDE	4.74	0.058	0.340	0.2886	4.16
3	NITRITE	5.82	0.107	0.261	0.0965	1.39
4	SULFATE	7.11	0.749	3.686	2.8639	41.28
5	NITRATE	10.01	0.038	0.109	0.1528	2.20



Sample Analysis Report

Sample Name:	526483-003	**Sample No.:**	58
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	1.0000
Date Time Collected:	3/14/2016 11:52 PM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

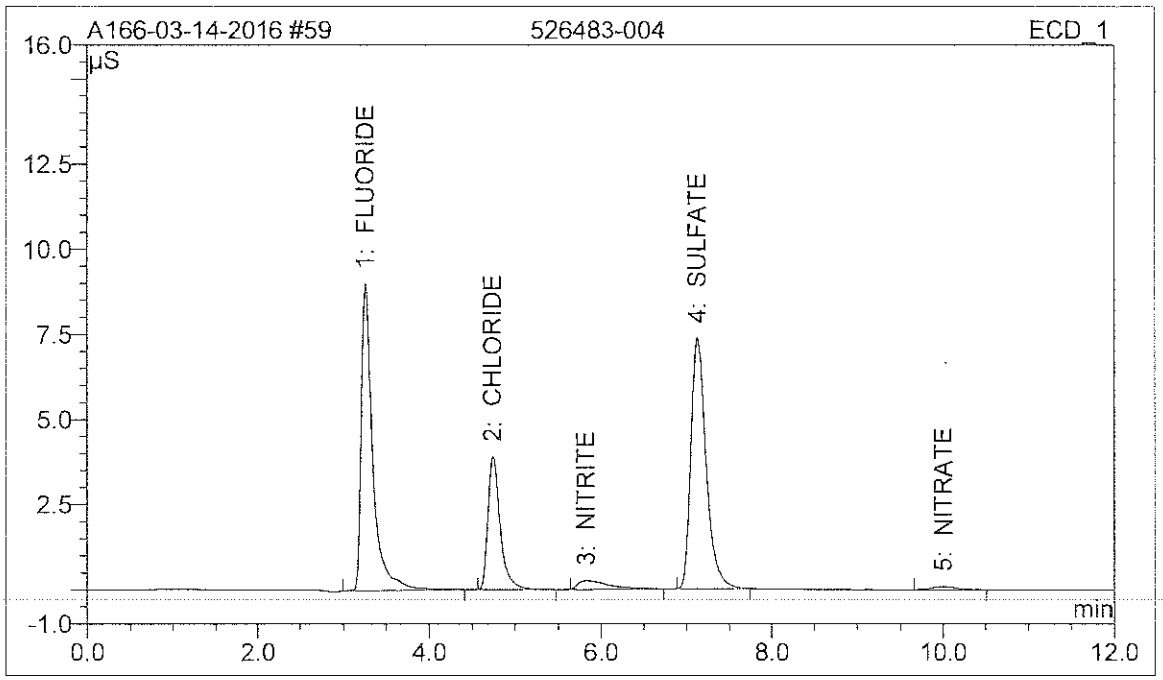
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.26	0.596	4.283	0.9905	17.50
3	CHLORIDE	4.74	0.476	2.819	1.4424	25.49
4	NITRITE	5.80	0.137	0.317	0.1379	2.44
5	SULFATE	7.12	0.768	3.800	2.9352	51.86
6	NITRATE	10.01	0.039	0.108	0.1535	2.71



Sample Analysis Report

Sample Name:	526483-004	**Sample No.:**	59
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	1.0000
Date Time Collected:	3/15/2016 12:06 AM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

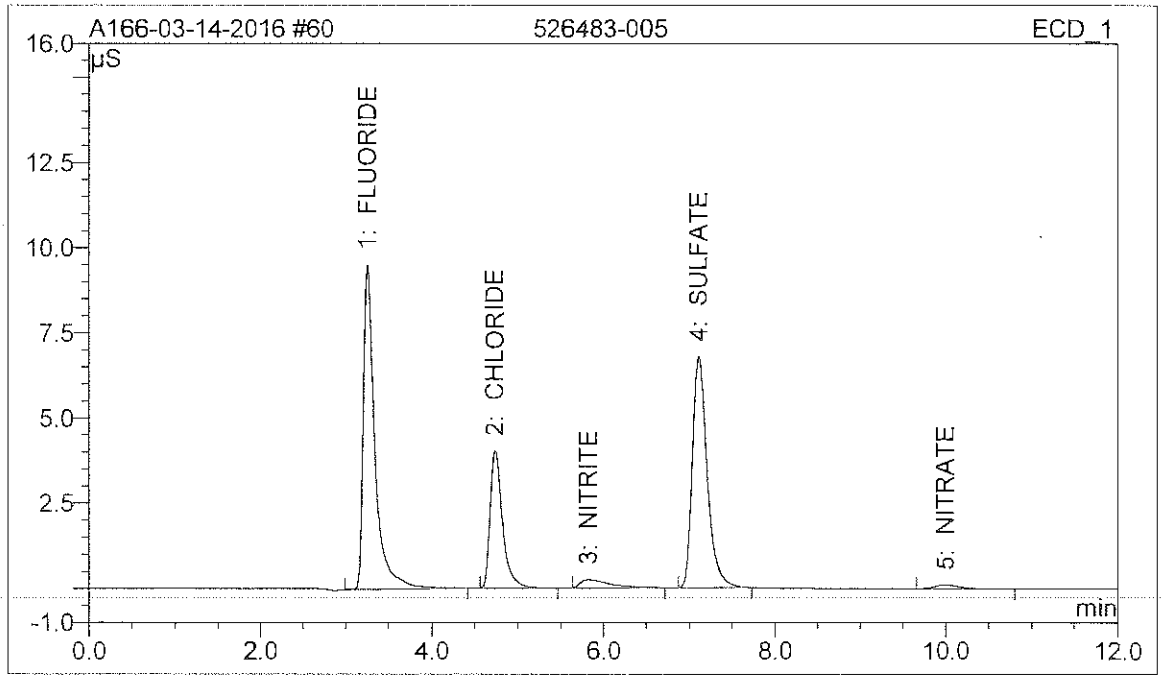
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.26	1.423	9.002	2.4911	24.16
2	CHLORIDE	4.74	0.655	3.895	1.9370	18.78
3	NITRITE	5.83	0.107	0.255	0.0962	0.93
4	SULFATE	7.13	1.516	7.359	5.6426	54.72
5	NITRATE	10.00	0.031	0.093	0.1452	1.41



Sample Analysis Report

Sample Name:	526483-005	**Sample No.:**	60
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	1.0000
Date Time Collected:	3/15/2016 12:21 AM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

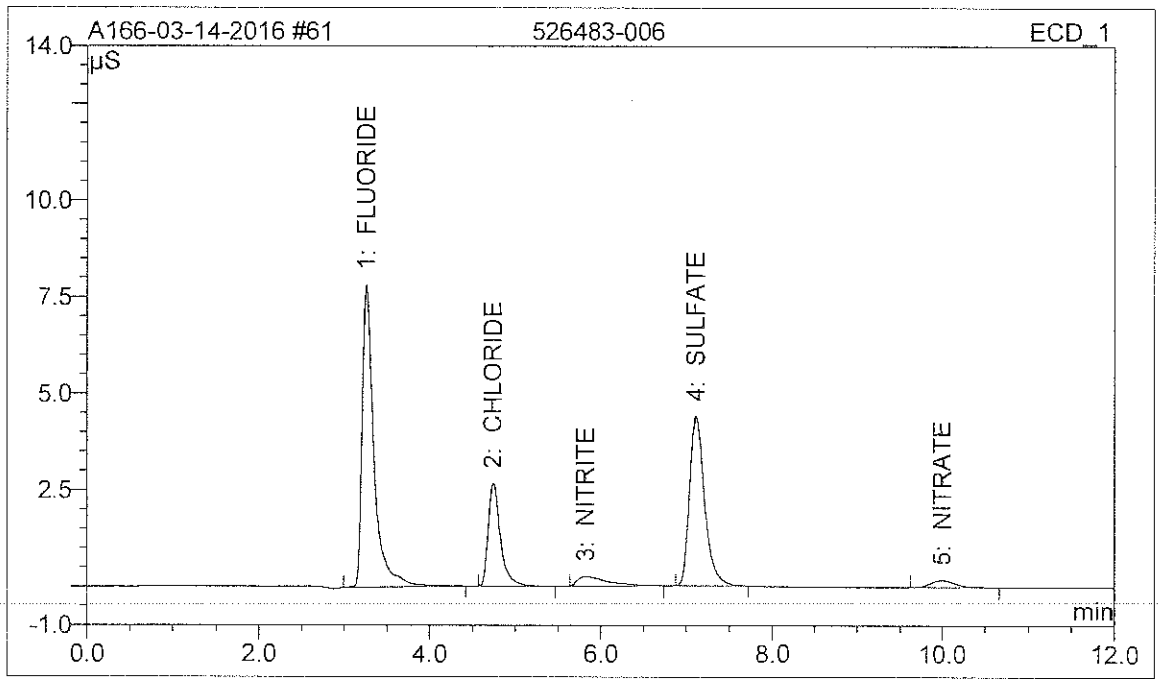
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.26	1.510	9.523	2.6500	26.22
2	CHLORIDE	4.74	0.680	4.028	2.0043	19.83
3	NITRITE	5.83	0.100	0.243	0.0866	0.86
4	SULFATE	7.11	1.397	6.792	5.2119	51.57
5	NITRATE	10.00	0.039	0.112	0.1531	1.52



Sample Analysis Report

Sample Name:	526483-006	**Sample No.:**	61
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	1.0000
Date Time Collected:	3/15/2016 12:35 AM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

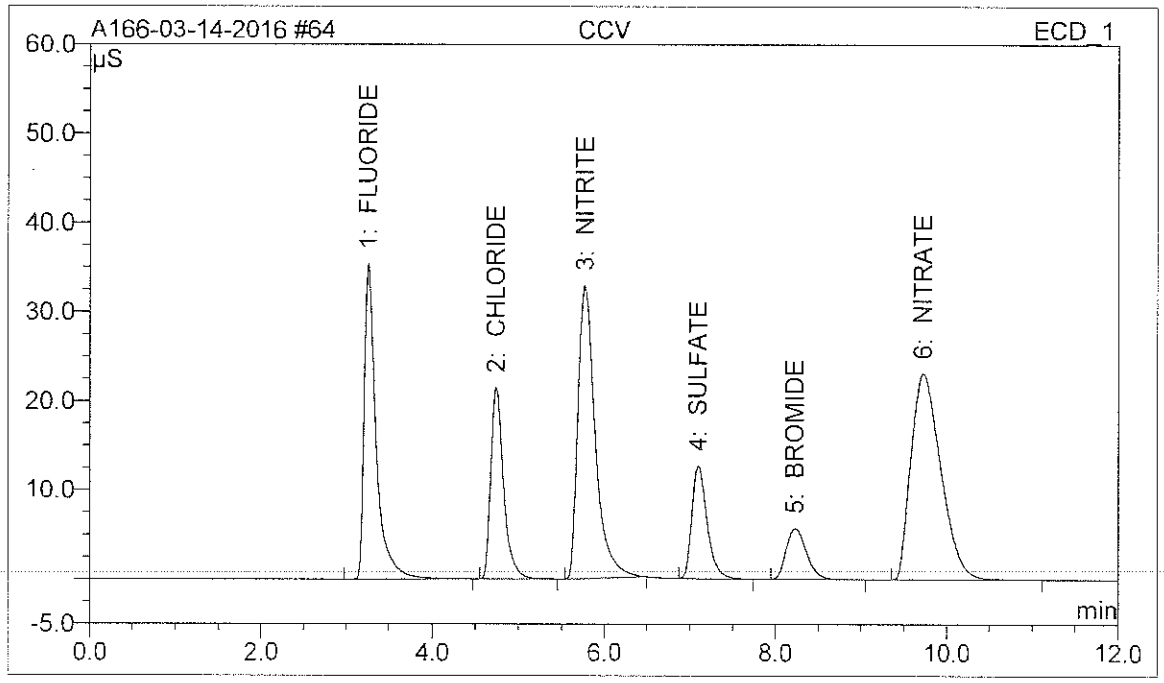
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.26	1.242	7.821	2.1629	30.06
2	CHLORIDE	4.74	0.448	2.658	1.3652	18.97
3	NITRITE	5.82	0.104	0.248	0.0929	1.29
4	SULFATE	7.11	0.896	4.395	3.3962	47.20
5	NITRATE	10.00	0.062	0.184	0.1784	2.48



Sample Analysis Report

Sample Name:	CCV	**Sample No.:**	64
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	1.0000
Date Time Collected:	3/15/2016 1:18 AM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

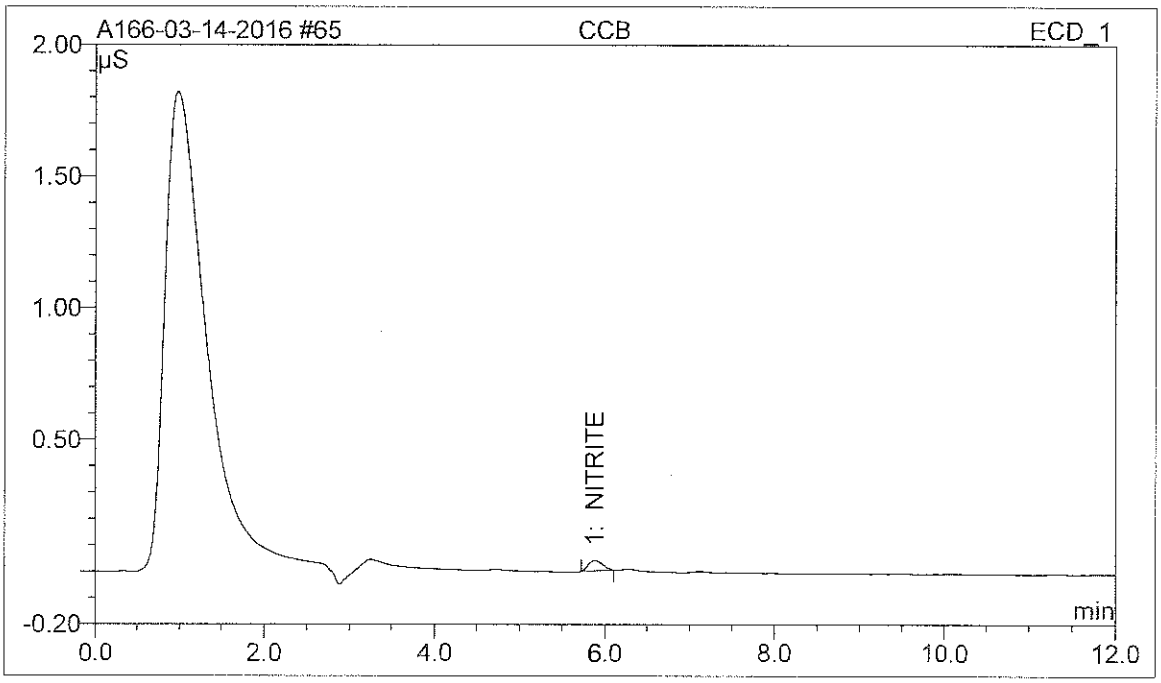
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	FLUORIDE	3.26	5.876	35.376	10.5753	17.07
2	CHLORIDE	4.74	3.693	21.485	10.3207	16.66
3	NITRITE	5.77	7.782	32.814	10.7471	17.35
4	SULFATE	7.10	2.647	12.650	9.7356	15.71
5	BROMIDE	8.24	1.550	5.684	10.2883	16.61
6	NITRATE	9.72	9.351	23.125	10.2910	16.61



Sample Analysis Report

Sample Name:	CCB	**Sample No.:**	65
Sequence Name:	A166-03-14-2016	**Sample ID.:**	
Program Method:	ANIONS_2	**Injection vol.:**	25.0
Quantitation Method:	ANIONS_01-08-14	**Dilution Factor:**	1.0000
Date Time Collected:	3/15/2016 1:33 AM	**Sample Wt.:**	1.0000
System Operator:	A166	**Sample Amt.:**	1.0000
Comments:			

Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount PPM	Relative Amount %
1	NITRITE	5.88	0.008	0.039	-0.0416	n.a.



Percent Moisture Worksheet

Analytical Method: **AD2216A / Percent Moist**
Sequence: **990097**
Analyst: **Yanexi Valero**
Balance ID: **AT261-2**
Sand Lot#: **507907**
Oven Temp (°C) Range: **105-115 Deg C**

1st Drying Cycle
Date & Time In Oven: **03/11/2016 15:39**
Date & Time Out of Oven:
Oven Temp (°C) Read: **105**
Oven Temp (°C) Correction: **106**

2nd Drying Cycle
Date & Time In Oven: **3/14/15 9:00**
Date & Time Out of Oven: **3/14/16 10:55**
Oven Temp (°C) Read: **105**
Oven Temp (°C) Correction **106**

Thermometer ID: **WC022014** Thermometer Correction Factor °C: **1**

	Lab ID	Client Sample Id	Date Received	Due Date	Pan Weight (a)	Wet Sample Weight +Pan (b)	1st Dry Weight + Pan	2nd Dry Weight + Pan (c)	3rd Dry Weight + Pan (d)	Percent Solid	Percent Moisture	Comments
1	990097-1-BLK	990097-1-BLK			1.3308 g	10.8667 g	10.86 g	10.8629 g				
2	526483-002	D-S-9'-160308	03/09/16	03/09/16	1.31 g	10.7874 g	9.7887 g	9.7944 g		88.30	11.70	
3	526483-002 D	D-S-9'-160308 D	03/09/16	03/09/16	1.3235 g	10.6852 g	9.6688 g	9.6756 g		87.91	12.09	
4	526483-003	F-S-25'-160308	03/09/16	03/09/16	1.3177 g	10.9844 g	8.999 g	9.008 g		74.30	25.70	
5	526483-004	E-S-16'-160308	03/09/16	03/09/16	1.3134 g	10.7338 g	8.6718 g	8.6789 g		72.10	27.90	
6	526483-005	I-S-11'-160308	03/09/16	03/09/16	1.323 g	11.4252 g	9.2336 g	9.2425 g		72.44	27.56	
7	526483-006	C-S-13'-160308	03/09/16	03/09/16	1.3193 g	12.155 g	9.9367 g	9.9419 g		74.33	25.67	
8	526574-001	S-1	03/10/16	03/10/16	1.3193 g	13.182 g	11.3919 g	11.4063 g		82.40	17.60	
9	526574-002	S-2	03/10/16	03/10/16	1.342 g	11.2436 g	9.6761 g	9.6919 g		81.42	18.58	
10	526574-003	S-3	03/10/16	03/10/16	1.3311 g	11.8095 g	10.0988 g	10.1104 g		80.65	19.35	
11	526574-004	S-4	03/10/16	03/10/16	1.3213 g	19.1739 g	14.9087 g	14.9273 g		68.79	31.21	
12	526574-005	S-5	03/10/16	03/10/16	1.321 g	11.0802 g	8.5635 g	8.5709 g		65.39	34.61	
13	526574-006	S-6	03/10/16	03/10/16	1.3108 g	13.7987 g	11.28 g	11.2937 g		74.91	25.09	
14	526574-006 D	S-6 D	03/10/16	03/10/16	1.3333 g	13.5906 g	11.0962 g	11.1129 g		74.66	25.34	
15	526622-001	SB-I4-70-70.5	03/10/16	03/11/16	1.3322 g	11.8716 g	10.7516 g	10.7559 g		88.16	11.84	

Approved By: 

Yanexi Valero

Approved Date: 03/14/2016

Analytical Report 544814

for

ARCADIS

Project Manager: Priscilla Yelvington

MORAN

B0048787.0001.0004A

02-FEB-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Table of Contents

02-FEB-17

Project Manager: **Priscilla Yelvington**
ARCADIS
1004 N. Big Spring St.
Midland, TX 79701

Reference: XENCO Report No(s): **544814**
MORAN
Project Address: Lea County NM

Priscilla Yelvington:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 544814. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 544814 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 544814

ARCADIS, Midland, TX

MORAN

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP-S-5'-170124	S	01-24-17 11:37	5 ft	544814-001

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3008599 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results
544814
ARCADIS, Midland, TX
MORAN

Sample Id: **SP-S-5'-170124** Matrix: Soil Sample Depth: 5 ft

Lab Sample Id: 544814-001 Date Collected: 01.24.17 11.37 Date Received: 01.24.17 18.46

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MGO % Moist: Tech: MGO

Seq Number: 3008791 Date Prep: 01.30.17 09.48

Prep seq: 719225

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**72.1**	5.00	0.858	mg/kg	01.30.17 12:58		1

Analytical Method: Reactive Cyanide by SW 846-Section7.3.3 Prep Method: SW9012P

Analyst: KCS % Moist: Tech: KCS

Seq Number: 3008654 Date Prep: 01.27.17 12.00

Subcontractor: SUB: TX104704215 Prep seq: 719161

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Cyanide +	57-12-5	<0.0124	0.250	0.0124	mg/kg	01.27.17 15:01	U	1

Analytical Method: Flash Point (CC) SW-846 1010 Prep Method:

Analyst: YAV % Moist: Tech: YAV

Seq Number: 3009045 Date Prep:

Subcontractor: SUB: TX104704215 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Flash Point		>180			Deg F	02.01.17 10:29	U	1

Analytical Method: Reactive Sulfide by SW9034 Prep Method:

Analyst: YAV % Moist: Tech: YAV

Seq Number: 3008679 Date Prep:

Subcontractor: SUB: TX104704215 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Reactive Sulfide	18496-25-8	<0.500	25.0	0.500	mg/kg	01.27.17 13:15	U	1

Certificate of Analytical Results

544814

ARCADIS, Midland, TX

MORAN

Sample Id: **SP-S-5'-170124** Matrix: Soil Sample Depth: 5 ft

Lab Sample Id: 544814-001 Date Collected: 01.24.17 11.37 Date Received: 01.24.17 18.46

Analytical Method: Soil pH by EPA 9045C Prep Method:

Analyst: YAV % Moist: Tech: YAV

Seq Number: 3008680 Date Prep:

Subcontractor: SUB: TX104704215 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
pH	12408-02-5	**8.91**			SU	01.27.17 11:25		1

Analytical Method: TPH By SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3008470 Date Prep: 01.25.17 16.00

Prep seq: 718965

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
C6-C10 Gasoline Range Hydrocarbons	PHC610	<7.99	15.0	7.99	mg/kg	01.25.17 23:12	U	1
C10-C28 Diesel Range Organics	C10C28DRO	<8.11	15.0	8.11	mg/kg	01.25.17 23:12	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<8.11	15.0	8.11	mg/kg	01.25.17 23:12	U	1
Total TPH	PHC635	<7.99	15.0	7.99	mg/kg	01.25.17 23:12	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	83	70 - 135	%		
o-Terphenyl	91	70 - 135	%		

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3008599 Date Prep: 01.26.17 16.30

Prep seq: 719127

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000337	0.00151	0.000337	mg/kg	01.26.17 19:57	U	1
Toluene	108-88-3	<0.00100	0.00201	0.00100	mg/kg	01.26.17 19:57	U	1
Ethylbenzene	100-41-4	**0.00682**	0.00201	0.000492	mg/kg	01.26.17 19:57		1
m_p-Xylenes	179601-23-1	**0.0283**	0.00201	0.00171	mg/kg	01.26.17 19:57		1
o-Xylene	95-47-6	**0.00689**	0.00301	0.000849	mg/kg	01.26.17 19:57		1
Total Xylenes	1330-20-7	**0.0352**	0.00201	0.000849	mg/kg	01.26.17 19:57		1
Total BTEX		**0.0420**	0.00151	0.000337	mg/kg	01.26.17 19:57		1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	80 - 120	%		
4-Bromofluorobenzene	95	80 - 120	%		

Certificate of Analytical Results

544814

ARCADIS, Midland, TX

MORAN

Sample Id: **3008679-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 3008679-1-BLK Date Collected: Date Received:

Analytical Method: Reactive Sulfide by SW9034 Prep Method:

Analyst: YAV % Moist: Tech: YAV

Seq Number: 3008679 Date Prep:

Subcontractor: SUB: TX104704215 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Reactive Sulfide	18496-25-8	<0.500	25.0	0.500	mg/kg	01.27.17 13:00	U	1

Sample Id: **3009045-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 3009045-1-BLK Date Collected: Date Received:

Analytical Method: Flash Point (CC) SW-846 1010 Prep Method:

Analyst: YAV % Moist: Tech: YAV

Seq Number: 3009045 Date Prep:

Subcontractor: SUB: TX104704215 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Flash Point		>180			Deg F	02.01.17 08:41	U	1

Sample Id: **718965-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 718965-1-BLK Date Collected: Date Received:

Analytical Method: TPH By SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3008470 Date Prep: 01.25.17 16.00

Prep seq: 718965

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
C6-C10 Gasoline Range Hydrocarbons	PHC610	<8.00	15.0	8.00	mg/kg	01.26.17 00:25	U	1
C10-C28 Diesel Range Organics	C10C28DRO	<8.13	15.0	8.13	mg/kg	01.26.17 00:25	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<8.13	15.0	8.13	mg/kg	01.26.17 00:25	U	1
Total TPH	PHC635	<8.00	15.0	8.00	mg/kg	01.26.17 00:25	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	124	70 - 135	%		
o-Terphenyl	129	70 - 135	%		

Certificate of Analytical Results

544814

ARCADIS, Midland, TX

MORAN

Sample Id: **719127-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 719127-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3008599 Date Prep: 01.26.17 16.30

Prep seq: 719127

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000334	0.00149	0.000334	mg/kg	01.26.17 19:40	U	1
Toluene	108-88-3	<0.000996	0.00199	0.000996	mg/kg	01.26.17 19:40	U	1
Ethylbenzene	100-41-4	<0.000488	0.00199	0.000488	mg/kg	01.26.17 19:40	U	1
m_p-Xylenes	179601-23-1	<0.00169	0.00199	0.00169	mg/kg	01.26.17 19:40	U	1
o-Xylene	95-47-6	<0.000842	0.00299	0.000842	mg/kg	01.26.17 19:40	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	110	80 - 120	%		
4-Bromofluorobenzene	103	80 - 120	%		

Sample Id: **719161-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 719161-1-BLK Date Collected: Date Received:

Analytical Method: Reactive Cyanide by SW 846-Section7.3.3 Prep Method: SW9012P

Analyst: KCS % Moist: Tech: KCS

Seq Number: 3008654 Date Prep: 01.27.17 12.00

Subcontractor: SUB: TX104704215 Prep seq: 719161

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Cyanide +	57-12-5	<0.0124	0.250	0.0124	mg/kg	01.27.17 14:51	U	1

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

	Phone	Fax
4147 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: MORAN

Work Orders : 544814,

Project ID: B0048787.0001.0004A

Lab Batch #: 3008599 **Sample:** 719127-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/26/17 18:18

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 3008599 **Sample:** 719127-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/26/17 18:35

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 3008599 **Sample:** 544814-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/26/17 18:51

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0346	0.0300	115	80-120	

Lab Batch #: 3008599 **Sample:** 544814-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/26/17 19:08

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0317	0.0300	106	80-120	

Lab Batch #: 3008599 **Sample:** 719127-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/26/17 19:40

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: MORAN

Work Orders : 544814,

Project ID: B0048787.0001.0004A

Lab Batch #: 3008470 **Sample:** 718965-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/26/17 00:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	64.3	50.0	129	70-135	

Lab Batch #: 3008470 **Sample:** 718965-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/26/17 00:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	63.6	50.0	127	70-135	

Lab Batch #: 3008470 **Sample:** 718965-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/26/17 01:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	59.8	50.0	120	70-135	

Lab Batch #: 3008470 **Sample:** 544787-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/26/17 02:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.9	103	70-135	
o-Terphenyl	51.6	50.0	103	70-135	

Lab Batch #: 3008470 **Sample:** 544787-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/26/17 02:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.9	99.9	100	70-135	
o-Terphenyl	48.4	50.0	97	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Blank Spike Recovery

Project Name: MORAN

Work Order #: 544814 **Project ID:** B0048787.0001.0004A

Lab Batch #: 3009045 **Sample:** 3009045-1-BKS **Matrix:** Solid

Date Analyzed: 02/01/2017 **Date Prepared:** 02/01/2017 **Analyst:** YAV

Reporting Units: Deg F **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

Flash Point (CC) SW-846 1010 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Flash Point	>180	81.0	80.0	99	75-140	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

BS / BSD Recoveries

Project Name: MORAN

Work Order #: 544814 **Project ID:** B0048787.0001.0004A

Analyst: ALJ **Date Prepared:** 01/26/2017 **Date Analyzed:** 01/26/2017

Lab Batch ID: 3008599 **Sample:** 719127-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000335	0.100	0.115	115	0.100	0.117	117	2	70-130	35	
Toluene	<0.00100	0.100	0.104	104	0.100	0.106	106	2	70-130	35	
Ethylbenzene	<0.000490	0.100	0.118	118	0.100	0.118	118	0	71-129	35	
m_p-Xylenes	<0.00170	0.200	0.234	117	0.201	0.240	119	3	70-135	35	
o-Xylene	<0.000845	0.100	0.108	108	0.100	0.112	112	4	71-133	35	

Analyst: MGO **Date Prepared:** 01/30/2017 **Date Analyzed:** 01/30/2017

Lab Batch ID: 3008791 **Sample:** 719225-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	269	108	250	268	107	0	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: MORAN

Work Order #: 544814 **Project ID:** B0048787.0001.0004A

Analyst: KCS **Date Prepared:** 01/27/2017 **Date Analyzed:** 01/27/2017

Lab Batch ID: 3008654 **Sample:** 719161-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Reactive Cyanide by SW 846-Section7.3.3 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Cyanide	<0.0620	20.0	3.79	19	20.0	3.78	19	0	5-40	20	

Analyst: YAV **Date Prepared:** 01/27/2017 **Date Analyzed:** 01/27/2017

Lab Batch ID: 3008679 **Sample:** 3008679-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Reactive Sulfide by SW9034 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Reactive Sulfide	<0.500	50.0	40.0	80	50.0	36.0	72	11	30-120	20	

Analyst: ARM **Date Prepared:** 01/25/2017 **Date Analyzed:** 01/26/2017

Lab Batch ID: 3008470 **Sample:** 718965-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<8.00	1000	893	89	1000	934	93	4	70-135	35	
C10-C28 Diesel Range Organics	<8.13	1000	948	95	1000	942	94	1	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: MORAN

Work Order # : 544814 **Project ID:** B0048787.0001.0004A

Lab Batch ID: 3008599 **QC- Sample ID:** 544814-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/26/2017 **Date Prepared:** 01/26/2017 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000336	0.100	0.0950	95	0.0994	0.0934	94	2	70-130	35	
Toluene	<0.00100	0.100	0.0873	87	0.0994	0.0838	84	4	70-130	35	
Ethylbenzene	0.00682	0.100	0.0955	89	0.0994	0.0900	84	6	71-129	35	
m_p-Xylenes	0.0283	0.200	0.193	82	0.199	0.178	75	8	70-135	35	
o-Xylene	0.00689	0.100	0.0883	81	0.0994	0.0844	78	5	71-133	35	

Lab Batch ID: 3008791 **QC- Sample ID:** 544814-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/30/2017 **Date Prepared:** 01/30/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	72.1	250	346	110	250	347	110	0	90-110	20	

Lab Batch ID: 3008791 **QC- Sample ID:** 544964-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/30/2017 **Date Prepared:** 01/30/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	6410	250	6110	0	250	6160	0	1	90-110	20	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: MORAN

Work Order # : 544814 **Project ID:** B0048787.0001.0004A

Lab Batch ID: 3008470 **QC- Sample ID:** 544787-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/26/2017 **Date Prepared:** 01/25/2017 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<7.99	999	974	97	999	956	96	2	70-135	35	
C10-C28 Diesel Range Organics	<8.12	999	938	94	999	979	98	4	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Sample Duplicate Recovery

Project Name: MORAN

Work Order #: 544814

Lab Batch #: 3009045 **Project ID:** B0048787.0001.0004A
Date Analyzed: 02/01/2017 09:51 **Date Prepared:** 02/01/2017 **Analyst:** YAV
QC- Sample ID: 544745-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: Deg F

Flash Point (CC) SW-846 1010 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Flash Point	>180	>180	0	25	U

Lab Batch #: 3009000
Date Analyzed: 01/30/2017 13:25 **Date Prepared:** 01/30/2017 **Analyst:** WRU
QC- Sample ID: 544814-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	15.5	14.7	5	20	

Lab Batch #: 3008654
Date Analyzed: 01/27/2017 14:57 **Date Prepared:** 01/27/2017 **Analyst:** KCS
QC- Sample ID: 544857-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Reactive Cyanide by SW 846-Section7.3.3 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Cyanide	<0.0124	<0.0124	0	20	U

Lab Batch #: 3008679
Date Analyzed: 01/27/2017 13:00 **Date Prepared:** 01/27/2017 **Analyst:** YAV
QC- Sample ID: 544857-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Reactive Sulfide by SW9034 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Reactive Sulfide	30.0	30.0	0	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

Sample Duplicate Recovery

Project Name: MORAN

Work Order #: 544814

Lab Batch #: 3008680 **Project ID:** B0048787.0001.0004A

Date Analyzed: 01/27/2017 11:25 **Date Prepared:** 01/27/2017 **Analyst:** YAV

QC- Sample ID: 544722-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: SU

Soil pH by EPA 9045C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
pH	11.7	11.7	0	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200) | Odessa, Texas (432-563-1800) | Lakeland, Florida (863-646-8526)

Dallas Texas (214-902-0300) | Norcross, Georgia (770-449-8800) | Tampa, Florida (813-620-2000)

Service Center - San Antonio, Texas (210-509-3334) www.xenco.com

Xenco Quote # Q_14208 | Xenco Job # 544814

Client / Reporting Information

Company Name / Branch: ARCADIS

Company Address: 1004 N BIG SPRING, SUITE 300 MIDLAND TX

Email: priscilla.yelvington@arcadis.com | Phone No: (713) 953-4717

Project Contact: Priscilla Yelvington

Samplers's Name: Ryan Nanny/Michael Bond

Project Information

Project Name/Number: MORAN

Project Location: LEA COUNTY NM

Invoice To: RJ-24-17

PO Number: B048787.0004.0004A

Matrix Codes

S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
W = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: BTEX	TPH	Chloride	MOISTURE	RCI	Field Comments
1	SP-5-5'-170124	5'	1-24-17	1137	S	4								X	X	X	X	X	X	
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [x] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Michael Bond	1/24/17 1845	Julian Martinez	2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice ✓

Temp: 4.2 IR ID:R-8
CF:+ 0.1
Corrected Temp: 4.3

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: ARCADIS

Date/ Time Received: 01/24/2017 06:46:00 PM

Work Order #: 544814

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	4.3	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seal present on shipping container/ cooler?	**N/A**	
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#6 Custody Seals intact on sample bottles?	**N/A**	
#7 *Custody Seals Signed and dated?	**N/A**	
#8 *Chain of Custody present?	**Yes**	
#9 Sample instructions complete on Chain of Custody?	**Yes**	
#10 Any missing/extra samples?	**No**	
#11 Chain of Custody signed when relinquished/ received?	**Yes**	
#12 Chain of Custody agrees with sample label(s)?	**Yes**	
#13 Container label(s) legible and intact?	**Yes**	
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**	
#15 Samples in proper container/ bottle?	**Yes**	
#16 Samples properly preserved?	**Yes**	
#17 Sample container(s) intact?	**Yes**	
#18 Sufficient sample amount for indicated test(s)?	**Yes**	
#19 All samples received within hold time?	**Yes**	
#20 Subcontract of sample(s)?	**Yes**	Houston
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**	
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**N/A**	
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Kramer
Jessica Kramer
Date: 01/25/2017

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks
Date: 01/25/2017