

Anatek Labs, Inc.

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Client: Cardno - Hawaii
Address: 737 Bishop St., Ste. 3050
Honolulu, HI 96813
Attn: Benjamin Berridge

Work Order: WCC1038
Project: ADC Water Quality Monitoring
Reported: 4/28/2022 15:38

Analytical Results Report

Sample Location: DW-2
Lab/Sample Number: WCC1038-01 **Collect Date:** 03/28/22 09:20
Date Received: 03/31/22 10:30 **Collected By:**
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	27.6	mg/L	0.400	0.400	3/31/22 14:00	ARS	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.00110	mg/L	0.0000600	0.00100	4/7/22 14:51	JLG	EPA 200.8	
Mercury								
Mercury	<0.0850	ug/L	0.0850	0.100	4/11/22 14:57	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	4/5/22 0:40	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.160	0.400	4/5/22 0:40	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	4/5/22 0:40	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.160	0.400	4/5/22 0:40	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	95.7%		50-150		4/5/22 0:40	ARC	NWTPH-HCID	

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Analytical Results Report

(Continued)

Sample Location: DW-3
Lab/Sample Number: WCC1038-02 Collect Date: 03/28/22 09:55
Date Received: 03/31/22 10:30 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	14.4	mg/L	0.200	0.200	3/31/22 14:00	ARS	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.000762	mg/L	0.0000600	0.00100	4/7/22 15:01	JLG	EPA 200.8	J
Mercury								
Mercury	<0.0850	ug/L	0.0850	0.100	4/11/22 14:59	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	4/5/22 5:09	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.160	0.400	4/5/22 5:09	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	4/5/22 5:09	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.160	0.400	4/5/22 5:09	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	98.2%		50-150		4/5/22 5:09	ARC	NWTPH-HCID	

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Analytical Results Report

(Continued)

Sample Location: D-2
Lab/Sample Number: WCC1038-03 Collect Date: 03/28/22 10:10
Date Received: 03/31/22 10:30 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	10.4	mg/L	0.400	0.400	3/31/22 14:00	ARS	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.0167	mg/L	0.0000600	0.00100	4/7/22 15:04	JLG	EPA 200.8	
Mercury								
Mercury	<0.0850	ug/L	0.0850	0.100	4/11/22 15:06	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	4/5/22 10:31	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.160	0.400	4/5/22 10:31	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	4/5/22 10:31	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.160	0.400	4/5/22 10:31	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	78.9%		50-150		4/5/22 10:31	ARC	NWTPH-HCID	

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Analytical Results Report

(Continued)

Sample Location: D-3
Lab/Sample Number: WCC1038-04 Collect Date: 03/28/22 09:40
Date Received: 03/31/22 10:30 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	16.4	mg/L	0.200	0.200	3/31/22 14:00	ARS	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.000928	mg/L	0.0000600	0.00100	4/7/22 15:07	JLG	EPA 200.8	J
Mercury								
Mercury	<0.0850	ug/L	0.0850	0.100	4/11/22 15:08	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	4/5/22 11:25	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.160	0.400	4/5/22 11:25	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	4/5/22 11:25	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.160	0.400	4/5/22 11:25	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	90.3%		50-150		4/5/22 11:25	ARC	NWTPH-HCID	

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Analytical Results Report

(Continued)

Sample Location: D-4
Lab/Sample Number: WCC1038-05 Collect Date: 03/28/22 08:50
Date Received: 03/31/22 10:30 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	5.50	mg/L	0.100	0.100	3/31/22 14:00	ARS	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.00143	mg/L	0.0000600	0.00100	4/7/22 15:11	JLG	EPA 200.8	
Mercury								
Mercury	0.0970	ug/L	0.0850	0.100	4/11/22 15:13	JLG	EPA 245.1	J
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	4/5/22 12:19	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.160	0.400	4/5/22 12:19	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	4/5/22 12:19	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.160	0.400	4/5/22 12:19	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	90.2%		50-150		4/5/22 12:19	ARC	NWTPH-HCID	

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Analytical Results Report

(Continued)

Sample Location: D-5
Lab/Sample Number: WCC1038-06 Collect Date: 03/28/22 09:10
Date Received: 03/31/22 10:30 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	5.30	mg/L	0.100	0.100	3/31/22 14:00	ARS	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.00151	mg/L	0.0000600	0.00100	4/7/22 15:14	JLG	EPA 200.8	
Mercury								
Mercury	<0.0850	ug/L	0.0850	0.100	4/11/22 15:15	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	4/5/22 13:13	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.160	0.400	4/5/22 13:13	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	4/5/22 13:13	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.160	0.400	4/5/22 13:13	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	95.9%		50-150		4/5/22 13:13	ARC	NWTPH-HCID	

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Analytical Results Report

(Continued)

Sample Location: D-6
Lab/Sample Number: WCC1038-07 Collect Date: 03/28/22 09:40
Date Received: 03/31/22 10:30 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	121	mg/L	1.00	1.00	3/31/22 14:00	ARS	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.00995	mg/L	0.0000600	0.00100	4/7/22 15:17	JLG	EPA 200.8	
Mercury								
Mercury	<0.0850	ug/L	0.0850	0.100	4/11/22 15:18	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	4/5/22 14:08	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.160	0.400	4/5/22 14:08	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	4/5/22 14:08	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.160	0.400	4/5/22 14:08	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	85.3%		50-150		4/5/22 14:08	ARC	NWTPH-HCID	

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Analytical Results Report

(Continued)

Sample Location: D-7
Lab/Sample Number: WCC1038-08 Collect Date: 03/28/22 09:00
Date Received: 03/31/22 10:30 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	13.2	mg/L	0.400	0.400	3/31/22 14:00	ARS	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.000255	mg/L	0.0000600	0.00100	4/7/22 15:21	JLG	EPA 200.8	J
Mercury								
Mercury	<0.0850	ug/L	0.0850	0.100	4/11/22 15:20	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	4/5/22 15:04	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.160	0.400	4/5/22 15:04	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	4/5/22 15:04	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.160	0.400	4/5/22 15:04	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	86.9%		50-150		4/5/22 15:04	ARC	NWTPH-HCID	

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Analytical Results Report

(Continued)

Sample Location: D-8
Lab/Sample Number: WCC1038-09 Collect Date: 03/28/22 10:30
Date Received: 03/31/22 10:30 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	7.20	mg/L	0.400	0.400	3/31/22 14:00	ARS	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.00275	mg/L	0.0000600	0.00100	4/7/22 15:37	JLG	EPA 200.8	
Mercury								
Mercury	<0.0850	ug/L	0.0850	0.100	4/11/22 15:22	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	4/5/22 15:59	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.160	0.400	4/5/22 15:59	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	4/5/22 15:59	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.160	0.400	4/5/22 15:59	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	96.5%		50-150		4/5/22 15:59	ARC	NWTPH-HCID	

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Analytical Results Report

(Continued)

Sample Location: DW-1/WW-1
Lab/Sample Number: WCC1038-10 Collect Date: 03/28/22 10:30
Date Received: 03/31/22 10:30 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	31.6	mg/L	0.400	0.400	3/31/22 14:00	ARS	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.000694	mg/L	0.0000600	0.00100	4/7/22 15:41	JLG	EPA 200.8	J
Mercury								
Mercury	<0.0850	ug/L	0.0850	0.100	4/11/22 15:24	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	4/5/22 16:55	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.160	0.400	4/5/22 16:55	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	4/5/22 16:55	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.160	0.400	4/5/22 16:55	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	89.8%		50-150		4/5/22 16:55	ARC	NWTPH-HCID	

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Analytical Results Report

(Continued)

Sample Location: WW-2
Lab/Sample Number: WCC1038-11 Collect Date: 03/28/22 10:20
Date Received: 03/31/22 10:30 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	6.00	mg/L	0.200	0.200	3/31/22 14:00	ARS	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.00147	mg/L	0.0000600	0.00100	4/7/22 15:44	JLG	EPA 200.8	
Mercury								
Mercury	<0.0850	ug/L	0.0850	0.100	4/11/22 15:32	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	4/5/22 17:50	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.160	0.400	4/5/22 17:50	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	4/5/22 17:50	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.160	0.400	4/5/22 17:50	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	85.9%		50-150		4/5/22 17:50	ARC	NWTPH-HCID	

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Analytical Results Report

(Continued)

Sample Location: U-2/WW-5
Lab/Sample Number: WCC1038-12 Collect Date: 03/28/22 09:40
Date Received: 03/31/22 10:30 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	14.4	mg/L	0.200	0.200	3/31/22 14:00	ARS	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.000237	mg/L	0.0000600	0.00100	4/7/22 15:48	JLG	EPA 200.8	J
Mercury								
Mercury	0.776	ug/L	0.0850	0.100	4/11/22 15:35	JLG	EPA 245.1	
Semivolatiles								
Diesel	<0.052	mg/L	0.0520	0.0800	4/5/22 18:45	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.160	0.400	4/5/22 18:45	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	4/5/22 18:45	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.160	0.400	4/5/22 18:45	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	92.5%		50-150		4/5/22 18:45	ARC	NWTPH-HCID	

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Analytical Results Report

(Continued)

Sample Location: WW-3
Lab/Sample Number: WCC1038-13 Collect Date: 03/28/22 10:45
Date Received: 03/31/22 10:30 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	5.80	mg/L	0.200	0.200	3/31/22 14:00	ARS	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.00159	mg/L	0.0000600	0.00100	4/7/22 15:51	JLG	EPA 200.8	
Mercury								
Mercury	<0.0850	ug/L	0.0850	0.100	4/11/22 15:37	JLG	EPA 245.1	
Semivolatiles								
AMPA	<2.00	ug/L	2.00	10.0	4/11/22 17:28	MER	EPA 547	*
Glyphosate	<4.23	ug/L	4.23	5.00	4/11/22 17:28	MER	EPA 547	*
Atrazine	<0.0500	ug/L	0.0500	0.100	4/19/22 18:33	MAH	EPA 625.1	*
Chlorpyrifos	<0.0500	ug/L	0.0500	0.100	4/19/22 18:33	MAH	EPA 625.1	*
Metolachlor	<0.0500	ug/L	0.0500	0.100	4/19/22 18:33	MAH	EPA 625.1	*
Surrogate: Terphenyl-d14	87.1%		25-135		4/19/22 18:33	MAH	EPA 625.1	
Diesel	<0.052	mg/L	0.0520	0.0800	4/6/22 0:10	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.160	0.400	4/6/22 0:10	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	4/6/22 0:10	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.160	0.400	4/6/22 0:10	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	84.9%		50-150		4/6/22 0:10	ARC	NWTPH-HCID	

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Analytical Results Report

(Continued)

Sample Location: E-2
Lab/Sample Number: WCC1038-14 Collect Date: 03/28/22 10:25
Date Received: 03/31/22 10:30 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	12.4	mg/L	0.400	0.400	3/31/22 14:00	ARS	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.0164	mg/L	0.0000600	0.00100	4/7/22 15:54	JLG	EPA 200.8	
Mercury								
Mercury	<0.0850	ug/L	0.0850	0.100	4/11/22 15:39	JLG	EPA 245.1	
Semivolatiles								
AMPA	<2.00	ug/L	2.00	10.0	4/11/22 17:35	MER	EPA 547	*
Glyphosate	<4.23	ug/L	4.23	5.00	4/11/22 17:35	MER	EPA 547	*
Atrazine	<0.0500	ug/L	0.0500	0.100	4/19/22 19:00	MAH	EPA 625.1	*
Chlorpyrifos	<0.0500	ug/L	0.0500	0.100	4/19/22 19:00	MAH	EPA 625.1	*
Metolachlor	<0.0500	ug/L	0.0500	0.100	4/19/22 19:00	MAH	EPA 625.1	*
Surrogate: Terphenyl-d14	79.5%		25-135		4/19/22 19:00	MAH	EPA 625.1	
Diesel	<0.052	mg/L	0.0520	0.0800	4/6/22 1:05	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.160	0.400	4/6/22 1:05	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	4/6/22 1:05	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.160	0.400	4/6/22 1:05	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	90.6%		50-150		4/6/22 1:05	ARC	NWTPH-HCID	

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Analytical Results Report

(Continued)

Sample Location: E-1
Lab/Sample Number: WCC1038-15 Collect Date: 03/28/22 09:30
Date Received: 03/31/22 10:30 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	39.0	mg/L	1.00	1.00	3/31/22 14:00	ARS	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.00139	mg/L	0.0000600	0.00100	4/7/22 15:58	JLG	EPA 200.8	
Mercury								
Mercury	<0.0850	ug/L	0.0850	0.100	4/11/22 15:41	JLG	EPA 245.1	
Semivolatiles								
AMPA	<2.00	ug/L	2.00	10.0	4/11/22 17:22	MER	EPA 547	*
Glyphosate	<4.23	ug/L	4.23	5.00	4/11/22 17:22	MER	EPA 547	*
Atrazine	<0.0500	ug/L	0.0500	0.100	4/19/22 19:27	MAH	EPA 625.1	*
Chlorpyrifos	<0.0500	ug/L	0.0500	0.100	4/19/22 19:27	MAH	EPA 625.1	*
Metolachlor	<0.0500	ug/L	0.0500	0.100	4/19/22 19:27	MAH	EPA 625.1	*
Surrogate: Terphenyl-d14	89.4%		25-135		4/19/22 19:27	MAH	EPA 625.1	
Diesel	<0.052	mg/L	0.0520	0.0800	4/5/22 2:28	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.160	0.400	4/5/22 2:28	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	4/5/22 2:28	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.160	0.400	4/5/22 2:28	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	94.5%		50-150		4/5/22 2:28	ARC	NWTPH-HCID	

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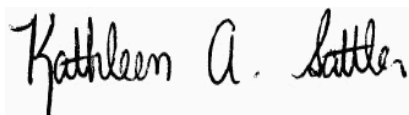
Analytical Results Report

(Continued)

Sample Location: E-1 DUP
Lab/Sample Number: WCC1038-16 Collect Date: 03/28/22 09:35
Date Received: 03/31/22 10:30 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
TSS	35.0	mg/L	1.00	1.00	3/31/22 14:00	ARS	EPA 160.2	
Metals by ICP-MS								
Arsenic	0.00123	mg/L	0.0000600	0.00100	4/7/22 16:08	JLG	EPA 200.8	
Mercury								
Mercury	0.256	ug/L	0.0850	0.100	4/11/22 15:48	JLG	EPA 245.1	
Semivolatiles								
AMPA	<2.00	ug/L	2.00	10.0	4/11/22 17:42	MER	EPA 547	*
Glyphosate	<4.23	ug/L	4.23	5.00	4/11/22 17:42	MER	EPA 547	*
Atrazine	<0.0500	ug/L	0.0500	0.100	4/19/22 19:54	MAH	EPA 625.1	*
Chlorpyrifos	<0.0500	ug/L	0.0500	0.100	4/19/22 19:54	MAH	EPA 625.1	*
Metolachlor	<0.0500	ug/L	0.0500	0.100	4/19/22 19:54	MAH	EPA 625.1	*
Surrogate: Terphenyl-d14	85.6%		25-135		4/19/22 19:54	MAH	EPA 625.1	
Diesel	<0.052	mg/L	0.0520	0.0800	4/6/22 1:59	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.160	0.400	4/6/22 1:59	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0460	0.0800	4/6/22 1:59	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.160	0.400	4/6/22 1:59	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	95.9%		50-150		4/6/22 1:59	ARC	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.
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.

This report shall not be reproduced except in full, without the written approval of the laboratory
The results reported related only to the samples indicated.

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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: BCD0070 - W Filtration										
Blank (BCD0070-BLK1)					Prepared & Analyzed: 3/31/2022					
TSS	ND		1.00	mg/L						
Blank (BCD0070-BLK2)					Prepared & Analyzed: 3/31/2022					
TSS	ND		1.00	mg/L						
LCS (BCD0070-BS1)					Prepared & Analyzed: 3/31/2022					
TSS	108			mg/L	100		108	90-110		
LCS Dup (BCD0070-BSD1)					Prepared & Analyzed: 3/31/2022					
TSS	104			mg/L	100		104	90-110	3.77	10
Duplicate (BCD0070-DUP1)					Prepared & Analyzed: 3/31/2022					
TSS	117		1.00	mg/L		121			3.36	20
Matrix Spike (BCD0070-MS1)					Prepared & Analyzed: 3/31/2022					
TSS	134		2.00	mg/L	100	35.0	99.0	80-120		
Matrix Spike Dup (BCD0070-MSD1)					Prepared & Analyzed: 3/31/2022					
TSS	128		2.00	mg/L	100	35.0	93.0	80-120	4.58	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: BCD0189 - W 3010 Digest										
Blank (BCD0189-BLK1)					Prepared: 4/6/2022 Analyzed: 4/7/2022					
Arsenic	ND		0.00100	mg/L						
LCS (BCD0189-BS1)					Prepared: 4/6/2022 Analyzed: 4/7/2022					
Arsenic	0.0475		0.00100	mg/L	0.0500		94.9	85-115		
Matrix Spike (BCD0189-MS1)					Prepared: 4/6/2022 Analyzed: 4/7/2022					
Arsenic	0.0519		0.00100	mg/L	0.0500	0.00110	102	70-130		
Matrix Spike (BCD0189-MS2)					Prepared: 4/6/2022 Analyzed: 4/7/2022					
Arsenic	0.0477		0.00100	mg/L	0.0500	0.00139	92.5	70-130		
Matrix Spike Dup (BCD0189-MSD1)					Prepared: 4/6/2022 Analyzed: 4/7/2022					
Arsenic	0.0500		0.00100	mg/L	0.0500	0.00110	97.8	70-130	3.73	20
Matrix Spike Dup (BCD0189-MSD2)					Prepared: 4/6/2022 Analyzed: 4/7/2022					
Arsenic	0.0487		0.00100	mg/L	0.0500	0.00139	94.7	70-130	2.20	20

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Quality Control Data (Continued)

Mercury

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BCD0219 - W 245.1 Digest										
Blank (BCD0219-BLK1)										
Mercury	ND		0.100	ug/L						
Prepared: 4/7/2022 Analyzed: 4/11/2022										
LCS (BCD0219-BS1)										
Mercury	1.96		0.100	ug/L	2.00		97.8	85-115		
Prepared: 4/7/2022 Analyzed: 4/11/2022										
Matrix Spike (BCD0219-MS1)										
Mercury	1.97		0.100	ug/L	2.00	<0.0850	98.4	70-130		
Prepared: 4/7/2022 Analyzed: 4/11/2022										
Matrix Spike (BCD0219-MS2)										
Mercury	2.22		0.100	ug/L	2.00	<0.0850	111	70-130		
Prepared: 4/7/2022 Analyzed: 4/11/2022										
Matrix Spike Dup (BCD0219-MSD1)										
Mercury	2.02		0.100	ug/L	2.00	<0.0850	101	70-130	2.71	20
Prepared: 4/7/2022 Analyzed: 4/11/2022										
Matrix Spike Dup (BCD0219-MSD2)										
Mercury	2.11		0.100	ug/L	2.00	<0.0850	105	70-130	5.13	20
Prepared: 4/7/2022 Analyzed: 4/11/2022										

Quality Control Data (Continued)

Semivolatiles

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BCD0059 - W TPH-Dx										
Blank (BCD0059-BLK1)										
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						
Prepared & Analyzed: 4/4/2022										
LCS (BCD0059-BS1)										
Diesel	1.02		0.0800	mg/L	1.00		102	70-130		
Prepared & Analyzed: 4/4/2022										
LCS Dup (BCD0059-BSD1)										
Diesel	0.862		0.0800	mg/L	1.00		86.2	70-130	16.6	20
Prepared & Analyzed: 4/4/2022										
Duplicate (BCD0059-DUP1)										
Lube Oil	ND		0.0800	mg/L		<0.046				200
Mineral Oil	ND		0.400	mg/L		<0.16				200
Gasoline	ND		0.400	mg/L		<0.16				200
Diesel	ND		0.0800	mg/L		<0.052				200
Prepared: 4/4/2022 Analyzed: 4/5/2022										
Matrix Spike (BCD0059-MS1)										
			0.100	ug/L						
Source: WCC1038-15										
Prepared: 4/4/2022 Analyzed: 4/5/2022										

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Quality Control Data (Continued)

Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
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Batch: BCD0059 - W TPH-Dx (Continued)

Matrix Spike (BCD0059-MS1)

Source: WCC1038-15

Prepared: 4/4/2022 Analyzed: 4/5/2022

Diesel	0.932		0.0800	mg/L	1.00	<0.052	93.2	70-130	
Surrogate: n-Hexacosane			46.9	mg/L	50.1		93.5	50-150	

Matrix Spike Dup (BCD0059-MSD1)

Source: WCC1038-15

Prepared: 4/4/2022 Analyzed: 4/5/2022

Diesel	0.914		0.0800	mg/L	1.00	<0.052	91.4	70-130	1.97
Surrogate: n-Hexacosane			45.3	mg/L	50.1		90.3	50-150	20

Batch: BCD0067 - SVOC Water

Blank (BCD0067-BLK1)

Prepared: 4/1/2022 Analyzed: 4/19/2022

Atrazine	ND		0.100	ug/L					
Metolachlor	ND		0.100	ug/L					
Chlorpyrifos	ND		0.100	ug/L					
Surrogate: Terphenyl-d14			21.4	ug/L	25.8		83.2	25-135	

LCS (BCD0067-BS1)

Prepared: 4/1/2022 Analyzed: 4/19/2022

Metolachlor	2.00		0.100	ug/L	2.50		80.0	60-125	
Chlorpyrifos	1.90		0.100	ug/L	2.50		76.0	50-125	
Atrazine	1.97		0.100	ug/L	2.50		78.8	60-125	
Surrogate: Terphenyl-d14			22.3	ug/L	25.8		86.5	25-135	

LCS Dup (BCD0067-BSD1)

Prepared: 4/1/2022 Analyzed: 4/19/2022

Atrazine	1.96		0.100	ug/L	2.50		78.4	60-125	0.509
Chlorpyrifos	1.88		0.100	ug/L	2.50		75.2	50-125	1.06
Metolachlor	1.99		0.100	ug/L	2.50		79.6	60-125	0.501
Surrogate: Terphenyl-d14			21.7	ug/L	25.8		84.3	25-135	20

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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: BCD0283 - Glyphosate										
Blank (BCD0283-BLK1)					Prepared & Analyzed: 4/11/2022					
Glyphosate	ND		5.00	ug/L						
AMPA	ND		10.0	ug/L						
LCS (BCD0283-BS1)										
					Prepared & Analyzed: 4/11/2022					
Glyphosate	43.0		5.00	ug/L	50.0		86.0	70-150		
AMPA	90.6		10.0	ug/L	100		90.6	70-150		
Matrix Spike (BCD0283-MS1)										
			Source: WCC1038-15		Prepared & Analyzed: 4/11/2022					
Glyphosate	51.2		5.00	ug/L	50.0	<4.23	102	70-150		
AMPA	143		10.0	ug/L	100	<2.00	143	70-150		
Matrix Spike Dup (BCD0283-MSD1)										
			Source: WCC1038-15		Prepared & Analyzed: 4/11/2022					
Glyphosate	47.7		5.00	ug/L	50.0	<4.23	95.4	70-150	7.08	25
AMPA	148		10.0	ug/L	100	<2.00	148	70-150	3.44	25



Chain of Custody Record

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Anatek
Log-In #

WCC1038



Due: 04/14/22

[illegible]



Anatek Labs, Inc.

Sample Receipt and Preservation Form

Client Name: Cardno GS Project: ARC Water Quality Apply

WCC1038



Due: 04/14/22

TAT: Normal RUSH: _____ daysSamples Received From: FedEx UPS USPS Client Courier Other: _____Custody Seal on Cooler/Box: Yes No Custody Seals Intact: Yes No N/ANumber of Coolers/Boxes: 5 Type of Ice: Ice/Ice Packs Blue Ice Dry Ice NonePacking Material: Bubble Wrap Bags Foam/Peanuts None Other: _____Cooler Temp As Read (°C): 3.0 Cooler Temp Corrected (°C): 3.0 Thermometer Used: IR#21.8, 2.0, 0.4, 0.2

Comments:

Samples Received Intact? Yes No N/AChain of Custody Present? Yes No N/ASamples Received Within Hold Time? Yes No N/ASamples Properly Preserved? Yes No N/AVOC Vials Free of Headspace (<6mm)? Yes No N/AVOC Trip Blanks Present? Yes No N/ALabels and Chains Agree? Yes No N/ATotal Number of Sample Bottles Received: 95Chain of Custody Fully Completed? Yes No N/ACorrect Containers Received? Yes No N/AAnatek Bottles Used? Yes No Unknown

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

HCl 2102736 HClO HCl 44 mL 21059072Na Thio. 2104462pH = 2 2102558

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

Received/Inspected By: Kathleen A. Satter Date/Time: 3-31-22 1100



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 #

WCC1038



Due: 04/14/22

Company Name: Cardno-GS				Project Manager: Benjamin Berridge				Turn Aro							
Address: 737 Bishop St Suite 3050				Project Name & #: ADC Water Quality Monitoring				Please refer to: http://www.anateklabs.com/services/guidelines/reporting.asp							
City: Honolulu		State: HI		Zip: 96813		Email Address: benjamin.berridge@cardno-gs.com				☒ Normal ☐ Next Day* ☐ 2nd Day* ☐ Other*					
Phone: (808) 476-0067				Purchase Order #:				*All rush order requests must be prior approved.							
Fax:				Sampler Name & phone:				☐ Phone ☐ Mail ☒ Fax ☐ Email							
Provide Sample Description				List Analyses Requested								Note Special Instructions/Comments			
				Preservative: ☐ TSS EPA 160.2 ☐ TPH HCID - SW 846 MOD 8015 ☐ **TPH GRO SW846M8015 ☐ Arsenic EPA 200.8 ☐ Mercury EPA 245.1 ☐ Color #								**Please do not conduct TPH GRO analysis until Cardno confirms it should be run.			
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	Color #				
	DW-2	03-28-2022/09:20 HST	Water	5		X	X	X	X	X	3				
	DW-3	03-28-2022/09:55 HST	Water	5		X	X	X	X	X	5				
	D-2	03-28-200/10:10 HST	Water	5		X	X	X	X	X	3				
	D-3	03-28-2022/09:40 HST	Water	5		X	X	X	X	X	5				
	D-4	03-28-2022/08:50 HST	Water	5		X	X	X	X	X	2				
	D-5	03-28-2022/09:10 HST	Water	5		X	X	X	X	X	2				
	D-6	03-28-2022/09:40 HST	Water	5		X	X	X	X	X	1				
	D-7	03-28-2022/09:00 HST	Water	5		X	X	X	X	X	3				
	D-8	03-28-2022/10:30 HST	Water	5		X	X	X	X	X	4				
	DW-1/WW-1	03-28-2022/10:30 HST	Water	5		X	X	X	X	X	4				
	WW-2	03-28-2022/10:20 HST	Water	5		X	X	X	X	X	4				
	U-2/WW-5	03-28-2022/09:40 HST	Water	5		X	X	X	X	X	4				
Printed Name		Signature		Company		Date		Time							
Relinquished by		Ben Berridge		Cardno		3/29/2022		14:00		Temperature (°C):					
Received by		Reidleen A. Sottiler		Anatek Labs, Inc.		3-31-2022		1100		Preservative:					
Relinquished by										Date & Time:					
Received by										Inspected By:					
Relinquished by															
Received by															

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10013.D Vial: 7
 Acq On : 04 Apr 2022 19:13 Operator: ARC
 Sample : BCD0059-BLK1 Inst : HP G1530A
 Misc : Multiplr: 1.00
 IntFile : EVENTS1.E
 Quant Time: Apr 05 08:12:34 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
 Title :
 Last Update : Mon Jan 10 08:33:21 2022
 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	24.88	99127399	50.000 ppm m

System Monitoring Compounds

2) S Hexacosane	25.59	91546153	48.008 ppm m
Spiked Amount 50.000 Range 50 - 150 Recovery = 96.02%			

Target Compounds

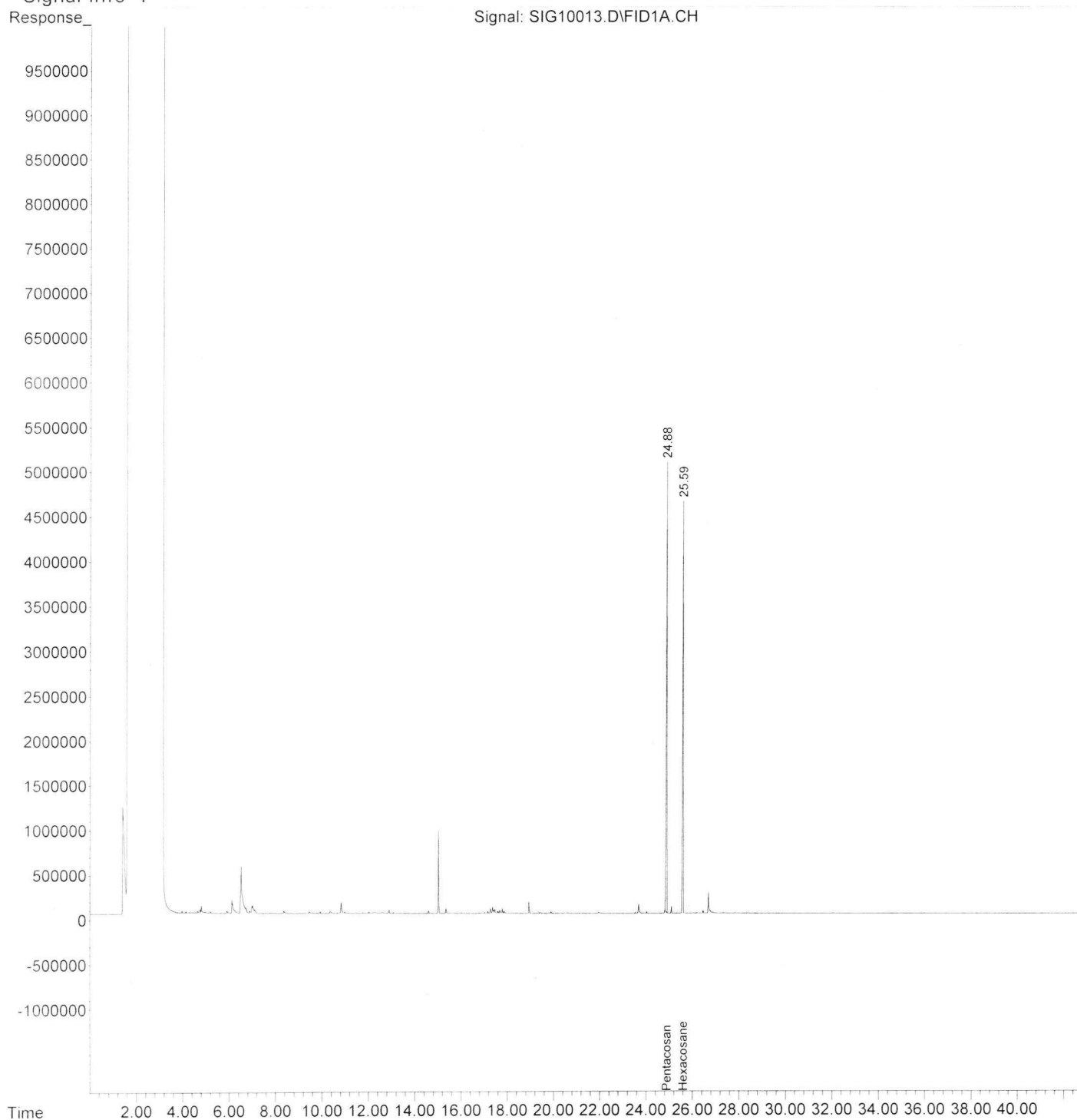
3) H TPH Diesel (C12-C14)	0.00	0	N.D. ppm
4) H TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H Mineral Oil	0.00	0	N.D. ppm
6) h HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h HCID Diesel (C12-C14)	0.00	0	N.D. ppm
8) h HCID Oil (>C14)	0.00	0	N.D. ppm

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10013.D Vial: 7
Acq On : 04 Apr 2022 19:13 Operator: ARC
Sample : BCD0059-BLK1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 5 8:24 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)

Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10014.D Vial: 8
 Acq On : 04 Apr 2022 20:08 Operator: ARC
 Sample : BCD0059-BS1 Inst : HP G1530A
 Misc : Multiplr: 1.00
 IntFile : EVENTS1.E
 Quant Time: Apr 05 08:13:28 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
 Title :
 Last Update : Mon Jan 10 08:33:21 2022
 Response via : Initial Calibration
 DataAcq Meth : DXHCID5.M

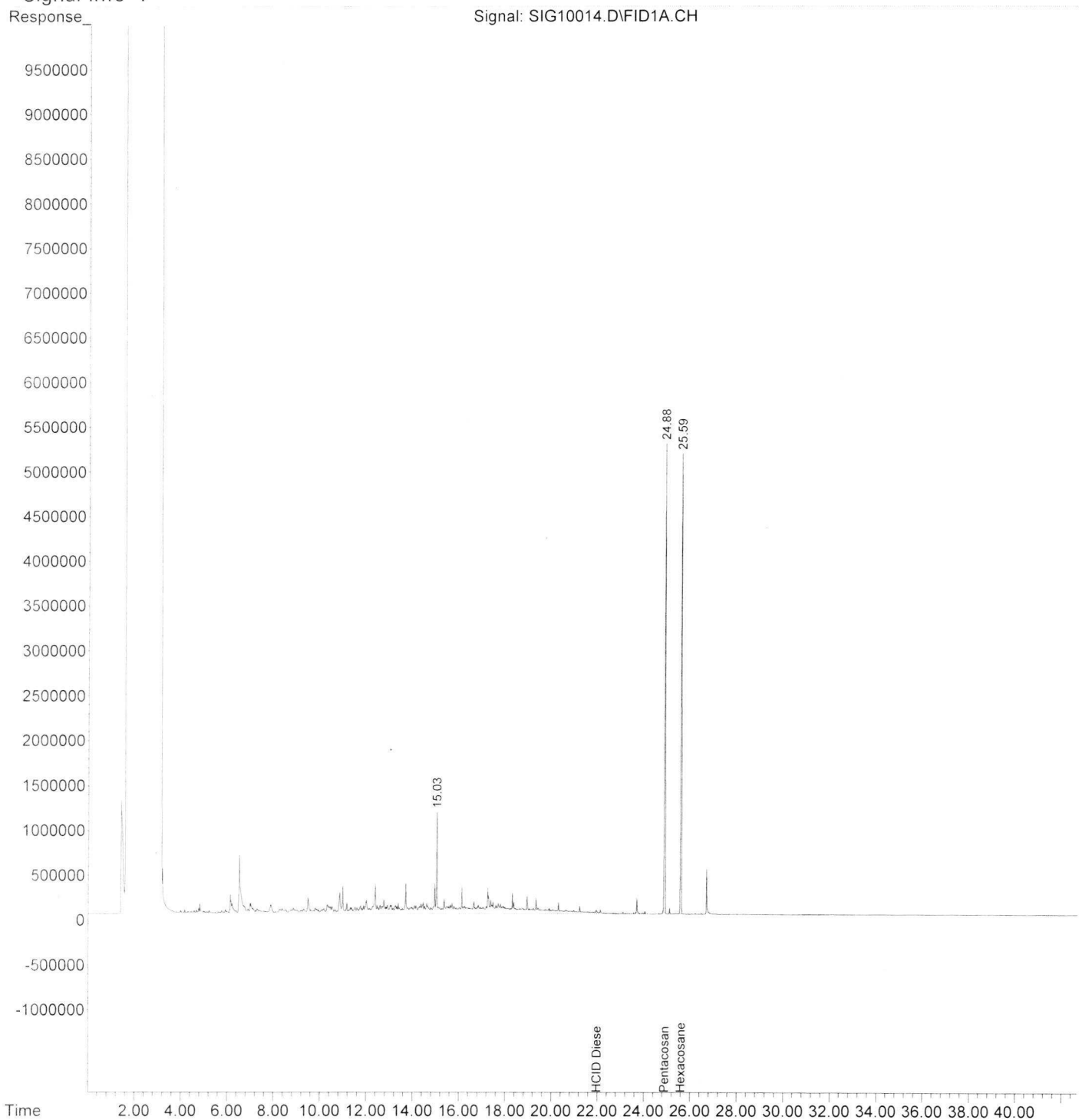
Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units
Internal Standards			
1) I Pentacosane	24.88	112953848	50.000 ppm m
System Monitoring Compounds			
2) S Hexacosane	25.59	109699044	50.486 ppm m
Spiked Amount 50.000 Range 50 - 150 Recovery = 100.97%			
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)	21.97	431401017	265.395 ppm
8) h HCID Oil (>C14)	0.00	0	N.D. ppm

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10014.D Vial: 8
Acq On : 04 Apr 2022 20:08 Operator: ARC
Sample : BCD0059-BS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 5 8:14 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10015.D Vial: 9
 Acq On : 04 Apr 2022 21:03 Operator: ARC
 Sample : BCD0059-BSD1 Inst : HP G1530A
 Misc : Multiplr: 1.00
 IntFile : EVENTS1.E
 Quant Time: Apr 05 08:14:21 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
 Title :
 Last Update : Mon Jan 10 08:33:21 2022
 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	24.87	104051883	50.000 ppm m

System Monitoring Compounds

2) S Hexacosane	25.58	90051803	44.990 ppm m
Spiked Amount	50.000	Range 50 - 150	Recovery = 89.98%

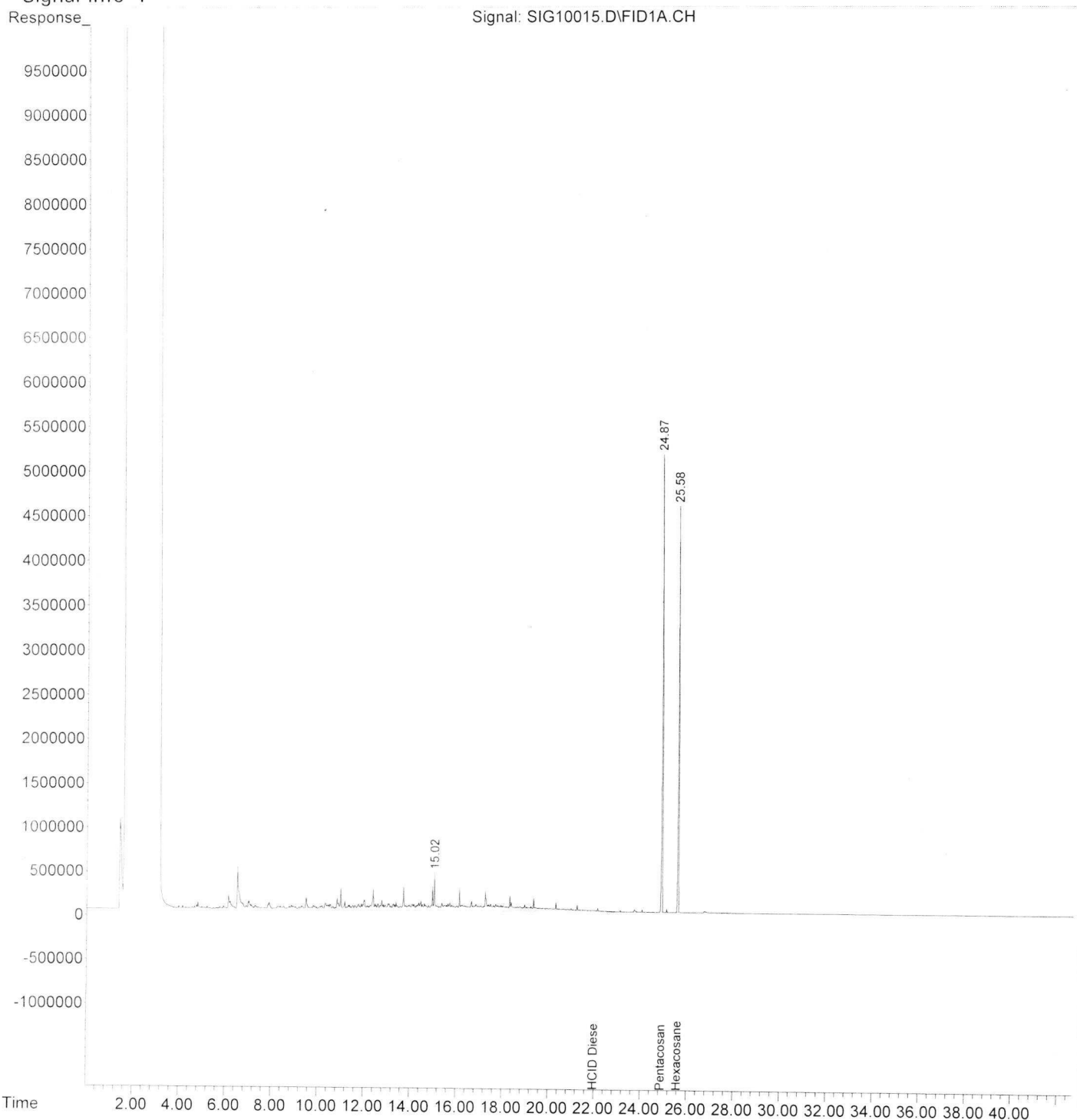
Target Compounds

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)	21.97	322166692	215.151 ppm
8) h HCID Oil (>C14)	0.00	0	N.D. ppm

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10015.D Vial: 9
Acq On : 04 Apr 2022 21:03 Operator: ARC
Sample : BCD0059-BSD1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 5 8:15 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10019.D Vial: 13
Acq On : 05 Apr 2022 00:40 Operator: ARC
Sample : WCC1038-01 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 05 08:15:46 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

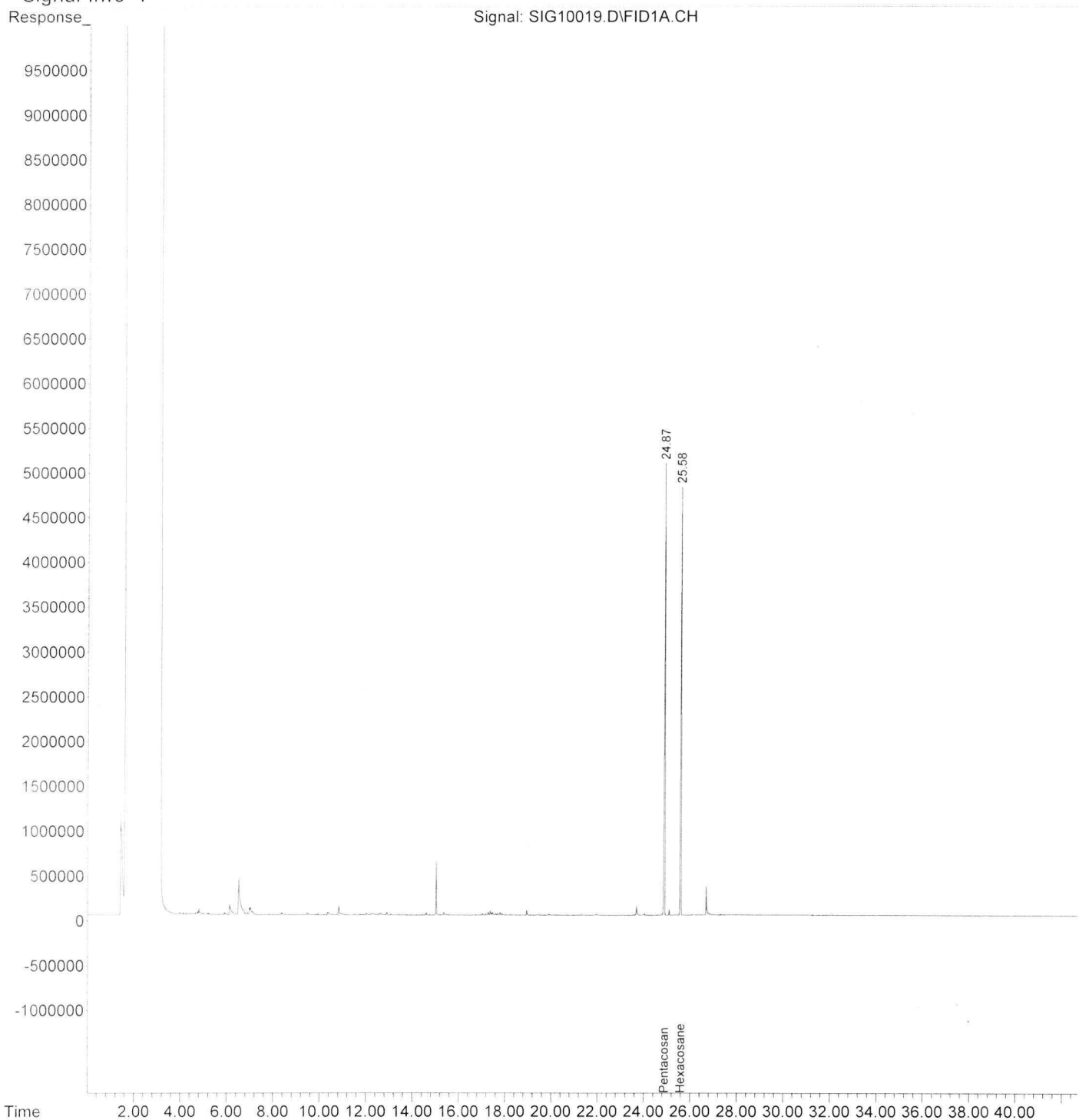
Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units
Internal Standards			
1) I Pentacosane	24.87	101847231	50.000 ppm m
System Monitoring Compounds			
2) S Hexacosane	25.58	93895435	47.925 ppm m
Spiked Amount 50.000 Range 50 - 150 Recovery = 95.85%			
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

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10019.D Vial: 13
Acq On : 05 Apr 2022 00:40 Operator: ARC
Sample : WCC1038-01 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 5 8:18 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10020.D Vial: 14
Acq On : 05 Apr 2022 1:34 Operator: ARC
Sample : BCD0059-DUP1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 05 08:15:47 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units
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Internal Standards

1) I Pentacosane	24.86	88712428	50.000 ppm m
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System Monitoring Compounds

2) S Hexacosane	25.58	85232020	49.945 ppm m
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Spiked Amount 50.000 Range 50 - 150 Recovery = 99.89%

Target Compounds

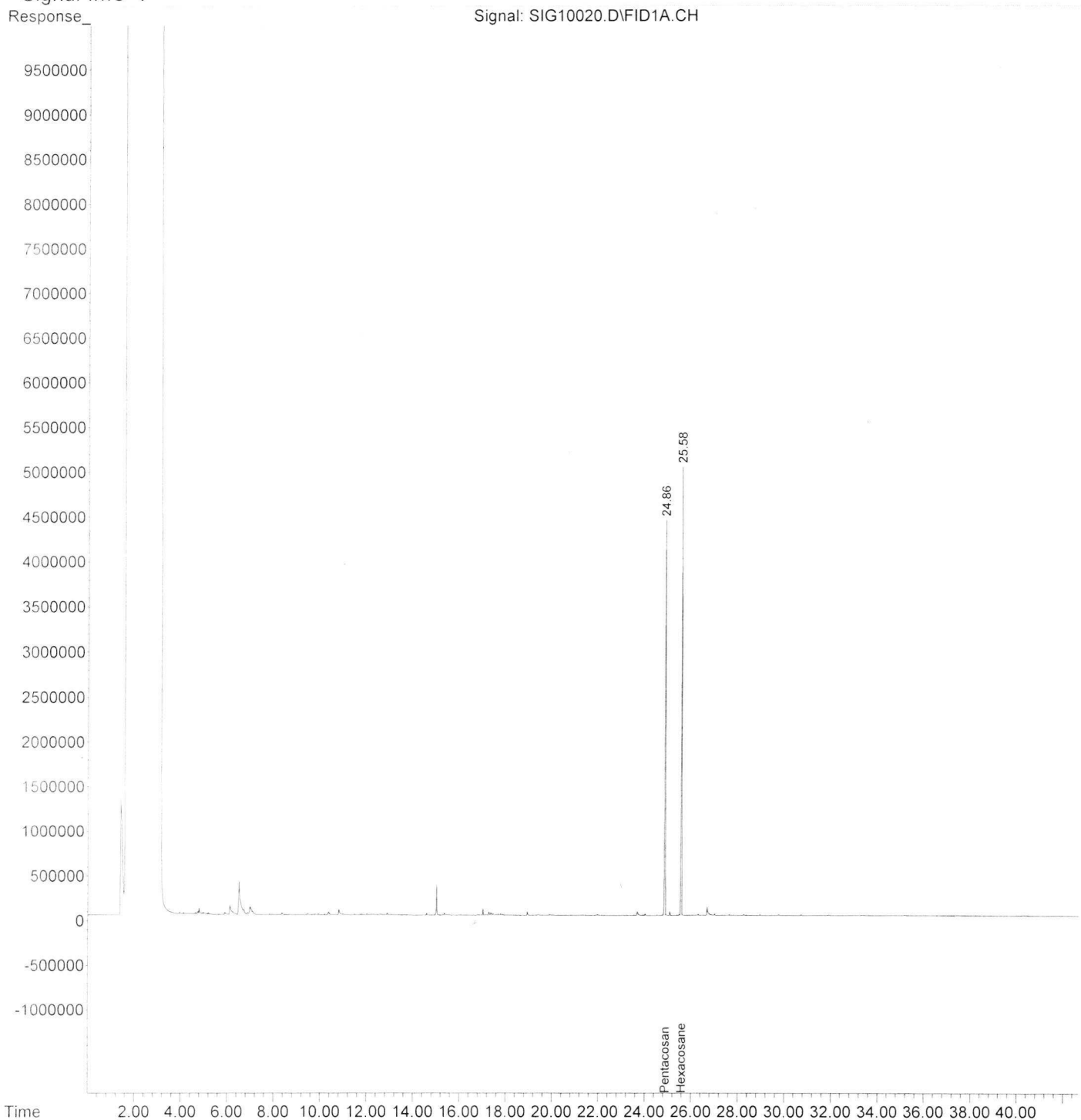
3) H TPH Diesel (C12-C14)	0.00	0	N.D. ppm
4) H TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H Mineral Oil	0.00	0	N.D. ppm
6) h HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h HCID Diesel (C12-C14)	0.00	0	N.D. ppm
8) h HCID Oil (>C14)	0.00	0	N.D. ppm

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10020.D Vial: 14
Acq On : 05 Apr 2022 1:34 Operator: ARC
Sample : BCD0059-DUP1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 5 8:17 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)

Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10021.D Vial: 15
 Acq On : 05 Apr 2022 2:28 Operator: ARC
 Sample : WCC1038-15 Inst : HP G1530A
 Misc : Multiplr: 1.00
 IntFile : EVENTS1.E
 Quant Time: Apr 05 08:15:48 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
 Title :
 Last Update : Mon Jan 10 08:33:21 2022
 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	24.87	105606923	50.000 ppm m

System Monitoring Compounds

2) S Hexacosane	25.58	96178593	47.343 ppm m
Spiked Amount	50.000	Range 50 - 150	Recovery = 94.69%

Target Compounds

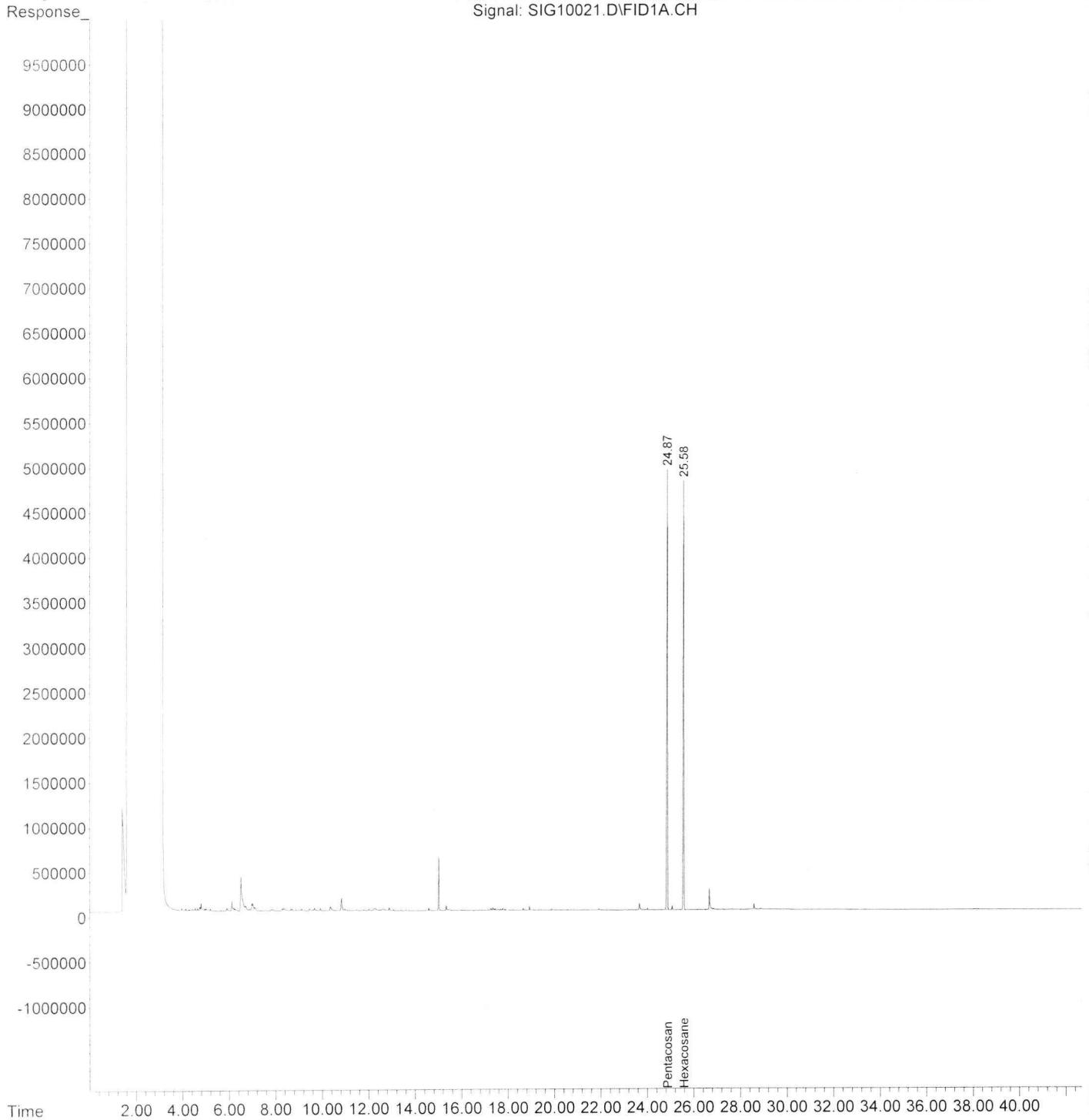
3) H TPH Diesel (C12-C14)	0.00	0	N.D. ppm
4) H TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H Mineral Oil	0.00	0	N.D. ppm
6) h HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h HCID Diesel (C12-C14)	0.00	0	N.D. ppm
8) h HCID Oil (>C14)	0.00	0	N.D. ppm

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10021.D Vial: 15
Acq On : 05 Apr 2022 2:28 Operator: ARC
Sample : WCC1038-15 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 5 8:18 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

Signal: SIG10021.D\FID1A.CH



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10022.D Vial: 16
Acq On : 05 Apr 2022 3:21 Operator: ARC
Sample : BCD0059-MS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 05 08:15:50 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
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	24.87	110411933	50.000 ppm m

System Monitoring Compounds

2) S Hexacosane	25.58	99510736	46.852 ppm m
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Spiked Amount 50.000 Range 50 - 150 Recovery = 93.70%

Target Compounds

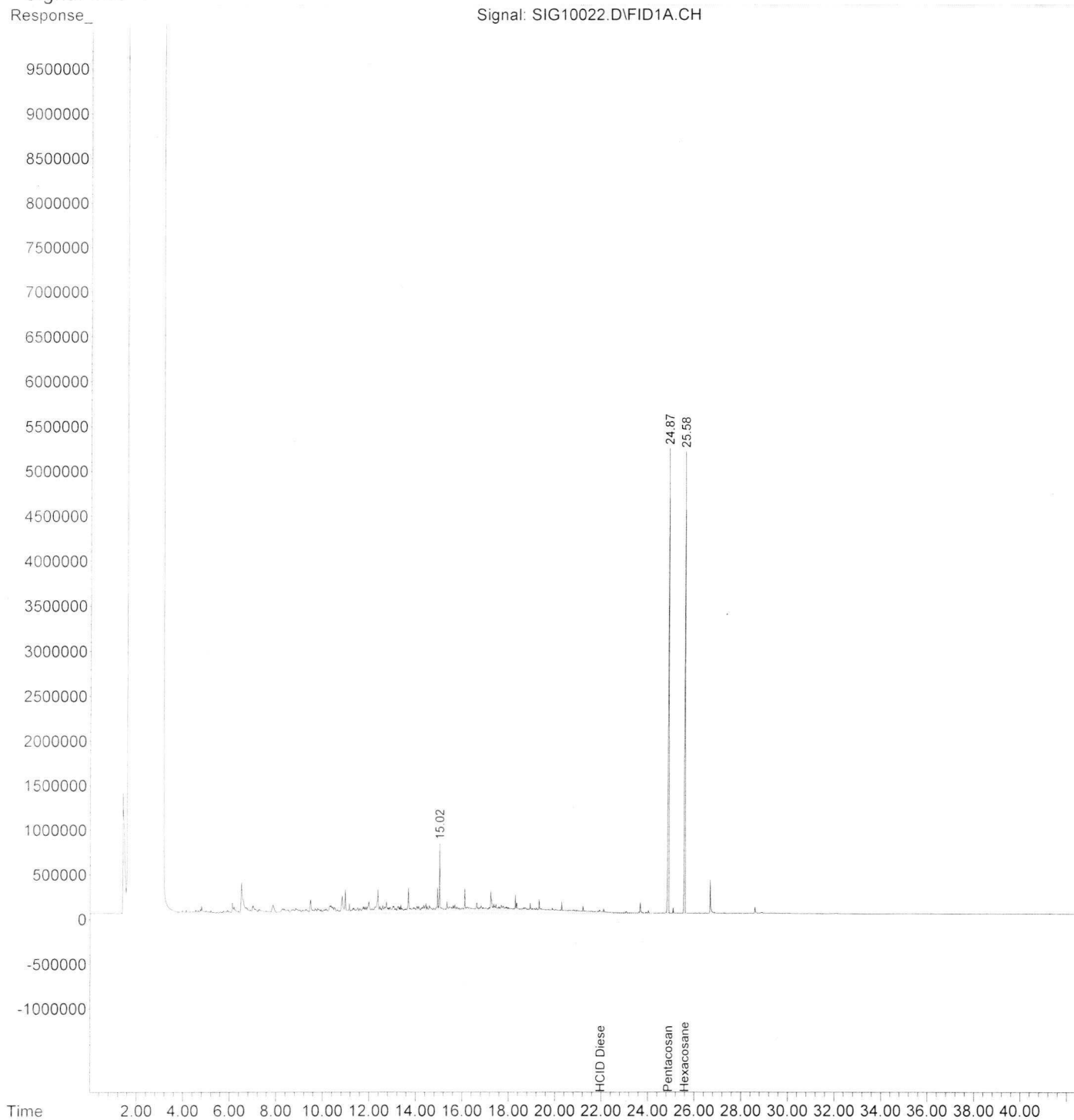
3) H TPH Diesel (C12-C14)	0.00	0	N.D. ppm
4) H TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H Mineral Oil	0.00	0	N.D. ppm
6) h HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h HCID Diesel (C12-C14)	21.97	370289933	233.045 ppm
8) h HCID Oil (>C14)	0.00	0	N.D. ppm

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10022.D Vial: 16
Acq On : 05 Apr 2022 3:21 Operator: ARC
Sample : BCD0059-MS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 5 8:18 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

Signal: SIG10022.D\FID1A.CH



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10023.D Vial: 17
 Acq On : 05 Apr 2022 4:15 Operator: ARC
 Sample : BCD0059-MSD1 Inst : HP G1530A
 Misc : Multiplr: 1.00
 IntFile : EVENTS1.E
 Quant Time: Apr 05 08:15:51 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
 Title :
 Last Update : Mon Jan 10 08:33:21 2022
 Response via : Initial Calibration
 DataAcq Meth : DXHCID5.M

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units
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Internal Standards

1) I Pentacosane	24.87	104715959	50.000 ppm m
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System Monitoring Compounds

2) S Hexacosane	25.58	91167188	45.258 ppm m
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Spiked Amount 50.000 Range 50 - 150 Recovery = 90.52%

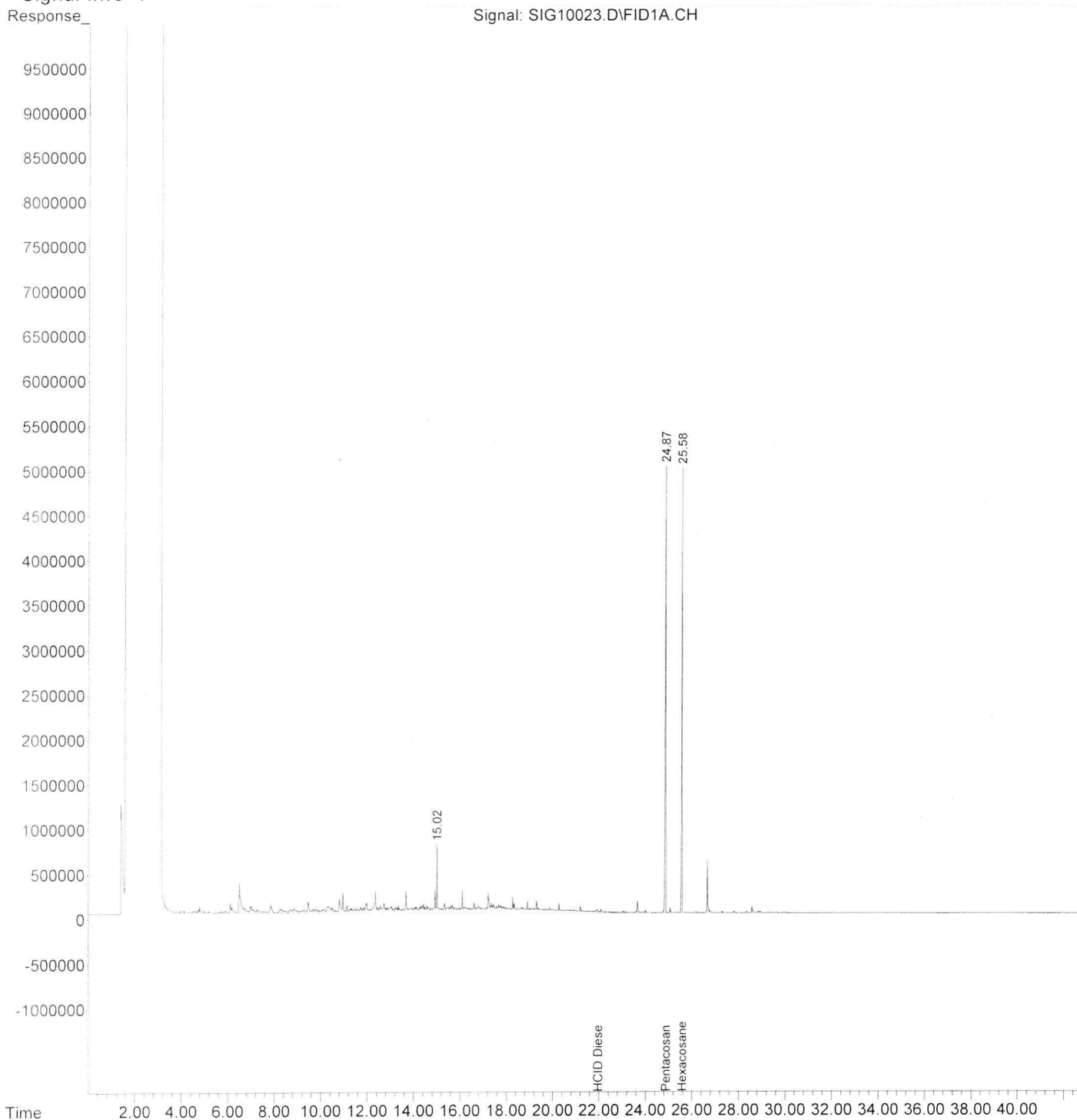
Target Compounds

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)	21.97	344333549	228.497 ppm
8) h HCID Oil (>C14)	0.00	0	N.D. ppm

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10023.D Vial: 17
Acq On : 05 Apr 2022 4:15 Operator: ARC
Sample : BCD0059-MSD1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 5 8:19 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10024.D Vial: 18
Acq On : 05 Apr 2022 5:09 Operator: ARC
Sample : WCC1038-02 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 05 08:15:52 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
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	24.86	98955890	50.000 ppm m

System Monitoring Compounds

2) S Hexacosane	25.58	93659747	49.202 ppm m
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Spiked Amount 50.000 Range 50 - 150 Recovery = 98.40%

Target Compounds

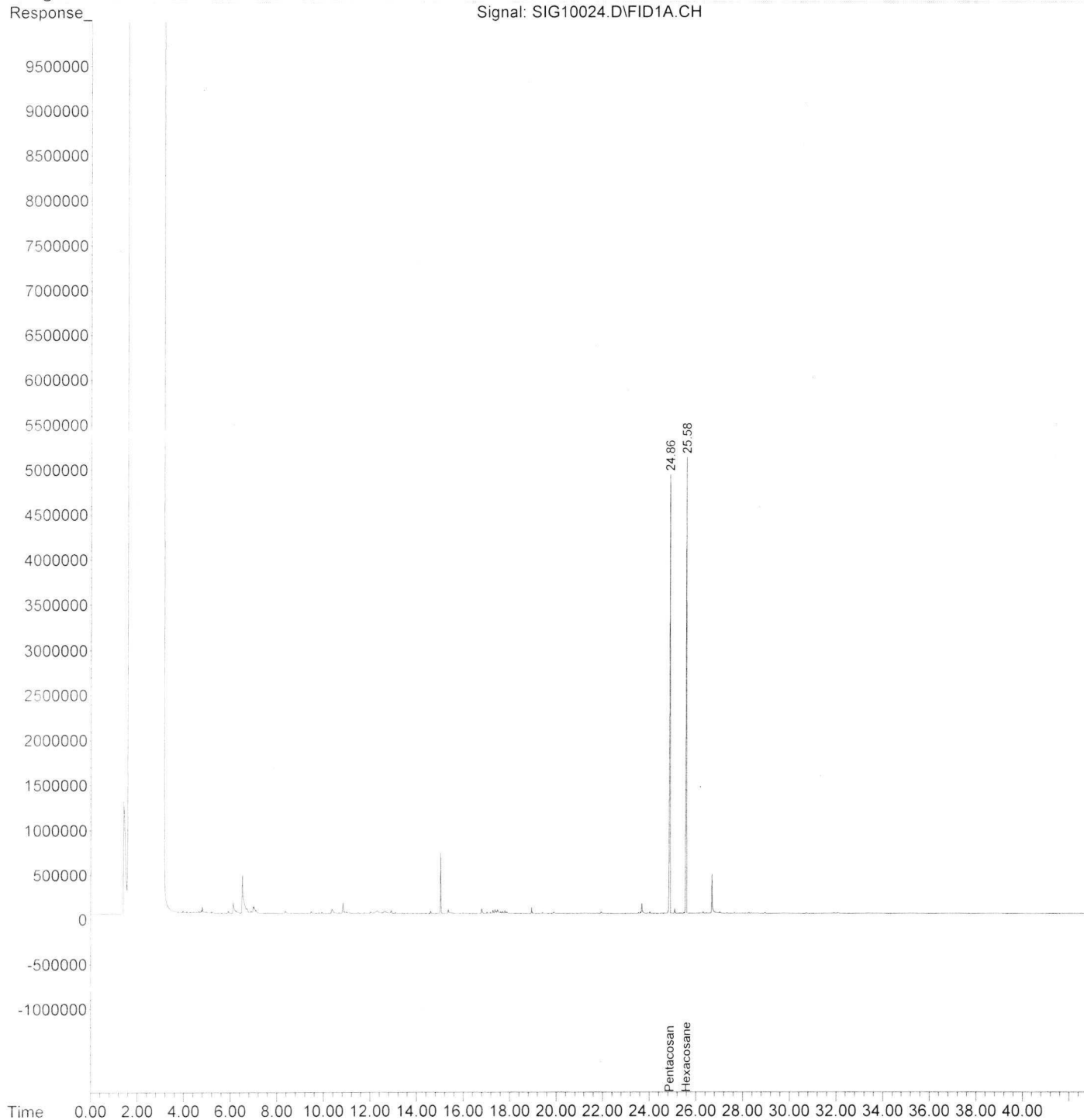
3) H TPH Diesel (C12-C14)	0.00	0	N.D. ppm
4) H TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H Mineral Oil	0.00	0	N.D. ppm
6) h HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h HCID Diesel (C12-C14)	0.00	0	N.D. ppm
8) h HCID Oil (>C14)	0.00	0	N.D. ppm

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10024.D Vial: 18
Acq On : 05 Apr 2022 5:09 Operator: ARC
Sample : WCC1038-02 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 5 8:20 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

Signal: SIG10024.D\FID1A.CH



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10030.D Vial: 19
Acq On : 05 Apr 2022 10:31 Operator: ARC
Sample : WCC1038-03 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 05 11:14:01 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
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	24.87	114409684	50.000 ppm m

System Monitoring Compounds

2) S Hexacosane	25.58	86953728	39.509 ppm m
Spiked Amount	50.000	Range 50 - 150	Recovery = 79.02%

Target Compounds

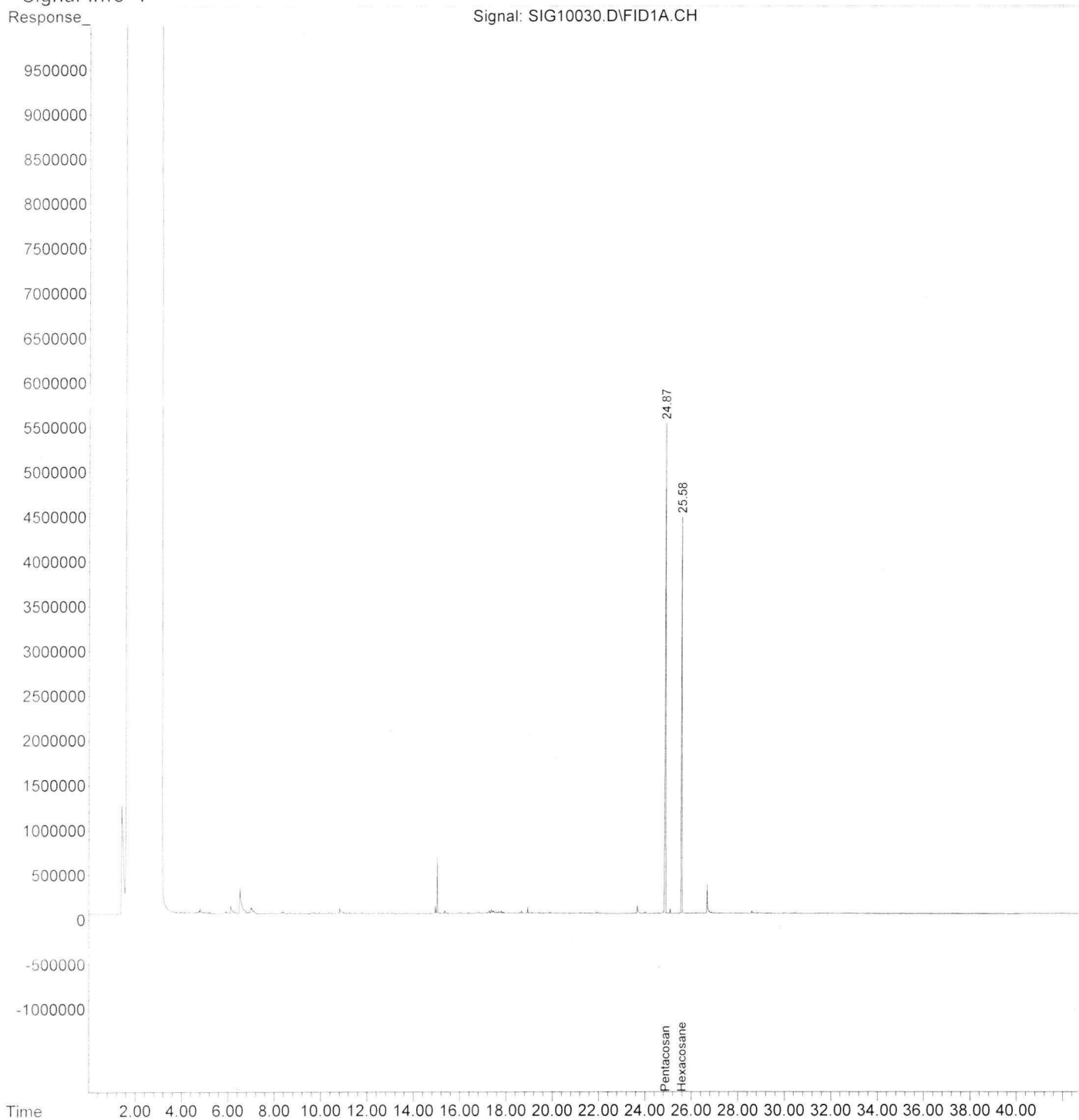
3) H TPH Diesel (C12-C14)	0.00	0	N.D. ppm
4) H TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H Mineral Oil	0.00	0	N.D. ppm
6) h HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h HCID Diesel (C12-C14)	0.00	0	N.D. ppm
8) h HCID Oil (>C14)	0.00	0	N.D. ppm

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10030.D Vial: 19
Acq On : 05 Apr 2022 10:31 Operator: ARC
Sample : WCC1038-03 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 5 11:14 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)

Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10031.D Vial: 20
Acq On : 05 Apr 2022 11:25 Operator: ARC
Sample : WCC1038-04 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 05 12:38:47 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
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	24.87	106623599	50.000 ppm m

System Monitoring Compounds

2) S Hexacosane	25.58	92787578	45.238 ppm m
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Spiked Amount 50.000 Range 50 - 150 Recovery = 90.48%

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

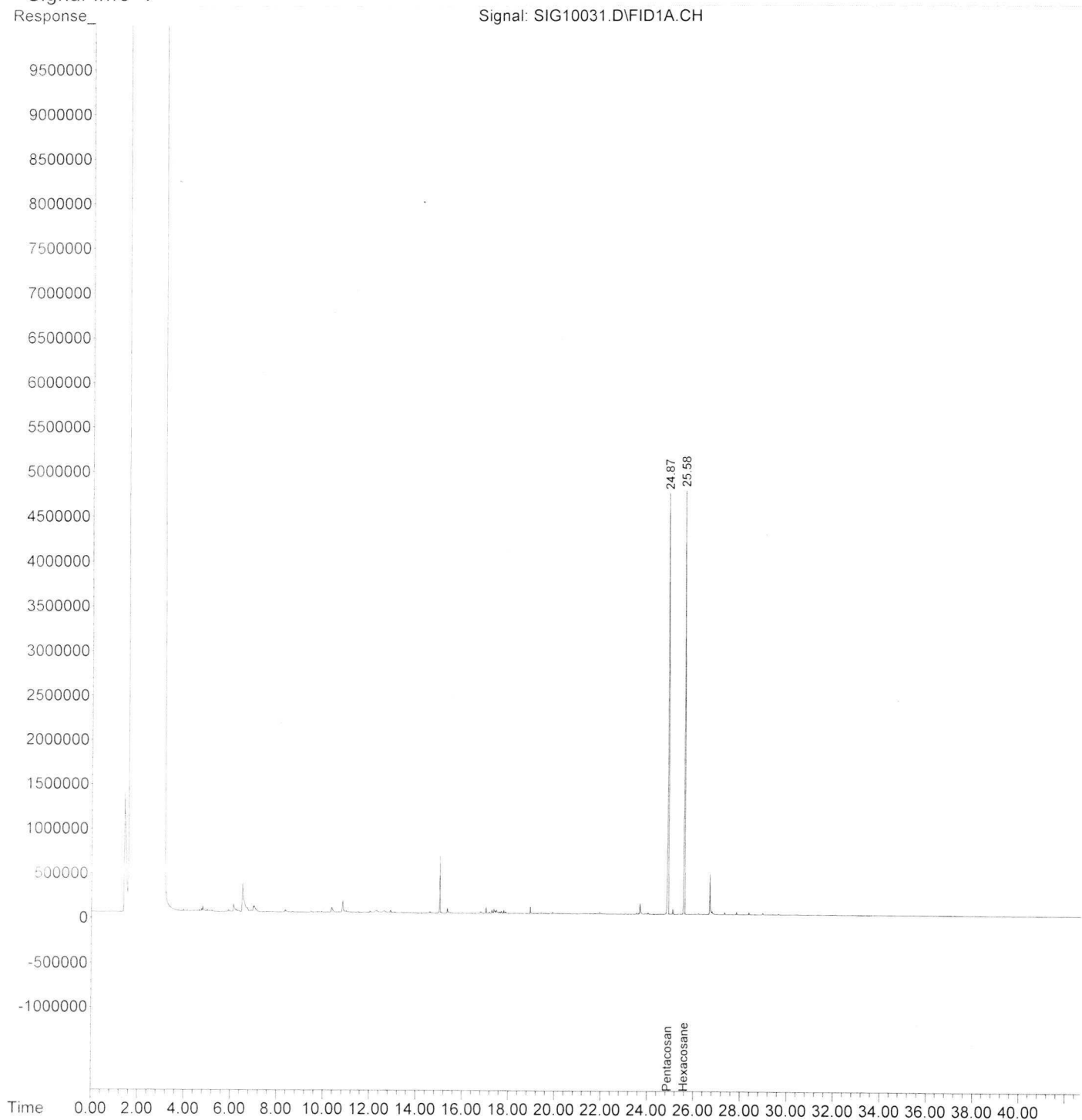
Data File : W:\HPCHEM\1\2022DATA\040422\SIG10031.D Vial: 20
Acq On : 05 Apr 2022 11:25 Operator: ARC
Sample : WCC1038-04 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 5 12:39 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)

Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

Signal: SIG10031.D\FID1A.CH



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10032.D Vial: 21
 Acq On : 05 Apr 2022 12:19 Operator: ARC
 Sample : WCC1038-05 Inst : HP G1530A
 Misc : Multiplr: 1.00
 IntFile : EVENTS1.E
 Quant Time: Apr 05 13:14:59 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
 Title :
 Last Update : Mon Jan 10 08:33:21 2022
 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	24.86	100752897	50.000 ppm m

System Monitoring Compounds

2) S Hexacosane	25.57	87594553	45.195 ppm m
Spiked Amount	50.000	Range 50 - 150	Recovery = 90.39%

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

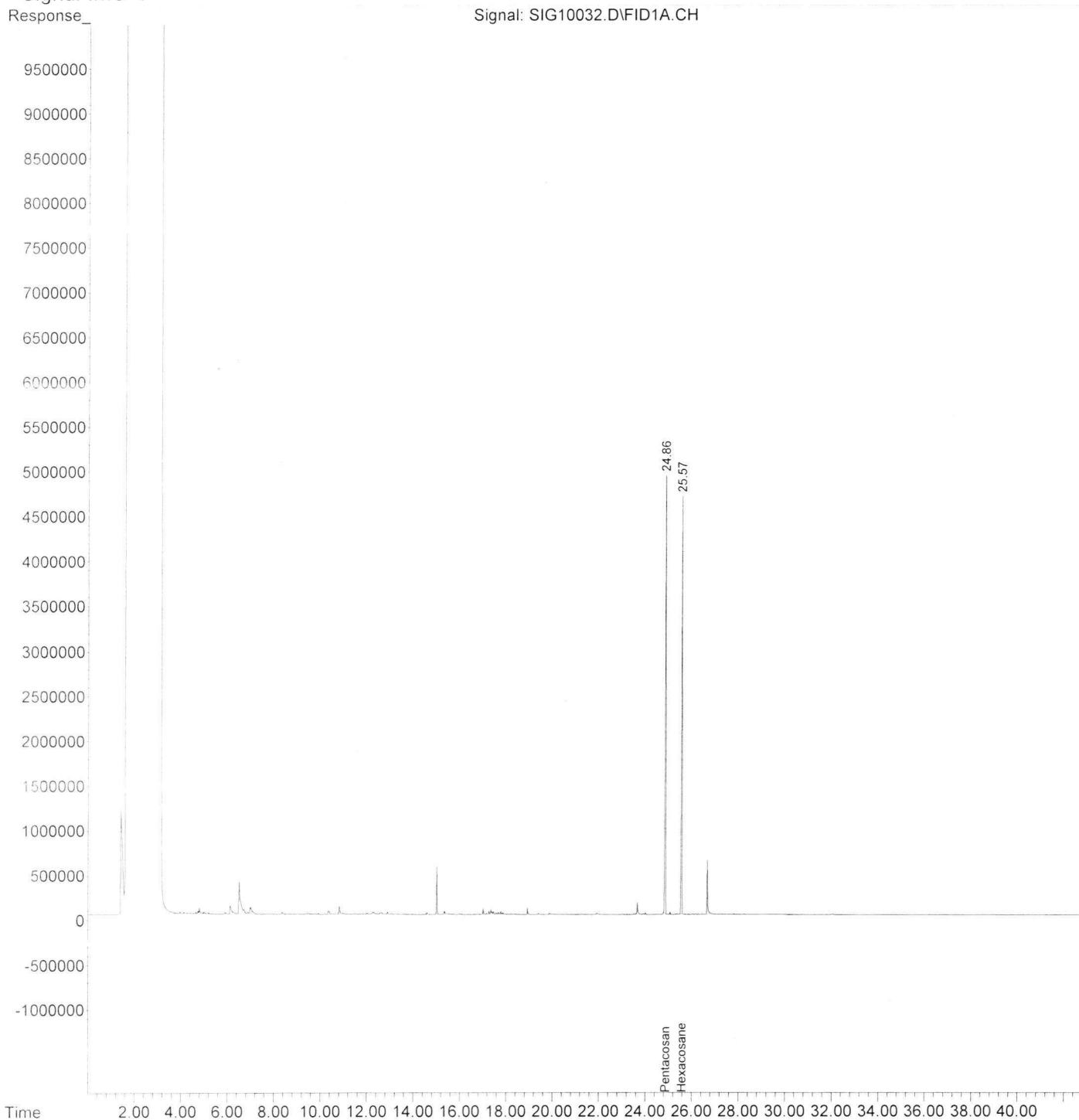
Data File : W:\HPCHEM\1\2022DATA\040422\SIG10032.D Vial: 21
Acq On : 05 Apr 2022 12:19 Operator: ARC
Sample : WCC1038-05 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 5 13:15 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)

Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

Signal: SIG10032.D\FID1A.CH



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10033.D Vial: 22
Acq On : 05 Apr 2022 13:13 Operator: ARC
Sample : WCC1038-06 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 05 14:02:15 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1\2022DATA\040422\SIG10033.D (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
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	24.86	113535337	50.000 ppm m
System Monitoring Compounds			
2) S Hexacosane	25.58	104940853	48.049 ppm m
Spiked Amount 50.000 Range 50 - 150 Recovery = 96.10%			
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

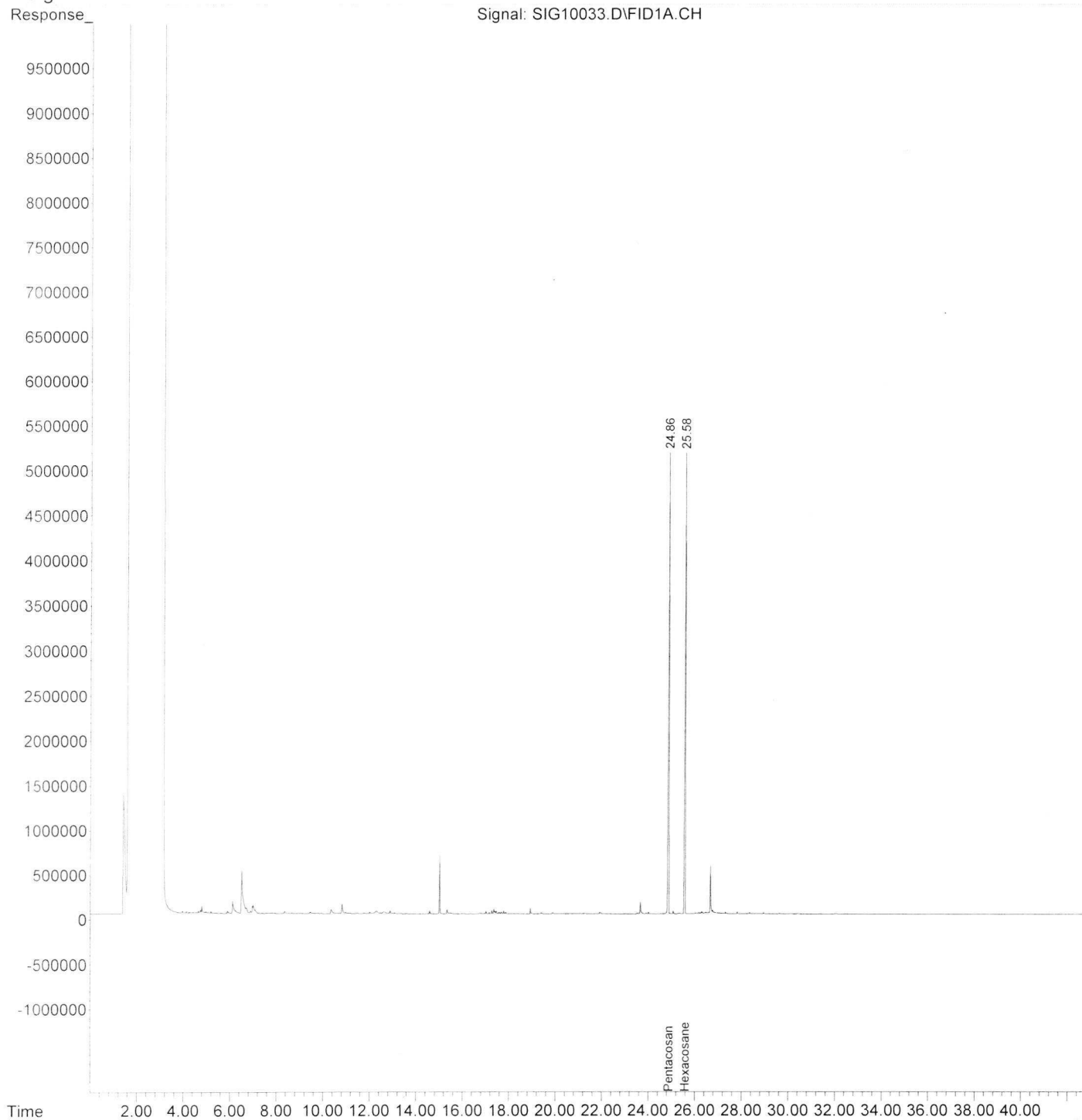
Data File : W:\HPCHEM\1\2022DATA\040422\SIG10033.D Vial: 22
Acq On : 05 Apr 2022 13:13 Operator: ARC
Sample : WCC1038-06 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 5 14:04 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)

Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

Signal: SIG10033.D\FID1A.CH



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10034.D Vial: 23
Acq On : 05 Apr 2022 14:08 Operator: ARC
Sample : WCC1038-07 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 05 14:59:46 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

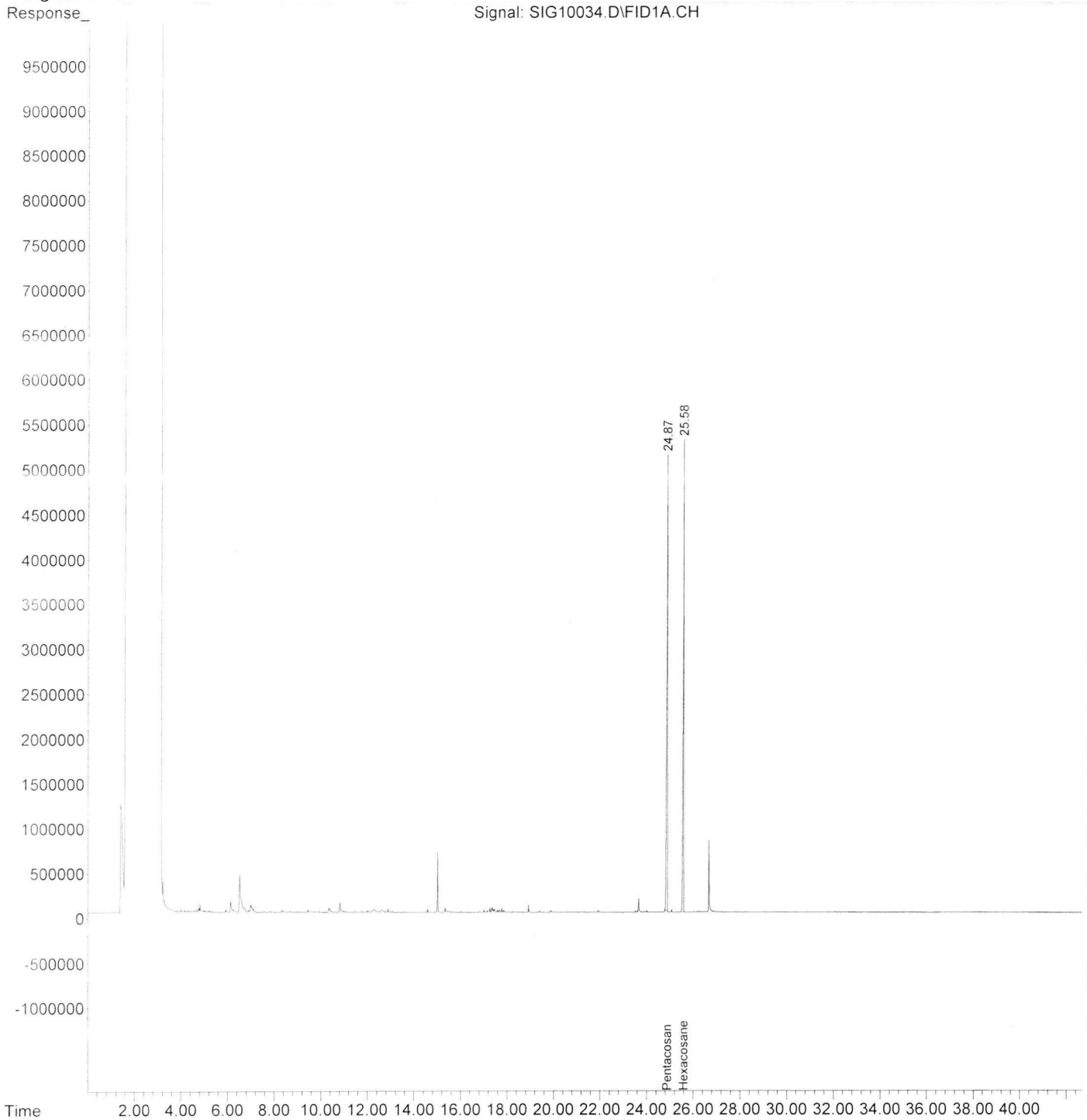
Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units
Internal Standards			
1) I Pentacosane	24.87	118919522	50.000 ppm m
System Monitoring Compounds			
2) S Hexacosane	25.58	97790339	42.748 ppm m
Spiked Amount 50.000 Range 50 - 150 Recovery = 85.50%			
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

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10034.D Vial: 23
Acq On : 05 Apr 2022 14:08 Operator: ARC
Sample : WCC1038-07 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 5 15:00 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10035.D Vial: 24
 Acq On : 05 Apr 2022 15:04 Operator: ARC
 Sample : WCC1038-08 Inst : HP G1530A
 Misc : Multiplr: 1.00
 IntFile : EVENTS1.E
 Quant Time: Apr 05 15:51:11 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
 Title :
 Last Update : Mon Jan 10 08:33:21 2022
 Response via : Initial Calibration
 DataAcq Meth : DXHCID5.M

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units
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Internal Standards

1) I Pentacosane	24.87	110564480	50.000 ppm m
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System Monitoring Compounds

2) S Hexacosane	25.58	92546272	43.513 ppm m
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Spiked Amount 50.000 Range 50 - 150 Recovery = 87.03%

Target Compounds

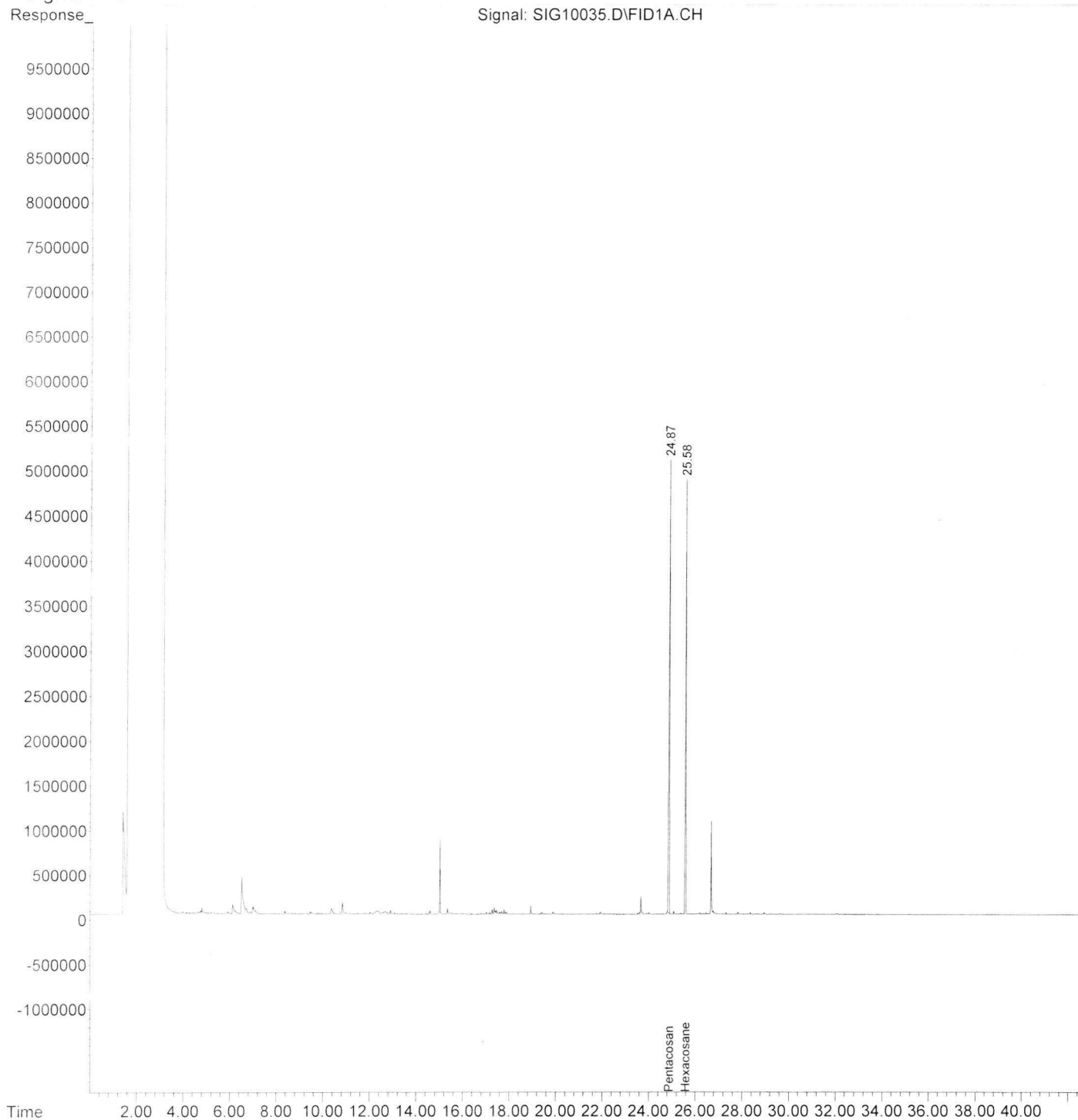
3) H TPH Diesel (C12-C14)	0.00	0	N.D. ppm
4) H TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H Mineral Oil	0.00	0	N.D. ppm
6) h HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h HCID Diesel (C12-C14)	0.00	0	N.D. ppm
8) h HCID Oil (>C14)	0.00	0	N.D. ppm

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10035.D Vial: 24
Acq On : 05 Apr 2022 15:04 Operator: ARC
Sample : WCC1038-08 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 5 15:52 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

Signal: SIG10035.D\FID1A.CH



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10036.D Vial: 25
Acq On : 05 Apr 2022 15:59 Operator: ARC
Sample : WCC1038-09 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 06 08:08:45 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
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	24.87	109583083	50.000 ppm m

System Monitoring Compounds

2) S Hexacosane	25.58	101956030	48.366 ppm m
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Spiked Amount 50.000 Range 50 - 150 Recovery = 96.73%

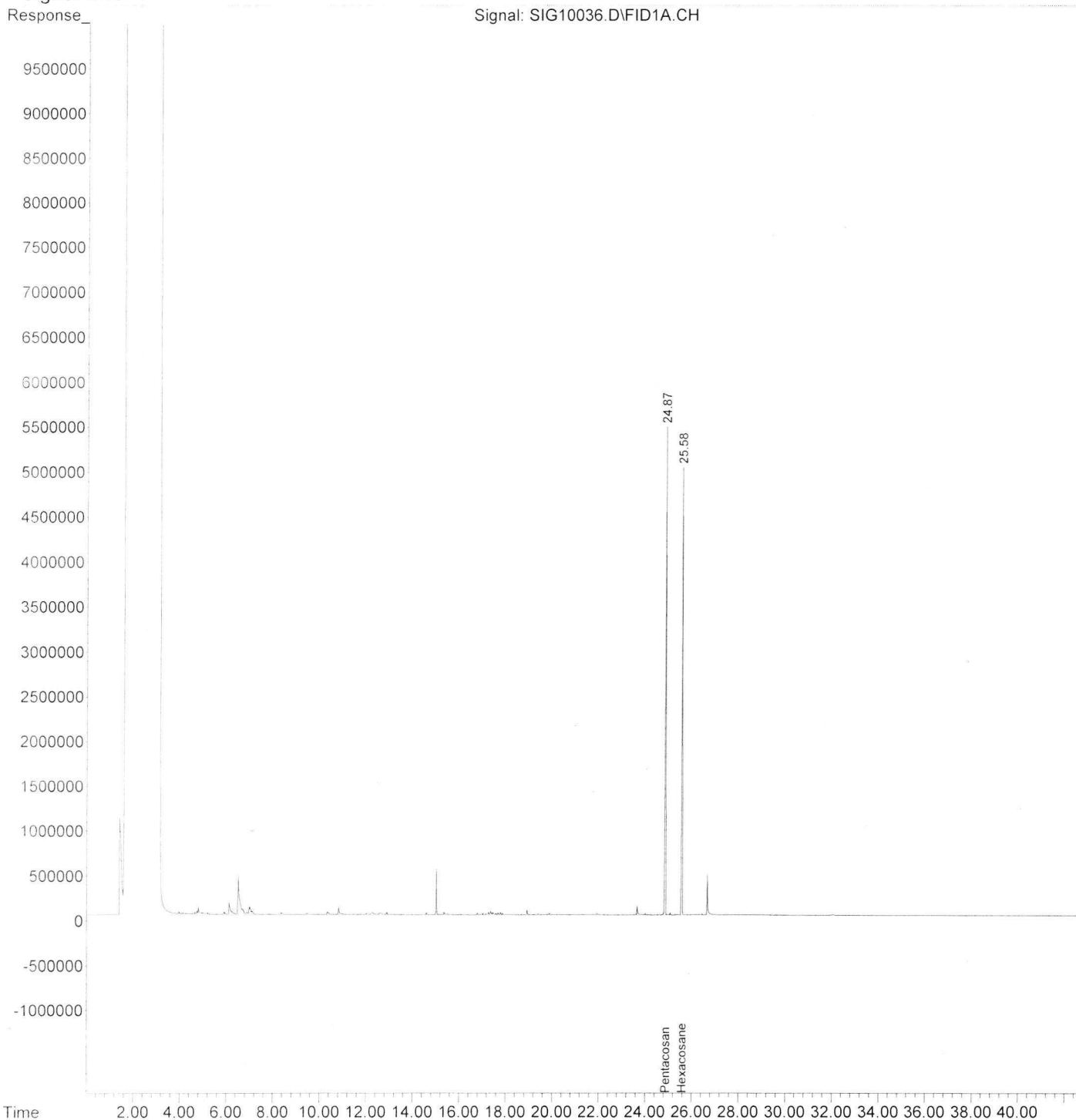
Target Compounds

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

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10036.D Vial: 25
Acq On : 05 Apr 2022 15:59 Operator: ARC
Sample : WCC1038-09 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 6 8:09 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10037.D Vial: 26
Acq On : 05 Apr 2022 16:55 Operator: ARC
Sample : WCC1038-10 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 06 08:08:47 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units
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Internal Standards

1) I Pentacosane	24.87	97515842	50.000 ppm m
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System Monitoring Compounds

2) S Hexacosane	25.57	84432740	45.010 ppm m
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Spiked Amount 50.000 Range 50 - 150 Recovery = 90.02%

Target Compounds

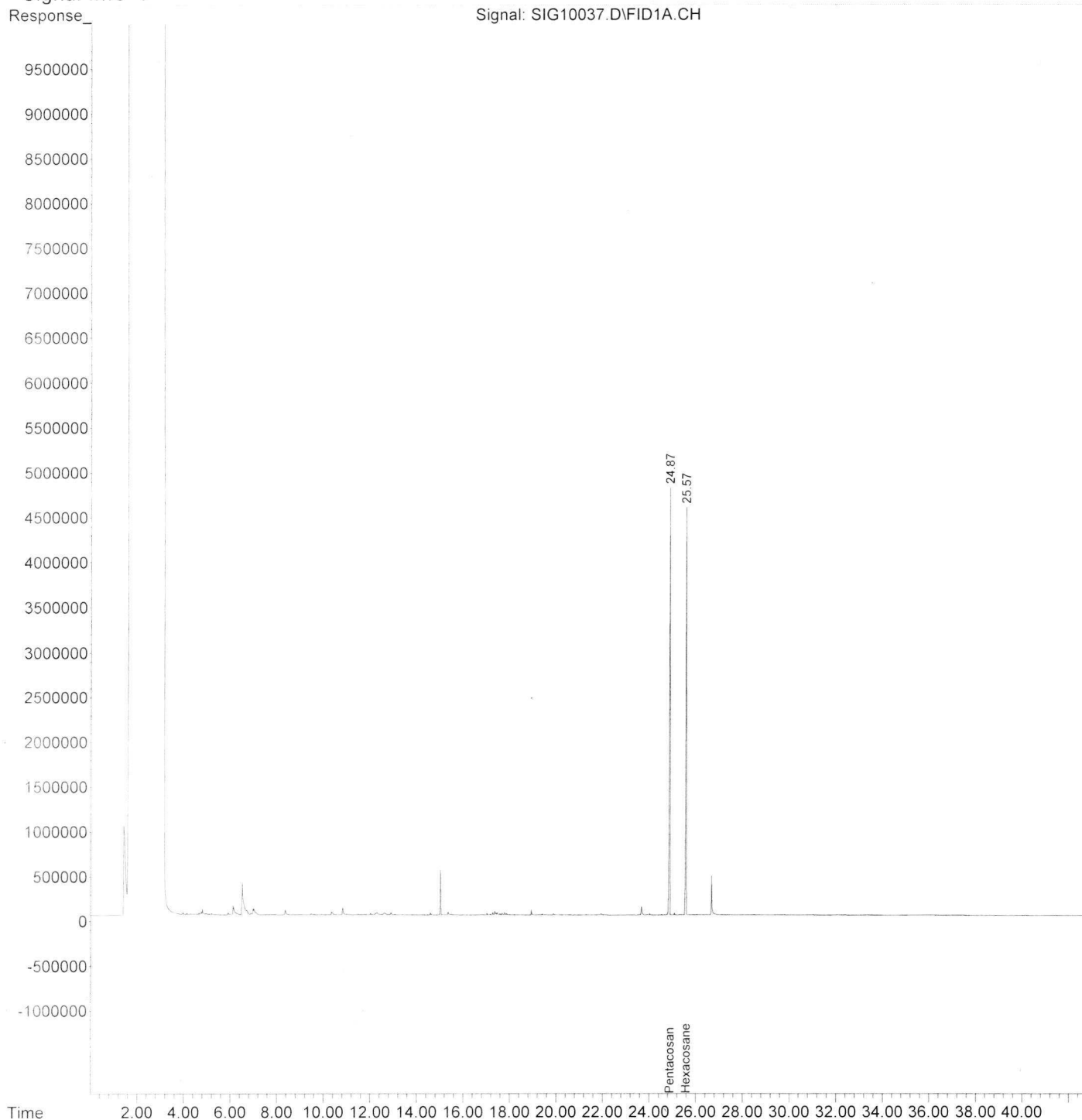
3) H TPH Diesel (C12-C14)	0.00	0	N.D. ppm
4) H TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H Mineral Oil	0.00	0	N.D. ppm
6) h HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h HCID Diesel (C12-C14)	0.00	0	N.D. ppm
8) h HCID Oil (>C14)	0.00	0	N.D. ppm

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10037.D Vial: 26
Acq On : 05 Apr 2022 16:55 Operator: ARC
Sample : WCC1038-10 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 6 8:09 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

Signal: SIG10037.D\FID1A.CH



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10038.D Vial: 27
Acq On : 05 Apr 2022 17:50 Operator: ARC
Sample : WCC1038-11 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 06 08:08:48 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

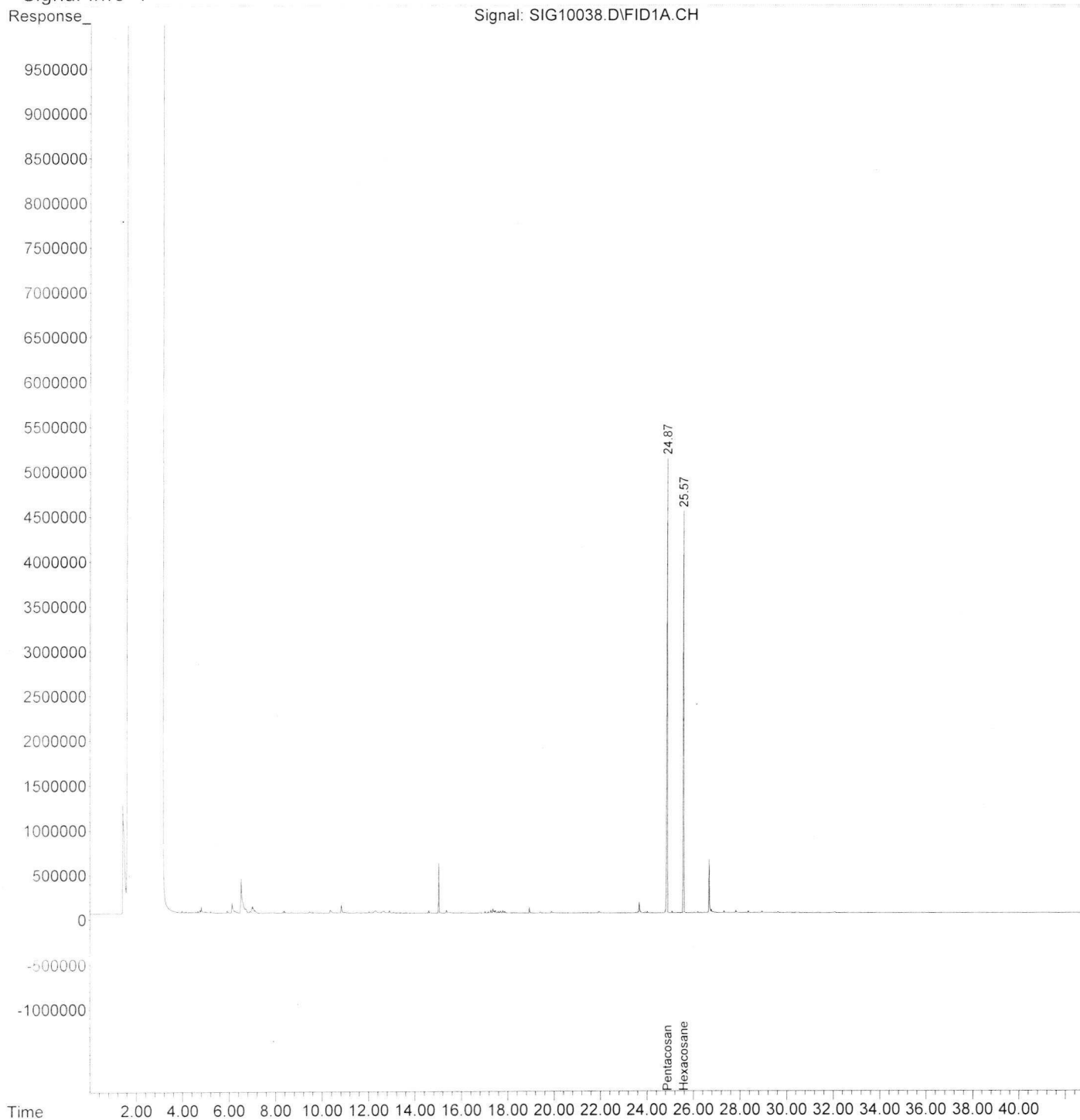
Compound	R.T.	Response	Conc Units
Internal Standards			
1) I Pentacosane	24.87	96647014	50.000 ppm m
System Monitoring Compounds			
2) S Hexacosane	25.57	80030015	43.046 ppm m
Spiked Amount 50.000 Range 50 - 150 Recovery = 86.09%			
Target Compounds			
3) H TPH Diesel (C12-C14)	0.00	0	N.D. ppm
4) H TPHDX-Lube 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

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10038.D Vial: 27
Acq On : 05 Apr 2022 17:50 Operator: ARC
Sample : WCC1038-11 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 6 8:10 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)

Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10039.D Vial: 28
Acq On : 05 Apr 2022 18:45 Operator: ARC
Sample : WCC1038-12 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 06 08:08:49 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
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	24.87	104943066	50.000 ppm m

System Monitoring Compounds

2) S Hexacosane	25.58	93560084	46.346 ppm m
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Spiked Amount 50.000 Range 50 - 150 Recovery = 92.69%

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

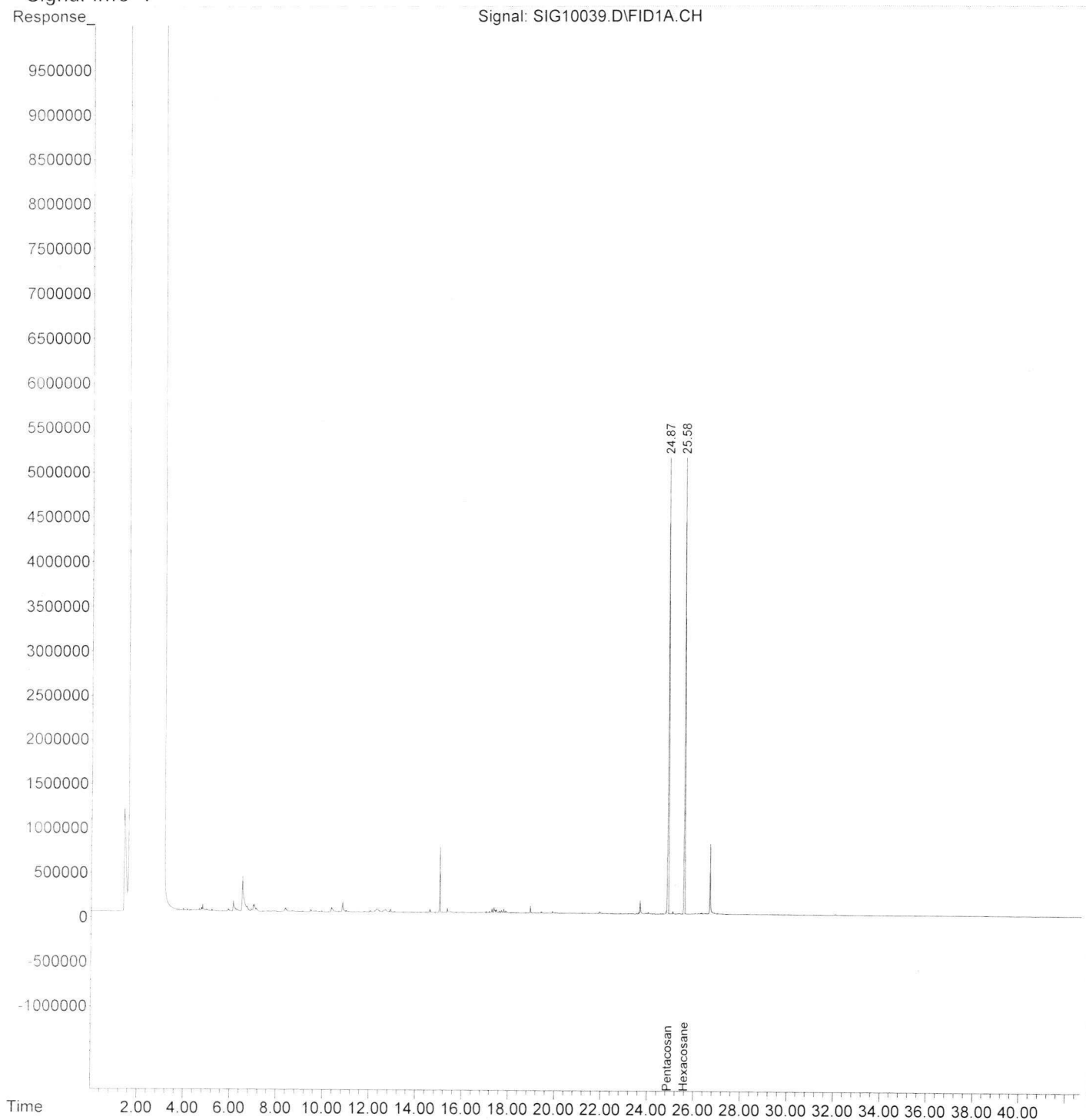
Data File : W:\HPCHEM\1\2022DATA\040422\SIG10039.D Vial: 28
Acq On : 05 Apr 2022 18:45 Operator: ARC
Sample : WCC1038-12 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 6 8:10 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)

Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

Signal: SIG10039.D\FID1A.CH



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10045.D Vial: 29
Acq On : 06 Apr 2022 00:10 Operator: ARC
Sample : WCC1038-13 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 06 08:08:57 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
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	24.86	112328380	50.000 ppm m

System Monitoring Compounds

2) S Hexacosane	25.57	91901937	42.531 ppm m
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Spiked Amount 50.000 Range 50 - 150 Recovery = 85.06%

Target Compounds

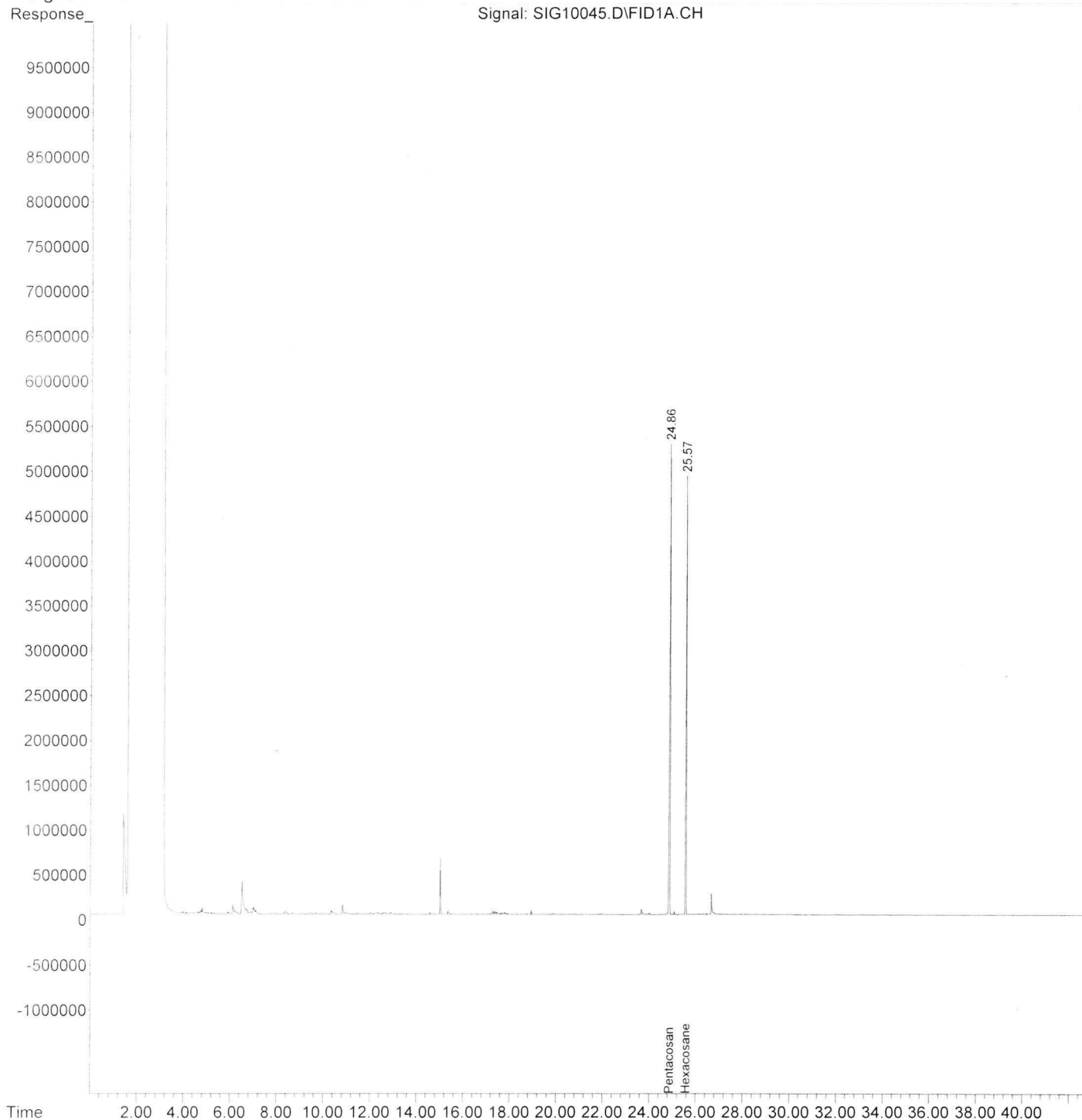
3) H TPH Diesel (C12-C14)	0.00	0	N.D. ppm
4) H TPHDX-Lube Oil (>C14)	0.00	0	N.D. ppm
5) H Mineral Oil	0.00	0	N.D. ppm
6) h HCID Gas (C7-C12)	0.00	0	N.D. ppm
7) h HCID Diesel (C12-C14)	0.00	0	N.D. ppm
8) h HCID Oil (>C14)	0.00	0	N.D. ppm

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10045.D Vial: 29
Acq On : 06 Apr 2022 00:10 Operator: ARC
Sample : WCC1038-13 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 6 8:14 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

Signal: SIG10045.D\FID1A.CH



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10046.D Vial: 30
Acq On : 06 Apr 2022 1:05 Operator: ARC
Sample : WCC1038-14 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 06 08:08:58 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
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	24.86	90959871	50.000 ppm m

System Monitoring Compounds

2) S Hexacosane	25.57	79387508	45.370 ppm m
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Spiked Amount 50.000 Range 50 - 150 Recovery = 90.74%

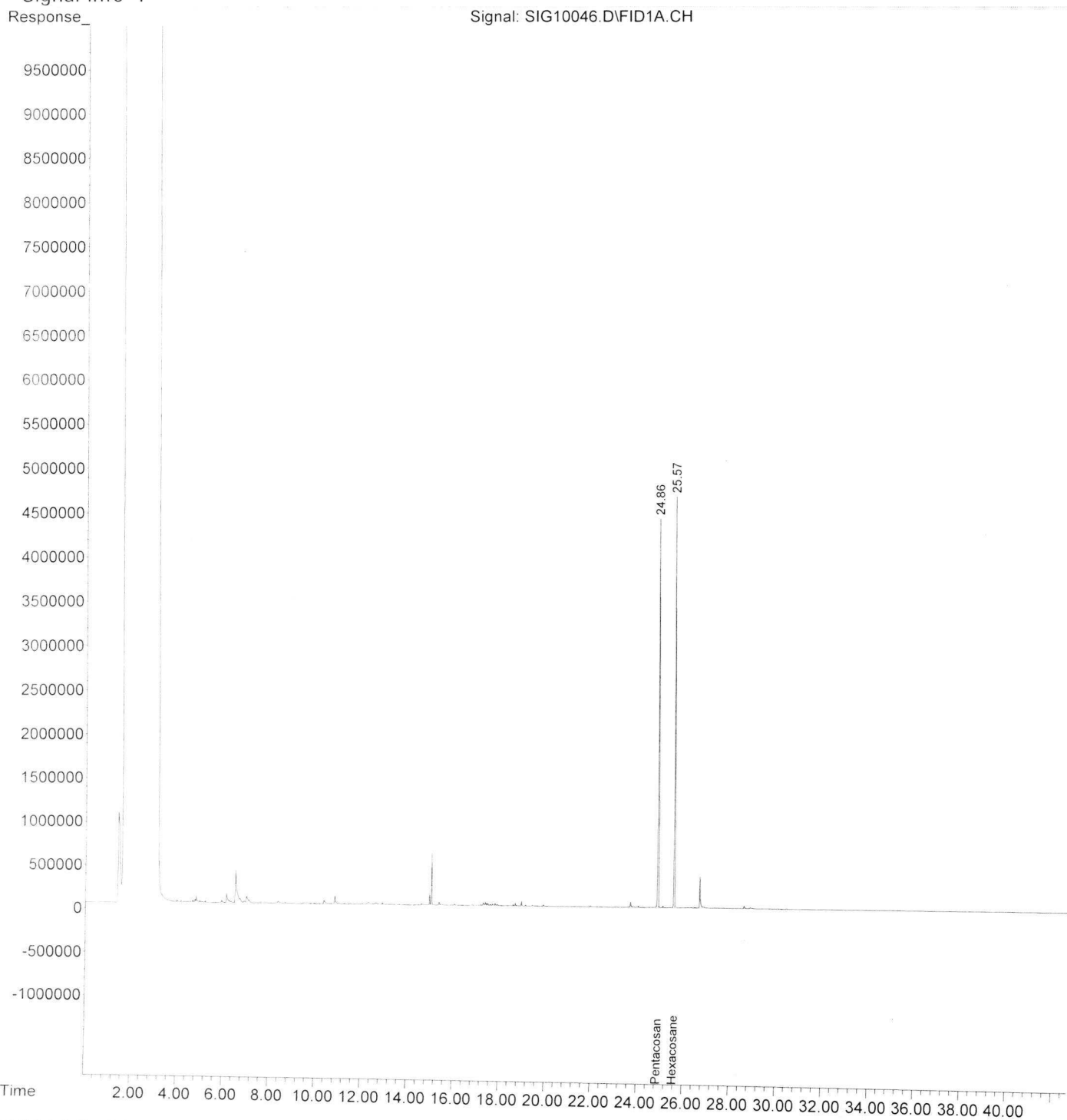
Target Compounds

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

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10046.D Vial: 30
Acq On : 06 Apr 2022 1:05 Operator: ARC
Sample : WCC1038-14 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 6 8:14 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :



Data File : W:\HPCHEM\1\2022DATA\040422\SIG10047.D Vial: 31
Acq On : 06 Apr 2022 1:59 Operator: ARC
Sample : WCC1038-16 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 06 08:08:59 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Initial Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

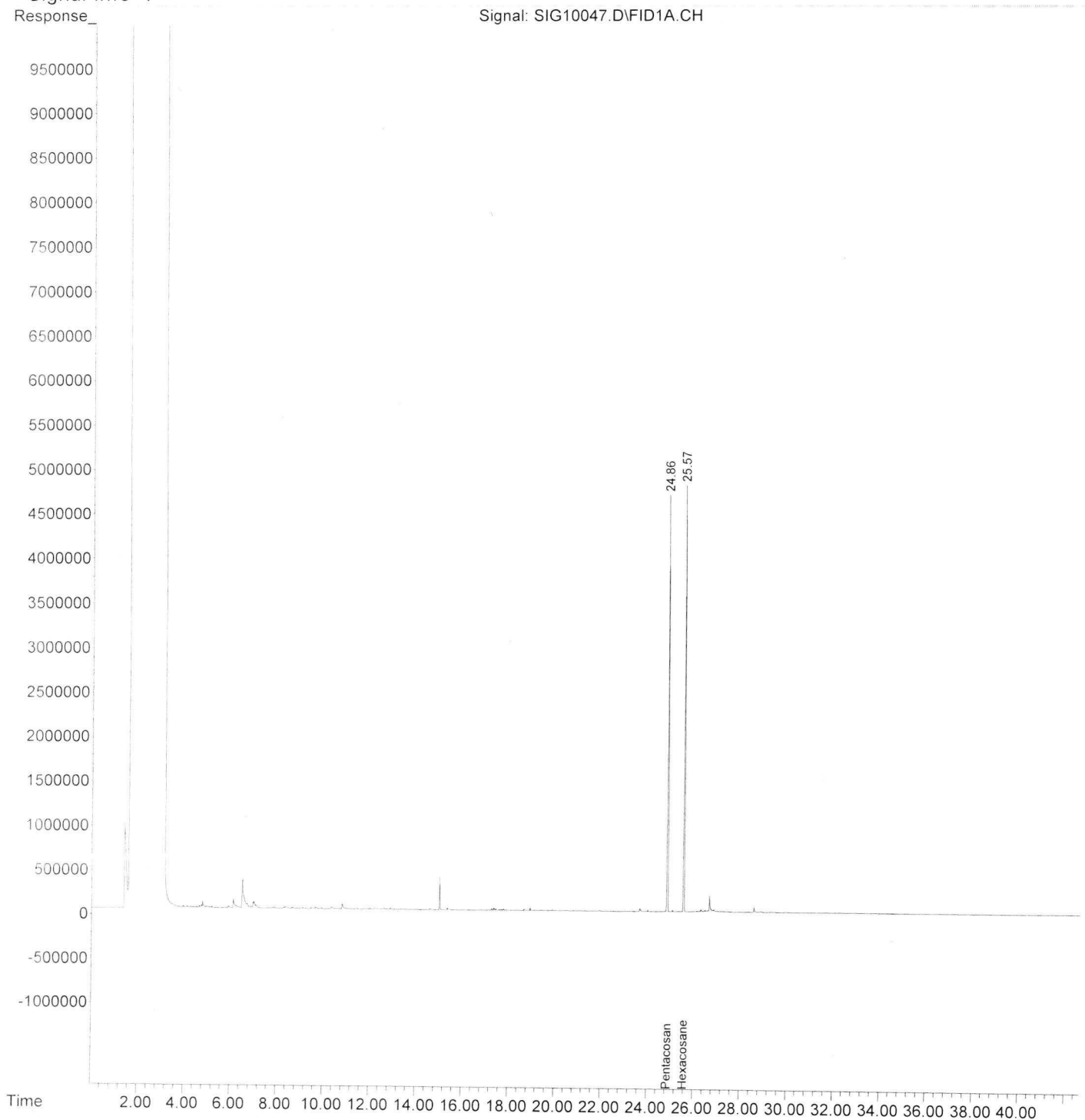
Compound	R.T.	Response	Conc Units
Internal Standards			
1) I Pentacosane	24.86	93449917	50.000 ppm m
System Monitoring Compounds			
2) S Hexacosane	25.57	86374440	48.048 ppm m
Spiked Amount 50.000 Range 50 - 150 Recovery = 96.10%			
Target Compounds			
3) H TPH Diesel (C12-C14)	0.00	0	N.D. ppm
4) H TPHDX-Lube 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

Data File : W:\HPCHEM\1\2022DATA\040422\SIG10047.D Vial: 31
Acq On : 06 Apr 2022 1:59 Operator: ARC
Sample : WCC1038-16 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : EVENTS1.E
Quant Time: Apr 6 8:15 2022 Quant Results File: 220107LOWDHT.RES

Quant Method : W:\HPCHEM\1...\220107LOWDHT.M (Chemstation Integrator)
Title :
Last Update : Mon Jan 10 08:33:21 2022
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M

Volume Inj. :
Signal Phase :
Signal Info :

Signal: SIG10047.D\FID1A.CH



	Sample Name	Sample Type	Acquisition Date	File Name	Dilution Factor	Analyte Peak Name	Analyte Peak Area (counts)	Analyte Concentration (na/mL)	IS Peak Area (counts)	Calculated Concentration (na/mL)	Accuracy (%)
1	250/500 ppb gly	Standard	4/11/2022 4:07	041122_gly\	1.00	Glyphosate	2.23e+006	250.	4.08e+005	247.	99.0
2	250/500 ppb gly	Standard	4/11/2022 4:07	041122_gly\	1.00	Glyphosate1	8.68e+005	250.	4.08e+005	246.	98.6
3	250/500 ppb gly	Standard	4/11/2022 4:07	041122_gly\	1.00	AMPA	3.39e+006	500.	4.08e+005	498.	99.6
4	250/500 ppb gly	Standard	4/11/2022 4:07	041122_gly\	1.00	AMPA1	1.24e+006	500.	4.08e+005	497.	99.4
5	125/250 ppb gly	Standard	4/11/2022 4:14	041122_gly\	1.00	Glyphosate	1.04e+006	125.	3.16e+005	129.	103.
6	125/250 ppb gly	Standard	4/11/2022 4:14	041122_gly\	1.00	Glyphosate1	4.02e+005	125.	3.16e+005	132.	105.
7	125/250 ppb gly	Standard	4/11/2022 4:14	041122_gly\	1.00	AMPA	1.45e+006	250.	3.16e+005	254.	102.
8	125/250 ppb gly	Standard	4/11/2022 4:14	041122_gly\	1.00	AMPA1	5.45e+005	250.	3.16e+005	255.	102.
9	50/100 ppb gly a	Standard	4/11/2022 4:21	041122_gly\	1.00	Glyphosate	4.13e+005	50.0	3.05e+005	49.2	98.4
10	50/100 ppb gly a	Standard	4/11/2022 4:21	041122_gly\	1.00	Glyphosate1	1.51e+005	50.0	3.05e+005	47.8	95.6
11	50/100 ppb gly a	Standard	4/11/2022 4:21	041122_gly\	1.00	AMPA	5.78e+005	100.	3.05e+005	100.	100.
12	50/100 ppb gly a	Standard	4/11/2022 4:21	041122_gly\	1.00	AMPA1	2.17e+005	100.	3.05e+005	101.	101.
13	25/50 ppb gly a	Standard	4/11/2022 4:28	041122_gly\	1.00	Glyphosate	2.38e+005	25.0	3.59e+005	23.8	95.1
14	25/50 ppb gly a	Standard	4/11/2022 4:28	041122_gly\	1.00	Glyphosate1	8.76e+004	25.0	3.59e+005	23.4	93.4
15	25/50 ppb gly a	Standard	4/11/2022 4:28	041122_gly\	1.00	AMPA	3.25e+005	50.0	3.59e+005	47.1	94.3
16	25/50 ppb gly a	Standard	4/11/2022 4:28	041122_gly\	1.00	AMPA1	1.15e+005	50.0	3.59e+005	45.5	91.1
17	12.5/25 ppb gly	Standard	4/11/2022 4:34	041122_gly\	1.00	Glyphosate	1.09e+005	12.5	3.31e+005	12.0	96.0
18	12.5/25 ppb gly	Standard	4/11/2022 4:34	041122_gly\	1.00	Glyphosate1	4.23e+004	12.5	3.31e+005	12.4	99.0
19	12.5/25 ppb gly	Standard	4/11/2022 4:34	041122_gly\	1.00	AMPA	1.63e+005	25.0	3.31e+005	25.5	102.
20	12.5/25 ppb gly	Standard	4/11/2022 4:34	041122_gly\	1.00	AMPA1	5.77e+004	25.0	3.31e+005	25.7	103.
21	6.25/12.5 ppb gl	Standard	4/11/2022 4:41	041122_gly\	1.00	Glyphosate	6.38e+004	6.25	3.56e+005	6.76	108.
22	6.25/12.5 ppb gl	Standard	4/11/2022 4:41	041122_gly\	1.00	Glyphosate1	2.40e+004	6.25	3.56e+005	6.75	108.
23	6.25/12.5 ppb gl	Standard	4/11/2022 4:41	041122_gly\	1.00	AMPA	8.71e+004	12.5	3.56e+005	12.8	102.
24	6.25/12.5 ppb gl	Standard	4/11/2022 4:41	041122_gly\	1.00	AMPA1	2.85e+004	12.5	3.56e+005	13.0	104.
25	RINSE	Quality Cont	4/11/2022 4:48	041122_gly\	1.00	Glyphosate	0.00e+000	0.00	3.77e+005	No Peak	N/A
26	RINSE	Quality Cont	4/11/2022 4:48	041122_gly\	1.00	Glyphosate1	0.00e+000	0.00	3.77e+005	No Peak	N/A
27	RINSE	Quality Cont	4/11/2022 4:48	041122_gly\	1.00	AMPA	2.29e+003	0.00	3.77e+005	0.597	N/A
28	RINSE	Quality Cont	4/11/2022 4:48	041122_gly\	1.00	AMPA1	0.00e+000	0.00	3.77e+005	No Peak	N/A
29	BCD0283-BLK1	Quality Cont	4/11/2022 4:55	041122_gly\	1.00	Glyphosate	0.00e+000	0.00	3.82e+005	No Peak	N/A
30	BCD0283-BLK1	Quality Cont	4/11/2022 4:55	041122_gly\	1.00	Glyphosate1	0.00e+000	0.00	3.82e+005	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 (%)
31	BCD0283-BLK1	Quality Cont	4/11/2022 4:55	041122_gly\	1.00	AMPA	0.00e+000	0.00	3.82e+005	No Peak	N/A
32	BCD0283-BLK1	Quality Cont	4/11/2022 4:55	041122_gly\	1.00	AMPA1	0.00e+000	0.00	3.82e+005	No Peak	N/A
33	BCD0283-BS1	Quality Cont	4/11/2022 5:01	041122_gly\	1.00	Glyphosate	4.14e+005	50.0	3.49e+005	43.0	85.9
34	BCD0283-BS1	Quality Cont	4/11/2022 5:01	041122_gly\	1.00	Glyphosate1	1.53e+005	50.0	3.49e+005	42.3	84.6
35	BCD0283-BS1	Quality Cont	4/11/2022 5:01	041122_gly\	1.00	AMPA	6.00e+005	100.	3.49e+005	90.6	90.6
36	BCD0283-BS1	Quality Cont	4/11/2022 5:01	041122_gly\	1.00	AMPA1	2.11e+005	100.	3.49e+005	85.7	85.7
37	BCD0283-MS1	Quality Cont	4/11/2022 5:08	041122_gly\	1.00	Glyphosate	4.99e+004	50.0	3.55e+004	51.2	102.
38	BCD0283-MS1	Quality Cont	4/11/2022 5:08	041122_gly\	1.00	Glyphosate1	1.57e+004	50.0	3.55e+004	42.7	85.4
39	BCD0283-MS1	Quality Cont	4/11/2022 5:08	041122_gly\	1.00	AMPA	9.50e+004	100.	3.55e+004	143.	143.
40	BCD0283-MS1	Quality Cont	4/11/2022 5:08	041122_gly\	1.00	AMPA1	3.25e+004	100.	3.55e+004	130.	130.
41	BCD0283-MSD1	Quality Cont	4/11/2022 5:15	041122_gly\	1.00	Glyphosate	5.17e+004	50.0	3.93e+004	47.7	95.5
42	BCD0283-MSD1	Quality Cont	4/11/2022 5:15	041122_gly\	1.00	Glyphosate1	1.53e+004	50.0	3.93e+004	37.5	75.0
43	BCD0283-MSD1	Quality Cont	4/11/2022 5:15	041122_gly\	1.00	AMPA	1.09e+005	100.	3.93e+004	148.	148.
44	BCD0283-MSD1	Quality Cont	4/11/2022 5:15	041122_gly\	1.00	AMPA1	3.68e+004	100.	3.93e+004	134.	134.
45	WCC1038-15	Unknown	4/11/2022 5:22	041122_gly\	1.00	Glyphosate	9.57e+003	N/A	3.79e+004	9.30	N/A
46	WCC1038-15	Unknown	4/11/2022 5:22	041122_gly\	1.00	Glyphosate1	2.74e+002	N/A	3.79e+004	1.19	N/A
47	WCC1038-15	Unknown	4/11/2022 5:22	041122_gly\	1.00	AMPA	2.24e+003	N/A	3.79e+004	3.30	N/A
48	WCC1038-15	Unknown	4/11/2022 5:22	041122_gly\	1.00	AMPA1	9.26e+002	N/A	3.79e+004	5.54	N/A
49	WCC1038-13	Unknown	4/11/2022 5:28	041122_gly\	1.00	Glyphosate	0.00e+000	N/A	7.59e+004	No Peak	N/A
50	WCC1038-13	Unknown	4/11/2022 5:28	041122_gly\	1.00	Glyphosate1	0.00e+000	N/A	7.59e+004	No Peak	N/A
51	WCC1038-13	Unknown	4/11/2022 5:28	041122_gly\	1.00	AMPA	0.00e+000	N/A	7.59e+004	No Peak	N/A
52	WCC1038-13	Unknown	4/11/2022 5:28	041122_gly\	1.00	AMPA1	0.00e+000	N/A	7.59e+004	No Peak	N/A
53	WCC1038-14	Unknown	4/11/2022 5:35	041122_gly\	1.00	Glyphosate	8.10e+003	N/A	5.09e+004	6.06	N/A
54	WCC1038-14	Unknown	4/11/2022 5:35	041122_gly\	1.00	Glyphosate1	2.82e+002	N/A	5.09e+004	1.04	N/A
55	WCC1038-14	Unknown	4/11/2022 5:35	041122_gly\	1.00	AMPA	0.00e+000	N/A	5.09e+004	No Peak	N/A
56	WCC1038-14	Unknown	4/11/2022 5:35	041122_gly\	1.00	AMPA1	0.00e+000	N/A	5.09e+004	No Peak	N/A
57	WCC1038-16	Unknown	4/11/2022 5:42	041122_gly\	1.00	Glyphosate	7.23e+003	N/A	3.48e+004	7.76	N/A
58	WCC1038-16	Unknown	4/11/2022 5:42	041122_gly\	1.00	Glyphosate1	3.81e+002	N/A	3.48e+004	1.54	N/A
59	WCC1038-16	Unknown	4/11/2022 5:42	041122_gly\	1.00	AMPA	0.00e+000	N/A	3.48e+004	No Peak	N/A
60	WCC1038-16	Unknown	4/11/2022 5:42	041122_gly\	1.00	AMPA1	0.00e+000	N/A	3.48e+004	No Peak	N/A

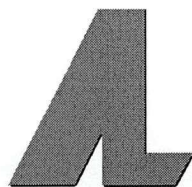
	Sample Name	Sample Type	Acquisition Date	File Name	Dilution Factor	Analyte Peak Name	Analyte Peak Area (counts)	Analyte Concentration (na/mL)	IS Peak Area (counts)	Calculated Concentration (na/mL)	Accuracy (%)
61	MCC0928-01	Unknown	4/11/2022 5:49	041122_gly\	1.00	Glyphosate	0.00e+000	N/A	2.15e+005	No Peak	N/A
62	MCC0928-01	Unknown	4/11/2022 5:49	041122_gly\	1.00	Glyphosate1	0.00e+000	N/A	2.15e+005	No Peak	N/A
63	MCC0928-01	Unknown	4/11/2022 5:49	041122_gly\	1.00	AMPA	0.00e+000	N/A	2.15e+005	No Peak	N/A
64	MCC0928-01	Unknown	4/11/2022 5:49	041122_gly\	1.00	AMPA1	0.00e+000	N/A	2.15e+005	No Peak	N/A
65	MCC0928-02	Unknown	4/11/2022 5:56	041122_gly\	1.00	Glyphosate	0.00e+000	N/A	9.41e+004	No Peak	N/A
66	MCC0928-02	Unknown	4/11/2022 5:56	041122_gly\	1.00	Glyphosate1	0.00e+000	N/A	9.41e+004	No Peak	N/A
67	MCC0928-02	Unknown	4/11/2022 5:56	041122_gly\	1.00	AMPA	0.00e+000	N/A	9.41e+004	No Peak	N/A
68	MCC0928-02	Unknown	4/11/2022 5:56	041122_gly\	1.00	AMPA1	0.00e+000	N/A	9.41e+004	No Peak	N/A
69	CCV 25/50 ppb	Quality Cont	4/11/2022 6:02	041122_gly\	1.00	Glyphosate	2.23e+005	25.0	2.85e+005	28.1	112.
70	CCV 25/50 ppb	Quality Cont	4/11/2022 6:02	041122_gly\	1.00	Glyphosate1	7.41e+004	25.0	2.85e+005	24.9	99.6
71	CCV 25/50 ppb	Quality Cont	4/11/2022 6:02	041122_gly\	1.00	AMPA	2.45e+005	50.0	2.85e+005	44.8	89.6
72	CCV 25/50 ppb	Quality Cont	4/11/2022 6:02	041122_gly\	1.00	AMPA1	9.36e+004	50.0	2.85e+005	46.8	93.6

Sequence Name: T:\DATA1\MSD4\SEQUENCES\2022\0419CD.S
Comment: 8270
Operator: MAH
Data Path: T:\DATA1\MSD4\2022\APR\19Cardno\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run	Sequence Barcode Options
(X) Full Method	(X) On Mismatch, Inject Anyway
() Reprocessing Only	() On Mismatch, Don't Inject
	() Barcode Disabled

Line	Sample Name/Misc Info
1) Sample	1 ----- CARDSIM CD 10 PPM
2) Sample	2 ----- CARDSIM CD 5 PPM
3) Sample	3 ----- CARDSIM CD 2.5 PPM
4) Sample	4 ----- CARDSIM CD 1 PPM
5) Sample	5 ----- CARDSIM CD 0.5 PPM
6) Sample	6 ----- CARDSIM CD 0.1 PPM
7) Sample	7 ----- CARDSIM CD 0.05 PPM
8) Sample	11 ----- CARDSIM LFB
9) Sample	12 ----- CARDSIM LFB
10) Sample	13 ----- CARDSIM BLK
11) Sample	21 ----- CARDSIM WCC1038-13
12) Sample	22 ----- CARDSIM WCC1038-14
13) Sample	23 ----- CARDSIM WCC1038-15
14) Sample	24 ----- CARDSIM WCC1038-16



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	2101009	3/23	1000
CLP Internal Standard	2201012	3/23	2000

Target Compound Standards

Standard	Reagent ID	Expiration	Concentration (ppm)
Chlorpyrifos	2003215	6/25/23	1000
Metolachlor	2003216	3/5/23	1000
Atrazine	2003218	11/21/24	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 MeCl₂ (2200721).

Analyst Initials: MAH

Form CS06.00 – Eff 9 Mar 2015

Date of Preparation: 3/05/22 by MAH

Page 1 of 1

Method Path : T:\Data1\MSD4\METHODS\2022\
 Method File : Cardno0419.M
 Title : EPA 8270D - GC MSD4
 Last Update : Wed Apr 20 11:02:21 2022
 Response Via : Initial Calibration

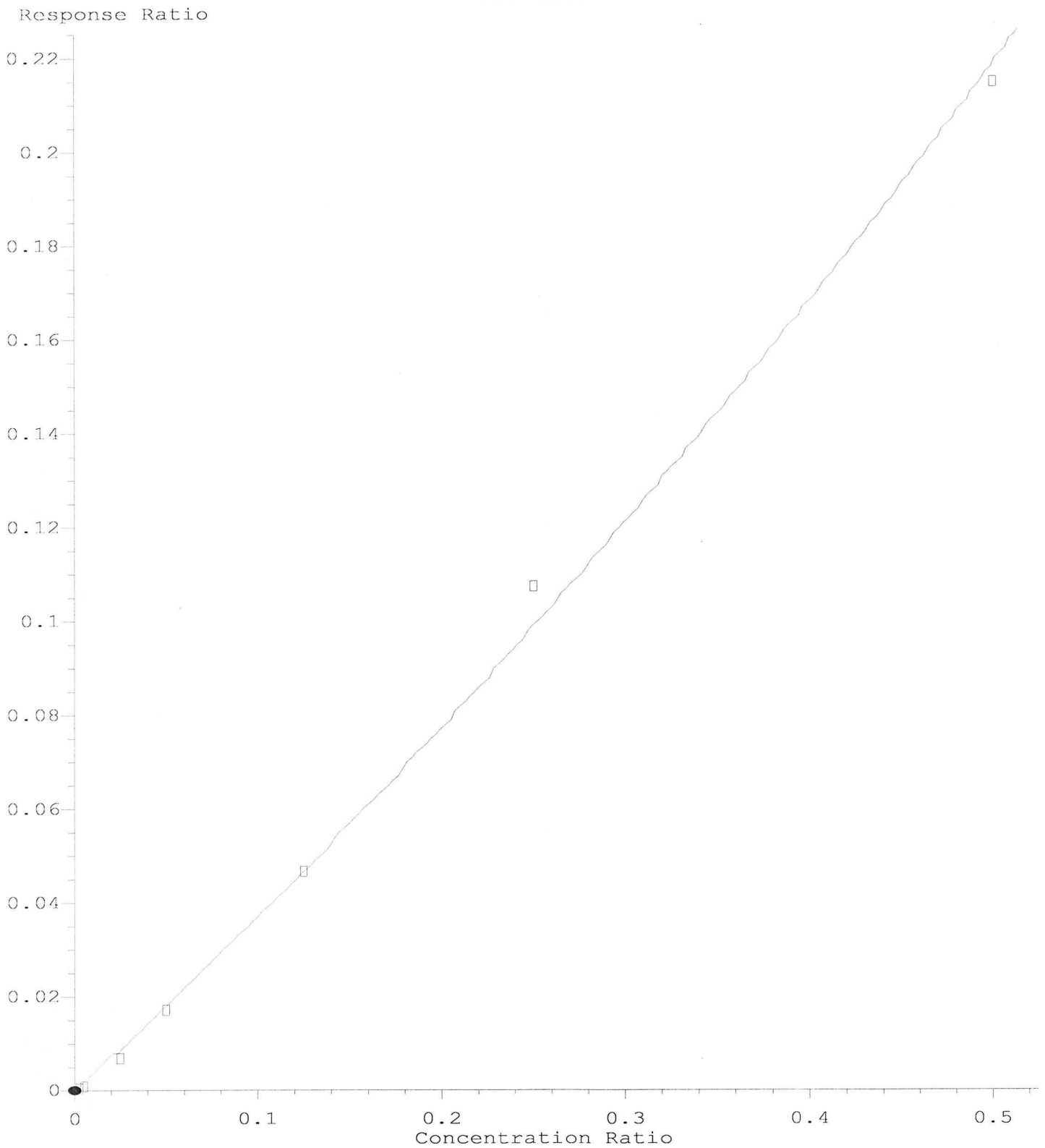
Calibration Files

0.05=00701007.D 10 =00101001.D 5 =00201002.D 2.5 =00301003.D 1 =00401004.D 0.5 =00501005.D
 0.1 =00601006.D

Compound	0.05	10	5	2.5	1	0.5	0.1	Avg	%RSD
1) I Dichlorobenzene-d5				ISTD					
2) S 2-Fluorobiphenyl	1.641	1.625	1.582	1.636	1.701	1.762	1.662	1.659	3.51
3) I Acenaphthene-d10				ISTD					
4) Atrazine	0.172	0.430	0.430	0.373	0.343	0.279	0.163	0.313	35.80
5) I Phenanthrene-d10				ISTD					
6) Metolachlor	0.208	0.660	0.692	0.579	0.487	0.368	0.204	0.457	44.29
7) Chlorpyrifos	0.067	0.152	0.165	0.141	0.132	0.112	0.063	0.119	33.76
8) I Chrysene-d12				ISTD					
9) S Terphenyl-d14	1.042	1.150	1.098	1.101	1.025	1.107	1.034	1.080	4.32

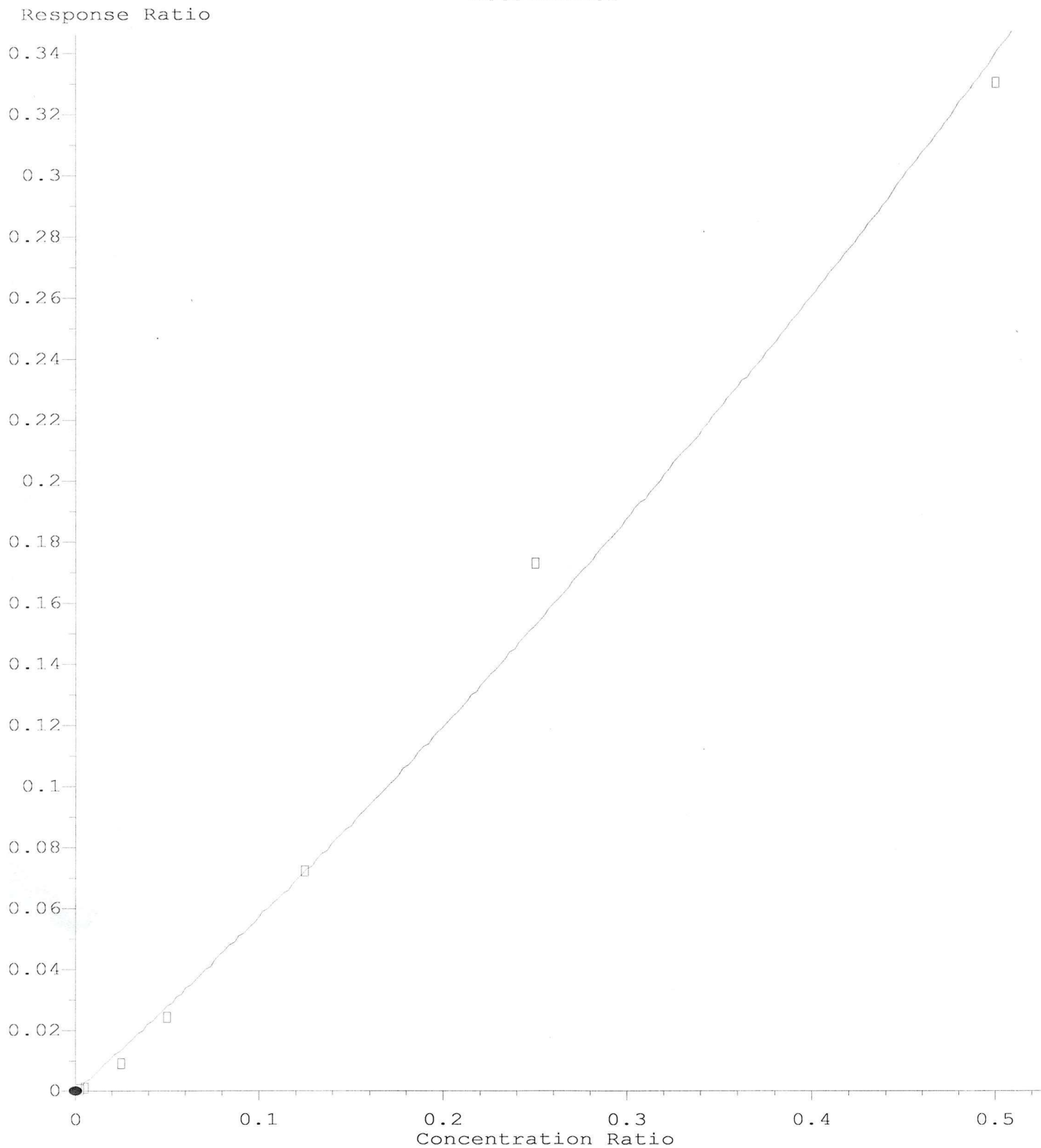
(#) = Out of Range

Atrazine



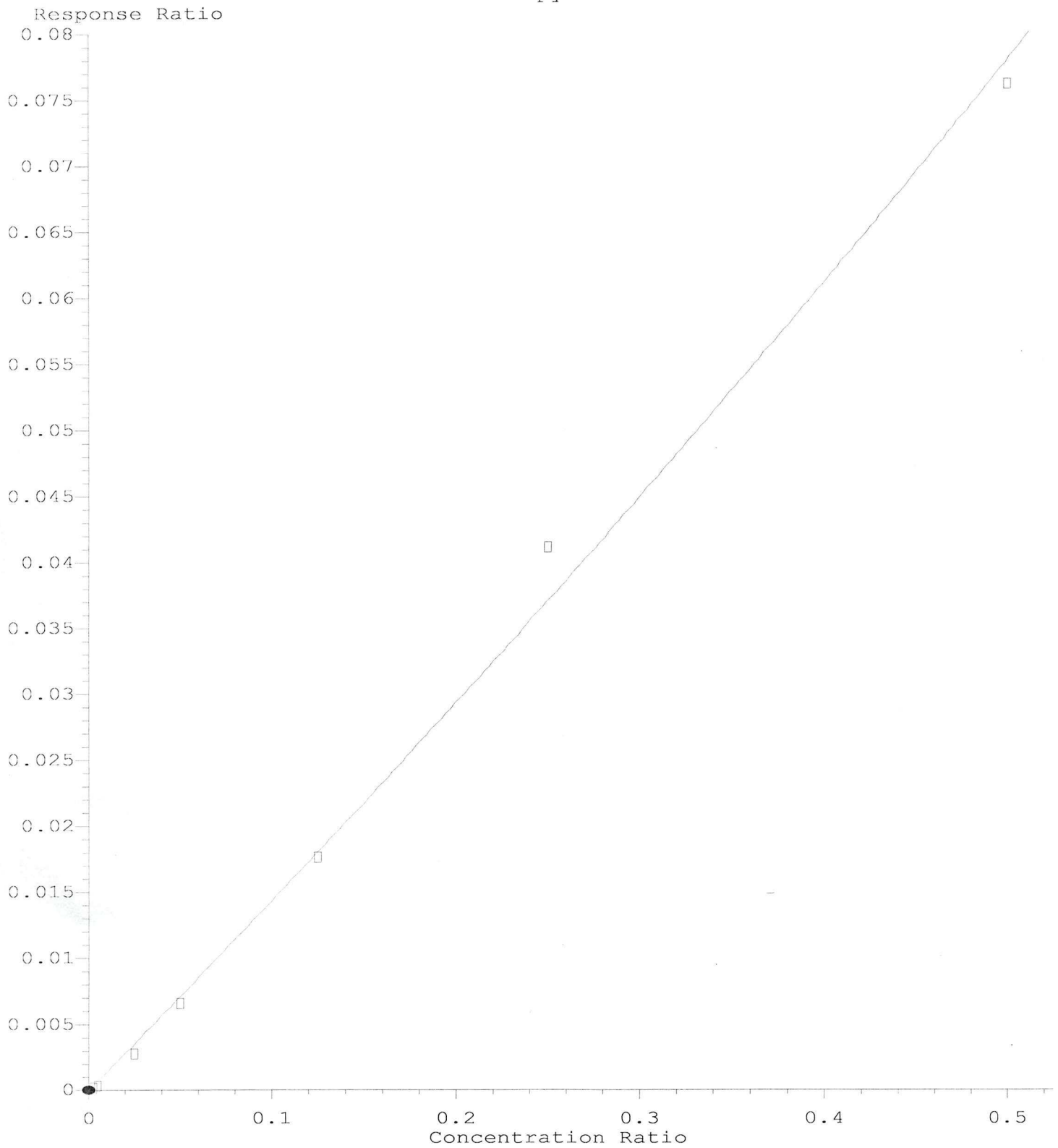
$R = 1.68e-001 A^2 + 3.54e-001 A + 0.00e+000$
 Coef of Det (r^2) = 0.997 Curve Fit: Quad w(1/a)/(0,0)
 Method Name: T:\Data1\MSD4\METHODS\2022\Cardno0419.M
 Calibration Table Last Updated: Wed Apr 20 11:02:21 2022

Metolachlor



$R = 2.70e-001 A^2 + 5.44e-001 A + 0.00e+000$
 Coef of Det (r^2) = 0.993 Curve Fit: Quad w(1/a)/(0,0)
 Method Name: T:\Data1\MSD4\METHODS\2022\Cardno0419.M
 Calibration Table Last Updated: Wed Apr 20 11:02:21 2022

Chlorpyrifos



$R = 3.11e-002 A^2 + 1.41e-001 A + 0.00e+000$
 Coef of Det (r^2) = 0.996 Curve Fit: Quad w(1/a)/(0,0)
 Method Name: T:\Data1\MSD4\METHODS\2022\Cardno0419.M
 Calibration Table Last Updated: Wed Apr 20 11:02:21 2022

PREPARATION BENCH SHEET

Organics

BCD0067

Matrix: Water

Prepared using: SVOC - SVOC Water

Analyses

SVOC 625 MISC

Spiking Solution(s)

2201385 Cardno Spk 100

Surrogate Solution(s)

2102810 CLP Acid Surr 2000
2102811 CLP B/N 1000

Lab Number	Sample and Source ID	Date Due	Extract by	Prepared	Initial (mL)	Final (mL)	ul Spike	ul Surrogate	Extraction Comments
BCD0067-BLK1	Blank			4/1/2022 9:59:00AM	1000	1		25	
BCD0067-BS1	LCS			4/1/2022 9:59:00AM	1000	1	25	25	
BCD0067-BSD1	LCS Dup			4/1/2022 9:59:00AM	1000	1	25	25	
WCC1038-13	WW-3	04/12/2022	04/04/2022	4/1/2022 9:59:00AM	1000	1		25	
WCC1038-14	E-2	04/12/2022	04/04/2022	4/1/2022 9:59:00AM	1000	1		25	
WCC1038-15	E-1	04/12/2022	04/04/2022	4/1/2022 9:59:00AM	1000	1		25	
WCC1038-16	E-1 DUP	04/12/2022	04/04/2022	4/1/2022 9:59:00AM	1000	1		25	

Reagents

Standard	Description	LotNum
2000154	Acetone - GC grade	59074
2000155	H2SO4	58115
2102881	CLP I.S. Spike 2000	032520
2200634	Dichloromethane	SHBP1472

Batch Comments:

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

Analyst:

Date

Run Date:

Date

Internal Standard ICal Average Responses	CARDNO 041922
	(method)

	1,4 Dichlorobenzene-d4	Naphthalene-d8	Acenaphthene-d10	Phenanthrene-d10	Chrysene-d12	Perylene-d12
0.05	38203971.64		49397965.98	77032075.17	53437074.88	
10	40788931.96		51266174.21	80886145.09	47987496.32	
5	39046777.2		48776283.66	77888540.73	48757876.97	
2.5	41481439.88		53070677.64	84857524.96	50969773.44	
1	40568472.88		53632036.3	87677103.63	62390367.43	
0.5	36447435.18		50596664.52	79904670.22	50979854.55	
0.1	37583792.4		47894340.72	73589349.21	52991659.77	
Average	39160117	#DIV/0!	50662020	80262201	52502015	#DIV/0!

50%	19580059	#DIV/0!	25331010	40131101	26251007	#DIV/0!
150%	58740176	#DIV/0!	75993031	120393302	78753022	#DIV/0!

Analyst: MAH

Data Path : T:\Data1\MSD4\2022\APR\19\
 Data File : 04101001.D
 Acq On : 19 Apr 2022 8:20 am
 Operator : MAH
 Sample : SYS
 Misc :
 ALS Vial : 41 Sample Multiplier: 1

Integration File: events.e

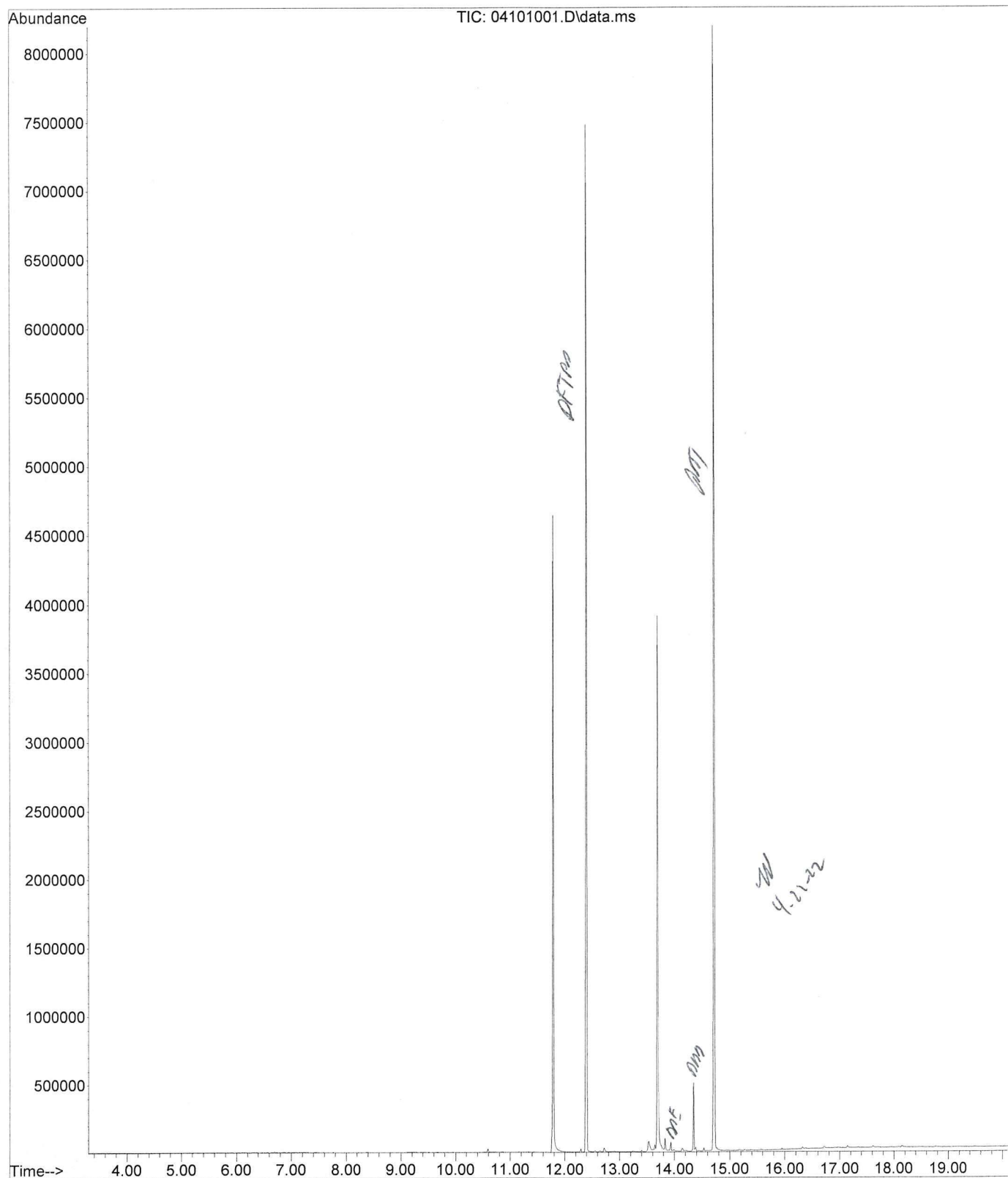
Method : T:\Data1\MSD4\METHODS\2022\Cardno0419.M
 Title : EPA 8270D - GC MSD4
 Last Update : Wed Apr 20 11:02:21 2022

AutoFind: Scans 1974, 1975, 1976; Background Corrected with Scan 1964

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	32.6	225214	PASS
68	69	0.00	2	1.1	2570	PASS
69	198	0.00	100	32.4	223507	PASS
70	69	0.00	2	0.6	1305	PASS
127	198	25	75	45.8	316139	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	690005	PASS
199	198	5	9	6.7	45989	PASS
275	198	10	60	31.2	214955	PASS
365	198	0.00	100	4.9	34133	PASS
441	443	0.01	100	73.8	143768	PASS
442	198	39	200	142.3	982080	PASS
443	442	15	24	19.8	194805	PASS

Cardno0419.M Fri Apr 22 11:35:28 2022

File :T:\Data1\MSD4\2022\APR\19\04101001.D
Operator : MAH
Acquired : 19 Apr 2022 8:20 am using AcqMethod SVOCT1.M
Instrument : MSD4
Sample Name: SYS
Misc Info :
Vial Number: 41



Area Percent Report

Data Path : T:\Data1\MSD4\2022\APR\19\
 Data File : 04101001.D
 Acq On : 19 Apr 2022 8:20 am
 Operator : MAH
 Sample : SYS
 Misc :
 ALS Vial : 41 Sample Multiplier: 1

Integration Parameters: events.e
 Integrator: ChemStation

Method : T:\Data1\MSD4\METHODS\2022\Cardno0419.M
 Title : EPA 8270D - GC MSD4

Signal : TIC: 04101001.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total	
1	13.933	2303	2308	2313	M	62283	626273	0.70%	0.658%	DDE
2	14.347	2393	2398	2402	M	502683	4687447	5.22%	4.926%	DDD
3	14.718	2467	2478	2487	M	8308064	89834492	100.00%	94.415%	DDT

DDT BREAKDOWN

Sum of corrected areas: 95148213

Cardno0419.M Fri Apr 22 11:36:25 2022

Data Path : T:\Data1\MSD4\2022\APR\19Cardno\
 Data File : 01101008.D
 Acq On : 19 Apr 2022 5:12 pm
 Operator : MAH
 Sample : LFB
 Misc :
 ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 20 11:04:09 2022
 Quant Method : T:\Data1\MSD4\METHODS\2022\Cardno0419.M
 Quant Title : EPA 8270D - GC MSD4
 QLast Update : Wed Apr 20 11:02:21 2022
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Dichlorobenzene-d5	6.546	150	29614559	20.00	ug/mL	0.00
3) Acenaphthene-d10	10.180	164	40036488	20.00	ug/mL	# 0.00
5) Phenanthrene-d10	12.014	188	62589810	20.00	ug/mL	# 0.00
8) Chrysene-d12	15.277	240	41511647	20.00	ug/mL	# 0.00
System Monitoring Compounds						
2) 2-Fluorobiphenyl	9.358	172	67699643	27.57	ug/mL	0.00
9) Terphenyl-d14	13.997	244	49930246	22.28	ug/mL	0.00
Spiked Amount	25.000		Recovery	=	89.12%	
Target Compounds						
						Qvalue
4) Atrazine	11.675	200	1460266	1.97	ug/mL	96
6) Metolachlor	12.881	162	3577029	2.00	ug/mL	96
7) Chlorpyrifos	12.887	197	852230	1.90	ug/mL	95

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

Data Path : T:\Data1\MSD4\2022\APR\19Cardno\
 Data File : 01201009.D
 Acq On : 19 Apr 2022 5:39 pm
 Operator : MAH
 Sample : LFBD
 Misc :
 ALS Vial : 12 Sample Multiplier: 1

Quant Time: Apr 20 11:05:08 2022
 Quant Method : T:\Data1\MSD4\METHODS\2022\Cardno0419.M
 Quant Title : EPA 8270D - GC MSD4
 QLast Update : Wed Apr 20 11:02:21 2022
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Dichlorobenzene-d5	6.545	150	30464747	20.00	ug/mL	0.00
3) Acenaphthene-d10	10.179	164	41328005	20.00	ug/mL	# 0.00
5) Phenanthrene-d10	12.013	188	64516756	20.00	ug/mL	# 0.00
8) Chrysene-d12	15.275	240	40997048	20.00	ug/mL	# 0.00
System Monitoring Compounds						
2) 2-Fluorobiphenyl	9.357	172	67260489	26.62	ug/mL	0.00
9) Terphenyl-d14	13.996	244	48035528	21.70	ug/mL	0.00
Spiked Amount	25.000		Recovery	=	86.80%	
Target Compounds						
						Qvalue
4) Atrazine	11.673	200	1499494	1.96	ug/mL	96
6) Metolachlor	12.880	162	3671679	1.99	ug/mL	97
7) Chlorpyrifos	12.885	197	871138	1.88	ug/mL	95

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

Data Path : T:\Data1\MSD4\2022\APR\19Cardno\
Data File : 01301010.D
Acq On : 19 Apr 2022 6:06 pm
Operator : MAH
Sample : BLK
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Apr 20 11:06:15 2022
Quant Method : T:\Data1\MSD4\METHODS\2022\Cardno0419.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Wed Apr 20 11:02:21 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Dichlorobenzene-d5	6.545	150	28649537	20.00	ug/mL	0.00
3) Acenaphthene-d10	10.178	164	38050425	20.00	ug/mL	# 0.00
5) Phenanthrene-d10	12.011	188	59421244	20.00	ug/mL	# 0.00
8) Chrysene-d12	15.274	240	38894227	20.00	ug/mL	# 0.00
System Monitoring Compounds						
2) 2-Fluorobiphenyl	9.356	172	59733983	25.14	ug/mL	0.00
9) Terphenyl-d14	13.995	244	45006646	21.43	ug/mL	0.00
Spiked Amount	25.000		Recovery	=	85.72%	

Target Compounds	Qvalue

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

Data Path : T:\Data1\MSD4\2022\APR\19Cardno\
Data File : 02101011.D
Acq On : 19 Apr 2022 6:33 pm
Operator : MAH
Sample : WCC1038-13
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Apr 20 11:06:57 2022
Quant Method : T:\Data1\MSD4\METHODS\2022\Cardno0419.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Wed Apr 20 11:02:21 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Dichlorobenzene-d5	6.541	150	38058883	20.00	ug/mL	0.00
3) Acenaphthene-d10	10.181	164	49008548	20.00	ug/mL	# 0.00
5) Phenanthrene-d10	12.015	188	79558155	20.00	ug/mL	# 0.00
8) Chrysene-d12	15.280	240	54927757	20.00	ug/mL	# 0.00
System Monitoring Compounds						
2) 2-Fluorobiphenyl	9.359	172	82706043	26.21	ug/mL	0.00
9) Terphenyl-d14	13.998	244	66548047	22.44	ug/mL	0.00
Spiked Amount	25.000		Recovery	=	89.76%	

Target Compounds	Qvalue

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

Data Path : T:\Data1\MSD4\2022\APR\19Cardno\
 Data File : 02201012.D
 Acq On : 19 Apr 2022 7:00 pm
 Operator : MAH
 Sample : WCC1038-14
 Misc :
 ALS Vial : 22 Sample Multiplier: 1

Quant Time: Apr 20 11:07:35 2022
 Quant Method : T:\Data1\MSD4\METHODS\2022\Cardno0419.M
 Quant Title : EPA 8270D - GC MSD4
 QLast Update : Wed Apr 20 11:02:21 2022
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichlorobenzene-d5	6.540	150	30947949	20.00	ug/mL	0.00
3) Acenaphthene-d10	10.181	164	41805955	20.00	ug/mL	# 0.00
5) Phenanthrene-d10	12.015	188	69062425	20.00	ug/mL	# 0.00
8) Chrysene-d12	15.278	240	47594299	20.00	ug/mL	# 0.00
System Monitoring Compounds						
2) 2-Fluorobiphenyl	9.358	172	68063928	26.52	ug/mL	0.00
9) Terphenyl-d14	13.998	244	52596335	20.47	ug/mL	0.00
Spiked Amount	25.000		Recovery	=	81.88%	
Target Compounds						
4) Atrazine	11.692	200	190773	0.26	ug/mL	# 47

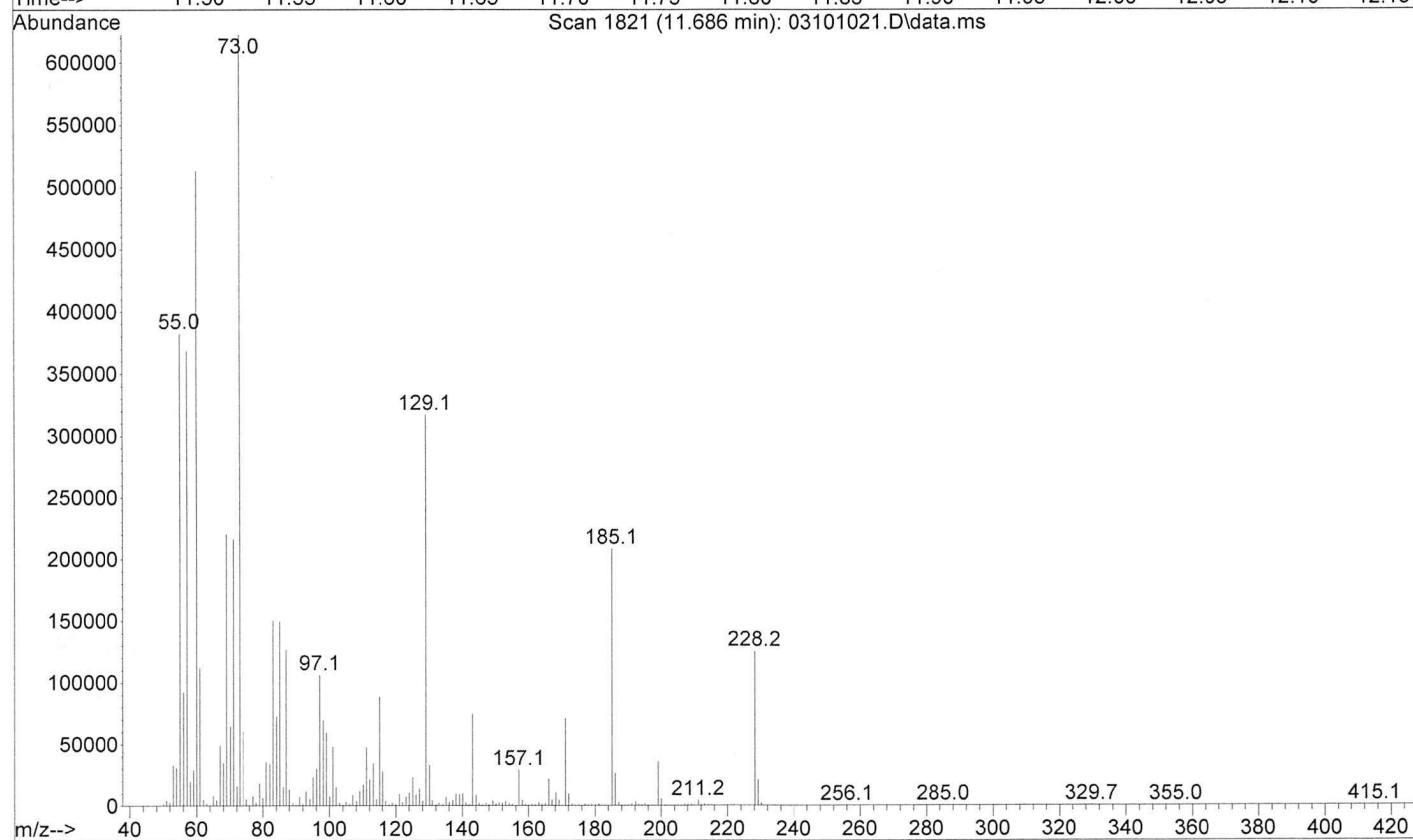
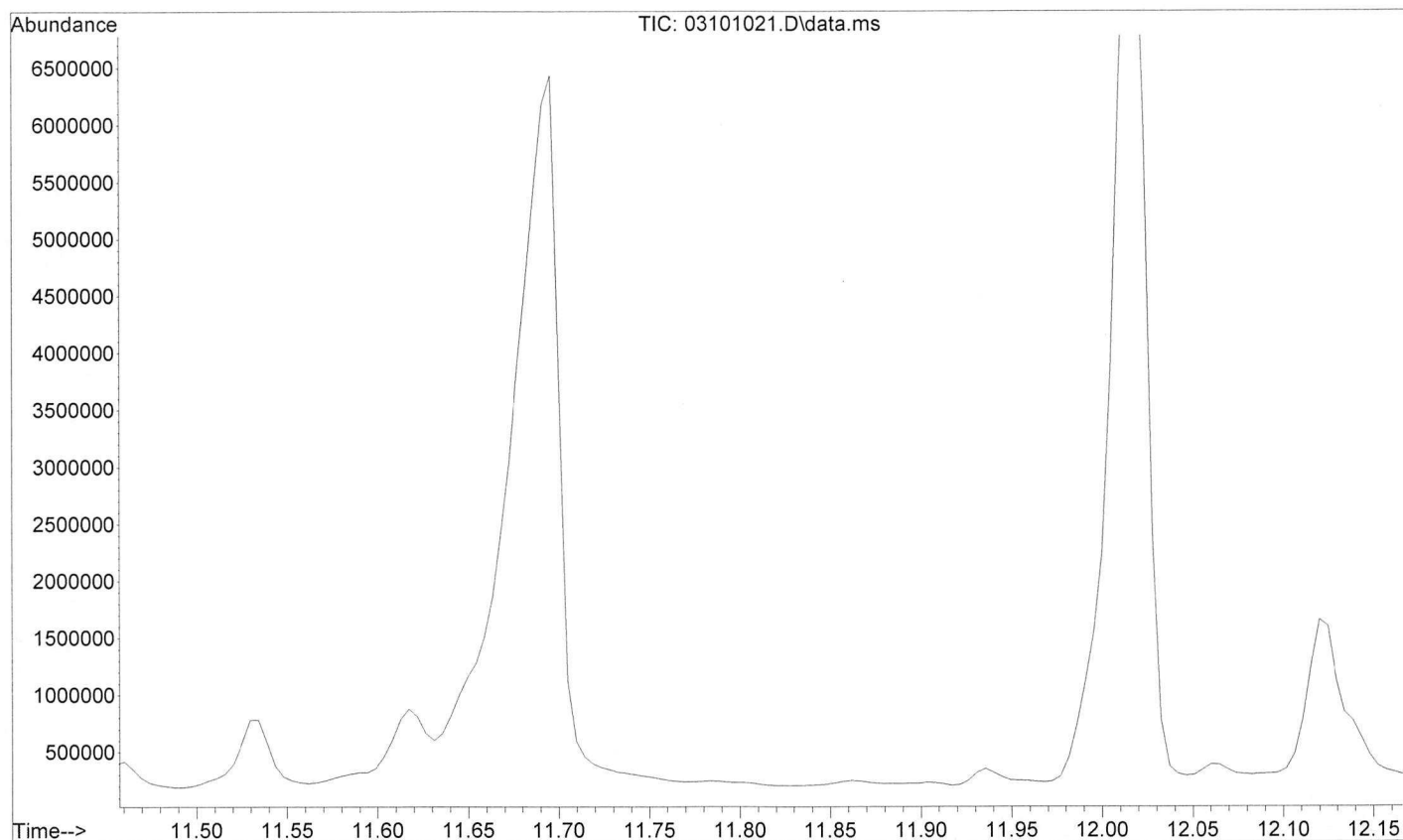
(X) *No*

4.22

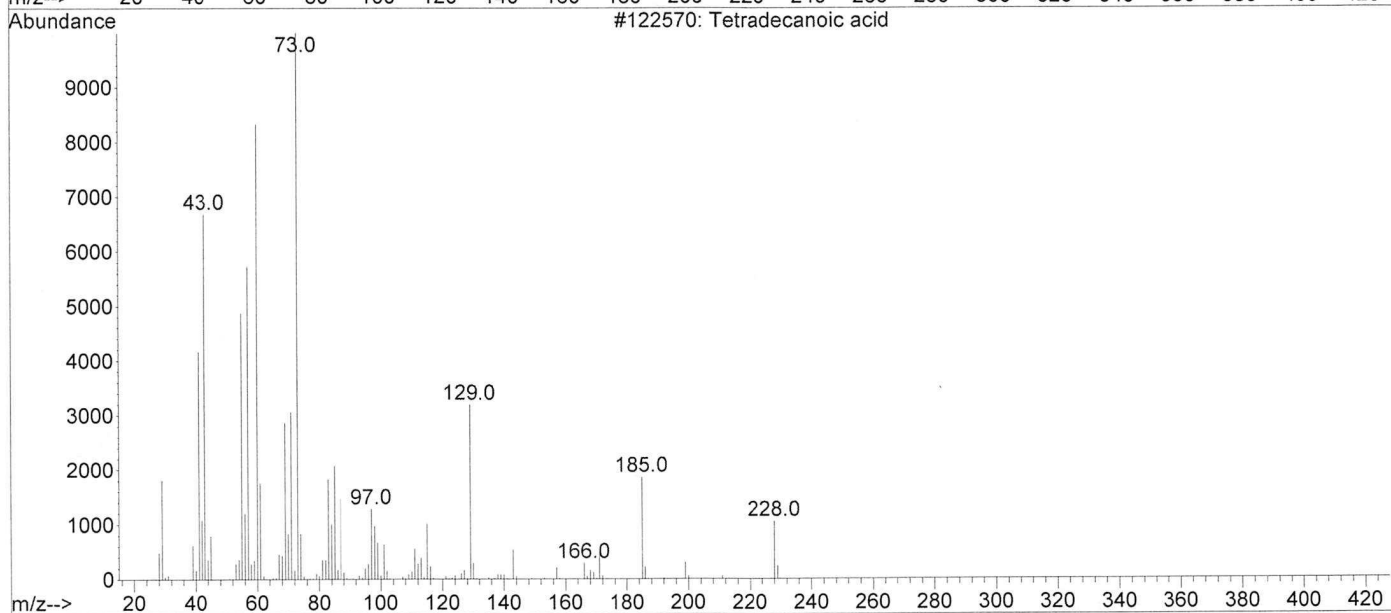
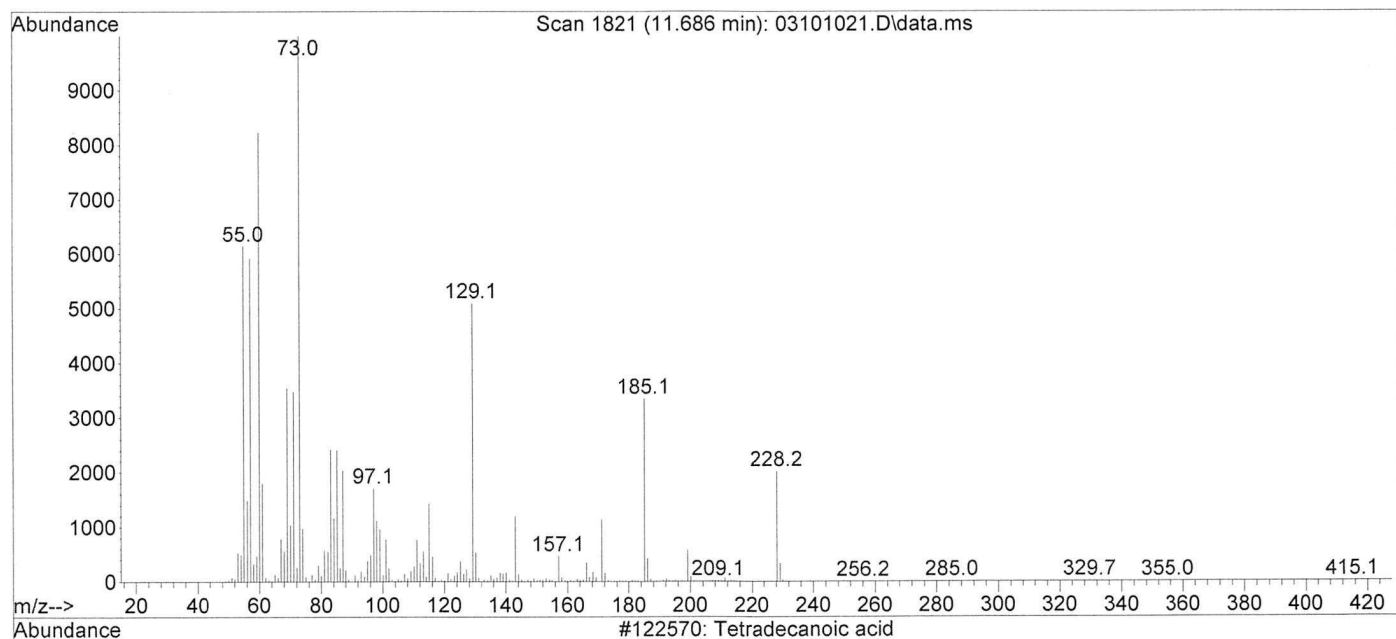
(#) = qualifier out of range (m) = manual integration (+) = signals summed

ⓧ Reconfirmed via
 GCMS Scan. See next
 file for peak i.d.
MM
 4-22-22

File :T:\Data1\MSD4\2022\APR\20\03101021.D
Operator : MAH
Acquired : 20 Apr 2022 10:22 pm using AcqMethod SVOCT1.M
Instrument : MSD4
Sample Name: WCC1038-14
Misc Info :
Vial Number: 31



Library Searched : Z:\Data1\NIST129K.L
Quality : 99
ID : Tetradecanoic acid



Data Path : T:\Data1\MSD4\2022\APR\19Cardno\
Data File : 02301013.D
Acq On : 19 Apr 2022 7:27 pm
Operator : MAH
Sample : WCC1038-15
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Apr 20 11:09:24 2022
Quant Method : T:\Data1\MSD4\METHODS\2022\Cardno0419.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Wed Apr 20 11:02:21 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Dichlorobenzene-d5	6.540	150	30777466	20.00	ug/mL	0.00
3) Acenaphthene-d10	10.181	164	41577926	20.00	ug/mL	# 0.00
5) Phenanthrene-d10	12.015	188	66769684	20.00	ug/mL	# 0.00
8) Chrysene-d12	15.277	240	43751838	20.00	ug/mL	# 0.00
System Monitoring Compounds						
2) 2-Fluorobiphenyl	9.359	172	68483799	26.83	ug/mL	0.00
9) Terphenyl-d14	13.997	244	54409882	23.03	ug/mL	0.00
Spiked Amount	25.000		Recovery	=	92.12%	
Target Compounds						
4) Atrazine	11.668	200	33106	0.04	ug/mL#	Qvalue 33

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

Data Path : T:\Data1\MSD4\2022\APR\19Cardno\
Data File : 02401014.D
Acq On : 19 Apr 2022 7:54 pm
Operator : MAH
Sample : WCC1038-16
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 20 11:10:23 2022
Quant Method : T:\Data1\MSD4\METHODS\2022\Cardno0419.M
Quant Title : EPA 8270D - GC MSD4
QLast Update : Wed Apr 20 11:02:21 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)

Internal Standards						
1) Dichlorobenzene-d5	6.541	150	31862646	20.00	ug/mL	0.00
3) Acenaphthene-d10	10.183	164	43265658	20.00	ug/mL	# 0.00
5) Phenanthrene-d10	12.017	188	68897644	20.00	ug/mL	# 0.00
8) Chrysene-d12	15.279	240	46262675	20.00	ug/mL	# 0.00
System Monitoring Compounds						
2) 2-Fluorobiphenyl	9.360	172	70093693	26.53	ug/mL	0.00
9) Terphenyl-d14	13.998	244	55046857	22.04	ug/mL	0.00
Spiked Amount	25.000		Recovery	=	88.16%	
Target Compounds						
4) Atrazine	11.668	200	31949	0.04	ug/mL	# 33

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

Report Generated By Teledyne CETAC QuickTrace

Analyst: Mercury

Worksheet file: C:\Users\Public\Documents\Teledyne CETAC\QuickTrace\Worksheets\04112022 245 a.wszf

Creation Date: 4/11/2022 12:23:03 PM

Comment:

Results

Sample Name	Type	Date/Time	Conc (ug/L)	μAbs	%RSD	Residual	Flags
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Calibration Blank	STD	04/11/22 01:15:23 pm	0.0000	332	23.96	-246.66	
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Replicates	437.6	309.9	246.4	333.7
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Calibration Blank	STD	04/11/22 01:17:39 pm	0.0000	1632	4.93	0.00	
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Replicates	1679.0	1672.1	1666.8	1512.0
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Standard #1 (0.05 ppb)	STD	04/11/22 01:19:56 pm	0.0500	6121	1.48	87.58	
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Replicates	6146.8	6048.2	6050.4	6237.7
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Standard #2 (0.1 ppb)	STD	04/11/22 01:22:13 pm	0.1000	7290	1.87	115.22	
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Replicates	7423.6	7371.6	7249.6	7117.2
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Standard #3 (0.5 ppb)	STD	04/11/22 01:24:30 pm	0.5000	12149	2.37	37.71	
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Replicates	11828.5	12000.2	12302.4	12465.4
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Standard #4 (2.5 ppb)	STD	04/11/22 01:26:47 pm	2.5000	42107	0.87	26.18	
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Replicates	42631.8	42059.5	41793.3	41943.6
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Standard #5 (5 ppb)	STD	04/11/22 01:29:04 pm	5.0000	79075	5.23	-20.04	
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Replicates	75869.2	76130.2	79562.0	84739.2
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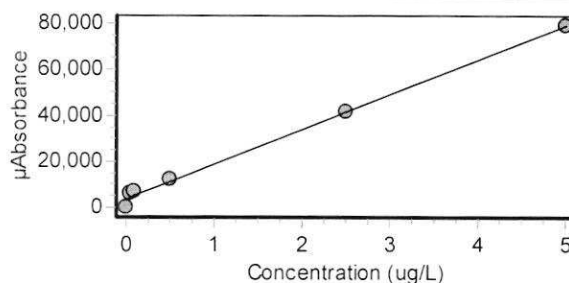
Calibration

Equation: $A = 4047.997 + 15065.828C$

R2: 0.99589

SEE: 2187.0900

Flags:



ics	UNK	04/11/22 01:58:05 pm	3.0830	50499	8.99	
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Replicates	55886.2	51606.0	47964.8	46538.5
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ics	UNK	04/11/22 02:00:21 pm	1.7460	30353	11.05	
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Replicates	34181.6	30978.0	28559.5	27694.0
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ics	UNK	04/11/22 02:04:53 pm	1.9570	33536	5.49	
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Replicates	35769.1	32994.3	31933.0	33448.1
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wcc1038-01	UNK	04/11/22 02:57:30 pm	-0.1001	2540	12.58	
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Replicates	2770.2	2612.8	2435.1	2343.6
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wcc1038-02	UNK	04/11/22 02:59:46 pm	-0.1643	1573	6.95	
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Replicates	1809.8	1590.1	1459.6	1432.7
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ms1	UNK	04/11/22 03:02:03 pm	1.9670	33684	10.50	
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Replicates	37810.5	34320.1	31662.8	30942.3
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Sample Name			Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual	Flags
msd1			UNK	04/11/22 03:04:19 pm	2.4400	40807	7.91		
Replicates	44861.8	40882.5	38307.0	39177.8					
wcc1038-03			UNK	04/11/22 03:06:36 pm	-0.1555	1705	8.10		
Replicates	1961.5	1730.2	1534.5	1592.9					
wcc1038-04			UNK	04/11/22 03:08:53 pm	-0.1731	1441	5.10		
Replicates	1632.2	1428.0	1340.8	1361.5					
msd1			UNK	04/11/22 03:11:10 pm	2.0210	34501	8.47		
Replicates	38111.8	33994.7	31993.5	33902.0					
wcc1038-05			UNK	04/11/22 03:13:27 pm	0.0970	5509	27.26		
Replicates	6059.9	5491.8	5120.7	5363.5					
wcc1038-06			UNK	04/11/22 03:15:45 pm	-0.0625	3106	20.75		
Replicates	3383.7	3092.6	2940.9	3005.1					
wcc1038-07			UNK	04/11/22 03:18:02 pm	-0.0990	2557	14.41		
Replicates	2837.8	2611.3	2384.6	2392.8					
wcc1038-08			UNK	04/11/22 03:20:18 pm	-0.1093	2401	7.65		
Replicates	2581.8	2392.7	2305.0	2325.5					
wcc1038-09			UNK	04/11/22 03:22:34 pm	-0.0631	3098	21.68		
Replicates	3376.6	3124.8	2974.1	2914.6					
wcc1038-10			UNK	04/11/22 03:24:50 pm	-0.0870	2737	11.71		
Replicates	2954.1	2735.8	2614.6	2644.3					
wcc1038-11			UNK	04/11/22 03:32:47 pm	-0.1215	2218	3.47		
Replicates	2302.4	2229.7	2181.5	2159.0					
wcc1038-12			UNK	04/11/22 03:35:03 pm	0.7762	15742	9.24		
Replicates	17231.5	15849.3	14954.8	14931.8					
wcc1038-13			UNK	04/11/22 03:37:20 pm	-0.0988	2559	11.40		
Replicates	2796.0	2566.0	2425.7	2447.2					
wcc1038-14			UNK	04/11/22 03:39:37 pm	-0.1253	2161	8.42		
Replicates	2378.5	2175.4	2021.0	2067.7					
wcc1038-15			UNK	04/11/22 03:41:54 pm	-0.0926	2652	16.67		
Replicates	2955.3	2714.1	2476.4	2463.3					
ms2			UNK	04/11/22 03:44:11 pm	2.2190	37475	7.30		
Replicates	40953.6	36693.7	35254.4	36997.7					
msd2			UNK	04/11/22 03:46:28 pm	2.1080	35812	8.76		
Replicates	39860.7	35126.5	33543.5	34715.9					
wcc1038-16			UNK	04/11/22 03:48:45 pm	0.2562	7907	13.97		
Replicates	8682.4	7774.7	7432.9	7739.7					
wcc1047-01			UNK	04/11/22 03:51:03 pm	-0.1203	2235	7.95		
Replicates	2442.3	2204.1	2108.1	2186.5					
wcc1047-10			UNK	04/11/22 03:53:19 pm	0.8391	16689	9.54		
Replicates	18344.2	16825.5	15774.6	15812.0					

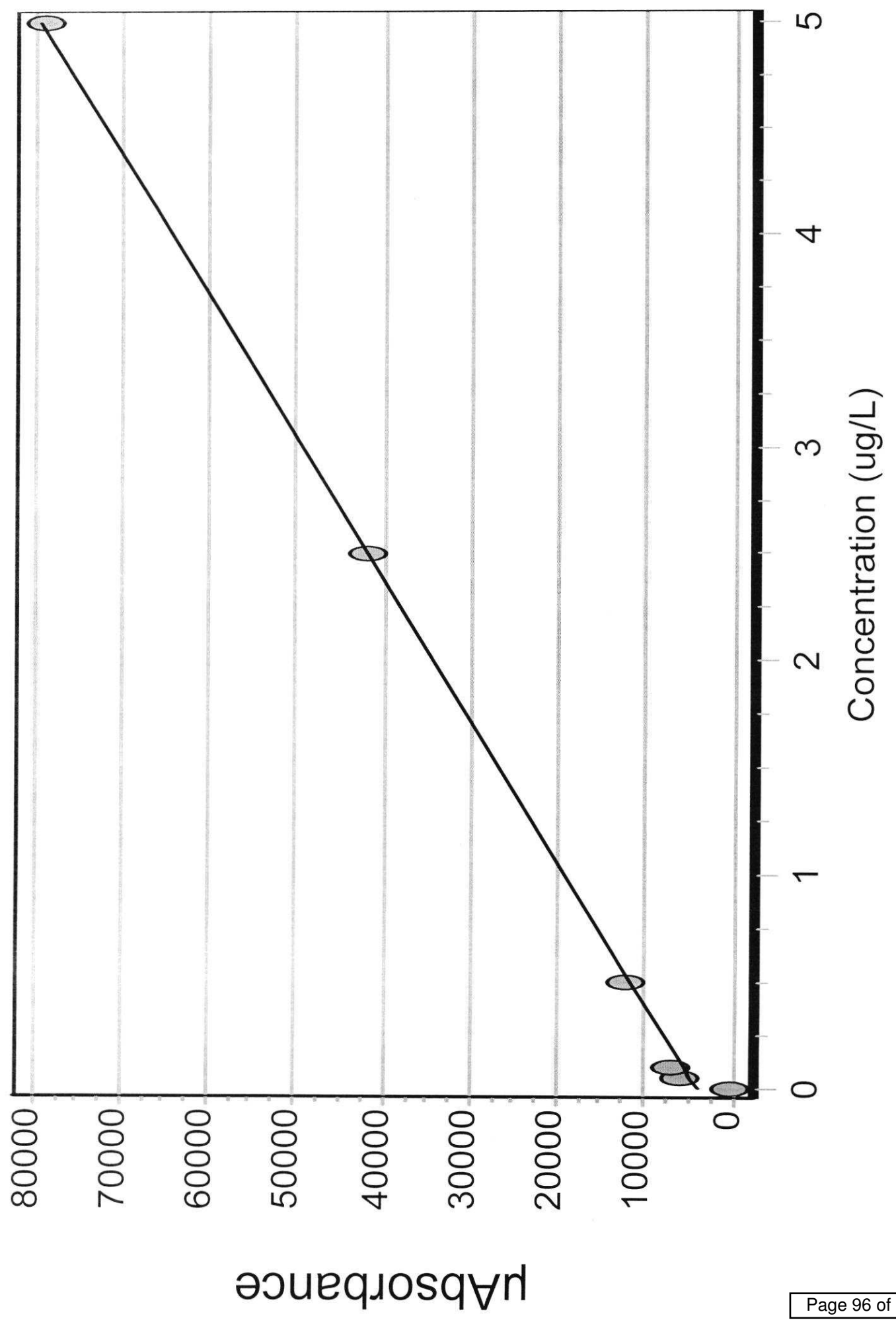
Sample Name			Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual	Flags
wcd0054-01			UNK	04/11/22 03:55:35 pm	1.2540	22945	10.94		
Replicates	25340.6	23778.7	22100.8	20560.3					
blank			UNK	04/11/22 03:57:51 pm	-0.1465	1841	7.78		
Replicates	2070.4	1868.2	1741.2	1682.7					
lcs			UNK	04/11/22 04:00:07 pm	-0.1211	2223	15.68		
Replicates	2046.9	2009.4	2203.9	2633.5					
lcs			UNK	04/11/22 04:02:24 pm	-0.2658	44	1.03		
Replicates	80.8	60.5	48.4	-14.5					
lcs			UNK	04/11/22 04:09:10 pm	-0.2744	-86	0.29		
Replicates	-95.3	-86.7	-92.3	-68.3					
lcs			UNK	04/11/22 04:11:27 pm	2.5820	42944	7.74		
Replicates	47024.6	43398.7	40772.6	40578.6					
lcs			UNK	04/11/22 04:16:08 pm	2.1330	36178	5.71		
Replicates	38727.1	36255.2	34590.2	35141.2					
CCB			UNK	04/11/22 04:18:25 pm	-0.2258	646	6.87		
Replicates	961.5	679.2	503.5	438.3					
ck			UNK	04/11/22 04:20:42 pm	0.5818	12813	10.80		
Replicates	14032.5	13074.1	12215.6	11931.4					
ck			UNK	04/11/22 04:22:59 pm	2.8880	47562	4.43		
Replicates	49740.2	48381.0	46852.0	45273.8					
ck			UNK	04/11/22 04:29:21 pm	2.4850	41493	6.16		
Replicates	44786.9	41183.3	39461.7	40540.2					

Notes

Analyst:

Lamp Current:

High Standard mirco Abs:



Sample Report

Sample Name BCD0189-MS1
File Name 064_LFM.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 14:54:24
Sample Type LFM
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Fail
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	48.268	No Gas	48.268	6	5.0	100	
9	Be	50.763	No Gas	50.763	6	3.7	100	
27	Al	326.801	No Gas	326.801	45	4.9	100	> +/- 25%
27	Al	309.349	He	309.349	45	1.9	100	> +/- 25%
47	Ti	65.514	He	65.514	45	3.1	100	
51	V	90.431	He	90.431	45	3.5	100	
52	Cr	53.368	He	53.368	45	5.0	100	
53	Cr	55.482	He	55.482	45	5.6	100	
55	Mn	63.522	No Gas	63.522	72	5.2	100	
55	Mn	64.413	He	64.413	72	4.8	100	
56	Fe	427.402	He	427.402	72	4.0	100	> +/- 25%
56	Fe	422.464	HEHe	422.464	72	1.2	100	> +/- 25%
57	Fe	423.555	He	423.555	72	5.2	100	> +/- 25%
59	Co	48.910	He	48.91	72	3.4	100	
60	Ni	48.934	He	48.934	72	3.0	100	
62	Ni	48.216	He	48.216	72	6.6	100	
65	Cu	49.181	He	49.181	72	4.1	100	
66	Zn	49.487	He	49.487	72	4.3	100	
75	As	51.914	He	51.914	72	3.9	100	
78	Se	50.315	He	50.315	72	6.6	100	
88	Sr	199.896	No Gas	199.896	72	6.5	100	> +/- 25%
88	Sr	200.385	He	200.385	72	4.5	100	> +/- 25%
95	Mo	54.430	No Gas	54.43	103	5.5	100	
95	Mo	54.334	He	54.334	103	5.0	100	
98	Mo	54.760	No Gas	54.76	103	7.3	100	
98	Mo	54.710	He	54.71	103	4.3	100	
107	Ag	50.238	No Gas	50.238	103	6.1	100	
107	Ag	51.115	He	51.115	103	4.5	100	
109	Ag	50.762	No Gas	50.762	103	6.4	100	
109	Ag	51.256	He	51.256	103	6.0	100	
111	Cd	51.549	No Gas	51.549	103	6.4	100	
111	Cd	51.625	He	51.625	103	5.3	100	
114	Cd	52.122	No Gas	52.122	103	5.2	100	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	51.598	He	51.598	103	5.0	100	
118	Sn	53.612	No Gas	53.612	103	5.6	100	
118	Sn	53.963	He	53.963	103	5.4	100	
137	Ba	53.508	No Gas	53.508	165	6.1	100	
137	Ba	53.855	He	53.855	165	4.6	100	
201	Hg	2.352	He	2.352	165	10.4	100	
202	Hg	2.354	He	2.354	165	6.0	100	
205	Tl	48.810	No Gas	48.81	165	10.1	100	
205	Tl	48.694	He	48.694	165	5.9	100	
208	Pb	48.467	No Gas	48.467	165	8.9	100	
208	Pb	48.572	He	48.572	165	5.1	100	
238	U	50.159	No Gas	50.159	165	10.1	100	
238	U	49.565	He	49.565	165	6.2	100	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	686126.76	3.7	91.3	751137.24
Sc	45	No Gas	671179.17	1.7	93.3	718995.44
Sc	45	He	77858.13	4.5	93.2	83562.7033333333
Ge	72	No Gas	267597.92	5.0	91.6	292154.613333333
Ge	72	He	83460.91	4.6	94.2	88575
Ge	72	HEHe	34455.18	1.4	94.5	36444.6633333333
Rh	103	No Gas	751286.63	5.4	87.6	857717.706666667
Rh	103	He	450836.93	5.2	90.7	497307.043333333
Ho	165	No Gas	267606.04	7.1	99.8	268146.15
Ho	165	He	159390.34	5.5	97.6	163344.786666667

Sample Report

Sample Name BCD0189-MSD1
File Name 065LFMD.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 14:57:45
Sample Type LFMDup
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Fail
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	46.971	No Gas	46.971	6	3.3	20	
9	Be	49.565	No Gas	49.565	6	4.2	20	
27	Al	480.136	No Gas	480.136	45	7.9	20	RPD > 20%
27	Al	470.166	He	470.166	45	3.1	20	RPD > 20%
47	Ti	78.826	He	78.826	45	4.2	20	
51	V	89.370	He	89.37	45	4.9	20	
52	Cr	53.977	He	53.977	45	4.7	20	
53	Cr	55.321	He	55.321	45	4.0	20	
55	Mn	72.449	No Gas	72.449	72	4.8	20	
55	Mn	74.584	He	74.584	72	5.6	20	
56	Fe	742.595	He	742.595	72	4.4	20	RPD > 20%
56	Fe	750.983	HEHe	750.983	72	1.2	20	RPD > 20%
57	Fe	752.882	He	752.882	72	3.6	20	RPD > 20%
59	Co	48.234	He	48.234	72	3.8	20	
60	Ni	47.420	He	47.42	72	6.4	20	
62	Ni	46.739	He	46.739	72	9.9	20	
65	Cu	48.679	He	48.679	72	3.7	20	
66	Zn	48.982	He	48.982	72	4.9	20	
75	As	50.014	He	50.014	72	5.3	20	
78	Se	47.273	He	47.273	72	2.3	20	
88	Sr	197.845	No Gas	197.845	72	6.5	20	
88	Sr	199.198	He	199.198	72	4.0	20	
95	Mo	53.818	No Gas	53.818	103	6.9	20	
95	Mo	54.062	He	54.062	103	4.3	20	
98	Mo	54.297	No Gas	54.297	103	7.1	20	
98	Mo	53.724	He	53.724	103	4.8	20	
107	Ag	48.762	No Gas	48.762	103	5.9	20	
107	Ag	49.847	He	49.847	103	5.3	20	
109	Ag	48.542	No Gas	48.542	103	6.6	20	
109	Ag	49.409	He	49.409	103	5.5	20	
111	Cd	50.159	No Gas	50.159	103	7.2	20	
111	Cd	50.317	He	50.317	103	4.6	20	
114	Cd	50.867	No Gas	50.867	103	6.6	20	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	50.594	He	50.594	103	4.2	20	
118	Sn	53.493	No Gas	53.493	103	7.1	20	
118	Sn	52.760	He	52.76	103	6.3	20	
137	Ba	52.933	No Gas	52.933	165	6.4	20	
137	Ba	53.136	He	53.136	165	6.1	20	
201	Hg	2.474	He	2.474	165	7.4	20	
202	Hg	2.361	He	2.361	165	4.4	20	
205	Tl	47.448	No Gas	47.448	165	9.2	20	
205	Tl	46.787	He	46.787	165	6.8	20	
208	Pb	46.864	No Gas	46.864	165	8.0	20	
208	Pb	46.720	He	46.72	165	6.3	20	
238	U	48.894	No Gas	48.894	165	8.6	20	
238	U	48.702	He	48.702	165	5.8	20	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	698689.11	0.3	93.0	751137.24
Sc	45	No Gas	686353.15	1.4	95.5	718995.44
Sc	45	He	77631.29	4.1	92.9	83562.7033333333
Ge	72	No Gas	273015.58	3.9	93.4	292154.6133333333
Ge	72	He	83789.77	5.6	94.6	88575
Ge	72	HEHe	35339.56	1.1	97.0	36444.6633333333
Rh	103	No Gas	763363.56	5.6	89.0	857717.7066666667
Rh	103	He	452941.68	4.7	91.1	497307.0433333333
Ho	165	No Gas	271134.56	6.3	101.1	268146.15
Ho	165	He	160133.24	6.1	98.0	163344.7866666667

Sample Report

Sample Name BCD0189-MSD2
File Name 085LFMD.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 16:04:45
Sample Type LFMDup
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Pass
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	128.449	No Gas	128.449	6	2.1	20	
9	Be	58.280	No Gas	58.28	6	1.4	20	
27	Al	371.969	No Gas	371.969	45	2.9	20	
27	Al	370.386	He	370.386	45	3.9	20	
47	Ti	73.744	He	73.744	45	2.5	20	
51	V	60.916	He	60.916	45	4.5	20	
52	Cr	49.534	He	49.534	45	3.5	20	
53	Cr	55.334	He	55.334	45	3.4	20	
55	Mn	74.767	No Gas	74.767	72	1.6	20	
55	Mn	73.476	He	73.476	72	3.5	20	
56	Fe	557.224	He	557.224	72	3.3	20	
56	Fe	565.312	HEHe	565.312	72	1.2	20	
57	Fe	656.553	He	656.553	72	6.6	20	
59	Co	45.598	He	45.598	72	3.3	20	
60	Ni	52.837	He	52.837	72	3.6	20	
62	Ni	55.034	He	55.034	72	7.0	20	
65	Cu	43.541	He	43.541	72	4.3	20	
66	Zn	42.807	He	42.807	72	1.0	20	
75	As	48.728	He	48.728	72	4.0	20	
78	Se	43.529	He	43.529	72	2.1	20	
88	Sr	7535.688	No Gas	7535.688	72	1.0	20	
88	Sr	7434.393	He	7434.393	72	4.4	20	
95	Mo	73.033	No Gas	73.033	103	0.9	20	
95	Mo	73.763	He	73.763	103	4.8	20	
98	Mo	73.148	No Gas	73.148	103	1.2	20	
98	Mo	73.789	He	73.789	103	4.0	20	
107	Ag	48.630	No Gas	48.63	103	0.3	20	
107	Ag	48.811	He	48.811	103	3.1	20	
109	Ag	48.265	No Gas	48.265	103	0.5	20	
109	Ag	48.548	He	48.548	103	4.7	20	
111	Cd	53.118	No Gas	53.118	103	0.1	20	
111	Cd	48.547	He	48.547	103	4.0	20	
114	Cd	56.881	No Gas	56.881	103	1.5	20	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	48.537	He	48.537	103	4.0	20	
118	Sn	56.506	No Gas	56.506	103	0.6	20	
118	Sn	54.355	He	54.355	103	2.7	20	
137	Ba	85.525	No Gas	85.525	165	1.3	20	
137	Ba	89.335	He	89.335	165	5.8	20	
201	Hg	2.259	He	2.259	165	7.0	20	
202	Hg	2.237	He	2.237	165	4.6	20	
205	Tl	44.684	No Gas	44.684	165	0.3	20	
205	Tl	45.508	He	45.508	165	5.2	20	
208	Pb	44.112	No Gas	44.112	165	1.9	20	
208	Pb	44.524	He	44.524	165	4.7	20	
238	U	48.073	No Gas	48.073	165	1.0	20	
238	U	49.146	He	49.146	165	4.8	20	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	654239.87	6.1	87.1	751137.24
Sc	45	No Gas	788387.54	9.6	109.7	718995.44
Sc	45	He	82804.01	4.4	99.1	83562.7033333333
Ge	72	No Gas	304257.43	0.9	104.1	292154.613333333
Ge	72	He	88374.44	4.4	99.8	88575
Ge	72	HEHe	41106.56	1.8	112.8	36444.6633333333
Rh	103	No Gas	758318.31	2.1	88.4	857717.706666667
Rh	103	He	405763.43	4.1	81.6	497307.043333333
Ho	165	No Gas	299218.43	3.1	111.6	268146.15
Ho	165	He	151429.97	4.2	92.7	163344.786666667



Sample Report

Sample Name BCD0189-MS2
File Name 084_LFM.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022 b
Acq Time 2022-04-07 16:01:28
Sample Type LFM
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Fail
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	121.373	No Gas	121.373	6	2.3	100	
9	Be	51.643	No Gas	51.643	6	1.9	100	
27	Al	328.006	No Gas	328.006	45	6.2	100	> +/- 25%
27	Al	336.865	He	336.865	45	7.4	100	> +/- 25%
47	Ti	79.363	He	79.363	45	20.7	100	> +/- 25%
51	V	59.736	He	59.736	45	3.2	100	
52	Cr	48.375	He	48.375	45	4.0	100	
53	Cr	52.541	He	52.541	45	4.3	100	
55	Mn	73.173	No Gas	73.173	72	0.9	100	
55	Mn	72.242	He	72.242	72	3.3	100	
56	Fe	471.040	He	471.04	72	4.2	100	> +/- 25%
56	Fe	468.672	HEHe	468.672	72	1.1	100	> +/- 25%
57	Fe	560.129	He	560.129	72	6.3	100	> +/- 25%
59	Co	44.444	He	44.444	72	5.0	100	
60	Ni	52.659	He	52.659	72	6.1	100	
62	Ni	52.274	He	52.274	72	6.5	100	
65	Cu	42.082	He	42.082	72	3.6	100	
66	Zn	41.200	He	41.2	72	4.7	100	
75	As	47.667	He	47.667	72	3.7	100	
78	Se	43.459	He	43.459	72	5.2	100	
88	Sr	7379.019	No Gas	7379.019	72	1.5	100	> +/- 25%
88	Sr	7219.800	He	7219.8	72	4.1	100	> +/- 25%
95	Mo	64.354	No Gas	64.354	103	2.2	100	
95	Mo	64.246	He	64.246	103	3.1	100	
98	Mo	64.706	No Gas	64.706	103	2.2	100	
98	Mo	64.750	He	64.75	103	4.1	100	
107	Ag	47.036	No Gas	47.036	103	1.5	100	
107	Ag	47.813	He	47.813	103	5.6	100	
109	Ag	47.490	No Gas	47.49	103	1.6	100	
109	Ag	46.930	He	46.93	103	4.0	100	
111	Cd	50.308	No Gas	50.308	103	2.8	100	
111	Cd	47.240	He	47.24	103	5.2	100	
114	Cd	54.616	No Gas	54.616	103	2.6	100	



Agilent Technologies

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Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	47.106	He	47.106	103	4.8	100	
118	Sn	48.376	No Gas	48.376	103	1.5	100	
118	Sn	47.018	He	47.018	103	4.1	100	
137	Ba	83.871	No Gas	83.871	165	1.0	100	
137	Ba	86.638	He	86.638	165	5.5	100	
201	Hg	2.200	He	2.2	165	2.8	100	
202	Hg	2.078	He	2.078	165	5.3	100	
205	Tl	42.531	No Gas	42.531	165	3.8	100	
205	Tl	43.752	He	43.752	165	5.1	100	
208	Pb	41.912	No Gas	41.912	165	1.0	100	
208	Pb	42.571	He	42.571	165	5.9	100	
238	U	45.518	No Gas	45.518	165	0.6	100	
238	U	47.629	He	47.629	165	4.6	100	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	730144.55	2.7	97.2	751137.24
Sc	45	No Gas	787319.92	5.3	109.5	718995.44
Sc	45	He	81834.90	4.6	97.9	83562.7033333333
Ge	72	No Gas	293460.44	1.4	100.4	292154.613333333
Ge	72	He	87078.53	3.9	98.3	88575
Ge	72	HEHe	39960.93	1.9	109.6	36444.6633333333
Rh	103	No Gas	725285.50	0.8	84.6	857717.706666667
Rh	103	He	395589.56	4.8	79.5	497307.043333333
Ho	165	No Gas	279200.46	2.0	104.1	268146.15
Ho	165	He	146596.21	5.5	89.7	163344.786666667

Sample Report

Sample Name Rinse
File Name 073_RIN.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:24:26
Sample Type RINSE
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Pass
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

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

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	851860.50	2.9	113.4	751137.24
Sc	45	No Gas	778342.37	4.5	108.3	718995.44
Sc	45	He	89419.77	5.6	107.0	83562.7033333333
Ge	72	No Gas	314408.11	4.5	107.6	292154.613333333
Ge	72	He	94942.20	4.4	107.2	88575
Ge	72	HEHe	39423.91	0.3	108.2	36444.6633333333
Rh	103	No Gas	939914.25	4.6	109.6	857717.706666667
Rh	103	He	536465.90	4.0	107.9	497307.043333333
Ho	165	No Gas	306525.99	6.2	114.3	268146.15
Ho	165	He	174423.93	4.7	106.8	163344.786666667

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	50.777	He	50.777	103	3.7	50	
118	Sn	51.370	No Gas	51.37	103	7.5	50	
118	Sn	49.962	He	49.962	103	4.4	50	
137	Ba	49.922	No Gas	49.922	165	9.4	50	
137	Ba	49.551	He	49.551	165	5.0	50	
201	Hg	2.380	He	2.38	165	6.9	2.5	
202	Hg	2.477	He	2.477	165	9.4	2.5	
205	Tl	49.176	No Gas	49.176	165	9.6	50	
205	Tl	48.765	He	48.765	165	7.0	50	
208	Pb	50.082	No Gas	50.082	165	9.2	50	
208	Pb	49.460	He	49.46	165	5.6	50	
238	U	50.403	No Gas	50.403	165	9.1	50	
238	U	49.122	He	49.122	165	5.7	50	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	842471.98	6.0	112.2	751137.24
Sc	45	No Gas	763458.06	5.5	106.2	718995.44
Sc	45	He	89329.10	5.1	106.9	83562.7033333333
Ge	72	No Gas	308877.90	5.4	105.7	292154.613333333
Ge	72	He	93511.46	4.6	105.6	88575
Ge	72	HEHe	39106.30	1.0	107.3	36444.6633333333
Rh	103	No Gas	910153.92	6.2	106.1	857717.706666667
Rh	103	He	531345.66	4.2	106.8	497307.043333333
Ho	165	No Gas	298986.52	8.2	111.5	268146.15
Ho	165	He	173468.25	5.3	106.2	163344.786666667

Sample Report

Sample Name CCV
File Name 074_CCV.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:27:45
Sample Type CCV
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Pass
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	47.578	No Gas	47.578	6	4.1	50	
9	Be	47.607	No Gas	47.607	6	3.9	50	
27	Al	100.297	No Gas	100.297	45	4.5	100	
27	Al	97.617	He	97.617	45	6.3	100	
47	Ti	49.465	He	49.465	45	5.5	50	
51	V	50.152	He	50.152	45	3.6	50	
52	Cr	49.848	He	49.848	45	3.6	50	
53	Cr	49.963	He	49.963	45	1.0	50	
55	Mn	50.442	No Gas	50.442	72	6.8	50	
55	Mn	51.397	He	51.397	72	4.3	50	
56	Fe	102.148	He	102.148	72	4.1	100	
56	Fe	101.947	HEHe	101.947	72	0.9	100	
57	Fe	102.431	He	102.431	72	5.4	100	
59	Co	51.248	He	51.248	72	3.2	50	
60	Ni	49.223	He	49.223	72	2.9	50	
62	Ni	50.250	He	50.25	72	5.8	50	
65	Cu	51.657	He	51.657	72	2.7	50	
66	Zn	51.076	He	51.076	72	5.1	50	
75	As	51.253	He	51.253	72	2.0	50	
78	Se	50.698	He	50.698	72	7.1	50	
88	Sr	50.928	No Gas	50.928	72	6.6	50	
88	Sr	51.079	He	51.079	72	4.1	50	
95	Mo	49.871	No Gas	49.871	103	6.8	50	
95	Mo	49.852	He	49.852	103	3.5	50	
98	Mo	49.741	No Gas	49.741	103	7.9	50	
98	Mo	49.430	He	49.43	103	6.1	50	
107	Ag	50.764	No Gas	50.764	103	7.1	50	
107	Ag	50.927	He	50.927	103	4.9	50	
109	Ag	50.888	No Gas	50.888	103	6.7	50	
109	Ag	50.406	He	50.406	103	3.2	50	
111	Cd	50.768	No Gas	50.768	103	6.5	50	
111	Cd	50.289	He	50.289	103	4.9	50	
114	Cd	51.413	No Gas	51.413	103	7.4	50	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.175	103	18.7	0.01	
118	Sn	<0.000	No Gas	-0.039	103	6.1	0.04	
118	Sn	0.156	He	0.156	103	11.8	0.04	>DL*2.2
137	Ba	<0.000	No Gas	-0.01	165	7.6	0.05	
137	Ba	0.037	He	0.037	165	2.8	0.05	
201	Hg	<0.000	He	-0.023	165	19.7	0.01	
202	Hg	0.025	He	0.025	165	9.4	0.01	>DL*2.2
205	Tl	0.009	No Gas	0.009	165	17.5	0.05	
205	Tl	<0.000	He	-0.006	165	18.9	0.05	
208	Pb	0.038	No Gas	0.038	165	7.7	0.04	
208	Pb	0.017	He	0.017	165	5.2	0.04	
238	U	<0.000	No Gas	-0.03	165	3.7	0.05	
238	U	<0.000	He	-0.023	165	3.5	0.05	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	846535.96	2.7	112.7	751137.24
Sc	45	No Gas	763172.64	6.6	106.1	718995.44
Sc	45	He	90039.96	3.9	107.8	83562.7033333333
Ge	72	No Gas	307243.17	4.8	105.2	292154.613333333
Ge	72	He	95530.93	4.8	107.9	88575
Ge	72	HEHe	39321.44	1.7	107.9	36444.6633333333
Rh	103	No Gas	924071.62	6.6	107.7	857717.706666667
Rh	103	He	538079.72	4.1	108.2	497307.043333333
Ho	165	No Gas	301315.46	7.4	112.4	268146.15
Ho	165	He	174235.86	5.5	106.7	163344.786666667

Sample Report

Sample Name Rinse
File Name 076_RIN.d
Data Path Name D:\Agilent\1\CPMH\1\DATA\Method Batches\RXNISequences\04072022.b
Acq Time 2022-04-07 15:34:26
Sample Type RINSE
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Pass
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

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

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	783556.17	4.4	104.3	751137.24
Sc	45	No Gas	722553.50	1.7	100.5	718995.44
Sc	45	He	81718.77	5.4	97.8	83562.7033333333
Ge	72	No Gas	261116.45	4.7	89.4	292154.613333333
Ge	72	He	80243.02	4.9	90.6	88575
Ge	72	HEHe	33816.92	1.4	92.8	36444.6633333333
Rh	103	No Gas	843801.04	6.1	98.4	857717.706666667
Rh	103	He	501077.22	4.7	100.8	497307.043333333
Ho	165	No Gas	279555.46	8.5	104.3	268146.15
Ho	165	He	166759.94	6.1	102.1	163344.786666667

Sample Report

Sample Name CCB
File Name 075_CCB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:31:07
Sample Type CCB
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Fail
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	<0.000	No Gas	-0.147	6	3.2	0.5	
9	Be	0.021	No Gas	0.021	6	20.1	0.05	
27	Al	<0.000	No Gas	-0.154	45	27.3	1.57	
27	Al	0.282	He	0.282	45	15.8	1.57	
47	Ti	0.048	He	0.048	45	100.1	0.23	
51	V	0.060	He	0.06	45	7.4	0.28	
52	Cr	<0.000	He	-0.023	45	16.5	0.04	
53	Cr	0.810	He	0.81	45	7.0	0.04	>DL*2.2
55	Mn	<0.000	No Gas	-0.026	72	4.5	0.05	
55	Mn	<0.000	He	-0.058	72	9.7	0.05	
56	Fe	<0.000	He	-0.469	72	12.3	1.59	
56	Fe	<0.000	HEHe	-0.67	72	7.6	1.59	
57	Fe	<0.000	He	-1.924	72	9.7	1.59	
59	Co	<0.000	He	-0.011	72	124.9	0.02	
60	Ni	<0.000	He	-1.621	72	9.4	0.08	
62	Ni	<0.000	He	-1.604	72	86.6	0.08	
65	Cu	0.068	He	0.068	72	21.1	0.03	>DL*2.2
66	Zn	<0.000	He	-0.373	72	7.1	0.3	
75	As	<0.000	He	-0.106	72	1.5	0.06	
78	Se	<0.000	He	-1.097	72	18.2	0.17	
88	Sr	0.089	No Gas	0.089	72	4.7	0.02	>DL*2.2
88	Sr	0.087	He	0.087	72	4.6	0.02	>DL*2.2
95	Mo	0.360	No Gas	0.36	103	5.2	0.05	>DL*2.2
95	Mo	0.246	He	0.246	103	16.8	0.05	>DL*2.2
98	Mo	0.360	No Gas	0.36	103	13.3	0.05	>DL*2.2
98	Mo	0.273	He	0.273	103	17.0	0.05	>DL*2.2
107	Ag	<0.000	No Gas	-0.24	103	27.5	0.03	
107	Ag	0.000	He	0	103	21.6	0.03	
109	Ag	0.011	No Gas	0.011	103	20.1	0.03	
109	Ag	<0.000	He	-0.325	103	69.3	0.03	
111	Cd	0.004	No Gas	0.004	103	194.3	0.01	
111	Cd	<0.000	He	-0.27	103	43.3	0.01	
114	Cd	0.020	No Gas	0.02	103	118.7	0.01	



Agilent Technologies

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2022-04-28 9:30 AM

Sample Report

Sample Name BCD0189-BLK1
File Name 060_Blk.d
Data Path Name D:\Agilent\CPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 14:41:00
Sample Type Blank
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Fail
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	0.168	No Gas	0.168	6	4.2	0.5	
9	Be	0.028	No Gas	0.028	6	15.0	0.05	
27	Al	2.732	No Gas	2.732	45	3.6	1.57	
27	Al	2.576	He	2.576	45	14.1	1.57	
47	Ti	0.089	He	0.089	45	114.6	0.23	
51	V	0.238	He	0.238	45	8.0	0.28	
52	Cr	<0.000	He	-0.027	45	18.5	0.04	
53	Cr	1.018	He	1.018	45	7.7	0.04	>DL*2.2
55	Mn	0.097	No Gas	0.097	72	3.5	0.05	
55	Mn	<0.000	He	-0.071	72	7.9	0.05	
56	Fe	0.531	He	0.531	72	6.1	1.59	
56	Fe	0.385	HEHe	0.385	72	4.9	1.59	
57	Fe	<0.000	He	-0.635	72	24.3	1.59	
59	Co	0.005	He	0.005	72	14.8	0.02	
60	Ni	<0.000	He	-0.782	72	11.3	0.08	
62	Ni	<0.000	He	-0.542	72	16.7	0.08	
65	Cu	0.072	He	0.072	72	29.4	0.03	>DL*2.2
66	Zn	<0.000	He	-0.223	72	6.8	0.3	
75	As	<0.000	He	-0.065	72	12.2	0.06	
78	Se	<0.000	He	-1.01	72	19.0	0.17	
88	Sr	0.025	No Gas	0.025	72	9.0	0.02	
88	Sr	0.018	He	0.018	72	14.2	0.02	
95	Mo	0.028	No Gas	0.028	103	26.7	0.05	
95	Mo	<0.000	He	-0.003	103	30.0	0.05	
98	Mo	0.065	No Gas	0.065	103	19.6	0.05	
98	Mo	0.027	He	0.027	103	4.7	0.05	
107	Ag	<0.000	No Gas	-0.242	103	22.2	0.03	
107	Ag	0.007	He	0.007	103	53.9	0.03	
109	Ag	0.010	No Gas	0.01	103	55.4	0.03	
109	Ag	<0.000	He	-0.327	103	65.5	0.03	
111	Cd	<0.000	No Gas	-0.02	103	261.6	0.01	
111	Cd	<0.000	He	-0.272	103	86.6	0.01	
114	Cd	<0.000	No Gas	-0.024	103	105.9	0.01	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.168	103	10.0	0.01	
118	Sn	<0.000	No Gas	-0.046	103	22.2	0.04	
118	Sn	0.131	He	0.131	103	11.5	0.04	>DL*2.2
137	Ba	0.132	No Gas	0.132	165	15.1	0.05	>DL*2.2
137	Ba	0.234	He	0.234	165	8.5	0.05	>DL*2.2
201	Hg	<0.000	He	0	165	11.0	0.01	
202	Hg	0.033	He	0.033	165	0.7	0.01	>DL*2.2
205	Tl	0.015	No Gas	0.015	165	13.2	0.05	
205	Tl	0.019	He	0.019	165	8.4	0.05	
208	Pb	0.022	No Gas	0.022	165	8.7	0.04	
208	Pb	<0.000	He	-0.001	165	9.7	0.04	
238	U	0.003	No Gas	0.003	165	9.6	0.05	
238	U	0.025	He	0.025	165	6.5	0.05	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	705834.32	3.0	94.0	751137.24
Sc	45	No Gas	657003.79	2.7	91.4	718995.44
Sc	45	He	78327.64	5.8	93.7	83562.7033333333
Ge	72	No Gas	261738.92	4.3	89.6	292154.613333333
Ge	72	He	83212.83	4.7	93.9	88575
Ge	72	HEHe	34367.10	1.0	94.3	36444.6633333333
Rh	103	No Gas	792367.56	5.4	92.4	857717.706666667
Rh	103	He	481287.71	5.3	96.8	497307.043333333
Ho	165	No Gas	260424.69	7.8	97.1	268146.15
Ho	165	He	159281.61	5.4	97.5	163344.786666667



Sample Report

Sample Name BCD0189-MRL1
File Name 061LICV.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 14:44:22
Sample Type LLICV
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Fail
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	0.790	No Gas	0.79	6	2.5	1	
9	Be	1.022	No Gas	1.022	6	8.9	1	
27	Al	2.466	No Gas	2.466	45	4.7	2	
27	Al	3.151	He	3.151	45	18.5	2	> +/- 50%
47	Ti	1.209	He	1.209	45	7.1	1	
51	V	0.982	He	0.982	45	5.1	1	
52	Cr	1.012	He	1.012	45	6.0	1	
53	Cr	1.450	He	1.45	45	4.8	1	
55	Mn	1.027	No Gas	1.027	72	5.4	1	
55	Mn	1.119	He	1.119	72	8.9	1	
56	Fe	2.555	He	2.555	72	4.9	2	
56	Fe	2.496	HEHe	2.496	72	2.8	2	
57	Fe	2.353	He	2.353	72	26.3	2	
59	Co	1.024	He	1.024	72	9.0	1	
60	Ni	<0.000	He	-0.066	72	9.6	1	> +/- 50%
62	Ni	0.237	He	0.237	72	23.2	1	> +/- 50%
65	Cu	1.157	He	1.157	72	15.1	1	
66	Zn	1.115	He	1.115	72	6.5	1	
75	As	0.807	He	0.807	72	15.6	1	
78	Se	<0.000	He	-0.187	72	6.8	1	> +/- 50%
88	Sr	1.053	No Gas	1.053	72	7.2	1	
88	Sr	1.023	He	1.023	72	4.8	1	
95	Mo	1.042	No Gas	1.042	103	5.3	1	
95	Mo	1.003	He	1.003	103	12.4	1	
98	Mo	1.030	No Gas	1.03	103	9.6	1	
98	Mo	1.051	He	1.051	103	0.4	1	
107	Ag	0.801	No Gas	0.801	103	2.0	1	
107	Ag	1.036	He	1.036	103	8.1	1	
109	Ag	1.003	No Gas	1.003	103	2.8	1	
109	Ag	0.722	He	0.722	103	4.3	1	
111	Cd	1.034	No Gas	1.034	103	7.2	1	
111	Cd	0.755	He	0.755	103	2.7	1	
114	Cd	1.063	No Gas	1.063	103	6.7	1	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	0.867	He	0.867	103	7.4	1	
118	Sn	0.842	No Gas	0.842	103	4.7	1	
118	Sn	1.055	He	1.055	103	1.7	1	
137	Ba	1.106	No Gas	1.106	165	3.1	1	
137	Ba	1.075	He	1.075	165	4.7	1	
201	Hg	0.063	He	0.063	165	11.1	0.05	
202	Hg	0.089	He	0.089	165	8.6	0.05	> +/- 50%
205	Tl	1.036	No Gas	1.036	165	7.5	1	
205	Tl	1.039	He	1.039	165	9.7	1	
208	Pb	1.023	No Gas	1.023	165	13.9	1	
208	Pb	0.990	He	0.99	165	6.5	1	
238	U	1.029	No Gas	1.029	165	5.9	1	
238	U	1.034	He	1.034	165	9.5	1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	743711.95	0.6	99.0	751137.24
Sc	45	No Gas	673088.39	2.4	93.6	718995.44
Sc	45	He	79741.86	4.3	95.4	83562.7033333333
Ge	72	No Gas	276887.99	3.5	94.8	292154.613333333
Ge	72	He	86709.50	4.8	97.9	88575
Ge	72	HEHe	35681.58	1.1	97.9	36444.6633333333
Rh	103	No Gas	818314.56	3.8	95.4	857717.706666667
Rh	103	He	489492.95	4.2	98.4	497307.043333333
Ho	165	No Gas	269393.05	5.8	100.5	268146.15
Ho	165	He	162010.89	6.1	99.2	163344.786666667

Sample Report

Sample Name BCD0189-BS1
File Name 062_LCS.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 14:47:43
Sample Type LCS
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Fail
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	45.471	No Gas	45.471	6	4.4	50	
9	Be	46.999	No Gas	46.999	6	5.3	50	
27	Al	137.474	No Gas	137.474	45	6.8	100	> +/- 10%
27	Al	155.654	He	155.654	45	7.5	100	> +/- 10%
47	Ti	48.528	He	48.528	45	1.2	50	
51	V	48.274	He	48.274	45	3.6	50	
52	Cr	47.909	He	47.909	45	3.7	50	
53	Cr	48.186	He	48.186	45	2.9	50	
55	Mn	46.807	No Gas	46.807	72	5.3	50	
55	Mn	46.420	He	46.42	72	5.4	50	
56	Fe	108.667	He	108.667	72	5.1	100	
56	Fe	111.231	HEHe	111.231	72	1.9	100	
57	Fe	107.857	He	107.857	72	1.6	100	
59	Co	46.370	He	46.37	72	5.3	50	
60	Ni	44.741	He	44.741	72	3.2	50	
62	Ni	44.986	He	44.986	72	2.3	50	
65	Cu	45.932	He	45.932	72	6.0	50	
66	Zn	68.137	He	68.137	72	6.9	50	> +/- 10%
75	As	47.462	He	47.462	72	4.1	50	
78	Se	45.165	He	45.165	72	5.5	50	
88	Sr	47.912	No Gas	47.912	72	7.5	50	
88	Sr	47.337	He	47.337	72	5.0	50	
95	Mo	50.383	No Gas	50.383	103	6.3	50	
95	Mo	51.503	He	51.503	103	4.0	50	
98	Mo	50.643	No Gas	50.643	103	7.4	50	
98	Mo	51.001	He	51.001	103	6.7	50	
107	Ag	48.189	No Gas	48.189	103	7.3	50	
107	Ag	48.355	He	48.355	103	5.8	50	
109	Ag	48.252	No Gas	48.252	103	7.3	50	
109	Ag	48.633	He	48.633	103	6.1	50	
111	Cd	49.405	No Gas	49.405	103	8.1	50	
111	Cd	48.478	He	48.478	103	4.4	50	
114	Cd	49.438	No Gas	49.438	103	7.7	50	

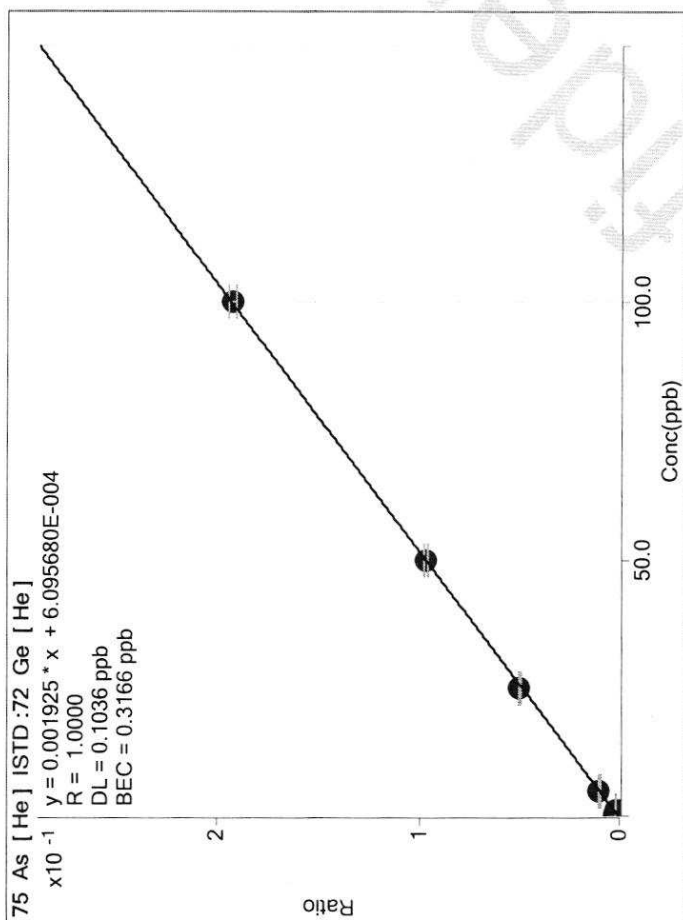
Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	49.426	He	49.426	103	4.8	50	
118	Sn	51.501	No Gas	51.501	103	7.3	50	
118	Sn	51.031	He	51.031	103	3.0	50	
137	Ba	47.036	No Gas	47.036	165	7.8	50	
137	Ba	46.546	He	46.546	165	5.0	50	
201	Hg	2.326	He	2.326	165	3.2	2.5	
202	Hg	2.322	He	2.322	165	2.1	2.5	
205	Tl	47.391	No Gas	47.391	165	10.4	50	
205	Tl	46.407	He	46.407	165	6.6	50	
208	Pb	47.169	No Gas	47.169	165	9.7	50	
208	Pb	46.675	He	46.675	165	7.5	50	
238	U	47.845	No Gas	47.845	165	10.3	50	
238	U	46.849	He	46.849	165	7.0	50	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	692116.52	1.7	92.1	751137.24
Sc	45	No Gas	670479.87	2.7	93.3	718995.44
Sc	45	He	77117.35	5.4	92.3	83562.7033333333
Ge	72	No Gas	266617.55	4.7	91.3	292154.613333333
Ge	72	He	85263.30	5.7	96.3	88575
Ge	72	HEHe	35290.59	2.8	96.8	36444.6633333333
Rh	103	No Gas	763518.19	5.7	89.0	857717.706666667
Rh	103	He	462656.36	5.4	93.0	497307.043333333
Ho	165	No Gas	262059.44	7.6	97.7	268146.15
Ho	165	He	161548.76	6.0	98.9	163344.786666667





Sample Report

Sample Name WCC1038-01
File Name 063_ARF.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 14:51:04
Sample Type AllRef
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Pass
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	0.863	No Gas	0.863	6	1.2	100	
9	Be	0.056	No Gas	0.056	6	13.3	200	
27	Al	129.484	No Gas	129.484	45	3.6	4000	
27	Al	133.992	He	133.992	45	10.7	4000	
47	Ti	6.838	He	6.838	45	10.4	1000	
51	V	36.402	He	36.402	45	5.1	1000	
52	Cr	3.191	He	3.191	45	4.5	1000	
53	Cr	4.729	He	4.729	45	6.3	1000	
55	Mn	8.016	No Gas	8.016	72	6.7	1000	
55	Mn	8.333	He	8.333	72	6.6	1000	
56	Fe	154.073	He	154.073	72	2.9	2000	
56	Fe	152.475	HEHe	152.475	72	1.2	4000	
57	Fe	159.220	He	159.22	72	1.7	4000	
59	Co	0.128	He	0.128	72	13.8	1000	
60	Ni	<0.000	He	-0.378	72	12.5	1000	
62	Ni	0.166	He	0.166	72	6.2	1000	
65	Cu	0.360	He	0.36	72	10.7	1000	
66	Zn	0.304	He	0.304	72	8.2	1000	
75	As	1.099	He	1.099	72	6.2	1000	
78	Se	0.099	He	0.099	72	5.4	1000	
88	Sr	130.533	No Gas	130.533	72	7.0	1000	
88	Sr	132.240	He	132.24	72	4.7	1000	
95	Mo	0.465	No Gas	0.465	103	4.4	1000	
95	Mo	0.450	He	0.45	103	11.9	1000	
98	Mo	0.517	No Gas	0.517	103	5.0	1000	
98	Mo	0.447	He	0.447	103	11.7	1000	
107	Ag	<0.000	No Gas	-0.08	103	47.0	1000	
107	Ag	0.046	He	0.046	103	16.6	1000	
109	Ag	0.140	No Gas	0.14	103	47.4	1000	
109	Ag	<0.000	He	-0.292	103	48.7	1000	
111	Cd	0.058	No Gas	0.058	103	73.0	1000	
111	Cd	<0.000	He	-0.262	103	43.3	1000	
114	Cd	0.150	No Gas	0.15	103	29.6	1000	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.163	103	11.8	1000	
118	Sn	<0.000	No Gas	-0.028	103	13.4	1000	
118	Sn	0.207	He	0.207	103	9.7	1000	
137	Ba	4.054	No Gas	4.054	165	9.1	1000	
137	Ba	4.146	He	4.146	165	3.9	1000	
201	Hg	0.043	He	0.043	165	7.1	50	
202	Hg	0.047	He	0.047	165	13.3	50	
205	Tl	0.029	No Gas	0.029	165	35.3	1000	
205	Tl	0.021	He	0.021	165	17.9	1000	
208	Pb	0.068	No Gas	0.068	165	3.0	1000	
208	Pb	0.056	He	0.056	165	26.7	1000	
238	U	0.051	No Gas	0.051	165	16.2	1000	
238	U	0.060	He	0.06	165	4.2	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	679742.45	2.7	90.5	751137.24
Sc	45	No Gas	661975.56	2.1	92.1	718995.44
Sc	45	He	76792.45	5.5	91.9	83562.7033333333
Ge	72	No Gas	265638.37	3.5	90.9	292154.613333333
Ge	72	He	82705.68	5.3	93.4	88575
Ge	72	HEHe	34640.03	0.4	95.0	36444.6633333333
Rh	103	No Gas	745888.90	4.4	87.0	857717.706666667
Rh	103	He	446343.60	4.9	89.8	497307.043333333
Ho	165	No Gas	261536.60	6.4	97.5	268146.15
Ho	165	He	159213.05	5.3	97.5	163344.786666667



Sample Report

Sample Name WCC1038-02
File Name 066SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:01:04
Sample Type Sample
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Pass
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	0.949	No Gas	0.949	6	3.8	100	
9	Be	0.066	No Gas	0.066	6	14.4	200	
27	Al	104.524	No Gas	104.524	45	6.8	4000	
27	Al	104.643	He	104.643	45	0.8	4000	
47	Ti	5.728	He	5.728	45	10.7	1000	
51	V	38.298	He	38.298	45	2.4	1000	
52	Cr	3.232	He	3.232	45	9.3	1000	
53	Cr	4.958	He	4.958	45	6.0	1000	
55	Mn	12.950	No Gas	12.95	72	4.6	1000	
55	Mn	13.513	He	13.513	72	1.3	1000	
56	Fe	126.074	He	126.074	72	5.5	2000	
56	Fe	130.532	HEHe	130.532	72	3.0	4000	
57	Fe	126.879	He	126.879	72	5.0	4000	
59	Co	0.117	He	0.117	72	1.8	1000	
60	Ni	<0.000	He	-0.302	72	8.2	1000	
62	Ni	<0.000	He	-0.397	72	11.2	1000	
65	Cu	0.354	He	0.354	72	26.4	1000	
66	Zn	0.541	He	0.541	72	10.3	1000	
75	As	0.762	He	0.762	72	3.5	1000	
78	Se	<0.000	He	-0.044	72	12.0	1000	
88	Sr	148.077	No Gas	148.077	72	4.6	1000	
88	Sr	147.771	He	147.771	72	4.1	1000	
95	Mo	0.532	No Gas	0.532	103	4.8	1000	
95	Mo	0.473	He	0.473	103	13.6	1000	
98	Mo	0.572	No Gas	0.572	103	8.8	1000	
98	Mo	0.618	He	0.618	103	7.1	1000	
107	Ag	<0.000	No Gas	-0.231	103	51.4	1000	
107	Ag	0.005	He	0.005	103	56.8	1000	
109	Ag	0.020	No Gas	0.02	103	20.3	1000	
109	Ag	<0.000	He	-0.309	103	64.9	1000	
111	Cd	0.031	No Gas	0.031	103	83.8	1000	
111	Cd	<0.000	He	-0.261	103	48.0	1000	
114	Cd	0.086	No Gas	0.086	103	29.9	1000	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.166	103	15.1	1000	
118	Sn	0.039	No Gas	0.039	103	9.6	1000	
118	Sn	0.185	He	0.185	103	20.8	1000	
137	Ba	4.958	No Gas	4.958	165	5.0	1000	
137	Ba	6.091	He	6.091	165	4.8	1000	
201	Hg	0.074	He	0.074	165	9.3	50	
202	Hg	0.076	He	0.076	165	13.5	50	
205	Tl	0.025	No Gas	0.025	165	18.7	1000	
205	Tl	0.012	He	0.012	165	20.3	1000	
208	Pb	0.057	No Gas	0.057	165	26.0	1000	
208	Pb	0.022	He	0.022	165	11.0	1000	
238	U	0.056	No Gas	0.056	165	9.0	1000	
238	U	0.095	He	0.095	165	10.4	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	695838.13	4.8	92.6	751137.24
Sc	45	No Gas	664886.37	2.2	92.5	718995.44
Sc	45	He	77475.74	3.8	92.7	83562.7033333333
Ge	72	No Gas	265310.51	3.8	90.8	292154.613333333
Ge	72	He	84116.78	3.1	95.0	88575
Ge	72	HEHe	33750.11	3.7	92.6	36444.6633333333
Rh	103	No Gas	728086.48	3.2	84.9	857717.706666667
Rh	103	He	441171.82	4.4	88.7	497307.043333333
Ho	165	No Gas	239150.22	0.8	89.2	268146.15
Ho	165	He	127948.46	4.8	78.3	163344.786666667



Sample Report

Sample Name WCC1038-03
File Name 067SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:04:26
Sample Type Sample
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Fail
ISTD QC Pass/Fail Fail
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	30.904	No Gas	30.904	6	5.7	100	
9	Be	0.040	No Gas	0.04	6	14.2	200	
27	Al	8.078	No Gas	8.078	45	6.5	4000	
27	Al	8.326	He	8.326	45	12.5	4000	
47	Ti	2.355	He	2.355	45	17.6	1000	
51	V	7.971	He	7.971	45	4.9	1000	
52	Cr	0.490	He	0.49	45	10.2	1000	
53	Cr	2.311	He	2.311	45	10.8	1000	
55	Mn	206.908	No Gas	206.908	72	6.5	1000	
55	Mn	216.065	He	216.065	72	5.3	1000	
56	Fe	180.207	He	180.207	72	5.6	2000	
56	Fe	178.529	HEHe	178.529	72	0.9	4000	
57	Fe	218.291	He	218.291	72	5.6	4000	
59	Co	0.519	He	0.519	72	2.1	1000	
60	Ni	6.318	He	6.318	72	7.7	1000	
62	Ni	6.594	He	6.594	72	12.0	1000	
65	Cu	0.266	He	0.266	72	17.8	1000	
66	Zn	1.709	He	1.709	72	5.7	1000	
75	As	16.716	He	16.716	72	6.2	1000	
78	Se	0.480	He	0.48	72	4.4	1000	
88	Sr	3154.915	No Gas	3154.915	72	6.4	1000	>LDR
88	Sr	3232.958	He	3232.958	72	3.2	1000	>LDR
95	Mo	4.932	No Gas	4.932	103	3.5	1000	
95	Mo	5.037	He	5.037	103	8.7	1000	
98	Mo	4.931	No Gas	4.931	103	6.7	1000	
98	Mo	4.853	He	4.853	103	6.9	1000	
107	Ag	<0.000	No Gas	-0.134	103	47.2	1000	
107	Ag	0.052	He	0.052	103	32.5	1000	
109	Ag	0.108	No Gas	0.108	103	40.2	1000	
109	Ag	<0.000	He	-0.285	103	13.3	1000	
111	Cd	1.352	No Gas	1.352	103	7.1	1000	
111	Cd	<0.000	He	-0.264	103	57.7	1000	
114	Cd	2.874	No Gas	2.874	103	7.4	1000	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.156	103	20.3	1000	
118	Sn	0.081	No Gas	0.081	103	5.4	1000	
118	Sn	0.199	He	0.199	103	13.1	1000	
137	Ba	36.462	No Gas	36.462	165	6.7	1000	
137	Ba	40.449	He	40.449	165	5.6	1000	
201	Hg	0.160	He	0.16	165	10.2	50	
202	Hg	0.093	He	0.093	165	12.2	50	
205	Tl	0.014	No Gas	0.014	165	30.0	1000	
205	Tl	0.021	He	0.021	165	5.3	1000	
208	Pb	0.470	No Gas	0.47	165	21.0	1000	
208	Pb	0.320	He	0.32	165	3.3	1000	
238	U	2.083	No Gas	2.083	165	8.5	1000	
238	U	2.392	He	2.392	165	2.3	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	650862.15	6.1	86.7	751137.24
Sc	45	No Gas	664394.17	3.0	92.4	718995.44
Sc	45	He	77193.44	5.4	92.4	83562.7033333333
Ge	72	No Gas	246538.38	4.8	84.4	292154.613333333
Ge	72	He	76406.03	5.1	86.3	88575
Ge	72	HEHe	32800.02	0.5	90.0	36444.6633333333
Rh	103	No Gas	647102.62	4.6	75.4	857717.706666667
Rh	103	He	372550.98	4.9	74.9	497307.043333333
Ho	165	No Gas	205969.37	6.1	76.8	268146.15
Ho	165	He	106400.44	6.5	65.1	163344.786666667

Sample Report

Sample Name WCC1038-04
File Name 068SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:07:44
Sample Type Sample
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Pass
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	0.646	No Gas	0.646	6	3.5	100	
9	Be	0.015	No Gas	0.015	6	10.8	200	
27	Al	104.402	No Gas	104.402	45	6.7	4000	
27	Al	111.450	He	111.45	45	2.9	4000	
47	Ti	7.007	He	7.007	45	29.7	1000	
51	V	38.467	He	38.467	45	4.5	1000	
52	Cr	3.154	He	3.154	45	2.4	1000	
53	Cr	5.194	He	5.194	45	10.5	1000	
55	Mn	7.935	No Gas	7.935	72	6.9	1000	
55	Mn	7.735	He	7.735	72	4.5	1000	
56	Fe	131.030	He	131.03	72	3.6	2000	
56	Fe	131.558	HEHe	131.558	72	3.9	4000	
57	Fe	133.182	He	133.182	72	5.2	4000	
59	Co	0.108	He	0.108	72	16.0	1000	
60	Ni	<0.000	He	-0.547	72	8.5	1000	
62	Ni	<0.000	He	-0.297	72	12.4	1000	
65	Cu	0.365	He	0.365	72	10.3	1000	
66	Zn	0.962	He	0.962	72	1.3	1000	
75	As	0.928	He	0.928	72	9.2	1000	
78	Se	<0.000	He	-0.445	72	8.4	1000	
88	Sr	142.700	No Gas	142.7	72	6.7	1000	
88	Sr	140.988	He	140.988	72	3.1	1000	
95	Mo	0.336	No Gas	0.336	103	13.2	1000	
95	Mo	0.284	He	0.284	103	29.6	1000	
98	Mo	0.362	No Gas	0.362	103	2.8	1000	
98	Mo	0.337	He	0.337	103	15.4	1000	
107	Ag	<0.000	No Gas	-0.237	103	28.4	1000	
107	Ag	0.011	He	0.011	103	60.1	1000	
109	Ag	0.017	No Gas	0.017	103	22.0	1000	
109	Ag	<0.000	He	-0.311	103	78.7	1000	
111	Cd	0.082	No Gas	0.082	103	16.9	1000	
111	Cd	<0.000	He	-0.26	103	24.7	1000	
114	Cd	0.140	No Gas	0.14	103	12.2	1000	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.17	103	7.1	1000	
118	Sn	<0.000	No Gas	-0.08	103	4.3	1000	
118	Sn	0.135	He	0.135	103	12.9	1000	
137	Ba	5.193	No Gas	5.193	165	6.4	1000	
137	Ba	5.832	He	5.832	165	6.9	1000	
201	Hg	0.101	He	0.101	165	13.9	50	
202	Hg	0.090	He	0.09	165	9.1	50	
205	Tl	0.006	No Gas	0.006	165	8.8	1000	
205	Tl	0.006	He	0.006	165	19.5	1000	
208	Pb	0.072	No Gas	0.072	165	12.4	1000	
208	Pb	0.068	He	0.068	165	16.1	1000	
238	U	0.056	No Gas	0.056	165	13.9	1000	
238	U	0.123	He	0.123	165	6.9	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	773475.29	0.2	103.0	751137.24
Sc	45	No Gas	742743.23	2.2	103.3	718995.44
Sc	45	He	83533.60	4.9	100.0	83562.7033333333
Ge	72	No Gas	285724.54	4.9	97.8	292154.613333333
Ge	72	He	89077.96	3.9	100.6	88575
Ge	72	HEHe	36327.62	1.3	99.7	36444.6633333333
Rh	103	No Gas	775090.42	5.9	90.4	857717.706666667
Rh	103	He	461980.67	4.3	92.9	497307.043333333
Ho	165	No Gas	230397.20	7.5	85.9	268146.15
Ho	165	He	126174.56	5.2	77.2	163344.786666667

Sample Report

Sample Name WCC1038-05
File Name 069SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:11:07
Sample Type Sample
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Pass
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	0.673	No Gas	0.673	6	3.9	100	
9	Be	0.020	No Gas	0.02	6	29.4	200	
27	Al	173.385	No Gas	173.385	45	5.8	4000	
27	Al	180.474	He	180.474	45	0.3	4000	
47	Ti	9.947	He	9.947	45	14.7	1000	
51	V	37.572	He	37.572	45	5.0	1000	
52	Cr	2.845	He	2.845	45	3.7	1000	
53	Cr	5.209	He	5.209	45	3.2	1000	
55	Mn	12.446	No Gas	12.446	72	5.8	1000	
55	Mn	12.554	He	12.554	72	4.4	1000	
56	Fe	178.036	He	178.036	72	3.9	2000	
56	Fe	179.500	HEHe	179.5	72	0.9	4000	
57	Fe	174.703	He	174.703	72	9.1	4000	
59	Co	0.108	He	0.108	72	16.2	1000	
60	Ni	<0.000	He	-0.416	72	13.6	1000	
62	Ni	<0.000	He	-0.072	72	24.7	1000	
65	Cu	0.468	He	0.468	72	8.0	1000	
66	Zn	0.618	He	0.618	72	14.2	1000	
75	As	1.431	He	1.431	72	11.4	1000	
78	Se	<0.000	He	-0.184	72	26.2	1000	
88	Sr	164.922	No Gas	164.922	72	6.7	1000	
88	Sr	166.000	He	166	72	4.5	1000	
95	Mo	0.365	No Gas	0.365	103	4.1	1000	
95	Mo	0.322	He	0.322	103	20.0	1000	
98	Mo	0.405	No Gas	0.405	103	4.6	1000	
98	Mo	0.362	He	0.362	103	11.8	1000	
107	Ag	<0.000	No Gas	-0.233	103	42.3	1000	
107	Ag	0.005	He	0.005	103	41.7	1000	
109	Ag	0.011	No Gas	0.011	103	38.5	1000	
109	Ag	<0.000	He	-0.319	103	40.0	1000	
111	Cd	0.048	No Gas	0.048	103	25.8	1000	
111	Cd	<0.000	He	-0.268	103	78.1	1000	
114	Cd	0.131	No Gas	0.131	103	44.4	1000	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.176	103	10.0	1000	
118	Sn	<0.000	No Gas	-0.043	103	12.1	1000	
118	Sn	0.152	He	0.152	103	4.2	1000	
137	Ba	5.543	No Gas	5.543	165	6.1	1000	
137	Ba	6.420	He	6.42	165	3.4	1000	
201	Hg	0.086	He	0.086	165	7.9	50	
202	Hg	0.120	He	0.12	165	7.3	50	
205	Tl	0.013	No Gas	0.013	165	39.4	1000	
205	Tl	<0.000	He	-0.005	165	10.8	1000	
208	Pb	0.040	No Gas	0.04	165	16.7	1000	
208	Pb	0.046	He	0.046	165	29.9	1000	
238	U	0.089	No Gas	0.089	165	4.5	1000	
238	U	0.152	He	0.152	165	4.3	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	761420.71	3.7	101.4	751137.24
Sc	45	No Gas	718021.42	3.2	99.9	718995.44
Sc	45	He	82979.17	3.9	99.3	83562.7033333333
Ge	72	No Gas	282341.66	5.4	96.6	292154.613333333
Ge	72	He	87248.96	5.7	98.5	88575
Ge	72	HEHe	35996.85	1.2	98.8	36444.6633333333
Rh	103	No Gas	771562.58	6.1	90.0	857717.706666667
Rh	103	He	456724.07	4.6	91.8	497307.043333333
Ho	165	No Gas	238892.05	6.3	89.1	268146.15
Ho	165	He	129881.24	7.4	79.5	163344.786666667

Sample Report

Sample Name WCC1038-06
File Name 070SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:14:26
Sample Type Sample
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Pass
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	0.739	No Gas	0.739	6	2.6	100	
9	Be	0.014	No Gas	0.014	6	35.3	200	
27	Al	189.903	No Gas	189.903	45	4.7	4000	
27	Al	208.635	He	208.635	45	6.0	4000	
47	Ti	12.059	He	12.059	45	28.5	1000	
51	V	34.456	He	34.456	45	3.0	1000	
52	Cr	2.504	He	2.504	45	32.7	1000	
53	Cr	4.531	He	4.531	45	7.3	1000	
55	Mn	13.571	No Gas	13.571	72	6.3	1000	
55	Mn	13.611	He	13.611	72	4.0	1000	
56	Fe	221.235	He	221.235	72	5.1	2000	
56	Fe	222.743	HEHe	222.743	72	3.4	4000	
57	Fe	225.432	He	225.432	72	5.2	4000	
59	Co	0.148	He	0.148	72	20.6	1000	
60	Ni	<0.000	He	-0.137	72	1.2	1000	
62	Ni	0.099	He	0.099	72	15.7	1000	
65	Cu	0.478	He	0.478	72	16.8	1000	
66	Zn	6.605	He	6.605	72	11.7	1000	
75	As	1.507	He	1.507	72	10.6	1000	
78	Se	<0.000	He	-0.072	72	2.0	1000	
88	Sr	171.141	No Gas	171.141	72	7.1	1000	
88	Sr	169.187	He	169.187	72	3.9	1000	
95	Mo	0.376	No Gas	0.376	103	16.7	1000	
95	Mo	0.447	He	0.447	103	29.5	1000	
98	Mo	0.363	No Gas	0.363	103	16.0	1000	
98	Mo	0.364	He	0.364	103	3.2	1000	
107	Ag	<0.000	No Gas	-0.241	103	29.4	1000	
107	Ag	0.004	He	0.004	103	68.7	1000	
109	Ag	0.006	No Gas	0.006	103	60.1	1000	
109	Ag	<0.000	He	-0.328	103	100.0	1000	
111	Cd	0.069	No Gas	0.069	103	24.2	1000	
111	Cd	<0.000	He	-0.275	103	0.0	1000	
114	Cd	0.139	No Gas	0.139	103	31.3	1000	



Agilent Technologies

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2022-04-28 9:32 AM

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.168	103	23.1	1000	
118	Sn	<0.000	No Gas	-0.077	103	9.4	1000	
118	Sn	0.122	He	0.122	103	8.8	1000	
137	Ba	6.128	No Gas	6.128	165	9.9	1000	
137	Ba	5.725	He	5.725	165	6.2	1000	
201	Hg	0.062	He	0.062	165	9.8	50	
202	Hg	0.077	He	0.077	165	4.2	50	
205	Tl	0.005	No Gas	0.005	165	31.4	1000	
205	Tl	0.004	He	0.004	165	19.7	1000	
208	Pb	0.039	No Gas	0.039	165	13.0	1000	
208	Pb	0.029	He	0.029	165	2.4	1000	
238	U	0.069	No Gas	0.069	165	10.8	1000	
238	U	0.118	He	0.118	165	4.9	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	748905.61	2.3	99.7	751137.24
Sc	45	No Gas	706327.06	3.3	98.2	718995.44
Sc	45	He	82028.01	3.9	98.2	83562.7033333333
Ge	72	No Gas	276380.90	5.3	94.6	292154.613333333
Ge	72	He	87089.84	4.7	98.3	88575
Ge	72	HEHe	36582.81	1.9	100.4	36444.6633333333
Rh	103	No Gas	762267.87	6.8	88.9	857717.706666667
Rh	103	He	458839.37	4.4	92.3	497307.043333333
Ho	165	No Gas	235903.11	10.3	88.0	268146.15
Ho	165	He	141478.17	9.4	86.6	163344.786666667

Sample Report

Sample Name WCC1038-07
File Name 071SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:17:48
Sample Type Sample
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Fail
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	20.011	No Gas	20.011	6	5.9	100	
9	Be	0.025	No Gas	0.025	6	16.7	200	
27	Al	226.462	No Gas	226.462	45	8.9	4000	
27	Al	227.585	He	227.585	45	4.8	4000	
47	Ti	16.866	He	16.866	45	19.6	1000	
51	V	4.655	He	4.655	45	6.1	1000	
52	Cr	2.074	He	2.074	45	5.5	1000	
53	Cr	3.839	He	3.839	45	8.5	1000	
55	Mn	23.777	No Gas	23.777	72	6.3	1000	
55	Mn	24.598	He	24.598	72	2.7	1000	
56	Fe	320.973	He	320.973	72	4.4	2000	
56	Fe	314.710	HEHe	314.71	72	1.1	4000	
57	Fe	387.144	He	387.144	72	4.1	4000	
59	Co	1.257	He	1.257	72	8.8	1000	
60	Ni	17.706	He	17.706	72	4.3	1000	
62	Ni	18.027	He	18.027	72	8.1	1000	
65	Cu	1.800	He	1.8	72	10.8	1000	
66	Zn	0.431	He	0.431	72	14.8	1000	
75	As	9.954	He	9.954	72	6.5	1000	
78	Se	3.250	He	3.25	72	16.4	1000	
88	Sr	11746.015	No Gas	11746.015	72	6.1	1000	>LDR
88	Sr	11955.888	He	11955.888	72	3.5	1000	>LDR
95	Mo	9.995	No Gas	9.995	103	10.7	1000	
95	Mo	10.346	He	10.346	103	2.6	1000	
98	Mo	10.175	No Gas	10.175	103	5.2	1000	
98	Mo	10.219	He	10.219	103	5.9	1000	
107	Ag	<0.000	No Gas	-0.22	103	30.9	1000	
107	Ag	0.025	He	0.025	103	22.2	1000	
109	Ag	0.025	No Gas	0.025	103	37.1	1000	
109	Ag	<0.000	He	-0.311	103	39.7	1000	
111	Cd	4.778	No Gas	4.778	103	6.0	1000	
111	Cd	<0.000	He	-0.261	103	41.7	1000	
114	Cd	10.481	No Gas	10.481	103	6.1	1000	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.159	103	39.0	1000	
118	Sn	0.092	No Gas	0.092	103	10.2	1000	
118	Sn	0.223	He	0.223	103	10.1	1000	
137	Ba	60.301	No Gas	60.301	165	7.1	1000	
137	Ba	63.790	He	63.79	165	4.0	1000	
201	Hg	0.030	He	0.03	165	18.2	50	
202	Hg	0.020	He	0.02	165	4.9	50	
205	Tl	0.031	No Gas	0.031	165	14.3	1000	
205	Tl	0.038	He	0.038	165	10.2	1000	
208	Pb	0.246	No Gas	0.246	165	20.2	1000	
208	Pb	0.089	He	0.089	165	6.5	1000	
238	U	5.165	No Gas	5.165	165	7.8	1000	
238	U	5.070	He	5.07	165	5.3	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	688410.95	5.0	91.6	751137.24
Sc	45	No Gas	690191.35	3.1	96.0	718995.44
Sc	45	He	78876.04	4.9	94.4	83562.7033333333
Ge	72	No Gas	252086.73	5.8	86.3	292154.613333333
Ge	72	He	77873.03	5.1	87.9	88575
Ge	72	HEHe	33783.48	1.2	92.7	36444.6633333333
Rh	103	No Gas	662149.21	6.5	77.2	857717.706666667
Rh	103	He	385167.95	5.0	77.5	497307.043333333
Ho	165	No Gas	231180.97	8.5	86.2	268146.15
Ho	165	He	132574.29	5.4	81.2	163344.786666667



Sample Report

Sample Name WCC1038-08
File Name 072SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:21:06
Sample Type Sample
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Pass
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	0.171	No Gas	0.171	6	2.7	100	
9	Be	0.008	No Gas	0.008	6	14.5	200	
27	Al	565.589	No Gas	565.589	45	9.9	4000	
27	Al	518.217	He	518.217	45	2.3	4000	
47	Ti	33.183	He	33.183	45	4.5	1000	
51	V	2.620	He	2.62	45	1.5	1000	
52	Cr	2.725	He	2.725	45	4.0	1000	
53	Cr	4.212	He	4.212	45	10.2	1000	
55	Mn	19.631	No Gas	19.631	72	4.5	1000	
55	Mn	19.678	He	19.678	72	2.7	1000	
56	Fe	675.387	He	675.387	72	3.4	2000	
56	Fe	697.068	HEHe	697.068	72	2.0	4000	
57	Fe	690.061	He	690.061	72	4.3	4000	
59	Co	0.480	He	0.48	72	1.6	1000	
60	Ni	2.773	He	2.773	72	6.1	1000	
62	Ni	2.769	He	2.769	72	10.3	1000	
65	Cu	2.191	He	2.191	72	1.9	1000	
66	Zn	0.706	He	0.706	72	8.9	1000	
75	As	0.255	He	0.255	72	15.2	1000	
78	Se	<0.000	He	-0.707	72	20.8	1000	
88	Sr	172.658	No Gas	172.658	72	6.6	1000	
88	Sr	170.374	He	170.374	72	3.5	1000	
95	Mo	0.102	No Gas	0.102	103	18.6	1000	
95	Mo	0.158	He	0.158	103	20.9	1000	
98	Mo	0.169	No Gas	0.169	103	11.7	1000	
98	Mo	0.132	He	0.132	103	11.5	1000	
107	Ag	<0.000	No Gas	-0.24	103	13.5	1000	
107	Ag	0.002	He	0.002	103	33.3	1000	
109	Ag	0.007	No Gas	0.007	103	20.8	1000	
109	Ag	<0.000	He	-0.318	103	10.2	1000	
111	Cd	0.065	No Gas	0.065	103	70.4	1000	
111	Cd	<0.000	He	-0.267	103	45.8	1000	
114	Cd	0.159	No Gas	0.159	103	37.7	1000	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.176	103	36.7	1000	
118	Sn	<0.000	No Gas	-0.05	103	7.2	1000	
118	Sn	0.120	He	0.12	103	4.7	1000	
137	Ba	3.634	No Gas	3.634	165	8.7	1000	
137	Ba	3.572	He	3.572	165	9.5	1000	
201	Hg	0.046	He	0.046	165	4.2	50	
202	Hg	0.049	He	0.049	165	8.6	50	
205	Tl	0.005	No Gas	0.005	165	47.5	1000	
205	Tl	0.001	He	0.001	165	24.2	1000	
208	Pb	0.067	No Gas	0.067	165	15.0	1000	
208	Pb	0.027	He	0.027	165	11.8	1000	
238	U	0.008	No Gas	0.008	165	0.8	1000	
238	U	0.023	He	0.023	165	9.5	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	836890.17	2.6	111.4	751137.24
Sc	45	No Gas	793843.83	1.4	110.4	718995.44
Sc	45	He	88093.45	4.3	105.4	83562.7033333333
Ge	72	No Gas	312539.71	4.7	107.0	292154.613333333
Ge	72	He	94090.80	3.8	106.2	88575
Ge	72	HEHe	39047.31	0.6	107.1	36444.6633333333
Rh	103	No Gas	877209.54	4.8	102.3	857717.706666667
Rh	103	He	504625.27	4.1	101.5	497307.043333333
Ho	165	No Gas	292748.40	8.4	109.2	268146.15
Ho	165	He	172210.79	5.9	105.4	163344.786666667



Sample Report

Sample Name WCC1038-09
File Name 077SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:37:48
Sample Type Sample
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Pass
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	0.303	No Gas	0.303	6	2.3	100	
9	Be	0.017	No Gas	0.017	6	8.8	200	
27	Al	527.056	No Gas	527.056	45	9.3	4000	
27	Al	516.608	He	516.608	45	3.9	4000	
47	Ti	30.076	He	30.076	45	3.4	1000	
51	V	10.860	He	10.86	45	3.2	1000	
52	Cr	3.827	He	3.827	45	1.9	1000	
53	Cr	6.266	He	6.266	45	6.5	1000	
55	Mn	36.235	No Gas	36.235	72	5.6	1000	
55	Mn	36.550	He	36.55	72	5.1	1000	
56	Fe	622.309	He	622.309	72	4.6	2000	
56	Fe	628.646	HEHe	628.646	72	0.7	4000	
57	Fe	615.871	He	615.871	72	3.8	4000	
59	Co	0.553	He	0.553	72	5.8	1000	
60	Ni	3.752	He	3.752	72	5.2	1000	
62	Ni	3.190	He	3.19	72	16.8	1000	
65	Cu	1.801	He	1.801	72	11.0	1000	
66	Zn	1.132	He	1.132	72	9.0	1000	
75	As	2.753	He	2.753	72	6.1	1000	
78	Se	<0.000	He	-0.849	72	11.5	1000	
88	Sr	241.484	No Gas	241.484	72	4.3	1000	
88	Sr	230.622	He	230.622	72	4.7	1000	
95	Mo	0.233	No Gas	0.233	103	2.8	1000	
95	Mo	0.244	He	0.244	103	10.6	1000	
98	Mo	0.238	No Gas	0.238	103	11.5	1000	
98	Mo	0.233	He	0.233	103	16.6	1000	
107	Ag	<0.000	No Gas	-0.246	103	37.8	1000	
107	Ag	0.000	He	0	103	24.7	1000	
109	Ag	0.005	No Gas	0.005	103	16.7	1000	
109	Ag	<0.000	He	-0.321	103	12.4	1000	
111	Cd	0.091	No Gas	0.091	103	50.4	1000	
111	Cd	<0.000	He	-0.263	103	66.1	1000	
114	Cd	0.252	No Gas	0.252	103	39.3	1000	



Agilent Technologies

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2022-04-28 9:30 AM

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.174	103	32.8	1000	
118	Sn	<0.000	No Gas	-0.074	103	6.9	1000	
118	Sn	0.109	He	0.109	103	8.2	1000	
137	Ba	3.377	No Gas	3.377	165	7.7	1000	
137	Ba	3.408	He	3.408	165	5.8	1000	
201	Hg	<0.000	He	-0.012	165	9.1	50	
202	Hg	0.026	He	0.026	165	13.8	50	
205	Tl	0.002	No Gas	0.002	165	21.2	1000	
205	Tl	<0.000	He	-0.001	165	25.6	1000	
208	Pb	0.044	No Gas	0.044	165	7.9	1000	
208	Pb	0.028	He	0.028	165	7.3	1000	
238	U	0.122	No Gas	0.122	165	5.6	1000	
238	U	0.106	He	0.106	165	11.5	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	794226.91	3.0	105.7	751137.24
Sc	45	No Gas	733604.60	1.9	102.0	718995.44
Sc	45	He	83113.50	3.9	99.5	83562.7033333333
Ge	72	No Gas	294137.90	3.3	100.7	292154.613333333
Ge	72	He	91026.04	4.5	102.8	88575
Ge	72	HEHe	38018.85	1.5	104.3	36444.6633333333
Rh	103	No Gas	840830.40	3.8	98.0	857717.706666667
Rh	103	He	492820.87	4.4	99.1	497307.043333333
Ho	165	No Gas	294585.91	5.9	109.9	268146.15
Ho	165	He	172380.34	6.7	105.5	163344.786666667

Sample Report

Sample Name WCC1038-10
File Name 078SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:41:34
Sample Type Sample
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Fail
ISTD QC Pass/Fail Fail
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	5.342	No Gas	5.342	6	8.8	100	
9	Be	0.017	No Gas	0.017	6	38.2	200	
27	Al	385.841	No Gas	385.841	45	22.3	4000	
27	Al	327.272	He	327.272	45	2.6	4000	
47	Ti	21.418	He	21.418	45	9.8	1000	
51	V	2.465	He	2.465	45	4.5	1000	
52	Cr	1.941	He	1.941	45	6.0	1000	
53	Cr	3.894	He	3.894	45	6.6	1000	
55	Mn	71.184	No Gas	71.184	72	8.5	1000	
55	Mn	69.318	He	69.318	72	4.9	1000	
56	Fe	442.964	He	442.964	72	4.5	2000	
56	Fe	463.470	HEHe	463.47	72	7.6	4000	
57	Fe	456.773	He	456.773	72	6.3	4000	
59	Co	0.754	He	0.754	72	8.8	1000	
60	Ni	2.501	He	2.501	72	9.6	1000	
62	Ni	2.592	He	2.592	72	3.2	1000	
65	Cu	1.525	He	1.525	72	9.4	1000	
66	Zn	1.938	He	1.938	72	6.8	1000	
75	As	0.694	He	0.694	72	6.0	1000	
78	Se	<0.000	He	-0.767	72	14.5	1000	
88	Sr	995.684	No Gas	995.684	72	11.0	1000	
88	Sr	1042.651	He	1042.651	72	3.3	1000	>LDR
95	Mo	0.609	No Gas	0.609	103	6.8	1000	
95	Mo	0.609	He	0.609	103	9.4	1000	
98	Mo	0.699	No Gas	0.699	103	12.2	1000	
98	Mo	0.622	He	0.622	103	11.7	1000	
107	Ag	<0.000	No Gas	-0.234	103	12.0	1000	
107	Ag	0.005	He	0.005	103	25.0	1000	
109	Ag	0.015	No Gas	0.015	103	60.2	1000	
109	Ag	<0.000	He	-0.322	103	25.0	1000	
111	Cd	0.361	No Gas	0.361	103	2.9	1000	
111	Cd	<0.000	He	-0.276	103	100.0	1000	
114	Cd	0.802	No Gas	0.802	103	5.7	1000	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.171	103	33.5	1000	
118	Sn	<0.000	No Gas	-0.077	103	12.9	1000	
118	Sn	0.140	He	0.14	103	4.8	1000	
137	Ba	9.157	No Gas	9.157	165	8.2	1000	
137	Ba	8.968	He	8.968	165	4.5	1000	
201	Hg	<0.000	He	-0.016	165	15.6	50	
202	Hg	0.024	He	0.024	165	11.6	50	
205	Tl	0.015	No Gas	0.015	165	17.9	1000	
205	Tl	<0.000	He	-0.003	165	17.6	1000	
208	Pb	0.052	No Gas	0.052	165	12.9	1000	
208	Pb	0.029	He	0.029	165	18.2	1000	
238	U	0.183	No Gas	0.183	165	5.9	1000	
238	U	0.118	He	0.118	165	7.5	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	563184.18	8.7	75.0	751137.24
Sc	45	No Gas	560377.81	5.3	77.9	718995.44
Sc	45	He	84185.44	5.1	100.7	83562.7033333333
Ge	72	No Gas	209740.30	9.1	71.8	292154.613333333
Ge	72	He	87735.28	5.3	99.1	88575
Ge	72	HEHe	37595.49	1.8	103.2	36444.6633333333
Rh	103	No Gas	561494.92	10.6	65.5	857717.706666667
Rh	103	He	463557.74	5.0	93.2	497307.043333333
Ho	165	No Gas	180014.70	12.7	67.1	268146.15
Ho	165	He	165311.52	5.7	101.2	163344.786666667

Sample Report

Sample Name WCC1038-11
File Name 079SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:44:55
Sample Type Sample
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Fail
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	12.050	No Gas	12.05	6	4.7	100	
9	Be	0.001	No Gas	0.001	6	31.6	200	
27	Al	110.597	No Gas	110.597	45	5.9	4000	
27	Al	113.994	He	113.994	45	5.5	4000	
47	Ti	5.505	He	5.505	45	13.5	1000	
51	V	25.195	He	25.195	45	6.2	1000	
52	Cr	1.037	He	1.037	45	15.9	1000	
53	Cr	3.582	He	3.582	45	8.4	1000	
55	Mn	24.453	No Gas	24.453	72	6.6	1000	
55	Mn	24.818	He	24.818	72	3.7	1000	
56	Fe	209.421	He	209.421	72	4.5	2000	
56	Fe	206.975	HEHe	206.975	72	1.0	4000	
57	Fe	222.052	He	222.052	72	5.7	4000	
59	Co	0.313	He	0.313	72	8.3	1000	
60	Ni	<0.000	He	-0.195	72	6.4	1000	
62	Ni	<0.000	He	-0.11	72	14.9	1000	
65	Cu	0.516	He	0.516	72	11.3	1000	
66	Zn	0.450	He	0.45	72	14.1	1000	
75	As	1.466	He	1.466	72	6.6	1000	
78	Se	<0.000	He	-0.793	72	19.5	1000	
88	Sr	1586.099	No Gas	1586.099	72	7.8	1000	>LDR
88	Sr	1625.902	He	1625.902	72	3.7	1000	>LDR
95	Mo	1.251	No Gas	1.251	103	11.4	1000	
95	Mo	1.205	He	1.205	103	4.5	1000	
98	Mo	1.258	No Gas	1.258	103	15.0	1000	
98	Mo	1.184	He	1.184	103	9.8	1000	
107	Ag	<0.000	No Gas	-0.237	103	47.2	1000	
107	Ag	0.007	He	0.007	103	48.0	1000	
109	Ag	0.006	No Gas	0.006	103	28.9	1000	
109	Ag	<0.000	He	-0.328	103	86.6	1000	
111	Cd	0.618	No Gas	0.618	103	10.7	1000	
111	Cd	<0.000	He	-0.276	103	100.0	1000	
114	Cd	1.345	No Gas	1.345	103	7.1	1000	



Agilent Technologies

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Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.178	103	81.1	1000	
118	Sn	<0.000	No Gas	-0.042	103	3.7	1000	
118	Sn	0.113	He	0.113	103	7.1	1000	
137	Ba	6.716	No Gas	6.716	165	7.8	1000	
137	Ba	6.677	He	6.677	165	3.1	1000	
201	Hg	<0.000	He	-0.002	165	12.3	50	
202	Hg	0.037	He	0.037	165	7.4	50	
205	Tl	<0.000	No Gas	-0.001	165	31.9	1000	
205	Tl	<0.000	He	-0.004	165	34.3	1000	
208	Pb	0.047	No Gas	0.047	165	2.0	1000	
208	Pb	0.026	He	0.026	165	17.8	1000	
238	U	0.354	No Gas	0.354	165	9.4	1000	
238	U	0.351	He	0.351	165	10.7	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	725951.78	4.9	96.6	751137.24
Sc	45	No Gas	715405.08	3.4	99.5	718995.44
Sc	45	He	84508.69	5.3	101.1	83562.7033333333
Ge	72	No Gas	276757.24	5.4	94.7	292154.6133333333
Ge	72	He	86607.83	4.6	97.8	88575
Ge	72	HEHe	36815.64	0.7	101.0	36444.6633333333
Rh	103	No Gas	755057.52	6.3	88.0	857717.7066666667
Rh	103	He	454348.52	4.8	91.4	497307.0433333333
Ho	165	No Gas	275372.24	9.0	102.7	268146.15
Ho	165	He	164853.19	5.6	100.9	163344.7866666667

Sample Report

Sample Name WCC1038-12
File Name 080SMPL.d
Data Path Name D:\Agilent\CPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:48:13
Sample Type Sample
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Pass
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	<0.000	No Gas	-0.098	6	2.6	100	
9	Be	0.002	No Gas	0.002	6	45.3	200	
27	Al	225.028	No Gas	225.028	45	2.0	4000	
27	Al	241.861	He	241.861	45	7.2	4000	
47	Ti	14.657	He	14.657	45	4.8	1000	
51	V	1.925	He	1.925	45	6.6	1000	
52	Cr	1.479	He	1.479	45	4.7	1000	
53	Cr	4.377	He	4.377	45	6.3	1000	
55	Mn	41.082	No Gas	41.082	72	5.5	1000	
55	Mn	41.997	He	41.997	72	4.8	1000	
56	Fe	332.647	He	332.647	72	4.0	2000	
56	Fe	335.073	HEHe	335.073	72	2.1	4000	
57	Fe	331.414	He	331.414	72	6.5	4000	
59	Co	0.715	He	0.715	72	5.3	1000	
60	Ni	2.140	He	2.14	72	7.3	1000	
62	Ni	2.032	He	2.032	72	14.7	1000	
65	Cu	2.300	He	2.3	72	11.4	1000	
66	Zn	1.101	He	1.101	72	3.3	1000	
75	As	0.237	He	0.237	72	6.6	1000	
78	Se	<0.000	He	-1.317	72	24.7	1000	
88	Sr	42.634	No Gas	42.634	72	6.1	1000	
88	Sr	41.831	He	41.831	72	4.7	1000	
95	Mo	0.038	No Gas	0.038	103	52.9	1000	
95	Mo	0.043	He	0.043	103	5.0	1000	
98	Mo	0.064	No Gas	0.064	103	24.9	1000	
98	Mo	0.018	He	0.018	103	49.1	1000	
107	Ag	<0.000	No Gas	-0.252	103	17.3	1000	
107	Ag	0.001	He	0.001	103	88.2	1000	
109	Ag	0.001	No Gas	0.001	103	68.7	1000	
109	Ag	<0.000	He	-0.322	103	12.4	1000	
111	Cd	<0.000	No Gas	-0.011	103	107.5	1000	
111	Cd	<0.000	He	-0.273	103	124.9	1000	
114	Cd	0.024	No Gas	0.024	103	18.0	1000	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.179	103	30.0	1000	
118	Sn	<0.000	No Gas	-0.069	103	7.7	1000	
118	Sn	0.105	He	0.105	103	12.9	1000	
137	Ba	6.774	No Gas	6.774	165	7.5	1000	
137	Ba	6.865	He	6.865	165	8.2	1000	
201	Hg	<0.000	He	-0.019	165	6.3	50	
202	Hg	0.040	He	0.04	165	3.3	50	
205	Tl	0.004	No Gas	0.004	165	28.5	1000	
205	Tl	<0.000	He	-0.004	165	18.4	1000	
208	Pb	0.032	No Gas	0.032	165	16.9	1000	
208	Pb	0.012	He	0.012	165	10.1	1000	
238	U	<0.000	No Gas	-0.024	165	3.5	1000	
238	U	<0.000	He	-0.025	165	5.2	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	822397.76	5.1	109.5	751137.24
Sc	45	No Gas	754140.90	1.7	104.9	718995.44
Sc	45	He	87649.89	5.5	104.9	83562.7033333333
Ge	72	No Gas	301039.57	4.4	103.0	292154.6133333333
Ge	72	He	94141.32	4.7	106.3	88575
Ge	72	HEHe	39390.48	1.4	108.1	36444.6633333333
Rh	103	No Gas	875544.71	5.1	102.1	857717.7066666667
Rh	103	He	524489.39	4.7	105.5	497307.0433333333
Ho	165	No Gas	295867.56	7.9	110.3	268146.15
Ho	165	He	178408.50	4.9	109.2	163344.7866666667



Sample Report

Sample Name WCC1038-13
File Name 081SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:51:35
Sample Type Sample
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Fail
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	14.570	No Gas	14.57	6	4.2	100	
9	Be	0.000	No Gas	0	6	32.7	200	
27	Al	84.829	No Gas	84.829	45	4.9	4000	
27	Al	87.704	He	87.704	45	2.9	4000	
47	Ti	5.805	He	5.805	45	8.7	1000	
51	V	22.702	He	22.702	45	3.9	1000	
52	Cr	0.640	He	0.64	45	15.0	1000	
53	Cr	3.694	He	3.694	45	2.8	1000	
55	Mn	17.591	No Gas	17.591	72	4.8	1000	
55	Mn	17.938	He	17.938	72	3.5	1000	
56	Fe	113.230	He	113.23	72	2.6	2000	
56	Fe	113.721	HEHe	113.721	72	1.0	4000	
57	Fe	123.210	He	123.21	72	3.2	4000	
59	Co	0.366	He	0.366	72	12.6	1000	
60	Ni	0.080	He	0.08	72	5.7	1000	
62	Ni	0.544	He	0.544	72	10.9	1000	
65	Cu	0.553	He	0.553	72	11.5	1000	
66	Zn	<0.000	He	-0.23	72	15.7	1000	
75	As	1.591	He	1.591	72	3.2	1000	
78	Se	0.098	He	0.098	72	10.6	1000	
88	Sr	1861.047	No Gas	1861.047	72	4.4	1000	>LDR
88	Sr	1940.578	He	1940.578	72	4.9	1000	>LDR
95	Mo	1.660	No Gas	1.66	103	7.3	1000	
95	Mo	1.533	He	1.533	103	0.7	1000	
98	Mo	1.596	No Gas	1.596	103	1.7	1000	
98	Mo	1.454	He	1.454	103	7.6	1000	
107	Ag	<0.000	No Gas	-0.248	103	52.9	1000	
107	Ag	0.001	He	0.001	103	137.8	1000	
109	Ag	0.004	No Gas	0.004	103	34.6	1000	
109	Ag	<0.000	He	-0.324	103	34.6	1000	
111	Cd	0.808	No Gas	0.808	103	23.1	1000	
111	Cd	<0.000	He	-0.277	103	86.6	1000	
114	Cd	1.747	No Gas	1.747	103	22.7	1000	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.18	103	19.9	1000	
118	Sn	<0.000	No Gas	-0.059	103	4.6	1000	
118	Sn	0.106	He	0.106	103	24.4	1000	
137	Ba	7.801	No Gas	7.801	165	7.5	1000	
137	Ba	7.841	He	7.841	165	0.6	1000	
201	Hg	<0.000	He	-0.033	165	31.1	50	
202	Hg	0.036	He	0.036	165	7.5	50	
205	Tl	<0.000	No Gas	0	165	14.2	1000	
205	Tl	<0.000	He	-0.015	165	45.1	1000	
208	Pb	0.023	No Gas	0.023	165	8.9	1000	
208	Pb	0.027	He	0.027	165	16.6	1000	
238	U	0.476	No Gas	0.476	165	5.7	1000	
238	U	0.472	He	0.472	165	6.7	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	733928.01	3.4	97.7	751137.24
Sc	45	No Gas	744141.21	2.3	103.5	718995.44
Sc	45	He	83150.28	3.4	99.5	83562.7033333333
Ge	72	No Gas	288008.59	5.1	98.6	292154.613333333
Ge	72	He	85974.75	2.8	97.1	88575
Ge	72	HEHe	37083.02	1.9	101.8	36444.6633333333
Rh	103	No Gas	798313.85	5.8	93.1	857717.706666667
Rh	103	He	450793.55	3.3	90.6	497307.043333333
Ho	165	No Gas	295562.33	6.7	110.2	268146.15
Ho	165	He	164095.61	5.4	100.5	163344.786666667

Sample Report

Sample Name WCC1038-14
File Name 082SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:54:53
Sample Type Sample
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Fail
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	32.818	No Gas	32.818	6	6.2	100	
9	Be	<0.000	No Gas	-0.003	6	66.2	200	
27	Al	10.374	No Gas	10.374	45	10.0	4000	
27	Al	9.969	He	9.969	45	4.3	4000	
47	Ti	2.474	He	2.474	45	12.0	1000	
51	V	7.274	He	7.274	45	6.1	1000	
52	Cr	0.414	He	0.414	45	8.5	1000	
53	Cr	3.118	He	3.118	45	12.6	1000	
55	Mn	236.748	No Gas	236.748	72	8.5	1000	
55	Mn	235.662	He	235.662	72	4.1	1000	
56	Fe	223.450	He	223.45	72	2.6	2000	
56	Fe	225.255	HEHe	225.255	72	1.4	4000	
57	Fe	262.498	He	262.498	72	1.8	4000	
59	Co	0.676	He	0.676	72	2.9	1000	
60	Ni	5.966	He	5.966	72	1.0	1000	
62	Ni	5.597	He	5.597	72	4.0	1000	
65	Cu	0.260	He	0.26	72	15.0	1000	
66	Zn	1.600	He	1.6	72	8.0	1000	
75	As	16.422	He	16.422	72	3.8	1000	
78	Se	0.222	He	0.222	72	23.9	1000	
88	Sr	3393.679	No Gas	3393.679	72	7.1	1000	>LDR
88	Sr	3500.719	He	3500.719	72	2.6	1000	>LDR
95	Mo	4.923	No Gas	4.923	103	7.8	1000	
95	Mo	4.970	He	4.97	103	2.2	1000	
98	Mo	4.721	No Gas	4.721	103	10.1	1000	
98	Mo	4.795	He	4.795	103	5.2	1000	
107	Ag	<0.000	No Gas	-0.238	103	14.8	1000	
107	Ag	0.003	He	0.003	103	33.3	1000	
109	Ag	0.007	No Gas	0.007	103	28.9	1000	
109	Ag	<0.000	He	-0.33	103	86.6	1000	
111	Cd	1.399	No Gas	1.399	103	8.6	1000	
111	Cd	<0.000	He	-0.272	103	124.9	1000	
114	Cd	3.083	No Gas	3.083	103	9.9	1000	

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.173	103	27.3	1000	
118	Sn	0.052	No Gas	0.052	103	11.1	1000	
118	Sn	0.166	He	0.166	103	4.4	1000	
137	Ba	30.480	No Gas	30.48	165	7.8	1000	
137	Ba	31.859	He	31.859	165	4.7	1000	
201	Hg	<0.000	He	-0.027	165	27.7	50	
202	Hg	0.005	He	0.005	165	6.7	50	
205	Tl	<0.000	No Gas	-0.001	165	4.3	1000	
205	Tl	<0.000	He	-0.009	165	10.8	1000	
208	Pb	0.109	No Gas	0.109	165	15.1	1000	
208	Pb	0.088	He	0.088	165	12.8	1000	
238	U	1.703	No Gas	1.703	165	5.9	1000	
238	U	1.671	He	1.671	165	3.8	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	756756.14	3.4	100.7	751137.24
Sc	45	No Gas	750384.42	3.9	104.4	718995.44
Sc	45	He	84664.95	4.3	101.3	83562.7033333333
Ge	72	No Gas	276141.70	5.9	94.5	292154.613333333
Ge	72	He	84375.17	3.9	95.3	88575
Ge	72	HEHe	36795.54	0.9	101.0	36444.6633333333
Rh	103	No Gas	740564.14	6.1	86.3	857717.706666667
Rh	103	He	425985.22	3.0	85.7	497307.043333333
Ho	165	No Gas	272087.43	8.2	101.5	268146.15
Ho	165	He	154925.24	4.2	94.8	163344.786666667

Sample Report

Sample Name WCC1038-15
File Name 083_ARF.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 15:58:11
Sample Type AllRef
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Fail
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	70.930	No Gas	70.93	6	4.0	100	
9	Be	<0.000	No Gas	-0.004	6	41.9	200	
27	Al	131.165	No Gas	131.165	45	5.2	4000	
27	Al	130.172	He	130.172	45	8.4	4000	
47	Ti	10.165	He	10.165	45	5.7	1000	
51	V	9.042	He	9.042	45	4.8	1000	
52	Cr	0.917	He	0.917	45	2.8	1000	
53	Cr	5.278	He	5.278	45	7.5	1000	
55	Mn	26.625	No Gas	26.625	72	3.1	1000	
55	Mn	26.261	He	26.261	72	2.9	1000	
56	Fe	234.410	He	234.41	72	6.0	2000	
56	Fe	245.170	HEHe	245.17	72	5.4	4000	
57	Fe	321.308	He	321.308	72	5.9	4000	
59	Co	0.289	He	0.289	72	4.9	1000	
60	Ni	9.360	He	9.36	72	2.2	1000	
62	Ni	9.276	He	9.276	72	8.4	1000	
65	Cu	0.754	He	0.754	72	6.9	1000	
66	Zn	1.824	He	1.824	72	7.2	1000	
75	As	1.393	He	1.393	72	10.0	1000	
78	Se	0.277	He	0.277	72	11.4	1000	
88	Sr	7086.925	No Gas	7086.925	72	4.6	1000	>LDR
88	Sr	6951.195	He	6951.195	72	4.3	1000	>LDR
95	Mo	9.391	No Gas	9.391	103	2.8	1000	
95	Mo	9.425	He	9.425	103	4.3	1000	
98	Mo	9.578	No Gas	9.578	103	7.0	1000	
98	Mo	9.245	He	9.245	103	6.6	1000	
107	Ag	<0.000	No Gas	-0.21	103	34.2	1000	
107	Ag	0.017	He	0.017	103	62.3	1000	
109	Ag	0.032	No Gas	0.032	103	22.0	1000	
109	Ag	<0.000	He	-0.291	103	25.0	1000	
111	Cd	2.991	No Gas	2.991	103	3.4	1000	
111	Cd	<0.000	He	-0.251	103	40.8	1000	
114	Cd	6.502	No Gas	6.502	103	3.5	1000	



Agilent Technologies

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2022-04-28 9:28 AM

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.162	103	19.9	1000	
118	Sn	<0.000	No Gas	-0.073	103	6.9	1000	
118	Sn	<0.000	He	-0.021	103	16.7	1000	
137	Ba	38.137	No Gas	38.137	165	4.3	1000	
137	Ba	40.521	He	40.521	165	4.5	1000	
201	Hg	0.040	He	0.04	165	18.3	50	
202	Hg	0.017	He	0.017	165	13.7	50	
205	Tl	0.011	No Gas	0.011	165	14.4	1000	
205	Tl	0.015	He	0.015	165	2.6	1000	
208	Pb	0.071	No Gas	0.071	165	10.6	1000	
208	Pb	0.045	He	0.045	165	21.2	1000	
238	U	0.178	No Gas	0.178	165	3.2	1000	
238	U	0.265	He	0.265	165	3.1	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	757451.53	3.0	100.8	751137.24
Sc	45	No Gas	761419.19	1.4	105.9	718995.44
Sc	45	He	83036.42	4.0	99.4	83562.7033333333
Ge	72	No Gas	277984.84	4.8	95.1	292154.613333333
Ge	72	He	83578.24	3.4	94.4	88575
Ge	72	HEHe	38278.48	0.2	105.0	36444.6633333333
Rh	103	No Gas	696746.69	4.3	81.2	857717.706666667
Rh	103	He	390565.69	3.5	78.5	497307.043333333
Ho	165	No Gas	260372.73	3.9	97.1	268146.15
Ho	165	He	142554.79	4.4	87.3	163344.786666667

Sample Report

Sample Name WCC1038-16
File Name 086SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\Method Batches\RXN\Sequences\04072022.b
Acq Time 2022-04-07 16:08:00
Sample Type Sample
Total Dilution 1.0000
Comment ---
ISTD Ref FileName 003CALB.d
Sample QC Pass/Fail Fail
ISTD QC Pass/Fail Pass
Operator JLG

QC Analyte Table

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
7	Li	77.375	No Gas	77.375	6	3.4	100	
9	Be	0.055	No Gas	0.055	6	13.3	200	
27	Al	52.223	No Gas	52.223	45	4.5	4000	
27	Al	50.700	He	50.7	45	3.9	4000	
47	Ti	3.033	He	3.033	45	20.1	1000	
51	V	9.870	He	9.87	45	4.7	1000	
52	Cr	0.462	He	0.462	45	13.4	1000	
53	Cr	4.596	He	4.596	45	9.3	1000	
55	Mn	26.215	No Gas	26.215	72	2.3	1000	
55	Mn	26.013	He	26.013	72	3.6	1000	
56	Fe	125.994	He	125.994	72	4.5	2000	
56	Fe	129.041	HEHe	129.041	72	0.7	4000	
57	Fe	215.261	He	215.261	72	4.5	4000	
59	Co	0.250	He	0.25	72	16.4	1000	
60	Ni	9.224	He	9.224	72	5.0	1000	
62	Ni	10.447	He	10.447	72	4.7	1000	
65	Cu	0.699	He	0.699	72	4.5	1000	
66	Zn	2.434	He	2.434	72	8.8	1000	
75	As	1.233	He	1.233	72	15.4	1000	
78	Se	<0.000	He	-0.579	72	9.2	1000	
88	Sr	7514.715	No Gas	7514.715	72	1.7	1000	>LDR
88	Sr	7268.232	He	7268.232	72	5.2	1000	>LDR
95	Mo	10.368	No Gas	10.368	103	2.3	1000	
95	Mo	10.588	He	10.588	103	5.8	1000	
98	Mo	10.210	No Gas	10.21	103	1.6	1000	
98	Mo	10.597	He	10.597	103	5.1	1000	
107	Ag	<0.000	No Gas	-0.202	103	34.4	1000	
107	Ag	0.042	He	0.042	103	11.5	1000	
109	Ag	0.056	No Gas	0.056	103	20.5	1000	
109	Ag	<0.000	He	-0.285	103	16.1	1000	
111	Cd	3.154	No Gas	3.154	103	12.3	1000	
111	Cd	<0.000	He	-0.242	103	54.5	1000	
114	Cd	6.799	No Gas	6.799	103	12.0	1000	



Agilent Technologies

1 of 2

2022-04-28 9:27 AM

Sample Report

Mass	Name	Conc.	Tune	Raw Conc.	ISTD	CPS RSD	LDR	QC Flag
114	Cd	<0.000	He	-0.154	103	14.2	1000	
118	Sn	<0.000	No Gas	-0.025	103	4.6	1000	
118	Sn	0.039	He	0.039	103	12.0	1000	
137	Ba	39.140	No Gas	39.14	165	1.2	1000	
137	Ba	40.809	He	40.809	165	5.6	1000	
201	Hg	<0.000	He	-0.036	165	14.3	50	
202	Hg	<0.000	He	-0.002	165	8.8	50	
205	Tl	0.053	No Gas	0.053	165	12.1	1000	
205	Tl	0.053	He	0.053	165	20.8	1000	
208	Pb	0.063	No Gas	0.063	165	15.7	1000	
208	Pb	0.045	He	0.045	165	10.5	1000	
238	U	0.213	No Gas	0.213	165	6.0	1000	
238	U	0.254	He	0.254	165	10.1	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	ISTD Recovery %	ISTD Ref CPS
Li	6	No Gas	606777.26	4.1	80.8	751137.24
Sc	45	No Gas	765494.12	6.2	106.5	718995.44
Sc	45	He	81193.32	3.9	97.2	83562.7033333333
Ge	72	No Gas	305973.35	1.9	104.7	292154.613333333
Ge	72	He	88075.76	3.5	99.4	88575
Ge	72	HEHe	39974.39	1.2	109.7	36444.6633333333
Rh	103	No Gas	789232.58	3.1	92.0	857717.706666667
Rh	103	He	415690.94	4.4	83.6	497307.043333333
Ho	165	No Gas	319234.65	1.7	119.1	268146.15
Ho	165	He	156644.34	6.0	95.9	163344.786666667



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

Anatek Labs. Inc. Spokane

Batch ID: BCD0070 Date: 3/31/2022 Time: 1400 Initials: ARS
 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	Temp	Filters	Thermometer
100ppm Cellulose TSS Soln.	2201079	50	100 PPM	105	2103143	00627

Comments:

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
BCD0070-BLK1	Blank	779	0.1212	100	0.1212	0.1212	1			4/4/22 KAS
BCD0070-BLK2	Blank	778	0.1222	100	0.1222	0.1225	1			4/4/22 KAS
BCD0070-BS1	LCS	871	0.1192	100	0.13	0.13	1	108.00	108.00	4/4/22 KAS
BCD0070-BSD1	LCS Dup	870	0.1194	100	0.1298	0.1298	1	104.00	104.00	4/4/22 KAS
WCC1026-01	Location #1	865	0.1198	5	0.1417	0.1422	20	219.00	4380.00	4/4/22 KAS
WCC1026-02	Location #2	864	0.1189	25	0.1228	0.123	4	39.00	156.00	4/4/22 KAS
BCD0070-DUP1	Duplicate WCC1038-07	869	0.12	100	0.1317	0.1321	1	117.00	117.00	4/4/22 KAS
WCC1038-07	D-6	797	0.1221	100	0.1342	0.1342	1	121.00	121.00	4/4/22 KAS
BCD0070-MS1	Matrix Spike WCC1038-16	868	0.119	50	0.1257	0.126	2	67.00	134.00	4/4/22 KAS
BCD0070-MSD1	Matrix Spike Dup WCC1038-16	867	0.1198	50	0.1262	0.1263	2	64.00	128.00	4/4/22 KAS
WCC1038-16	E-1 DUP	787	0.1211	100	0.1246	0.1246	1	35.00	35.00	4/4/22 KAS
WCC1038-01	DW-2	791	0.1221	250	0.129	0.1291	0.4	69.00	27.60	4/4/22 KAS
WCC1038-02	DW-3	784	0.1215	500	0.1287	0.1288	0.2	72.00	14.40	4/4/22 KAS
WCC1038-03	D-2	790	0.1219	250	0.1245	0.1247	0.4	26.00	10.40	4/4/22 KAS
WCC1038-04	D-3	780	0.12	500	0.1282	0.1286	0.2	82.00	16.40	4/4/22 KAS
WCC1038-05	D-4	794	0.1219	1000	0.1275	0.1274	0.1	55.00	5.50	4/4/22 KAS
WCC1038-06	D-5	795	0.1224	1000	0.1277	0.128	0.1	53.00	5.30	4/4/22 KAS
WCC1038-08	D-7	796	0.1223	250	0.1256	0.1257	0.4	33.00	13.20	4/4/22 KAS
WCC1038-09	D-8	786	0.1213	250	0.1232	0.1231	0.4	18.00	7.20	4/4/22 KAS
WCC1038-10	DW-1/WW-1	789	0.1164	250	0.1244	0.1243	0.4	79.00	31.60	4/4/22 KAS
WCC1038-11	WW-2	785	0.1217	500	0.1247	0.1248	0.2	30.00	6.00	4/4/22 KAS
WCC1038-12	U-2/WW-5	782	0.1205	500	0.1277	0.1278	0.2	72.00	14.40	4/4/22 KAS
WCC1038-13	WW-3	783	0.1208	500	0.1237	0.1237	0.2	29.00	5.80	4/4/22 KAS
WCC1038-14	E-2	781	0.1201	250	0.1232	0.1233	0.4	31.00	12.40	4/4/22 KAS
WCC1038-15	E-1	788	0.1205	100	0.1244	0.1244	1	39.00	39.00	4/4/22 KAS





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
737 Bishop Street, Suite 3050
Honolulu HI 96813
ATTENTION: Benjamin Berridge
Benjamin.Berridge@cardno-gs.com

FILE No.: 1494
REPORT DATE: 03/30/2022
PAGE: 1 of 1

AECOS REPORT OF RESULTS

SAMPLE TYPE: stormwater **AECOS LOG No.:** 45018
DATE SAMPLED: 03/28/2022 **DATE/TIME RECEIVED:** 03/28/2022 @1530
TEMP. CONTROL: 1.9, 3.0 °C **SAMPLER:** B. Berridge
DATE/TIME ANALYZED: 03/28/22 @1627 **MATRIX:** water
ANALYST: C. Mayer, J. Withrow

ANALYTE (UNITS)		Enterococcus (MPN/100ml)	Dilution Factor (10 ml / 100 ml)	Number of large positive wells	Number of small positive wells
SAMPLE ID ↓	METHOD →	ASTM D650399	---	---	---
	TIME SAMPLED ↓				
D-4	0850	360	10	23	4
D-7	0900	1000	10	42	7
D-5	0910	180	10	14	2
DW-2	0920	200	10	15	2
E-1	0930	<10	10	0	0
E-1 Dup	0935	20	10	2	0
D-6	0940	74	10	6	1
U-2 / WW-5	0940	430	10	26	5
D-3	0940	63	10	6	0
DW-3	0955	1100	10	41	12
WW-2	1020	<10	10	0	0
D-8	1030	690	10	37	3
DW-1 / WW-1	1030	590	10	34	3
D-2	0920	1100	10	45	4
E-2	0940	350	10	25	1
WW-3	1045	62	10	4	2


J. Mello, Laboratory Director



AECOS, Inc.

45-939 Kamehameha Highway Suite 104

Kaneohe, Oahu, HI 96744

Tel: (808) 234-7770 Fax: 234-7775

CHAIN OF CUSTODY FORM

PROJECT
FILE No.

1494

LOG NUMBER

045018

CLIENT: Carndno GS, Inc.

ADDRESS: 737 Bishop St Suite 3050
Honolulu, HI 96813

CONTACT: Ben Burridge

PHONE No.: 808-476-0067

Purchase Order No.: _____

☐ RUSH

☐ SEE REVERSE

SPECIAL INSTRUCTIONS

SAMPLED

	☒	SAMPLE ID	DATE	TIME	SAMPLE TYPE	CONTAINER(S)	REQUESTED ANALYSES	PRESERVATION
1	☒	D-4	3/20/2022	8:50	grab/water	1 idex	enterococci	None
2	☒	D-7		9:00				
3	☒	D-5		9:10				
4	☒	DW-2		9:20				
5	☒	E-1		9:30				
6	☒	E1DUP		9:35				
7	☒	D-6		9:40				
8	☒	V-2/WW-5		9:40				
9	☒	D-3		9:40				
10	☒	DW-3		9:55				

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:	DATE	3/20/2022
PRINT NAME: Ben Burridge	DATE	3/20/2022
RELINQUISHED:	DATE	3/20/2022
SIGNATURE: [Signature]	TIME	15:30

RECEIVED BY:	DATE	20
SIGNATURE: [Signature]	TIME	20
RELINQUISHED:	DATE	20
SIGNATURE OR INITIALS	TIME	20

RECEIVED FOR LABORATORY:	DATE	3/20/2022
SIGNATURE: [Signature]	TIME	15:30
RELINQUISHED:	DATE	20
SIGNATURE OR INITIALS	TIME	20

DISPOSAL:

PRECAUTIONS:

RETURN SAMPLE TO CLIENT ☐

USE (BLACK) INK

T = 1.9 °C
T = 3.0 °C

* All bottles overfilled



AECOS, Inc.

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

CHAIN OF CUSTODY FORM

PROJECT
FILE No.

1494

LOG NUMBER

[45018]

CLIENT: *Cardno GS, Inc.*

ADDRESS: *737 Bishop St. Suite 3050*

Honolulu HI 96813

CONTACT: *Ben Burridge*

PHONE No.: *808-476-0063*

Purchase Order No.:

☐ RUSH

☐ SEE REVERSE

SPECIAL INSTRUCTIONS

SAMPLED

☒	SAMPLE ID	DATE	TIME	SAMPLE TYPE	CONTAINER(S)	REQUESTED ANALYSES	PRESERVATION
1	✓ WW-2	3/28/02	10:20	grab/water	1 idex	enterococci	None
2	✓ D-8		10:30				
3	✓ DW-1/WW-1		10:30				
4	✓ D-2		9:20				
5	✓ E-2		9:40				
6	✓ WW-3		10:45				
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:	DATE	3/28/02
PRINT NAME	Ben Burridge	
RELINQUISHED:	DATE	3/28/02
SIGNATURE	[Signature]	
COMMENTS:	TIME	15:30

RECEIVED BY:	DATE	20
SIGNATURE	TIME	
RELINQUISHED:	DATE	20
SIGNATURE/INITIALS	TIME	

RECEIVED FOR LABORATORY:	DATE	3/28
SIGNATURE	TIME	20:30
RELINQUISHED:	DATE	20
SIGNATURE/INITIALS	TIME	

PRECAUTIONS:

DISPOSAL:

RETURN SAMPLE TO CLIENT ☐

USE (BLACK) INK

Acute Toxicity Test Results for ADC Dry Weather Water Quality Monitoring

Monitoring Period: November 2021

Prepared for: Cardno GS, Inc.
737 Bishop St., Suite 3050
Honolulu, HI 96734

Testing Lab: Enthalpy Analytical
4340 Vandever Avenue
San Diego, CA 92120

Submitted: December 23, 2021

Revised: May 4, 2022

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:



Barbara Orelo, Project Manager

Introduction

Three samples were collected during a dry weather event for the ADC Kekaha Water Quality Monitoring. Samples were submitted for bioassay testing to the Enthalpy Analytical Laboratory in San Diego, California by Cardno-GS. The salinity of all three samples was above 1 part per thousand (ppt), therefore testing was conducted with the marine species, including Pacific topsmelt (*Atherinops affinis*), inland silverside (*Menidia beryllina*), and mysid shrimp (*Americamysis bahia*) 96-hour acute survival.

Materials and Methods

Sample Information

Client: Cardno-GS, Inc.

Project Name: ADC Kekaha Water Quality Monitoring

Sample IDs: 1. DW-1/WW-1
2. WW-2
3. WW-3

Sample Collection Dates, Times^a: 1. 11/15/2021, 13:30
2. 11/15/2021, 11:40
3. 11/15/2021, 11:55

Sample Receipt Dates, Times: 11/17/2021, 10:10

Sample Material: Dry Weather Sample

Sampling Method: Grab

^a Collection times adjusted to Pacific Standard Time from Hawaii Standard Time.

Water Quality Parameters Measured upon Sample Receipt

Sample ID	pH	DO (mg/L)	Temp. (°C)	Conductivity (µS/cm)	Salinity (ppt)	Alkalinity (mg/L as CaCO ₃)	Total Chlorine (mg/L)
DW-1/WW-1	7.53	9.0	1.0	6,350	3.5	138	<0.02
WW-2	7.43	9.6	1.0	NM	30.9	156	<0.02
WW-3	7.79	9.6	1.0	9,700	5.4	167	<0.02

nm = not measured; salinity greater than 10ppt

Acute Toxicity Test Methods

Testing was conducted in accordance with methods published in US Environmental Protection Agency (USEPA) guidance (2002). Test specifications for all marine tests are summarized in Table 1.

Table 1. 96-hr Acute Survival Test Specifications - Marine Organisms

Pacific topsmelt test: 11/17/21, 16:10 to 11/21/21, 15:35	Species: <i>Atherinops affinis</i> . Source & Age: Aquatic Biosystems (Ft. Collins, CO), 14 days
Inland silverside test: 11/17/21, 16:18 to 11/21/21, 15:15	Species: <i>Menidia beryllina</i> . Source & Age: Aquatic Biosystems (Ft. Collins, CO), 10 days
Mysid shrimp test: 11/17/21, 17:08 to 11/21/21, 15:20	Species: <i>Americamysis bahia</i> . Source & Age: Aquatic Biosystems (Ft. Collins, CO), 5 days
Protocol Used:	Acute Manual (EPA/821/R-02/012), EPA 2002
Test Acceptability Criteria:	Control mean survival $\geq 90\%$
Test Concentration:	100% sample (DW-1/WW-1, WW-2, WW-3)
Sample Manipulation:	Artificial salts (Instant Ocean®) were added to bring the salinity of the DW-1/WW-1 and WW-3 samples to 30 ± 1 parts per thousand (ppt)
Lab Control Water:	20- μ m filtered seawater (Source: Scripps Institution of Oceanography [SIO] Intake); diluted to 30 ppt with deionized water
Salt Control:	Salt Control – 30 ppt artificial saltwater (Instant Ocean®)

Statistical Analyses

Statistical analyses were conducted using flowchart specifications as outlined in the test guidance manual (USEPA 2002). Organism performance in the sample was compared to that observed in the concurrent artificial 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 1.8.7.20.

Results

No statistically significant effects were observed to any of the marine species exposed to the DW-1/WW-1, WW-2, or WW-3 samples compared to the respective artificial salt controls. A summary of results for the marine species tests is presented in Table 2.

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 2. Summary of Marine 96-hr Acute Survival Results

Sample ID	Test Organism	Salt Control Result	100% Sample Result	Statistically Significant Effect? (Yes/No)	Percent Effect
DW-1/WW-1	Pacific topsmelt	100	100	No	0.0
	Inland silverside	95.0	95.0	No	0.0
	Mysid shrimp	95.0	100	No	-5.3
WW-2	Pacific topsmelt	100	100	No	0.0
	Inland silverside	95.0	100	No	-5.3
	Mysid shrimp	95.0	95.0	No	0.0
WW-3	Pacific topsmelt	100	100	No	0.0
	Inland silverside	95.0	100	No	-5.3
	Mysid shrimp	95.0	90.0	No	5.3

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

Quality Assurance

The samples were received via overnight delivery service two days after collection and within the appropriate temperature range. All 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 3. The reference toxicant tests for all species tested met all acceptability criteria. Additionally, the median effect concentration value for these tests was within two standard deviations of the historical mean for all species tested, indicating typical organism sensitivity to copper. The control chart for the previous 20 reference toxicant tests is presented in Appendix E.

Table 3. 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 (%)
Pacific Topsmelt	100	174	164 ± 106	32.1
Inland Silverside	100	211	187 ± 92.9	24.9
Mysid Shrimp	100	164	223 ± 79.6	17.8

NOEC = the highest concentration tested that results in no observed effect

LC₅₀ = concentration expected to cause a lethal effect to 50 percent of the test organisms

Historical LC₅₀ ± 2 SD = the mean LC₅₀ from the previous 20 tests performed by Enthalpy, plus or minus two standard deviations

CV = Coefficient of Variation

References

Tidepool Scientific Software. 2000-2013. CETIS Comprehensive Environmental Toxicity Information System Software, Version 1.8.7.20.

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

Pacific Topsmelt

CETIS Summary Report

Report Date: 24 Nov-21 13:09 (p 1 of 1)
Test Code: 2111-S283 | 09-8883-9512

Pacific Topsmelt 96-h Acute Survival Test				Nautilus Environmental (CA)							
Batch ID:	02-0454-3171	Test Type:	Survival (96h)	Analyst:	Not Applicable						
Start Date:	17 Nov-21 16:10	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	Diluted Natural Seawater						
Ending Date:	21 Nov-21 15:35	Species:	Atherinops affinis	Brine:	Not Applicable						
Duration:	95h	Source:	Aquatic Biosystems, CO	Age:	14d						
Sample ID:	07-5962-2319	Code:	21-1247	Client:	Cardno Hawaii						
Sample Date:	15 Nov-21 13:30	Material:	Stormwater Dry weather Sample	Project:	ADC Kekaha WQ Monitoring						
Receive Date:	17 Nov-21 10:10	Source:	Cardno Hawaii								
Sample Age:	51h (1 °C)	Station:	DW-1/WW-1								
Comparison Summary											
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method				
10-1401-3934	96h Survival Rate	100	>100	NA	NA	1	Wilcoxon Rank Sum Two-Sample Test				
96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
0	Salt Control	4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%
96h Survival Rate Detail											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
0	Salt Control	1	1	1	1						
100		1	1	1	1						

Ⓐ Q18 ACS 12/8/21

Ⓑ Q18 ACS 4/29/22

CETIS Analytical Report

Report Date: 24 Nov-21 13:09 (p 1 of 1)
 Test Code: 2111-S283 | 09-8883-9512

Pacific Topsmelt 96-h Acute Survival Test				Nautilus Environmental (CA)	
Analysis ID:	10-1401-3934	Endpoint:	96h Survival Rate	CETIS Version:	CETISv1.8.7
Analyzed:	24 Nov-21 13:09	Analysis:	Nonparametric-Two Sample	Official Results:	Yes

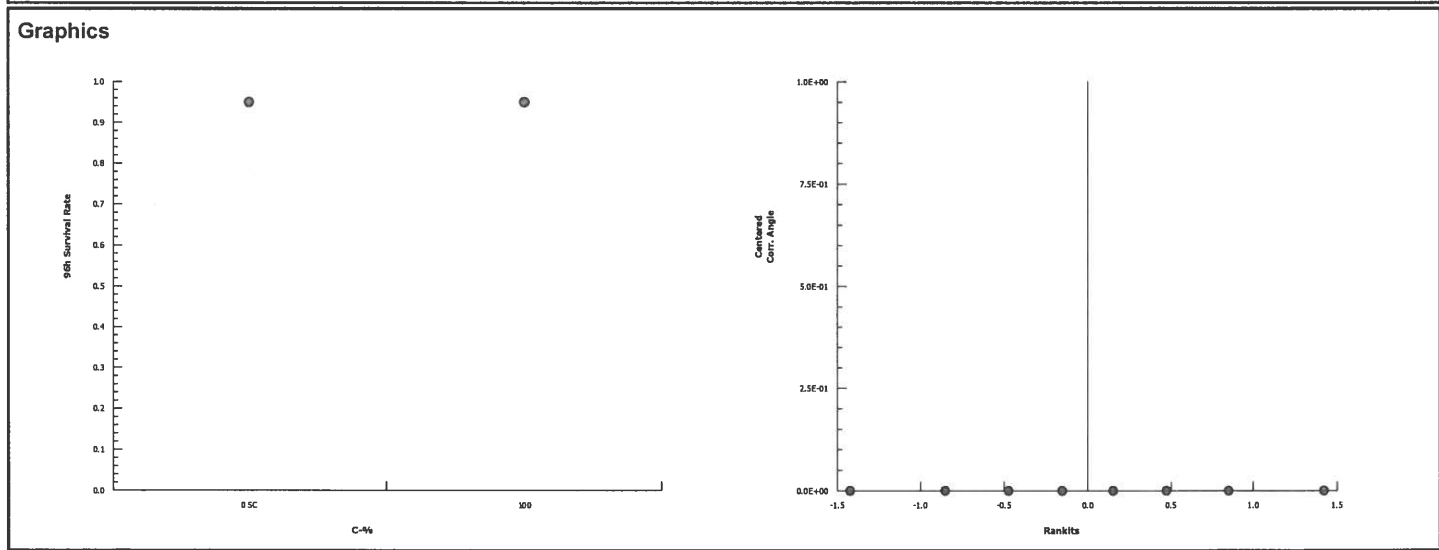
Data Transform	Zeta	Alt Hyp	Trials	Seed	Test Result
Angular (Corrected)	NA	C > T	NA	NA	Passes 96h survival rate

Wilcoxon Rank Sum Two-Sample Test									
Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Salt Control		100	18	NA	1	6	1.0000	Exact	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	65540	<0.0001	Significant Effect
Error	0	0	6			
Total	0		7			

96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1	1	1	1	1	1	0	0.0%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	0.0%

Angular (Corrected) Transformed Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
100		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%



CETIS Summary Report

Report Date: 24 Nov-21 13:16 (p 1 of 1)

Test Code: 2111-S286 | 02-3532-9933

Pacific Topsmelt 96-h Acute Survival Test						Nautilus Environmental (CA)					
Batch ID:	21-4257-7416	Test Type:	Survival (96h)	Analyst:	<i>Not Applicable</i>						
Start Date:	17 Nov-21 16:10	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	Ⓐ Diluted Natural Seawater						
Ending Date:	21 Nov-21 15:35	Species:	Atherinops affinis	Brine:	Not Applicable						
Duration:	95h	Source:	Aquatic Biosystems, CO	Age:	14d						
Sample ID:	16-6204-6634	Code:	21-1248	Client:	Cardno Hawaii						
Sample Date:	15 Nov-21 11:40	Material:	Ⓑ Stormwater <i>Dry weather sample</i>	Project:	ADC Kekaha WQ Monitoring						
Receive Date:	17 Nov-21 10:10	Source:	Cardno Hawaii								
Sample Age:	52h (1 °C)	Station:	WW-2								
Comparison Summary											
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method				
09-9936-7999	96h Survival Rate	100	>100	NA	NA	1	Wilcoxon Rank Sum Two-Sample Test				
96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
0	Salt Control	4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%
96h Survival Rate Detail											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
0	Salt Control	1	1	1	1						
100		1	1	1	1						

Ⓐ QAS ACS 12/8/21

Ⓑ QAS ACS 4/29/22

CETIS Analytical Report

Report Date: 24 Nov-21 13:16 (p 1 of 1)
 Test Code: 2111-S286 | 02-3532-9933

Pacific Topsmelt 96-h Acute Survival Test Nautilus Environmental (CA)

Analysis ID: 09-9936-7999	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7
Analyzed: 24 Nov-21 13:13	Analysis: Nonparametric-Two Sample	Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	Test Result
Angular (Corrected)	NA	C > T	NA	NA	Passes 96h survival rate

Wilcoxon Rank Sum Two-Sample Test

Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Salt Control		100	18	NA	1	6	1.0000	Exact	Non-Significant Effect

ANOVA Table

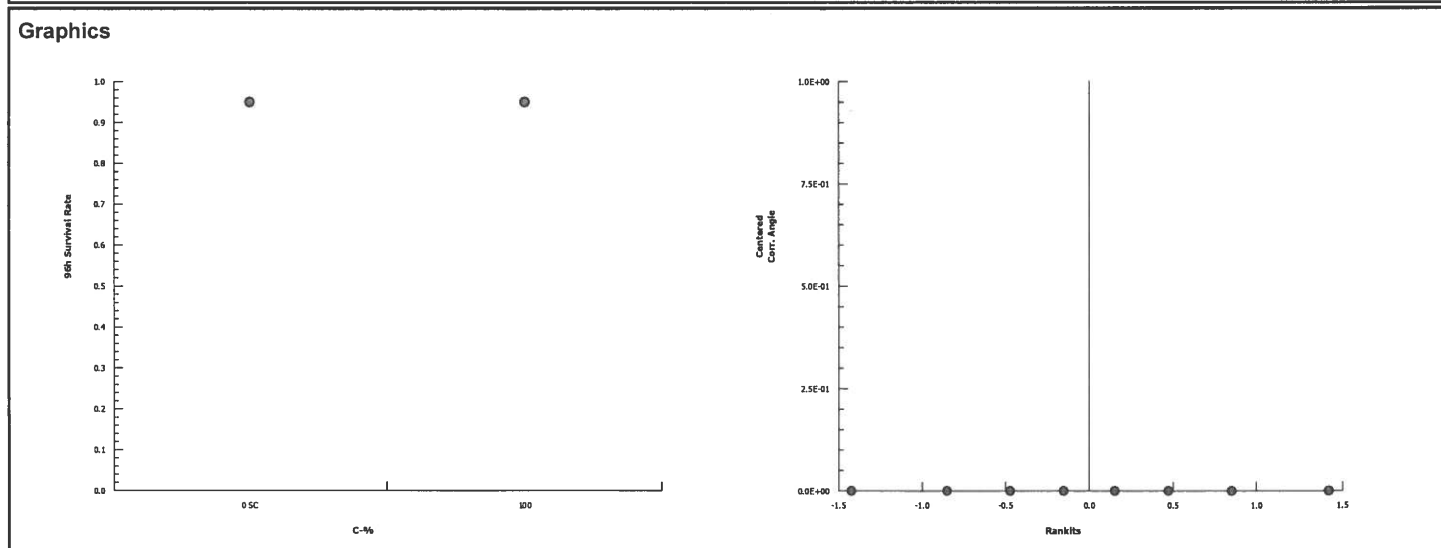
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	65540	<0.0001	Significant Effect
Error	0	0	6			
Total	0		7			

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1	1	1	1	1	1	0	0.0%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	0.0%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
100		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%



CETIS Summary Report

Report Date: 24 Nov-21 13:15 (p 1 of 1)

Test Code: 2111-S289 | 18-0951-7923

Pacific Topsmelt 96-h Acute Survival Test						Nautilus Environmental (CA)					
Batch ID:	13-1676-1400	Test Type:	Survival (96h)	Analyst:	Not Applicable						
Start Date:	17 Nov-21 16:10	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	④ Diluted Natural Seawater						
Ending Date:	21 Nov-21 15:35	Species:	Atherinops affinis	Brine:	Not Applicable						
Duration:	95h	Source:	Aquatic Biosystems, CO	Age:	14d						
Sample ID:	03-7053-1191	Code:	21-1249	Client:	Cardno Hawaii						
Sample Date:	15 Nov-21 11:55	Material:	⑥ Stormwater Dry weather Sample	Project:	ADC Kekaha WQ Monitoring						
Receive Date:	17 Nov-21 10:10	Source:	Cardno Hawaii								
Sample Age:	52h (1 °C)	Station:	WW-3								
Comparison Summary											
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method				
09-8814-0846	96h Survival Rate	100	>100	NA	NA	1	Wilcoxon Rank Sum Two-Sample Test				
96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
0	Salt Control	4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%
96h Survival Rate Detail											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
0	Salt Control	1	1	1	1						
100		1	1	1	1						

④ Q14 ACS 12/8/21

⑥ Q14 ACS 4/29/22

CETIS Analytical Report

Report Date: 24 Nov-21 13:15 (p 1 of 1)
Test Code: 2111-S289 | 18-0951-7923

Pacific Topsmelt 96-h Acute Survival Test Nautilus Environmental (CA)

Analysis ID: 09-8814-0846	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7
Analyzed: 24 Nov-21 13:15	Analysis: Nonparametric-Two Sample	Official Results: Yes

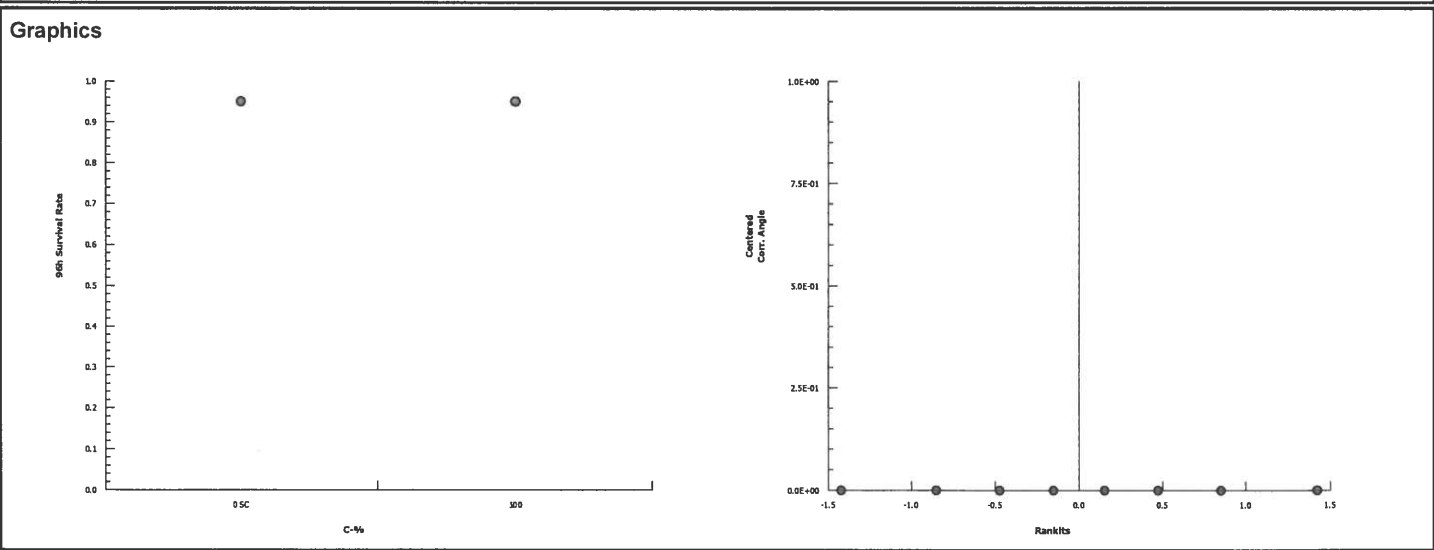
Data Transform	Zeta	Alt Hyp	Trials	Seed	Test Result
Angular (Corrected)	NA	C > T	NA	NA	Passes 96h survival rate

Wilcoxon Rank Sum Two-Sample Test								
Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	Decision(α:5%)
Salt Control		100	18	NA	1	6	1.0000	Exact Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	65540	<0.0001	Significant Effect
Error	0	0	6			
Total	0		7			

96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1	1	1	1	1	1	0	0.0%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	0.0%

Angular (Corrected) Transformed Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
100		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%



Client: Cardno HI

Test Species: *A. affinis*

Sample ID: ^{DW-1/} WW-1, WW-2, WW-3

Start Date/Time: 11/17/2021 1610

Sample Log-in No.: 21-1247, -1248, -1249

End Date/Time: 11/21/2021 1535

Test No.: 211-S283, S286, S289

Tech Initials

0 24 48 72 96

Counts: SP RT SP SP (G-M)

Readings: SP SP SP SP G-M

Dilutions made by: RT RT

Concentration (%)	Rep	Number of Live Organisms					Salinity (ppt)					Temperature Q ₁ (°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	29.4	29.3	30.0	29.8	29.9	20.1	19.4	20.1	20.7	20.9	7.6	7.0	7.0	6.9	6.7	7.6	7.8	8.0	7.8	7.8
	B	5	5	5	5	5			29.2					20.8					6.2					7.4		
	C	5	5	5	5	5																				
	D	5	5	5	5	5																				
Salt Control	A	5	5	5	5	5	29.9	30.1	30.5	30.6	30.7	20.2	19.2	20.0	20.7	20.4	7.6	6.9	6.9	6.2	6.7	8.1	8.0	8.1	8.1	8.0
	B	5	5	5	5	5			30.1					20.9					6.0					8.1		
	C	5	5	5	5	5																				
	D	5	5	5	5	5																				
100% Dw-1/WW-1	A	5	5	5	5	5	29.4	29.5	29.2	29.6	29.8	21.4	19.3	20.1	20.7	20.3	7.4	6.8	7.2	6.5	6.9	7.9	8.0	7.9	8.0	8.1
	B	5	5	5	5	5			29.5					20.9					5.7					8.0		
	C	5	5	5	5	5																				
	D	5	5	5	5	5																				
100% WW-2	A	5	5	5	5	5	31.2	31.3	31.2	31.3	31.4	21.5	19.1	20.3	20.6	20.3	7.3	7.1	7.6	6.9	6.8	7.9	7.8	7.5	7.9	8.0
	B	5	5	5	5	5			31.2					20.8					6.5					7.9		
	C	5	5	5	5	5																				
	D	5	5	5	5	5																				
100% WW-3	A	5	5	5	5	5	29.6	29.7	29.6	29.8	30.2	20.1	19.2	20.5	20.4	20.2	8.0	6.9	7.7	6.5	6.7	7.9	7.9	7.9	8.0	8.1
	B	5	5	5	5	5			29.4					20.8					5.6					8.0		
	C	5	5	5	5	5																				
	D	5	5	5	5	5																				
	A																									
	B																									
	C																									
	D																									
	A																									
	B																									
	C																									
	D																									

Initial Counts QC'd by: KUM

Initiated by: SP

Environmental Chamber: C

Animal Source/Date Received: ABS, 11/16/21

Age at Initiation: 14 day

Animal Acclimation Qualifiers (circle all that apply):

Q22 / Q23 Q24 / none

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)

QC Check: JU 11/24/21

Final Review:

Feeding Times					
0	24	48	72	96	
AM:	0830	0830	0830	0830	0830
PM:	1740				

A/S 12/8/21

Inland Silverside

CETIS Summary Report

Report Date: 24 Nov-21 12:47 (p 1 of 1)
Test Code: 2111-S284 | 10-8517-1994

Inland Silverside 96-h Acute Survival Test						Nautilus Environmental (CA)					
Batch ID:	02-4964-6863	Test Type:	Survival (96h)	Analyst:	Not Applicable	Diluent:	Diluted Natural Seawater	Brine:	Not Applicable	Age:	10d
Start Date:	17 Nov-21 16:18	Protocol:	EPA/821/R-02-012 (2002)	Client:	Cardno Hawaii	Project:	ADC Kekaha WQ Monitoring				
Ending Date:	21 Nov-21 15:15	Species:	Menidia beryllina								
Duration:	95h	Source:	Aquatic Biosystems, CO								
Sample ID:	19-5182-4514	Code:	21-1247	Material:	Stormwater Dry weather sample						
Sample Date:	15 Nov-21 13:30	Source:	Cardno Hawaii								
Receive Date:	17 Nov-21 10:10	Station:	DW-1/WW-1								
Sample Age:	51h (1 °C)										
Comparison Summary											
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method				
04-3998-8424	96h Survival Rate	100	>100	NA	14.5%	1	Wilcoxon Rank Sum Two-Sample Test				
Test Acceptability											
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision					
04-3998-8424	96h Survival Rate	Control Resp	0.95	0.9 - NL	Yes	Passes Acceptability Criteria					
96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
0	Salt Control	4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	5.0%
100		4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	5.0%
96h Survival Rate Detail											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
0	Salt Control	1	0.8	1	1						
100		0.8	1	1	1						

Ⓐ ACS Q14 12/4/21

Ⓑ Q14 ACS 4/29/22

CETIS Analytical Report

Report Date: 24 Nov-21 12:47 (p 1 of 1)

Test Code: 2111-S284 | 10-8517-1994

Inland Silverside 96-h Acute Survival Test				Nautilus Environmental (CA)			
Analysis ID:	04-3998-8424	Endpoint:	96h Survival Rate	CETIS Version:	CETISv1.8.7		
Analyzed:	24 Nov-21 12:46	Analysis:	Nonparametric-Two Sample	Official Results:	Yes		

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	14.5%	Passes 96h survival rate

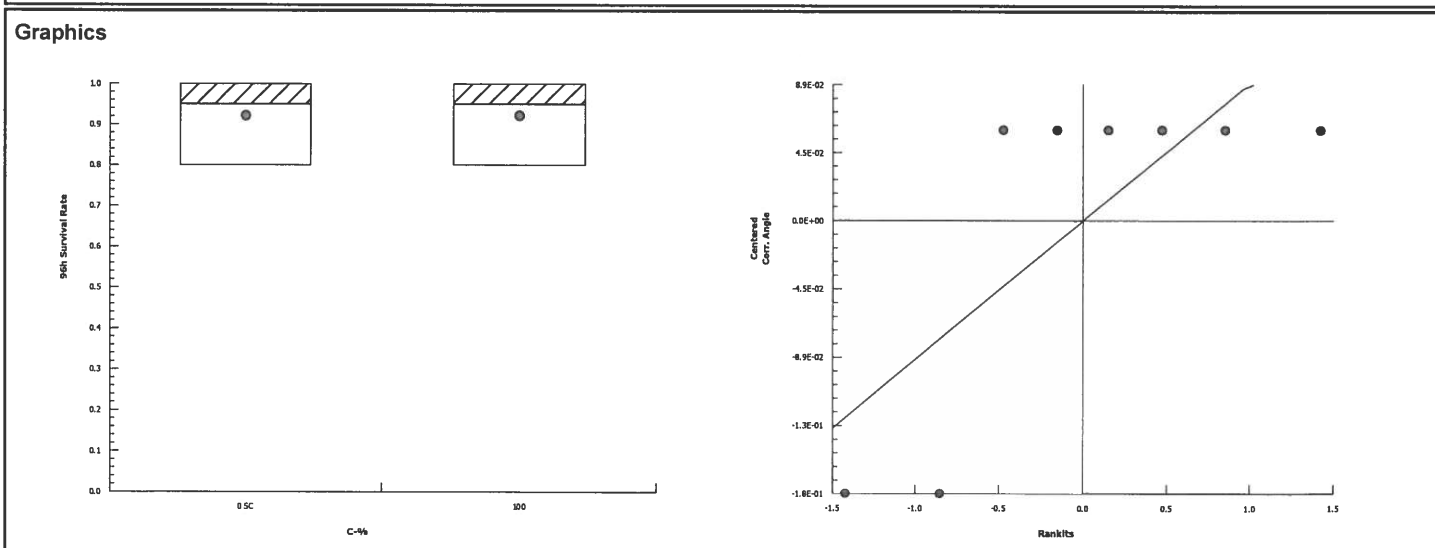
Wilcoxon Rank Sum Two-Sample Test									
Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α :5%)
Salt Control		100	18	NA	2	6	0.7857	Exact	Non-Significant Effect

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	0.08506185	0.01417698	6			
Total	0.08506185		7			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α :1%)	
Variances	Variance Ratio F	1	47.47	1.0000	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.5659	0.6451	<0.0001	Non-normal Distribution	

96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%
100		4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%

Angular (Corrected) Transformed Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
100		4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%



CETIS Summary Report

Report Date: 24 Nov-21 12:49 (p 1 of 1)
 Test Code: 2111-S287 | 11-7794-6193

Inland Silverside 96-h Acute Survival Test						Nautilus Environmental (CA)					
Batch ID:	20-2090-4179	Test Type:	Survival (96h)	Analyst:	Not Applicable						
Start Date:	17 Nov-21 16:18	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	Diluted Natural Seawater						
Ending Date:	21 Nov-21 15:15	Species:	Menidia beryllina	Brine:	Not Applicable						
Duration:	95h	Source:	Aquatic Biosystems, CO	Age:	10d						
Sample ID:	02-3021-0748	Code:	21-1248	Client:	Cardno Hawaii						
Sample Date:	15 Nov-21 11:40	Material:	Stormwater Dry weather sample	Project:	ADC Kekaha WQ Monitoring						
Receive Date:	17 Nov-21 10:10	Source:	Cardno Hawaii								
Sample Age:	53h (1 °C)	Station:	WW-2								
Comparison Summary											
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method				
01-4001-1928	96h Survival Rate	100	>100	NA	10.8%	1	Wilcoxon Rank Sum Two-Sample Test				
Test Acceptability											
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision					
01-4001-1928	96h Survival Rate	Control Resp	0.95	0.9 - NL	Yes	Passes Acceptability Criteria					
96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
0	Salt Control	4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	5.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%
96h Survival Rate Detail											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
0	Salt Control	1	0.8	1	1						
100		1	1	1	1						

Ⓐ Q18 ACS 12/8/21

Ⓑ Q18 ACS 4/29/22

CETIS Analytical Report

Report Date: 24 Nov-21 12:49 (p 1 of 1)

Test Code: 2111-S287 | 11-7794-6193

Inland Silverside 96-h Acute Survival Test										Nautilus Environmental (CA)	
Analysis ID: 01-4001-1928		Endpoint: 96h Survival Rate		CETIS Version: CETISv1.8.7							
Analyzed: 24 Nov-21 12:49		Analysis: Nonparametric-Two Sample		Official Results: Yes							
Data Transform		Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result				
Angular (Corrected)		NA	C > T	NA	NA	10.8%	Passes 96h survival rate				
Wilcoxon Rank Sum Two-Sample Test											
Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)		
Salt Control		100	20	NA	1	6	1.0000	Exact	Non-Significant Effect		
ANOVA Table											
Source	Sum Squares		Mean Square		DF	F Stat	P-Value	Decision(α:5%)			
Between	0.007088488		0.007088488		1	1	0.3559	Non-Significant Effect			
Error	0.04253092		0.007088488		6						
Total	0.04961941				7						
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Mod Levene Equality of Variance		1	13.75	0.3559	Equal Variances					
Variances	Levene Equality of Variance		9	13.75	0.0240	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.7065	0.6451	0.0027	Non-normal Distribution					
96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	-5.26%
Angular (Corrected) Transformed Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
100		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	-4.63%
Graphics											

CETIS Summary Report

Report Date: 24 Nov-21 12:51 (p 1 of 1)
 Test Code: 2111-S290 | 10-5543-4287

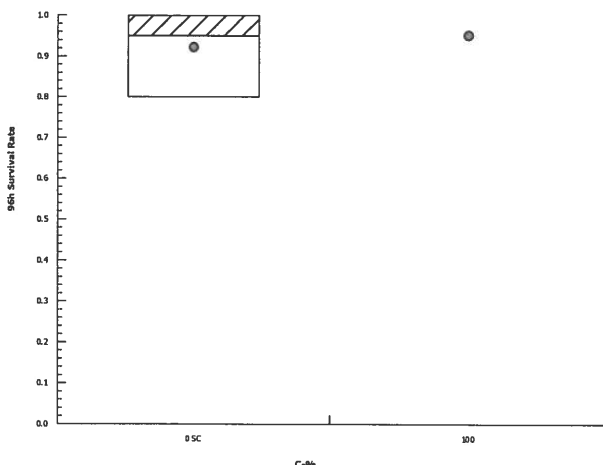
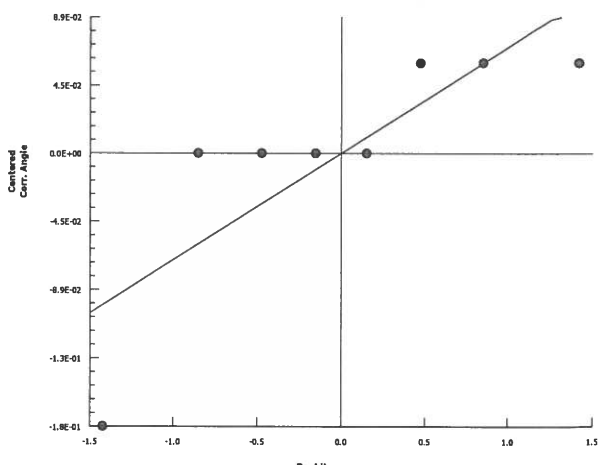
Inland Silverside 96-h Acute Survival Test						Nautilus Environmental (CA)					
Batch ID:	18-8988-8352	Test Type:	Survival (96h)	Analyst:	<i>Not Applicable</i>						
Start Date:	17 Nov-21 16:18	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	Ⓐ Diluted Natural Seawater						
Ending Date:	21 Nov-21 15:15	Species:	Menidia beryllina	Brine:	Not Applicable						
Duration:	95h	Source:	Aquatic Biosystems, CO	Age:	10d						
Sample ID:	10-5143-6858	Code:	21-1249	Client:	Cardno Hawaii						
Sample Date:	15 Nov-21 11:55	Material:	Ⓑ Stormwater <i>dry weather sample</i>	Project:	ADC Kekaha WQ Monitoring						
Receive Date:	17 Nov-21 10:10	Source:	Cardno Hawaii								
Sample Age:	52h (1 °C)	Station:	WW-3								
Comparison Summary											
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method				
21-0041-7958	96h Survival Rate	100	>100	NA	10.8%	1	Wilcoxon Rank Sum Two-Sample Test				
Test Acceptability											
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision					
21-0041-7958	96h Survival Rate	Control Resp	0.95	0.9 - NL	Yes	Passes Acceptability Criteria					
96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
0	Salt Control	4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	5.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%
96h Survival Rate Detail											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
0	Salt Control	1	0.8	1	1						
100		1	1	1	1						

Ⓐ QAS ACS 12/8/21

Ⓑ QAS ACS 4/29/22

CETIS Analytical Report

Report Date: 24 Nov-21 12:51 (p 1 of 1)
Test Code: 2111-S290 | 10-5543-4287

Inland Silverside 96-h Acute Survival Test							Nautilus Environmental (CA)				
Analysis ID: 21-0041-7958		Endpoint: 96h Survival Rate		CETIS Version: CETISv1.8.7							
Analyzed: 24 Nov-21 12:51		Analysis: Nonparametric-Two Sample		Official Results: Yes							
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result					
Angular (Corrected)	NA	C > T	NA	NA	10.8%	Passes 96h survival rate					
Wilcoxon Rank Sum Two-Sample Test											
Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)		
Salt Control		100	20	NA	1	6	1.0000	Exact	Non-Significant Effect		
ANOVA Table											
Source	Sum Squares		Mean Square		DF	F Stat	P-Value	Decision(α:5%)			
Between	0.007088488		0.007088488		1	1	0.3559	Non-Significant Effect			
Error	0.04253092		0.007088488		6						
Total	0.04961941				7						
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Mod Levene Equality of Variance		1	13.75	0.3559	Equal Variances					
Variances	Levene Equality of Variance		9	13.75	0.0240	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.7065	0.6451	0.0027	Non-normal Distribution					
96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	-5.26%
Angular (Corrected) Transformed Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
100		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	-4.63%
Graphics											
 											

Client: Cardno HI

Test Species: *M. beryllina*

Sample ID: ^{DW-1/}WW-1, WW-2, WW-3

Start Date/Time: 11/17/2021 1618

Sample Log-in No.: 21-1247, -1248, -1249

End Date/Time: 11/21/2021 1515

Test No.: 2111-5284, 5287, 5290

Tech Initials				
0	24	48	72	96
KL	RT	SP	SP	GM
KL	SP	SP	SP	GM
RT		RT		

Counts:

Readings:

Dilutions made by:

Concentration (%)	Rep	Number of Live Organisms					Salinity (ppt)					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	29.6	29.9	29.9	30.0	30.1	24.4	24.6	24.4	25.5	25.4	6.9	5.7	6.1	5.7	6.0	7.97	7.86	7.92	7.84	7.86
	B	5	5	5	5	5			30.0					25.2					5.5					7.83		
	C	5	5	5	5	5																				
	D	5	5	5	5	5																				
Salt Control	A	5	5	5	5	5	30.2	30.5	30.4	30.6	30.8	24.1	24.9	24.5	25.9	25.6	6.8	5.7	5.8	5.7	6.0	8.19	8.10	8.14	8.11	8.07
	B	5	4	4	4	4			30.8					25.4					5.5					8.07		
	C	5	5	5	5	5																				
	D	5	5	5	5	5																				
100% Dw-1/WW-1	A	5	5	5	4	4	29.6	29.6	29.5	29.7	29.7	25.6	25.6	24.5	26.0	25.3	7.0	5.6	6.8	5.5	5.9	7.86	8.01	7.91	8.06	8.20
	B	5	5	5	5	5			29.9					25.5					5.3					8.09		
	C	5	5	5	5	5																				
	D	5	5	5	5	5																				
100% WW-2	A	5	5	5	5	5	31.2	31.4	31.2	31.3	31.5	24.3	25.0	24.3	26.6	25.6	6.9	5.3	6.9	5.0	5.4	7.37	7.75	7.42	7.88	7.84
	B	5	5	5	5	5			31.3					25.5					5.1					7.90		
	C	5	5	5	5	5																				
	D	5	5	5	5	5																				
100% WW-3	A	5	5	5	5	5	29.5	29.8	29.7	30.1	30.6	24.1	24.9	24.4	25.7	25.3	7.2	5.3	6.8	5.3	5.9	7.89	7.97	7.94	8.12	8.23
	B	5	5	5	5	5			30.1					25.3					5.4					8.17		
	C	5	5	5	5	5																				
	D	5	5	5	5	5																				
	A																									
	B																									
	C																									
	D																									
	A																									
	B																									
	C																									
	D																									

Initial Counts QC'd by: HH/ISP

Initiated by: KL

Environmental Chamber: A

Animal Source/Date Received: ABS 11/17/21

Age at Initiation: 10 days

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

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) (X) Q22/11/21

QC Check: JU 11/24/21

Final Review:

Feeding Times				
0	24	48	72	96
AM: 085	0830	0830	0830	0830
PM: 140				

AC 12/8/21

Mysid Shrimp

CETIS Summary Report

Report Date: 24 Nov-21 12:58 (p 1 of 1)
Test Code: 2111-S285 | 06-0860-5733

Mysid 96-h Acute Survival Test						Nautilus Environmental (CA)					
Batch ID:	10-4969-9229	Test Type:	Survival (96h)	Analyst:	Not Applicable						
Start Date:	17 Nov-21 17:08	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	(b) Diluted Natural Seawater						
Ending Date:	21 Nov-21 15:20	Species:	Americamysis bahia	Brine:	Not Applicable						
Duration:	94h	Source:	Aquatic Biosystems, CO	Age:	(b) 10d 5 days						
Sample ID:	00-7992-8413	Code:	21-1247	Client:	Cardno Hawaii						
Sample Date:	15 Nov-21 13:30	Material:	Effluent Sample Stormwater (A) (C)	Project:	ADC Kekaha WQ Monitoring						
Receive Date:	17 Nov-21 10:10	Source:	Cardno Hawaii Dry weather sample								
Sample Age:	52h (1 °C)	Station:	DW-1/WW-1								
Comparison Summary											
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method				
16-3493-0437	96h Survival Rate	100	>100	NA	10.8%	1	Wilcoxon Rank Sum Two-Sample Test				
Test Acceptability											
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision					
16-3493-0437	96h Survival Rate	Control Resp	0.95	0.9 - NL	Yes	Passes Acceptability Criteria					
96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
0	Salt Control	4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	5.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%
96h Survival Rate Detail											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
0	Salt Control	1	1	1	0.8						
100		1	1	1	1						

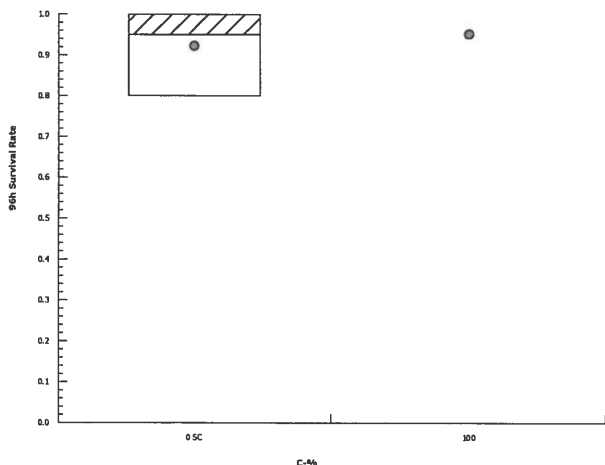
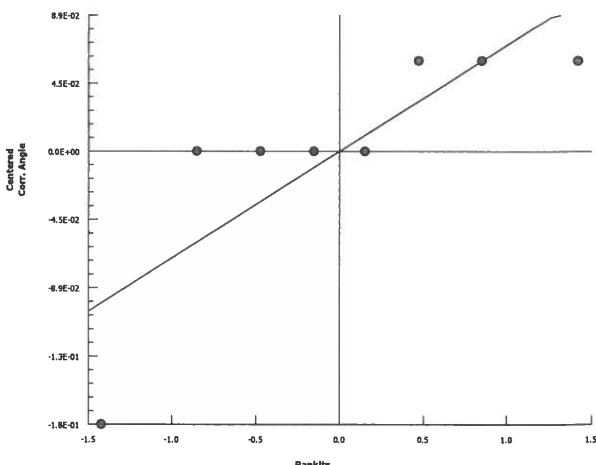
(A) Q18 JCL 11/24/21

(B) Q18 JCL 12/6/21

(C) Q18 JCL 1/29/22

CETIS Analytical Report

Report Date: 24 Nov-21 12:58 (p 1 of 1)
Test Code: 2111-S285 | 06-0860-5733

Mysid 96-h Acute Survival Test							Nautilus Environmental (CA)				
Analysis ID: 16-3493-0437		Endpoint: 96h Survival Rate		CETIS Version: CETISv1.8.7							
Analyzed: 24 Nov-21 12:58		Analysis: Nonparametric-Two Sample		Official Results: Yes							
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result					
Angular (Corrected)	NA	C > T	NA	NA	10.8%	Passes 96h survival rate					
Wilcoxon Rank Sum Two-Sample Test											
Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)		
Salt Control		100	20	NA	1	6	1.0000	Exact	Non-Significant Effect		
ANOVA Table											
Source	Sum Squares		Mean Square		DF	F Stat	P-Value	Decision(α:5%)			
Between	0.007088488		0.007088488		1	1	0.3559	Non-Significant Effect			
Error	0.04253092		0.007088488		6						
Total	0.04961941				7						
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Mod Levene Equality of Variance		1	13.75	0.3559	Equal Variances					
Variances	Levene Equality of Variance		9	13.75	0.0240	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.7065	0.6451	0.0027	Non-normal Distribution					
96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	-5.26%
Angular (Corrected) Transformed Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
100		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	-4.63%
Graphics											
 											

CETIS Summary Report

Report Date: 24 Nov-21 13:02 (p 1 of 1)

Test Code: 2111-S288 | 02-5897-0798

Mysid 96-h Acute Survival Test				Nautilus Environmental (CA)							
Batch ID:	20-6418-7665	Test Type:	Survival (96h)	Analyst:	Not Applicable						
Start Date:	17 Nov-21 17:08	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	Diluted Natural Seawater						
Ending Date:	21 Nov-21 15:20	Species:	Americamysis bahia	Brine:	Not Applicable						
Duration:	94h	Source:	Aquatic Biosystems, CO	Age:	6-100 5L						
Sample ID:	11-7158-7422	Code:	21-1248	Client:	Cardno Hawaii						
Sample Date:	15 Nov-21 13:30	Material:	Effluent Sample	Project:	ADC Kekaha WQ Monitoring						
Receive Date:	17 Nov-21 10:10	Source:	Cardno Hawaii		Dry weather sample						
Sample Age:	52h (1 °C)	Station:	WW-2								
Comparison Summary											
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method				
05-7240-4121	96h Survival Rate	100	>100	NA	14.5%	1	Wilcoxon Rank Sum Two-Sample Test				
Test Acceptability											
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision					
05-7240-4121	96h Survival Rate	Control Resp	0.95	0.9 - NL	Yes	Passes Acceptability Criteria					
96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
0	Salt Control	4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	5.0%
100		4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	5.0%
96h Survival Rate Detail											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
0	Salt Control	1	1	1	0.8						
100		1	1	0.8	1						

Ⓐ Q18 JK 11/24/21

Ⓑ Q18 ACS 12/8/21

Ⓒ Q18 ACS 4/29/22

CETIS Analytical Report

Report Date: 24 Nov-21 13:02 (p 1 of 1)
 Test Code: 2111-S288 | 02-5897-0798

Mysid 96-h Acute Survival Test				Nautilus Environmental (CA)		
Analysis ID:	05-7240-4121	Endpoint:	96h Survival Rate	CETIS Version:	CETISv1.8.7	
Analyzed:	24 Nov-21 13:02	Analysis:	Nonparametric-Two Sample	Official Results:	Yes	

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	14.5%	Passes 96h survival rate

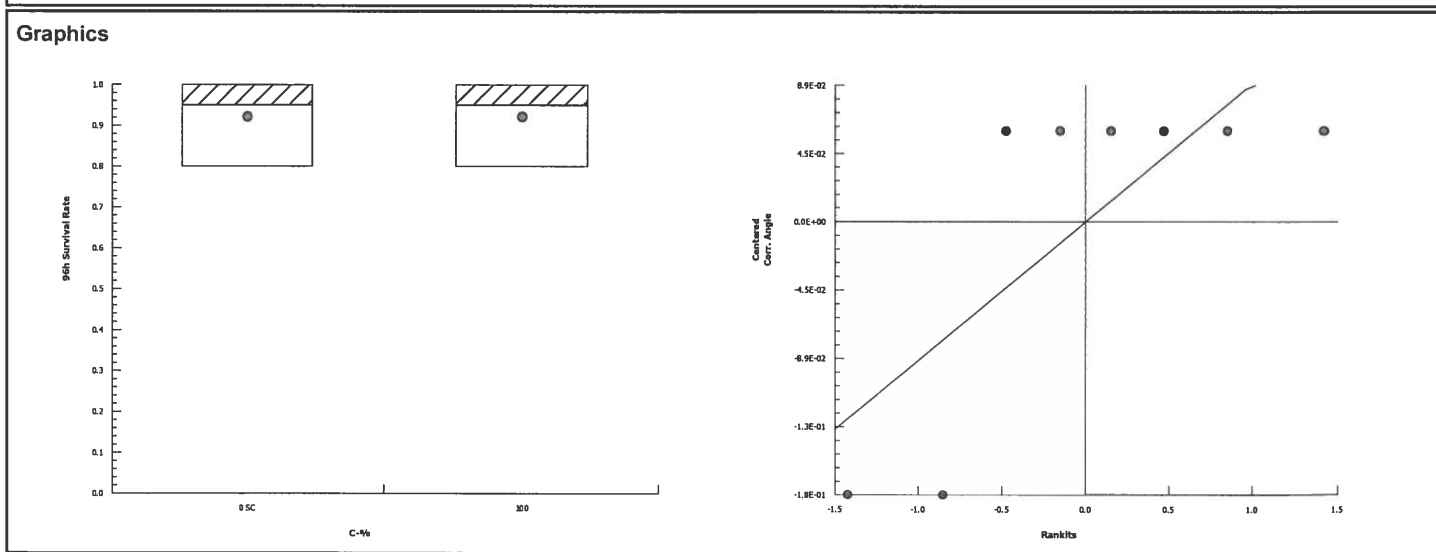
Wilcoxon Rank Sum Two-Sample Test									
Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Salt Control		100	18	NA	2	6	0.7857	Exact	Non-Significant Effect

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	0.08506185	0.01417698	6			
Total	0.08506185		7			

Distributional Tests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1	47.47	1.0000	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.5659	0.6451	<0.0001	Non-normal Distribution

96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%
100		4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%

Angular (Corrected) Transformed Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
100		4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%



CETIS Summary Report

Report Date: 24 Nov-21 13:04 (p 1 of 1)
 Test Code: 2111-S291 | 10-4205-5524

Mysid 96-h Acute Survival Test						Nautilus Environmental (CA)					
Batch ID:	11-7096-1554	Test Type:	Survival (96h)	Analyst:	Not Applicable						
Start Date:	17 Nov-21 17:08	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	Ⓟ Diluted Natural Seawater						
Ending Date:	21 Nov-21 15:20	Species:	Americamysis bahia	Brine:	Not Applicable						
Duration:	94h	Source:	Aquatic Biosystems, CO	Age:	Ⓟ 100 SD						
Sample ID:	10-4404-2597	Code:	21-1249	Client:	Cardno Hawaii						
Sample Date:	15 Nov-21 11:55	Material:	Effluent Sample Stormwater	Project:	ADC Kekaha WQ Monitoring						
Receive Date:	17 Nov-21 10:10	Source:	Cardno Hawaii								
Sample Age:	53h (1 °C)	Station:	WW-3								
Comparison Summary											
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method				
07-6921-1622	96h Survival Rate	100	>100	NA	15.6%	1	Equal Variance t Two-Sample Test				
Test Acceptability											
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision					
07-6921-1622	96h Survival Rate	Control Resp	0.95	0.9 - NL	Yes	Passes Acceptability Criteria					
96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
0	Salt Control	4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	5.0%
100		4	0.9	0.7163	1	0.8	1	0.05774	0.1155	12.83%	10.0%
96h Survival Rate Detail											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
0	Salt Control	1	1	1	0.8						
100		1	0.8	1	0.8						

Ⓟ Q18 JCU 11/24/21

Ⓟ Q18 ACS 12/8/21

Ⓟ Q18 ACS 4/29/22

CETIS Analytical Report

Report Date: 24 Nov-21 13:04 (p 1 of 1)
Test Code: 2111-S291 | 10-4205-5524

Mysid 96-h Acute Survival Test				Nautilus Environmental (CA)		
Analysis ID:	07-6921-1622	Endpoint:	96h Survival Rate	CETIS Version:	CETISv1.8.7	
Analyzed:	24 Nov-21 13:04	Analysis:	Parametric-Two Sample	Official Results:	Yes	

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	15.6%	Passes 96h survival rate

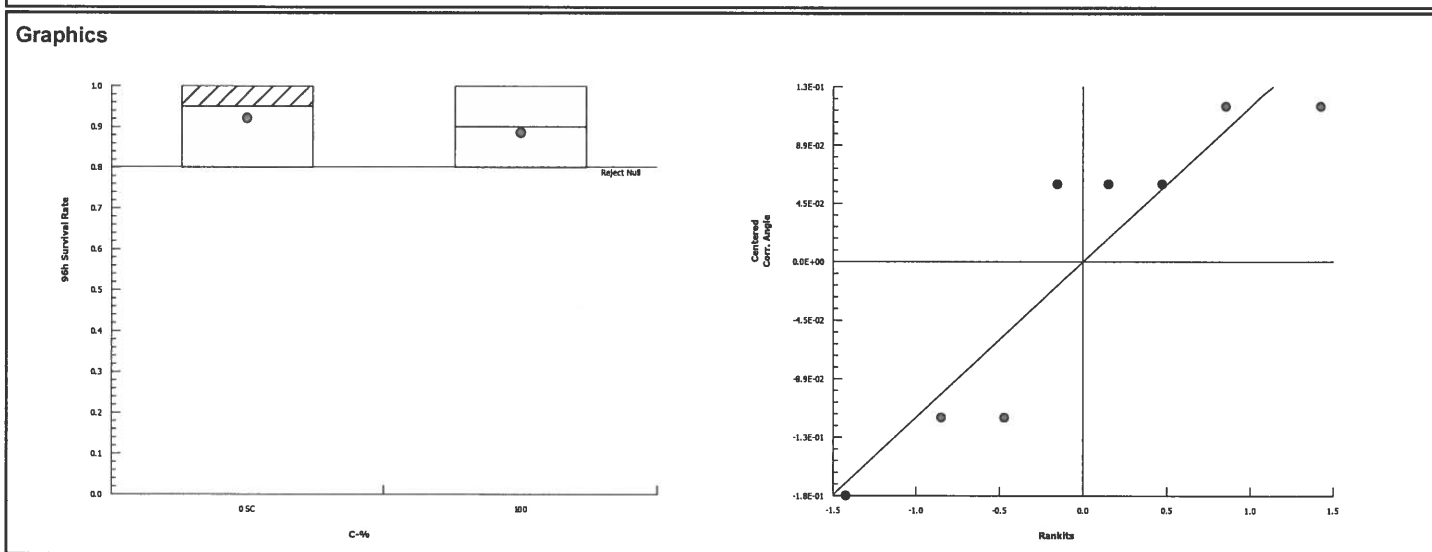
Equal Variance t Two-Sample Test									
Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Salt Control		100	0.6547	1.943	0.177	6	0.2685	CDF	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.007088488	0.007088488	1	0.4286	0.5370	Non-Significant Effect
Error	0.09923882	0.0165398	6			
Total	0.1063273		7			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Variance Ratio F	1.333	47.47	0.8187	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.8283	0.6451	0.0570	Normal Distribution	

96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%
100		4	0.9	0.7163	1	0.9	0.8	1	0.05774	12.83%	5.26%

Angular (Corrected) Transformed Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
100		4	1.226	1.007	1.445	1.226	1.107	1.345	0.06874	11.21%	4.63%



Client: Cardno HI

Test Species: *A. bahia*

Sample ID: ^{DW-1} WW-1, WW-2, WW-3

Start Date/Time: 11/17/2021 1708

Sample Log-in No.: 21-1247, -1248, -1249

End Date/Time: 11/21/2021 1520

Test No.: 2111-5285, 5288, 5291

Tech Initials				
0	24	48	72	96
PL	RT	SP	SP	GM
KL	SP	SP	SP	GM

Counts:

Readings:

Dilutions made by: RT RT

Concentration (%)	Rep	Number of Live Organisms					Salinity (ppt)					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	29.6	29.9	29.6	30.1	30.8	24.4	24.5	24.9	25.2	25.2	6.9	6.1	6.2	5.7	6.0	7.95	7.87	7.96	7.80	7.86
	B	5	5	5	5	5			30.3					25.4					5.3					7.78		
	C	5	5	5	5	5																				
	D	5	5	5	5	5																				
Salt Control	A	5	5	5	5	5	30.3	30.5	30.2	30.8	30.9	24.1	24.8	24.7	25.2	25.2	6.9	6.0	6.1	5.4	6.0	8.18	8.11	8.17	8.09	8.03
	B	5	5	5	5	5			30.7					25.7					5.2					8.04		
	C	5	5	5	5	5																				
	D	5	5	5	4	4																				
100% DW-1 / WW-1	A	5	5	5	5	5	29.5	29.7	29.6	29.9	30.6	25.9	24.8	24.6	25.3	25.2	7.0	5.9	6.4	5.6	6.0	7.87	8.01	7.92	8.07	8.20
	B	5	5	5	5	5			29.7					25.7					5.2					8.11		
	C	5	5	5	5	5																				
	D	5	5	5	5	5																				
100% WW-2	A	5	5	5	5	5	31.2	31.3	31.2	31.6	31.9	24.0	24.8	24.5	25.2	25.2	7.0	5.4	6.6	5.0	5.3	7.30	7.74	7.41	7.86	7.85
	B	5	5	5	5	5			31.2					25.6					5.0					7.77		
	C	5	5	5	4	4																				
	D	5	5	5	5	5																				
100% WW-3	A	5	5	5	5	5	29.6	29.9	29.8	30.4	30.7	24.1	24.7	24.7	25.3	25.3	7.2	5.8	6.6	5.3	5.9	7.91	8.02	7.89	8.10	8.22
	B	5	5	5	5	4			30.0					25.5					5.0					8.18		
	C	5	5	5	5	5																				
	D	5	5	5	5	4																				
	A																									
	B																									
	C																									
	D																									
	A																									
	B																									
	C																									
	D																									

Initial Counts QC'd by: SR

Initiated by: KL

Environmental Chamber: A

Animal Source/Date Received: ABS 11/16/21

Age at Initiation: 54 days

Animal Acclimation Qualifiers (circle all that apply):

Q22 / Q23 / Q24 / none

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) 9/16/21 11/17/21

QC Check:

3u 11/24/21

Final Review:

Feeding Times				
0	24	48	72	96
AM:	0830	0830	0900	
PM:	1710	1700	1715	1600

Appendix B

Sample Check-In Information

Client:

Cardno^{GS} HI

Tests Performed:

Acute tap smell, meridia
+ mysid

Project:

ADC water quality
monitoring

Test ID No.(s):

2111-S283 to S291

Sample Descriptions:

- 1) no color, clear, no odor, no debris
- 2) light yellow, clear, no odor, no debris
- 3) no color, clear, no odor, no debris
- 4)

Sample ID:	1) WW-1 WW-1	2) WW-2	3) WW-3	4)
Log-in No. (21-xxxx):	1247	1248	1249	
Sample Collection Date & Time:	11/15/21 1330 ^{PT}	11/15/21 1140 ^{PT}	11/15/21 1155 ^{PT}	
Sample Receipt Date & Time:	11/17/21 1010	11/17/21 1010	11/17/21 1010	
Number of Containers & Container Type:	2x4L cub.s	2x4L cub.s	2x4L cub.s	
Approx. Total Volume Received (L):	~8	~8	~8	
Check-in Temp (°C)	1.0	1.0	1.0	
Temperature OK? ¹	(Y) N	(Y) N	(Y) N	Y N
DO (mg/L)	9.0	9.8	9.6	
pH (units)	7.53	7.43	7.79	
Conductivity (µS/cm)	6350	—	9700	
Salinity (ppt)	3.5	30.9	5.4	
Alkalinity (mg/L) ²	138	156	167	
Hardness (mg/L) ^{2,3}	—	—	—	
Total Chlorine (mg/L)	20.02	20.02	20.02	
Technician Initials	GM	GM	GM	

Freshwater Tests:

Control/Dilution Water Source: 8:2 Coast Other: _____ Alkalinity: _____ Hardness: _____
Additional Control? Y N = _____ Alkalinity: _____ Hardness: _____

Marine Tests:

Control/Dilution Water Source: AB SW ART SW Other: _____ Alkalinity: 98 Salinity: 30ppt
Additional Control? (Y) N = Art SW Alkalinity: 150 Salinity: 30ppt
Sample Salted w/ artificial salt? (Y) N If yes, target ppt and source? 30ppt - Eastman Ocean
Sample salted w/ brine? Y (N) If yes, target ppt? WW-1 & WW-3 only

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

Additional Comments:

Q18 GM 11/17/21 Q18 ACS 12/8/21

QC Check: JL 11/24/21

COC Complete?

(Y) N

Filtration?

Y (N)

Initials:

1) 2) 3) 4)

Pore Size:

Organisms or Debris

pH Adjustment?

Y (N)

Initial pH:

Amount of HCl added:

Final pH:

Cl₂ Adjustment?

Y (N)

Initial Free Cl₂:

STS added:

Final Free Cl₂:

Sample Aeration?

Y (N)

Initial D.O.

Duration & Rate

Final D.O.

Measure NH₃ via test strip (circle one):

(Y) N

NH₃ Strip Result: 1: 0.5 2: 0.5 3: 0.5

*(If 6 or more, notify PM)

Subsamples For Additional Chemistry Required? Y (N)

NH₃

Other

Tech Initials:

Final Review:

ACS 12/8/21

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 11/15/21 11/17/21
Page 1 of 1

Sample Collection By:							ANALYSES REQUIRED							Receipt Temperature (°C)
Report to:				Invoice To:			Enthalpy Matrix Codes:							
Company Cardno-GS 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				Same as Report to ☒ Company Address City/State/Zip Contact Phone Email			G = Grab C = Composite FW = Freshwater SW = Seawater Sed = Sediment STRM = Stormwater GW = Groundwater WW = Wastewater O = Other (specify)							
SAMPLE ID	SAMPLE		MATRIX CODE (FW, SW, Sed, STRM, GW, WW, O)	Container		COMMENTS	P. promelas 96-hr Acute Survival	C. dubia 96-hr Acute Survival	H. azteca 96-hr Acute Survival	A. affinis 96-hr Acute Survival	M. berylina 96-hr Acute Survival	A. bahia 96-hr Acute Survival		
	Date	Time		Type (G or C)	Type								Qty	
1 DW-1/WW-1	11/15/21	11:30 HST	G	STRM	2.5 Gal Plastic	2	Marine Species				X	X	X	1.0
2 WW-2	11/15/21	09:40 HST	G	STRM	2.5 Gal Plastic	2	Marine Species				X	X	X	1.0
3 WW-3	11/15/21	09:55 HST	G	STRM	2.5 Gal Plastic	2	Marine Species				X	X	X	1.0
4					1 gal plastic	1								
5														
6														
7														
8														
9														
10														

PROJECT INFORMATION		SAMPLE RECEIPT		1) RELINQUISHED BY (CLIENT)		2) RECEIVED BY (COURIER)	
Project Name:	ADC Water Quality Monitoring	Total No. of Containers	6	(Signature)	<i>[Signature]</i>	(Time)	14:00
PO No.:		Received Good Condition?	Y	(Printed Name)	Ben Berridge	(Date)	11/16/21
Shipped Via:	Fedex	Matches Test Schedule?	Y	(Company)	Cardno	(Company)	

SPECIAL INSTRUCTIONS/COMMENTS:		3) RELINQUISHED BY (COURIER)		4) RECEIVED BY (LABORATORY)	
		(Signature)		(Signature)	<i>[Signature]</i>
		(Time)		(Time)	1010
		(Printed Name)	FedEx	(Date)	11/17/21
		(Company)		(Company)	EA-SD

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 $\leq 110\%$
- 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

Pacific Topsmelt 96-h Acute Survival Test

Nautilus Environmental (CA)

Test Type: Survival (96h)

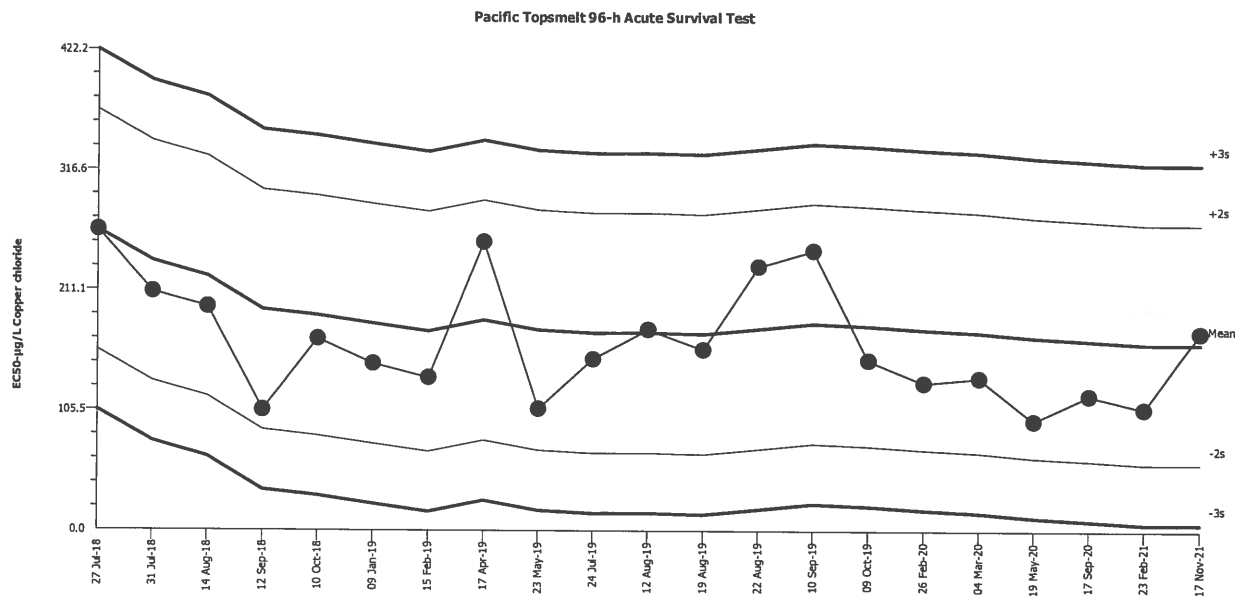
Organism: Atherinops affinis (Topsmelt)

Material: Copper chloride

Protocol: EPA/821/R-02-012 (2002)

Endpoint: 96h Survival Rate

Source: Reference Toxicant-REF



Mean: 164.2

Count: 20

-2s Warning Limit: 58.69

-3s Action Limit: 5.93

Sigma: 52.76

CV: 32.10%

+2s Warning Limit: 269.7

+3s Action Limit: 322.5

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	Jul	27	15:45	263.9	99.7	1.89			14-8822-7369	11-4350-5971
2			31	16:30	209.6	45.39	0.8603			19-5107-0005	20-6864-5330
3		Aug	14	16:00	196.4	32.18	0.61			15-6494-9229	17-8173-7294
4		Sep	12	14:00	105.6	-58.58	-1.11			16-1211-7168	05-2683-6884
5		Oct	10	16:55	168.2	3.979	0.07542			03-4460-7421	02-8297-4115
6	2019	Jan	9	16:00	146.4	-17.79	-0.3372			16-8541-8400	01-0716-9806
7		Feb	15	16:10	134	-30.2	-0.5724			08-0425-5661	18-0762-3864
8		Apr	17	17:50	253.5	89.35	1.693			05-1475-1452	18-1058-7085
9		May	23	15:30	106.6	-57.57	-1.091			03-2154-6851	19-3512-2662
10		Jul	24	16:25	150.4	-13.79	-0.2614			02-4547-9337	03-4444-2456
11		Aug	12	16:15	176.5	12.27	0.2326			05-6999-0080	19-2452-0933
12			19	19:30	158.7	-5.46	-0.1035			00-1616-6988	16-4823-3084
13			22	16:45	232	67.83	1.286			14-6253-4066	09-6589-6472
14		Sep	10	11:15	246.2	82.03	1.555			01-3190-7470	00-5901-5932
15		Oct	9	15:40	149.6	-14.6	-0.2768			12-2483-9958	16-7314-6828
16	2020	Feb	26	15:20	129.7	-34.52	-0.6542			04-4275-3329	19-1366-8841
17		Mar	4	17:15	134.1	-30.12	-0.5709			09-0186-0501	09-2347-5750
18		May	19	17:20	96.59	-67.61	-1.281			09-8977-8612	01-6220-7123
19		Sep	17	14:25	118.9	-45.28	-0.8582			07-7701-0607	03-4458-7869
20	2021	Feb	23	16:10	107.2	-57.02	-1.081			15-2183-5128	00-7227-8818
21		Nov	17	17:00	174.1	9.91	0.1878			10-0193-2387	14-5680-1838

CETIS QC Plot

Report Date: 10 Nov-21 09:44 (1 of 1)

Inland Silverside 96-h Acute Survival Test

Nautilus Environmental (CA)

Test Type: Survival (96h)

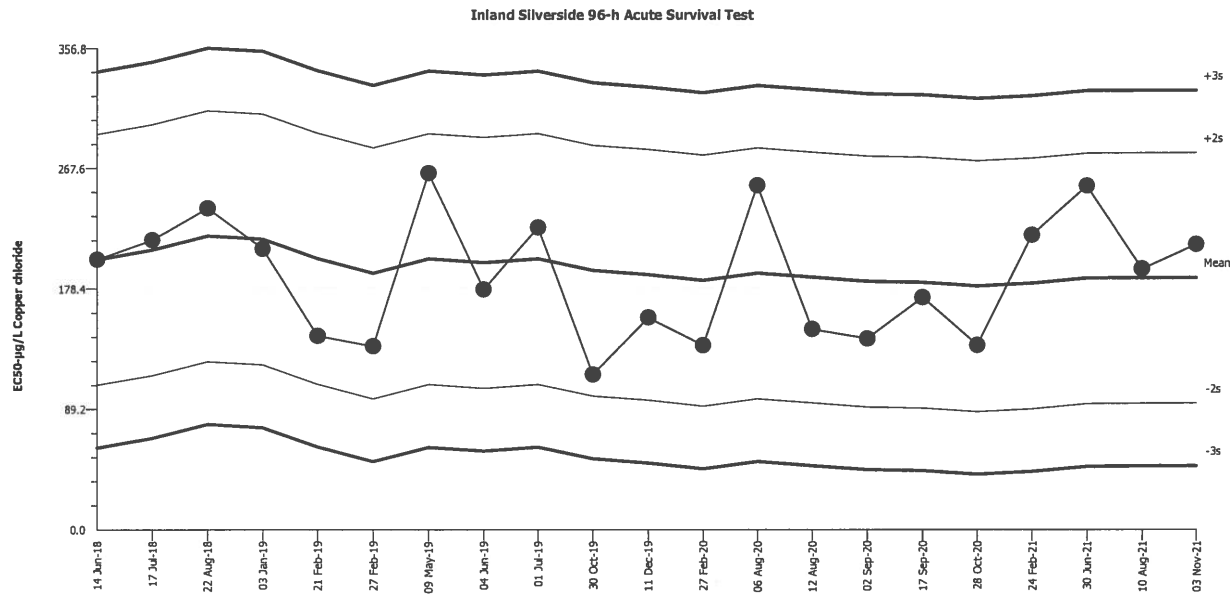
Organism: Menidia beryllina (Inland Silverside)

Material: Copper chloride

Protocol: EPA/821/R-02-012 (2002)

Endpoint: 96h Survival Rate

Source: Reference Toxicant-REF



Mean: 186.6

Count: 20

-2s Warning Limit: 93.67

-3s Action Limit: 47.2

Sigma: 46.47

CV: 24.90%

+2s Warning Limit: 279.6

+3s Action Limit: 326

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	Jun	14	14:35	200	13.4	0.2884			01-9952-0614	00-3575-1747
2		Jul	17	14:30	214.4	27.75	0.5973			11-1445-3115	12-3693-5336
3		Aug	22	16:25	237.8	51.24	1.103			08-6172-7555	12-4329-0617
4	2019	Jan	3	16:50	207.9	21.25	0.4573			16-0506-4055	11-1190-1934
5		Feb	21	16:05	143.5	-43.12	-0.9279			10-4228-2556	08-7111-9529
6			27	16:25	135.8	-50.83	-1.094			14-0947-0420	00-4247-8099
7		May	9	19:10	263.9	77.3	1.663			03-9779-6453	09-3747-7536
8		Jun	4	14:50	177.8	-8.845	-0.1903			00-2136-1210	01-4264-5145
9		Jul	1	15:55	223.6	37.02	0.7965			04-4319-5710	17-4098-1084
10		Oct	30	14:45	114.9	-71.73	-1.544			05-0159-0485	07-6888-5964
11		Dec	11	16:30	156.9	-29.68	-0.6388			11-0566-6524	14-4935-0865
12	2020	Feb	27	17:15	136.4	-50.24	-1.081			00-2639-4829	10-5059-8408
13		Aug	6	16:00	254.9	68.31	1.47			13-3377-6823	09-5433-0150
14			12	15:20	148.4	-38.24	-0.8229			02-5307-3356	11-5066-6205
15		Sep	2	15:25	141.4	-45.18	-0.9722			09-8373-9144	18-7650-2455
16			17	14:45	172	-14.64	-0.3151			07-8442-4358	02-9347-5784
17		Oct	28	16:35	136.6	-50	-1.076			10-9446-3954	10-4215-8111
18	2021	Feb	24	17:30	218.2	31.59	0.6798			11-4316-4077	02-1492-4727
19		Jun	30	16:05	254.9	68.31	1.47			01-4075-9626	19-2668-9340
20		Aug	10	14:30	193.2	6.587	0.1418			20-1130-3481	09-5748-8802
21		Nov	3	17:15	211.2	24.65	0.5304			01-2577-3416	13-6085-8539

Mysid 96-h Acute Survival Test

Nautilus Environmental (CA)

Test Type: Survival (96h)

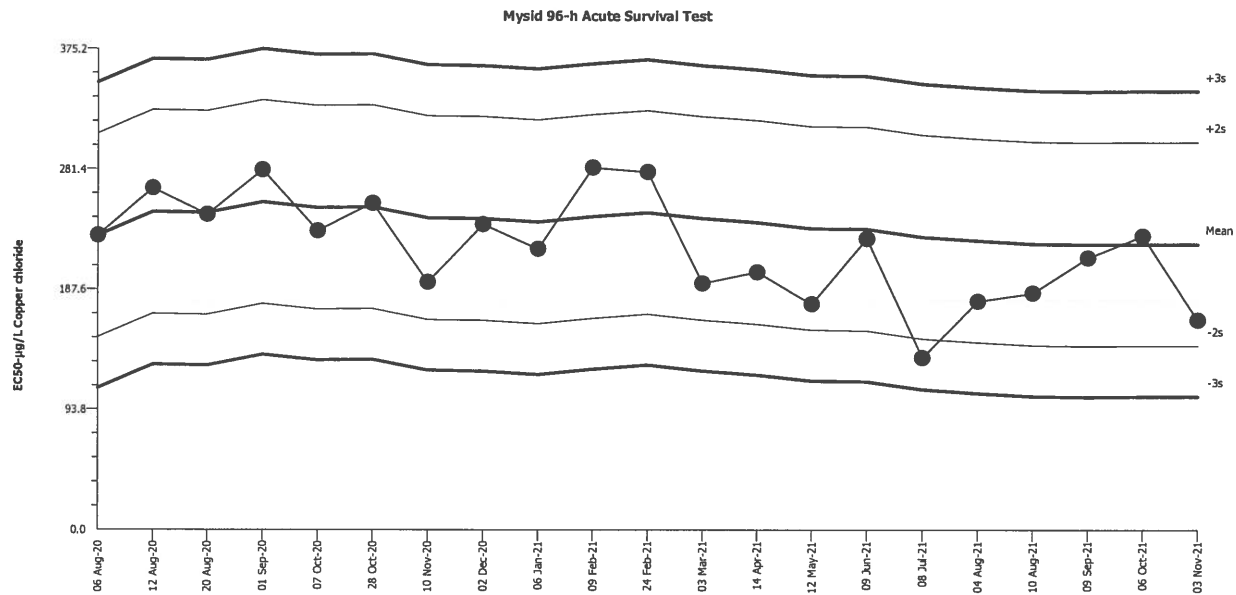
Organism: Americamysis bahia (Opossum Shrimp)

Material: Copper chloride

Protocol: EPA/821/R-02-012 (2002)

Endpoint: 96h Survival Rate

Source: Reference Toxicant-REF



Mean: 223
Sigma: 39.78

Count: 20
CV: 17.80%

-2s Warning Limit: 143.4
+2s Warning Limit: 302.5

-3s Action Limit: 103.6
+3s Action Limit: 342.3

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2020	Aug	6	16:45	229.7	6.74	0.1694			12-3621-4083	04-5216-6972
2			12	15:00	266.7	43.71	1.099			09-6865-4747	15-4661-4894
3			20	15:10	246.2	23.23	0.5839			11-8933-3936	07-7149-7380
4		Sep	1	17:40	280.9	57.91	1.456			15-1725-8445	02-3217-4494
5		Oct	7	16:50	233.3	10.31	0.2591			10-9302-4751	10-8015-5811
6			28	17:30	254.9	31.91	0.8022			05-5138-7579	10-2662-3199
7		Nov	10	16:15	193.2	-29.81	-0.7494			18-2802-6809	21-3845-2247
8		Dec	2	16:15	238.4	15.45	0.3883			05-6239-9486	13-2389-5949
9	2021	Jan	6	15:40	219.1	-3.902	-0.09808			03-0517-8333	01-7272-9774
10		Feb	9	16:35	282.8	59.84	1.504			18-0066-8687	07-5637-1896
11			24	17:00	279.3	56.33	1.416			12-7982-0378	10-2127-5639
12		Mar	3	16:20	192.2	-30.76	-0.7734			19-5823-8705	16-3495-3098
13		Apr	14	16:15	201	-21.97	-0.5523			12-9280-6414	13-7392-7597
14		May	12	17:30	176	-46.97	-1.181			12-7732-0164	05-0673-2773
15		Jun	9	16:00	227.2	4.239	0.1066			17-2171-6769	11-3085-8431
16		Jul	8	16:10	134.1	-88.92	-2.235	(-)		11-1635-1099	02-4153-3890
17		Aug	4	17:20	178.2	-44.82	-1.127			12-8033-5320	14-9454-0803
18			10	17:15	184.6	-38.37	-0.9646			01-4163-2041	16-5453-9162
19		Sep	9	16:50	212.2	-10.77	-0.2707			19-9503-3728	00-7298-1641
20		Oct	6	17:00	229.4	6.396	0.1608			21-3339-5883	18-5433-4447
21		Nov	3	17:40	163.6	-59.36	-1.492			03-0676-2868	02-4632-6423