RTI LABORATORIES, INC.

Analytical Report

Level IV Data Package
RTI Work Order 1103158

Prepared by:

RTI Laboratories, Inc.
31628 Glendale
Livonia, MI 48150

Shaw Environmental & Infrastructure, Inc
Ms. Pamela Moss
74604 Technology Way
Denver, CO 80237

Project: Kirtland AFB
Task Order: 02

Reviewed and Approved By: _____ Date: April 15, 2011
Charles O'Bryan, Director Quality Management

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Project: Kirtland AFB
Task Order: 02
RTI Laboratories, Inc. Project # 1103158

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RTI Laboratories, Inc.

Date: *15-Apr.-11*

CLIENT: Shaw Environmental & Infrastructure, Inc.
Project: Kirtland AFB
Task Order: 02
Lab Order: 1103158

CASE NARRATIVE

SAMPLE RECEIPT:
Samples were received at the RTI Laboratory, Livonia, MI via commercial delivery on 3/4/2011. Samples were received in good condition. The sample set consisted of 14 air samples.

SAMPLE ANALYSIS:
Samples were analyzed at the RTI Livonia Laboratory for:
Petroleum Hydrocarbons (TPH as Diesel) – EPA Methods 3540/TO13
Fixed Gases (Noncondensable Gases/Light Hydrocarbons) – ASTM D-2504

QUALITY CONTROL:

Petroleum Hydrocarbons (TPH as Diesel) Analyses:

All sample analyses included a Method Blank, LCS, LCSD and MS/MSD, where applicable. All QC parameters were within established control limits except where noted on the QC summary forms or below. Initial and continuing calibration results were within method specifications.

Comments for SW_3540, Sample 1103158-002B: Sample tube had viscous liquid inside with a solvent type odor.

Batch ID 21419:

- Analytical Comments for METHOD EPA_TO13-TPH, SAMPLE 1103158-002b, Batch ID 21419: Elevated surrogate recovery due to matrix interference.

Fixed Gases (Noncondensable Gases/Light Hydrocarbons) Analyses:

All sample analyses included a Method Blank, LCS, LCSD and Duplicate, where applicable. All QC parameters were within established control limits except where noted on the QC summary forms or below. Initial and continuing calibration results were within method specifications.

Samples collected in Tedlar bags have a limited holding time as specified by the manufacturer for the collection of volatile organic compounds. There is no known stability data for the analytes of interest for this project collected in Tedlar bags. The standard holding time is 48 hours for Tedlar bags. Due to the nature of the project sample analysis within 48 hours was not feasible.

RTI Laboratories, Inc.

Date: *15-Apr.-11*

CLIENT: Shaw Environmental & Infrastructure, Inc.
Project: Kirtland AFB
Task Order: 02
Lab Order: 1103158

CASE NARRATIVE

No other problems were noted during the analytical events associated with this project.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Signed: Charles O'Bryan
Charles O'Bryan, Director, Quality Management

Date: 4/15/2011

1103158

Shaw
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No. 140705-SV

Project Number: 140705
Project Name: Kirtland AFB
Sample Coordinator: Mark Lyon
Turnaround Time:

Samples Shipment Date: 25 FEB 2011
Lab Destination: RTI Laboratories
Lab Contact: Mike Truchan
Project Contact: Pamela Moss
Carrier/Waybill No.: UPS#1Z65V6900398531612

Bill To: Shaw Environmental Inc - Accounts P
PO Box 98519
Baton Rouge LA 70884

Report To: Pamela Moss
7604 Technology Way, Suite 300
Denver CO 80237

Special Instructions:

Possible Hazard Indentification:
Non-hazard X Flammable Skin Irritant Poison B Radiological Unknown

Sample Disposal:
Return to Client Disposal by Lab X Archive (mos.)

1. Relinquished By (Signature/Affiliation) Mark Lyon Shaw Environmental Date: 2-25-11 Time: 1630
2. Relinquished By (Signature/Affiliation) Date: Time:
3. Relinquished By (Signature/Affiliation) Date: Time:

1. Received By (Signature/Affiliation) Kelly Jones / RTI Labs Date: Time:
2. Received By (Signature/Affiliation) Date: Time:
3. Received By (Signature/Affiliation) Date: Time:

Comments: UPS GROUND SERVICE
Rec'd Tedlar Bags
+ XAD tubes only -
Amber vac's arrived 3/3/11

Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
VA9001 TB	FIELDOG AQ VA9001 TB-1E	24 FEB 2011	09 00	1 L BOTTLEVAC	1	None Required	VOCs / TPH by TO-15			N		
VA9001	STACK IN GS VA9001 REG	24 FEB 2011	13 30	1 L BOTTLEVAC	1	None Required	VOCs / TPH by TO-15			N		
VA9001	STACK IN GS VA9001 REG	24 FEB 2011	13 30	1 L Tedlar Bag	1	None Required	Fixed Gases by ASTM D2504			N		
VA9001	STACK IN GS VA9001 REG	24 FEB 2011	13 30	2 in OVS XAD-2	1	None Required	TPH as Diesel by SW846 8015B			N		
VA9002	STACK IN GS VA9002 FG	24 FEB 2011	16 00	1 L BOTTLEVAC	1	None Required	VOCs / TPH by TO-15			N		
VA9002	STACK IN GS VA9002 FG	24 FEB 2011	16 00	1 L Tedlar Bag	1	None Required	Fixed Gases by ASTM D2504			N		
VA9002	STACK IN GS VA9002 FG	24 FEB 2011	16 00	2 in OVS XAD-2	1	None Required	TPH as Diesel by SW846 8015B			N		
[illegible]	STACK INDIRECT GS VA9001 [illegible]	24 FEB 2011	10 10	1 L BOTTLEVAC	1	None Required	VOCs / TPH by TO-15			N		

Shaw
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

1103158

Reference Document No 140705-SV

	Sample No	Sample Name	Sample Date	Sample Time	Container		Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
3	VA9003	ST10L-POST1C1-GS-VA9003-REG	24-FEB-2011	10:10	1 L Tedlar Bag	1	None Required	Fixed Gases by ASTM D2504			N		
	VA9004	ST10L-POST1C2-GS-VA9004-REG	24-FEB-2011	10:15	1 L BOTTLEVAC	1	None Required	VOCs / TPH by TO-15			N		
4	VA9004	ST10L-POST1C2-GS-VA9004-RLG	24-FEB-2011	10:15	1 L Tedlar Bag	1	None Required	Fixed Gases by ASTM D2504			N		
5	VA9005	KAFB1065-PA-GS-VA9005-RLG	25-FEB-2011	10:45	1 L Tedlar Bag	1	None Required	Fixed Gases by ASTM D2504			N		
5	VA9005	KAFB1065-IN-GS-VA9005-REG	25-FEB-2011	10:45	2 In OV5 XAD-2	1	None Required	TPH as Diesel by SW846 8015B			N		
	VA9005	KAFB1065-IN-GS-VA9005-REG	25-FEB-2011	10:45	1 L BOTTLEVAC	1	None Required	VOCs / TPH by TO-15			N		
	VA9006	KAFB1065-POST1C1-GS-VA9006-REG	25-FEB-2011	10:15	1 L BOTTLEVAC	1	None Required	VOCs / TPH by TO-15			N		
6	VA9006	KAFB1065-POST1C1-GS-VA9006-REG	25-FEB-2011	10:15	1 L Tedlar Bag	1	None Required	Fixed Gases by ASTM D2504			N		
	VA9007	KAFB1065-POST1C2-GS-VA9007-REG	25-FEB-2011	10:30	1 L BOTTLEVAC	1	None Required	VOCs / TPH by TO-15			N		
7	VA9007	KAFB1065-POST1C2-GS-VA9007-REG	25-FEB-2011	10:30	1 L Tedlar Bag	1	None Required	Fixed Gases by ASTM D2504			N		
	VA9008	KAFB1065-IN-GS-VA9008-REG	24-FEB-2011	12:10	1 L BOTTLEVAC	1	None Required	VOCs / TPH by TO-15			N		
8	VA9008	KAFB1065-IN-GS-VA9008-REG	24-FEB-2011	12:10	1 L Tedlar Bag	1	None Required	Fixed Gases by ASTM D2504			N		
8	VA9008	KAFB1065-IN-GS-VA9008-REG	24-FEB-2011	12:10	2 In OV5 XAD-2	1	None Required	TPH as Diesel by SW846 8015B			N		
	VA9009	KAFB1065-POST1C1-GS-VA9009-REG	24-FEB-2011	11:25	1 L BOTTLEVAC	1	None Required	VOCs / TPH by TO-15			N		
9	VA9009	KAFB1065-POST1C1-GS-VA9009-REG	24-FEB-2011	11:25	1 L Tedlar Bag	1	None Required	Fixed Gases by ASTM D2504			N		
10	VA9010	KAFB1065-POST1C2-GS-VA9010-REG	24-FEB-2011	11:35	1 L Tedlar Bag	1	None Required	Fixed Gases by ASTM D2504			N		
	VA9010	KAFB1065-POST1C2-GS-VA9010-REG	24-FEB-2011	11:35	1 L BOTTLEVAC	1	None Required	VOCs / TPH by TO-15			N		
	VA9011	KAFB1065-POST1C2-GS-VA9011-FD	24-FEB-2011	11:45	1 L BOTTLEVAC	1	None Required	VOCs / TPH by TO-15			N		
11	VA9011	KAFB1065-POST1C2-GS-VA9011-FD	24-FEB-2011	11:45	1 L Tedlar Bag	1	None Required	Fixed Gases by ASTM D2504			N		
	VA9012	KAFB1065-IN-GS-VA9012-REG	25-FEB-2011	09:25	1 L BOTTLEVAC	1	None Required	VOCs / TPH by TO-15			N		
12	VA9012	KAFB1065-IN-GS-VA9012-REG	25-FEB-2011	09:25	1 L Tedlar Bag	1	None Required	Fixed Gases by ASTM D2504			N		
12	VA9012	KAFB1065-IN-GS-VA9012-REG	25-FEB-2011	09:25	2 In OV5 XAD-2	1	None Required	TPH as Diesel by SW846 8015B			N		
	VA9013	KAFB1065-POST1C1-GS-VA9013-REG	25-FEB-2011	08:45	1 L BOTTLEVAC	1	None Required	VOCs / TPH by TO-15			N		
13	VA9013	KAFB1065-POST1C1-GS-VA9013-REG	25-FEB-2011	08:45	1 L Tedlar Bag	1	None Required	Fixed Gases by ASTM D2504			N		
	VA9014	KAFB1065-POST1C2-GS-VA9014-REG	25-FEB-2011	09:05	1 L BOTTLEVAC	1	None Required	VOCs / TPH by TO-15			N		
14	VA9014	KAFB1065-POST1C2-GS-VA9014-REG	25-FEB-2011	09:05	1 L Tedlar Bag	1	None Required	Fixed Gases by ASTM D2504			N		

DATE 3/25/11
SIGNATURE

T - 10 Door: 1249
UPST 342649 MI 48150-1827
MI 482 9-02

UPS GROUND

1Z66V6900398535912

RTI LABORATORIES, INC.

RTI
31628 Glendale St.
Livonia, MI 48150
TEL: 7344228000 FAX: 7344225342
Website: www.rtilabs.com

Sample Receipt Checklist

Client Name: **SHA04** Date and Time Received: **3/4/2011 10:05:00 AM**

Work Order Number **1103158** RcptNo: **1** Received by: **Katherine Jones**

Completed by: Reviewed by:

Completed Date: 3/4/2011 4:03:37 PM Reviewed Date:

Carrier name: UPS

Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐	Not Present	☐
Are matrices correctly identified on Chain of custody?	Yes ☑	No ☐		
Is it clear what analyses were requested?	Yes ☑	No ☐		
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present	☑
Samples in proper container/bottle?	Yes ☑	No ☐		
Were correct preservatives used and noted?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
Were container lables complete (ID, Pres, Date)?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Was an attempt made to cool the samples?	Yes ☑	No ☐		
All samples received at a temp. of > 0° C to 6.0° C?	Yes ☐	No ☑		
Response when temperature is outside of range:	Not required			
Preservative added to bottles:				
Sample Temp. taken and recorded upon receipt?	Yes ☐	No ☑	To	°C
Water - Were bubbles absent in VOC vials?	Yes ☐	No ☐	No Vials	☑
Water - Was there Chlorine Present?	Yes ☐	No ☐	NA	☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	No Water	☑
Are Samples considered acceptable?	Yes ☑	No ☐		
Custody Seals present?	Yes ☑	No ☐		
Traffic Report or Packing Lists present?	Yes ☑	No ☐		
Airbill or Sticker?	Air Bill ☑	Sticker ☐	Not Present	☐
Airbill No:	1z66V6900398535912			
Sample Tags Present?	Yes ☐	No ☑		
Sample Tags Listed on COC?	Yes ☐	No ☑		
Tag Numbers:				
Sample Condition?	Intact ☑	Broken ☐	Leaking	☐

Case Number: SDG: SAS:

Adjusted? _____ Checked by

Any No and/or NA (not applicable) response must be detailed in the comments section below.

SampID	ContainerID	Type	Org pH	Adj pH	Req Min pH	Req Max pH
1103158-004A	Container-01 of 01	Bottle				
1103158-002B	Container-01 of 01	Bottle				
1103158-009A	Container-01 of 01	Bottle				
1103158-002A	Container-01 of 01	Bottle				
1103158-010A	Container-01 of 01	Bottle				
1103158-005B	Container-01 of 01	Bottle				
1103158-005A	Container-01 of 01	Bottle				
1103158-011A	Container-01 of 01	Bottle				
1103158-012B	Container-01 of 01	Bottle				
1103158-003A	Container-01 of 01	Bottle				
1103158-014A	Container-01 of 01	Bottle				
1103158-012A	Container-01 of 01	Bottle				
1103158-008B	Container-01 of 01	Bottle				
1103158-001B	Container-01 of 01	Bottle				
1103158-006A	Container-01 of 01	Bottle				
1103158-001A	Container-01 of 01	Bottle				
1103158-013A	Container-01 of 01	Bottle				
1103158-007A	Container-01 of 01	Bottle				
1103158-008A	Container-01 of 01	Bottle				

Adjusted? _____ Checked by _____

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client Contacted? ☐ Yes ☑ No ☐ NA Person Contacted:

Contact Mode: ☐ Phone: ☐ Fax: ☐ Email: ☐ In Person:

Client Instructions:

Date Contacted: Contacted By:

Regarding:

CorrectiveAction:

Comments:
Bottle Vac's rec'd 3/3/11 on WO 1103120

RTI LABORATORIES, INC.

RTI
31628 Glendale St.
Livonia, MI 48150
TEL: 7344228000 FAX: 7344225342
Website: www.rtilabs.com

Workorder Sample Summary

WO#: 1103158

28-Mar-11

CLIENT: Shaw Environmental & Infrastructure, Inc
Project: Kirtland AFB

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
1103158-001	ST106-IN-GS-VA9001-REG		2/24/2011 1:30:00 PM	3/4/2011 10:05:00 AM	Air
1103158-001	ST106-IN-GS-VA9001-REG		2/24/2011 1:30:00 PM	3/4/2011 10:05:00 AM	Air
1103158-002	ST-106-IN-GS-VA9002-FD		2/24/2011 4:00:00 PM	3/4/2011 10:05:00 AM	Air
1103158-002	ST-106-IN-GS-VA9002-FD		2/24/2011 4:00:00 PM	3/4/2011 10:05:00 AM	Air
1103158-003	ST106-POSTC1-GS-VA9003-REG		2/24/2011 10:10:00 AM	3/4/2011 10:05:00 AM	Air
1103158-004	ST106-POSTC2-GS-VA9004-REG		2/24/2011 10:15:00 AM	3/4/2011 10:05:00 AM	Air
1103158-005	KAFB1065-IN-GS-VA9005-REG		2/24/2011 10:45:00 AM	3/4/2011 10:05:00 AM	Air
1103158-005	KAFB1065-IN-GS-VA9005-REG		2/24/2011 10:45:00 AM	3/4/2011 10:05:00 AM	Air
1103158-006	KAFB1065-POSTC1-GS-VA9006-REG		2/24/2011 10:15:00 AM	3/4/2011 10:05:00 AM	Air
1103158-007	KAFB1065-POSTC2-GS-VA9007-REG		2/24/2011 10:30:00 AM	3/4/2011 10:05:00 AM	Air
1103158-008	KAFB1066-IN-GS-VA9008-REG		2/24/2011 12:10:00 PM	3/4/2011 10:05:00 AM	Air
1103158-008	KAFB1066-IN-GS-VA9008-REG		2/24/2011 12:10:00 PM	3/4/2011 10:05:00 AM	Air
1103158-009	KAFB1066-POSTC1-GS-VA9009-REG		2/24/2011 11:25:00 AM	3/4/2011 10:05:00 AM	Air
1103158-010	KAFB1066-POSTC2-GS-VA9010-REG		2/24/2011 11:35:00 AM	3/4/2011 10:05:00 AM	Air
1103158-011	KAFB1066-POSTC2-GS-VA9011-FD		2/24/2011 11:45:00 AM	3/4/2011 10:05:00 AM	Air
1103158-012	KAFB1068-IN-GS-VA9012-REG		2/25/2011 9:25:00 AM	3/4/2011 10:05:00 AM	Air
1103158-012	KAFB1068-IN-GS-VA9012-REG		2/25/2011 9:25:00 AM	3/4/2011 10:05:00 AM	Air
1103158-013	KAFB1068-POSTC1-GS-VA9013-REG		2/25/2011 8:45:00 AM	3/4/2011 10:05:00 AM	Air
1103158-014	KAFB1068-PSOTC2-GS-VA9014-REG		2/25/2011 9:05:00 AM	3/4/2011 10:05:00 AM	Air

RTI LABORATORIES, INC.

RTI
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Livonia, MI 48150
TEL: 7344228000 FAX: 7344225342
Website: www.rtilabs.com

DATES REPORT

WO#: 1103158

28-Mar-11

Client: Shaw Environmental & Infrastructure, Inc

Project: Kirtland AFB

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1103158-001A	ST106-IN-GS-VA9001-REG	2/24/2011 1:30:00 PM	Air	Noncondensable Gases and Light Hydrocarbons			3/11/2011 3:15:00 AM
1103158-001B				Petroleum Hydrocarbons		3/16/2011	3/18/2011 1:22:22 AM
				Petroleum Hydrocarbons		3/16/2011	3/18/2011 12:36:17 AM
1103158-002A	ST-106-IN-GS-VA9002-FD	2/24/2011 4:00:00 PM		Noncondensable Gases and Light Hydrocarbons			3/11/2011 3:37:00 AM
1103158-002B				Petroleum Hydrocarbons		3/16/2011	3/18/2011 2:08:18 AM
				Petroleum Hydrocarbons		3/16/2011	3/18/2011 2:54:16 AM
1103158-003A	ST106-POSTC1-GS-VA9003-REG	2/24/2011 10:10:00 AM		Noncondensable Gases and Light Hydrocarbons			3/11/2011 4:01:00 AM
1103158-004A	ST106-POSTC2-GS-VA9004-REG	2/24/2011 10:15:00 AM		Noncondensable Gases and Light Hydrocarbons			3/11/2011 4:21:00 AM
1103158-005A	KAFB1065-IN-GS-VA9005-REG	2/24/2011 10:45:00 AM		Noncondensable Gases and Light Hydrocarbons			3/11/2011 5:03:00 AM
1103158-005B				Petroleum Hydrocarbons		3/16/2011	3/18/2011 10:35:22 AM
				Petroleum Hydrocarbons		3/16/2011	3/18/2011 3:40:16 AM
1103158-006A	KAFB1065-POSTC1-GS-VA9006-REG	2/24/2011 10:15:00 AM		Noncondensable Gases and Light Hydrocarbons			3/11/2011 5:30:00 AM
1103158-007A	KAFB1065-POSTC2-GS-VA9007-REG	2/24/2011 10:30:00 AM		Noncondensable Gases and Light Hydrocarbons			3/11/2011 5:51:00 AM
1103158-008A	KAFB1066-IN-GS-VA9008-REG	2/24/2011 12:10:00 PM		Noncondensable Gases and Light Hydrocarbons			3/11/2011 6:12:00 AM
1103158-008B				Petroleum Hydrocarbons		3/16/2011	3/18/2011 4:26:09 AM
				Petroleum Hydrocarbons		3/16/2011	3/18/2011 5:12:03 AM
1103158-009A	KAFB1066-POSTC1-GS-VA9009-REG	2/24/2011 11:25:00 AM		Noncondensable Gases and Light Hydrocarbons			3/11/2011 6:36:00 AM
1103158-010A	KAFB1066-POSTC2-GS-VA9010-REG	2/24/2011 11:35:00 AM		Noncondensable Gases and Light Hydrocarbons			3/11/2011 6:58:00 AM
1103158-011A	KAFB1066-POSTC2-GS-VA9011-FD	2/24/2011 11:45:00 AM		Noncondensable Gases and Light Hydrocarbons			3/12/2011 5:16:00 AM

RTI LABORATORIES, INC.

RTI
31628 Glendale St.
Livonia, MI 48150
TEL: 7344228000 FAX: 7344225342
Website: www.rtilabs.com

DATES REPORT

WO#: 1103158

28-Mar-11

Client: Shaw Environmental & Infrastructure, Inc

Project: Kirtland AFB

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1103158-012A	KAFB1068-IN-GS-VA9012-REG	2/25/2011 9:25:00 AM	Air	Noncondensable Gases and Light Hydrocarbons			3/12/2011 5:38:00 AM
1103158-012B				Petroleum Hydrocarbons		3/16/2011	3/18/2011 6:43:42 AM
				Petroleum Hydrocarbons		3/16/2011	3/18/2011 5:57:57 AM
1103158-013A	KAFB1068-POSTC1-GS-VA9013-REG	2/25/2011 8:45:00 AM		Noncondensable Gases and Light Hydrocarbons			3/12/2011 5:59:00 AM
1103158-014A	KAFB1068-PSOTC2-GS-VA9014-REG	2/25/2011 9:05:00 AM		Noncondensable Gases and Light Hydrocarbons			3/12/2011 6:19:00 AM

RTI LABORATORIES, INC.

RTI
31628 Glendale St.
Livonia, MI 48150
TEL: 7344228000 FAX: 7344225342
Website: www.rtilabs.com

Analytical Report

(consolidated)

WO#: 1103158

Date Reported: 3/28/2011

CLIENT: Shaw Environmental & Infrastructure, Inc **Collection Date:** 2/24/2011 1:30:00 PM

Project: Kirtland AFB

Lab ID: 1103158-001 **Matrix:** AIR

Client Sample ID ST106-IN-GS-VA9001-REG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PETROLEUM HYDROCARBONS				**TO-13A**	**SW3540C**	Analyst: **MB**
Hydrocarbons C12-C28	6,900	800		µg, total	4	3/18/2011 1:22:22 AM
NONCONDENSABLE GASES AND LIGHT HYDROCARBONS				**ASTM-D2504**		Analyst: **MB**
Carbon dioxide	1.5	0.30	H	%	1	3/11/2011 3:15:00 AM
Carbon Monoxide	ND	0.14	H	%	1	3/11/2011 3:15:00 AM
Methane	ND	0.090	H	%	1	3/11/2011 3:15:00 AM
Nitrogen	77	1.4	H	%	1	3/11/2011 3:15:00 AM
Oxygen	17	0.080	H	%	1	3/11/2011 3:15:00 AM

Qualifiers:				
	*/X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Estimated concentration	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

RTI LABORATORIES, INC.

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31628 Glendale St.
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Analytical Report

(consolidated)

WO#: 1103158

Date Reported: 3/28/2011

CLIENT: Shaw Environmental & Infrastructure, Inc **Collection Date:** 2/24/2011 4:00:00 PM

Project: Kirtland AFB

Lab ID: 1103158-002 **Matrix:** AIR

Client Sample ID ST-106-IN-GS-VA9002-FD

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PETROLEUM HYDROCARBONS				**TO-13A**	**SW3540C**	Analyst: **MB**
Hydrocarbons C12-C28	8,900	800		µg, total	4	3/18/2011 2:54:16 AM
NONCONDENSABLE GASES AND LIGHT HYDROCARBONS				**ASTM-D2504**		Analyst: **MB**
Carbon dioxide	1.4	0.30	H	%	1	3/11/2011 3:37:00 AM
Carbon Monoxide	ND	0.14	H	%	1	3/11/2011 3:37:00 AM
Methane	ND	0.090	H	%	1	3/11/2011 3:37:00 AM
Nitrogen	77	1.4	H	%	1	3/11/2011 3:37:00 AM
Oxygen	18	0.080	H	%	1	3/11/2011 3:37:00 AM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Estimated concentration	M	Manual Integration used to determine area response
ND	Not Detected at the Reporting Limit	PL	Permit Limit
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

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Analytical Report

(consolidated)

WO#: 1103158

Date Reported: 3/28/2011

CLIENT: Shaw Environmental & Infrastructure, Inc **Collection Date:** 2/24/2011 10:10:00 AM

Project: Kirtland AFB

Lab ID: 1103158-003 **Matrix:** AIR

Client Sample ID ST106-POSTC1-GS-VA9003-REG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NONCONDENSABLE GASES AND LIGHT HYDROCARBONS				**ASTM-D2504**		Analyst: **MB**
Carbon dioxide	9.3	0.30	H	%	1	3/11/2011 4:01:00 AM
Carbon Monoxide	0.16	0.14	H	%	1	3/11/2011 4:01:00 AM
Methane	ND	0.090	H	%	1	3/11/2011 4:01:00 AM
Nitrogen	85	1.4	H	%	1	3/11/2011 4:01:00 AM
Oxygen	3.3	0.080	H	%	1	3/11/2011 4:01:00 AM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Estimated concentration	M	Manual Integration used to determine area response
ND	Not Detected at the Reporting Limit	PL	Permit Limit
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

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Analytical Report

(consolidated)

WO#: 1103158

Date Reported: 3/28/2011

CLIENT: Shaw Environmental & Infrastructure, Inc **Collection Date:** 2/24/2011 10:15:00 AM

Project: Kirtland AFB

Lab ID: 1103158-004 **Matrix:** AIR

Client Sample ID ST106-POSTC2-GS-VA9004-REG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NONCONDENSABLE GASES AND LIGHT HYDROCARBONS				**ASTM-D2504**		Analyst: **MB**
Carbon dioxide	9.5	0.30	H	%	1	3/11/2011 4:21:00 AM
Carbon Monoxide	0.074	0.14	JH	%	1	3/11/2011 4:21:00 AM
Methane	ND	0.090	H	%	1	3/11/2011 4:21:00 AM
Nitrogen	84	1.4	H	%	1	3/11/2011 4:21:00 AM
Oxygen	3.7	0.080	H	%	1	3/11/2011 4:21:00 AM

Qualifiers:

*/X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Estimated concentration	M	Manual Integration used to determine area response
ND	Not Detected at the Reporting Limit	PL	Permit Limit
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

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Analytical Report

(consolidated)

WO#: 1103158

Date Reported: 3/28/2011

CLIENT: Shaw Environmental & Infrastructure, Inc **Collection Date:** 2/24/2011 10:45:00 AM

Project: Kirtland AFB

Lab ID: 1103158-005 **Matrix:** AIR

Client Sample ID KAFB1065-IN-GS-VA9005-REG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PETROLEUM HYDROCARBONS				**TO-13A**	**SW3540C**	Analyst: **MB**
Hydrocarbons C12-C28	22,000	800		µg, total	4	3/18/2011 10:35:22 AM
NONCONDENSABLE GASES AND LIGHT HYDROCARBONS				**ASTM-D2504**		Analyst: **MB**
Carbon dioxide	ND	0.30	H	%	1	3/11/2011 5:03:00 AM
Carbon Monoxide	ND	0.14	H	%	1	3/11/2011 5:03:00 AM
Methane	ND	0.090	H	%	1	3/11/2011 5:03:00 AM
Nitrogen	76	1.4	H	%	1	3/11/2011 5:03:00 AM
Oxygen	20	0.080	H	%	1	3/11/2011 5:03:00 AM

Qualifiers:				
	*/X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Estimated concentration	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

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Analytical Report

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WO#: 1103158

Date Reported: 3/28/2011

CLIENT: Shaw Environmental & Infrastructure, Inc **Collection Date:** 2/24/2011 10:15:00 AM

Project: Kirtland AFB

Lab ID: 1103158-006 **Matrix:** AIR

Client Sample ID KAFB1065-POSTC1-GS-VA9006-REG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NONCONDENSABLE GASES AND LIGHT HYDROCARBONS				**ASTM-D2504**		Analyst: **MB**
Carbon dioxide	5.0	0.30	H	%	1	3/11/2011 5:30:00 AM
Carbon Monoxide	0.17	0.14	H	%	1	3/11/2011 5:30:00 AM
Methane	ND	0.090	H	%	1	3/11/2011 5:30:00 AM
Nitrogen	81	1.4	H	%	1	3/11/2011 5:30:00 AM
Oxygen	10	0.080	H	%	1	3/11/2011 5:30:00 AM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Estimated concentration	M	Manual Integration used to determine area response
ND	Not Detected at the Reporting Limit	PL	Permit Limit
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

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Analytical Report

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WO#: 1103158

Date Reported: 3/28/2011

CLIENT: Shaw Environmental & Infrastructure, Inc **Collection Date:** 2/24/2011 10:30:00 AM

Project: Kirtland AFB

Lab ID: 1103158-007 **Matrix:** AIR

Client Sample ID KAFB1065-POSTC2-GS-VA9007-REG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NONCONDENSABLE GASES AND LIGHT HYDROCARBONS				**ASTM-D2504**		Analyst: **MB**
Carbon dioxide	9.1	0.30	H	%	1	3/11/2011 5:51:00 AM
Carbon Monoxide	0.26	0.14	H	%	1	3/11/2011 5:51:00 AM
Methane	ND	0.090	H	%	1	3/11/2011 5:51:00 AM
Nitrogen	82	1.4	H	%	1	3/11/2011 5:51:00 AM
Oxygen	4.0	0.080	H	%	1	3/11/2011 5:51:00 AM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Estimated concentration	M	Manual Integration used to determine area response
ND	Not Detected at the Reporting Limit	PL	Permit Limit
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

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Analytical Report

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WO#: 1103158

Date Reported: 3/28/2011

CLIENT: Shaw Environmental & Infrastructure, Inc **Collection Date:** 2/24/2011 12:10:00 PM

Project: Kirtland AFB

Lab ID: 1103158-008 **Matrix:** AIR

Client Sample ID KAFB1066-IN-GS-VA9008-REG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PETROLEUM HYDROCARBONS				**TO-13A**	**SW3540C**	Analyst: **MB**
Hydrocarbons C12-C28	4,000	800		µg, total	4	3/18/2011 5:12:03 AM
NONCONDENSABLE GASES AND LIGHT HYDROCARBONS				**ASTM-D2504**		Analyst: **MB**
Carbon dioxide	1.7	0.30	H	%	1	3/11/2011 6:12:00 AM
Carbon Monoxide	ND	0.14	H	%	1	3/11/2011 6:12:00 AM
Methane	ND	0.090	H	%	1	3/11/2011 6:12:00 AM
Nitrogen	80	1.4	H	%	1	3/11/2011 6:12:00 AM
Oxygen	14	0.080	H	%	1	3/11/2011 6:12:00 AM

Qualifiers:				
	*/X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Estimated concentration	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

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Analytical Report

(consolidated)

WO#: 1103158

Date Reported: 3/28/2011

CLIENT: Shaw Environmental & Infrastructure, Inc **Collection Date:** 2/24/2011 11:25:00 AM

Project: Kirtland AFB

Lab ID: 1103158-009 **Matrix:** AIR

Client Sample ID KAFB1066-POSTC1-GS-VA9009-REG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NONCONDENSABLE GASES AND LIGHT HYDROCARBONS				**ASTM-D2504**		Analyst: **MB**
Carbon dioxide	8.0	0.30	H	%	1	3/11/2011 6:36:00 AM
Carbon Monoxide	0.44	0.14	H	%	1	3/11/2011 6:36:00 AM
Methane	ND	0.090	H	%	1	3/11/2011 6:36:00 AM
Nitrogen	83	1.4	H	%	1	3/11/2011 6:36:00 AM
Oxygen	4.2	0.080	H	%	1	3/11/2011 6:36:00 AM

Qualifiers:				
	*/X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Estimated concentration	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

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Analytical Report

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WO#: 1103158

Date Reported: 3/28/2011

CLIENT: Shaw Environmental & Infrastructure, Inc **Collection Date:** 2/24/2011 11:35:00 AM

Project: Kirtland AFB

Lab ID: 1103158-010 **Matrix:** AIR

Client Sample ID KAFB1066-POSTC2-GS-VA9010-REG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NONCONDENSABLE GASES AND LIGHT HYDROCARBONS				**ASTM-D2504**		Analyst: **MB**
Carbon dioxide	8.7	0.30	H	%	1	3/11/2011 6:58:00 AM
Carbon Monoxide	0.37	0.14	H	%	1	3/11/2011 6:58:00 AM
Methane	ND	0.090	H	%	1	3/11/2011 6:58:00 AM
Nitrogen	84	1.4	H	%	1	3/11/2011 6:58:00 AM
Oxygen	3.0	0.080	H	%	1	3/11/2011 6:58:00 AM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Estimated concentration	M	Manual Integration used to determine area response
ND	Not Detected at the Reporting Limit	PL	Permit Limit
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

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Analytical Report

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WO#: 1103158

Date Reported: 3/28/2011

CLIENT: Shaw Environmental & Infrastructure, Inc **Collection Date:** 2/24/2011 11:45:00 AM

Project: Kirtland AFB

Lab ID: 1103158-011 **Matrix:** AIR

Client Sample ID KAFB1066-POSTC2-GS-VA9011-FD

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NONCONDENSABLE GASES AND LIGHT HYDROCARBONS				**ASTM-D2504**		Analyst: **MB**
Carbon dioxide	8.3	0.30	H	%	1	3/12/2011 5:16:00 AM
Carbon Monoxide	0.32	0.14	H	%	1	3/12/2011 5:16:00 AM
Methane	ND	0.090	H	%	1	3/12/2011 5:16:00 AM
Nitrogen	83	1.4	H	%	1	3/12/2011 5:16:00 AM
Oxygen	4.3	0.080	H	%	1	3/12/2011 5:16:00 AM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Estimated concentration	M	Manual Integration used to determine area response
ND	Not Detected at the Reporting Limit	PL	Permit Limit
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

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Analytical Report

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WO#: 1103158

Date Reported: 3/28/2011

CLIENT: Shaw Environmental & Infrastructure, Inc **Collection Date:** 2/25/2011 9:25:00 AM

Project: Kirtland AFB

Lab ID: 1103158-012 **Matrix:** AIR

Client Sample ID KAFB1068-IN-GS-VA9012-REG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PETROLEUM HYDROCARBONS				**TO-13A**	**SW3540C**	Analyst: **MB**
Hydrocarbons C12-C28	ND	200		µg, total	1	3/18/2011 5:57:57 AM
NONCONDENSABLE GASES AND LIGHT HYDROCARBONS				**ASTM-D2504**		Analyst: **MB**
Carbon dioxide	ND	0.30	H	%	1	3/12/2011 5:38:00 AM
Carbon Monoxide	ND	0.14	H	%	1	3/12/2011 5:38:00 AM
Methane	ND	0.090	H	%	1	3/12/2011 5:38:00 AM
Nitrogen	78	1.4	H	%	1	3/12/2011 5:38:00 AM
Oxygen	21	0.080	H	%	1	3/12/2011 5:38:00 AM

Qualifiers:

*IX	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Estimated concentration	M	Manual Integration used to determine area response
ND	Not Detected at the Reporting Limit	PL	Permit Limit
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

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Analytical Report

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WO#: 1103158

Date Reported: 3/28/2011

CLIENT: Shaw Environmental & Infrastructure, Inc **Collection Date:** 2/25/2011 8:45:00 AM

Project: Kirtland AFB

Lab ID: 1103158-013 **Matrix:** AIR

Client Sample ID KAFB1068-POSTC1-GS-VA9013-REG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NONCONDENSABLE GASES AND LIGHT HYDROCARBONS				**ASTM-D2504**		Analyst: **MB**
Carbon dioxide	8.2	0.30	H	%	1	3/12/2011 5:59:00 AM
Carbon Monoxide	0.64	0.14	H	%	1	3/12/2011 5:59:00 AM
Methane	ND	0.090	H	%	1	3/12/2011 5:59:00 AM
Nitrogen	83	1.4	H	%	1	3/12/2011 5:59:00 AM
Oxygen	3.3	0.080	H	%	1	3/12/2011 5:59:00 AM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Estimated concentration	M	Manual Integration used to determine area response
ND	Not Detected at the Reporting Limit	PL	Permit Limit
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

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Analytical Report

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WO#: 1103158

Date Reported: 3/28/2011

CLIENT: Shaw Environmental & Infrastructure, Inc **Collection Date:** 2/25/2011 9:05:00 AM

Project: Kirtland AFB

Lab ID: 1103158-014 **Matrix:** AIR

Client Sample ID KAFB1068-PSOTC2-GS-VA9014-REG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NONCONDENSABLE GASES AND LIGHT HYDROCARBONS				**ASTM-D2504**		Analyst: **MB**
Carbon dioxide	6.3	0.30	H	%	1	3/12/2011 6:19:00 AM
Carbon Monoxide	0.61	0.14	H	%	1	3/12/2011 6:19:00 AM
Methane	ND	0.090	H	%	1	3/12/2011 6:19:00 AM
Nitrogen	82	1.4	H	%	1	3/12/2011 6:19:00 AM
Oxygen	6.4	0.080	H	%	1	3/12/2011 6:19:00 AM

Qualifiers:				
	*/X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Estimated concentration	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

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QC SUMMARY REPORT

WO#: 1103158

28-Mar-11

Client: Shaw Environmental & Infrastructure, Inc

Project: Kirtland AFB

BatchID: 21419

Sample ID: lcs-21419 | SampType: LCS | TestCode: EPA_TO13-T | Units: µg, total | Prep Date: 3/16/2011 | RunNo: 39411

Client ID: ZZZZZZ | Batch ID: 21419 | TestNo: TO-13A | SW3540C | Analysis Date: 3/17/2011 | SeqNo: 747728

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrocarbons C12-C28	940	200	1,000	0	93.7	70	130				

Sample ID: lcsd-21419 | SampType: LCSD | TestCode: EPA_TO13-T | Units: µg, total | Prep Date: 3/16/2011 | RunNo: 39411

Client ID: ZZZZZZ | Batch ID: 21419 | TestNo: TO-13A | SW3540C | Analysis Date: 3/17/2011 | SeqNo: 747729

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrocarbons C12-C28	870	200	1,000	0	87.0	70	130	937.0	7.41	20	

Sample ID: mb-21419 | SampType: MBLK | TestCode: EPA_TO13-T | Units: µg, total | Prep Date: 3/16/2011 | RunNo: 39411

Client ID: ZZZZZZ | Batch ID: 21419 | TestNo: TO-13A | SW3540C | Analysis Date: 3/17/2011 | SeqNo: 747730

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrocarbons C12-C28	ND	200									

Qualifiers:

*/X	Value exceeds Maximum Contaminant Level	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Estimated concentration	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

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QC SUMMARY REPORT

WO#: 1103158
28-Mar-11

Client: Shaw Environmental & Infrastructure, Inc
Project: Kirtland AFB
BatchID: R39440

Sample ID: lcs | SampType: LCS | TestCode: ASTM-D2504 | Units: % | Prep Date: | RunNo: 39440
Client ID: ZZZZZZ | Batch ID: R39440 | TestNo: ASTM-D2504 | Analysis Date: 3/11/2011 | SeqNo: 748286

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon dioxide	2.3	0.10	2.500	0	91.4	70	130				
Carbon Monoxide	2.4	0.10	2.500	0	97.0	70	130				
Methane	1.9	0.50	2.000	0	96.6	70	130				
Nitrogen	2.7	0.10	2.500	0	107	70	130				
Oxygen	2.3	0.10	2.500	0	92.4	70	130				

Sample ID: lcsd | SampType: LCSD | TestCode: ASTM-D2504 | Units: % | Prep Date: | RunNo: 39440
Client ID: ZZZZZZ | Batch ID: R39440 | TestNo: ASTM-D2504 | Analysis Date: 3/11/2011 | SeqNo: 748287

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon dioxide	2.3	0.10	2.500	0	91.6	70	130	2.286	0.218	20	
Carbon Monoxide	2.4	0.10	2.500	0	97.5	70	130	2.426	0.452	20	
Methane	2.0	0.50	2.000	0	97.7	70	130	1.932	1.13	20	
Nitrogen	2.7	0.10	2.500	0	107	70	130	2.667	0.710	20	
Oxygen	2.3	0.10	2.500	0	93.2	70	130	2.310	0.862	20	

Sample ID: mb | SampType: MBLK | TestCode: ASTM-D2504 | Units: % | Prep Date: | RunNo: 39440
Client ID: ZZZZZZ | Batch ID: R39440 | TestNo: ASTM-D2504 | Analysis Date: 3/11/2011 | SeqNo: 748288

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon dioxide	ND	0.30									
Carbon Monoxide	ND	0.14									
Methane	ND	0.090									
Nitrogen	ND	1.4									
Oxygen	ND	0.080									

Qualifiers:

*/X	Value exceeds Maximum Contaminant Level	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Estimated concentration	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

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QC SUMMARY REPORT

WO#: 1103158
28-Mar-11

Client: Shaw Environmental & Infrastructure, Inc
Project: Kirtland AFB

BatchID: R39440

Sample ID: 1103158-007Adup SampType: DUP TestCode: ASTM-D2504 Units: % Prep Date: RunNo: 39440
Client ID: KAFB1065-POSTC2- Batch ID: R39440 TestNo: ASTM-D2504 Analysis Date: 3/11/2011 SeqNo: 748299

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon dioxide	9.2	0.30						9.138	0.197	20	H
Carbon Monoxide	0.28	0.14						0.2590	6.72	20	H
Methane	ND	0.090						0	0	20	H
Nitrogen	82	1.4						82.30	0.199	20	H
Oxygen	4.1	0.080						4.018	2.31	20	H

Sample ID: 1103158-014Adup SampType: DUP TestCode: ASTM-D2504 Units: % Prep Date: RunNo: 39441
Client ID: KAFB1068-PSOTC2- Batch ID: R39440 TestNo: ASTM-D2504 Analysis Date: 3/12/2011 SeqNo: 748310

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon dioxide	6.3	0.30						6.311	0.413	20	H
Carbon Monoxide	0.61	0.14						0.6090	0.164	20	H
Methane	ND	0.090						0	0	20	H
Nitrogen	83	1.4						81.82	0.940	20	H
Oxygen	6.5	0.080						6.432	1.05	20	H

Qualifiers:

*/X	Value exceeds Maximum Contaminant Level	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Estimated concentration	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

RTI LABORATORIES, INC.

RTI
31628 Glendale St.
Livonia, MI 48150
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Website: www.rtilabs.com

QC SUMMARY REPORT

WO#: 1103158
28-Mar-11

Client: Shaw Environmental & Infrastructure, Inc
Project: Kirtland AFB
BatchID: R39440

Sample ID: lcs | SampType: LCS | TestCode: ASTM-D2504 | Units: % | Prep Date: | RunNo: 39440
Client ID: ZZZZZZ | Batch ID: R39440 | TestNo: ASTM-D2504 | Analysis Date: 3/11/2011 | SeqNo: 748286

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon dioxide	2.3	0.10	2.500	0	91.4	70	130				
Carbon Monoxide	2.4	0.10	2.500	0	97.0	70	130				
Methane	1.9	0.50	2.000	0	96.6	70	130				
Nitrogen	2.7	0.10	2.500	0	107	70	130				
Oxygen	2.3	0.10	2.500	0	92.4	70	130				

Sample ID: lcsd | SampType: LCSD | TestCode: ASTM-D2504 | Units: % | Prep Date: | RunNo: 39440
Client ID: ZZZZZZ | Batch ID: R39440 | TestNo: ASTM-D2504 | Analysis Date: 3/11/2011 | SeqNo: 748287

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon dioxide	2.3	0.10	2.500	0	91.6	70	130	2.286	0.218	20	
Carbon Monoxide	2.4	0.10	2.500	0	97.5	70	130	2.426	0.452	20	
Methane	2.0	0.50	2.000	0	97.7	70	130	1.932	1.13	20	
Nitrogen	2.7	0.10	2.500	0	107	70	130	2.667	0.710	20	
Oxygen	2.3	0.10	2.500	0	93.2	70	130	2.310	0.862	20	

Sample ID: mb | SampType: MBLK | TestCode: ASTM-D2504 | Units: % | Prep Date: | RunNo: 39440
Client ID: ZZZZZZ | Batch ID: R39440 | TestNo: ASTM-D2504 | Analysis Date: 3/11/2011 | SeqNo: 748288

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon dioxide	ND	0.30									
Carbon Monoxide	ND	0.14									
Methane	ND	0.090									
Nitrogen	ND	1.4									
Oxygen	ND	0.080									

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Estimated concentration	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

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QC SUMMARY REPORT

WO#: 1103158
28-Mar-11

Client: Shaw Environmental & Infrastructure, Inc
Project: Kirtland AFB

BatchID: R39440

Sample ID: 1103158-007Adup SampType: DUP TestCode: ASTM-D2504 Units: % Prep Date: RunNo: 39440
Client ID: KAFB1065-POSTC2- Batch ID: R39440 TestNo: ASTM-D2504 Analysis Date: 3/11/2011 SeqNo: 748299

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon dioxide	9.2	0.30						9.138	0.197	20	H
Carbon Monoxide	0.28	0.14						0.2590	6.72	20	H
Methane	ND	0.090						0	0	20	H
Nitrogen	82	1.4						82.30	0.199	20	H
Oxygen	4.1	0.080						4.018	2.31	20	H

Sample ID: 1103158-014Adup SampType: DUP TestCode: ASTM-D2504 Units: % Prep Date: RunNo: 39441
Client ID: KAFB1068-PSOTC2- Batch ID: R39440 TestNo: ASTM-D2504 Analysis Date: 3/12/2011 SeqNo: 748310

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon dioxide	6.3	0.30						6.311	0.413	20	H
Carbon Monoxide	0.61	0.14						0.6090	0.164	20	H
Methane	ND	0.090						0	0	20	H
Nitrogen	83	1.4						81.82	0.940	20	H
Oxygen	6.5	0.080						6.432	1.05	20	H

Qualifiers:

*/X	Value exceeds Maximum Contaminant Level	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
J	Estimated concentration	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

RTI Laboratories

PREP BATCH REPORT

Prep Start Date: **3/16/2011**
Prep End Date: **3/17/2011**

Prep Batch ID: **21419** Prep Code: **SW_3540** Technician: **Mike Budziak**

Initial Temp: **44 °C** Final Temp **44 °C**

Prep Factor Units: **mL / g**

Sample ID	ClientSampleID	Matrix	pH1	pH2	SampAmt	Sol Added	Sol Recov	Fin Vol	factor	PrepStart	PrepEnd
LCS-21419		Solid			1	0	0	2	2.000	3/16/2011	3/17/2011
LCSD-21419		Solid			1	0	0	2	2.000	3/16/2011	3/17/2011
MB-21419		Solid			1	0	0	2	2.000	3/16/2011	3/17/2011
1103158-001B	ST106-IN-GS-VA9001	Air			1	0	0	2	2.000	3/16/2011	3/17/2011
1103158-002B	ST-106-IN-GS-VA900	Air			1	0	0	2	2.000	3/16/2011	3/17/2011
1103158-005B	KAFB1065-IN-GS-VA	Air			1	0	0	2	2.000	3/16/2011	3/17/2011
1103158-008B	KAFB1066-IN-GS-VA	Air			1	0	0	2	2.000	3/16/2011	3/17/2011
1103158-012B	KAFB1068-IN-GS-VA	Air			1	0	0	2	2.000	3/16/2011	3/17/2011

Type	Chemical / Reagent ID	Chemical / Reagent Name	Container#	Container ID	Amount Added	Amount Unit
Chemical	654	methylene chloride	2934	Container-25 of 40	200	mL

Spike ID	Spike Name	Samp Type	Container#	Container ID	Amount Added	Amount Unit

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Run ID: GC-FID-NPD_110317A **Run No.:** 39411

Analytical Run Date: 3/17/2011 **InstrumentID:** GC-FID-NPD

Analyst: Mike Budziak **Column:** GC-FID-NPD

Calibration ID: **Column ID:** 0.53mm 1.0um cat10255 serri

Column Length: 30m

SampID	TestCode	SampType	Batch ID	Analysis Date/Time	QA By	Q	Comments
icb	EPA_TO13-TPH	CCB	R39411	3/17/2011 7:13:59 PM	Charles O'Bryan		
retention time mix	EPA_TO13-TPH	SAMP	R39411	3/17/2011 8:00:02 PM	Charles O'Bryan		
crql std 100ppm a	EPA_TO13-TPH	CRQL	R39411	3/17/2011 8:46:15 PM	Charles O'Bryan		
ccv std 1000ppm a	EPA_TO13-TPH	CCV	R39411	3/17/2011 9:32:16 PM	Charles O'Bryan		
lcs-21419	EPA_TO13-TPH	LCS	21419	3/17/2011 10:18:21 PM	Charles O'Bryan		
lcsd-21419	EPA_TO13-TPH	LCSD	21419	3/17/2011 11:04:20 PM	Charles O'Bryan		
mb-21419	EPA_TO13-TPH	MBLK	21419	3/17/2011 11:50:19 PM	Charles O'Bryan		
1103158-001b	EPA_TO13-TPH	SAMP	21419	3/18/2011 12:36:17 AM	Charles O'Bryan		
1103158-001b	EPA_TO13-TPH	SAMP	21419	3/18/2011 1:22:22 AM	Charles O'Bryan		
1103158-002b	EPA_TO13-TPH	SAMP	21419	3/18/2011 2:08:18 AM	Charles O'Bryan		
1103158-002b	EPA_TO13-TPH	SAMP	21419	3/18/2011 2:54:16 AM	Charles O'Bryan		
1103158-005b	EPA_TO13-TPH	SAMP	21419	3/18/2011 3:40:16 AM	Charles O'Bryan		
1103158-008b	EPA_TO13-TPH	SAMP	21419	3/18/2011 4:26:09 AM	Charles O'Bryan		
1103158-008b	EPA_TO13-TPH	SAMP	21419	3/18/2011 5:12:03 AM	Charles O'Bryan		
1103158-012b	EPA_TO13-TPH	SAMP	21419	3/18/2011 5:57:57 AM	Charles O'Bryan		
1103158-012b	EPA_TO13-TPH	SAMP	21419	3/18/2011 6:43:42 AM	Charles O'Bryan		
ccb b	EPA_TO13-TPH	CCB	R39411	3/18/2011 7:29:40 AM	Charles O'Bryan		
crql std 100ppm b	EPA_TO13-TPH	CRQL	R39411	3/18/2011 8:15:23 AM	Charles O'Bryan		
ccv std 1000ppm b	EPA_TO13-TPH	CCV	R39411	3/18/2011 9:01:13 AM	Charles O'Bryan		
1103158-005b	EPA_TO13-TPH	SAMP	21419	3/18/2011 10:35:22 AM	Charles O'Bryan		
ccb c	EPA_TO13-TPH	CCB	R39411	3/18/2011 11:21:12 AM	Charles O'Bryan		
crql std 100ppm c	EPA_TO13-TPH	CRQL	R39411	3/18/2011 12:07:14 PM	Charles O'Bryan		
ccv std 1000ppm c	EPA_TO13-TPH	CCV	R39411	3/18/2011 12:53:20 PM	Charles O'Bryan		

RTI Laboratories

ANALYTICAL RUN Summary

29-Mar-11

RunNo 39411

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747727	icb	EPA_TO13-TPH	CCB		3/17/2011 7:13:5	1	R39411		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	ug/ml		0		0	0	0	75	200	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747731	retention time mix	EPA_TO13-TPH	SAMP		3/17/2011 8:00:0	1	R39411		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	ug/ml		0		0	0	0	75	200	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747724	crql std 100ppm a	EPA_TO13-TPH	CRQL		3/17/2011 8:46:1	1	R39411		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	ug/ml	80.783859	80.783859		100	0	0	75	200	0	81%	70	130	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747721	ccv std 1000ppm a	EPA_TO13-TPH	CCV		3/17/2011 9:32:1	1	R39411		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	ug/ml	913.659668	913.659668		1000	0	0	75	200	0	91%	85	115	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747728	lcs-21419	EPA_TO13-TPH	LCS		3/17/2011 10:18:	1	21419	3/16/2011	0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	µg, total	468.518677	937.037354		1000	0	0	75	200	0	94%	70	130	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747729	lcsd-21419	EPA_TO13-TPH	LCSD		3/17/2011 11:04:	1	21419	3/16/2011	0	747728	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	µg, total	435.041931	870.083862		1000	0	937.03735	75	200	0	87%	70	130	7%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747730	mb-21419	EPA_TO13-TPH	MBLK		3/17/2011 11:50:	1	21419	3/16/2011	0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	µg, total	7.079749	0		0	0	0	75	200	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747709	1103158-001b (Container-01 of 01)	EPA_TO13-TPH	SAMP		3/18/2011 12:36:	1	21419	3/16/2011	0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	µg, total	3549.66016	7099.32031		0	0	0	75	200	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747710	1103158-001b (Container-01 of 01)	EPA_TO13-TPH	SAMP		3/18/2011 1:22:2	4	21419	3/16/2011	0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	µg, total	860.949768	6887.59814		0	0	0	300	800	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747711	1103158-002b (Container-01 of 01)	EPA_TO13-TPH	SAMP		3/18/2011 2:08:1	1	21419	3/16/2011	0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	µg, total	4943.29395	9886.58789		0	0	0	75	200	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747712	1103158-002b (Container-01 of 01)	EPA_TO13-TPH	SAMP		3/18/2011 2:54:1	4	21419	3/16/2011	0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	µg, total	1117.48401	8939.87207		0	0	0	300	800	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747713	1103158-005b (Container-01 of 01)	EPA_TO13-TPH	SAMP		3/18/2011 3:40:1	1	21419	3/16/2011	0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	µg, total	13106.3037	26212.6074		0	0	0	75	200	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747715	1103158-008b (Container-01 of 01)	EPA_TO13-TPH	SAMP		3/18/2011 4:26:0	1	21419	3/16/2011	0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	µg, total	2079.31567	4158.63135		0	0	0	75	200	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747716	1103158-008b (Container-01 of 01)	EPA_TO13-TPH	SAMP		3/18/2011 5:12:0	4	21419	3/16/2011	0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	µg, total	497.868805	3982.95044		0	0	0	300	800	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747717	1103158-012b (Container-01 of 01)	EPA_TO13-TPH	SAMP		3/18/2011 5:57:5	1	21419	3/16/2011	0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	µg, total	32.353279	0		0	0	0	75	200	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747718	1103158-012b (Container-01 of 01)	EPA_TO13-TPH	SAMP		3/18/2011 6:43:4	4	21419	3/16/2011	0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	µg, total	0	0		0	0	0	300	800	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747719	ccb b	EPA_TO13-TPH	CCB		3/18/2011 7:29:4	1	R39411		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	ug/ml		0		0	0	0	75	200	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747725	crql std 100ppm b	EPA_TO13-TPH	CRQL		3/18/2011 8:15:2	1	R39411		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	ug/ml	81.646652	81.646652		100	0	0	75	200	0	82%	70	130	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747722	ccv std 1000ppm b	EPA_TO13-TPH	CCV		3/18/2011 9:01:1	1	R39411		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	ug/ml	854.175171	854.175171		1000	0	0	75	200	0	85%	85	115	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747714	1103158-005b (Container-01 of 01)	EPA_TO13-TPH	SAMP		3/18/2011 10:35:	4	21419	3/16/2011	0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	µg, total	2791.27441	22330.1953		0	0	0	300	800	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747720	ccb c	EPA_TO13-TPH	CCB		3/18/2011 11:21:	1	R39411		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747720	ccb c	EPA_TO13-TPH	CCB		3/18/2011 11:21:	1	R39411		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	ug/ml		0		0	0	0	75	200	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747726	crql std 100ppm c	EPA_TO13-TPH	CRQL		3/18/2011 12:07:	1	R39411		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	ug/ml	84.216454	84.216454		100	0	0	75	200	0	84%	70	130	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
747723	ccv std 1000ppm c	EPA_TO13-TPH	CCV		3/18/2011 12:53:	1	R39411		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Hydrocarbons C12-C28	A	ug/ml	871.523804	871.523804		1000	0	0	75	200	0	87%	85	115	0%	

Surrogate Recovery - Analytical Sequence ID 39411

Sample ID	Actual	Result	% Rec.	Control Limits
icb	12.5	10.6381	85.10	
crql std 100ppm a	2.5	2.2082	88.33	
ccv std 1000ppm a	20	17.6782	88.39	
lcs-21419	12.5	12.7113	101.69	
lcsd-21419	12.5	10.662	85.30	
mb-21419	12.5	11.4485	91.59	
1103158-001b	12.5	12.2839	98.27	
1103158-001b-4	12.5	12.1432	97.15	
1103158-002b	12.5	57.3144	458.52	
1103158-002b-4	12.5	52.9208	423.37	
1103158-005b	12.5	10.8491	86.79	
1103158-008b	12.5	13.2316	105.85	
1103158-008b-4	12.5	11.7268	93.81	
1103158-012b	12.5	11.8051	94.44	
1103158-012b-4	12.5	10.3884	83.11	
ccb b	12.5	10.3986	83.19	
crql std 100ppm b	2.5	2.1599	86.40	
ccv std 1000ppm b	20	17.1445	85.72	
1103158-005b-4	12.5	9.7452	77.96	
ccb c	12.5	10.624	84.99	
crql std 100ppm c	2.5	2.1418	85.67	
ccv std 1000ppm c	20	17.7739	88.87	

Spikes and Surrogates Report

RunID: GC-FID-NPD_110317A **Analyst:** Mike Budziak

RunNo: 39411

Spikes

SeqNo	SampID	TestCode	SampType	BatchID	DF	Duplicate Of
747721	ccv std 1000ppm a	EPA_TO13-TPH	CCV	R39411	1	

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	Qual
☑	Hydrocarbons C12-C28	1000	913.66	91.37%	85	115		

Total Recoveries Out: 0

SeqNo	SampID	TestCode	SampType	BatchID	DF	Duplicate Of
747722	ccv std 1000ppm b	EPA_TO13-TPH	CCV	R39411	1	

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	Qual
☑	Hydrocarbons C12-C28	1000	854.175	85.42%	85	115		

Total Recoveries Out: 0

SeqNo	SampID	TestCode	SampType	BatchID	DF	Duplicate Of
747723	ccv std 1000ppm c	EPA_TO13-TPH	CCV	R39411	1	

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	Qual
☑	Hydrocarbons C12-C28	1000	871.524	87.15%	85	115		

Total Recoveries Out: 0

SeqNo	SampID	TestCode	SampType	BatchID	DF	Duplicate Of
747724	crql std 100ppm a	EPA_TO13-TPH	CRQL	R39411	1	

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	Qual
☑	Hydrocarbons C12-C28	100	80.7839	80.78%	70	130		

Total Recoveries Out: 0

SeqNo	SampID	TestCode	SampType	BatchID	DF	Duplicate Of
747725	crql std 100ppm b	EPA_TO13-TPH	CRQL	R39411	1	

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	Qual
☑	Hydrocarbons C12-C28	100	81.6467	81.65%	70	130		

Total Recoveries Out: 0

SeqNo	SampID	TestCode	SampType	BatchID	DF	Duplicate Of
747726	crql std 100ppm c	EPA_TO13-TPH	CRQL	R39411	1	

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	Qual
☑	Hydrocarbons C12-C28	100	84.2165	84.22%	70	130		

Total Recoveries Out: 0

SeqNo	SampID	TestCode	SampType	BatchID	DF	Duplicate Of
747728	lcs-21419	EPA_TO13-TPH	LCS	21419	1	

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	Qual
☑	Hydrocarbons C12-C28	1000	937.037	93.70%	70	130		

Total Recoveries Out: 0

SeqNo	SampID	TestCode	SampType	BatchID	DF	Duplicate Of
747729	lcsd-21419	EPA_TO13-TPH	LCSD	21419	1	747728

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	RPD	RPD Limit	RPD Out	Qual
☑	Hydrocarbons C12-C28	1000	870.084	87.01%	70	130		7.41%	20		

Total Recoveries Out: 0 **Total RPD Out:** 0

Method Blank Contamination Report

Blank ID: mb-21419

SeqNo: 747730

Analysis Date: 3/17/2011 11:50:19 PM

Analyst: Mike Budziak

Batch ID: 21419

TestCode: EPA_TO13-TPH

RunID: GC-FID-NPD_110317A

InstrumentID: GC-FID-NPD

No Contaminants Were Found in this Blank

The following Samples are associated with this blank:

Sample ID	SeqNo	TestCode	SampType	RunID	BatchID	AnalDate	DF
1103158-001b	747709	EPA_TO13-TPH	SAMP	GC-FID-NPD_110317A	21419	3/18/2011 12:36:17 AM	1
1103158-001b	747710	EPA_TO13-TPH	SAMP	GC-FID-NPD_110317A	21419	3/18/2011 1:22:22 AM	4
1103158-002b	747711	EPA_TO13-TPH	SAMP	GC-FID-NPD_110317A	21419	3/18/2011 2:08:18 AM	1
1103158-002b	747712	EPA_TO13-TPH	SAMP	GC-FID-NPD_110317A	21419	3/18/2011 2:54:16 AM	4
1103158-005b	747713	EPA_TO13-TPH	SAMP	GC-FID-NPD_110317A	21419	3/18/2011 3:40:16 AM	1
1103158-005b	747714	EPA_TO13-TPH	SAMP	GC-FID-NPD_110317A	21419	3/18/2011 10:35:22 AM	4
1103158-008b	747715	EPA_TO13-TPH	SAMP	GC-FID-NPD_110317A	21419	3/18/2011 4:26:09 AM	1
1103158-008b	747716	EPA_TO13-TPH	SAMP	GC-FID-NPD_110317A	21419	3/18/2011 5:12:03 AM	4
1103158-012b	747717	EPA_TO13-TPH	SAMP	GC-FID-NPD_110317A	21419	3/18/2011 5:57:57 AM	1
1103158-012b	747718	EPA_TO13-TPH	SAMP	GC-FID-NPD_110317A	21419	3/18/2011 6:43:42 AM	4
lcs-21419	747728	EPA_TO13-TPH	LCS	GC-FID-NPD_110317A	21419	3/17/2011 10:18:21 PM	1
lcsd-21419	747729	EPA_TO13-TPH	LCSD	GC-FID-NPD_110317A	21419	3/17/2011 11:04:20 PM	1

Varian Star Workstation - Generic SampleList Tue Mar 29 11:02:16 2011

SampleList: D:\star\Hp6890 GC\031711-c12-28.smp

Created: Thu Mar 17 12:05:39 2011
Modified: Fri Mar 18 12:47:31 2011

****

Line	Sample Name	Inj.	Multiplier
1	icb	1	1
2	retention time mix	1	1
3	crql std 100ppm a	1	1
4	ccv std 1000ppm a	1	1
5	lcs-21419	1	1
6	lcsd-21419	1	1
7	mb-21419	1	1
8	1103158-001b	1	1
9	1103158-001b1-4	1	1
10	1103158-002b	1	1
11	1103158-002b1-4	1	1
12	1103158-005b	1	1
13	1103158-008b	1	1
14	1103158-008b1-4	1	1
15	1103158-012b	1	1
16	1103158-012b1-4	1	1
17	ccb b	1	1
18	crql std 100ppm b	1	1
19	ccv std 1000ppm b	1	1
20	1103158-005b1-4	1	1
21	ccb c	1	1
22	crql std 100ppm c	1	1
23	ccv std 1000ppm c	1	1

Directory for Data Files: d:\star\data\hp6890 gc\2011-03\0317-c12-28

Data File Names: %s

Append to an existing RecalcList: d:\star\hp6890 gc\031711-c12-28.rcl.

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\icb.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : icb

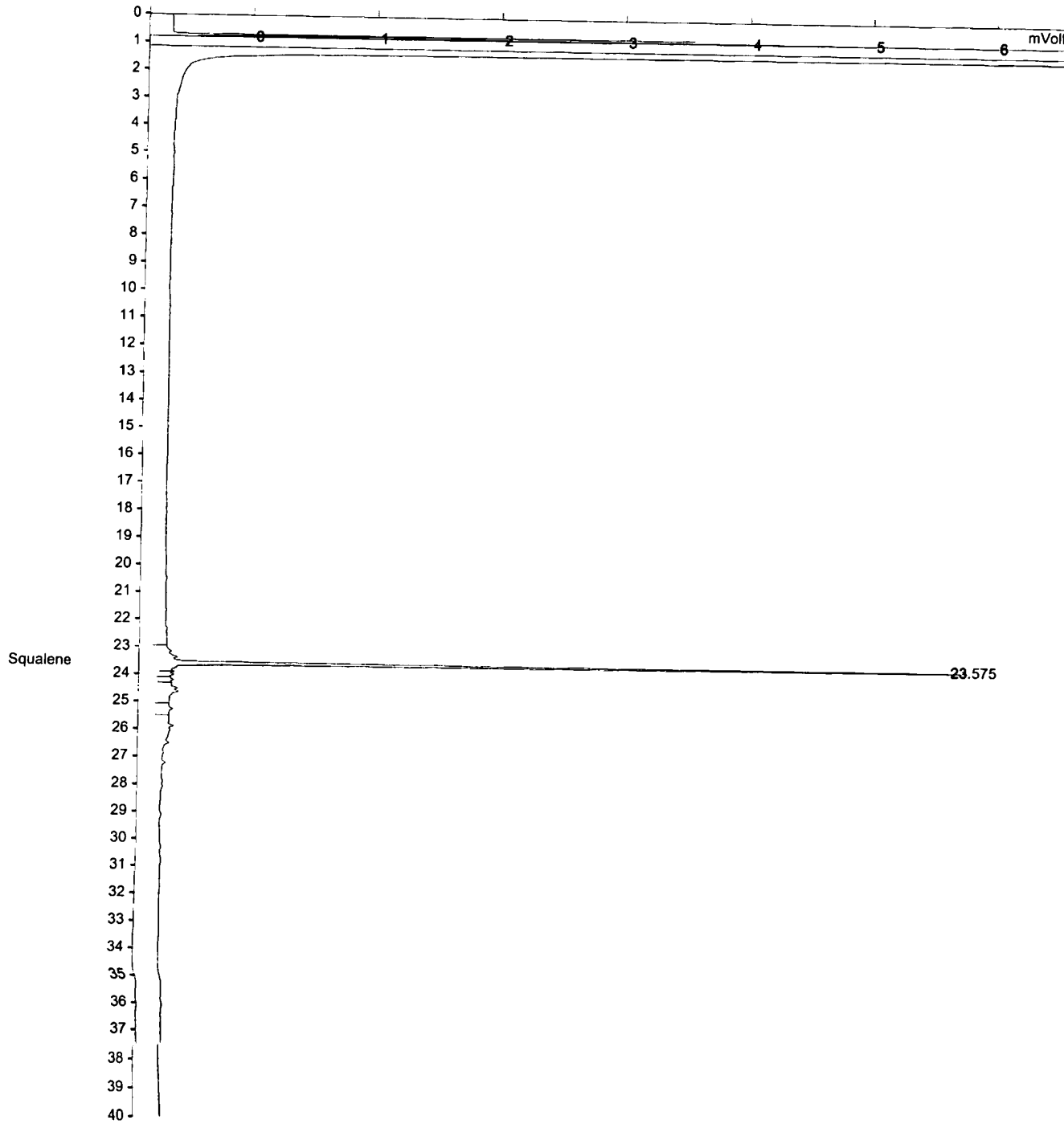
Injection Date: 3/17/11 7:13 PM Calculation Date: 3/18/11 10:19 AM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 30 Zero Offset = 11%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:11:01 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\icb.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : icb

Injection Date: 3/17/11 7:13 PM Calculation Date: 3/18/11 10:19 AM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Squalene	10.6381	23.575	0.006	27610	BV	4.1	0	
	Group 0	10.6381		0.006	27610				
	Totals:	10.6381		0.006	27610				

Total Unidentified Counts : 0 counts

Detected Peaks: 5 Rejected Peaks: 4 Identified Peaks: 1

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -653 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 4 microVolts

Manual injection

****

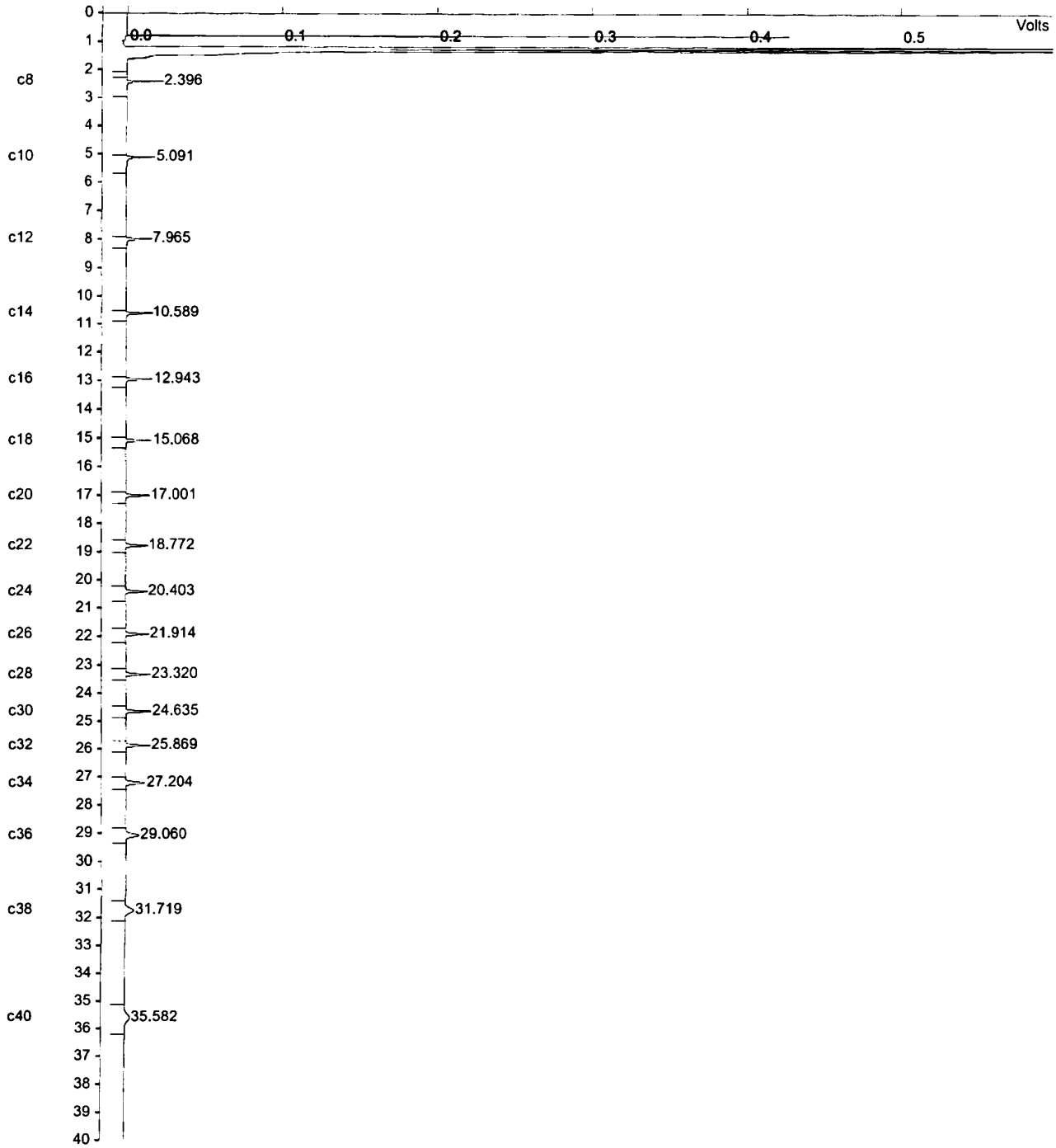
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\retention time mix.ru
Method File : d:\star\hp6890 gc\hydrocarbons-c10-40id.mth
Sample ID : retention time mix

Injection Date: 3/17/11 8:00 PM Calculation Date: 3/23/11 5:29 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 2523 Zero Offset = 2%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:11:06 2011

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\retention time mix.run
Method File : d:\star\hp6890 gc\hydrocarbons-c10-40id.mth
Sample ID : retention time mix

Injection Date: 3/17/11 8:00 PM Calculation Date: 3/23/11 5:29 PM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	c8	58.7279	2.396	0.016	64836	PB	2.4	0	
2	c10	55.6300	5.091	0.019	60153	BB	2.5	0	
3	c12	53.9463	7.965	0.018	57793	BB	2.8	0	
4	c14	53.8930	10.589	0.017	58554	BB	2.9	0	
5	c16	54.5739	12.943	0.015	59133	BB	3.0	0	
6	c18	53.8685	15.068	0.013	58676	BB	3.2	0	
7	c20	54.1172	17.001	0.011	58443	BB	3.4	0	
8	c22	55.6839	18.772	0.010	59066	BB	3.6	0	
9	c24	57.6661	20.403	0.008	58339	BB	3.6	0	
10	c26	59.1238	21.914	0.006	60661	BB	3.7	0	
11	c28	60.7296	23.320	0.005	63145	BB	3.7	0	
12	c30	61.4104	24.635	0.002	66372	BB	3.8	0	
13	c32	60.6223	25.869	0.002	67069	BB	3.9	0	
14	c34	57.8871	27.204	0.002	71670	BB	5.4	0	
15	c36	56.3449	29.060	-0.001	71972	BB	7.9	0	
16	c38	53.6395	31.719	-0.002	69213	BB	11.7	0	
17	c40	29.1966	35.582	-0.003	63207	BB	17.7	0	
	Group 0	937.0610		0.138	1068302				
	Totals:	937.0610		0.138	1068302				

Total Unidentified Counts : 403 counts

Detected Peaks: 18 Rejected Peaks: 0 Identified Peaks: 17

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -639 microVolts

Noise (used): 30 microVolts - fixed value
Noise (monitored before this run): 5 microVolts

Manual injection

****

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\crql std 100ppm a.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : crql std 100ppm a

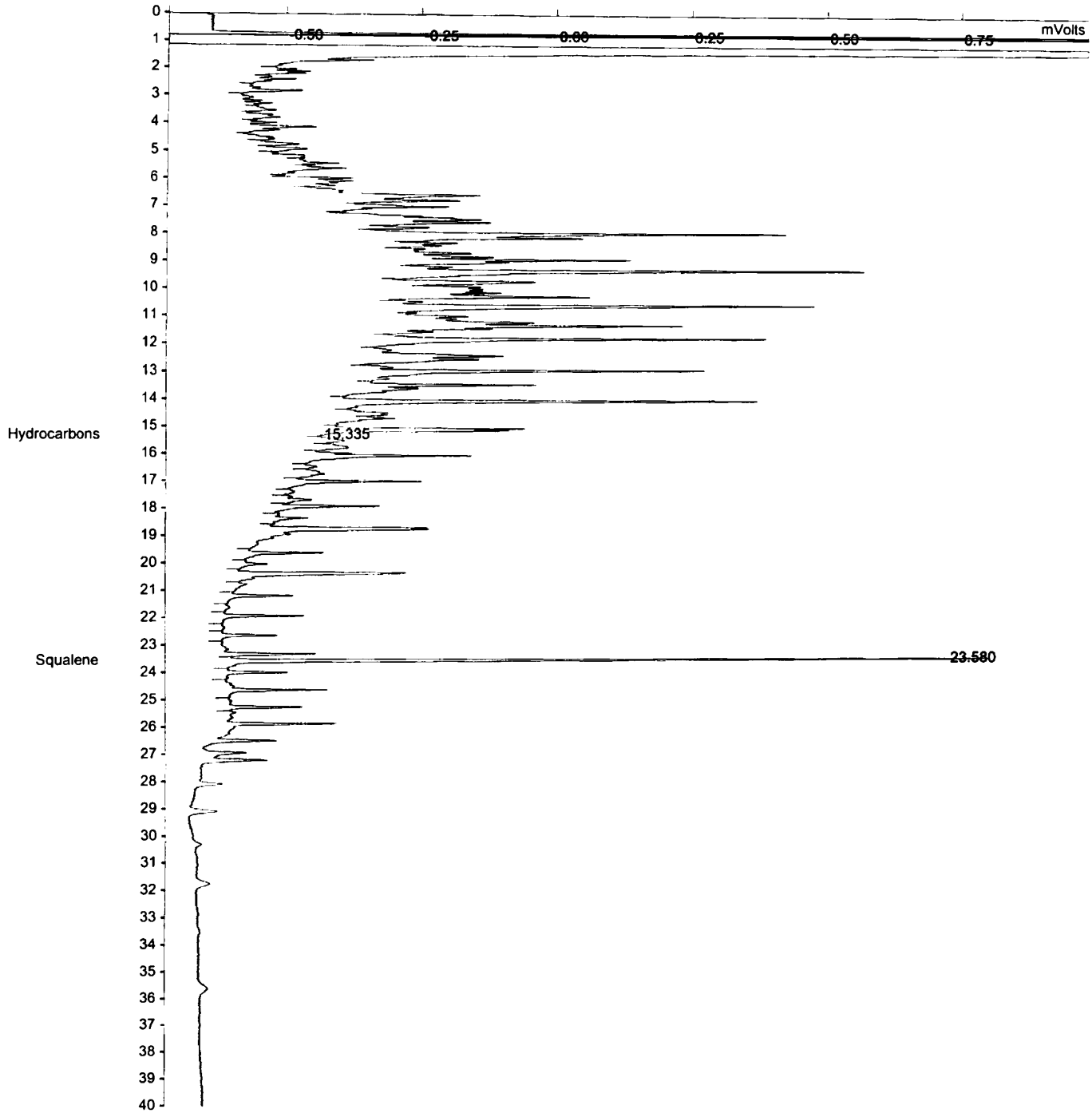
Injection Date: 3/17/11 8:46 PM Calculation Date: 3/18/11 10:20 AM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 7 Zero Offset = 42%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Verification Report

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\crql std 100ppm a.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : crql std 100ppm a

Injection Date: 3/17/11 8:46 PM Calculation Date: 3/18/11 10:20 AM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Verification
Peak Measurement: Peak Area
Calculation Type: External Standard
Level : 2
Tolerance : 20.0%

Peak No.	Peak Name	Expected Result (ug/ml)	Calculated Result (ug/ml)	Dev. %	Ret. Time (min)	Time Offset (min)	Area (counts)	Group	Status Codes
1	Hydrocarbons	100.0000	80.7839	19.2	15.335	0.000	237251	0	
2	Squalene	2.5000	2.2082	11.7	23.580	0.011	6014	0	
	Group 0		82.9921			0.011	243265		
	Totals:		82.9921			0.011	243265		

Total Unidentified Counts : 14859 counts

Detected Peaks: 60 Rejected Peaks: 15 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -638 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 5 microVolts

Manual injection

****

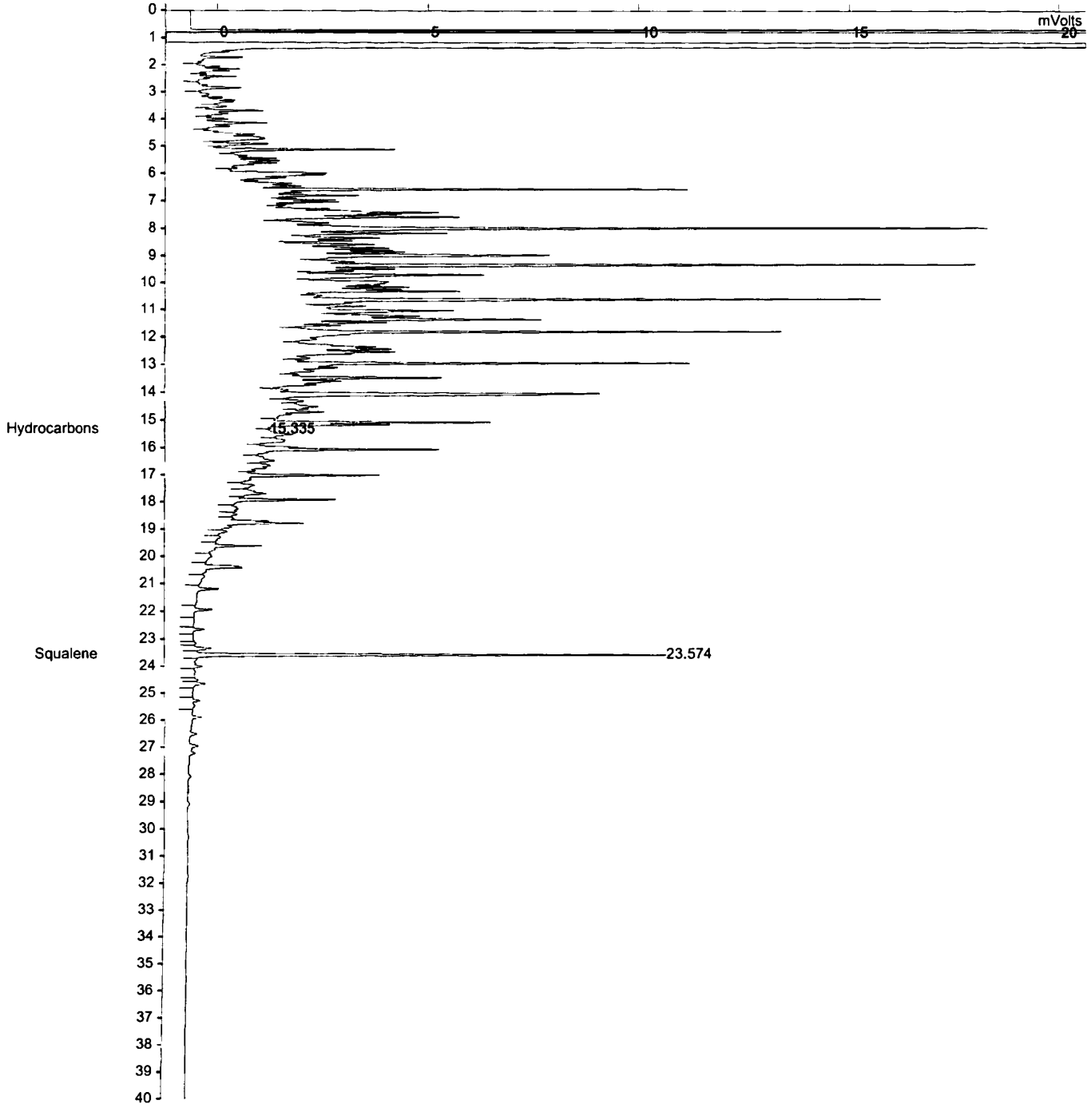
Title : DRO/ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\ccv std 1000ppm a.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : ccv std 1000ppm a

Injection Date: 3/17/11 9:32 PM Calculation Date: 3/18/11 10:21 AM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 89 Zero Offset = 5%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Verification Report

Title : DRO/ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\ccv std 1000ppm a.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : ccv std 1000ppm a

Injection Date: 3/17/11 9:32 PM Calculation Date: 3/18/11 10:21 AM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Verification
Peak Measurement: Peak Area
Calculation Type: External Standard
Level : 8
Tolerance : 20.0%

Peak No.	Peak Name	Expected Result (ug/ml)	Calculated Result (ug/ml)	Dev. %	Ret. Time (min)	Time Offset (min)	Area (counts)	Group	Status Codes
1	Hydrocarbons	1000.0000	913.6597	8.6	15.335	0.000	2293962	0	
2	Squalene	20.0000	17.6782	11.6	23.574	0.005	45326	0	
	Group 0		931.3379			0.005	2339288		
	Totals:		931.3379			0.005	2339288		

Total Unidentified Counts : 347383 counts

Detected Peaks: 66 Rejected Peaks: 5 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -644 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 5 microVolts

Manual injection

Requested Curve Type : quadratic
Requested Origin : ignore
Calibration Type : External Standard Analysis

Method Detector Type : ADC Board
Method Bus Address : 16
Method Channel : B

Calibration Dates
Last Injection Date : 3/16/11 11:59 PM

Last Recalculation Date : 3/17/11 3:35 PM

Retention Time (min)	Peak Name	Curve\ Origin	X^3	X^2	X	C	r^2	Cal. Range	No. of Points	Edit Codes
15.335	Hydrocarbons C12-	2 IG	-3.4203e-002	+2.5034e+003	+3.5238e+004	+2.8820e+002	+9.9994e-001	2-7	6	
23.569	Squalene	2 IG	-2.9256e+000	+2.5994e+003	+2.8820e+002		+9.9995e-001	2-7	6	

Curve Codes	Origin Codes	Edit Codes
1 linear	I include	1 curve
2 quadratic	IG ignore	2 origin
3 cubic	F force	3 coefficient

Ret. Time: 15.335 min. Peak Measurement: Area
Peak Name: Hydrocarbons C12-28 Curve\Origin: 2 IG

Level	Amount	Replicate No.	Response	Avg. Response	Std. Dev.
2	100.000000	1	283957	283957.0	#
3	200.000000	1	514918	514917.6	#
4	500.000000	1	1267060	1267060.1	#
5	1000.000000	1	2568985	2568985.0	#
6	2000.000000	1	4869749	4869748.5	#
7	5000.000000	1	11700516	11700516.0	#

Ret. Time: 23.569 min. Peak Measurement: Area
Peak Name: Squalene Curve\Origin: 2 IG

Level	Amount	Replicate No.	Response	Avg. Response	Std. Dev.
2	2.500000	1	7133	7132.7	#
3	5.000000	1	12739	12738.8	#
4	10.000000	1	26093	26093.0	#
5	20.000000	1	50935	50935.1	#
6	25.000000	1	63643	63643.1	#
7	50.000000	1	122921	122920.8	#

= Too few points to calculate.

Peak Name	Level	Rep.	Injection Date Time	Run Files
Hydrocarbons C12-28	2	1	3/16/11 8:09 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 100.run
	3	1	3/16/11 8:55 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 200.run
	4	1	3/16/11 9:41 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 500.run
	5	1	3/16/11 10:27 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 1000.run
	6	1	3/16/11 11:13 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 2000.run
	7	1	3/16/11 11:59 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 5000.run
Squalene	2	1	3/16/11 8:09 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 100.run
	3	1	3/16/11 8:55 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 200.run
	4	1	3/16/11 9:41 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 500.run
	5	1	3/16/11 10:27 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 1000.run
	6	1	3/16/11 11:13 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 2000.run
	7	1	3/16/11 11:59 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 5000.run

****

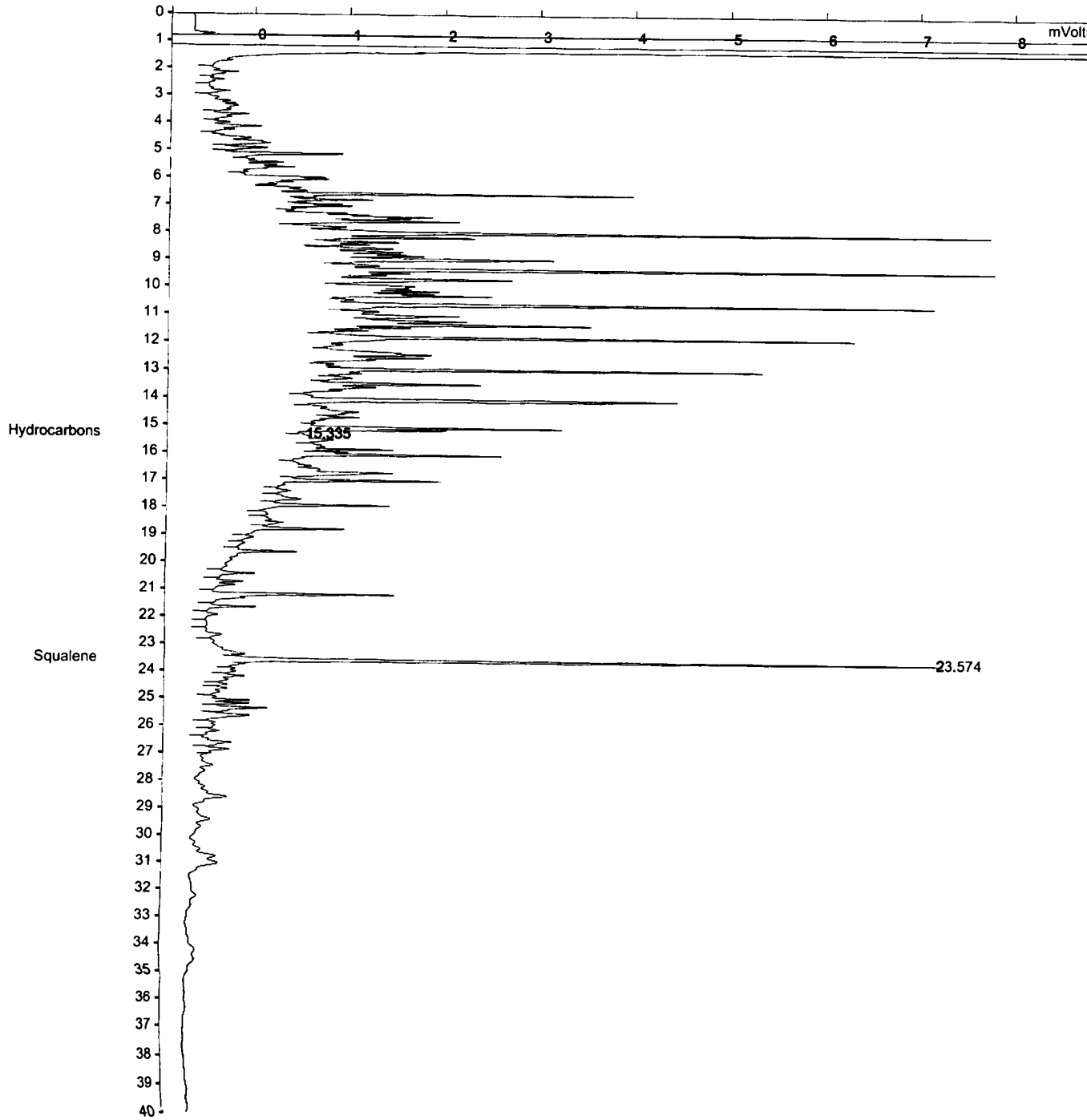
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\lcs-21419.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : lcs-21419

Injection Date: 3/17/11 10:18 PM Calculation Date: 3/23/11 5:44 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 39 Zero Offset = 9%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:11:18 2011

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\lcs-21419.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : lcs-21419

Injection Date: 3/17/11 10:18 PM Calculation Date: 3/23/11 5:44 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	468.5187	15.335	0.000	1200630	GR	0.0	0	
2	Squalene	12.7133	23.574	0.005	32862	VV	0.0	0	
	Group 0	481.2320		0.005	1233492				
	Totals:	481.2320		0.005	1233492				

Total Unidentified Counts : 141080 counts

Detected Peaks: 70 Rejected Peaks: 16 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -647 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 7 microVolts

Manual injection

****

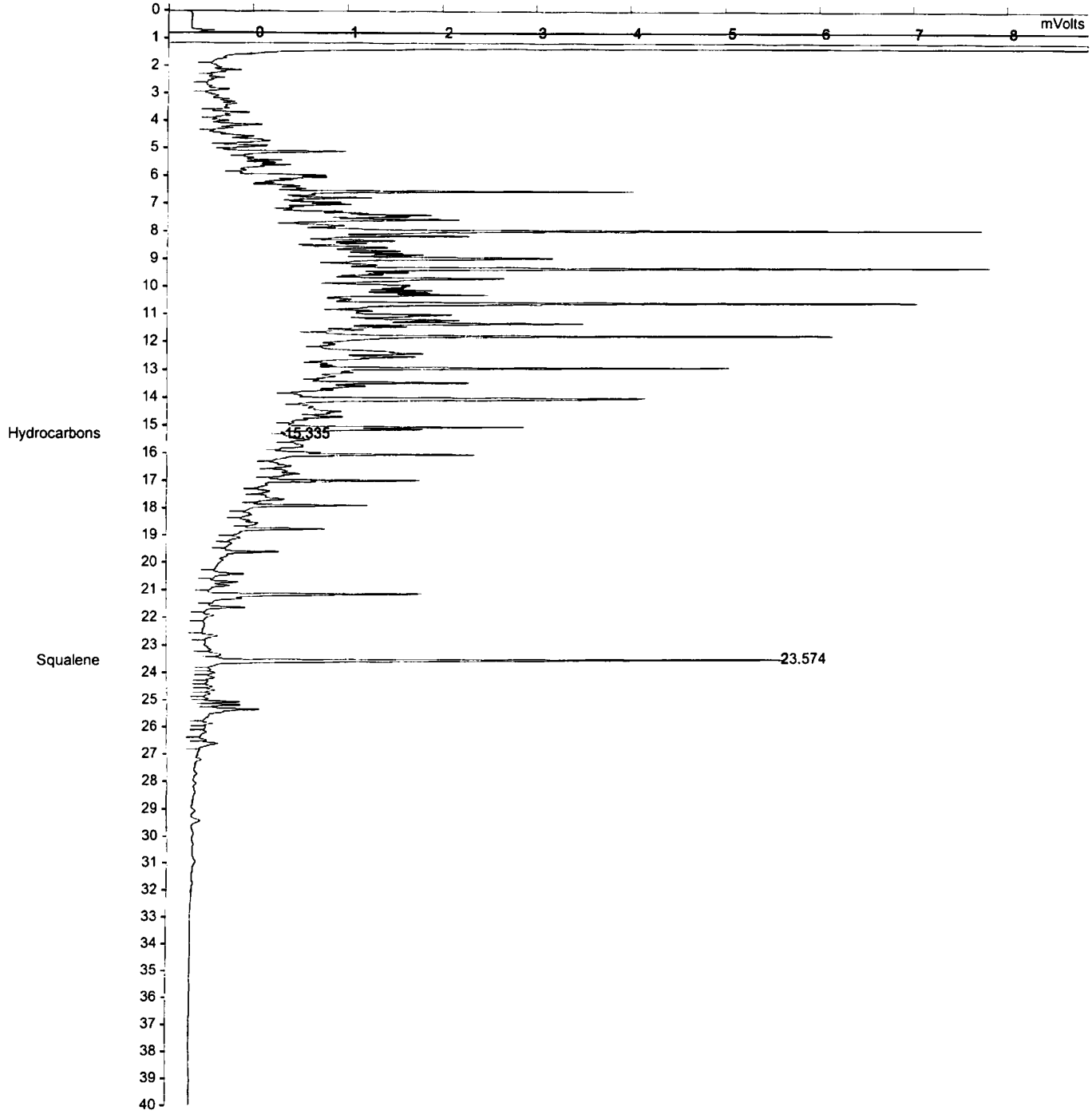
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\lcsd-21419.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : lcsd-21419

Injection Date: 3/17/11 11:04 PM Calculation Date: 3/23/11 5:43 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 40 Zero Offset = 9%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:11:25 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\lcsd-21419.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : lcsd-21419

Injection Date: 3/17/11 11:04 PM Calculation Date: 3/23/11 5:43 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	435.0419	15.335	0.000	1117858	GR	0.0	0	
2	Squalene	10.6620	23.574	0.005	27670	VV	3.9	0	
	Group 0	445.7039		0.005	1145528				
	Totals:	445.7039		0.005	1145528				

Total Unidentified Counts : 147228 counts

Detected Peaks: 74 Rejected Peaks: 18 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -652 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 6 microVolts

Manual injection

****

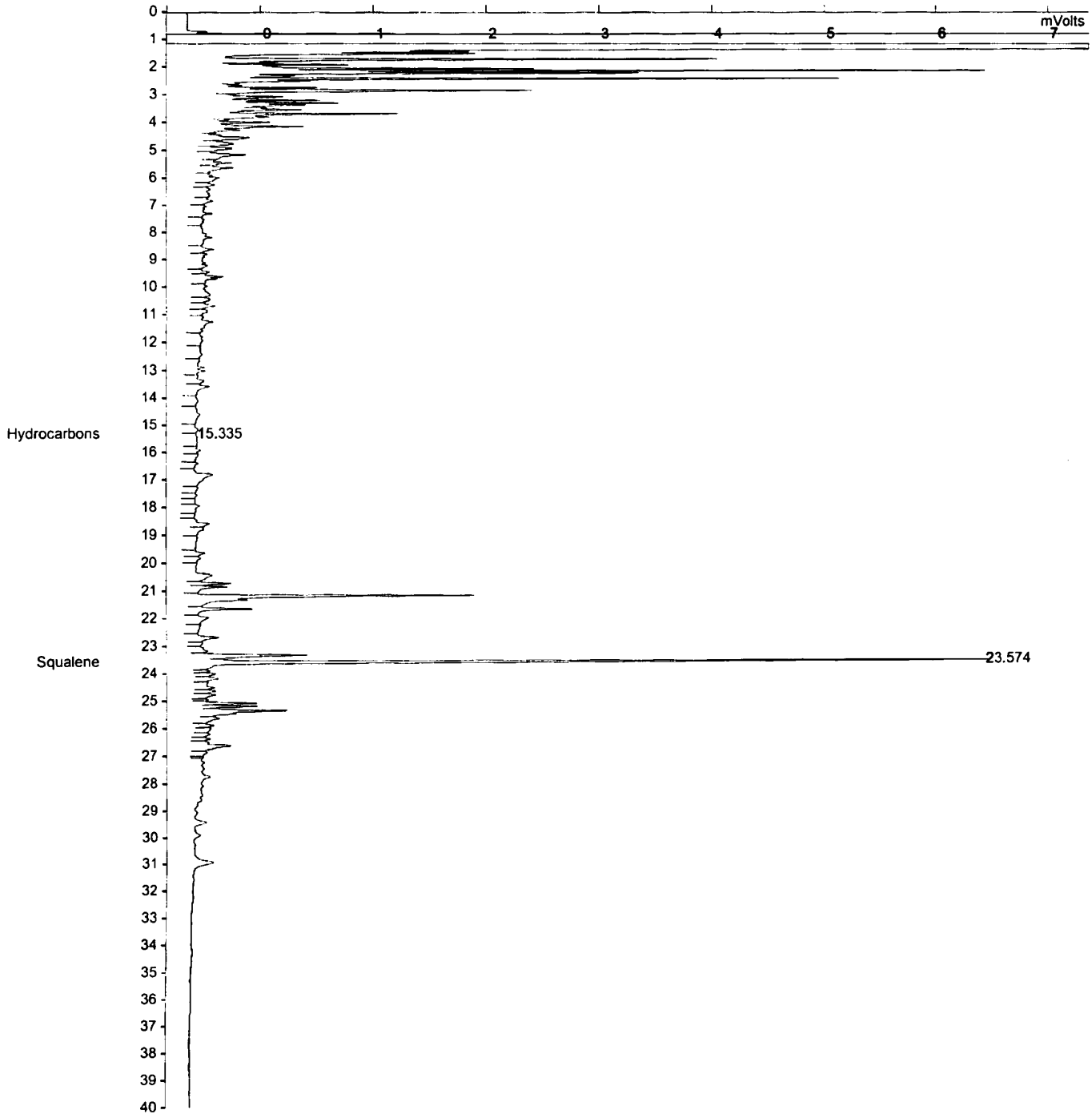
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\mb-21419.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : mb-21419

Injection Date: 3/17/11 11:50 PM Calculation Date: 3/22/11 5:12 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 33 Zero Offset = 10%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:11:30 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\mb-21419.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : mb-21419

Injection Date: 3/17/11 11:50 PM Calculation Date: 3/22/11 5:12 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	7.0797	15.335	0.000	52960	GR	0.0	0	
2	Squalene	11.4485	23.574	0.005	29664	VV	3.8	0	
	Group 0	18.5282		0.005	82624				
	Totals:	18.5282		0.005	82624				

Total Unidentified Counts : 39798 counts

Detected Peaks: 77 Rejected Peaks: 30 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -654 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 6 microVolts

Manual injection

****

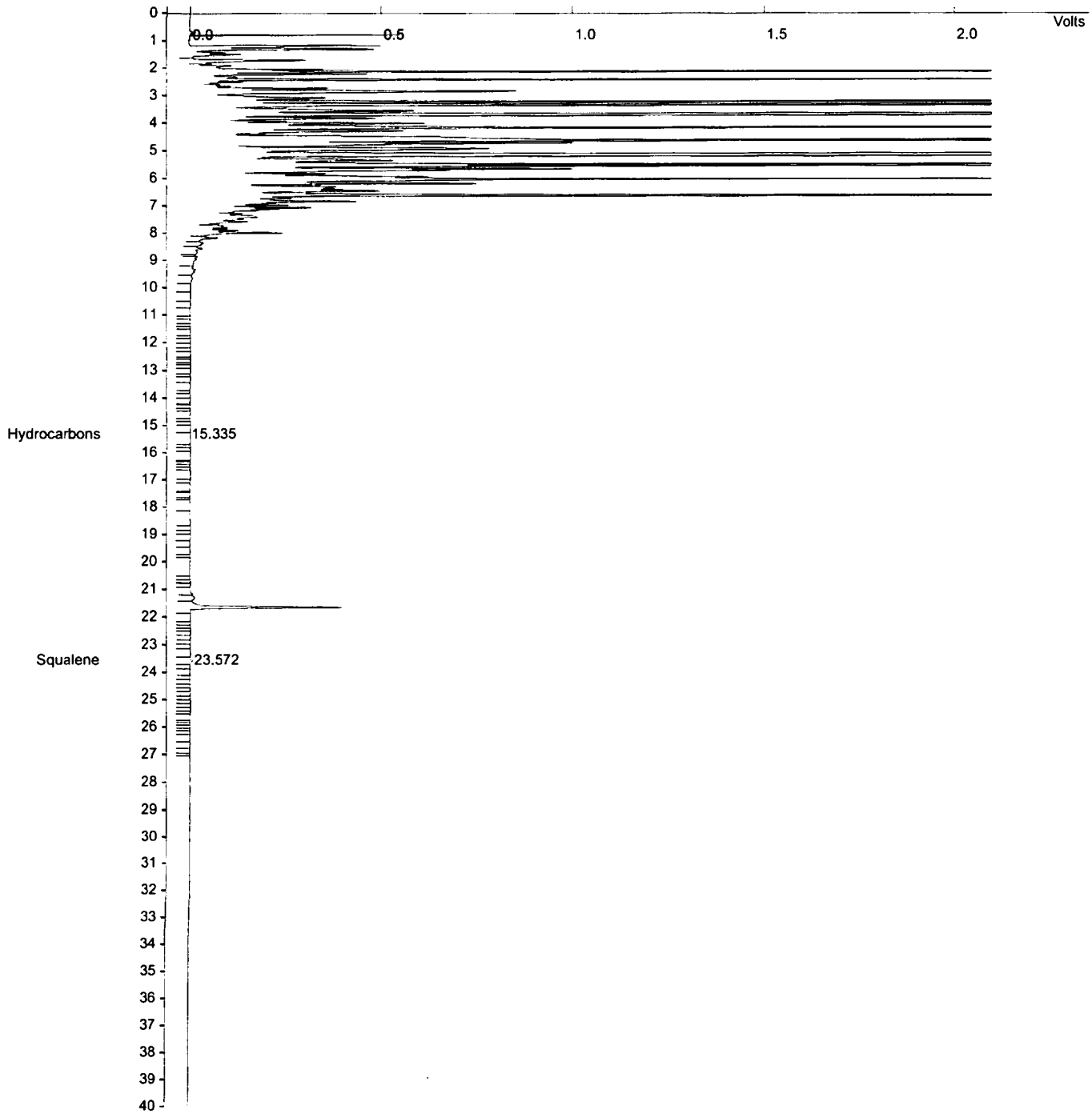
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-001b.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : 1103158-001b

Injection Date: 3/18/11 12:36 AM Calculation Date: 3/23/11 5:46 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 9918 Zero Offset = 2%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:11:36 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-001b.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : 1103158-001b

Injection Date: 3/18/11 12:36 AM Calculation Date: 3/23/11 5:46 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	3549.6602	15.335	0.000	8490572	GR	0.0	0	
2	Squalene	12.2839	23.572	0.003	31777	VV	3.8	0	
	Group 0	3561.9441		0.003	8522349				
	Totals:	3561.9441		0.003	8522349				

Total Unidentified Counts : 121712224 counts

Detected Peaks: 102 Rejected Peaks: 20 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -659 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 8 microVolts

Manual injection

****

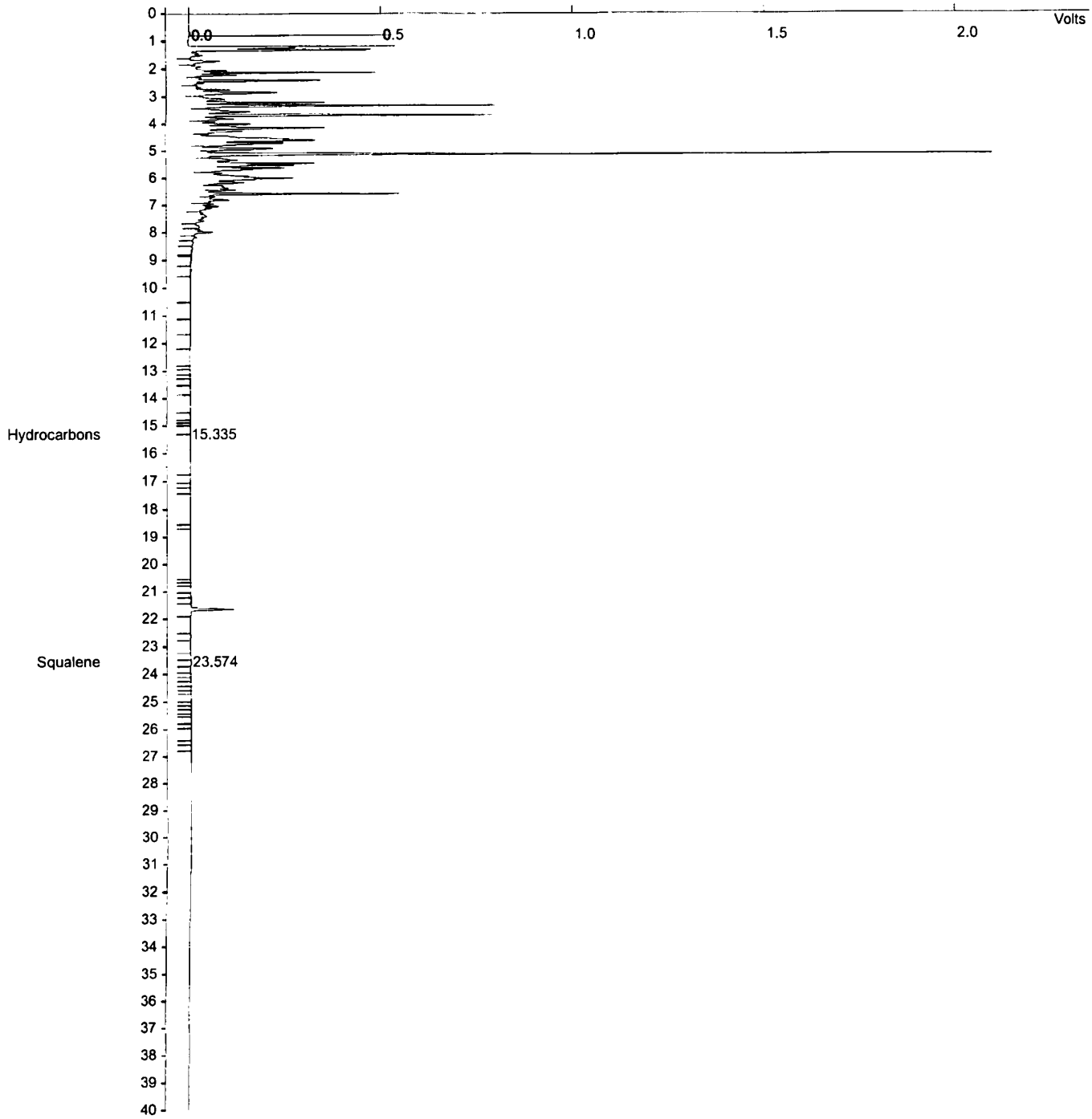
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-001b1-4.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : 1103158-001b1-4

Injection Date: 3/18/11 1:22 AM Calculation Date: 3/23/11 5:46 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 9919 Zero Offset = 2%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:11:42 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-001b1-4.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : 1103158-001b1-4

Injection Date: 3/18/11 1:22 AM Calculation Date: 3/23/11 5:46 PM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	860.9498	15.335	0.000	2165206	GR	0.0	0	
2	Squalene	3.0358	23.574	0.005	8153	VB	3.7	0	
	Group 0	863.9856		0.005	2173359				
	Totals:	863.9856		0.005	2173359				

Total Unidentified Counts : 35266776 counts

Detected Peaks: 57 Rejected Peaks: 12 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -660 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 7 microVolts

Manual injection

****

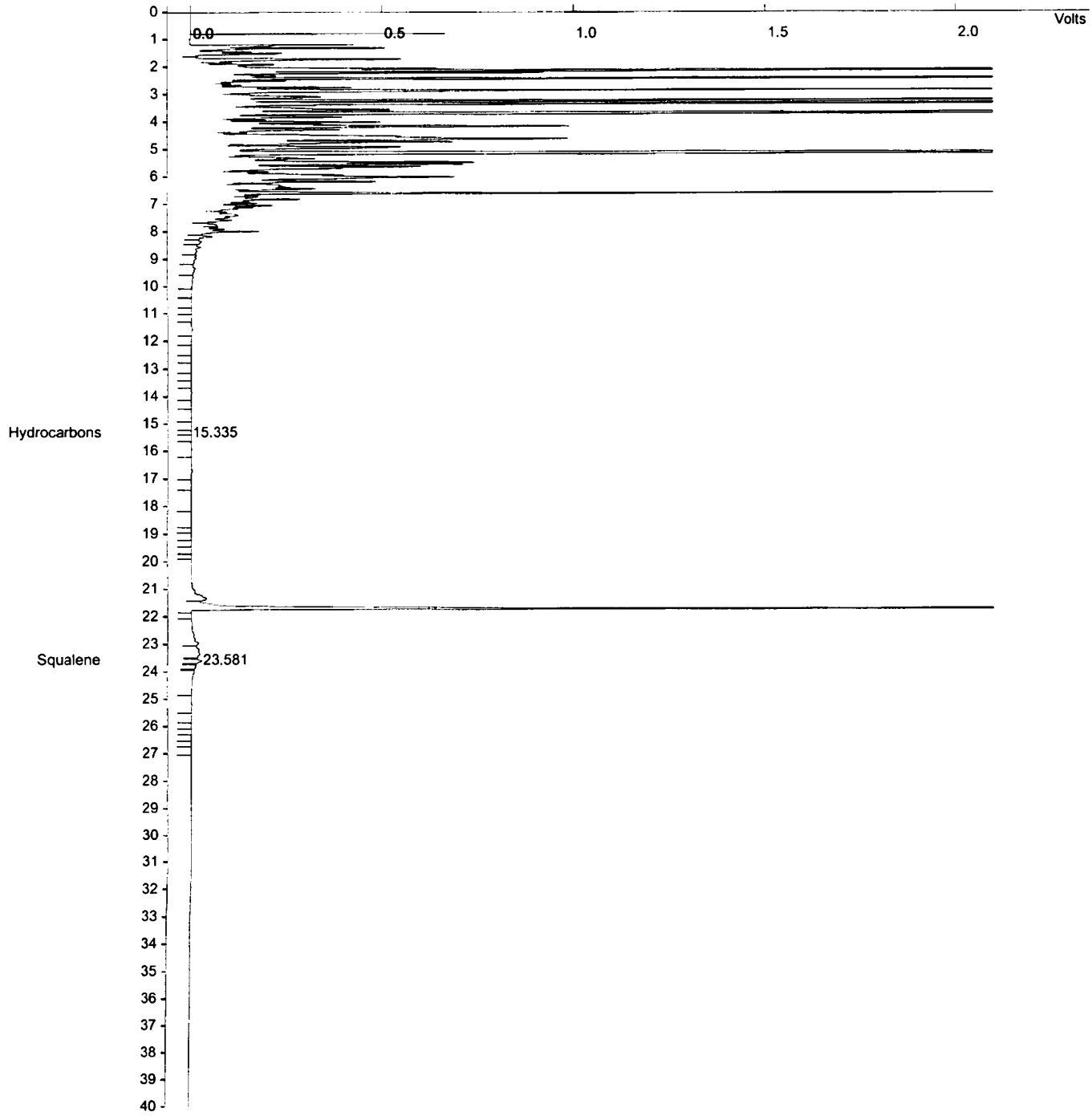
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-002b.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : 1103158-002b

Injection Date: 3/18/11 2:08 AM Calculation Date: 3/23/11 6:09 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 9918 Zero Offset = 2%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:11:49 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-002b.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : 1103158-002b

Injection Date: 3/18/11 2:08 AM Calculation Date: 3/23/11 6:09 PM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	4943.2939	15.335	0.000	11574594	GR	0.0	0	
2	Squalene	57.3144	23.581	0.012	139660	VV	0.0	0	
	Group 0	5000.6083		0.012	11714254				
	Totals:	5000.6083		0.012	11714254				

Total Unidentified Counts : 92011368 counts

Detected Peaks: 65 Rejected Peaks: 6 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -660 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 5 microVolts

Manual injection

****

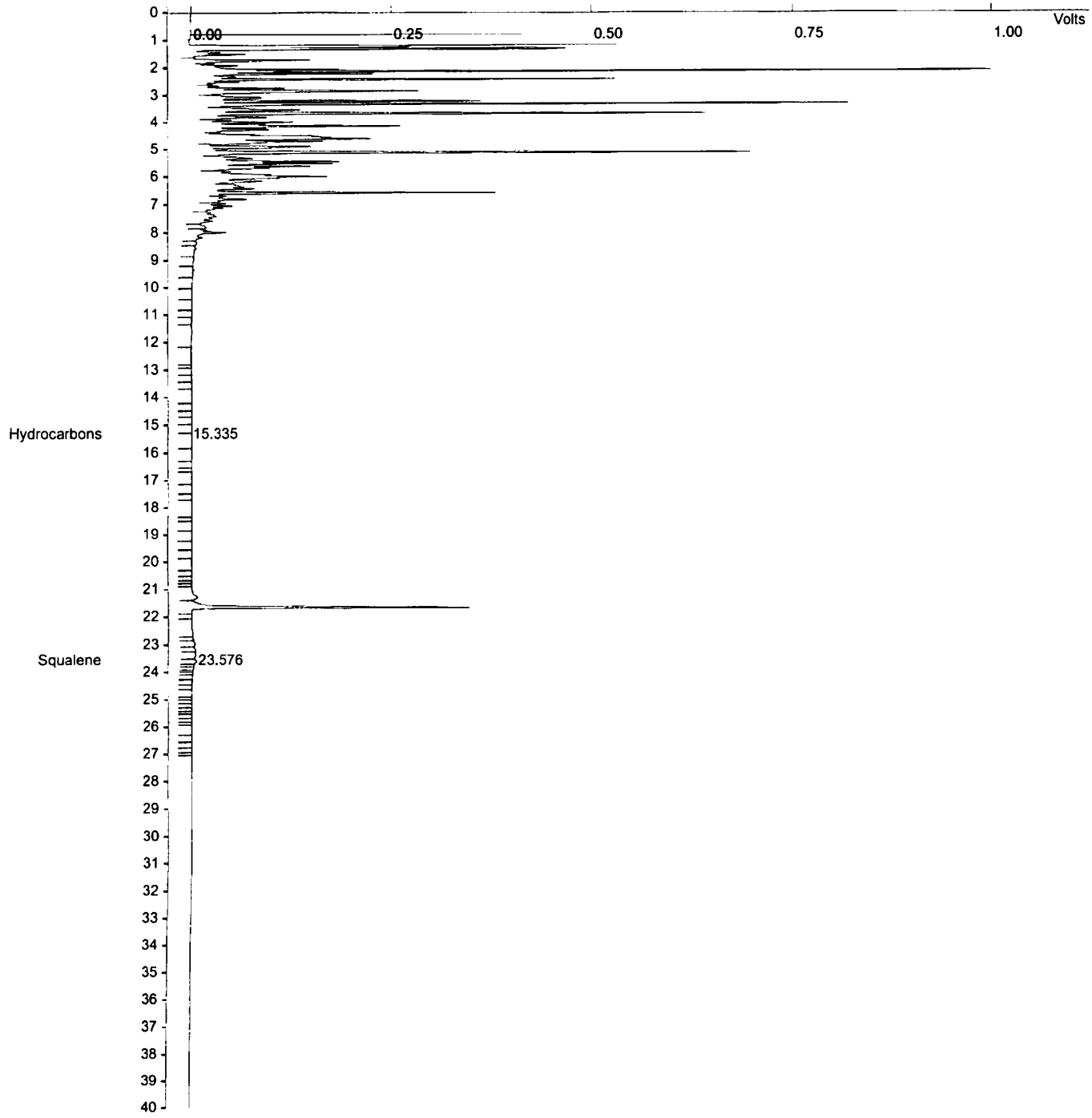
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-002b1-4.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : 1103158-002b1-4

Injection Date: 3/18/11 2:54 AM Calculation Date: 3/23/11 6:08 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 4731 Zero Offset = 2%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:11:55 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-002b1-4.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : 1103158-002b1-4

Injection Date: 3/18/11 2:54 AM Calculation Date: 3/23/11 6:08 PM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	1117.4840	15.335	0.000	2790060	GR	0.0	0	
2	Squalene	13.2302	23.576	0.007	34167	VV	0.0	0	
	Group 0	1130.7142		0.007	2824227				
	Totals:	1130.7142		0.007	2824227				

Total Unidentified Counts : 25745560 counts

Detected Peaks: 80 Rejected Peaks: 22 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -665 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 5 microVolts

Manual injection

****

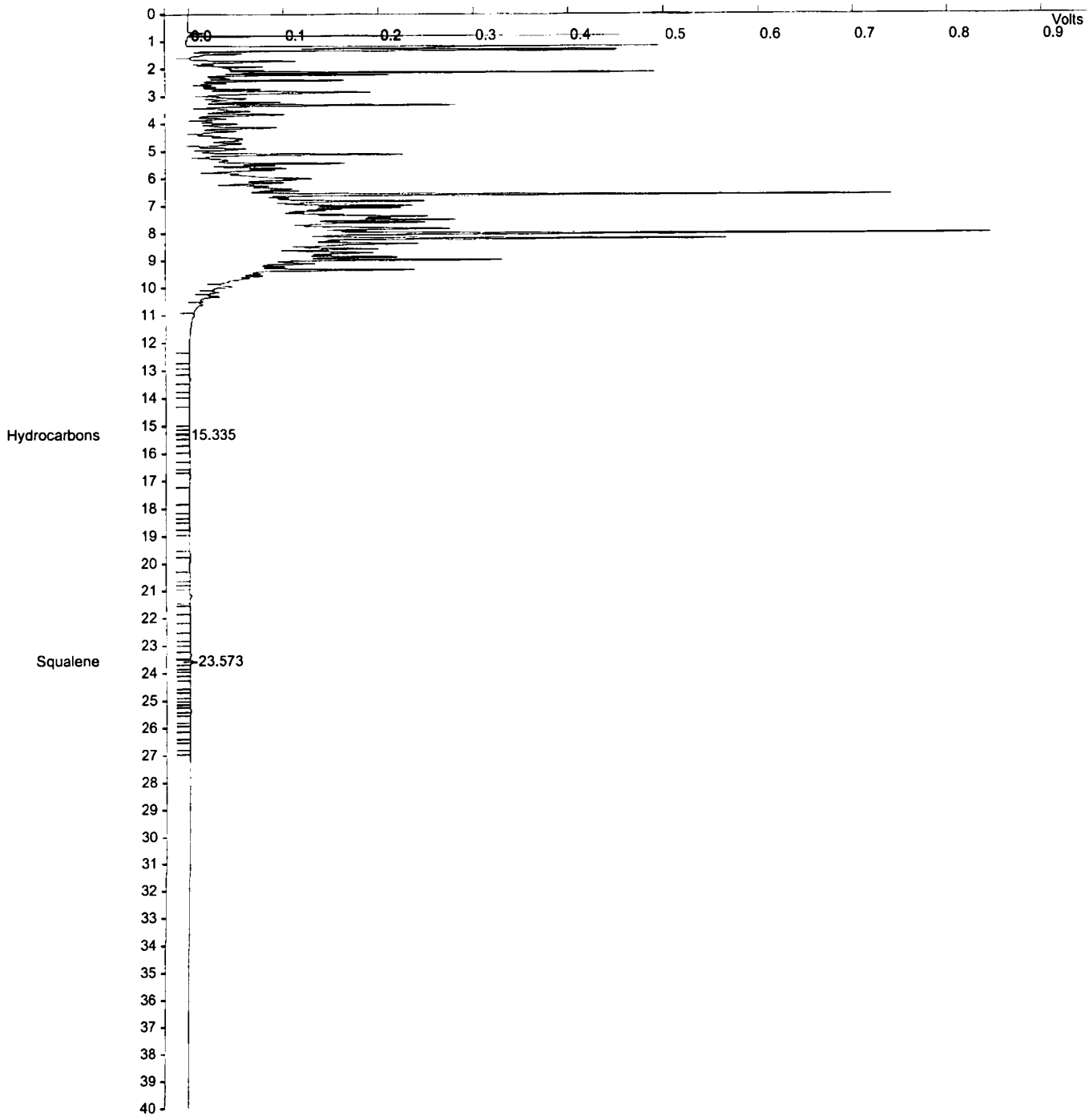
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-005b.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : 1103158-005b

Injection Date: 3/18/11 3:40 AM Calculation Date: 3/23/11 5:55 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 4001 Zero Offset = 2%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:12:01 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-005b.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : 1103158-005b

Injection Date: 3/18/11 3:40 AM Calculation Date: 3/23/11 5:55 PM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	no result	15.335	0.000	26970584	GR	0.0	0	C*
2	Squalene	10.8491	23.573	0.003	28145	BB	3.6	0	
	Group 0	13117.1528		0.003	26998729				
	Totals:	10.8491		0.003	26998729				

Status Codes:
* - No result could be calculated; check calibration curve
C - Out of calibration range

Total Unidentified Counts : 19885448 counts

Detected Peaks: 79 Rejected Peaks: 18 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -664 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 6 microVolts

Manual injection

Data Handling: At Least One Curve has Improper Solution!
Calib. out of range; No Recovery Action Specified

****

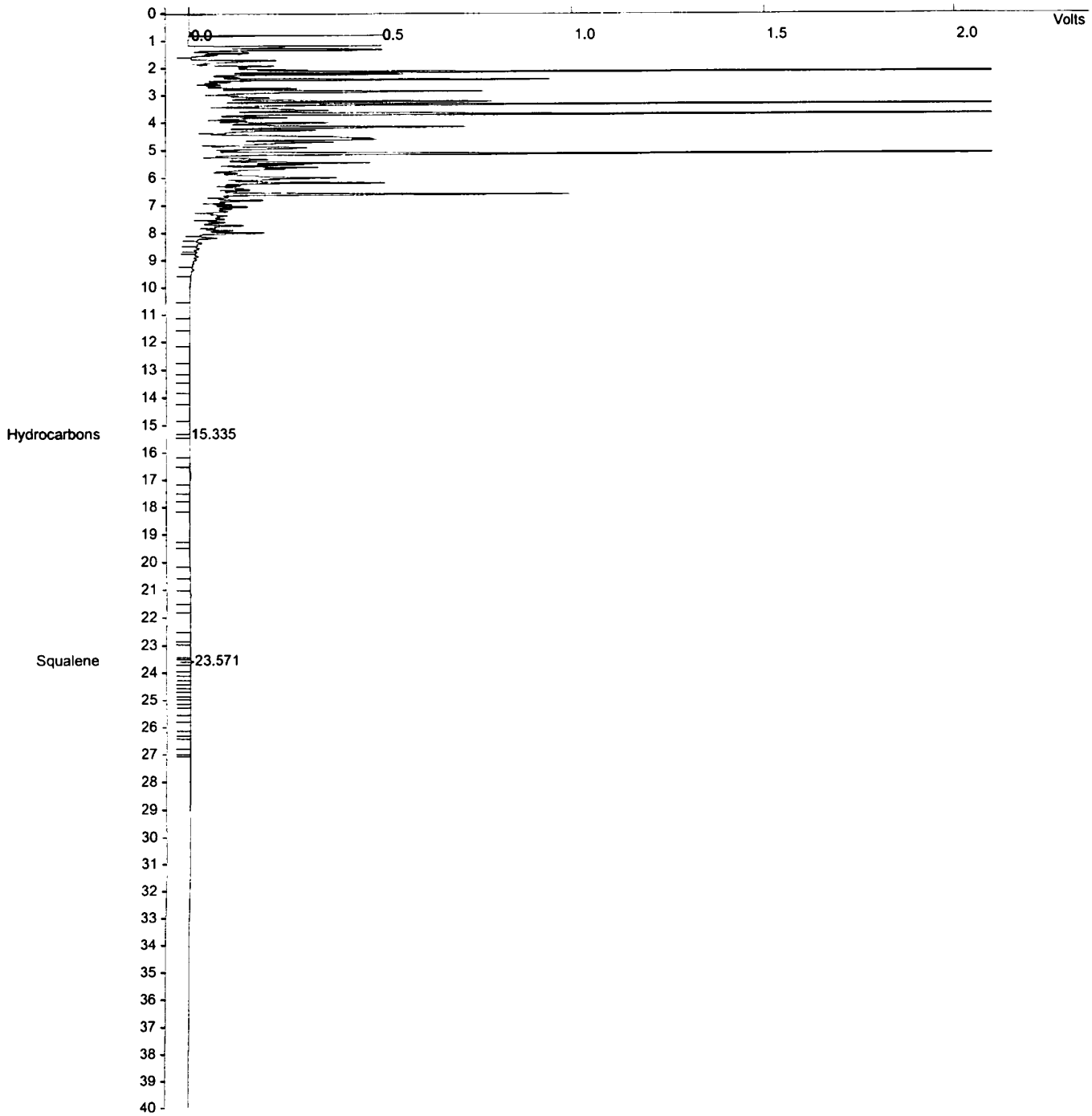
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-008b.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : 1103158-008b

Injection Date: 3/18/11 4:26 AM Calculation Date: 3/23/11 5:53 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 9918 Zero Offset = 2%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:12:07 2011

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-008b.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : 1103158-008b

Injection Date: 3/18/11 4:26 AM Calculation Date: 3/23/11 5:53 PM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	2079.3157	15.335	0.000	5092763	GR	0.0	0	
2	Squalene	13.2316	23.571	0.002	34170	BB	3.6	0	
	Group 0	2092.5473		0.002	5126933				
	Totals:	2092.5473		0.002	5126933				

Total Unidentified Counts : 62529196 counts

Detected Peaks: 71 Rejected Peaks: 16 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -667 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 4 microVolts

Manual injection

****

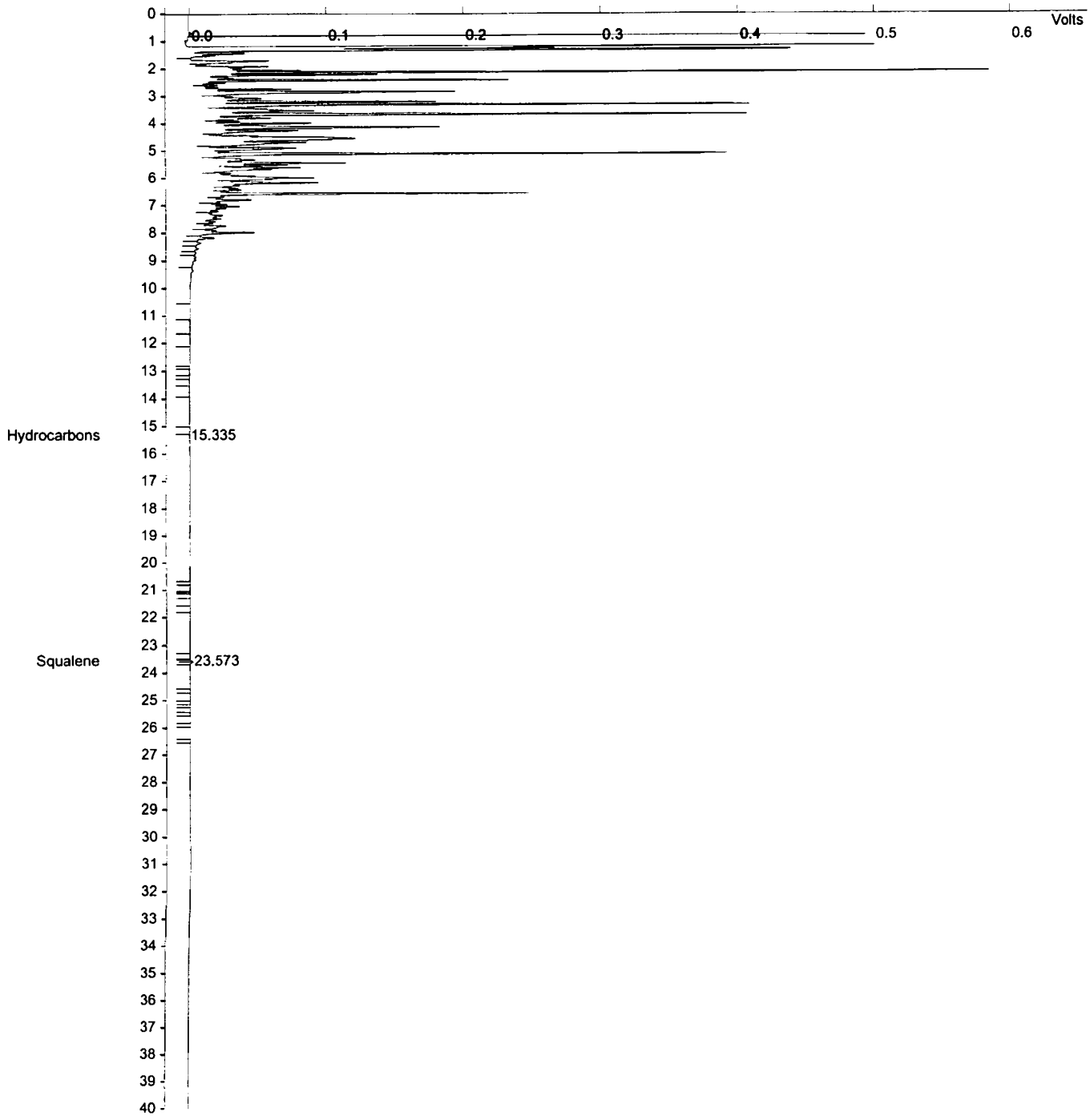
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-008b1-4.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : 1103158-008b1-4

Injection Date: 3/18/11 5:12 AM Calculation Date: 3/23/11 5:52 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 2768 Zero Offset = 2%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:12:13 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-008b1-4.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : 1103158-008b1-4

Injection Date: 3/18/11 5:12 AM Calculation Date: 3/23/11 5:52 PM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	497.8688	15.335	0.000	1273135	GR	0.0	0	
2	Squalene	2.9317	23.573	0.003	7884	BB	3.6	0	
	Group 0	500.8005		0.003	1281019				
	Totals:	500.8005		0.003	1281019				

Total Unidentified Counts : 15708819 counts

Detected Peaks: 47 Rejected Peaks: 8 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -673 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 6 microVolts

Manual injection

****

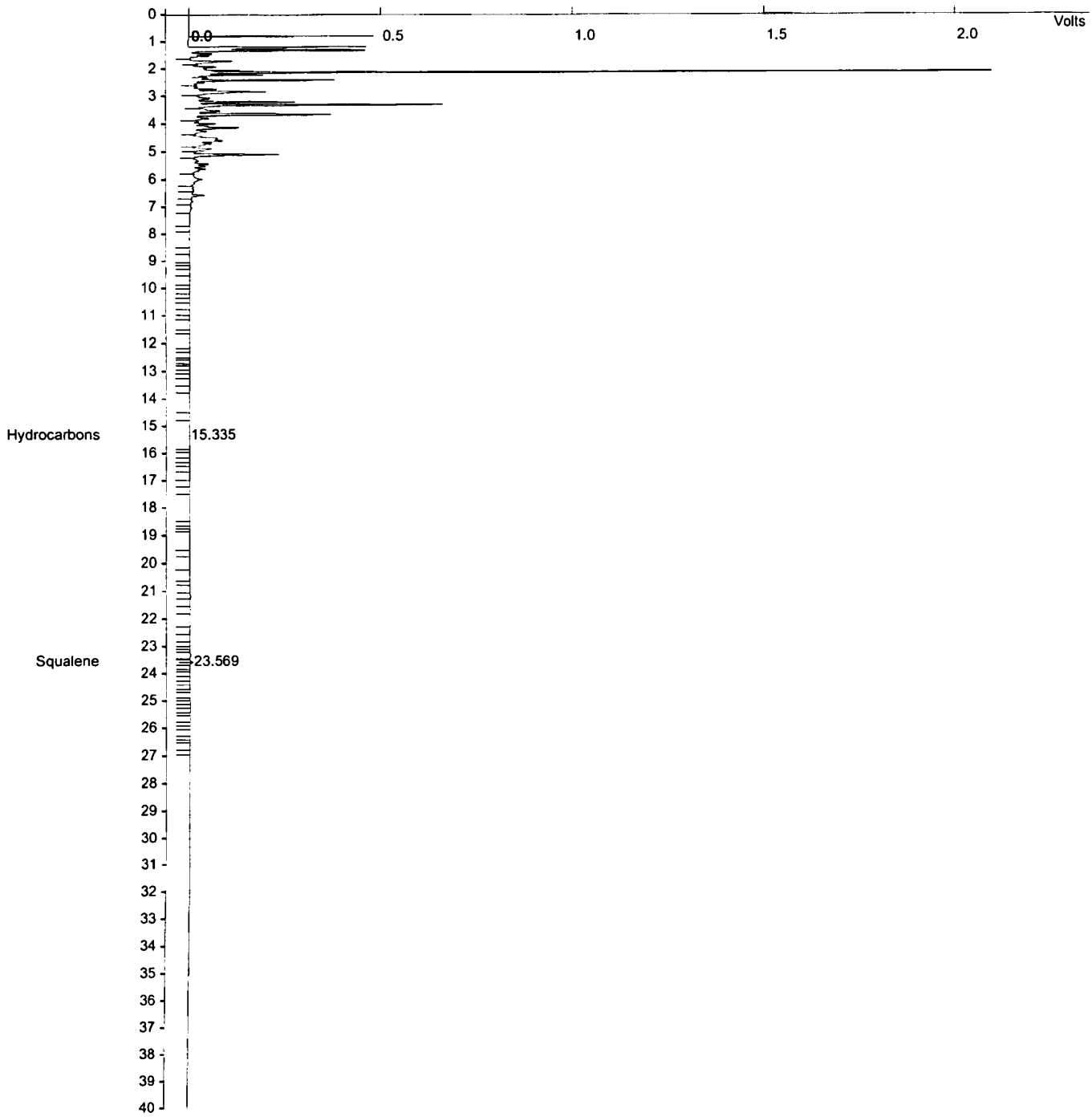
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-012b.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : 1103158-012b

Injection Date: 3/18/11 5:57 AM Calculation Date: 3/23/11 5:53 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 9919 Zero Offset = 2%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:12:19 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-012b.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : 1103158-012b

Injection Date: 3/18/11 5:57 AM Calculation Date: 3/23/11 5:53 PM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	32.3533	15.335	0.000	116196	GR	0.0	0	
2	Squalene	11.8051	23.569	0.000	30567	BB	3.6	0	
	Group 0	44.1584		0.000	146763				
	Totals:	44.1584		0.000	146763				

Total Unidentified Counts : 11130213 counts

Detected Peaks: 80 Rejected Peaks: 20 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -689 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 6 microVolts

Manual injection

****

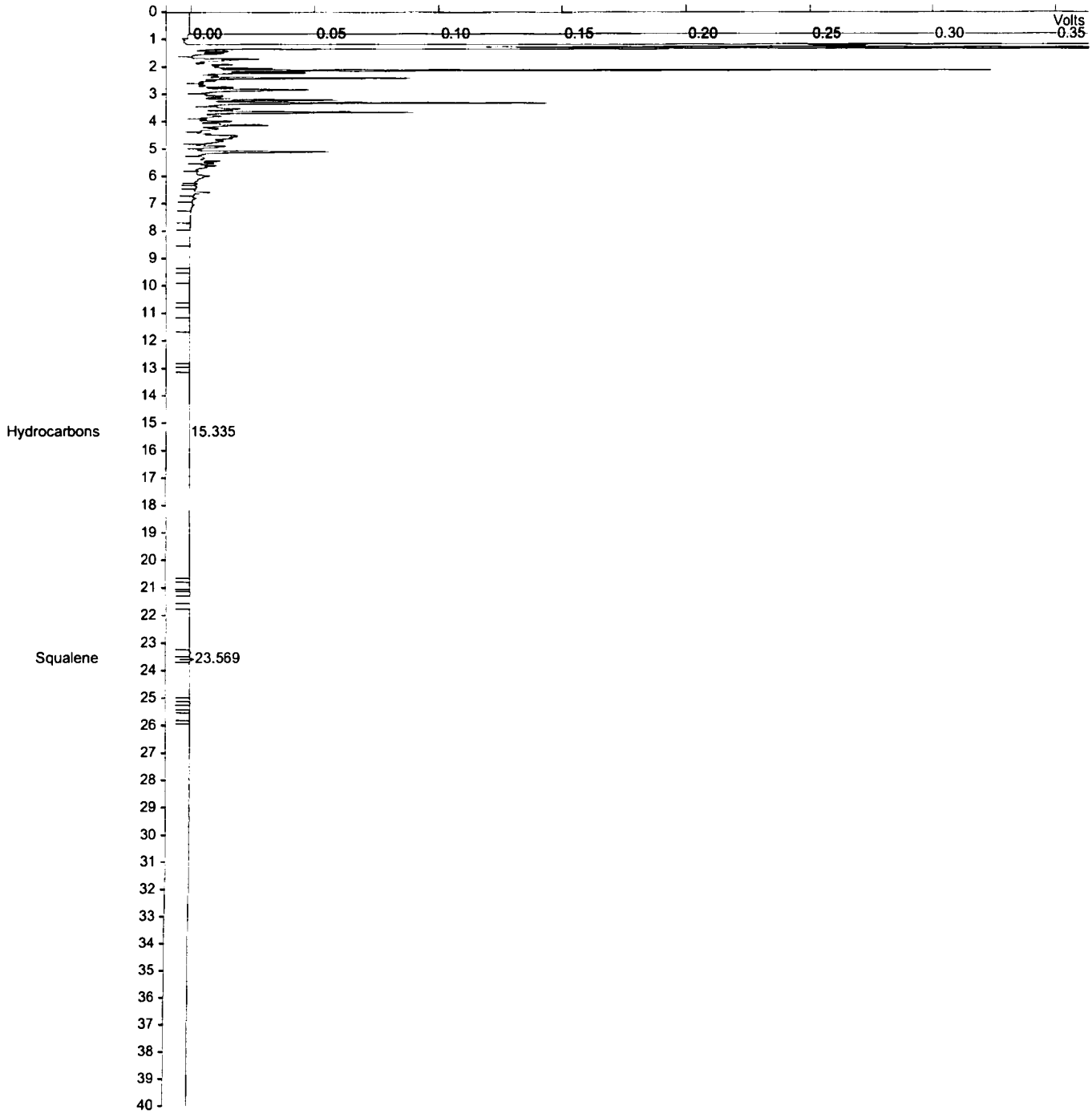
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-012b1-4.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : 1103158-012b1-4

Injection Date: 3/18/11 6:43 AM Calculation Date: 3/23/11 5:53 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 1533 Zero Offset = 2%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:12:25 2011

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-012b1-4.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : 1103158-012b1-4

Injection Date: 3/18/11 6:43 AM Calculation Date: 3/23/11 5:53 PM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	no result	15.335	0.000	18318	GR	0.0	0	C*
2	Squalene	2.5971	23.569	0.000	7019	BB	3.6	0	
	Group 0	73201.9565		0.000	25337				
	Totals:	2.5971		0.000	25337				

Status Codes:
* - No result could be calculated; check calibration curve
C - Out of calibration range

Total Unidentified Counts : 2728574 counts

Detected Peaks: 36 Rejected Peaks: 5 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -694 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 7 microVolts

Manual injection

Data Handling: At Least One Curve has Improper Solution!
Calib. out of range; No Recovery Action Specified

****

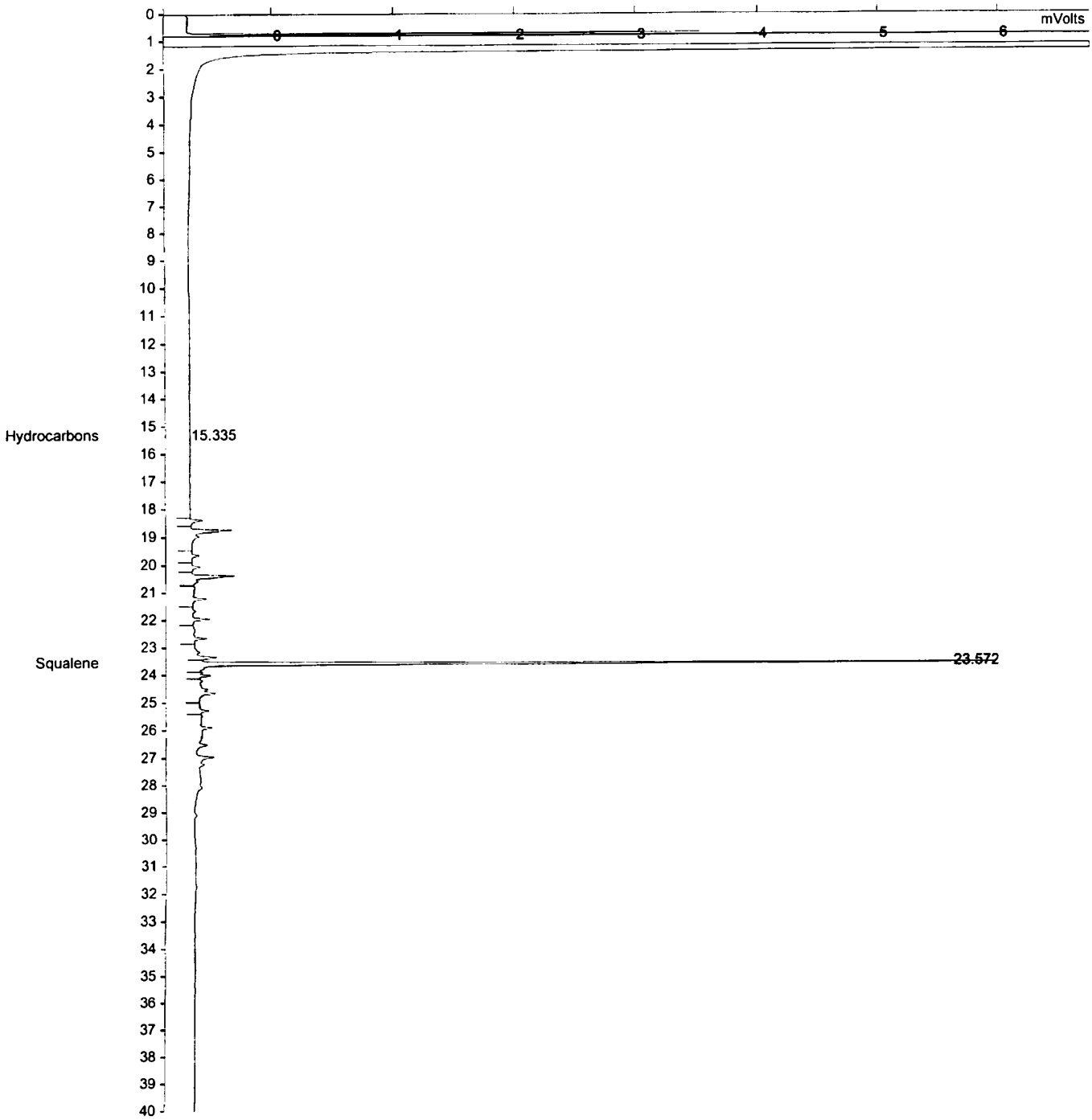
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\ccb b.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : ccb b

Injection Date: 3/18/11 7:29 AM Calculation Date: 3/18/11 10:20 AM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 31 Zero Offset = 11%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:12:31 2011

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\ccb b.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : ccb b

Injection Date: 3/18/11 7:29 AM Calculation Date: 3/18/11 10:20 AM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	no result	15.335	0.000	10436	GR	0.0	0	C*
2	Squalene	10.3986	23.572	0.003	27002	VV	4.1	0	
	Group 0	73212.9064		0.003	37438				
	Totals:	10.3986		0.003	37438				

Status Codes:
* - No result could be calculated; check calibration curve
C - Out of calibration range

Total Unidentified Counts : 0 counts

Detected Peaks: 13 Rejected Peaks: 3 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -695 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 6 microVolts

Manual injection

Data Handling: At Least One Curve has Improper Solution!
Calib. out of range; No Recovery Action Specified

****

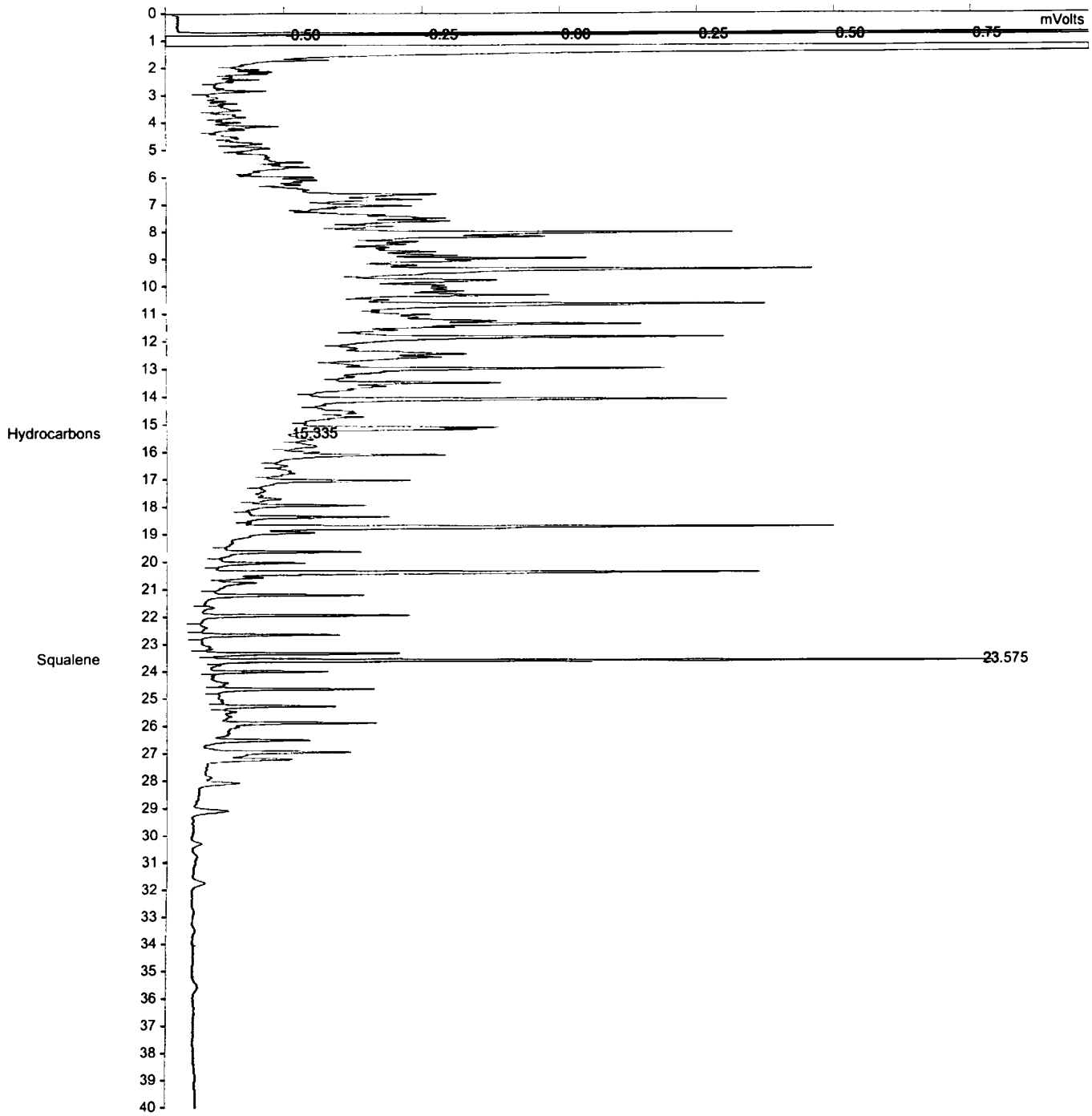
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\crql std 100ppm b.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : crql std 100ppm b

Injection Date: 3/18/11 8:15 AM Calculation Date: 3/18/11 10:19 AM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 6 Zero Offset = 48%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Verification Report

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\crql std 100ppm b.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : crql std 100ppm b

Injection Date: 3/18/11 8:15 AM Calculation Date: 3/18/11 10:19 AM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Verification
Peak Measurement: Peak Area
Calculation Type: External Standard
Level : 2
Tolerance : 20.0%

Peak No.	Peak Name	Expected Result (ug/ml)	Calculated Result (ug/ml)	Dev. %	Ret. Time (min)	Time Offset (min)	Area (counts)	Group	Status Codes
1	Hydrocarbons	100.0000	81.6467	18.4	15.335	0.000	239406	0	
2	Squalene	2.5000	2.1599	13.6	23.575	0.006	5889	0	
	Group 0		83.8066			0.006	245295		
	Totals:		83.8066			0.006	245295		

Total Unidentified Counts : 10319 counts

Detected Peaks: 55 Rejected Peaks: 15 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -695 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 6 microVolts

Manual injection

****

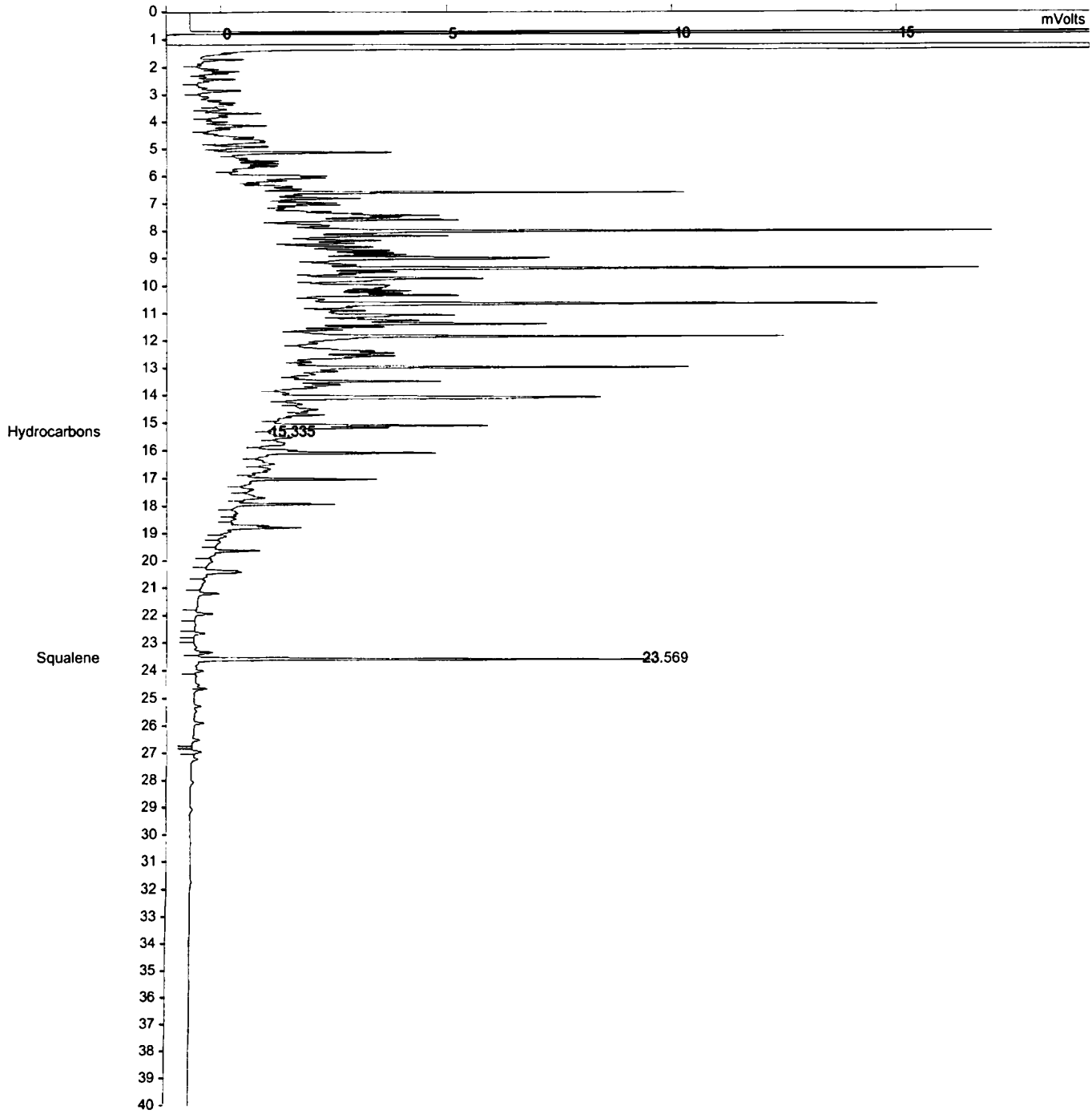
Title : DRO/ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\ccv std 1000ppm b.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : ccv std 1000ppm b

Injection Date: 3/18/11 9:01 AM Calculation Date: 3/18/11 10:23 AM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 84 Zero Offset = 5%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Verification Report

Title : DRO/ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\ccv std 1000ppm b.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : ccv std 1000ppm b

Injection Date: 3/18/11 9:01 AM Calculation Date: 3/18/11 10:23 AM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Verification
Peak Measurement: Peak Area
Calculation Type: External Standard
Level : 8
Tolerance : 20.0%

Peak No.	Peak Name	Expected Result (ug/ml)	Calculated Result (ug/ml)	Dev. %	Ret. Time (min)	Time Offset (min)	Area (counts)	Group	Status Codes
1	Hydrocarbons	1000.0000	854.1752	14.6	15.335	0.000	2148644	0	
2	Squalene	20.0000	17.1445	14.3	23.569	0.000	43993	0	
	Group 0		871.3197			0.000	2192637		
	Totals:		871.3197			0.000	2192637		

Total Unidentified Counts : 338261 counts

Detected Peaks: 64 Rejected Peaks: 2 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -692 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 5 microVolts

Manual injection

Requested Curve Type : quadratic
Requested Origin : ignore
Calibration Type : External Standard Analysis

Method Detector Type : ADC Board
Method Bus Address : 16
Method Channel : B

Calibration Dates
Last Injection Date : 3/16/11 11:59 PM

Last Recalculation Date : 3/17/11 3:35 PM

Retention Time (min)	Peak Name	Curve\ Origin	X^3	X^2	X	C	r^2	Cal.Range	No. of Points	Edit Codes
15.335	Hydrocarbons C12-	2 IG		-3.4203e-002	+2.5034e+003	+3.5238e+004	+9.9994e-001	2-7	6	
23.569	Squalene	2 IG		-2.9256e+000	+2.5994e+003	+2.8820e+002	+9.9995e-001	2-7	6	

Curve Codes	Origin Codes	Edit Codes
1 linear	I include	1 curve
2 quadratic	IG ignore	2 origin
3 cubic	F force	3 coefficient

Ret. Time: 15.335 min. Peak Measurement: Area
Peak Name: Hydrocarbons C12-28 Curve\Origin: 2 IG

Level	Amount	Replicate No.	Response	Avg. Response	Std. Dev.
2	100.000000	1	283957	283957.0	#
3	200.000000	1	514918	514917.6	#
4	500.000000	1	1267060	1267060.1	#
5	1000.000000	1	2568985	2568985.0	#
6	2000.000000	1	4869749	4869748.5	#
7	5000.000000	1	11700516	11700516.0	#

Ret. Time: 23.569 min. Peak Measurement: Area
Peak Name: Squalene Curve\Origin: 2 IG

Level	Amount	Replicate No.	Response	Avg. Response	Std. Dev.
2	2.500000	1	7133	7132.7	#
3	5.000000	1	12739	12738.8	#
4	10.000000	1	26093	26093.0	#
5	20.000000	1	50935	50935.1	#
6	25.000000	1	63643	63643.1	#
7	50.000000	1	122921	122920.8	#

= Too few points to calculate.

Peak Name	Level	Rep.	Injection Date Time	Run Files
Hydrocarbons C12-28	2	1	3/16/11 8:09 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 100.run
	3	1	3/16/11 8:55 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 200.run
	4	1	3/16/11 9:41 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 500.run
	5	1	3/16/11 10:27 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 1000.run
	6	1	3/16/11 11:13 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 2000.run
	7	1	3/16/11 11:59 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 5000.run
Squalene	2	1	3/16/11 8:09 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 100.run
	3	1	3/16/11 8:55 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 200.run
	4	1	3/16/11 9:41 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 500.run
	5	1	3/16/11 10:27 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 1000.run
	6	1	3/16/11 11:13 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 2000.run
	7	1	3/16/11 11:59 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 5000.run

****

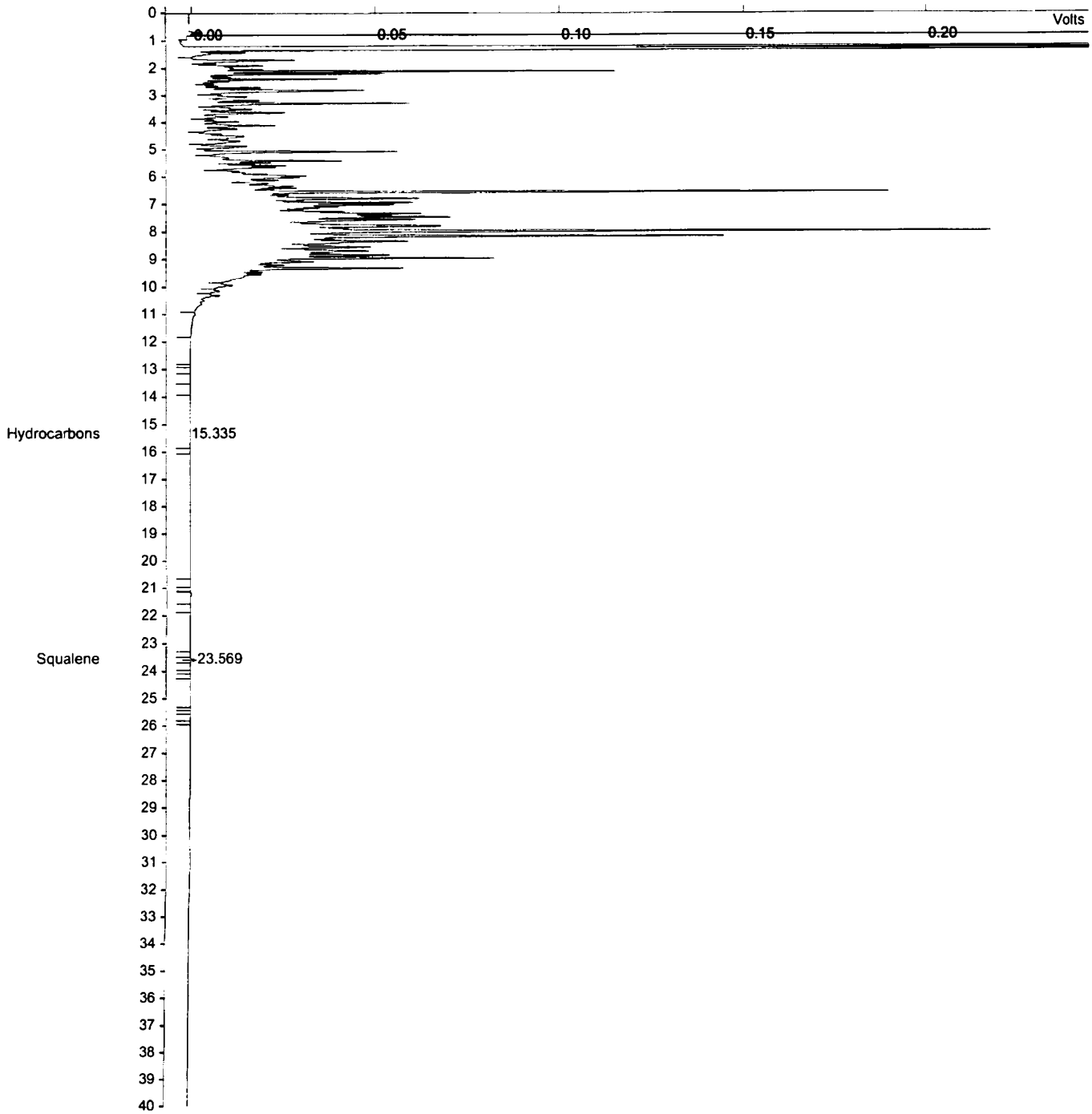
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-005b1-4.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : 1103158-005b1-4

Injection Date: 3/18/11 10:35 AM Calculation Date: 3/23/11 5:55 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 1032 Zero Offset = 2%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:12:43 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\1103158-005b1-4.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : 1103158-005b1-4

Injection Date: 3/18/11 10:35 AM Calculation Date: 3/23/11 5:55 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	2791.2744	15.335	0.000	6756492	GR	0.0	0	
2	Squalene	2.4363	23.569	0.000	6604	BB	3.6	0	
	Group 0	2793.7107		0.000	6763096				
	Totals:	2793.7107		0.000	6763096				

Total Unidentified Counts : 5003395 counts

Detected Peaks: 46 Rejected Peaks: 6 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -709 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 4 microVolts

Manual injection

****

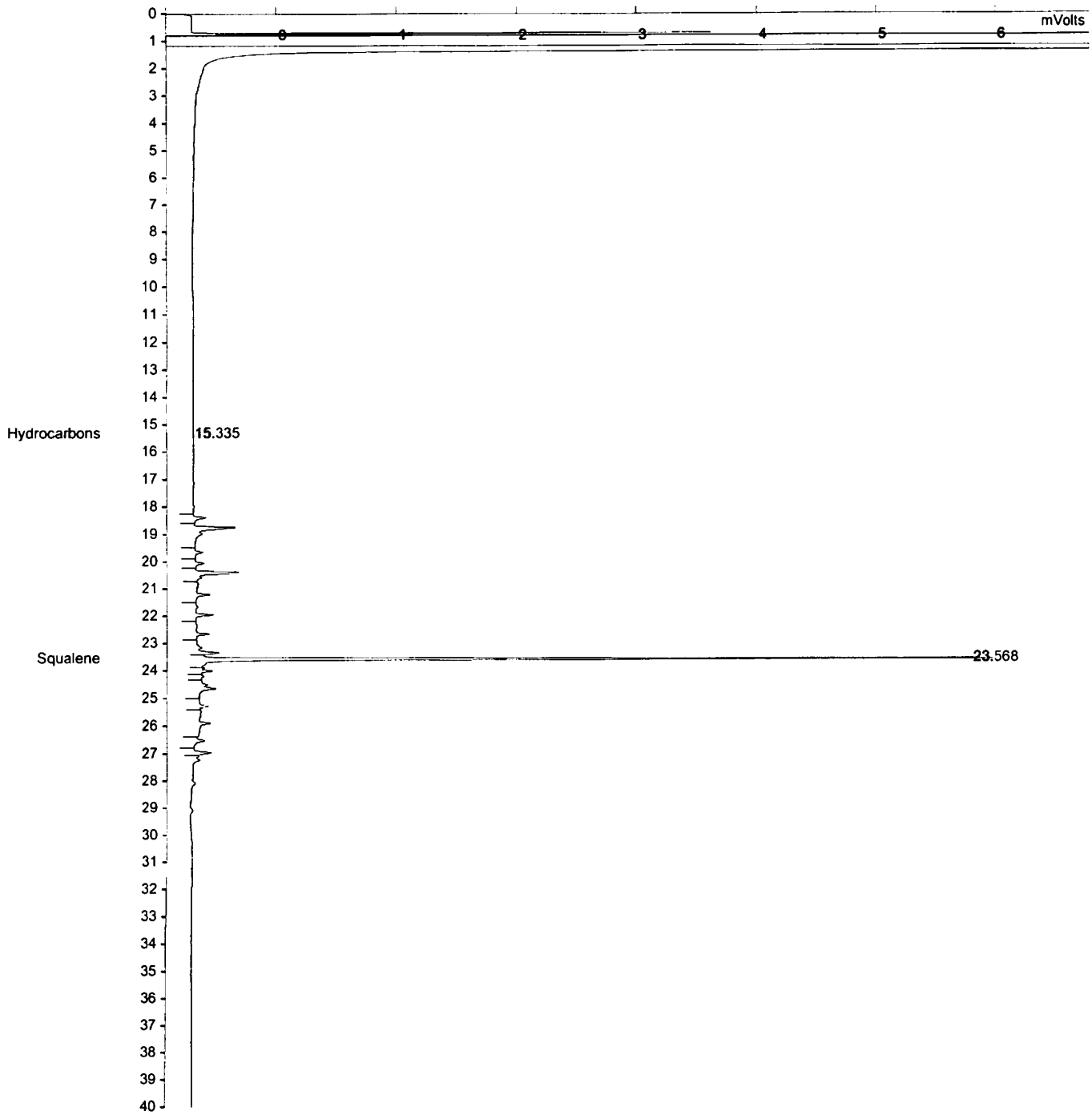
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\ccb c.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : ccb c

Injection Date: 3/18/11 11:21 AM Calculation Date: 3/23/11 5:41 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 31 Zero Offset = 12%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:12:49 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\ccb c.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : ccb c

Injection Date: 3/18/11 11:21 AM Calculation Date: 3/23/11 5:41 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	no result	15.335	0.000	12682	GR	0.0	0	C*
2	Squalene	10.6240	23.568	-0.001	27574	VV	4.0	0	
	Group 0	73212.2334		-0.001	40256				
	Totals:	10.6240		-0.001	40256				

Status Codes:
* - No result could be calculated; check calibration curve
C - Out of calibration range

Total Unidentified Counts : 0 counts

Detected Peaks: 17 Rejected Peaks: 7 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -705 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 5 microVolts

Manual injection

Data Handling: At Least One Curve has Improper Solution!
Calib. out of range; No Recovery Action Specified

****

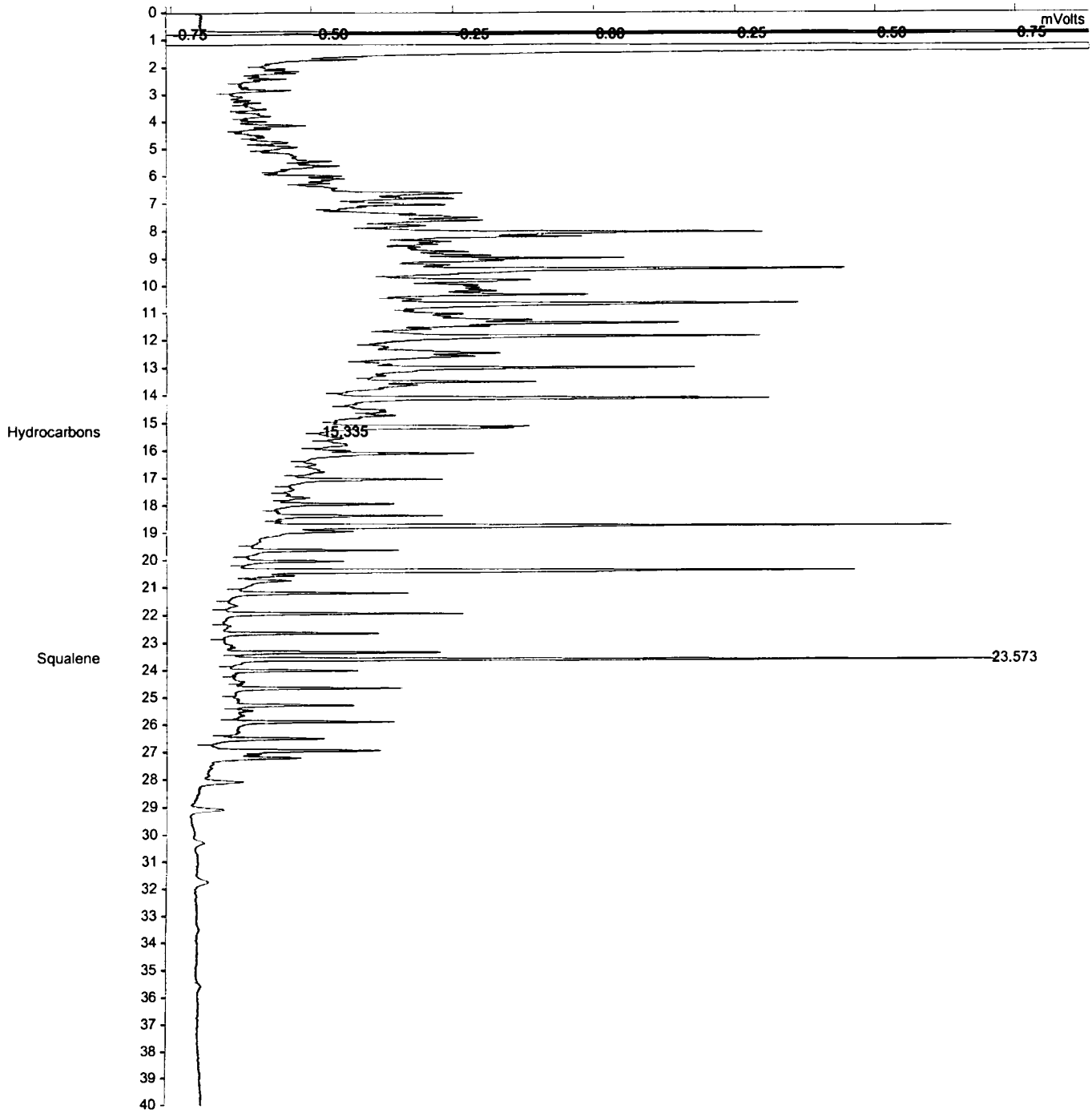
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\crql std 100ppm c.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : crql std 100ppm c

Injection Date: 3/18/11 12:07 PM Calculation Date: 3/18/11 1:37 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 6 Zero Offset = 51%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Verification Report

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\crql std 100ppm c.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : crql std 100ppm c

Injection Date: 3/18/11 12:07 PM Calculation Date: 3/18/11 1:37 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Verification
Peak Measurement: Peak Area
Calculation Type: External Standard
Level : 2
Tolerance : 20.0%

Peak No.	Peak Name	Expected Result (ug/ml)	Calculated Result (ug/ml)	Dev. %	Ret. Time (min)	Time Offset (min)	Area (counts)	Group	Status Codes
1	Hydrocarbons	100.0000	84.2165	15.8	15.335	0.000	245824	0	
2	Squalene	2.5000	2.1418	14.3	23.573	0.004	5842	0	
	Group 0		86.3583			0.004	251666		
	Totals:		86.3583			0.004	251666		

Total Unidentified Counts : 10427 counts

Detected Peaks: 61 Rejected Peaks: 19 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -698 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 5 microVolts

Manual injection

****

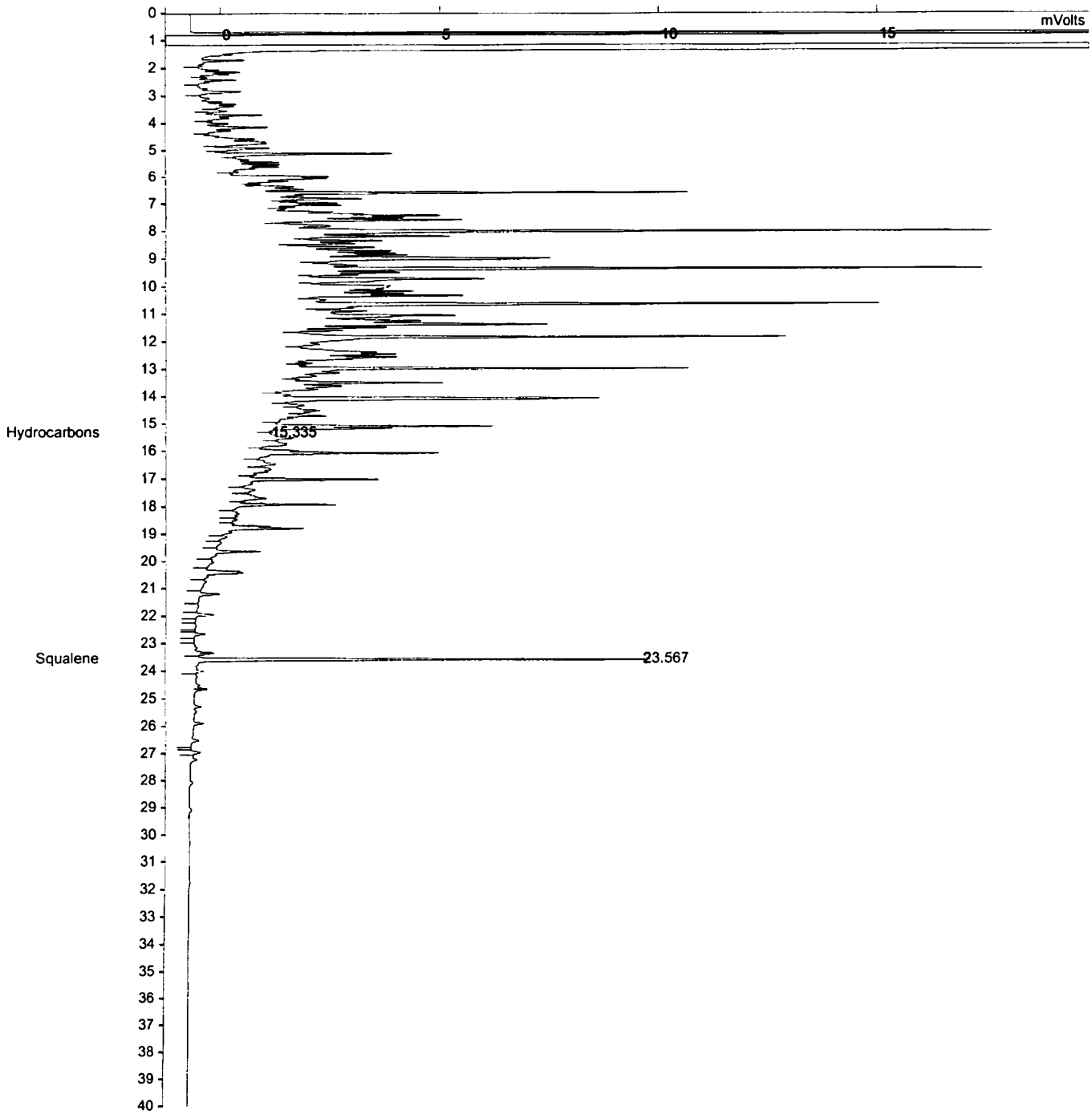
Title : DRO/ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\ccv std 1000ppm c.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mt
Sample ID : ccv std 1000ppm c

Injection Date: 3/18/11 12:53 PM Calculation Date: 3/18/11 1:36 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 86 Zero Offset = 6%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Verification Report

Title : DRO/ORO
Run File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\ccv std 1000ppm c.run
Method File : d:\star\data\hp6890 gc\2011-03\0317-c12-28\hydrocarbons c12-28.mth
Sample ID : ccv std 1000ppm c

Injection Date: 3/18/11 12:53 PM Calculation Date: 3/18/11 1:36 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Verification
Peak Measurement: Peak Area
Calculation Type: External Standard
Level : 8
Tolerance : 20.0%

Peak No.	Peak Name	Expected Result (ug/ml)	Calculated Result (ug/ml)	Dev. %	Ret. Time (min)	Time Offset (min)	Area (counts)	Group	Status Codes
1	Hydrocarbons	1000.0000	871.5238	12.8	15.335	0.000	2191051	0	
2	Squalene	20.0000	17.7739	11.1	23.567	-0.002	45565	0	
	Group 0		889.2977			-0.002	2236616		
	Totals:		889.2977			-0.002	2236616		

Total Unidentified Counts : 346443 counts

Detected Peaks: 65 Rejected Peaks: 2 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -686 microVolts

Noise (used): 10 microVolts - fixed value
Noise (monitored before this run): 6 microVolts

Manual injection

Requested Curve Type : quadratic
Requested Origin : ignore
Calibration Type : External Standard Analysis

Method Detector Type : ADC Board
Method Bus Address : 16
Method Channel : B

Calibration Dates
Last Injection Date : 3/16/11 11:59 PM

Last Recalculation Date : 3/17/11 3:35 PM

Retention Time (min)	Peak Name	Curve\ Origin	X^3	X^2	X	C	r^2	Cal.Range	No. of Points	Edit Codes
15.335	Hydrocarbons C12-	2 IG		-3.4203e-002	+2.5034e+003	+3.5238e+004	+9.9994e-001	2-7	6	
23.569	Squalene	2 IG		-2.9256e+000	+2.5994e+003	+2.8820e+002	+9.9995e-001	2-7	6	

Curve Codes	Origin Codes	Edit Codes
1 linear	I include	1 curve
2 quadratic	IG ignore	2 origin
3 cubic	F force	3 coefficient

Ret. Time: 15.335 min. Peak Measurement: Area
Peak Name: Hydrocarbons C12-28 Curve\Origin: 2 IG

Level	Amount	Replicate No.	Response	Avg. Response	Std. Dev.
2	100.000000	1	283957	283957.0	#
3	200.000000	1	514918	514917.6	#
4	500.000000	1	1267060	1267060.1	#
5	1000.000000	1	2568985	2568985.0	#
6	2000.000000	1	4869749	4869748.5	#
7	5000.000000	1	11700516	11700516.0	#

Ret. Time: 23.569 min. Peak Measurement: Area
Peak Name: Squalene Curve\Origin: 2 IG

Level	Amount	Replicate No.	Response	Avg. Response	Std. Dev.
2	2.500000	1	7133	7132.7	#
3	5.000000	1	12739	12738.8	#
4	10.000000	1	26093	26093.0	#
5	20.000000	1	50935	50935.1	#
6	25.000000	1	63643	63643.1	#
7	50.000000	1	122921	122920.8	#

= Too few points to calculate.

Peak Name	Level	Rep.	Injection Date Time	Run Files
Hydrocarbons C12-28	2	1	3/16/11 8:09 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 100.run
	3	1	3/16/11 8:55 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 200.run
	4	1	3/16/11 9:41 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 500.run
	5	1	3/16/11 10:27 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 1000.run
	6	1	3/16/11 11:13 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 2000.run
	7	1	3/16/11 11:59 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 5000.run
Squalene	2	1	3/16/11 8:09 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 100.run
	3	1	3/16/11 8:55 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 200.run
	4	1	3/16/11 9:41 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 500.run
	5	1	3/16/11 10:27 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 1000.run
	6	1	3/16/11 11:13 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 2000.run
	7	1	3/16/11 11:59 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 5000.run

****

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Varian Star Workstation - Generic SampleList Tue Mar 29 11:01:39 2011

SampleList: D:\star\Hp6890 GC\031611-c12-28.smp

Created: Wed Mar 16 12:48:24 2011
Modified: Wed Mar 23 17:14:15 2011

****

Line	Sample Name	Inj.	Multiplier
1	icb	1	1
2	retention time mix	1	1
3	std 100	1	1
4	std 200	1	1
5	std 500	1	1
6	std 1000	1	1
7	std 2000	1	1
8	std 5000	1	1
9	crql std 100	1	1
10	icv std 1000	1	1
11	mb	1	1
12	idmp-1	1	1
13	idmp-2	1	1
14	idmp-3	1	1
15	idmp-4	1	1
16	lod	1	1
17	ccb	1	1
18	crql std 100ppm a	1	1
19	ccv std 1000ppm a	1	1

Directory for Data Files: d:\star\data\hp6890 gc\2011-03\0316-c12-28

Data File Names: %s

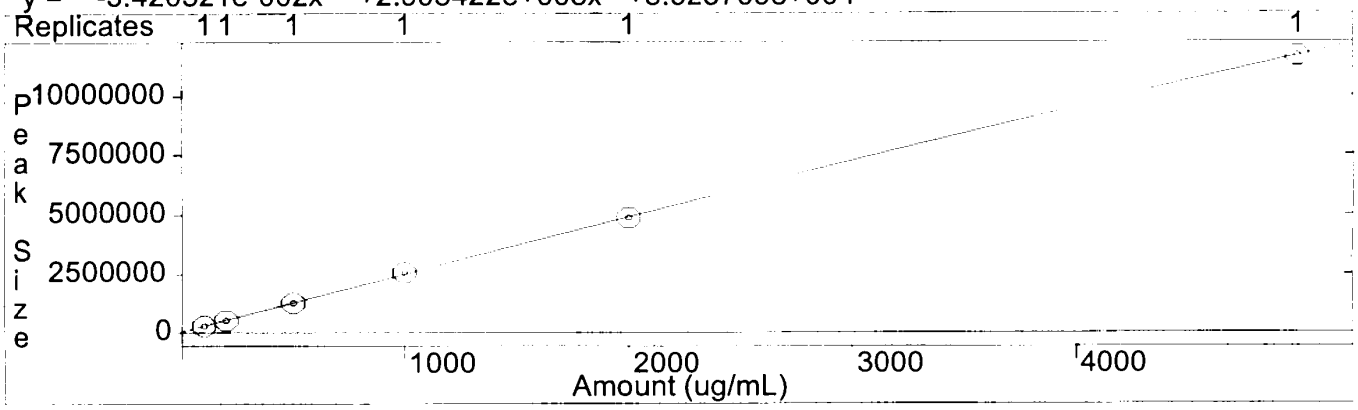
Create and update a new RecalcList: d:\star\hp6890 gc\031611-c12-28.rcl.

Print Date: 29 Mar 2011 11:03:04
Calibration Curves Report
File: d:\star\data\hp6890 gc\2011-03\0316-c12-28\hydrocarbons c12-28.mth
Detector: ADC Board, Address: 16, Channel ID: B

Hydrocarbons C12-28

External Standard Analysis
Curve Type: Quadratic
Origin: Ignore
$y = -3.420321e-002x^2 + 2.503422e+003x + 3.523765e+004$

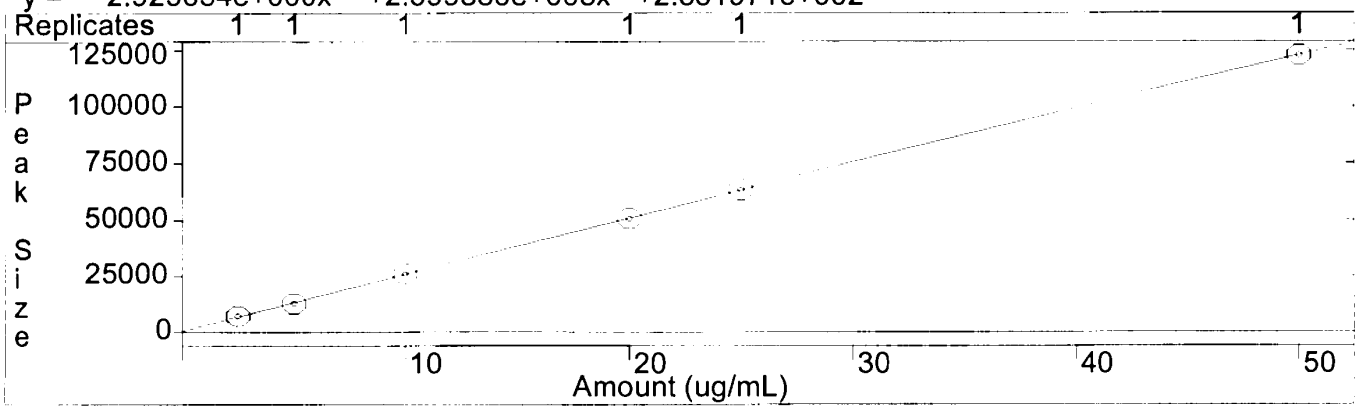
Resp. Fact. RSD: 6.621%
Coeff. Det.(r^2): 0.999937



Squalene

External Standard Analysis
Curve Type: Quadratic
Origin: Ignore
$y = -2.925634e+000x^2 + 2.599388e+003x + 2.881971e+002$

Resp. Fact. RSD: 5.243%
Coeff. Det.(r^2): 0.999953



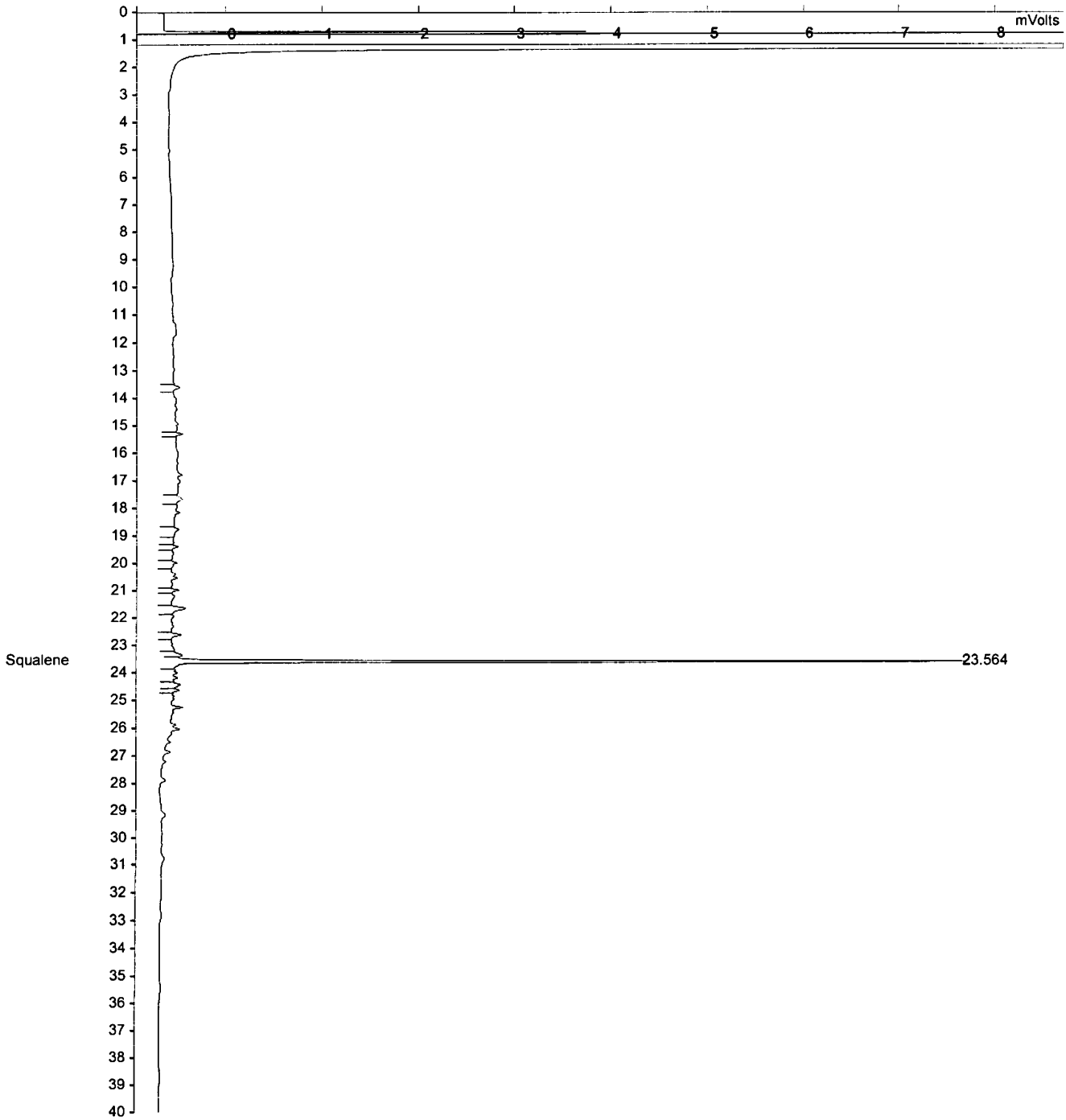
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\icb.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mt
Sample ID : icb

Injection Date: 3/16/11 5:50 PM Calculation Date: 3/17/11 10:39 AM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 39 Zero Offset = 9%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:10:00 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\icb.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mth
Sample ID : icb

Injection Date: 3/16/11 5:50 PM Calculation Date: 3/17/11 10:39 AM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Squalene	14.2060	23.564	-0.004	33421	VB	3.7	0	
	Group 0	14.2060		-0.004	33421				
	Totals:	14.2060		-0.004	33421				

Total Unidentified Counts : 0 counts

Detected Peaks: 12 Rejected Peaks: 4 Identified Peaks: 1

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -640 microVolts

Noise (used): 25 microVolts - fixed value
Noise (monitored before this run): 5 microVolts

Manual injection

****

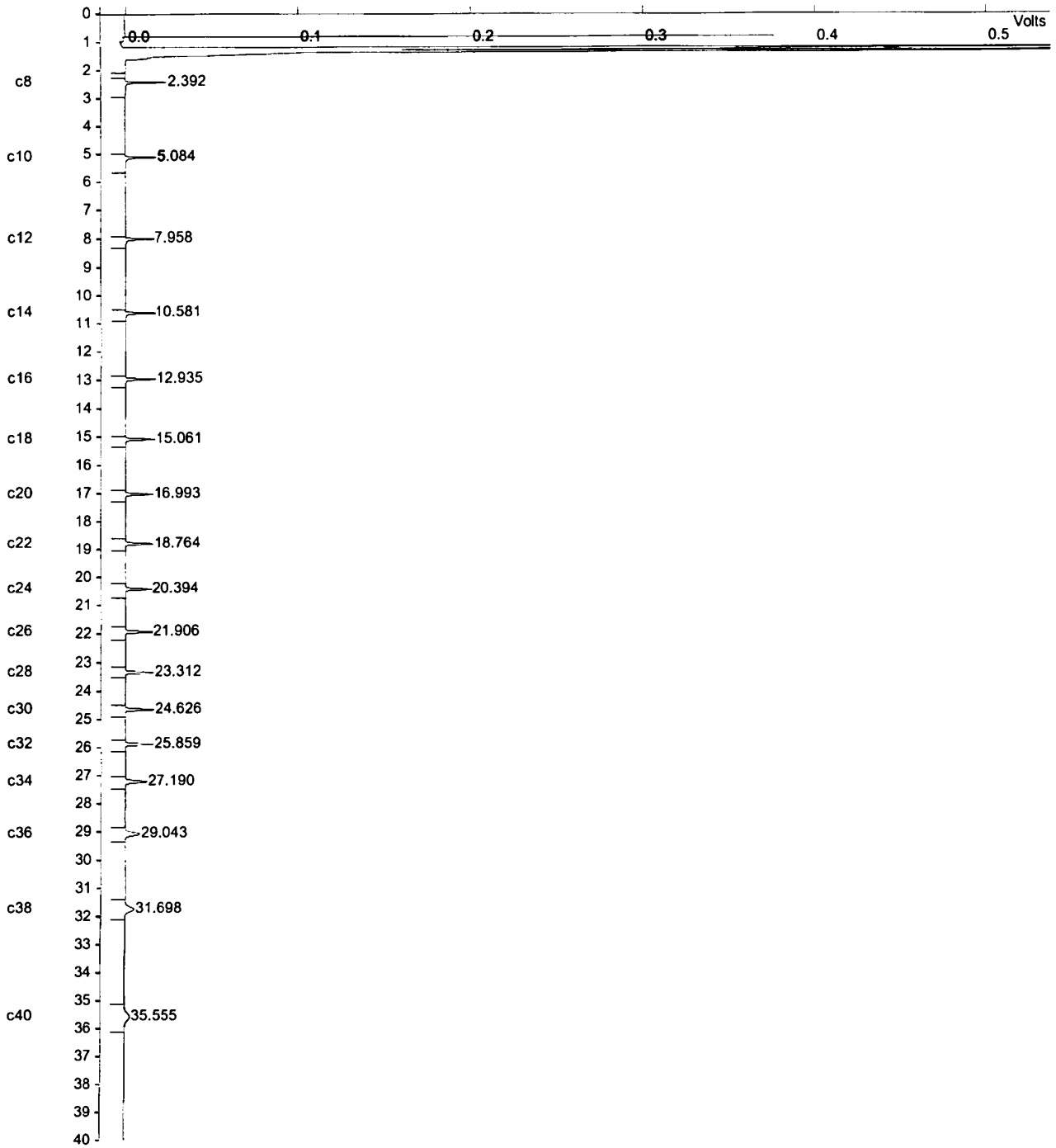
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\retention time mix.ru
Method File : d:\star\hp6890 gc\hydrocarbons-c10-40id.mth
Sample ID : retention time mix

Injection Date: 3/16/11 7:23 PM Calculation Date: 3/23/11 5:26 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 2267 Zero Offset = 2%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:10:05 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\retention time mix.run
Method File : d:\star\hp6890 gc\hydrocarbons-c10-40id.mth
Sample ID : retention time mix

Injection Date: 3/16/11 7:23 PM Calculation Date: 3/23/11 5:26 PM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (ug/ml)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	c8	58.3198	2.392	0.012	64385	PB	2.3	0	
2	c10	55.2223	5.084	0.012	59712	BB	2.5	0	
3	c12	54.0352	7.958	0.011	57888	BB	2.8	0	
4	c14	54.4828	10.581	0.009	59195	BB	2.9	0	
5	c16	55.8015	12.935	0.007	60463	BB	3.0	0	
6	c18	55.6219	15.061	0.006	60586	BB	3.2	0	
7	c20	56.3917	16.993	0.003	60899	BB	3.4	0	
8	c22	58.2384	18.764	0.002	61775	BB	3.5	0	
9	c24	60.8483	20.394	-0.001	61559	BB	3.6	0	
10	c26	62.4747	21.906	-0.002	64099	BB	3.7	0	
11	c28	63.2965	23.312	-0.003	65814	BB	3.7	0	
12	c30	62.9514	24.626	-0.007	68038	BB	3.8	0	
13	c32	61.7613	25.859	-0.008	68329	BB	3.9	0	
14	c34	58.2884	27.190	-0.012	72167	BB	5.3	0	
15	c36	55.3257	29.043	-0.018	70670	BB	7.9	0	
16	c38	50.8337	31.698	-0.023	65592	BB	11.7	0	
17	c40	26.9635	35.555	-0.030	58373	BB	17.9	0	
	Group 0	950.8571		-0.042	1079544				
	Totals:	950.8571		-0.042	1079544				

Total Unidentified Counts : 412 counts

Detected Peaks: 18 Rejected Peaks: 0 Identified Peaks: 17

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -612 microVolts

Noise (used): 30 microVolts - fixed value
Noise (monitored before this run): 7 microVolts

Manual injection

****

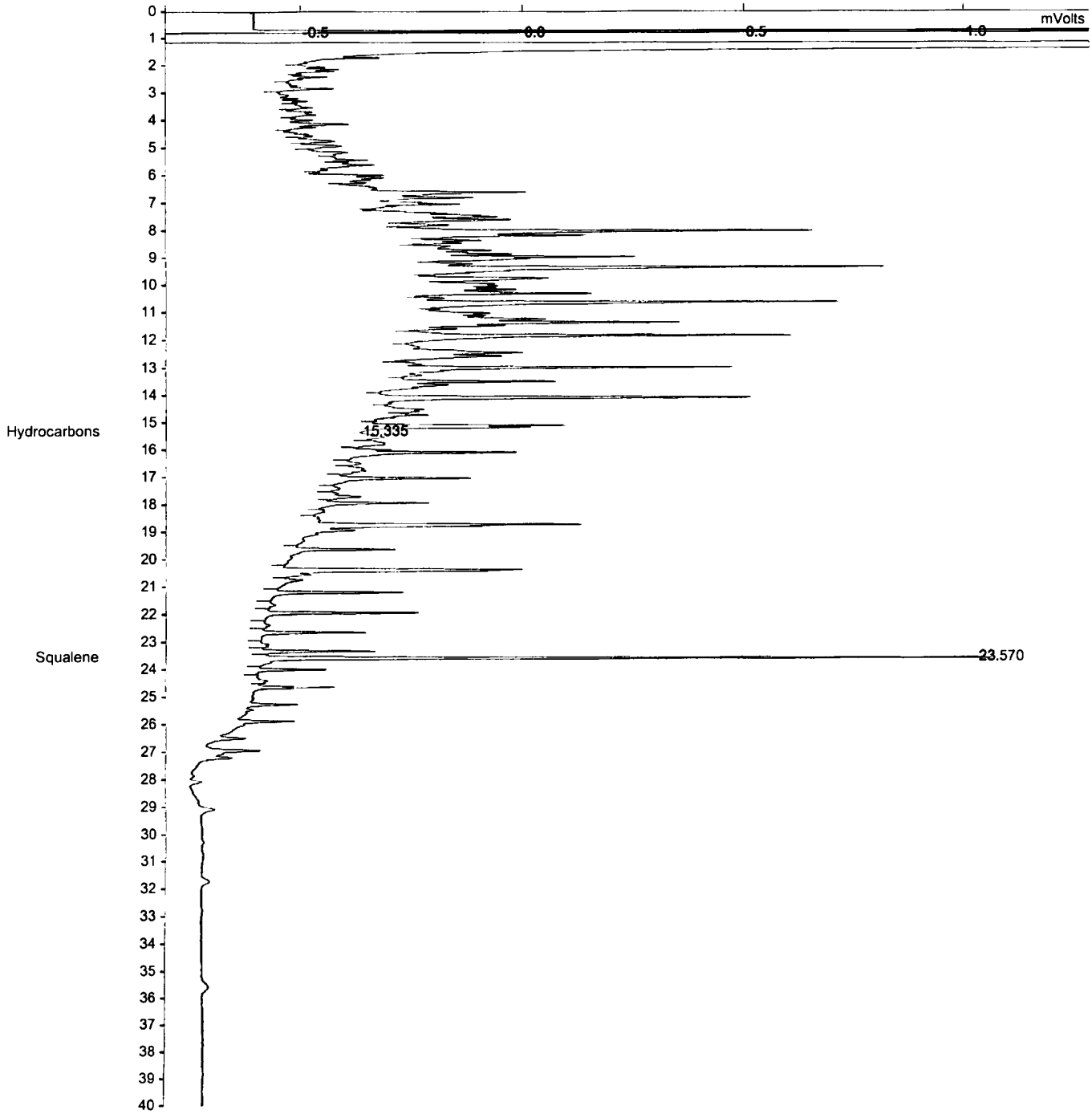
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 100.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mt
Sample ID : std 100

Injection Date: 3/16/11 8:09 PM Calculation Date: 3/17/11 3:35 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 8 Zero Offset = 41%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:10:11 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 100.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mth
Sample ID : std 100

Injection Date: 3/16/11 8:09 PM Calculation Date: 3/17/11 3:35 PM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Calibration
Peak Measurement: Peak Area
Calculation Type: External Standard
Level : 2

Peak No.	Peak Name	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	15.335	0.000	283957	GR	0.0	0	
2	Squalene	23.570	0.001	7133	VV	3.9	0	
	Group 0		0.001	291090				
	Totals:		0.001	291090				

Total Unidentified Counts : 17151 counts

Detected Peaks: 62 Rejected Peaks: 15 Identified Peaks: 2

Multiplier: N/A Divisor: N/A Unidentified Peak Factor: 0

Baseline Offset: -608 microVolts

Noise (used): 25 microVolts - fixed value
Noise (monitored before this run): 7 microVolts

Manual injection

****

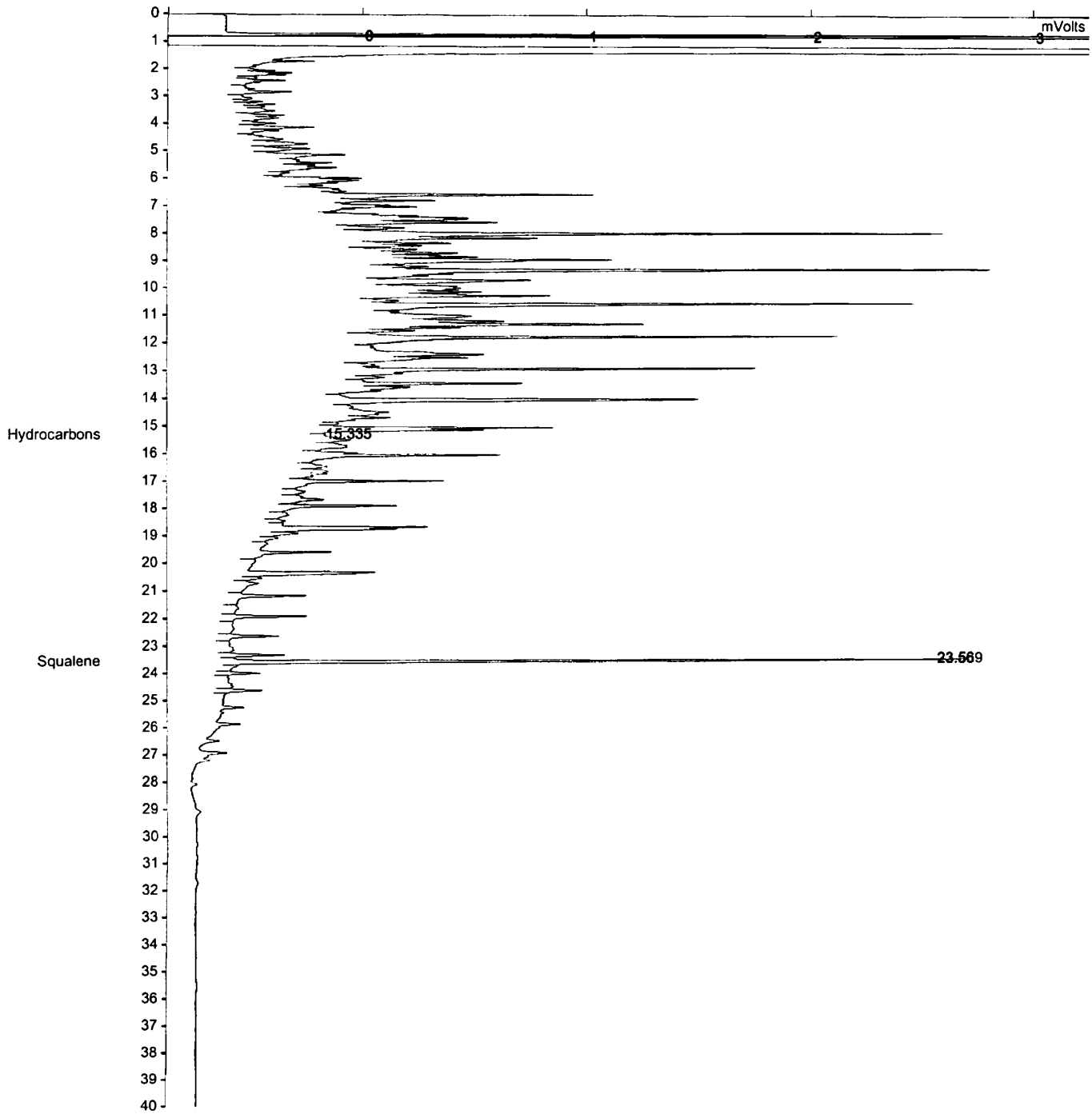
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 200.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mt
Sample ID : std 200

Injection Date: 3/16/11 8:55 PM Calculation Date: 3/17/11 3:33 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 16 Zero Offset = 22%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:10:17 2011

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 200.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mth
Sample ID : std 200

Injection Date: 3/16/11 8:55 PM Calculation Date: 3/17/11 3:33 PM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Calibration
Peak Measurement: Peak Area
Calculation Type: External Standard
Level : 3

Peak No.	Peak Name	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	15.335	0.000	514918	GR	0.0	0	
2	Squalene	23.569	0.003	12739	VB	3.6	0	
	Group 0		0.003	527657				
	Totals:		0.003	527657				

Total Unidentified Counts : 46126 counts

Detected Peaks: 88 Rejected Peaks: 20 Identified Peaks: 2

Multiplier: N/A Divisor: N/A Unidentified Peak Factor: 0

Baseline Offset: -609 microVolts

Noise (used): 25 microVolts - fixed value
Noise (monitored before this run): 4 microVolts

Manual injection

****

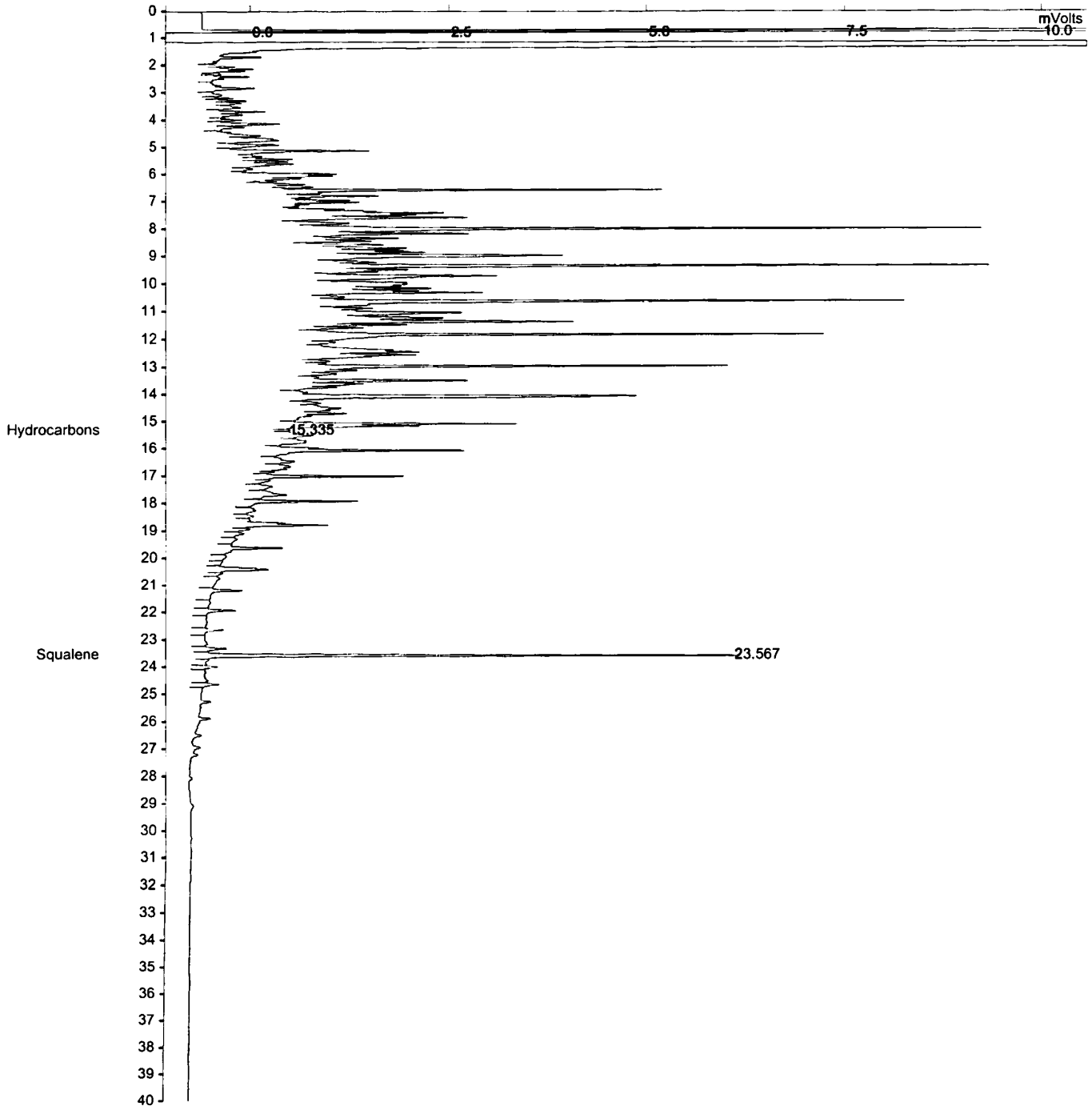
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 500.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mt
Sample ID : std 500

Injection Date: 3/16/11 9:41 PM Calculation Date: 3/17/11 3:33 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 47 Zero Offset = 9%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:10:23 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 500.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mth
Sample ID : std 500

Injection Date: 3/16/11 9:41 PM Calculation Date: 3/17/11 3:33 PM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Calibration
Peak Measurement: Peak Area
Calculation Type: External Standard
Level : 4

Peak No.	Peak Name	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	15.335	0.000	1267060	GR	0.0	0	
2	Squalene	23.567	0.001	26093	VB	3.6	0	
	Group 0		0.001	1293153				
	Totals:		0.001	1293153				

Total Unidentified Counts : 155629 counts

Detected Peaks: 101 Rejected Peaks: 15 Identified Peaks: 2

Multiplier: N/A Divisor: N/A Unidentified Peak Factor: 0

Baseline Offset: -625 microVolts

Noise (used): 25 microVolts - fixed value
Noise (monitored before this run): 6 microVolts

Manual injection

****

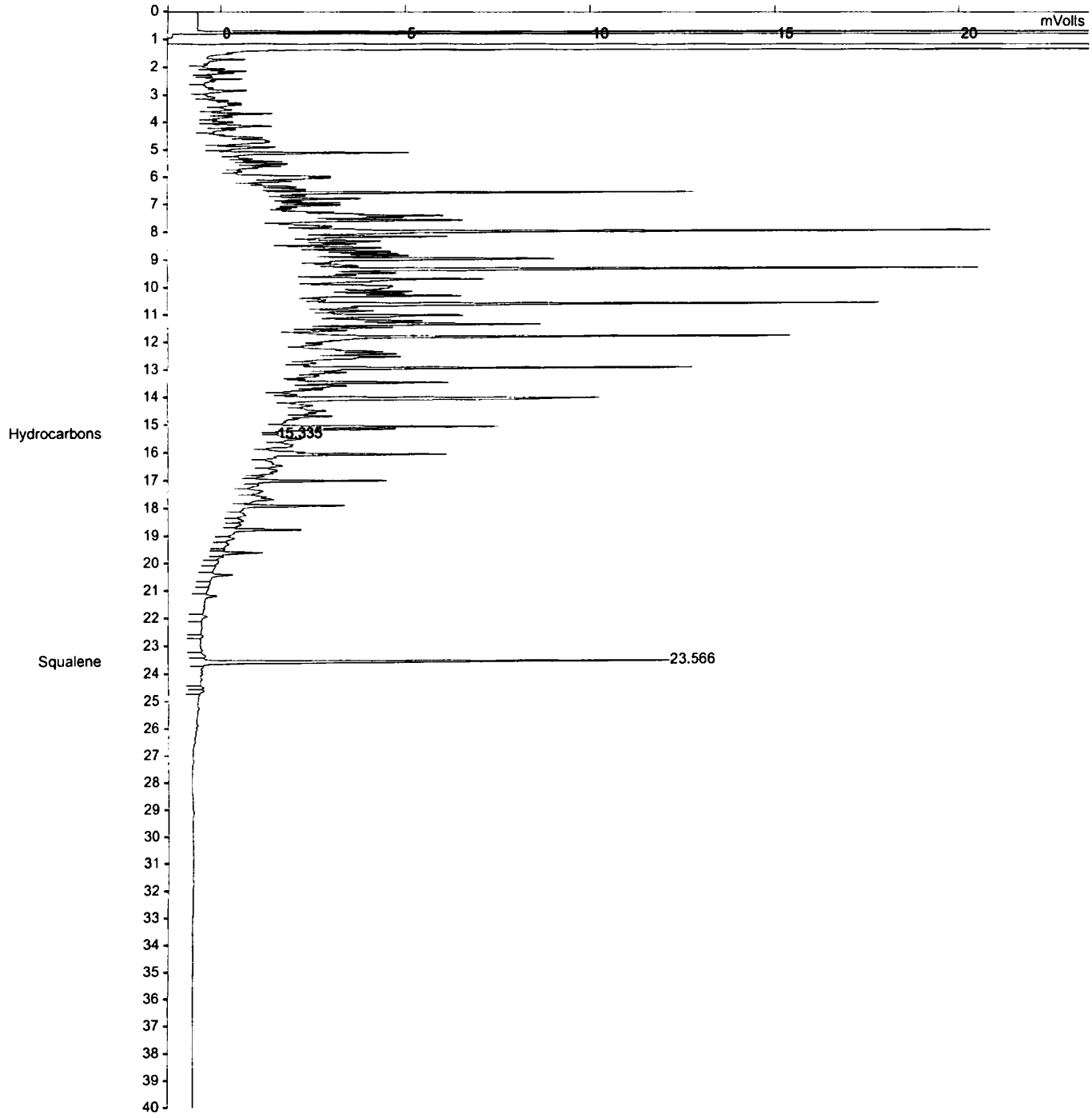
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 1000.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mt
Sample ID : std 1000

Injection Date: 3/16/11 10:27 PM Calculation Date: 3/17/11 3:33 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 102 Zero Offset = 5%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:10:29 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 1000.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mth
Sample ID : std 1000

Injection Date: 3/16/11 10:27 PM Calculation Date: 3/17/11 3:33 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Calibration
Peak Measurement: Peak Area
Calculation Type: External Standard
Level : 5

Peak No.	Peak Name	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	15.335	0.000	2568985	GR	0.0	0	
2	Squalene	23.566	-0.001	50935	VB	3.8	0	
	Group 0		-0.001	2619920				
	Totals:		-0.001	2619920				

Total Unidentified Counts : 399150 counts

Detected Peaks: 108 Rejected Peaks: 4 Identified Peaks: 2

Multiplier: N/A Divisor: N/A Unidentified Peak Factor: 0

Baseline Offset: -619 microVolts

Noise (used): 25 microVolts - fixed value
Noise (monitored before this run): 6 microVolts

Manual injection

****

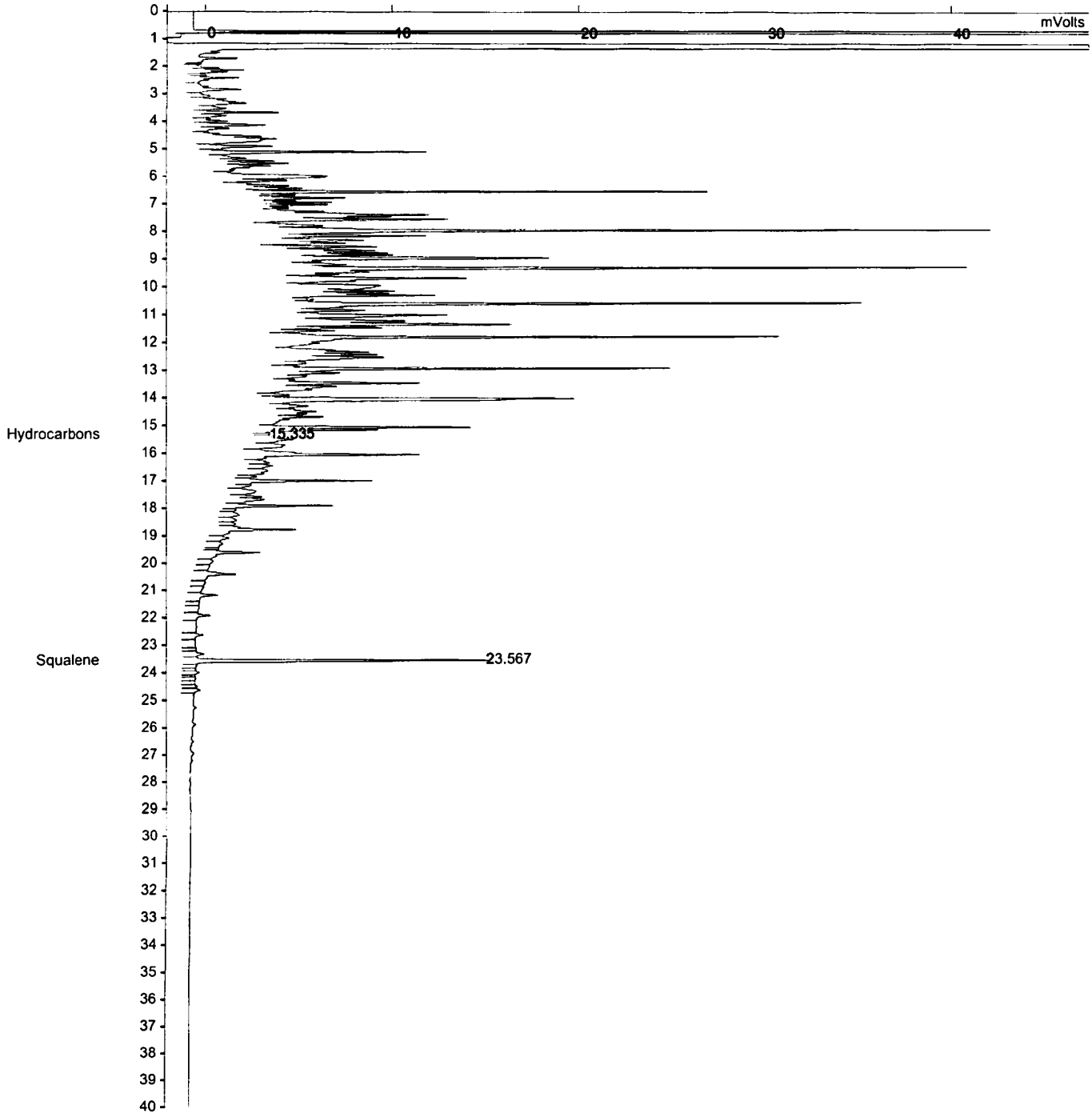
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 2000.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mt
Sample ID : std 2000

Injection Date: 3/16/11 11:13 PM Calculation Date: 3/17/11 3:33 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 202 Zero Offset = 4%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:10:35 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 2000.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mth
Sample ID : std 2000

Injection Date: 3/16/11 11:13 PM Calculation Date: 3/17/11 3:33 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Calibration
Peak Measurement: Peak Area
Calculation Type: External Standard
Level : 6

Peak No.	Peak Name	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	15.335	0.000	4869749	GR	0.0	0	
2	Squalene	23.567	0.001	63643	VV	3.8	0	
	Group 0		0.001	4933392				
	Totals:		0.001	4933392				

Total Unidentified Counts : 778203 counts

Detected Peaks: 113 Rejected Peaks: 6 Identified Peaks: 2

Multiplier: N/A Divisor: N/A Unidentified Peak Factor: 0

Baseline Offset: -622 microVolts

Noise (used): 25 microVolts - fixed value
Noise (monitored before this run): 6 microVolts

Manual injection

****

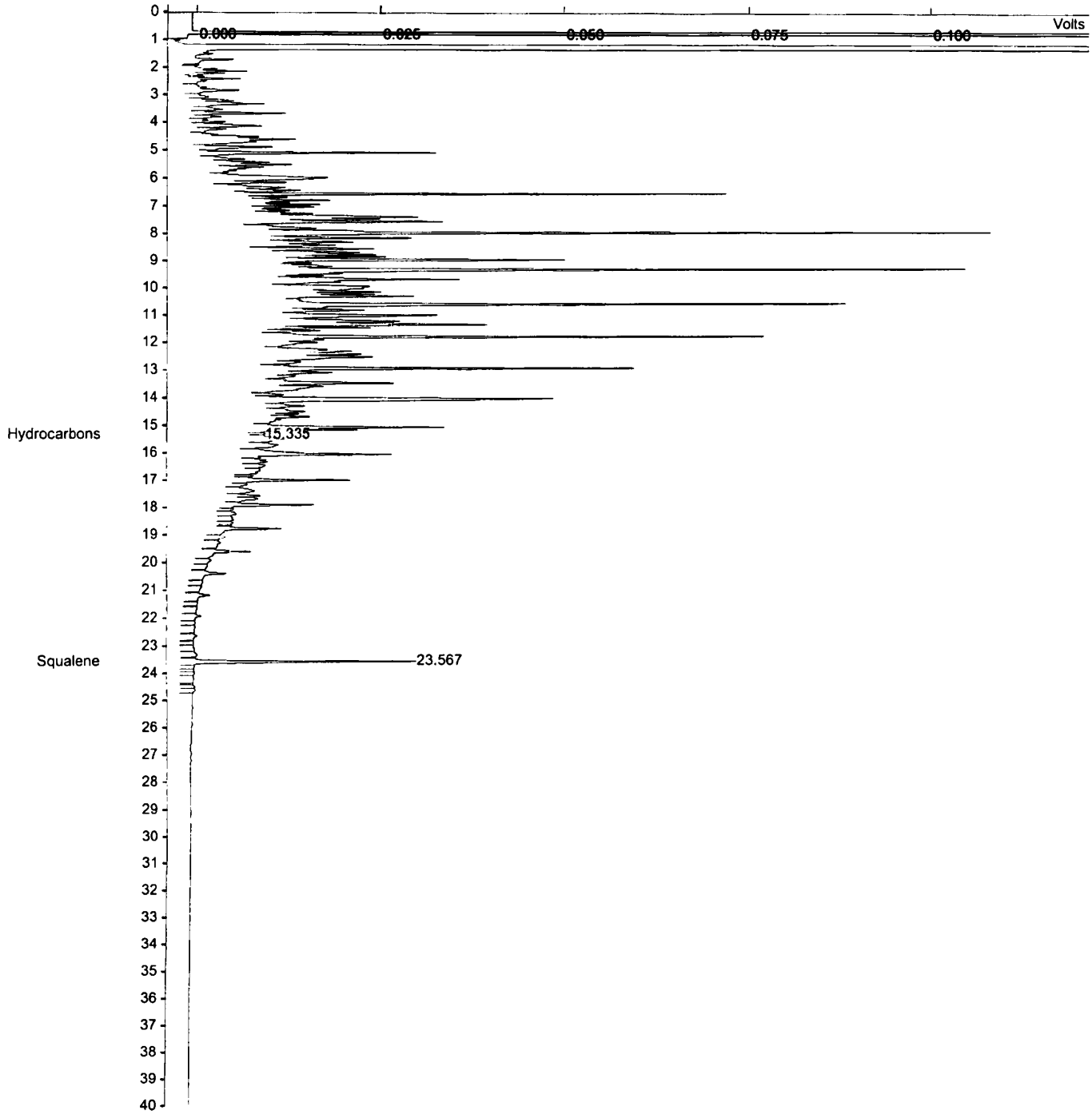
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 5000.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mt
Sample ID : std 5000

Injection Date: 3/16/11 11:59 PM Calculation Date: 3/17/11 3:33 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 515 Zero Offset = 3%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Print Date: Tue Mar 29 11:10:41 2011 Page 1 of 1

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 5000.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mth
Sample ID : std 5000

Injection Date: 3/16/11 11:59 PM Calculation Date: 3/17/11 3:33 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Calibration
Peak Measurement: Peak Area
Calculation Type: External Standard
Level : 7

Peak No.	Peak Name	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Group	Status Codes
1	Hydrocarbons	15.335	0.000	11700516	GR	0.0	0	
2	Squalene	23.567	0.001	122921	VV	3.7	0	
	Group 0		0.001	11823437				
	Totals:		0.001	11823437				

Total Unidentified Counts : 2011078 counts

Detected Peaks: 119 Rejected Peaks: 6 Identified Peaks: 2

Multiplier: N/A Divisor: N/A Unidentified Peak Factor: 0

Baseline Offset: -624 microVolts

Noise (used): 25 microVolts - fixed value
Noise (monitored before this run): 5 microVolts

Manual injection

****

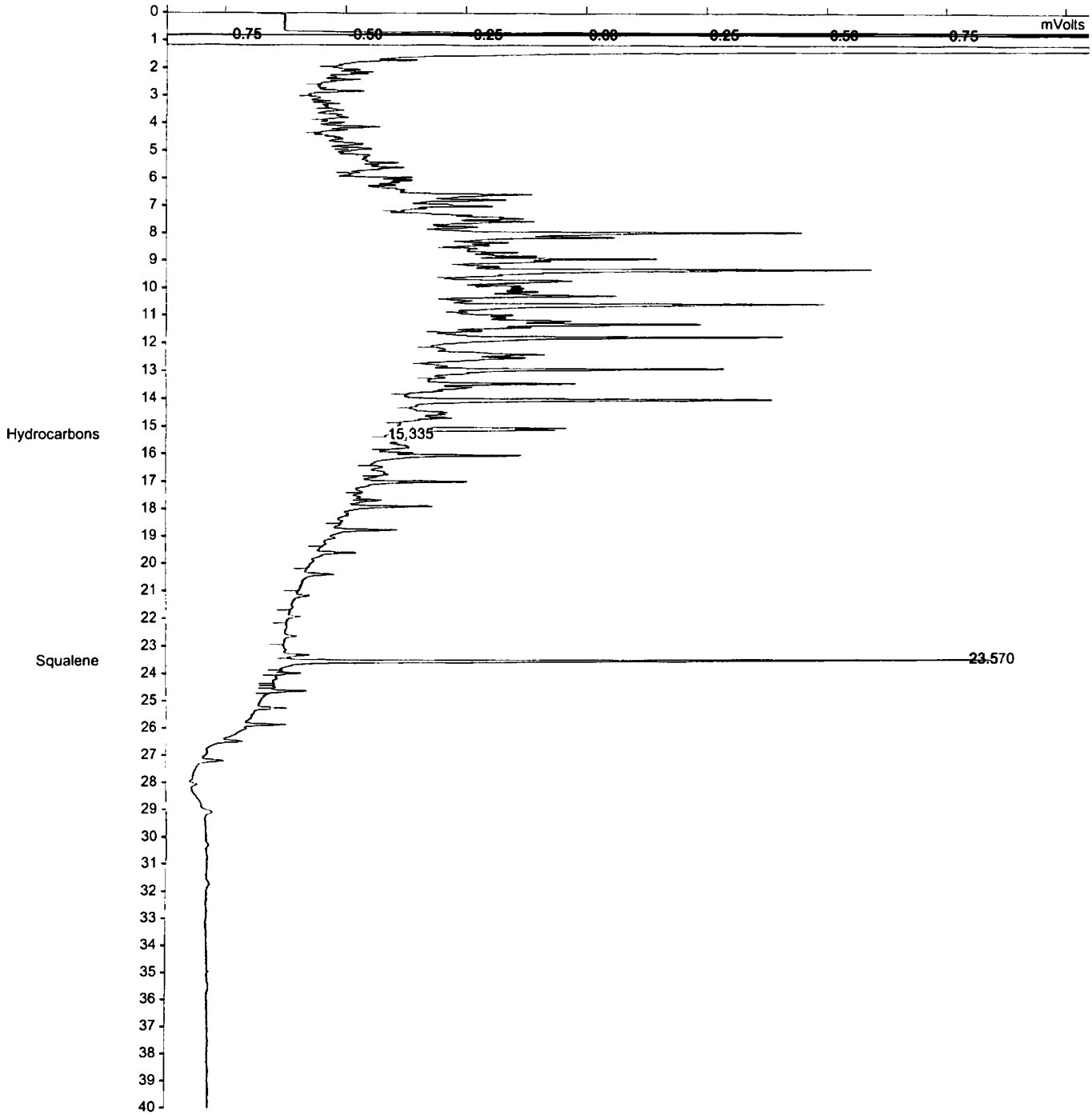
Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\crql std 100.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mt
Sample ID : crql std 100

Injection Date: 3/17/11 12:45 AM Calculation Date: 3/17/11 3:38 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 7 Zero Offset = 51%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Verification Report

Title : DRO / ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\crql std 100.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mth
Sample ID : crql std 100

Injection Date: 3/17/11 12:45 AM Calculation Date: 3/17/11 3:38 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Verification
Peak Measurement: Peak Area
Calculation Type: External Standard
Level : 2
Tolerance : 20.0%

Peak No.	Peak Name	Expected Result (ug/ml)	Calculated Result (ug/ml)	Dev. %	Ret. Time (min)	Time Offset (min)	Area (counts)	Group	Status Codes
1	Hydrocarbons	100.0000	81.9999	18.0	15.335	0.000	240288	0	
2	Squalene	2.5000	2.2989	8.0	23.570	0.001	6248	0	
	Group 0		84.2988			0.001	246536		
	Totals:		84.2988			0.001	246536		

Total Unidentified Counts : 24711 counts

Detected Peaks: 41 Rejected Peaks: 9 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -626 microVolts

Noise (used): 15 microVolts - fixed value
Noise (monitored before this run): 6 microVolts

Manual injection

****

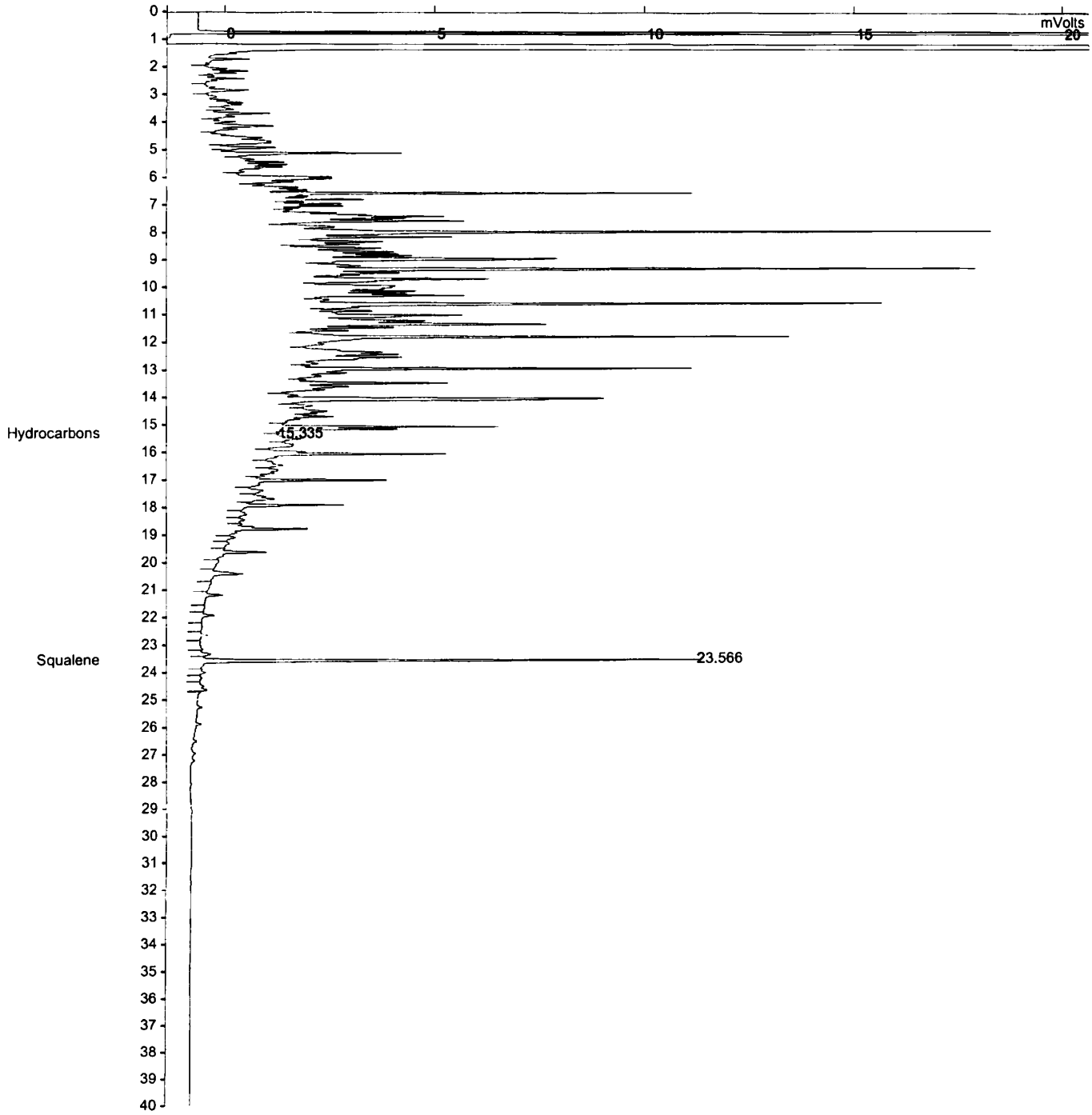
Title : DRO/ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\icv std 1000.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mt
Sample ID : icv std 1000

Injection Date: 3/17/11 1:31 AM Calculation Date: 3/17/11 3:35 PM

Operator : M. Budziak Detector Type: ADCB (1 Volt)
Workstation: Bus Address : 16
Instrument : HP 6890 GC#16 Sample Rate : 10.00 Hz
Channel : B = B Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Chart Speed = 0.49 cm/min Attenuation = 90 Zero Offset = 6%
Start Time = 0.000 min End Time = 40.002 min Min / Tick = 1.00



Verification Report

Title : DRO/ORO
Run File : d:\star\data\hp6890 gc\2011-03\0316-c12-28\icv std 1000.run
Method File : d:\star\data\hp6890 gc\2011-03\0315-c12-28\hydrocarbons c12-28.mth
Sample ID : icv std 1000

Injection Date: 3/17/11 1:31 AM Calculation Date: 3/17/11 3:35 PM

Operator : M. Budziak
Workstation:
Instrument : HP 6890 GC#16
Channel : B = B

Detector Type: ADCB (1 Volt)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 40.002 min

** Star Chromatography Workstation Version 5.3 ** 00778-3168-5cf-21c0 **

Run Mode : Verification
Peak Measurement: Peak Area
Calculation Type: External Standard
Level : 8
Tolerance : 20.0%

Peak No.	Peak Name	Expected Result (ug/ml)	Calculated Result (ug/ml)	Dev. %	Ret. Time (min)	Time Offset (min)	Area (counts)	Group	Status Codes
1	Hydrocarbons	1000.0000	923.0215	7.7	15.335	0.000	2316810	0	
2	Squalene	20.0000	19.1272	4.4	23.566	-0.003	48937	0	
	Group 0		942.1487			-0.003	2365747		
	Totals:		942.1487			-0.003	2365747		

Total Unidentified Counts : 347371 counts

Detected Peaks: 69 Rejected Peaks: 4 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -630 microVolts

Noise (used): 25 microVolts - fixed value
Noise (monitored before this run): 4 microVolts

Manual injection

Requested Curve Type : quadratic
Requested Origin : ignore
Calibration Type : External Standard Analysis

Method Detector Type : ADC Board
Method Bus Address : 16
Method Channel : B

Calibration Dates
Last Injection Date : 3/16/11 11:59 PM

Last Recalculation Date : 3/17/11 3:35 PM

Retention Time (min)	Peak Name	Curve\ Origin	X^3	X^2	X	C	r^2	Cal.Range	No. of Points	Edit Codes
15.335	Hydrocarbons C12-	2 IG		-3.4203e-002	+2.5034e+003	+3.5238e+004	+9.9994e-001	2-7	6	
23.569	Squalene	2 IG		-2.9256e+000	+2.5994e+003	+2.8820e+002	+9.9995e-001	2-7	6	

Curve Codes	Origin Codes	Edit Codes
1 linear	I include	1 curve
2 quadratic	IG ignore	2 origin
3 cubic	F force	3 coefficient

Ret. Time: 15.335 min. Peak Measurement: Area
Peak Name: Hydrocarbons C12-28 Curve\Origin: 2 IG

Level	Amount	Replicate No.	Response	Avg. Response	Std. Dev.
2	100.000000	1	283957	283957.0	#
3	200.000000	1	514918	514917.6	#
4	500.000000	1	1267060	1267060.1	#
5	1000.000000	1	2568985	2568985.0	#
6	2000.000000	1	4869749	4869748.5	#
7	5000.000000	1	11700516	11700516.0	#

Ret. Time: 23.569 min. Peak Measurement: Area
Peak Name: Squalene Curve\Origin: 2 IG

Level	Amount	Replicate No.	Response	Avg. Response	Std. Dev.
2	2.500000	1	7133	7132.7	#
3	5.000000	1	12739	12738.8	#
4	10.000000	1	26093	26093.0	#
5	20.000000	1	50935	50935.1	#
6	25.000000	1	63643	63643.1	#
7	50.000000	1	122921	122920.8	#

= Too few points to calculate.

Peak Name	Level	Rep.	Injection Date Time	Run Files
Hydrocarbons C12-28	2	1	3/16/11 8:09 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 100.run
	3	1	3/16/11 8:55 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 200.run
	4	1	3/16/11 9:41 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 500.run
	5	1	3/16/11 10:27 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 1000.run
	6	1	3/16/11 11:13 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 2000.run
	7	1	3/16/11 11:59 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 5000.run
Squalene	2	1	3/16/11 8:09 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 100.run
	3	1	3/16/11 8:55 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 200.run
	4	1	3/16/11 9:41 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 500.run
	5	1	3/16/11 10:27 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 1000.run
	6	1	3/16/11 11:13 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 2000.run
	7	1	3/16/11 11:59 PM	d:\star\data\hp6890 gc\2011-03\0316-c12-28\std 5000.run

****

RTI Laboratories

Run ID: GC-TCD 1_110310B **Run No.:** 39440

Analytical Run Date: 3/10/2011 **InstrumentID:** GC-TCD 1

Analyst: Mike Budziak **Column:**

Calibration ID: **Column ID:**

Column Length:

SampID	TestCode	SampType	Batch ID	Analysis Date/Time	QA By	Q	Comments
icb	ASTM-D2504	ICB	R39440	3/11/2011 12:55:00 AM	Robert Lynch		
ccv std 1-2 a	ASTM-D2504	CCV	R39440	3/11/2011 1:17:00 AM	Robert Lynch		
crql std 2% a	ASTM-D2504	CRQL	R39440	3/11/2011 1:39:00 AM	Robert Lynch		
lcs	ASTM-D2504	LCS	R39440	3/11/2011 2:08:00 AM	Robert Lynch		
lcsd	ASTM-D2504	LCSD	R39440	3/11/2011 2:31:00 AM	Robert Lynch		
mb	ASTM-D2504	MBLK	R39440	3/11/2011 2:50:00 AM	Robert Lynch		
1103158-001A	ASTM-D2504	SAMP	R39440	3/11/2011 3:15:00 AM	Robert Lynch	H	
1103158-002A	ASTM-D2504	SAMP	R39440	3/11/2011 3:37:00 AM	Robert Lynch	H	
1103158-003A	ASTM-D2504	SAMP	R39440	3/11/2011 4:01:00 AM	Robert Lynch	H	
1103158-004A	ASTM-D2504	SAMP	R39440	3/11/2011 4:21:00 AM	Robert Lynch	H	
1103158-005A	ASTM-D2504	SAMP	R39440	3/11/2011 5:03:00 AM	Robert Lynch	H	
1103158-006A	ASTM-D2504	SAMP	R39440	3/11/2011 5:30:00 AM	Robert Lynch	H	
1103158-007A	ASTM-D2504	SAMP	R39440	3/11/2011 5:51:00 AM	Robert Lynch	H	
1103158-008A	ASTM-D2504	SAMP	R39440	3/11/2011 6:12:00 AM	Robert Lynch	H	
1103158-009A	ASTM-D2504	SAMP	R39440	3/11/2011 6:36:00 AM	Robert Lynch	H	
1103158-010A	ASTM-D2504	SAMP	R39440	3/11/2011 6:58:00 AM	Robert Lynch	H	
1103158-007Adup	ASTM-D2504	DUP	R39440	3/11/2011 7:19:00 AM	Robert Lynch	H	
LOD	ASTM-D2504	SAMP	R39440	3/11/2011 8:11:00 AM	Robert Lynch		
crql std 2% b	ASTM-D2504	CCV	R39440	3/11/2011 9:31:00 AM	Robert Lynch		
ccv std 1-2 b	ASTM-D2504	CCV	R39440	3/11/2011 9:57:00 AM	Robert Lynch		

RTI Laboratories

ANALYTICAL RUN Summary

15-Apr-11

RunNo 39440

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748283	icb	ASTM-D2504	ICB	.TA\031011\0310	3/11/2011 12:55:	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748284	ccv std 1-2 a	ASTM-D2504	CCV	.TA\031011\0310	3/11/2011 1:17:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	2.319	2.319		2.5	0	0	0.025	0.1	0	93%	85	115	0%	
Carbon Monoxide	A	%	2.591	2.591		2.5	0	0	0.025	0.1	0	104%	85	115	0%	
Ethane	A	%		0		1	0	0	0.025	0.5	0	0%	85	115	0%	S
Hydrogen	A	%		0		1	0	0	0.025	0.5	0	0%	85	115	0%	S
Methane	A	%	1.961	1.961		2	0	0	0.025	0.5	0	98%	85	115	0%	
Nitrogen	A	%	2.662	2.662		2.5	0	0	0.025	0.1	0	106%	85	115	0%	
Oxygen	A	%	2.356	2.356		2.5	0	0	0.025	0.1	0	94%	85	115	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748285	crql std 2% a	ASTM-D2504	CRQL	.TA\031011\0310	3/11/2011 1:39:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	0.28	0.28		0.3	0	0	0.025	0.1	0	93%	80	120	0%	
Carbon Monoxide	A	%	0.136	0.136		0.14	0	0	0.025	0.1	0	97%	80	120	0%	
Ethane	A	%		0		0.025	0	0	0.025	0.5	0	0%	80	120	0%	S
Hydrogen	A	%		0		0.025	0	0	0.025	0.5	0	0%	80	120	0%	S
Methane	A	%	0.09	0.09		0.09	0	0	0.025	0.5	0	100%	80	120	0%	
Nitrogen	A	%	1.356	1.356		1.39	0	0	0.025	0.1	0	98%	80	120	0%	
Oxygen	A	%	0.094	0.094		0.08	0	0	0.025	0.1	0	118%	80	120	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748286	lcs	ASTM-D2504	LCS	.TA\031011\0310	3/11/2011 2:08:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748286	lcs	ASTM-D2504	LCS	.TA\031011\0310	3/11/2011 2:08:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	2.286	2.286		2.5	0	0	0.025	0.1	0	91%	70	130	0%	
Carbon Monoxide	A	%	2.426	2.426		2.5	0	0	0.025	0.1	0	97%	70	130	0%	
Ethane	A	%		0		1	0	0	0.025	0.5	0	0%	70	130	0%	S
Hydrogen	A	%		0		1	0	0	0.025	0.5	0	0%	70	130	0%	S
Methane	A	%	1.932	1.932		2	0	0	0.025	0.5	0	97%	70	130	0%	
Nitrogen	A	%	2.667	2.667		2.5	0	0	0.025	0.1	0	107%	70	130	0%	
Oxygen	A	%	2.31	2.31		2.5	0	0	0.025	0.1	0	92%	70	130	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748287	lcsd	ASTM-D2504	LCSD	.TA\031011\0310	3/11/2011 2:31:0	1	R39440		0	748286	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	2.291	2.291		2.5	0	2.286	0.025	0.1	0	92%	70	130	0%	
Carbon Monoxide	A	%	2.437	2.437		2.5	0	2.426	0.025	0.1	0	97%	70	130	0%	
Ethane	A	%		0		1	0	0	0.025	0.5	0	0%	70	130	0%	S
Hydrogen	A	%		0		1	0	0	0.025	0.5	0	0%	70	130	0%	S
Methane	A	%	1.954	1.954		2	0	1.932	0.025	0.5	0	98%	70	130	1%	
Nitrogen	A	%	2.686	2.686		2.5	0	2.667	0.025	0.1	0	107%	70	130	1%	
Oxygen	A	%	2.33	2.33		2.5	0	2.31	0.025	0.1	0	93%	70	130	1%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748288	mb	ASTM-D2504	MBLK	.TA\031011\0310	3/11/2011 2:50:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	0	0		0	0	0	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0	0		0	0	0	0.066	0.14	0	0%	0	0	0%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0	0		0	0	0	0.043	0.09	0	0%	0	0	0%	
Nitrogen	A	%	0	0		0	0	0	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	0	0		0	0	0	0.03	0.08	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748289	1103158-001A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031011\0310	3/11/2011 3:15:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	1.46	1.46		0	0	0	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0	0		0	0	0	0.066	0.14	0	0%	0	0	0%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0	0		0	0	0	0.043	0.09	0	0%	0	0	0%	
Nitrogen	A	%	76.918	76.918		0	0	0	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	17.277	17.277		0	0	0	0.03	0.08	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748290	1103158-002A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031011\0310	3/11/2011 3:37:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	1.397	1.397		0	0	0	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0	0		0	0	0	0.066	0.14	0	0%	0	0	0%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0	0		0	0	0	0.043	0.09	0	0%	0	0	0%	
Nitrogen	A	%	77.241	77.241		0	0	0	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	17.634	17.634		0	0	0	0.03	0.08	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748291	1103158-003A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031011\0310	3/11/2011 4:01:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	9.279	9.279		0	0	0	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0.165	0.165		0	0	0	0.066	0.14	0	0%	0	0	0%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0.014	0		0	0	0	0.043	0.09	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748291	1103158-003A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031011\0310	3/11/2011 4:01:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Nitrogen	A	%	85.336	85.336		0	0	0	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	3.346	3.346		0	0	0	0.03	0.08	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748292	1103158-004A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031011\0310	3/11/2011 4:21:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	9.505	9.505		0	0	0	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0.074	0.074		0	0	0	0.066	0.14	0	0%	0	0	0%	J
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0.015	0		0	0	0	0.043	0.09	0	0%	0	0	0%	
Nitrogen	A	%	84.29	84.29		0	0	0	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	3.729	3.729		0	0	0	0.03	0.08	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748293	1103158-005A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031011\0310	3/11/2011 5:03:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	0.054	0		0	0	0	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0	0		0	0	0	0.066	0.14	0	0%	0	0	0%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0	0		0	0	0	0.043	0.09	0	0%	0	0	0%	
Nitrogen	A	%	75.701	75.701		0	0	0	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	20.345	20.345		0	0	0	0.03	0.08	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748294	1103158-006A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031011\0310	3/11/2011 5:30:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	5.045	5.045		0	0	0	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0.174	0.174		0	0	0	0.066	0.14	0	0%	0	0	0%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0.002	0		0	0	0	0.043	0.09	0	0%	0	0	0%	
Nitrogen	A	%	80.758	80.758		0	0	0	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	10.402	10.402		0	0	0	0.03	0.08	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748295	1103158-007A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031011\0310	3/11/2011 5:51:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	9.138	9.138		0	0	0	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0.259	0.259		0	0	0	0.066	0.14	0	0%	0	0	0%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0.011	0		0	0	0	0.043	0.09	0	0%	0	0	0%	
Nitrogen	A	%	82.298	82.298		0	0	0	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	4.018	4.018		0	0	0	0.03	0.08	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748296	1103158-008A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031011\0310	3/11/2011 6:12:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	1.694	1.694		0	0	0	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0	0		0	0	0	0.066	0.14	0	0%	0	0	0%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0	0		0	0	0	0.043	0.09	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748296	1103158-008A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031011\0310	3/11/2011 6:12:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Nitrogen	A	%	79.596	79.596		0	0	0	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	14.266	14.266		0	0	0	0.03	0.08	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748297	1103158-009A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031011\0310	3/11/2011 6:36:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	7.998	7.998		0	0	0	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0.437	0.437		0	0	0	0.066	0.14	0	0%	0	0	0%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0.011	0		0	0	0	0.043	0.09	0	0%	0	0	0%	
Nitrogen	A	%	83.44	83.44		0	0	0	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	4.21	4.21		0	0	0	0.03	0.08	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748298	1103158-010A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031011\0310	3/11/2011 6:58:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	8.741	8.741		0	0	0	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0.37	0.37		0	0	0	0.066	0.14	0	0%	0	0	0%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0.013	0		0	0	0	0.043	0.09	0	0%	0	0	0%	
Nitrogen	A	%	83.896	83.896		0	0	0	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	3.033	3.033		0	0	0	0.03	0.08	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748299	1103158-007Adup	ASTM-D2504	DUP	.TA\031011\0310	3/11/2011 7:19:0	1	R39440		0	748295	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	9.156	9.156		0	0	9.138	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0.277	0.277		0	0	0.259	0.066	0.14	0	0%	0	0	7%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0.01	0		0	0	0	0.043	0.09	0	0%	0	0	0%	
Nitrogen	A	%	82.134	82.134		0	0	82.298	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	4.112	4.112		0	0	4.018	0.03	0.08	0	0%	0	0	2%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748300	LOD	ASTM-D2504	SAMP	.TA\031011\0310	3/11/2011 8:11:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	0.115	0		0	0	0	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0.055	0		0	0	0	0.066	0.14	0	0%	0	0	0%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0.036	0		0	0	0	0.043	0.09	0	0%	0	0	0%	
Nitrogen	A	%	0.599	0		0	0	0	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	0.057	0.057		0	0	0	0.03	0.08	0	0%	0	0	0%	J

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748301	crql std 2% b	ASTM-D2504	CCV	.TA\031011\0310	3/11/2011 9:31:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	0.332	0.332		0.3	0	0	0.025	0.1	0	111%	85	115	0%	
Carbon Monoxide	A	%	0.15	0.15		0.14	0	0	0.025	0.1	0	107%	85	115	0%	
Ethane	A	%		0		0.025	0	0	0.025	0.5	0	0%	85	115	0%	S
Hydrogen	A	%		0		0.025	0	0	0.025	0.5	0	0%	85	115	0%	S
Methane	A	%	0.099	0.099		0.09	0	0	0.025	0.5	0	110%	85	115	0%	
Nitrogen	A	%	1.456	1.456		1.39	0	0	0.025	0.1	0	105%	85	115	0%	
Oxygen	A	%	0.073	0.073		0.08	0	0	0.025	0.1	0	91%	85	115	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748302	ccv std 1-2 b	ASTM-D2504	CCV	.TA\031011\0310	3/11/2011 9:57:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	2.47	2.47		2.5	0	0	0.025	0.1	0	99%	85	115	0%	
Carbon Monoxide	A	%	2.512	2.512		2.5	0	0	0.025	0.1	0	100%	85	115	0%	
Ethane	A	%		0		1	0	0	0.025	0.5	0	0%	85	115	0%	S
Hydrogen	A	%		0		1	0	0	0.025	0.5	0	0%	85	115	0%	S
Methane	A	%	1.967	1.967		2	0	0	0.025	0.5	0	98%	85	115	0%	
Nitrogen	A	%	2.69	2.69		2.5	0	0	0.025	0.1	0	108%	85	115	0%	
Oxygen	A	%	2.387	2.387		2.5	0	0	0.025	0.1	0	95%	85	115	0%	

Spikes and Surrogates Report

RunID: GC-TCD 1_110310B **Analyst:** Mike Budziak

RunNo: 39440

Spikes

SeqNo	SampID	TestCode	SampType	BatchID	DF	Duplicate Of
748284	ccv std 1-2 a	ASTM-D2504	CCV	R39440	1	

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	Qual
☑	Carbon Monoxide	2.5	2.591	103.64%	85	115		
☐	Ethane	1	0	0.00%	85	115	*	S
☐	Hydrogen	1	0	0.00%	85	115	*	S
☑	Methane	2	1.961	98.05%	85	115		
☑	Nitrogen	2.5	2.662	106.48%	85	115		
☑	Oxygen	2.5	2.356	94.24%	85	115		
☑	Carbon dioxide	2.5	2.319	92.76%	85	115		

Total Recoveries Out: 2

SeqNo	SampID	TestCode	SampType	BatchID	DF
748285	crql std 2% a	ASTM-D2504	CRQL	R39440	1

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	Qual
☐	Ethane	0.025	0	0.00%	80	120	*	S
☑	Oxygen	0.08	0.094	117.50%	80	120		
☑	Nitrogen	1.39	1.356	97.55%	80	120		
☐	Hydrogen	0.025	0	0.00%	80	120	*	S
☑	Carbon Monoxide	0.14	0.136	97.14%	80	120		
☑	Carbon dioxide	0.3	0.28	93.33%	80	120		
☑	Methane	0.09	0.09	100.00%	80	120		

Total Recoveries Out: 2

SeqNo	SampID	TestCode	SampType	BatchID	DF
748286	lcs	ASTM-D2504	LCS	R39440	1

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	Qual
☑	Nitrogen	2.5	2.667	106.68%	70	130		
☑	Oxygen	2.5	2.31	92.40%	70	130		
☑	Carbon dioxide	2.5	2.286	91.44%	70	130		
☑	Carbon Monoxide	2.5	2.426	97.04%	70	130		
☐	Ethane	1	0	0.00%	70	130	*	S
☐	Hydrogen	1	0	0.00%	70	130	*	S
☑	Methane	2	1.932	96.60%	70	130		

Total Recoveries Out: 2

SeqNo	SampID	TestCode	SampType	BatchID	DF	Duplicate Of
748287	lcsd	ASTM-D2504	LCSD	R39440	1	748286

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	RPD	RPD Limit	RPD Out	Qual
☑	Carbon Monoxide	2.5	2.437	97.48%	70	130		0.45%	20		
☐	Ethane	1	0	0.00%	70	130	*	0.00%	20		S
☐	Hydrogen	1	0	0.00%	70	130	*	0.00%	20		S
☑	Methane	2	1.954	97.70%	70	130		1.13%	20		
☑	Nitrogen	2.5	2.686	107.44%	70	130		0.71%	20		
☑	Oxygen	2.5	2.33	93.20%	70	130		0.86%	20		
☑	Carbon dioxide	2.5	2.291	91.64%	70	130		0.22%	20		

Total Recoveries Out: 2 **Total RPD Out:** 0

Spikes and Surrogates Report

RunID: GC-TCD 1_110310B **Analyst:** Mike Budziak

RunNo: 39440

Spikes

SeqNo	SampID	TestCode	SampType	BatchID	DF	Duplicate Of
748301	crql std 2% b	ASTM-D2504	CCV	R39440	1	

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	Qual
☐	Ethane	0.025	0	0.00%	85	115	*	S
✓	Oxygen	0.08	0.073	91.25%	85	115		
☑	Nitrogen	1.39	1.456	104.75%	85	115		
☐	Hydrogen	0.025	0	0.00%	85	115	*	S
☑	Carbon Monoxide	0.14	0.15	107.14%	85	115		
☑	Carbon dioxide	0.3	0.34	113.33%	85	115		
☑	Methane	0.09	0.099	110.00%	85	115		

Total Recoveries Out: 2

748302	ccv std 1-2 b	ASTM-D2504	CCV	R39440	1	

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	Qual
☑	Oxygen	2.5	2.387	95.48%	85	115		
☑	Carbon dioxide	2.5	2.47	98.80%	85	115		
☑	Carbon Monoxide	2.5	2.512	100.48%	85	115		
☐	Ethane	1	0	0.00%	85	115	*	S
☐	Hydrogen	1	0	0.00%	85	115	*	S
☑	Methane	2	1.967	98.35%	85	115		
☑	Nitrogen	2.5	2.69	107.60%	85	115		

Total Recoveries Out: 2

Method Blank Contamination Report

Blank ID: mb

SeqNo: 748288

Analysis Date: 3/11/2011 2:50:00 AM

Analyst: Mike Budziak

Batch ID: R39440

TestCode: ASTM-D2504

RunID: GC-TCD 1_110310B

InstrumentID: GC-TCD 1

No Contaminants Were Found in this Blank

The following Samples are associated with this blank:

Sample ID	SeqNo	TestCode	SampType	RunID	BatchID	AnalDate	DF
icb	748283	ASTM-D2504	ICB	GC-TCD 1_110310B	R39440	3/11/2011 12:55:00 AM	1
ccv std 1-2 a	748284	ASTM-D2504	CCV	GC-TCD 1_110310B	R39440	3/11/2011 1:17:00 AM	1
crql std 2% a	748285	ASTM-D2504	CRQL	GC-TCD 1_110310B	R39440	3/11/2011 1:39:00 AM	1
lcs	748286	ASTM-D2504	LCS	GC-TCD 1_110310B	R39440	3/11/2011 2:08:00 AM	1
lcsd	748287	ASTM-D2504	LCSD	GC-TCD 1_110310B	R39440	3/11/2011 2:31:00 AM	1
1103158-001A	748289	ASTM-D2504	SAMP	GC-TCD 1_110310B	R39440	3/11/2011 3:15:00 AM	1
1103158-002A	748290	ASTM-D2504	SAMP	GC-TCD 1_110310B	R39440	3/11/2011 3:37:00 AM	1
1103158-003A	748291	ASTM-D2504	SAMP	GC-TCD 1_110310B	R39440	3/11/2011 4:01:00 AM	1
1103158-004A	748292	ASTM-D2504	SAMP	GC-TCD 1_110310B	R39440	3/11/2011 4:21:00 AM	1
1103158-005A	748293	ASTM-D2504	SAMP	GC-TCD 1_110310B	R39440	3/11/2011 5:03:00 AM	1
1103158-006A	748294	ASTM-D2504	SAMP	GC-TCD 1_110310B	R39440	3/11/2011 5:30:00 AM	1
1103158-007A	748295	ASTM-D2504	SAMP	GC-TCD 1_110310B	R39440	3/11/2011 5:51:00 AM	1
1103158-008A	748296	ASTM-D2504	SAMP	GC-TCD 1_110310B	R39440	3/11/2011 6:12:00 AM	1
1103158-009A	748297	ASTM-D2504	SAMP	GC-TCD 1_110310B	R39440	3/11/2011 6:36:00 AM	1
1103158-010A	748298	ASTM-D2504	SAMP	GC-TCD 1_110310B	R39440	3/11/2011 6:58:00 AM	1
1103158-007Adup	748299	ASTM-D2504	DUP	GC-TCD 1_110310B	R39440	3/11/2011 7:19:00 AM	1
LOD	748300	ASTM-D2504	SAMP	GC-TCD 1_110310B	R39440	3/11/2011 8:11:00 AM	1
crql std 2% b	748301	ASTM-D2504	CCV	GC-TCD 1_110310B	R39440	3/11/2011 9:31:00 AM	1
ccv std 1-2 b	748302	ASTM-D2504	CCV	GC-TCD 1_110310B	R39440	3/11/2011 9:57:00 AM	1
1103158-011A	748306	ASTM-D2504	SAMP	GC-TCD 1_110311A	R39440	3/12/2011 5:16:00 AM	1
1103158-012A	748307	ASTM-D2504	SAMP	GC-TCD 1_110311A	R39440	3/12/2011 5:38:00 AM	1
1103158-013A	748308	ASTM-D2504	SAMP	GC-TCD 1_110311A	R39440	3/12/2011 5:59:00 AM	1
1103158-014A	748309	ASTM-D2504	SAMP	GC-TCD 1_110311A	R39440	3/12/2011 6:19:00 AM	1
1103158-014Adup	748310	ASTM-D2504	DUP	GC-TCD 1_110311A	R39440	3/12/2011 6:48:00 AM	1

Injection Log

Directory: C:\HPCHEM\2\DATA\031011

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	03101101.D	1.	icb	ICB ASTM-D2504	11 Mar 2011 00:55
2	1	03101102.D	1.	ccv std 1-2 a	CCV ASTM-D2504	11 Mar 2011 01:17
3	1	03101103.D	1.	crql std 2% a	CRQL ASTM-D2504	11 Mar 2011 01:39
4	1	03101104.D	1.	lcs	LCS ASTM-D2504	11 Mar 2011 02:08
5	1	03101105.D	1.	lcsd	LCSD ASTM-D2504	11 Mar 2011 02:31
6	1	03101106.D	1.	mb	MBLK ASTM-D2504	11 Mar 2011 02:50
7	1	03101107.D	1.	1103158-001A	SAMP ASTM-D2504	11 Mar 2011 03:15
8	1	03101108.D	1.	1103158-002A	SAMP ASTM-D2504	11 Mar 2011 03:37
9	1	03101109.D	1.	1103158-003A	SAMP ASTM-D2504	11 Mar 2011 04:01
10	1	03101110.D	1.	1103158-004A	SAMP ASTM-D2504	11 Mar 2011 04:21
11	1	03101111.D	1.	1103158-005A	SAMP ASTM-D2504	11 Mar 2011 05:03
12	1	03101112.D	1.	1103158-006A	SAMP ASTM-D2504	11 Mar 2011 05:30
13	1	03101113.D	1.	1103158-007A	SAMP ASTM-D2504	11 Mar 2011 05:51
14	1	03101114.D	1.	1103158-008A	SAMP ASTM-D2504	11 Mar 2011 06:12
15	1	03101115.D	1.	1103158-009A	SAMP ASTM-D2504	11 Mar 2011 06:36
16	1	03101116.D	1.	1103158-010A	SAMP ASTM-D2504	11 Mar 2011 06:58
17	1	03101117.D	1.	1103158-007Adup	DUP ASTM-D2504	11 Mar 2011 07:19
18	1	03101118.d	1.	LOD	SAMP ASTM-D2504	11 Mar 2011 08:11
19	1	03101119.d	1.	crql std 2% b	CCV ASTM-D2504	11 Mar 2011 09:31
20	1	03101120.d	1.	ccv std 1-2 b	CCV ASTM-D2504	11 Mar 2011 09:57

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101101.D Vial: 1
Acq On : 11 Mar 2011 12:55 am Operator:
Sample : icb Inst : GC/TCD
Misc : ICB ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 12 4:57 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 04:49:32 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

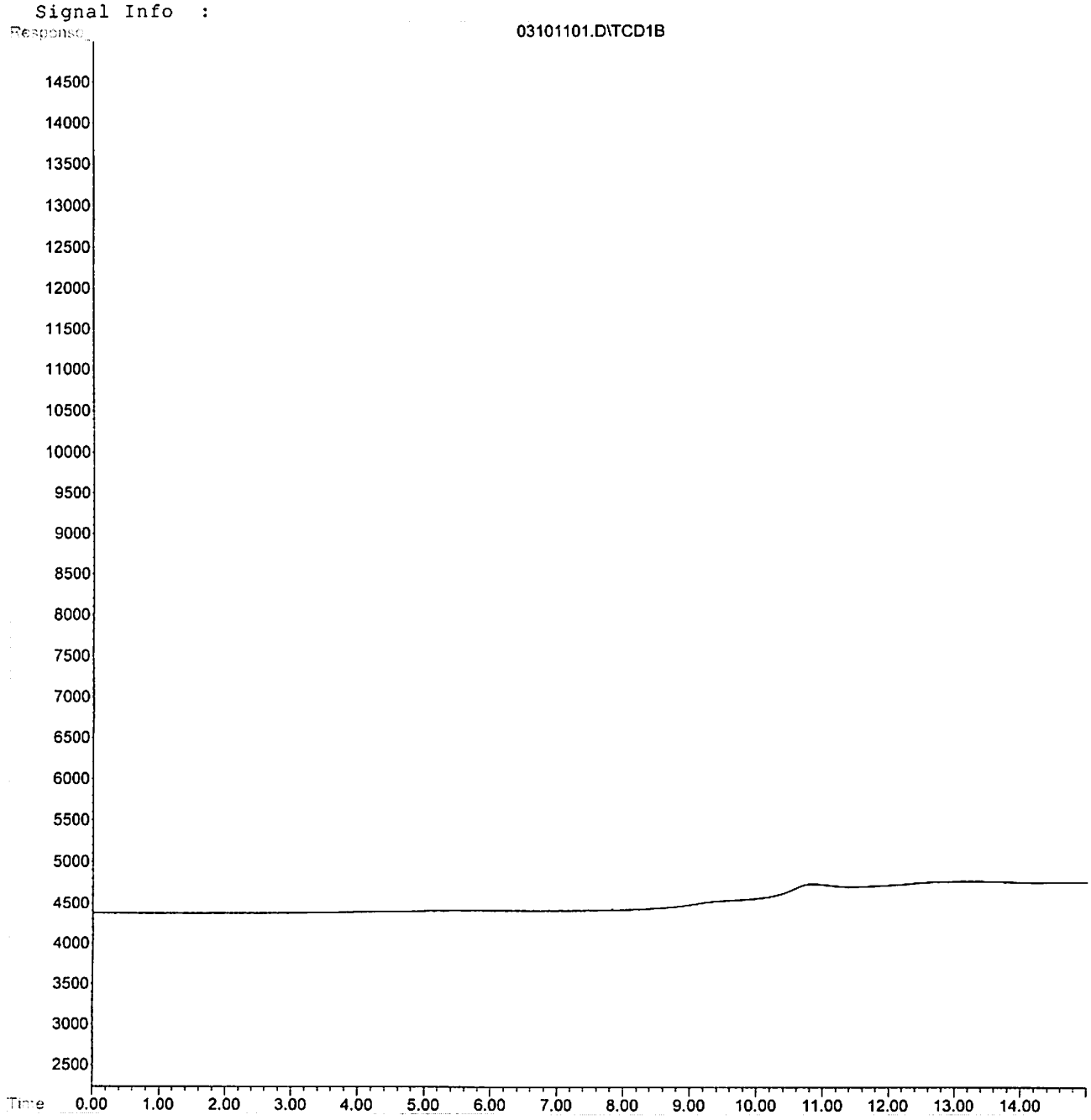
	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	0.00	0	N.D.	%
2)	Nitrogen	0.00	0	N.D.	%
3)	Carbon Monoxide	0.00	0	N.D.	%
4)	Methane	0.00	0	N.D.	%
5)	Carbon dioxide	0.00	0	N.D.	%

Quantitation Report

```
Data File : C:\HPCHEM\2\DATA\031011\03101101.D          Vial: 1
Acq On    : 11 Mar 2011  12:55 am                   Operator:
Sample    : icb                                     Inst    : GC/TCD
Misc      : ICB  ASTM-D2504                         Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Mar 12  4:57 2011  Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title        :
Last Update  : Sat Mar 12 04:49:32 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101102.D Vial: 1
Acq On : 11 Mar 2011 1:17 am Operator:
Sample : ccv std 1-2 a Inst : GC/TCD
Misc : CCV ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 11 1:34 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 09 10:39:51 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1)	Oxygen	2.13	368265	2.356 %
2)	Nitrogen	2.32	463181	2.662 %
3)	Carbon Monoxide	3.01	425973	2.591 %
4)	Methane	6.22	270108	1.961 %
5)	Carbon dioxide	11.15	474685	2.319 %

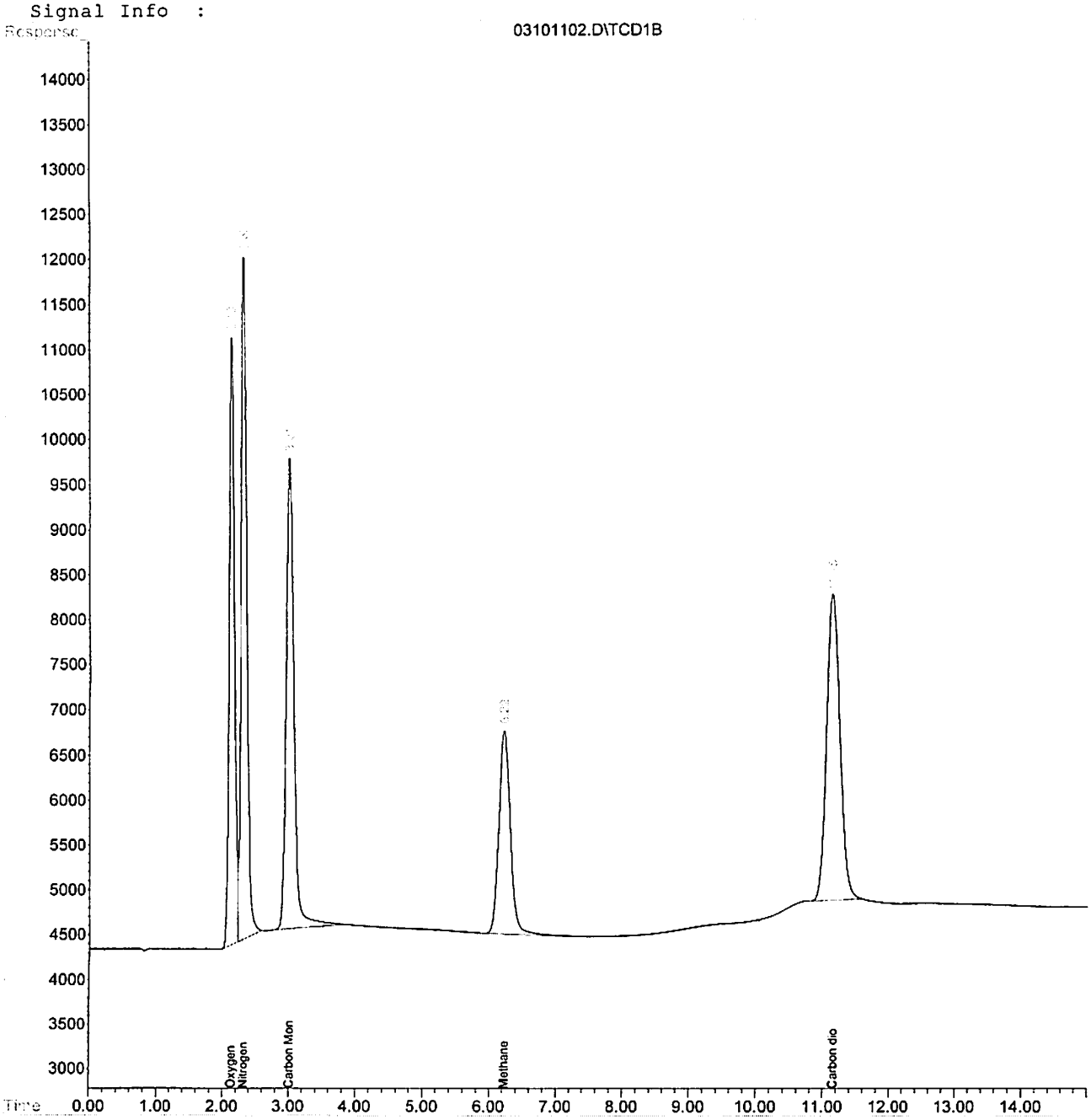
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101102.D Vial: 1
Acq On : 11 Mar 2011 1:17 am Operator:
Sample : ccv std 1-2 a Inst : GC/TCD
Misc : CCV ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 11 1:34 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 09 10:39:51 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101103.D Vial: 1
Acq On : 11 Mar 2011 1:39 am Operator:
Sample : crql std 2% a Inst : GC/TCD
Misc : CRQL ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 11 2:07 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 09 10:39:51 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1)	Oxygen	2.12	14753	0.094 %
2)	Nitrogen	2.31	235875	1.356 %
3)	Carbon Monoxide	3.00	22373	0.136 %
4)	Methane	6.22	12387	0.090 %
5)	Carbon dioxide	11.16	57380	0.280 %

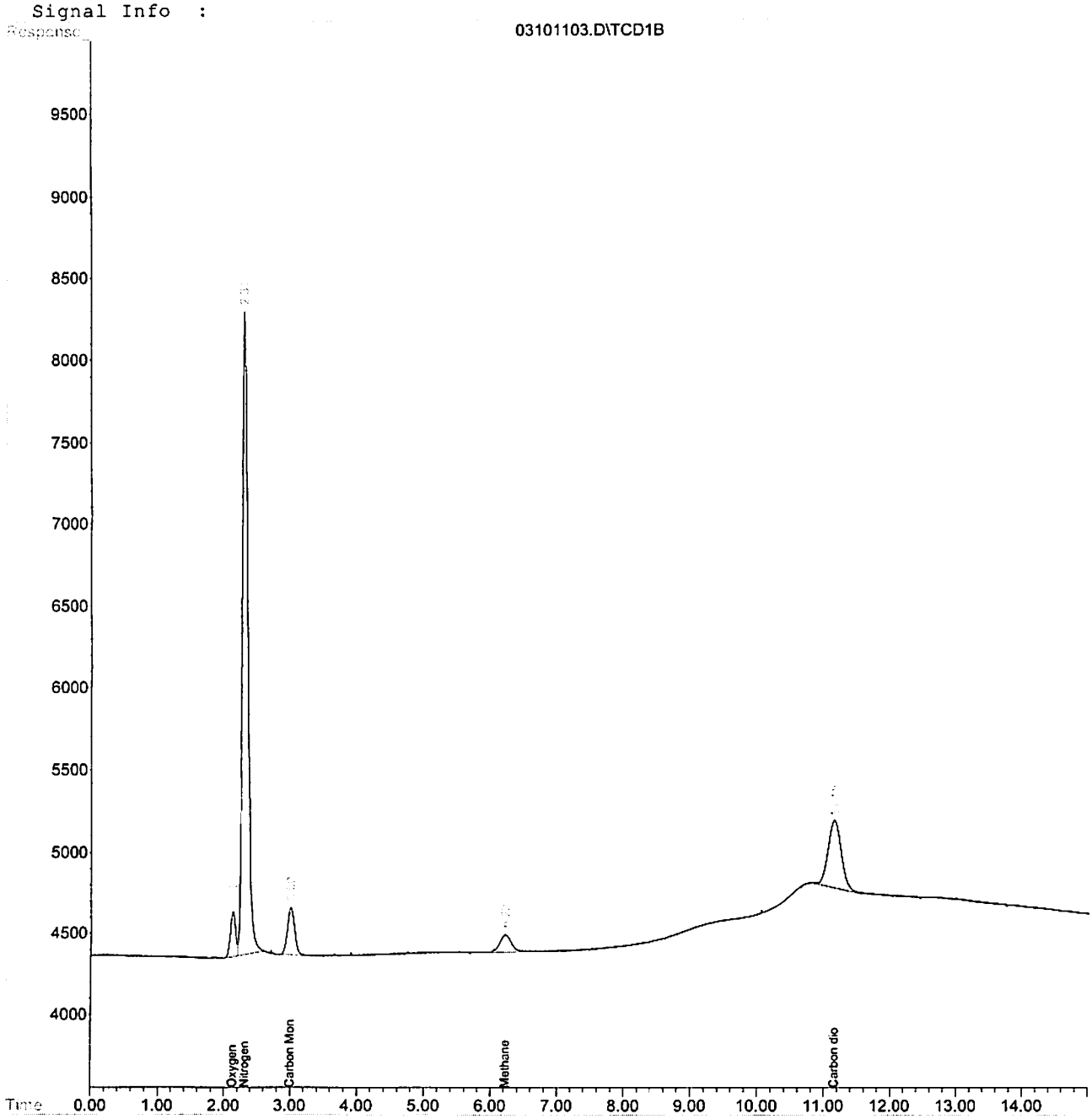
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101103.D Vial: 1
Acq On : 11 Mar 2011 1:39 am Operator:
Sample : crql std 2% a Inst : GC/TCD
Misc : CRQL ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 11 2:07 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 09 10:39:51 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101104.D Vial: 1
Acq On : 11 Mar 2011 2:08 am Operator:
Sample : lcs Inst : GC/TCD
Misc : LCS ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 12 4:58 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 04:49:32 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1)	Oxygen	2.13	361147	2.310 %
2)	Nitrogen	2.32	464044	2.667 %
3)	Carbon Monoxide	3.01	398945	2.426 %
4)	Methane	6.22	266041	1.932 %
5)	Carbon dioxide	11.15	467868	2.286 %

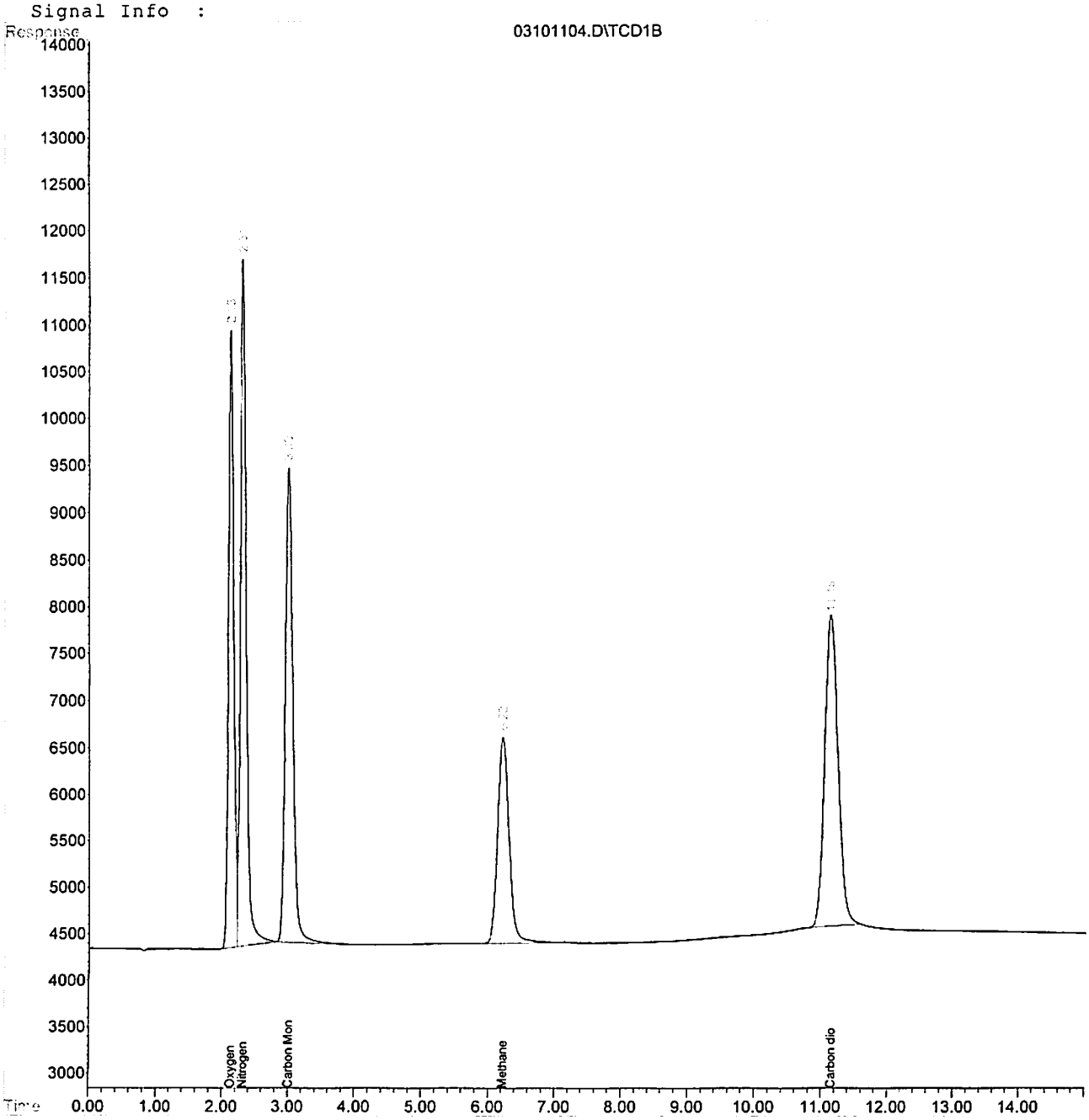
(f)=RT Delta > 1/2 Window (m)=manual int.
03101104.D 030511.M Tue Mar 29 09:55:06 2011 Page 1

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101104.D Vial: 1
Acq On : 11 Mar 2011 2:08 am Operator:
Sample : lcs Inst : GC/TCD
Misc : LCS ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 12 4:58 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 04:49:32 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101105.D Vial: 1
Acq On : 11 Mar 2011 2:31 am Operator:
Sample : lcsd Inst : GC/TCD
Misc : LCSD ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 12 4:58 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 04:49:32 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1)	Oxygen	2.13	364238	2.330 %
2)	Nitrogen	2.31	467429	2.686 %
3)	Carbon Monoxide	3.00	400677	2.437 %
4)	Methane	6.22	269074	1.954 %
5)	Carbon dioxide	11.16	468957	2.291 %

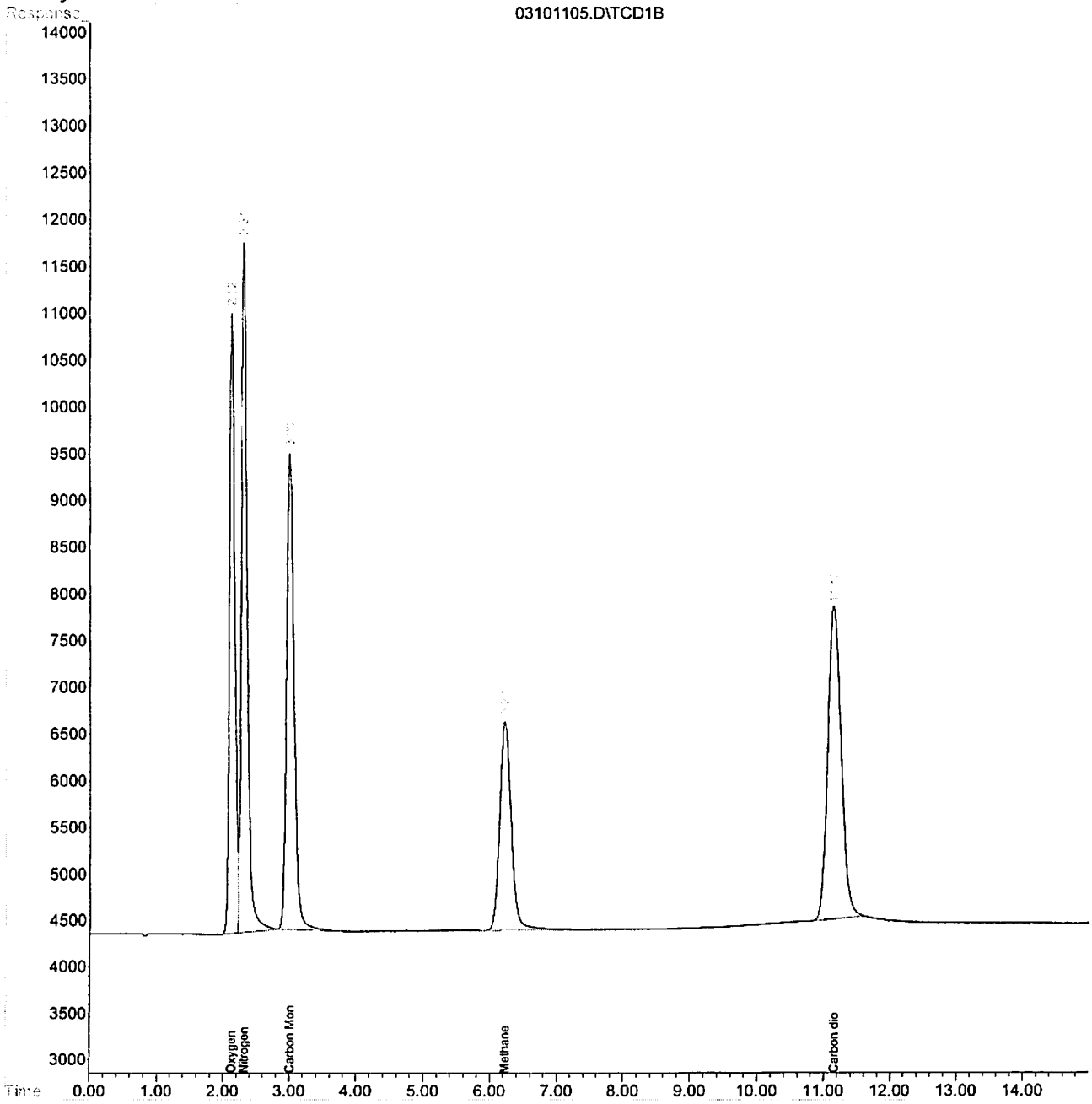
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

```
Data File : C:\HPCHEM\2\DATA\031011\03101105.D          Vial: 1
Acq On    : 11 Mar 2011   2:31 am                   Operator:
Sample    : lcsd                                    Inst    : GC/TCD
Misc      : LCSD ASTM-D2504                         Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Mar 12  4:58 2011  Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title        :
Last Update  : Sat Mar 12 04:49:32 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101106.D Vial: 1
Acq On : 11 Mar 2011 2:50 am Operator:
Sample : mb Inst : GC/TCD
Misc : MBLK ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 12 4:59 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 04:49:32 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	0.00	0	N.D.	%
2)	Nitrogen	0.00	0	N.D.	%
3)	Carbon Monoxide	0.00	0	N.D.	%
4)	Methane	0.00	0	N.D.	%
5)	Carbon dioxide	0.00	0	N.D.	%

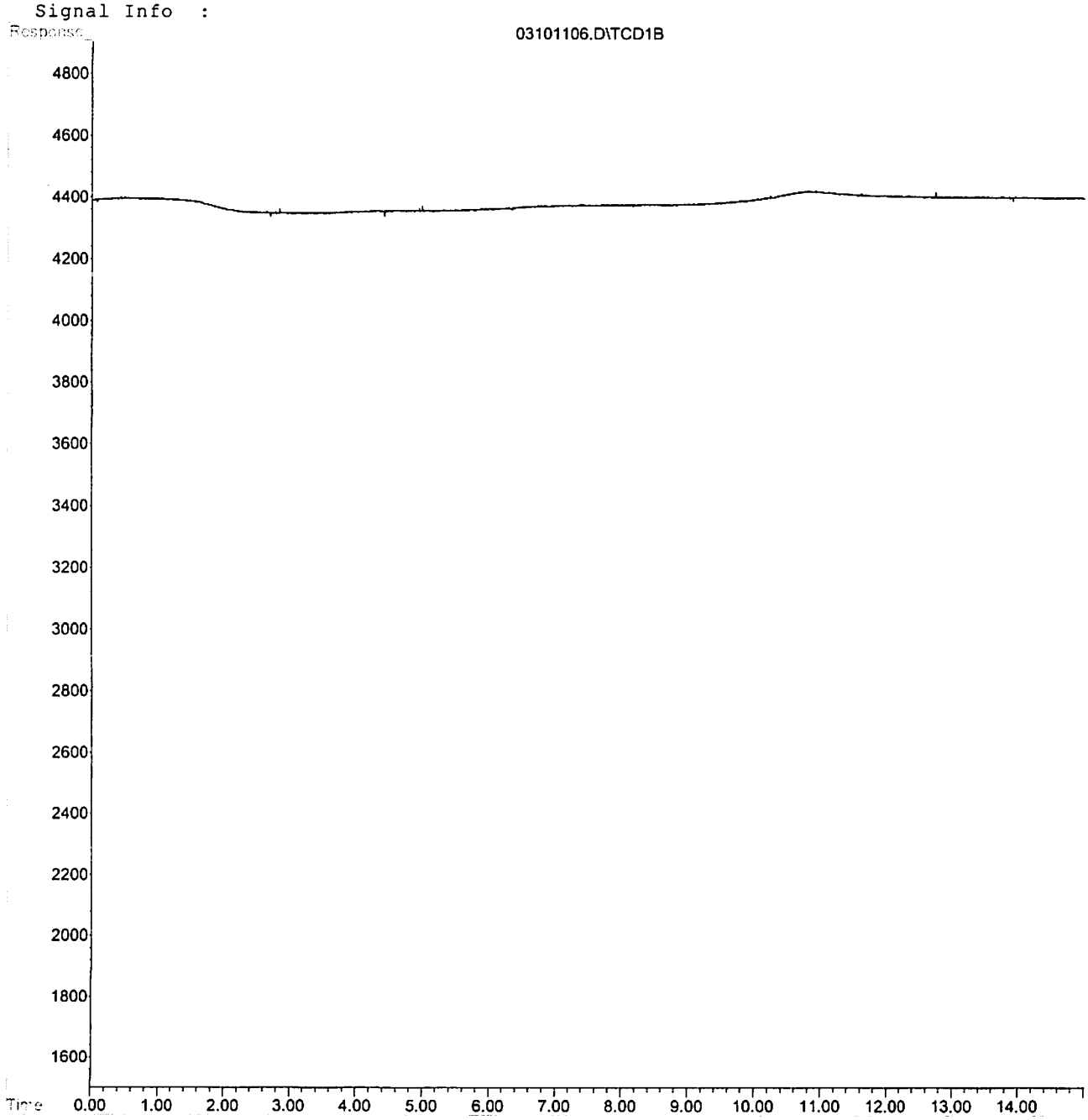
(f)=RT Delta > 1/2 Window (m)=manual int.
03101106.D 030511.M Tue Mar 29 09:55:26 2011 Page 1

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101106.D Vial: 1
Acq On : 11 Mar 2011 2:50 am Operator:
Sample : mb Inst : GC/TCD
Misc : MBLK ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 12 4:59 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 04:49:32 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101107.D Vial: 1
Acq On : 11 Mar 2011 3:15 am Operator:
Sample : 1103158-001A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 11 6:03 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Fri Mar 11 05:59:54 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

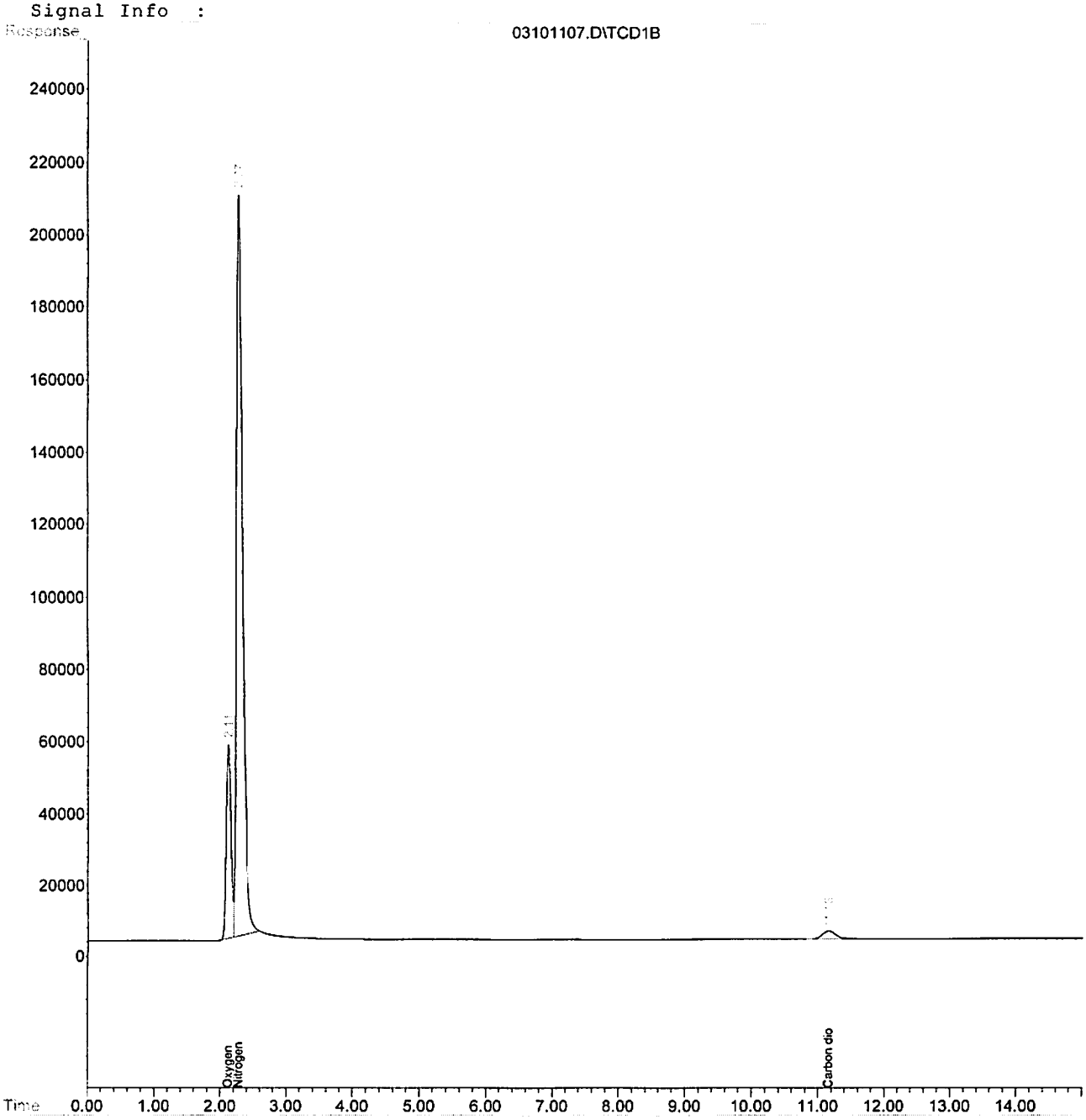
	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	2.11	2700552	17.277	%
2)	Nitrogen	2.27	13384307	76.918	%
3)	Carbon Monoxide	0.00	0	N.D.	%
4)	Methane	0.00	0	N.D.	%
5)	Carbon dioxide	11.16	298899	1.460	%

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101107.D Vial: 1
Acq On : 11 Mar 2011 3:15 am Operator:
Sample : 1103158-001A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 11 6:03 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Fri Mar 11 05:59:54 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101108.D Vial: 1
Acq On : 11 Mar 2011 3:37 am Operator:
Sample : 1103158-002A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 12 5:00 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 04:49:32 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	2.11	2756432	17.634	%
2)	Nitrogen	2.27f	13440636	77.241	%
3)	Carbon Monoxide	0.00	0	N.D.	%
4)	Methane	0.00	0	N.D.	%
5)	Carbon dioxide	11.16	286050	1.397	%

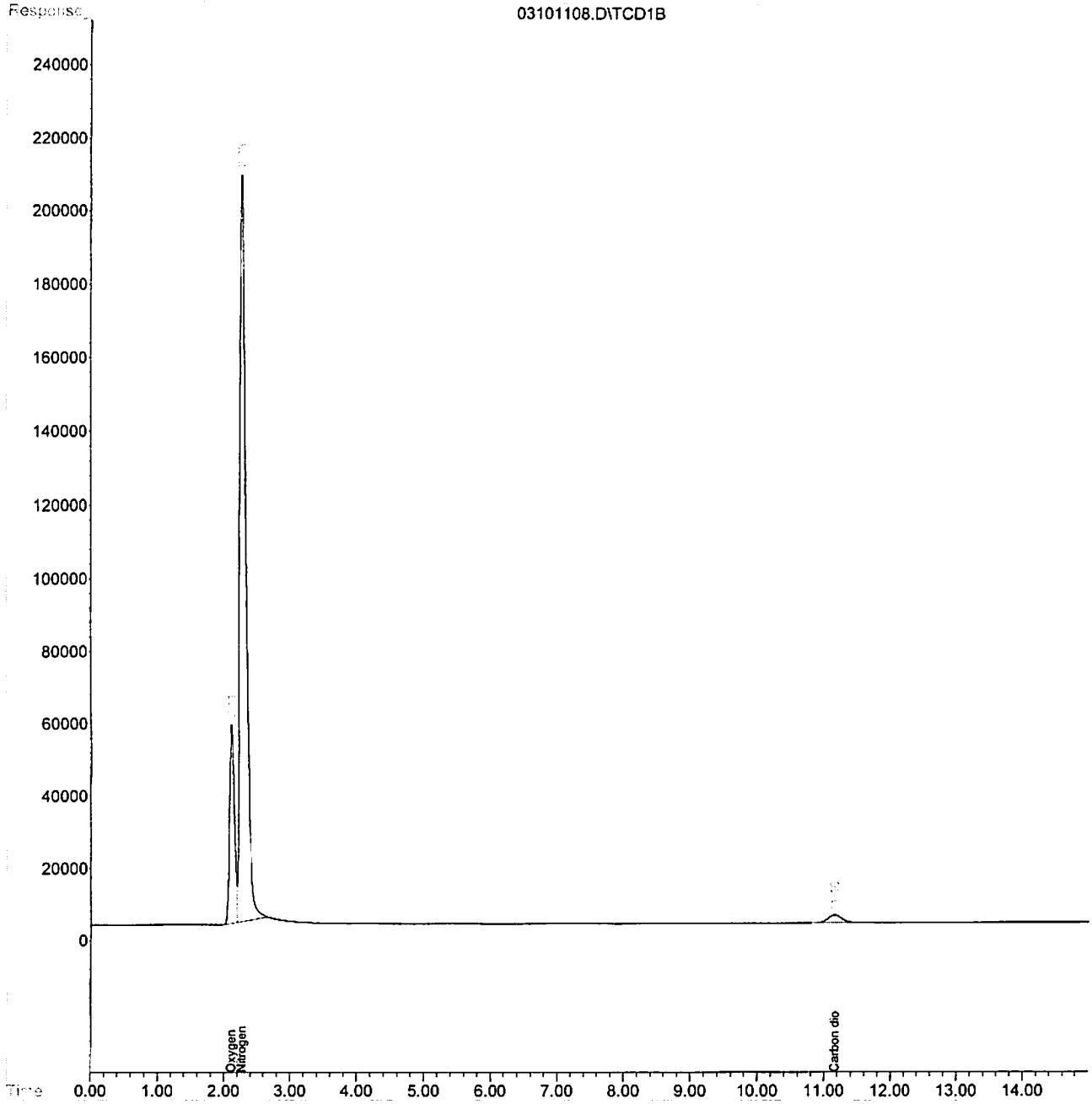
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101108.D Vial: 1
Acq On : 11 Mar 2011 3:37 am Operator:
Sample : 1103158-002A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 12 5:00 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 04:49:32 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101109.D Vial: 1
Acq On : 11 Mar 2011 4:01 am Operator:
Sample : 1103158-003A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 12 5:05 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 05:03:19 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	2.12	522972	3.346	%
2)	Nitrogen	2.27f	14849239	85.336	%
3)	Carbon Monoxide	3.00	27142	0.165	%
4)	Methane	6.23	1934	0.014	%
5)	Carbon dioxide	11.14	1899342	9.279	%

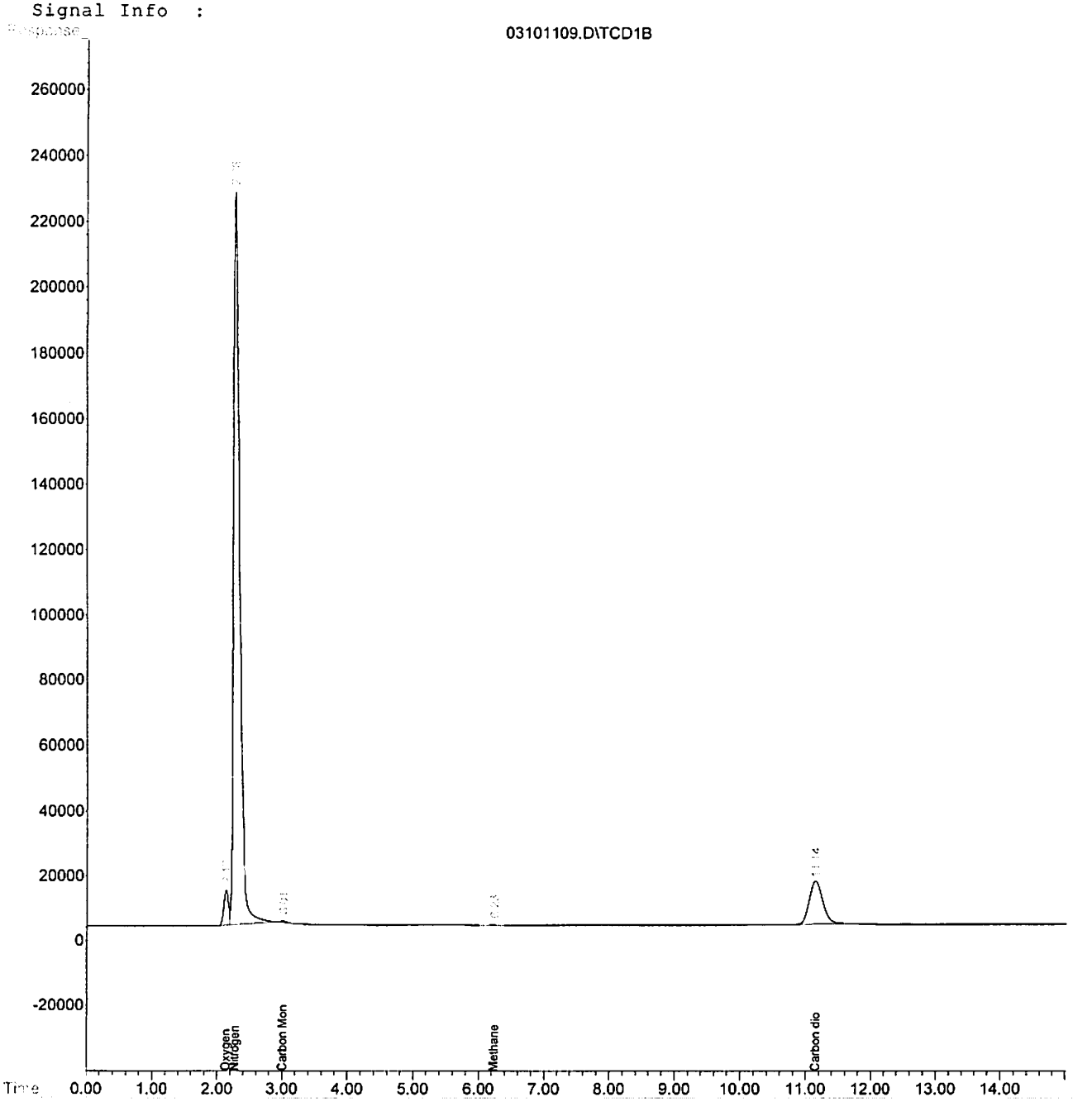
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101109.D Vial: 1
Acq On : 11 Mar 2011 4:01 am Operator:
Sample : 1103158-003A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 12 5:05 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 05:03:19 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101110.D
Acq On : 11 Mar 2011 4:21 am
Sample : 1103158-004A
Misc : SAMP ASTM-D2504
IntFile : events.e
Quant Time: Mar 24 14:47 2011 Quant Results File: 030511.RES

Vial: 1
Operator:
Inst : GC/TCD
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 05:03:19 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	Target Compounds					
1)	Oxygen	2.12	582835	3.729	%	
2)	Nitrogen	2.27f	14667188	84.290	%	
3)	Carbon Monoxide	2.99	12134	0.074	%	
4)	Methane	6.24	2025	0.015	%	m
5)	Carbon dioxide	11.14	1945789	9.505	%	

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

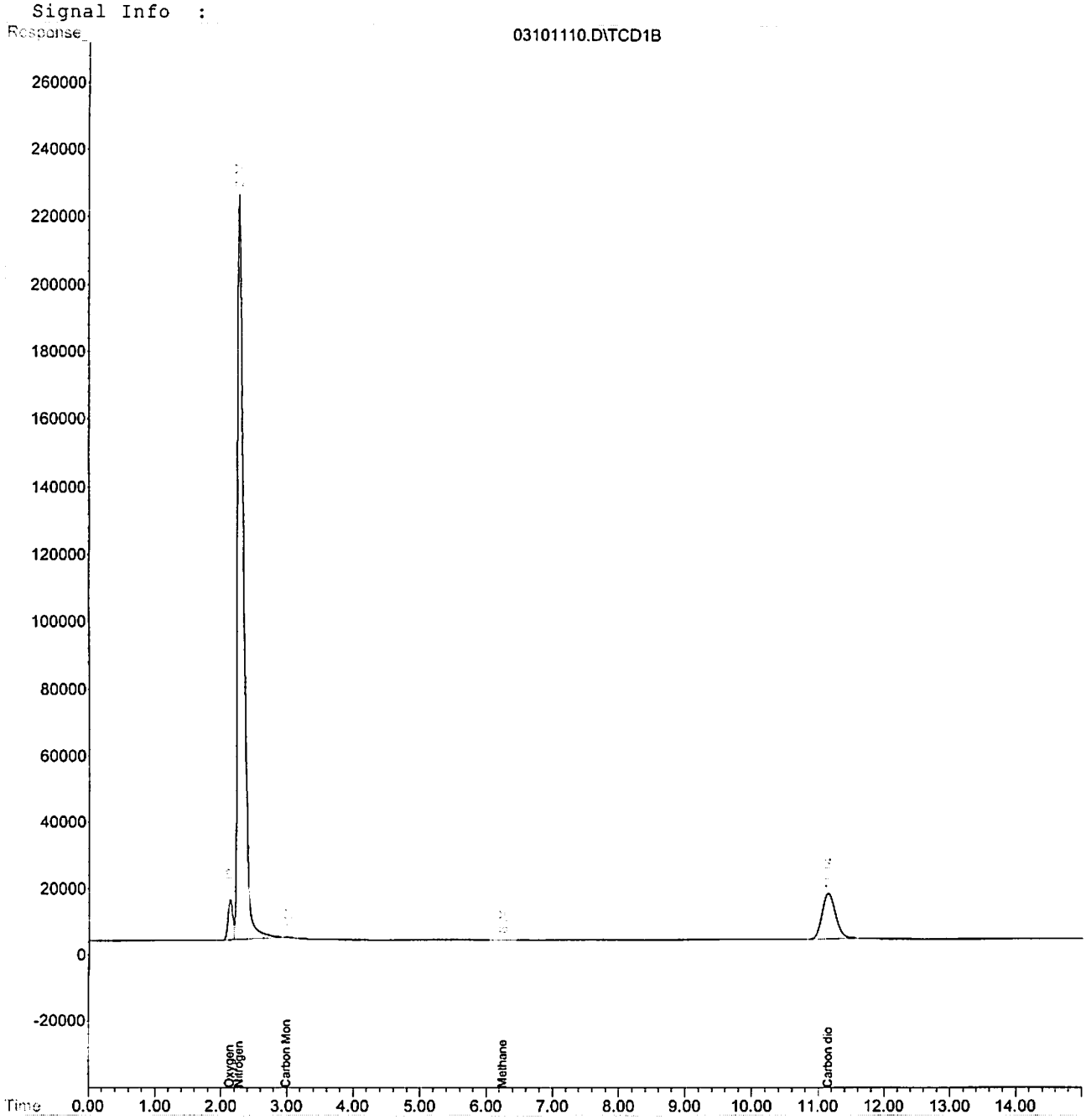
Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101110.D
Acq On : 11 Mar 2011 4:21 am
Sample : 1103158-004A
Misc : SAMP ASTM-D2504
IntFile : EVENTS.E
Quant Time: Mar 24 14:47 2011 Quant Results File: 030511.RES

Vial: 1
Operator:
Inst : GC/TCD
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 05:03:19 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

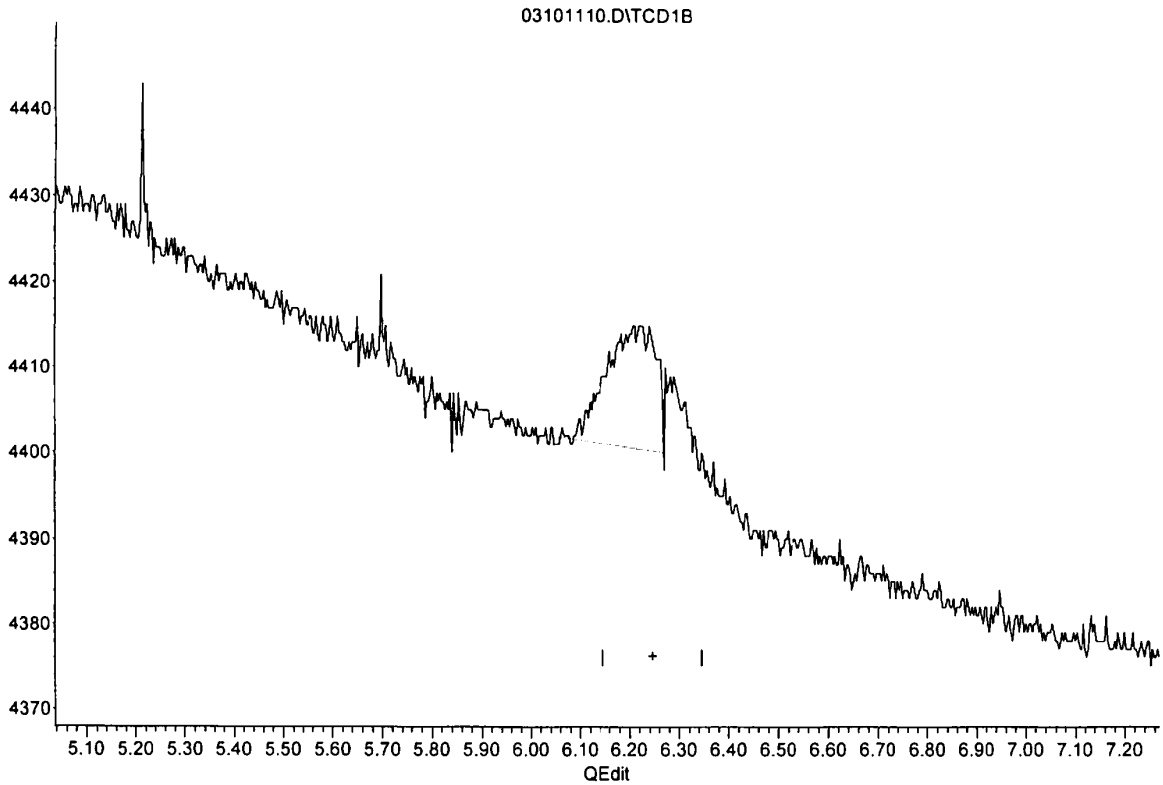
Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (Qedit)

Data File : C:\HPCHEM\2\DATA\031011\03101110.D Vial: 1
Acq On : 11 Mar 2011 4:21 am Operator:
Sample : 1103158-004A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 22 0:33 2011 Quant Results File: 030511.RES

Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Fri Mar 11 05:59:54 2011
Response via : Multiple Level Calibration



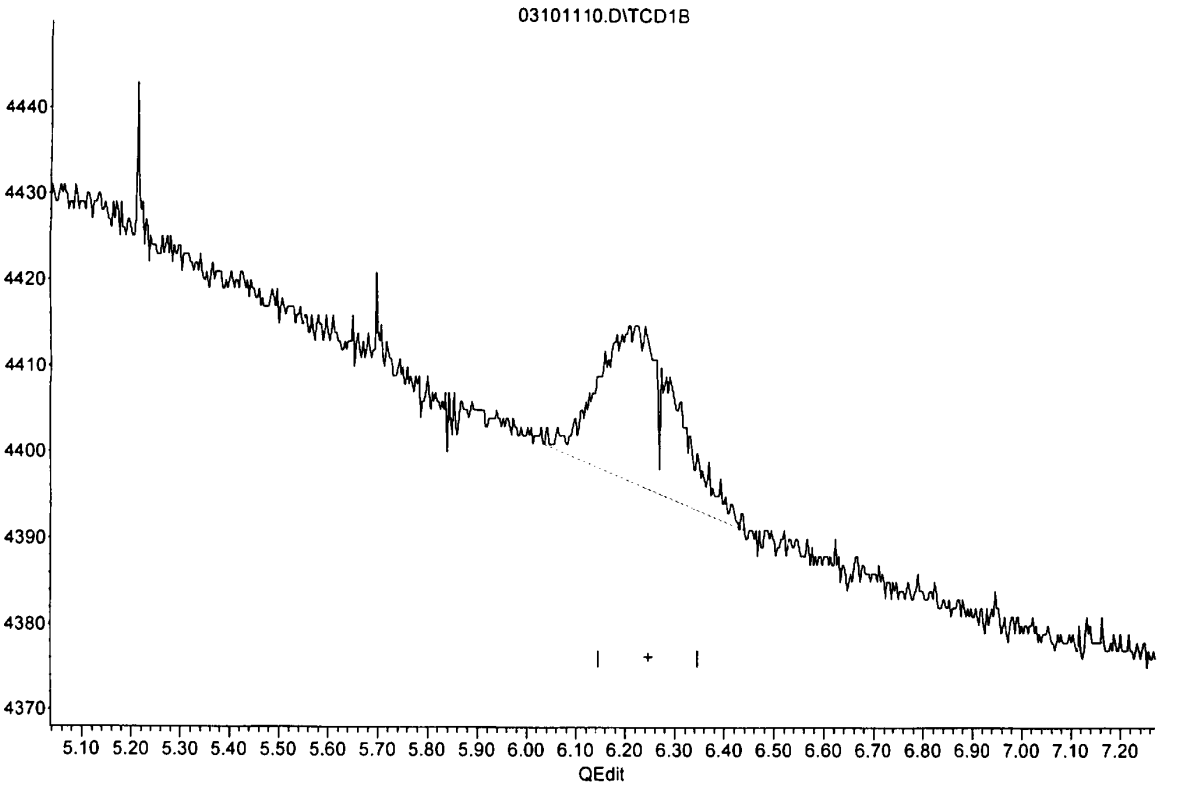
(4) Methane
6.24min 0.008%
response 1036

(+) = Expected Retention Time
03101110.D 030511.M Thu Mar 24 14:47:49 2011

Quantitation Report (Qedit)

Data File : C:\HPCHEM\2\DATA\031011\03101110.D Vial: 1
Acq On : 11 Mar 2011 4:21 am Operator:
Sample : 1103158-004A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 22 0:33 2011 Quant Results File: 030511.RES

Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Fri Mar 11 05:59:54 2011
Response via : Multiple Level Calibration



(4) Methane
6.24min 0.015% m
response 2025

(+) = Expected Retention Time
03101110.D 030511.M Thu Mar 24 14:47:59 2011

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101111.D Vial: 1
Acq On : 11 Mar 2011 5:03 am Operator:
Sample : 1103158-005A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 14:53 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Fri Mar 11 05:59:54 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

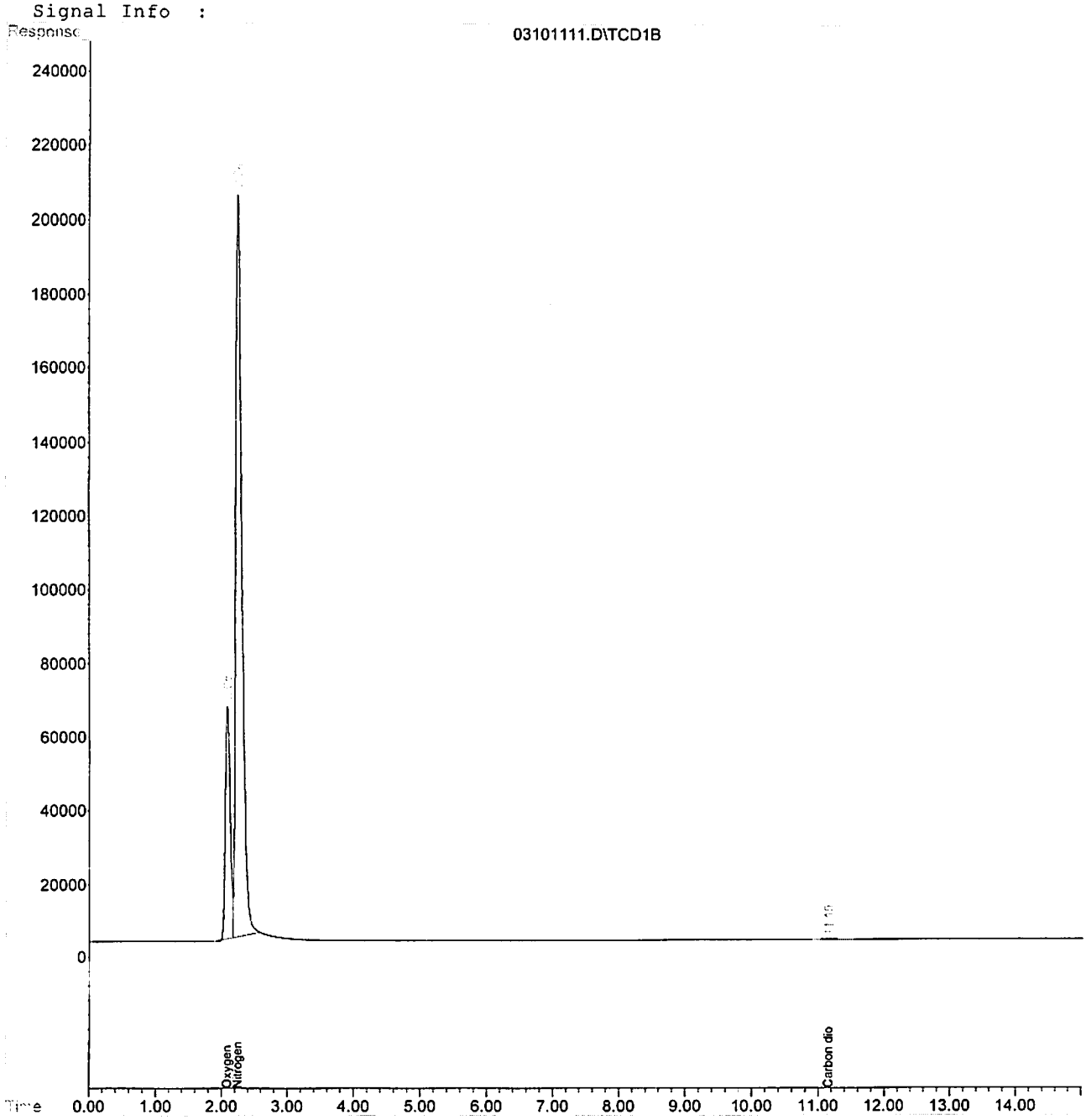
	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	2.08	3180146	20.345	%
2)	Nitrogen	2.24	13172553	75.701	%
3)	Carbon Monoxide	0.00	0	N.D.	%
4)	Methane	0.00	0	N.D.	%
5)	Carbon dioxide	11.15	11059	0.054	%

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101111.D Vial: 1
Acq On : 11 Mar 2011 5:03 am Operator:
Sample : 1103158-005A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 14:53 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Fri Mar 11 05:59:54 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101112.D Vial: 1
Acq On : 11 Mar 2011 5:30 am Operator:
Sample : 1103158-006A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 14:55 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 14:54:59 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	2.10	1625922	10.402	%
2)	Nitrogen	2.26	14052601	80.758	%
3)	Carbon Monoxide	2.99	28540	0.174	%
4)	Methane	6.18f	216	0.002	%
5)	Carbon dioxide	11.15	1032683	5.045	%

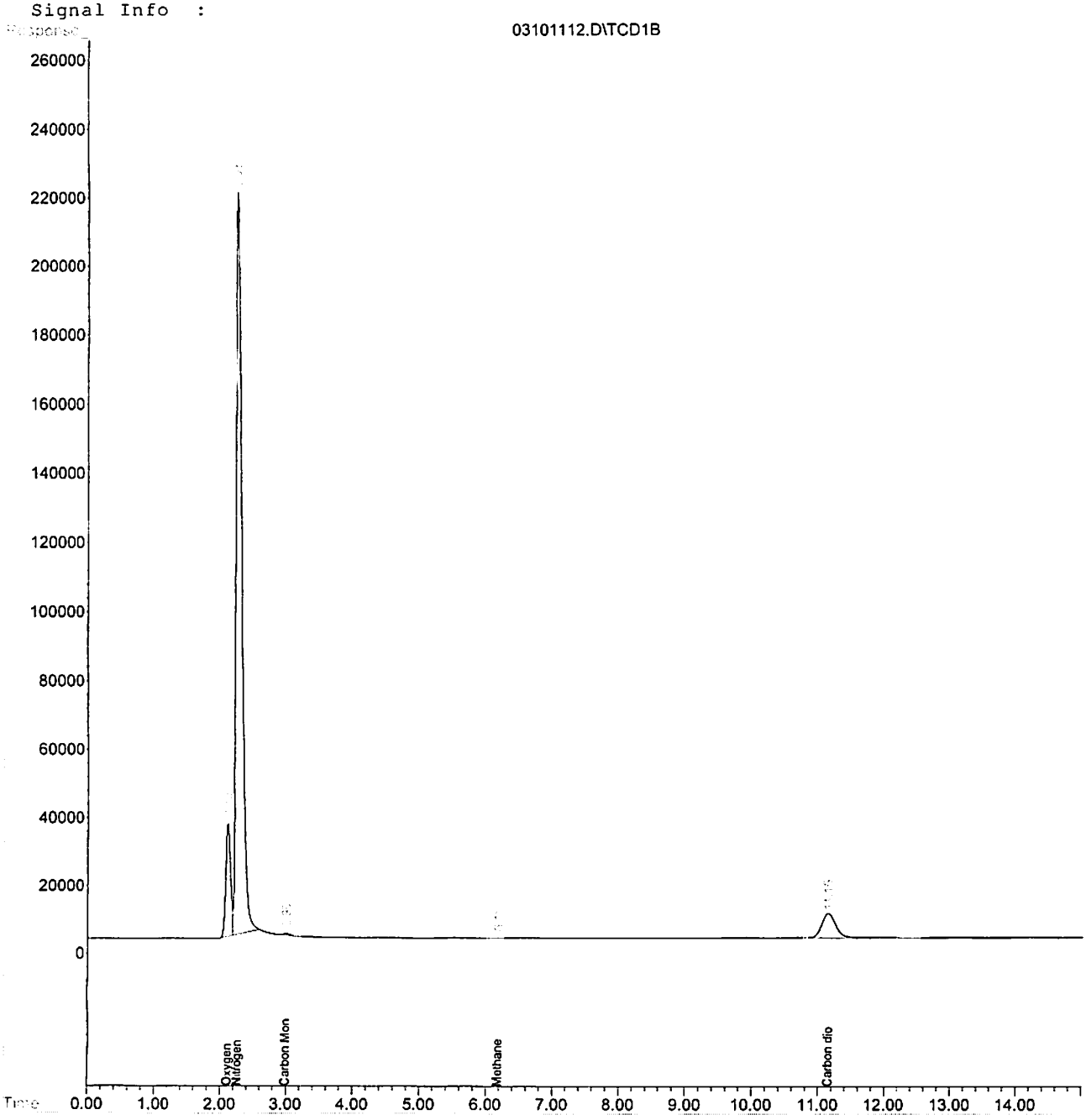
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101112.D Vial: 1
Acq On : 11 Mar 2011 5:30 am Operator:
Sample : 1103158-006A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 14:55 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 14:54:59 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101113.D Vial: 1
Acq On : 11 Mar 2011 5:51 am Operator:
Sample : 1103158-007A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 14:56 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 14:54:59 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	Target Compounds					
1)	Oxygen	2.11	628122	4.018	%	
2)	Nitrogen	2.26	14320574	82.298	%	
3)	Carbon Monoxide	2.99	42577	0.259	%	
4)	Methane	6.21	1524	0.011	%	m
5)	Carbon dioxide	11.14	1870520	9.138	%	

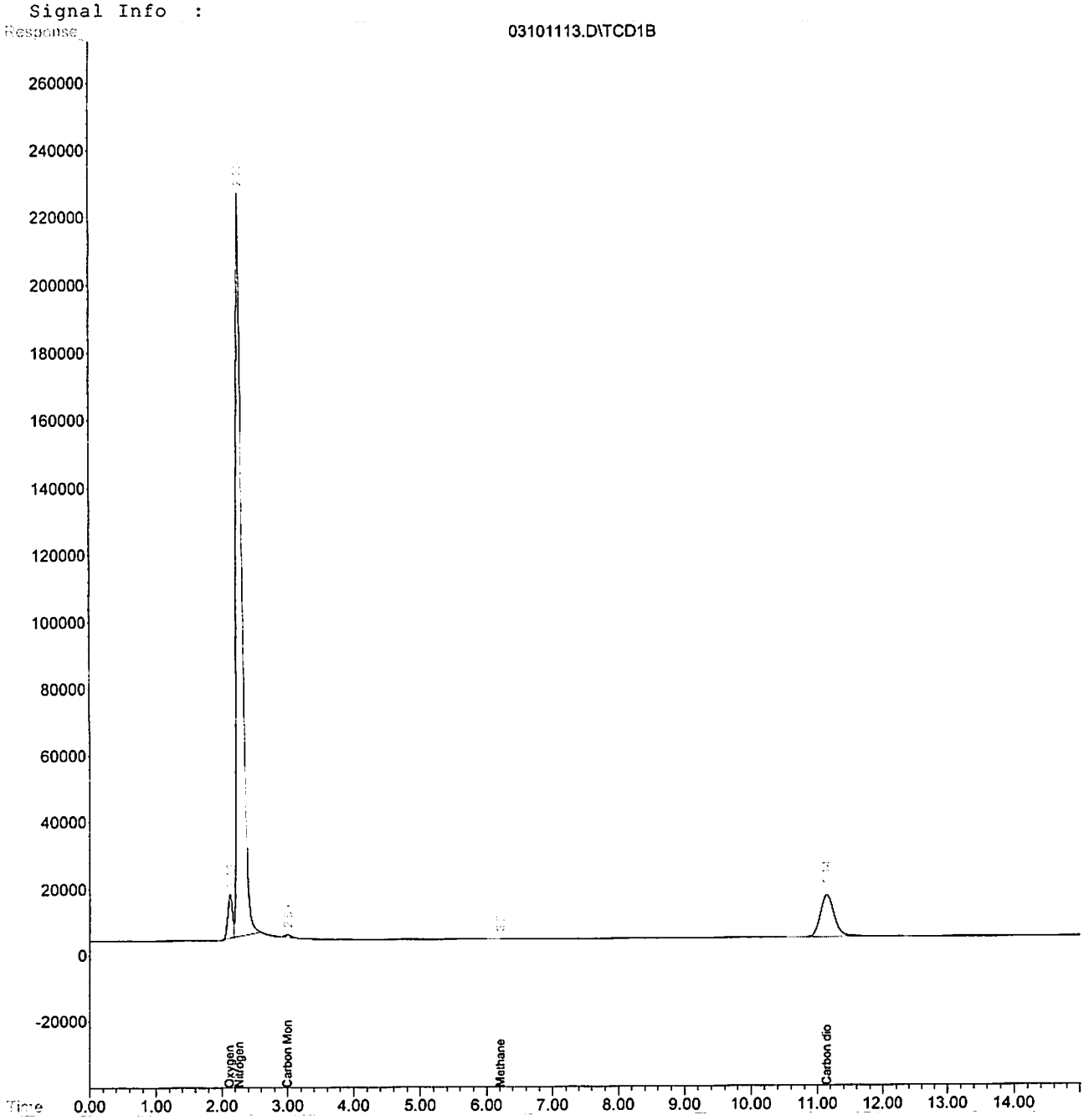
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101113.D Vial: 1
Acq On : 11 Mar 2011 5:51 am Operator:
Sample : 1103158-007A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 14:56 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 14:54:59 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

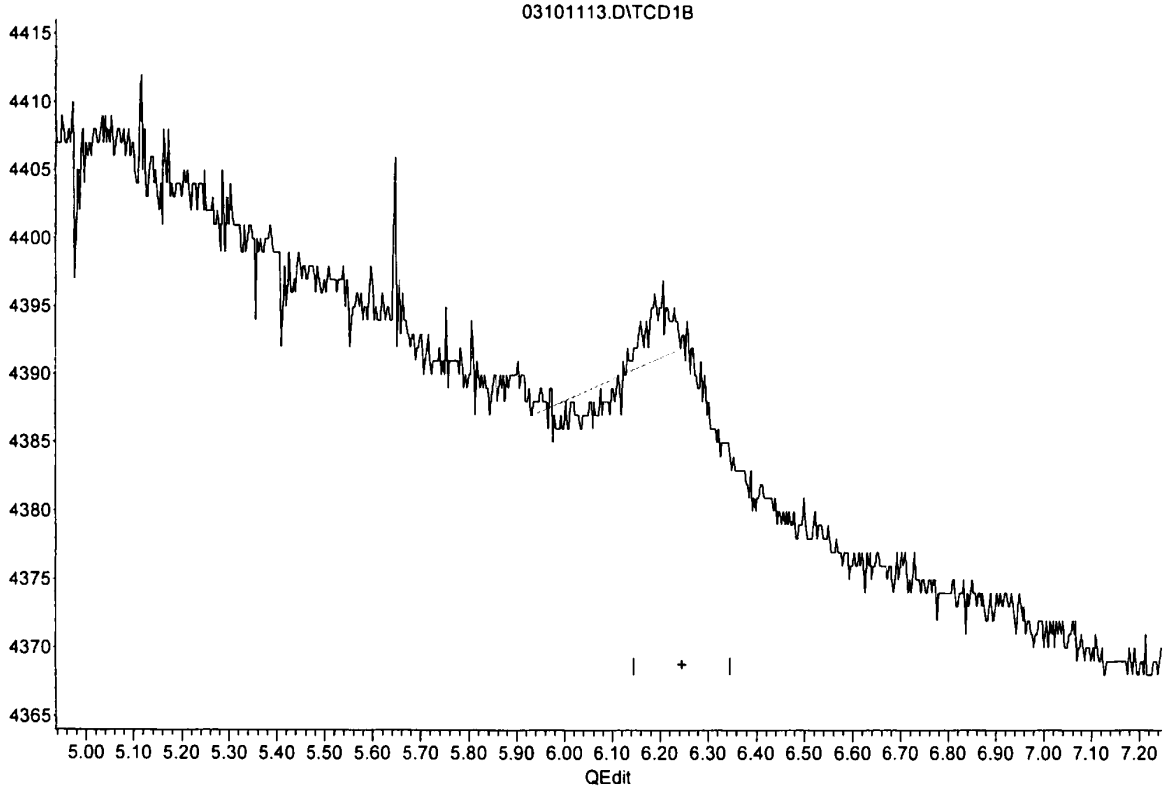
Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (Qedit)

Data File : C:\HPCHEM\2\DATA\031011\03101113.D Vial: 1
Acq On : 11 Mar 2011 5:51 am Operator:
Sample : 1103158-007A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 14:56 2011 Quant Results File: 030511.RES

Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 14:54:59 2011
Response via : Multiple Level Calibration



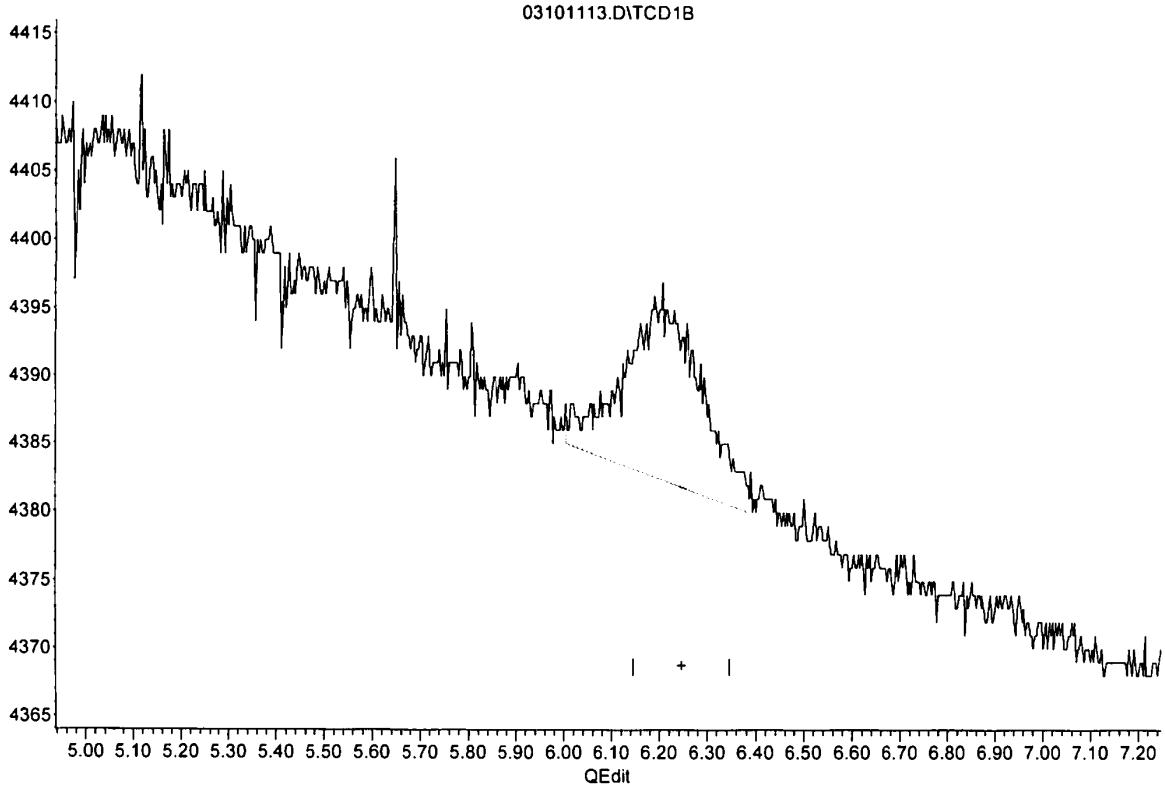
(4) Methane
6.21min 0.000%
response 6

(+) = Expected Retention Time
03101113.D 030511.M Thu Mar 24 14:56:48 2011

Quantitation Report (Qedit)

Data File : C:\HPCHEM\2\DATA\031011\03101113.D Vial: 1
Acq On : 11 Mar 2011 5:51 am Operator:
Sample : 1103158-007A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 14:56 2011 Quant Results File: 030511.RES

Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 14:54:59 2011
Response via : Multiple Level Calibration



(4) Methane
6.21min 0.011% m
response 1524

(+) = Expected Retention Time
03101113.D 030511.M Thu Mar 24 14:56:55 2011

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101114.D Vial: 1
Acq On : 11 Mar 2011 6:12 am Operator:
Sample : 1103158-008A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 14:57 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 14:54:59 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	2.11	2229890	14.266	%
2)	Nitrogen	2.27	13850457	79.596	%
3)	Carbon Monoxide	0.00	0	N.D.	%
4)	Methane	0.00	0	N.D.	%
5)	Carbon dioxide	11.16	346711	1.694	%

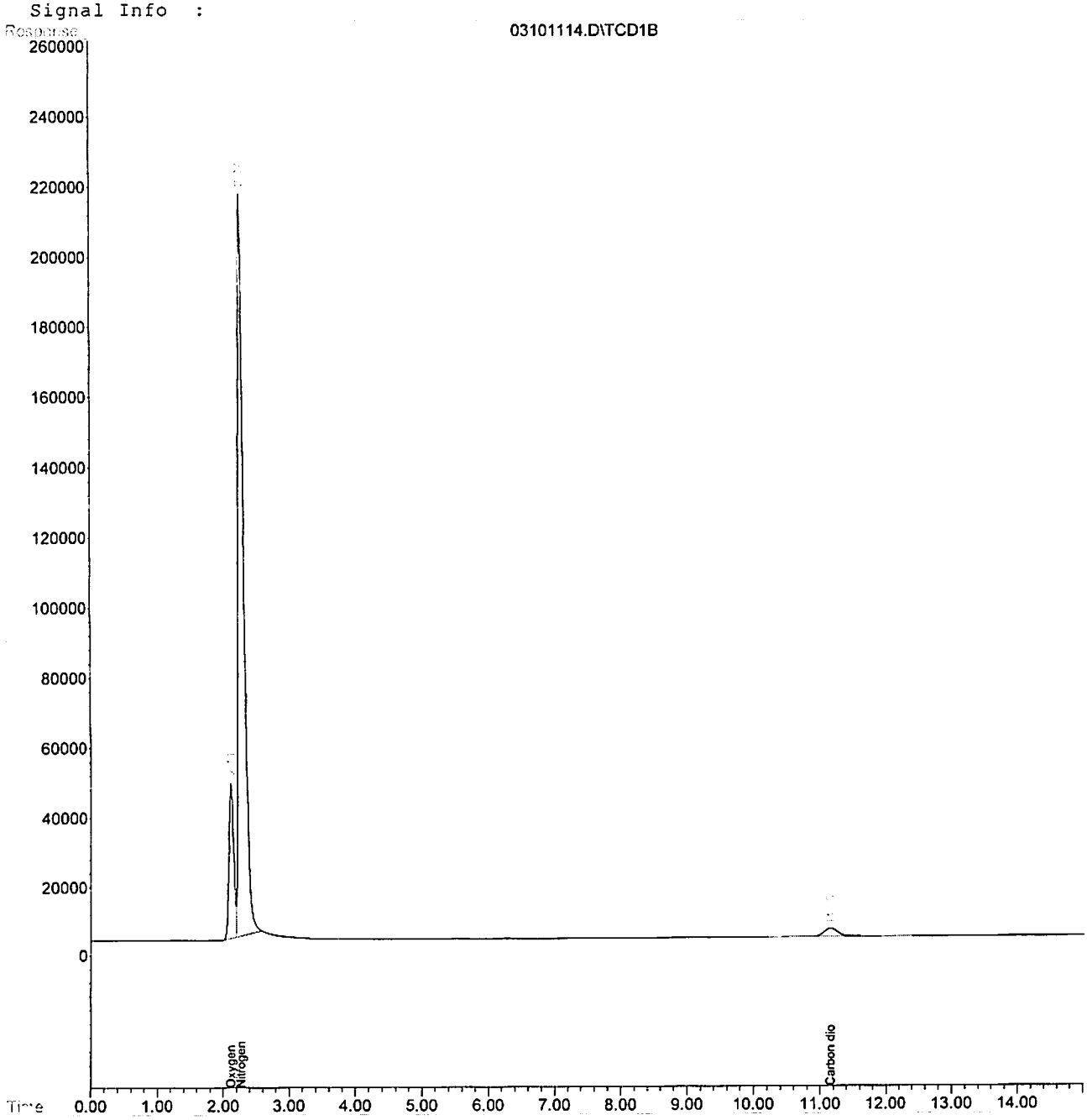
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

```
Data File : C:\HPCHEM\2\DATA\031011\03101114.D          Vial: 1
Acq On    : 11 Mar 2011   6:12 am                   Operator:
Sample    : 1103158-008A                            Inst    : GC/TCD
Misc      : SAMP ASTM-D2504                         Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Mar 24 14:57 2011  Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title        :
Last Update  : Thu Mar 24 14:54:59 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101115.D Vial: 1
Acq On : 11 Mar 2011 6:36 am Operator:
Sample : 1103158-009A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 14:58 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 14:54:59 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	2.12	658048	4.210	%
2)	Nitrogen	2.27	14519330	83.440	%
3)	Carbon Monoxide	3.01	71824	0.437	%
4)	Methane	6.24	1489	0.011	%
5)	Carbon dioxide	11.15	1637145	7.998	%

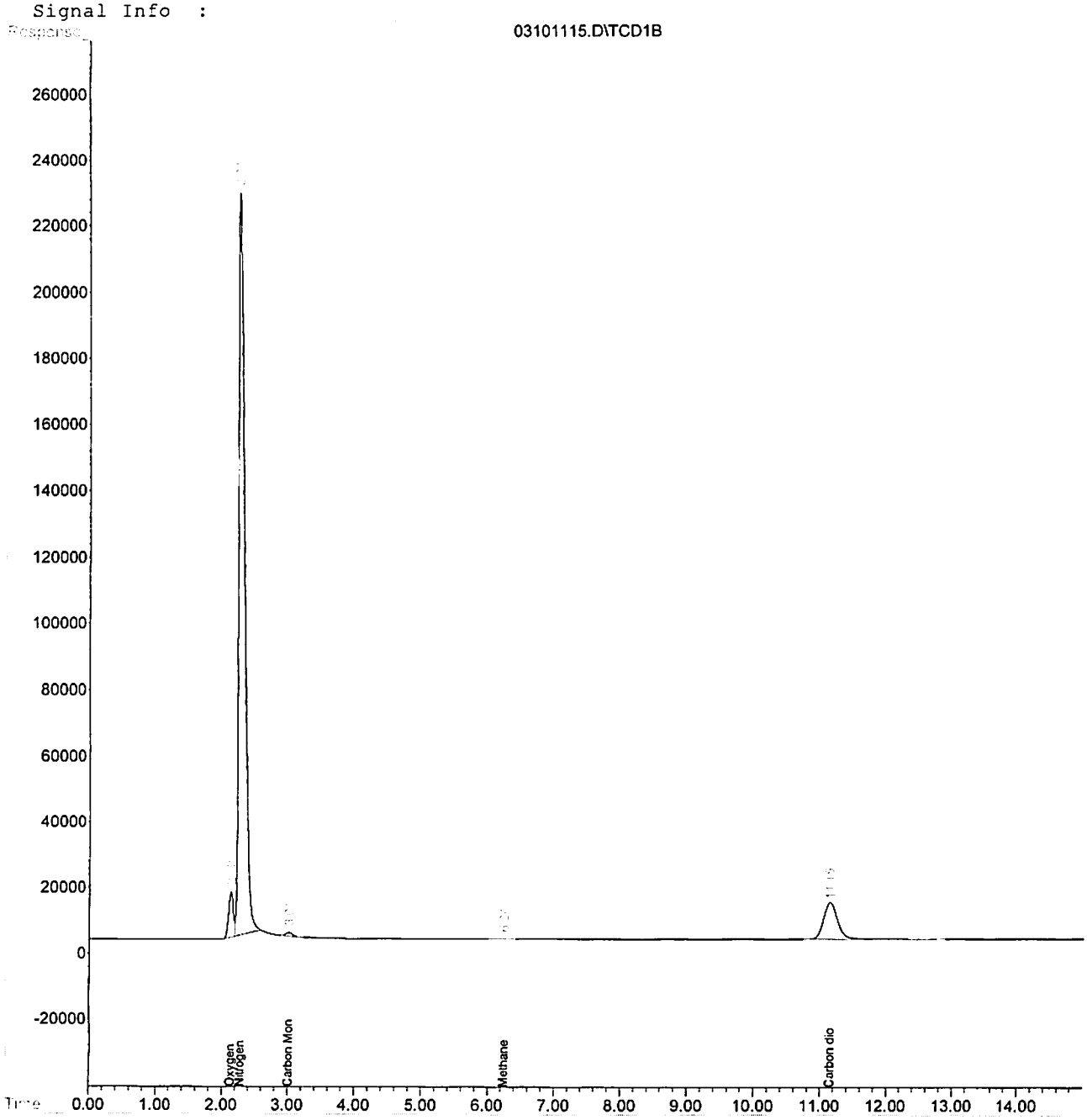
(f)=RT Delta > 1/2 Window (m)=manual int.
03101115.D 030511.M Tue Mar 29 09:56:31 2011 Page 1

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101115.D Vial: 1
Acq On : 11 Mar 2011 6:36 am Operator:
Sample : 1103158-009A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 14:58 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 14:54:59 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101116.D Vial: 1
Acq On : 11 Mar 2011 6:58 am Operator:
Sample : 1103158-010A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 14:59 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 14:54:59 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	Target Compounds					
1)	Oxygen	2.13	474071	3.033	%	
2)	Nitrogen	2.27	14598582	83.896	%	
3)	Carbon Monoxide	3.01	60785	0.370	%	
4)	Methane	6.24	1844	0.013	%	m
5)	Carbon dioxide	11.15	1789358	8.741	%	

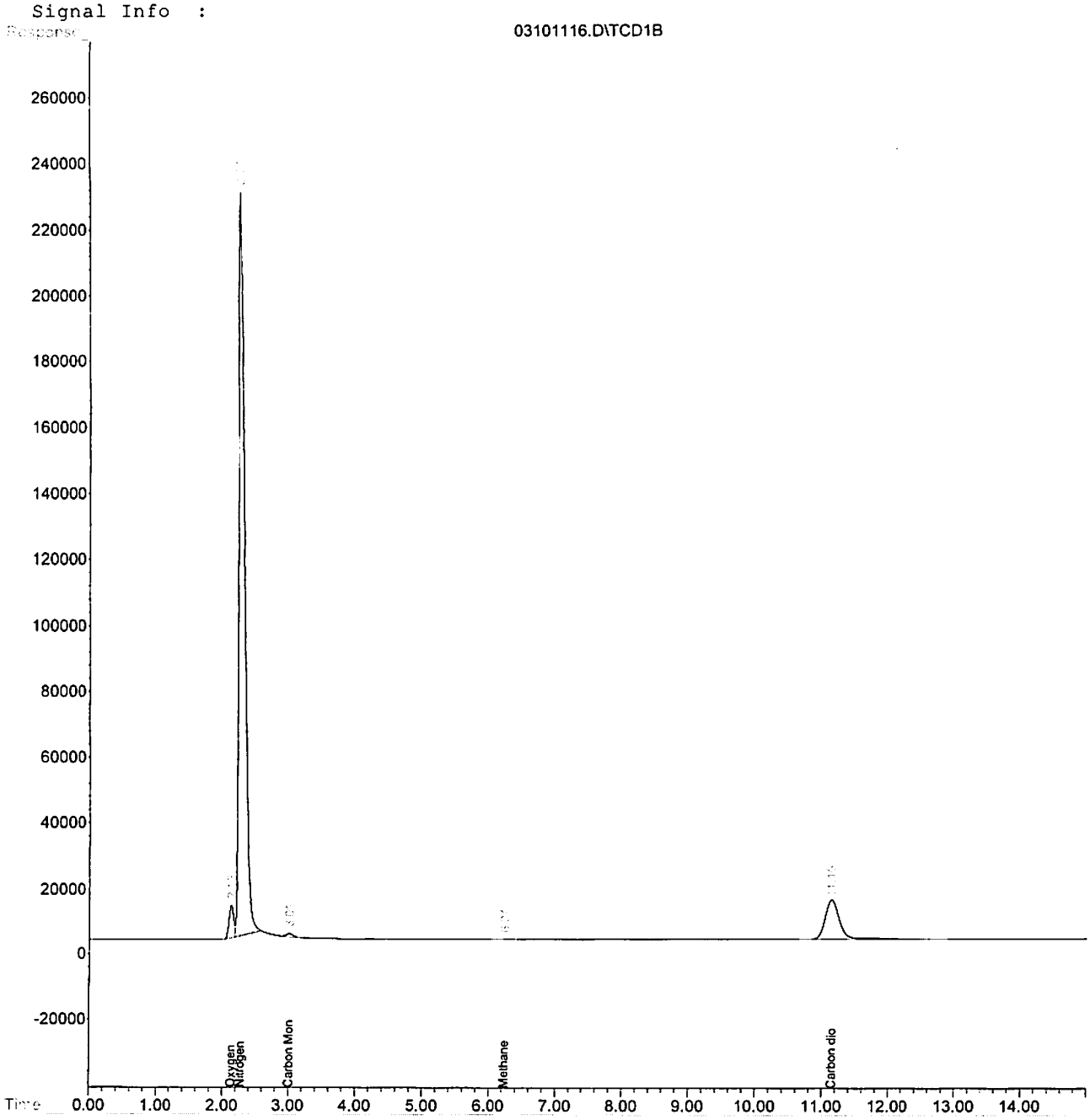
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101116.D Vial: 1
Acq On : 11 Mar 2011 6:58 am Operator:
Sample : 1103158-010A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 14:59 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 14:54:59 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

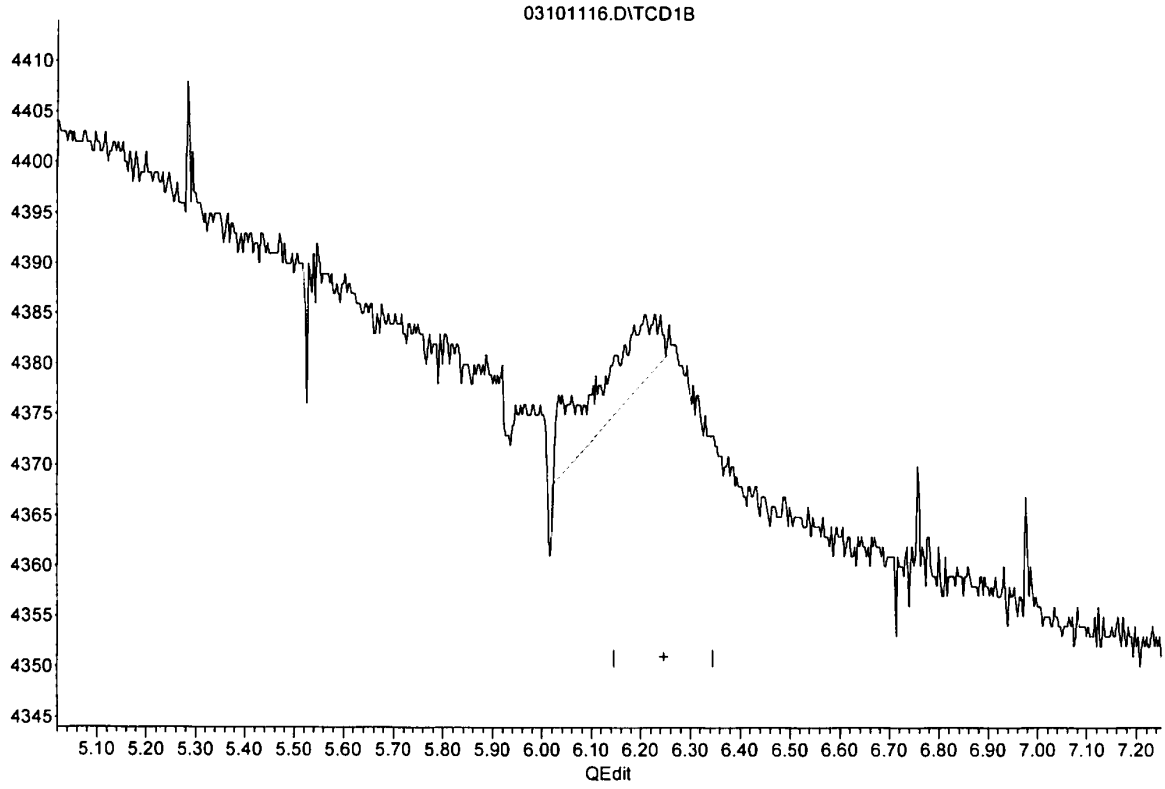
Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (Qedit)

Data File : C:\HPCHEM\2\DATA\031011\03101116.D Vial: 1
Acq On : 11 Mar 2011 6:58 am Operator:
Sample : 1103158-010A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 14:59 2011 Quant Results File: 030511.RES

Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 14:54:59 2011
Response via : Multiple Level Calibration



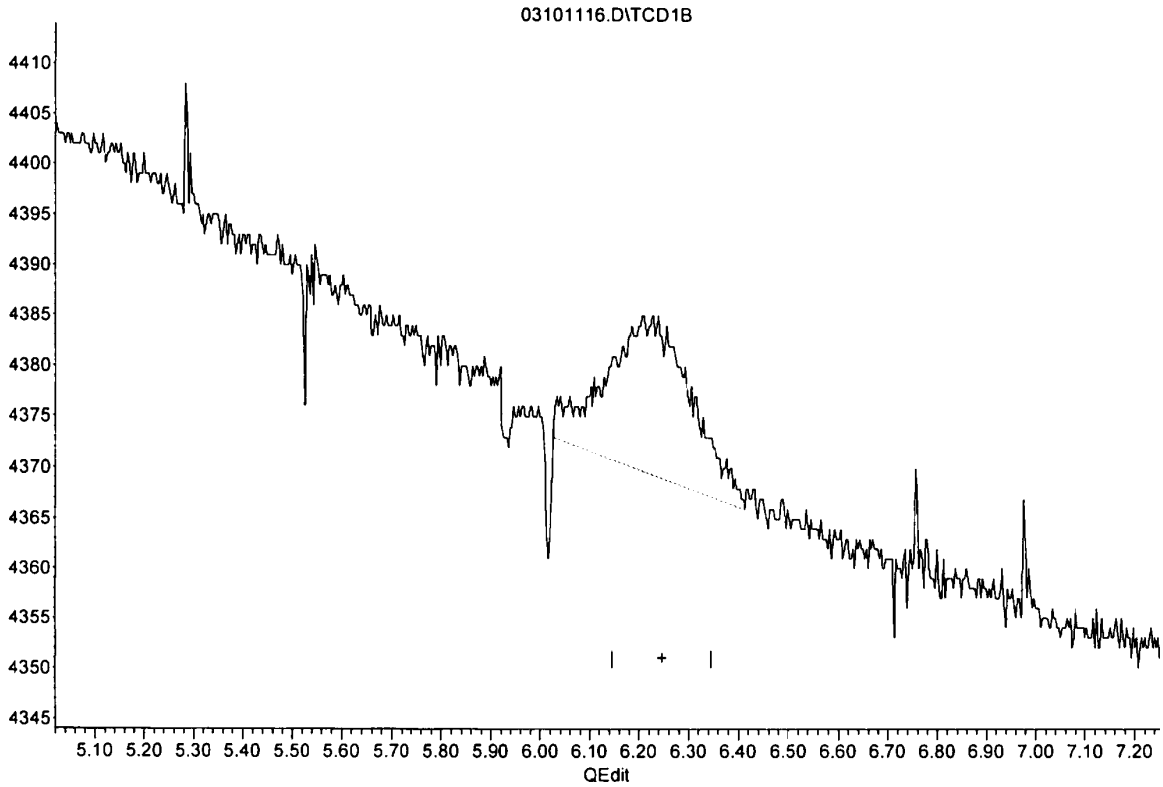
(4) Methane
6.21min 0.004%
response 519

(+) = Expected Retention Time
03101116.D 030511.M Thu Mar 24 14:59:27 2011

Quantitation Report (Qedit)

Data File : C:\HPCHEM\2\DATA\031011\03101116.D Vial: 1
Acq On : 11 Mar 2011 6:58 am Operator:
Sample : 1103158-010A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 14:59 2011 Quant Results File: 030511.RES

Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 14:54:59 2011
Response via : Multiple Level Calibration



(4) Methane
6.24min 0.013% m
response 1844

(+) = Expected Retention Time
03101116.D 030511.M Thu Mar 24 14:59:50 2011

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101117.D Vial: 1
Acq On : 11 Mar 2011 7:19 am Operator:
Sample : 1103158-007Adup Inst : GC/TCD
Misc : DUP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:00 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 14:54:59 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

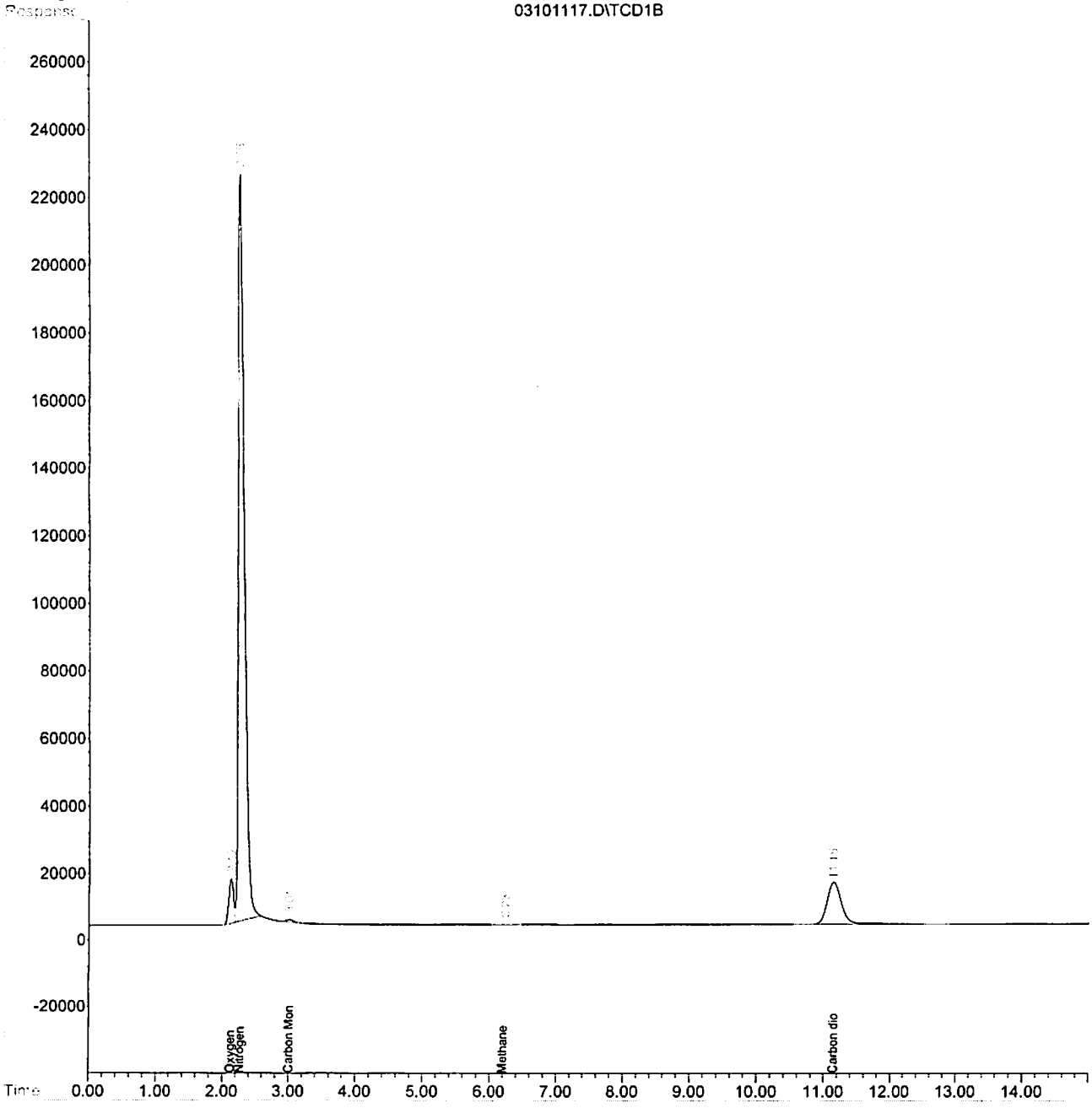
	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	2.12	642699	4.112	%
2)	Nitrogen	2.27	14292015	82.134	%
3)	Carbon Monoxide	3.00	45566	0.277	%
4)	Methane	6.20	1397	0.010	%
5)	Carbon dioxide	11.15	1874354	9.156	%

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101117.D Vial: 1
Acq On : 11 Mar 2011 7:19 am Operator:
Sample : 1103158-007Adup Inst : GC/TCD
Misc : DUP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:00 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 14:54:59 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101118.D Vial: 1
Acq On : 11 Mar 2011 8:11 am Operator:
Sample : LOD Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 11 8:26 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Fri Mar 11 06:05:17 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

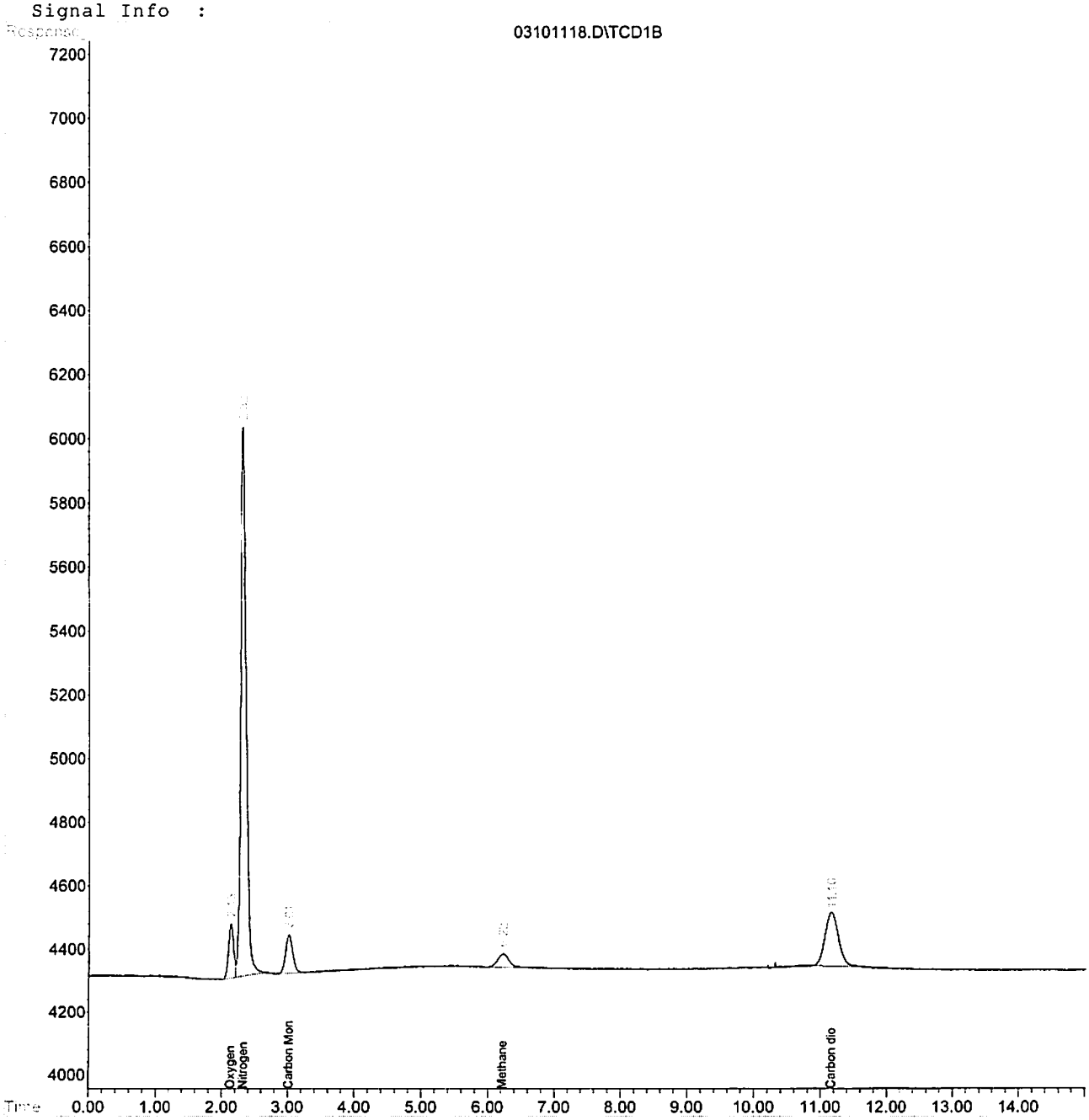
	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	2.13	8948	0.057	%
2)	Nitrogen	2.32	104149	0.599	%
3)	Carbon Monoxide	3.01	8997	0.055	%
4)	Methane	6.23	5017	0.036	%
5)	Carbon dioxide	11.16	23543	0.115	%

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101118.D Vial: 1
Acq On : 11 Mar 2011 8:11 am Operator:
Sample : LOD Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 11 8:26 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Fri Mar 11 06:05:17 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101119.D Vial: 1
Acq On : 11 Mar 2011 9:31 am Operator:
Sample : crql std 2% b Inst : GC/TCD
Misc : CCV ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 29 14:14 2011 Quant Results File: 030511A.RES

Quant Method : C:\HPCHEM\2\METHODS\030511A.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	2.13	11458	0.073	%
2)	Nitrogen	2.32	253403	1.456	%
3)	Carbon Monoxide	3.01	24673	0.150	%
4)	Methane	6.22	13575	0.099	%
5)	Carbon dioxide	11.16	67873	0.332	%

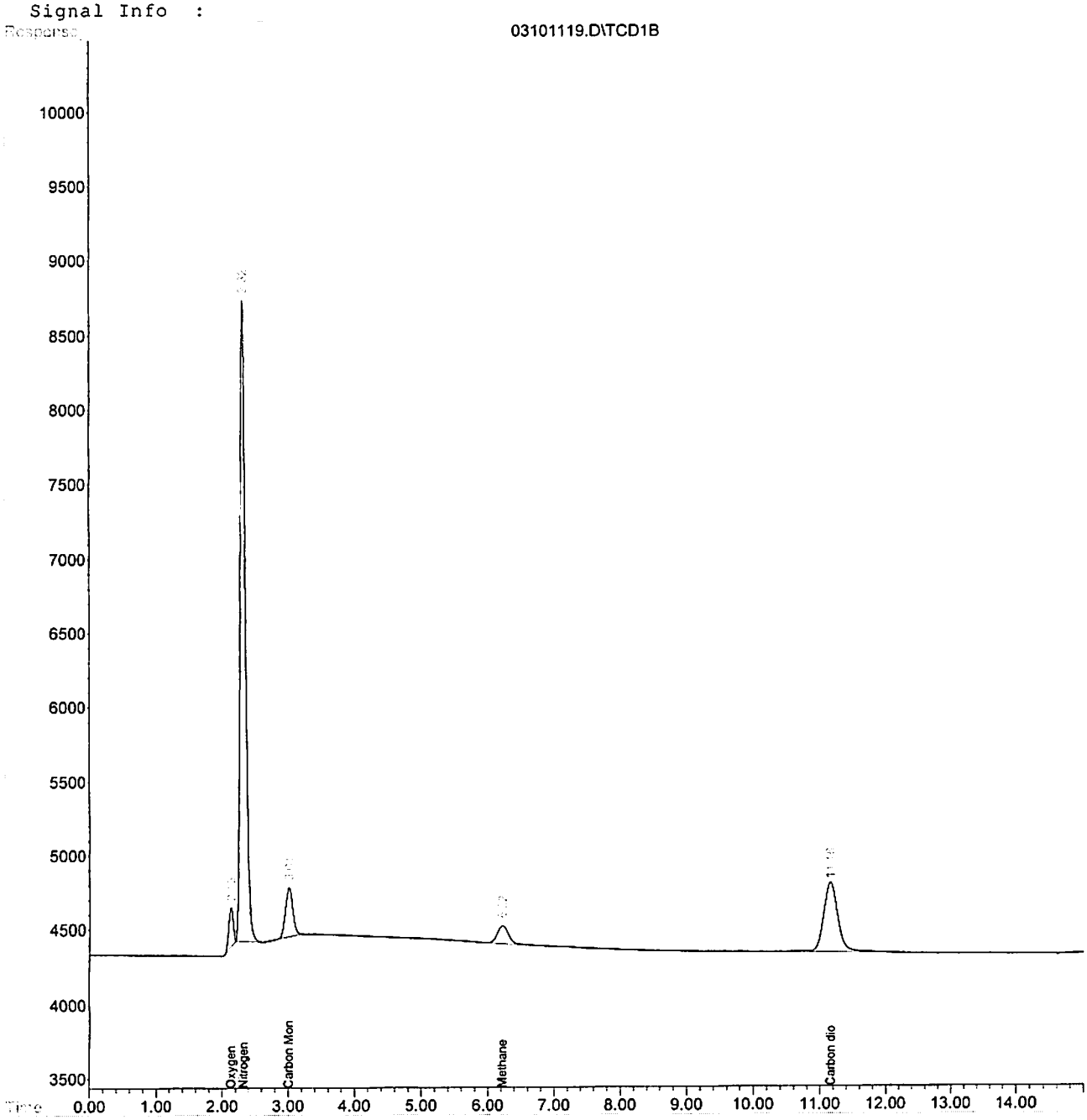
(f)=RT Delta > 1/2 Window (m)=manual int.
03101119.D 030511A.M Tue Mar 29 14:14:46 2011

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101119.D Vial: 1
Acq On : 11 Mar 2011 9:31 am Operator:
Sample : crql std 2% b Inst : GC/TCD
Misc : CCV ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 29 14:14 2011 Quant Results File: 030511A.RES

Quant Method : C:\HPCHEM\2\METHODS\030511A.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031011\03101120.D Vial: 1
Acq On : 11 Mar 2011 9:57 am Operator:
Sample : ccv std 1-2 b Inst : GC/TCD
Misc : CCV ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:06 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1)	Oxygen	2.13	373040	2.387 %
2)	Nitrogen	2.32	468166	2.690 %
3)	Carbon Monoxide	3.01	412979	2.512 %
4)	Methane	6.23	270877	1.967 %
5)	Carbon dioxide	11.16	505559	2.470 %

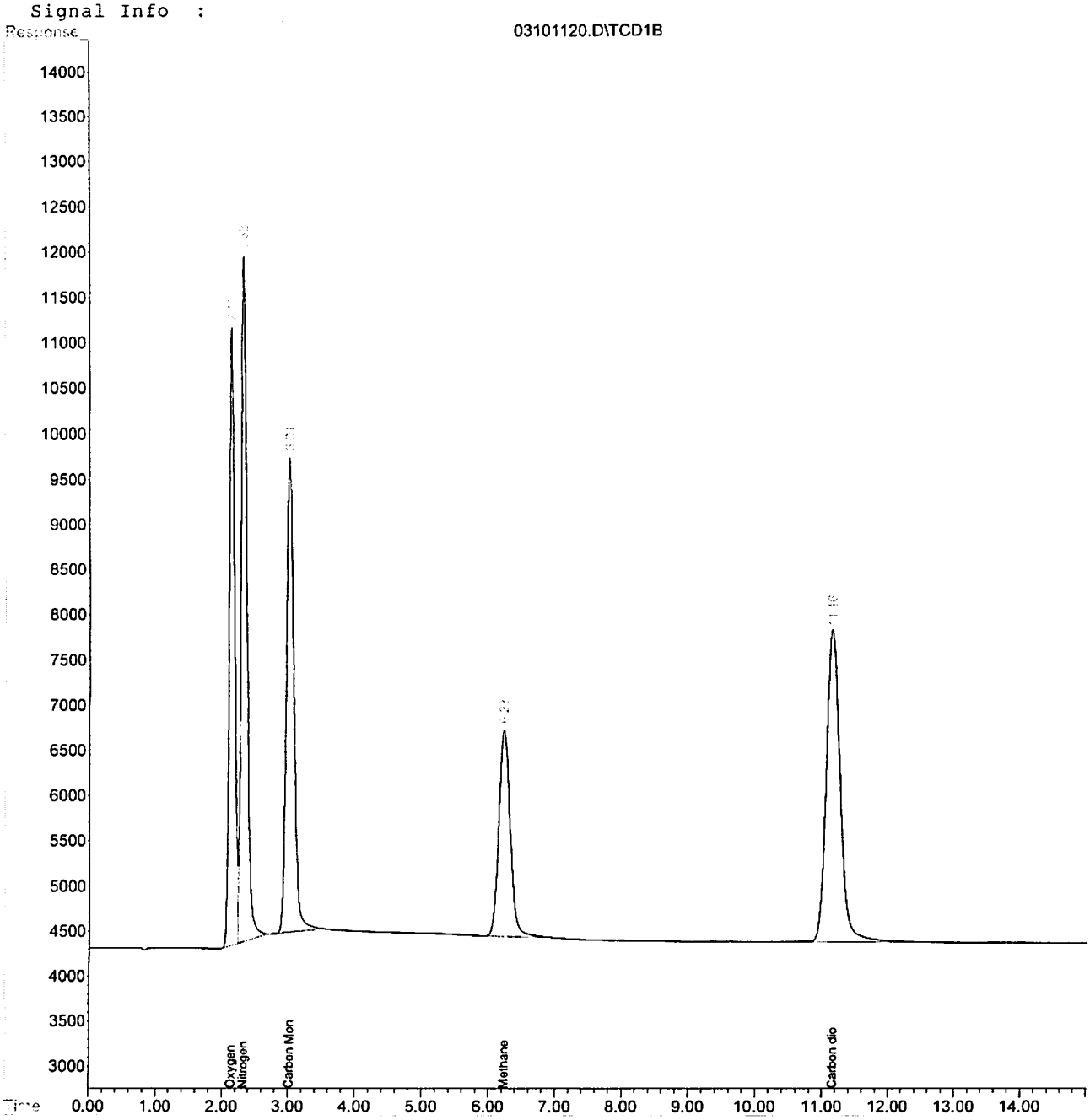
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031011\03101120.D Vial: 1
Acq On : 11 Mar 2011 9:57 am Operator:
Sample : ccv std 1-2 b Inst : GC/TCD
Misc : CCV ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:06 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



MANUAL INTEGRATION SUMMARY

Analyst: Michael Budziak
Instrument: GC-TCD
Sequence: 39440
Run Date: 3-10-11

Routine Manual Integrations

N/A

Non-Routine Manual Integrations

1103158-011a, 1103158-012a, 1103158-013a, and 1103158-014a.

Methane peak was manually integrated due to peak in samples below calibration level and not picked up by Chemstation software.

RTI Laboratories

Run ID: GC-TCD 1_110311A **Run No.:** 39441

Analytical Run Date: 3/11/2011 **InstrumentID:** GC-TCD 1

Analyst: Mike Budziak **Column:**

Calibration ID: **Column ID:**

Column Length:

SampID	TestCode	SampType	Batch ID	Analysis Date/Time	QA By	Q	Comments
icb	ASTM-D2504	ICB	R39441	3/12/2011 3:21:00 AM	Robert Lynch		
ccv std 1-2 a	ASTM-D2504	CCV	R39441	3/12/2011 4:09:00 AM	Robert Lynch		
crql std 2% a	ASTM-D2504	CRQL	R39441	3/12/2011 4:53:00 AM	Robert Lynch		
1103158-011A	ASTM-D2504	SAMP	R39440	3/12/2011 5:16:00 AM	Robert Lynch	H	
1103158-012A	ASTM-D2504	SAMP	R39440	3/12/2011 5:38:00 AM	Robert Lynch	H	
1103158-013A	ASTM-D2504	SAMP	R39440	3/12/2011 5:59:00 AM	Robert Lynch	H	
1103158-014A	ASTM-D2504	SAMP	R39440	3/12/2011 6:19:00 AM	Robert Lynch	H	
1103158-014Adup	ASTM-D2504	DUP	R39440	3/12/2011 6:48:00 AM	Robert Lynch	H	
crql std 2% b	ASTM-D2504	CRQL	R39441	3/12/2011 7:13:00 AM	Robert Lynch		
ccv std 1-2 b	ASTM-D2504	CCV	R39441	3/12/2011 7:39:00 AM	Robert Lynch		

RTI Laboratories

ANALYTICAL RUN Summary

29-Mar-11

RunNo 39441

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748303	icb	ASTM-D2504	ICB	.TA\031111\0311	3/12/2011 3:21:0	1	R39441		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748304	ccv std 1-2 a	ASTM-D2504	CCV	.TA\031111\0311	3/12/2011 4:09:0	1	R39441		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	2.452	2.452		2.5	0	0	0.025	0.1	0	98%	85	115	0%	
Carbon Monoxide	A	%	2.655	2.655		2.5	0	0	0.025	0.1	0	106%	85	115	0%	
Ethane	A	%		0		1	0	0	0.025	0.5	0	0%	85	115	0%	S
Hydrogen	A	%		0		1	0	0	0.025	0.5	0	0%	85	115	0%	S
Methane	A	%	2.083	2.083		2	0	0	0.025	0.5	0	104%	85	115	0%	
Nitrogen	A	%	2.848	2.848		2.5	0	0	0.025	0.1	0	114%	85	115	0%	
Oxygen	A	%	2.549	2.549		2.5	0	0	0.025	0.1	0	102%	85	115	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748305	crql std 2% a	ASTM-D2504	CRQL	.TA\031111\0311	3/12/2011 4:53:0	1	R39441		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	0.324	0.324		0.3	0	0	0.025	0.1	0	108%	80	120	0%	
Carbon Monoxide	A	%	0.148	0.148		0.14	0	0	0.025	0.1	0	106%	80	120	0%	
Ethane	A	%		0		0.025	0	0	0.025	0.5	0	0%	80	120	0%	S
Hydrogen	A	%		0		0.025	0	0	0.025	0.5	0	0%	80	120	0%	S
Methane	A	%	0.101	0.101		0.09	0	0	0.025	0.5	0	112%	80	120	0%	
Nitrogen	A	%	1.541	1.541		1.39	0	0	0.025	0.1	0	111%	80	120	0%	
Oxygen	A	%	0.091	0.091		0.08	0	0	0.025	0.1	0	114%	80	120	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748306	1103158-011A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031111\0311	3/12/2011 5:16:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748306	1103158-011A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031111\0311	3/12/2011 5:16:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	8.276	8.276		0	0	0	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0.32	0.32		0	0	0	0.066	0.14	0	0%	0	0	0%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0.009	0		0	0	0	0.043	0.09	0	0%	0	0	0%	
Nitrogen	A	%	83.157	83.157		0	0	0	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	4.334	4.334		0	0	0	0.03	0.08	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748307	1103158-012A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031111\0311	3/12/2011 5:38:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	0.059	0		0	0	0	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0	0		0	0	0	0.066	0.14	0	0%	0	0	0%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0	0		0	0	0	0.043	0.09	0	0%	0	0	0%	
Nitrogen	A	%	78.197	78.197		0	0	0	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	20.688	20.688		0	0	0	0.03	0.08	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748308	1103158-013A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031111\0311	3/12/2011 5:59:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	8.193	8.193		0	0	0	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0.641	0.641		0	0	0	0.066	0.14	0	0%	0	0	0%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0.019	0		0	0	0	0.043	0.09	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748308	1103158-013A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031111\0311	3/12/2011 5:59:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Nitrogen	A	%	83.452	83.452		0	0	0	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	3.27	3.27		0	0	0	0.03	0.08	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748309	1103158-014A (Container-01 of 01)	ASTM-D2504	SAMP	.TA\031111\0311	3/12/2011 6:19:0	1	R39440		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	6.311	6.311		0	0	0	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0.609	0.609		0	0	0	0.066	0.14	0	0%	0	0	0%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0.019	0		0	0	0	0.043	0.09	0	0%	0	0	0%	
Nitrogen	A	%	81.818	81.818		0	0	0	0.63	1.39	0	0%	0	0	0%	
Oxygen	A	%	6.432	6.432		0	0	0	0.03	0.08	0	0%	0	0	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748310	1103158-014Adup	ASTM-D2504	DUP	.TA\031111\0311	3/12/2011 6:48:0	1	R39440		0	748309	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	6.285	6.285		0	0	6.311	0.13	0.3	0	0%	0	0	0%	
Carbon Monoxide	A	%	0.608	0.608		0	0	0.609	0.066	0.14	0	0%	0	0	0%	
Ethane	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Hydrogen	A	%		0		0	0	0	0.025	0.5	0	0%	0	0	0%	
Methane	A	%	0.022	0		0	0	0	0.043	0.09	0	0%	0	0	0%	
Nitrogen	A	%	82.591	82.591		0	0	81.818	0.63	1.39	0	0%	0	0	1%	
Oxygen	A	%	6.5	6.5		0	0	6.432	0.03	0.08	0	0%	0	0	1%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748311	crql std 2% b	ASTM-D2504	CRQL	.TA\031111\0311	3/12/2011 7:13:0	1	R39441		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	0.3	0.3		0.3	0	0	0.025	0.1	0	100%	80	120	0%	
Carbon Monoxide	A	%	0.129	0.129		0.14	0	0	0.025	0.1	0	92%	80	120	0%	
Ethane	A	%		0		0.025	0	0	0.025	0.5	0	0%	80	120	0%	S
Hydrogen	A	%		0		0.025	0	0	0.025	0.5	0	0%	80	120	0%	S
Methane	A	%	0.087	0.087		0.09	0	0	0.025	0.5	0	97%	80	120	0%	
Nitrogen	A	%	1.477	1.477		1.39	0	0	0.025	0.1	0	106%	80	120	0%	
Oxygen	A	%	0.091	0.091		0.08	0	0	0.025	0.1	0	114%	80	120	0%	

Seq No	Sample ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
748312	ccv std 1-2 b	ASTM-D2504	CCV	.TA\031111\0311	3/12/2011 7:39:0	1	R39441		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Carbon dioxide	A	%	2.435	2.435		2.5	0	0	0.025	0.1	0	97%	85	115	0%	
Carbon Monoxide	A	%	2.578	2.578		2.5	0	0	0.025	0.1	0	103%	85	115	0%	
Ethane	A	%		0		1	0	0	0.025	0.5	0	0%	85	115	0%	S
Hydrogen	A	%		0		1	0	0	0.025	0.5	0	0%	85	115	0%	S
Methane	A	%	2.011	2.011		2	0	0	0.025	0.5	0	101%	85	115	0%	
Nitrogen	A	%	2.845	2.845		2.5	0	0	0.025	0.1	0	114%	85	115	0%	
Oxygen	A	%	2.548	2.548		2.5	0	0	0.025	0.1	0	102%	85	115	0%	

Spikes and Surrogates Report

RunID: GC-TCD 1_110311A **Analyst:** Mike Budziak

RunNo: 39441

Spikes

SeqNo	SampID	TestCode	SampType	BatchID	DF	Duplicate Of
748304	ccv std 1-2 a	ASTM-D2504	CCV	R39441	1	

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	Qual
✔	Carbon Monoxide	2.5	2.655	106.20%	85	115		
☐	Ethane	1	0	0.00%	85	115	*	S
☐	Hydrogen	1	0	0.00%	85	115	*	S
✔	Methane	2	2.083	104.15%	85	115		
✔	Nitrogen	2.5	2.848	113.92%	85	115		
✔	Oxygen	2.5	2.549	101.96%	85	115		
✔	Carbon dioxide	2.5	2.452	98.08%	85	115		

Total Recoveries Out: 2

SeqNo	SampID	TestCode	SampType	BatchID	DF	Duplicate Of
748305	crql std 2% a	ASTM-D2504	CRQL	R39441	1	

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	Qual
✔	Oxygen	0.08	0.091	113.75%	80	120		
✔	Carbon dioxide	0.3	0.324	108.00%	80	120		
✔	Carbon Monoxide	0.14	0.148	105.71%	80	120		
☐	Ethane	0.025	0	0.00%	80	120	*	S
☐	Hydrogen	0.025	0	0.00%	80	120	*	S
✔	Methane	0.09	0.101	112.22%	80	120		
✔	Nitrogen	1.39	1.541	110.86%	80	120		

Total Recoveries Out: 2

SeqNo	SampID	TestCode	SampType	BatchID	DF	Duplicate Of
748311	crql std 2% b	ASTM-D2504	CRQL	R39441	1	

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	Qual
✔	Carbon Monoxide	0.14	0.129	92.14%	80	120		
☐	Ethane	0.025	0	0.00%	80	120	*	S
☐	Hydrogen	0.025	0	0.00%	80	120	*	S
✔	Methane	0.09	0.087	96.67%	80	120		
✔	Nitrogen	1.39	1.477	106.26%	80	120		
✔	Oxygen	0.08	0.091	113.75%	80	120		
✔	Carbon dioxide	0.3	0.3	100.00%	80	120		

Total Recoveries Out: 2

SeqNo	SampID	TestCode	SampType	BatchID	DF	Duplicate Of
748312	ccv std 1-2 b	ASTM-D2504	CCV	R39441	1	

Rpt	Analyte	SpkVal	CalcVal	REC	LowLimit	HighLimit	Rec Out	Qual
✔	Oxygen	2.5	2.548	101.92%	85	115		
✔	Carbon dioxide	2.5	2.435	97.40%	85	115		
✔	Carbon Monoxide	2.5	2.578	103.12%	85	115		
☐	Ethane	1	0	0.00%	85	115	*	S
☐	Hydrogen	1	0	0.00%	85	115	*	S
✔	Methane	2	2.011	100.55%	85	115		
✔	Nitrogen	2.5	2.845	113.80%	85	115		

Total Recoveries Out: 2

Injection Log

Directory: C:\HPCHEM\2\DATA\031111

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	03111101.D	1.	icb	ICB ASTM-D2504	12 Mar 2011 03:21
2	1	03111102.D	1.	ccv std 1-2 a	CCV ASTM-D2504	12 Mar 2011 04:09
3	1	03111103.d	1.	crql std 2% a	SAMP ASTM-D2504	12 Mar 2011 04:53
4	1	03111104.d	1.	1103158-011A	SAMP ASTM-D2504	12 Mar 2011 05:16
5	1	03111105.D	1.	1103158-012A	SAMP ASTM-D2504	12 Mar 2011 05:38
6	1	03111106.D	1.	1103158-013A	SAMP ASTM-D2504	12 Mar 2011 05:59
7	1	03111107.D	1.	1103158-014A	SAMP ASTM-D2504	12 Mar 2011 06:19
8	1	03111108.D	1.	1103158-014Adup	DUP ASTM-D2504	12 Mar 2011 06:48
9	1	03111109.D	1.	crql std 2% b	CRQL ASTM-D2504	12 Mar 2011 07:13
10	1	03111110.D	1.	ccv std 1-2 b	CCV ASTM-D2504	12 Mar 2011 07:39

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031111\03111101.D Vial: 1
Acq On : 12 Mar 2011 3:21 am Operator:
Sample : icb Inst : GC/TCD
Misc : ICB ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:09 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

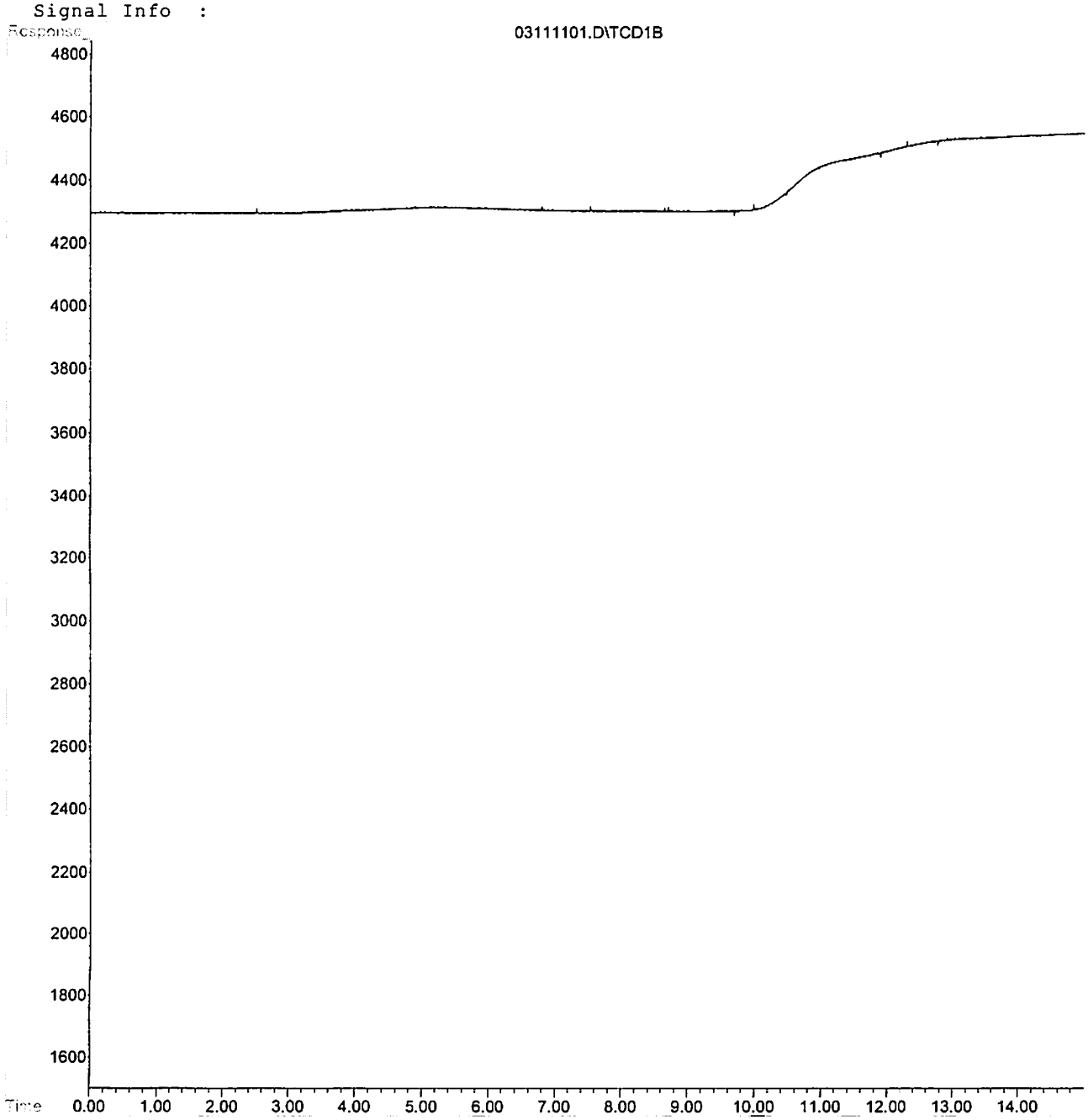
	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	0.00	0	N.D.	%
2)	Nitrogen	0.00	0	N.D.	%
3)	Carbon Monoxide	0.00	0	N.D.	%
4)	Methane	0.00	0	N.D.	%
5)	Carbon dioxide	0.00	0	N.D.	%

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031111\03111101.D Vial: 1
Acq On : 12 Mar 2011 3:21 am Operator:
Sample : icb Inst : GC/TCD
Misc : ICB ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:09 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031111\03111102.D Vial: 1
Acq On : 12 Mar 2011 4:09 am Operator:
Sample : ccv std 1-2 a Inst : GC/TCD
Misc : CCV ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 12 4:54 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 04:49:32 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1)	Oxygen	2.13	398388	2.549 %
2)	Nitrogen	2.32	495516	2.848 %
3)	Carbon Monoxide	3.01	436533	2.655 %
4)	Methane	6.23	286842	2.083 %
5)	Carbon dioxide	11.15	502032	2.452 %

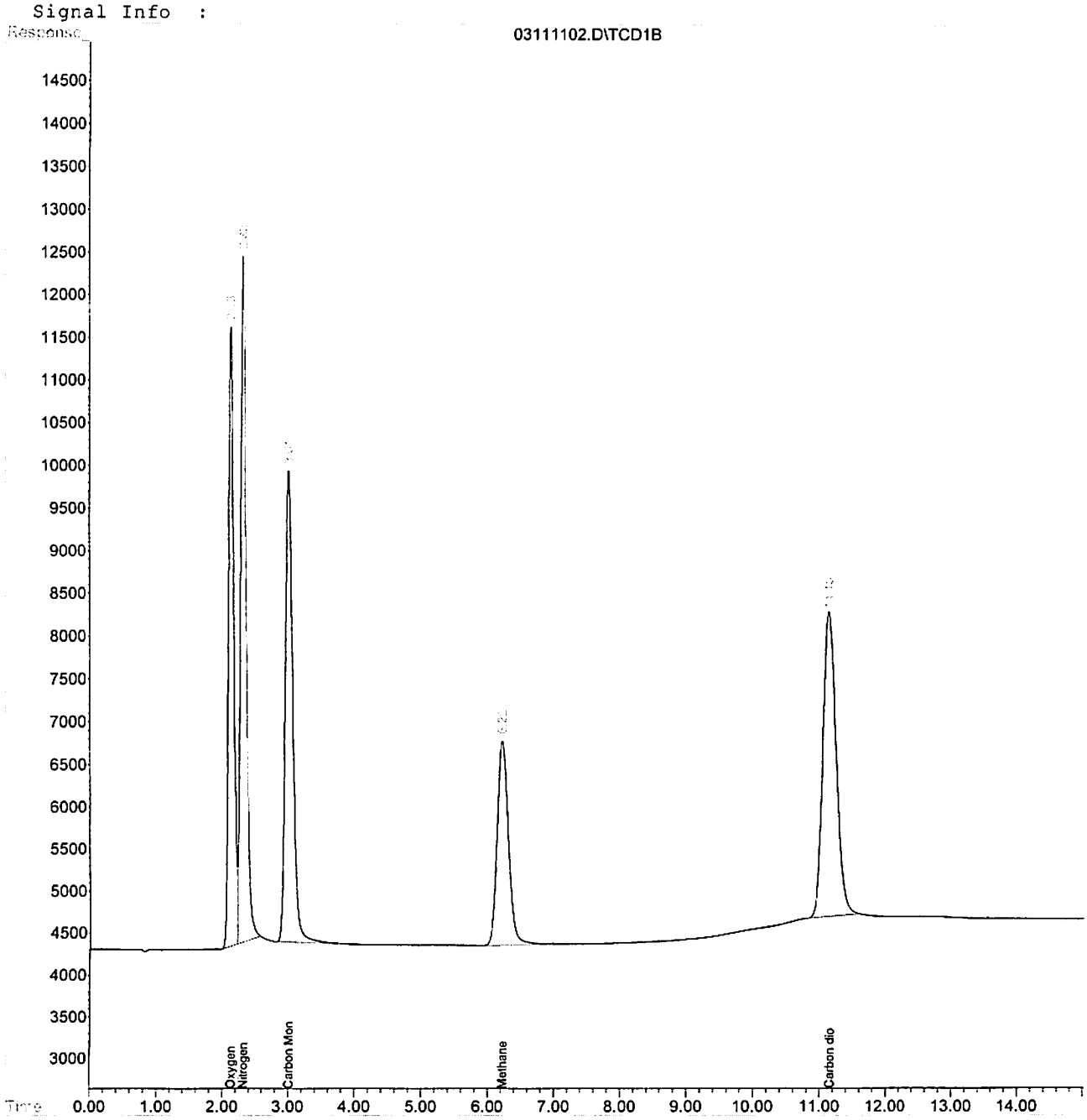
(f)=RT Delta > 1/2 Window (m)=manual int.
03111102.D 030511.M Tue Mar 29 09:57:45 2011 Page 1

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031111\03111102.D Vial: 1
Acq On : 12 Mar 2011 4:09 am Operator:
Sample : ccv std 1-2 a Inst : GC/TCD
Misc : CCV ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 12 4:54 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 04:49:32 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031111\03111103.D Vial: 1
Acq On : 12 Mar 2011 4:53 am Operator:
Sample : crql std 2% a Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 12 5:11 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 05:03:19 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	2.13	14278	0.091	%
2)	Nitrogen	2.32	268212	1.541	%
3)	Carbon Monoxide	3.01	24313	0.148	%
4)	Methane	6.23	13949	0.101	%
5)	Carbon dioxide	11.16	66360	0.324	%

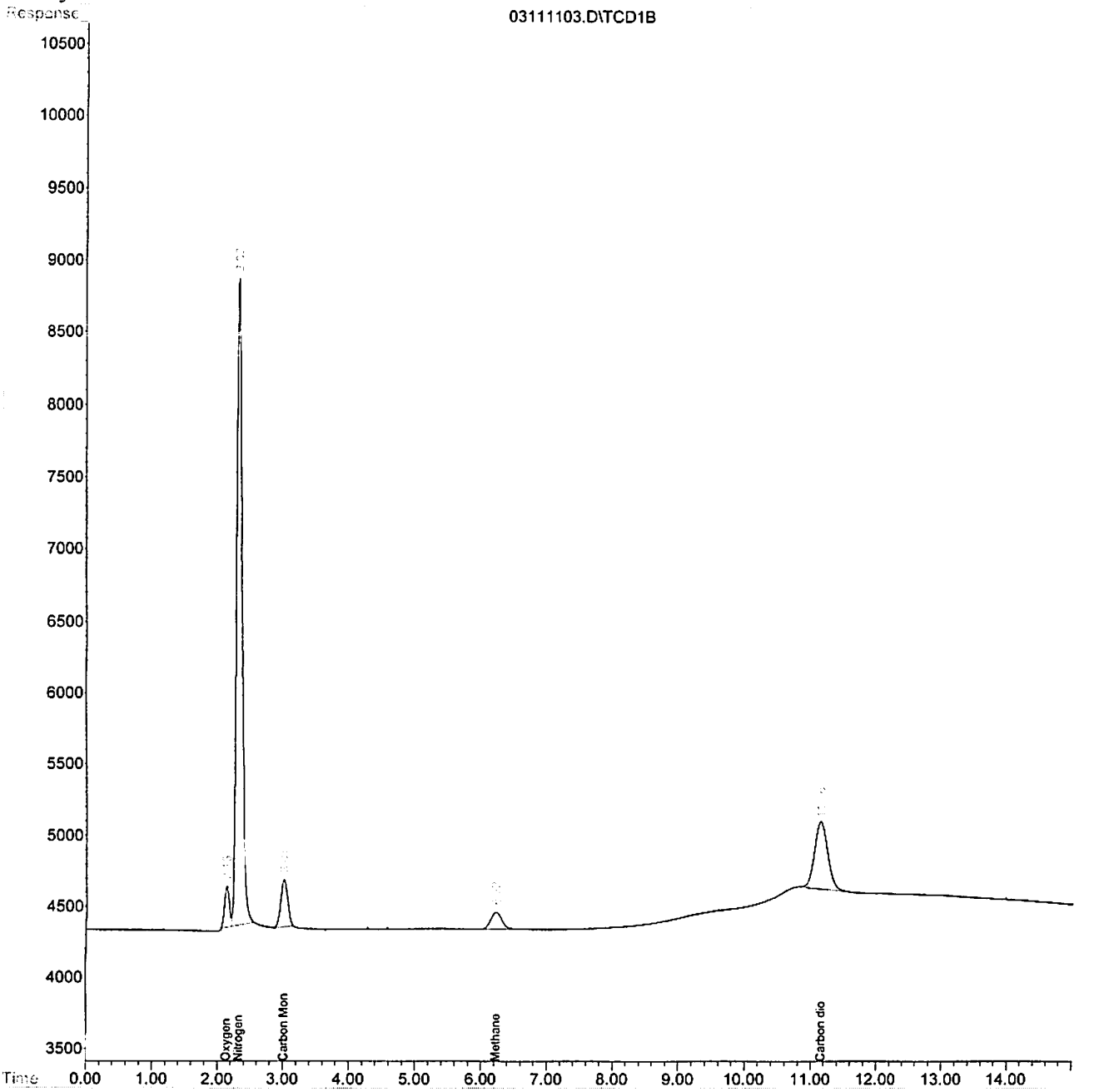
Quantitation Report

Data File : C:\HPCHEM\2\DATA\031111\03111103.D
Acq On : 12 Mar 2011 4:53 am
Sample : crql std 2% a
Misc : SAMP ASTM-D2504
IntFile : EVENTS.E
Quant Time: Mar 12 5:11 2011 Quant Results File: 030511.RES

Vial: 1
Operator:
Inst : GC/TCD
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 05:03:19 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031111\03111104.D Vial: 1
Acq On : 12 Mar 2011 5:16 am Operator:
Sample : 1103158-011A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:14 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	Target Compounds					
1)	Oxygen	2.12	677397	4.334	%	
2)	Nitrogen	2.27	14470106	83.157	%	
3)	Carbon Monoxide	3.00	52640	0.320	%	
4)	Methane	6.21	1277	0.009	%	m
5)	Carbon dioxide	11.15	1694064	8.276	%	

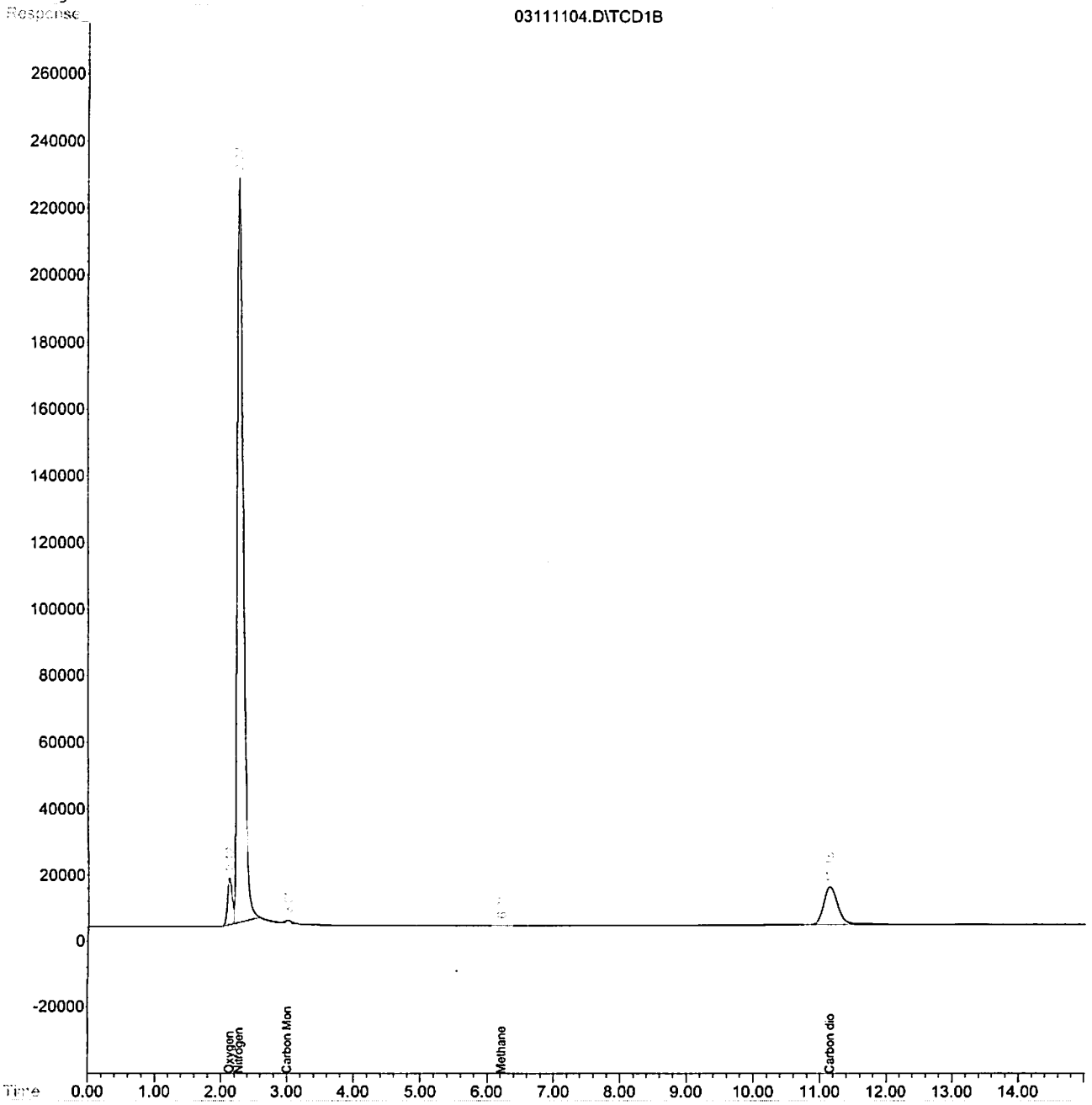
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031111\03111104.D Vial: 1
Acq On : 12 Mar 2011 5:16 am Operator:
Sample : 1103158-011A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:14 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

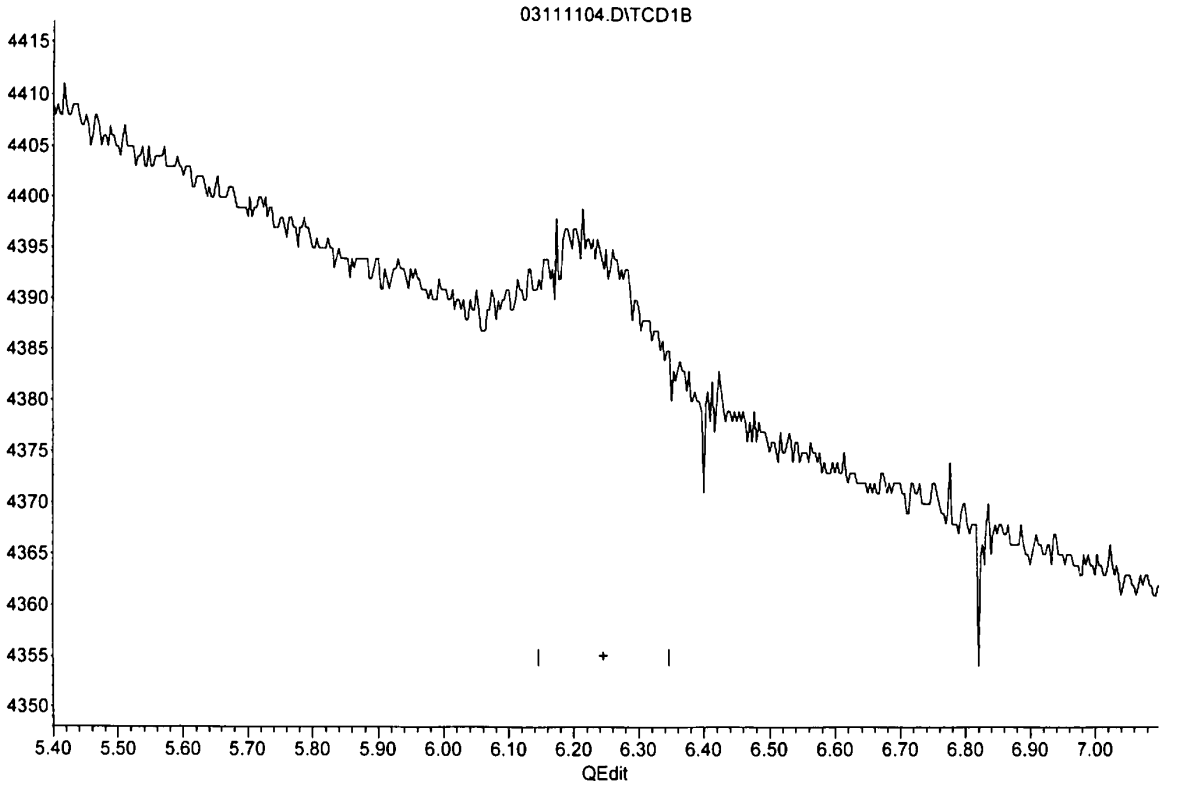
Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (Qedit)

Data File : C:\HPCHEM\2\DATA\031111\03111104.D Vial: 1
Acq On : 12 Mar 2011 5:16 am Operator:
Sample : 1103158-011A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:13 2011 Quant Results File: 030511.RES

Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Multiple Level Calibration



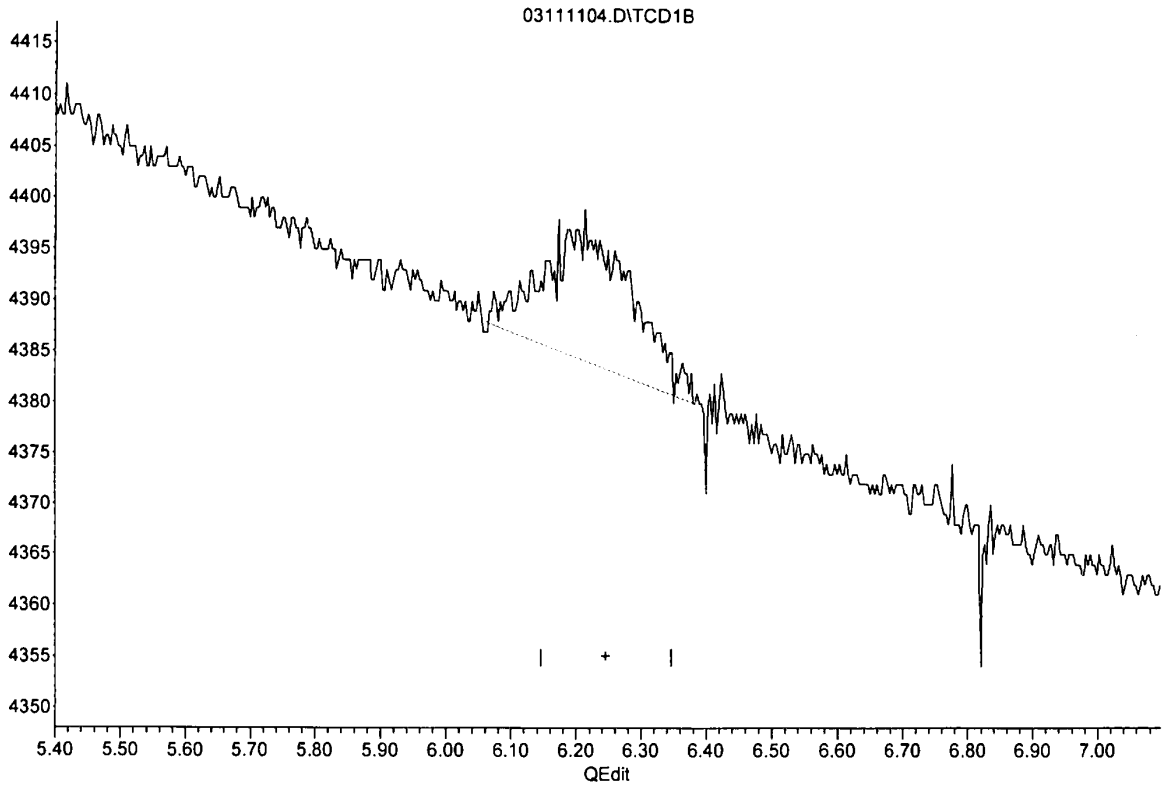
(4) Methane
6.25min 0.000%
response 0

(+) = Expected Retention Time
03111104.D 030511.M Thu Mar 24 15:14:31 2011

Quantitation Report (Qedit)

Data File : C:\HPCHEM\2\DATA\031111\03111104.D Vial: 1
Acq On : 12 Mar 2011 5:16 am Operator:
Sample : 1103158-011A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:13 2011 Quant Results File: 030511.RES

Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Multiple Level Calibration



(4) Methane
6.21min 0.009% m
response 1277

(+) = Expected Retention Time
03111104.D 030511.M Thu Mar 24 15:14:40 2011

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031111\03111105.D Vial: 1
Acq On : 12 Mar 2011 5:38 am Operator:
Sample : 1103158-012A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 12 7:18 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 05:03:19 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

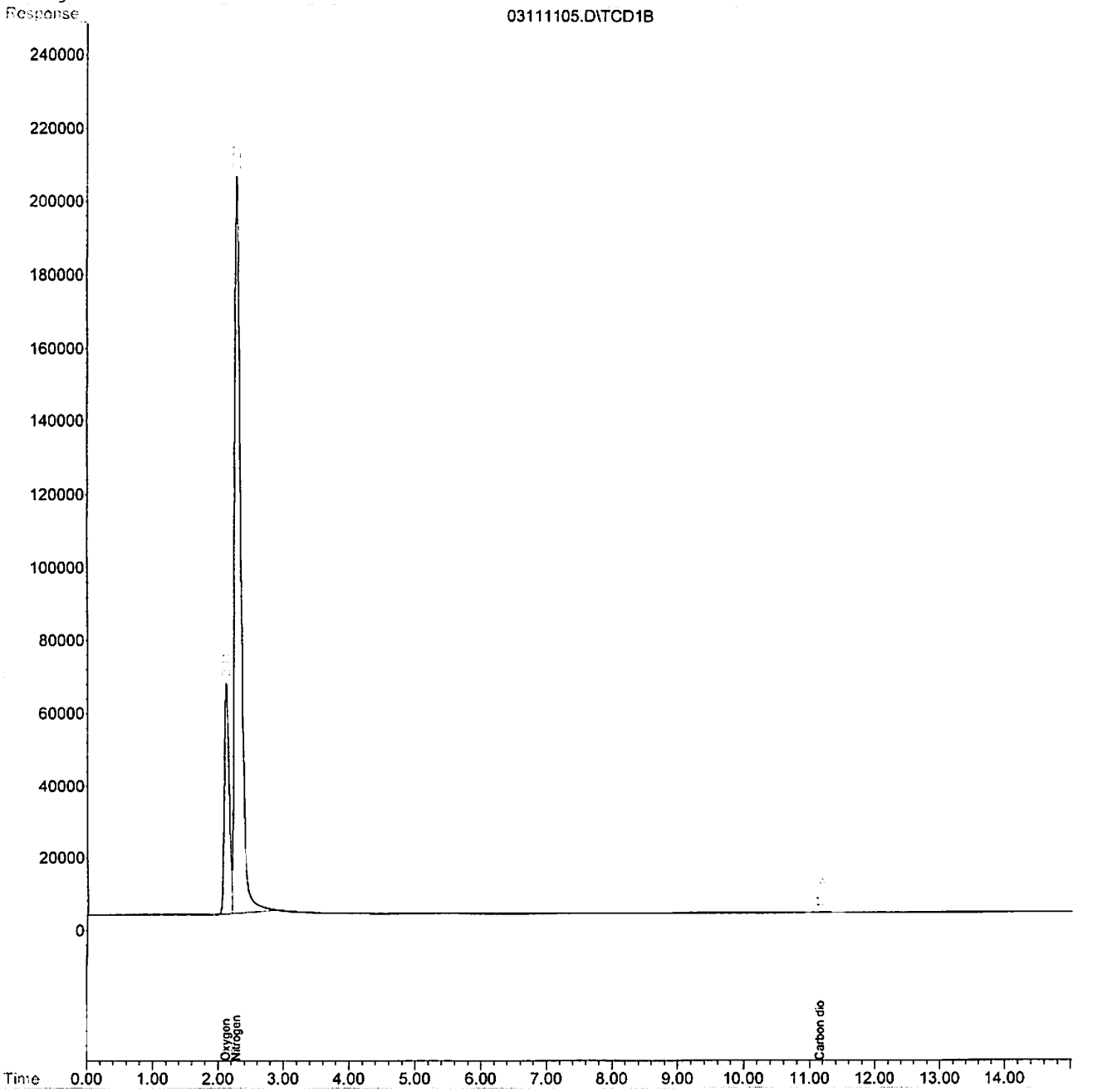
	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	2.11	3233766	20.688	%
2)	Nitrogen	2.27	13606964	78.197	%
3)	Carbon Monoxide	0.00	0	N.D.	%
4)	Methane	0.00	0	N.D.	%
5)	Carbon dioxide	11.16	12011	0.059	%

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031111\03111105.D Vial: 1
Acq On : 12 Mar 2011 5:38 am Operator:
Sample : 1103158-012A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 12 7:18 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 05:03:19 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031111\03111106.D Vial: 1
Acq On : 12 Mar 2011 5:59 am Operator:
Sample : 1103158-013A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:17 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	Target Compounds					
1)	Oxygen	2.13	511090	3.270	%	
2)	Nitrogen	2.27	14521370	83.452	%	
3)	Carbon Monoxide	3.01	105398	0.641	%	
4)	Methane	6.22	2653	0.019	%	m
5)	Carbon dioxide	11.15	1677153	8.193	%	

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

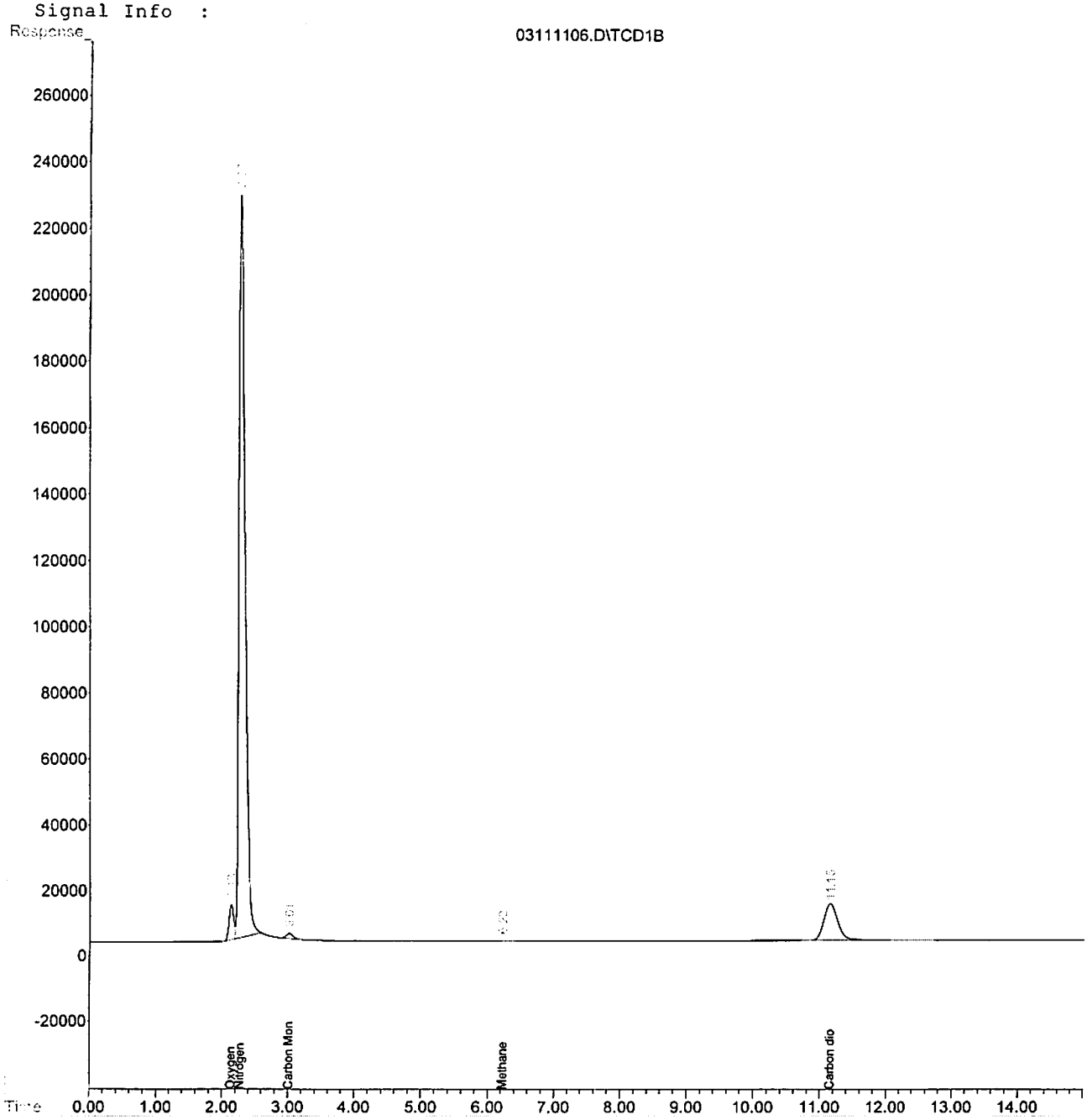
Quantitation Report

Data File : C:\HPCHEM\2\DATA\031111\03111106.D
Acq On : 12 Mar 2011 5:59 am
Sample : 1103158-013A
Misc : SAMP ASTM-D2504
IntFile : EVENTS.E
Quant Time: Mar 24 15:17 2011 Quant Results File: 030511.RES

Vial: 1
Operator:
Inst : GC/TCD
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

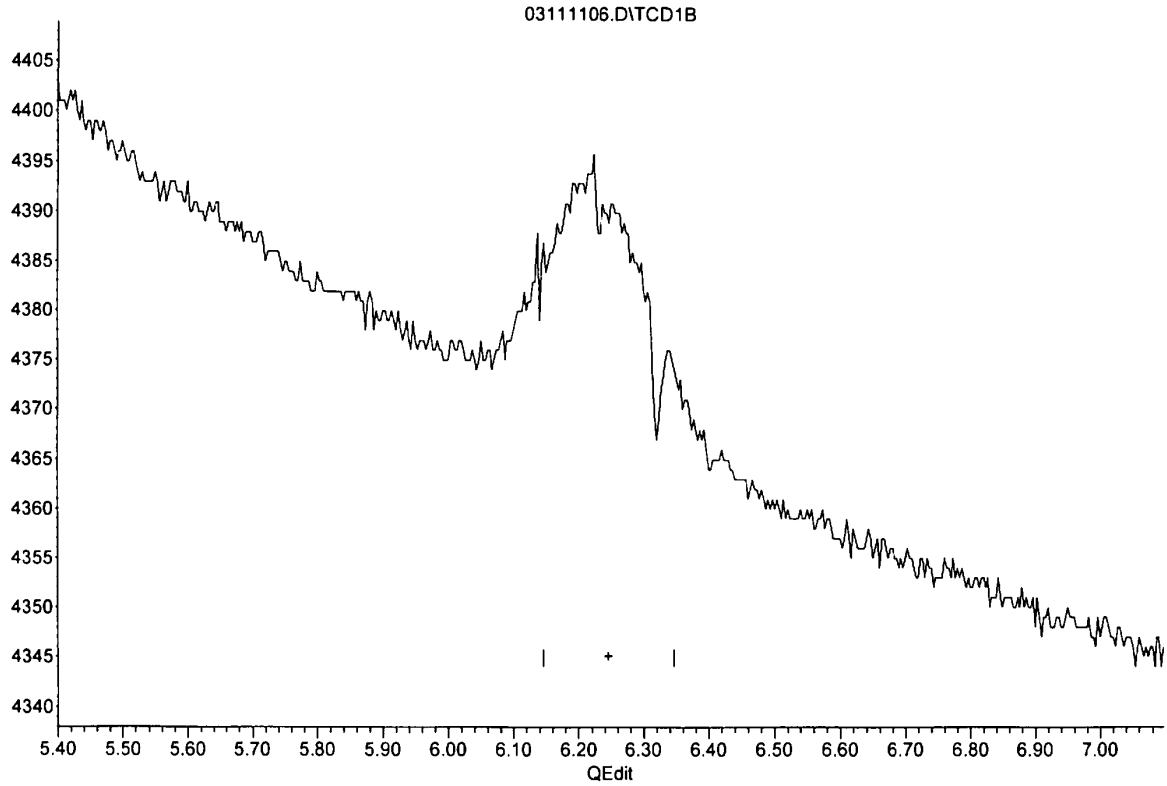
Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (Qedit)

Data File : C:\HPCHEM\2\DATA\031111\03111106.D Vial: 1
Acq On : 12 Mar 2011 5:59 am Operator:
Sample : 1103158-013A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:17 2011 Quant Results File: 030511.RES

Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Multiple Level Calibration



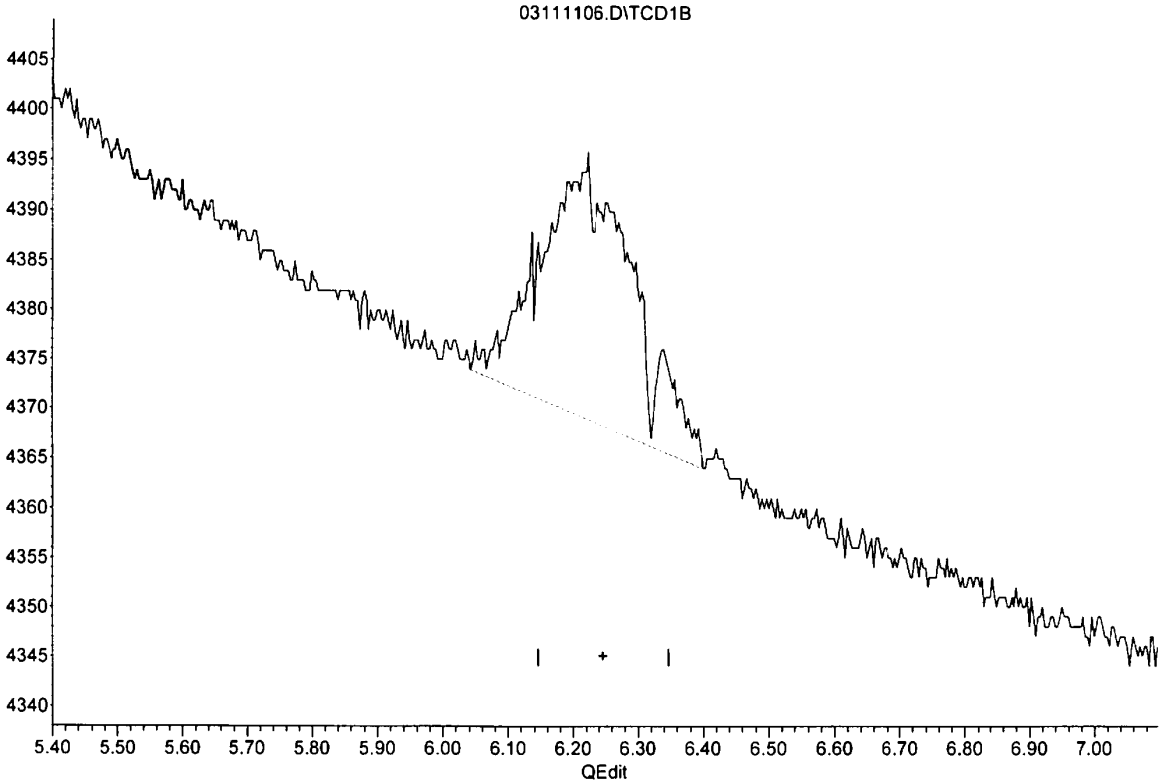
(4) Methane
6.25min 0.000%
response 0

(+) = Expected Retention Time
03111106.D 030511.M Thu Mar 24 15:17:31 2011

Quantitation Report (Qedit)

Data File : C:\HPCHEM\2\DATA\031111\03111106.D Vial: 1
Acq On : 12 Mar 2011 5:59 am Operator:
Sample : 1103158-013A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:17 2011 Quant Results File: 030511.RES

Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Multiple Level Calibration



(4) Methane
6.22min 0.019% m
response 2653

(+) = Expected Retention Time
03111106.D 030511.M Thu Mar 24 15:17:37 2011

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031111\03111107.D Vial: 1
Acq On : 12 Mar 2011 6:19 am Operator:
Sample : 1103158-014A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:18 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	Target Compounds					
1)	Oxygen	2.12	1005384	6.432	%	
2)	Nitrogen	2.27	14236996	81.818	%	
3)	Carbon Monoxide	3.01	100116	0.609	%	
4)	Methane	6.25	2675	0.019	%	m
5)	Carbon dioxide	11.16	1291784	6.311	%	

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

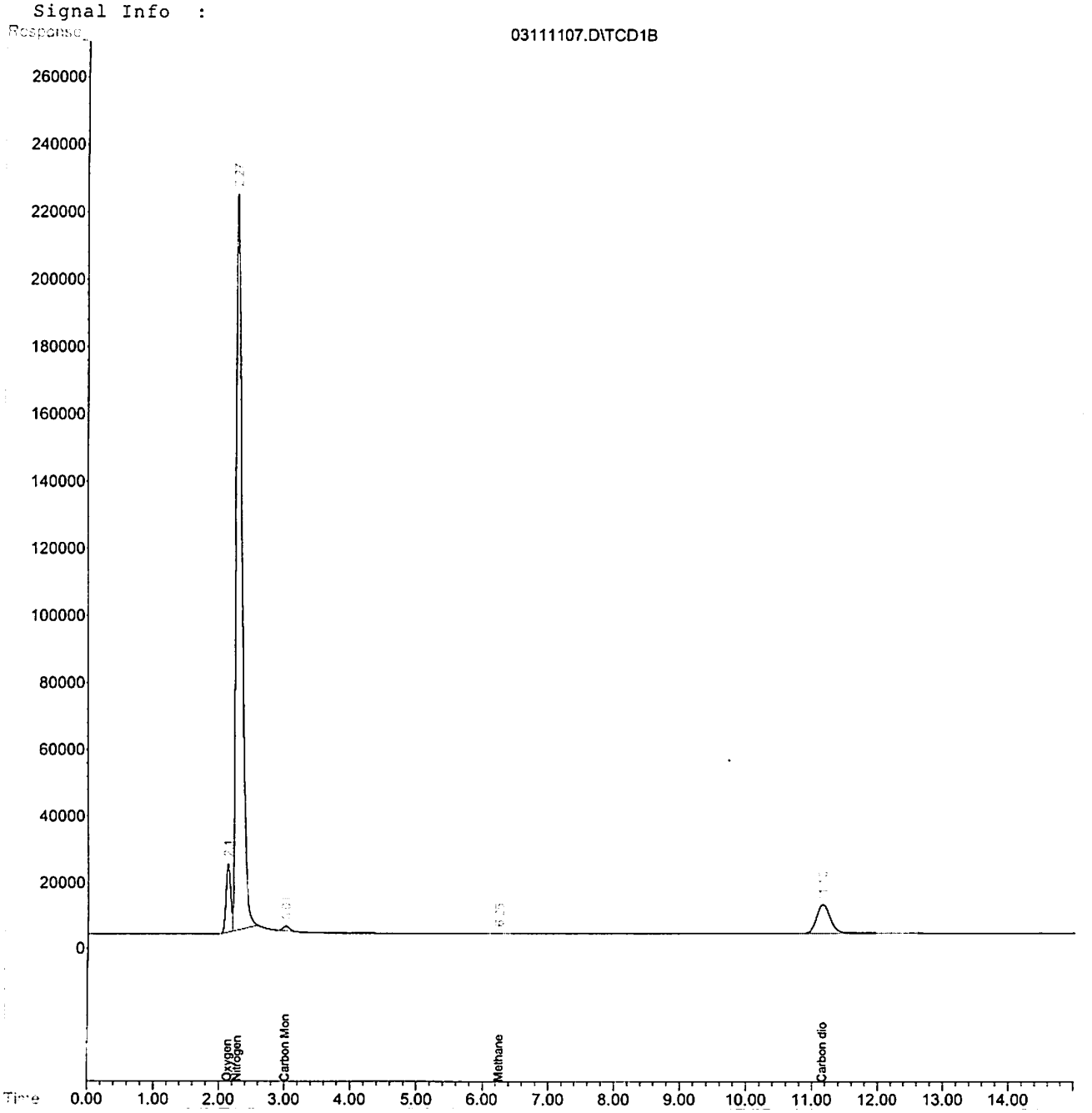
Quantitation Report

Data File : C:\HPCHEM\2\DATA\031111\03111107.D
Acq On : 12 Mar 2011 6:19 am
Sample : 1103158-014A
Misc : SAMP ASTM-D2504
IntFile : EVENTS.E
Quant Time: Mar 24 15:18 2011 Quant Results File: 030511.RES

Vial: 1
Operator:
Inst : GC/TCD
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

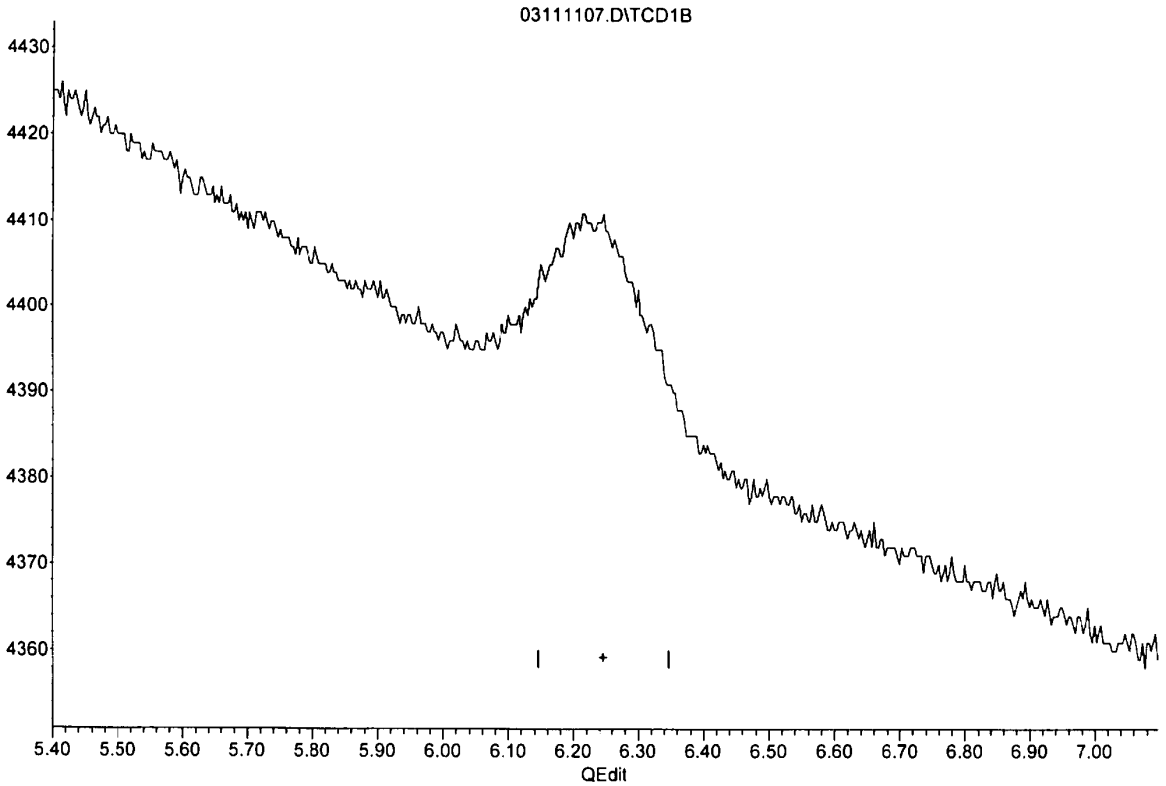
Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (Qedit)

Data File : C:\HPCHEM\2\DATA\031111\03111107.D Vial: 1
Acq On : 12 Mar 2011 6:19 am Operator:
Sample : 1103158-014A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:18 2011 Quant Results File: 030511.RES

Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Multiple Level Calibration



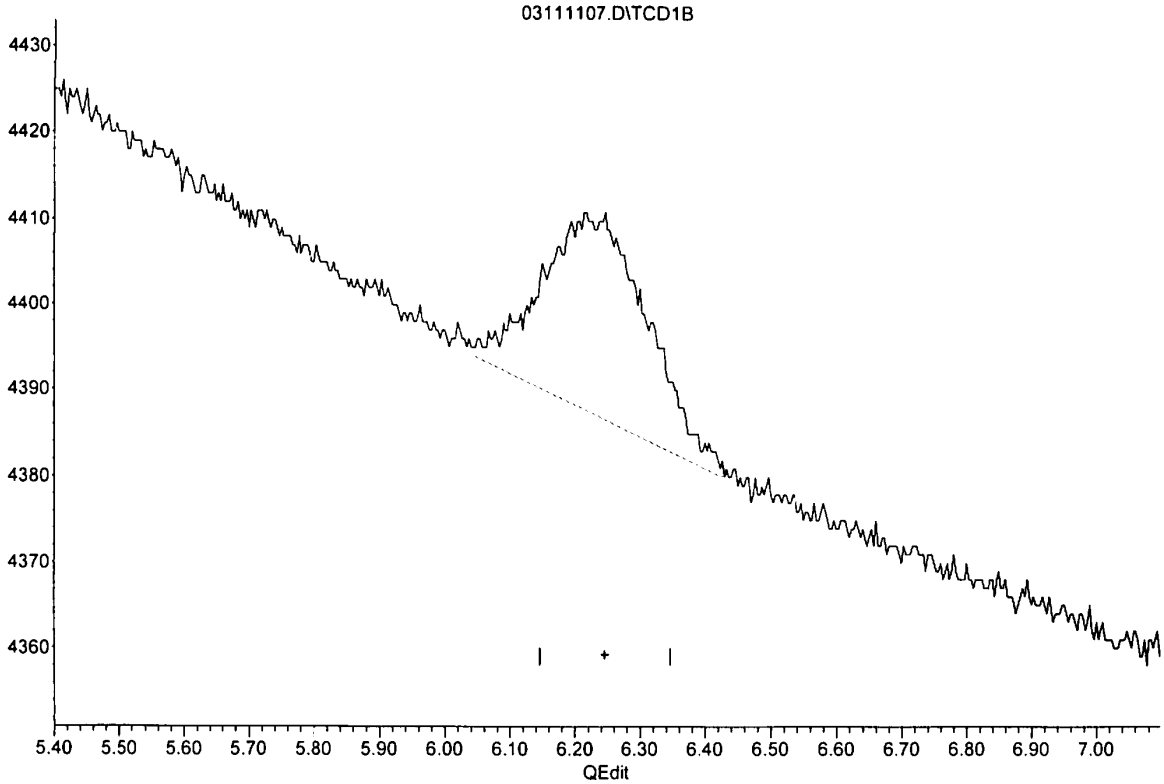
(4) Methane
6.25min 0.000%
response 0

(+) = Expected Retention Time
03111107.D 030511.M Thu Mar 24 15:18:22 2011

Quantitation Report (Qedit)

Data File : C:\HPCHEM\2\DATA\031111\03111107.D Vial: 1
Acq On : 12 Mar 2011 6:19 am Operator:
Sample : 1103158-014A Inst : GC/TCD
Misc : SAMP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:18 2011 Quant Results File: 030511.RES

Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Multiple Level Calibration



(4) Methane
6.25min 0.019% m
response 2675

(+) = Expected Retention Time
03111107.D 030511.M Thu Mar 24 15:18:29 2011

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031111\03111108.D Vial: 1
Acq On : 12 Mar 2011 6:48 am Operator:
Sample : 1103158-014Adup Inst : GC/TCD
Misc : DUP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:19 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	Target Compounds					
1)	Oxygen	2.12	1016037	6.500	%	
2)	Nitrogen	2.27	14371562	82.591	%	
3)	Carbon Monoxide	3.01	99895	0.608	%	
4)	Methane	6.24	3086	0.022	%	m
5)	Carbon dioxide	11.15	1286488	6.285	%	

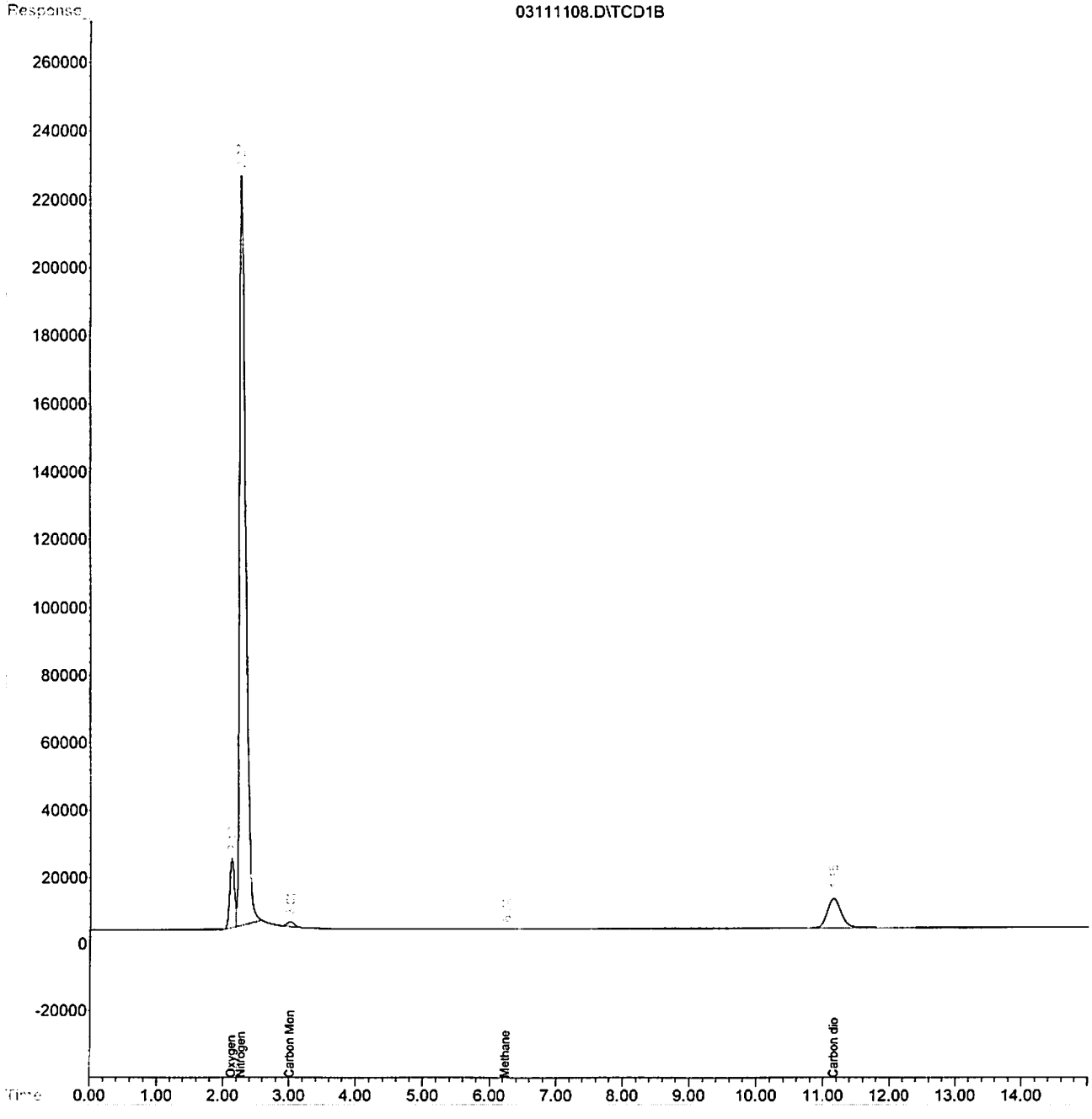
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031111\03111108.D Vial: 1
Acq On : 12 Mar 2011 6:48 am Operator:
Sample : 1103158-014Adup Inst : GC/TCD
Misc : DUP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:19 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

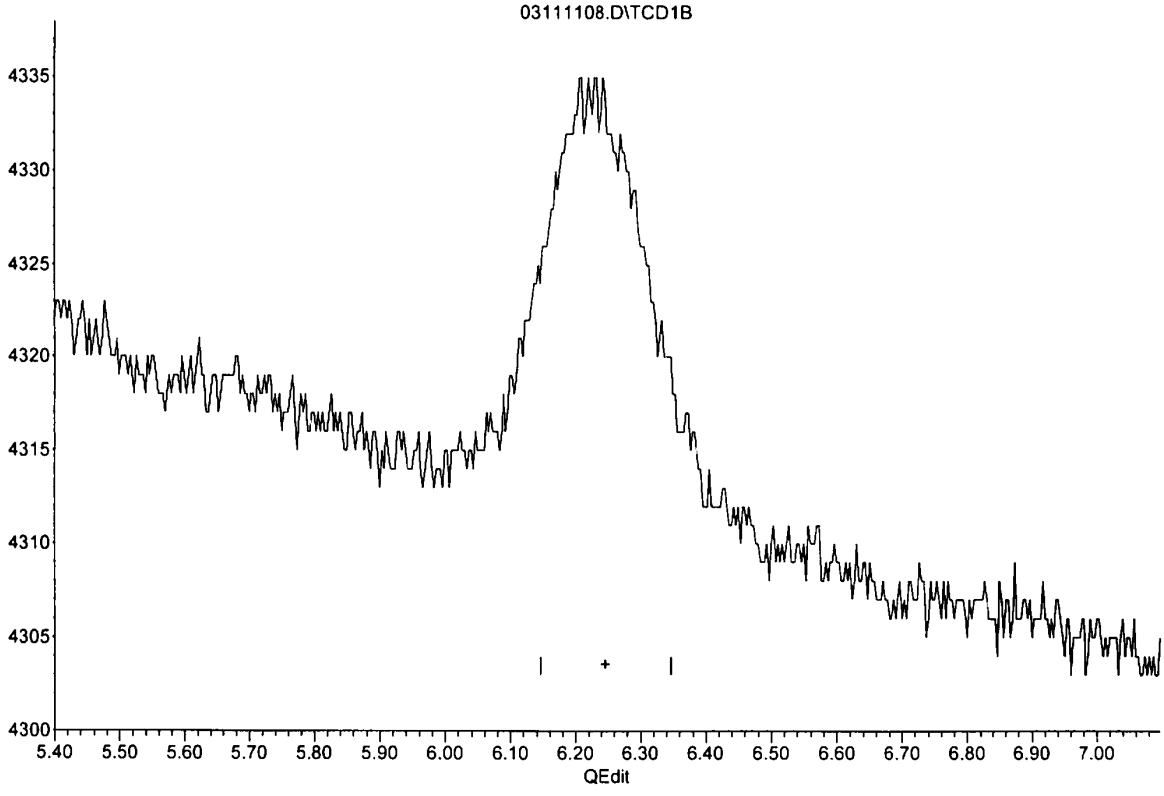
Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (Qedit)

Data File : C:\HPCHEM\2\DATA\031111\03111108.D Vial: 1
Acq On : 12 Mar 2011 6:48 am Operator:
Sample : 1103158-014Adup Inst : GC/TCD
Misc : DUP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:19 2011 Quant Results File: 030511.RES

Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Multiple Level Calibration



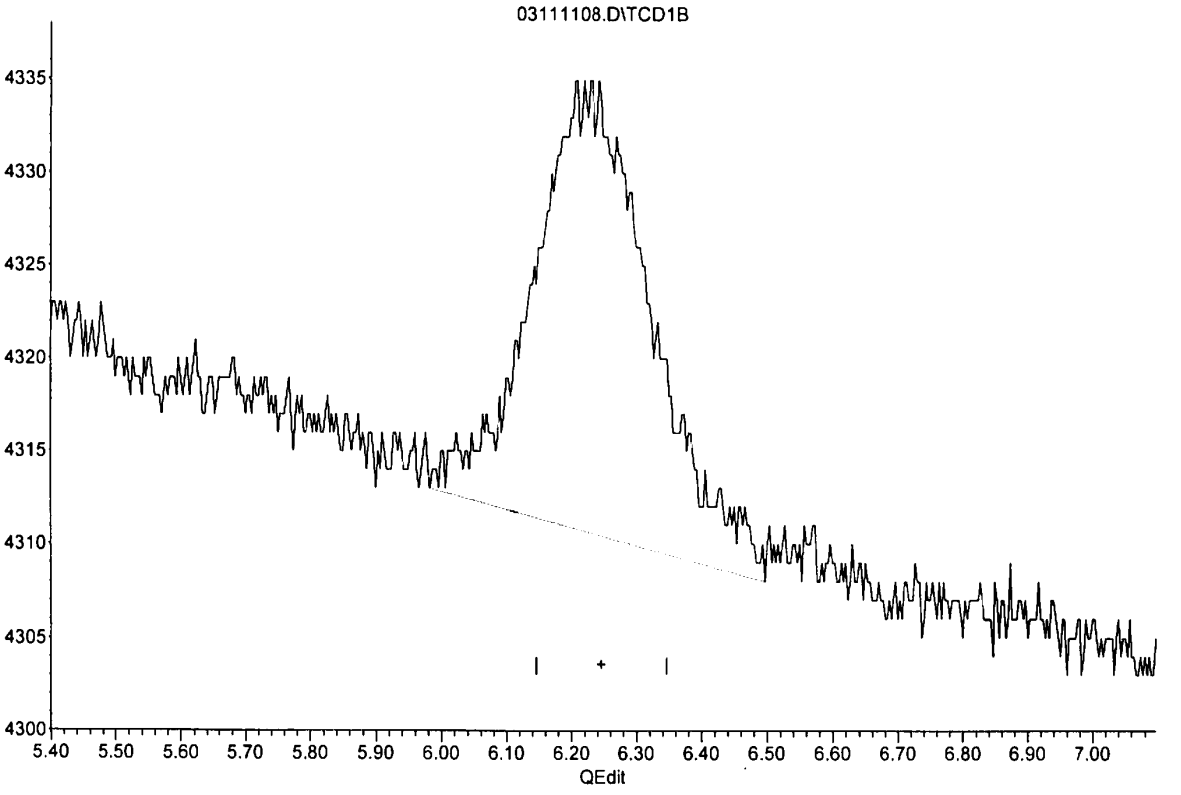
(4) Methane
6.25min 0.000%
response 0

(+) = Expected Retention Time
03111108.D 030511.M Thu Mar 24 15:19:28 2011

Quantitation Report (Qedit)

Data File : C:\HPCHEM\2\DATA\031111\03111108.D Vial: 1
Acq On : 12 Mar 2011 6:48 am Operator:
Sample : 1103158-014Adup Inst : GC/TCD
Misc : DUP ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:19 2011 Quant Results File: 030511.RES

Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Multiple Level Calibration



(4) Methane
6.24min 0.022% m
response 3086

(+) = Expected Retention Time
03111108.D 030511.M Thu Mar 24 15:19:34 2011

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031111\03111109.D Vial: 1
Acq On : 12 Mar 2011 7:13 am Operator:
Sample : crql std 2% b Inst : GC/TCD
Misc : CRQL ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 12 7:34 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 12 05:03:19 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

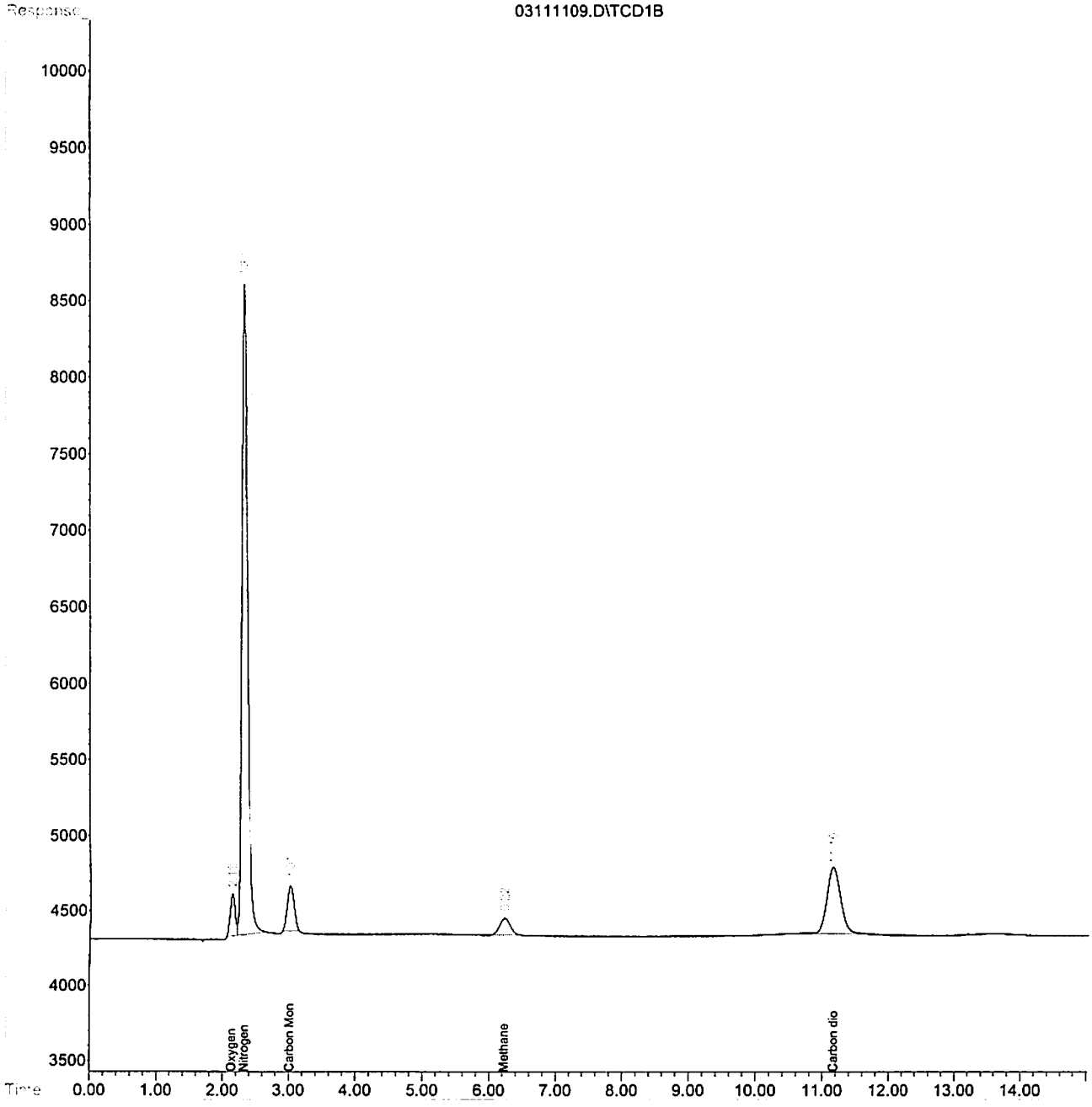
	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	2.13	14198	0.091	%
2)	Nitrogen	2.32	257029	1.477	%
3)	Carbon Monoxide	3.01	21285	0.129	%
4)	Methane	6.22	11938	0.087	%
5)	Carbon dioxide	11.16	61368	0.300	%

Quantitation Report

```
Data File : C:\HPCHEM\2\DATA\031111\03111109.D          Vial: 1
Acq On    : 12 Mar 2011   7:13 am                   Operator:
Sample    : crql std 2% b                           Inst    : GC/TCD
Misc      : CRQL ASTM-D2504                         Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Mar 12  7:34 2011  Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title        :
Last Update  : Sat Mar 12 05:03:19 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\031111\03111110.D Vial: 1
Acq On : 12 Mar 2011 7:39 am Operator:
Sample : ccv std 1-2 b Inst : GC/TCD
Misc : CCV ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:10 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

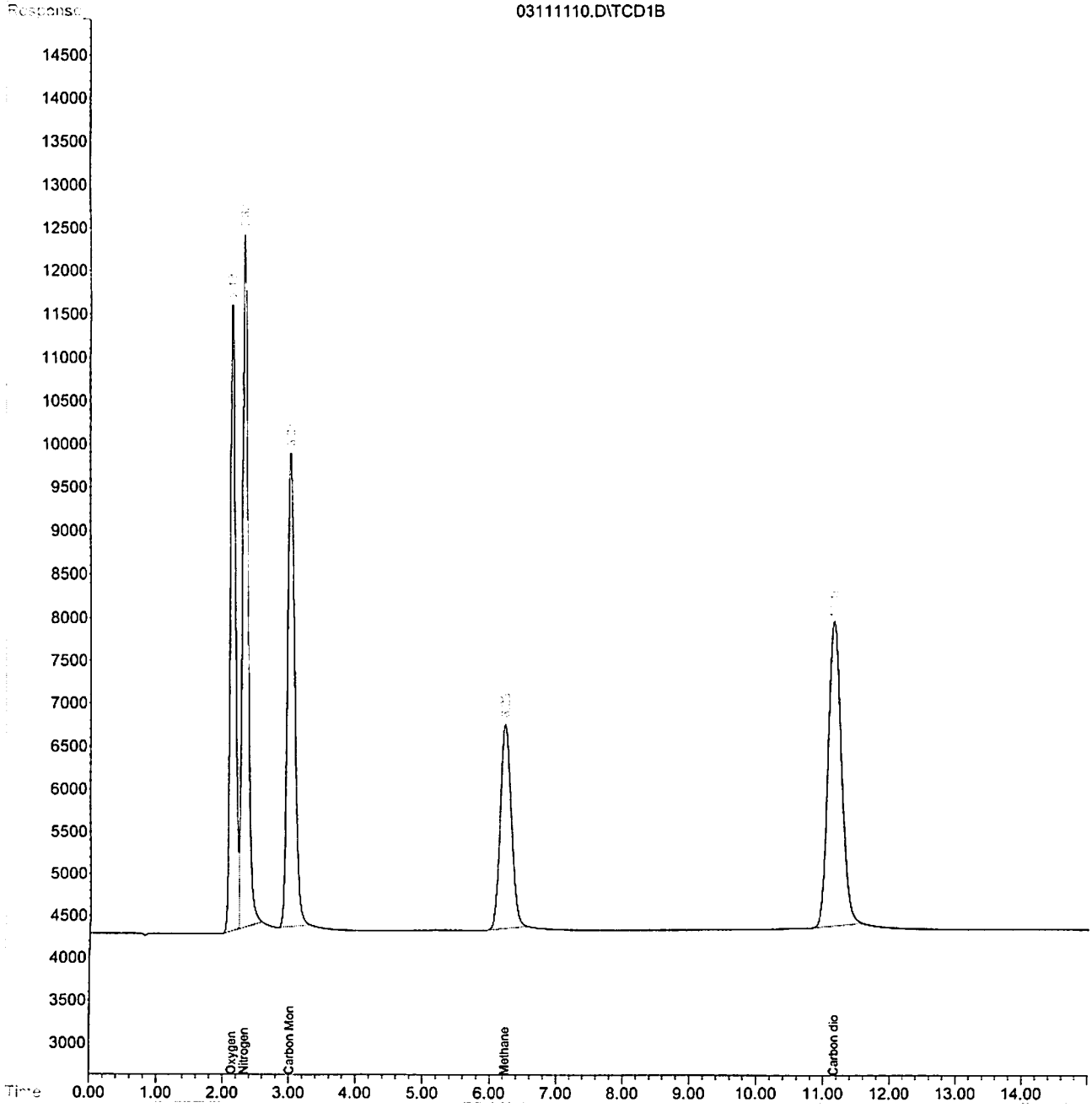
	Compound	R.T.	Response	Conc Units
	Target Compounds			
1)	Oxygen	2.13	398296	2.548 %
2)	Nitrogen	2.32	495012	2.845 %
3)	Carbon Monoxide	3.01	423952	2.578 %
4)	Methane	6.23	276918	2.011 %
5)	Carbon dioxide	11.16	498476	2.435 %

Quantitation Report

Data File : C:\HPCHEM\2\DATA\031111\03111110.D Vial: 1
Acq On : 12 Mar 2011 7:39 am Operator:
Sample : ccv std 1-2 b Inst : GC/TCD
Misc : CCV ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 24 15:10 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



MANUAL INTEGRATION SUMMARY

Analyst: Michael Budziak
Instrument: GC-TCD
Sequence: 39441
Run Date: 3-11-11

Routine Manual Integrations

N/A

Non-Routine Manual Integrations

1103158-004a, 1103158-007a, and 1103158-010a.

Methane peak was manually integrated due to peak in samples below calibration level and not picked up by Chemstation software.

Injection Log

Directory: C:\HPCHEM\2\DATA\030511

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	2	03051101.d	1.	icb	ICB ASTM-D2504	5 Mar 2011 01:04
2	2	03051102.D	1.	STD 100%	ICAL ASTM-D2504	5 Mar 2011 01:52
3	3	03051103.D	1.	STD 80%	ICAL ASTM-D2504	5 Mar 2011 02:17
4	4	03051104.D	1.	STD 60%	ICAL ASTM-D2504	5 Mar 2011 02:43
5	5	03051105.D	1.	STD 40%	ICAL ASTM-D2504	5 Mar 2011 03:10
6	6	03051106.D	1.	STD 20%	ICAL ASTM-D2504	5 Mar 2011 03:31
7	10	03051107.d	1.	STD 2%	ICAL ASTM-D2504	5 Mar 2011 05:40
8	1	03051108.d	1.	N2 100%	ICAL ASTM-D2504	5 Mar 2011 06:29
9	1	03051109.d	1.	O2 50%	ICAL ASTM-D2504	5 Mar 2011 07:41
10	1	03051110.d	1.	ICV STD 1-2	ICAL ASTM-D2504	5 Mar 2011 08:05
11	2	03051111.D	1.	OFF	ICAL ASTM-D2504	5 Mar 2011 08:33

Response Factor Report GC/TCD

Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011

Calibration Files
1 =03051102.D 2 =03051103.D 3 =03051104.D
4 =03051105.D 5 =03051106.D 6 =03051107.D

	Compound	1	2	3	4	5	6	Avg	%RSD
1)	Oxygen	1.450	1.444	1.427	1.365	1.324	1.502	1.440 E5	5.59
2)	Nitrogen	1.748	1.695	1.678	1.586	1.522	1.436	1.635 E5	7.62
3)	Carbon Monoxide	1.690	1.628	1.621	1.517	1.472	1.346	1.546 E5	8.17
4)	Methane	1.422	1.364	1.344	1.267	1.212	1.113	1.287 E5	8.76
5)	Carbon dioxide	2.121	2.009	2.012	1.874	1.813	1.946	1.963 E5	5.60

(#) = Out of Range ### Number of calibration levels exceeded format ###

030511.M Tue Mar 29 09:52:14 2011

Compound List Report GC/TCD

Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Thu Mar 24 15:04:37 2011
Response via : Initial Calibration
Total Cpnds : 5

PK#	Type	Compound Name	Exp_RT	Rel_RT	Cal	A/H	ID
1		Oxygen	2.10	1.000	LO	A	R
2		Nitrogen	2.29	1.000	LO	A	R
3		Carbon Monoxide	2.99	1.000	LO	A	R
4		Methane	6.25	1.000	LO	A	R
5		Carbon dioxide	11.18	1.000	LO	A	R

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

030511.M Tue Mar 29 09:53:41 2011

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\2\DATA\030511\03051101.D Vial: 2
Acq On : 5 Mar 2011 1:04 am Operator:
Sample : icb Inst : GC/TCD
Misc : ICB ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 5 1:19 2011 Quant Results File: TCD.RES

Quant Method : C:\HPCHEM\2\METHODS\TCD.M (Chemstation Integrator)
Title :
Last Update : Wed Jan 05 02:24:54 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Hydrogen	0.00	0	N.D.	%
2)	Oxygen	0.00	0	N.D.	%
3)	Nitrogen	0.00	0	N.D.	%
4)	Carbon Monoxide	0.00	0	N.D.	%
5)	Methane	0.00	0	N.D.	%
6)	Carbon dioxide	0.00	0	N.D.	%

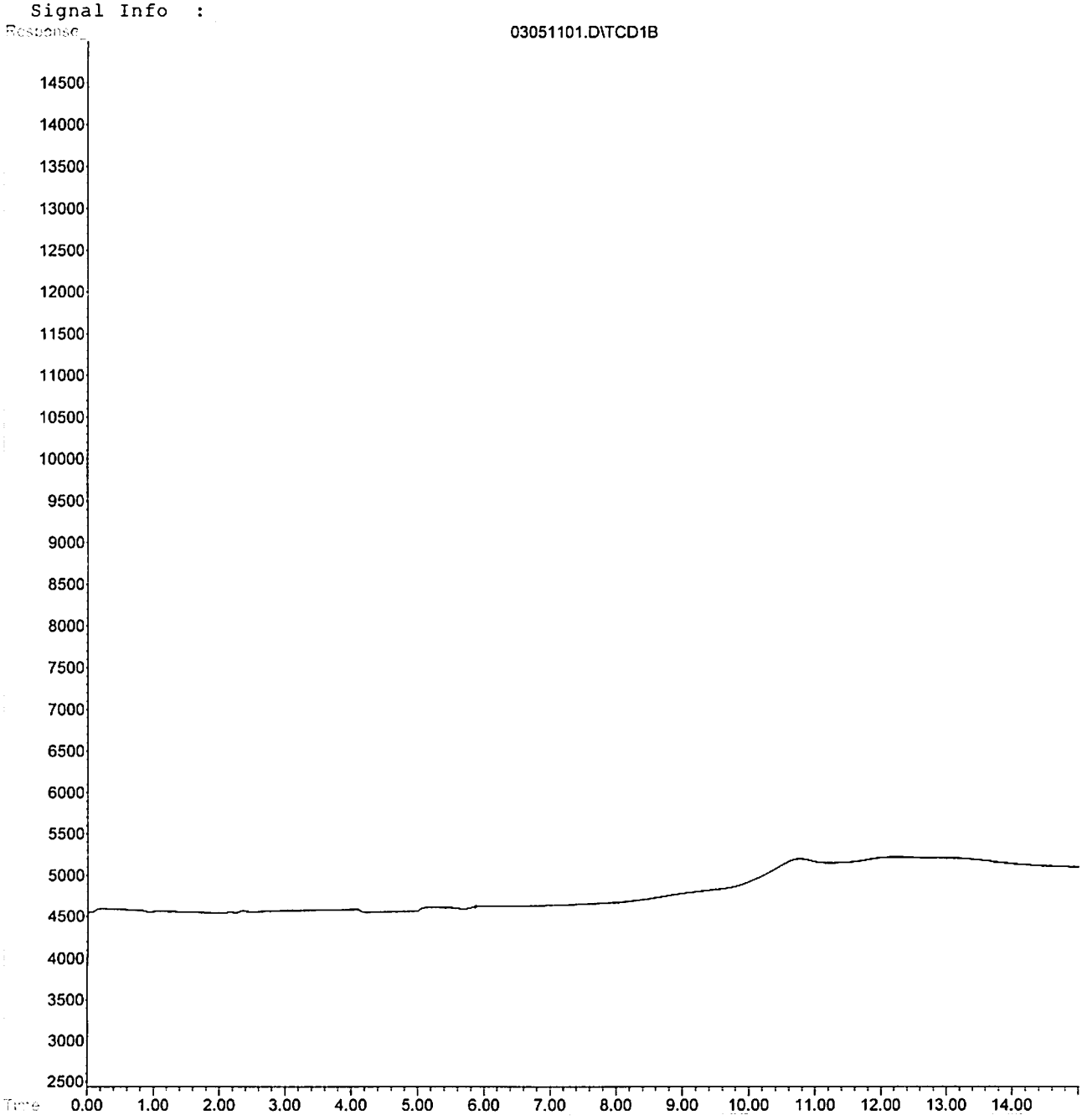
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\2\DATA\030511\03051101.D Vial: 2
Acq On : 5 Mar 2011 1:04 am Operator:
Sample : icb Inst : GC/TCD
Misc : ICB ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 5 1:19 2011 Quant Results File: TCD.RES

Quant Method : C:\HPCHEM\2\METHODS\TCD.M (Chemstation Integrator)
Title :
Last Update : Wed Jan 05 02:24:54 2011
Response via : Single Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\030511\03051102.D Vial: 2
Acq On : 5 Mar 2011 1:52 am Operator:
Sample : STD 100% Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 5 2:11 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 01:22:06 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1)	Oxygen	2.13	581508	4.010 %
2)	Nitrogen	2.29	12144985	69.480 %
3)	Carbon Monoxide	3.02	1184988	7.010 %
4)	Methane	6.25	639702	4.500 %
5)	Carbon dioxide	11.16	3181324	15.000 %

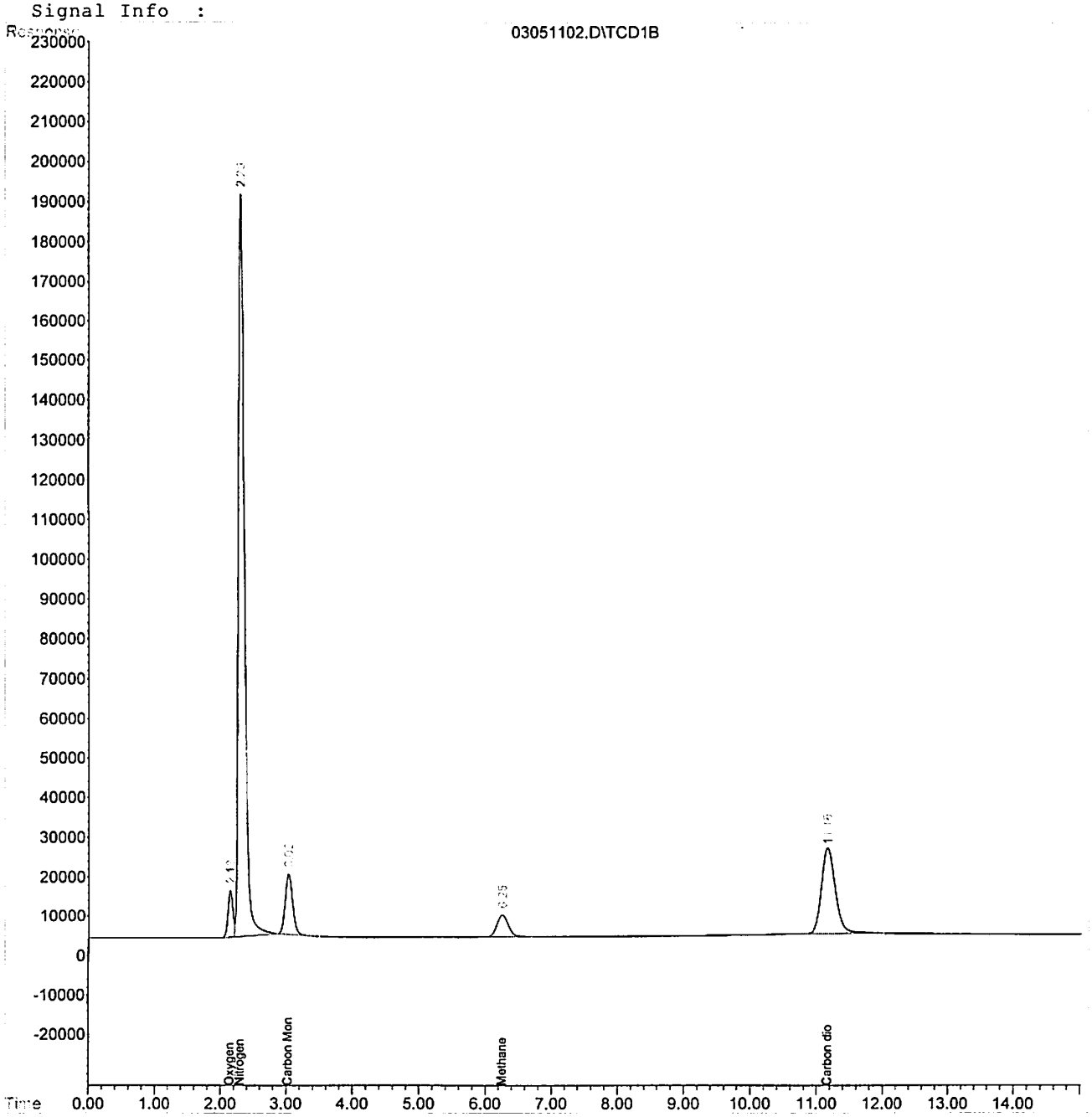
(f)=RT Delta > 1/2 Window (m)=manual int.
03051102.D 030511.M Tue Mar 29 09:50:23 2011 Page 1

Quantitation Report

```
Data File : C:\HPCHEM\2\DATA\030511\03051102.D          Vial: 2
Acq On    :  5 Mar 2011   1:52 am                    Operator:
Sample    : STD 100%                                 Inst     : GC/TCD
Misc      : ICAL ASTM-D2504                          Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Mar  5  2:11 2011  Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title        :
Last Update  : Sat Mar 05 01:22:06 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\030511\03051103.D Vial: 3
Acq On : 5 Mar 2011 2:17 am Operator:
Sample : STD 80% Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 5 2:38 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 01:22:06 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

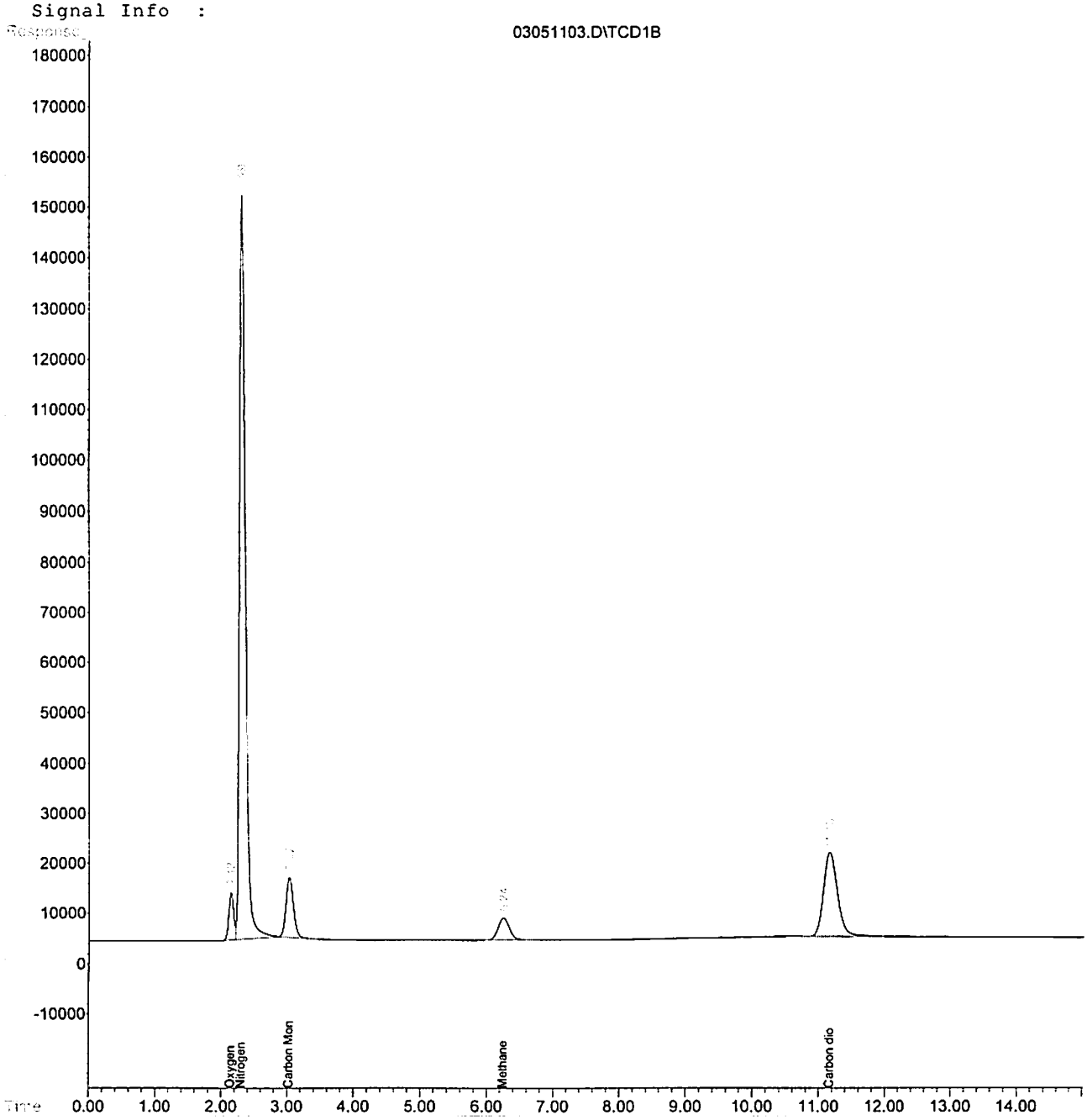
	Compound	R.T.	Response	Conc Units
	Target Compounds			
1)	Oxygen	2.13	463310	3.195 %
2)	Nitrogen	2.30	9420045	53.891 %
3)	Carbon Monoxide	3.02	913157	5.402 %
4)	Methane	6.24	491119	3.455 %
5)	Carbon dioxide	11.16	2411152	11.369 %

Quantitation Report

Data File : C:\HPCHEM\2\DATA\030511\03051103.D Vial: 3
Acq On : 5 Mar 2011 2:17 am Operator:
Sample : STD 80% Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 5 2:38 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 01:22:06 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\030511\03051104.D Vial: 4
Acq On : 5 Mar 2011 2:43 am Operator:
Sample : STD 60% Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 5 3:05 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 01:22:06 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

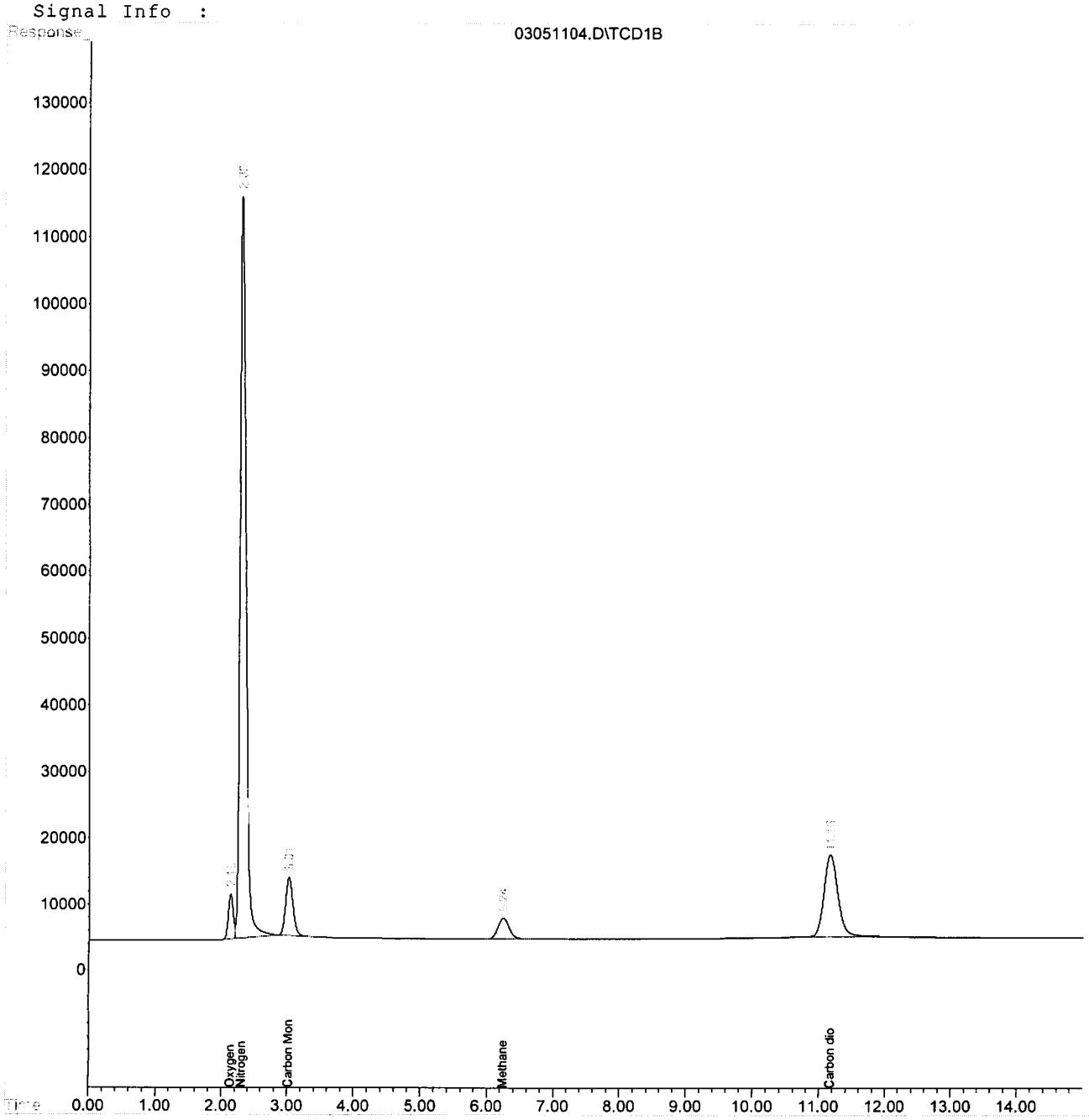
	Compound	R.T.	Response	Conc Units
	Target Compounds			
1)	Oxygen	2.13	343431	2.368 %
2)	Nitrogen	2.30	6993706	40.010 %
3)	Carbon Monoxide	3.01	681654	4.032 %
4)	Methane	6.24	362878	2.553 %
5)	Carbon dioxide	11.16	1810908	8.538 %

Quantitation Report

Data File : C:\HPCHEM\2\DATA\030511\03051104.D Vial: 4
Acq On : 5 Mar 2011 2:43 am Operator:
Sample : STD 60% Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 5 3:05 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 01:22:06 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\030511\03051105.D Vial: 5
Acq On : 5 Mar 2011 3:10 am Operator:
Sample : STD 40% Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 5 3:26 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 01:22:06 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

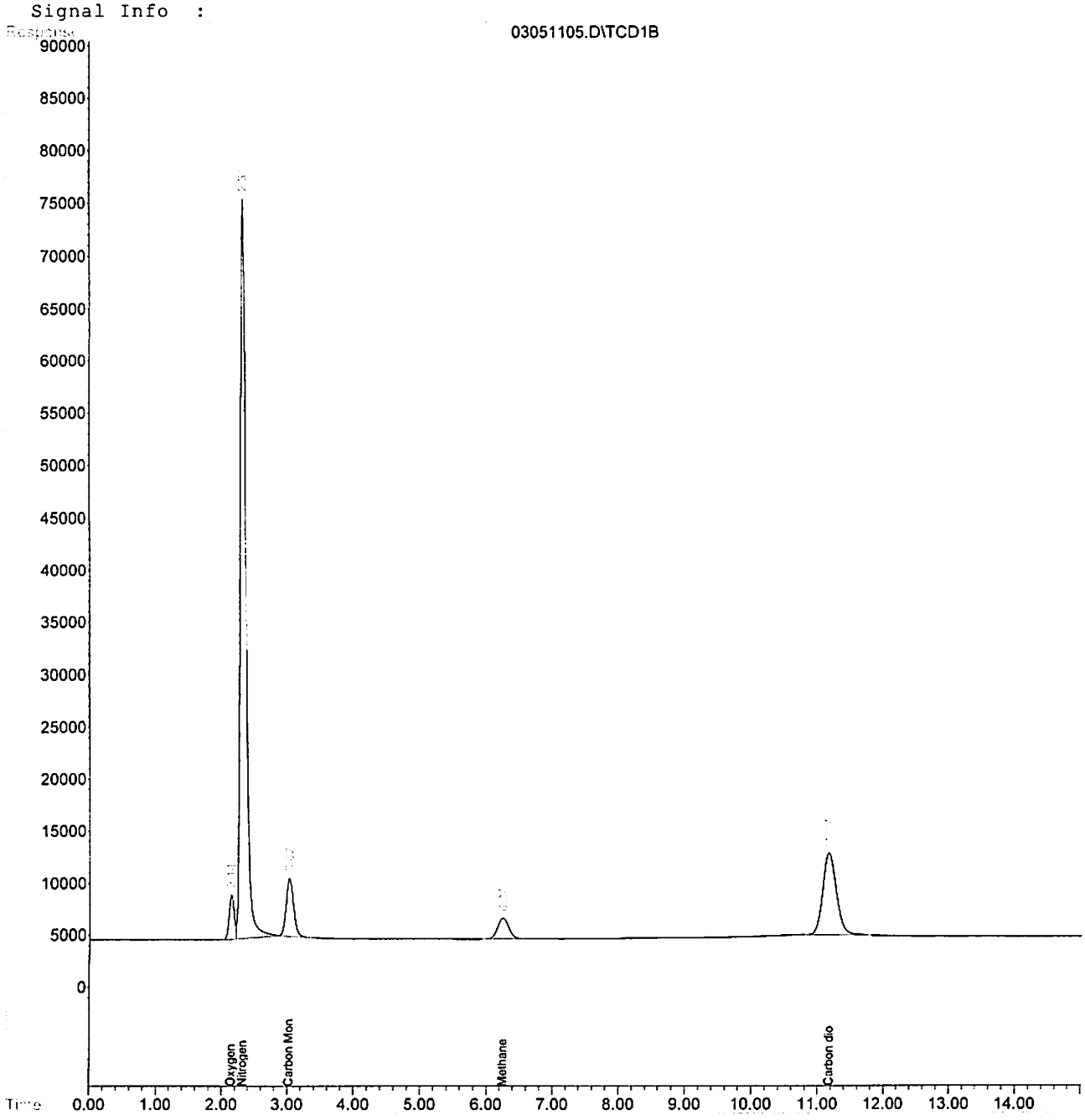
	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	2.14	218905	1.510	%
2)	Nitrogen	2.31	4406717	25.210	%
3)	Carbon Monoxide	3.02	425448	2.517	%
4)	Methane	6.24	227971	1.604	%
5)	Carbon dioxide	11.17	1124243	5.301	%

Quantitation Report

Data File : C:\HPCHEM\2\DATA\030511\03051105.D Vial: 5
Acq On : 5 Mar 2011 3:10 am Operator:
Sample : STD 40% Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 5 3:26 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 01:22:06 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\030511\03051106.D Vial: 6
Acq On : 5 Mar 2011 3:31 am Operator:
Sample : STD 20% Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 5 3:47 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 01:22:06 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1)	Oxygen	2.14	106219	0.732 %
2)	Nitrogen	2.33	2115642	12.103 %
3)	Carbon Monoxide	3.03	206340	1.221 %
4)	Methane	6.25	109069	0.767 %
5)	Carbon dioxide	11.18	543812	2.564 %

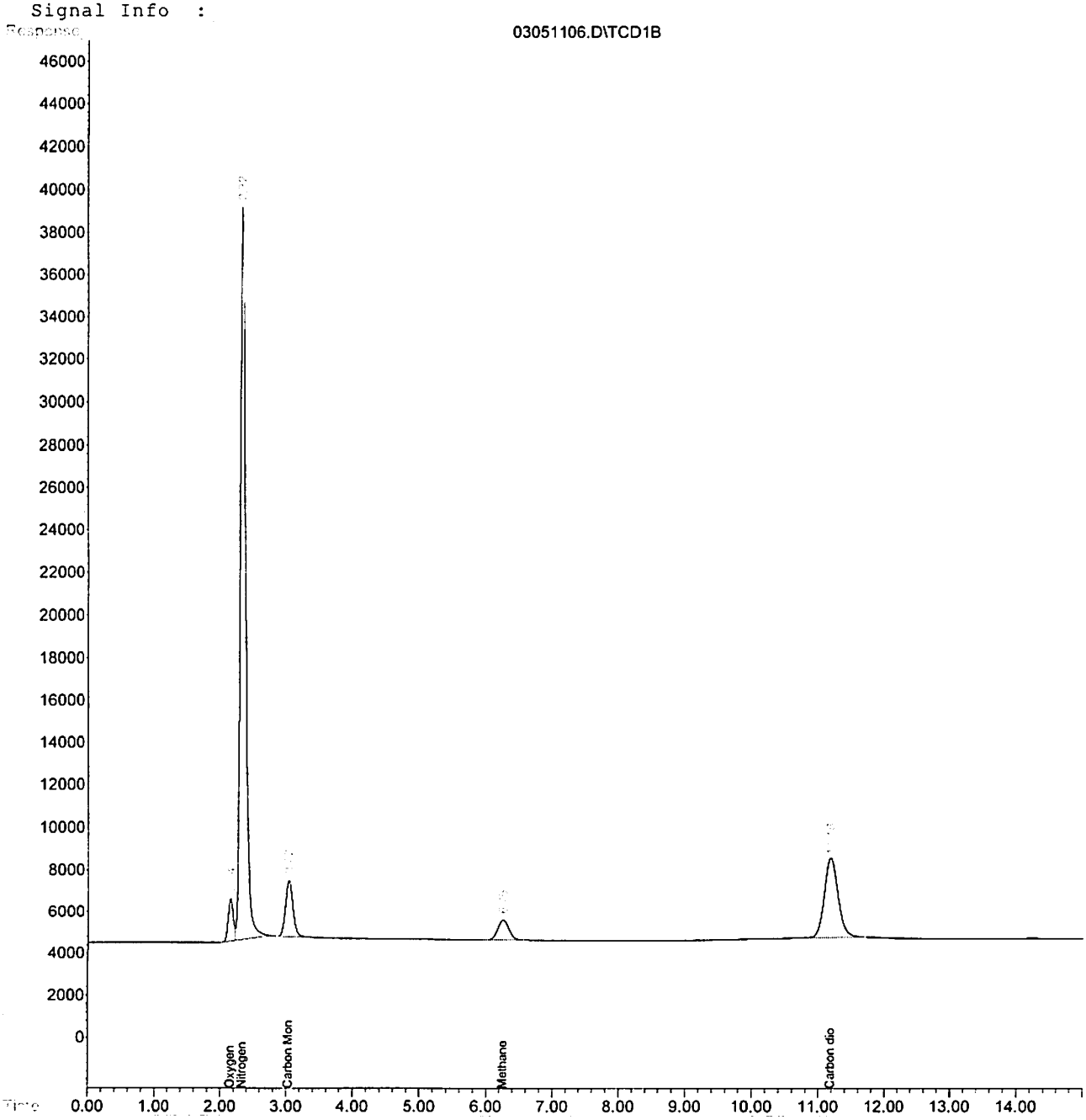
(f)=RT Delta > 1/2 Window (m)=manual int.
03051106.D 030511.M Tue Mar 29 09:50:48 2011 Page 1

Quantitation Report

Data File : C:\HPCHEM\2\DATA\030511\03051106.D Vial: 6
Acq On : 5 Mar 2011 3:31 am Operator:
Sample : STD 20% Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 5 3:47 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 01:22:06 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\030511\03051107.D Vial: 10
Acq On : 5 Mar 2011 5:40 am Operator:
Sample : STD 2% Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 5 6:17 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 04:19:26 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	2.14	12019	0.084	%
2)	Nitrogen	2.33	199576	1.170	%
3)	Carbon Monoxide	3.02	18840	0.115	%
4)	Methane	6.25	10019	0.073	%
5)	Carbon dioxide	11.18	58393	0.285	%

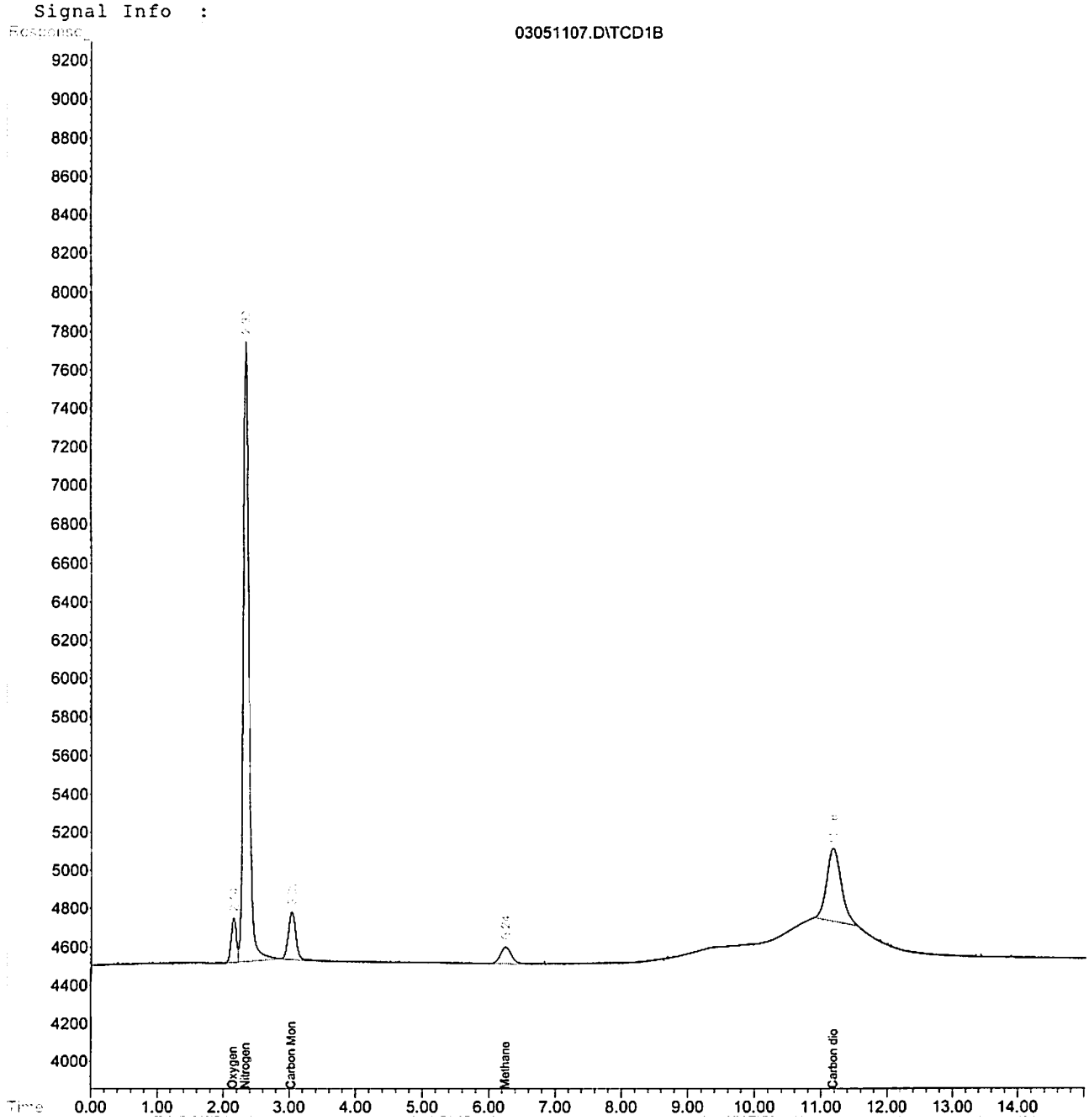
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\2\DATA\030511\03051107.D Vial: 10
Acq On : 5 Mar 2011 5:40 am Operator:
Sample : STD 2% Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 5 6:17 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 04:19:26 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\030511\03051108.D Vial: 1
Acq On : 5 Mar 2011 6:29 am Operator:
Sample : N2 100% Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 5 7:02 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 07:02:15 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	0.00	0	N.D.	%
2)	Nitrogen	2.25	17773276	104.238	%
3)	Carbon Monoxide	0.00	0	N.D.	%
4)	Methane	0.00	0	N.D.	%
5)	Carbon dioxide	0.00	0	N.D.	%

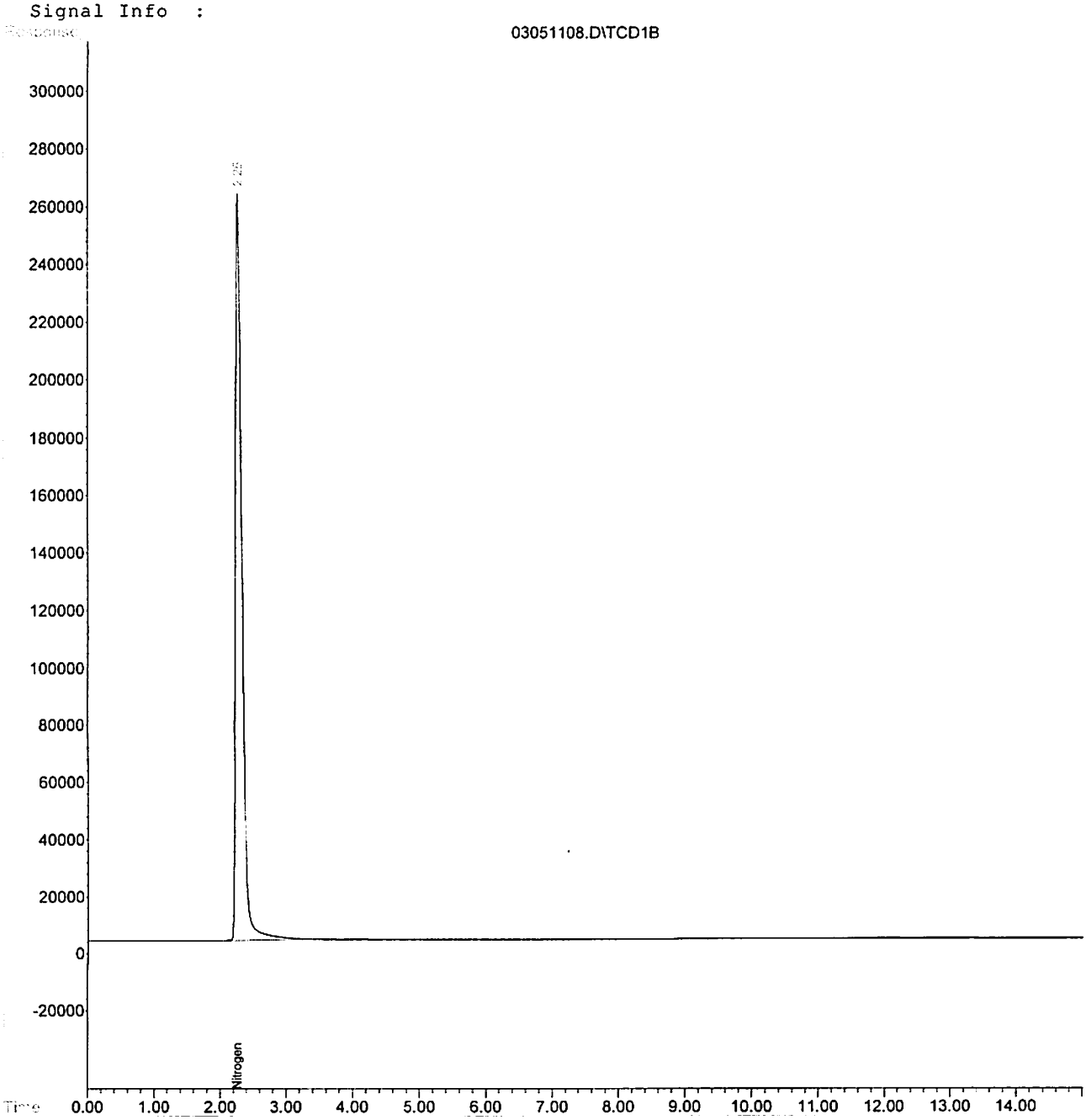
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\2\DATA\030511\03051108.D Vial: 1
Acq On : 5 Mar 2011 6:29 am Operator:
Sample : N2 100% Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 5 7:02 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 07:02:15 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\030511\03051109.D Vial: 1
Acq On : 5 Mar 2011 7:41 am Operator:
Sample : O2 50% Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 5 7:57 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 07:02:15 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Oxygen	2.11	7824603	54.481	%
2)	Nitrogen	0.00	0	N.D.	%
3)	Carbon Monoxide	0.00	0	N.D.	%
4)	Methane	0.00	0	N.D.	%
5)	Carbon dioxide	0.00	0	N.D.	%

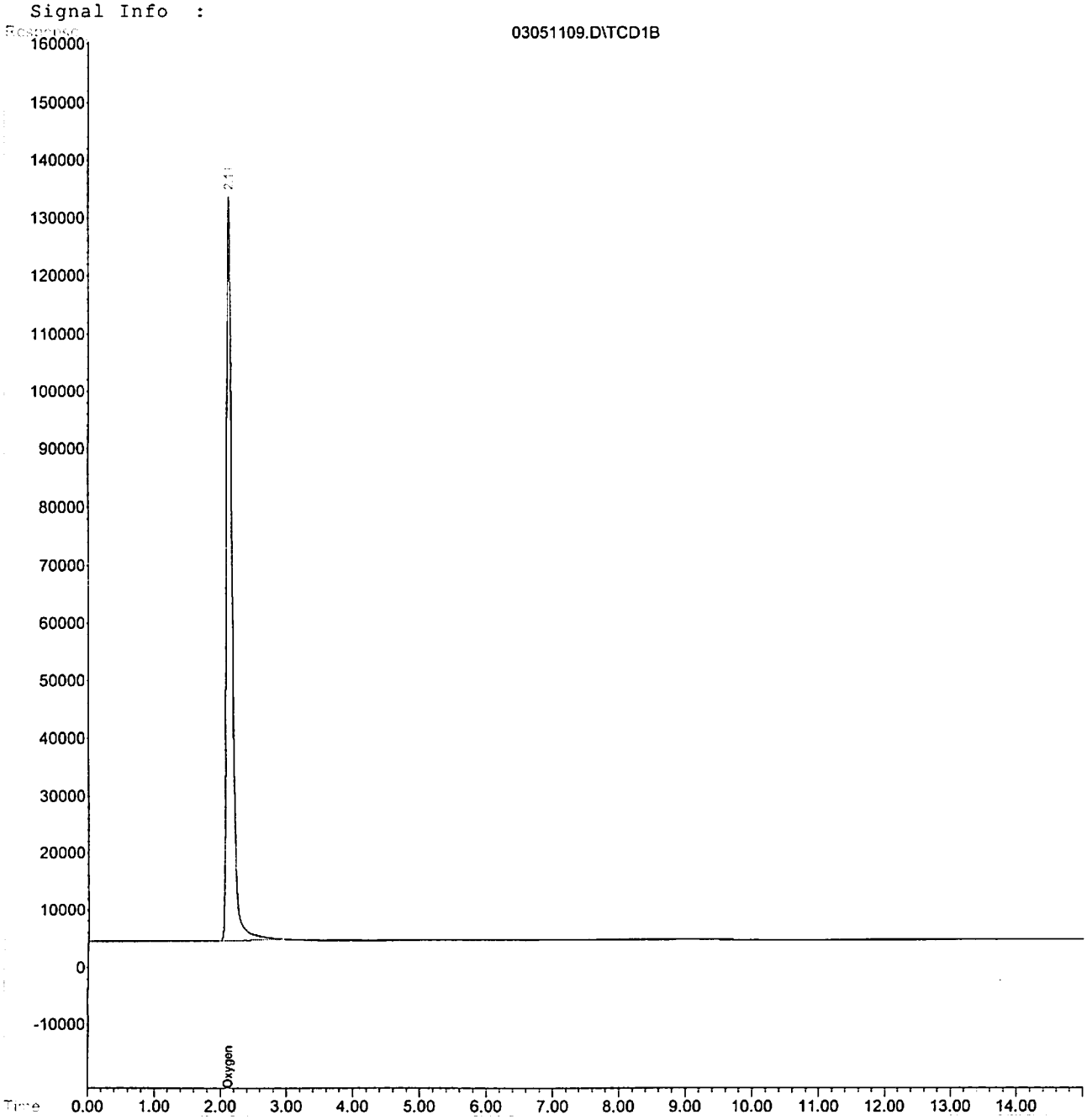
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\2\DATA\030511\03051109.D Vial: 1
Acq On : 5 Mar 2011 7:41 am Operator:
Sample : O2 50% Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 5 7:57 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 07:02:15 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\2\DATA\030511\03051110.D Vial: 1
Acq On : 5 Mar 2011 8:05 am Operator:
Sample : ICV STD 1-2 Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 5 8:23 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 07:02:15 2011
Response via : Initial Calibration
DataAcq Meth : TCD.M

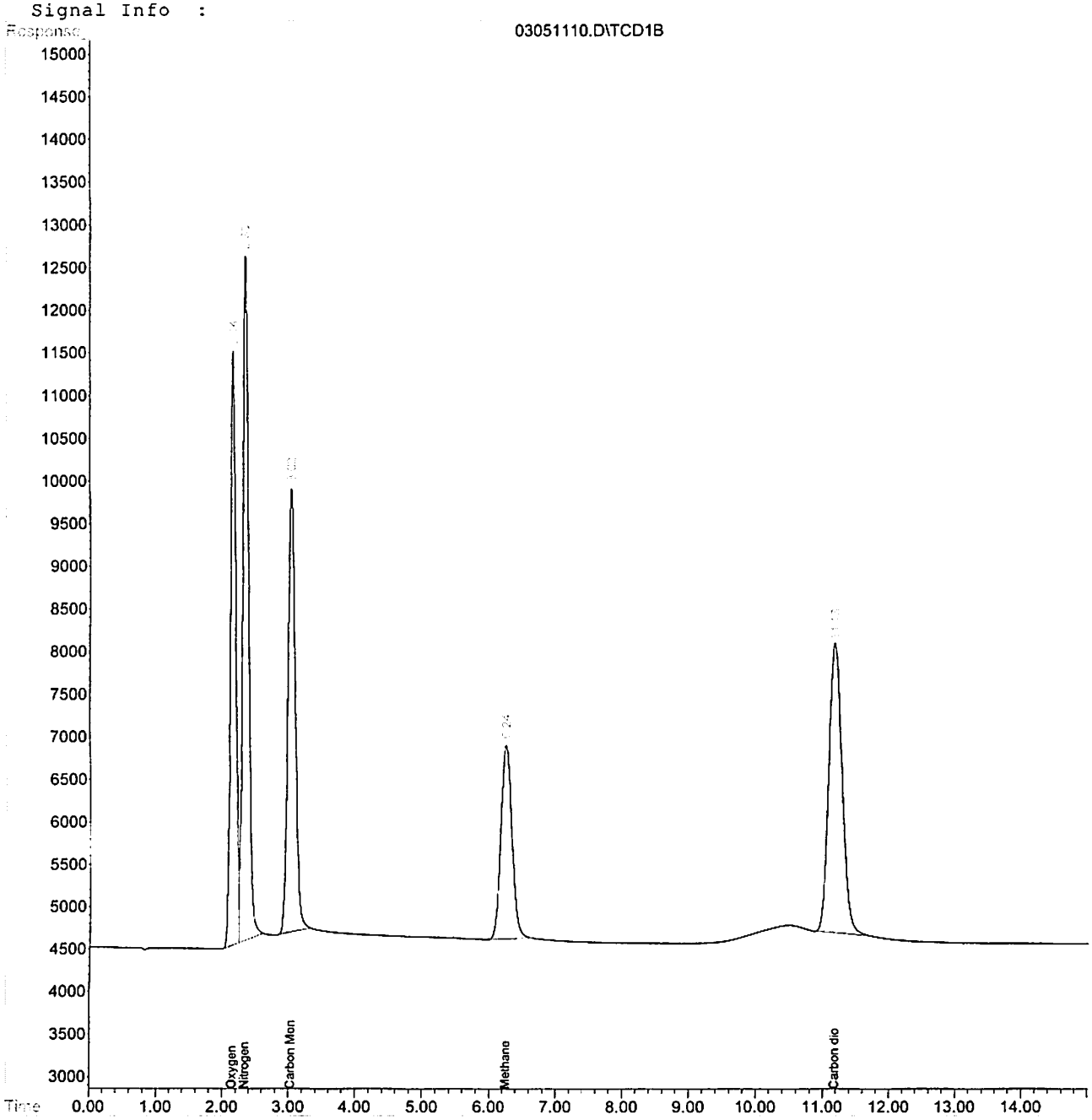
Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1)	Oxygen	2.14	381287	2.655 %
2)	Nitrogen	2.33f	493949	2.897 %
3)	Carbon Monoxide	3.02	402767	2.449 %
4)	Methane	6.25	263844	1.916 %
5)	Carbon dioxide	11.18	477323	2.332 %

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

Quantitation Report

Data File : C:\HPCHEM\2\DATA\030511\03051110.D Vial: 1
Acq On : 5 Mar 2011 8:05 am Operator:
Sample : ICV STD 1-2 Inst : GC/TCD
Misc : ICAL ASTM-D2504 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 5 8:23 2011 Quant Results File: 030511.RES

Quant Method : C:\HPCHEM\2\METHODS\030511.M (Chemstation Integrator)
Title :
Last Update : Sat Mar 05 07:02:15 2011
Response via : Multiple Level Calibration
DataAcq Meth : TCD.M

Volume Inj. :
Signal Phase :
Signal Info :