AECOS, Inc.

45-939 Kamehameha Hwy, Suite 104 · Kaneohe, HI 96744
Telephone: (808) 234-7770 · Fax: (808) 234-7775 · aecos@aecos.com

CLIENT: Cardno-GS / Stantec
737 Bishop Street, Suite 3050
Honolulu HI 96813
ATTENTION: Benjamin Berridge / Hannah Hubanks
Benjamin.Berridge@cardno-gs.com

FILE No.:	1494
REPORT DATE:	06/23/2023
PAGE:	1 of 1

AECOS REPORT OF RESULTS

SAMPLE TYPE: water
DATE SAMPLED: 06/19/23
TEMP. CONTROL: 3.3 °C
DATE/TIME ANALYZED: 06/19/23 @1608-1614

***AECOS* LOG No.:** 48145
DATE/TIME RECEIVED: 06/19/23 @1530
SAMPLER: H. Hubanks
MATRIX: water
ANALYST: R. Knapstein

	ANALYTE (UNITS)	Enterococcus (MPN/100ml)	*Dilution Factor (10 ml / 100 ml)*	*Number of large positive wells*	*Number of small positive wells*
	METHOD →	ASTM D650399	---	---	---
SAMPLE ID ⇩	TIME SAMPLED ⇩				
D-3	0900	1300	*10*	*42*	*15*
WW-6	0915	2000	*10*	*48*	*13*
WW-3	1000	130	*10*	*7*	*5*
D-4	0940	100	*10*	*5*	*5*
D-2	0920	330	*10*	*21*	*5*
U-3/WW-4	0845	930	*10*	*41*	*6*
E-1	1000	85	*10*	*7*	*1*
E1 Dup	1025	31	*10*	*3*	*0*
U-2/WW-5	1022	11,000	*10*	*49*	*40*
D-7	0942	680	*10*	*38*	*1*
D-8	0915	320	*10*	*20*	*5*
D-6	0845	200	*10*	*14*	*3*

for *AECOS*, Inc.

CHAIN OF CUSTODY FORM

AECOS, Inc.
45-939 Kamehameha Highway Suite 104
Kaneohe, Oahu, HI 96744
Tel: (808) 234-7770 Fax: 234-7775

PROJECT FILE No.:
LOG NUMBER [048145]

CLIENT: Stantec (prev. Cardno)
ADDRESS: 737 Bishop St. Suite 3050
Honolulu HI 96813

CONTACT: Hannah Hubanks
PHONE No.: 608 393 4527
Purchase Order No.:

☐ RUSH
☐ SEE REVERSE
SPECIAL INSTRUCTIONS

	☑	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	SAMPLE TYPE	CONTAINER(S)		REQUESTED ANALYSES	PRESERVATION
1	✓	D-3	6/19/23	0900	Water	1	idexx	enterococci	
2	✓	WW-6	↓	0915	↓	↓	↓	↓	
3	✓	WW-3	↓	1000	↓	↓	↓	↓	
4	✓	D-4	↓	0940	↓	↓	↓	↓	
5	✓	D-2	↓	0920	↓	↓	↓	↓	
6	✓	U-3/WW-4	↓	0845	↓	↓	↓	↓	
7	✓	E-1	↓	1005	↓	↓	↓	↓	
8	✓	E-1 DUP	↓	1025	↓	↓	↓	↓	
9	✓	U-2/WW-5	↓	1022	↓	↓	↓	↓	
10	✓	D-7	↓	0942	↓	↓	↓	↓	

CLIENTS PROVIDING SAMPLES TO THE LABORATORY SHOULD COMPLETE AS MUCH OF THE ABOVE FORM AS POSSIBLE. NOTE: NAME AND DATED SIGNATURE OF PERSON COLLECTING THE SAMPLE MUST BE ENTERED BELOW ↓. INFORMATION REQUESTED IN SHADED BOXES ABOVE TO BE FILLED IN BY THE LABORATORY.

SAMPLED BY: Hannah Hubanks — PRINT NAME — DATE 6-19 2023
RELINQUISHED: [signature] — SIGNATURE — DATE 2023 — TIME 1530

RECEIVED BY: — SIGNATURE — DATE 20___ — TIME
RELINQUISHED: — SIGNATURE OR INITIALS — DATE 20___ — TIME

RECEIVED FOR LABORATORY: [signature] — SIGNATURE — DATE 6/19 2023 — TIME 1530
RELINQUISHED: — SIGNATURE OR INITIALS — DATE 20___ — TIME

COMMENTS: Streamwater dilute 10x for turb.

PRECAUTIONS: T = 3.3 c

DISPOSAL:

RETURN SAMPLE TO CLIENT ☐

USE (BLACK) INK

CHAIN OF CUSTODY FORM

AECOS, Inc.
45-939 Kamehameha Highway Suite 104
Kaneohe, Oahu, HI 96744
Tel: (808) 234-7770 Fax: 234-7775

PROJECT	
FILE No.	
LOG NUMBER	[43145]

CLIENT: Stantec (prev. Cardno) CONTACT: Hannah Hubanks
ADDRESS: 737 Bishop Stuite 3050 PHONE No.: ☎ 608 393 4527
Honolulu HI 96813 Purchase Order No.:

☐ RUSH
☐ SEE REVERSE
SPECIAL INSTRUCTIONS

	☑	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	SAMPLE TYPE	CONTAINER(S)		REQUESTED ANALYSES	PRESERVATION
1	J	D-8	6/19/23	0915	water	1	idexx	enterococci	
2	J	D-6		0845					
3									
4									
5									
6									
7									
8									
9									
10									

CLIENTS PROVIDING SAMPLES TO THE LABORATORY SHOULD COMPLETE AS MUCH OF THE ABOVE FORM AS POSSIBLE. NOTE: NAME AND DATED SIGNATURE OF PERSON COLLECTING THE SAMPLE MUST BE ENTERED BELOW ↓. INFORMATION REQUESTED IN SHADED BOXES ABOVE TO BE FILLED IN BY THE LABORATORY.

SAMPLED BY: Hannah Hubanks (PRINT NAME) DATE 2023 6-19
RELINQUISHED: (SIGNATURE) DATE 2023 TIME 1530

RECEIVED BY: (SIGNATURE) DATE 20___ TIME
RELINQUISHED: (SIGNATURE OR INITIALS) DATE 20___ TIME

RECEIVED FOR LABORATORY: (SIGNATURE) DATE 6/19 2023 TIME 1530
RELINQUISHED: (SIGNATURE OR INITIALS) DATE 20___ TIME

COMMENTS:

PRECAUTIONS:

T= 7.3°C

DISPOSAL:

RETURN SAMPLE TO CLIENT ☐

USE (BLACK) INK

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504 E Sprague Ste. D - Spokane, WA 99202 - (509) 838-3999 - email spokane@anateklabs.com

Client:	Stantec-GS	Work Order:	WDF1311
Address:	737 Bishop St., Ste. 3050	Project:	ADC Water Quality Monitoring
	Honolulu, HI 96813	Reported:	9/5/2023 09:12
Attn:	Benjamin Berridge		

Case Narrative

Laboratory ID	Sample Name
WDF1311-01	WW-3
WDF1311-02	WW-6
WDF1311-03	D-2
WDF1311-04	D-3
WDF1311-05	D-4
WDF1311-06	E-1
WDF1311-07	D-6
WDF1311-08	D-7
WDF1311-09	D-8
WDF1311-10	E-1 Dup
WDF1311-11	U-3/WW-5
WDF1311-12	U-2/WW-4

QA/QC Checks

Parameters	Yes / No	Exceptions / Deviations
Sample Holding Time Valid?	Y	NA
Surrogate Recoveries Valid?	Y	NA
QC Sample(s) Recoveries Valid?	Y	NA
Method Blank(s) Valid?	Y	NA
Comments	**N**	**See Comments Section**

1. Holding Time Requirements

No problems encountered.

2. Calibration Requirements

No problems encountered.

3. Surrogate Recovery Requirements

No problems encountered.

4. QC Sample (LCS/MS/MSD) Recovery Requirements

No problems encountered.

5. Method Blank Requirements

The method blanks were non-detect for all analytes. No problems encountered.

6. Internal Standard(s) Response Requirements

No problems encountered

7. Comments

I certify that this data package is in compliance with the terms and conditions of the contract. Release of the data contained in this data package has been authorized by the Laboratory Manager or his or her designee.

Kathleen A. Sattler, Lab Manager

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Analytical Results Report

Sample Location: WW-3
Lab/Sample Number: WDF1311-01 Collect Date: 06/19/23 10:00
Date Received: 06/22/23 10:45 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	10.9	mg/L			6/24/23 11:10	WSK	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.000632	mg/L	0.000140	0.00100	7/13/23 16:01	JLG	EPA 200.8	J
Mercury								
Mercury	<0.0710	ug/L	0.0710	0.100	6/28/23 15:36	JLG	EPA 245.1	
Semivolatiles								
AMPA	<5.00	ug/L	5.00	10.0	6/28/23 11:49	GPB	EPA 547	*
Glyphosate	<2.50	ug/L	2.50	5.00	6/28/23 11:49	GPB	EPA 547	*
Diesel	<0.052	mg/L	0.0520	0.0800	6/27/23 15:13	BAN	NWTPH-HCID	
Gasoline	<0.160	mg/L	0.160	0.400	6/27/23 15:13	BAN	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	6/27/23 15:13	BAN	NWTPH-HCID	
Mineral Oil	<0.160	mg/L	0.160	0.400	6/27/23 15:13	BAN	NWTPH-HCID	
Surrogate: n-Hexacosane	*56.0%*		*50-150*		*6/27/23 15:13*	*BAN*	*NWTPH-HCID*	

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Analytical Results Report

(Continued)

Sample Location: WW-6

Lab/Sample Number: WDF1311-02 Collect Date: 06/19/23 09:15

Date Received: 06/22/23 10:45 Collected By:

Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	180	mg/L			6/24/23 11:10	WSK	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.000266	mg/L	0.000140	0.00100	7/13/23 16:03	JLG	EPA 200.8	J
Mercury								
Mercury	<0.0710	ug/L	0.0710	0.100	6/28/23 15:39	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	6/29/23 17:02	BAN	NWTPH-HCID	
Gasoline	<0.160	mg/L	0.160	0.400	6/29/23 17:02	BAN	NWTPH-HCID	
Lube Oil	< 0.046	mg/L	0.0460	0.0800	6/29/23 17:02	BAN	NWTPH-HCID	
Mineral Oil	<0.160	mg/L	0.160	0.400	6/29/23 17:02	BAN	NWTPH-HCID	
Surrogate: n-Hexacosane	*80.4%*		*50-150*		*6/29/23 17:02*	*BAN*	*NWTPH-HCID*	

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Analytical Results Report

(Continued)

Sample Location: D-2

Lab/Sample Number: WDF1311-03 Collect Date: 06/19/23 09:20

Date Received: 06/22/23 10:45 Collected By:

Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	14.0	mg/L			6/24/23 11:10	WSK	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.0241	mg/L	0.000140	0.00100	7/13/23 15:19	JLG	EPA 200.8	
Mercury								
Mercury	<0.0710	ug/L	0.0710	0.100	6/28/23 15:41	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	6/29/23 17:57	BAN	NWTPH-HCID	
Gasoline	<0.160	mg/L	0.160	0.400	6/29/23 17:57	BAN	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	6/29/23 17:57	BAN	NWTPH-HCID	
Mineral Oil	<0.160	mg/L	0.160	0.400	6/29/23 17:57	BAN	NWTPH-HCID	
Surrogate: n-Hexacosane	*74.5%*		*50-150*		*6/29/23 17:57*	*BAN*	*NWTPH-HCID*	

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Analytical Results Report

(Continued)

Sample Location: D-3

Lab/Sample Number: WDF1311-04 Collect Date: 06/19/23 09:00

Date Received: 06/22/23 10:45 Collected By:

Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	32.0	mg/L			6/24/23 11:10	WSK	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.00139	mg/L	0.000140	0.00100	7/13/23 15:22	JLG	EPA 200.8	
Mercury								
Mercury	<0.0710	ug/L	0.0710	0.100	6/28/23 15:44	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	6/29/23 18:52	BAN	NWTPH-HCID	
Gasoline	<0.160	mg/L	0.160	0.400	6/29/23 18:52	BAN	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	6/29/23 18:52	BAN	NWTPH-HCID	
Mineral Oil	<0.160	mg/L	0.160	0.400	6/29/23 18:52	BAN	NWTPH-HCID	
Surrogate: n-Hexacosane	*82.9%*		*50-150*		*6/29/23 18:52*	*BAN*	*NWTPH-HCID*	

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Analytical Results Report

(Continued)

Sample Location: D-4

Lab/Sample Number: WDF1311-05 Collect Date: 06/19/23 09:40

Date Received: 06/22/23 10:45 Collected By:

Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	14.0	mg/L			6/24/23 11:10	WSK	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.00132	mg/L	0.000140	0.00100	7/13/23 15:24	JLG	EPA 200.8	
Mercury								
Mercury	<0.0710	ug/L	0.0710	0.100	6/28/23 15:46	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	6/27/23 2:47	BAN	NWTPH-HCID	
Gasoline	<0.160	mg/L	0.160	0.400	6/27/23 2:47	BAN	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	6/27/23 2:47	BAN	NWTPH-HCID	
Mineral Oil	<0.160	mg/L	0.160	0.400	6/27/23 2:47	BAN	NWTPH-HCID	
Surrogate: n-Hexacosane	*78.6%*		*50-150*		*6/27/23 2:47*	*BAN*	*NWTPH-HCID*	

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Analytical Results Report

(Continued)

Sample Location: E-1
Lab/Sample Number: WDF1311-06 Collect Date: 06/19/23 10:05
Date Received: 06/22/23 10:45 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	26.4	mg/L			6/24/23 11:10	WSK	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.00118	mg/L	0.000140	0.00100	7/13/23 15:26	JLG	EPA 200.8	
Mercury								
Mercury	<0.0710	ug/L	0.0710	0.100	6/28/23 15:49	JLG	EPA 245.1	
Semivolatiles								
AMPA	<5.00	ug/L	5.00	10.0	6/28/23 11:56	GPB	EPA 547	*
Glyphosate	<2.50	ug/L	2.50	5.00	6/28/23 11:56	GPB	EPA 547	*
Atrazine	<0.0500	ug/L	0.0500	0.100	7/21/23 18:23	MAH	EPA 625.1	*
Chlorpyrifos	<0.0500	ug/L	0.0500	0.100	7/21/23 18:23	MAH	EPA 625.1	*
Metolachlor	<0.05	ug/L	0.0500	0.100	7/21/23 18:23	MAH	EPA 625.1	*
Surrogate: Terphenyl-d14	*121%*		*25-135*		*7/21/23 18:23*	*MAH*	*EPA 625.1*	
Diesel	<0.052	mg/L	0.0520	0.0800	6/29/23 19:47	BAN	NWTPH-HCID	
Gasoline	<0.160	mg/L	0.160	0.400	6/29/23 19:47	BAN	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	6/29/23 19:47	BAN	NWTPH-HCID	
Mineral Oil	<0.160	mg/L	0.160	0.400	6/29/23 19:47	BAN	NWTPH-HCID	
Surrogate: n-Hexacosane	*48.1%*		*50-150*		*6/29/23 19:47*	*BAN*	*NWTPH-HCID*	*S12*

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Analytical Results Report

(Continued)

Sample Location: D-6
Lab/Sample Number: WDF1311-07 Collect Date: 06/19/23 08:45
Date Received: 06/22/23 10:45 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	19.6	mg/L			6/24/23 11:10	WSK	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.00130	mg/L	0.000140	0.00100	7/13/23 15:33	JLG	EPA 200.8	
Mercury								
Mercury	<0.0710	ug/L	0.0710	0.100	6/28/23 16:01	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	6/29/23 20:42	BAN	NWTPH-HCID	
Gasoline	<0.160	mg/L	0.160	0.400	6/29/23 20:42	BAN	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	6/29/23 20:42	BAN	NWTPH-HCID	
Mineral Oil	<0.160	mg/L	0.160	0.400	6/29/23 20:42	BAN	NWTPH-HCID	
Surrogate: n-Hexacosane	*67.5%*		*50-150*		*6/29/23 20:42*	*BAN*	*NWTPH-HCID*	

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Analytical Results Report

(Continued)

Sample Location: D-7

Lab/Sample Number: WDF1311-08 Collect Date: 06/19/23 09:42

Date Received: 06/22/23 10:45 Collected By:

Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	221	mg/L			6/24/23 11:10	WSK	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.000416	mg/L	0.000140	0.00100	7/13/23 15:35	JLG	EPA 200.8	J
Mercury								
Mercury	<0.0710	ug/L	0.0710	0.100	6/28/23 16:04	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	6/29/23 21:37	BAN	NWTPH-HCID	
Gasoline	<0.160	mg/L	0.160	0.400	6/29/23 21:37	BAN	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	6/29/23 21:37	BAN	NWTPH-HCID	
Mineral Oil	<0.160	mg/L	0.160	0.400	6/29/23 21:37	BAN	NWTPH-HCID	
Surrogate: n-Hexacosane	*65.4%*		*50-150*		*6/29/23 21:37*	*BAN*	*NWTPH-HCID*	

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Analytical Results Report

(Continued)

Sample Location: D-8
Lab/Sample Number: WDF1311-09 Collect Date: 06/19/23 09:15
Date Received: 06/22/23 10:45 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	23.2	mg/L			6/24/23 11:10	WSK	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.00194	mg/L	0.000140	0.00100	7/13/23 15:38	JLG	EPA 200.8	
Mercury								
Mercury	<0.0710	ug/L	0.0710	0.100	6/28/23 16:06	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	6/29/23 22:33	BAN	NWTPH-HCID	
Gasoline	<0.160	mg/L	0.160	0.400	6/29/23 22:33	BAN	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	6/29/23 22:33	BAN	NWTPH-HCID	
Mineral Oil	<0.160	mg/L	0.160	0.400	6/29/23 22:33	BAN	NWTPH-HCID	
Surrogate: n-Hexacosane	*85.7%*		*50-150*		*6/29/23 22:33*	*BAN*	*NWTPH-HCID*	

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Analytical Results Report

(Continued)

Sample Location: E-1 Dup

Lab/Sample Number: WDF1311-10 Collect Date: 06/19/23 10:25

Date Received: 06/22/23 10:45 Collected By:

Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	24.8	mg/L			6/24/23 11:10	WSK	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.00116	mg/L	0.000140	0.00100	7/13/23 15:40	JLG	EPA 200.8	
Mercury								
Mercury	<0.0710	ug/L	0.0710	0.100	6/28/23 16:09	JLG	EPA 245.1	
Semivolatiles								
AMPA	<5.00	ug/L	5.00	10.0	6/28/23 12:03	GPB	EPA 547	*
Glyphosate	<2.50	ug/L	2.50	5.00	6/28/23 12:03	GPB	EPA 547	*
Atrazine	<0.0500	ug/L	0.0500	0.100	7/21/23 18:53	MAH	EPA 625.1	*
Chlorpyrifos	<0.0500	ug/L	0.0500	0.100	7/21/23 18:53	MAH	EPA 625.1	*
Metolachlor	<0.05	ug/L	0.0500	0.100	7/21/23 18:53	MAH	EPA 625.1	*
Surrogate: Terphenyl-d14	*110%*		*25-135*		*7/21/23 18:53*	*MAH*	*EPA 625.1*	
Diesel	<0.052	mg/L	0.0520	0.0800	6/29/23 23:28	BAN	NWTPH-HCID	
Gasoline	<0.160	mg/L	0.160	0.400	6/29/23 23:28	BAN	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	6/29/23 23:28	BAN	NWTPH-HCID	
Mineral Oil	<0.160	mg/L	0.160	0.400	6/29/23 23:28	BAN	NWTPH-HCID	
Surrogate: n-Hexacosane	*70.2%*		*50-150*		*6/29/23 23:28*	*BAN*	*NWTPH-HCID*	

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Analytical Results Report

(Continued)

Sample Location: U-2/WW-5
Lab/Sample Number: WDF1311-11 Collect Date: 06/19/23 10:22
Date Received: 06/22/23 10:45 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	457	mg/L			6/24/23 11:10	WSK	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.000233	mg/L	0.000140	0.00100	7/13/23 16:14	JLG	EPA 200.8	J
Mercury								
Mercury	<0.0710	ug/L	0.0710	0.100	6/28/23 16:11	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	6/30/23 0:23	BAN	NWTPH-HCID	
Gasoline	<0.160	mg/L	0.160	0.400	6/30/23 0:23	BAN	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	6/30/23 0:23	BAN	NWTPH-HCID	
Mineral Oil	<0.160	mg/L	0.160	0.400	6/30/23 0:23	BAN	NWTPH-HCID	
Surrogate: n-Hexacosane	*87.1%*		*50-150*		*6/30/23 0:23*	*BAN*	*NWTPH-HCID*	

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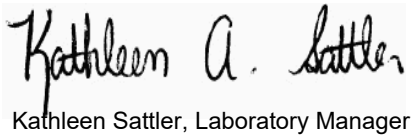
Analytical Results Report

(Continued)

Sample Location: U-3/WW-4
Lab/Sample Number: WDF1311-12 Collect Date: 06/19/23 08:45
Date Received: 06/22/23 10:45 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	67.2	mg/L			6/24/23 11:10	WSK	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.000411	mg/L	0.000140	0.00100	7/13/23 16:12	JLG	EPA 200.8	J
Mercury								
Mercury	<0.0710	ug/L	0.0710	0.100	6/28/23 16:14	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	6/30/23 1:18	BAN	NWTPH-HCID	
Gasoline	<0.160	mg/L	0.160	0.400	6/30/23 1:18	BAN	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	6/30/23 1:18	BAN	NWTPH-HCID	
Mineral Oil	<0.160	mg/L	0.160	0.400	6/30/23 1:18	BAN	NWTPH-HCID	
Surrogate: n-Hexacosane	*90.8%*		*50-150*		*6/30/23 1:18*	*BAN*	*NWTPH-HCID*	

Authorized Signature,



Kathleen Sattler, Laboratory Manager

J	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
L2	The associated blank spike recovery was below laboratory acceptance limits
M12	Matrix spike recovery was low. Potential matrix effect.
S12	Surrogate recovery was low.
PQL	Practical Quantitation Limit
ND	Not Detected
MDL	Method Detection Limit
Dry	Sample results reported on a dry weight basis
*	Not a state-certified analyte
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was spiked or duplicated.

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Certifications

Code	Description	Facility	Number
W WA DOE	Washington Department of Ecology	Anatek-Spokane, WA	C585
W FLDOH	Florida Department of Health (NELAC)	Anatek-Spokane, WA	E871099

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Quality Control Data

Inorganics

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BDF0940 - W Filtration										
Blank (BDF0940-BLK1)					Prepared: 6/23/2023 Analyzed: 6/24/2023					
TSS	0.100			mg/L						
Blank (BDF0940-BLK2)					Prepared: 6/23/2023 Analyzed: 6/24/2023					
TSS	<0.1			mg/L						
LCS (BDF0940-BS1)					Prepared: 6/23/2023 Analyzed: 6/24/2023					
TSS	101			mg/L	100		101	90-110		
Matrix Spike (BDF0940-MS1)		**Source: WDF1311-06**			Prepared: 6/23/2023 Analyzed: 6/24/2023					
TSS	146			mg/L	100	26.4	120	80-120		
Matrix Spike Dup (BDF0940-MSD1)		**Source: WDF1311-06**			Prepared: 6/23/2023 Analyzed: 6/24/2023					
TSS	126			mg/L	100	26.4	99.6	80-120	14.7	20

Quality Control Data

Metals by ICP-MS

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BDG0204 - W 3010 Digest										
Blank (BDG0204-BLK1)					Prepared: 7/10/2023 Analyzed: 7/13/2023					
Arsenic	ND		0.00100	mg/L						
LCS (BDG0204-BS1)					Prepared: 7/10/2023 Analyzed: 7/13/2023					
Arsenic	0.0511		0.00100	mg/L	0.0500		102	85-115		
Matrix Spike (BDG0204-MS1)		**Source: WDF1311-06**			Prepared: 7/10/2023 Analyzed: 7/13/2023					
Arsenic	0.0579		0.00100	mg/L	0.0500	0.00118	113	70-130		
Matrix Spike (BDG0204-MS2)		**Source: WDF1311-12**			Prepared: 7/10/2023 Analyzed: 7/13/2023					
Arsenic	0.0478		0.00100	mg/L	0.0500	0.000411	94.8	70-130		
Matrix Spike Dup (BDG0204-MSD1)		**Source: WDF1311-06**			Prepared: 7/10/2023 Analyzed: 7/13/2023					
Arsenic	0.0494		0.00100	mg/L	0.0500	0.00118	96.4	70-130	15.9	20
Matrix Spike Dup (BDG0204-MSD2)		**Source: WDF1311-12**			Prepared: 7/10/2023 Analyzed: 7/13/2023					
Arsenic	0.0533		0.00100	mg/L	0.0500	0.000411	106	70-130	10.8	20

Quality Control Data

Mercury

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit

Batch: BDF1076 - W 245.1 Digest

Blank (BDF1076-BLK1)				Prepared: 6/27/2023 Analyzed: 6/28/2023					
Mercury	ND		0.100	ug/L					
LCS (BDF1076-BS1)				Prepared: 6/27/2023 Analyzed: 6/28/2023					
Mercury	5.26		0.100	ug/L	5.60		93.9	85-115	
Matrix Spike (BDF1076-MS1)		**Source: WDF0809-02**		Prepared: 6/27/2023 Analyzed: 6/28/2023					
Mercury	5.06		0.100	ug/L	5.60	ND	90.4	70-130	
Matrix Spike (BDF1076-MS2)		**Source: WDF1311-06**		Prepared: 6/27/2023 Analyzed: 6/28/2023					
Mercury	4.82		0.100	ug/L	5.60	<0.0710	86.1	70-130	
Matrix Spike Dup (BDF1076-MSD1)		**Source: WDF0809-02**		Prepared: 6/27/2023 Analyzed: 6/28/2023					
Mercury	4.98		0.100	ug/L	5.60	ND	88.9	70-130	1.59	20
Matrix Spike Dup (BDF1076-MSD2)		**Source: WDF1311-06**		Prepared: 6/27/2023 Analyzed: 6/28/2023					
Mercury	5.79		0.100	ug/L	5.60	<0.0710	103	70-130	18.3	20

Quality Control Data
(Continued)

Semivolatiles

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BDF0681 - W TPH-Dx										
Blank (BDF0681-BLK1)					Prepared & Analyzed: 6/26/2023					
Lube Oil	ND		0.0800	mg/L						
Mineral Oil	ND		0.400	mg/L						
Gasoline	ND		0.400	mg/L						
Diesel	ND		0.0800	mg/L						
Surrogate: n-Hexacosane			*0.180*	*mg/L*	*0.200*		*89.9*	*50-150*		
LCS (BDF0681-BS1)					Prepared: 6/19/2023 Analyzed: 6/26/2023					
Diesel	1.60		0.0800	mg/L	2.06		77.8	70-130		
Surrogate: n-Hexacosane			*0.166*	*mg/L*	*0.200*		*83.2*	*50-150*		
Batch: BDF1035 - W TPH-Dx										
Blank (BDF1035-BLK1)					Prepared: 6/27/2023 Analyzed: 6/29/2023					
Lube Oil	ND		0.0800	mg/L						
Mineral Oil	ND		0.400	mg/L						
Gasoline	ND		0.400	mg/L						
Diesel	ND		0.0800	mg/L						
Surrogate: n-Hexacosane			*0.170*	*mg/L*	*0.200*		*85.0*	*50-150*		
LCS (BDF1035-BS1)					Prepared: 6/27/2023 Analyzed: 6/30/2023					
Diesel	1.24	L2	0.0800	mg/L	2.06		60.2	70-130		
Surrogate: n-Hexacosane			*0.172*	*mg/L*	*0.200*		*86.0*	*50-150*		
Matrix Spike (BDF1035-MS1)		**Source: WDF1311-10**			Prepared: 6/27/2023 Analyzed: 6/29/2023					
Diesel	0.910	M12	0.0800	mg/L	2.06	<0.052	44.2	70-130		
Surrogate: n-Hexacosane			*0.161*	*mg/L*	*0.200*		*80.4*	*50-150*		

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Quality Control Data
(Continued)

Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BDF1035 - W TPH-Dx (Continued)										
Matrix Spike Dup (BDF1035-MSD1)		**Source: WDF1311-10**			Prepared: 6/27/2023 Analyzed: 6/29/2023					
Diesel	0.880	M12	0.0800	mg/L	2.06	<0.052	42.7	70-130	3.42	20
Surrogate: n-Hexacosane			*0.148*	*mg/L*	*0.200*		*74.1*	*50-150*		
Batch: BDF1065 - Glyphosate										
Blank (BDF1065-BLK1)					Prepared: 6/27/2023 Analyzed: 6/28/2023					
Glyphosate	ND		5.00	ug/L						
AMPA	ND		10.0	ug/L						
LCS (BDF1065-BS1)					Prepared: 6/27/2023 Analyzed: 6/28/2023					
Glyphosate	107		5.00	ug/L	100		107	70-130		
AMPA	182		10.0	ug/L	200		90.9	70-130		
Matrix Spike (BDF1065-MS1)		**Source: WDF1311-06**			Prepared: 6/27/2023 Analyzed: 6/28/2023					
Glyphosate	113		5.00	ug/L	100	<2.50	113	70-130		
AMPA	254		10.0	ug/L	200	<5.00	127	70-130		
Matrix Spike Dup (BDF1065-MSD1)		**Source: WDF1311-06**			Prepared: 6/27/2023 Analyzed: 6/28/2023					
Glyphosate	98.4		5.00	ug/L	100	<2.50	98.4	70-130	13.8	25
AMPA	216		10.0	ug/L	200	<5.00	108	70-130	16.2	25
Batch: BDF1187 - SVOC Water										
Blank (BDF1187-BLK1)					Prepared: 6/26/2023 Analyzed: 7/21/2023					
Atrazine	ND		0.100	ug/L						
Chlorpyrifos	ND		0.100	ug/L						
Metolachlor	ND		0.100	ug/L						
Surrogate: Terphenyl-d14			*33.0*	*ug/L*	*25.0*		*132*	*25-135*		

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Quality Control Data
(Continued)

Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BDF1187 - SVOC Water (Continued)										
LCS (BDF1187-BS1)					Prepared: 6/26/2023 Analyzed: 7/21/2023					
Metolachlor	4.44		0.100	ug/L	5.00		88.8	60-125		
Chlorpyrifos	4.28		0.100	ug/L	5.00		85.6	50-125		
Atrazine	4.27		0.100	ug/L	5.00		85.4	60-125		
Surrogate: Terphenyl-d14			*30.3*	*ug/L*	*25.0*		*121*	*25-135*		
Matrix Spike (BDF1187-MS1)		**Source: WDF1311-06**			Prepared: 6/26/2023 Analyzed: 7/21/2023					
Chlorpyrifos	4.62		0.100	ug/L	5.00	<0.0500	92.4	40-140		
Metolachlor	4.83		0.100	ug/L	5.00	<0.05	96.6	40-140		
Atrazine	4.55		0.100	ug/L	5.00	<0.0500	91.0	40-140		
Surrogate: Terphenyl-d14			*30.9*	*ug/L*	*25.0*		*124*	*60-135*		
Matrix Spike Dup (BDF1187-MSD1)		**Source: WDF1311-06**			Prepared: 6/26/2023 Analyzed: 7/21/2023					
Atrazine	4.66		0.100	ug/L	5.00	<0.0500	93.2	40-140	2.39	40
Chlorpyrifos	4.75		0.100	ug/L	5.00	<0.0500	95.0	40-140	2.77	40
Metolachlor	5.02		0.100	ug/L	5.00	<0.05	100	40-140	3.86	40
Surrogate: Terphenyl-d14			*33.8*	*ug/L*	*25.0*		*135*	*60-135*		

Anatek Labs, Inc.

Sample Receipt and Preservation Form

WDF1311

Due: 07/07/23

Client Name: Stantec Project: ADC Water Quality

TAT: (Normal) RUSH: _____ days

Samples Received From: FedEx UPS USPS Client Courier Other: _____

Custody Seal on Cooler/Box: (Yes) No Custody Seals Intact: (Yes) No N/A

Number of Coolers/Boxes: 3 Type of Ice: Ice/Ice Packs Blue Ice Dry Ice None

Packing Material: Bubble Wrap Bags Foam/Peanuts None Other: _____

Cooler Temp As Read (°C): 1.0 Cooler Temp Corrected (°C): 1.0 Thermometer Used: IR#6

Cooler #2 2.1°C Cooler #3 2.4°C

				Comments:
Samples Received Intact?	(Yes)	No	N/A	
Chain of Custody Present?	(Yes)	No	N/A	
Samples Received Within Hold Time?	(Yes)	No	N/A	
Samples Properly Preserved?	(Yes)	No	N/A	
VOC Vials Free of Headspace (<6mm)?	(Yes)	No	N/A	
VOC Trip Blanks Present?	Yes	No	N/A	
Labels and Chains Agree?	(Yes)	No	N/A	
Total Number of Sample Bottles Received: _____				

Chain of Custody Fully Completed?	(Yes)	No	N/A	
Correct Containers Received?	(Yes)	No	N/A	
Anatek Bottles Used?	(Yes)	No	Unknown	

Record preservatives (and lot numbers, if known) for containers below:

Na Thiosulfate
HCl

P1000 P250 G44mL HCl G44mL Na Thiosulfate
G1000 HCl G44mL HCl G1000mL

Notes, comments, etc. (also use this space if contacting the client - record names and date/time)

WW3 L25 bottles received broken

Received/Inspected By: Kathleen A Sattler Date/Time: 6-22-23 1015

WDF1311

Due: 07/07/23

Anatek Labs, Inc.

Chain of Custody Record

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504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

Anatek Log-In #

625

Company Name:	Stantec-GS (previously Cardno)	Project Manager:	Benjamin Berridge
Address:	737 Bishop St Suite 3050	Project Name & #:	ADC Water Quality Monitoring
City: Honolulu	State: HI Zip: 96813	Email Address:	benjamin.berridge@cardno-gs.com
Phone:	(808) 476-0067	Purchase Order #:	
Fax:		Sampler Name & phone:	

Turn Around

Please refer to our normal turn around times at:
http://www.anateklabs.com/services/guidelines/reporting.asp

✓ Normal
__ Next Day*
__ 2nd Day*
__ Other*_____

*All rush order requests must be prior approved.

__ Phone
__ Mail
__ Fax
✓ Email

Provide Sample Description / **List Analyses Requested**

Lab ID	Sample Identification	Sampling Date/Time	Matrix	# of Containers	Sample Volume	TSS EPA 160.2	TPH HCID - SW 846 MOD 8015	**TPH GRO SW846M8015	*Arsenic EPA 200.8	Mercury EPA 245.1	Pesticides EPA 625 SIM	Glyphosate EPA 547	Pesticides Sed. EPA 827D	Glyphosate Sed.	
	Preservative:														
1	WW-3	06-19-2023/1000 HST	Water	7		X	X	X	X	X	X	X			
2	WW-6	06-19-2023/0915 HST	Water	5		X	X	X	X	X					
3	D-2	06-19-2023/0920 HST	Water	5		X	X	X	X	X					
4	D-3	06-19-2023/0900 HST	Water	5		X	X	X	X	X					
5	D-4	06-19-2023/0940 HST	Water	5		X	X	X	X	X					
6	E-1	06-19-2023/1005 HST	Water	7		X	X	X	X	X	X	X			
7	D-6	06-19-2023/0845 HST	Water	5		X	X	X	X	X					
8	D-7	06-19-2023/0942 HST	Water	5		X	X	X	X	X					
9	D-8	06-19-2023/0915 HST	Water	5		X	X	X	X	X					
10	E-1 DUP	06-19-2023/1025 HST	Water	7		X	X	X	X	X	X	X			
11	U-2/WW-5	06-19-2023/1022 HST	Water	5		X	X	X	X	X					
12	U-3/WW-4	06-19-2023/0845 HST	Water	5		X	X	X	X	X					
13	E-1 MSMSD	06-19-2023/1015 HST	Water	7		X	X	X	X	X	X	X			

	Printed Name	Signature	Company	Date	Time
Relinquished by	Hannah Hubanks	Hannah Hubanks	Stantec	06-20-23	14:00
Received by	Kathy Sattler	Kathy Sattler	Anatek Labs	6-22-23	1045
Relinquished by					
Received by					
Relinquished by					
Received by					

Note Special Instructions/Comments

**Please do not conduct TPH GRO analysis until Cardno confirms it should be run.

Inspection Checklist

Received Intact?	(Y)	N
Labels & Chains Agree?	(Y)	N
Containers Sealed?	(Y)	N
VOC Head Space?	Y	(N)

See attached

Temperature (°C):_____

Preservative:_____

Date & Time:_____

Inspected By:_____

Form COC01.00 - Eff 1 Mar 2015

TSS (SM2540D/EPA 160.2)-TS(SM 2540B)

Anatek Labs. Inc. Spokane

Batch ID: BDF0940 Date: 6/23/2023 Time: 1616 Initals: WSK

QC REQUIREMENTS:	Blank <1ppm, LFB %Rec= 90-110%, MS/MSD %Rec= 80-120% Run a blank and lcs before and after every 20 samples, plus dup and ms/msd after 20 samples.

TSS Reagents	Std. #	Amount Spiked	Balance ID	Oven	Temp	Filters	Thermometer
100ppm Cellulose TSS Soln.	2302009	100 ppm	BAL-06	3	104	2301123	T-Oven 3

Comments:

Date/Time of Weigh: 6/24/23 1110 6/24/23 1220 WSK

Sample Number	Sample ID	Dish ID	Filter Wt (g)	mLs used	Dry Weight #1	Dry Weight #2**	Dilution Factor	IResult (mg/L)	FResult (mg/L)	QC Date & Initials
BDF0940-BLK1	Blank	761	0.11	1000	0.1101	0.1102	0.1	1.00	0.10	6-27-23
BDF0940-BLK2	Blank	778	0.1097	1000	0.1097	0.1098	0.1			KAS
BDF0940-BS1	LCS	762	0.1095	100	0.1196	0.1196	1	101.00	101.00	
WDF1311-01	WW-3	763	0.1097	1000	0.1206	0.1207	0.1	109.00	10.90	
WDF1311-02	WW-6	764	0.108	300	0.1244	0.1242	0.3333333	162.00	54.00	
WDF1311-03	D-2	765	0.1083	500	0.1118	0.1119	0.2	35.00	7.00	
WDF1311-04	D-3	766	0.1102	500	0.1182	0.1183	0.2	80.00	16.00	
WDF1311-05	D-4	767	0.1096	500	0.1131	0.1132	0.2	35.00	7.00	
WDF1311-06	E-1	768	0.1094	500	0.1162	0.116	0.2	66.00	13.20	
WDF1311-07	D-6	772	0.1084	500	0.1133	0.1134	0.2	49.00	9.80	
WDF1311-08	D-7	773	0.1094	250	0.1234	0.1232	0.4	138.00	55.20	
WDF1311-09	D-8	774	0.1083	500	0.1141	0.1143	0.2	58.00	11.60	
BDF0940-MS1	Matrix Spike WDF1311-10	770	0.1095	50	0.1168	0.1169	2	73.00	146.00	
BDF0940-MSD1	Matrix Spike Dup WDF131	771	0.1083	50	0.1146	0.1146	2	63.00	126.00	
WDF1311-10	E-1 Dup	769	0.108	500	0.1143	0.1142	0.2	62.00	12.40	
WDF1311-11	U-3/WW-5	775	0.1089	300	0.15	0.15	0.3333333	411.00	137.00	
WDF1311-12	U-2/WW-4	776	0.1081	500	0.1252	0.1249	0.2	168.00	33.60	

BDF0940

NON DW SV EXTRACTION LOG DATE 6/27/23 ANALYST GPB

Methods: 8270C / EPA 6850 / EPA 8321B
Instrument: LC-MS-MS
Ext. Method: EPA 3535 SPE/ Liq-Solid microextraction and derivatization

Internal Standard (IS)	Solution #	Concentration (ppm)
Glyphosate-$^{13}C_2$	2301517	10
Matrix Spiking Info (MS/MSD)	**Solution #**	**Concentration (ppm)**
Glyphosate / AMPA	2300356	25/50

	Standard or Sample # (Glyphosate / AMPA)	Reaction volume	Sample	FMOC (mL)	Buffer (mL)	IS (µL)	Cal Std or Spike (µl)	Final Mult
	250 ppb / 500 ppb	2 ml	1.0	0.5	0.5	10	20	
	125 ppb / 250 ppb	2 ml	1.0	0.5	0.5	10	10	
	50 ppb / 100 ppb	2 ml	1.0	0.5	0.5	10	4	
	25 ppb / 50 ppb	2 ml	1.0	0.5	0.5	10	2	
	12.5 ppb / 25 ppb	2 ml	1.0	0.5	0.5	10	1	
	6.25 ppb/12.5 ppb	2 ml	1.0	0.5	0.5	10	0.5	
	BDF1065-BLK1	2 ml	1.0	0.5	0.5	10	0	
	BDF1065-BS1	2 ml	1.0	0.5	0.5	10	4	
	BDF1065-MS1	2 ml	1.0	0.5	0.5	10	4	
	BDF1065-MSD1	2 ml	1.0	0.5	0.5	10	4	
	MDF0900-01	2 ml	1.0	0.5	0.5	10	0	
	MDF0900-02	2 ml	1.0	0.5	0.5	10	0	
	MDF0900-03	2 ml	1.0	0.5	0.5	10	0	
	WDF1311-01	2 ml	1.0	0.5	0.5	10	0	
	WDF1311-06	2 ml	1.0	0.5	0.5	10	0	
	WDF1311-10	2 ml	1.0	0.5	0.5	10	0	

Prepped samples were heated overnight at 40°C in a water bath.
Derivatized samples were diluted into well plate for analysis as follows
(100 µL 2% phosphoric acid / 700 µL water / 200 µL derivatized extract)

6/28/23

Reagents
FMOC – 5 mg/mL in Acetonitrile 2% Phosphoric Acid Buffer – 5 % Sodium Tetraborate

	Sample Name	Sample Type	Acquisition Date	File Name	Dilution Factor	Analyte Peak Name	Analyte Peak Area (counts)	Analyte Concentration (ng/mL)	IS Peak Area (counts)	Calculated Concentration (ng/mL)	Accuracy (%)
1	250/500 ppb gl	Standard	6/28/2023 10:15	062823_gly\Da	1.00	Glyphosate	2.17e+005	250.	5.41e+004	251.	100.
2	250/500 ppb gl	Standard	6/28/2023 10:15	062823_gly\Da	1.00	Glyphosate1	7.57e+004	250.	5.41e+004	250.	100.
3	250/500 ppb gl	Standard	6/28/2023 10:15	062823_gly\Da	1.00	AMPA	1.41e+005	500.	5.41e+004	509.	102.
4	250/500 ppb gl	Standard	6/28/2023 10:15	062823_gly\Da	1.00	AMPA1	4.50e+004	500.	5.41e+004	510.	102.
5	125/250 ppb gl	Standard	6/28/2023 10:22	062823_gly\Da	1.00	Glyphosate	1.39e+005	125.	6.06e+004	124.	99.0
6	125/250 ppb gl	Standard	6/28/2023 10:22	062823_gly\Da	1.00	Glyphosate1	4.70e+004	125.	6.06e+004	124.	99.5
7	125/250 ppb gl	Standard	6/28/2023 10:22	062823_gly\Da	1.00	AMPA	9.61e+004	250.	6.06e+004	239.	95.5
8	125/250 ppb gl	Standard	6/28/2023 10:22	062823_gly\Da	1.00	AMPA1	3.14e+004	250.	6.06e+004	240.	96.0
9	50/100 ppb gly	Standard	6/28/2023 10:28	062823_gly\Da	1.00	Glyphosate	7.25e+004	50.0	6.96e+004	51.6	103.
10	50/100 ppb gly	Standard	6/28/2023 10:28	062823_gly\Da	1.00	Glyphosate1	2.36e+004	50.0	6.96e+004	50.9	102.
11	50/100 ppb gly	Standard	6/28/2023 10:28	062823_gly\Da	1.00	AMPA	5.55e+004	100.	6.96e+004	106.	106.
12	50/100 ppb gly	Standard	6/28/2023 10:28	062823_gly\Da	1.00	AMPA1	1.78e+004	100.	6.96e+004	102.	102.
13	25/50 ppb gly	Standard	6/28/2023 10:35	062823_gly\Da	1.00	Glyphosate	4.03e+004	25.0	7.89e+004	24.2	97.0
14	25/50 ppb gly	Standard	6/28/2023 10:35	062823_gly\Da	1.00	Glyphosate1	1.30e+004	25.0	7.89e+004	23.8	95.2
15	25/50 ppb gly	Standard	6/28/2023 10:35	062823_gly\Da	1.00	AMPA	3.23e+004	50.0	7.89e+004	49.5	99.0
16	25/50 ppb gly	Standard	6/28/2023 10:35	062823_gly\Da	1.00	AMPA1	1.11e+004	50.0	7.89e+004	50.3	101.
17	12.5/25 ppb gl	Standard	6/28/2023 10:42	062823_gly\Da	1.00	Glyphosate	2.23e+004	12.5	8.27e+004	12.3	98.7
18	12.5/25 ppb gl	Standard	6/28/2023 10:42	062823_gly\Da	1.00	Glyphosate1	7.99e+003	12.5	8.27e+004	13.5	108.
19	12.5/25 ppb gl	Standard	6/28/2023 10:42	062823_gly\Da	1.00	AMPA	1.95e+004	25.0	8.27e+004	25.9	103.
20	12.5/25 ppb gl	Standard	6/28/2023 10:42	062823_gly\Da	1.00	AMPA1	7.49e+003	25.0	8.27e+004	29.1	116.
21	6.25/12.5 ppb	Standard	6/28/2023 10:49	062823_gly\Da	1.00	Glyphosate	1.30e+004	6.25	8.89e+004	6.37	102.
22	6.25/12.5 ppb	Standard	6/28/2023 10:49	062823_gly\Da	1.00	Glyphosate1	4.11e+003	6.25	8.89e+004	5.97	95.6
23	6.25/12.5 ppb	Standard	6/28/2023 10:49	062823_gly\Da	1.00	AMPA	1.15e+004	12.5	8.89e+004	11.9	95.0
24	6.25/12.5 ppb	Standard	6/28/2023 10:49	062823_gly\Da	1.00	AMPA1	4.03e+003	12.5	8.89e+004	10.5	84.1
25	BDF1065-BLK	Quality Cont	6/28/2023 11:02	062823_gly\Da	1.00	Glyphosate	0.00e+000	0.00	1.03e+005	No Peak	N/A
26	BDF1065-BLK	Quality Cont	6/28/2023 11:02	062823_gly\Da	1.00	Glyphosate1	0.00e+000	0.00	1.03e+005	No Peak	N/A
27	BDF1065-BLK	Quality Cont	6/28/2023 11:02	062823_gly\Da	1.00	AMPA	0.00e+000	0.00	1.03e+005	No Peak	N/A
28	BDF1065-BLK	Quality Cont	6/28/2023 11:02	062823_gly\Da	1.00	AMPA1	0.00e+000	0.00	1.03e+005	No Peak	N/A
29	BDF1065-BS1	Quality Cont	6/28/2023 11:09	062823_gly\Da	1.00	Glyphosate	1.07e+005	0.00	9.94e+004	53.3	N/A

	Sample Name	Sample Type	Acquisition Date	File Name	Dilution Factor	Analyte Peak Name	Analyte Peak Area (counts)	Analyte Concentration (ng/mL)	IS Peak Area (counts)	Calculated Concentration (ng/mL)	Accuracy (%)
30	BDF1065-BS1	Quality Cont	6/28/2023 11:09	062823_gly\Da	1.00	Glyphosate1	3.40e+004	0.00	9.94e+004	51.4	N/A
31	BDF1065-BS1	Quality Cont	6/28/2023 11:09	062823_gly\Da	1.00	AMPA	6.95e+004	0.00	9.94e+004	90.9	N/A
32	BDF1065-BS1	Quality Cont	6/28/2023 11:09	062823_gly\Da	1.00	AMPA1	2.33e+004	0.00	9.94e+004	91.5	N/A
33	BDF1065-MS1	Quality Cont	6/28/2023 11:16	062823_gly\Da	1.00	Glyphosate	2.29e+004	0.00	2.02e+004	56.5	N/A
34	BDF1065-MS1	Quality Cont	6/28/2023 11:16	062823_gly\Da	1.00	Glyphosate1	7.58e+003	0.00	2.02e+004	56.8	N/A
35	BDF1065-MS1	Quality Cont	6/28/2023 11:16	062823_gly\Da	1.00	AMPA	1.88e+004	0.00	2.02e+004	127.	N/A
36	BDF1065-MS1	Quality Cont	6/28/2023 11:16	062823_gly\Da	1.00	AMPA1	6.45e+003	0.00	2.02e+004	132.	N/A
37	BDF1065-MS	Quality Cont	6/28/2023 11:22	062823_gly\Da	1.00	Glyphosate	2.07e+004	0.00	2.08e+004	49.2	N/A
38	BDF1065-MS	Quality Cont	6/28/2023 11:22	062823_gly\Da	1.00	Glyphosate1	7.06e+003	0.00	2.08e+004	51.0	N/A
39	BDF1065-MS	Quality Cont	6/28/2023 11:22	062823_gly\Da	1.00	AMPA	1.69e+004	0.00	2.08e+004	108.	N/A
40	BDF1065-MS	Quality Cont	6/28/2023 11:22	062823_gly\Da	1.00	AMPA1	5.57e+003	0.00	2.08e+004	107.	N/A
41	MDF0900-01	Unknown	6/28/2023 11:29	062823_gly\Da	1.00	Glyphosate	0.00e+000	N/A	9.02e+004	No Peak	N/A
42	MDF0900-01	Unknown	6/28/2023 11:29	062823_gly\Da	1.00	Glyphosate1	0.00e+000	N/A	9.02e+004	No Peak	N/A
43	MDF0900-01	Unknown	6/28/2023 11:29	062823_gly\Da	1.00	AMPA	1.28e+003	N/A	9.02e+004	< 0	N/A
44	MDF0900-01	Unknown	6/28/2023 11:29	062823_gly\Da	1.00	AMPA1	0.00e+000	N/A	9.02e+004	No Peak	N/A
45	MDF0900-02	Unknown	6/28/2023 11:36	062823_gly\Da	1.00	Glyphosate	0.00e+000	N/A	1.15e+005	No Peak	N/A
46	MDF0900-02	Unknown	6/28/2023 11:36	062823_gly\Da	1.00	Glyphosate1	0.00e+000	N/A	1.15e+005	No Peak	N/A
47	MDF0900-02	Unknown	6/28/2023 11:36	062823_gly\Da	1.00	AMPA	0.00e+000	N/A	1.15e+005	No Peak	N/A
48	MDF0900-02	Unknown	6/28/2023 11:36	062823_gly\Da	1.00	AMPA1	0.00e+000	N/A	1.15e+005	No Peak	N/A
49	MDF0900-03	Unknown	6/28/2023 11:43	062823_gly\Da	1.00	Glyphosate	0.00e+000	N/A	1.32e+005	No Peak	N/A
50	MDF0900-03	Unknown	6/28/2023 11:43	062823_gly\Da	1.00	Glyphosate1	0.00e+000	N/A	1.32e+005	No Peak	N/A
51	MDF0900-03	Unknown	6/28/2023 11:43	062823_gly\Da	1.00	AMPA	0.00e+000	N/A	1.32e+005	No Peak	N/A
52	MDF0900-03	Unknown	6/28/2023 11:43	062823_gly\Da	1.00	AMPA1	0.00e+000	N/A	1.32e+005	No Peak	N/A
53	WDF1311-01	Unknown	6/28/2023 11:49	062823_gly\Da	1.00	Glyphosate	0.00e+000	N/A	7.92e+004	No Peak	N/A
54	WDF1311-01	Unknown	6/28/2023 11:49	062823_gly\Da	1.00	Glyphosate1	0.00e+000	N/A	7.92e+004	No Peak	N/A
55	WDF1311-01	Unknown	6/28/2023 11:49	062823_gly\Da	1.00	AMPA	0.00e+000	N/A	7.92e+004	No Peak	N/A
56	WDF1311-01	Unknown	6/28/2023 11:49	062823_gly\Da	1.00	AMPA1	0.00e+000	N/A	7.92e+004	No Peak	N/A
57	WDF1311-06	Unknown	6/28/2023 11:56	062823_gly\Da	1.00	Glyphosate	1.81e+003	N/A	1.88e+004	3.92	N/A
58	WDF1311-06	Unknown	6/28/2023 11:56	062823_gly\Da	1.00	Glyphosate1	0.00e+000	N/A	1.88e+004	No Peak	N/A

	Sample Name	Sample Type	Acquisition Date	File Name	Dilution Factor	Analyte Peak Name	Analyte Peak Area (counts)	Analyte Concentration (ng/mL)	IS Peak Area (counts)	Calculated Concentration (ng/mL)	Accuracy (%)
59	WDF1311-06	Unknown	6/28/2023 11:56	062823_gly\Da	1.00	AMPA	0.00e+000	N/A	1.88e+004	No Peak	N/A
60	WDF1311-06	Unknown	6/28/2023 11:56	062823_gly\Da	1.00	AMPA1	0.00e+000	N/A	1.88e+004	No Peak	N/A
61	WDF1311-10	Unknown	6/28/2023 12:03	062823_gly\Da	1.00	Glyphosate	1.89e+003	N/A	2.08e+004	3.68	N/A
62	WDF1311-10	Unknown	6/28/2023 12:03	062823_gly\Da	1.00	Glyphosate1	0.00e+000	N/A	2.08e+004	No Peak	N/A
63	WDF1311-10	Unknown	6/28/2023 12:03	062823_gly\Da	1.00	AMPA	0.00e+000	N/A	2.08e+004	No Peak	N/A
64	WDF1311-10	Unknown	6/28/2023 12:03	062823_gly\Da	1.00	AMPA1	0.00e+000	N/A	2.08e+004	No Peak	N/A
65	MDE0728-01	Unknown	6/28/2023 12:10	062823_gly\Da	1.00	Glyphosate	2.00e+004	N/A	4.18e+004	22.6	N/A
66	MDE0728-01	Unknown	6/28/2023 12:10	062823_gly\Da	1.00	Glyphosate1	6.81e+003	N/A	4.18e+004	23.5	N/A
67	MDE0728-01	Unknown	6/28/2023 12:10	062823_gly\Da	1.00	AMPA	0.00e+000	N/A	4.18e+004	No Peak	N/A
68	MDE0728-01	Unknown	6/28/2023 12:10	062823_gly\Da	1.00	AMPA1	0.00e+000	N/A	4.18e+004	No Peak	N/A
69	MDE0730-01	Unknown	6/28/2023 12:16	062823_gly\Da	1.00	Glyphosate	2.69e+004	N/A	1.56e+004	89.2	N/A
70	MDE0730-01	Unknown	6/28/2023 12:16	062823_gly\Da	1.00	Glyphosate1	1.03e+004	N/A	1.56e+004	104.	N/A
71	MDE0730-01	Unknown	6/28/2023 12:16	062823_gly\Da	1.00	AMPA	0.00e+000	N/A	1.56e+004	No Peak	N/A
72	MDE0730-01	Unknown	6/28/2023 12:16	062823_gly\Da	1.00	AMPA1	0.00e+000	N/A	1.56e+004	No Peak	N/A
73	CCV 25/50	Unknown	6/28/2023 12:23	062823_gly\Da	1.00	Glyphosate	6.19e+004	N/A	1.20e+005	24.5	N/A
74	CCV 25/50	Unknown	6/28/2023 12:23	062823_gly\Da	1.00	Glyphosate1	2.05e+004	N/A	1.20e+005	24.6	N/A
75	CCV 25/50	Unknown	6/28/2023 12:23	062823_gly\Da	1.00	AMPA	3.50e+004	N/A	1.20e+005	33.3	N/A
76	CCV 25/50	Unknown	6/28/2023 12:23	062823_gly\Da	1.00	AMPA1	1.20e+004	N/A	1.20e+005	32.7	N/A

Starting sequence Fri Jul 21 12:34:26 2023

Instrument Name: MSD4
Sequence File: T:\DATA1\MSD4\SEQUENCES\2023\SVOP.S
Comment: CARDNO 625
Operator: MAH
Data Path: T:\DATA1\MSD4\2023\JUL\21\
Method Path: C:\MSDCHEM\1\METHODS\

Line	Type	Vial	DataFile	Method	Sample Name
1)	Sample	1	00101001	SVOCT1	SYS
2)	Sample	2	00201002	SVOCT1	CARDNO 10 PPM
3)	Sample	3	00301003	SVOCT1	CARDNO 5 PPM
4)	Sample	4	00401004	SVOCT1	CARDNO 2.5 PPM
5)	Sample	5	00501005	SVOCT1	CARDNO 1 PPM
6)	Sample	6	00601006	SVOCT1	CARDNO 0.5 PPM
7)	Sample	7	00701007	SVOCT1	CARDNO 0.1 PPM
8)	Sample	11	01101008	SVOCT1	BDF1187-BS1
9)	Sample	12	01201009	SVOCT1	BDF1187-BSD1
10)	Sample	13	01301010	SVOCT1	BDF1187-MS1
11)	Sample	14	01401011	SVOCT1	BDF1187-MSD1
12)	Sample	15	01501012	SVOCT1	BDF1187-BLK1
13)	Sample	16	01601013	SVOCT1	WDF1311-06
14)	Sample	17	01701014	SVOCT1	WDF1311-10

Sequence completed Sat Jul 22 12:00:39 2023

T:\DATA1\MSD4\2023\JUL\21\2023 Jul 21 1234 Quality Log.LOG
T:\DATA1\MSD4\2023\JUL\21\2023 Jul 21 1234 Sequence Log .LOG

Anatek Labs, Inc.

QC Checklist for EPA 8270/625.1 - SOCs

Analysis Date: 7-21-23

☒	QC Parameter	Acceptance Criteria	Frequency	Notes
✓	DFTPP Tune	See SOP/Method	Every 12 hours	
✓	Sys Check	DDT breakdown <20%	Every 12 hours	
NA	System Performance	Anthracene & phenanthrene baseline separated	Each analysis batch	
✓	System Performance	Benzo[a]anthracene & chrysene valley >75%	Each analysis batch	
✓	System Performance	Benzo(b/k)fluoranthenes - valley >50% of average of both peaks	Each analysis batch	
✓	System Performance	Peak tailing factors for benzidine & PCP <2	Each analysis batch	
✓	Initial Calibration	90% of compounds RRF RSD<20% 8270: True value within 30%		
✓	RF	See table on back of this checklist		Include CCRF report in packet
✓	Internal Standard	±30% of CCV and ±50% of ICAL average	All samples	
✓	Surrogate Recovery	Per control chart	All samples	
✓	ICV/QCS	±30%, 50% at MRL	Each ICAL	
✓	Blanks	No interferences	Each extraction batch	
✓	CCV - 8270	80-120% - 80% of analytes pass	Each analysis batch w/o an ICAL	ICAL
✓	CCV - 625	80-120% - all reported analytes must pass	Each analysis batch w/o an ICAL	✓
✓	MS/MSD or LFB/LFB Dup	Per control chart	Every 20 samples	

✓	Bench Sheet Present	Standards/reagents noted	
✓	Cal Prep Form Present	Standards/reagents noted	
✓	Dilutions Noted?		

Comments:

Analyst: MMK Checklist Completed Date: 7-25-23

Reviewed By: [signature] *Date:* 7/26/23

Guidance Response Factors – EPA Method 8270E – Table 4			
2,3,4,6-Tetrachlorophenol	0.01	bis(2-Ethylhexyl)phthalate	0.01
2,4,5-Trichlorophenol	0.2	Butyl benzyl phthalate	0.01
2,4,6-Trichlorophenol	0.2	Carbazole	0.01
2,4-Dichlorophenol	0.2	Chrysene	0.7
2,4-Dimethylphenol	0.2	Dibenz[a,h]anthracene	0.4
2,4-Dinitrophenol	0.01	Dibenzofuran	0.8
2,4-Dinitrotoluene	0.2	Diethyl phthalate	0.01
2,6-Dinitrotoluene	0.2	Dimethyl phthalate	0.01
2-Chloronaphthalene	0.8	Di-n-butyl phthalate	0.01
2-Chlorophenol	0.8	Di-n-octyl phthalate	0.01
3,3'-Dichlorobenzidine	0.01	Fluoranthene	0.6
4,6-Dinitro-2-methylphenol	0.01	Fluorene	0.9
4-Bromophenyl-phenylether	0.1	Hexachlorobenzene	0.1
4-Chloro-3-methylphenol	0.2	Hexachlorobutadiene	0.01
4-Chloroaniline	0.01	Hexachlorocyclopentadiene	0.05
4-Chlorophenyl phenyl ether	0.4	Hexachloroethane	0.3
Acenaphthene	0.9	Indeno[1,2,3-cd]pyrene	0.5
Acenaphthylene	0.9	Isophorone	0.4
Aniline	0.7	Naphthalene	0.7
Benzo[a]anthracene	0.8	Nitrobenzene	0.2
Benzo[a]pyrene	0.7	n-Nitroso-di-n-propylamine	0.5
Benzo[b]fluoranthene	0.7	n-Nitrosodiphenylamine	0.01
Benzo[ghi]perylene	0.5	Pentachlorophenol	0.05
Benzo[k]fluoranthene	0.7	Phenanthrene	0.7
bis(2-Chloroethoxy)methane	0.3	Phenol	0.8
bis(2-Chloroethyl)ether	0.7	Pyrene	0.6
bis(2-chloroisopropyl)ether	0.01		

From Method 8270E, 11.3.4.2. *Table 4 contains minimum RFs that may be used as guidance in determining if the system is behaving properly and as a check to see if calibration standards are prepared correctly. Because the minimum RFs in Table 4 were determined using specific ions and instrument conditions that may vary, it is neither expected nor required that all analytes meet these minimum RFs. The information is provided as guidance only.*

Anatek Labs, Inc
1282 Alturas Drive
Moscow, ID 83843

1,4-Dioxane Cal. Standard Prep. Form **Method: EPA 625.1/8270D**

IS/Surrogate Standards

Standard	Reagent ID	Expiration	Concentration (ppm)
CLP B/N Surrogate	2300782	2/24	1000
CLP Internal Standard	2301118	3/24	2000

Target Compound Standards

Standard	Reagent ID	Expiration	Concentration (ppm)
Chlorpyrifos	2003215	12/23	1000
Metolachlor	2003216	9/23	1000
Atrazine	2003218	11/24	1000

Calibration Dilution Template

Desired Concentration (ppm)	Stock Concentration (ppm) **	uL Standard Added	Final Volume (uL)
10	100	100	1000
5	100	50	1000
2.5	100	25	1000
1.0	100	10	1000
0.5	100	5	1000
0.1	100	1	1000
0.05	100	0.5	1000

Calibration made from target compound standards in the table. 25 uL of surrogate and 10 uL of IS stock added to each standard point. Dilutions were made in $MeCl_2$ (2200721).

Analyst Initials: MH Date of Preparation: 4/1/23 by MAH

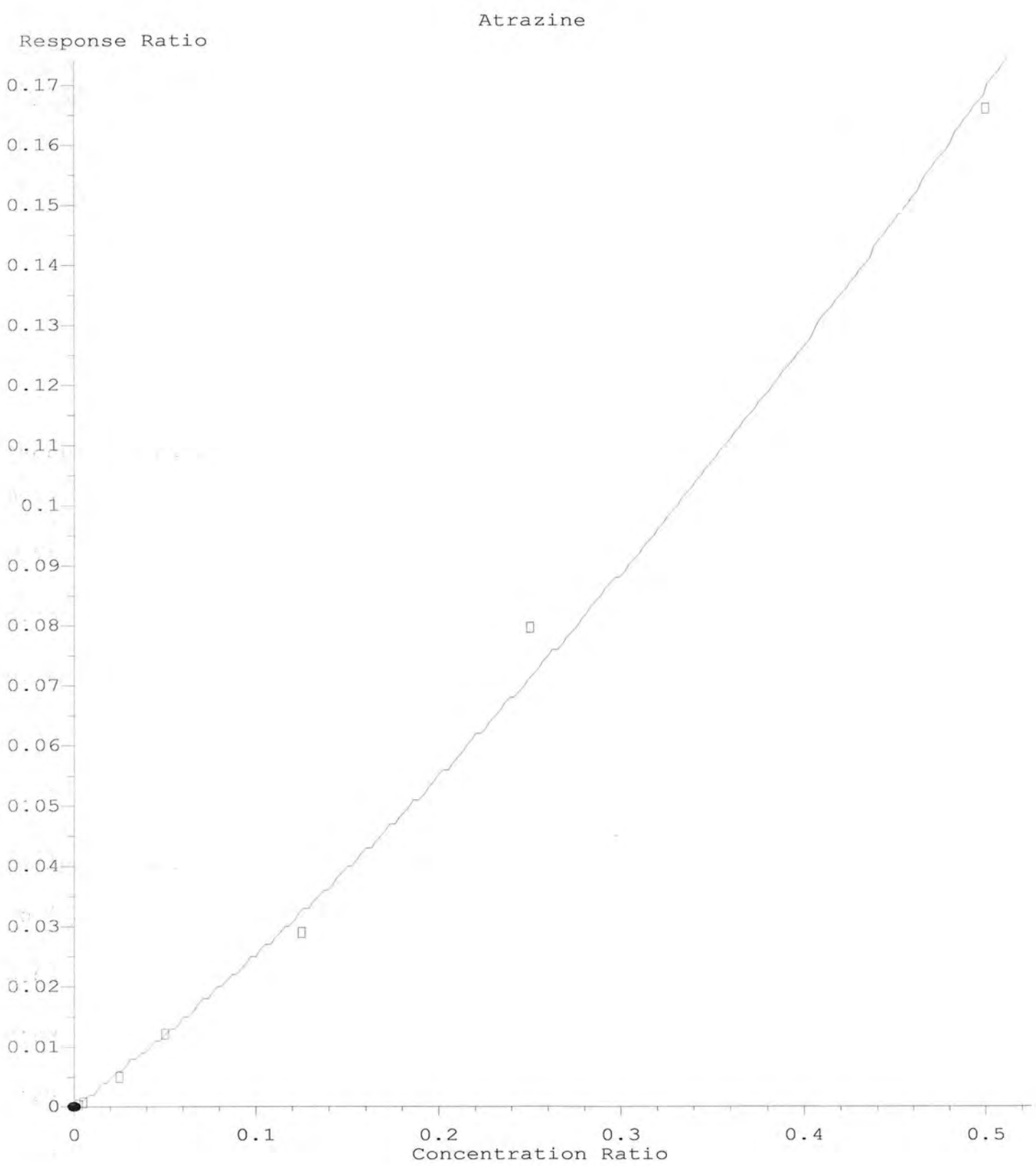
Response Factor Report MSD4

Method Path : T:\Data1\MSD4\METHODS\2023\
Method File : Cardo-0721.M
Title : EPA 8270D - GC MSD4
Last Update : Fri Jul 21 16:43:06 2023
Response Via : Initial Calibration

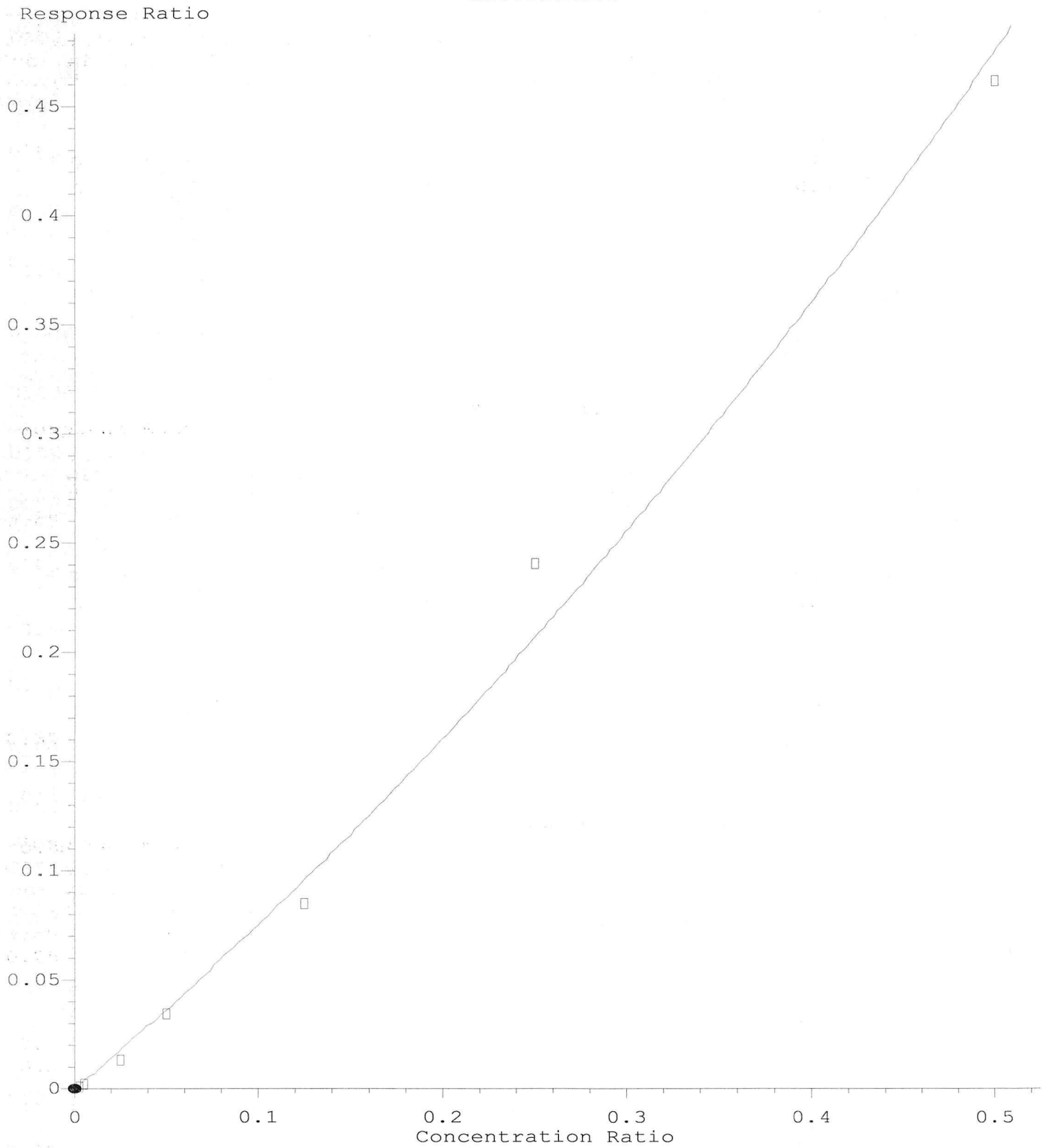
Calibration Files
0.05=00801008.D 10 =00201002.D 5 =00301003.D 2.5 =00401004.D 1 =00501005.D 0.5 =00601006.D
0.1 =00701007.D

		Compound	0.05	10	5	2.5	1	0.5	0.1	Avg	%RSD
1)	I	Dichlorobenzene-d5	ISTD								
2)	S	2-Fluorobiphenyl	1.731	1.826	1.722	1.881	1.814	1.856	1.568	1.771	6.08
3)	I	Acenaphthene-d10	ISTD								
4)		Atrazine	0.120	0.332	0.319	0.232	0.243	0.199	0.136	0.226	36.23
5)		Metolachlor	0.326	0.922	0.961	0.679	0.688	0.534	0.428	0.648	36.73
6)		Chlorpyrifos	0.088	0.192	0.201	0.155	0.156	0.136	0.096	0.146	29.55
7)	I	Chrysene-d12	ISTD								
8)	S	Terphenyl-d14	0.838	1.110	1.002	1.037	1.061	0.962	0.912	0.989	9.41

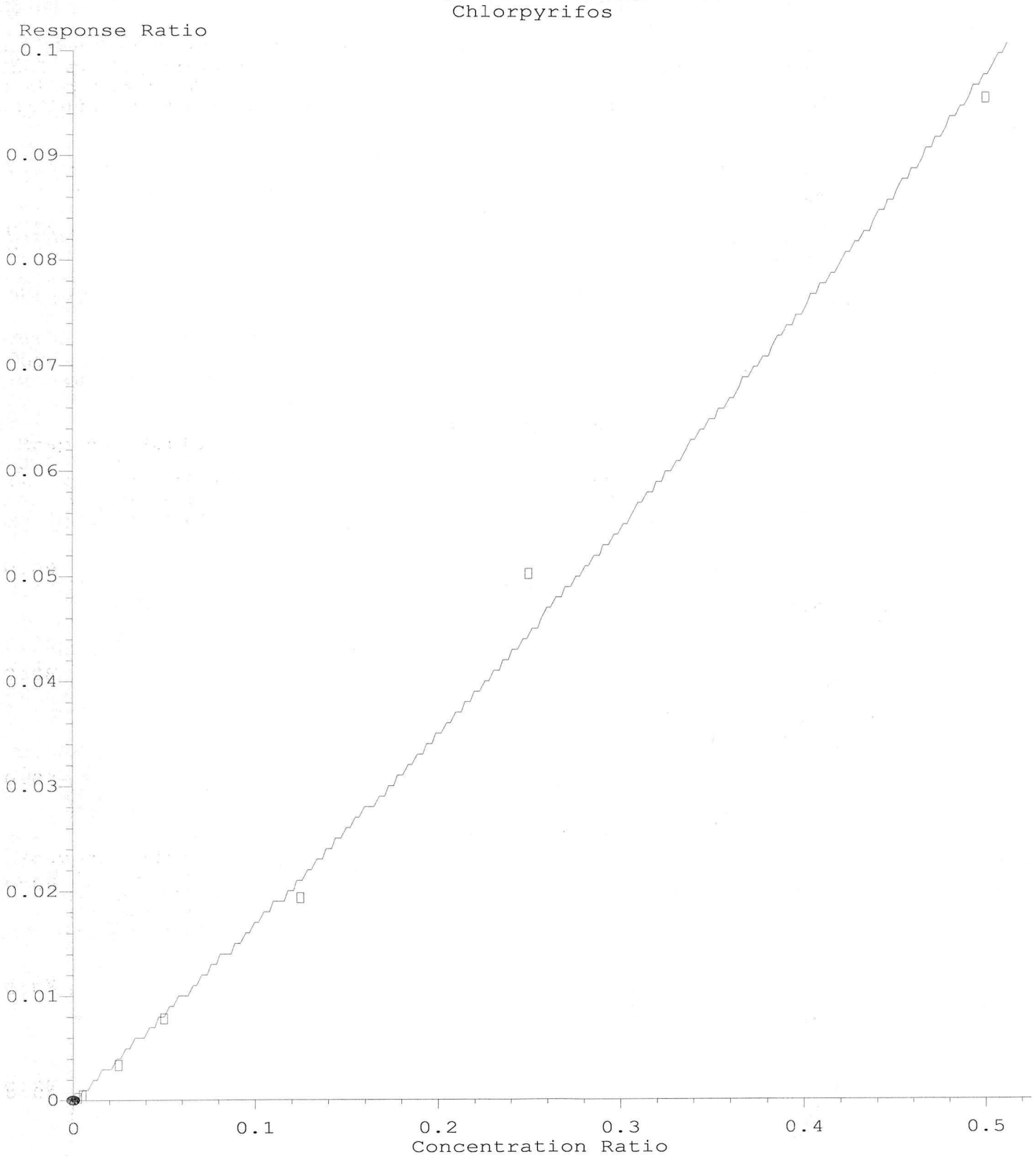
(#) = Out of Range



R = 2.11e-001 A*A + 2.32e-001 A + 0.00e+000
Coef of Det (r^2) = 0.995 Curve Fit: Quad w(1/a)/(0,0)
Method Name: T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Calibration Table Last Updated: Tue Jul 25 11:07:02 2023



R = 4.87e-001 A*A + 7.05e-001 A + 0.00e+000
Coef of Det (r^2) = 0.991 Curve Fit: Quad w(1/a)/(0,0)
Method Name: T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Calibration Table Last Updated: Tue Jul 25 11:07:02 2023



R = 7.15e-002 A*A + 1.60e-001 A + 0.00e+000
Coef of Det (r^2) = 0.994 Curve Fit: Quad w(1/a)/(0,0)
Method Name: T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Calibration Table Last Updated: Tue Jul 25 11:07:02 2023

PREPARATION BENCH SHEET
Organics
BDF1187

Matrix: Water

Prepared using: SVOC - SVOC Water

Analyses
SVOC 625 MISC

Spiking Solution(s)
2201385 Cardno Spk 100

Surrogate Solution(s)
2300782 CLP B/N 1000
2301428 CLP Acid Surr 2000

Analysis	Lab Number	Sample and Source ID	Date Due	Extract by	Prepared - By	Initial (mL)	Final (mL)	ul Spike	ul Surrogate	Extraction Comments
QC	BDF1187-BLK1	Blank			6/26/23 0:50 MAH	1000	1		25	
QC	BDF1187-BS1	LCS			6/26/23 0:50 MAH	1000	1	50	25	
QC	BDF1187-MS1	Matrix Spike [WDF1311-06]			6/26/23 0:50 MAH	1000	1	50	25	
QC	BDF1187-MSD1	Matrix Spike Dup [WDF1311-06]			6/26/23 0:50 MAH	1000	1	50	25	
SVOC 625 MISC	WDF1311-06	E-1	07/05/2023	06/26/2023	6/26/23 0:50 MAH	1000	1		25	
SVOC 625 MISC	WDF1311-10	E-1 Dup	07/05/2023	06/26/2023	6/26/23 0:50 MAH	1000	1		25	

Reagents

Standard	Description	LotNum
2000154	Acetone - GC grade	59074
2000155	H2SO4	58115
2301118	CLP I.S. Spike 2000	061422
2301678	Dichloromethane	63104

Batch Comments:
Acidic start/stop time: 3PM- 8AM
Basic start/stop tiime: 8AM-3PM
Instrument: 7890/5975 GCMS
Ext. Method: 3520C liq-liq/Waste Dilution/Microextr
TurboVap: 01
Balance: 04

Analyst: _____ Date _____

Run Date: 7-21-23 Date _____

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 00101001.D
Acq On : 21 Jul 2023 12:35 pm
Operator : MAH
Sample : SYS
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e

Method : T:\Data1\MSD4\METHODS\2023\BNA-0723.M
Title : EPA 8270D / EPA 625.1 - MSD4
Last Update : Mon Jul 24 11:07:16 2023

AutoFind: Averaged scan 1936 to 1953; Bkg corrected with scan 1935 AUTOFIND

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	34.2	13312	PASS
68	69	0.00	2	1.5	225	PASS
70	69	0.00	2	0.6	82	PASS
127	198	10	80	50.9	19849	PASS
197	198	0.00	2	0.2	88	PASS
198	198	100	100	100.0	38975	PASS
199	198	5	9	6.8	2636	PASS
275	198	10	60	26.7	10397	PASS
365	198	1	100	3.6	1403	PASS
441	443	0.01	150	74.4	5460	PASS
442	198	30	200	97.8	38136	PASS
443	442	15	24	19.2	7340	PASS

BNA-0723.M Tue Jul 25 11:42:20 2023

Area Percent Report

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 00101001.D
Acq On : 21 Jul 2023 12:35 pm
Operator : MAH
Sample : SYS
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration Parameters: events.e
Integrator: ChemStation

Method : T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Title : EPA 8270D - GC MSD4

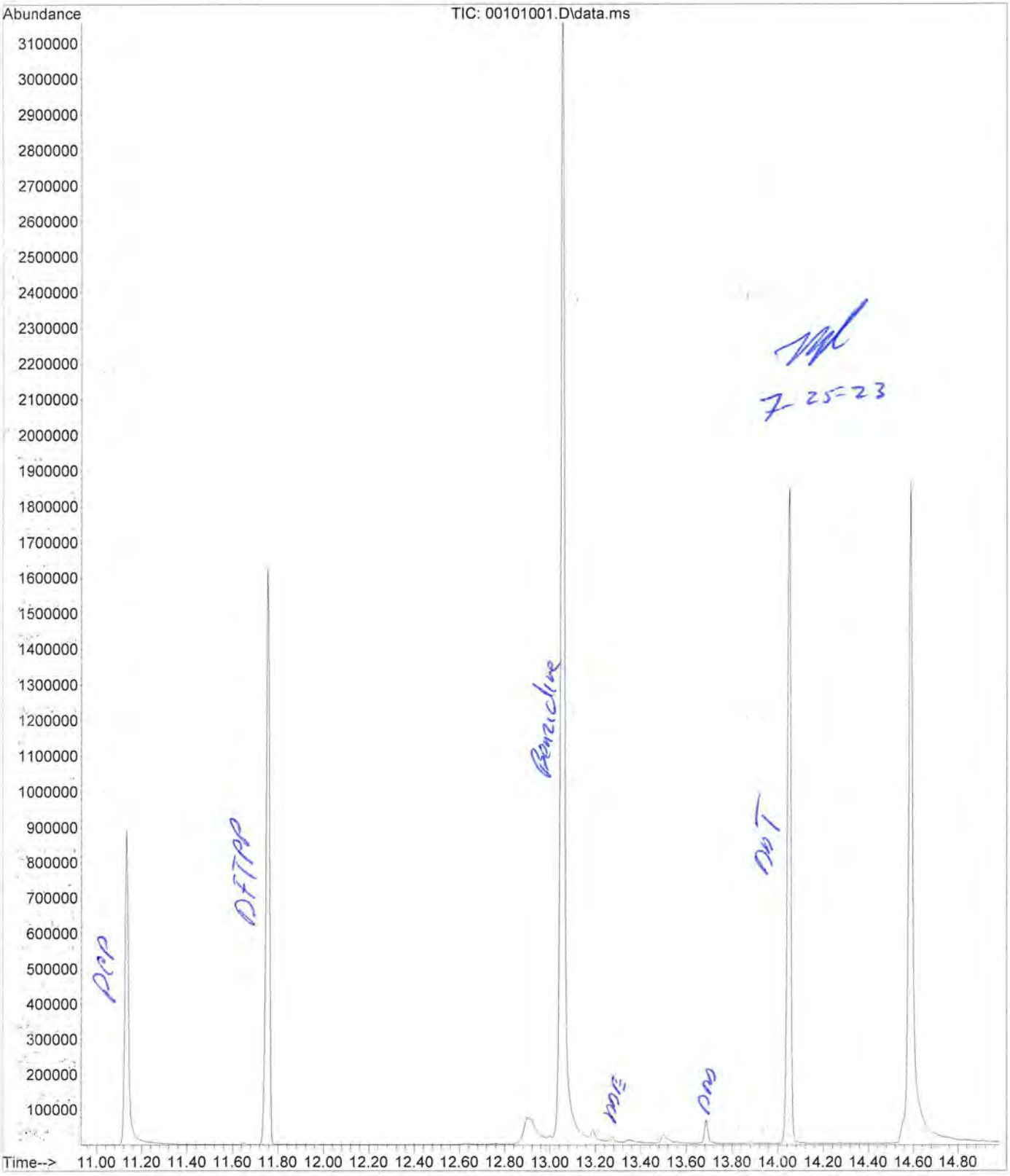
Signal : TIC: 00101001.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total	
1	13.274	2269	2274	2281	M3	13621	149762	0.77%	0.745%	DDE
2	13.686	2358	2363	2367	M	65062	616219	3.19%	3.066%	DDD
3	14.049	2432	2442	2454	M	1926732	19334293	100.00%	96.189%	DDT % Breakdown

Sum of corrected areas: 20100274

Cardo-0721.M Tue Jul 25 11:36:24 2023

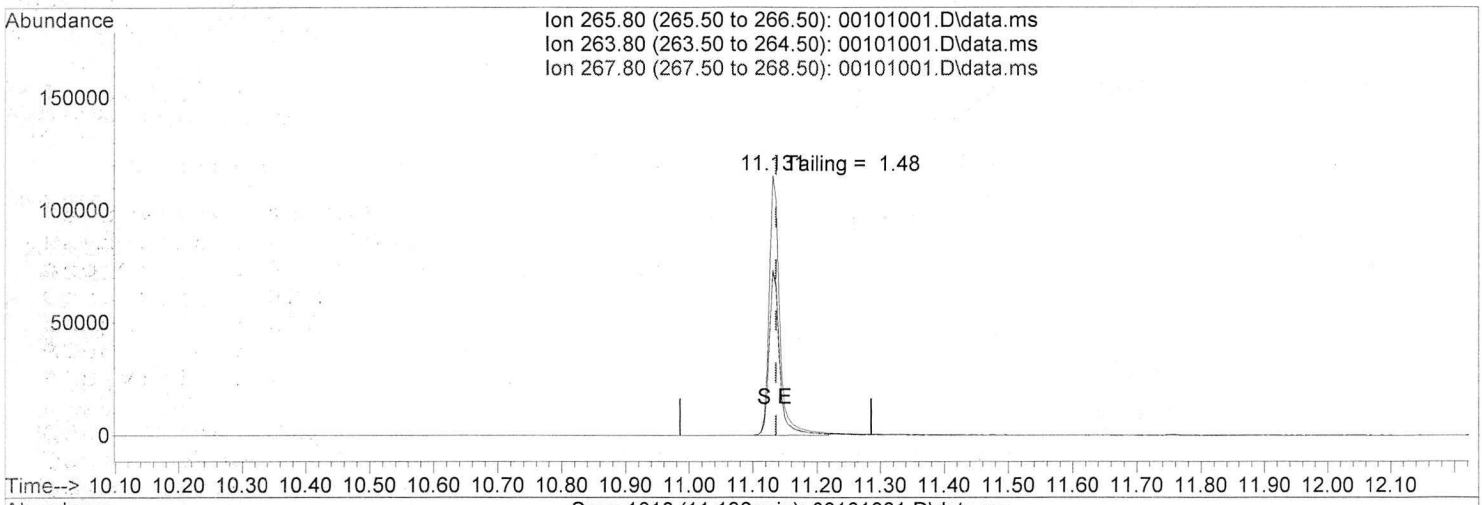
```
File       :T:\Data1\MSD4\2023\JUL\21\00101001.D
Operator   : MAH
Acquired   : 21 Jul 2023  12:35 pm using AcqMethod SVOCT1.M
Instrument :   MSD4
Sample Name: SYS
Misc Info  :
Vial Number: 1
```

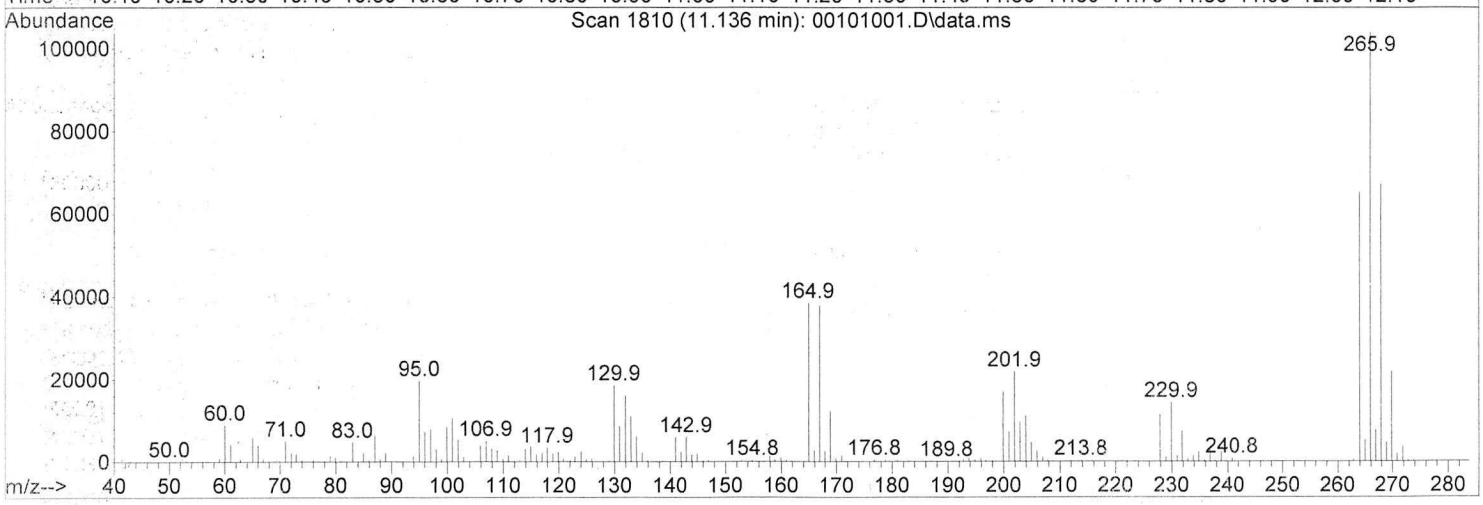


Quantitation Report (Qedit)

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 00101001.D
Acq On : 21 Jul 2023 12:35 pm
Operator : MAH
Sample : SYS
Misc :
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 21 12:58:54 2023
Quant Method : T:\Data1\MSD4\METHODS\2023\BNA-0719.M
Quant Title : EPA 8270D / EPA 625.1 - MSD4
QLast Update : Thu Jul 20 15:02:01 2023
Response via : Initial Calibration





TIC: 00101001.D\data.ms

(68) Pentachlorophenol

11.134min (-0.002) 0.00 ug/mL

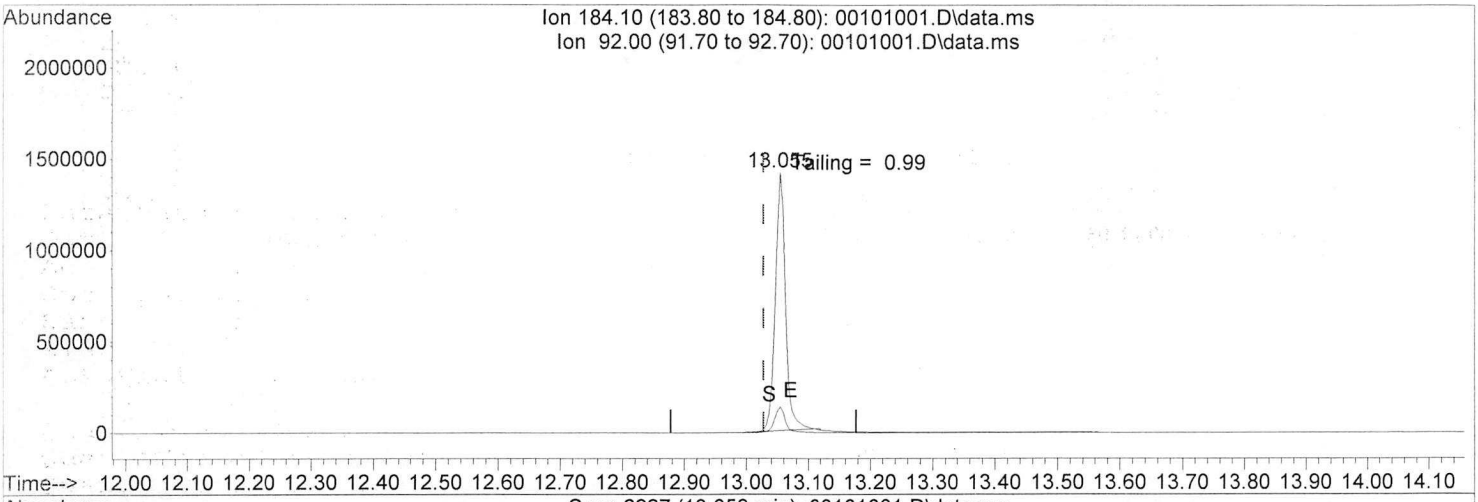
response 1281933

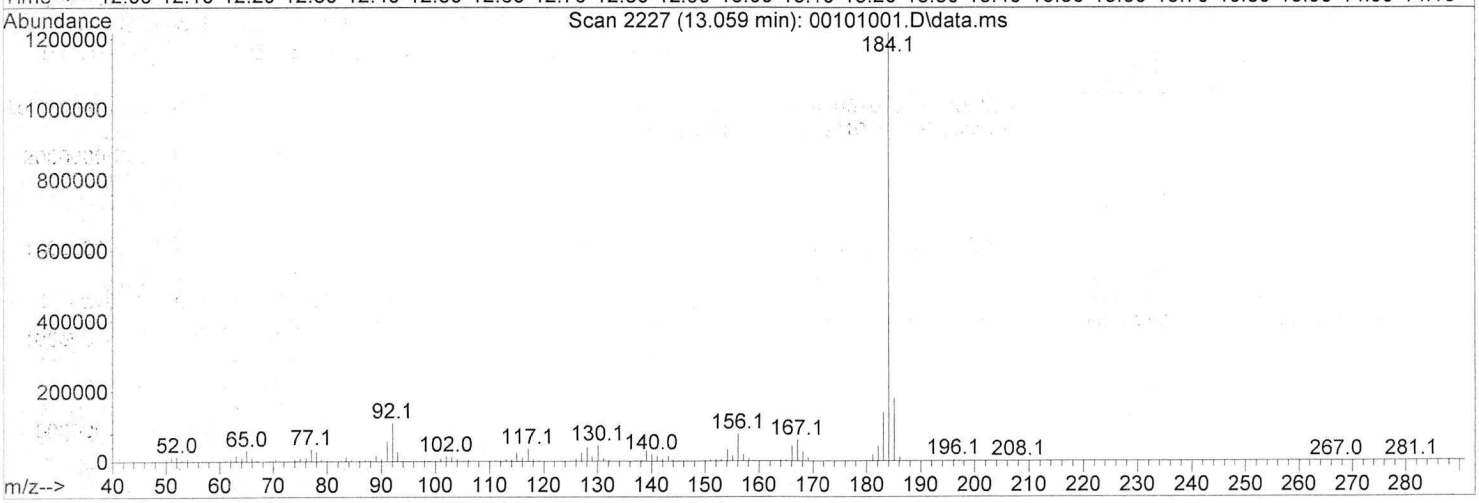
Ion	Exp%	Act%
265.80	100.00	100.00
263.80	63.00	62.91
267.80	64.20	63.86
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 00101001.D
Acq On : 21 Jul 2023 12:35 pm
Operator : MAH
Sample : SYS
Misc :
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 21 12:58:54 2023
Quant Method : T:\Data1\MSD4\METHODS\2023\BNA-0719.M
Quant Title : EPA 8270D / EPA 625.1 - MSD4
QLast Update : Thu Jul 20 15:02:01 2023
Response via : Initial Calibration





TIC: 00101001.D\data.ms

(74) Benzidine

13.057min (+ 0.029) 0.00 ug/mL

response 16863505

Ion	Exp%	Act%
184.10	100.00	100.00
92.00	9.70	10.17
0.00	0.00	0.00
0.00	0.00	0.00

Internal Standard ICal Average Responses	072123 CARDNO (method)

	1,4 Dichlorobenzene-d4	Naphthalene-d8	Acenaphthene-d10	Phenanthrene-d10	Chrysene-d12	Perylene-d12
0.05	23640745.99		29194263.63		26981339.48	
10	13713686.31		18001271.39		11498045.57	
5	15402224.67		19977792.73		13708827.37	
2.5	8292028.52		10935278.95		6910120.904	
1	14723880		19960683.18		12956548.52	
0.5	10589077.27		14316732.24		10177823.08	
0.1	15263118.5		17550751.86		13656115.59	
Average	14517823	#DIV/0!	18562396	#DIV/0!	13698403	#DIV/0!
50%	**7258912**	**#DIV/0!**	**9281198**	**#DIV/0!**	**6849201**	**#DIV/0!**
150%	**21776735**	**#DIV/0!**	**27843594**	**#DIV/0!**	**20547604**	**#DIV/0!**

Analyst: MAH

Evaluate Continuing Calibration Report

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 00201002.D
Acq On : 21 Jul 2023 1:03 pm
Operator : MAH
Sample : CARDNO 10 PPM
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 25 10:51:56 2023
Quant Method : T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Fri Jul 21 16:43:06 2023
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Dichlorobenzene-d5	20.000	20.000	0.0	100	0.00
2	S	2-Fluorobiphenyl	25.000	25.772	-3.1	100	0.00
3	I	Acenaphthene-d10	20.000	20.000	0.0	100	0.00
4		Atrazine	10.000	10.247	-2.5	100	0.00
5		Metolachlor	10.000	10.072	-0.7	100	0.00
6		Chlorpyrifos	10.000	10.018	-0.2	100	0.00
7	I	Chrysene-d12	20.000	20.000	0.0	100	0.00
8	S	Terphenyl-d14	25.000	28.064	-12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 00301003.D
Acq On : 21 Jul 2023 1:30 pm
Operator : MAH
Sample : CARDNO 5 PPM
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 25 11:02:16 2023
Quant Method : T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Fri Jul 21 16:43:06 2023
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Dichlorobenzene-d5	20.000	20.000	0.0	100	0.00
2	S	2-Fluorobiphenyl	25.000	24.303	2.8	100	0.00
3	I	Acenaphthene-d10	20.000	20.000	0.0	100	0.00
4		Atrazine	5.000	4.923	1.5	100	0.00
5		Metolachlor	5.000	5.251	-5.0	100	0.00
6		Chlorpyrifos	5.000	5.255	-5.1	100	0.00
7	I	Chrysene-d12	20.000	20.000	0.0	100	0.00
8	S	Terphenyl-d14	25.000	25.338	-1.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 00401004.D
Acq On : 21 Jul 2023 1:59 pm
Operator : MAH
Sample : CARDNO 2.5 PPM
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 25 11:07:07 2023
Quant Method : T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Tue Jul 25 11:07:02 2023
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Dichlorobenzene-d5	20.000	20.000	0.0	100	0.00
2	S	2-Fluorobiphenyl	25.000	26.546	-6.2	100	0.00
3	I	Acenaphthene-d10	20.000	20.000	0.0	100	0.00
4		Atrazine	2.500	2.263	9.5	100	0.00
5		Metolachlor	2.500	2.234	10.6	100	0.00
6		Chlorpyrifos	2.500	2.278	8.9	99	0.00
7	I	Chrysene-d12	20.000	20.000	0.0	100	0.00
8	S	Terphenyl-d14	25.000	26.220	-4.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 00501005.D
Acq On : 21 Jul 2023 2:27 pm
Operator : MAH
Sample : CARDNO 1 PPM
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 25 11:08:19 2023
Quant Method : T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Tue Jul 25 11:07:02 2023
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Dichlorobenzene-d5	20.000	20.000	0.0	100	0.00
2	S	2-Fluorobiphenyl	25.000	25.611	-2.4	100	0.00
3	I	Acenaphthene-d10	20.000	20.000	0.0	100	0.00
4		Atrazine	1.000	0.950	5.0	95	0.00
5		Metolachlor	1.000	0.928	7.2	98	0.00
6		Chlorpyrifos	1.000	0.955	4.5	100	0.00
7	I	Chrysene-d12	20.000	20.000	0.0	100	0.00
8	S	Terphenyl-d14	25.000	26.827	-7.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 00601006.D
Acq On : 21 Jul 2023 2:56 pm
Operator : MAH
Sample : CARDNO 0.5 PPM
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 25 11:09:33 2023
Quant Method : T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Tue Jul 25 11:07:02 2023
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Dichlorobenzene-d5	20.000	20.000	0.0	100	0.00
2	S	2-Fluorobiphenyl	25.000	26.200	-4.8	100	0.00
3	I	Acenaphthene-d10	20.000	20.000	0.0	100	0.00
4		Atrazine	0.500	0.423	15.4	101	0.00
5		Metolachlor	0.500	0.386	22.8#	103	0.00
6		Chlorpyrifos	0.500	0.420	16.0	100	0.00
7	I	Chrysene-d12	20.000	20.000	0.0	100	0.00
8	S	Terphenyl-d14	25.000	24.327	2.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 00701007.D
Acq On : 21 Jul 2023 3:26 pm
Operator : MAH
Sample : CARDNO 0.1 PPM
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jul 25 11:10:33 2023
Quant Method : T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Tue Jul 25 11:07:02 2023
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Dichlorobenzene-d5	20.000	20.000	0.0	100	0.00
2	S	2-Fluorobiphenyl	25.000	22.129	11.5	100	0.00
3	I	Acenaphthene-d10	20.000	20.000	0.0	100	0.00
4		Atrazine	0.100	0.058	42.0#	100	0.00
5		Metolachlor	0.100	0.061	39.0#	100	0.00
6		Chlorpyrifos	0.100	0.060	40.0#	100	0.00
7	I	Chrysene-d12	20.000	20.000	0.0	100	0.00
8	S	Terphenyl-d14	25.000	23.051	7.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 01101008.D
Acq On : 21 Jul 2023 3:55 pm
Operator : MAH
Sample : BDF1187-BS1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jul 21 16:36:45 2023
Quant Method : T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Fri Jul 21 14:24:17 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichlorobenzene-d5	5.946	150	13518614	20.00	ug/mL	0.00
3) Acenaphthene-d10	9.562	164	18387585	20.00	ug/mL	0.00
7) Chrysene-d12	14.599	240	12871360	20.00	ug/mL	0.00
System Monitoring Compounds						
2) 2-Fluorobiphenyl	8.757	172	21931487	18.22	ug/mL	0.00
8) Terphenyl-d14	13.346	244	18602208	30.25	ug/mL	0.00
Spiked Amount 25.000			Recovery =	121.00%		
Target Compounds						Qvalue
4) Atrazine	11.069	200	1267711	4.27	ug/mL	96
5) Metolachlor	12.239	162	3723913	4.44	ug/mL	100
6) Chlorpyrifos	12.249	197	751794	4.28	ug/mL	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 01201009.D
Acq On : 21 Jul 2023 4:24 pm
Operator : MAH
Sample : BDF1187-BSD1
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 25 09:55:03 2023
Quant Method : T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Fri Jul 21 16:43:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichlorobenzene-d5	5.946	150	13388003	20.00	ug/mL	0.00
3) Acenaphthene-d10	9.562	164	18239613	20.00	ug/mL	0.00
7) Chrysene-d12	14.598	240	12261824	20.00	ug/mL	0.00
System Monitoring Compounds						
2) 2-Fluorobiphenyl	8.756	172	25176526	21.24	ug/mL	0.00
8) Terphenyl-d14	13.345	244	18925430	31.21	ug/mL	0.00
Spiked Amount 25.000			Recovery =	124.84%		
Target Compounds						Qvalue
4) Atrazine	11.067	200	1245715	4.22	ug/mL	96
5) Metolachlor	12.239	162	3632816	4.35	ug/mL	100
6) Chlorpyrifos	12.248	197	749781	4.30	ug/mL	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 01301010.D
Acq On : 21 Jul 2023 4:55 pm
Operator : MAH
Sample : BDF1187-MS1
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 25 09:56:32 2023
Quant Method : T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Fri Jul 21 16:43:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichlorobenzene-d5	5.945	150	13157549	20.00	ug/mL	0.00
3) Acenaphthene-d10	9.562	164	18410303	20.00	ug/mL	0.00
7) Chrysene-d12	14.600	240	14326601	20.00	ug/mL	0.00
System Monitoring Compounds						
2) 2-Fluorobiphenyl	8.756	172	26925209	23.11	ug/mL	0.00
8) Terphenyl-d14	13.346	244	21873742	30.88	ug/mL	0.00
Spiked Amount 25.000			Recovery =	123.52%		
Target Compounds						Qvalue
4) Atrazine	11.069	200	1355254	4.55	ug/mL	95
5) Metolachlor	12.239	162	4072348	4.83	ug/mL	100
6) Chlorpyrifos	12.249	197	812986	4.62	ug/mL	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 01401011.D
Acq On : 21 Jul 2023 5:24 pm
Operator : MAH
Sample : BDF1187-MSD1
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 25 10:01:11 2023
Quant Method : T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Fri Jul 21 16:43:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichlorobenzene-d5	5.942	150	11721181	20.00	ug/mL	0.00
3) Acenaphthene-d10	9.561	164	14915222	20.00	ug/mL	0.00
7) Chrysene-d12	14.596	240	9295315	20.00	ug/mL	0.00
System Monitoring Compounds						
2) 2-Fluorobiphenyl	8.757	172	22247036	21.43	ug/mL	0.00
8) Terphenyl-d14	13.345	244	15531987m	33.79	ug/mL	0.00
Spiked Amount 25.000			Recovery =	135.16%		
Target Compounds						Qvalue
4) Atrazine	11.068	200	1123326	4.66	ug/mL	95
5) Metolachlor	12.239	162	3429574	5.02	ug/mL	98
6) Chlorpyrifos	12.249	197	677869	4.75	ug/mL	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 01501012.D
Acq On : 21 Jul 2023 5:54 pm
Operator : MAH
Sample : BDF1187-BLK1
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jul 25 10:06:41 2023
Quant Method : T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Fri Jul 21 16:43:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichlorobenzene-d5	5.946	150	13709124	20.00	ug/mL	0.00
3) Acenaphthene-d10	9.562	164	19605040	20.00	ug/mL	0.00
7) Chrysene-d12	14.599	240	13671548	20.00	ug/mL	0.00
System Monitoring Compounds						
2) 2-Fluorobiphenyl	8.757	172	26978892	22.22	ug/mL	0.00
8) Terphenyl-d14	13.346	244	22307168	33.00	ug/mL	0.00
Spiked Amount 25.000			Recovery =	132.00%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 01601013.D
Acq On : 21 Jul 2023 6:23 pm
Operator : MAH
Sample : WDF1311-06
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 25 10:08:35 2023
Quant Method : T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Fri Jul 21 16:43:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichlorobenzene-d5	5.946	150	13392002	20.00	ug/mL	0.00
3) Acenaphthene-d10	9.561	164	17502893	20.00	ug/mL	0.00
7) Chrysene-d12	14.598	240	11663577	20.00	ug/mL	0.00
System Monitoring Compounds						
2) 2-Fluorobiphenyl	8.756	172	21083611	17.78	ug/mL	0.00
8) Terphenyl-d14	13.344	244	17410817	30.19	ug/mL	0.00
Spiked Amount 25.000			Recovery =	120.76%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : T:\Data1\MSD4\2023\JUL\21\
Data File : 01701014.D
Acq On : 21 Jul 2023 6:53 pm
Operator : MAH
Sample : WDF1311-10
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 25 10:10:41 2023
Quant Method : T:\Data1\MSD4\METHODS\2023\Cardo-0721.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Fri Jul 21 16:43:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichlorobenzene-d5	5.945	150	13581486	20.00	ug/mL	0.00
3) Acenaphthene-d10	9.561	164	18377893	20.00	ug/mL	0.00
7) Chrysene-d12	14.598	240	13853009	20.00	ug/mL	0.00
System Monitoring Compounds						
2) 2-Fluorobiphenyl	8.756	172	21986436	18.28	ug/mL	0.00
8) Terphenyl-d14	13.344	244	18838666	27.50	ug/mL	0.00
Spiked Amount 25.000			Recovery =	110.00%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

PREPARATION BENCH SHEET
Metals

BDF1076

Matrix: Water

Prepared using: Metals - W 245.1 Digest

Lab Number	Prepared - By	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	Comments
BDF1076-BLK1	06/27/23 16:58 - JLG	50	50				
BDF1076-BS1	06/27/23 16:58 - JLG	50	50	2204254		280	
BDF1076-MS1	06/27/23 16:58 - JLG	50	50	2204254	WDF0809-02	280	
BDF1076-MS2	06/27/23 16:58 - JLG	50	50	2204254	WDF1311-06	280	
BDF1076-MSD1	06/27/23 16:58 - JLG	50	50	2204254	WDF0809-02	280	
BDF1076-MSD2	06/27/23 16:58 - JLG	50	50	2204254	WDF1311-06	280	
WDF0639-01 Analytes: Mercury	06/27/23 16:58 - JLG	50	50	Client: Big Sky Industrial, Inc.			
WDF0809-01 Analytes: Mercury	06/27/23 16:58 - JLG	50	50	Client: Matrix Sciences			
WDF0809-02 Analytes: Mercury	06/27/23 16:58 - JLG	50	50	Client: Matrix Sciences			
WDF1311-01 Analytes: Mercury	06/27/23 16:58 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-02 Analytes: Mercury	06/27/23 16:58 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-03 Analytes: Mercury	06/27/23 16:58 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-04 Analytes: Mercury	06/27/23 16:58 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-05 Analytes: Mercury	06/27/23 16:58 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-06 Analytes: Mercury	06/27/23 16:58 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-07 Analytes: Mercury	06/27/23 16:58 - JLG	50	50	Client: Cardno - Hawaii			

Batch Prepared By _____ Date _____ Analytical Run Date _____

PREPARATION BENCH SHEET
Metals

BDF1076

(Continued)

Matrix: Water

Prepared using: Metals - W 245.1 Digest

Lab Number	Prepared - By	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	Comments
WDF1311-08 Analytes: Mercury	06/27/23 16:58 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-09 Analytes: Mercury	06/27/23 16:58 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-10 Analytes: Mercury	06/27/23 16:58 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-11 Analytes: Mercury	06/27/23 16:58 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-12 Analytes: Mercury	06/27/23 16:58 - JLG	50	50	Client: Cardno - Hawaii			

Support Equipment: W PT-04 W PT-33 W PT-21, W PT-27

Reagent ID	Description	LotNum
2200419	Hg. Tin(II) chloride	-
2201408	Sulfuric Acid	61179
2301145	Hg. 5% Potassium Permangar	-
2301390	Hg. Hydroxlamine Hydrochlori	-
2301734	Nitric Acid	62327
2301818	Hg. 5% Potassium Persulfate	-

Batch Prepared By _____ Date _____ Analytical Run Date _____

C:\Promium\Element\Print\bch_Metals_ls.rpt

Report Generated By Teledyne CETAC QuickTrace

Analyst: Mercury

Worksheet file: C:\Users\Public\Documents\Teledyne CETAC\QuickTrace\Worksheets\06282023.wszf

Creation Date: 6/28/2023 11:41:50 AM

Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual	Flags	% Recovery
Calibration Blank					STD	06/28/23 12:30:36 pm	0.000	388	6.15	-66.41		N/A
	Replicates	423.4	372.6	384.5	373.5							
Standard #1 (0.5 ug/L)					STD	06/28/23 12:33:07 pm	0.500	9736	0.77	-36.41		N/A
	Replicates	9783.5	9794.8	9734.6	9630.8							
Standard #2 (1 ug/L)					STD	06/28/23 12:35:39 pm	1.000	18815	0.51	-21.63		N/A
	Replicates	18684.3	18875.4	18896.6	18803.6							
Standard #3 (2.0 ug/L)					STD	06/28/23 12:38:11 pm	2.000	38837	1.04	113.62		N/A
	Replicates	39110.9	39144.5	38822.0	38271.3							
Standard #4 (5.0 ug/L)					STD	06/28/23 12:40:43 pm	5.000	90786	0.78	59.13		N/A
	Replicates	91079.7	91409.0	90889.0	89767.7							
Standard #5 (10.0 ug/L)					STD	06/28/23 12:43:15 pm	10.000	177075	1.06	-48.31		N/A
	Replicates	178267.1	178549.4	177040.6	174444.7							

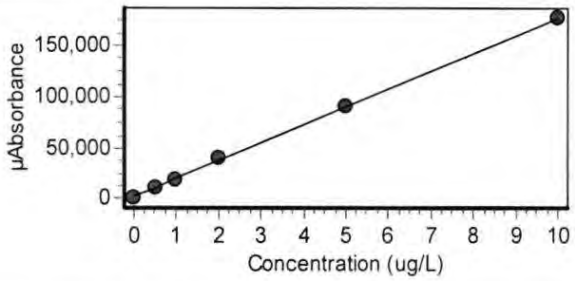
Calibration

Equation: A = 1559.679 + 17636.771C

R2: 0.99966

SEE: 1392.7290

Flags:



ICV					ICV	06/28/23 12:57:50 pm	-0.096	-128	1.15		Q	-2.39
	Replicates	-100.0	-138.4	-142.9	-132.4							
CCV (95-105%)					OPR	06/28/23 01:00:23 pm	5.100	91461	0.94			101.95
	Replicates	91951.6	92135.6	91493.4	90264.6							
ICV					ICV	06/28/23 01:02:54 pm	-0.096	-136	0.35		Q	-2.40
	Replicates	-132.6	-130.1	-143.8	-136.5							
ICV					ICV	06/28/23 01:05:24 pm	4.560	82048	2.47			114.09
	Replicates	79223.3	82363.3	83875.6	82731.5							
CCB					CCB	06/28/23 01:07:56 pm	-0.095	-108	1.87			N/A
	Replicates	-86.8	-84.5	-110.9	-151.7							
BLANK					MB	06/28/23 01:10:27 pm	-0.074	253	5.83			N/A
	Replicates	348.4	274.9	218.5	171.5							
LCS					LCS	06/28/23 01:12:58 pm	4.490	80721	3.60			112.21
	Replicates	84291.1	81596.5	79198.7	77797.7							

Sample Name		Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual Flags	% Recovery
WDF0656-01		UNK	06/28/23 01:15:29 pm	0.106	3432	7.77		N/A
Replicates	3601.8	3489.9	3369.9	3266.2				
WDF0659-01		UNK	06/28/23 01:18:01 pm	0.064	2686	12.57		N/A
Replicates	2846.2	2746.9	2630.6	2519.6				
WDF1049-01		UNK	06/28/23 01:20:32 pm	0.858	16688	9.59		N/A
Replicates	18186.3	17445.4	16251.5	14868.9				
DUP1		UNK	06/28/23 01:23:04 pm	0.633	12729	11.92		N/A
Replicates	14063.6	13457.3	12361.9	11034.9				
DUP2		UNK	06/28/23 01:25:36 pm	0.796	15596	5.59		N/A
Replicates	16390.7	16011.2	15387.4	14595.6				
MS1		UNK	06/28/23 01:28:08 pm	4.940	88613	3.12		N/A
Replicates	85122.1	88005.9	89899.7	91425.0				
MSD1		UNK	06/28/23 01:30:40 pm	5.350	95834	0.93		N/A
Replicates	96504.3	96447.4	95760.4	94623.1				
MSA		UNK	06/28/23 01:33:12 pm	5.170	92709	4.72		N/A
Replicates	97141.9	94949.6	91447.7	87298.7				
MSDA		UNK	06/28/23 01:35:45 pm	5.560	99581	0.71		N/A
Replicates	100553.5	99620.4	99111.0	99040.2				
WDF1080-01		UNK	06/28/23 01:38:16 pm	4.230	76236	0.40		N/A
Replicates	76157.0	76526.1	76406.2	75855.2				
BLANK		UNK	06/28/23 01:40:47 pm	-0.085	58	7.66		N/A
Replicates	191.9	98.9	18.4	-78.3				
LCS		UNK	06/28/23 01:43:18 pm	4.480	80582	0.44		N/A
Replicates	80480.4	80947.5	80753.9	80144.4				
BLK		UNK	06/28/23 02:09:40 pm	-0.083	91	1.55		N/A
Replicates	91.0	93.1	116.8	61.3				
CK		UNK	06/28/23 02:12:12 pm	2.130	39154	1.19		N/A
Replicates	39501.7	39463.0	39112.5	38539.2				
ICV		ICV	06/28/23 03:11:17 pm	3.940	70977	0.39		98.40
Replicates	70794.0	70768.6	70998.6	71348.6				
BLANK		MB	06/28/23 03:13:48 pm	-0.008	1412	145.07		N/A
Replicates	1676.4	1479.2	1310.6	1182.1				
LCS		LCS	06/28/23 03:16:19 pm	5.260	94376	5.49	L	131.57
Replicates	98920.0	97548.1	93473.9	87560.1				
WDF0639-01		UNK	06/28/23 03:18:50 pm	0.000	1562	420.57		N/A
Replicates	1983.1	1674.4	1427.4	1161.8				
WDF0809-01		UNK	06/28/23 03:21:22 pm	-0.043	793	2.80		N/A
Replicates	793.8	822.4	786.2	771.2				
WDF0809-02		UNK	06/28/23 03:23:53 pm	-0.031	1010	4.62		N/A
Replicates	1038.3	1014.8	1009.7	976.7				

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual Flags	% Recovery
MS1					UNK	06/28/23 03:26:25 pm	5.060	90809	5.41		N/A
	Replicates	95074.2	93844.1	89981.9	84336.4						
MSD1					UNK	06/28/23 03:28:57 pm	-0.087	32	2.17		N/A
	Replicates	68.0	39.5	-12.1	33.5						
MSA					UNK	06/28/23 03:31:29 pm	-0.099	-187	1.65		N/A
	Replicates	-215.6	-165.5	-158.5	-207.0						
MSDA					UNK	06/28/23 03:34:01 pm	4.980	89358	0.99		N/A
	Replicates	89865.7	90045.0	89401.8	88119.0						
WDF1311-01					UNK	06/28/23 03:36:33 pm	0.014	1801	139.96		N/A
	Replicates	2198.2	1931.1	1658.1	1417.1						
WDF1311-02					UNK	06/28/23 03:39:06 pm	-0.037	909	6.40		N/A
	Replicates	935.8	947.0	899.0	854.9						
WDF1311-03					UNK	06/28/23 03:41:37 pm	-0.045	759	1.38		N/A
	Replicates	749.6	758.8	774.5	752.8						
WDF1311-04					UNK	06/28/23 03:44:08 pm	-0.045	771	0.81		N/A
	Replicates	776.3	775.3	770.2	762.3						
WDF1311-05					UNK	06/28/23 03:46:39 pm	-0.051	668	0.35		N/A
	Replicates	665.1	669.2	665.7	671.7						
WDF1311-06					UNK	06/28/23 03:49:10 pm	-0.046	744	2.50		N/A
	Replicates	756.7	758.9	746.9	714.7						
MS2					UNK	06/28/23 03:51:42 pm	4.820	86576	0.81		N/A
	Replicates	86872.7	87149.6	86707.5	85574.3						
MSD2					UNK	06/28/23 03:54:13 pm	4.920	88307	1.08		N/A
	Replicates	88974.5	88983.2	88285.9	86983.5						
MSB					UNK	06/28/23 03:56:45 pm	5.790	103764	1.39		N/A
	Replicates	105093.7	104624.0	103435.7	101902.0						
MSDB					UNK	06/28/23 03:59:17 pm	5.830	104466	1.16		N/A
	Replicates	105237.5	105259.2	104631.2	102736.4						
WDF1311-07					UNK	06/28/23 04:01:49 pm	0.035	2179	52.46		N/A
	Replicates	2558.2	2306.6	2047.4	1805.3						
WDF1311-08					UNK	06/28/23 04:04:21 pm	-0.040	850	9.54		N/A
	Replicates	899.1	893.6	854.8	752.9						
WDF1311-09					UNK	06/28/23 04:06:54 pm	-0.041	829	6.15		N/A
	Replicates	878.7	845.9	820.5	772.2						
WDF1311-10					UNK	06/28/23 04:09:26 pm	-0.048	714	8.48		N/A
	Replicates	793.5	739.4	700.9	623.1						
WDF1311-11					UNK	06/28/23 04:11:57 pm	-0.055	584	2.46		N/A
	Replicates	616.0	578.8	581.0	558.2						
WDF1311-12					UNK	06/28/23 04:14:28 pm	-0.052	635	7.85		N/A
	Replicates	711.9	677.1	596.1	553.5						

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual Flags	% Recovery
BLANK					UNK	06/28/23 04:16:59 pm	-0.052	635	2.68		N/A
	Replicates	667.6	641.1	611.8	620.9						
LCS					UNK	06/28/23 04:19:31 pm	5.270	94589	3.35		N/A
	Replicates	97637.2	96362.4	93771.4	90585.1						
BLK					UNK	06/28/23 04:22:56 pm	-0.101	-218	0.52		N/A
	Replicates	-215.2	-212.3	-214.0	-232.3						
CK					UNK	06/28/23 04:25:28 pm	2.180	39951	1.07		N/A
	Replicates	40229.1	40245.5	39964.1	39363.5						

PREPARATION BENCH SHEET
Metals

BDG0204

Matrix: Water

Prepared using: Metals - W 3010 Digest

Lab Number	Prepared - By	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	Comments
BDG0204-BLK1	07/10/23 08:48 - JLG	50	50				
BDG0204-BS1	07/10/23 08:48 - JLG	50	50	2301403		250	
BDG0204-MS1	07/10/23 08:48 - JLG	50	50	2301403	WDF1311-06	250	
BDG0204-MS2	07/10/23 08:48 - JLG	50	50	2301403	WDF1311-12	250	
BDG0204-MSD1	07/10/23 08:48 - JLG	50	50	2301403	WDF1311-06	250	
BDG0204-MSD2	07/10/23 08:48 - JLG	50	50	2301403	WDF1311-12	250	
WDF1311-01 Analytes: Arsenic	07/10/23 08:48 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-02 Analytes: Arsenic	07/10/23 08:48 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-03 Analytes: Arsenic	07/10/23 08:48 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-04 Analytes: Arsenic	07/10/23 08:48 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-05 Analytes: Arsenic	07/10/23 08:48 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-06 Analytes: Arsenic	07/10/23 08:48 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-07 Analytes: Arsenic	07/10/23 08:48 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-08 Analytes: Arsenic	07/10/23 08:48 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-09 Analytes: Arsenic	07/10/23 08:48 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-10 Analytes: Arsenic	07/10/23 08:48 - JLG	50	50	Client: Cardno - Hawaii			

Batch Prepared By _____ Date _____ Analytical Run Date _____

PREPARATION BENCH SHEET
Metals

BDG0204

(Continued)

Matrix: Water **Prepared using: Metals - W 3010 Digest**

Lab Number	Prepared - By	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	Comments
WDF1311-11 Analytes: Arsenic	07/10/23 08:48 - JLG	50	50	Client: Cardno - Hawaii			
WDF1311-12 Analytes: Arsenic	07/10/23 08:48 - JLG	50	50	Client: Cardno - Hawaii			

Support Equipment: W PT-04 W PT-33 W PT-21, W PT-27, BLK1B

Reagent ID	Description	LotNum
2003793	Metals UHP Helium	314SPO0620A
2300508	P. Metals Digestion Vials U	052722
2301386	P. 1:1 HCl-metals	59072
2301734	Nitric Acid	62327
2301966	C. 10 ppb Tune Solution	-
2302117	C. Internal Standard Mix	-

Batch Prepared By _____ Date _____ Analytical Run Date _____

C:\Promium\Element\Print\bch_Metals_ls.rpt

US EPA Tune Check Report

Operator Name	Metals
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX.b
Acq. Date-Time	2023-07-13 11:29:18
Report Comment	---
Instrument Name	7800 JP17450949

[No Gas]

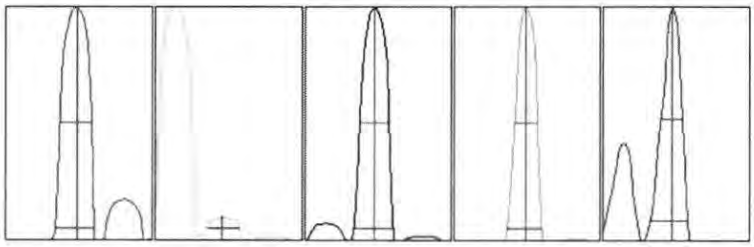
Sensitivity

Mass	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
9	1512	15116.62	0.751	5.000	
24	5305	53051.89	0.583	5.000	
59	6237	62366.56	0.436	5.000	
115	6811	68108.52	0.511	5.000	
208	3713	37133.65	1.327	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	1521	1505	1497	1525	1511
24	5345	5320	5303	5297	5261
59	6266	6200	6261	6232	6225
115	6870	6780	6798	6797	6810
208	3750	3694	3768	3643	3712

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)	W-5%	W-5% (Required)	W-5% (Flag)
9	2385.25	9.00	8.90 - 9.10		0.790	0.900	
24	8072.74	23.90	23.90 - 24.10			0.900	
59	10754.16	58.95	58.90 - 59.10		0.802	0.900	
115	14381.68	115.00	114.90 - 115.10		0.718	0.900	
208	8189.14	207.95	207.90 - 208.10		0.765	0.900	

Integration Time [sec] = 0.1 Acquisition Time [sec] = 168.5 Y Axis = Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.36 L/min	Dilution Gas	0.62 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.26 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

US EPA Tune Check Report

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.3 V	Deflect	12.2 V
Extract 2	-190.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-85 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	---	OctP RF	200 V		

QP Parameters

Mass Gain	158	Axis Gain	1.0025	QP Bias	-3.0 V
Mass Offset	123	Axis Offset	0.03		

Hardware Settings

Torch

Torch H	0.5 mm	Torch V	-0.3 mm		

EM

Discriminator	4.0 mV	Analog HV	2246 V	Pulse HV	1681 V

Sample Report

Sample Name	BDG0204-BLK1
File Name	014_Blk.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 15:12:42
Sample Type	Blank
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
75	As	0.080	He	0.08	72	3.1	0.06	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	1542656.96	1.5	91.0	1694387.96
Ge	72	He	879374.86	3.3	95.4	922087.36
Ge	72	HEHe	476254.84	2.3	95.1	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

Sample Report

Sample Name	BDG0204-BS1
File Name	016_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 15:17:22
Sample Type	LCS
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**JLG**

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
75	As	51.107	He	51.107	72	1.6	50	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	1603421.75	6.9	94.6	1694387.96
Ge	72	He	877406.60	3.8	95.2	922087.36
Ge	72	HEHe	483143.75	1.3	96.5	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

Sample Report

Sample Name	BDG0204-MRL1
File Name	015LICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 15:15:01
Sample Type	LLICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**JLG**

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
75	As	0.856	He	0.856	72	5.3	1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	1600523.13	2.1	94.5	1694387.96
Ge	72	He	1075690.83	21.9	116.7	922087.36
Ge	72	HEHe	474282.53	0.5	94.7	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

Sample Report

Sample Name	WDF1311-01
File Name	035SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 16:01:29
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**JLG**

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
75	As	0.632	He	0.632	72	2.0	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	1741992.79	1.8	102.8	1694387.96
Ge	72	He	1104005.02	2.5	119.7	922087.36
Ge	72	HEHe	594802.04	1.2	118.7	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

Sample Report

Sample Name	WDF1311-02
File Name	036SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 16:03:48
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
75	As	0.266	He	0.266	72	4.9	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	1784074.12	3.3	105.3	1694387.96
Ge	72	He	1122511.21	3.4	121.7	922087.36
Ge	72	HEHe	615479.63	0.8	122.9	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

Sample Report

Sample Name	BDG0204-MSD1
File Name	022LFMD.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 15:31:19
Sample Type	LFMDup
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Fail
Operator	**JLG**

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
75	As	49.364	He	49.364	72	4.2	20	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	1322888.50	3.9	78.1	1694387.96
Ge	72	He	605597.58	26.8	65.7	922087.36
Ge	72	HEHe	239847.45	3.0	47.9	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

Sample Report

Sample Name	BDG0204-MS1
File Name	021_LFM.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 15:28:58
Sample Type	LFM
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	1329844.21	1.8	78.5	1694387.96
Ge	72	He	652048.67	5.2	70.7	922087.36
Ge	72	HEHe	362138.91	2.8	72.3	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

Sample Report

Sample Name	WDF1311-04
File Name	018SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 15:22:00
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
75	As	1.391	He	1.391	72	2.9	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	1584342.58	0.1	93.5	1694387.96
Ge	72	He	917075.24	3.5	99.5	922087.36
Ge	72	HEHe	494989.04	1.7	98.8	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

Sample Report

Sample Name	WDF1311-03
File Name	017SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 15:19:42
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
75	As	24.079	He	24.079	72	0.4	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	1447424.83	2.6	85.4	1694387.96
Ge	72	He	756771.71	2.1	82.1	922087.36
Ge	72	HEHe	405967.80	2.0	81.0	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

Sample Report

Sample Name	WDF1311-06
File Name	020SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 15:26:39
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Fail
Operator	JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
75	As	1.177	He	1.177	72	5.7	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	1262030.21	2.6	74.5	1694387.96
Ge	72	He	597110.53	5.0	64.8	922087.36
Ge	72	HEHe	334785.82	2.0	66.8	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

Sample Report

Sample Name	WDF1311-05
File Name	019SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 15:24:21
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
75	As	1.325	He	1.325	72	2.1	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	1604238.54	4.0	94.7	1694387.96
Ge	72	He	1137849.99	18.6	123.4	922087.36
Ge	72	HEHe	436369.66	4.1	87.1	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

Sample Report

Sample Name	WDF1311-08
File Name	024SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 15:35:55
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Fail
Operator	**JLG**

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
75	As	0.416	He	0.416	72	1.7	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	2121232.50	0.5	125.2	1694387.96
Ge	72	He	957188.29	5.1	103.8	922087.36
Ge	72	HEHe	501273.96	2.8	100.1	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

Sample Report

Sample Name	WDF1311-07
File Name	023SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 15:33:37
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Fail
Operator	JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
75	As	1.296	He	1.296	72	2.8	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	2135285.17	1.0	126.0	1694387.96
Ge	72	He	953426.66	4.1	103.4	922087.36
Ge	72	HEHe	503381.82	2.3	100.5	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

Sample Report

Sample Name	WDF1311-10
File Name	026SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 15:40:37
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**JLG**

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
75	As	1.160	He	1.16	72	2.5	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	1354146.46	3.2	79.9	1694387.96
Ge	72	He	648285.39	5.4	70.3	922087.36
Ge	72	HEHe	375717.73	0.7	75.0	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

Sample Report

Sample Name	WDF1311-09
File Name	025SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 15:38:19
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**JLG**

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
75	As	1.942	He	1.942	72	1.3	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	2037691.96	2.4	120.3	1694387.96
Ge	72	He	935540.59	3.1	101.5	922087.36
Ge	72	HEHe	507514.91	2.1	101.3	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

Sample Report

Sample Name	WDF1311-11
File Name	040SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 16:14:51
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**JLG**

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
75	As	0.233	He	0.233	72	3.2	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	1785063.09	1.6	105.4	1694387.96
Ge	72	He	1079323.08	5.1	117.1	922087.36
Ge	72	HEHe	597102.32	0.6	119.2	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

Sample Report

Sample Name	WDF1311-12
File Name	039_ARF.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\07132023 HIGH MATRIX REDO.b
Acq Time	2023-07-13 16:12:32
Sample Type	AllRef
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
75	As	0.411	He	0.411	72	1.4	1000	

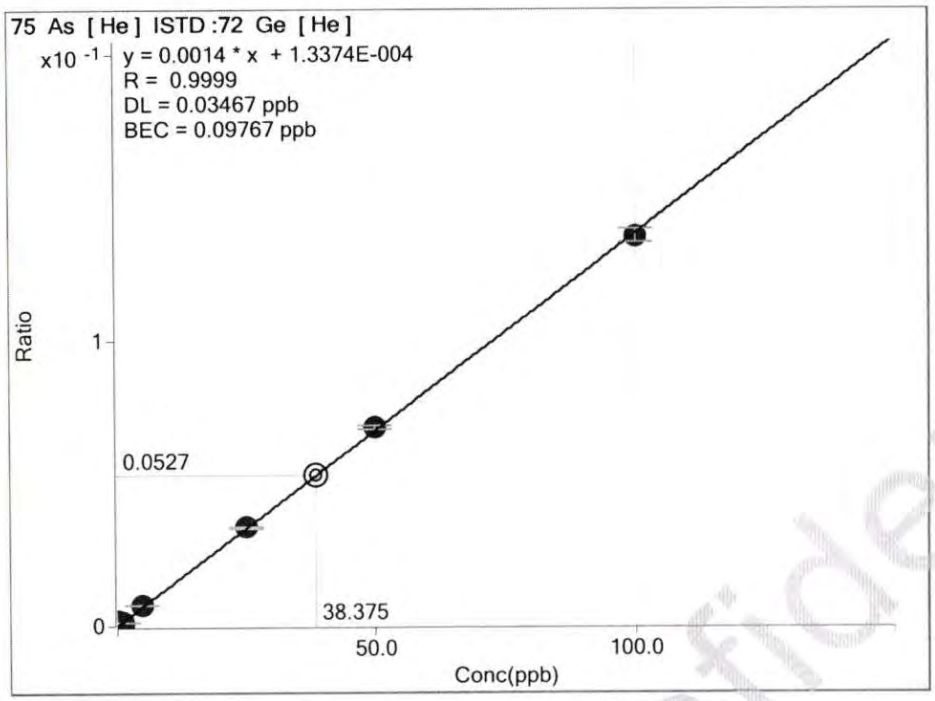
QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas				0
Sc	45	No Gas				0
Sc	45	He				0
Ge	72	No Gas	1746989.71	1.6	103.1	1694387.96
Ge	72	He	1059057.91	6.1	114.9	922087.36
Ge	72	HEHe	581102.01	0.7	116.0	500888.906666667
Rh	103	No Gas				0
Rh	103	He				0
Ho	165	No Gas				0
Ho	165	He				0

	Sample									
		Rjct	Data File	Acq. Date-Time	Type	Level	Sample Name	Comment	Total Dil.	Vial Number
1			001CALB.	2023-07-13 14:42:37	CalBlk	1	Blank		1.0000	1101
2			002CALB.	2023-07-13 14:44:55	CalBlk	1	Blank		1.0000	1101
3			003CALB.	2023-07-13 14:47:12	CalBlk	1	Blank		1.0000	1101
4			004CALS.	2023-07-13 14:49:33	CalStd	2	1 ppb cal		1.0000	1103
5			005CALS.	2023-07-13 14:51:50	CalStd	3	5 ppb cal		1.0000	1104
6			006CALS.	2023-07-13 14:54:08	CalStd	4	25 ppb cal		1.0000	1105
7			007CALS.	2023-07-13 14:56:29	CalStd	5	50 ppb cal		1.0000	1106
8			008CALS.	2023-07-13 14:58:47	CalStd	6	100 ppb cal		1.0000	1107
9			009_RIN.d	2023-07-13 15:01:04	RINSE		Rinse		1.0000	4
10			010_ICV.d	2023-07-13 15:03:24	ICV		ICV- 40ppb		1.0000	2101
11			011_LDR.d	2023-07-13 15:05:43	LDR		Daily LDR- 500pp		1.0000	2102
12			012_RIN.d	2023-07-13 15:08:00	RINSE		Rinse		1.0000	4
13			013_RIN.d	2023-07-13 15:10:21	RINSE		Rinse		1.0000	4
14			014_Blk.d	2023-07-13 15:12:42	Blank		BDG0204-BLK1		1.0000	3101
15			015LICV.d	2023-07-13 15:15:01	LLICV		BDG0204-MRL1		1.0000	3102
16			016_LCS.d	2023-07-13 15:17:22	LCS		BDG0204-BS1		1.0000	3103
17			017SMPL.	2023-07-13 15:19:42	Sample		WDF1311-03		1.0000	3106
18			018SMPL.	2023-07-13 15:22:00	Sample		WDF1311-04		1.0000	3107
19			019SMPL.	2023-07-13 15:24:21	Sample		WDF1311-05		1.0000	3108
20			020SMPL.	2023-07-13 15:26:39	Sample		WDF1311-06		1.0000	3109
21			021_LFM.d	2023-07-13 15:28:58	LFM		BDG0204-MS1		1.0000	3110
22			022LFMD.	2023-07-13 15:31:19	LFMDup		BDG0204-MSD1		1.0000	3111
23			023SMPL.	2023-07-13 15:33:37	Sample		WDF1311-07		1.0000	3112
24			024SMPL.	2023-07-13 15:35:55	Sample		WDF1311-08		1.0000	3201
25			025SMPL.	2023-07-13 15:38:19	Sample		WDF1311-09		1.0000	3202

	Sample									
		Rjct	Data File	Acq. Date-Time	Type	Level	Sample Name	Comment	Total Dil.	Vial Number
26		☐	026SMPL.	2023-07-13 15:40:37	Sample		WDF1311-10		1.0000	3203
27		☑	027SMPL.	2023-07-13 15:42:56	Sample		WDF1311-11		1.0000	3204
28		☑	028_ARF.d	2023-07-13 15:45:17	AllRef		WDF1311-12		1.0000	3205
29		☐	029_LFM.d	2023-07-13 15:47:35	LFM		BDG0204-MS2		1.0000	3206
30		☐	030LFMD.	2023-07-13 15:49:54	LFMDup		BDG0204-MSD2		1.0000	3207
31		☐	031_RIN.d	2023-07-13 15:52:14	RINSE		Rinse		1.0000	4
32		☐	032_CCV.	2023-07-13 15:54:32	CCV		CCV		1.0000	1106
33		☐	033_CCB.	2023-07-13 15:56:50	CCB		CCB		1.0000	1101
34		☐	034_RIN.d	2023-07-13 15:59:11	RINSE		Rinse		1.0000	5
35		☐	035SMPL.	2023-07-13 16:01:29	Sample		WDF1311-01		1.0000	3104
36		☐	036SMPL.	2023-07-13 16:03:48	Sample		WDF1311-02		1.0000	3105
37		☐	037_Blk.d	2023-07-13 16:06:08	Blank		BDG0204-BLK1		1.0000	3208
38		☐	038_LCS.d	2023-07-13 16:08:27	LCS		BDG0204-BS1		1.0000	3209
39		☐	039_ARF.d	2023-07-13 16:12:32	AllRef		WDF1311-12		1.0000	3205
40		☐	040SMPL.	2023-07-13 16:14:51	Sample		WDF1311-11		1.0000	3204
41		☑	041SMPL.	2023-07-13 16:22:32	Sample		WDF1311-06		1.0000	3109
42		☑	042SMPL.	2023-07-13 16:24:50	Sample		WDF1311-10		1.0000	3203
43		☑	043_LFM.d	2023-07-13 16:29:40	LFM		BDG0204-MS2		1.0000	3206
44		☐	044_LFM.d	2023-07-13 16:32:05	LFM		BDG0204-MS2		1.0000	3206
45		☐	045_RIN.d	2023-07-13 16:34:23	RINSE		Rinse		1.0000	4
46		☐	046_CCV.	2023-07-13 16:37:43	CCV		CCV		1.0000	1106
47		☐	047_CCB.	2023-07-13 16:40:58	CCB		CCB		1.0000	1101
48		☐	048_RIN.d	2023-07-13 16:44:19	RINSE		Rinse		1.0000	5
49		☐	049_RIN.d	2023-07-13 16:47:37	RINSE		Rinse		1.0000	4
50		☐	050_CCV.	2023-07-13 16:50:58	CCV		CCV		1.0000	1106

	Sample									
		Rjct	Data File	Acq. Date-Time	Type	Level	Sample Name	Comment	Total Dil.	Vial Number
51			051_CCB.	2023-07-13 16:54:13	CCB		CCB		1.0000	1101
52			052_RIN.d	2023-07-13 16:57:31	RINSE		Rinse		1.0000	5
53			053_RIN.d	2023-07-13 17:00:50	RINSE		Rinse		1.0000	5
54			054_RIN.d	2023-07-13 17:04:10	RINSE		Rinse		1.0000	5



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062623\SIG10006.D Vial: 6
Acq On : 26 Jun 2023 16:39 Operator: BAN
Sample : BDF0681-BLK1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 28 12:26:57 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : Z:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	Internal Standards					
1) I	Pentacosane	24.75	81725735	50.000	ppm	m
	System Monitoring Compounds					
2) S	Hexacosane	25.48	83462635	45.457	ppm	m
Spiked Amount	50.000	Range 50 - 150	Recovery =	90.91%		
	Target Compounds					
3) H	TPH Diesel (C12-C14)	0.00	0	N.D.	ppm	
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm	
5) H	Mineral Oil	0.00	0	N.D.	ppm	
6) h	HCID Gas (C7-C12)	0.00	0	N.D.	ppm	
7) h	HCID Diesel (C12-C14)	0.00	0	N.D.	ppm	
8) h	HCID Oil (>C14)	0.00	0	N.D.	ppm	

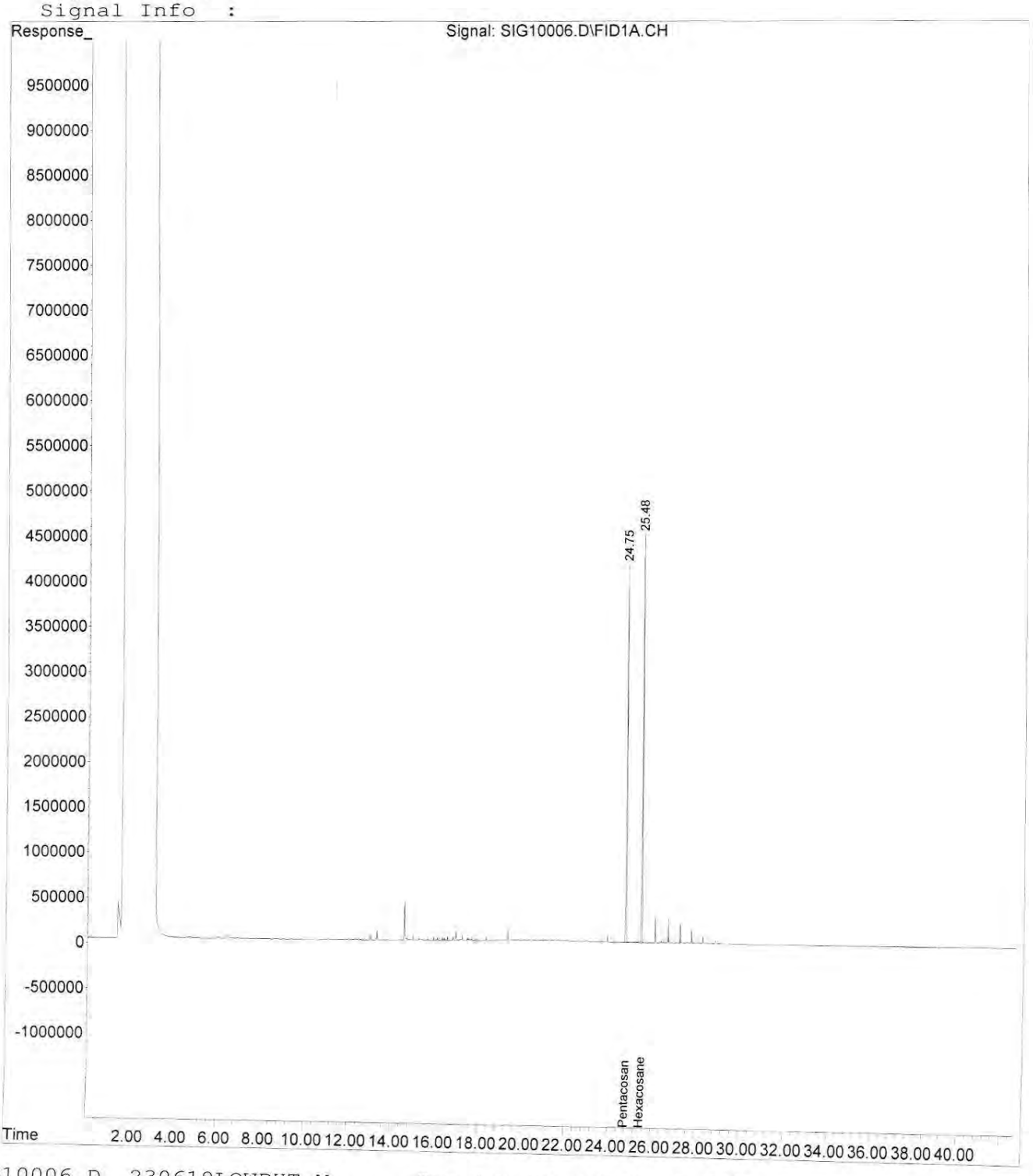
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062623\SIG10006.D Vial: 6
Acq On : 26 Jun 2023 16:39 Operator: BAN
Sample : BDF0681-BLK1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 28 12:29 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : Z:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (Not Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062623\SIG10007.D Vial: 7
Acq On : 26 Jun 2023 17:34 Operator: BAN
Sample : BDF0681-BS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 28 12:26:59 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : Z:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units
Internal Standards			
1) I Pentacosane	24.75	84411682	50.000 ppm
System Monitoring Compounds			
2) S Hexacosane	25.49	150187658	79.195 ppm
Spiked Amount 50.000	Range 50 - 150	Recovery =	158.39%#
Target Compounds			
3) H TPH Diesel (C12-C14)	21.97	2689348610	1617.037 ppm
4) H TPHDX-Lube Oil (>C14)	26.20	228219123	254.367 ppm
5) H Mineral Oil	21.94	1952019427	1124.725 ppm
6) h HCID Gas (C7-C12)	5.05	379691058	453.106 ppm
7) h HCID Diesel (C12-C14)	21.97	1817880164	1134.167 ppm
8) h HCID Oil (>C14)	26.20	52498302	50.868 ppm

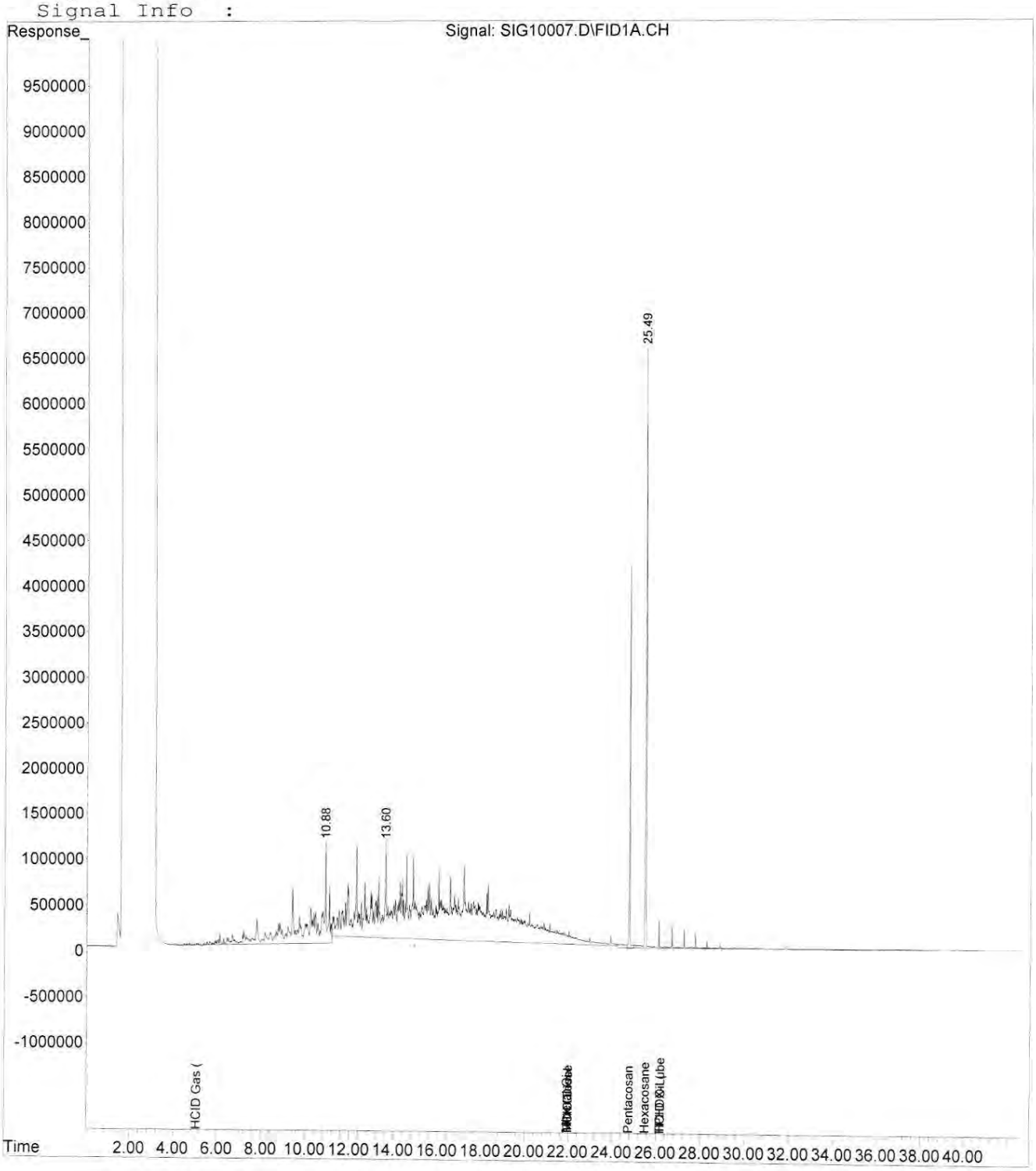
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062623\SIG10007.D Vial: 7
Acq On : 26 Jun 2023 17:34 Operator: BAN
Sample : BDF0681-BS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 28 12:29 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : Z:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062623\SIG10008.D Vial: 8
Acq On : 26 Jun 2023 18:29 Operator: BAN
Sample : BDF0681-BSD1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 28 12:27:01 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : Z:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc	Units	
Internal Standards					
1) I Pentacosane	24.75	92034043	50.000	ppm	m
System Monitoring Compounds					
2) S Hexacosane	25.50	174338565	84.316	ppm	m
Spiked Amount 50.000	Range 50 - 150	Recovery =	168.63%#		
Target Compounds					
3) H TPH Diesel (C12-C14)	26.20	824123859	454.485	ppm	
4) H TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm	
5) H Mineral Oil	0.00	0	N.D.	ppm	
6) h HCID Gas (C7-C12)	0.00	0	N.D.	ppm	
7) h HCID Diesel (C12-C14)	0.00	0	N.D.	ppm	
8) h HCID Oil (>C14)	0.00	0	N.D.	ppm	

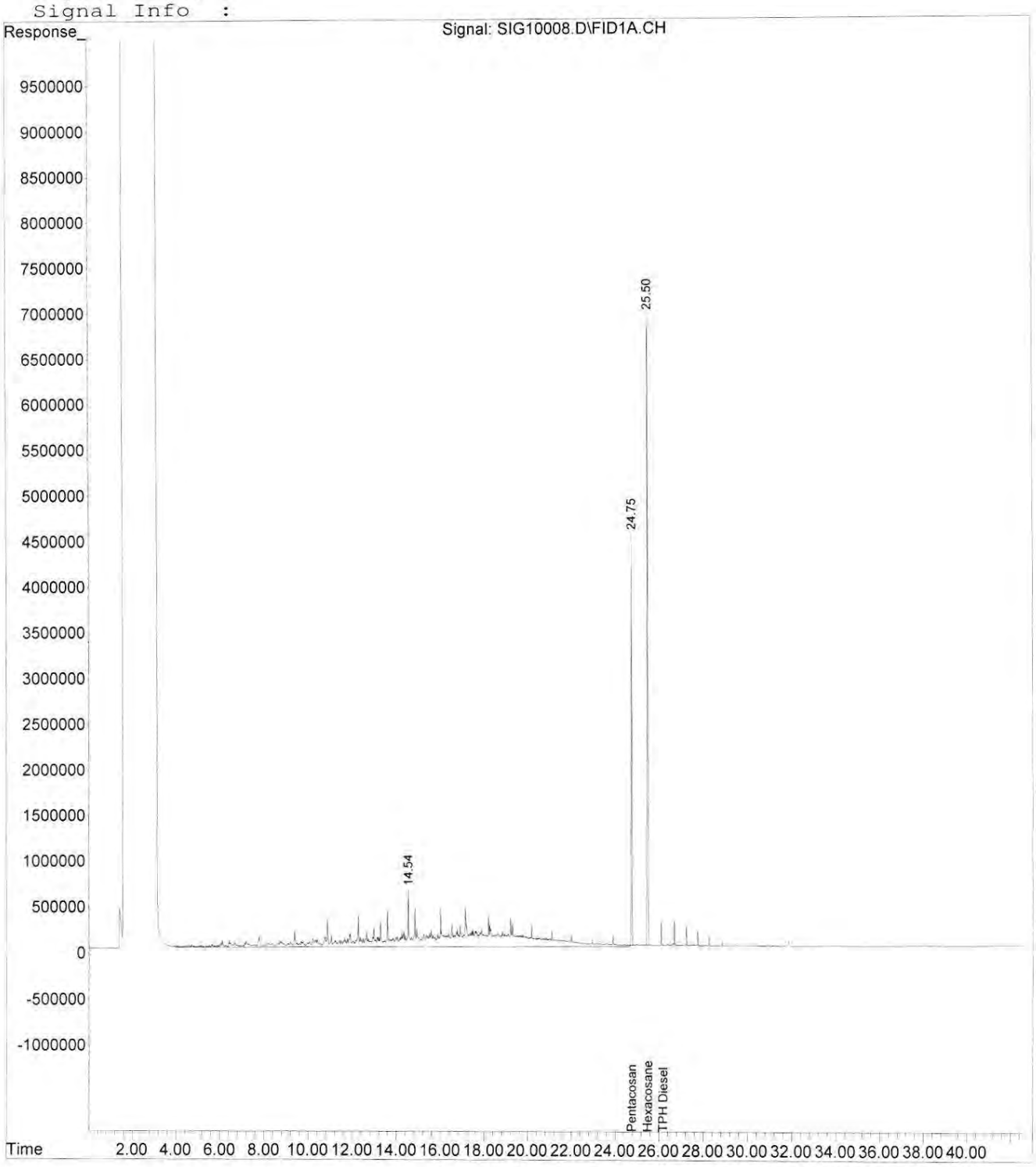
(f)=RT Delta > 1/2 Window (m)=manual int.
SIG10008.D 230619LOWDHT.M Tue Aug 08 12:20:19 2023

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062623\SIG10008.D Vial: 8
Acq On : 26 Jun 2023 18:29 Operator: BAN
Sample : BDF0681-BSD1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 28 12:32 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : Z:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062623\SIG10009.D Vial: 16
Acq On : 26 Jun 2023 19:24 Operator: BAN
Sample : BDF0681-MS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 28 12:27:02 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : Z:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	Internal Standards					
1) I	Pentacosane	24.75	77156446	50.000	ppm	m
	System Monitoring Compounds					
2) S	Hexacosane	25.47	73146232	42.198	ppm	m
Spiked Amount	50.000	Range 50 - 150	Recovery =	84.40%		
	Target Compounds					
3) H	TPH Diesel (C12-C14)	21.97	552349252	363.343	ppm	
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm	
5) H	Mineral Oil	0.00	0	N.D.	ppm	
6) h	HCID Gas (C7-C12)	0.00	0	N.D.	ppm	
7) h	HCID Diesel (C12-C14)	0.00	0	N.D.	ppm	
8) h	HCID Oil (>C14)	0.00	0	N.D.	ppm	

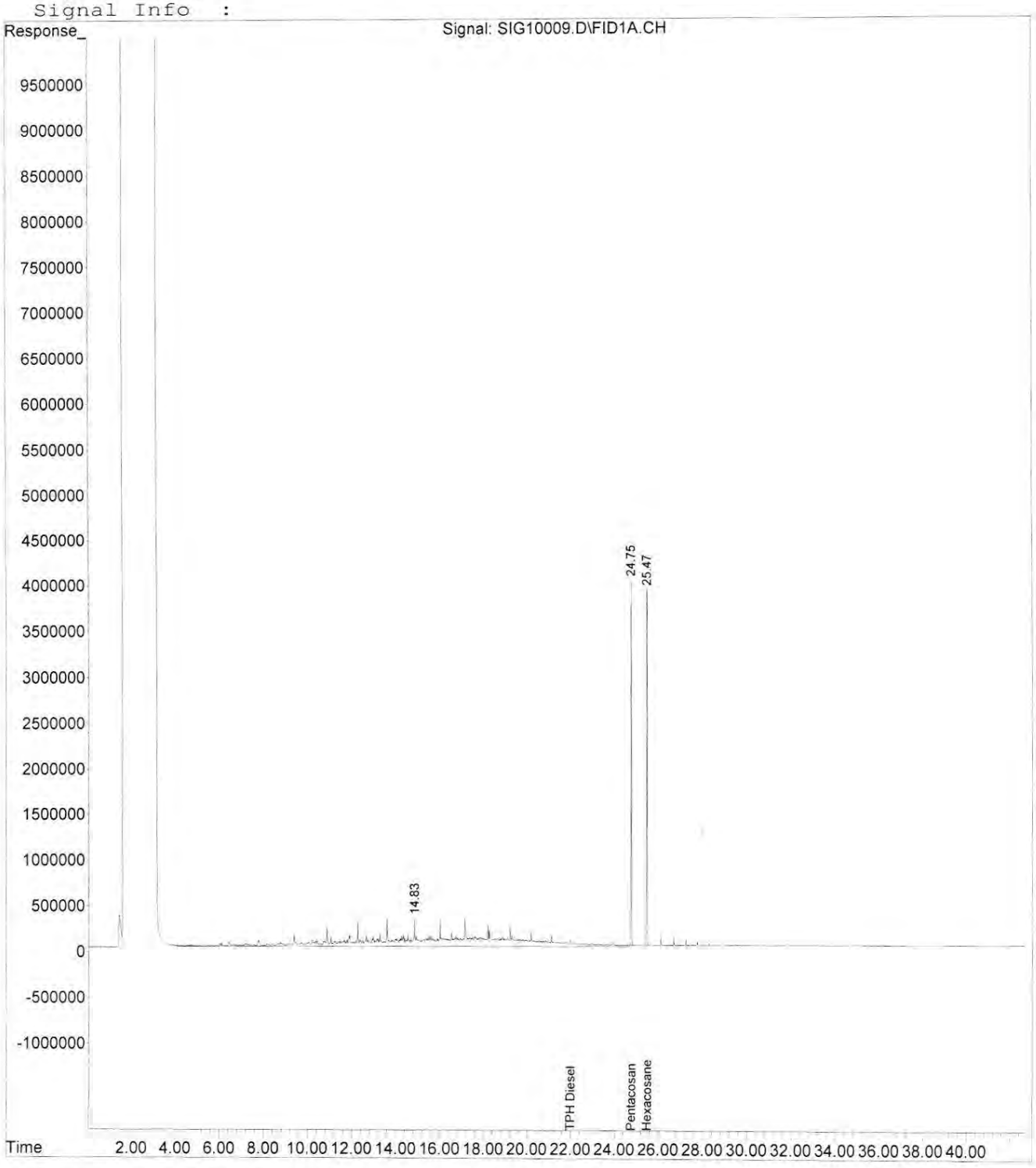
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062623\SIG10009.D Vial: 16
Acq On : 26 Jun 2023 19:24 Operator: BAN
Sample : BDF0681-MS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 28 12:33 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : Z:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062623\SIG10010.D Vial: 17
Acq On : 26 Jun 2023 20:19 Operator: BAN
Sample : BDF0681-MSD1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 28 12:27:04 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : Z:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

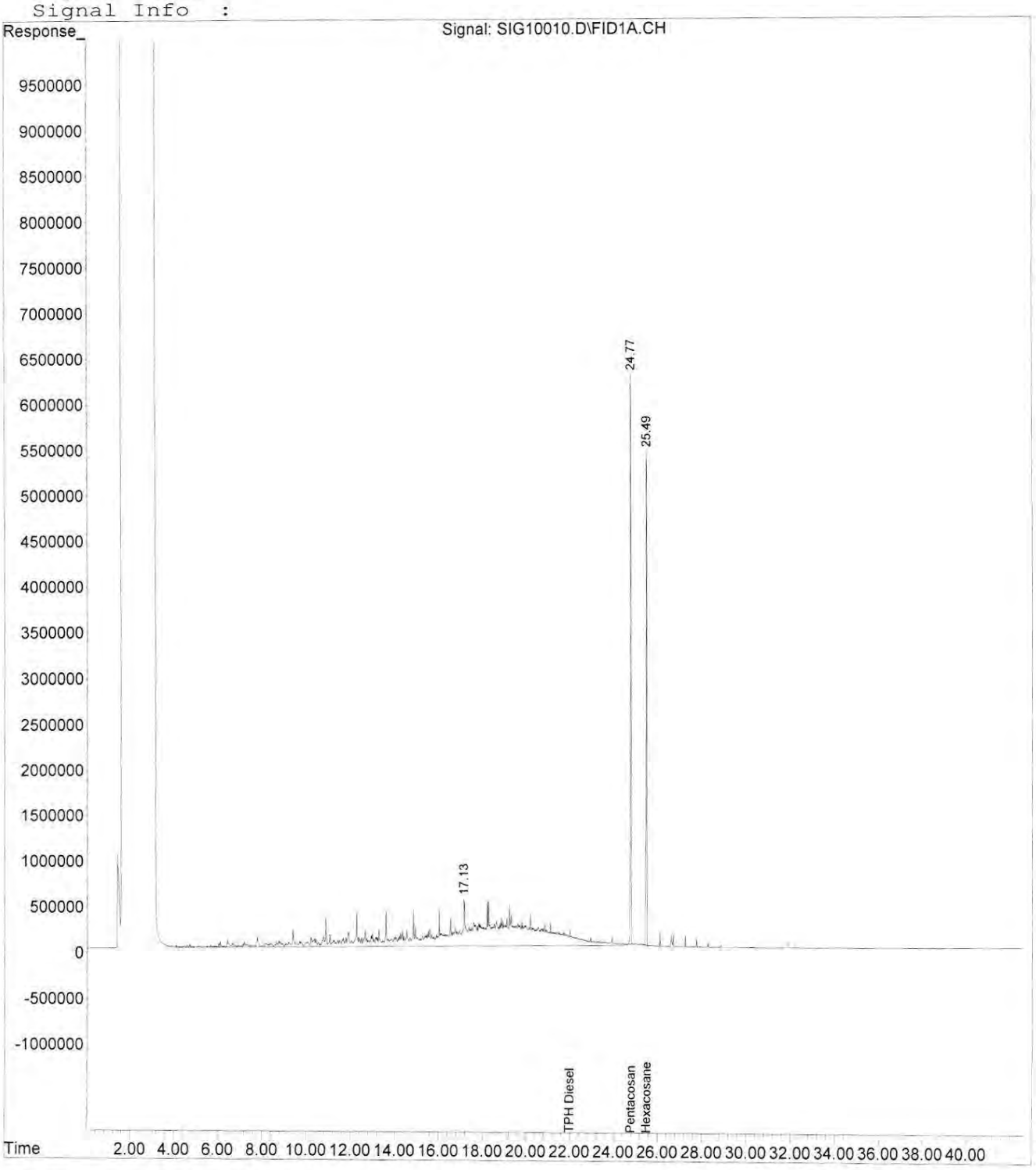
Compound	R.T.	Response	Conc	Units	
Internal Standards					
1) I Pentacosane	24.77	134432598	50.000	ppm	m
System Monitoring Compounds					
2) S Hexacosane	25.49	115506551	38.245	ppm	m
Spiked Amount 50.000	Range 50 - 150	Recovery =	76.49%		
Target Compounds					
3) H TPH Diesel (C12-C14)	21.97	1067303741	402.957	ppm	
4) H TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm	
5) H Mineral Oil	0.00	0	N.D.	ppm	
6) h HCID Gas (C7-C12)	0.00	0	N.D.	ppm	
7) h HCID Diesel (C12-C14)	0.00	0	N.D.	ppm	
8) h HCID Oil (>C14)	0.00	0	N.D.	ppm	

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

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062623\SIG10010.D Vial: 17
Acq On : 26 Jun 2023 20:19 Operator: BAN
Sample : BDF0681-MSD1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 28 12:34 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : Z:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062623\SIG10012.D Vial: 10
Acq On : 26 Jun 2023 22:09 Operator: BAN
Sample : WDF1311-01 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 28 12:24:56 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : Z:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

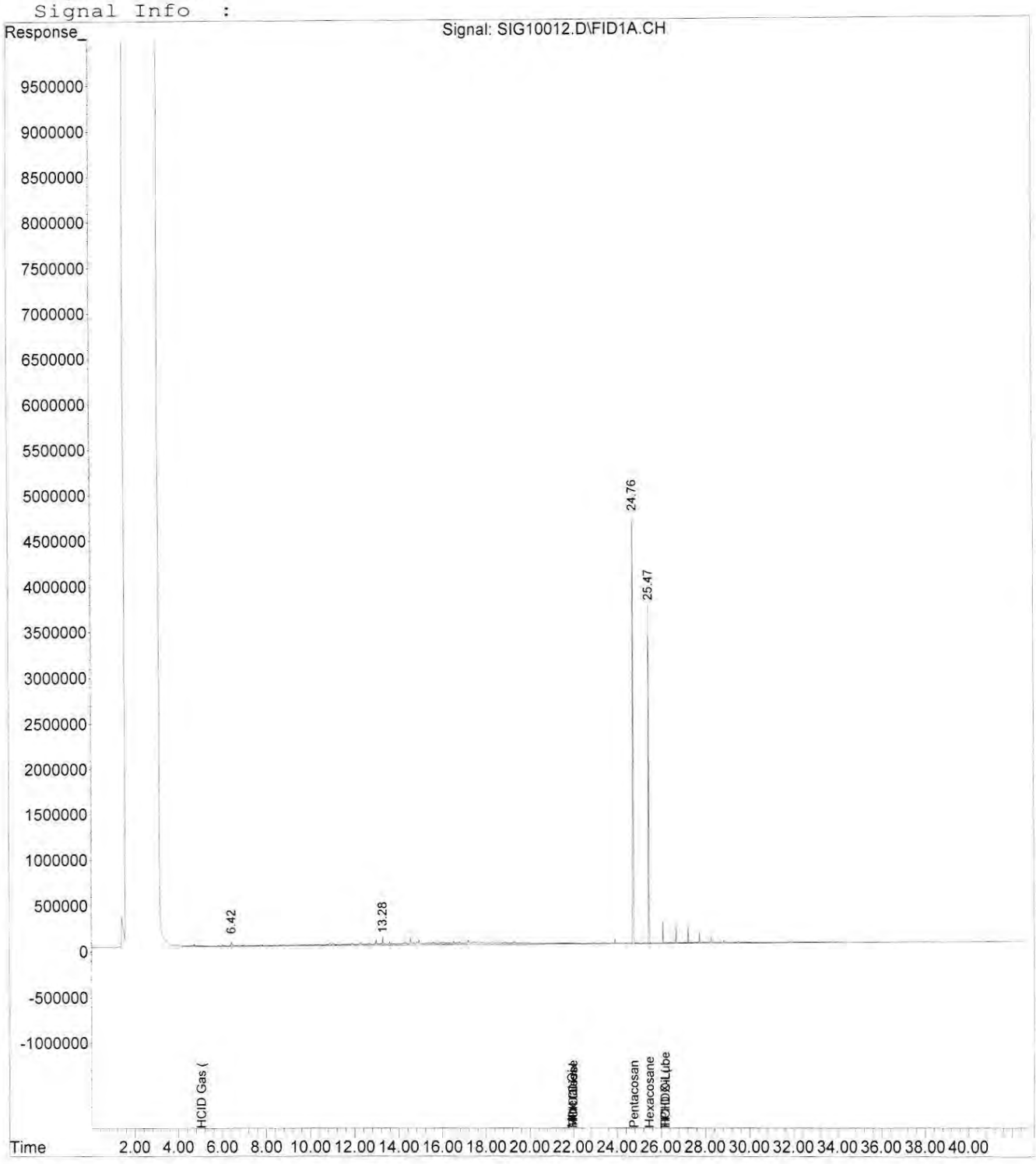
	Compound	R.T.	Response	Conc Units
	Internal Standards			
1)	I Pentacosane	24.76	102309015	50.000 ppm m
	System Monitoring Compounds			
2)	S Hexacosane	25.47	64095611	27.886 ppm m
Spiked Amount	50.000	Range 50 - 150	Recovery =	55.77%
	Target Compounds			
3)	H TPH Diesel (C12-C14)	21.97	121207362	60.130 ppm
4)	H TPHDX-Lube Oil (>C14)	26.20	41831480	38.468 ppm
5)	H Mineral Oil	21.94	100669912	47.858 ppm
6)	h HCID Gas (C7-C12)	5.05	23657850	23.293 ppm
7)	h HCID Diesel (C12-C14)	21.97	94340826	48.562 ppm
8)	h HCID Oil (>C14)	26.20	36924096	29.519 ppm

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

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062623\SIG10012.D Vial: 10
Acq On : 26 Jun 2023 22:09 Operator: BAN
Sample : WDF1311-01 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 28 12:27 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : Z:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062623\SIG10017.D Vial: 15
Acq On : 27 Jun 2023 2:47 Operator: BAN
Sample : WDF1311-05 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Aug 08 12:29:21 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : M:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units
Internal Standards			
1) I Pentacosane	24.76	112891408	50.000 ppm
System Monitoring Compounds			
2) S Hexacosane	25.48	100245482	39.525 ppm
Spiked Amount 50.000	Range 50 - 150	Recovery =	79.05%
Target Compounds			
3) H TPH Diesel (C12-C14)	0.00	0	N.D. ppm
4) H TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H Mineral Oil	0.00	0	N.D. ppm
6) h HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h HCID Diesel (C12-C14)	0.00	0	N.D. ppm
8) h HCID Oil (>C14)	0.00	0	N.D. ppm

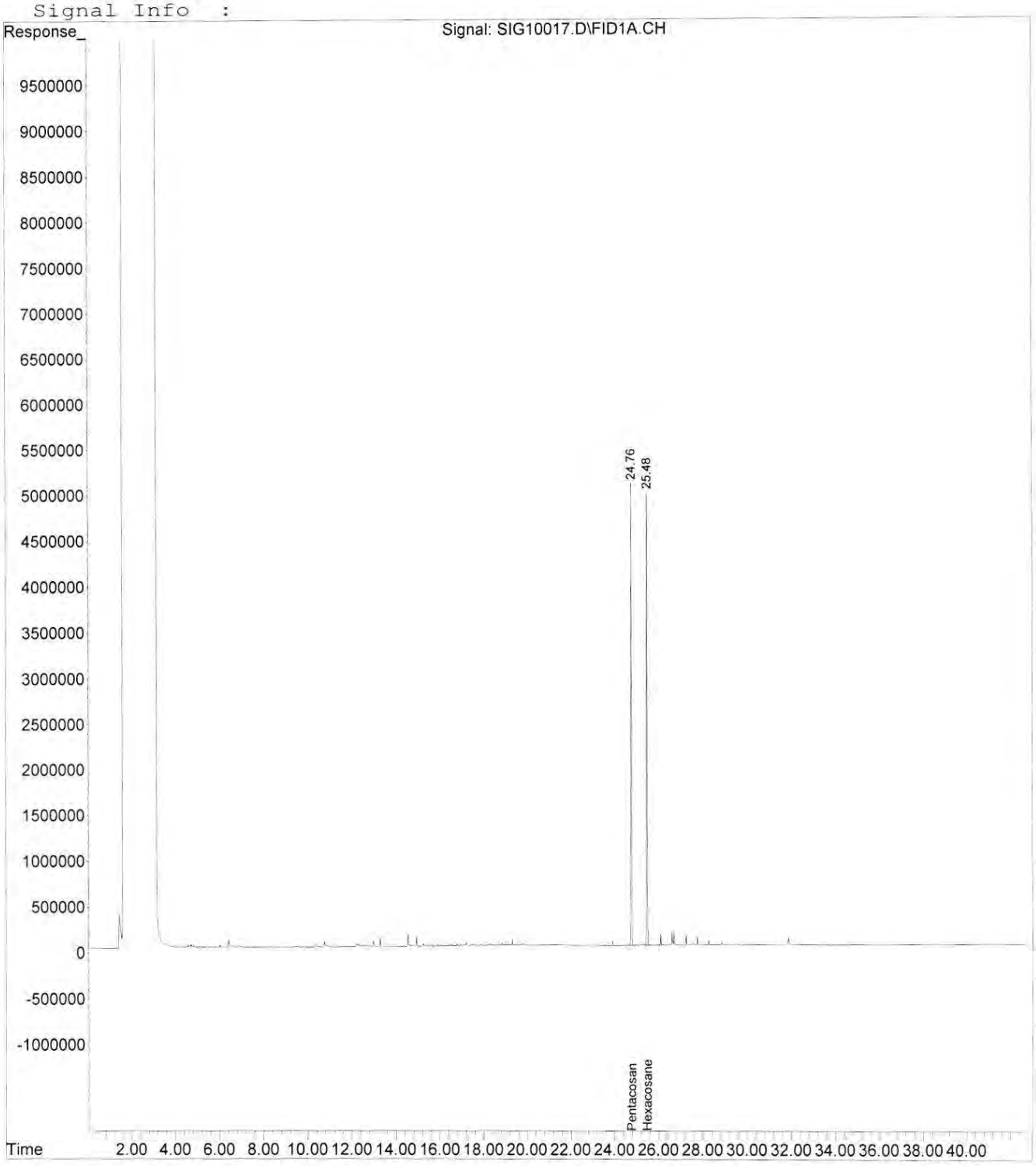
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062623\SIG10017.D Vial: 15
Acq On : 27 Jun 2023 2:47 Operator: BAN
Sample : WDF1311-05 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Aug 8 12:29 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : M:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10003.D Vial: 1
Acq On : 28 Jun 2023 2:20 pm Operator: BAN
Sample : Blank Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Aug 08 12:17:46 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : M:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Pentacosane	24.74	95251943	50.000	ppm
	System Monitoring Compounds				
2) S	Hexacosane	25.47	100542918	46.983	ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	93.97%	
	Target Compounds				
3) H	TPH Diesel (C12-C14)	0.00	0	N.D.	ppm
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm
5) H	Mineral Oil	0.00	0	N.D.	ppm
6) h	HCID Gas (C7-C12)	0.00	0	N.D.	ppm
7) h	HCID Diesel (C12-C14)	0.00	0	N.D.	ppm
8) h	HCID Oil (>C14)	0.00	0	N.D.	ppm

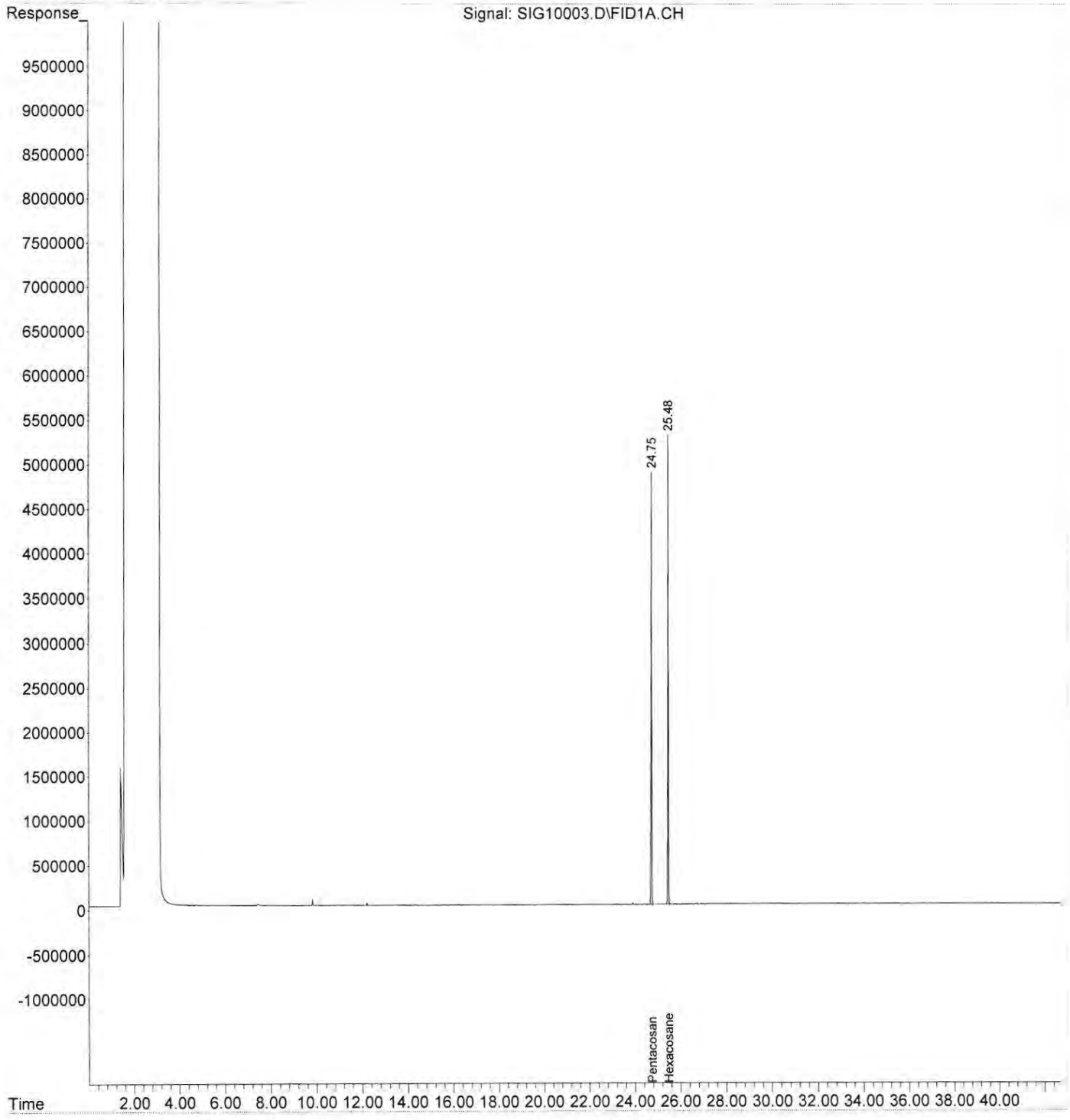
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10003.D Vial: 1
Acq On : 28 Jun 2023 2:20 pm Operator: BAN
Sample : Blank Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Aug 8 12:17 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : M:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (Not Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10006.D Vial: 4
Acq On : 28 Jun 2023 5:05 pm Operator: BAN
Sample : 1000 ppm To Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 29 08:00:07 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : Z:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Internal Standards			
1) I	Pentacosane	24.75	102413738	50.000 ppm
	System Monitoring Compounds			
2) S	Hexacosane	25.48	113610905	49.377 ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	98.75%
	Target Compounds			
3) H	TPH Diesel (C12-C14)	21.97	1953442149	968.094 ppm
4) H	TPHDX-Lube Oil (>C14)	26.20	300389232	275.954 ppm
5) H	Mineral Oil	21.94	1958538271	930.119 ppm
6) h	HCID Gas (C7-C12)	5.05	7891329	7.762 ppm
7) h	HCID Diesel (C12-C14)	21.97	1956015879	1005.839 ppm
8) h	HCID Oil (>C14)	26.20	17676127	14.117 ppm

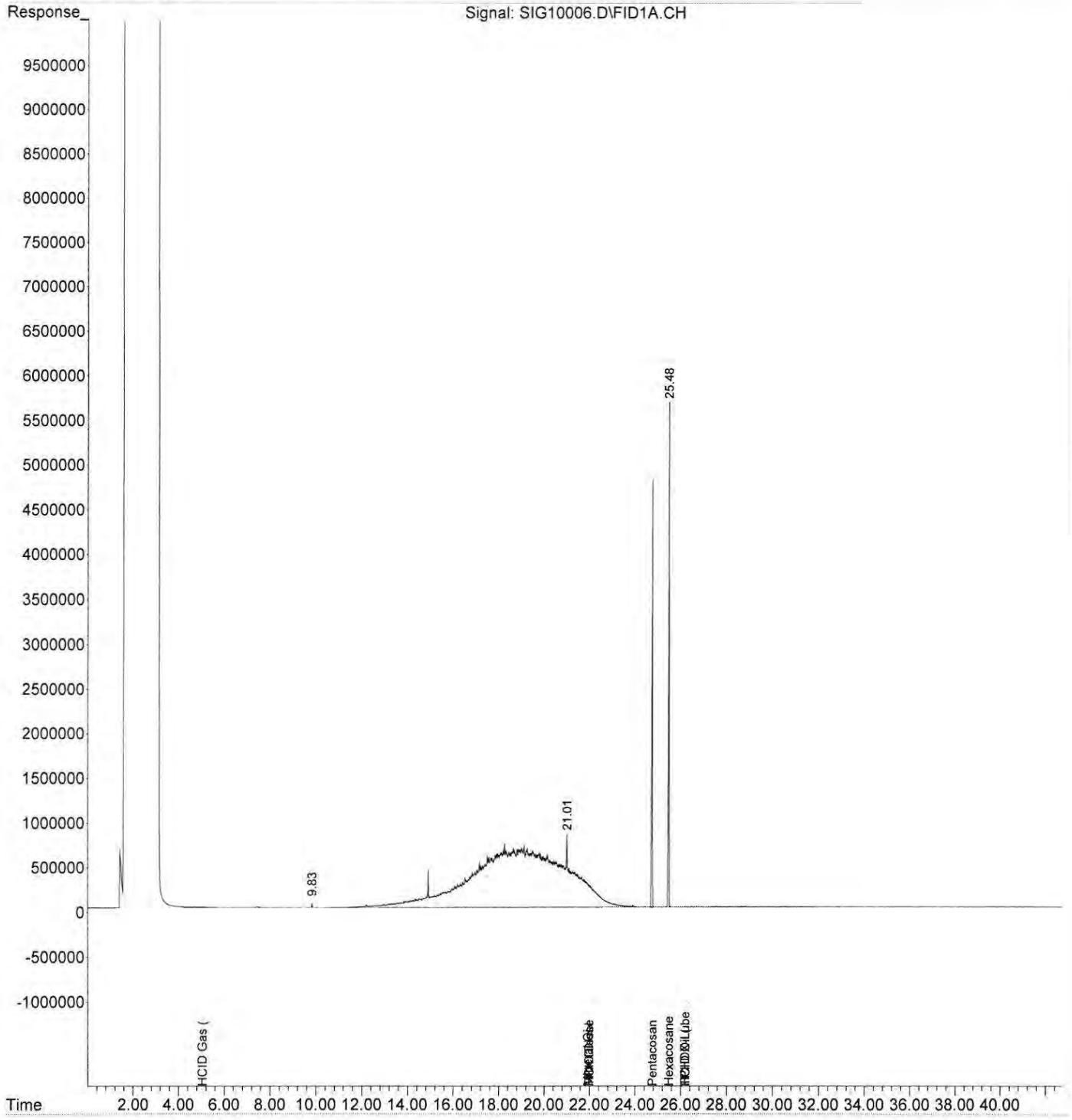
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10006.D Vial: 4
Acq On : 28 Jun 2023 5:05 pm Operator: BAN
Sample : 1000 ppm To Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 29 8:02 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : Z:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10007.D Vial: 5
Acq On : 28 Jun 2023 6:00 pm Operator: BAN
Sample : Dx ICV Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 29 13:53:21 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : Z:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Internal Standards			
1) I	Pentacosane	24.75	100746178	50.000 ppm
	System Monitoring Compounds			
2) S	Hexacosane	25.48	111560385	49.289 ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	98.58%
	Target Compounds			
3) H	TPH Diesel (C12-C14)	21.97	888450026	447.589 ppm
4) H	TPHDX-Lube Oil (>C14)	26.20	58385016	54.524 ppm
5) H	Mineral Oil	21.94	657567324	317.451 ppm
6) h	HCID Gas (C7-C12)	5.05	173692605	173.670 ppm
7) h	HCID Diesel (C12-C14)	21.97	637635701	333.318 ppm
8) h	HCID Oil (>C14)	26.20	13856160	11.249 ppm

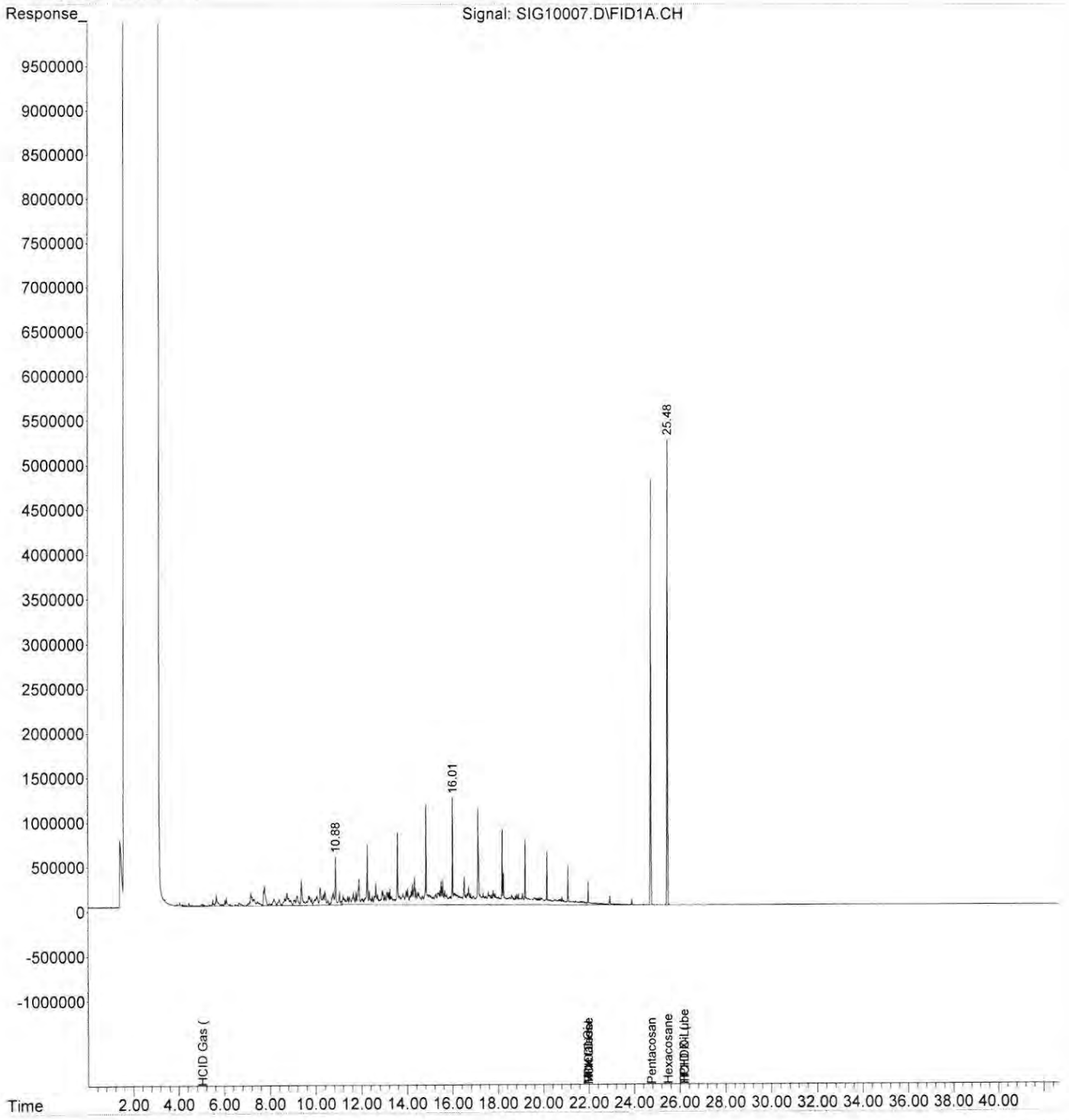
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10007.D Vial: 5
Acq On : 28 Jun 2023 6:00 pm Operator: BAN
Sample : Dx ICV Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 29 13:55 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : Z:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10026.D Vial: 41
Acq On : 29 Jun 2023 11:32 am Operator: BAN
Sample : BDF1035-BLK1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:16 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

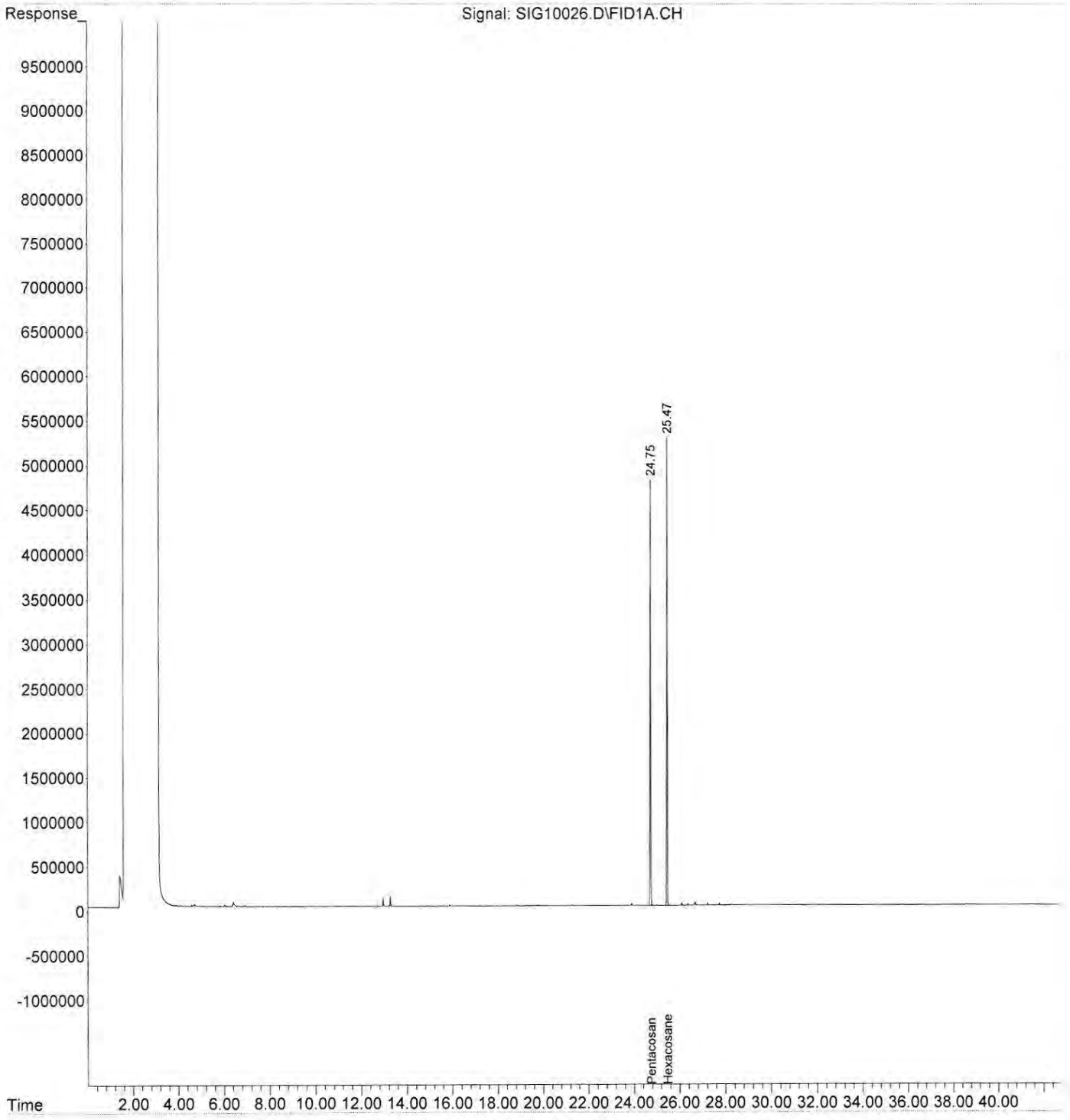
	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Pentacosane	24.75	101764050	50.000	ppm
	System Monitoring Compounds				
2) S	Hexacosane	25.47	97132845	42.485	ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	84.97%	
	Target Compounds				
3) H	TPH Diesel (C12-C14)	0.00	0	N.D.	ppm
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm
5) H	Mineral Oil	0.00	0	N.D.	ppm
6) h	HCID Gas (C7-C12)	0.00	0	N.D.	ppm
7) h	HCID Diesel (C12-C14)	0.00	0	N.D.	ppm
8) h	HCID Oil (>C14)	0.00	0	N.D.	ppm

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10026.D Vial: 41
Acq On : 29 Jun 2023 11:32 am Operator: BAN
Sample : BDF1035-BLK1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:49 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10027.D Vial: 42
Acq On : 29 Jun 2023 12:27 pm Operator: BAN
Sample : BDF1035-BS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:17 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1)	I Pentacosane	24.75	98030699	50.000	ppm
	System Monitoring Compounds				
2)	S Hexacosane	25.47	93754370	42.569	ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	85.14%	
	Target Compounds				
3)	H TPH Diesel (C12-C14)	21.97	443208122	229.467	ppm
4)	H TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm
5)	H Mineral Oil	0.00	0	N.D.	ppm
6)	h HCID Gas (C7-C12)	0.00	0	N.D.	ppm
7)	h HCID Diesel (C12-C14)	0.00	0	N.D.	ppm
8)	h HCID Oil (>C14)	0.00	0	N.D.	ppm

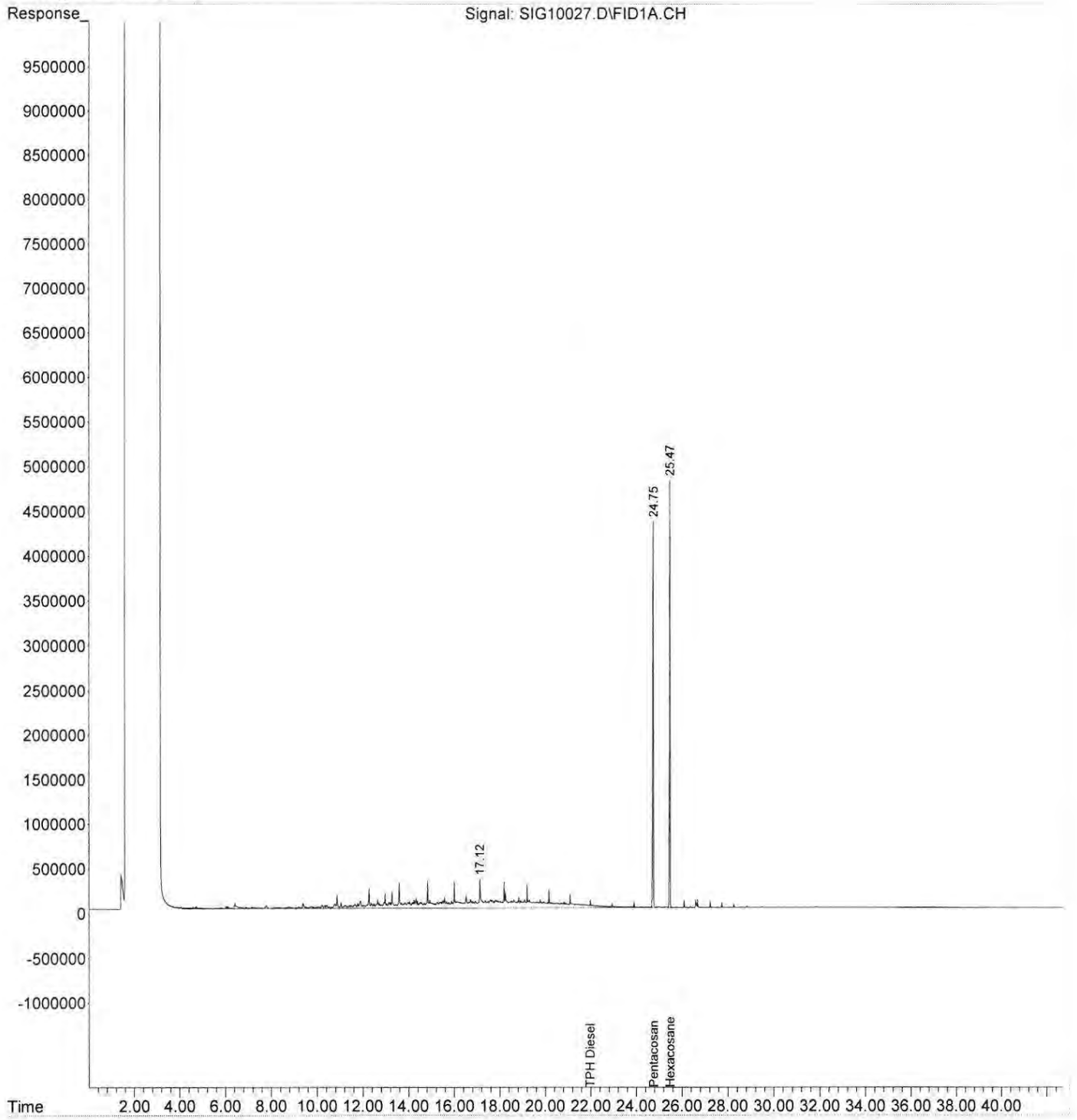
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10027.D Vial: 42
Acq On : 29 Jun 2023 12:27 pm Operator: BAN
Sample : BDF1035-BS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:49 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10028.D Vial: 43
Acq On : 29 Jun 2023 1:22 pm Operator: BAN
Sample : BDF1035-BSD1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:18 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

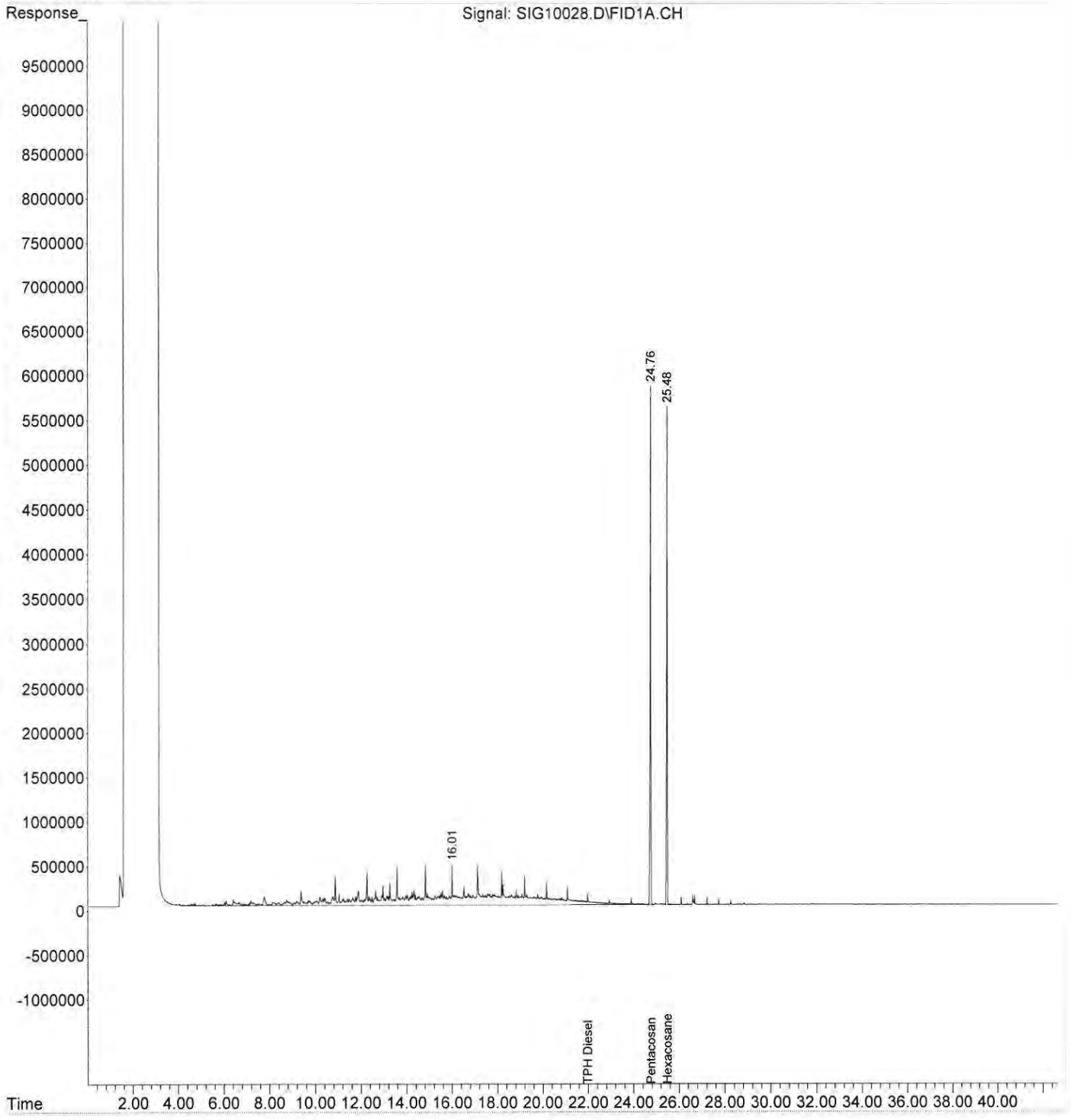
		Compound	R.T.	Response	Conc	Units
		Internal Standards				
1)	I	Pentacosane	24.75	125720438	50.000	ppm
		System Monitoring Compounds				
2)	S	Hexacosane	25.48	123463748	43.712	ppm
Spiked Amount		50.000	Range 50 - 150	Recovery =	87.42%	
		Target Compounds				
3)	H	TPH Diesel (C12-C14)	21.97	685537925	276.758	ppm
4)	H	TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm
5)	H	Mineral Oil	0.00	0	N.D.	ppm
6)	h	HCID Gas (C7-C12)	0.00	0	N.D.	ppm
7)	h	HCID Diesel (C12-C14)	0.00	0	N.D.	ppm
8)	h	HCID Oil (>C14)	0.00	0	N.D.	ppm

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10028.D Vial: 43
Acq On : 29 Jun 2023 1:22 pm Operator: BAN
Sample : BDF1035-BSD1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:49 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10029.D Vial: 44
Acq On : 29 Jun 2023 2:17 pm Operator: BAN
Sample : BDF1035-MS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:19 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

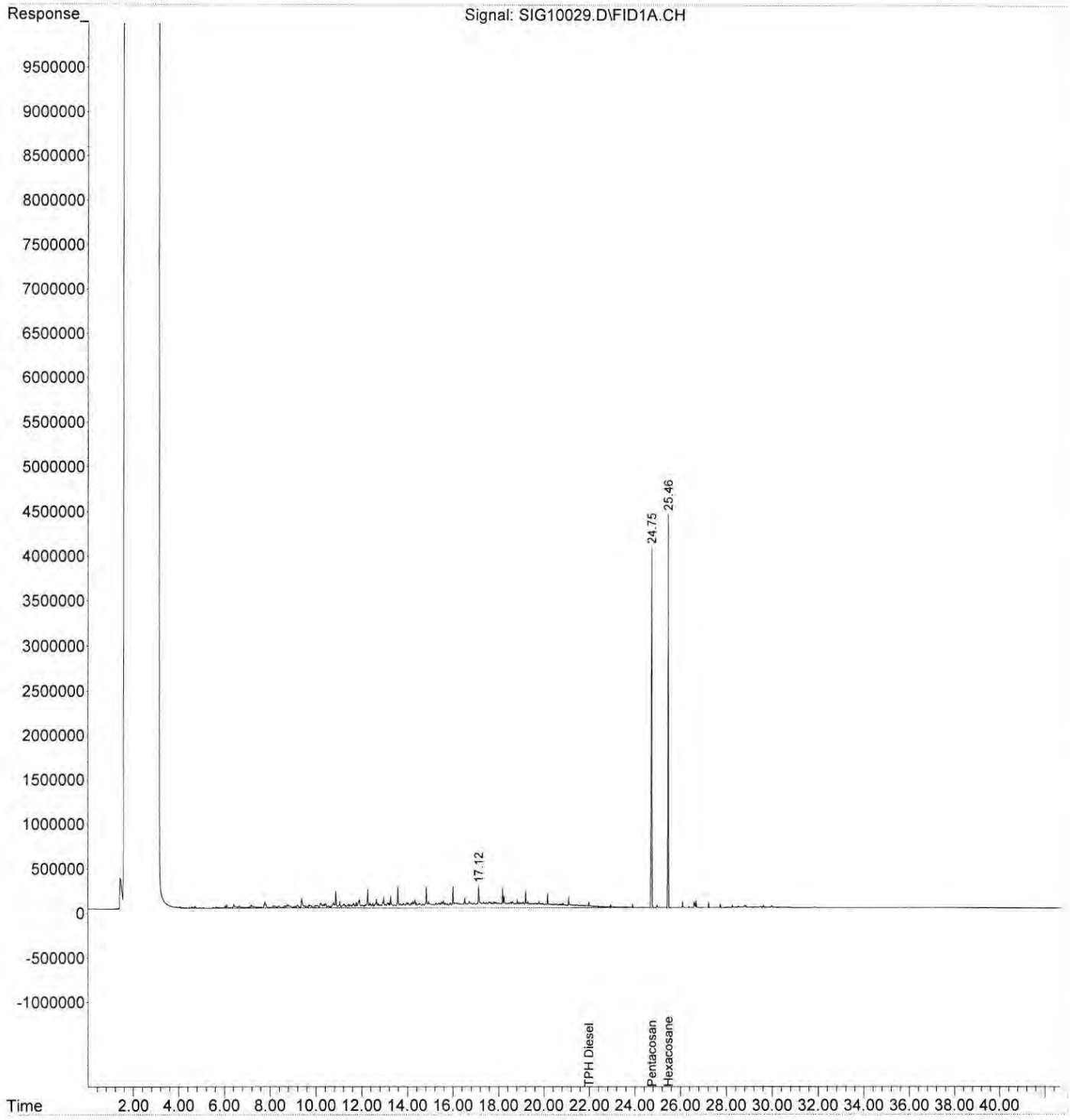
		Compound	R.T.	Response	Conc	Units
		Internal Standards				
1)	I	Pentacosane	24.74	88358788	50.000	ppm
		System Monitoring Compounds				
2)	S	Hexacosane	25.46	79825038	40.212	ppm
Spiked Amount		50.000	Range 50 - 150	Recovery =	80.42%	
		Target Compounds				
3)	H	TPH Diesel (C12-C14)	21.97	396261669	227.619	ppm
4)	H	TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm
5)	H	Mineral Oil	0.00	0	N.D.	ppm
6)	h	HCID Gas (C7-C12)	0.00	0	N.D.	ppm
7)	h	HCID Diesel (C12-C14)	0.00	0	N.D.	ppm
8)	h	HCID Oil (>C14)	0.00	0	N.D.	ppm

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10029.D Vial: 44
Acq On : 29 Jun 2023 2:17 pm Operator: BAN
Sample : BDF1035-MS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:49 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10030.D Vial: 45
Acq On : 29 Jun 2023 3:12 pm Operator: BAN
Sample : BDF1035-MSD1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:21 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

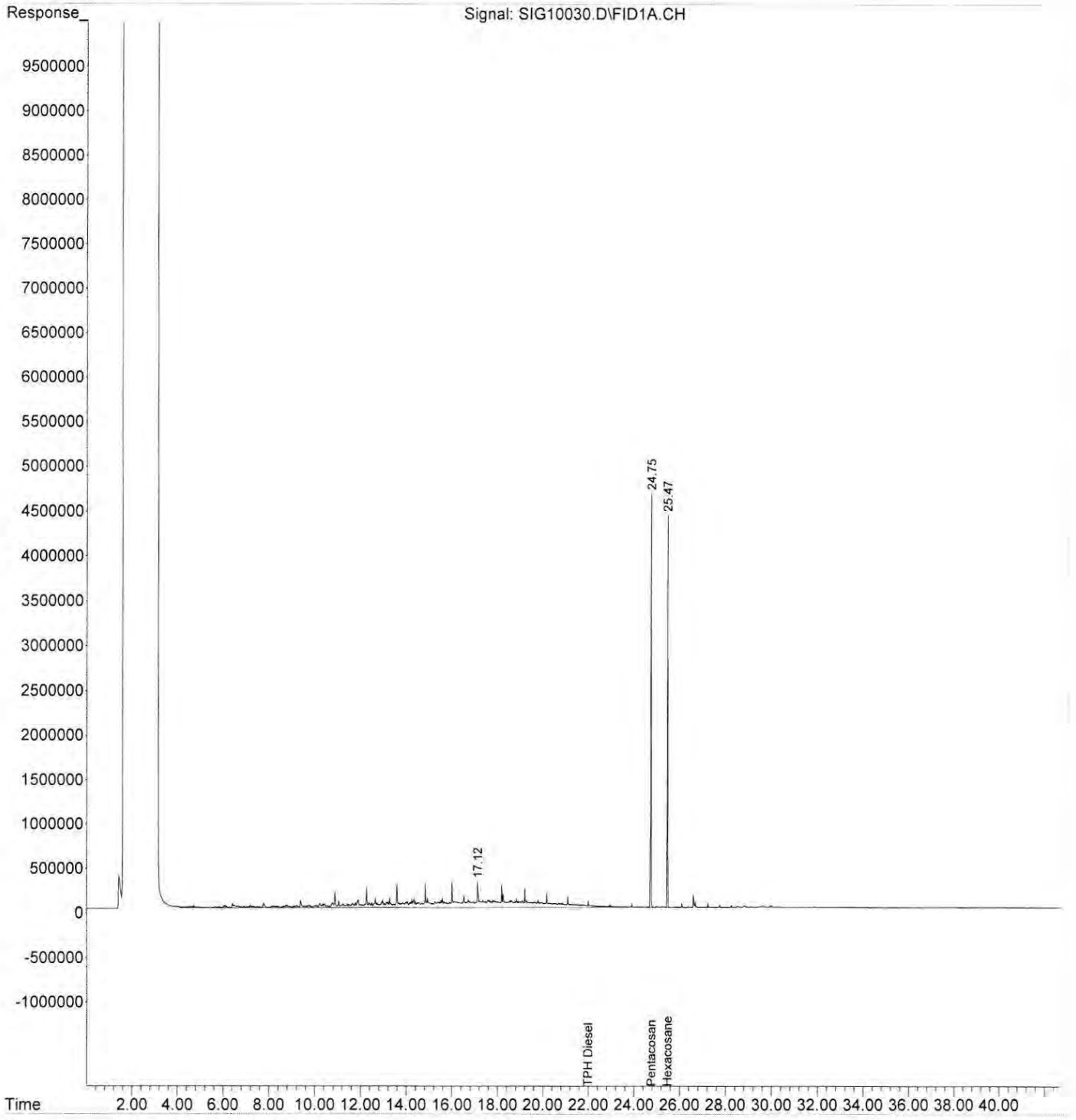
	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Pentacosane	24.75	95685462	50.000	ppm
	System Monitoring Compounds				
2) S	Hexacosane	25.46	79671573	37.062	ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	74.12%	
	Target Compounds				
3) H	TPH Diesel (C12-C14)	21.97	414674730	219.957	ppm
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm
5) H	Mineral Oil	0.00	0	N.D.	ppm
6) h	HCID Gas (C7-C12)	0.00	0	N.D.	ppm
7) h	HCID Diesel (C12-C14)	0.00	0	N.D.	ppm
8) h	HCID Oil (>C14)	0.00	0	N.D.	ppm

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10030.D Vial: 45
Acq On : 29 Jun 2023 3:12 pm Operator: BAN
Sample : BDF1035-MSD1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:50 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10031.D Vial: 18
Acq On : 29 Jun 2023 4:07 pm Operator: BAN
Sample : BDF1035-BS2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:22 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

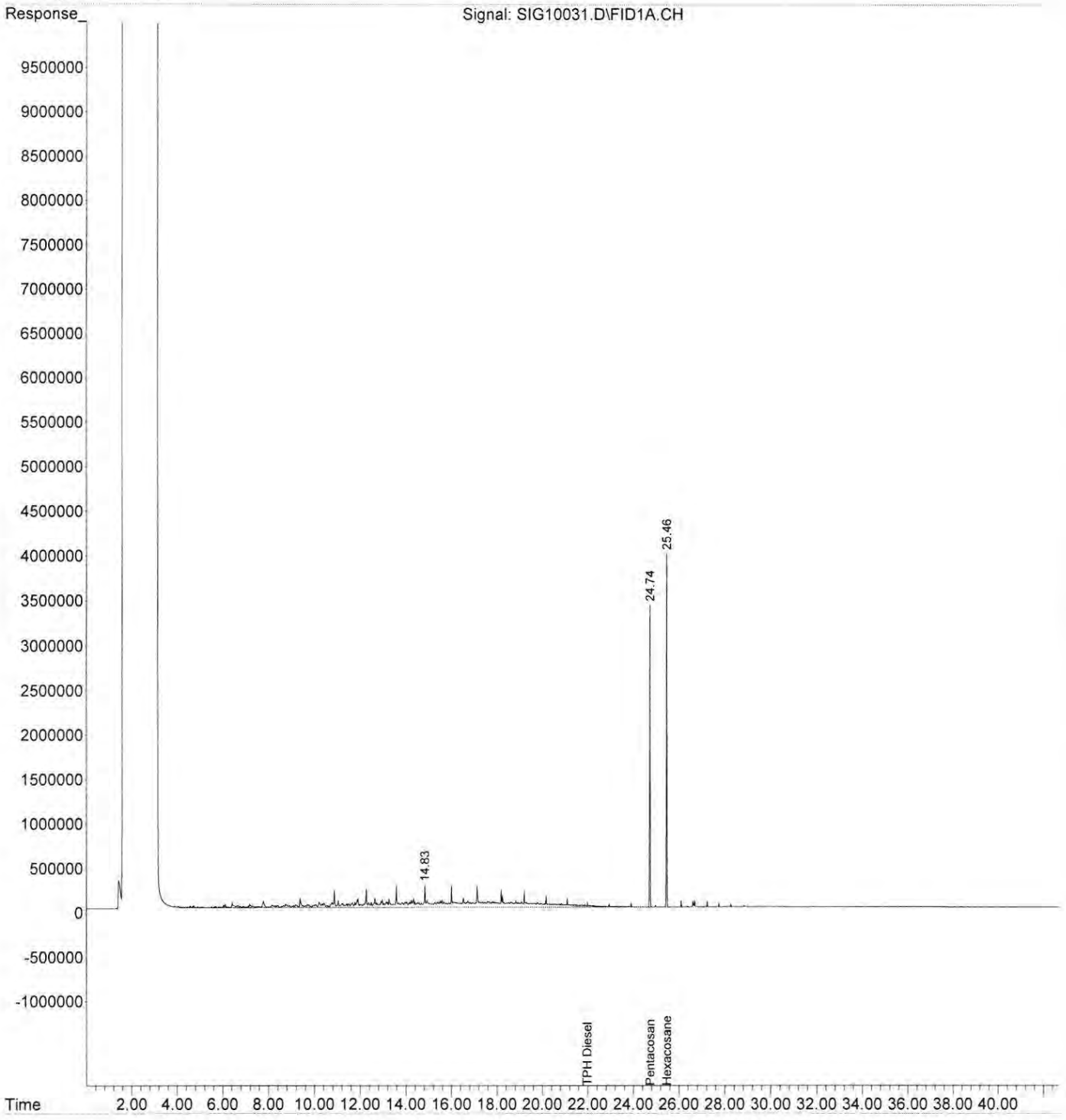
		Compound	R.T.	Response	Conc	Units
		Internal Standards				
1)	I	Pentacosane	24.74	65078107	50.000	ppm
		System Monitoring Compounds				
2)	S	Hexacosane	25.46	71059708	48.602	ppm
Spiked Amount		50.000 Range	50 - 150	Recovery =	97.20%	
		Target Compounds				
3)	H	TPH Diesel (C12-C14)	21.97	375623977	292.950	ppm
4)	H	TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm
5)	H	Mineral Oil	0.00	0	N.D.	ppm
6)	h	HCID Gas (C7-C12)	0.00	0	N.D.	ppm
7)	h	HCID Diesel (C12-C14)	0.00	0	N.D.	ppm
8)	h	HCID Oil (>C14)	0.00	0	N.D.	ppm

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10031.D Vial: 18
Acq On : 29 Jun 2023 4:07 pm Operator: BAN
Sample : BDF1035-BS2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:50 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10032.D Vial: 46
Acq On : 29 Jun 2023 5:02 pm Operator: BAN
Sample : WDF1311-02 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:24 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Pentacosane	24.75	117799423	50.000	ppm
	System Monitoring Compounds				
2) S	Hexacosane	25.47	106424977	40.213	ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	80.43%	
	Target Compounds				
3) H	TPH Diesel (C12-C14)	0.00	0	N.D.	ppm
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm
5) H	Mineral Oil	0.00	0	N.D.	ppm
6) h	HCID Gas (C7-C12)	0.00	0	N.D.	ppm
7) h	HCID Diesel (C12-C14)	0.00	0	N.D.	ppm
8) h	HCID Oil (>C14)	0.00	0	N.D.	ppm

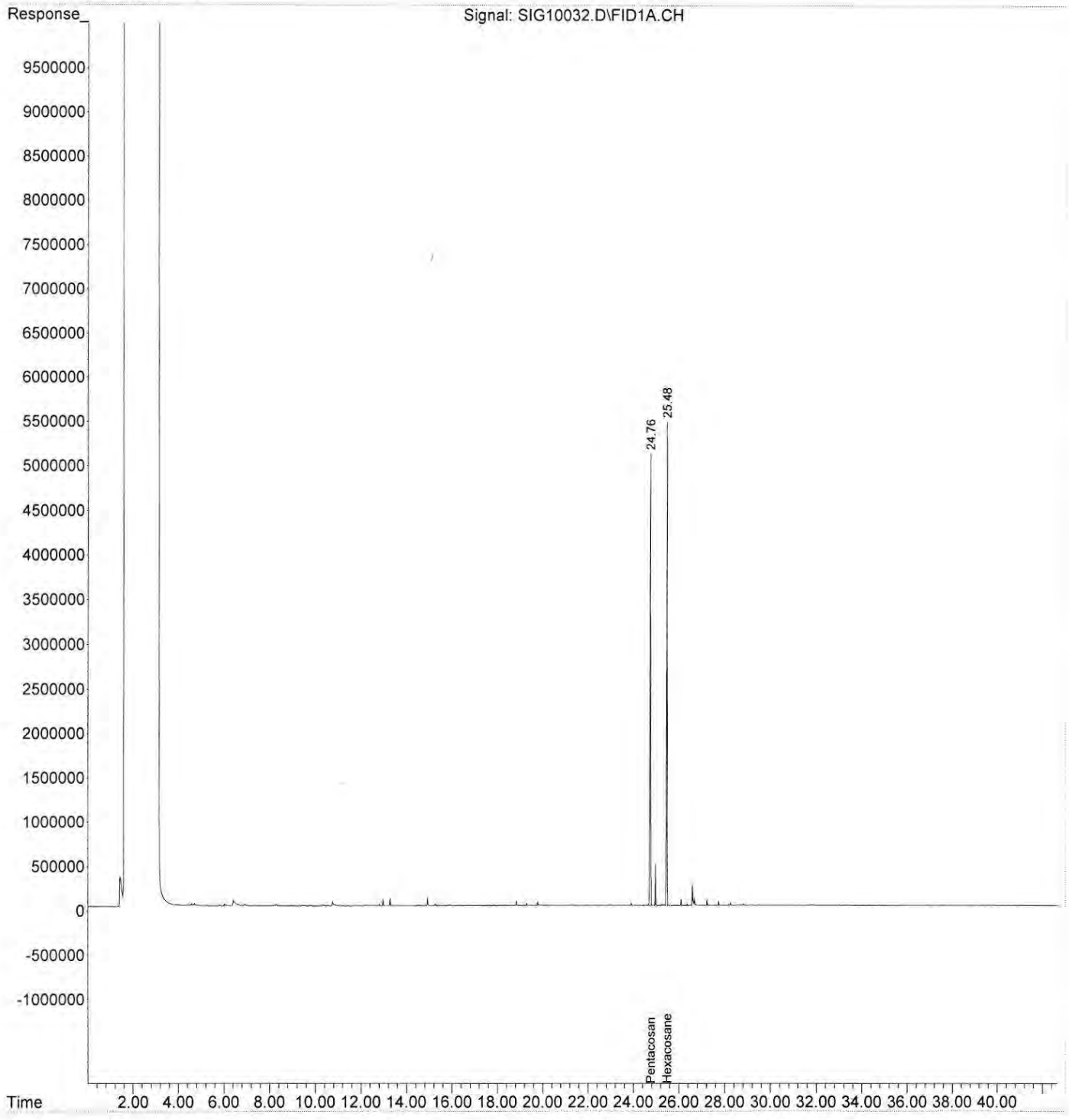
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10032.D Vial: 46
Acq On : 29 Jun 2023 5:02 pm Operator: BAN
Sample : WDF1311-02 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:50 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10033.D Vial: 47
Acq On : 29 Jun 2023 5:57 pm Operator: BAN
Sample : WDF1311-03 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:25 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Internal Standards			
1) I	Pentacosane	24.74	81416273	50.000 ppm
	System Monitoring Compounds			
2) S	Hexacosane	25.46	68091294	37.226 ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	74.45%
	Target Compounds			
3) H	TPH Diesel (C12-C14)	0.00	0	N.D. ppm
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H	Mineral Oil	0.00	0	N.D. ppm
6) h	HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h	HCID Diesel (C12-C14)	0.00	0	N.D. ppm
8) h	HCID Oil (>C14)	0.00	0	N.D. ppm

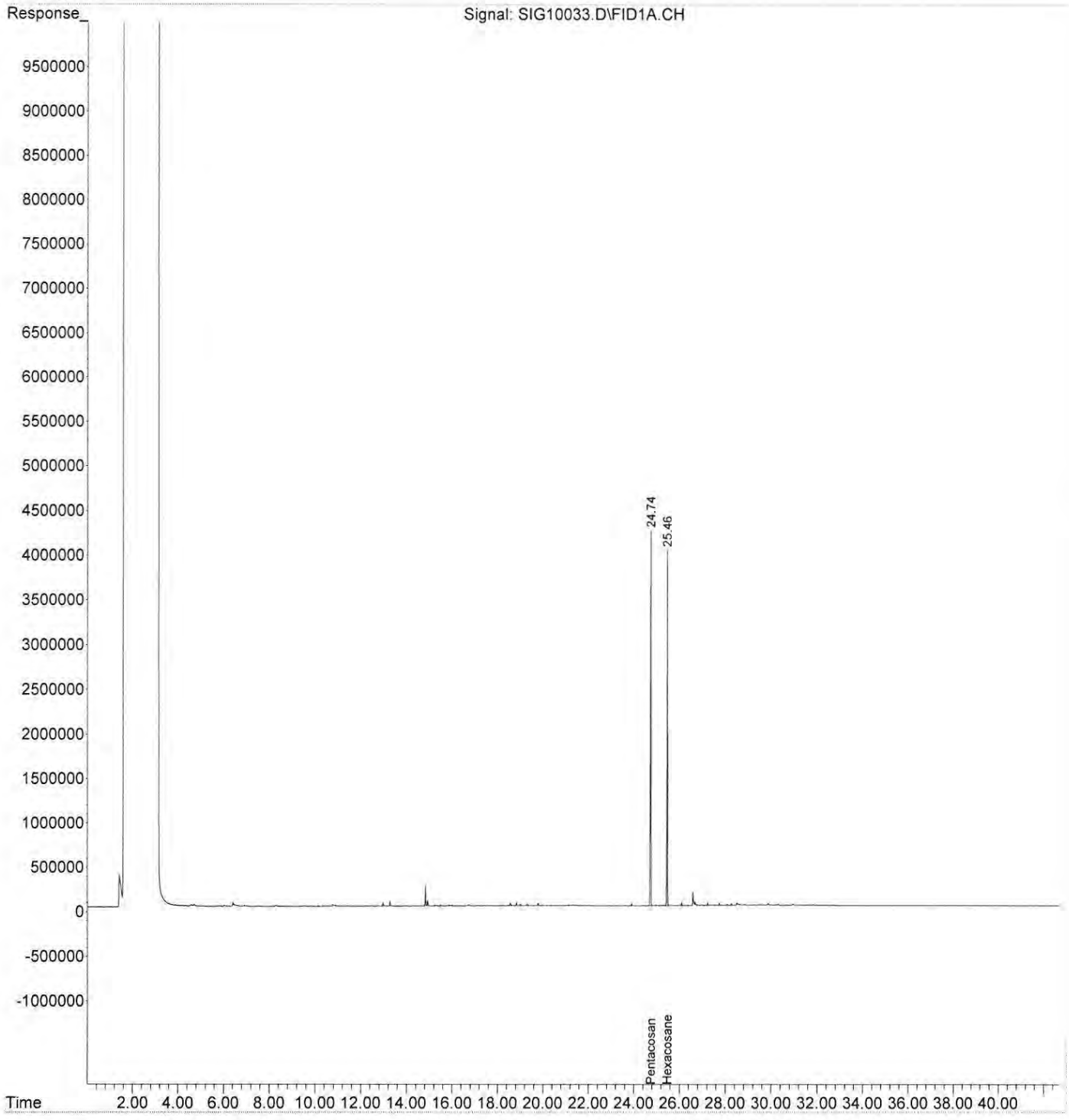
(f)=RT Delta > 1/2 Window (m)=manual int.
SIG10033.D 230619LOWDHT.M Tue Aug 08 12:21:43 2023

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10033.D Vial: 47
Acq On : 29 Jun 2023 5:57 pm Operator: BAN
Sample : WDF1311-03 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:52 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10034.D Vial: 48
Acq On : 29 Jun 2023 6:52 pm Operator: BAN
Sample : WDF1311-04 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:26 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Internal Standards			
1) I	Pentacosane	24.75	110273228	50.000 ppm
	System Monitoring Compounds			
2) S	Hexacosane	25.47	102700614	41.454 ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	82.91%
	Target Compounds			
3) H	TPH Diesel (C12-C14)	0.00	0	N.D. ppm
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H	Mineral Oil	0.00	0	N.D. ppm
6) h	HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h	HCID Diesel (C12-C14)	0.00	0	N.D. ppm
8) h	HCID Oil (>C14)	0.00	0	N.D. ppm

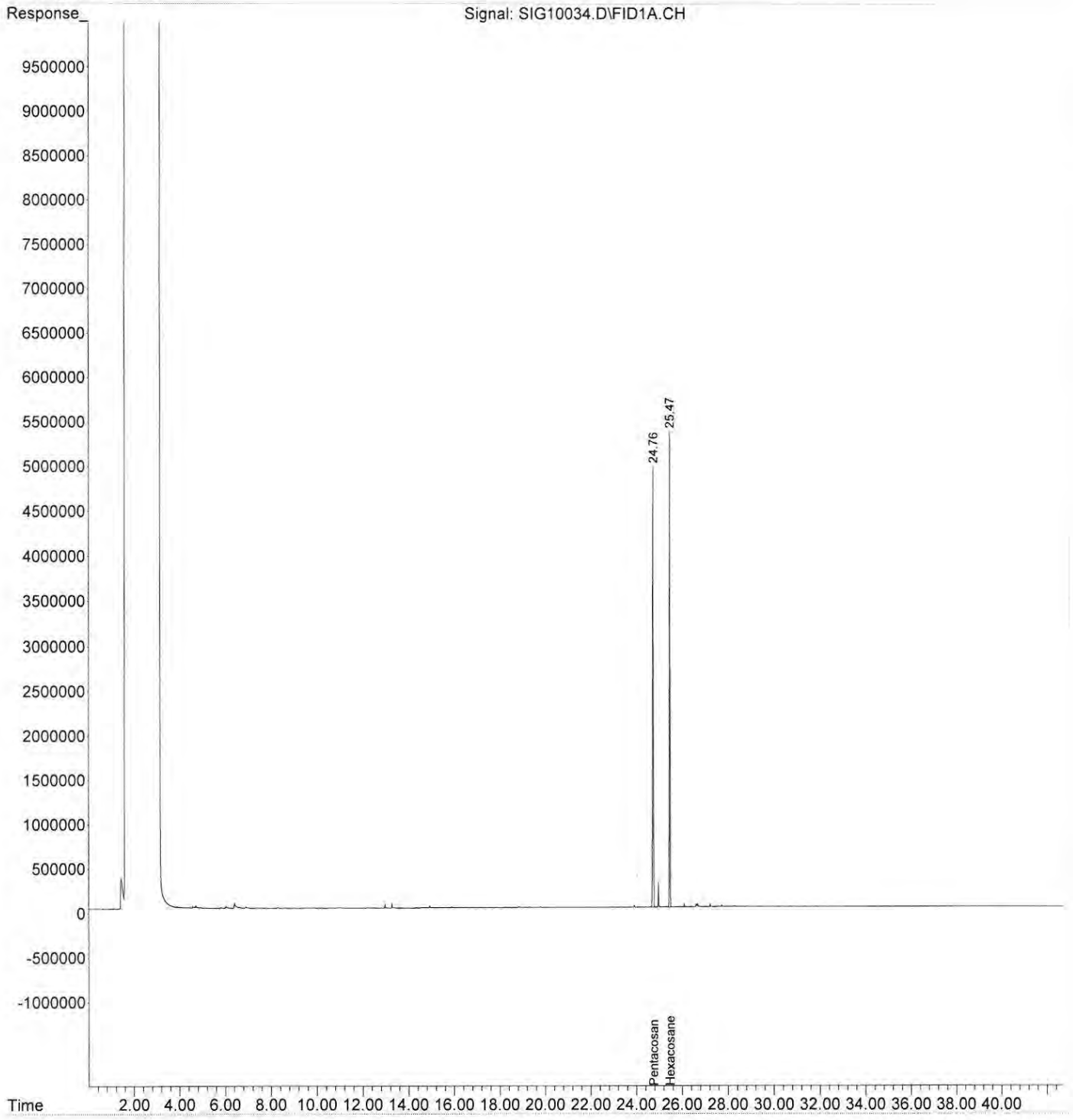
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10034.D Vial: 48
Acq On : 29 Jun 2023 6:52 pm Operator: BAN
Sample : WDF1311-04 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:52 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10035.D Vial: 49
Acq On : 29 Jun 2023 7:47 pm Operator: BAN
Sample : WDF1311-06 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:28 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	Internal Standards					
1) I	Pentacosane	24.75	99146266	50.000	ppm	m
	System Monitoring Compounds					
2) S	Hexacosane	25.46	53547961	24.040	ppm	m
Spiked Amount	50.000	Range 50 - 150	Recovery =	48.08%#		
	Target Compounds					
3) H	TPH Diesel (C12-C14)	0.00	0	N.D.	ppm	
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm	
5) H	Mineral Oil	0.00	0	N.D.	ppm	
6) h	HCID Gas (C7-C12)	0.00	0	N.D.	ppm	
7) h	HCID Diesel (C12-C14)	0.00	0	N.D.	ppm	
8) h	HCID Oil (>C14)	0.00	0	N.D.	ppm	

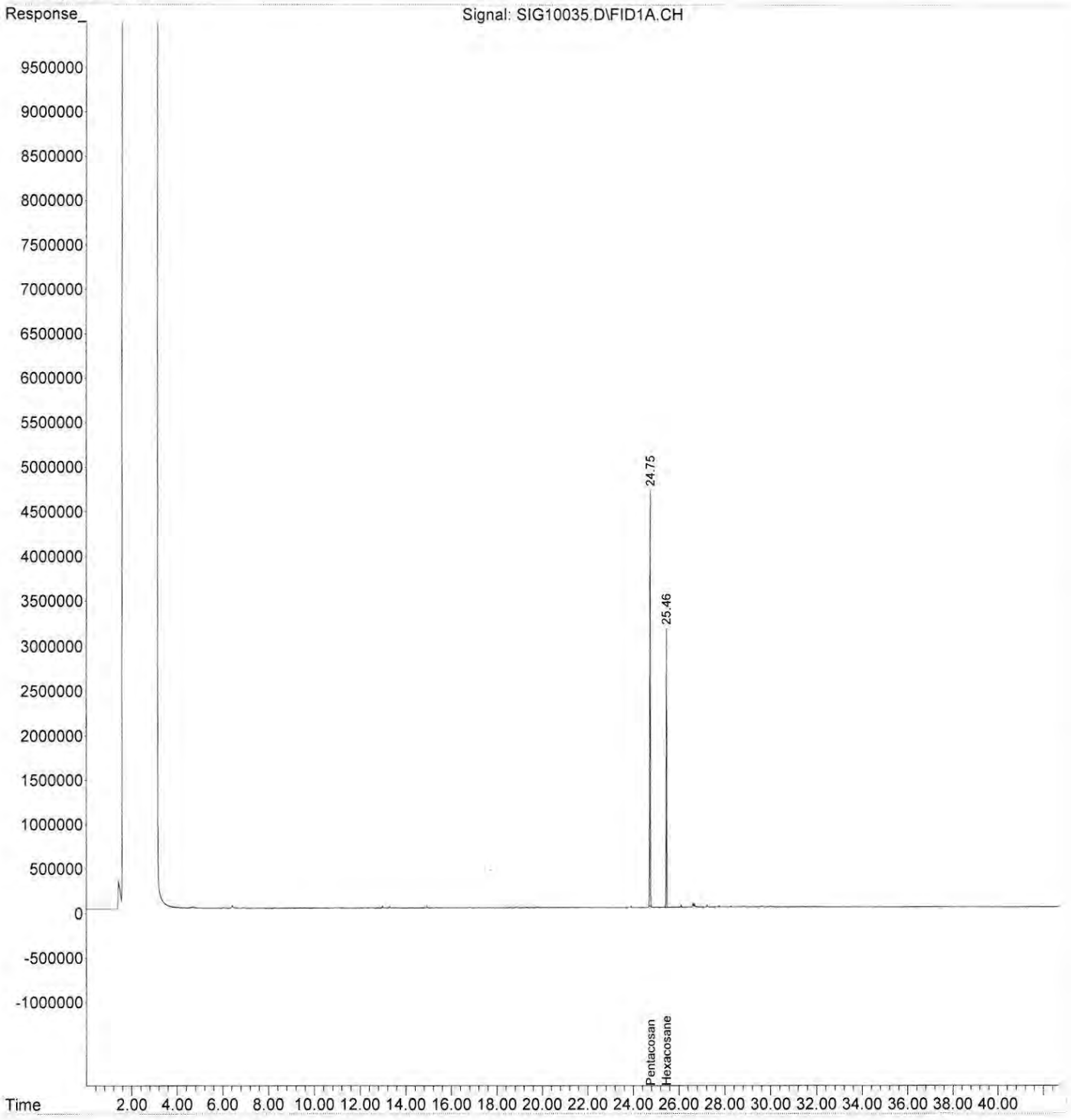
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10035.D Vial: 49
Acq On : 29 Jun 2023 7:47 pm Operator: BAN
Sample : WDF1311-06 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:53 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10036.D Vial: 50
Acq On : 29 Jun 2023 8:42 pm Operator: BAN
Sample : WDF1311-07 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:29 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

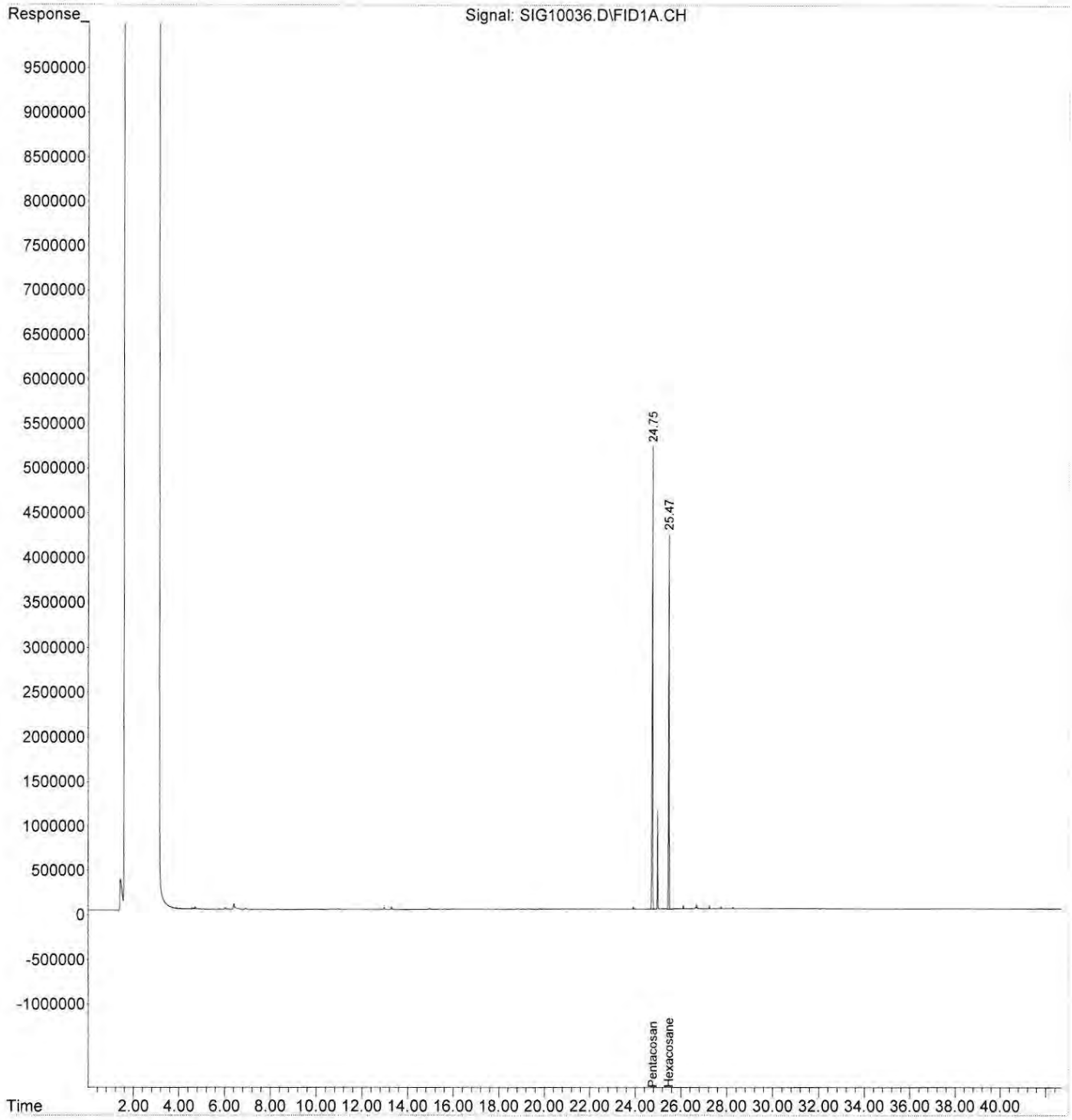
	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Pentacosane	24.75	105604169	50.000	ppm
	System Monitoring Compounds				
2) S	Hexacosane	25.46	80085992	33.755	ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	67.51%	
	Target Compounds				
3) H	TPH Diesel (C12-C14)	0.00	0	N.D.	ppm
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm
5) H	Mineral Oil	0.00	0	N.D.	ppm
6) h	HCID Gas (C7-C12)	0.00	0	N.D.	ppm
7) h	HCID Diesel (C12-C14)	0.00	0	N.D.	ppm
8) h	HCID Oil (>C14)	0.00	0	N.D.	ppm

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10036.D Vial: 50
Acq On : 29 Jun 2023 8:42 pm Operator: BAN
Sample : WDF1311-07 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:54 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10037.D Vial: 51
Acq On : 29 Jun 2023 9:37 pm Operator: BAN
Sample : WDF1311-08 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:30 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Internal Standards			
1) I	Pentacosane	24.75	94192565	50.000 ppm
	System Monitoring Compounds			
2) S	Hexacosane	25.46	69197093	32.699 ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	65.40%
	Target Compounds			
3) H	TPH Diesel (C12-C14)	0.00	0	N.D. ppm
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H	Mineral Oil	0.00	0	N.D. ppm
6) h	HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h	HCID Diesel (C12-C14)	0.00	0	N.D. ppm
8) h	HCID Oil (>C14)	0.00	0	N.D. ppm

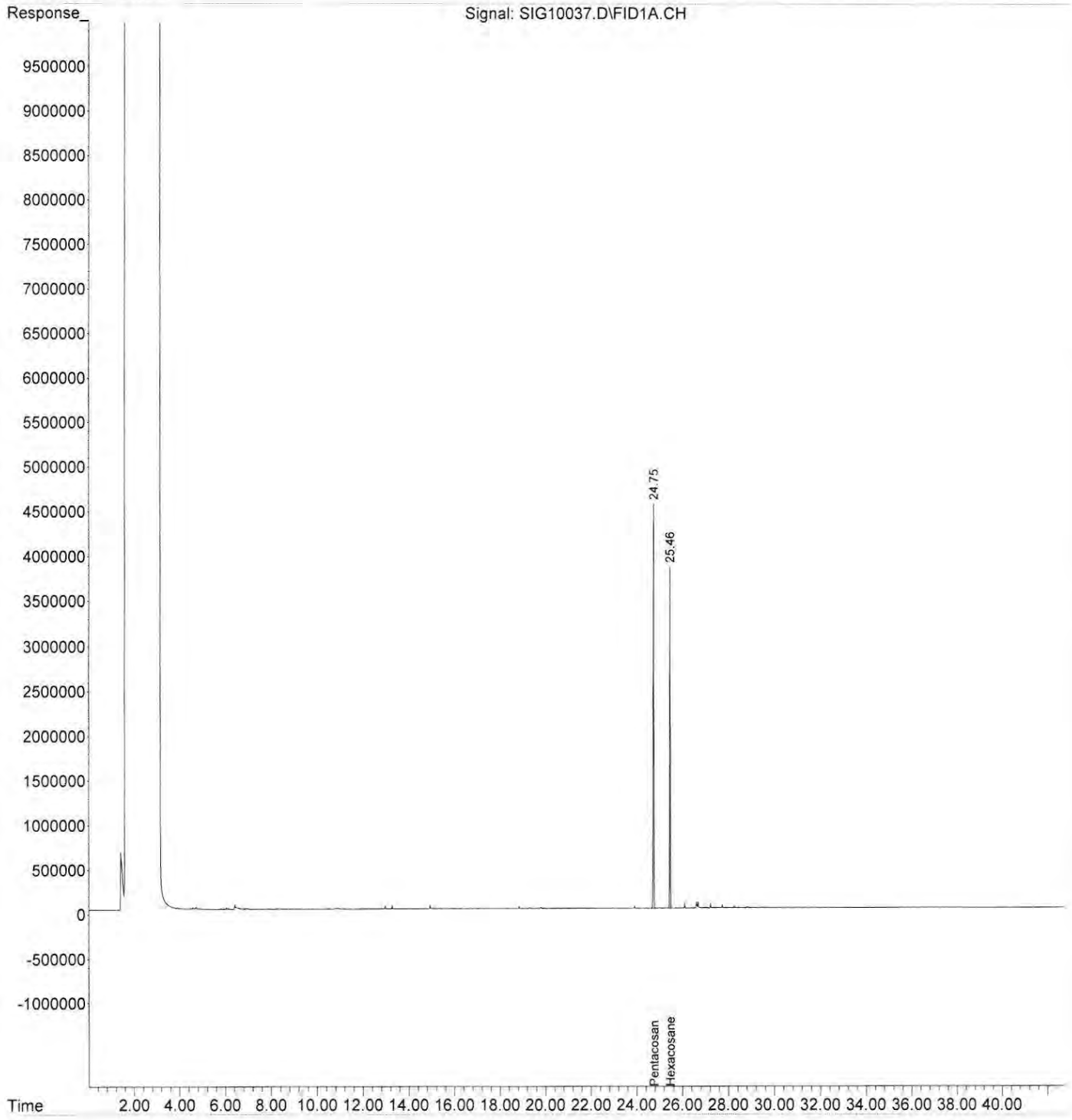
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10037.D Vial: 51
Acq On : 29 Jun 2023 9:37 pm Operator: BAN
Sample : WDF1311-08 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:54 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10038.D Vial: 52
Acq On : 29 Jun 2023 10:33 pm Operator: BAN
Sample : WDF1311-09 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:32 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Pentacosane	24.74	64059203	50.000	ppm
	System Monitoring Compounds				
2) S	Hexacosane	25.46	61668935	42.850	ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	85.70%	
	Target Compounds				
3) H	TPH Diesel (C12-C14)	0.00	0	N.D.	ppm
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm
5) H	Mineral Oil	0.00	0	N.D.	ppm
6) h	HCID Gas (C7-C12)	0.00	0	N.D.	ppm
7) h	HCID Diesel (C12-C14)	0.00	0	N.D.	ppm
8) h	HCID Oil (>C14)	0.00	0	N.D.	ppm

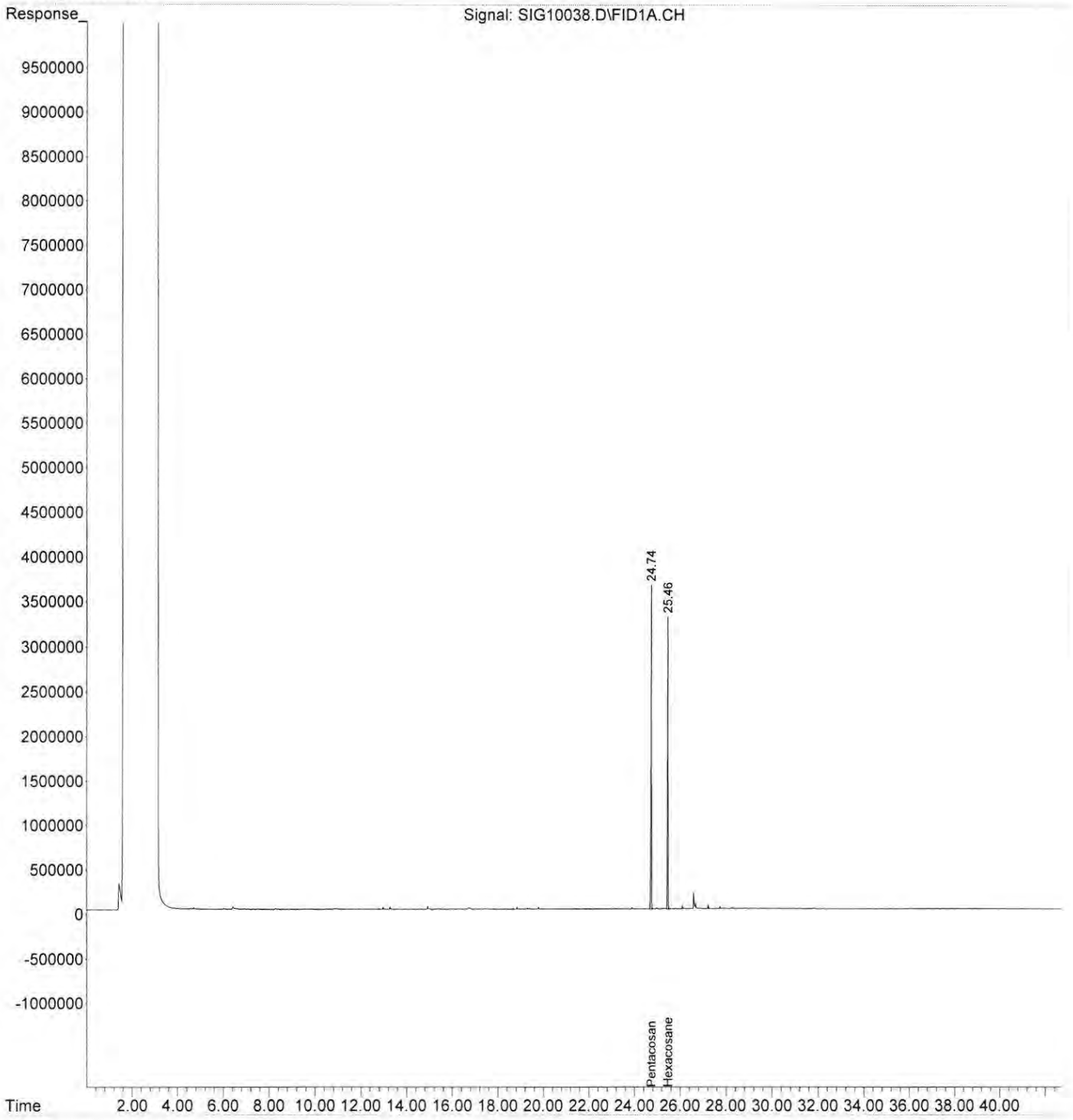
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10038.D Vial: 52
Acq On : 29 Jun 2023 10:33 pm Operator: BAN
Sample : WDF1311-09 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:54 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10039.D Vial: 53
Acq On : 29 Jun 2023 11:28 pm Operator: BAN
Sample : WDF1311-10 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:33 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Internal Standards			
1) I	Pentacosane	24.75	96853432	50.000 ppm
	System Monitoring Compounds			
2) S	Hexacosane	25.46	76423342	35.122 ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	70.24%
	Target Compounds			
3) H	TPH Diesel (C12-C14)	0.00	0	N.D. ppm
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H	Mineral Oil	0.00	0	N.D. ppm
6) h	HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h	HCID Diesel (C12-C14)	0.00	0	N.D. ppm
8) h	HCID Oil (>C14)	0.00	0	N.D. ppm

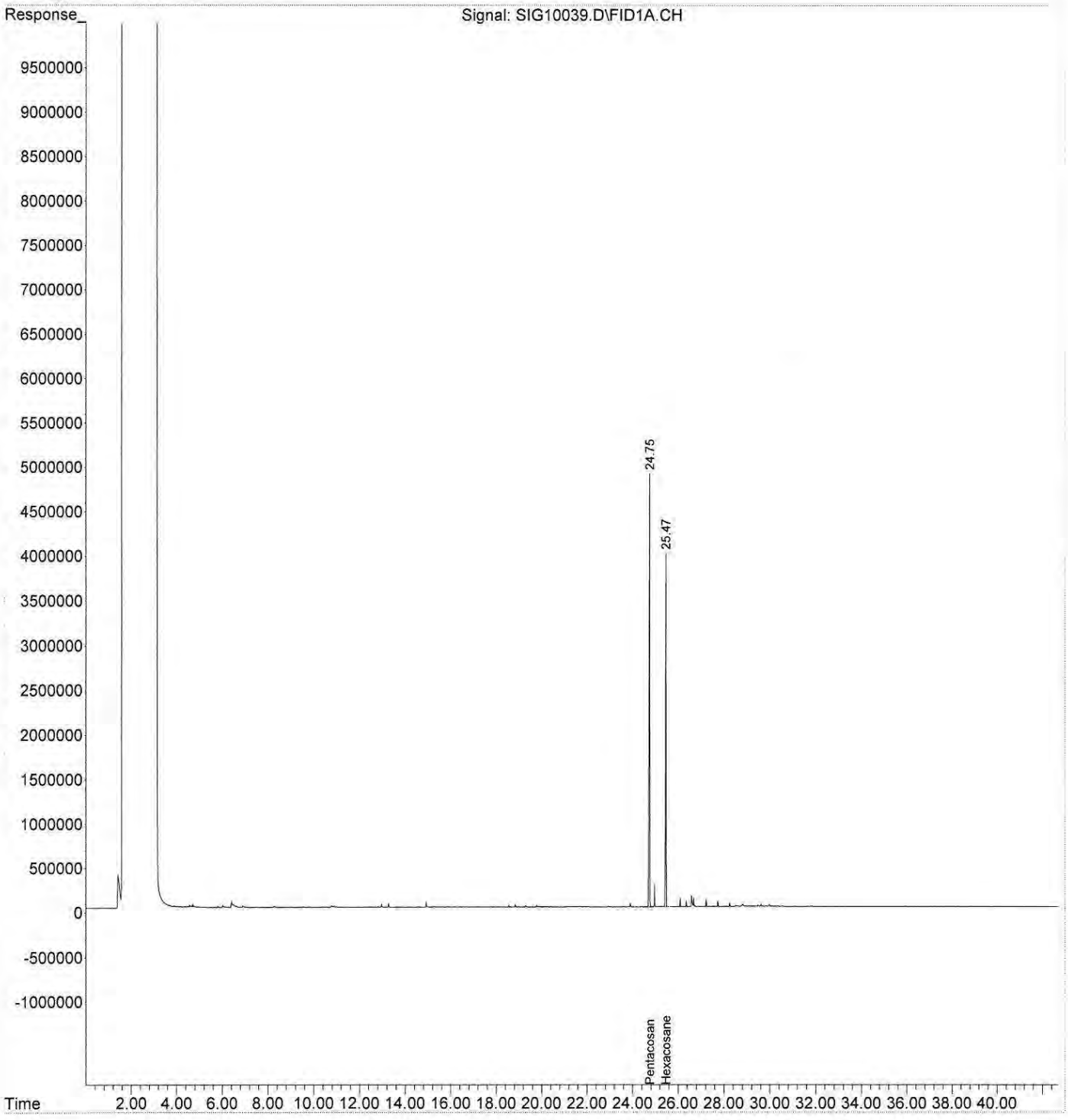
(f)=RT Delta > 1/2 Window (m)=manual int.
SIG10039.D 230619LOWDHT.M Tue Aug 08 12:21:59 2023 Page 1

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10039.D Vial: 53
Acq On : 29 Jun 2023 11:28 pm Operator: BAN
Sample : WDF1311-10 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:54 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10040.D Vial: 54
Acq On : 30 Jun 2023 12:23 am Operator: BAN
Sample : WDF1311-11 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:34 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1)	I Pentacosane	24.75	107089377	50.000	ppm
	System Monitoring Compounds				
2)	S Hexacosane	25.47	104750780	43.539	ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	87.08%	
	Target Compounds				
3)	H TPH Diesel (C12-C14)	0.00	0	N.D.	ppm
4)	H TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm
5)	H Mineral Oil	0.00	0	N.D.	ppm
6)	h HCID Gas (C7-C12)	0.00	0	N.D.	ppm
7)	h HCID Diesel (C12-C14)	0.00	0	N.D.	ppm
8)	h HCID Oil (>C14)	0.00	0	N.D.	ppm

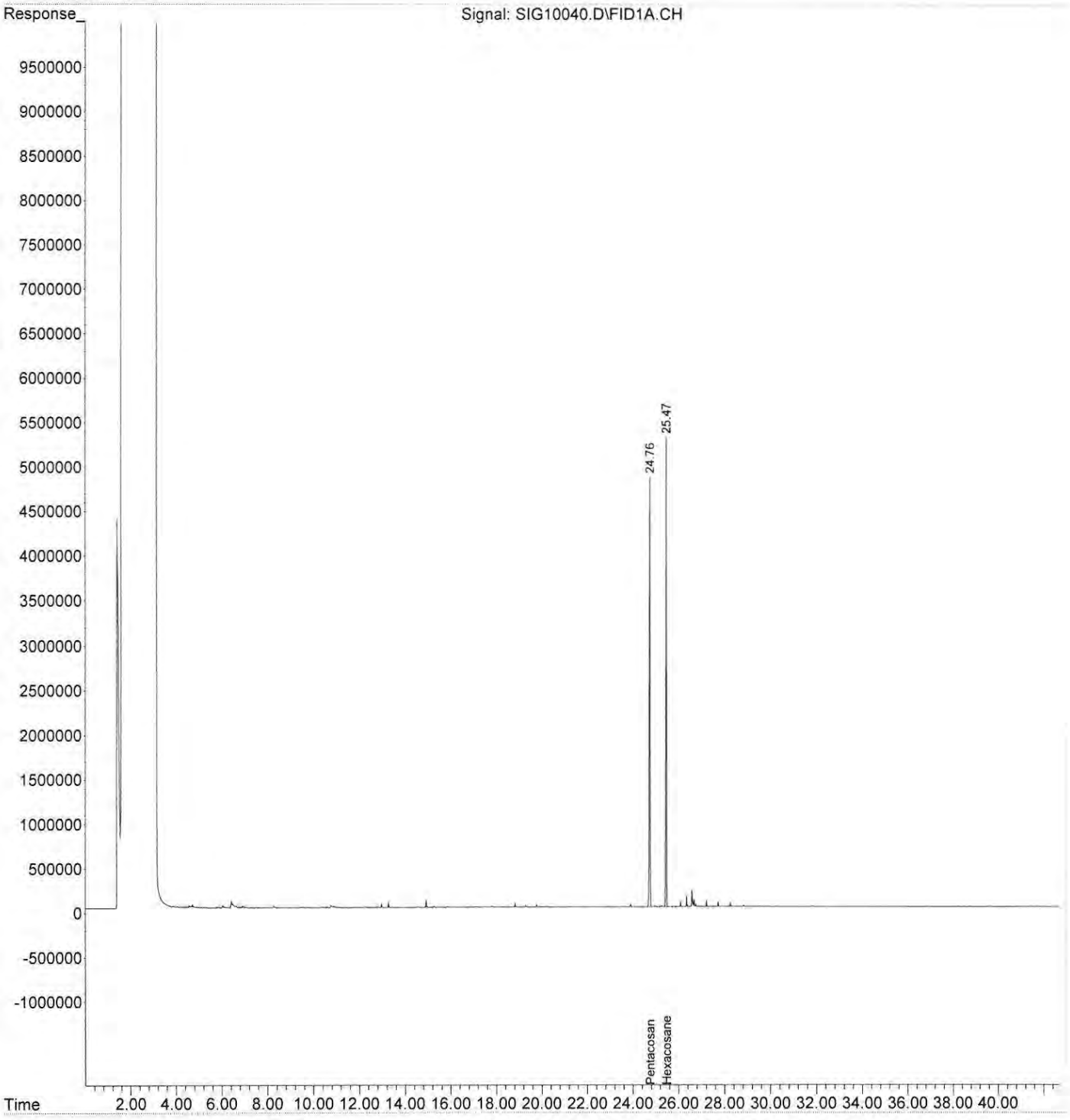
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10040.D Vial: 54
Acq On : 30 Jun 2023 12:23 am Operator: BAN
Sample : WDF1311-11 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:54 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10041.D Vial: 55
Acq On : 30 Jun 2023 1:18 am Operator: BAN
Sample : WDF1311-12 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:35 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Pentacosane	24.75	109492366	50.000	ppm
	System Monitoring Compounds				
2) S	Hexacosane	25.47	111738836	45.424	ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	90.85%	
	Target Compounds				
3) H	TPH Diesel (C12-C14)	0.00	0	N.D.	ppm
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm
5) H	Mineral Oil	0.00	0	N.D.	ppm
6) h	HCID Gas (C7-C12)	0.00	0	N.D.	ppm
7) h	HCID Diesel (C12-C14)	0.00	0	N.D.	ppm
8) h	HCID Oil (>C14)	0.00	0	N.D.	ppm

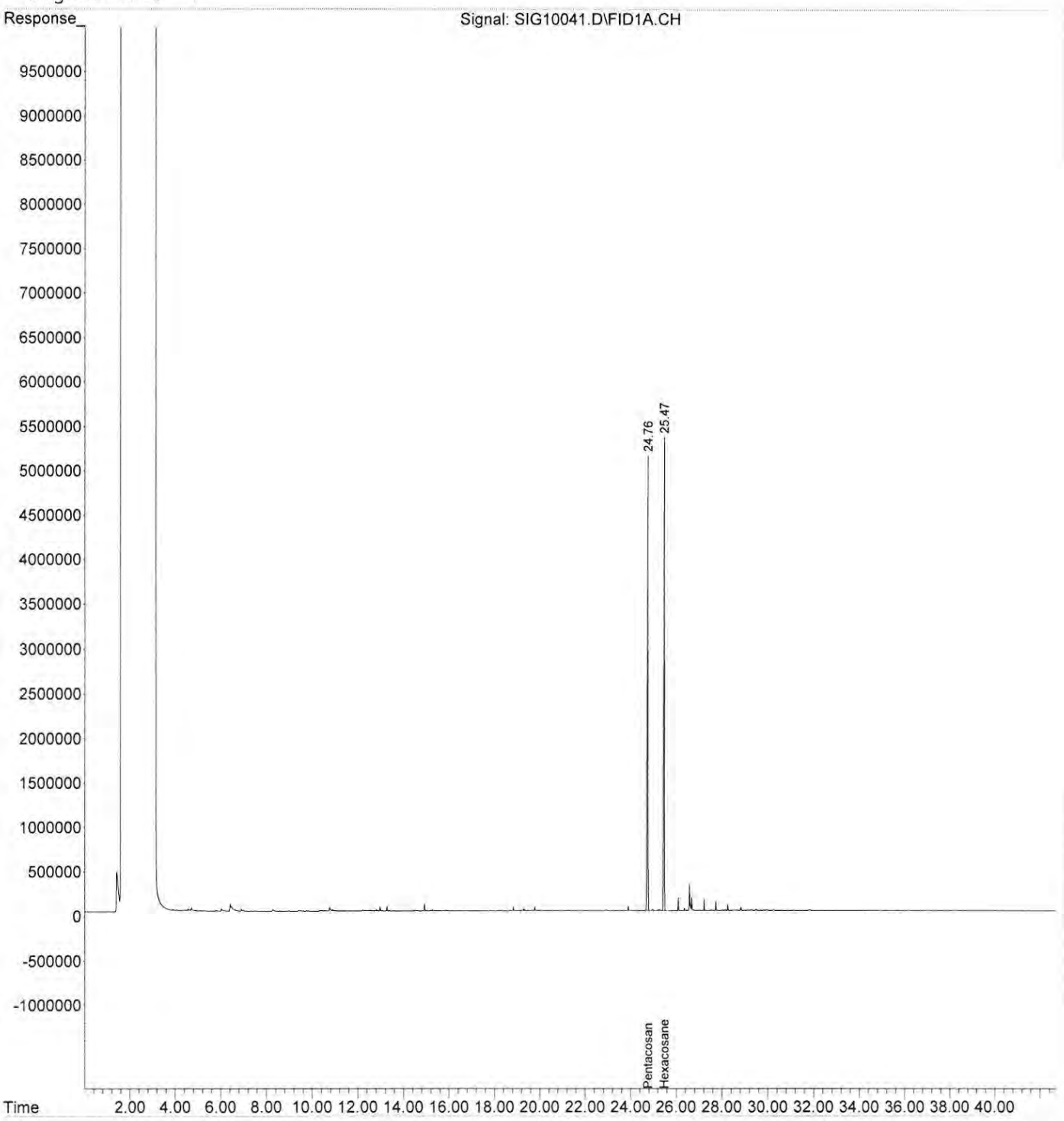
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10041.D Vial: 55
Acq On : 30 Jun 2023 1:18 am Operator: BAN
Sample : WDF1311-12 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:54 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10042.D Vial: 19
Acq On : 30 Jun 2023 2:14 am Operator: BAN
Sample : BDF1035-BS3 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:37 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Internal Standards			
1) I	Pentacosane	24.74	78548343	50.000 ppm
	System Monitoring Compounds			
2) S	Hexacosane	25.46	75857236	42.986 ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	85.97%
	Target Compounds			
3) H	TPH Diesel (C12-C14)	21.97	479617148	309.908 ppm
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H	Mineral Oil	0.00	0	N.D. ppm
6) h	HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h	HCID Diesel (C12-C14)	0.00	0	N.D. ppm
8) h	HCID Oil (>C14)	0.00	0	N.D. ppm

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

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10042.D Vial: 19
Acq On : 30 Jun 2023 2:14 Operator: BAN
Sample : BDF1035-BS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:37 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Internal Standards			
1) I	Pentacosane	24.74	78548343	50.000 ppm
	System Monitoring Compounds			
2) S	Hexacosane	25.46	75857236	42.986 ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	85.97%
	Target Compounds			
3) H	TPH Diesel (C12-C14)	21.97	479617148	309.908 ppm
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H	Mineral Oil	0.00	0	N.D. ppm
6) h	HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h	HCID Diesel (C12-C14)	0.00	0	N.D. ppm
8) h	HCID Oil (>C14)	0.00	0	N.D. ppm

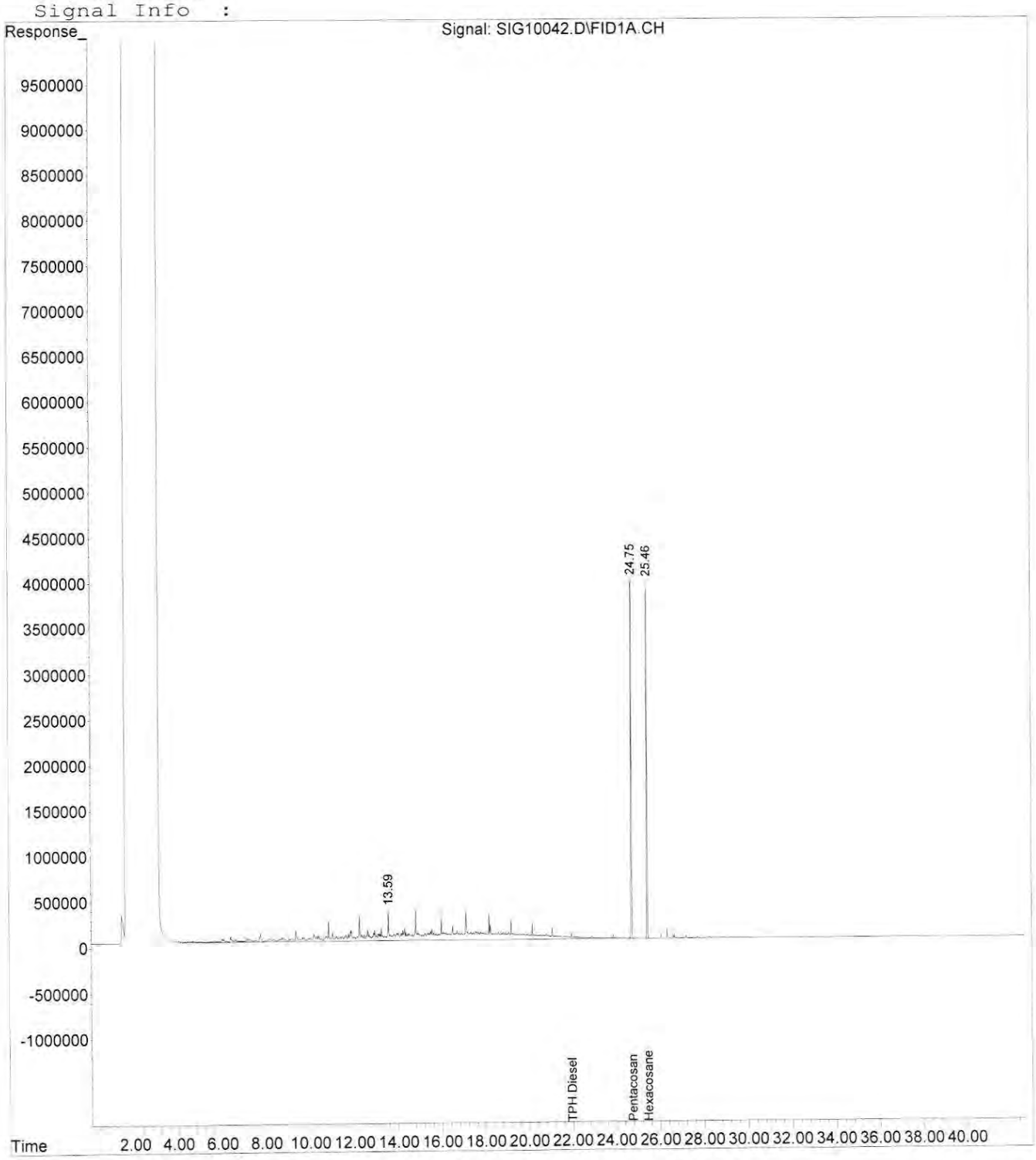
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10042.D Vial: 19
Acq On : 30 Jun 2023 2:14 Operator: BAN
Sample : BDF1035-BS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:50 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

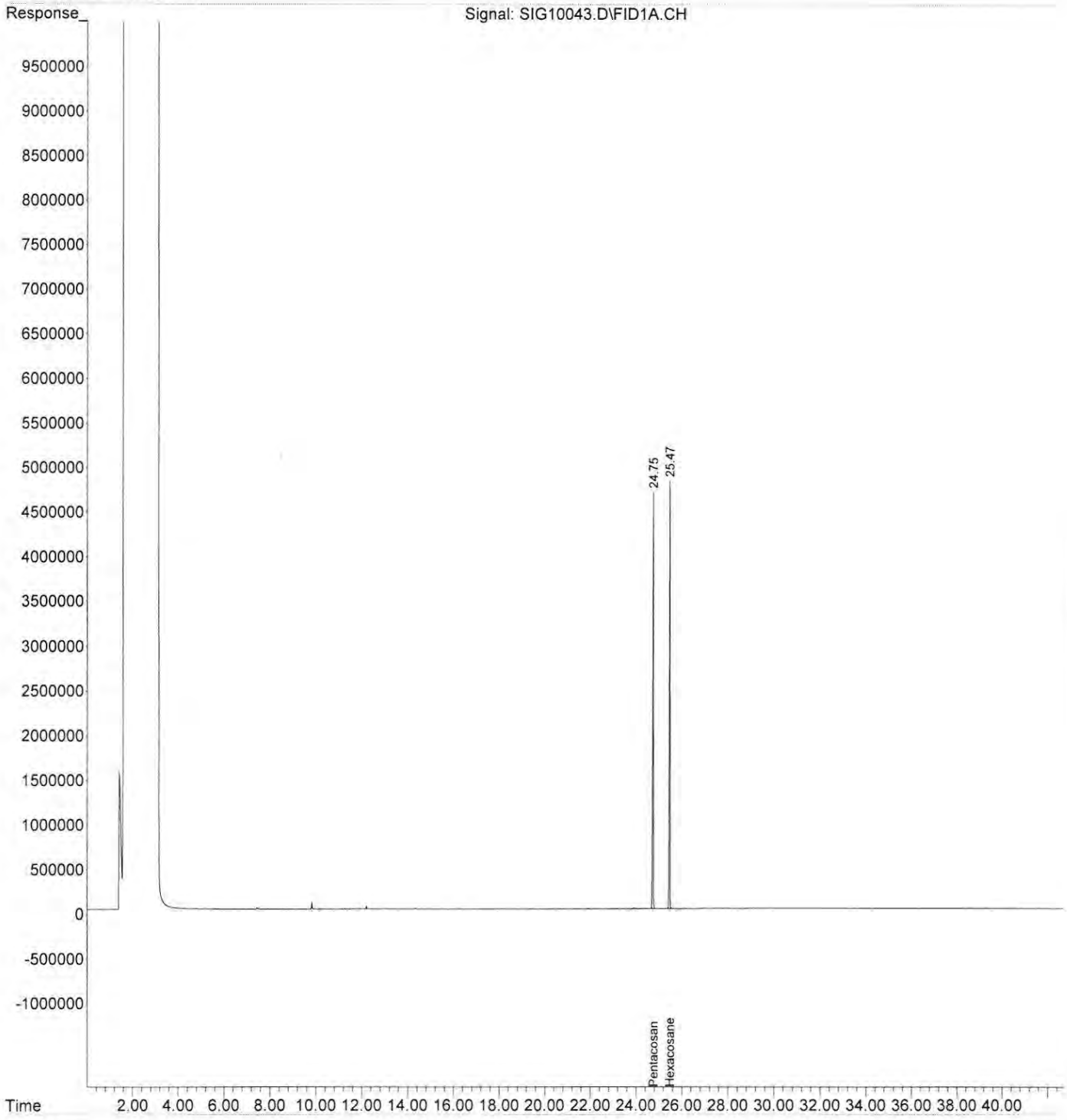


Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10043.D Vial: 1
Acq On : 30 Jun 2023 3:09 am Operator: BAN
Sample : Blank Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:48 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10044.D Vial: 2
Acq On : 30 Jun 2023 4:04 am Operator: BAN
Sample : 500 ppm Dx Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:40 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
	Internal Standards			
1) I	Pentacosane	24.75	100267420	50.000 ppm
	System Monitoring Compounds			
2) S	Hexacosane	25.47	110875688	49.220 ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	98.44%
	Target Compounds			
3) H	TPH Diesel (C12-C14)	21.97	920862204	466.133 ppm
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H	Mineral Oil	0.00	0	N.D. ppm
6) h	HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h	HCID Diesel (C12-C14)	0.00	0	N.D. ppm
8) h	HCID Oil (>C14)	0.00	0	N.D. ppm

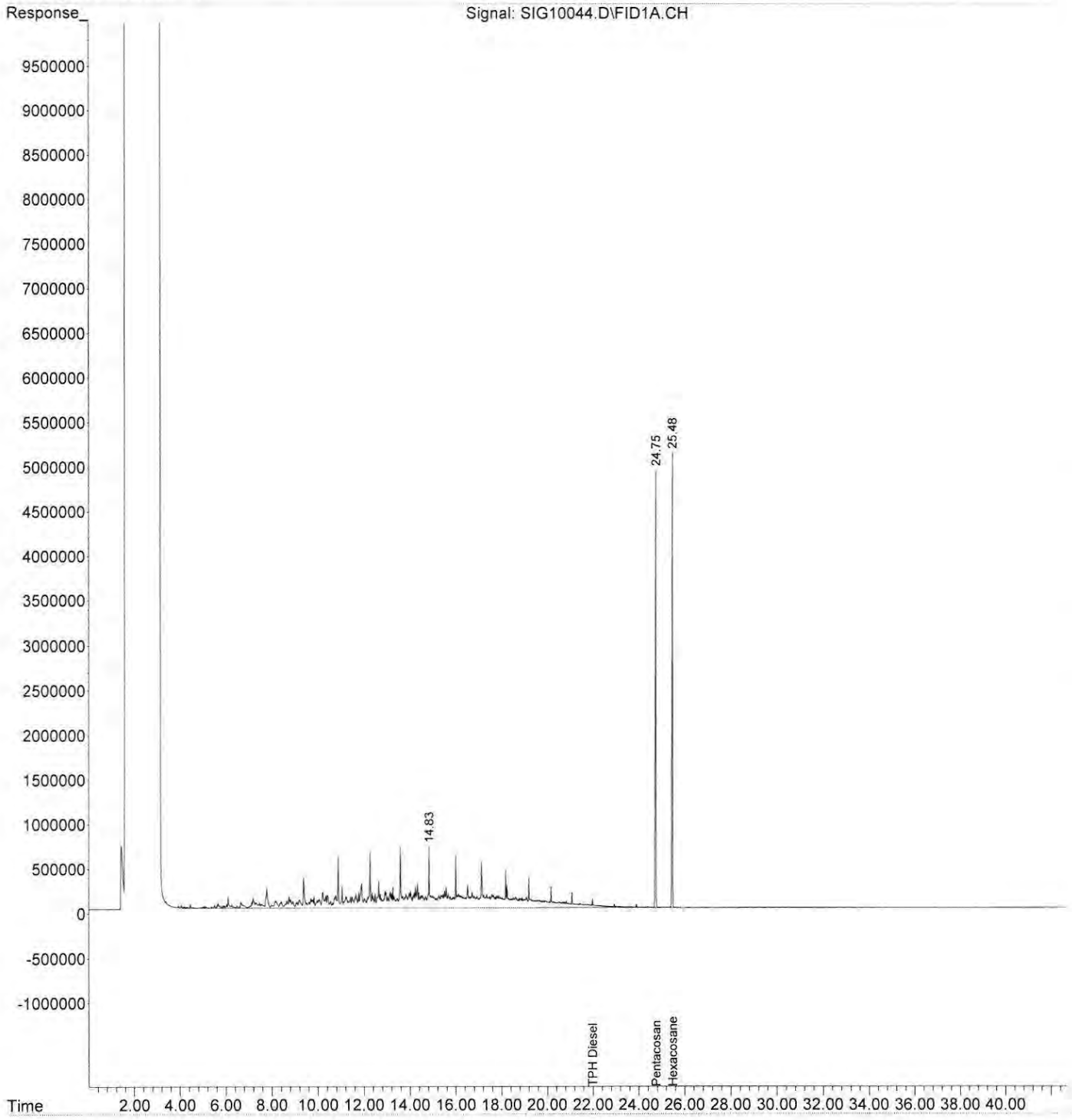
(f)=RT Delta > 1/2 Window (m)=manual int.
SIG10044.D 230619LOWDHT.M Tue Aug 08 12:22:12 2023 Page 1

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10044.D Vial: 2
Acq On : 30 Jun 2023 4:04 am Operator: BAN
Sample : 500 ppm Dx Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:48 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10045.D Vial: 3
Acq On : 30 Jun 2023 5:00 am Operator: BAN
Sample : 1000 ppm Mo+Gas Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:41 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	Internal Standards					
1) I	Pentacosane	24.76	96041224	50.000	ppm	m
	System Monitoring Compounds					
2) S	Hexacosane	25.48	104679986	48.515	ppm	m
Spiked Amount	50.000	Range 50 - 150	Recovery =	97.03%		
	Target Compounds					
3) H	TPH Diesel (C12-C14)	0.00	0	N.D.	ppm	
4) H	TPHDX-Lube Oil (>C14)	26.20	1007361131	986.821	ppm	
5) H	Mineral Oil	0.00	0	N.D.	ppm	
6) h	HCID Gas (C7-C12)	5.05	39871180	41.819	ppm	
7) h	HCID Diesel (C12-C14)	0.00	0	N.D.	ppm	
8) h	HCID Oil (>C14)	0.00	0	N.D.	ppm	

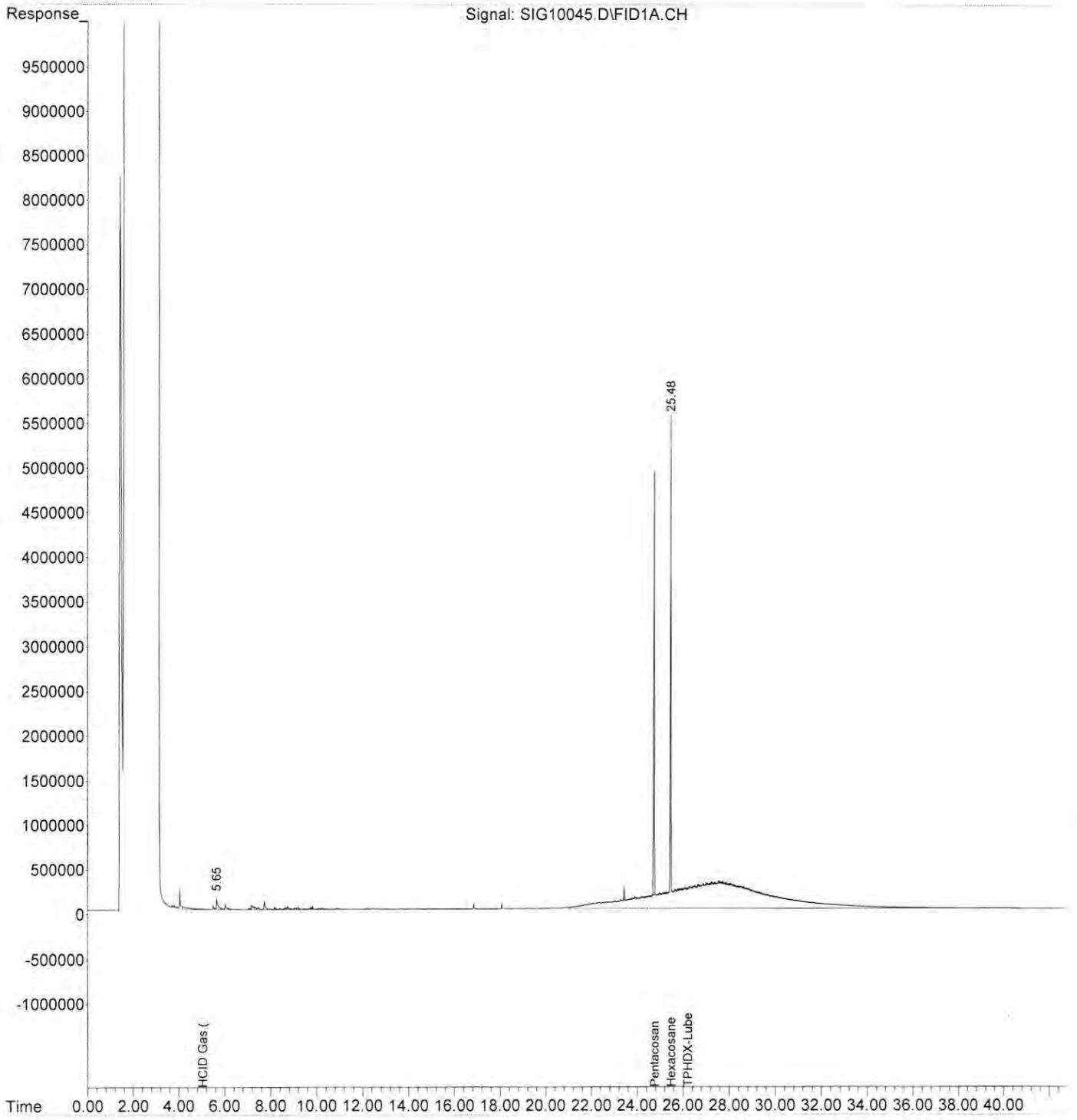
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10045.D Vial: 3
Acq On : 30 Jun 2023 5:00 am Operator: BAN
Sample : 1000 ppm Mo+Gas Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:48 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10046.D Vial: 4
Acq On : 30 Jun 2023 5:55 am Operator: BAN
Sample : 1000 ppm To Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:43 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

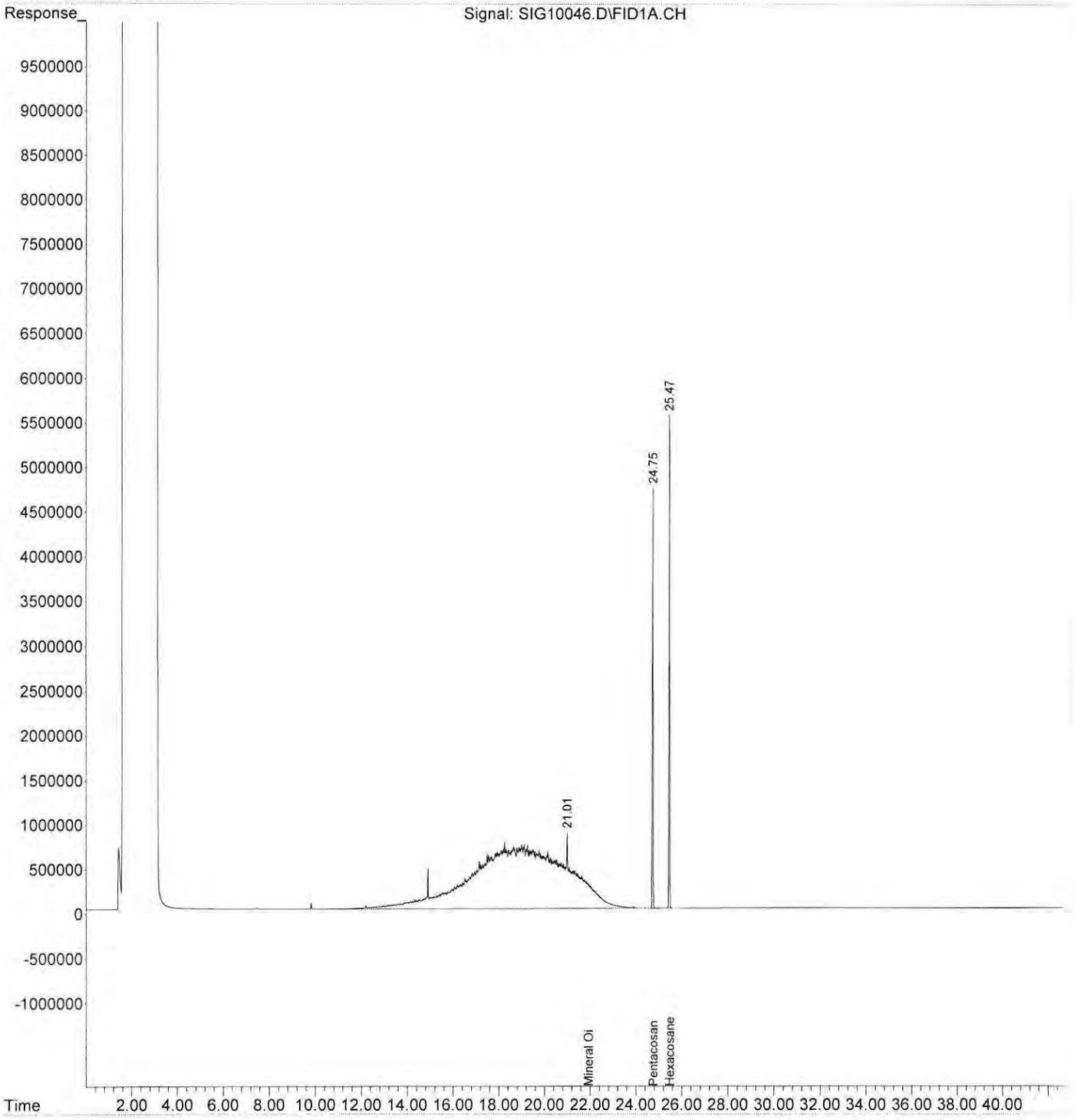
	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Pentacosane	24.74	104435287	50.000	ppm
	System Monitoring Compounds				
2) S	Hexacosane	25.47	114970957	49.001	ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	98.00%	
	Target Compounds				
3) H	TPH Diesel (C12-C14)	0.00	0	N.D.	ppm
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm
5) H	Mineral Oil	21.94	2064662454	961.539	ppm
6) h	HCID Gas (C7-C12)	0.00	0	N.D.	ppm
7) h	HCID Diesel (C12-C14)	0.00	0	N.D.	ppm
8) h	HCID Oil (>C14)	0.00	0	N.D.	ppm

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10046.D Vial: 4
Acq On : 30 Jun 2023 5:55 am Operator: BAN
Sample : 1000 ppm To Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:48 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10047.D Vial: 5
Acq On : 30 Jun 2023 6:50 am Operator: BAN
Sample : Dx ICV Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:45:44 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Pentacosane	24.75	106860109	50.000	ppm
	System Monitoring Compounds				
2) S	Hexacosane	25.47	117510225	48.947	ppm
Spiked Amount	50.000	Range 50 - 150	Recovery =	97.89%	
	Target Compounds				
3) H	TPH Diesel (C12-C14)	21.97	964159456	457.940	ppm
4) H	TPHDX-Lube Oil (>C14)	0.00	0	N.D.	ppm
5) H	Mineral Oil	0.00	0	N.D.	ppm
6) h	HCID Gas (C7-C12)	0.00	0	N.D.	ppm
7) h	HCID Diesel (C12-C14)	0.00	0	N.D.	ppm
8) h	HCID Oil (>C14)	0.00	0	N.D.	ppm

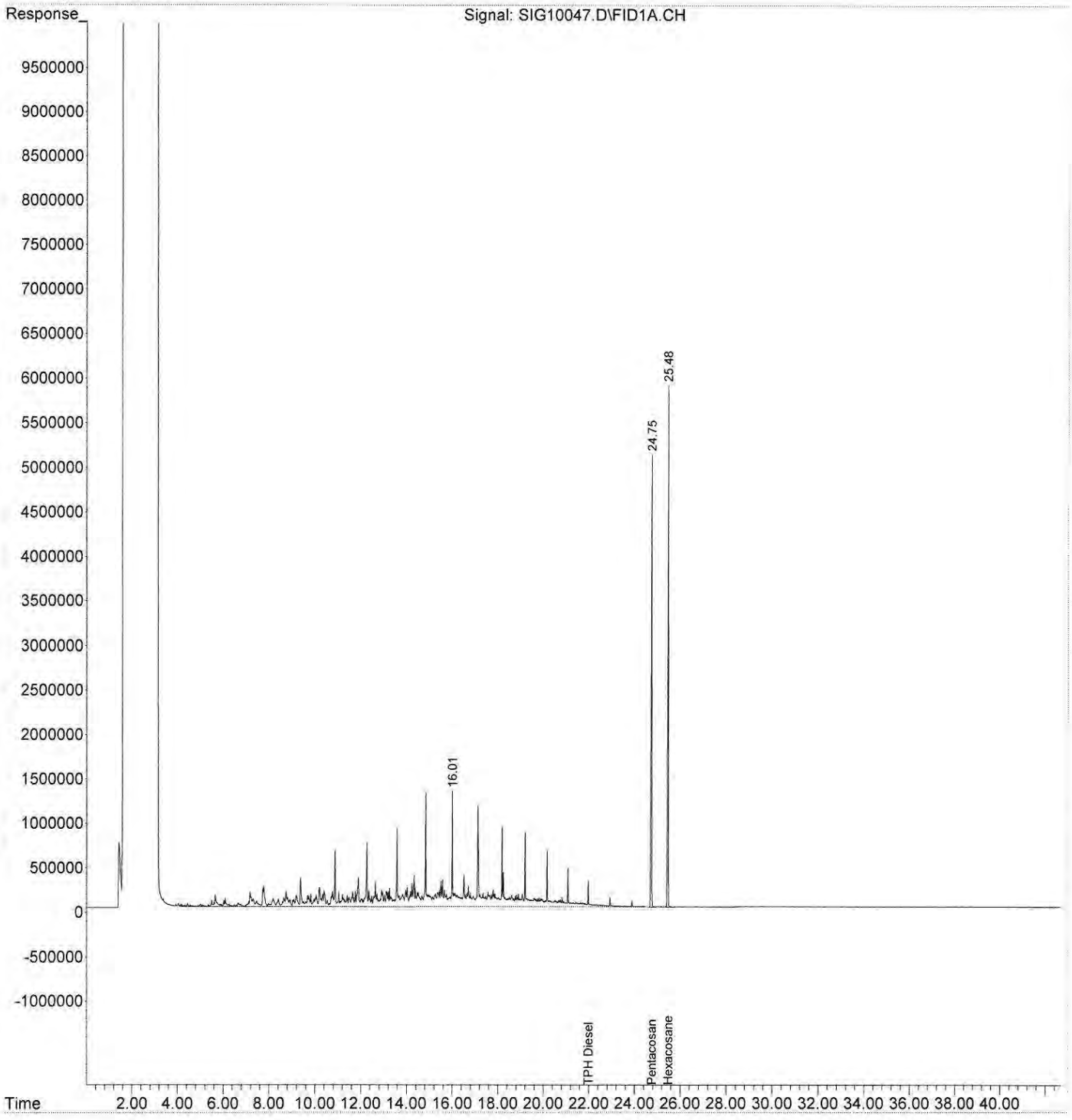
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : M:\HPCHEM\1\2023DATA\06JUNE\062823\SIG10047.D Vial: 5
Acq On : 30 Jun 2023 6:50 am Operator: BAN
Sample : Dx ICV Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Jun 30 10:49 2023 Quant Results File: 230619LOWDHT.RES

Quant Method : N:\HPCHEM\1...\230619LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Wed Jun 28 12:23:00 2023
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



ENTHALPY ANALYTICAL
TOXICITY LABORATORY & CONSULTING

Acute Toxicity Test Results for ADC Dry Weather Water Quality Monitoring

Monitoring Period: June 2023

Prepared for:	Stantec 737 Bishop St., Suite 3050 Honolulu, HI 96734
Testing Lab:	Enthalpy Analytical 4340 Vandever Avenue San Diego, CA 92120
Submitted:	August 18, 2023

Data Quality Assurance:

- Enthalpy Analytical (formerly Nautilus Environmental) is accredited in accordance with NELAP by the State of Oregon Environmental Laboratory Accreditation Program (Certificate No. 4053). It is also certified by the State of California Department of Health Services Environmental Laboratory Accreditation Program (Certificate No. 1802) and the State of Washington Department of Ecology (Lab ID C552).
- All data have been reviewed and verified.
- All test results have met minimum test acceptability criteria under their respective EPA protocols, unless otherwise noted in this report.
- All results have met internal Quality Assurance Program requirements, unless otherwise noted in this report.

Data Verified by: Borelo

Barbara Orelo, Project Manager

California
4340 Vandever Ave
San Diego, CA 92120
858.587.7333

Introduction

A sample was collected during a dry weather event for the ADC Kekaha Water Quality Monitoring. The sample was submitted by Stantec. Testing was conducted at the Enthalpy Analytical Laboratory in San Diego, California using the fathead minnow (*Pimephales promelas*), water flea (*Ceriodaphnia dubia*), and freshwater amphipod (*Hyalella azteca*) 96-hour acute survival tests.

Materials and Methods

Sample Information

Client:	Stantec
Project Name:	ADC Kekaha Water Quality Monitoring
Sample IDs:	WW-3
Sample Collection Dates, Times[a]:	6/19/23, 13:00
Sample Receipt Dates, Times:	6/21/23, 09:54
Sample Material:	Dry weather sample
Sampling Method:	Grab

[a] Collection times adjusted to Pacific Standard Time from Hawaii Standard Time.

Table 1. Water Quality Parameters Measured upon Sample Receipt

Sample ID	pH	DO (mg/L)	Temp. (ºC)	Cond. (µS/cm)	Salinity (ppt)	Alkalinity (mg/L as $CaCO_3$)	Hardness (mg/L as CaCO3)	Total Chlorine (mg/L)
WW-3	7.64	7.4	2.2	652	0.3	95	123	0.02

Acute Toxicity Test Methods

Testing was conducted in accordance with methods published in US Environmental Protection Agency (USEPA) guidance (2002). Test specifications are summarized in Table 2.

Table 2. 96-hr Acute Survival Test Specifications

Fathead minnow test: 6/21/23, 14:30 to 6/25/23, 13:45	Species: *Pimephales promelas.* Source & Age: Aquatic Biosystems (Ft. Collins, CO), 6 days
Water flea test: 6/21/23, 15:20 to 6/25/23, 13:40	Species: *Ceriodaphnia dubia.* Source & Age: Internal culture, < 24 hours
Freshwater amphipod test: 6/21/23, 14:35 to 6/25/23, 13:55	Species: *Hyalella azteca.* Source & Age: Aquatic Research Organisms (Hampton, NH), 13 days
Protocol Used:	Acute Manual (EPA/821/R-02/012), EPA 2002
Test Acceptability Criteria:	Control mean survival ≥ 90%
Test Concentration:	100% sample (WW-3)
Lab Control Water:	Diluted mineral water (per EPA protocol) for *P. promelas* and *C. dubia*; Carbon-filtered municipal water (Coast) for *H. azteca*

Statistical Analyses

Statistical analyses were conducted using EPA flowchart specifications as outlined in the test guidance manual (USEPA 2002). Organism performance in the sample was compared to that observed in the concurrent lab or salt control. Results were used to calculate whether a statistically significant effect was observed between the control and sample result. Comprehensive Environmental Toxicity Information System™ (CETIS) software by Tidepool Scientific Software, version 2.1.2.3.

Results

No statistically significant effects were detected to survival for any of the species tested. A summary of results is presented in Table 3.

Raw datasheets and complete statistical summaries for all tests are provided in Appendix A. Sample receipt information is provided in Appendix B, and a copy of the chain of custody form is presented in Appendix C.

Table 3. Summary of Freshwater 96-hr Acute Survival Results

Sample ID	Species	Lab Control Result	100% Sample Result	Statistically Significant Effect? (Yes/No)	Percent Effect
WW-3	Fathead Minnow	97.5	97.5	No	0.0
	Water Flea	100	100	No	0.0
	Freshwater Amphipod	100	100	No	0.0

Percent effect from control is calculated as: ((mean response in lab control - mean response in undiluted sample)/mean response in lab control) *100. A negative value results when organism performance in the sample is greater than that in the lab control.

Quality Assurance

The sample was received via overnight delivery service two days after collection and within the range of 0-6 degrees Celsius (°C). The tests were initiated within the maximum allowable holding time of 72 hours.

Mean control responses met minimum acceptability criteria for all tests. Minor QA issues that were unlikely to have any bearing on the final test data, such as slight temperature deviations, are noted on the datasheets, and a list of laboratory qualifier codes can be found in Appendix D.

Reference Toxicant Testing

Results for reference toxicant testing used to monitor laboratory performance and test organism sensitivity are summarized in Table 4. The reference toxicant tests for all species tested met all acceptability criteria. The median effect concentration values (EC_{50}) were within two standard deviations of the historical means for all endpoints, indicating organisms exhibited typical sensitivity as historically observed in our laboratory. The control charts for the previous 20 reference toxicant tests are presented in Appendix E.

Table 4. Summary of 96-hr Acute Survival Reference Toxicant Test Results

Species	NOEC (µg/L copper)	LC_{50} (µg/L copper)	Historical LC_{50} ± 2 SD (µg/L copper)	CV (%)
Fathead Minnow	<15	40.4	70.6 ± 62.9	44.5
Water Flea	10	16.2	17.7 ± 15.0	42.4
Freshwater Amphipod	200	384	437 ± 257	29.4

NOEC = the highest concentration tested that results in no observed effect
LC_{50} = the concentration expected to cause a lethal effect to 50 percent of the test organisms
Historical LC_{50} ± 2 SD = the mean LC_{50} from the previous 20 tests performed by Enthalpy, plus or minus two standard deviations
CV = Coefficient of Variation

References

Tidepool Scientific Software. 2000-2022. CETIS Comprehensive Environmental Toxicity Information System Software, Version 2.1.4.11.

USEPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. EPA/821/R-02/012. US EPA Office of Water, Washington, DC.

Appendix A

Raw Data and Statistical Summaries

CETIS Summary Report

Fathead Minnow 96-h Acute Survival Test — **Nautilus Environmental (CA)**

Batch ID:	13-0952-7689	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	21 Jun-23 14:30	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Not Applicable
Ending Date:	25 Jun-23 13:45	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	95h	**Taxon:**		**Source:**	Aquatic Biosystems, CO **Age:** 6d

Sample ID:	10-0143-6904	**Code:**	23-0744	**Project:**	ADC Kekaha WQ Monitoring
Sample Date:	19 Jun-23 13:00 PDT	**Material:**	Dry Weather Sample	**Source:**	Stantec
Receipt Date:	21 Jun-23 09:54 PDT	**CAS (PC):**		**Station:**	WW-3
Sample Age:	50h (2.2 °C)	**Client:**	Stantec		

SIngle Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
08-3304-4299	96h Survival Rate	Wilcoxon Rank Sum Two-Sample Test	0.7857	100% passed 96h survival rate	1

Test Acceptability

				TAC Limits			
Analysis ID	**Endpoint**	**Attribute**	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
08-3304-4299	96h Survival Rate	Control Resp	0.975	0.9	<<	Yes	Passes Criteria

96h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	4	0.975	0.895	1.050	0.900	1.000	0.025	0.050	5.13%	0.00%
100		4	0.975	0.895	1.050	0.900	1.000	0.025	0.050	5.13%	0.00%

96h Survival Rate Detail — MD5: 067FCD1365324BDD8BABDBFE30B91D41

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LC	0.900	1.000	1.000	1.000
100		1.000	1.000	1.000	0.900

Fathead Minnow 96-h Acute Survival Test — **Nautilus Environmental (CA)**

Analysis ID:	08-3304-4299	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	06 Jul-23 14:48	**Analysis:**	Nonparametric-Two Sample	**Status Level:**	1
Edit Date:	06 Jul-23 14:47	**MD5 Hash:**	067FCD1365324BDD8BABDBFE30B91D4	**Editor ID:**	009-628-326-6

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed 96h survival rate endpoint	7.07%

Wilcoxon Rank Sum Two-Sample Test

Control	vs	Conc-%	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)
Lab Control		100	6	18	---	2	Exact	0.7857	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	0	1.0000	Non-Significant Effect
Error	0.039839	0.0066398	6			
Total	0.039839		7			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Variance Ratio F Test	1	47.5	1.0000	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.566	0.645	6.3E-05	Non-Normal Distribution

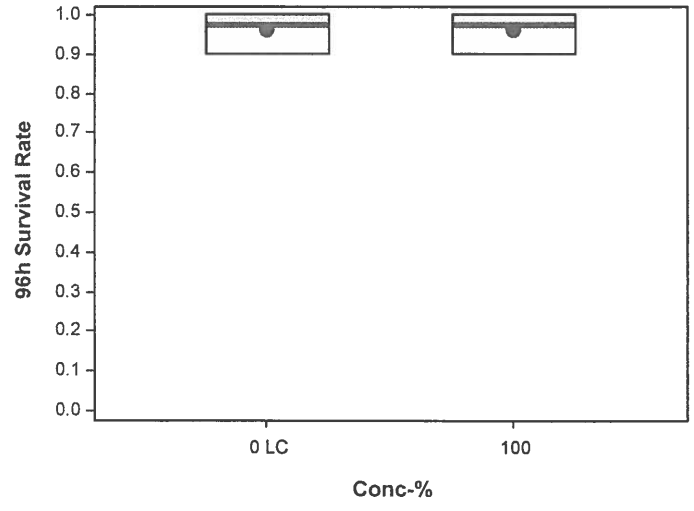
96h Survival Rate Summary

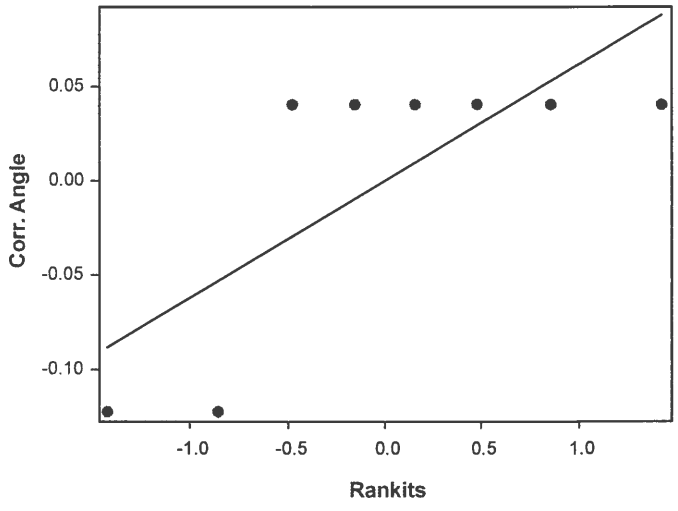
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	4	0.975	0.895	1.000	1.000	0.900	1.000	0.025	5.13%	0.00%
100		4	0.975	0.895	1.000	1.000	0.900	1.000	0.025	5.13%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	4	1.370	1.240	1.500	1.410	1.250	1.410	0.041	5.94%	0.00%
100		4	1.370	1.240	1.500	1.410	1.250	1.410	0.041	5.94%	0.00%

Graphics





96-hour Freshwater Acute Bioassay
Static-Renewal Conditions
DF-006

Water Quality Measurements & Test Organism Survival

Client: Stantec HI
Sample ID: WW-3
Sample Log-in No's.: 23-0744
Test No's.: 2306-~~5117~~ 5116 (initialed)

Test Species: *P. promelas*
Start Date/Time: 6/21/23 1430
End Date/Time: 6/25/23 1345

Tech Initials	0	24	48	72	96
Counts:	DR	MK	WF	GM	DR
Readings:	GM	WF	WF	MK	DR
Dilutions made by:	WF		WF		

Sample ID (100%)	Rep	Number of Live Organisms					Conductivity (µmhos/cm)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)				
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	A	10	10	10	10	9	197	201	i 195	186	203	21.0	20.6	i 19.6	20.6	20.8	7.9	7.6	i 8.3	7.5	8.2	8.25	7.94	i 8.20	7.98	8.00
	B	10	10	10	10	10			f 199					f 20.3					f 7.8					f 8.00		
	C	10	10	10	10	10																				
	D	10	10	10	10	10																				
100%	A	10	10	10	10	10	653	649	i 641	610	661	19.5	20.7	i 19.0	20.5	20.6	7.7	7.5	i 8.7	8.0	8.4	7.53	7.90	i 7.84	7.96	8.1
	B	10	10	10	10	10			f 636					f 20.5					f 7.7					f 7.97		
	C	10	10	10	10	10																				
	D	10	10	10	10	9																				
	A	10							i					i					i					i		
	B	10							f					f					f					f		
	C	10																								
	D	10																								
	A	10							i					i					i					i		
	B	10							f					f					f					f		
	C	10																								
	D	10																								
	A	10							i					i					i					i		
	B	10							f					f					f					f		
	C	10																								
	D	10																								
	A								i					i					i					i		
	B								f					f					f					f		
	C																									
	D																									
	A								i					i					i					i		
	B								f					f					f					f		
	C																									
	D																									

Initial Counts QC'd by: GM
Initiated by: DR

Environmental Chamber: F

Animal Source/Date Received: ABS / 06-21-23
Age at Initiation: 6 days

Animal Acclimation Qualifiers (circle all that apply): Q22 / Q23 / Q24 / (none) (circled)

Feeding Times	0	24	48	72	96
AM:	--	--	0835	--	--
PM:	--	--	--	--	--

Comments: i = initial reading in fresh test solution, f = final reading in test chamber prior to renewal
Organisms fed prior to initiation, circle one (y) / n) @ 018 CM 7/6/23

QC Check: CM 7/6/23

Final Review: AES 7/17/23

CETIS Summary Report

Report Date: 06 Jul-23 14:59 (p 1 of 1)
Test Code/ID: 2306-S117 / 03-2673-5647

Ceriodaphnia 96-h Acute Survival Test — **Nautilus Environmental (CA)**

Batch ID:	14-4579-4246	**Test Type:**	Survival (96h)	**Analyst:**			
Start Date:	21 Jun-23 15:20	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Not Applicable		
Ending Date:	25 Jun-23 13:40	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable		
Test Length:	94h	**Taxon:**		**Source:**	In-House Culture	**Age:**	<24h

Sample ID:	20-4620-3243	**Code:**	23-0744	**Project:**	ADC Kekaha WQ Monitoring
Sample Date:	19 Jun-23 13:00 PDT	**Material:**	Dry Weather Sample	**Source:**	Cardno Hawaii
Receipt Date:	21 Jun-23 09:54 PDT	**CAS (PC):**		**Station:**	WW-3
Sample Age:	50h (2.2 °C)	**Client:**	Stantec		

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
13-0997-5802	96h Survival Rate	Wilcoxon Rank Sum Two-Sample Test	1.0000	100% passed 96h survival rate	1

Test Acceptability

				TAC Limits			
Analysis ID	**Endpoint**	**Attribute**	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
13-0997-5802	96h Survival Rate	Control Resp	1	0.9	<<	Yes	Passes Criteria

96h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	4	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
100		4	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%

96h Survival Rate Detail — MD5: 02835A6FE1710696B7C8F79EC2C22377

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LC	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000

CETIS Analytical Report

Ceriodaphnia 96-h Acute Survival Test — **Nautilus Environmental (CA)**

Analysis ID:	13-0997-5802	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	06 Jul-23 14:59	**Analysis:**	Nonparametric-Two Sample	**Status Level:**	1
Edit Date:	06 Jul-23 14:58	**MD5 Hash:**	02835A6FE1710696B7C8F79EC2C22377	**Editor ID:**	009-628-326-6

Data Transform	Alt Hyp	Comparison Result
Angular (Corrected)	C > T	100% passed 96h survival rate endpoint

Wilcoxon Rank Sum Two-Sample Test

Control	vs	Conc-%	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)
Lab Control		100	6	18	---	1	Exact	1.0000	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1			Indeterminate
Error	0	0	6			
Total	0		7			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Variance Ratio F Test				Indeterminate
Distribution	Shapiro-Wilk W Normality Test				Indeterminate

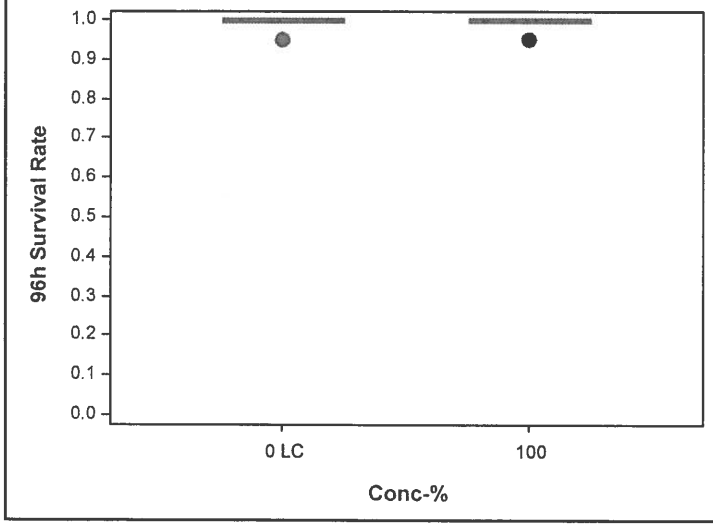
96h Survival Rate Summary

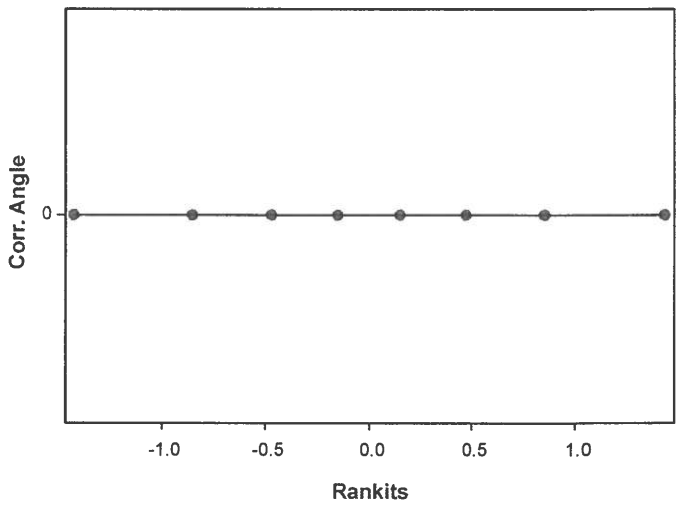
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
100		4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	4	1.350	1.340	1.350	1.350	1.350	1.350	0.000	0.00%	0.00%
100		4	1.350	1.340	1.350	1.350	1.350	1.350	0.000	0.00%	0.00%

Graphics





96-hour Freshwater Acute Bioassay
Static-Renewal Conditions
DF-002

Water Quality Measurements & Test Organism Survival

Client: Stantec HI
Sample ID: WW-3
Sample Log-in No.: 23-0744
Test No.: 2306-S117

Test Species: *C.dubia*
Start Date/Time: 6/21/23 1520
End Date/Time: 6/25/23 1340

Tech Initials	0	24	48	72	96
Counts:	GM	HH	GM	GM	HH
Readings:	GM	WF	GM	MK	HH
Dilutions made by:	GM/WF		WF		

Concentration (%)	REP	Number of Live Organisms					Conductivity (µmhos/cm)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)				
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	A	5	5	5	5	5	196	199	i 196	189	211	20.8	20.9	i 21.0	20.6	20.4	8.3	8.6	i 8.3	8.5	8.5	8.26	8.30	i 8.10	8.25	8.22
	B	5	5	5	5	5			f 235					f 20.0					f 8.3					f 8.37		
	C	5	5	5	5	5																				
	D	5	5	5	5	5																				
100%	A	5	5	5	5	5	656	649	i 630	608	606	19.5	20.7	i 19.5	20.3	20.4	8.2	8.7	i 8.6	8.7	8.6	7.73	8.19	i 7.68	8.19	8.23
	B	5	5	5	5	5			f 659					f 20.0					f 8.4					f 8.28		
	C	5	5	5	5	5																				
	D	5	5	5	5	5																				
									i					i					i					i		
									f					f					f					f		
									i					i					i					i		
									f					f					f					f		
									i					i					i					i		
									f					f					f					f		
									i					i					i					i		
									f					f					f					f		
									i					i					i					i		
									f					f					f					f		

Initial Counts QC'd by: KR
Initiated by: GM

Environmental Chamber: F

Animal Source/Date Received: Internal N/A
Age at Initiation: <24 hrs

Feeding Times				
0	24	48	72	96
--	--	1245	--	--
--	--	--	--	--

Comments: i = initial reading in fresh test solution, f = final reading in test chamber prior to renewal
Organisms fed prior to initiation, (circle one: y / n) — y circled

QC Check: CM 7/6/23

Final Review: AIS 7/17/23

CETIS Summary Report

Acute Amphipod Survival Test — **Nautilus Environmental (CA)**

Batch ID:	02-2465-7850	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	21 Jun-23 14:35	**Protocol:**	EPA/600/R-99/064 (2000)	**Diluent:**	Not Applicable
Ending Date:	25 Jun-23 13:55	**Species:**	Hyalella azteca	**Brine:**	Not Applicable
Test Length:	95h	**Taxon:**		**Source:**	Aquatic Research Organis **Age:** 13d

Sample ID:	17-5474-3505	**Code:**	23-0744	**Project:**	ADC Kekaha WQ Monitoring
Sample Date:	19 Jun-23 13:00 PDT	**Material:**	Dry Weather Sample	**Source:**	Cardno Hawaii
Receipt Date:	21 Jun-23 09:54 PDT	**CAS (PC):**		**Station:**	WW-3
Sample Age:	50h (2.2 °C)	**Client:**	Cardno Hawaii		

SIngle Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
13-1492-1323	96h Survival Rate	Wilcoxon Rank Sum Two-Sample Test	1.0000	100% passed 96h survival rate	1

Test Acceptability

				TAC Limits			
Analysis ID	**Endpoint**	**Attribute**	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
13-1492-1323	96h Survival Rate	Control Resp	1	0.9	<<	Yes	Passes Criteria

96h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	4	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
100		4	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%

96h Survival Rate Detail — MD5: 02835A6FE1710696B7C8F79EC2C22377

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LC	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000

CETIS Analytical Report

Acute Amphipod Survival Test — **Nautilus Environmental (CA)**

Analysis ID:	13-1492-1323	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	06 Jul-23 15:03	**Analysis:**	Nonparametric-Two Sample	**Status Level:**	1
Edit Date:	06 Jul-23 15:03	**MD5 Hash:**	02835A6FE1710696B7C8F79EC2C22377	**Editor ID:**	009-628-326-6

Data Transform	Alt Hyp	Comparison Result
Angular (Corrected)	C > T	100% passed 96h survival rate endpoint

Wilcoxon Rank Sum Two-Sample Test

Control	vs	Conc-%	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)
Lab Control		100	6	18	---	1	Exact	1.0000	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1			Indeterminate
Error	0	0	6			
Total	0		7			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Variance Ratio F Test				Indeterminate
Distribution	Shapiro-Wilk W Normality Test				Indeterminate

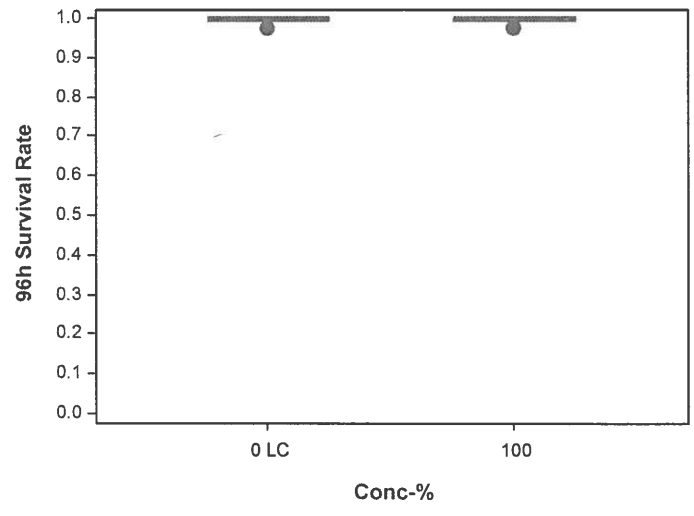
96h Survival Rate Summary

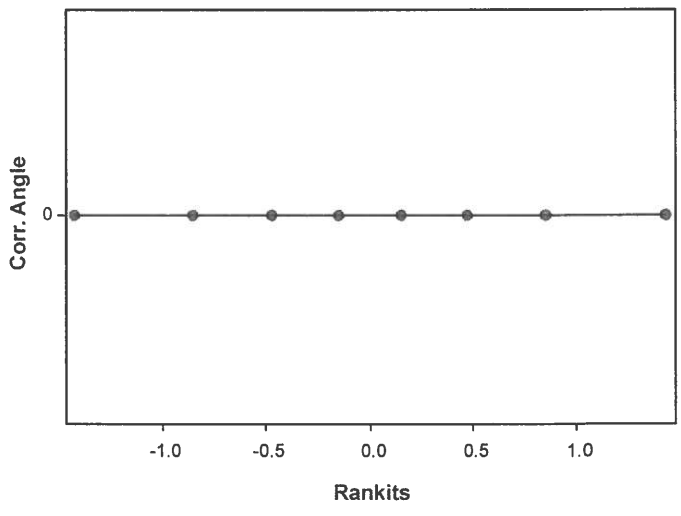
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
100		4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	4	1.410	1.410	1.410	1.410	1.410	1.410	0.000	0.00%	0.00%
100		4	1.410	1.410	1.410	1.410	1.410	1.410	0.000	0.00%	0.00%

Graphics





96-hour Freshwater Acute Bioassay
Static-Renewal Conditions
DF-006

Water Quality Measurements
& Test Organism Survival

Client: Stantec HI
Sample ID: WW-3
Sample Log-in No's.: 23-0744
Test No's.: 2306-S118

Test Species: *H. azteca*
Start Date/Time: 6/21/23 1435
End Date/Time: 6/25/23 1355

Tech Initials	0	24	48	72	96
Counts:	MK	MK	MK	AK	DR
Readings:	GM	WF	WF	MK	DR
Dilutions made by:	WF		WF		

Sample ID (100%)	Rep	Number of Live Organisms					Conductivity (µmhos/cm)					Temperature (°C)					Dissolved Oxygen (mg/L) Q14					pH (units)				
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	A	10	10	10	10	10	705	708	i 709	672	741	19.8	20.2	i 19.4	20.0	20.3	9.1	8.8	i 8.9	8.6	8.7	8.25	8.29	i 8.35	8.26	8.28
(0095)	B	10	10	10	10	10			f 706					f 19.9					f 8.2					f 8.15		
	C	10	10	10	10	10																				
	D	10	10	10	10	10																				
100%	A	10	10	10	10	10	654	663	i 643	630	678	19.9	20.3	i 19.4	20.1	20.5	7.5	8.6	i 8.8	8.5	8.6	~~7.58~~	8.15	i 7.87	8.17	8.20
	B	10	10	10	10	10			f 665					f 19.9					f 8.1			7.67 (A)		f 8.11		
	C	10	10	10	10	10																				
	D	10	10	10	10	10																				
	A	10							i					i					i					i		
	B	10							f					f					f					f		
	C	10																								
	D	10																								
	A	10							i					i					i					i		
	B	10							f					f					f					f		
	C	10																								
	D	10																								
	A	10							i					i					i					i		
	B	10							f					f					f					f		
	C	10																								
	D	10																								
	A								i					i					i					i		
	B								f					f					f					f		
	C																									
	D																									
	A								i					i					i					i		
	B								f					f					f					f		
	C																									
	D																									

Initial Counts QC'd by: GM
Initiated by: MK

Environmental Chamber: F

Animal Source/Date Received: ARO / 6/21/23
Age at Initiation: 13 ~~6~~ (B) days

Animal Acclimation Qualifiers (circle all that apply): Q22 / (Q23) / Q24 / none

Feeding Times	0	24	48	72	96
AM:	--	--	0835	--	--
PM:	--	--	--	--	--

Comments: i = initial reading in fresh test solution, f = final reading in test chamber prior to renewal
Organisms fed prior to initiation, circle one (y) / n) (A) Q18 GM 6/21/23 (B) Q18 MK 6/21/23

QC Check: GM 7/6/23

Final Review: ACS 7/17/23

Enthalpy Analytical. 4340 Vandever Avenue. San Diego, CA 92120.

Appendix B

Sample Check-In Information

Enthalpy Analytical
4340 Vandever Avenue
San Diego, CA 92120

Sample Check-In Information
DC-006

Client: Stantec - GS
Tests Performed: acute fathead, water flea, amphipod
Project: ADC Kekaha
Test ID No.(s): 2306-S116 to S118

	1)	2)	3	4)
Sample ID:	WW-3			
Log-in No. (23-xxxx):	0744			
Sample Collection Date & Time:	6/19/23 1300 PDT			
Sample Receipt Date & Time:	6/21/23 0954			
Number of Containers & Container Type:	2x4L cubi			
Approx. Total Volume Received (L):	28L			
Check-in Temp (°C)	2.2			
Temperature OK? [1]	(Y) N	Y N	Y N	Y N
DO (mg/L)	7.4			
pH (units)	7.64			
Conductivity (µS/cm)	652			
Salinity (ppt)	0.3			
Alkalinity (mg/L) [2]	95			
Hardness (mg/L) [2,3]	123			
Total Chlorine (mg/L)	0.02			
Technician Initials	KR			

Freshwater Tests:

Control/Dilution Water Source: (8:2) (Coast) Other: _____ Alkalinity: 94/112 Hardness: 96/188

Additional Control? Y (N) = _____ Alkalinity: _____ Hardness: _____

Marine Tests:

Control/Dilution Water Source: LAB SW ART SW Other: _____ Alkalinity: _____ Salinity: _____

Additional Control? Y N = _____ Alkalinity: _____ Salinity: _____

Sample Salted w/ artificial salt? Y N If yes, target ppt and source? _____

Sample salted w/brine? Y N If yes, target ppt? _____

Notes [1] Temperature for sample must be 0-6°C if received >24 hours past collection time.
[2] mg/L as CaCO3, [3] Measured for freshwater samples only, NA = Not Applicable

Sample Descriptions:

1) light orange, slightly opaque, no odor, light debris
2)
3)
4)

COC Complete? (Y) N

Filtration? Y (N)
Initials: 1) 2) 3) 4)
Pore Size: _____
Organisms or Debris

pH Adjustment? Y (N)

	1	2	3	4	5	6
Initial pH:						
Amount of HCl added:						
Final pH:						

Cl_2 Adjustment? Y (N)

	1	2	3	4	5	6
Initial Free Cl_2:						
STS added:						
Final Free Cl_2:						

Sample Aeration? Y (N)

	1	2	3	4	5	6
Initial D.O.						
Duration & Rate						
Final D.O.						

Measure NH3 via test strip (circle one)? Y (N)

NH3 Strip Result* A:_____ B:_____ C:_____
*(if 6 or more, notify PM)

Subsamples for Additional Chemistry Required? Y (N)
NH3 Other _____
Tech Initials: _____

Additional Comments: _____

QC Check: BO 6/28/23 | CM 7/6/23

Final Review: ACS 7/17/23

Appendix C

Chain-of-Custody Form

Enthalpy Analytical - Environmental Toxicology

4340 Vandever Avenue
San Diego, CA 92120
Phone 858.587.7333
infoSD@enthalpy.com

Chain of Custody

Date 6/19/23 2/6/2023 (A) Page 1 of 1

Sample Collection By:

Report to:

Company	Stantec-GS (previously Cardno)
Address	737 Bishop St Suite 3050
City/State/Zip	Honolulu, HI 96734
Contact	Benjamin Berridge
Phone	808-476-0067
Email	benjamin.berridge@cardno-gs.com

Invoice To: Same as Report to [X]

Company	
Address	
City/State/Zip	
Contact	
Phone	
Email	

	SAMPLE ID	SAMPLE Date	SAMPLE Time	SAMPLE Type (G or C)	MATRIX CODE (FW, SW, Sed, STRM, GW, WW, O)	Container Type	Container Qty	COMMENTS	*P. promelas* 96-hr Acute Survival	*C. dubia* 96-hr Acute Survival	*H. azteca* 96-hr Acute Survival	*A. affinis* 6-hr Acute Survival	*M. beryllina* 6-hr Acute Survival	*A. bahia* 6-hr Acute Survival	Receipt Temperature (°C)
1	WW-3	06-19-2023	1000 HST	G	STRM - FW 0.35 PPT	2.5 Gal Plastic	2	Analyze outside of holding time.	X	X	X	X	X	X	2.2
2															
3															
4															
5															
6															
7															
8															
9															
10															

ANALYSES REQUIRED

Enthalpy Matrix Codes:
G = Grab
C = Composite
FW = Freshwater
SW = Seawater
Sed = Sediment
STRM = Stormwater
GW = Groundwater
WW = Wastewater
O = Other (specify)

(A) (B)

PROJECT INFORMATION		SAMPLE RECEIPT	
Project Name:	ADC Water Quality Monitoring	Total No. of Containers	2
PO No.:		Received Good Condition?	Y
Shipped Via:	FedEx	Matches Test Schedule?	Y

SPECIAL INSTRUCTIONS/COMMENTS:
(A) Organisms 7/17/23
(B) Freshwater organisms tested because salinity was <1ppt AHS 7/17/23

1) RELINQUISHED BY (CLIENT)	2) RECEIVED BY (COURIER)
(Signature) Hannah Hubanks (Time) 14:00	(Signature) (Time)
(Printed Name) Hannah Hubanks (Date) 6/20/2023	(Printed Name) (Date)
(Company) Cardno/Stantec	(Company) FedEx - See Shipping Information
3) RELINQUISHED BY (COURIER)	**4) RECEIVED BY (LABORATORY)**
(Signature) (Time)	(Signature) (Time) 0954
(Printed Name) (Date)	(Printed Name) Garratt Mike (Date) 6/21/23
(Company)	(Company) E/T - SD (Log-In #s) 23-0744

Additional costs may be required for sample disposal or storage. Payment net 30 unless otherwise contracted.
Shaded areas are for lab use only
Report turn-around-time varies depending on length of test; please inquire with your project manager.

http://enthalpy.com/environmental-toxicology-2/

Appendix D

Qualifier Code Glossary

Glossary of Qualifier Codes

Q1 - Temperature out of recommended range; corrective action taken and recorded in Test Temperature Correction Log

Q2 - Temperature out of recommended range; no action taken, test terminated same day

Q3 - Sample pH adjusted to within range of 6-9 with reagent grade NaOH or HCl, as needed

Q4 - Test aerated; D.O. levels dropped below 4.0 mg/L

Q5 - Test initiated with continuous aeration due to an anticipated drop in D.O.

Q6 - Airline obstructed or fell out of replicate and replaced; drop in D.O. occurred

Q7 - Salinity out of recommended range

Q8 - Spilled test chamber/ Unable to recover test organism(s)

Q9 - Inadequate sample volume remaining, partial renewal performed

Q10 - Inadequate sample volume remaining, no renewal performed

Q11 - Sample out of holding time; refer to QA section of report

Q12 - Replicate(s) not initiated; excluded from data analysis

Q13 - Survival counts not recorded due to poor visibility or heavy debris

Q14 - D.O. percent saturation was checked and was ≤ 110%

Q15 - Did not meet minimum test acceptability criteria. Refer to QA section of report.

Q16 - Percent minimum significant difference (PMSD) was below the lower bound limit for acceptability. This indicates that statistics may be over-sensitive in detecting a difference from the control due to low variability in the data set. Test results were reviewed and reported in accordance with guidance found in EPA-833-R-00-003, 2000 unless otherwise specified.

Q17 - Percent minimum significant difference (PMSD) was above the upper bound limit for acceptability. This indicates that statistics may be under-sensitive in detecting a difference from the control due to high variability in the data set. Test results were reviewed and reported in accordance with EPA-833-R-00-003, 2000 guidance unless otherwise specified.

Q18 - Incorrect or illegible Entry

Q19 - Miscalculation

Q20 - PMSD criteria do not apply to the test of significant toxicity (TST) analysis

Q21 - Other (provide reason in comments section)

Q22 - Greater than 10% batch mortality observed upon receipt and/or in holding prior to test initiation. Organisms acclimated to test conditions at Enthalpy and ultimately deemed fit to use for testing.

Q23 - Test organisms experienced a temperature shift greater than 3°C within 1 day or were received at a temperature greater than 3°C outside the recommended test temperature range and had minimal time to acclimate prior to test initiation. However, due to age-specific protocol requirements and/or sample holding time constraints, the organisms were used to initiate test(s). Organisms were ultimately deemed fit to use for testing.

Q24 - Test organisms experienced a salinity shift greater than 3 ppt within 1 day or were received at a salinity greater than 3 ppt outside the recommended test salinity range and had minimal time to acclimate prior to test initiation. However, due to age-specific protocol requirements and/or sample holding time constraints, the organisms were used to initiate test(s). Organisms were ultimately deemed fit to use for testing.

Appendix E

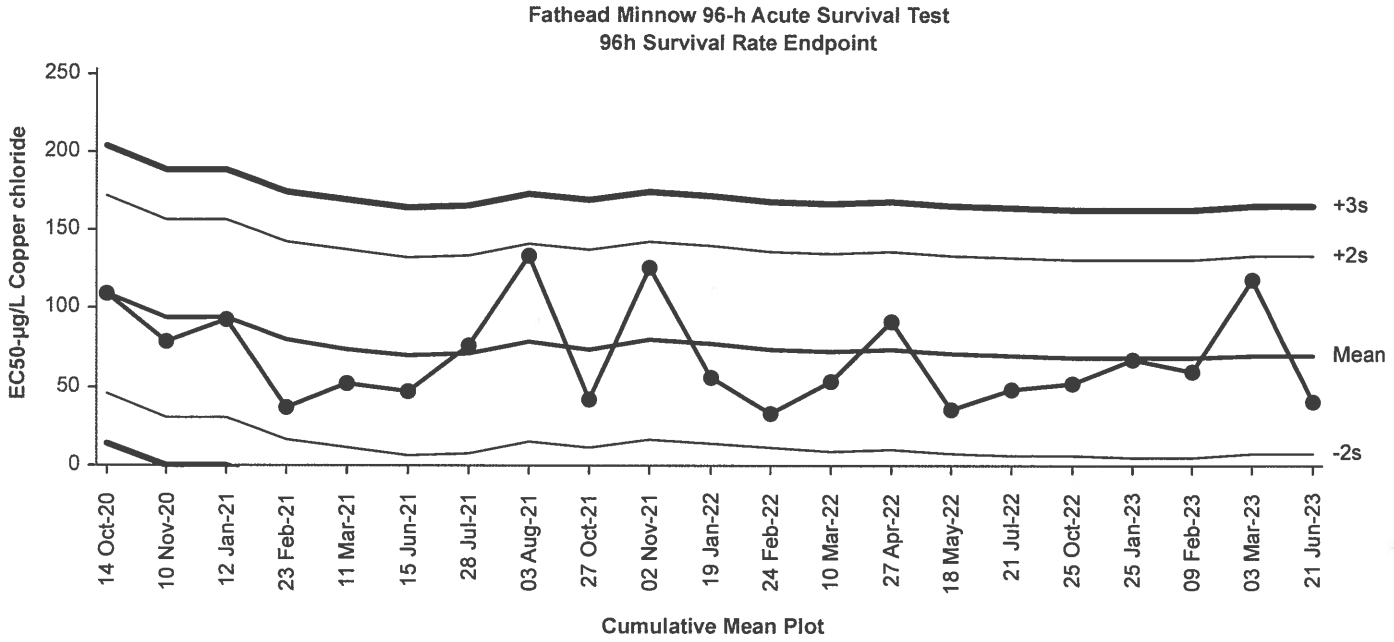
Reference Toxicant Test Control Charts

CETIS QC Plot

Report Date: 26 Jun-23 15:45 (1 of 1)

Fathead Minnow 96-h Acute Survival Test — **Nautilus Environmental (CA)**

Test Type:	Survival (96h)	**Organism:**	Pimephales promelas	**Material:**	Copper chloride
Protocol:	EPA/821/R-02-012 (2002)	**Endpoint:**	96h Survival Rate	**Source:**	Reference Toxicant-REF



Mean:	70.62	**Count:**	20	**-2s Warning Limit:**	7.72	**-3s Action Limit:**	-23.7
Sigma:	31.45	**CV:**	44.50%	**+2s Warning Limit:**	134	**+3s Action Limit:**	165

Quality Control Data

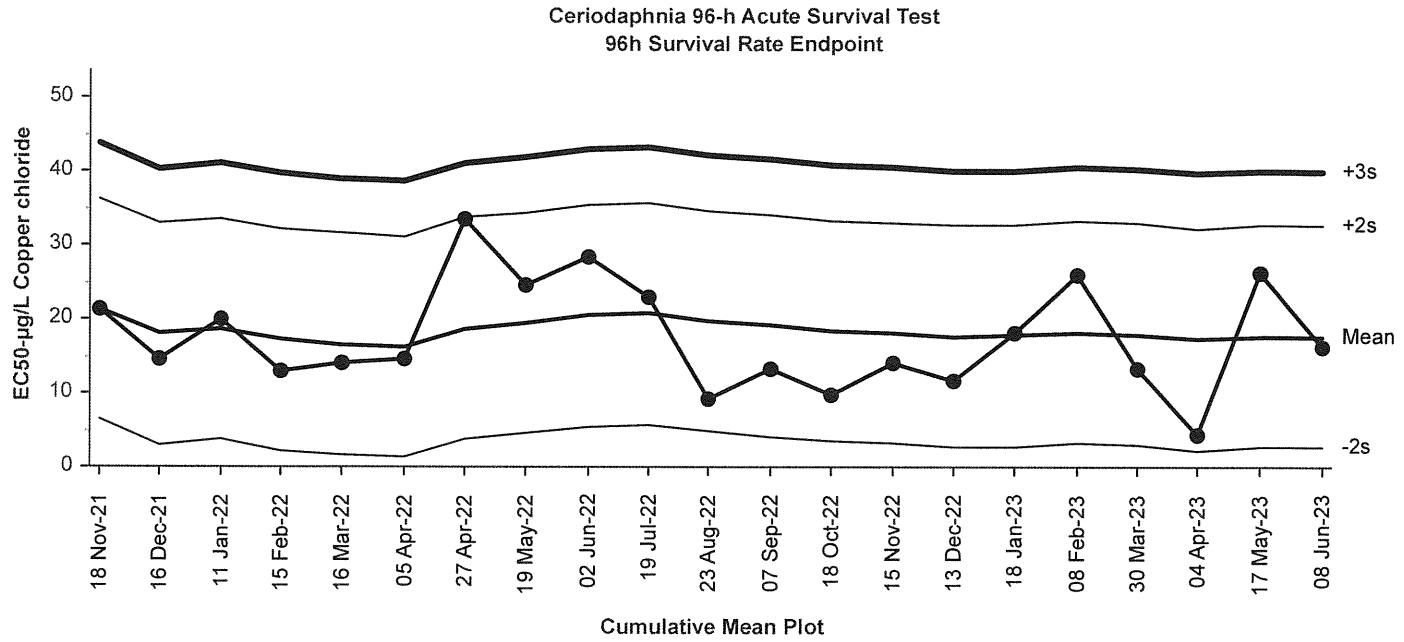
Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2020	Oct	14	15:55	108.9	38.29	1.218			16-9476-4319	04-8332-8963
2		Nov	10	15:50	79.05	8.43	0.268			10-0925-3953	05-0925-4459
3	2021	Jan	12	16:10	93.54	22.92	0.7288			10-2818-5435	19-4959-1498
4		Feb	23	16:00	37.5	-33.12	-1.053			00-7897-7348	07-5099-8101
5		Mar	11	16:25	52.64	-17.98	-0.5718			20-0307-6488	03-1985-7497
6		Jun	15	17:10	47.63	-22.99	-0.7311			13-1662-1659	03-5455-1927
7		Jul	28	17:30	75.92	5.297	0.1684			04-8837-0734	00-2418-4039
8		Aug	3	15:30	133.2	62.56	1.989			01-5905-1678	06-9846-1307
9		Oct	27	17:55	41.65	-28.97	-0.9212			04-8454-9323	21-2291-3266
10		Nov	2	14:55	126.6	55.95	1.779			02-5381-8973	13-3748-9296
11	2022	Jan	19	14:00	56.14	-14.48	-0.4603			20-2049-9334	07-9545-0483
12		Feb	24	16:10	32.6	-38.02	-1.209			17-0760-7068	11-1555-4113
13		Mar	10	15:55	54.03	-16.59	-0.5275			12-1339-4334	02-2933-1085
14		Apr	27	15:10	91.63	21.01	0.6679			04-5378-2545	07-8420-2882
15		May	18	16:55	35.22	-35.4	-1.125			18-5661-4183	07-3447-2353
16		Jul	21	17:45	48.45	-22.17	-0.7051			07-1587-3363	06-2880-7627
17		Oct	25	15:50	52.4	-18.22	-0.5794			06-6314-9915	03-2187-1829
18	2023	Jan	25	18:01	67.41	-3.209	-0.102			19-0784-2205	08-9150-6242
19		Feb	9	16:50	59.42	-11.2	-0.3561			06-2469-6093	00-8217-4012
20		Mar	3	16:35	118.4	47.81	1.52			05-5862-3435	03-5254-4793
21		Jun	21	14:55	40.38	-30.24	-0.9616			03-3580-9094	00-4894-4439

CETIS QC Plot

Report Date: 13 Jun-23 16:06 (1 of 1)

Ceriodaphnia 96-h Acute Survival Test — **Nautilus Environmental (CA)**

Test Type:	Survival (96h)	**Organism:**	Ceriodaphnia dubia	**Material:**	Copper chloride
Protocol:	EPA/821/R-02-012 (2002)	**Endpoint:**	96h Survival Rate	**Source:**	Reference Toxicant-REF



Mean:	17.69	**Count:**	20	**-2s Warning Limit:**	2.7	**-3s Action Limit:**	-4.79
Sigma:	7.494	**CV:**	42.40%	**+2s Warning Limit:**	32.7	**+3s Action Limit:**	40.2

Quality Control Data

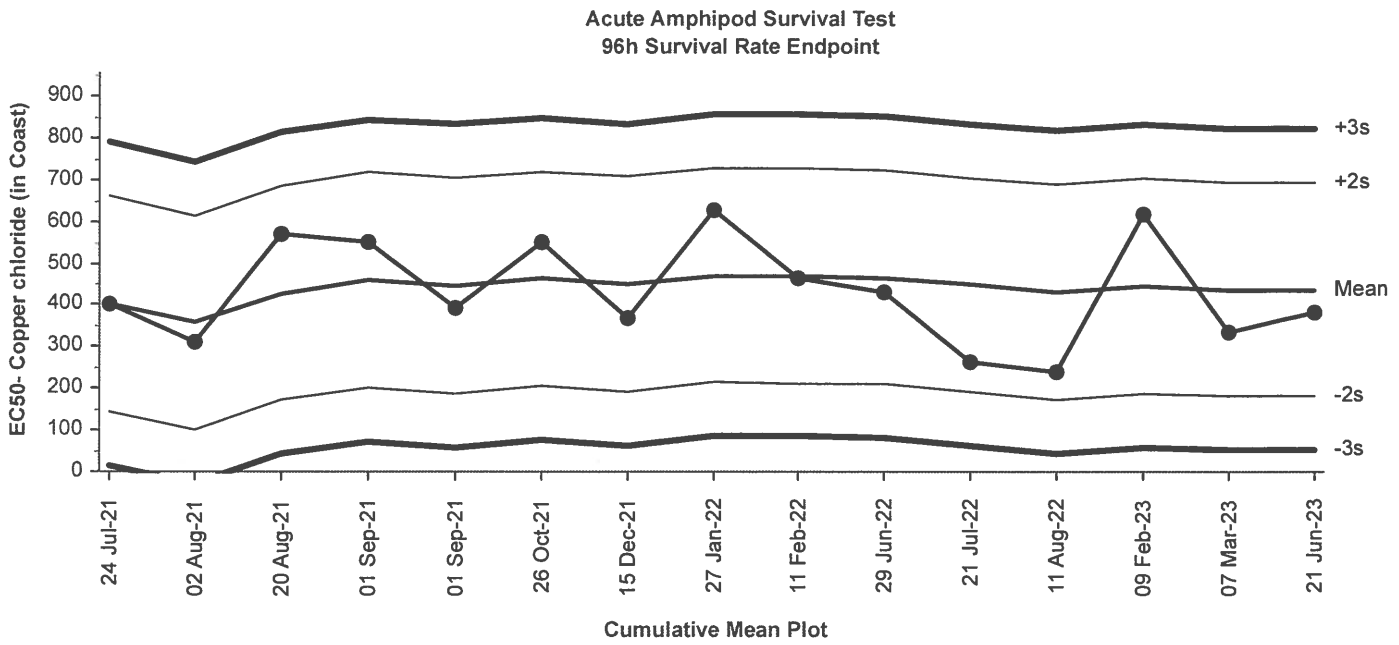
Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2021	Nov	18	14:30	21.44	3.745	0.4998			17-9444-3715	09-3342-3577
2		Dec	16	17:20	14.6	-3.087	-0.4119			14-6159-9603	07-8985-1975
3	2022	Jan	11	15:00	20	2.31	0.3082			16-5501-6237	05-0045-3257
4		Feb	15	15:20	12.91	-4.784	-0.6384			19-8470-5266	12-1776-6242
5		Mar	16	15:00	14.14	-3.548	-0.4734			08-4939-9657	04-1675-6253
6		Apr	5	16:55	14.64	-3.049	-0.4069			15-6426-3206	15-2718-9221
7			27	15:15	33.64	15.95	2.128	(+)		08-4806-4027	01-7719-2285
8		May	19	15:15	24.62	6.925	0.9241			15-0414-1498	09-1011-4307
9		Jun	2	15:40	28.57	10.88	1.451			13-6497-5171	08-6278-4122
10		Jul	19	15:45	23.16	5.474	0.7304			03-1124-9631	00-8098-2495
11		Aug	23	15:50	9.33	-8.36	-1.116			20-3988-3287	11-6761-6164
12		Sep	7	15:00	13.2	-4.495	-0.5998			01-7106-9553	05-0730-6008
13		Oct	18	15:25	9.862	-7.828	-1.045			00-3320-6805	04-6100-3813
14		Nov	15	15:05	14.14	-3.548	-0.4734			00-5461-1467	19-6868-6561
15		Dec	13	15:05	11.7	-5.988	-0.7991			12-0086-6428	08-7195-5995
16	2023	Jan	18	13:55	18.03	0.335	0.0447			09-7538-0685	07-8161-1407
17		Feb	8	15:20	25.96	8.268	1.103			17-7377-6097	02-7722-6792
18		Mar	30	14:50	13.2	-4.495	-0.5998			00-8046-0950	18-8859-9281
19		Apr	4	15:20	4.318	-13.37	-1.784			07-0540-7813	08-4239-9426
20		May	17	15:30	26.39	8.7	1.161			04-0322-0654	15-8704-5627
21		Jun	8	15:35	16.25	-1.445	-0.1928			04-4576-9053	18-8894-4384

CETIS QC Plot

Report Date: 19 Jul-23 10:13 (1 of 1)

Acute Amphipod Survival Test — **Nautilus Environmental (CA)**

Test Type:	Survival (96h)	**Organism:**	Hyalella azteca	**Material:**	Copper chloride (in Coast)
Protocol:	EPA/821/R-02-012 (2002)	**Endpoint:**	96h Survival Rate	**Source:**	Reference Toxicant-REF



Mean:	437.3	**Count:**	14	**-2s Warning Limit:**	180	**-3s Action Limit:**	51.2
Sigma:	128.7	**CV:**	29.40%	**+2s Warning Limit:**	695	**+3s Action Limit:**	823

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2021	Jul	24	10:35	402.1	-35.24	-0.2738			01-9158-2894	04-9657-5582
2		Aug	2	18:10	311.1	-126.2	-0.9803			12-1293-8948	18-5258-0274
3			20	16:45	568.8	131.5	1.021			13-6419-6120	05-7250-0573
4		Sep	1	14:40	551	113.7	0.8837			16-9611-9317	12-1127-8026
5			1	16:00	393.8	-43.51	-0.3381			05-5529-3044	09-1102-6160
6		Oct	26	19:00	549.6	112.3	0.8724			18-1063-1366	05-2379-1035
7		Dec	15	18:25	366.8	-70.5	-0.5478			20-2781-7958	18-9516-9975
8	2022	Jan	27	17:30	625.4	188.1	1.461			18-9392-5843	01-5172-6206
9		Feb	11	17:35	463.8	26.54	0.2062			14-7873-5968	19-5575-1394
10		Jun	29	17:00	431	-6.254	-0.04859			03-3409-7356	15-5020-6688
11		Jul	21	16:27	264.5	-172.8	-1.343			05-1323-0021	05-5852-2990
12		Aug	11	18:55	240.4	-196.9	-1.53			20-9606-1183	03-0306-6180
13	2023	Feb	9	17:15	619.4	182.1	1.415			20-3293-9827	10-5332-3305
14		Mar	7	16:30	334.9	-102.4	-0.7955			20-0160-8722	08-8166-1553
15		Jun	21	15:20	384	-53.28	-0.414			18-4411-2589	06-3764-0545