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Cover Page

Order ID : Q2198

Project ID : Amtrak Sawtooth Bridges 2025

Client : Portal Partners Tri-Venture

Lab Sample Number	Client Sample Number
Q2198-01	B-202-SB02
Q2198-02	B-202-SB02
Q2198-03	B-207-SB02
Q2198-04	B-207-SB02
Q2198-05	B-202-GW01

I certify that the data package is in compliance with the terms and conditions of the contract,both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : _____

Date: 6/12/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

284 Sheffield Street, Mountainside NJ 07092 Tel. 908-789-8900 Fax: 908-789-8922

DATA REPORTING QUALIFIERS- ORGANIC

For reporting results, the following " Results Qualifiers" are used:

Value	If the result is a value greater than or equal to the detection limit, report the value
U	Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, i.e. "10 U". This is not necessarily the instrument detection limit attainable for this particular sample based on any concentration or dilution that may have been required.
ND	Indicates the analyte was analyzed for, but not detected
J	Indicates an estimated value**.** This flag is used: (1) When estimating a concentration for a tentatively identified compound (library search hits, where a 1:1 response is assumed.) (2) When the mass spectral data indicated the identification, however the result was less than the specified detection limit greater than zero. If the detection limit was 10ug/L and a concentration of 3 ug/L was calculated report as 3 J. This is flag is used when similar situation arise on any organic parameter i.e. Pest, PCB and others.
B	Indicates the analyte was found in the blank as well as the sample report as "12 B".
E	Indicates the analyte 's concentration exceeds the calibrated range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
P	This flag is used for Pesticide/PCB target analyte when there is >25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form 1 and flagged with a "P".
N	This flag indicates presumptive evidence of a compound. This is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It applies to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the flag is not used.
A	This flag indicates that a Tentatively Identified Compound is a suspected aldol-condensation product.
Q	Indicates the LCS did not meet the control limits requirements

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APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: **Q2198**

	Completed
For thorough review, the report must have the following:	
GENERAL:	
Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)	✓
Check chain-of-custody for proper relinquish/return of samples	✓
Is the chain of custody signed and complete	✓
Check internal chain-of-custody for proper relinquish/return of samples /sample extracts	✓
Collect information for each project id from server. Were all requirements followed	✓
COVER PAGE:	
Do numbers of samples correspond to the number of samples in the Chain of Custody on login page	✓
Do lab numbers and client Ids on cover page agree with the Chain of Custody	✓
CHAIN OF CUSTODY:	
Do requested analyses on Chain of Custody agree with form I results	✓
Do requested analyses on Chain of Custody agree with the log-in page	✓
Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody	✓
Were the samples received within hold time	✓
Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle	✓
ANALYTICAL:	
Was method requirement followed?	✓
Was client requirement followed?	✓
Does the case narrative summarize all QC failure?	✓
All runlogs and manual integration are reviewed for requirements	✓
All manual calculations and /or hand notations verified	✓

QA Review Signature: **MAHESH PATEL** **Date:** **06/12/2025**

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LAB CHRONICLE

OrderID:	Q2198	**OrderDate:**	6/3/2025 2:31:00 PM
Client:	Portal Partners Tri-Venture	**Project:**	Amtrak Sawtooth Bridges 2025
Contact:	Joseph Krupansky	**Location:**	N22,VOA Ref. #2 Soil,VOA Ref. #3 Water

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q2198-01	**B-202-SB02**	**SOIL**			**05/31/25**			**06/03/25**
			PCB	8082A		06/04/25	06/04/25	
			TPH GC	8015D		06/10/25	06/10/25	
Q2198-02	**B-202-SB02**	**TCLP**			**05/31/25**			**06/03/25**
			TCLP Herbicide	8151A		06/06/25	06/09/25	
			TCLP Pesticide	8081B		06/06/25	06/09/25	
Q2198-03	**B-207-SB02**	**SOIL**			**06/01/25**			**06/03/25**
			TPH GC	8015D		06/10/25	06/10/25	
			PCB	8082A		06/04/25	06/04/25	
Q2198-04	**B-207-SB02**	**TCLP**			**06/01/25**			**06/03/25**
			TCLP Herbicide	8151A		06/06/25	06/09/25	
			TCLP Pesticide	8081B		06/06/25	06/09/25	
Q2198-05	**B-202-GW01**	**WATER**			**05/31/25**			**06/03/25**
			PCB	8082A		06/06/25	06/06/25	

QC SUMMARY

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SOIL TPH GC SURROGATE RECOVERY

Lab Name: Chemtech Client: Portal Partners Tri-Venture

Lab Code: CHEM Case No.: Q2198 SAS No.: Q2198 SDG No.: Q2198

EPA SAMPLE NO.	S1 TETRACOSANE-d50	S2	S3	S4	TOT OUT
PIBLK-FG016009.D	78				0
PIBLK-FG016021.D	82				0
PB168382BL	70				0
PB168382BS	75				0
B-202-SB02	82				0
B-207-SB02	51				0
BU-03-060525MS	44				0
BU-03-060525MSD	44				0

	QC LIMITS
TETRACOSANE-d50	For Water : 29-130 For Soil : 37-130

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate Diluted Out

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SOIL TPH GC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Portal Partners Tri-Venture

Lab Code: CHEM **Cas No:** Q2198 **SAS No :** Q2198 **SDG No:** Q2198

Client SampleID : BU-03-060525MS **Datafile:** FG016019.D

COMPOUND	SPIKE ADDED ug/kg	SAMPLE CONCENTRATION ug/kg	MS/MSD CONCENTRATION ug/kg	% REC	Qual	QC LIMITS
Petroleum Hydrocarbons	11421	9230	22867	119%		68-131

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SOIL TPH GC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Portal Partners Tri-Venture

Lab Code: CHEM **Cas No:** Q2198 **SAS No :** Q2198 **SDG No:** Q2198

Client SampleID : BU-03-060525MSD **Datafile:** FG016020.D

COMPOUND	SPIKE ADDED ug/kg	SAMPLE CONCENTRATION ug/kg	MS/MSD CONCENTRATION ug/kg	% REC	Qual	QC LIMITS
Petroleum Hydrocarbons	11414	9230	23299	123%		68-131

MS/MSD % Recovery RPD : 3.2

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SOIL TPH GC LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Portal Partners Tri-Venture

Lab Code: CHEM **Cas No:** Q2198 **SAS No :** Q2198 **SDG No:** Q2198

Matrix Spike - EPA Sample No : PB168382BS **Datafile:** FG016012.D

COMPOUND	SPIKE ADDED ug/kg	CONCENTRATION ug/kg	LCS/LCSD CONCENTRATION ug/kg	% REC	QC LIMITS
Petroleum Hydrocarbons	11326	0	11840	104	68-131

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4B

METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB168382BL

Lab Name: CHEMTECH Contract: PORT06

Lab Code: CHEM Case No.: Q2198 SAS No.: Q2198 SDG NO.: Q2198

Lab File ID: FG016011.D Lab Sample ID: PB168382BL

Instrument ID: FG Date Extracted: 06/10/2025

Matrix: (soil/water) Soil Date Analyzed: 06/10/25

Level: (low/med) low Time Analyzed: 15:36

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
PB168382BS	PB168382BS	FG016012.D	06/10/25
B-202-SB02	Q2198-01	FG016016.D	06/10/25
B-207-SB02	Q2198-03	FG016017.D	06/10/25
BU-03-060525MS	Q2246-01MS	FG016019.D	06/10/25
BU-03-060525MSD	Q2246-01MSD	FG016020.D	06/10/25

COMMENTS:

SAMPLE DATA

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Report of Analysis

Client:	Portal Partners Tri-Venture	Date Collected:	05/31/25
Project:	Amtrak Sawtooth Bridges 2025	Date Received:	06/03/25
Client Sample ID:	B-202-SB02	SDG No.:	Q2198
Lab Sample ID:	Q2198-01	Matrix:	SOIL
Analytical Method:	8015D TPH	% Solid:	71.9 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	TPH GC
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG016016.D	1	06/10/25 08:16	06/10/25 18:03	PB168382

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
PHC	Petroleum Hydrocarbons	9570		533	3930	ug/kg
SURROGATES						
16416-32-3	TETRACOSANE-d50	16.4		37 - 130	82%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016016.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 18:03
Operator : YP\AJ
Sample : Q2198-01
Misc :
ALS Vial : 31 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
B-202-SB02

Integration File: autoint1.e
Quant Time: Jun 11 05:53:26 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
9) S TETRACOSANE-d50 (SURR...	14.973	2014367	16.436 ug/ml
Target Compounds			

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

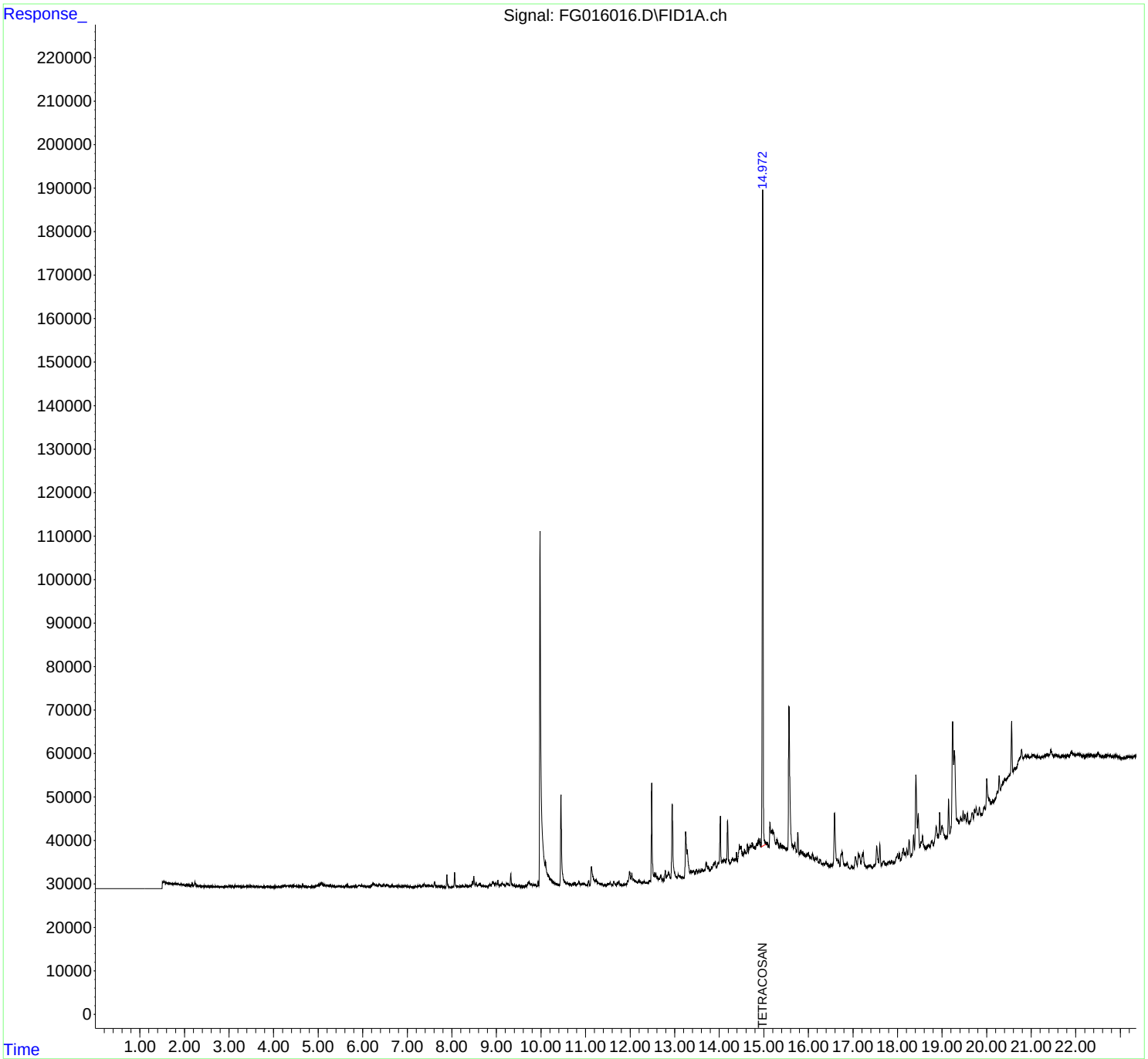
Quantitation Report (QT Reviewed)

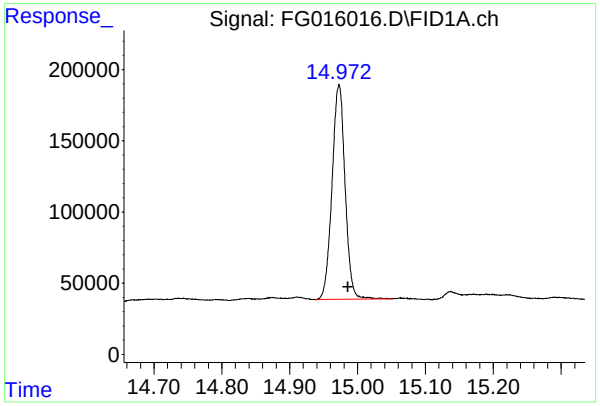
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016016.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 18:03
Operator : YP\AJ
Sample : Q2198-01
Misc :
ALS Vial : 31 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
B-202-SB02

Integration File: autoint1.e
Quant Time: Jun 11 05:53:26 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 14.973 min
Delta R.T.: -0.013 mi
Response: 2014367
Conc: 16.44 ug/m

Instrument :
FID_G
ClientSampleId :
B-202-SB02

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016016.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 18:03
Sample : Q2198-01
Misc :
ALS Vial : 31 Sample Multiplier: 1

Integration File: Sample.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Title :

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	1.942	1.924	1.945	BV	54	272	0.01%	0.001%
2	1.950	1.945	1.986	PV	142	1800	0.07%	0.006%
3	1.991	1.986	1.995	VV	57	210	0.01%	0.001%
4	1.997	1.995	2.014	VV	94	364	0.01%	0.001%
5	2.025	2.014	2.028	VV	126	464	0.02%	0.002%
6	2.033	2.028	2.042	PV	138	650	0.03%	0.002%
7	2.052	2.042	2.056	VV	97	542	0.02%	0.002%
8	2.060	2.056	2.070	VV	145	721	0.03%	0.003%
9	2.078	2.070	2.122	VV	110	2516	0.10%	0.009%
10	2.126	2.122	2.154	VV	156	1219	0.05%	0.004%
11	2.167	2.154	2.213	PV	490	8730	0.35%	0.031%
12	2.233	2.213	2.262	VV	1053	14738	0.59%	0.053%
13	2.271	2.262	2.287	VV	269	2920	0.12%	0.010%
14	2.290	2.287	2.303	VV	126	1039	0.04%	0.004%
15	2.308	2.303	2.320	VV	156	874	0.04%	0.003%
16	2.325	2.320	2.339	VV	121	692	0.03%	0.002%
17	2.342	2.339	2.360	VV	72	778	0.03%	0.003%
18	2.363	2.360	2.377	VV	100	504	0.02%	0.002%
19	2.389	2.377	2.407	VV	115	1252	0.05%	0.004%
20	2.420	2.407	2.431	VV	159	1380	0.06%	0.005%
21	2.435	2.431	2.455	VV	196	947	0.04%	0.003%
22	2.459	2.455	2.463	PV	113	348	0.01%	0.001%
23	2.467	2.463	2.517	VV	98	2465	0.10%	0.009%
24	2.522	2.517	2.528	VV	113	463	0.02%	0.002%
25	2.533	2.528	2.544	PV	90	805	0.03%	0.003%
26	2.549	2.544	2.562	VV	120	995	0.04%	0.004%
27	2.570	2.562	2.575	VV	161	741	0.03%	0.003%
28	2.579	2.575	2.607	VV	144	1811	0.07%	0.006%
29	2.612	2.607	2.628	VV	132	1048	0.04%	0.004%
30	2.632	2.628	2.638	VV	112	563	0.02%	0.002%
31	2.640	2.638	2.651	VV	159	696	0.03%	0.002%
32	2.655	2.651	2.677	VV	106	1082	0.04%	0.004%
33	2.682	2.677	2.698	PV	172	960	0.04%	0.003%
34	2.704	2.698	2.710	VV	115	584	0.02%	0.002%
35	2.732	2.710	2.745	VV	179	2422	0.10%	0.009%
36	2.748	2.745	2.779	VV	174	1950	0.08%	0.007%

rteres

37	2.784	2.779	2.792	VV	147	756	0.03%	0.003%
38	2.797	2.792	2.820	VV	144	1199	0.05%	0.004%
39	2.825	2.820	2.830	VV	116	588	0.02%	0.002%
40	2.834	2.830	2.840	VV	158	622	0.03%	0.002%
41	2.846	2.840	2.851	VV	158	678	0.03%	0.002%
42	2.860	2.851	2.868	VV	106	830	0.03%	0.003%
43	2.872	2.868	2.882	VV	155	937	0.04%	0.003%
44	2.902	2.882	2.920	VV	314	2869	0.12%	0.010%
45	2.921	2.920	2.940	VV	186	1317	0.05%	0.005%
46	2.944	2.940	2.963	VV	162	1592	0.06%	0.006%
47	2.975	2.963	2.980	VV	176	1247	0.05%	0.004%
48	3.000	2.980	3.025	VV	409	5921	0.24%	0.021%
49	3.026	3.025	3.029	VV	218	443	0.02%	0.002%
50	3.034	3.029	3.050	VV	216	1898	0.08%	0.007%
51	3.054	3.050	3.060	VV	213	846	0.03%	0.003%
52	3.064	3.060	3.069	VV	163	631	0.03%	0.002%
53	3.085	3.069	3.113	VV	182	3550	0.14%	0.013%
54	3.133	3.113	3.174	VV	342	8187	0.33%	0.029%
55	3.179	3.174	3.183	VV	197	889	0.04%	0.003%
56	3.188	3.183	3.199	VV	193	1350	0.05%	0.005%
57	3.210	3.199	3.219	VV	245	2028	0.08%	0.007%
58	3.224	3.219	3.255	VV	226	3425	0.14%	0.012%
59	3.262	3.255	3.268	VV	201	1043	0.04%	0.004%
60	3.269	3.268	3.330	VV	229	5324	0.21%	0.019%
61	3.346	3.330	3.352	VV	149	1519	0.06%	0.005%
62	3.357	3.352	3.374	VV	150	1703	0.07%	0.006%
63	3.406	3.374	3.424	VV	228	5203	0.21%	0.019%
64	3.428	3.424	3.459	VV	206	3635	0.15%	0.013%
65	3.464	3.459	3.474	VV	244	1695	0.07%	0.006%
66	3.482	3.474	3.511	VV	228	3921	0.16%	0.014%
67	3.524	3.511	3.552	VV	200	4269	0.17%	0.015%
68	3.566	3.552	3.601	VV	234	4695	0.19%	0.017%
69	3.610	3.601	3.629	VV	168	2410	0.10%	0.009%
70	3.634	3.629	3.651	VV	177	1548	0.06%	0.006%
71	3.656	3.651	3.659	VV	130	514	0.02%	0.002%
72	3.665	3.659	3.689	VV	141	1928	0.08%	0.007%
73	3.700	3.689	3.728	VV	149	2604	0.10%	0.009%
74	3.733	3.728	3.754	VV	121	1801	0.07%	0.006%
75	3.759	3.754	3.784	VV	151	2330	0.09%	0.008%
76	3.788	3.784	3.802	VV	214	1205	0.05%	0.004%
77	3.812	3.802	3.819	VV	163	1058	0.04%	0.004%
78	3.824	3.819	3.841	VV	152	1707	0.07%	0.006%
79	3.843	3.841	3.870	VV	155	1779	0.07%	0.006%
80	3.873	3.870	3.875	VV	93	305	0.01%	0.001%
81	3.880	3.875	3.914	VV	130	2317	0.09%	0.008%
82	3.922	3.914	3.941	VV	158	1804	0.07%	0.006%
83	3.942	3.941	3.978	VV	166	2068	0.08%	0.007%
84	3.988	3.978	4.009	VV	125	1552	0.06%	0.006%
85	4.014	4.009	4.018	VV	160	519	0.02%	0.002%
86	4.029	4.018	4.039	VV	144	1011	0.04%	0.004%
87	4.046	4.039	4.059	VV	118	913	0.04%	0.003%
88	4.061	4.059	4.066	VV	122	310	0.01%	0.001%
89	4.073	4.066	4.097	PV	72	866	0.03%	0.003%

90	4.122	4.097	4.132	VV	140	1717	0.07%	0.006%
91	4.204	4.132	4.217	VV	271	8434	0.34%	0.030%
92	4.236	4.217	4.260	VV	332	7389	0.30%	0.027%
93	4.264	4.260	4.268	VV	336	1413	0.06%	0.005%
94	4.305	4.268	4.309	VV	384	7935	0.32%	0.028%
95	4.315	4.309	4.345	VV	399	7224	0.29%	0.026%
96	4.349	4.345	4.354	VV	342	1659	0.07%	0.006%
97	4.362	4.354	4.377	VV	332	4001	0.16%	0.014%
98	4.384	4.377	4.404	VV	299	4557	0.18%	0.016%
99	4.416	4.404	4.431	VV	320	4505	0.18%	0.016%
100	4.439	4.431	4.453	VV	310	3416	0.14%	0.012%
101	4.458	4.453	4.461	VV	305	1234	0.05%	0.004%
102	4.479	4.461	4.495	VV	397	6309	0.25%	0.023%
103	4.500	4.495	4.526	VV	290	4347	0.18%	0.016%
104	4.529	4.526	4.574	VV	238	5985	0.24%	0.021%
105	4.577	4.574	4.582	VV	201	925	0.04%	0.003%
106	4.592	4.582	4.601	VV	229	2388	0.10%	0.009%
107	4.605	4.601	4.612	VV	224	1312	0.05%	0.005%
108	4.617	4.612	4.630	VV	188	1523	0.06%	0.005%
109	4.654	4.630	4.697	VV	586	13456	0.54%	0.048%
110	4.704	4.697	4.723	VV	211	2664	0.11%	0.010%
111	4.727	4.723	4.734	VV	191	1120	0.05%	0.004%
112	4.741	4.734	4.761	VV	194	2418	0.10%	0.009%
113	4.767	4.761	4.782	VV	169	1766	0.07%	0.006%
114	4.787	4.782	4.798	VV	170	1168	0.05%	0.004%
115	4.815	4.798	4.841	VV	177	2976	0.12%	0.011%
116	4.849	4.841	4.879	VV	186	2659	0.11%	0.010%
117	4.892	4.879	4.904	VV	181	1888	0.08%	0.007%
118	4.920	4.904	4.923	VV	218	2045	0.08%	0.007%
119	4.989	4.923	4.999	VV	553	16363	0.66%	0.059%
120	5.014	4.999	5.023	VV	577	7196	0.29%	0.026%
121	5.026	5.023	5.029	VV	563	1933	0.08%	0.007%
122	5.033	5.029	5.036	VV	680	2516	0.10%	0.009%
123	5.078	5.036	5.126	VV	891	38504	1.55%	0.138%
124	5.137	5.126	5.169	VV	528	11782	0.47%	0.042%
125	5.191	5.169	5.257	VV	497	20745	0.84%	0.074%
126	5.282	5.257	5.297	VV	494	9177	0.37%	0.033%
127	5.304	5.297	5.315	VV	372	3484	0.14%	0.012%
128	5.317	5.315	5.338	VV	373	3935	0.16%	0.014%
129	5.346	5.338	5.367	VV	270	3992	0.16%	0.014%
130	5.373	5.367	5.376	VV	220	1042	0.04%	0.004%
131	5.380	5.376	5.387	VV	234	1222	0.05%	0.004%
132	5.394	5.387	5.403	VV	202	1632	0.07%	0.006%
133	5.420	5.403	5.444	VV	244	4131	0.17%	0.015%
134	5.479	5.444	5.521	VV	372	12230	0.49%	0.044%
135	5.528	5.521	5.534	VV	189	1301	0.05%	0.005%
136	5.544	5.534	5.558	VV	195	2475	0.10%	0.009%
137	5.562	5.558	5.597	VV	208	2721	0.11%	0.010%
138	5.623	5.597	5.639	VV	569	8956	0.36%	0.032%
139	5.653	5.639	5.704	VV	749	12266	0.49%	0.044%
140	5.726	5.704	5.731	VV	275	2432	0.10%	0.009%
141	5.736	5.731	5.742	VV	212	1204	0.05%	0.004%

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142	5.748	5.742	5.757	VV	202	1525	0.06%	0.005%
143	5.760	5.757	5.781	VV	210	2177	0.09%	0.008%
144	5.784	5.781	5.789	VV	230	905	0.04%	0.003%
145	5.794	5.789	5.802	VV	192	1481	0.06%	0.005%
146	5.825	5.802	5.853	VV	309	7488	0.30%	0.027%
147	5.857	5.853	5.867	VV	246	1899	0.08%	0.007%
148	5.916	5.867	5.958	VV	581	19362	0.78%	0.069%
149	5.971	5.958	5.999	VV	496	8567	0.34%	0.031%
150	6.005	5.999	6.008	VV	239	1244	0.05%	0.004%
151	6.022	6.008	6.044	VV	317	5052	0.20%	0.018%
152	6.052	6.044	6.062	VV	202	1966	0.08%	0.007%
153	6.072	6.062	6.079	VV	213	1814	0.07%	0.007%
154	6.095	6.079	6.127	VV	332	6414	0.26%	0.023%
155	6.141	6.127	6.145	VV	245	1692	0.07%	0.006%
156	6.150	6.145	6.152	VV	207	771	0.03%	0.003%
157	6.158	6.152	6.174	VV	254	2666	0.11%	0.010%
158	6.240	6.174	6.286	VV	890	40193	1.62%	0.144%
159	6.291	6.286	6.315	VV	591	9429	0.38%	0.034%
160	6.372	6.315	6.442	VV	799	37748	1.52%	0.135%
161	6.471	6.442	6.504	VV	666	18948	0.76%	0.068%
162	6.509	6.504	6.514	VV	371	1991	0.08%	0.007%
163	6.542	6.514	6.601	VV	649	23500	0.95%	0.084%
164	6.612	6.601	6.641	VV	290	5919	0.24%	0.021%
165	6.657	6.641	6.700	VV	742	13618	0.55%	0.049%
166	6.724	6.700	6.749	VV	313	6996	0.28%	0.025%
167	6.756	6.749	6.783	VV	264	4572	0.18%	0.016%
168	6.810	6.783	6.834	VV	443	8503	0.34%	0.030%
169	6.888	6.834	6.920	VV	308	11544	0.46%	0.041%
170	6.946	6.920	6.969	VV	455	9065	0.37%	0.033%
171	6.978	6.969	7.047	VV	304	9719	0.39%	0.035%
172	7.061	7.047	7.102	VV	244	4949	0.20%	0.018%
173	7.119	7.102	7.142	VV	163	2567	0.10%	0.009%
174	7.187	7.142	7.216	VV	284	6746	0.27%	0.024%
175	7.236	7.216	7.266	VV	417	8392	0.34%	0.030%
176	7.280	7.266	7.319	VV	429	8944	0.36%	0.032%
177	7.378	7.319	7.424	VV	757	27035	1.09%	0.097%
178	7.457	7.424	7.467	VV	446	9989	0.40%	0.036%
179	7.476	7.467	7.488	VV	457	5017	0.20%	0.018%
180	7.502	7.488	7.529	VV	412	9473	0.38%	0.034%
181	7.544	7.529	7.584	VV	492	12167	0.49%	0.044%
182	7.610	7.584	7.667	VV	1287	26836	1.08%	0.096%
183	7.689	7.667	7.718	VV	341	7872	0.32%	0.028%
184	7.728	7.718	7.766	VV	255	5980	0.24%	0.021%
185	7.781	7.766	7.808	VV	252	4084	0.16%	0.015%
186	7.828	7.808	7.839	PV	113	836	0.03%	0.003%
187	7.890	7.839	7.937	VV	2934	38934	1.57%	0.140%
188	7.947	7.937	7.962	VV	211	1914	0.08%	0.007%
189	7.976	7.962	8.002	VV	124	1718	0.07%	0.006%
190	8.063	8.002	8.118	VV	3439	48552	1.96%	0.174%
191	8.138	8.118	8.156	VV	285	4125	0.17%	0.015%
192	8.184	8.156	8.206	VV	492	8048	0.32%	0.029%
193	8.241	8.206	8.271	VV	398	9029	0.36%	0.032%
194	8.276	8.271	8.292	VV	189	2224	0.09%	0.008%

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195	8.310	8.292	8.332	VV	607	8832	0.36%	0.032%
196	8.345	8.332	8.363	VV	345	4888	0.20%	0.018%
197	8.375	8.363	8.386	VV	274	3069	0.12%	0.011%
198	8.405	8.386	8.419	VV	311	5439	0.22%	0.020%
199	8.462	8.419	8.476	VV	1313	23017	0.93%	0.083%
200	8.494	8.476	8.525	VV	2570	38801	1.56%	0.139%
201	8.546	8.525	8.574	VV	1154	19110	0.77%	0.069%
202	8.637	8.574	8.690	VV	744	32639	1.31%	0.117%
203	8.696	8.690	8.724	VV	282	4878	0.20%	0.017%
204	8.735	8.724	8.755	VV	279	3792	0.15%	0.014%
205	8.787	8.755	8.812	VV	221	3915	0.16%	0.014%
206	8.853	8.812	8.885	VV	691	18048	0.73%	0.065%
207	8.917	8.885	8.966	VV	1204	38680	1.56%	0.139%
208	8.990	8.966	9.008	VV	903	17412	0.70%	0.062%
209	9.033	9.008	9.066	VV	1562	27618	1.11%	0.099%
210	9.084	9.066	9.102	VV	600	8957	0.36%	0.032%
211	9.124	9.102	9.202	VV	939	32665	1.32%	0.117%
212	9.228	9.202	9.296	VV	821	31812	1.28%	0.114%
213	9.323	9.296	9.390	VV	3015	54373	2.19%	0.195%
214	9.405	9.390	9.427	VV	400	6603	0.27%	0.024%
215	9.441	9.427	9.457	VV	235	3187	0.13%	0.011%
216	9.462	9.457	9.497	VV	195	3748	0.15%	0.013%
217	9.512	9.497	9.541	VV	265	3997	0.16%	0.014%
218	9.561	9.541	9.589	VV	152	1931	0.08%	0.007%
219	9.624	9.589	9.637	PV	247	3957	0.16%	0.014%
220	9.656	9.637	9.681	VV	287	4561	0.18%	0.016%
221	9.719	9.681	9.772	VV	1113	39724	1.60%	0.142%
222	9.785	9.772	9.814	VV	645	11460	0.46%	0.041%
223	9.830	9.814	9.847	VV	593	8603	0.35%	0.031%
224	9.856	9.847	9.872	VV	418	5103	0.21%	0.018%
225	9.880	9.872	9.912	VV	391	5141	0.21%	0.018%
226	9.937	9.912	9.954	VV	1226	13751	0.55%	0.049%
227	9.980	9.954	10.089	VV	81301	1741787	70.14%	6.247%
228	10.104	10.089	10.204	VV	5773	222530	8.96%	0.798%
229	10.212	10.204	10.367	VV	1779	91824	3.70%	0.329%
230	10.375	10.367	10.417	VV	464	9836	0.40%	0.035%
231	10.449	10.417	10.567	VV	20994	384782	15.49%	1.380%
232	10.587	10.567	10.612	VV	996	18234	0.73%	0.065%
233	10.626	10.612	10.657	VV	576	12926	0.52%	0.046%
234	10.664	10.657	10.692	VV	464	7160	0.29%	0.026%
235	10.744	10.692	10.796	VV	607	27858	1.12%	0.100%
236	10.849	10.796	10.901	VV	1107	34907	1.41%	0.125%
237	10.919	10.901	10.937	VV	609	10686	0.43%	0.038%
238	10.953	10.937	11.036	VV	566	20190	0.81%	0.072%
239	11.070	11.036	11.102	VV	1246	20590	0.83%	0.074%
240	11.133	11.102	11.204	VV	4509	136148	5.48%	0.488%
241	11.233	11.204	11.411	VV	1368	79352	3.20%	0.285%
242	11.440	11.411	11.459	VV	105	2805	0.11%	0.010%
243	11.497	11.459	11.517	VV	546	10397	0.42%	0.037%
244	11.554	11.517	11.586	VV	812	19139	0.77%	0.069%
245	11.595	11.586	11.606	VV	205	1885	0.08%	0.007%
246	11.634	11.606	11.691	VV	1032	21878	0.88%	0.078%

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247	11.714	11.691	11.731	VV	747	11788	0.47%	0.042%
248	11.748	11.731	11.781	VV	1001	16005	0.64%	0.057%
249	11.796	11.781	11.827	VV	247	4211	0.17%	0.015%
250	11.850	11.827	11.887	PV	252	6694	0.27%	0.024%
251	11.902	11.887	11.921	VV	297	4494	0.18%	0.016%
252	11.944	11.921	11.957	VV	1050	14833	0.60%	0.053%
253	11.986	11.957	12.019	VV	3075	76078	3.06%	0.273%
254	12.038	12.019	12.100	VV	2697	74530	3.00%	0.267%
255	12.121	12.100	12.151	VV	952	23110	0.93%	0.083%
256	12.160	12.151	12.175	VV	576	7386	0.30%	0.026%
257	12.195	12.175	12.213	VV	1078	16683	0.67%	0.060%
258	12.225	12.213	12.252	VV	792	12919	0.52%	0.046%
259	12.279	12.252	12.289	VV	463	7354	0.30%	0.026%
260	12.319	12.289	12.351	VV	664	15059	0.61%	0.054%
261	12.378	12.351	12.397	VV	364	6215	0.25%	0.022%
262	12.428	12.397	12.462	VV	771	18286	0.74%	0.066%
263	12.485	12.462	12.529	VV	22889	309038	12.44%	1.108%
264	12.545	12.529	12.561	VV	2467	37502	1.51%	0.134%
265	12.576	12.561	12.632	VV	2369	65452	2.64%	0.235%
266	12.647	12.632	12.661	VV	1075	15851	0.64%	0.057%
267	12.688	12.661	12.722	VV	1821	42980	1.73%	0.154%
268	12.738	12.722	12.759	VV	984	16039	0.65%	0.058%
269	12.789	12.759	12.810	VV	2746	46698	1.88%	0.167%
270	12.865	12.810	12.911	VV	2180	92877	3.74%	0.333%
271	12.945	12.911	13.029	VV	17831	397633	16.01%	1.426%
272	13.040	13.029	13.059	VV	1149	18714	0.75%	0.067%
273	13.078	13.059	13.102	VV	1761	36045	1.45%	0.129%
274	13.115	13.102	13.154	VV	1372	34373	1.38%	0.123%
275	13.171	13.154	13.182	VV	938	14949	0.60%	0.054%
276	13.190	13.182	13.204	VV	949	11028	0.44%	0.040%
277	13.246	13.204	13.272	VV	11345	229011	9.22%	0.821%
278	13.280	13.272	13.341	VV	6955	173074	6.97%	0.621%
279	13.358	13.341	13.386	VV	2385	56346	2.27%	0.202%
280	13.417	13.386	13.464	VV	2267	90875	3.66%	0.326%
281	13.483	13.464	13.517	VV	2378	64148	2.58%	0.230%
282	13.546	13.517	13.567	VV	2506	62507	2.52%	0.224%
283	13.580	13.567	13.596	VV	2128	33993	1.37%	0.122%
284	13.611	13.596	13.628	VV	2590	44742	1.80%	0.160%
285	13.641	13.628	13.654	VV	2224	32608	1.31%	0.117%
286	13.704	13.654	13.786	VV	3941	216096	8.70%	0.775%
287	13.830	13.786	13.844	VV	2757	82304	3.31%	0.295%
288	13.909	13.844	13.942	VV	4001	192839	7.76%	0.692%
289	13.973	13.942	13.987	VV	3551	87621	3.53%	0.314%
290	14.023	13.987	14.052	VV	14328	278353	11.21%	0.998%
291	14.068	14.052	14.081	VV	4257	66921	2.69%	0.240%
292	14.120	14.081	14.141	VV	4349	145436	5.86%	0.522%
293	14.185	14.141	14.239	VV	13182	342801	13.80%	1.229%
294	14.302	14.239	14.339	VV	4415	236494	9.52%	0.848%
295	14.388	14.339	14.401	VV	5022	153521	6.18%	0.551%
296	14.450	14.401	14.466	VV	7521	217175	8.74%	0.779%
297	14.480	14.466	14.530	VV	7150	237047	9.55%	0.850%
298	14.564	14.530	14.606	VV	6386	255668	10.29%	0.917%
299	14.631	14.606	14.652	VV	7472	176258	7.10%	0.632%

300	14.702	14.652	14.714	VV	7111	246677	9.93%	0.885%
301	14.736	14.714	14.781	VV	7763	281993	11.35%	1.011%
302	14.792	14.781	14.811	VV	6744	117653	4.74%	0.422%
303	14.839	14.811	14.857	VV	7498	195547	7.87%	0.701%
304	14.875	14.857	14.897	VV	8167	183576	7.39%	0.658%
305	14.912	14.897	14.939	VV	8459	188706	7.60%	0.677%
306	14.973	14.939	15.052	VV	157148	2483459	100.00%	8.907%
307	15.063	15.052	15.110	VV	7639	243207	9.79%	0.872%
308	15.138	15.110	15.161	VV	12040	290456	11.70%	1.042%
309	15.171	15.161	15.181	VV	10255	119638	4.82%	0.429%
310	15.190	15.181	15.212	VV	10256	188352	7.58%	0.676%
311	15.220	15.212	15.274	VV	9732	305880	12.32%	1.097%
312	15.291	15.274	15.351	VV	8049	328752	13.24%	1.179%
313	15.369	15.351	15.409	VV	7052	227615	9.17%	0.816%
314	15.431	15.409	15.449	VV	6534	152557	6.14%	0.547%
315	15.458	15.449	15.507	VV	6155	205494	8.27%	0.737%
316	15.516	15.507	15.532	VV	5885	85538	3.44%	0.307%
317	15.564	15.532	15.668	VV	38370	1150039	46.31%	4.125%
318	15.694	15.668	15.732	VV	6928	225814	9.09%	0.810%
319	15.762	15.732	15.802	VV	9173	257107	10.35%	0.922%
320	15.826	15.802	15.854	VV	5123	144825	5.83%	0.519%
321	15.866	15.854	15.942	VV	4521	220293	8.87%	0.790%
322	15.976	15.942	15.985	VV	4252	103862	4.18%	0.373%
323	15.995	15.985	16.066	VV	4288	177645	7.15%	0.637%
324	16.085	16.066	16.142	VV	4164	154888	6.24%	0.556%
325	16.165	16.142	16.181	VV	3133	67258	2.71%	0.241%
326	16.199	16.181	16.237	VV	3235	88811	3.58%	0.319%
327	16.265	16.237	16.316	VV	2741	97530	3.93%	0.350%
328	16.336	16.316	16.360	VV	1806	44624	1.80%	0.160%
329	16.393	16.360	16.467	VV	1958	99485	4.01%	0.357%
330	16.485	16.467	16.517	VV	1329	35112	1.41%	0.126%
331	16.536	16.517	16.547	VV	1365	22078	0.89%	0.079%
332	16.585	16.547	16.634	VV	13064	305804	12.31%	1.097%
333	16.646	16.634	16.672	VV	2630	49787	2.00%	0.179%
334	16.683	16.672	16.705	VV	2252	32447	1.31%	0.116%
335	16.755	16.705	16.831	VV	4236	170789	6.88%	0.613%
336	16.873	16.831	16.942	VV	1340	50524	2.03%	0.181%
337	16.969	16.942	17.017	VV	730	19069	0.77%	0.068%
338	17.055	17.017	17.096	VV	2765	73499	2.96%	0.264%
339	17.120	17.096	17.178	VV	3547	115158	4.64%	0.413%
340	17.227	17.178	17.302	VV	3708	126011	5.07%	0.452%
341	17.311	17.302	17.329	VV	330	3653	0.15%	0.013%
342	17.384	17.329	17.449	VV	634	22451	0.90%	0.081%
343	17.481	17.449	17.497	PV	637	10828	0.44%	0.039%
344	17.533	17.497	17.576	VV	4718	113232	4.56%	0.406%
345	17.601	17.576	17.647	VV	5142	84355	3.40%	0.303%
346	17.680	17.647	17.744	VV	1023	31704	1.28%	0.114%
347	17.811	17.744	17.849	VV	751	22596	0.91%	0.081%
348	17.870	17.849	17.901	VV	788	11691	0.47%	0.042%
349	17.929	17.901	17.939	PV	136	3095	0.12%	0.011%
350	17.999	17.939	18.024	VV	1892	51236	2.06%	0.184%
351	18.040	18.024	18.069	VV	1870	25998	1.05%	0.093%

352	18.132	18.069	18.154	PV	2551	68881	2.77%	0.247%
353	18.167	18.154	18.186	VV	1324	21197	0.85%	0.076%
354	18.208	18.186	18.231	VV	2099	34610	1.39%	0.124%
355	18.259	18.231	18.297	VV	3868	73315	2.95%	0.263%
356	18.317	18.297	18.325	PV	233	2608	0.11%	0.009%
357	18.359	18.325	18.381	VV	4529	70397	2.83%	0.252%
358	18.412	18.381	18.444	VV	18189	380102	15.31%	1.363%
359	18.463	18.444	18.501	VV	8988	174757	7.04%	0.627%
360	18.526	18.501	18.541	VV	2133	42187	1.70%	0.151%
361	18.560	18.541	18.627	VV	3429	75309	3.03%	0.270%
362	18.694	18.627	18.734	VV	557	14773	0.59%	0.053%
363	18.761	18.734	18.806	PV	1162	26904	1.08%	0.096%
364	18.868	18.806	18.918	VV	3882	127195	5.12%	0.456%
365	18.945	18.918	18.966	VV	6759	99079	3.99%	0.355%
366	18.998	18.966	19.092	VV	3441	121293	4.88%	0.435%
367	19.098	19.092	19.104	VV	191	986	0.04%	0.004%
368	19.145	19.104	19.176	PV	8667	125310	5.05%	0.449%
369	19.235	19.176	19.259	VV	25910	557834	22.46%	2.001%
370	19.276	19.259	19.332	VV	18910	490070	19.73%	1.758%
371	19.348	19.332	19.381	VV	2745	65865	2.65%	0.236%
372	19.413	19.381	19.429	VV	2796	64578	2.60%	0.232%
373	19.437	19.429	19.450	VV	2043	24472	0.99%	0.088%
374	19.471	19.450	19.490	VV	3935	64438	2.59%	0.231%
375	19.515	19.490	19.547	VV	2648	64868	2.61%	0.233%
376	19.567	19.547	19.606	VV	2780	48545	1.95%	0.174%
377	19.678	19.606	19.700	VV	2106	56247	2.26%	0.202%
378	19.726	19.700	19.742	VV	2479	43402	1.75%	0.156%
379	19.764	19.742	19.802	VV	2825	66006	2.66%	0.237%
380	19.836	19.802	19.874	VV	2370	52062	2.10%	0.187%
381	19.887	19.874	19.895	VV	398	4126	0.17%	0.015%
382	19.938	19.895	19.974	VV	1685	50697	2.04%	0.182%
383	20.002	19.974	20.049	VV	7648	189523	7.63%	0.680%
384	20.062	20.049	20.101	VV	2783	67683	2.73%	0.243%
385	20.130	20.101	20.152	VV	1935	52338	2.11%	0.188%
386	20.239	20.152	20.252	VV	3459	137808	5.55%	0.494%
387	20.280	20.252	20.314	VV	6699	166397	6.70%	0.597%
388	20.406	20.314	20.437	VV	5076	334578	13.47%	1.200%
389	20.559	20.437	20.598	VV	17326	677012	27.26%	2.428%
390	20.627	20.598	20.651	VV	6289	187897	7.57%	0.674%
391	20.783	20.651	20.827	VV	9494	790336	31.82%	2.835%
392	20.870	20.827	20.904	VV	7531	338442	13.63%	1.214%
393	20.937	20.904	20.981	VV	7053	314596	12.67%	1.128%
394	21.052	20.981	21.111	VV	6648	494729	19.92%	1.774%
395	21.139	21.111	21.213	VV	5793	330676	13.32%	1.186%
396	21.241	21.213	21.257	VV	4910	126444	5.09%	0.453%
397	21.366	21.257	21.411	VV	4706	422640	17.02%	1.516%
398	21.440	21.411	21.508	VV	5118	246505	9.93%	0.884%
399	21.554	21.508	21.639	VV	3313	230131	9.27%	0.825%
400	21.643	21.639	21.661	VV	2321	28519	1.15%	0.102%
401	21.705	21.661	21.718	VV	1991	70202	2.83%	0.252%
402	21.728	21.718	21.772	VV	1910	55488	2.23%	0.199%
403	21.811	21.772	21.847	VV	1535	63041	2.54%	0.226%
404	21.900	21.847	22.014	VV	1705	102560	4.13%	0.368%

rteres

405	22.051	22.014	22.071	VBA	242	22113	0.89%	0.079%

Sum of corrected areas: 27882229

FG052225.M Wed Jun 11 07:11:55 2025

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Report of Analysis

Client:	Portal Partners Tri-Venture	Date Collected:	06/01/25
Project:	Amtrak Sawtooth Bridges 2025	Date Received:	06/03/25
Client Sample ID:	B-207-SB02	SDG No.:	Q2198
Lab Sample ID:	Q2198-03	Matrix:	SOIL
Analytical Method:	8015D TPH	% Solid:	52.1 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	TPH GC
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG016017.D	1	06/10/25 08:16	06/10/25 18:32	PB168382

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
PHC	Petroleum Hydrocarbons	21400		736	5430	ug/kg
SURROGATES						
16416-32-3	TETRACOSANE-d50	10.2		37 - 130	51%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016017.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 18:32
Operator : YP\AJ
Sample : Q2198-03
Misc :
ALS Vial : 32 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
B-207-SB02

Manual Integrations APPROVED

Reviewed By :Yogesh Patel 06/11/2025
Supervised By :mohammad ahmed 06/12/2025

Integration File: autoint1.e
Quant Time: Jun 11 05:53:44 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
9) S	TETRACOSANE-d50 (SURR...	14.970	1245946	10.166 ug/mlm
	Target Compounds			

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

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016017.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 18:32
Operator : YP\AJ
Sample : Q2198-03
Misc :
ALS Vial : 32 Sample Multiplier: 1

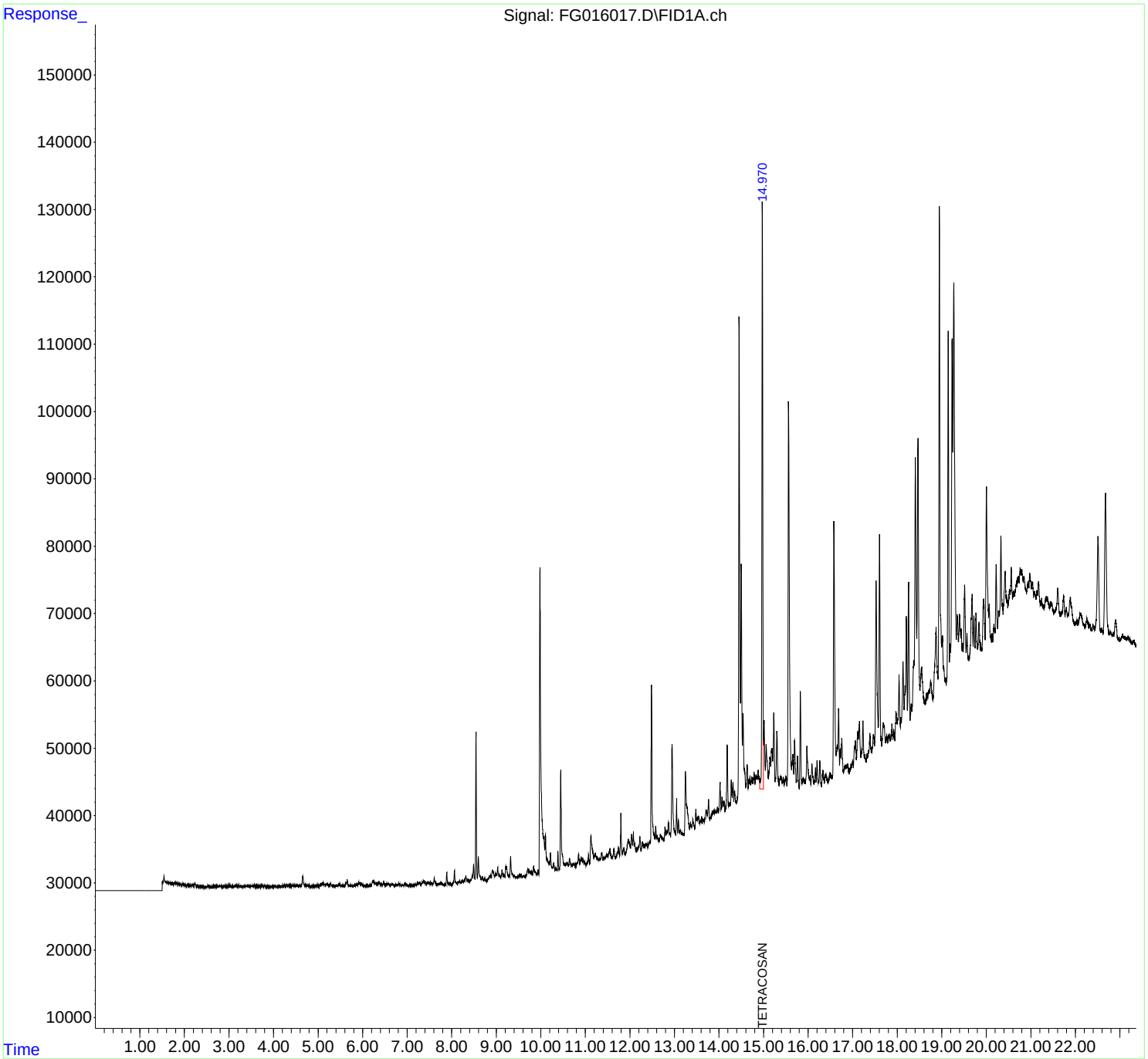
Integration File: autoint1.e
Quant Time: Jun 11 05:53:44 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

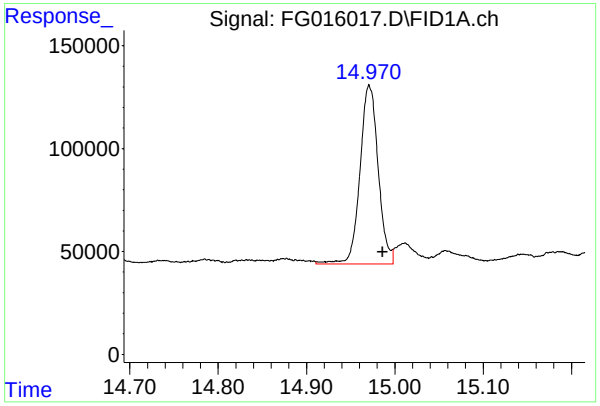
Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

Instrument :
FID_G
ClientSampleId :
B-207-SB02

Manual Integrations APPROVED

Reviewed By :Yogesh Patel 06/11/2025
Supervised By :mohammad ahmed 06/12/2025





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 14.970 min
Delta R.T.: -0.016 mi
Response: 1245946
Conc: 10.17 ug/m

Instrument :
FID_G
ClientSampleId :
B-207-SB02

Manual Integrations
APPROVED

Reviewed By :Yogesh Patel 06/11/2025
Supervised By :mohammad ahmed 06/12/2025

Instrument :
FID_G
ClientSampleId :
B-207-SB02

rteres

Area Percent Report

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 06/11/2025
Supervised By :mohammad ahmed 06/12/2025

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG06102
Data File : FG016017.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 18:32
Sample : Q2198-03
Misc :
ALS Vial : 32 Sample Multiplier: 1

Integration File: Sample.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Title :

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	1.913	1.900	1.920	BV	109	550	0.03%	0.001%
2	1.925	1.920	1.945	PV	103	870	0.05%	0.002%
3	1.950	1.945	1.955	VV	128	633	0.04%	0.001%
4	1.961	1.955	1.979	VV	218	1503	0.09%	0.003%
5	1.984	1.979	2.004	VV	140	969	0.06%	0.002%
6	2.008	2.004	2.024	VV	93	701	0.04%	0.002%
7	2.028	2.024	2.055	VV	163	1145	0.07%	0.003%
8	2.058	2.055	2.063	PV	67	312	0.02%	0.001%
9	2.088	2.063	2.120	VV	167	2869	0.17%	0.007%
10	2.125	2.120	2.131	VV	147	399	0.02%	0.001%
11	2.135	2.131	2.149	VV	145	689	0.04%	0.002%
12	2.167	2.149	2.202	VV	391	6057	0.36%	0.014%
13	2.235	2.202	2.283	VV	671	12517	0.75%	0.029%
14	2.295	2.283	2.308	VV	178	1621	0.10%	0.004%
15	2.310	2.308	2.328	VV	144	950	0.06%	0.002%
16	2.355	2.328	2.378	PV	151	2449	0.15%	0.006%
17	2.389	2.378	2.405	VV	190	1728	0.10%	0.004%
18	2.418	2.405	2.432	VV	186	1823	0.11%	0.004%
19	2.436	2.432	2.454	PV	114	1026	0.06%	0.002%
20	2.459	2.454	2.465	VV	112	553	0.03%	0.001%
21	2.475	2.465	2.502	VV	156	1608	0.10%	0.004%
22	2.525	2.502	2.532	VV	222	2224	0.13%	0.005%
23	2.537	2.532	2.576	VV	219	3228	0.19%	0.007%
24	2.613	2.576	2.625	VV	143	2815	0.17%	0.007%
25	2.642	2.625	2.684	VV	245	6924	0.42%	0.016%
26	2.684	2.684	2.697	VV	250	1485	0.09%	0.003%
27	2.702	2.697	2.723	VV	253	2795	0.17%	0.006%
28	2.730	2.723	2.738	VV	207	1636	0.10%	0.004%
29	2.750	2.738	2.765	VV	253	3050	0.18%	0.007%
30	2.768	2.765	2.777	VV	187	1168	0.07%	0.003%
31	2.785	2.777	2.790	VV	222	1092	0.07%	0.003%
32	2.793	2.790	2.835	VV	181	3664	0.22%	0.008%
33	2.843	2.835	2.872	VV	189	3093	0.19%	0.007%
34	2.874	2.872	2.883	VV	169	826	0.05%	0.002%
35	2.907	2.883	2.942	VV	268	6197	0.37%	0.014%
36	2.947	2.942	2.957	VV	158	1310	0.08%	0.003%

Instrument :
FID_G
ClientSampleId :
B-207-SB02

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 06/11/2025
Supervised By :mohammad ahmed 06/12/2025

rteres

37	2.965	2.957	2.971	VV	173	1158	0.07%	0.003%
38	3.007	2.971	3.043	VV	332	8271		
39	3.044	3.043	3.048	VV	128	391		
40	3.052	3.048	3.097	VV	233	4104		
41	3.102	3.097	3.109	VV	155	886		
42	3.116	3.109	3.129	VV	145	1500		
43	3.146	3.129	3.171	VV	326	5967	0.36%	0.014%
44	3.175	3.171	3.199	VV	273	3647	0.22%	0.008%
45	3.207	3.199	3.241	VV	270	5181	0.31%	0.012%
46	3.246	3.241	3.258	VV	193	1805	0.11%	0.004%
47	3.265	3.258	3.271	VV	145	1149	0.07%	0.003%
48	3.279	3.271	3.291	VV	188	1555	0.09%	0.004%
49	3.295	3.291	3.300	VV	186	825	0.05%	0.002%
50	3.307	3.300	3.322	VV	154	1819	0.11%	0.004%
51	3.329	3.322	3.378	VV	197	5280	0.32%	0.012%
52	3.385	3.378	3.389	VV	193	1048	0.06%	0.002%
53	3.399	3.389	3.406	VV	221	1838	0.11%	0.004%
54	3.411	3.406	3.416	VV	176	954	0.06%	0.002%
55	3.427	3.416	3.476	VV	224	5792	0.35%	0.013%
56	3.505	3.476	3.537	VV	238	6975	0.42%	0.016%
57	3.566	3.537	3.618	VV	300	8333	0.50%	0.019%
58	3.624	3.618	3.733	VV	178	8788	0.53%	0.020%
59	3.746	3.733	3.810	VV	182	6973	0.42%	0.016%
60	3.817	3.810	3.841	VV	218	3035	0.18%	0.007%
61	3.847	3.841	3.864	VV	173	1828	0.11%	0.004%
62	3.875	3.864	3.886	VV	150	1349	0.08%	0.003%
63	3.900	3.886	3.923	PV	158	2388	0.14%	0.006%
64	3.937	3.923	3.979	VV	156	3640	0.22%	0.008%
65	4.021	3.979	4.096	VV	232	8543	0.51%	0.020%
66	4.105	4.096	4.119	VV	162	1317	0.08%	0.003%
67	4.125	4.119	4.142	VV	97	1313	0.08%	0.003%
68	4.150	4.142	4.163	VV	109	1160	0.07%	0.003%
69	4.222	4.163	4.255	VV	283	9268	0.56%	0.021%
70	4.287	4.255	4.328	VV	303	10643	0.64%	0.025%
71	4.339	4.328	4.393	VV	234	7488	0.45%	0.017%
72	4.400	4.393	4.424	VV	199	3513	0.21%	0.008%
73	4.426	4.424	4.462	VV	255	4090	0.25%	0.009%
74	4.476	4.462	4.509	VV	297	5806	0.35%	0.013%
75	4.517	4.509	4.544	VV	250	3922	0.24%	0.009%
76	4.553	4.544	4.574	VV	190	3030	0.18%	0.007%
77	4.592	4.574	4.624	VV	237	5271	0.32%	0.012%
78	4.659	4.624	4.745	VV	1593	40114	2.41%	0.093%
79	4.755	4.745	4.869	VV	235	9673	0.58%	0.022%
80	4.895	4.869	4.934	VV	163	4529	0.27%	0.010%
81	4.953	4.934	4.961	VV	180	2114	0.13%	0.005%
82	4.981	4.961	5.006	VV	261	4098	0.25%	0.009%
83	5.095	5.006	5.119	VV	536	22133	1.33%	0.051%
84	5.127	5.119	5.167	VV	492	10753	0.65%	0.025%
85	5.208	5.167	5.257	VV	469	17447	1.05%	0.040%
86	5.274	5.257	5.313	VV	413	9368	0.56%	0.022%
87	5.332	5.313	5.361	VV	211	4468	0.27%	0.010%
88	5.369	5.361	5.384	VV	137	1535	0.09%	0.004%
89	5.413	5.384	5.437	VV	261	5525	0.33%	0.013%

Instrument :
FID_G
ClientSampleId :
B-207-SB02

rteres

90	5.478	5.437	5.536	VV	414	12326	0.74%	0.029%
91	5.562	5.536	5.599	VV	175	3376		
92	5.622	5.599	5.636	VV	631	9264		
93	5.653	5.636	5.702	VV	1052	17563		
94	5.739	5.702	5.758	VV	237	4951		
95	5.781	5.758	5.801	VV	176	2804		
96	5.819	5.801	5.878	VV	309	8991	0.54%	0.021%
97	5.915	5.878	5.934	VV	653	13081	0.79%	0.030%
98	5.943	5.934	5.956	VV	440	4489	0.27%	0.010%
99	5.973	5.956	6.064	VV	546	12918	0.78%	0.030%
100	6.099	6.064	6.131	PV	256	5646	0.34%	0.013%
101	6.159	6.131	6.182	VV	231	4092	0.25%	0.009%
102	6.233	6.182	6.319	VV	827	38649	2.32%	0.089%
103	6.348	6.319	6.358	VV	544	10425	0.63%	0.024%
104	6.370	6.358	6.394	VV	608	9981	0.60%	0.023%
105	6.422	6.394	6.449	VV	460	10790	0.65%	0.025%
106	6.476	6.449	6.510	VV	622	13881	0.83%	0.032%
107	6.545	6.510	6.567	VV	293	8464	0.51%	0.020%
108	6.576	6.567	6.626	VV	410	8279	0.50%	0.019%
109	6.659	6.626	6.706	VV	423	10492	0.63%	0.024%
110	6.746	6.706	6.764	VV	225	5378	0.32%	0.012%
111	6.780	6.764	6.794	VV	220	2918	0.18%	0.007%
112	6.810	6.794	6.871	VV	383	9933	0.60%	0.023%
113	6.880	6.871	6.891	VV	118	1310	0.08%	0.003%
114	6.906	6.891	6.923	VV	136	1913	0.11%	0.004%
115	6.945	6.923	7.038	VV	328	10965	0.66%	0.025%
116	7.067	7.038	7.104	VV	241	3433	0.21%	0.008%
117	7.116	7.104	7.136	PV	142	1705	0.10%	0.004%
118	7.155	7.136	7.163	VV	144	1584	0.10%	0.004%
119	7.187	7.163	7.211	VV	234	4817	0.29%	0.011%
120	7.235	7.211	7.242	VV	384	5140	0.31%	0.012%
121	7.251	7.242	7.266	VV	397	4891	0.29%	0.011%
122	7.280	7.266	7.304	VV	485	7833	0.47%	0.018%
123	7.378	7.304	7.424	VV	757	29997	1.80%	0.069%
124	7.443	7.424	7.463	VV	420	8731	0.52%	0.020%
125	7.475	7.463	7.494	VV	392	6328	0.38%	0.015%
126	7.519	7.494	7.532	VV	342	7013	0.42%	0.016%
127	7.545	7.532	7.573	VV	357	7313	0.44%	0.017%
128	7.609	7.573	7.649	VV	1160	21468	1.29%	0.050%
129	7.655	7.649	7.704	VV	287	6620	0.40%	0.015%
130	7.719	7.704	7.737	VV	233	3664	0.22%	0.008%
131	7.783	7.737	7.812	VV	308	8958	0.54%	0.021%
132	7.825	7.812	7.847	VV	118	1179	0.07%	0.003%
133	7.890	7.847	7.927	PV	1854	25396	1.53%	0.059%
134	7.943	7.927	7.963	VV	332	4575	0.28%	0.011%
135	7.979	7.963	8.007	VV	135	2648	0.16%	0.006%
136	8.063	8.007	8.117	PV	2130	37412	2.25%	0.087%
137	8.144	8.117	8.157	VV	395	6748	0.41%	0.016%
138	8.182	8.157	8.202	VV	481	9413	0.57%	0.022%
139	8.215	8.202	8.227	VV	348	4429	0.27%	0.010%
140	8.243	8.227	8.260	VV	591	8251	0.50%	0.019%
141	8.318	8.260	8.337	VV	1158	28972	1.74%	0.067%

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142	8.344	8.337	8.389	VV	579	12482	0.75%	0.029%
143	8.402	8.389	8.411	VV	363	4316		
144	8.428	8.411	8.436	VV	523	6280		
145	8.461	8.436	8.476	VV	1108	19294		
146	8.493	8.476	8.521	VV	2776	40565		
147	8.547	8.521	8.577	VV	22283	244970		
148	8.600	8.577	8.666	VV	3795	74412	4.47%	0.172%
149	8.688	8.666	8.717	VV	827	14034	0.84%	0.032%
150	8.741	8.717	8.761	VV	454	8249	0.50%	0.019%
151	8.772	8.761	8.795	VV	224	2769	0.17%	0.006%
152	8.848	8.795	8.862	VV	750	17063	1.03%	0.039%
153	8.877	8.862	8.894	VV	802	12730	0.77%	0.029%
154	8.917	8.894	8.962	VV	1475	45228	2.72%	0.105%
155	8.986	8.962	9.017	VV	952	27571	1.66%	0.064%
156	9.033	9.017	9.072	VV	1911	35227	2.12%	0.082%
157	9.081	9.072	9.101	VV	686	9378	0.56%	0.022%
158	9.130	9.101	9.194	VV	1476	39939	2.40%	0.092%
159	9.214	9.194	9.225	VV	1955	24235	1.46%	0.056%
160	9.236	9.225	9.272	VV	1870	30196	1.82%	0.070%
161	9.286	9.272	9.300	VV	557	7900	0.47%	0.018%
162	9.324	9.300	9.356	VV	3279	51100	3.07%	0.118%
163	9.365	9.356	9.391	VV	673	10619	0.64%	0.025%
164	9.409	9.391	9.429	VV	554	7501	0.45%	0.017%
165	9.446	9.429	9.466	VV	195	2550	0.15%	0.006%
166	9.479	9.466	9.493	VV	204	2334	0.14%	0.005%
167	9.518	9.493	9.546	VV	452	8524	0.51%	0.020%
168	9.561	9.546	9.589	VV	453	6651	0.40%	0.015%
169	9.622	9.589	9.639	VV	220	4292	0.26%	0.010%
170	9.661	9.639	9.669	PV	284	2965	0.18%	0.007%
171	9.712	9.669	9.757	VV	1173	37278	2.24%	0.086%
172	9.782	9.757	9.811	VV	740	15853	0.95%	0.037%
173	9.839	9.811	9.872	VV	1331	25403	1.53%	0.059%
174	9.881	9.872	9.912	VV	638	6531	0.39%	0.015%
175	9.936	9.912	9.956	VV	715	8998	0.54%	0.021%
176	9.981	9.956	10.059	VV	45448	937490	56.36%	2.170%
177	10.070	10.059	10.088	VV	5498	86159	5.18%	0.199%
178	10.105	10.088	10.198	VV	5765	169829	10.21%	0.393%
179	10.218	10.198	10.256	VV	2898	52896	3.18%	0.122%
180	10.291	10.256	10.332	VV	1343	33708	2.03%	0.078%
181	10.344	10.332	10.366	VV	336	5393	0.32%	0.012%
182	10.387	10.366	10.416	VV	2885	34979	2.10%	0.081%
183	10.449	10.416	10.519	VV	14901	246599	14.82%	0.571%
184	10.533	10.519	10.559	VV	869	18275	1.10%	0.042%
185	10.595	10.559	10.619	VV	924	28285	1.70%	0.065%
186	10.646	10.619	10.684	VV	1474	33231	2.00%	0.077%
187	10.706	10.684	10.717	VV	559	9698	0.58%	0.022%
188	10.736	10.717	10.794	VV	662	20880	1.26%	0.048%
189	10.848	10.794	10.877	VV	1917	46314	2.78%	0.107%
190	10.915	10.877	10.942	VV	1203	36873	2.22%	0.085%
191	10.962	10.942	11.021	VV	766	23474	1.41%	0.054%
192	11.071	11.021	11.097	PV	1623	28806	1.73%	0.067%
193	11.126	11.097	11.193	VV	4181	122325	7.35%	0.283%
194	11.219	11.193	11.263	VV	1452	43971	2.64%	0.102%

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195	11.271	11.263	11.314	VV	652	15929	0.96%	0.037%
196	11.369	11.314	11.397	VV	1342	32163	1	
197	11.421	11.397	11.444	VV	567	10632	0	
198	11.484	11.444	11.507	VV	861	23169	1	
199	11.553	11.507	11.589	VV	1603	42273	2	
200	11.602	11.589	11.614	VV	247	2667	0	
201	11.639	11.614	11.672	VV	1289	24575	1.48%	0.057%
202	11.748	11.672	11.770	VV	1360	31513	1.89%	0.073%
203	11.798	11.770	11.831	VV	6314	81761	4.92%	0.189%
204	11.866	11.831	11.887	VV	1097	22771	1.37%	0.053%
205	11.899	11.887	11.909	VV	306	2876	0.17%	0.007%
206	11.960	11.909	11.972	VV	2315	46684	2.81%	0.108%
207	11.986	11.972	12.011	VV	1836	33120	1.99%	0.077%
208	12.038	12.011	12.059	VV	2829	51459	3.09%	0.119%
209	12.078	12.059	12.146	VV	3121	66725	4.01%	0.154%
210	12.165	12.146	12.176	VV	629	7571	0.46%	0.018%
211	12.225	12.176	12.250	VV	2121	41343	2.49%	0.096%
212	12.280	12.250	12.311	PV	1185	23563	1.42%	0.055%
213	12.323	12.311	12.341	VV	764	9375	0.56%	0.022%
214	12.383	12.341	12.402	VV	726	20187	1.21%	0.047%
215	12.441	12.402	12.454	VV	852	19210	1.15%	0.044%
216	12.484	12.454	12.559	VV	24038	374024	22.49%	0.866%
217	12.577	12.559	12.598	VV	2866	44001	2.65%	0.102%
218	12.607	12.598	12.659	VV	1299	33981	2.04%	0.079%
219	12.686	12.659	12.739	VV	1375	43825	2.63%	0.101%
220	12.746	12.739	12.762	VV	608	6330	0.38%	0.015%
221	12.791	12.762	12.812	VV	2039	37747	2.27%	0.087%
222	12.827	12.812	12.847	VV	1597	29981	1.80%	0.069%
223	12.867	12.847	12.912	VV	2746	59569	3.58%	0.138%
224	12.945	12.912	13.024	VV	14151	286402	17.22%	0.663%
225	13.048	13.024	13.069	VV	5723	72957	4.39%	0.169%
226	13.089	13.069	13.111	VV	2551	37476	2.25%	0.087%
227	13.121	13.111	13.201	VV	978	30268	1.82%	0.070%
228	13.244	13.201	13.332	VV	9233	266210	16.00%	0.616%
229	13.356	13.332	13.377	VV	1561	30381	1.83%	0.070%
230	13.412	13.377	13.456	VV	1841	55775	3.35%	0.129%
231	13.480	13.456	13.496	VV	3266	44666	2.69%	0.103%
232	13.511	13.496	13.524	VV	1851	30398	1.83%	0.070%
233	13.540	13.524	13.564	VV	2136	39922	2.40%	0.092%
234	13.582	13.564	13.594	VV	1353	21246	1.28%	0.049%
235	13.608	13.594	13.626	VV	1827	26332	1.58%	0.061%
236	13.640	13.626	13.670	VV	1417	31694	1.91%	0.073%
237	13.718	13.670	13.739	VV	2592	79758	4.79%	0.185%
238	13.764	13.739	13.795	VV	4029	77423	4.65%	0.179%
239	13.865	13.795	13.878	VV	2126	77260	4.64%	0.179%
240	13.911	13.878	13.937	VV	1961	65530	3.94%	0.152%
241	13.963	13.937	13.984	VV	2488	54936	3.30%	0.127%
242	14.023	13.984	14.046	VV	5713	124774	7.50%	0.289%
243	14.069	14.046	14.086	VV	3677	66277	3.98%	0.153%
244	14.112	14.086	14.139	VV	2998	78214	4.70%	0.181%
245	14.183	14.139	14.214	VV	10945	207722	12.49%	0.481%
246	14.225	14.214	14.234	VV	2285	27364	1.65%	0.063%

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247	14.242	14.234	14.252	VV	2176	23953	1.44%	0.055%
248	14.275	14.252	14.294	VV	5718	97178	5	
249	14.313	14.294	14.332	VV	5175	88813	5	
250	14.351	14.332	14.397	VV	3730	108772	6	
251	14.450	14.397	14.479	VV	73052	1153742	69	
252	14.498	14.479	14.524	VV	37093	633244	38	
253	14.539	14.524	14.601	VV	14926	385653	23.18%	0.893%
254	14.632	14.601	14.659	VV	7215	177715	10.68%	0.411%
255	14.671	14.659	14.684	VV	4688	67825	4.08%	0.157%
256	14.693	14.684	14.711	VV	5348	74549	4.48%	0.173%
257	14.737	14.711	14.758	VV	5025	128396	7.72%	0.297%
258	14.785	14.758	14.809	VV	5558	144544	8.69%	0.335%
259	14.834	14.809	14.859	VV	4903	141198	8.49%	0.327%
260	14.875	14.859	14.917	VV	5323	166142	9.99%	0.385%
261	14.971	14.917	14.997	VV	89613	1374524	82.63%	3.182%
262	15.011	14.997	15.038	VV	12740	233809	14.06%	0.541%
263	15.058	15.038	15.106	VV	9070	261872	15.74%	0.606%
264	15.145	15.106	15.161	VV	7071	190428	11.45%	0.441%
265	15.187	15.161	15.207	VV	8253	205817	12.37%	0.476%
266	15.230	15.207	15.268	VV	13461	272379	16.37%	0.630%
267	15.298	15.268	15.349	VV	10532	264435	15.90%	0.612%
268	15.387	15.349	15.418	VV	3564	134433	8.08%	0.311%
269	15.439	15.418	15.462	VV	3421	75578	4.54%	0.175%
270	15.506	15.462	15.522	VV	3321	101365	6.09%	0.235%
271	15.560	15.522	15.629	VV	58313	1251361	75.23%	2.896%
272	15.653	15.629	15.676	VV	5837	140067	8.42%	0.324%
273	15.696	15.676	15.736	VV	8320	178881	10.75%	0.414%
274	15.761	15.736	15.801	VV	5844	118494	7.12%	0.274%
275	15.825	15.801	15.872	VV	15249	244496	14.70%	0.566%
276	15.887	15.872	15.938	VV	2279	72215	4.34%	0.167%
277	15.974	15.938	16.034	VV	6523	184534	11.09%	0.427%
278	16.044	16.034	16.062	VV	2144	27253	1.64%	0.063%
279	16.086	16.062	16.132	VV	3877	86516	5.20%	0.200%
280	16.164	16.132	16.180	VV	2976	53329	3.21%	0.123%
281	16.199	16.180	16.241	VV	4112	70122	4.22%	0.162%
282	16.263	16.241	16.301	VV	3845	61378	3.69%	0.142%
283	16.331	16.301	16.367	PV	2282	49791	2.99%	0.115%
284	16.395	16.367	16.452	VV	1659	43709	2.63%	0.101%
285	16.488	16.452	16.542	VV	1513	45045	2.71%	0.104%
286	16.578	16.542	16.627	VV	38379	733285	44.08%	1.697%
287	16.684	16.627	16.707	VV	10204	259053	15.57%	0.600%
288	16.721	16.707	16.737	VV	3981	62687	3.77%	0.145%
289	16.756	16.737	16.796	VV	5638	107771	6.48%	0.249%
290	16.846	16.796	16.865	VV	1569	50202	3.02%	0.116%
291	16.885	16.865	16.924	VV	1463	33539	2.02%	0.078%
292	17.001	16.924	17.017	PV	1562	49441	2.97%	0.114%
293	17.063	17.017	17.087	VV	4259	118131	7.10%	0.273%
294	17.114	17.087	17.132	VV	5311	110285	6.63%	0.255%
295	17.151	17.132	17.182	VV	6721	129485	7.78%	0.300%
296	17.230	17.182	17.306	VV	6550	158691	9.54%	0.367%
297	17.326	17.306	17.334	VV	1274	12594	0.76%	0.029%
298	17.386	17.334	17.428	VV	3789	100961	6.07%	0.234%
299	17.464	17.428	17.491	VV	3324	89605	5.39%	0.207%

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300	17.526	17.491	17.577	VV	25854	587900	35.34%	1.361%
301	17.602	17.577	17.654	VV	32480	519367	31	
302	17.686	17.654	17.740	VV	4140	144699	8	
303	17.763	17.740	17.787	VV	2145	42661	2	
304	17.820	17.787	17.846	VV	2012	50007	3	
305	17.881	17.846	17.906	VV	2895	65258	3	
306	17.920	17.906	17.947	VV	1936	36950	2.22%	0.086%
307	17.972	17.947	17.998	VV	4513	95910	5.77%	0.222%
308	18.042	17.998	18.072	VV	9826	214391	12.89%	0.496%
309	18.083	18.072	18.094	VV	3198	36719	2.21%	0.085%
310	18.130	18.094	18.157	VV	11147	250033	15.03%	0.579%
311	18.176	18.157	18.186	VV	7558	108985	6.55%	0.252%
312	18.205	18.186	18.231	VV	17429	286271	17.21%	0.663%
313	18.254	18.231	18.292	VV	22584	391726	23.55%	0.907%
314	18.314	18.292	18.327	VV	3919	71947	4.33%	0.167%
315	18.407	18.327	18.438	VV	39373	1067813	64.19%	2.472%
316	18.466	18.438	18.514	VV	43015	910699	54.75%	2.108%
317	18.549	18.514	18.638	VV	8796	410448	24.68%	0.950%
318	18.654	18.638	18.691	VV	4396	125231	7.53%	0.290%
319	18.746	18.691	18.802	VV	5817	295821	17.78%	0.685%
320	18.871	18.802	18.917	VV	13230	529330	31.82%	1.225%
321	18.946	18.917	19.001	VV	75065	1365525	82.09%	3.161%
322	19.013	19.001	19.101	VV	11446	401964	24.17%	0.930%
323	19.145	19.101	19.173	VV	56175	919045	55.25%	2.127%
324	19.190	19.173	19.199	VV	9287	129483	7.78%	0.300%
325	19.233	19.199	19.249	VV	53929	980531	58.95%	2.270%
326	19.270	19.249	19.328	VV	62632	1663405	100.00%	3.850%
327	19.348	19.328	19.377	VV	13071	333376	20.04%	0.772%
328	19.399	19.377	19.427	VV	12445	330788	19.89%	0.766%
329	19.435	19.427	19.484	VV	10245	284366	17.10%	0.658%
330	19.514	19.484	19.546	VV	16830	426589	25.65%	0.987%
331	19.567	19.546	19.608	VV	9343	260429	15.66%	0.603%
332	19.680	19.608	19.703	VV	14729	510947	30.72%	1.183%
333	19.723	19.703	19.749	VV	11265	241412	14.51%	0.559%
334	19.769	19.749	19.804	VV	11385	271458	16.32%	0.628%
335	19.837	19.804	19.868	VV	9734	294208	17.69%	0.681%
336	19.877	19.868	19.897	VV	6616	102201	6.14%	0.237%
337	19.940	19.897	19.972	VV	12763	419952	25.25%	0.972%
338	20.004	19.972	20.052	VV	29297	783010	47.07%	1.812%
339	20.065	20.052	20.116	VV	11524	317843	19.11%	0.736%
340	20.128	20.116	20.147	VV	6887	118504	7.12%	0.274%
341	20.170	20.147	20.191	VV	7884	184870	11.11%	0.428%
342	20.221	20.191	20.253	VV	16470	399431	24.01%	0.925%
343	20.285	20.253	20.294	VV	9479	213581	12.84%	0.494%
344	20.329	20.294	20.378	VV	20410	624114	37.52%	1.445%
345	20.422	20.378	20.481	VV	14382	703803	42.31%	1.629%
346	20.520	20.481	20.537	VV	11725	357963	21.52%	0.829%
347	20.560	20.537	20.587	VV	14854	376560	22.64%	0.872%
348	20.609	20.587	20.622	VV	10857	222645	13.38%	0.515%
349	20.625	20.622	20.640	VV	10994	112194	6.74%	0.260%
350	20.722	20.640	20.741	VV	12833	716340	43.06%	1.658%
351	20.759	20.741	20.779	VV	13869	302560	18.19%	0.700%

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352	20.788	20.779	20.829	VV	13411	377485	22.69%	0.874%
353	20.842	20.829	20.906	VV	11863	505600	30	
354	20.934	20.906	20.959	VV	10894	332351	19	
355	20.978	20.959	21.016	VV	11840	371771	22	
356	21.037	21.016	21.061	VV	10443	266429	16	
357	21.069	21.061	21.109	VV	8783	247342	14	
358	21.133	21.109	21.152	VV	8896	217555	13.08%	0.504%
359	21.173	21.152	21.226	VV	10069	358089	21.53%	0.829%
360	21.244	21.226	21.277	VV	7298	197394	11.87%	0.457%
361	21.282	21.277	21.296	VV	5885	63792	3.83%	0.148%
362	21.346	21.296	21.361	VV	7016	249902	15.02%	0.578%
363	21.372	21.361	21.424	VV	6838	227755	13.69%	0.527%
364	21.445	21.424	21.457	VV	5949	106451	6.40%	0.246%
365	21.470	21.457	21.521	VV	5557	179435	10.79%	0.415%
366	21.601	21.521	21.659	VV	7160	380728	22.89%	0.881%
367	21.735	21.659	21.767	VV	5516	238760	14.35%	0.553%
368	21.796	21.767	21.819	VV	3420	90144	5.42%	0.209%
369	21.835	21.819	21.847	VV	2459	37674	2.26%	0.087%
370	21.885	21.847	21.964	VV	4552	188670	11.34%	0.437%
371	21.972	21.964	22.007	VV	546	8820	0.53%	0.020%

Sum of corrected areas: 43202790

FG052225.M Wed Jun 11 07:12:25 2025

CALIBRATION SUMMARY

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

TPH GC INITIAL CALIBRATION SUMMARY

Lab Name: Chemtech Contract: PORT06

ProjectID: Amtrak Sawtooth Bridges 2025

Lab Code: CHEM Case No.: Q2198 SAS No.: Q2198 SDG No.: Q2198

Calibration Sequence : FG052225		Test : TPH GC	
Concentration (PPM)	**Area Count**	**Reference Factor**	**File ID**
1700	205023420	120602	FG015886.D
850	105950670	124648	FG015887.D
340	42697248	125580	FG015888.D
170	22436219	131978	FG015889.D
85	10374809	122057	FG015890.D
AVG RF : 124973	**% RSD : 3.514**		**AVG RT : 14.9848**

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Fax : 908 789 8922

TPH GC CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: PORT06

ProjectID: Amtrak Sawtooth Bridges 2025

Lab Code: CHEM Case No.: Q2198 SAS No.: Q2198 SDG No.: Q2198

DataFile: FG016010.D Analyst Name: YP\AJ Analyst Date: 06-10-2025

Conc. (PPM)	Area Count	RF	Average RF	%D
850	99554971	117123	124973	6.281

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016010.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 15:06
Operator : YP\AJ
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 3 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
50 PPM TRPH STD

Integration File: autoint1.e
Quant Time: Jun 11 01:39:40 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
9) S	TETRACOSANE-d50 (SURR...	14.976	5628825	45.927 ug/ml
	Target Compounds			
1)	N-OCTANE	1.950	5859317	49.831 ug/ml
2)	N-DECANE	4.476	6067037	51.635 ug/ml
3)	N-DODECANE	6.660	6233451	51.358 ug/ml
4)	N-TETRADECANE	8.497	6418218	50.264 ug/ml
5)	N-HEXADECANE	10.110	6510938	48.870 ug/ml
6)	N-OCTADECANE	11.557	6662857	48.280 ug/ml
7)	N-EICOSANE	12.873	6709400	47.491 ug/ml
8)	N-DOCOSANE	14.074	6452989	46.977 ug/ml
10)	N-TETRACOSANE	15.181	6354713	46.226 ug/ml
11)	N-HEXACOSANE	16.204	6226365	45.826 ug/ml
12)	N-OCTACOSANE	17.157	6097879	45.228 ug/ml
13)	N-TRIACONTANE	18.045	6135285	44.964 ug/ml
14)	N-DOTRIACONTANE	18.880	5908072	44.112 ug/ml
15)	N-TETRATRIACONTANE	19.665	5363637	44.231 ug/ml
16)	N-HEXATRIACONTANE	20.407	4609188	43.163 ug/ml
17)	N-OCTATRIACONTANE	21.141	4102672	42.751 ug/ml
18)	N-TETRACONTANE	22.051	3842953	43.694 ug/ml

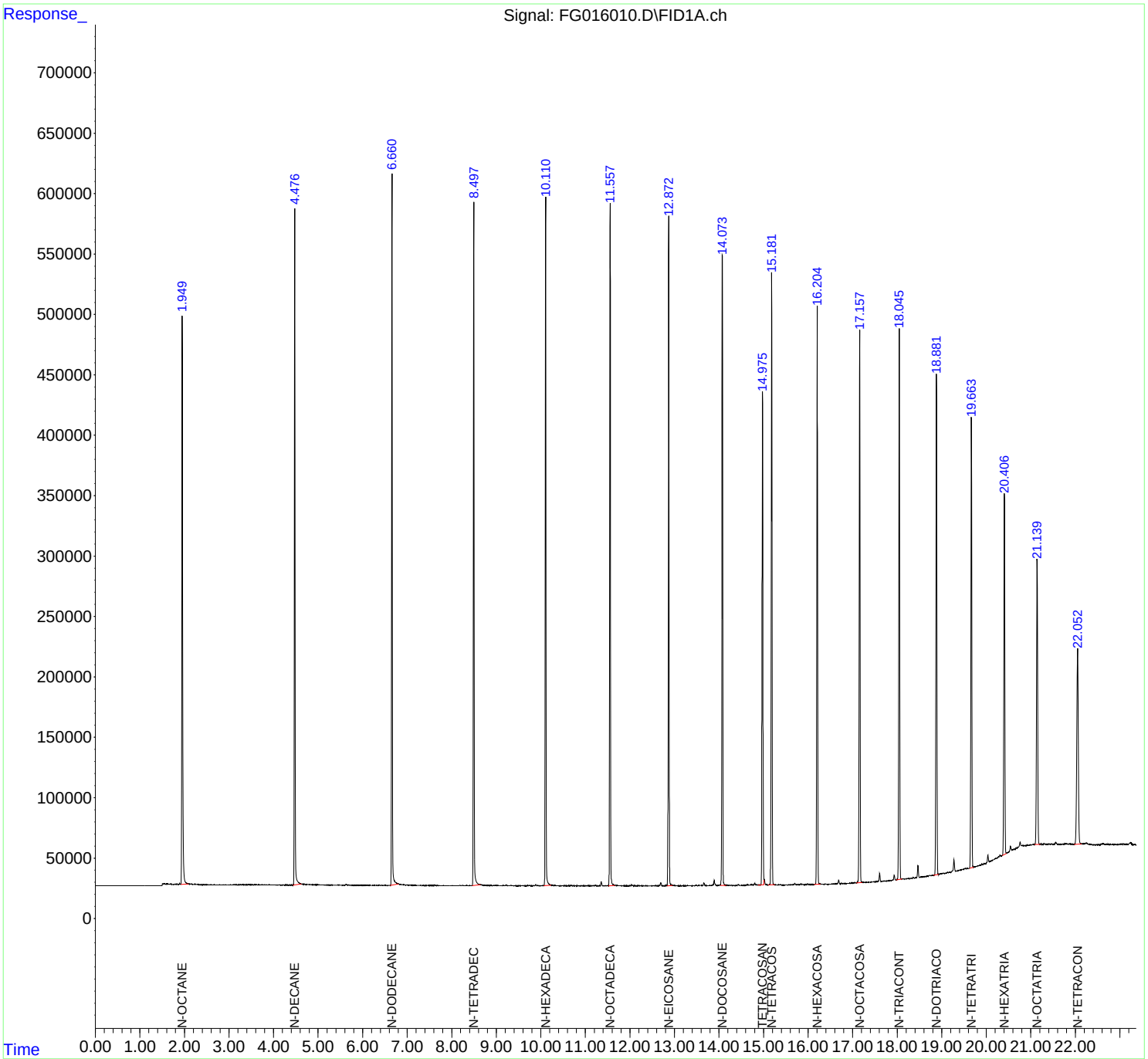
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016010.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 15:06
Operator : YP\AJ
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 3 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
50 PPM TRPH STD

Integration File: autoint1.e
Quant Time: Jun 11 01:39:40 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um



rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016010.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 15:06
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 3 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Title :

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	1.950	1.919	2.091	BB	471149	5859317	87.33%	5.571%
2	4.476	4.433	4.625	BB	559047	6067037	90.43%	5.768%
3	6.660	6.618	6.805	BB	589259	6233451	92.91%	5.926%
4	8.497	8.457	8.645	BB	564209	6418218	95.66%	6.102%
5	10.110	10.072	10.233	BB	570271	6510938	97.04%	6.190%
6	11.557	11.515	11.662	BB	564489	6662857	99.31%	6.334%
7	12.873	12.832	12.962	BB	553947	6709400	100.00%	6.379%
8	14.074	14.038	14.164	VB	520379	6452989	96.18%	6.135%
9	14.976	14.877	15.009	BV	406382	5628825	83.89%	5.351%
10	15.181	15.100	15.254	BB	504975	6354713	94.71%	6.042%
11	16.204	16.133	16.278	BB	475624	6226365	92.80%	5.920%
12	17.157	17.084	17.216	BB	452550	6097879	90.89%	5.797%
13	18.045	17.975	18.105	BB	454615	6135285	91.44%	5.833%
14	18.880	18.813	18.933	BB	412839	5908072	88.06%	5.617%
15	19.665	19.620	19.718	BV	366477	5363637	79.94%	5.099%
16	20.407	20.360	20.448	BV	297452	4609188	68.70%	4.382%
17	21.141	21.080	21.213	BV	234597	4102672	61.15%	3.900%
18	22.051	21.970	22.143	BB	162217	3842953	57.28%	3.654%

Sum of corrected areas: 105183796

FG052225.M Wed Jun 11 01:55:36 2025

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

TPH GC CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: PORT06

ProjectID: Amtrak Sawtooth Bridges 2025

Lab Code: CHEM Case No.: Q2198 SAS No.: Q2198 SDG No.: Q2198

DataFile: FG016022.D Analyst Name: YP\AJ Analyst Date: 06-10-2025

Conc. (PPM)	Area Count	RF	Average RF	%D
850	103907568	122244	124973	2.184

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016022.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 21:00
Operator : YP\AJ
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 3 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
50 PPM TRPH STD

Integration File: autoint1.e
Quant Time: Jun 11 05:55:23 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
9) S	TETRACOSANE-d50 (SURR...	14.976	5898744	48.129 ug/ml
	Target Compounds			
1)	N-OCTANE	1.949	6073843	51.656 ug/ml
2)	N-DECANE	4.475	6298665	53.606 ug/ml
3)	N-DODECANE	6.659	6474887	53.347 ug/ml
4)	N-TETRADECANE	8.496	6653763	52.109 ug/ml
5)	N-HEXADECANE	10.110	6772484	50.833 ug/ml
6)	N-OCTADECANE	11.557	6933004	50.237 ug/ml
7)	N-EICOSANE	12.872	6996768	49.525 ug/ml
8)	N-DOCOSANE	14.074	6755868	49.182 ug/ml
10)	N-TETRACOSANE	15.181	6667691	48.503 ug/ml
11)	N-HEXACOSANE	16.204	6542216	48.151 ug/ml
12)	N-OCTACOSANE	17.157	6401691	47.481 ug/ml
13)	N-TRIACONTANE	18.046	6456274	47.317 ug/ml
14)	N-DOTRIACONTANE	18.881	6239964	46.590 ug/ml
15)	N-TETRATRIACONTANE	19.666	5607734	46.243 ug/ml
16)	N-HEXATRIACONTANE	20.406	4807284	45.018 ug/ml
17)	N-OCTATRIACONTANE	21.142	4253506	44.323 ug/ml
18)	N-TETRACONTANE	22.051	3971926	45.160 ug/ml

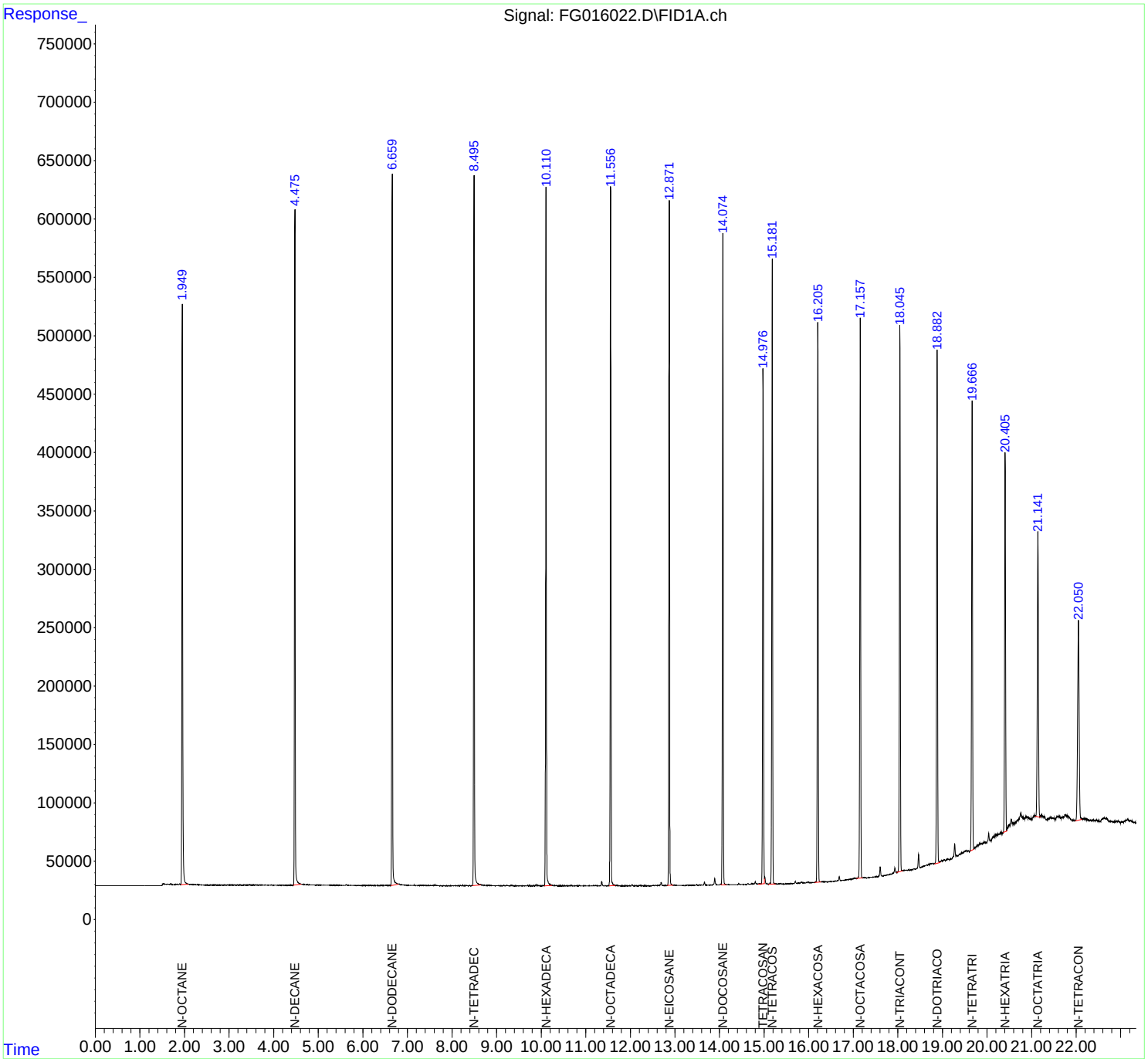
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016022.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 21:00
Operator : YP\AJ
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 3 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
50 PPM TRPH STD

Integration File: autoint1.e
Quant Time: Jun 11 05:55:23 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um



rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016022.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 21:00
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 3 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Title :

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	1.949	1.913	2.086	BB	495574	6073843	86.81%	5.531%
2	4.475	4.433	4.623	BB	577873	6298665	90.02%	5.736%
3	6.659	6.623	6.800	BB	608226	6474887	92.54%	5.897%
4	8.496	8.458	8.644	BB	607356	6653763	95.10%	6.060%
5	10.110	10.070	10.245	BB	598629	6772484	96.79%	6.168%
6	11.558	11.518	11.666	BB	595278	6933004	99.09%	6.314%
7	12.872	12.821	12.959	BB	585211	6996768	100.00%	6.372%
8	14.074	14.037	14.160	VB	555225	6755868	96.56%	6.153%
9	14.976	14.868	15.008	BV	440171	5898744	84.31%	5.372%
10	15.181	15.098	15.261	BB	533575	6667691	95.30%	6.072%
11	16.204	16.132	16.278	BB	477195	6542216	93.50%	5.958%
12	17.157	17.068	17.213	BB	478838	6401691	91.49%	5.830%
13	18.046	17.969	18.118	PB	465838	6456274	92.28%	5.880%
14	18.881	18.830	18.945	VV	442431	6239964	89.18%	5.683%
15	19.666	19.620	19.702	BV	381713	5607734	80.15%	5.107%
16	20.406	20.360	20.441	BV	324900	4807284	68.71%	4.378%
17	21.142	21.080	21.189	BV	242253	4253506	60.79%	3.874%
18	22.051	21.989	22.114	PV	170992	3971926	56.77%	3.617%

Sum of corrected areas: 109806312

FG052225.M Wed Jun 11 06:59:01 2025

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Analytical Sequence

Client: Portal Partners Tri-Venture **SDG No.:** Q2198

Project: Amtrak Sawtooth Bridges 2025 **Instrument ID:** FID_G

GC Column: RXI-1MS **ID:** 0.18 **(mm)**

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SUROGATE RT FROM INITIAL CALIBRATION **14.9848**

EPA SAMPLE NO.	LAB SAMPLE ID	DATE AND TIME ANALYZED	DATAFILE	RT	#
PIBLK01	I.BLK01	10 Jun 2025 14:37	FG016009.D	14.973	
50 PPM TRPH STD	50 PPM TRPH STD	10 Jun 2025 15:06	FG016010.D	14.976	
PB168382BL	PB168382BL	10 Jun 2025 15:36	FG016011.D	14.974	
PB168382BS	PB168382BS	10 Jun 2025 16:05	FG016012.D	14.973	
B-202-SB02	Q2198-01	10 Jun 2025 18:03	FG016016.D	14.973	
B-207-SB02	Q2198-03	10 Jun 2025 18:32	FG016017.D	14.971	
BU-03-060525MS	Q2246-01MS	10 Jun 2025 19:31	FG016019.D	14.973	
BU-03-060525MSD	Q2246-01MSD	10 Jun 2025 20:01	FG016020.D	14.973	
PIBLK02	I.BLK02	10 Jun 2025 20:30	FG016021.D	14.974	
50 PPM TRPH STD	50 PPM TRPH STD	10 Jun 2025 21:00	FG016022.D	14.976	

 # Column used to flag RT values with an * values outside of QC limits

QC Limits	Lower Limit	Upper Limits
(± 0.10 minutes)	14.8848	15.0848

QC SAMPLE DATA

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Report of Analysis

Client:	Portal Partners Tri-Venture	Date Collected:	
Project:	Amtrak Sawtooth Bridges 2025	Date Received:	
Client Sample ID:	PB168382BL	SDG No.:	Q2198
Lab Sample ID:	PB168382BL	Matrix:	SOIL
Analytical Method:	8015D TPH	% Solid:	100 Decanted:
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	TPH GC
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG016011.D	1	06/10/25 08:16	06/10/25 15:36	PB168382

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
PHC	Petroleum Hydrocarbons	384	U	384	2830	ug/kg
SURROGATES						
16416-32-3	TETRACOSANE-d50	14.1		37 - 130	70%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016011.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 15:36
Operator : YP\AJ
Sample : PB168382BL
Misc :
ALS Vial : 26 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
PB168382BL

Integration File: autoint1.e
Quant Time: Jun 11 01:59:16 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
9) S TETRACOSANE-d50 (SURR...	14.974	1723832	14.065 ug/ml
Target Compounds			

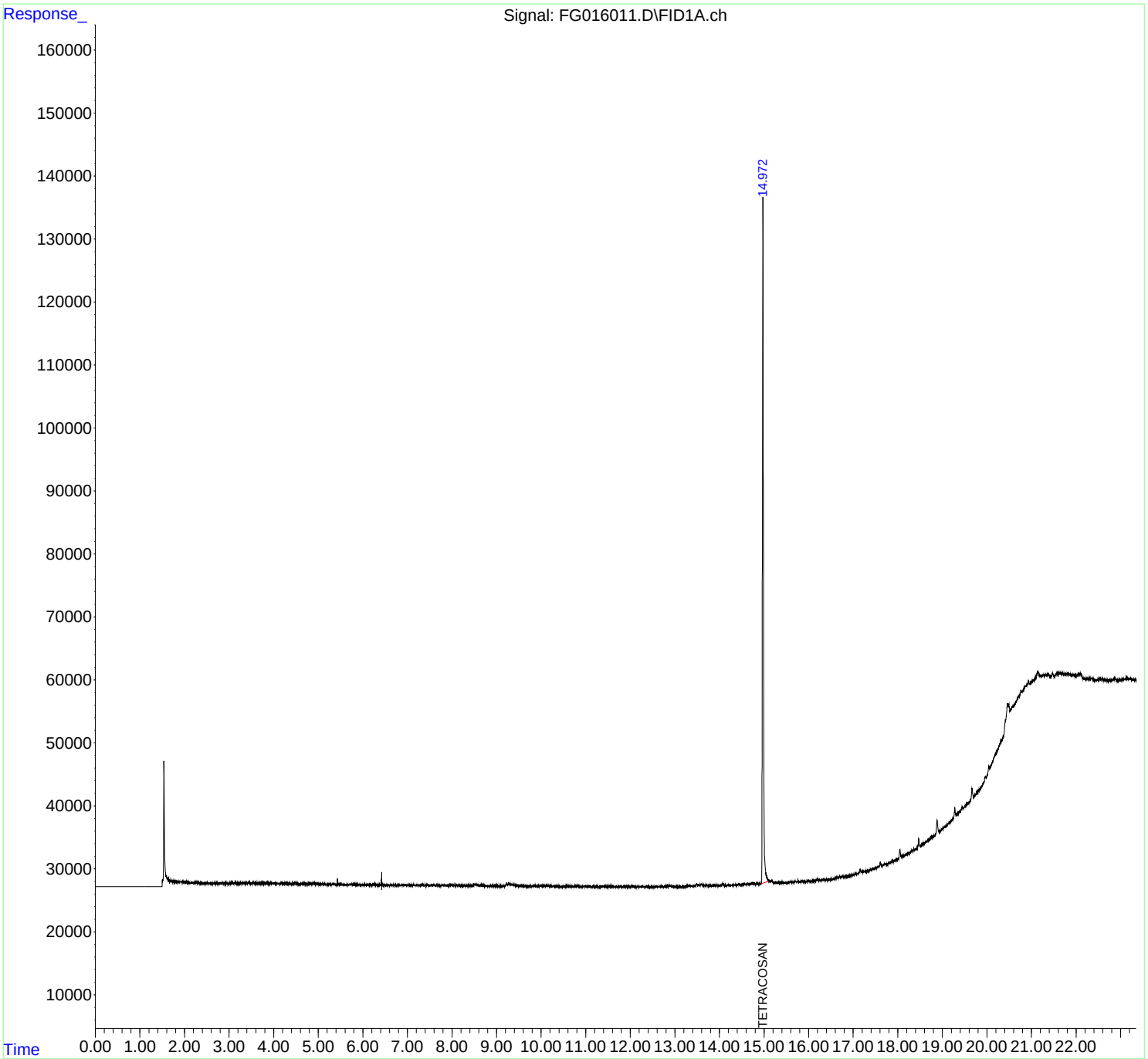
(f)=RT Delta > 1/2 Window (m)=manual int.

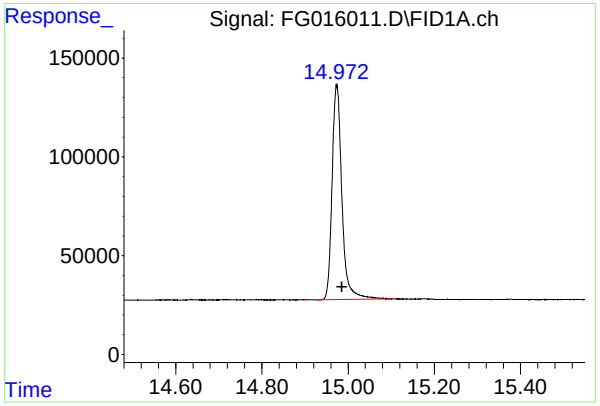
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016011.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 15:36
Operator : YP\AJ
Sample : PB168382BL
Misc :
ALS Vial : 26 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
PB168382BL

Integration File: autoint1.e
Quant Time: Jun 11 01:59:16 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 14.974 min
Delta R.T.: -0.013 mi
Response: 1723832
Conc: 14.07 ug/m

Instrument :
FID_G
ClientSampleId :
PB168382BL

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016011.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 15:36
Sample : PB168382BL
Misc :
ALS Vial : 26 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Title :

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	14.974	14.926	15.104	BB	107968	1723832	100.00%	100.000%

Sum of corrected areas: 1723832

FG052225.M Wed Jun 11 02:01:29 2025

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Report of Analysis

Client:	Portal Partners Tri-Venture	Date Collected:	06/10/25
Project:	Amtrak Sawtooth Bridges 2025	Date Received:	06/10/25
Client Sample ID:	PIBLK-FG016009.D	SDG No.:	Q2198
Lab Sample ID:	I.BLK-FG016009.D	Matrix:	Water
Analytical Method:	8015D TPH	% Solid:	0 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	TPH GC
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :	SW3510		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG016009.D	1		06/10/25	FG061025

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
PHC	Petroleum Hydrocarbons	12.0	U	12.0	85.0	ug/L
SURROGATES						
16416-32-3	TETRACOSANE-d50	15.7		29 - 130	78%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016009.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 14:37
Operator : YP\AJ
Sample : I.BLK
Misc :
ALS Vial : 2 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
I.BLK

Integration File: autoint1.e
Quant Time: Jun 11 01:39:25 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
9) S TETRACOSANE-d50 (SURR...	14.973	1920551	15.670 ug/ml
Target Compounds			

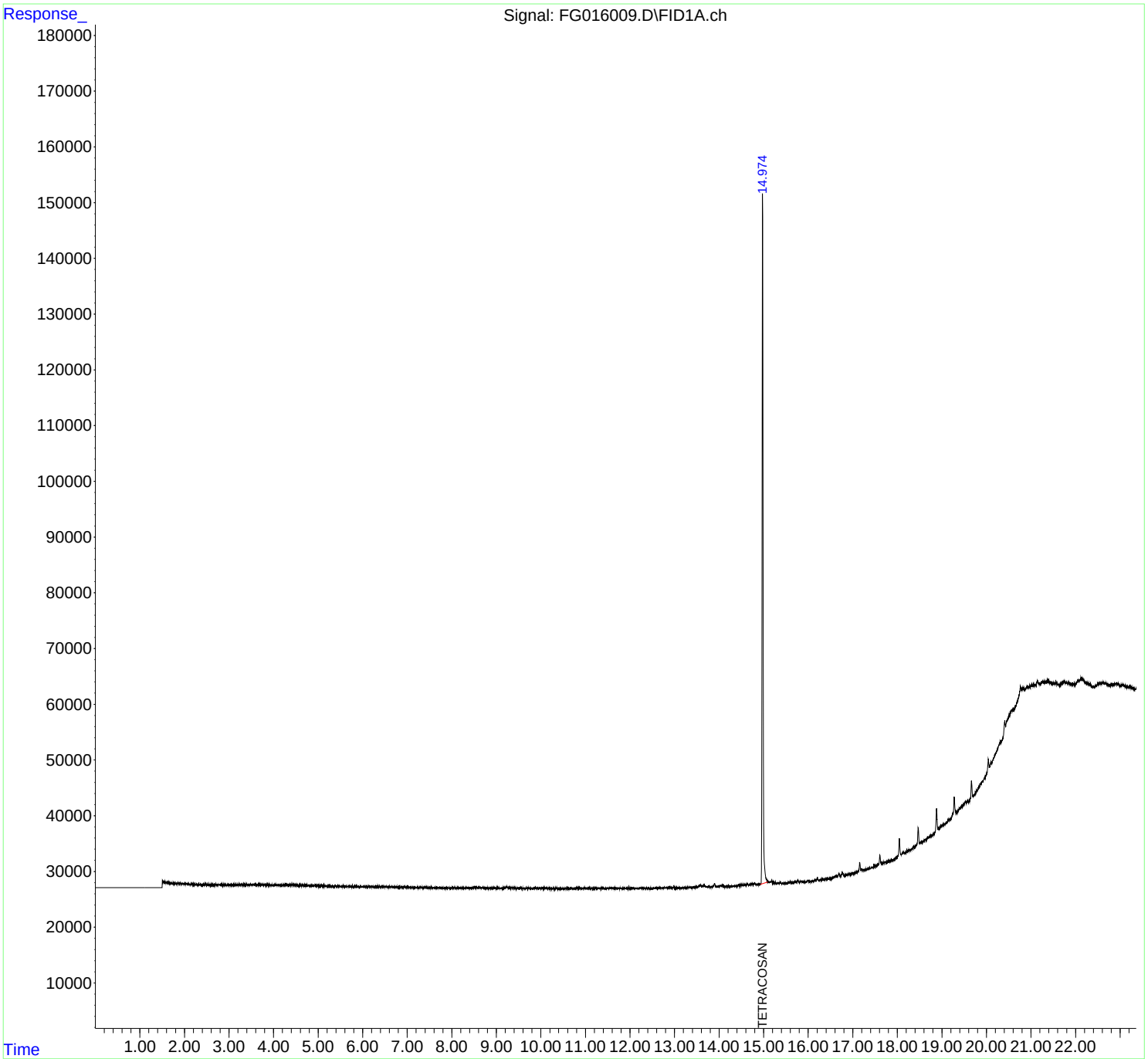
(f)=RT Delta > 1/2 Window (m)=manual int.

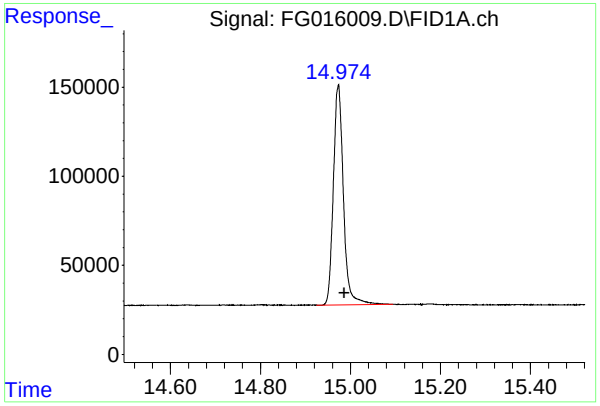
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016009.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 14:37
Operator : YP\AJ
Sample : I.BLK
Misc :
ALS Vial : 2 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
I.BLK

Integration File: autoint1.e
Quant Time: Jun 11 01:39:25 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 14.973 min
Delta R.T.: -0.013 mi
Response: 1920551
Conc: 15.67 ug/m

Instrument :
FID_G
ClientSampleId :
I.BLK

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016009.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 14:37
Sample : I.BLK
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Title :

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	14.973	14.924	15.095	BB	123110	1920551	100.00%	100.000%

Sum of corrected areas: 1920551

FG052225.M Wed Jun 11 01:54:56 2025

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Report of Analysis

Client:	Portal Partners Tri-Venture	Date Collected:	06/10/25
Project:	Amtrak Sawtooth Bridges 2025	Date Received:	06/10/25
Client Sample ID:	PIBLK-FG016021.D	SDG No.:	Q2198
Lab Sample ID:	I.BLK-FG016021.D	Matrix:	Water
Analytical Method:	8015D TPH	% Solid:	0 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	TPH GC
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :	SW3510		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG016021.D	1		06/10/25	FG061025

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
PHC	Petroleum Hydrocarbons	12.0	U	12.0	85.0	ug/L
SURROGATES						
16416-32-3	TETRACOSANE-d50	16.3		29 - 130	82%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016021.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 20:30
Operator : YP\AJ
Sample : I.BLK
Misc :
ALS Vial : 2 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
I.BLK

Integration File: autoint1.e
Quant Time: Jun 11 05:55:06 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
9) S TETRACOSANE-d50 (SURR...	14.974	2001567	16.331 ug/ml
Target Compounds			

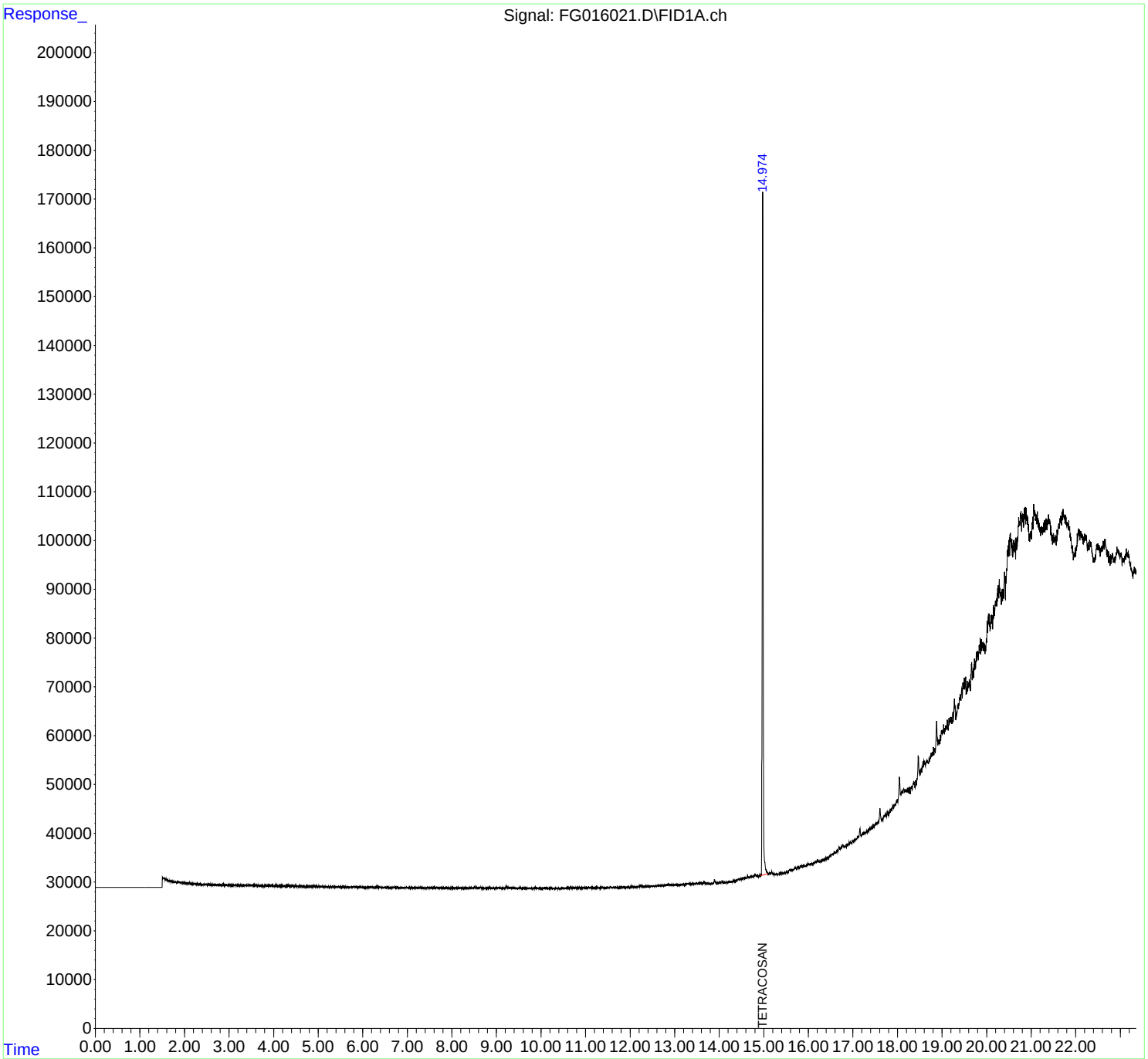
(f)=RT Delta > 1/2 Window (m)=manual int.

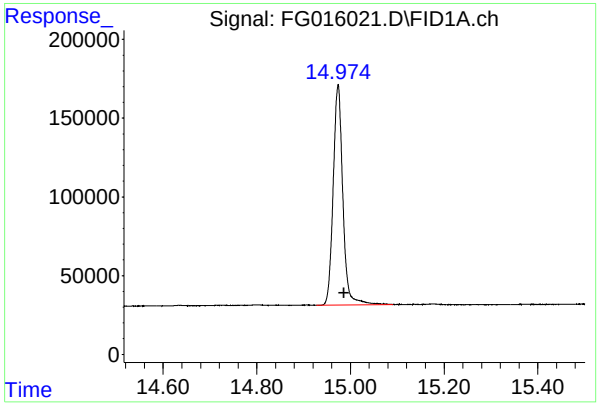
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016021.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 20:30
Operator : YP\AJ
Sample : I.BLK
Misc :
ALS Vial : 2 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
I.BLK

Integration File: autoint1.e
Quant Time: Jun 11 05:55:06 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 14.974 min
Delta R.T.: -0.012 mi
Response: 2001567
Conc: 16.33 ug/m

Instrument :
FID_G
ClientSampleId :
I.BLK

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016021.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 20:30
Sample : I.BLK
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Title :

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	14.974	14.927	15.091	BB	140247	2001567	100.00%	100.000%
			Sum of corrected areas:			2001567		

FG052225.M Wed Jun 11 06:58:03 2025

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Report of Analysis

Client:	Portal Partners Tri-Venture	Date Collected:	
Project:	Amtrak Sawtooth Bridges 2025	Date Received:	
Client Sample ID:	PB168382BS	SDG No.:	Q2198
Lab Sample ID:	PB168382BS	Matrix:	SOIL
Analytical Method:	8015D TPH	% Solid:	100 Decanted:
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	TPH GC
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG016012.D	1	06/10/25 08:16	06/10/25 16:05	PB168382

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
PHC	Petroleum Hydrocarbons	11800		384	2830	ug/kg
SURROGATES						
16416-32-3	TETRACOSANE-d50	15.1		37 - 130	75%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016012.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 16:05
Operator : YP\AJ
Sample : PB168382BS
Misc :
ALS Vial : 27 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
PB168382BS

Integration File: autoint1.e
Quant Time: Jun 11 01:59:30 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
9)	S TETRACOSANE-d50 (SURR...	14.973	1847586	15.075 ug/ml
	Target Compounds			
1)	N-OCTANE	1.951	2675876	22.757 ug/ml
2)	N-DECANE	4.475	2859899	24.340 ug/ml
3)	N-DODECANE	6.657	3052486	25.150 ug/ml
4)	N-TETRADECANE	8.493	3062343	23.983 ug/ml
5)	N-HEXADECANE	10.107	3193116	23.967 ug/ml
6)	N-OCTADECANE	11.555	3316977	24.035 ug/ml
7)	N-EICOSANE	12.870	3254030	23.033 ug/ml
8)	N-DOCOSANE	14.071	3193099	23.245 ug/ml
10)	N-TETRACOSANE	15.177	3148048	22.900 ug/ml
11)	N-HEXACOSANE	16.201	3070175	22.597 ug/ml
12)	N-OCTACOSANE	17.154	3017115	22.378 ug/ml
13)	N-TRIACONTANE	18.044	2922700	21.420 ug/ml
14)	N-DOTRIACONTANE	18.878	2518080	18.801 ug/ml
15)	N-TETRATRIACONTANE	19.662	1676929	13.829 ug/ml
16)	N-HEXATRIACONTANE	20.404	1208496	11.317 ug/ml
17)	N-OCTATRIACONTANE	21.139	1124171	11.714 ug/ml
18)	N-TETRACONTANE	22.049	1126040	12.803 ug/ml

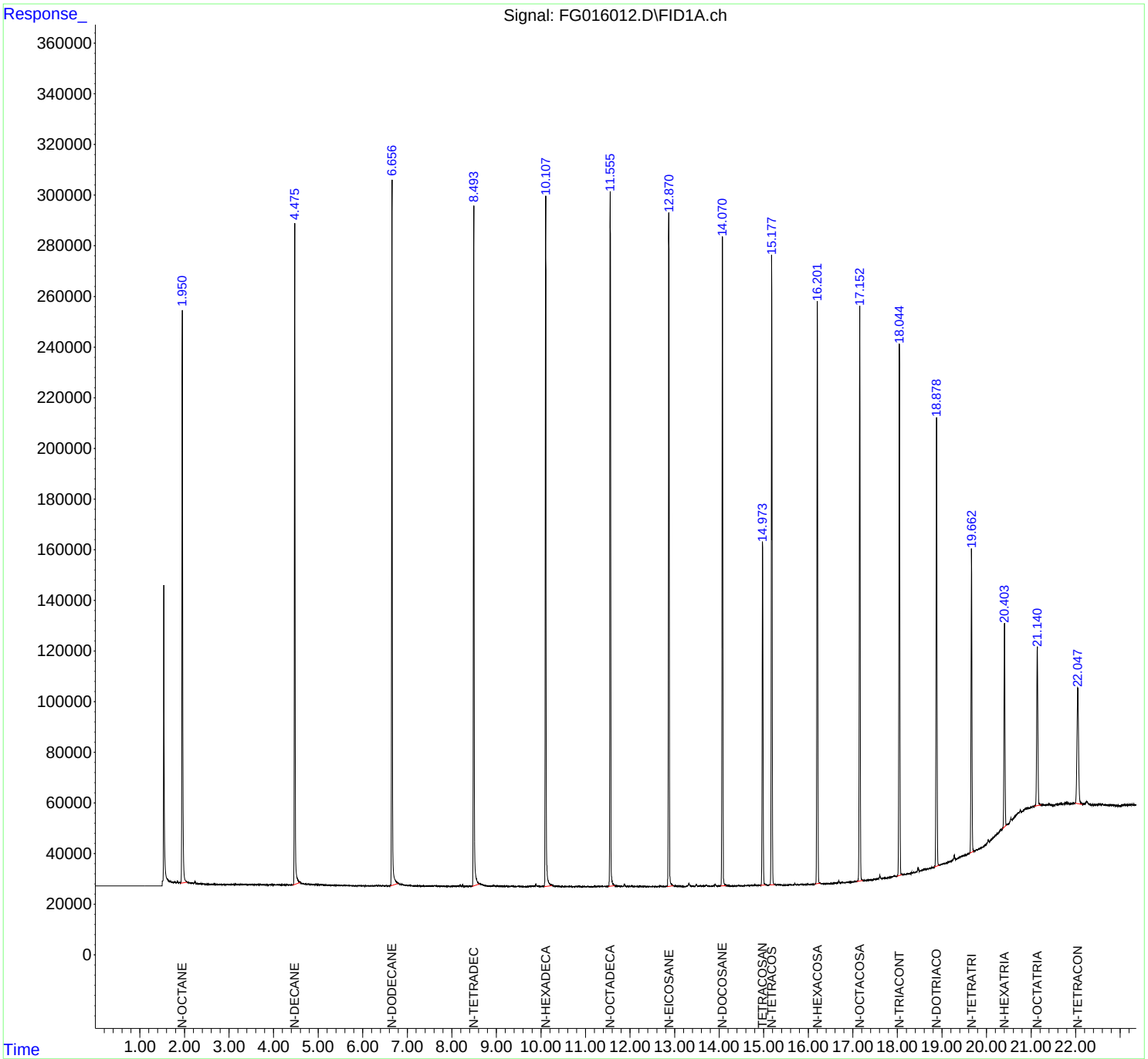
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016012.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 16:05
Operator : YP\AJ
Sample : PB168382BS
Misc :
ALS Vial : 27 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
PB168382BS

Integration File: autoint1.e
Quant Time: Jun 11 01:59:30 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um



rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016012.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 16:05
Sample : PB168382BS
Misc :
ALS Vial : 27 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Title :

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	1.951	1.915	2.064	BB	225030	2675876	80.67%	5.784%
2	4.475	4.432	4.595	BB	260591	2859899	86.22%	6.181%
3	6.657	6.627	6.795	BB	278185	3052486	92.03%	6.598%
4	8.493	8.457	8.623	BB	268276	3062343	92.32%	6.619%
5	10.107	10.071	10.240	BB	272414	3193116	96.27%	6.901%
6	11.555	11.508	11.661	BB	273318	3316977	100.00%	7.169%
7	12.870	12.833	12.966	BB	263852	3254030	98.10%	7.033%
8	14.071	14.034	14.152	BB	255728	3193099	96.27%	6.901%
9	14.973	14.923	15.045	BB	134831	1847586	55.70%	3.993%
10	15.177	15.132	15.245	BB	248735	3148048	94.91%	6.804%
11	16.201	16.149	16.270	BB	229887	3070175	92.56%	6.636%
12	17.154	17.080	17.227	BB	225677	3017115	90.96%	6.521%
13	18.044	17.989	18.105	BB	209495	2922700	88.11%	6.317%
14	18.878	18.822	18.938	BB	176675	2518080	75.91%	5.442%
15	19.662	19.620	19.716	BB	119521	1676929	50.56%	3.624%
16	20.404	20.360	20.450	BB	80255	1208496	36.43%	2.612%
17	21.139	21.080	21.218	BB	62305	1124171	33.89%	2.430%
18	22.049	21.983	22.156	BB	45637	1126040	33.95%	2.434%
			Sum of corrected areas:			46267164		

FG052225.M Wed Jun 11 02:02:01 2025

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Report of Analysis

Client:	Portal Partners Tri-Venture	Date Collected:	06/05/25
Project:	Amtrak Sawtooth Bridges 2025	Date Received:	06/05/25
Client Sample ID:	BU-03-060525MS	SDG No.:	Q2198
Lab Sample ID:	Q2246-01MS	Matrix:	SOIL
Analytical Method:	8015D TPH	% Solid:	99 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	TPH GC
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG016019.D	1	06/10/25 08:16	06/10/25 19:31	PB168382

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
PHC	Petroleum Hydrocarbons	22900		387	2860	ug/kg
SURROGATES						
16416-32-3	TETRACOSANE-d50	8.89		37 - 130	44%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016019.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 19:31
Operator : YP\AJ
Sample : Q2246-01MS
Misc :
ALS Vial : 34 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
BU-03-060525MS

Integration File: autoint1.e
Quant Time: Jun 11 05:54:23 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
9)	S TETRACOSANE-d50 (SURR...	14.973	1090125	8.895 ug/ml
	Target Compounds			
1)	N-OCTANE	1.951	455197	3.871 ug/ml
2)	N-DECANE	4.474	854055	7.269 ug/ml
3)	N-DODECANE	6.657	1026085	8.454 ug/ml
4)	N-TETRADECANE	8.492	1203302	9.424 ug/ml
5)	N-HEXADECANE	10.106	1386792	10.409 ug/ml
6)	N-OCTADECANE	11.554	1794083	13.000 ug/ml
7)	N-EICOSANE	12.868	1715916	12.146 ug/ml
8)	N-DOCOSANE	14.070	1428942	10.402 ug/ml
10)	N-TETRACOSANE	15.176	1499008	10.904 ug/ml
11)	N-HEXACOSANE	16.201	1230043	9.053 ug/ml
12)	N-OCTACOSANE	17.155	1351958	10.027 ug/ml
13)	N-TRIACONTANE	18.045	1539314	11.281 ug/ml
14)	N-DOTRIACONTANE	18.880	1367429	10.210 ug/ml
15)	N-TETRATRIACONTANE	19.665	1096460	9.042 ug/ml
16)	N-HEXATRIACONTANE	20.405	836842	7.837 ug/ml
17)	N-OCTATRIACONTANE	21.141	739550	7.706 ug/ml
18)	N-TETRACONTANE	22.057	892211	10.144 ug/ml

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

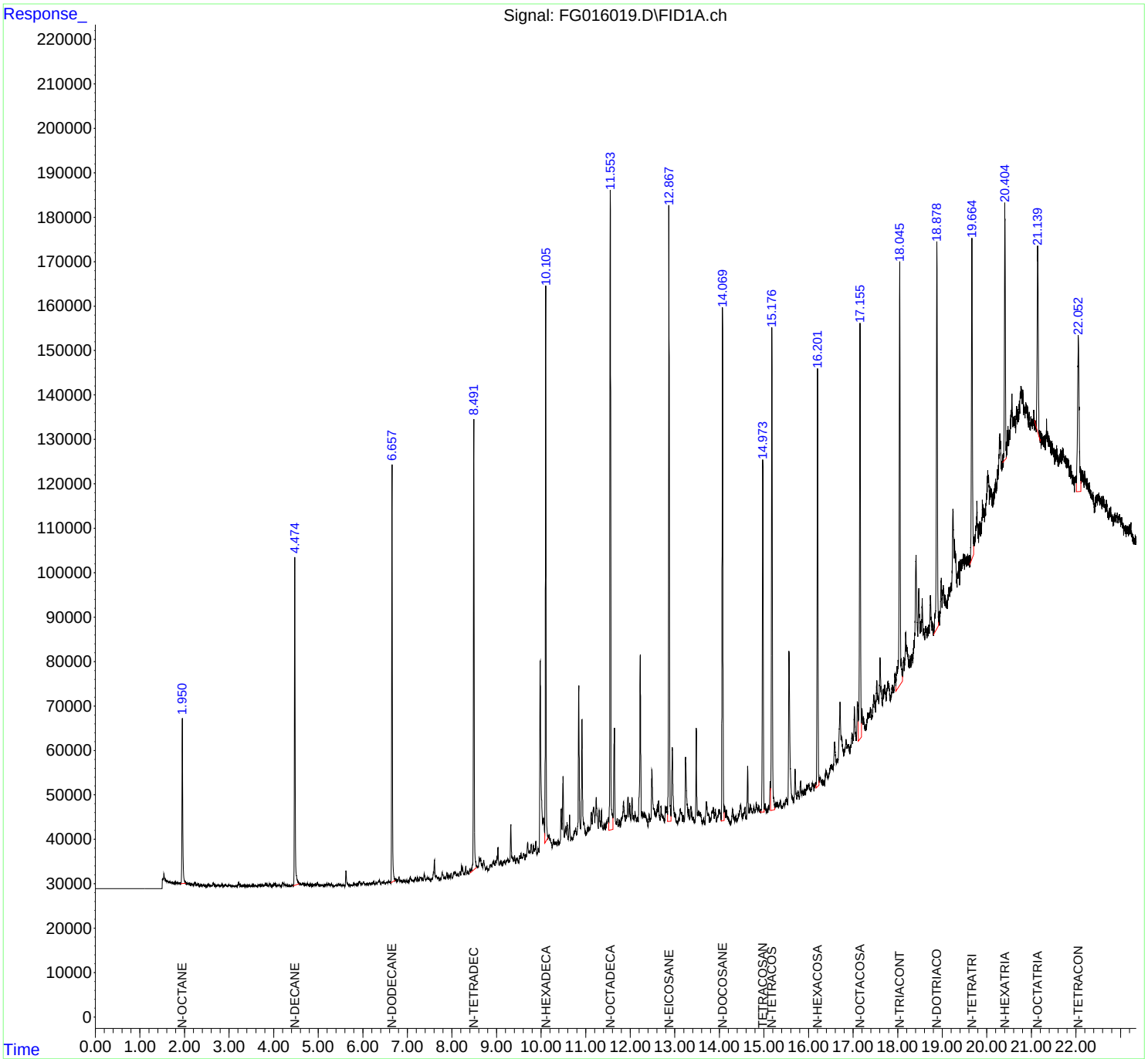
Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016019.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 19:31
Operator : YP\AJ
Sample : Q2246-01MS
Misc :
ALS Vial : 34 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
BU-03-060525MS

Integration File: autoint1.e
Quant Time: Jun 11 05:54:23 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um



Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016019.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 19:31
Sample : Q2246-01MS
Misc :
ALS Vial : 34 Sample Multiplier: 1

Integration File: Sample.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Title :

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	1.951	1.906	2.037	BV	37153	462712	22.96%	0.537%
2	2.040	2.037	2.075	VV	265	3969	0.20%	0.005%
3	2.081	2.075	2.094	VV	209	1495	0.07%	0.002%
4	2.097	2.094	2.117	VV	142	1300	0.06%	0.002%
5	2.120	2.117	2.151	VV	129	1433	0.07%	0.002%
6	2.158	2.151	2.192	VV	165	2814	0.14%	0.003%
7	2.202	2.192	2.213	VV	150	1208	0.06%	0.001%
8	2.234	2.213	2.264	VV	603	9838	0.49%	0.011%
9	2.268	2.264	2.279	VV	151	1128	0.06%	0.001%
10	2.296	2.279	2.314	VV	266	3287	0.16%	0.004%
11	2.318	2.314	2.338	VV	127	997	0.05%	0.001%
12	2.351	2.338	2.365	PV	168	1169	0.06%	0.001%
13	2.371	2.365	2.377	VV	114	495	0.02%	0.001%
14	2.385	2.377	2.395	VV	179	1164	0.06%	0.001%
15	2.396	2.395	2.418	VV	191	1095	0.05%	0.001%
16	2.429	2.418	2.441	VV	161	1350	0.07%	0.002%
17	2.444	2.441	2.455	VV	159	966	0.05%	0.001%
18	2.456	2.455	2.467	VV	172	785	0.04%	0.001%
19	2.472	2.467	2.490	PB	191	1197	0.06%	0.001%
20	2.529	2.494	2.533	BV	244	2303	0.11%	0.003%
21	2.536	2.533	2.567	VV	224	3252	0.16%	0.004%
22	2.570	2.567	2.575	VV	127	503	0.02%	0.001%
23	2.579	2.575	2.588	VV	127	520	0.03%	0.001%
24	2.594	2.588	2.614	PV	88	755	0.04%	0.001%
25	2.642	2.614	2.690	PV	575	13171	0.65%	0.015%
26	2.694	2.690	2.716	VV	178	1800	0.09%	0.002%
27	2.726	2.716	2.738	VV	181	1609	0.08%	0.002%
28	2.753	2.738	2.783	VV	259	5148	0.26%	0.006%
29	2.789	2.783	2.813	VV	130	1358	0.07%	0.002%
30	2.825	2.813	2.828	VV	133	979	0.05%	0.001%
31	2.847	2.828	2.866	VV	315	3818	0.19%	0.004%
32	2.869	2.866	2.878	VV	104	550	0.03%	0.001%
33	2.884	2.878	2.892	VV	87	554	0.03%	0.001%
34	2.910	2.892	2.955	VV	406	7334	0.36%	0.009%
35	2.991	2.955	3.061	VV	314	7538	0.37%	0.009%
36	3.063	3.061	3.082	VV	131	1099	0.05%	0.001%

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37	3.085	3.082	3.108	VV	119	992	0.05%	0.001%
38	3.111	3.108	3.116	PV	57	136	0.01%	0.000%
39	3.132	3.116	3.139	PV	111	625	0.03%	0.001%
40	3.143	3.139	3.151	VV	121	401	0.02%	0.000%
41	3.155	3.151	3.168	VV	115	707	0.04%	0.001%
42	3.172	3.168	3.184	VV	102	604	0.03%	0.001%
43	3.214	3.184	3.273	VV	989	18445	0.92%	0.021%
44	3.276	3.273	3.286	VV	143	771	0.04%	0.001%
45	3.290	3.286	3.296	VV	191	536	0.03%	0.001%
46	3.304	3.296	3.314	VV	126	876	0.04%	0.001%
47	3.331	3.314	3.338	VV	196	2068	0.10%	0.002%
48	3.346	3.338	3.372	VV	208	2680	0.13%	0.003%
49	3.388	3.372	3.405	VV	185	2352	0.12%	0.003%
50	3.409	3.405	3.418	VV	101	686	0.03%	0.001%
51	3.422	3.418	3.440	VV	122	1490	0.07%	0.002%
52	3.452	3.440	3.481	VV	182	3096	0.15%	0.004%
53	3.485	3.481	3.506	VV	151	1476	0.07%	0.002%
54	3.524	3.506	3.541	PV	359	4166	0.21%	0.005%
55	3.545	3.541	3.567	VV	251	2311	0.11%	0.003%
56	3.573	3.567	3.577	VV	192	838	0.04%	0.001%
57	3.585	3.577	3.591	VV	196	1283	0.06%	0.001%
58	3.595	3.591	3.599	VV	157	705	0.03%	0.001%
59	3.607	3.599	3.623	VV	200	1965	0.10%	0.002%
60	3.626	3.623	3.638	VV	163	984	0.05%	0.001%
61	3.660	3.638	3.686	VV	319	5902	0.29%	0.007%
62	3.690	3.686	3.697	VV	201	1037	0.05%	0.001%
63	3.736	3.697	3.775	VV	309	9624	0.48%	0.011%
64	3.780	3.775	3.784	VV	163	588	0.03%	0.001%
65	3.812	3.784	3.826	VV	511	7477	0.37%	0.009%
66	3.833	3.826	3.876	VV	473	9198	0.46%	0.011%
67	3.908	3.876	3.956	VV	501	12171	0.60%	0.014%
68	3.982	3.956	3.987	VV	180	2013	0.10%	0.002%
69	3.993	3.987	3.997	VV	255	1075	0.05%	0.001%
70	4.011	3.997	4.030	VV	664	8337	0.41%	0.010%
71	4.044	4.030	4.064	VV	527	6532	0.32%	0.008%
72	4.068	4.064	4.072	VV	197	747	0.04%	0.001%
73	4.082	4.072	4.097	VV	265	2843	0.14%	0.003%
74	4.121	4.097	4.145	VV	406	6611	0.33%	0.008%
75	4.149	4.145	4.162	VV	139	927	0.05%	0.001%
76	4.166	4.162	4.171	VV	78	351	0.02%	0.000%
77	4.207	4.171	4.300	VV	974	29823	1.48%	0.035%
78	4.305	4.300	4.327	VV	281	3218	0.16%	0.004%
79	4.332	4.327	4.337	VV	175	726	0.04%	0.001%
80	4.341	4.337	4.396	VV	238	4660	0.23%	0.005%
81	4.414	4.396	4.439	VV	326	4616	0.23%	0.005%
82	4.474	4.439	4.588	VV	74133	890007	44.16%	1.033%
83	4.599	4.588	4.621	VV	632	9804	0.49%	0.011%
84	4.652	4.621	4.678	VV	771	19216	0.95%	0.022%
85	4.683	4.678	4.712	VV	526	8745	0.43%	0.010%
86	4.728	4.712	4.740	VV	464	6259	0.31%	0.007%
87	4.760	4.740	4.778	VV	636	11029	0.55%	0.013%
88	4.781	4.778	4.799	VV	487	4571	0.23%	0.005%
89	4.805	4.799	4.812	VV	385	2479	0.12%	0.003%

90	4.815	4.812	4.831	VV	429	4279	0.21%	0.005%
91	4.837	4.831	4.858	VV	429	5028	0.25%	0.006%
92	4.874	4.858	4.883	VV	399	4031	0.20%	0.005%
93	4.902	4.883	4.908	VV	536	5903	0.29%	0.007%
94	4.911	4.908	4.930	VV	546	5471	0.27%	0.006%
95	4.946	4.930	4.960	VV	493	7481	0.37%	0.009%
96	4.984	4.960	5.028	VV	942	20064	1.00%	0.023%
97	5.041	5.028	5.047	VV	314	3029	0.15%	0.004%
98	5.060	5.047	5.073	VV	445	5545	0.28%	0.006%
99	5.077	5.073	5.117	VV	325	6458	0.32%	0.007%
100	5.157	5.117	5.173	VV	435	9158	0.45%	0.011%
101	5.191	5.173	5.216	VV	665	11838	0.59%	0.014%
102	5.233	5.216	5.268	VV	720	13932	0.69%	0.016%
103	5.278	5.268	5.284	VV	453	4026	0.20%	0.005%
104	5.298	5.284	5.343	VV	612	11014	0.55%	0.013%
105	5.352	5.343	5.356	VV	172	1129	0.06%	0.001%
106	5.396	5.356	5.408	VV	410	7946	0.39%	0.009%
107	5.417	5.408	5.432	VV	368	4155	0.21%	0.005%
108	5.460	5.432	5.473	VV	564	9313	0.46%	0.011%
109	5.496	5.473	5.515	VV	596	11176	0.55%	0.013%
110	5.520	5.515	5.533	VV	363	2983	0.15%	0.003%
111	5.537	5.533	5.542	VV	305	1442	0.07%	0.002%
112	5.549	5.542	5.553	VV	353	2192	0.11%	0.003%
113	5.558	5.553	5.576	VV	421	3595	0.18%	0.004%
114	5.584	5.576	5.601	VV	263	2392	0.12%	0.003%
115	5.624	5.601	5.683	PV	3553	56467	2.80%	0.066%
116	5.691	5.683	5.695	VV	277	1843	0.09%	0.002%
117	5.699	5.695	5.722	VV	250	2885	0.14%	0.003%
118	5.744	5.722	5.763	VV	287	4567	0.23%	0.005%
119	5.797	5.763	5.810	VV	813	10436	0.52%	0.012%
120	5.824	5.810	5.838	VV	466	6195	0.31%	0.007%
121	5.884	5.838	5.898	VV	499	10079	0.50%	0.012%
122	5.923	5.898	5.964	VV	991	23086	1.15%	0.027%
123	5.984	5.964	5.997	VV	419	6876	0.34%	0.008%
124	6.015	5.997	6.063	VV	847	18860	0.94%	0.022%
125	6.073	6.063	6.086	VV	301	3313	0.16%	0.004%
126	6.103	6.086	6.134	VV	562	9280	0.46%	0.011%
127	6.153	6.134	6.173	VV	485	7817	0.39%	0.009%
128	6.185	6.173	6.200	VV	386	5057	0.25%	0.006%
129	6.215	6.200	6.225	VV	461	6182	0.31%	0.007%
130	6.248	6.225	6.272	VV	615	12343	0.61%	0.014%
131	6.299	6.272	6.322	VV	638	8856	0.44%	0.010%
132	6.368	6.322	6.401	VV	986	27436	1.36%	0.032%
133	6.405	6.401	6.409	VV	150	512	0.03%	0.001%
134	6.427	6.409	6.437	VV	505	5376	0.27%	0.006%
135	6.443	6.437	6.455	VV	393	3884	0.19%	0.005%
136	6.473	6.455	6.506	VV	609	10542	0.52%	0.012%
137	6.526	6.506	6.557	PV	427	8678	0.43%	0.010%
138	6.581	6.557	6.611	VV	586	13401	0.66%	0.016%
139	6.613	6.611	6.631	VV	330	2915	0.14%	0.003%
140	6.657	6.631	6.731	VV	94291	1054068	52.30%	1.223%
141	6.745	6.731	6.762	VV	863	13575	0.67%	0.016%

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142	6.776	6.762	6.792	VV	796	11262	0.56%	0.013%
143	6.811	6.792	6.833	VV	1443	22565	1.12%	0.026%
144	6.843	6.833	6.855	VV	564	5662	0.28%	0.007%
145	6.860	6.855	6.875	VV	398	4006	0.20%	0.005%
146	6.884	6.875	6.894	VV	350	3309	0.16%	0.004%
147	6.913	6.894	6.930	VV	595	7974	0.40%	0.009%
148	6.945	6.930	6.967	VV	641	8163	0.41%	0.009%
149	6.984	6.967	7.004	VV	573	7713	0.38%	0.009%
150	7.016	7.004	7.034	VV	312	3252	0.16%	0.004%
151	7.067	7.034	7.095	VV	1247	22738	1.13%	0.026%
152	7.109	7.095	7.133	VV	462	7053	0.35%	0.008%
153	7.151	7.133	7.164	VV	517	7018	0.35%	0.008%
154	7.188	7.164	7.210	VV	1032	18144	0.90%	0.021%
155	7.231	7.210	7.263	VV	1034	16153	0.80%	0.019%
156	7.283	7.263	7.291	VV	921	10747	0.53%	0.012%
157	7.301	7.291	7.325	VV	930	15462	0.77%	0.018%
158	7.338	7.325	7.354	VV	721	8738	0.43%	0.010%
159	7.379	7.354	7.417	VV	1691	29199	1.45%	0.034%
160	7.443	7.417	7.462	VV	832	13463	0.67%	0.016%
161	7.478	7.462	7.493	VV	734	9853	0.49%	0.011%
162	7.505	7.493	7.527	VV	410	4817	0.24%	0.006%
163	7.549	7.527	7.558	PV	449	5958	0.30%	0.007%
164	7.561	7.558	7.566	VV	459	2033	0.10%	0.002%
165	7.586	7.566	7.593	VV	1866	19907	0.99%	0.023%
166	7.609	7.593	7.633	VV	4634	61860	3.07%	0.072%
167	7.644	7.633	7.676	VV	994	18639	0.92%	0.022%
168	7.691	7.676	7.718	VV	609	10094	0.50%	0.012%
169	7.732	7.718	7.744	VV	206	1999	0.10%	0.002%
170	7.782	7.744	7.817	VV	1694	32909	1.63%	0.038%
171	7.835	7.817	7.860	VV	537	7596	0.38%	0.009%
172	7.889	7.860	7.909	PV	1430	18898	0.94%	0.022%
173	7.929	7.909	7.934	VV	722	7098	0.35%	0.008%
174	7.944	7.934	7.964	VV	664	7897	0.39%	0.009%
175	7.979	7.964	8.015	VV	1125	13272	0.66%	0.015%
176	8.037	8.015	8.051	PV	1227	15117	0.75%	0.018%
177	8.064	8.051	8.107	VV	1380	31617	1.57%	0.037%
178	8.135	8.107	8.154	VV	796	15266	0.76%	0.018%
179	8.184	8.154	8.200	VV	1149	17257	0.86%	0.020%
180	8.218	8.200	8.232	VV	2424	28963	1.44%	0.034%
181	8.243	8.232	8.269	VV	1803	23919	1.19%	0.028%
182	8.277	8.269	8.291	VV	577	5578	0.28%	0.006%
183	8.311	8.291	8.342	VV	2089	31514	1.56%	0.037%
184	8.358	8.342	8.384	VV	887	13530	0.67%	0.016%
185	8.401	8.384	8.413	VV	1354	15263	0.76%	0.018%
186	8.431	8.413	8.441	VV	1129	15350	0.76%	0.018%
187	8.492	8.441	8.557	VV	102291	1268179	62.92%	1.472%
188	8.565	8.557	8.580	VV	1666	20380	1.01%	0.024%
189	8.616	8.580	8.628	VV	3283	64832	3.22%	0.075%
190	8.640	8.628	8.666	VV	3176	59800	2.97%	0.069%
191	8.677	8.666	8.692	VV	2135	25797	1.28%	0.030%
192	8.715	8.692	8.755	VV	2706	61332	3.04%	0.071%
193	8.769	8.755	8.775	VV	872	8901	0.44%	0.010%
194	8.784	8.775	8.811	VV	933	13165	0.65%	0.015%

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195	8.823	8.811	8.833	VV	515	5044	0.25%	0.006%
196	8.854	8.833	8.859	VV	1322	13558	0.67%	0.016%
197	8.866	8.859	8.877	VV	1415	14173	0.70%	0.016%
198	8.886	8.877	8.898	VV	1264	13709	0.68%	0.016%
199	8.918	8.898	8.928	VV	1910	27674	1.37%	0.032%
200	8.942	8.928	8.962	VV	2219	35109	1.74%	0.041%
201	8.981	8.962	8.996	VV	2029	33436	1.66%	0.039%
202	9.010	8.996	9.018	VV	2691	29893	1.48%	0.035%
203	9.033	9.018	9.061	VV	4946	72605	3.60%	0.084%
204	9.084	9.061	9.097	VV	1692	29060	1.44%	0.034%
205	9.110	9.097	9.125	VV	1635	21721	1.08%	0.025%
206	9.154	9.125	9.167	VV	1582	30679	1.52%	0.036%
207	9.180	9.167	9.200	VV	1795	28378	1.41%	0.033%
208	9.217	9.200	9.228	VV	1477	21554	1.07%	0.025%
209	9.253	9.228	9.280	VV	1978	51003	2.53%	0.059%
210	9.294	9.280	9.301	VV	1361	16286	0.81%	0.019%
211	9.322	9.301	9.388	VV	9534	174683	8.67%	0.203%
212	9.408	9.388	9.430	VV	2313	39564	1.96%	0.046%
213	9.451	9.430	9.493	VV	1757	46557	2.31%	0.054%
214	9.521	9.493	9.537	VV	2098	36325	1.80%	0.042%
215	9.550	9.537	9.575	VV	2643	46834	2.32%	0.054%
216	9.583	9.575	9.593	VV	1618	16646	0.83%	0.019%
217	9.606	9.593	9.639	VV	2511	55300	2.74%	0.064%
218	9.656	9.639	9.669	VV	2250	30692	1.52%	0.036%
219	9.699	9.669	9.733	VV	4740	116697	5.79%	0.135%
220	9.744	9.733	9.754	VV	2839	32750	1.62%	0.038%
221	9.781	9.754	9.810	VV	4196	102324	5.08%	0.119%
222	9.830	9.810	9.847	VV	3917	66630	3.31%	0.077%
223	9.860	9.847	9.867	VV	3092	35751	1.77%	0.041%
224	9.884	9.867	9.904	VV	4795	71634	3.55%	0.083%
225	9.935	9.904	9.958	VV	2987	75246	3.73%	0.087%
226	9.980	9.958	10.040	VV	45100	920960	45.70%	1.069%
227	10.054	10.040	10.080	VV	9483	202185	10.03%	0.235%
228	10.106	10.080	10.157	VV	128625	1593030	79.04%	1.849%
229	10.162	10.157	10.171	VV	5142	40779	2.02%	0.047%
230	10.175	10.171	10.200	VV	5299	85512	4.24%	0.099%
231	10.207	10.200	10.253	VV	4572	116241	5.77%	0.135%
232	10.280	10.253	10.305	VV	4360	112169	5.57%	0.130%
233	10.319	10.305	10.325	VV	3441	39877	1.98%	0.046%
234	10.341	10.325	10.361	VV	3749	72552	3.60%	0.084%
235	10.380	10.361	10.407	VV	3913	91617	4.55%	0.106%
236	10.453	10.407	10.471	VV	10904	229351	11.38%	0.266%
237	10.494	10.471	10.524	VV	18086	337468	16.74%	0.392%
238	10.546	10.524	10.563	VV	6444	128922	6.40%	0.150%
239	10.584	10.563	10.608	VV	7566	156539	7.77%	0.182%
240	10.640	10.608	10.666	VV	9153	196393	9.74%	0.228%
241	10.686	10.666	10.692	VV	3902	58895	2.92%	0.068%
242	10.697	10.692	10.716	VV	3866	52562	2.61%	0.061%
243	10.748	10.716	10.753	VV	5424	101530	5.04%	0.118%
244	10.757	10.753	10.762	VV	5453	26390	1.31%	0.031%
245	10.775	10.762	10.798	VV	5931	113883	5.65%	0.132%
246	10.847	10.798	10.886	VV	37712	662945	32.89%	0.769%

247	10.918	10.886	10.945	VV	29732	538669	26.73%	0.625%
248	10.949	10.945	11.012	VV	7028	220190	10.93%	0.256%
249	11.038	11.012	11.048	VV	5234	99776	4.95%	0.116%
250	11.055	11.048	11.079	VV	5538	98104	4.87%	0.114%
251	11.093	11.079	11.101	VV	5481	66513	3.30%	0.077%
252	11.128	11.101	11.146	VV	8805	187399	9.30%	0.217%
253	11.172	11.146	11.208	VV	9796	305969	15.18%	0.355%
254	11.239	11.208	11.283	VV	11893	380246	18.87%	0.441%
255	11.303	11.283	11.341	VV	8910	225254	11.18%	0.261%
256	11.355	11.341	11.394	VV	8872	194842	9.67%	0.226%
257	11.412	11.394	11.440	VV	5657	136202	6.76%	0.158%
258	11.442	11.440	11.447	VV	4628	20499	1.02%	0.024%
259	11.469	11.447	11.485	VV	5984	123197	6.11%	0.143%
260	11.512	11.485	11.524	VV	6836	147205	7.30%	0.171%
261	11.554	11.524	11.616	VV	147467	2015427	100.00%	2.339%
262	11.644	11.616	11.683	VV	26756	525994	26.10%	0.610%
263	11.686	11.683	11.691	VV	5331	24626	1.22%	0.029%
264	11.712	11.691	11.732	VV	6137	131929	6.55%	0.153%
265	11.752	11.732	11.775	VV	5855	132567	6.58%	0.154%
266	11.804	11.775	11.810	VV	6218	114479	5.68%	0.133%
267	11.849	11.810	11.892	VV	9783	357377	17.73%	0.415%
268	11.908	11.892	11.913	VV	6678	73305	3.64%	0.085%
269	11.921	11.913	11.925	VV	6596	46724	2.32%	0.054%
270	11.951	11.925	11.970	VV	10460	228188	11.32%	0.265%
271	11.989	11.970	12.018	VV	9085	204587	10.15%	0.237%
272	12.040	12.018	12.066	VV	10465	211444	10.49%	0.245%
273	12.075	12.066	12.089	VV	6385	81307	4.03%	0.094%
274	12.108	12.089	12.142	VV	7154	188922	9.37%	0.219%
275	12.160	12.142	12.177	VV	5597	109767	5.45%	0.127%
276	12.225	12.177	12.252	VV	41812	753289	37.38%	0.874%
277	12.264	12.252	12.280	VV	6692	101175	5.02%	0.117%
278	12.296	12.280	12.309	VV	6175	101785	5.05%	0.118%
279	12.325	12.309	12.346	VV	6165	127687	6.34%	0.148%
280	12.349	12.346	12.398	VV	5634	144044	7.15%	0.167%
281	12.425	12.398	12.445	VV	5891	132441	6.57%	0.154%
282	12.485	12.445	12.525	VV	15797	416114	20.65%	0.483%
283	12.529	12.525	12.558	VV	6960	121722	6.04%	0.141%
284	12.569	12.558	12.589	VV	5862	106034	5.26%	0.123%
285	12.608	12.589	12.624	VV	7620	141280	7.01%	0.164%
286	12.638	12.624	12.673	VV	8488	176845	8.77%	0.205%
287	12.693	12.673	12.712	VV	7167	132444	6.57%	0.154%
288	12.717	12.712	12.737	VV	5191	71993	3.57%	0.084%
289	12.742	12.737	12.765	VV	4697	68853	3.42%	0.080%
290	12.790	12.765	12.807	VV	6861	134444	6.67%	0.156%
291	12.821	12.807	12.838	VV	6837	114322	5.67%	0.133%
292	12.868	12.838	12.914	VV	141237	1870088	92.79%	2.170%
293	12.943	12.914	12.997	VV	19853	476881	23.66%	0.553%
294	13.012	12.997	13.037	VV	4669	92562	4.59%	0.107%
295	13.038	13.037	13.047	VV	3094	17954	0.89%	0.021%
296	13.056	13.047	13.060	VV	2876	21918	1.09%	0.025%
297	13.094	13.060	13.101	VV	3672	78294	3.88%	0.091%
298	13.125	13.101	13.147	VV	5735	130537	6.48%	0.151%
299	13.150	13.147	13.177	VV	4760	75006	3.72%	0.087%

300	13.194	13.177	13.212	VV	4127	71949	3.57%	0.084%
301	13.242	13.212	13.300	VV	17107	441587	21.91%	0.512%
302	13.313	13.300	13.335	VV	5275	86448	4.29%	0.100%
303	13.361	13.335	13.395	VV	5759	155850	7.73%	0.181%
304	13.410	13.395	13.438	VV	3389	73305	3.64%	0.085%
305	13.481	13.438	13.508	VV	23194	352471	17.49%	0.409%
306	13.519	13.508	13.533	VV	4125	57899	2.87%	0.067%
307	13.550	13.533	13.568	VV	4256	78421	3.89%	0.091%
308	13.577	13.568	13.617	VV	3852	80120	3.98%	0.093%
309	13.621	13.617	13.626	VV	1596	8024	0.40%	0.009%
310	13.644	13.626	13.676	VV	2732	57044	2.83%	0.066%
311	13.706	13.676	13.738	VV	6199	156648	7.77%	0.182%
312	13.743	13.738	13.750	VV	3351	22609	1.12%	0.026%
313	13.754	13.750	13.774	VV	3307	40204	1.99%	0.047%
314	13.788	13.774	13.802	VV	2482	33888	1.68%	0.039%
315	13.833	13.802	13.848	VV	3859	79747	3.96%	0.093%
316	13.864	13.848	13.883	VV	4597	73385	3.64%	0.085%
317	13.906	13.883	13.936	VV	4201	88491	4.39%	0.103%
318	13.956	13.936	13.964	VV	2442	33146	1.64%	0.038%
319	13.988	13.964	14.007	VV	3977	83217	4.13%	0.097%
320	14.010	14.007	14.041	VV	3519	55608	2.76%	0.065%
321	14.070	14.041	14.104	VV	116784	1474792	73.18%	1.712%
322	14.119	14.104	14.142	VV	4433	75255	3.73%	0.087%
323	14.157	14.142	14.188	VV	3470	64284	3.19%	0.075%
324	14.194	14.188	14.239	VV	1627	32149	1.60%	0.037%
325	14.249	14.239	14.259	PV	556	4042	0.20%	0.005%
326	14.297	14.259	14.326	VV	3354	75901	3.77%	0.088%
327	14.335	14.326	14.347	VV	1371	13616	0.68%	0.016%
328	14.367	14.347	14.385	VV	1534	20123	1.00%	0.023%
329	14.397	14.385	14.402	VV	857	5583	0.28%	0.006%
330	14.409	14.402	14.412	VV	924	4550	0.23%	0.005%
331	14.436	14.412	14.442	VV	1708	24168	1.20%	0.028%
332	14.477	14.442	14.525	VV	3841	104941	5.21%	0.122%
333	14.547	14.525	14.552	VV	1682	20409	1.01%	0.024%
334	14.575	14.552	14.609	VV	2923	49394	2.45%	0.057%
335	14.633	14.609	14.659	VV	11917	160056	7.94%	0.186%
336	14.666	14.659	14.670	VV	1809	10472	0.52%	0.012%
337	14.691	14.670	14.709	VV	3229	52590	2.61%	0.061%
338	14.713	14.709	14.736	VV	2267	27226	1.35%	0.032%
339	14.774	14.736	14.799	VV	2154	58001	2.88%	0.067%
340	14.826	14.799	14.847	VV	3009	59660	2.96%	0.069%
341	14.851	14.847	14.862	VV	1890	14256	0.71%	0.017%
342	14.884	14.862	14.910	VV	2161	43943	2.18%	0.051%
343	14.914	14.910	14.922	VV	907	5582	0.28%	0.006%
344	14.925	14.922	14.928	VV	887	3121	0.15%	0.004%
345	14.973	14.928	15.007	VV	79898	1115886	55.37%	1.295%
346	15.029	15.007	15.060	VV	2243	40928	2.03%	0.047%
347	15.069	15.060	15.086	VV	717	7516	0.37%	0.009%
348	15.103	15.086	15.116	VV	1720	20006	0.99%	0.023%
349	15.138	15.116	15.151	VV	6929	88812	4.41%	0.103%
350	15.176	15.151	15.249	VV	108219	1516633	75.25%	1.760%
351	15.267	15.249	15.281	VV	1589	22543	1.12%	0.026%

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352	15.301	15.281	15.329	VV	1608	32212	1.60%	0.037%
353	15.364	15.329	15.396	VV	1947	41391	2.05%	0.048%
354	15.401	15.396	15.411	VV	425	2424	0.12%	0.003%
355	15.416	15.411	15.420	PV	398	1294	0.06%	0.002%
356	15.453	15.420	15.467	VV	956	18176	0.90%	0.021%
357	15.491	15.467	15.502	VV	1659	22893	1.14%	0.027%
358	15.511	15.502	15.532	VV	1501	15882	0.79%	0.018%
359	15.562	15.532	15.648	VV	34561	697054	34.59%	0.809%
360	15.653	15.648	15.672	VV	1033	6481	0.32%	0.008%
361	15.698	15.672	15.737	VV	7190	117486	5.83%	0.136%
362	15.764	15.737	15.797	VV	2154	37648	1.87%	0.044%
363	15.824	15.797	15.851	VV	3976	65764	3.26%	0.076%
364	15.860	15.851	15.866	VV	1605	11123	0.55%	0.013%
365	15.869	15.866	15.892	VV	1270	16828	0.83%	0.020%
366	15.908	15.892	15.911	VV	1662	11716	0.58%	0.014%
367	15.916	15.911	15.935	VV	1492	11923	0.59%	0.014%
368	15.955	15.935	15.980	VV	2238	44491	2.21%	0.052%
369	16.002	15.980	16.021	VV	2480	45787	2.27%	0.053%
370	16.028	16.021	16.042	VV	1454	14941	0.74%	0.017%
371	16.046	16.042	16.055	VV	1000	5356	0.27%	0.006%
372	16.085	16.055	16.098	VV	2297	38626	1.92%	0.045%
373	16.105	16.098	16.125	VV	1820	20192	1.00%	0.023%
374	16.156	16.125	16.172	VV	1874	38182	1.89%	0.044%
375	16.201	16.172	16.237	VV	94670	1259484	62.49%	1.462%
376	16.243	16.237	16.248	VV	2251	13291	0.66%	0.015%
377	16.260	16.248	16.285	VV	2482	44784	2.22%	0.052%
378	16.290	16.285	16.303	VV	1839	13709	0.68%	0.016%
379	16.321	16.303	16.341	VV	1790	22547	1.12%	0.026%
380	16.345	16.341	16.361	VV	1340	8926	0.44%	0.010%
381	16.391	16.361	16.436	PV	3297	93544	4.64%	0.109%
382	16.439	16.436	16.442	VV	1362	4589	0.23%	0.005%
383	16.491	16.442	16.497	VV	3170	63704	3.16%	0.074%
384	16.513	16.497	16.517	VV	2968	34711	1.72%	0.040%
385	16.521	16.517	16.530	VV	3086	19515	0.97%	0.023%
386	16.535	16.530	16.551	VV	2417	24862	1.23%	0.029%
387	16.589	16.551	16.617	VV	7354	179243	8.89%	0.208%
388	16.648	16.617	16.656	VV	2895	59505	2.95%	0.069%
389	16.706	16.656	16.731	VV	14895	360636	17.89%	0.419%
390	16.734	16.731	16.772	VV	7093	130807	6.49%	0.152%
391	16.776	16.772	16.790	VV	3489	29866	1.48%	0.035%
392	16.842	16.790	16.863	VV	4647	148334	7.36%	0.172%
393	16.873	16.863	16.878	VV	3290	25528	1.27%	0.030%
394	16.884	16.878	16.900	VV	3249	38156	1.89%	0.044%
395	16.903	16.900	16.913	VV	3169	20056	1.00%	0.023%
396	16.918	16.913	16.927	VV	2219	13049	0.65%	0.015%
397	16.974	16.927	16.991	VV	4885	106624	5.29%	0.124%
398	17.002	16.991	17.009	VV	3500	35369	1.75%	0.041%
399	17.029	17.009	17.071	VV	9949	196229	9.74%	0.228%
400	17.094	17.071	17.098	VV	10204	98986	4.91%	0.115%
401	17.102	17.098	17.118	VV	10192	97352	4.83%	0.113%
402	17.155	17.118	17.187	VV	95068	1403559	69.64%	1.629%
403	17.201	17.187	17.221	VV	7656	116529	5.78%	0.135%
404	17.230	17.221	17.272	VV	5438	111933	5.55%	0.130%

405	17.329	17.272	17.337	VV	5200	122138	6.06%	0.142%
406	17.341	17.337	17.346	VV	4620	23643	1.17%	0.027%
407	17.353	17.346	17.358	VV	4508	29180	1.45%	0.034%
408	17.386	17.358	17.409	VV	5707	134892	6.69%	0.157%
409	17.415	17.409	17.426	VV	3482	32423	1.61%	0.038%
410	17.462	17.426	17.505	VV	7476	247073	12.26%	0.287%
411	17.534	17.505	17.575	VV	10007	276780	13.73%	0.321%
412	17.606	17.575	17.657	VV	14212	368439	18.28%	0.428%
413	17.674	17.657	17.687	VV	6408	85760	4.26%	0.100%
414	17.712	17.687	17.737	VV	6885	161644	8.02%	0.188%
415	17.740	17.737	17.744	VV	3605	14105	0.70%	0.016%
416	17.773	17.744	17.780	VV	6630	112971	5.61%	0.131%
417	17.786	17.780	17.795	VV	6687	54890	2.72%	0.064%
418	17.799	17.795	17.832	VV	6070	96329	4.78%	0.112%
419	17.842	17.832	17.847	VV	2910	22604	1.12%	0.026%
420	17.887	17.847	17.902	VV	4750	119509	5.93%	0.139%
421	17.908	17.902	17.912	VV	3619	19386	0.96%	0.022%
422	17.933	17.912	17.960	VV	6784	146805	7.28%	0.170%
423	17.984	17.960	17.992	VV	7843	116994	5.80%	0.136%
424	18.010	17.992	18.015	VV	8577	99138	4.92%	0.115%
425	18.045	18.015	18.076	VV	97790	1450941	71.99%	1.684%
426	18.079	18.076	18.112	VV	7412	127810	6.34%	0.148%
427	18.137	18.112	18.148	VV	8023	142267	7.06%	0.165%
428	18.182	18.148	18.197	VV	13140	270389	13.42%	0.314%
429	18.201	18.197	18.206	VV	9883	50741	2.52%	0.059%
430	18.211	18.206	18.246	VV	9189	178975	8.88%	0.208%
431	18.252	18.246	18.263	VV	6060	57106	2.83%	0.066%
432	18.279	18.263	18.296	VV	6721	108096	5.36%	0.125%
433	18.310	18.296	18.314	VV	6513	55510	2.75%	0.064%
434	18.320	18.314	18.341	VV	6686	90818	4.51%	0.105%
435	18.410	18.341	18.452	VV	26832	909193	45.11%	1.055%
436	18.473	18.452	18.516	VV	19380	513549	25.48%	0.596%
437	18.522	18.516	18.535	VV	11501	120607	5.98%	0.140%
438	18.551	18.535	18.572	VV	16374	277237	13.76%	0.322%
439	18.577	18.572	18.581	VV	9045	44536	2.21%	0.052%
440	18.589	18.581	18.610	VV	9117	133736	6.64%	0.155%
441	18.623	18.610	18.628	VV	8948	89044	4.42%	0.103%
442	18.633	18.628	18.650	VV	9061	108237	5.37%	0.126%
443	18.656	18.650	18.661	VV	7159	45665	2.27%	0.053%
444	18.676	18.661	18.686	VV	8310	112905	5.60%	0.131%
445	18.736	18.686	18.768	VV	14952	475126	23.57%	0.551%
446	18.773	18.768	18.805	VV	8570	155364	7.71%	0.180%
447	18.880	18.805	18.916	VV	91814	1746945	86.68%	2.027%
448	18.931	18.916	18.938	VV	8594	103925	5.16%	0.121%
449	18.977	18.938	18.995	VV	15544	376368	18.67%	0.437%
450	19.023	18.995	19.027	VV	13869	229441	11.38%	0.266%
451	19.033	19.027	19.042	VV	12977	106913	5.30%	0.124%
452	19.048	19.042	19.063	VV	11347	125609	6.23%	0.146%
453	19.068	19.063	19.084	VV	11024	122418	6.07%	0.142%
454	19.109	19.084	19.114	VV	9411	154969	7.69%	0.180%
455	19.125	19.114	19.131	VV	10281	97779	4.85%	0.113%
456	19.150	19.131	19.161	VV	11783	191417	9.50%	0.222%

457	19.165	19.161	19.170	VV	11240	56898	2.82%	0.066%
458	19.182	19.170	19.195	VV	11612	164148	8.14%	0.191%
459	19.200	19.195	19.212	VV	12256	116892	5.80%	0.136%
460	19.241	19.212	19.268	VV	28249	701021	34.78%	0.814%
461	19.275	19.268	19.294	VV	20771	284344	14.11%	0.330%
462	19.302	19.294	19.331	VV	17310	306512	15.21%	0.356%
463	19.341	19.331	19.356	VV	12638	175855	8.73%	0.204%
464	19.377	19.356	19.390	VV	14969	266768	13.24%	0.310%
465	19.406	19.390	19.412	VV	14629	162491	8.06%	0.189%
466	19.422	19.412	19.428	VV	13375	128926	6.40%	0.150%
467	19.434	19.428	19.444	VV	14616	128930	6.40%	0.150%
468	19.478	19.444	19.487	VV	15395	366636	18.19%	0.426%
469	19.491	19.487	19.498	VV	13840	92357	4.58%	0.107%
470	19.508	19.498	19.521	VV	14098	179003	8.88%	0.208%
471	19.525	19.521	19.537	VV	13516	131858	6.54%	0.153%
472	19.544	19.537	19.558	VV	13904	163507	8.11%	0.190%
473	19.570	19.558	19.591	VV	13994	255683	12.69%	0.297%
474	19.599	19.591	19.608	VV	13411	133744	6.64%	0.155%
475	19.616	19.608	19.626	VV	13555	127578	6.33%	0.148%
476	19.665	19.626	19.707	VV	84141	1690422	83.87%	1.962%
477	19.715	19.707	19.720	VV	16388	118234	5.87%	0.137%
478	19.725	19.720	19.732	VV	16174	117217	5.82%	0.136%
479	19.738	19.732	19.743	VV	16710	103521	5.14%	0.120%
480	19.779	19.743	19.800	VV	23552	640415	31.78%	0.743%
481	19.806	19.800	19.817	VV	18259	168009	8.34%	0.195%
482	19.842	19.817	19.857	VV	18438	410045	20.35%	0.476%
483	19.876	19.857	19.882	VV	17773	239993	11.91%	0.279%
484	19.902	19.882	19.910	VV	22568	328341	16.29%	0.381%
485	19.916	19.910	19.925	VV	21361	177259	8.80%	0.206%
486	19.930	19.925	19.935	VV	20189	114886	5.70%	0.133%
487	19.941	19.935	19.949	VV	20249	163078	8.09%	0.189%
488	19.959	19.949	19.963	VV	19655	156939	7.79%	0.182%
489	19.968	19.963	19.975	VV	20509	138418	6.87%	0.161%
490	20.021	19.975	20.026	VV	27634	712882	35.37%	0.827%
491	20.031	20.026	20.035	VV	26727	149177	7.40%	0.173%
492	20.041	20.035	20.056	VV	26515	297770	14.77%	0.346%
493	20.078	20.056	20.085	VV	23308	387153	19.21%	0.449%
494	20.090	20.085	20.100	VV	22523	195642	9.71%	0.227%
495	20.105	20.100	20.112	VV	22254	161558	8.02%	0.187%
496	20.117	20.112	20.122	VV	21431	122954	6.10%	0.143%
497	20.126	20.122	20.133	VV	20671	127701	6.34%	0.148%
498	20.137	20.133	20.142	VV	21159	107226	5.32%	0.124%
499	20.148	20.142	20.157	VV	21577	179373	8.90%	0.208%
500	20.170	20.157	20.174	VV	21900	209417	10.39%	0.243%
501	20.196	20.174	20.211	VV	23882	485398	24.08%	0.563%
502	20.217	20.211	20.222	VV	21666	140866	6.99%	0.163%
503	20.236	20.222	20.252	VV	25586	434620	21.56%	0.504%
504	20.258	20.252	20.263	VV	26018	165803	8.23%	0.192%
505	20.282	20.263	20.286	VV	32177	380481	18.88%	0.442%
506	20.295	20.286	20.325	VV	32897	702847	34.87%	0.816%
507	20.335	20.325	20.346	VV	26108	315685	15.66%	0.366%
508	20.354	20.346	20.362	VV	26620	246506	12.23%	0.286%
509	20.366	20.362	20.370	VV	26953	133853	6.64%	0.155%

510	20.405	20.370	20.446	VV	82417	2011418	99.80%	2.334%
511	20.464	20.446	20.470	VV	31397	414710	20.58%	0.481%
512	20.475	20.470	20.487	VV	32221	298835	14.83%	0.347%
513	20.490	20.487	20.495	VV	30135	145061	7.20%	0.168%
514	20.502	20.495	20.518	VV	31347	418298	20.75%	0.485%
515	20.565	20.518	20.586	VV	38657	1356893	67.33%	1.575%
516	20.598	20.586	20.605	VV	32943	360166	17.87%	0.418%
517	20.617	20.605	20.632	VV	33041	533443	26.47%	0.619%
518	20.642	20.632	20.649	VV	32046	309105	15.34%	0.359%
519	20.664	20.649	20.668	VV	34092	370824	18.40%	0.430%
520	20.672	20.668	20.685	VV	34543	318094	15.78%	0.369%
521	20.689	20.685	20.702	VV	33208	328407	16.29%	0.381%
522	20.706	20.702	20.711	VV	32653	174308	8.65%	0.202%
523	20.731	20.711	20.740	VV	34874	578799	28.72%	0.672%
524	20.754	20.740	20.758	VV	36224	382551	18.98%	0.444%
525	20.765	20.758	20.785	VV	37991	584015	28.98%	0.678%
526	20.788	20.785	20.793	VV	36984	186058	9.23%	0.216%
527	20.804	20.793	20.831	VV	36095	770147	38.21%	0.894%
528	20.833	20.831	20.856	VV	32997	475674	23.60%	0.552%
529	20.876	20.856	20.933	VV	32996	1425652	70.74%	1.655%
530	20.938	20.933	20.941	VV	29265	131636	6.53%	0.153%
531	20.953	20.941	20.982	VV	29566	693600	34.41%	0.805%
532	20.992	20.982	21.000	VV	28010	286724	14.23%	0.333%
533	21.004	21.000	21.008	VV	27287	135616	6.73%	0.157%
534	21.013	21.008	21.024	VV	27778	253308	12.57%	0.294%
535	21.031	21.024	21.040	VV	26951	252475	12.53%	0.293%
536	21.053	21.040	21.070	VV	28648	493905	24.51%	0.573%
537	21.080	21.070	21.093	VV	26682	358192	17.77%	0.416%
538	21.097	21.093	21.107	VV	26207	211682	10.50%	0.246%
539	21.141	21.107	21.194	VV	64048	1933532	95.94%	2.244%
540	21.199	21.194	21.227	VV	21885	413997	20.54%	0.480%
541	21.231	21.227	21.236	VV	21681	99106	4.92%	0.115%
542	21.240	21.236	21.251	VV	21296	186132	9.24%	0.216%
543	21.254	21.251	21.258	VV	20469	90814	4.51%	0.105%
544	21.262	21.258	21.270	VV	20237	135020	6.70%	0.157%
545	21.273	21.270	21.278	VV	20286	98379	4.88%	0.114%
546	21.281	21.278	21.289	VV	20207	120359	5.97%	0.140%
547	21.296	21.289	21.303	VV	20721	163434	8.11%	0.190%
548	21.307	21.303	21.315	VV	19819	142674	7.08%	0.166%
549	21.341	21.315	21.356	VV	23356	496623	24.64%	0.576%
550	21.360	21.356	21.364	VV	20840	97651	4.85%	0.113%
551	21.369	21.364	21.383	VV	20232	207844	10.31%	0.241%
552	21.387	21.383	21.393	VV	19408	116722	5.79%	0.135%
553	21.396	21.393	21.417	VV	19396	256082	12.71%	0.297%
554	21.418	21.417	21.434	VV	18000	177783	8.82%	0.206%
555	21.440	21.434	21.452	VV	17657	165920	8.23%	0.193%
556	21.465	21.452	21.493	VV	17331	384065	19.06%	0.446%
557	21.501	21.493	21.506	VV	15293	108915	5.40%	0.126%
558	21.510	21.506	21.538	VV	15212	262530	13.03%	0.305%
559	21.543	21.538	21.556	VV	14465	135921	6.74%	0.158%
560	21.565	21.556	21.597	VV	15194	322659	16.01%	0.374%
561	21.601	21.597	21.606	VV	12658	64477	3.20%	0.075%

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562	21.616	21.606	21.623	VV	11302	112374	5.58%	0.130%
563	21.637	21.623	21.641	VV	12556	117556	5.83%	0.136%
564	21.654	21.641	21.658	VV	13293	123832	6.14%	0.144%
565	21.663	21.658	21.676	VV	12641	122777	6.09%	0.142%
566	21.685	21.676	21.695	VV	12508	136209	6.76%	0.158%
567	21.701	21.695	21.712	VV	13006	118825	5.90%	0.138%
568	21.716	21.712	21.737	VV	12772	164985	8.19%	0.191%
569	21.740	21.737	21.743	VV	10655	40157	1.99%	0.047%
570	21.749	21.743	21.753	VV	10008	56902	2.82%	0.066%
571	21.766	21.753	21.772	VV	10239	106063	5.26%	0.123%
572	21.778	21.772	21.789	VV	9887	93234	4.63%	0.108%
573	21.794	21.789	21.819	VV	9611	150291	7.46%	0.174%
574	21.827	21.819	21.852	VV	9169	146768	7.28%	0.170%
575	21.857	21.852	21.868	VV	6953	59491	2.95%	0.069%
576	21.875	21.868	21.879	VV	6971	35623	1.77%	0.041%
577	21.886	21.879	21.897	VV	6954	59087	2.93%	0.069%
578	21.903	21.897	21.920	VV	5125	55625	2.76%	0.065%
579	21.923	21.920	21.926	VV	4164	12303	0.61%	0.014%
580	21.934	21.926	21.947	VV	4183	39319	1.95%	0.046%
581	21.950	21.947	21.967	VV	3472	23437	1.16%	0.027%
582	21.984	21.967	21.991	PV	2560	25996	1.29%	0.030%
583	21.994	21.991	22.008	VV	2069	14248	0.71%	0.017%
584	22.057	22.008	22.070	PBA	19732	364061	18.06%	0.423%

Sum of corrected areas: 86164903

FG052225.M Wed Jun 11 07:13:28 2025

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Report of Analysis

Client:	Portal Partners Tri-Venture	Date Collected:	06/05/25
Project:	Amtrak Sawtooth Bridges 2025	Date Received:	06/05/25
Client Sample ID:	BU-03-060525MSD	SDG No.:	Q2198
Lab Sample ID:	Q2246-01MSD	Matrix:	SOIL
Analytical Method:	8015D TPH	% Solid:	99 Decanted:
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	TPH GC
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG016020.D	1	06/10/25 08:16	06/10/25 20:01	PB168382

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
PHC	Petroleum Hydrocarbons	23300		387	2850	ug/kg
SURROGATES						
16416-32-3	TETRACOSANE-d50	8.88		37 - 130	44%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016020.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 20:01
Operator : YP\AJ
Sample : Q2246-01MSD
Misc :
ALS Vial : 35 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
BU-03-060525MSD

Integration File: autoint1.e
Quant Time: Jun 11 05:54:45 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
9) S	TETRACOSANE-d50 (SURR...	14.973	1088021	8.877	ug/ml
	Target Compounds				
1)	N-OCTANE	1.952	457839	3.894	ug/ml
2)	N-DECANE	4.474	862193	7.338	ug/ml
3)	N-DODECANE	6.657	1028806	8.476	ug/ml
4)	N-TETRADECANE	8.493	1271311	9.956	ug/ml
5)	N-HEXADECANE	10.106	1391528	10.445	ug/ml
6)	N-OCTADECANE	11.554	1751574	12.692	ug/ml
7)	N-EICOSANE	12.868	1681439	11.902	ug/ml
8)	N-DOCOSANE	14.071	1405054	10.229	ug/ml
10)	N-TETRACOSANE	15.177	1463654	10.647	ug/ml
11)	N-HEXACOSANE	16.201	1243834	9.155	ug/ml
12)	N-OCTACOSANE	17.154	1334279	9.896	ug/ml
13)	N-TRIACONTANE	18.044	1377873	10.098	ug/ml
14)	N-DOTRIACONTANE	18.879	1349517	10.076	ug/ml
15)	N-TETRATRIACONTANE	19.665	1073709	8.854	ug/ml
16)	N-HEXATRIACONTANE	20.406	834082	7.811	ug/ml
17)	N-OCTATRIACONTANE	21.144	832545	8.675	ug/ml
18)	N-TETRACONTANE	22.053	968262	11.009	ug/ml

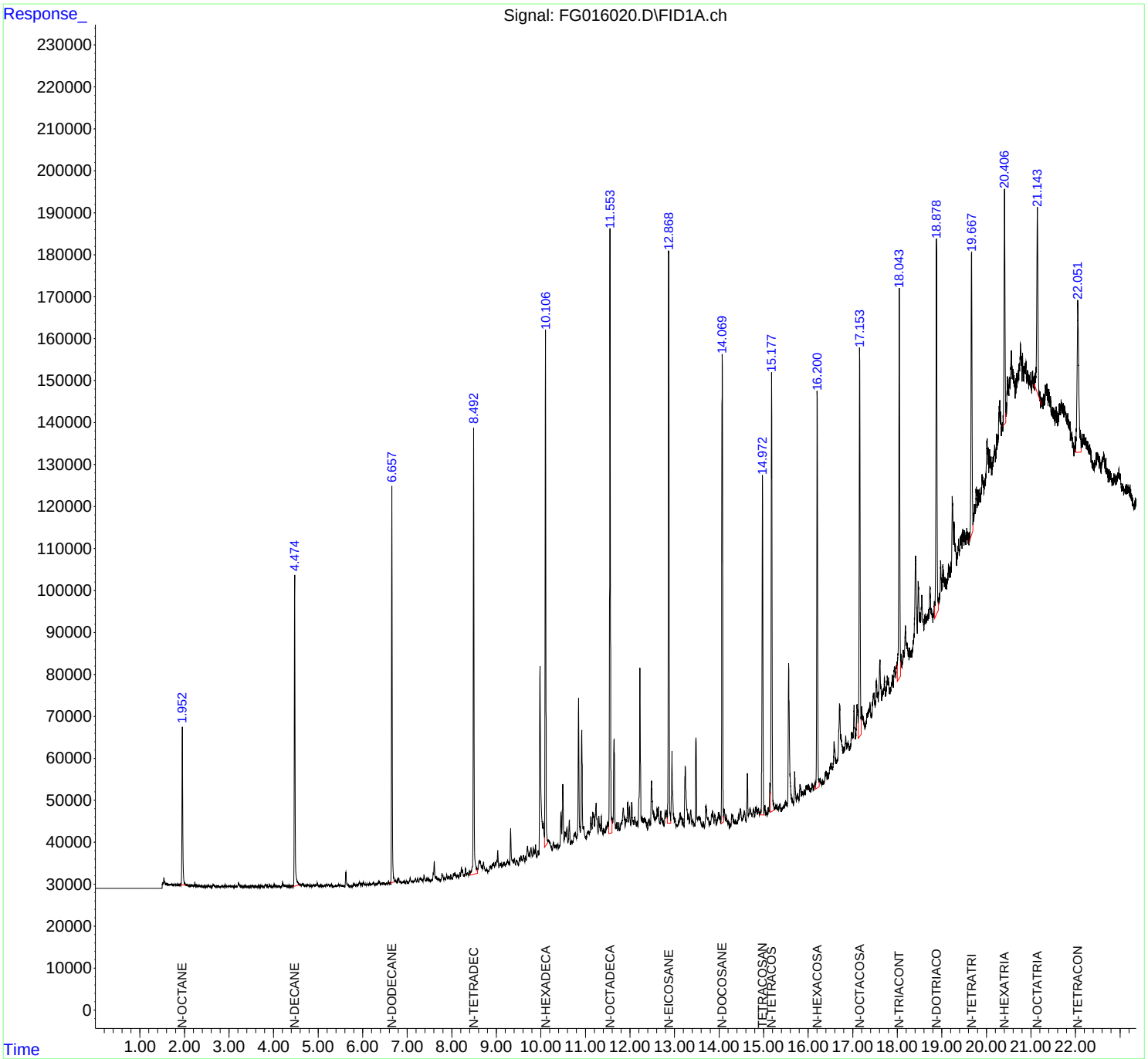
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016020.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 20:01
Operator : YP\AJ
Sample : Q2246-01MSD
Misc :
ALS Vial : 35 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
BU-03-060525MSD

Integration File: autoint1.e
Quant Time: Jun 11 05:54:45 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Quant Title :
QLast Update : Thu May 22 06:20:25 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um



Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG061025\
Data File : FG016020.D
Signal(s) : FID1A.ch
Acq On : 10 Jun 2025 20:01
Sample : Q2246-01MSD
Misc :
ALS Vial : 35 Sample Multiplier: 1

Integration File: Sample.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG052225.M
Title :

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	1.952	1.900	2.055	BV	37668	463806	14.25%	0.528%
2	2.057	2.055	2.112	VV	199	3789	0.12%	0.004%
3	2.118	2.112	2.129	VV	136	746	0.02%	0.001%
4	2.140	2.129	2.204	PV	134	3533	0.11%	0.004%
5	2.209	2.204	2.214	VV	84	390	0.01%	0.000%
6	2.233	2.214	2.270	VV	646	8944	0.27%	0.010%
7	2.291	2.270	2.328	VV	215	4066	0.12%	0.005%
8	2.330	2.328	2.392	PV	111	2190	0.07%	0.002%
9	2.395	2.392	2.492	VB	103	2456	0.08%	0.003%
10	2.528	2.494	2.541	BV	278	3854	0.12%	0.004%
11	2.545	2.541	2.577	VV	243	3241	0.10%	0.004%
12	2.582	2.577	2.594	VV	156	983	0.03%	0.001%
13	2.598	2.594	2.608	VV	138	723	0.02%	0.001%
14	2.613	2.608	2.616	PV	114	360	0.01%	0.000%
15	2.643	2.616	2.709	VV	594	16916	0.52%	0.019%
16	2.717	2.709	2.734	VV	177	2177	0.07%	0.002%
17	2.753	2.734	2.807	VV	272	6862	0.21%	0.008%
18	2.848	2.807	2.892	VV	274	7202	0.22%	0.008%
19	2.914	2.892	2.942	VV	442	7925	0.24%	0.009%
20	2.949	2.942	2.968	VV	180	2141	0.07%	0.002%
21	2.991	2.968	3.009	VV	289	5465	0.17%	0.006%
22	3.013	3.009	3.031	VV	191	2187	0.07%	0.002%
23	3.036	3.031	3.049	VV	177	1314	0.04%	0.001%
24	3.069	3.049	3.074	VV	160	1702	0.05%	0.002%
25	3.079	3.074	3.129	VV	177	3654	0.11%	0.004%
26	3.156	3.129	3.161	VV	165	2214	0.07%	0.003%
27	3.166	3.161	3.176	VV	147	916	0.03%	0.001%
28	3.184	3.176	3.190	VV	139	1033	0.03%	0.001%
29	3.213	3.190	3.249	VV	1025	17862	0.55%	0.020%
30	3.257	3.249	3.261	VV	232	1414	0.04%	0.002%
31	3.266	3.261	3.314	VV	292	4790	0.15%	0.005%
32	3.334	3.314	3.339	VV	271	2386	0.07%	0.003%
33	3.350	3.339	3.370	VV	219	3127	0.10%	0.004%
34	3.384	3.370	3.406	VV	205	2827	0.09%	0.003%
35	3.432	3.406	3.437	VV	205	2481	0.08%	0.003%
36	3.451	3.437	3.479	VV	192	3213	0.10%	0.004%

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37	3.497	3.479	3.502	VV	379	1804	0.06%	0.002%
38	3.526	3.502	3.594	VV	305	8394	0.26%	0.010%
39	3.611	3.594	3.624	VV	182	2164	0.07%	0.002%
40	3.630	3.624	3.637	VV	56	356	0.01%	0.000%
41	3.658	3.637	3.699	VV	295	5448	0.17%	0.006%
42	3.712	3.699	3.726	VV	224	2702	0.08%	0.003%
43	3.737	3.726	3.742	VV	272	1998	0.06%	0.002%
44	3.747	3.742	3.762	VV	219	1970	0.06%	0.002%
45	3.772	3.762	3.783	VV	143	1165	0.04%	0.001%
46	3.813	3.783	3.884	VV	464	14210	0.44%	0.016%
47	3.907	3.884	3.927	VV	466	6849	0.21%	0.008%
48	3.934	3.927	3.953	VV	281	2651	0.08%	0.003%
49	3.959	3.953	3.981	VV	114	1174	0.04%	0.001%
50	3.990	3.981	3.996	VV	179	1447	0.04%	0.002%
51	4.013	3.996	4.027	VV	622	7445	0.23%	0.008%
52	4.045	4.027	4.069	VV	452	6548	0.20%	0.007%
53	4.071	4.069	4.086	VV	200	1456	0.04%	0.002%
54	4.092	4.086	4.109	VV	245	1865	0.06%	0.002%
55	4.125	4.109	4.146	VV	355	4112	0.13%	0.005%
56	4.151	4.146	4.166	PV	96	346	0.01%	0.000%
57	4.207	4.166	4.234	VV	990	18104	0.56%	0.021%
58	4.239	4.234	4.264	VV	397	5823	0.18%	0.007%
59	4.267	4.264	4.272	VV	254	1048	0.03%	0.001%
60	4.281	4.272	4.297	VV	245	2994	0.09%	0.003%
61	4.312	4.297	4.326	VV	198	2192	0.07%	0.002%
62	4.332	4.326	4.337	VV	91	564	0.02%	0.001%
63	4.360	4.337	4.397	VV	269	4388	0.13%	0.005%
64	4.413	4.397	4.439	VV	324	4270	0.13%	0.005%
65	4.474	4.439	4.574	VV	74377	887783	27.28%	1.011%
66	4.580	4.574	4.620	VV	641	14647	0.45%	0.017%
67	4.650	4.620	4.714	VV	713	27184	0.84%	0.031%
68	4.717	4.714	4.743	VV	349	5714	0.18%	0.007%
69	4.761	4.743	4.771	VV	682	7826	0.24%	0.009%
70	4.782	4.771	4.799	VV	491	6376	0.20%	0.007%
71	4.803	4.799	4.808	VV	337	1713	0.05%	0.002%
72	4.813	4.808	4.829	VV	411	4611	0.14%	0.005%
73	4.840	4.829	4.858	VV	397	4993	0.15%	0.006%
74	4.875	4.858	4.887	VV	380	4662	0.14%	0.005%
75	4.910	4.887	4.927	VV	537	9908	0.30%	0.011%
76	4.943	4.927	4.964	VV	514	9149	0.28%	0.010%
77	4.982	4.964	5.035	VV	993	19602	0.60%	0.022%
78	5.062	5.035	5.081	VV	397	7786	0.24%	0.009%
79	5.091	5.081	5.122	VV	325	4710	0.14%	0.005%
80	5.154	5.122	5.169	VV	412	7878	0.24%	0.009%
81	5.190	5.169	5.216	VV	699	11229	0.35%	0.013%
82	5.234	5.216	5.251	VV	632	9386	0.29%	0.011%
83	5.255	5.251	5.271	VV	375	4161	0.13%	0.005%
84	5.276	5.271	5.287	VV	444	3768	0.12%	0.004%
85	5.300	5.287	5.331	VV	558	8746	0.27%	0.010%
86	5.336	5.331	5.339	VV	130	487	0.01%	0.001%
87	5.351	5.339	5.359	VV	148	1602	0.05%	0.002%
88	5.397	5.359	5.411	VV	387	7394	0.23%	0.008%
89	5.421	5.411	5.431	VV	306	2903	0.09%	0.003%

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90	5.457	5.431	5.479	VV	575	10827	0.33%	0.012%
91	5.496	5.479	5.511	VV	548	8284	0.25%	0.009%
92	5.516	5.511	5.527	VV	329	2750	0.08%	0.003%
93	5.536	5.527	5.547	VV	297	2804	0.09%	0.003%
94	5.559	5.547	5.572	VV	335	3574	0.11%	0.004%
95	5.578	5.572	5.599	VV	200	2185	0.07%	0.002%
96	5.624	5.599	5.724	PV	3551	60050	1.85%	0.068%
97	5.738	5.724	5.762	VV	175	2770	0.09%	0.003%
98	5.797	5.762	5.810	VV	757	9532	0.29%	0.011%
99	5.825	5.810	5.845	VV	422	6512	0.20%	0.007%
100	5.857	5.845	5.870	VV	271	3409	0.10%	0.004%
101	5.881	5.870	5.896	VV	385	4377	0.13%	0.005%
102	5.923	5.896	5.961	VV	904	21494	0.66%	0.024%
103	5.981	5.961	5.994	VV	340	5928	0.18%	0.007%
104	6.015	5.994	6.069	VV	810	19267	0.59%	0.022%
105	6.075	6.069	6.084	VV	342	2214	0.07%	0.003%
106	6.100	6.084	6.119	VV	576	6737	0.21%	0.008%
107	6.126	6.119	6.134	VV	250	1517	0.05%	0.002%
108	6.153	6.134	6.173	VV	452	6345	0.19%	0.007%
109	6.188	6.173	6.194	VV	262	2997	0.09%	0.003%
110	6.239	6.194	6.279	VV	609	17902	0.55%	0.020%
111	6.298	6.279	6.315	VV	544	6033	0.19%	0.007%
112	6.344	6.315	6.347	VV	518	5777	0.18%	0.007%
113	6.367	6.347	6.406	VV	950	18272	0.56%	0.021%
114	6.426	6.406	6.436	VV	415	4319	0.13%	0.005%
115	6.445	6.436	6.455	VV	333	3080	0.09%	0.004%
116	6.474	6.455	6.502	VV	521	8360	0.26%	0.010%
117	6.508	6.502	6.510	PV	64	114	0.00%	0.000%
118	6.542	6.510	6.556	VV	318	6229	0.19%	0.007%
119	6.582	6.556	6.631	VV	592	14094	0.43%	0.016%
120	6.657	6.631	6.724	VV	95005	1053666	32.37%	1.200%
121	6.744	6.724	6.764	VV	766	15784	0.48%	0.018%
122	6.779	6.764	6.791	VV	806	9976	0.31%	0.011%
123	6.810	6.791	6.836	VV	1352	22138	0.68%	0.025%
124	6.845	6.836	6.873	VV	502	8534	0.26%	0.010%
125	6.915	6.873	6.929	VV	522	10647	0.33%	0.012%
126	6.943	6.929	6.969	VV	689	8648	0.27%	0.010%
127	6.984	6.969	7.009	VV	537	7661	0.24%	0.009%
128	7.017	7.009	7.032	VV	262	2662	0.08%	0.003%
129	7.067	7.032	7.097	PV	1334	23105	0.71%	0.026%
130	7.109	7.097	7.130	VV	458	6504	0.20%	0.007%
131	7.152	7.130	7.162	VV	545	7033	0.22%	0.008%
132	7.189	7.162	7.210	VV	1028	17397	0.53%	0.020%
133	7.233	7.210	7.261	VV	994	14945	0.46%	0.017%
134	7.296	7.261	7.327	VV	859	25481	0.78%	0.029%
135	7.338	7.327	7.355	VV	726	7855	0.24%	0.009%
136	7.379	7.355	7.419	VV	1609	28656	0.88%	0.033%
137	7.444	7.419	7.462	VV	943	13063	0.40%	0.015%
138	7.476	7.462	7.494	VV	726	8936	0.27%	0.010%
139	7.507	7.494	7.526	VV	408	4148	0.13%	0.005%
140	7.609	7.526	7.632	VV	4729	88353	2.71%	0.101%
141	7.646	7.632	7.676	VV	895	18767	0.58%	0.021%

142	7.691	7.676	7.729	VV	612	11035	0.34%	0.013%
143	7.734	7.729	7.747	VV	173	1185	0.04%	0.001%
144	7.783	7.747	7.821	PV	1693	34344	1.06%	0.039%
145	7.837	7.821	7.859	VV	501	7634	0.23%	0.009%
146	7.889	7.859	7.912	PV	1293	19056	0.59%	0.022%
147	7.930	7.912	7.961	VV	732	14790	0.45%	0.017%
148	7.979	7.961	8.014	VV	1151	12927	0.40%	0.015%
149	8.038	8.014	8.050	PV	1181	14887	0.46%	0.017%
150	8.066	8.050	8.105	VV	1375	30450	0.94%	0.035%
151	8.137	8.105	8.154	VV	669	15225	0.47%	0.017%
152	8.183	8.154	8.199	VV	1198	16601	0.51%	0.019%
153	8.219	8.199	8.232	VV	2352	29371	0.90%	0.033%
154	8.243	8.232	8.266	VV	1787	22012	0.68%	0.025%
155	8.278	8.266	8.291	VV	560	5642	0.17%	0.006%
156	8.311	8.291	8.338	VV	2030	28523	0.88%	0.032%
157	8.358	8.338	8.382	VV	785	13959	0.43%	0.016%
158	8.399	8.382	8.414	VV	1283	15108	0.46%	0.017%
159	8.429	8.414	8.439	VV	1037	13410	0.41%	0.015%
160	8.493	8.439	8.559	VV	106370	1265528	38.88%	1.441%
161	8.566	8.559	8.582	VV	1554	19236	0.59%	0.022%
162	8.613	8.582	8.632	VV	3195	70699	2.17%	0.081%
163	8.641	8.632	8.665	VV	3113	48453	1.49%	0.055%
164	8.677	8.665	8.692	VV	1967	26263	0.81%	0.030%
165	8.714	8.692	8.756	VV	2684	58214	1.79%	0.066%
166	8.784	8.756	8.809	VV	898	19643	0.60%	0.022%
167	8.820	8.809	8.836	VV	422	4804	0.15%	0.005%
168	8.867	8.836	8.898	VV	1319	38052	1.17%	0.043%
169	8.917	8.898	8.932	VV	1827	30287	0.93%	0.034%
170	8.944	8.932	8.964	VV	2098	30965	0.95%	0.035%
171	8.983	8.964	8.994	VV	2055	29733	0.91%	0.034%
172	9.034	8.994	9.061	VV	4758	101154	3.11%	0.115%
173	9.085	9.061	9.098	VV	1668	27806	0.85%	0.032%
174	9.109	9.098	9.129	VV	1609	20839	0.64%	0.024%
175	9.181	9.129	9.199	VV	1699	53651	1.65%	0.061%
176	9.254	9.199	9.281	VV	1868	70301	2.16%	0.080%
177	9.323	9.281	9.359	VV	9474	159997	4.92%	0.182%
178	9.366	9.359	9.385	VV	1890	24464	0.75%	0.028%
179	9.407	9.385	9.432	VV	2180	41121	1.26%	0.047%
180	9.453	9.432	9.497	VV	1583	44058	1.35%	0.050%
181	9.523	9.497	9.537	VV	2152	32835	1.01%	0.037%
182	9.553	9.537	9.587	VV	2460	55916	1.72%	0.064%
183	9.609	9.587	9.641	VV	2411	58987	1.81%	0.067%
184	9.656	9.641	9.670	VV	2156	29244	0.90%	0.033%
185	9.699	9.670	9.731	VV	4571	108680	3.34%	0.124%
186	9.744	9.731	9.757	VV	2866	39341	1.21%	0.045%
187	9.780	9.757	9.808	VV	3987	91408	2.81%	0.104%
188	9.831	9.808	9.851	VV	3790	73248	2.25%	0.083%
189	9.883	9.851	9.914	VV	4431	105828	3.25%	0.120%
190	9.936	9.914	9.955	VV	2987	57572	1.77%	0.066%
191	9.982	9.955	10.042	VV	46406	936044	28.76%	1.066%
192	10.054	10.042	10.081	VV	9340	185251	5.69%	0.211%
193	10.106	10.081	10.172	VV	126756	1620038	49.78%	1.845%
194	10.179	10.172	10.251	VV	4952	186735	5.74%	0.213%

195	10.281	10.251	10.309	VV	4303	118371	3.64%	0.135%
196	10.315	10.309	10.324	VV	3127	28509	0.88%	0.032%
197	10.341	10.324	10.363	VV	3572	75602	2.32%	0.086%
198	10.381	10.363	10.401	VV	3608	72491	2.23%	0.083%
199	10.452	10.401	10.470	VV	11077	234555	7.21%	0.267%
200	10.494	10.470	10.523	VV	17679	329541	10.13%	0.375%
201	10.546	10.523	10.565	VV	6262	135688	4.17%	0.154%
202	10.585	10.565	10.611	VV	7259	153469	4.72%	0.175%
203	10.640	10.611	10.667	VV	8824	189444	5.82%	0.216%
204	10.698	10.667	10.707	VV	3784	84453	2.59%	0.096%
205	10.748	10.707	10.762	VV	5250	145612	4.47%	0.166%
206	10.776	10.762	10.804	VV	5714	124529	3.83%	0.142%
207	10.848	10.804	10.887	VV	37688	644335	19.80%	0.734%
208	10.919	10.887	10.947	VV	29864	539174	16.57%	0.614%
209	10.963	10.947	11.012	VV	6605	205028	6.30%	0.233%
210	11.061	11.012	11.079	VV	5469	191421	5.88%	0.218%
211	11.126	11.079	11.147	VV	8652	257648	7.92%	0.293%
212	11.171	11.147	11.207	VV	9701	292867	9.00%	0.333%
213	11.239	11.207	11.286	VV	11803	385529	11.85%	0.439%
214	11.304	11.286	11.341	VV	8563	213841	6.57%	0.243%
215	11.357	11.341	11.394	VV	8450	189133	5.81%	0.215%
216	11.415	11.394	11.442	VV	5367	138323	4.25%	0.157%
217	11.501	11.442	11.521	VV	6422	264562	8.13%	0.301%
218	11.554	11.521	11.613	VV	147996	2005100	61.61%	2.283%
219	11.643	11.613	11.691	VV	26116	553333	17.00%	0.630%
220	11.708	11.691	11.734	VV	6252	137121	4.21%	0.156%
221	11.752	11.734	11.774	VV	6162	121334	3.73%	0.138%
222	11.849	11.774	11.892	VV	9226	468574	14.40%	0.534%
223	11.911	11.892	11.922	VV	6548	107630	3.31%	0.123%
224	11.950	11.922	11.974	VV	10580	250719	7.70%	0.285%
225	11.988	11.974	12.016	VV	9295	178824	5.49%	0.204%
226	12.040	12.016	12.090	VV	10397	301670	9.27%	0.343%
227	12.109	12.090	12.144	VV	6852	187618	5.76%	0.214%
228	12.161	12.144	12.176	VV	5394	98540	3.03%	0.112%
229	12.226	12.176	12.259	VV	42099	773843	23.78%	0.881%
230	12.266	12.259	12.283	VV	6524	86303	2.65%	0.098%
231	12.295	12.283	12.312	VV	6041	100059	3.07%	0.114%
232	12.326	12.312	12.344	VV	6162	107629	3.31%	0.123%
233	12.352	12.344	12.397	VV	5563	146570	4.50%	0.167%
234	12.425	12.397	12.451	VV	5334	147186	4.52%	0.168%
235	12.484	12.451	12.557	VV	14583	504787	15.51%	0.575%
236	12.566	12.557	12.586	VV	5687	93814	2.88%	0.107%
237	12.609	12.586	12.623	VV	7545	145854	4.48%	0.166%
238	12.639	12.623	12.676	VV	8232	189185	5.81%	0.215%
239	12.692	12.676	12.769	VV	7010	271854	8.35%	0.310%
240	12.791	12.769	12.807	VV	6848	125047	3.84%	0.142%
241	12.823	12.807	12.838	VV	6881	109485	3.36%	0.125%
242	12.868	12.838	12.912	VV	139816	1853756	56.96%	2.111%
243	12.943	12.912	12.995	VV	20846	474672	14.58%	0.540%
244	13.012	12.995	13.039	VV	4717	98794	3.04%	0.112%
245	13.046	13.039	13.061	VV	2962	37799	1.16%	0.043%
246	13.123	13.061	13.147	VV	5841	210891	6.48%	0.240%

247	13.156	13.147	13.175	VV	4562	66445	2.04%	0.076%
248	13.191	13.175	13.214	VV	4256	79468	2.44%	0.090%
249	13.240	13.214	13.297	VV	16572	432403	13.29%	0.492%
250	13.312	13.297	13.337	VV	5066	96451	2.96%	0.110%
251	13.364	13.337	13.394	VV	6030	146601	4.50%	0.167%
252	13.410	13.394	13.444	VV	3530	85298	2.62%	0.097%
253	13.482	13.444	13.515	VV	22959	359480	11.05%	0.409%
254	13.526	13.515	13.537	VV	3693	49040	1.51%	0.056%
255	13.550	13.537	13.566	VV	4229	63868	1.96%	0.073%
256	13.574	13.566	13.627	VV	3658	96498	2.96%	0.110%
257	13.645	13.627	13.676	VV	2730	54468	1.67%	0.062%
258	13.707	13.676	13.741	VV	6417	162724	5.00%	0.185%
259	13.747	13.741	13.777	VV	3393	60975	1.87%	0.069%
260	13.791	13.777	13.805	VV	2288	32850	1.01%	0.037%
261	13.843	13.805	13.851	VV	3777	84636	2.60%	0.096%
262	13.860	13.851	13.884	VV	4437	68326	2.10%	0.078%
263	13.903	13.884	13.934	VV	3823	84670	2.60%	0.096%
264	13.987	13.934	14.041	VV	4300	177402	5.45%	0.202%
265	14.070	14.041	14.101	VV	111521	1461049	44.89%	1.664%
266	14.116	14.101	14.139	VV	4663	80394	2.47%	0.092%
267	14.155	14.139	14.205	VV	3296	82223	2.53%	0.094%
268	14.215	14.205	14.236	VV	1606	18193	0.56%	0.021%
269	14.250	14.236	14.257	PV	416	5240	0.16%	0.006%
270	14.301	14.257	14.326	VV	2857	76537	2.35%	0.087%
271	14.334	14.326	14.351	VV	1349	16796	0.52%	0.019%
272	14.365	14.351	14.383	VV	1351	18904	0.58%	0.022%
273	14.392	14.383	14.409	VV	801	10006	0.31%	0.011%
274	14.434	14.409	14.444	VV	2178	28153	0.87%	0.032%
275	14.478	14.444	14.517	VV	3703	97530	3.00%	0.111%
276	14.571	14.517	14.605	VV	2880	81851	2.51%	0.093%
277	14.634	14.605	14.657	VV	11399	160952	4.95%	0.183%
278	14.695	14.657	14.742	VV	3016	103993	3.20%	0.118%
279	14.776	14.742	14.802	VV	2397	59884	1.84%	0.068%
280	14.822	14.802	14.864	VV	2612	74896	2.30%	0.085%
281	14.885	14.864	14.914	VV	2267	46880	1.44%	0.053%
282	14.973	14.914	15.007	VV	81005	1121857	34.47%	1.277%
283	15.027	15.007	15.049	VV	2274	38008	1.17%	0.043%
284	15.066	15.049	15.079	VV	650	8544	0.26%	0.010%
285	15.103	15.079	15.119	VV	1790	26143	0.80%	0.030%
286	15.139	15.119	15.151	VV	7404	92813	2.85%	0.106%
287	15.177	15.151	15.254	VV	105039	1507891	46.33%	1.717%
288	15.268	15.254	15.286	VV	1723	24301	0.75%	0.028%
289	15.294	15.286	15.332	VV	1582	28868	0.89%	0.033%
290	15.366	15.332	15.401	VV	1887	39052	1.20%	0.044%
291	15.452	15.401	15.466	PV	1045	20408	0.63%	0.023%
292	15.495	15.466	15.526	VV	1775	38167	1.17%	0.043%
293	15.561	15.526	15.671	VV	34116	701792	21.56%	0.799%
294	15.697	15.671	15.734	PV	7285	113287	3.48%	0.129%
295	15.763	15.734	15.793	VV	1704	34192	1.05%	0.039%
296	15.819	15.793	15.843	VV	3594	61886	1.90%	0.070%
297	15.857	15.843	15.894	VV	1589	34748	1.07%	0.040%
298	15.913	15.894	15.930	VV	1281	23167	0.71%	0.026%
299	15.956	15.930	15.984	VV	2357	50186	1.54%	0.057%

300	15.991	15.984	16.061	VV	2167	55909	1.72%	0.064%
301	16.087	16.061	16.122	VV	1837	42431	1.30%	0.048%
302	16.201	16.122	16.250	VV	94556	1276108	39.21%	1.453%
303	16.267	16.250	16.308	VV	1802	35796	1.10%	0.041%
304	16.326	16.308	16.352	VV	863	13423	0.41%	0.015%
305	16.397	16.352	16.439	PV	2283	62465	1.92%	0.071%
306	16.511	16.439	16.549	PV	2556	92208	2.83%	0.105%
307	16.582	16.549	16.651	VV	6377	175039	5.38%	0.199%
308	16.705	16.651	16.784	VV	13024	450652	13.85%	0.513%
309	16.798	16.784	16.811	VV	2244	28047	0.86%	0.032%
310	16.841	16.811	16.860	VV	4734	84340	2.59%	0.096%
311	16.894	16.860	16.929	VV	1997	61280	1.88%	0.070%
312	16.977	16.929	17.009	PV	3576	94216	2.89%	0.107%
313	17.028	17.009	17.063	VV	9199	152221	4.68%	0.173%
314	17.098	17.063	17.121	VV	8389	179642	5.52%	0.205%
315	17.154	17.121	17.189	VV	91790	1343149	41.27%	1.529%
316	17.199	17.189	17.272	VV	6371	171874	5.28%	0.196%
317	17.388	17.272	17.414	VV	4764	208033	6.39%	0.237%
318	17.477	17.414	17.500	VV	5739	188254	5.78%	0.214%
319	17.530	17.500	17.573	VV	7999	215831	6.63%	0.246%
320	17.607	17.573	17.651	VV	10855	289346	8.89%	0.329%
321	17.678	17.651	17.691	VV	3723	71617	2.20%	0.082%
322	17.712	17.691	17.744	VV	6125	115207	3.54%	0.131%
323	17.776	17.744	17.790	VV	5683	104459	3.21%	0.119%
324	17.799	17.790	17.842	VV	4526	78479	2.41%	0.089%
325	17.891	17.842	17.911	VV	3610	91947	2.83%	0.105%
326	17.936	17.911	17.965	VV	5300	129588	3.98%	0.148%
327	18.044	17.965	18.074	VV	93909	1551080	47.66%	1.766%
328	18.082	18.074	18.107	VV	6534	96225	2.96%	0.110%
329	18.136	18.107	18.154	VV	6355	148568	4.56%	0.169%
330	18.182	18.154	18.244	VV	12029	402029	12.35%	0.458%
331	18.255	18.244	18.264	VV	4802	48963	1.50%	0.056%
332	18.275	18.264	18.291	VV	5054	67079	2.06%	0.076%
333	18.297	18.291	18.330	VV	3807	86627	2.66%	0.099%
334	18.409	18.330	18.447	VV	25456	787867	24.21%	0.897%
335	18.473	18.447	18.516	VV	18080	493838	15.17%	0.562%
336	18.551	18.516	18.601	VV	14010	476220	14.63%	0.542%
337	18.624	18.601	18.654	VV	8112	227737	7.00%	0.259%
338	18.673	18.654	18.686	VV	7322	131872	4.05%	0.150%
339	18.733	18.686	18.801	VV	13450	550635	16.92%	0.627%
340	18.879	18.801	18.929	VV	93627	1780261	54.70%	2.027%
341	18.974	18.929	19.002	VV	16339	451852	13.88%	0.514%
342	19.024	19.002	19.057	VV	14739	384263	11.81%	0.438%
343	19.070	19.057	19.087	VV	10624	174160	5.35%	0.198%
344	19.150	19.087	19.164	VV	12230	462467	14.21%	0.527%
345	19.171	19.164	19.194	VV	11536	192948	5.93%	0.220%
346	19.203	19.194	19.212	VV	12599	124624	3.83%	0.142%
347	19.237	19.212	19.266	VV	26747	651077	20.00%	0.741%
348	19.276	19.266	19.297	VV	20917	342365	10.52%	0.390%
349	19.306	19.297	19.332	VV	15619	279756	8.60%	0.319%
350	19.376	19.332	19.391	VV	15812	454381	13.96%	0.517%
351	19.417	19.391	19.429	VV	15776	321645	9.88%	0.366%

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352	19.443	19.429	19.451	VV	15150	197060	6.05%	0.224%
353	19.469	19.451	19.499	VV	16667	425173	13.06%	0.484%
354	19.508	19.499	19.531	VV	15617	277463	8.53%	0.316%
355	19.559	19.531	19.572	VV	15079	357996	11.00%	0.408%
356	19.578	19.572	19.592	VV	14512	155584	4.78%	0.177%
357	19.600	19.592	19.607	VV	13238	113981	3.50%	0.130%
358	19.666	19.607	19.704	VV	79419	1822158	55.99%	2.075%
359	19.710	19.704	19.718	VV	16899	135521	4.16%	0.154%
360	19.774	19.718	19.806	VV	22633	997906	30.66%	1.136%
361	19.816	19.806	19.827	VV	20270	251601	7.73%	0.286%
362	19.843	19.827	19.867	VV	20464	469854	14.44%	0.535%
363	19.903	19.867	19.947	VV	23475	1004877	30.88%	1.144%
364	20.015	19.947	20.036	VV	29746	1295303	39.80%	1.475%
365	20.044	20.036	20.055	VV	27504	296560	9.11%	0.338%
366	20.072	20.055	20.126	VV	27505	1017413	31.26%	1.158%
367	20.187	20.126	20.204	VV	25521	1124888	34.56%	1.281%
368	20.230	20.204	20.241	VV	28465	577231	17.74%	0.657%
369	20.299	20.241	20.337	VV	34842	1766927	54.29%	2.012%
370	20.406	20.337	20.446	VV	83998	2717806	83.51%	3.095%
371	20.476	20.446	20.504	VV	38780	1235050	37.95%	1.406%
372	20.562	20.504	20.591	VV	42358	2013583	61.87%	2.293%
373	20.603	20.591	20.647	VV	38855	1216891	37.39%	1.386%
374	20.676	20.647	20.686	VV	36153	807485	24.81%	0.919%
375	20.767	20.686	20.803	VV	41991	2637456	81.04%	3.003%
376	20.814	20.803	20.837	VV	39782	741052	22.77%	0.844%
377	20.888	20.837	20.912	VV	36574	1576319	48.43%	1.795%
378	20.924	20.912	20.981	VV	33599	1319127	40.53%	1.502%
379	20.986	20.981	21.019	VV	32222	690903	21.23%	0.787%
380	21.026	21.019	21.067	VV	32233	876186	26.92%	0.998%
381	21.075	21.067	21.084	VV	30594	294687	9.05%	0.336%
382	21.144	21.084	21.246	VV	69425	3254576	100.00%	3.706%
383	21.256	21.246	21.273	VV	22612	348021	10.69%	0.396%
384	21.288	21.273	21.311	VV	23182	495017	15.21%	0.564%
385	21.358	21.311	21.384	VV	24065	1010490	31.05%	1.151%
386	21.404	21.384	21.432	VV	22721	597188	18.35%	0.680%
387	21.441	21.432	21.469	VV	20550	399773	12.28%	0.455%
388	21.480	21.469	21.498	VV	17741	276921	8.51%	0.315%
389	21.513	21.498	21.544	VV	16872	421526	12.95%	0.480%
390	21.561	21.544	21.595	VV	15975	438011	13.46%	0.499%
391	21.606	21.595	21.613	VV	13579	136004	4.18%	0.155%
392	21.643	21.613	21.664	VV	16195	434626	13.35%	0.495%
393	21.680	21.664	21.694	VV	16202	269694	8.29%	0.307%
394	21.705	21.694	21.715	VV	14765	175705	5.40%	0.200%
395	21.726	21.715	21.740	VV	14430	202785	6.23%	0.231%
396	21.753	21.740	21.786	VV	12944	338977	10.42%	0.386%
397	21.789	21.786	21.812	VV	10895	162727	5.00%	0.185%
398	21.829	21.812	21.862	VV	11058	268444	8.25%	0.306%
399	21.874	21.862	21.902	VV	7837	150964	4.64%	0.172%
400	21.920	21.902	21.966	VV	5250	110987	3.41%	0.126%
401	21.991	21.966	22.004	PV	3139	24241	0.74%	0.028%
402	22.053	22.004	22.071	PBA	20152	370454	11.38%	0.422%

Sum of corrected areas: 87824631

FG052225.M Wed Jun 11 07:13:59 2025

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900, Fax : 908 789 8922

Manual Integration Report

Sample ID	ClientId ID	File ID	Sequence ID	Parameter	Supervised By	Supervised On	Reason
5 TRPH STD		FG015890.D	FG052225	N-TETRACONTANE	mohammad	5/23/2025 5:16:45 AM	Peak Integrated by Software incorrectly

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900, Fax : 908 789 8922

Manual Integration Report

Sample ID	ClientId ID	File ID	Sequence ID	Parameter	Supervised By	Supervised On	Reason
Q2147-01		FG016006.D	FG061025	TETRACOSANE-d50 (SURROGA	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-04		FG016013.D	FG061025	N-OCTADECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-04		FG016013.D	FG061025	N-OCTANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-04		FG016013.D	FG061025	N-TETRACOSANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-04		FG016014.D	FG061025	N-DECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-04		FG016014.D	FG061025	N-DODECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-04		FG016014.D	FG061025	N-TETRADECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2198-03		FG016017.D	FG061025	TETRACOSANE-d50 (SURROGA	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2246-01		FG016018.D	FG061025	TETRACOSANE-d50 (SURROGA	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-10		FG016024.D	FG061025	N-DECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-10		FG016024.D	FG061025	N-DOCOSANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-10		FG016024.D	FG061025	N-DODECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-10		FG016024.D	FG061025	N-HEXADECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-10		FG016024.D	FG061025	N-OCTADECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-10		FG016024.D	FG061025	N-OCTATRIACONTANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-10		FG016024.D	FG061025	N-TETRACONTANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-10		FG016024.D	FG061025	N-TETRADECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-10		FG016025.D	FG061025	N-DODECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-10		FG016025.D	FG061025	N-TETRACONTANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-01		FG016034.D	FG061025	N-DECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-01		FG016034.D	FG061025	N-DODECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-01		FG016034.D	FG061025	N-HEXADECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly

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Manual Integration Report

Q2126-01		FG016034.D	FG061025	N-TETRACOSANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-01		FG016034.D	FG061025	N-TETRADECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-07		FG016037.D	FG061025	N-DECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-07		FG016037.D	FG061025	N-DODECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-07		FG016037.D	FG061025	N-HEXADECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-07		FG016037.D	FG061025	N-TETRACOSANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-07		FG016037.D	FG061025	N-TETRADECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-07		FG016038.D	FG061025	N-DECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly
Q2126-07		FG016038.D	FG061025	N-DODECANE	mohammad	6/12/2025 3:34:17 AM	Peak Integrated by Software incorrectly

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Instrument ID: FID_G

Daily Analysis Runlog For Sequence/QCBatch ID # FG052225

Review By	yogesh	Review On	5/21/2025 1:58:58 PM		
Supervise By	mohammad	Supervise On	5/23/2025 5:16:45 AM		
SubDirectory	FG052225	HP Acquire Method		HP Processing Method	FG052225

STD. NAME	STD REF.#
Tune/Reschk	
Initial Calibration Stds	PP24467,PP24469,PP24470,PP24471,PP24472
CCC	
Internal Standard/PEM	
ICV/I.BLK	PP24468,PP24473
Surrogate Standard	
MS/MSD Standard	
LCS Standard	

Sr#	SampleId	Data File Name	Date-Time	Operator	Status
1	MECL2	FG015884.D	21 May 2025 20:34	YP\AJ	Ok
2	I.BLK	FG015885.D	21 May 2025 21:03	YP\AJ	Ok
3	100 TRPH STD	FG015886.D	21 May 2025 21:33	YP\AJ	Ok
4	50 TRPH STD	FG015887.D	21 May 2025 22:02	YP\AJ	Ok
5	20 TRPH STD	FG015888.D	21 May 2025 22:31	YP\AJ	Ok
6	10 TRPH STD	FG015889.D	21 May 2025 23:00	YP\AJ	Ok
7	5 TRPH STD	FG015890.D	21 May 2025 23:30	YP\AJ	Ok,M
8	FG052225ICV	FG015891.D	21 May 2025 23:59	YP\AJ	Ok
9	PP24596	FG015892.D	22 May 2025 00:58	YP\AJ	Ok

M : Manual Integration

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Fax : 908 789 8922

Instrument ID: FID_G

Daily Analysis Runlog For Sequence/QCBatch ID # FG061025

Review By	yogesh	Review On	6/10/2025 12:14:20 PM		
Supervise By	mohammad	Supervise On	6/12/2025 3:34:17 AM		
SubDirectory	FG061025	HP Acquire Method		HP Processing Method	FG052225

STD. NAME	STD REF.#
Tune/Reschk	
Initial Calibration Stds	PP24467,PP24469,PP24470,PP24471,PP24472
CCC	PP24469
Internal Standard/PEM	
ICV/I.BLK	PP24468,PP24473
Surrogate Standard	
MS/MSD Standard	
LCS Standard	

Sr#	SampleId	Data File Name	Date-Time	Operator	Status
1	MECL2	FG016000.D	10 Jun 2025 10:02	YP\AJ	Ok
2	I.BLK	FG016001.D	10 Jun 2025 10:32	YP\AJ	Ok
3	50 PPM TRPH STD	FG016002.D	10 Jun 2025 11:01	YP\AJ	Ok
4	RT MARKER	FG016003.D	10 Jun 2025 11:40	YP\AJ	Ok
5	PB168365BL	FG016004.D	10 Jun 2025 12:10	YP\AJ	Ok
6	PB168365BS	FG016005.D	10 Jun 2025 12:39	YP\AJ	Ok
7	Q2147-01	FG016006.D	10 Jun 2025 13:08	YP\AJ	Ok,M
8	Q2147-01MS	FG016007.D	10 Jun 2025 13:38	YP\AJ	Ok
9	Q2147-01MSD	FG016008.D	10 Jun 2025 14:07	YP\AJ	Ok
10	I.BLK	FG016009.D	10 Jun 2025 14:37	YP\AJ	Ok
11	50 PPM TRPH STD	FG016010.D	10 Jun 2025 15:06	YP\AJ	Ok
12	PB168382BL	FG016011.D	10 Jun 2025 15:36	YP\AJ	Ok
13	PB168382BS	FG016012.D	10 Jun 2025 16:05	YP\AJ	Ok
14	Q2126-04	FG016013.D	10 Jun 2025 16:35	YP\AJ	Ok,M
15	Q2126-04	FG016014.D	10 Jun 2025 17:04	YP\AJ	Ok,M
16	Q2126-05	FG016015.D	10 Jun 2025 17:33	YP\AJ	Ok
17	Q2198-01	FG016016.D	10 Jun 2025 18:03	YP\AJ	Ok
18	Q2198-03	FG016017.D	10 Jun 2025 18:32	YP\AJ	Ok,M
19	Q2246-01	FG016018.D	10 Jun 2025 19:02	YP\AJ	Ok,M
20	Q2246-01MS	FG016019.D	10 Jun 2025 19:31	YP\AJ	Ok
21	Q2246-01MSD	FG016020.D	10 Jun 2025 20:01	YP\AJ	Ok

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Fax : 908 789 8922

Instrument ID: FID_G

Daily Analysis Runlog For Sequence/QCBatch ID # FG061025

Review By	yogesh	Review On	6/10/2025 12:14:20 PM		
Supervise By	mohammad	Supervise On	6/12/2025 3:34:17 AM		
SubDirectory	FG061025	HP Acquire Method		HP Processing Method	FG052225

STD. NAME	STD REF.#
Tune/Reschk	
Initial Calibration Stds	PP24467,PP24469,PP24470,PP24471,PP24472
CCC	PP24469
Internal Standard/PEM	
ICV/I.BLK	PP24468,PP24473
Surrogate Standard	
MS/MSD Standard	
LCS Standard	

22	I.BLK	FG016021.D	10 Jun 2025 20:30	YP\AJ	Ok
23	50 PPM TRPH STD	FG016022.D	10 Jun 2025 21:00	YP\AJ	Ok
24	PB168383BL	FG016023.D	10 Jun 2025 21:59	YP\AJ	Ok
25	Q2126-10	FG016024.D	10 Jun 2025 22:28	YP\AJ	Ok,M
26	Q2126-10	FG016025.D	10 Jun 2025 22:57	YP\AJ	Ok,M
27	Q2126-11	FG016026.D	10 Jun 2025 23:27	YP\AJ	Ok
28	I.BLK	FG016027.D	10 Jun 2025 23:56	YP\AJ	Ok
29	50 PPM TRPH STD	FG016028.D	11 Jun 2025 00:26	YP\AJ	Ok
30	I.BLK	FG016029.D	11 Jun 2025 01:24	YP\AJ	Ok
31	50 PPM TRPH STD	FG016030.D	11 Jun 2025 01:53	YP\AJ	Ok
32	RT MARKER	FG016031.D	11 Jun 2025 02:23	YP\AJ	Ok
33	PB168380BL	FG016032.D	11 Jun 2025 02:52	YP\AJ	Ok
34	PB168381BL	FG016033.D	11 Jun 2025 03:22	YP\AJ	Ok
35	Q2126-01	FG016034.D	11 Jun 2025 03:51	YP\AJ	Ok,M
36	Q2126-01	FG016035.D	11 Jun 2025 04:20	YP\AJ	Ok
37	Q2126-02	FG016036.D	11 Jun 2025 04:49	YP\AJ	Ok
38	Q2126-07	FG016037.D	11 Jun 2025 05:19	YP\AJ	Ok,M
39	Q2126-07	FG016038.D	11 Jun 2025 05:48	YP\AJ	Ok,M
40	Q2126-08	FG016039.D	11 Jun 2025 06:17	YP\AJ	Ok
41	I.BLK	FG016040.D	11 Jun 2025 06:46	YP\AJ	Ok
42	50 PPM TRPH STD	FG016041.D	11 Jun 2025 07:16	YP\AJ	Ok

M : Manual Integration

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Instrument ID: FID_G

Daily Analysis Runlog For Sequence/QCBatch ID # FG052225

Review By	yogesh	Review On	5/21/2025 1:58:58 PM		
Supervise By	mohammad	Supervise On	5/23/2025 5:16:45 AM		
SubDirectory	FG052225	HP Acquire Method		HP Processing Method	FG052225

STD. NAME	STD REF.#
Tune/Reschk	
Initial Calibration Stds	PP24467,PP24469,PP24470,PP24471,PP24472
CCC	
Internal Standard/PEM	
ICV/I.BLK	PP24468,PP24473
Surrogate Standard	
MS/MSD Standard	
LCS Standard	

Sr#	SampleId	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	MECL2		FG015884.D	21 May 2025 20:34		YP\AJ	Ok
2	I.BLK		FG015885.D	21 May 2025 21:03		YP\AJ	Ok
3	100 TRPH STD		FG015886.D	21 May 2025 21:33		YP\AJ	Ok
4	50 TRPH STD		FG015887.D	21 May 2025 22:02		YP\AJ	Ok
5	20 TRPH STD		FG015888.D	21 May 2025 22:31		YP\AJ	Ok
6	10 TRPH STD		FG015889.D	21 May 2025 23:00		YP\AJ	Ok
7	5 TRPH STD		FG015890.D	21 May 2025 23:30		YP\AJ	Ok,M
8	FG052225ICV		FG015891.D	21 May 2025 23:59		YP\AJ	Ok
9	PP24596		FG015892.D	22 May 2025 00:58		YP\AJ	Ok

M : Manual Integration

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Instrument ID: FID_G

Daily Analysis Runlog For Sequence/QCBatch ID # FG061025

Review By	yogesh	Review On	6/10/2025 12:14:20 PM		
Supervise By	mohammad	Supervise On	6/12/2025 3:34:17 AM		
SubDirectory	FG061025	HP Acquire Method		HP Processing Method	FG052225

STD. NAME	STD REF.#
Tune/Reschk	
Initial Calibration Stds	PP24467,PP24469,PP24470,PP24471,PP24472
CCC	PP24469
Internal Standard/PEM	
ICV/I.BLK	PP24468,PP24473
Surrogate Standard	
MS/MSD Standard	
LCS Standard	

Sr#	SampleId	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	MECL2		FG016000.D	10 Jun 2025 10:02		YP\AJ	Ok
2	I.BLK		FG016001.D	10 Jun 2025 10:32		YP\AJ	Ok
3	50 PPM TRPH STD		FG016002.D	10 Jun 2025 11:01		YP\AJ	Ok
4	RT MARKER		FG016003.D	10 Jun 2025 11:40		YP\AJ	Ok
5	PB168365BL		FG016004.D	10 Jun 2025 12:10		YP\AJ	Ok
6	PB168365BS		FG016005.D	10 Jun 2025 12:39		YP\AJ	Ok
7	Q2147-01		FG016006.D	10 Jun 2025 13:08		YP\AJ	Ok,M
8	Q2147-01MS		FG016007.D	10 Jun 2025 13:38		YP\AJ	Ok
9	Q2147-01MSD		FG016008.D	10 Jun 2025 14:07		YP\AJ	Ok
10	I.BLK		FG016009.D	10 Jun 2025 14:37		YP\AJ	Ok
11	50 PPM TRPH STD		FG016010.D	10 Jun 2025 15:06		YP\AJ	Ok
12	PB168382BL		FG016011.D	10 Jun 2025 15:36		YP\AJ	Ok
13	PB168382BS		FG016012.D	10 Jun 2025 16:05		YP\AJ	Ok
14	Q2126-04		FG016013.D	10 Jun 2025 16:35	1 PPM SOIL LOD	YP\AJ	Ok,M
15	Q2126-04		FG016014.D	10 Jun 2025 17:04	2.5 PPM SOIL LOD	YP\AJ	Ok,M
16	Q2126-05		FG016015.D	10 Jun 2025 17:33	5 PPM SOIL LOQ	YP\AJ	Ok
17	Q2198-01		FG016016.D	10 Jun 2025 18:03		YP\AJ	Ok
18	Q2198-03		FG016017.D	10 Jun 2025 18:32		YP\AJ	Ok,M

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Fax : 908 789 8922

Instrument ID: FID_G

Daily Analysis Runlog For Sequence/QCBatch ID # FG061025

Review By	yogesh	Review On	6/10/2025 12:14:20 PM		
Supervise By	mohammad	Supervise On	6/12/2025 3:34:17 AM		
SubDirectory	FG061025	HP Acquire Method		HP Processing Method	FG052225

STD. NAME	STD REF.#
Tune/Reschk	
Initial Calibration Stds	PP24467,PP24469,PP24470,PP24471,PP24472
CCC	PP24469
Internal Standard/PEM	
ICV/I.BLK	PP24468,PP24473
Surrogate Standard	
MS/MSD Standard	
LCS Standard	

19	Q2246-01		FG016018.D	10 Jun 2025 19:02		YP\AJ	Ok,M
20	Q2246-01MS		FG016019.D	10 Jun 2025 19:31		YP\AJ	Ok
21	Q2246-01MSD		FG016020.D	10 Jun 2025 20:01		YP\AJ	Ok
22	I.BLK		FG016021.D	10 Jun 2025 20:30		YP\AJ	Ok
23	50 PPM TRPH STD		FG016022.D	10 Jun 2025 21:00		YP\AJ	Ok
24	PB168383BL		FG016023.D	10 Jun 2025 21:59		YP\AJ	Ok
25	Q2126-10		FG016024.D	10 Jun 2025 22:28	1 PPM WATER LOD	YP\AJ	Ok,M
26	Q2126-10		FG016025.D	10 Jun 2025 22:57	2.5 PPM WATER LOD	YP\AJ	Ok,M
27	Q2126-11		FG016026.D	10 Jun 2025 23:27	5 PPM WATER LOQ	YP\AJ	Ok
28	I.BLK		FG016027.D	10 Jun 2025 23:56		YP\AJ	Ok
29	50 PPM TRPH STD		FG016028.D	11 Jun 2025 00:26		YP\AJ	Ok
30	I.BLK		FG016029.D	11 Jun 2025 01:24		YP\AJ	Ok
31	50 PPM TRPH STD		FG016030.D	11 Jun 2025 01:53		YP\AJ	Ok
32	RT MARKER		FG016031.D	11 Jun 2025 02:23		YP\AJ	Ok
33	PB168380BL		FG016032.D	11 Jun 2025 02:52		YP\AJ	Ok
34	PB168381BL		FG016033.D	11 Jun 2025 03:22		YP\AJ	Ok
35	Q2126-01		FG016034.D	11 Jun 2025 03:51	1 PPM SOIL LOD	YP\AJ	Ok,M
36	Q2126-01		FG016035.D	11 Jun 2025 04:20	2.5 PPM SOIL LOD	YP\AJ	Ok
37	Q2126-02		FG016036.D	11 Jun 2025 04:49	5 PPM SOIL LOQ	YP\AJ	Ok

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Fax : 908 789 8922

Instrument ID: FID_G

Daily Analysis Runlog For Sequence/QCBatch ID # FG061025

Review By	yogesh	Review On	6/10/2025 12:14:20 PM		
Supervise By	mohammad	Supervise On	6/12/2025 3:34:17 AM		
SubDirectory	FG061025	HP Acquire Method		HP Processing Method	FG052225

STD. NAME	STD REF.#
Tune/Reschk	
Initial Calibration Stds	PP24467,PP24469,PP24470,PP24471,PP24472
CCC	PP24469
Internal Standard/PEM	
ICV/I.BLK	PP24468,PP24473
Surrogate Standard	
MS/MSD Standard	
LCS Standard	

38	Q2126-07		FG016037.D	11 Jun 2025 05:19	1 PPM WATER LOD	YP\AJ	Ok,M
39	Q2126-07		FG016038.D	11 Jun 2025 05:48	2.5 PPM WATER LOD	YP\AJ	Ok,M
40	Q2126-08		FG016039.D	11 Jun 2025 06:17	5 PPM WATER LOQ	YP\AJ	Ok
41	I.BLK		FG016040.D	11 Jun 2025 06:46		YP\AJ	Ok
42	50 PPM TRPH STD		FG016041.D	11 Jun 2025 07:16		YP\AJ	Ok

M : Manual Integration

PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 6/5/2025

OVENTEMP IN Celsius(°C): 108
Time IN: 17:25
In Date: 06/04/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:26
Out Date: 06/05/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC: LB135996

Lab ID	Client SampleID	Dish #	Dish Wt(g) (A)	Sample Wt(g)	Dish + Sample Wt(g) (B)	Dish+Dry Sample Wt(g) (C)	% Solid	Comments
Q2198-01	B-202-SB02	1	1.18	10.51	11.69	8.74	71.9	
Q2198-03	B-207-SB01	2	1.19	10.01	11.2	6.41	52.1	
Q2199-01	ETGI-343	3	1.15	10.53	11.68	9.98	83.9	
Q2199-02	ETGI-343	4	1.19	10.46	11.65	10.55	89.5	
Q2199-03	VNJ-231	5	1.17	10.34	11.51	10.4	89.3	
Q2199-04	VNJ-231	6	1.12	10.63	11.75	10.13	84.8	
Q2199-05	72-11978	7	1.13	10.47	11.6	10.7	91.4	
Q2199-06	72-11978	8	1.13	10.62	11.75	10.66	89.7	
Q2206-01	TP-1	9	1.18	10.47	11.65	10.38	87.9	
Q2206-02	TP-1-EPH	10	1.15	10.03	11.18	10.00	88.2	
Q2206-03	TP-1-VOC	11	1.11	10.44	11.55	10.3	88.0	
Q2215-01	BC122669-1-1	12	1.00	1.00	2.00	2.00	100.0	pilc
Q2215-02	BC122669-1-2	13	1.00	1.00	2.00	2.00	100.0	pilc
Q2215-03	BC283059-1-1	14	1.00	1.00	2.00	2.00	100.0	pilc
Q2215-04	BC283059-1-2	15	1.00	1.00	2.00	2.00	100.0	pilc
Q2216-01	3898	16	1.00	1.00	2.00	2.00	100.0	debris
Q2217-01	HEH707X-1-1	17	1.00	1.00	2.00	2.00	100.0	pilc
Q2217-02	HEH707X-1-2	18	1.00	1.00	2.00	2.00	100.0	pilc

$$\% \text{ Solid} = \frac{(C-A) * 100}{(B-A)}$$

WORKLIST(Hardcopy Internal Chain)

LB 135996

WorkList Name : %1-060425 **WorkList ID :** 189903 **Department :** Wet-Chemistry **Date :** 06-04-2025 08:10:46

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2198-01	B-202-SB02	Solid	Percent Solids	Cool 4 deg C	PORT06	N22	05/31/2025	Chemtech -SO
Q2198-03	B-207-SB01	Solid	Percent Solids	Cool 4 deg C	PORT06	N22	06/01/2025	Chemtech -SO
Q2199-01	ETGI-343	Solid	Percent Solids	Cool 4 deg C	PSEG03	N31	06/03/2025	Chemtech -SO
Q2199-02	ETGI-343	Solid	Percent Solids	Cool 4 deg C	PSEG03	N31	06/03/2025	Chemtech -SO
Q2199-03	VNJ-231	Solid	Percent Solids	Cool 4 deg C	PSEG03	N31	06/03/2025	Chemtech -SO
Q2199-04	VNJ-231	Solid	Percent Solids	Cool 4 deg C	PSEG03	N31	06/03/2025	Chemtech -SO
Q2199-05	72-11978	Solid	Percent Solids	Cool 4 deg C	PSEG03	N31	06/03/2025	Chemtech -SO
Q2199-06	72-11978	Solid	Percent Solids	Cool 4 deg C	PSEG03	N31	06/03/2025	Chemtech -SO
Q2215-04	BC283059-1-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	N31	06/03/2025	Chemtech -SO
Q2216-01	3898	Solid	Percent Solids	Cool 4 deg C	PSEG03	N31	06/04/2025	Chemtech -SO
Q2217-01	HEH707X-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	N31	06/04/2025	Chemtech -SO
Q2217-02	HEH707X-1-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	N31	06/04/2025	Chemtech -SO
Q2206-01	TP-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	N31	06/04/2025	Chemtech -SO
Q2206-02	TP-1-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	N31	06/04/2025	Chemtech -SO
Q2206-03	TP-1-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	N31	06/04/2025	Chemtech -SO
Q2215-01	BC122669-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	N31	06/04/2025	Chemtech -SO
Q2215-02	BC122669-1-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	N31	06/04/2025	Chemtech -SO
Q2215-03	BC283059-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	N31	06/04/2025	Chemtech -SO

Date/Time 06/04/25 16:26

Raw Sample Received by:

Raw Sample Relinquished by:

Date/Time 06/04/25 17:35

Raw Sample Received by:

Raw Sample Relinquished by:

Alliance TECHNICAL GROUP

EXTRACTION LOGPAGE

PB168382

SOP ID:	M3541-ASE Extraction-14				
Clean Up SOP #:	N/A			**Extraction Start Date :**	06/10/2025
Matrix :	Solid			**Extraction Start Time :**	08:16
Weigh By:	EH	**Extraction By:**	RJ	**Extraction End Date :**	06/10/2025
Balance check:	RJ	**Filter By:**	RJ	**Extraction End Time :**	11:15
Balance ID:	EX-SC-2	**pH Meter ID:**	N/A	**Concentration By:**	EH
pH Strip Lot#:	N/A	**Hood ID:**	3,7	**Supervisor By :**	rajesh

Extraction Method: ☐ Seperatory Funnel ☐ Continious Liquid/Liquid ☐ Sonication ☐ Waste Dilution ☑ Soxhlet

Standared Name	MLS USED	Concentration ug/mL	STD REF. # FROM LOG
Spike Sol 1	1.0ML	20 PPM	PP24162
Surrogate	1.0ML	20 PPM	PP24596
LOD	0.05ML	20 PPM	PP24162
LOD	0.125ML	20 PPM	PP24162
LOQ	0.25ML	20 PPM	PP24162

Chemical Used	ML/SAMPLE USED	Lot Number
MeCl2/Acetone/1:1	N/A	EP2612
Baked Na2SO4	N/A	EP2620
Sand	N/A	E2865
Methylene Chloride	N/A	E3939
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

1.5 ML Vial lot# 2210673.

KD Bath ID:	N/A	**Envap ID:**	NEVAP-02
KD Bath Temperature:	N/A	**Envap Temperature:**	40 °C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
06/10/25	RP (Ext. Lab)	PP-PEST IPC.
11:20	**Preparation Group**	**Analysis Group**

Alliance TECHNICAL GROUP

EXTRACTION LOGPAGE

PrepBatch ID : PB168382

Analytical Method: M3541-ASE Extraction-14 **Concentration Date:** 06/10/2025

Sample ID	Client Sample ID	Test	g / mL	PH	Surr/Spike By:		Final Vol. (mL)	JarID	Comments	Prep Pos
					AddedBy	VerifiedBy				
PB168382BL	PB168382BL	TPH GC	30.03	N/A	ritesh	Evelyn	1			U2-1
PB168382BS	PB168382BS	TPH GC	30.02	N/A	ritesh	Evelyn	1			2
Q2126-04	LOD-MDL-SOIL-04-QT2-2025 0.05ML	TPH GC	30.03	N/A	ritesh	Evelyn	1			3
Q2126-05	LOQ-SOIL-05-QT2-2025 0.25ML	TPH GC	30.01	N/A	ritesh	Evelyn	1			4
Q2198-01	B-202-SB02	TPH GC	30.08	N/A	ritesh	Evelyn	1	D		5
Q2198-03	B-207-SB02	TPH GC	30.05	N/A	ritesh	Evelyn	1	D		6
Q2246-01	BU-03-060525	TPH GC	30.03	N/A	ritesh	Evelyn	1	B		U3-1
Q2246-01MS	BU-03-060525MS	TPH GC	30.07	N/A	ritesh	Evelyn	1	B		2
Q2246-01MSD	BU-03-060525MSD	TPH GC	30.09	N/A	ritesh	Evelyn	1	B		3
	LOD · 0.125ML	1	30.03	1	1	1	1			4

* **Extracts relinguished on the same date as received.**

6/10/25

168382
TPH 8:16

WORKLIST(Hardcopy Internal Chain)

WorkList Name : Q2126T **WorkList ID :** 190064 **Department :** Extraction **Date :** 06-10-2025 08:10:23

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2126-01	LOD-MDL-SOIL-03-QT2-2025	Solid	Diesel Range Organics	Cool 4 deg C	ALLI03	QA Of	05/23/2025	8015D
Q2126-02	LOQ-SOIL-02-QT2-2025	Solid	Diesel Range Organics	Cool 4 deg C	ALLI03	QA Of	05/23/2025	8015D
Q2126-04	LOD-MDL-SOIL-04-QT2-2025	Solid	TPH GC	Cool 4 deg C	ALLI03	QA Of	05/23/2025	8015D
Q2126-05	LOQ-SOIL-05-QT2-2025	Solid	TPH GC	Cool 4 deg C	ALLI03	QA Of	05/23/2025	8015D
Q2126-07	LOD-MDL-WATER-01-QT2-202	Water	Diesel Range Organics	Cool 4 deg C	ALLI03	QA Of	05/23/2025	8015D
Q2126-08	LOQ-WATER-02-QT2-2025	Water	Diesel Range Organics	Cool 4 deg C	ALLI03	QA Of	05/23/2025	8015D
Q2126-10	LOD-MDL-WATER-04-QT2-202	Water	TPH GC	Cool 4 deg C	ALLI03	QA Of	05/23/2025	8015D
Q2126-11	LOQ-WATER-05-QT2-2025	Water	TPH GC	Cool 4 deg C	ALLI03	QA Of	05/23/2025	8015D
Q2198-01	B-202-SB02	Solid	TPH GC	Cool 4 deg C	PORT06	N22	05/31/2025	8015D
Q2198-03	B-207-SB02	Solid	TPH GC	Cool 4 deg C	PORT06	N22	06/01/2025	8015D
Q2246-01	BU-03-060525	Solid	TPH GC	Cool 4 deg C	PSEG05	N51	06/05/2025	8015D

Date/Time 06/10/25 8:10
Raw Sample Received by: RS (Ext lab)
Raw Sample Relinquished by:

Date/Time 06/10/25 8:30
Raw Sample Received by:
Raw Sample Relinquished by: RS (Ext lab)

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Prep Standard - Chemical Standard Summary

Order ID : Q2198

Test : TPH GC

Prepbatch ID : PB168382,

Sequence ID/Qc Batch ID: FG061025,

Standard ID :
EP2612,EP2620,PP24162,PP24467,PP24468,PP24469,PP24470,PP24471,PP24472,PP24473,PP24596,

Chemical ID :
E2865,E3551,E3874,E3926,E3930,E3931,E3932,E3939,P11951,P11952,P11955,P11956,P13106,P13108,P13477,P13479,P13483,P13484,P13485,P13486,

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Extractions STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2017	1:1 ACETONE/METHYLENE CHLORIDE	EP2612	05/09/2025	11/05/2025	RUPESHKUMAR SHAH	None	None	Riteshkumar Patel 05/09/2025

FROM 8000.00000ml of E3930 + 8000.00000ml of E3932 = Final Quantity: 16000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3923	Baked Sodium Sulfate	EP2620	05/30/2025	07/01/2025	RUPESHKUMAR SHAH	Extraction_SCALE_2 (EX-SC-2)	None	Riteshkumar Patel 05/30/2025

FROM 4000.00000gram of E3551 = Final Quantity: 4000.000 gram

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3609	20 PPM DRO SPIKE SOLUTION (RESTEK)	PP24162	01/31/2025	07/30/2025	Yogesh Patel	None	None	Ankita Jodhani 01/31/2025

FROM 1.00000ml of P11955 + 1.00000ml of P11956 + 48.00000ml of E3874 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
433	100/100 PPM DRO (Restek)	PP24467	04/22/2025	10/08/2025	Yogesh Patel	None	None	Abdul Mirza 05/08/2025

FROM 1.00000ml of P11951 + 1.00000ml of P11952 + 1.00000ml of P13477 + 7.00000ml of E3926 = Final Quantity: 10.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3979	100/100 PPM DRO ICV (RESTEK)	PP24468	04/22/2025	10/08/2025	Yogesh Patel	None	None	Abdul Mirza 05/08/2025

FROM 1.00000ml of P13106 + 1.00000ml of P13108 + 1.00000ml of P13479 + 7.00000ml of E3926 = Final Quantity: 10.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
435	50 PPM ICC DRO STD (Restek)	PP24469	04/22/2025	10/08/2025	Yogesh Patel	None	None	Abdul Mirza 05/08/2025

FROM 0.50000ml of E3926 + 0.50000ml of PP24467 = Final Quantity: 1.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
437	20 PPM ICC DRO STD (Restek)	PP24470	04/22/2025	10/08/2025	Yogesh Patel	None	None	Abdul Mirza 05/08/2025

FROM 0.80000ml of E3926 + 0.20000ml of PP24467 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
438	10 PPM ICC DRO STD (Restek)	PP24471	04/22/2025	10/08/2025	Yogesh Patel	None	None	Abdul Mirza 05/08/2025

FROM 0.90000ml of E3926 + 0.10000ml of PP24467 = Final Quantity: 1.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
439	5 PPM ICC DRO STD (Restek)	PP24472	04/22/2025	10/08/2025	Yogesh Patel	None	None	Abdul Mirza 05/08/2025

FROM 0.90000ml of E3926 + 0.10000ml of PP24469 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3608	50 PPM ICV DRO STD (RESTEK)	PP24473	04/22/2025	10/08/2025	Yogesh Patel	None	None	Abdul Mirza 05/08/2025

FROM 0.50000ml of E3926 + 0.50000ml of PP24468 = Final Quantity: 1.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
147	20 PPM DRO Surrogate Spike Solution	PP24596	05/20/2025	11/20/2025	Abdul Mirza	None	None	Yogesh Patel 05/22/2025

FROM 1.00000ml of P13483 + 1.00000ml of P13484 + 1.00000ml of P13485 + 1.00000ml of P13486 + 196.00000ml of E3931 = Final Quantity: 200.000 ml

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3382-05 / Sand, Purified (cs/4x2.5kg)	0000243821	06/30/2025	04/30/2020 / RAJESH	04/28/2020 / RAJESH	E2865

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC19631-100 / SODIUM SULFATE, ANHYDROUS, PEST GRADE, 1	313201	12/04/2025	01/03/2024 / Rajesh	07/20/2023 / Rajesh	E3551

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	25A0262002	07/30/2025	01/30/2025 / Rajesh	01/20/2025 / Rajesh	E3874

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	25A0262002	10/08/2025	04/08/2025 / Rajesh	02/07/2025 / Rajesh	E3926

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	25A0262002	02/20/2026	05/02/2025 / RUPESH	03/09/2025 / RUPESH	E3930

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	25A0262002	02/20/2026	05/02/2025 / RUPESH	03/09/2025 / RUPESH	E3931

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	24H1462005	11/05/2025	05/05/2025 / RUPESH	04/23/2025 / RUPESH	E3932

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	25A2862010	11/22/2025	05/22/2025 / RUPESH	02/28/2025 / RUPESH	E3939

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31266 / Florida TRPH Standard	A0186840	10/22/2025	04/22/2025 / yogesh	07/11/2022 / Yogesh	P11951

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31266 / Florida TRPH Standard	A0186840	10/22/2025	04/22/2025 / yogesh	07/11/2022 / Yogesh	P11952

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31266 / Florida TRPH Standard	A0186840	07/31/2025	01/31/2025 / yogesh	07/11/2022 / Yogesh	P11955

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31266 / Florida TRPH Standard	A0186840	07/31/2025	01/31/2025 / yogesh	07/11/2022 / Yogesh	P11956

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Fax : 908 789 8922

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31266 / Florida TRPH Standard	A0204859	10/22/2025	04/22/2025 / yogesh	01/12/2024 / Yogesh	P13106

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31266 / Florida TRPH Standard	A0204859	10/22/2025	04/22/2025 / yogesh	01/12/2024 / Yogesh	P13108

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	72072 / n-Tetracosane-d50, 1000 ug/ml	101122	10/22/2025	04/22/2025 / yogesh	07/24/2024 / yogesh	P13477

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	72072 / n-Tetracosane-d50, 1000 ug/ml	101122	10/22/2025	04/22/2025 / yogesh	07/24/2024 / yogesh	P13479

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	72072 / n-Tetracosane-d50, 1000 ug/ml	101122	11/20/2025	05/20/2025 / Abdul	07/24/2024 / yogesh	P13483

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	72072 / n-Tetracosane-d50, 1000 ug/ml	101122	11/20/2025	05/20/2025 / Abdul	07/24/2024 / yogesh	P13484

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	72072 / n-Tetracosane-d50, 1000 ug/ml	101122	11/20/2025	05/20/2025 / Abdul	07/24/2024 / yogesh	P13485

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	72072 / n-Tetracosane-d50, 1000 ug/ml	101122	11/20/2025	05/20/2025 / Abdul	07/24/2024 / yogesh	P13486

Sand
Purified
Washed and Ignited

avantor™ | J.T.Baker®

Material No.: 3382-05
Batch No.: 0000243821
Manufactured Date: 2018/04/09
Retest Date: 2025/04/07
Revision No: 1

Certificate of Analysis

Test	Specification	Result
Substances Soluble in HCl	<= 0.16 %	0.01

For Laboratory, Research or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs

Country of Origin: US
Packaging Site: Paris Mfg Ctr & DC

E 2865

James T Ethier

Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

PRODUCTOS QUIMICOS MONTERREY, S.A. DE C.V.

MIRADOR 201, COL. MIRADOR
MONTERREY, N.L. MEXICO
CP 64070
TEL +52 81 13 52 57 57
www.pqm.com.mx

CERTIFICATE OF ANALYSIS

PRODUCT :	SODIUM SULFATE CRYSTALS ANHYDROUS		
QUALITY :	ACS (CODE RMB3375)	FORMULA :	Na_2SO_4
SPECIFICATION NUMBER :	6399	RELEASE DATE:	ABR/21/2023
LOT NUMBER :	313201		

TEST	SPECIFICATIONS	LOT VALUES
Assay (Na_2SO_4)	Min. 99.0%	99.7 %
pH of a 5% solution at 25°C	5.2 - 9.2	6.1
Insoluble matter	Max. 0.01%	0.005 %
Loss on ignition	Max. 0.5%	0.1 %
Chloride (Cl)	Max. 0.001%	<0.001 %
Nitrogen compounds (as N)	Max. 5 ppm	<5 ppm
Phosphate (PO_4)	Max. 0.001%	<0.001 %
Heavy metals (as Pb)	Max. 5 ppm	<5 ppm
Iron (Fe)	Max. 0.001%	<0.001 %
Calcium (Ca)	Max. 0.01%	0.002 %
Magnesium (Mg)	Max. 0.005%	0.001 %
Potassium (K)	Max. 0.008%	0.003 %
Extraction-concentration suitability	Passes test	Passes test
Appearance	Passes test	Passes test
Identification	Passes test	Passes test
Solubility and foreing matter	Passes test	Passes test
Retained on US Standard No. 10 sieve	Max. 1%	0.1 %
Retained on US Standard No. 60 sieve	Min. 94%	97.3 %
Through US Standard No. 60 sieve	Max. 5%	2.5 %
Through US Standard No. 100 sieve	Max. 10%	0.1 %

COMMENTS

QC: PhC Irma Belmares

If you need further details, please call our factory or contact our local distributor.

RG-02-01, Ed. 3

Recd. by RB on 7/24/23 E3551

PO: PO2-1178.2 PRODUCT CODE: SHIP DATE: 1/20/2025

Methylene Chloride
ULTRA RESI-ANALYZED
For Organic Residue Analysis
(dichloromethane)

avantor | J.T.Baker

Material No.: 9266-A4
Batch No.: 25A0262002
Manufactured Date: 2024-11-21
Expiration Date:2026-02-20
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol)Single Impurity Peak (ng/mL)	<= 5	1
ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)	<= 10	4
Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	>= 99.8 %	99.9 %
Color (APHA)	<= 10	10
Residue after Evaporation	<= 1.0 ppm	0.8 ppm
Titrable Acid (µeq/g)	<= 0.3	<0.1
Chloride (Cl)	<= 10 ppm	<5 ppm
Water (by KF, coulometric)	<= 0.02 %	<0.01 %

For Laboratory,Research,or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

E 3874

Jamie Croak
Director Quality Operations, Bioscience Production

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials,LLC
100 Matsonford Rd, Suite 200,Radnor,PA,19087.U.S.A.Phone 610.386.1700

PO: PO2-1308 PRODUCT CODE: SHIP DATE: 2/7/25

Methylene Chloride
ULTRA RESI-ANALYZED
For Organic Residue Analysis
(dichloromethane)

avantor | J.T.Baker

Material No.: 9266-A4
Batch No.: 25A0262002
Manufactured Date: 2024-11-21
Expiration Date:2026-02-20
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol)Single Impurity Peak (ng/mL)	<= 5	1
ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)	<= 10	4
Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	>= 99.8 %	99.9 %
Color (APHA)	<= 10	10
Residue after Evaporation	<= 1.0 ppm	0.8 ppm
Titrable Acid (µeq/g)	<= 0.3	<0.1
Chloride (Cl)	<= 10 ppm	<5 ppm
Water (by KF, coulometric)	<= 0.02 %	<0.01 %

For Laboratory,Research,or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

E 3926

Jamie Croak
Director Quality Operations, Bioscience Production

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials,LLC
100 Matsonford Rd, Suite 200,Radnor,PA,19087.U.S.A.Phone 610.386.1700

PO: PO2-1178.2 PRODUCT CODE: SHIP DATE: 1/20/2025

Methylene Chloride
ULTRA RESI-ANALYZED
For Organic Residue Analysis
(dichloromethane)

avantor | J.T.Baker

Material No.: 9266-A4
Batch No.: 25A0262002
Manufactured Date: 2024-11-21
Expiration Date:2026-02-20
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol)Single Impurity Peak (ng/mL)	<= 5	1
ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)	<= 10	4
Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	>= 99.8 %	99.9 %
Color (APHA)	<= 10	10
Residue after Evaporation	<= 1.0 ppm	0.8 ppm
Titrable Acid (µeq/g)	<= 0.3	<0.1
Chloride (Cl)	<= 10 ppm	<5 ppm
Water (by KF, coulometric)	<= 0.02 %	<0.01 %

For Laboratory,Research,or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

E3930

JCroak
Jamie Croak
Director Quality Operations, Bioscience Production

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials,LLC
100 Matsonford Rd, Suite 200,Radnor,PA,19087.U.S.A.Phone 610.386.1700

PO: PO2-1178.2 PRODUCT CODE: SHIP DATE: 1/20/2025

Methylene Chloride
ULTRA RESI-ANALYZED
For Organic Residue Analysis
(dichloromethane)

avantor | J.T.Baker

Material No.: 9266-A4
Batch No.: 25A0262002
Manufactured Date: 2024-11-21
Expiration Date:2026-02-20
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol)Single Impurity Peak (ng/mL)	<= 5	1
ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)	<= 10	4
Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	>= 99.8 %	99.9 %
Color (APHA)	<= 10	10
Residue after Evaporation	<= 1.0 ppm	0.8 ppm
Titrable Acid (µeq/g)	<= 0.3	<0.1
Chloride (Cl)	<= 10 ppm	<5 ppm
Water (by KF, coulometric)	<= 0.02 %	<0.01 %

For Laboratory,Research,or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

E3930

JCroak
Jamie Croak
Director Quality Operations, Bioscience Production

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Avantor Performance Materials,LLC
100 Matsonford Rd, Suite 200,Radnor,PA,19087.U.S.A.Phone 610.386.1700

Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis

avantor™ | J.T.Baker

Material No.: 9254-03
Batch No.: 24H1462005
Manufactured Date: 2024-05-24
Expiration Date:2027-05-24
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay ($(CH_3)_2CO$) (by GC, corrected forwater)	>= 99.4 %	99.8 %
Color (APHA)	<= 10	5
Residue after Evaporation	<= 1.0 ppm	0.2 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titrable Acid (µeq/g)	<= 0.3	0.2
Titrable Base (µeq/g)	<= 0.6	<0.1
Water (H_2O)	<= 0.5 %	0.2 %
FID-Sensitive Impurities (as 2-Octanol)Single Impurity Peak (ng/mL)	<= 5	<1
ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)	<= 10	1

For Laboratory,Research,or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD RS

Country of Origin: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

E 3932

JCroak
Jamie Croak
Director Quality Operations, Bioscience Production

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Methylene Chloride
ULTRA RESI-ANALYZED
For Organic Residue Analysis
(dichloromethane)

avantor | J.T.Baker

Material No.: 9266-A4
Batch No.: 25A2862010
Manufactured Date: 2024-12-18
Expiration Date:2026-03-19
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol)Single Impurity Peak (ng/mL)	<= 5	<1
ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)	<= 10	2
Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	>= 99.8 %	99.9 %
Color (APHA)	<= 10	5
Residue after Evaporation	<= 1.0 ppm	0.3 ppm
Titrable Acid (µeq/g)	<= 0.3	<0.1
Chloride (Cl)	<= 10 ppm	<5 ppm
Water (by KF, coulometric)	<= 0.02 %	<0.01 %

For Laboratory,Research,or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

E3939

J Croak
Jamie Croak
Director Quality Operations, Bioscience Production

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials,LLC
100 Matsonford Rd, Suite 200,Radnor,PA,19087.U.S.A.Phone 610.386.1700

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

P11948
&
P11962
7.8
07/11/2

Catalog No. : 31266 **Lot No.:** A0186840

Description : Florida TRPH Standard

Florida TRPH Standard 500µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2029 **Storage:** 25°C nominal

Handling: Sonicate prior to use. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	n-Octane (C8) **CAS #** 111-65-9 (Lot SHBN3807) **Purity** 99%	505.0 µg/mL	+/- 2.9995 µg/mL +/- 12.5465 µg/mL +/- 15.0390 µg/mL	Gravimetric Unstressed Stressed
2	n-Decane (C10) **CAS #** 124-18-5 (Lot SHBN8619) **Purity** 99%	503.0 µg/mL	+/- 2.9877 µg/mL +/- 12.4968 µg/mL +/- 14.9795 µg/mL	Gravimetric Unstressed Stressed
3	n-Dodecane (C12) **CAS #** 112-40-3 (Lot SHBN7174) **Purity** 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed
4	n-Tetradecane (C14) **CAS #** 629-59-4 (Lot STBK2282) **Purity** 99%	505.0 µg/mL	+/- 2.9995 µg/mL +/- 12.5465 µg/mL +/- 15.0390 µg/mL	Gravimetric Unstressed Stressed
5	n-Hexadecane (C16) **CAS #** 544-76-3 (Lot SHBM4146) **Purity** 98%	504.7 µg/mL	+/- 2.9978 µg/mL +/- 12.5390 µg/mL +/- 15.0301 µg/mL	Gravimetric Unstressed Stressed
6	n-Octadecane (C18) **CAS #** 593-45-3 (Lot VZKOJ) **Purity** 97%	504.4 µg/mL	+/- 2.9960 µg/mL +/- 12.5316 µg/mL +/- 15.0212 µg/mL	Gravimetric Unstressed Stressed
7	n-Eicosane (C20) **CAS #** 112-95-8 (Lot MKCF7888) **Purity** 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed

8	n-Docosane (C22) **CAS #** 629-97-0 **Purity** 99%	(Lot MKCL8918)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	n-Tetracosane (C24) **CAS #** 646-31-1 **Purity** 99%	(Lot MKCN2863)	503.5	µg/mL	+/- 2.9906 +/- 12.5092 +/- 14.9944	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	n-Hexacosane (C26) **CAS #** 630-01-3 **Purity** 99%	(Lot MKCD4540)	504.0	µg/mL	+/- 2.9936 +/- 12.5216 +/- 15.0093	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	n-Octacosane (C28) **CAS #** 630-02-4 **Purity** 99%	(Lot BCCG0084)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	n-Triacontane (C30) **CAS #** 638-68-6 **Purity** 99%	(Lot MKCN9321)	505.0	µg/mL	+/- 2.9995 +/- 12.5465 +/- 15.0390	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	n-Dotriacontane (C32) **CAS #** 544-85-4 **Purity** 99%	(Lot BCBW0661)	505.0	µg/mL	+/- 2.9995 +/- 12.5465 +/- 15.0390	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	n-Tetratriacontane (C34) **CAS #** 14167-59-0 **Purity** 99%	(Lot OML4N)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	n-Hexatriacontane (C36) **CAS #** 630-06-8 **Purity** 99%	(Lot U25B014)	504.0	µg/mL	+/- 2.9936 +/- 12.5216 +/- 15.0093	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	n-Octatriacontane (C38) **CAS #** 7194-85-6 **Purity** 97%	(Lot 0000127235)	504.4	µg/mL	+/- 2.9960 +/- 12.5316 +/- 15.0212	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	n-Tetracontane (C40) **CAS #** 4181-95-7 **Purity** 98%	(Lot PADGI)	504.7	µg/mL	+/- 2.9978 +/- 12.5390 +/- 15.0301	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

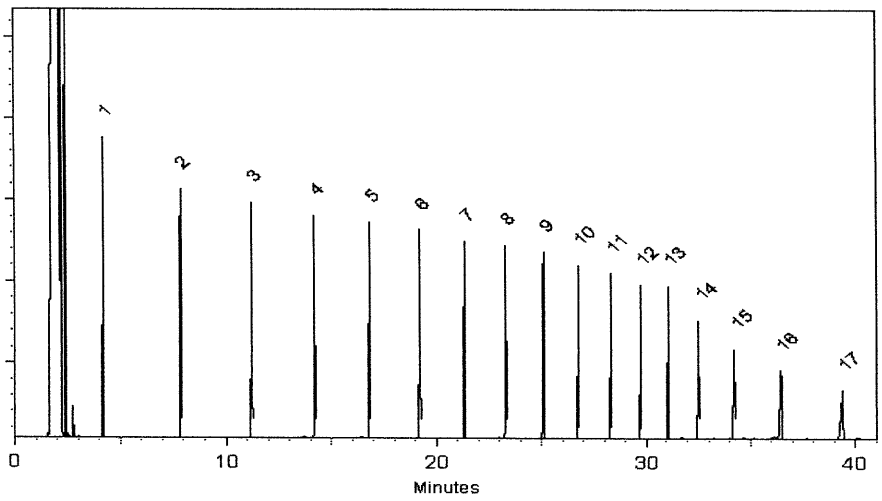
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Brittany Federinko - Operations Tech I

Date Mixed: 29-Jun-2022 **Balance:** 1128360905

Christie Mills - Operations Tech II - ARM QC

Date Passed: 01-Jul-2022

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

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Tel: (800)356-1688
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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

P11948
&
P11962
7.8
07/11/2

Catalog No. : 31266 **Lot No.:** A0186840

Description : Florida TRPH Standard

Florida TRPH Standard 500µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2029 **Storage:** 25°C nominal

Handling: Sonicate prior to use. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	n-Octane (C8) **CAS #** 111-65-9 (Lot SHBN3807) **Purity** 99%	505.0 µg/mL	+/- 2.9995 µg/mL +/- 12.5465 µg/mL +/- 15.0390 µg/mL	Gravimetric Unstressed Stressed
2	n-Decane (C10) **CAS #** 124-18-5 (Lot SHBN8619) **Purity** 99%	503.0 µg/mL	+/- 2.9877 µg/mL +/- 12.4968 µg/mL +/- 14.9795 µg/mL	Gravimetric Unstressed Stressed
3	n-Dodecane (C12) **CAS #** 112-40-3 (Lot SHBN7174) **Purity** 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed
4	n-Tetradecane (C14) **CAS #** 629-59-4 (Lot STBK2282) **Purity** 99%	505.0 µg/mL	+/- 2.9995 µg/mL +/- 12.5465 µg/mL +/- 15.0390 µg/mL	Gravimetric Unstressed Stressed
5	n-Hexadecane (C16) **CAS #** 544-76-3 (Lot SHBM4146) **Purity** 98%	504.7 µg/mL	+/- 2.9978 µg/mL +/- 12.5390 µg/mL +/- 15.0301 µg/mL	Gravimetric Unstressed Stressed
6	n-Octadecane (C18) **CAS #** 593-45-3 (Lot VZKOJ) **Purity** 97%	504.4 µg/mL	+/- 2.9960 µg/mL +/- 12.5316 µg/mL +/- 15.0212 µg/mL	Gravimetric Unstressed Stressed
7	n-Eicosane (C20) **CAS #** 112-95-8 (Lot MKCF7888) **Purity** 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed

8	n-Docosane (C22) **CAS #** 629-97-0 **Purity** 99%	(Lot MKCL8918)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	n-Tetracosane (C24) **CAS #** 646-31-1 **Purity** 99%	(Lot MKCN2863)	503.5	µg/mL	+/- 2.9906 +/- 12.5092 +/- 14.9944	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	n-Hexacosane (C26) **CAS #** 630-01-3 **Purity** 99%	(Lot MKCD4540)	504.0	µg/mL	+/- 2.9936 +/- 12.5216 +/- 15.0093	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	n-Octacosane (C28) **CAS #** 630-02-4 **Purity** 99%	(Lot BCCG0084)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	n-Triacontane (C30) **CAS #** 638-68-6 **Purity** 99%	(Lot MKCN9321)	505.0	µg/mL	+/- 2.9995 +/- 12.5465 +/- 15.0390	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	n-Dotriacontane (C32) **CAS #** 544-85-4 **Purity** 99%	(Lot BCBW0661)	505.0	µg/mL	+/- 2.9995 +/- 12.5465 +/- 15.0390	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	n-Tetratriacontane (C34) **CAS #** 14167-59-0 **Purity** 99%	(Lot OML4N)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	n-Hexatriacontane (C36) **CAS #** 630-06-8 **Purity** 99%	(Lot U25B014)	504.0	µg/mL	+/- 2.9936 +/- 12.5216 +/- 15.0093	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	n-Octatriacontane (C38) **CAS #** 7194-85-6 **Purity** 97%	(Lot 0000127235)	504.4	µg/mL	+/- 2.9960 +/- 12.5316 +/- 15.0212	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	n-Tetracontane (C40) **CAS #** 4181-95-7 **Purity** 98%	(Lot PADGI)	504.7	µg/mL	+/- 2.9978 +/- 12.5390 +/- 15.0301	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

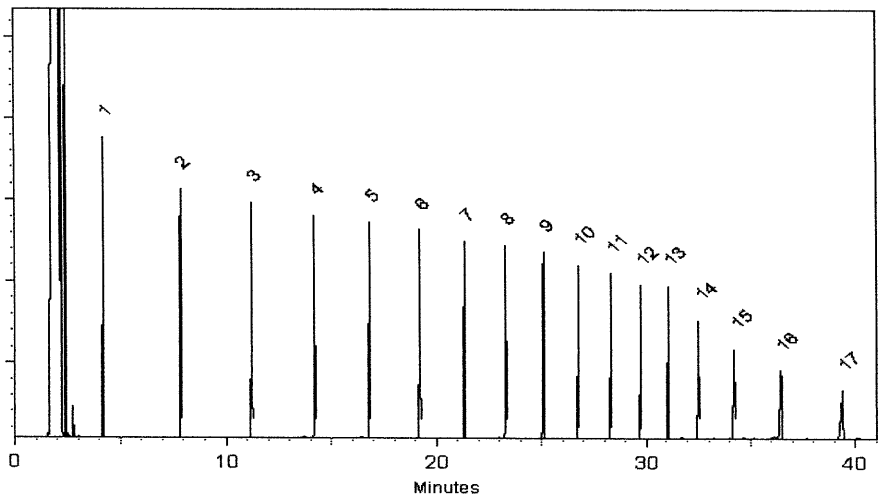
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Brittany Federinko - Operations Tech I

Date Mixed: 29-Jun-2022 **Balance:** 1128360905

Christie Mills - Operations Tech II - ARM QC

Date Passed: 01-Jul-2022

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

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Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

P11948
&
P11962
7.8
07/11/2

Catalog No. : 31266 **Lot No.:** A0186840

Description : Florida TRPH Standard

Florida TRPH Standard 500µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2029 **Storage:** 25°C nominal

Handling: Sonicate prior to use. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	n-Octane (C8) **CAS #** 111-65-9 (Lot SHBN3807) **Purity** 99%	505.0 µg/mL	+/- 2.9995 µg/mL +/- 12.5465 µg/mL +/- 15.0390 µg/mL	Gravimetric Unstressed Stressed
2	n-Decane (C10) **CAS #** 124-18-5 (Lot SHBN8619) **Purity** 99%	503.0 µg/mL	+/- 2.9877 µg/mL +/- 12.4968 µg/mL +/- 14.9795 µg/mL	Gravimetric Unstressed Stressed
3	n-Dodecane (C12) **CAS #** 112-40-3 (Lot SHBN7174) **Purity** 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed
4	n-Tetradecane (C14) **CAS #** 629-59-4 (Lot STBK2282) **Purity** 99%	505.0 µg/mL	+/- 2.9995 µg/mL +/- 12.5465 µg/mL +/- 15.0390 µg/mL	Gravimetric Unstressed Stressed
5	n-Hexadecane (C16) **CAS #** 544-76-3 (Lot SHBM4146) **Purity** 98%	504.7 µg/mL	+/- 2.9978 µg/mL +/- 12.5390 µg/mL +/- 15.0301 µg/mL	Gravimetric Unstressed Stressed
6	n-Octadecane (C18) **CAS #** 593-45-3 (Lot VZKOJ) **Purity** 97%	504.4 µg/mL	+/- 2.9960 µg/mL +/- 12.5316 µg/mL +/- 15.0212 µg/mL	Gravimetric Unstressed Stressed
7	n-Eicosane (C20) **CAS #** 112-95-8 (Lot MKCF7888) **Purity** 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed

8	n-Docosane (C22) **CAS #** 629-97-0 **Purity** 99%	(Lot MKCL8918)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	n-Tetracosane (C24) **CAS #** 646-31-1 **Purity** 99%	(Lot MKCN2863)	503.5	µg/mL	+/- 2.9906 +/- 12.5092 +/- 14.9944	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	n-Hexacosane (C26) **CAS #** 630-01-3 **Purity** 99%	(Lot MKCD4540)	504.0	µg/mL	+/- 2.9936 +/- 12.5216 +/- 15.0093	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	n-Octacosane (C28) **CAS #** 630-02-4 **Purity** 99%	(Lot BCCG0084)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	n-Triacontane (C30) **CAS #** 638-68-6 **Purity** 99%	(Lot MKCN9321)	505.0	µg/mL	+/- 2.9995 +/- 12.5465 +/- 15.0390	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	n-Dotriacontane (C32) **CAS #** 544-85-4 **Purity** 99%	(Lot BCBW0661)	505.0	µg/mL	+/- 2.9995 +/- 12.5465 +/- 15.0390	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	n-Tetratriacontane (C34) **CAS #** 14167-59-0 **Purity** 99%	(Lot OML4N)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	n-Hexatriacontane (C36) **CAS #** 630-06-8 **Purity** 99%	(Lot U25B014)	504.0	µg/mL	+/- 2.9936 +/- 12.5216 +/- 15.0093	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	n-Octatriacontane (C38) **CAS #** 7194-85-6 **Purity** 97%	(Lot 0000127235)	504.4	µg/mL	+/- 2.9960 +/- 12.5316 +/- 15.0212	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	n-Tetracontane (C40) **CAS #** 4181-95-7 **Purity** 98%	(Lot PADGI)	504.7	µg/mL	+/- 2.9978 +/- 12.5390 +/- 15.0301	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

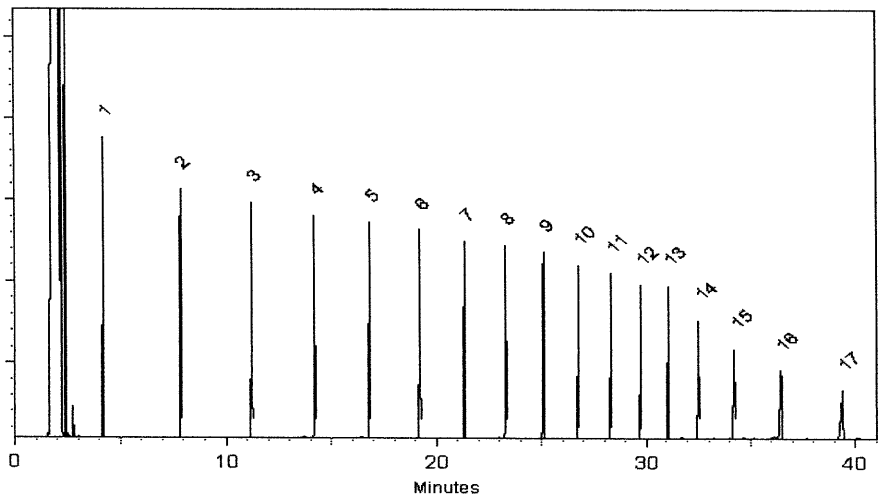
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Brittany Federinko - Operations Tech I

Date Mixed: 29-Jun-2022 **Balance:** 1128360905

Christie Mills - Operations Tech II - ARM QC

Date Passed: 01-Jul-2022

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

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k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

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- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

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Certificate #3222.02

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P11948
&
P11962
7.8
07/11/2

Catalog No. : 31266 **Lot No.:** A0186840

Description : Florida TRPH Standard

Florida TRPH Standard 500µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2029 **Storage:** 25°C nominal

Handling: Sonicate prior to use. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	n-Octane (C8) **CAS #** 111-65-9 (Lot SHBN3807) **Purity** 99%	505.0 µg/mL	+/- 2.9995 µg/mL +/- 12.5465 µg/mL +/- 15.0390 µg/mL	Gravimetric Unstressed Stressed
2	n-Decane (C10) **CAS #** 124-18-5 (Lot SHBN8619) **Purity** 99%	503.0 µg/mL	+/- 2.9877 µg/mL +/- 12.4968 µg/mL +/- 14.9795 µg/mL	Gravimetric Unstressed Stressed
3	n-Dodecane (C12) **CAS #** 112-40-3 (Lot SHBN7174) **Purity** 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed
4	n-Tetradecane (C14) **CAS #** 629-59-4 (Lot STBK2282) **Purity** 99%	505.0 µg/mL	+/- 2.9995 µg/mL +/- 12.5465 µg/mL +/- 15.0390 µg/mL	Gravimetric Unstressed Stressed
5	n-Hexadecane (C16) **CAS #** 544-76-3 (Lot SHBM4146) **Purity** 98%	504.7 µg/mL	+/- 2.9978 µg/mL +/- 12.5390 µg/mL +/- 15.0301 µg/mL	Gravimetric Unstressed Stressed
6	n-Octadecane (C18) **CAS #** 593-45-3 (Lot VZKOJ) **Purity** 97%	504.4 µg/mL	+/- 2.9960 µg/mL +/- 12.5316 µg/mL +/- 15.0212 µg/mL	Gravimetric Unstressed Stressed
7	n-Eicosane (C20) **CAS #** 112-95-8 (Lot MKCF7888) **Purity** 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed

8	n-Docosane (C22) **CAS #** 629-97-0 **Purity** 99%	(Lot MKCL8918)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	n-Tetracosane (C24) **CAS #** 646-31-1 **Purity** 99%	(Lot MKCN2863)	503.5	µg/mL	+/- 2.9906 +/- 12.5092 +/- 14.9944	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	n-Hexacosane (C26) **CAS #** 630-01-3 **Purity** 99%	(Lot MKCD4540)	504.0	µg/mL	+/- 2.9936 +/- 12.5216 +/- 15.0093	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	n-Octacosane (C28) **CAS #** 630-02-4 **Purity** 99%	(Lot BCCG0084)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	n-Triacontane (C30) **CAS #** 638-68-6 **Purity** 99%	(Lot MKCN9321)	505.0	µg/mL	+/- 2.9995 +/- 12.5465 +/- 15.0390	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	n-Dotriacontane (C32) **CAS #** 544-85-4 **Purity** 99%	(Lot BCBW0661)	505.0	µg/mL	+/- 2.9995 +/- 12.5465 +/- 15.0390	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	n-Tetratriacontane (C34) **CAS #** 14167-59-0 **Purity** 99%	(Lot OML4N)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	n-Hexatriacontane (C36) **CAS #** 630-06-8 **Purity** 99%	(Lot U25B014)	504.0	µg/mL	+/- 2.9936 +/- 12.5216 +/- 15.0093	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	n-Octatriacontane (C38) **CAS #** 7194-85-6 **Purity** 97%	(Lot 0000127235)	504.4	µg/mL	+/- 2.9960 +/- 12.5316 +/- 15.0212	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	n-Tetracontane (C40) **CAS #** 4181-95-7 **Purity** 98%	(Lot PADGI)	504.7	µg/mL	+/- 2.9978 +/- 12.5390 +/- 15.0301	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

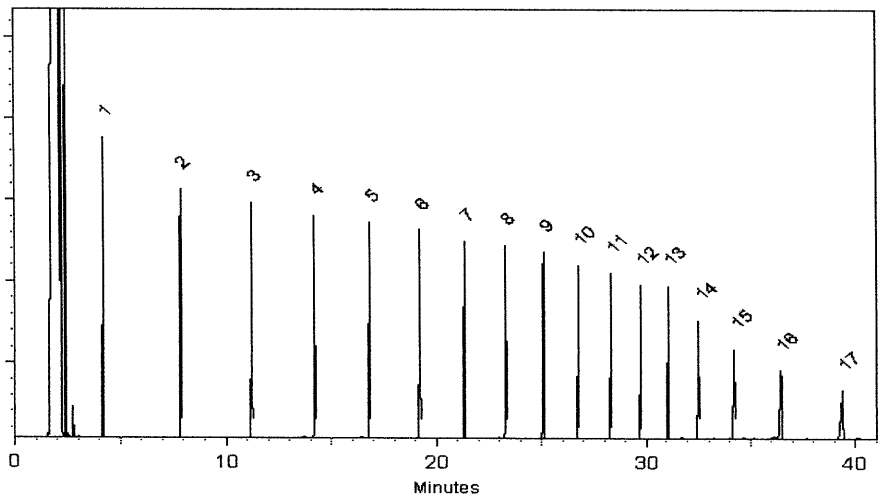
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Brittany Federinko - Operations Tech I

Date Mixed: 29-Jun-2022 **Balance:** 1128360905

Christie Mills - Operations Tech II - ARM QC

Date Passed: 01-Jul-2022

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

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ilac-MRA A2LA ACCREDITED ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31266 **Lot No.:** A0204859

Description : Florida TRPH Standard

Florida TRPH Standard 500µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : December 31, 2030 **Storage:** 25°C nominal

Handling: Sonicate prior to use. **Ship:** Ambient

P13103 → P13112 Y.P. 01/12/2024

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	n-Octane (C8)	111-65-9	SHBP9758	99%	504.4 µg/mL	+/- 13.0305
2	n-Decane (C10)	124-18-5	SHBQ1342	99%	503.6 µg/mL	+/- 13.0098
3	n-Dodecane (C12)	112-40-3	SHBP7054	99%	503.6 µg/mL	+/- 13.0098
4	n-Tetradecane (C14)	629-59-4	STBK5437	99%	504.0 µg/mL	+/- 13.0201
5	n-Hexadecane (C16)	544-76-3	SHBP8192	99%	504.0 µg/mL	+/- 13.0201
6	n-Octadecane (C18)	593-45-3	UE5NG	98%	504.1 µg/mL	+/- 13.0230
7	n-Eicosane (C20)	112-95-8	MKCN8767	97%	504.0 µg/mL	+/- 13.0204
8	n-Docosane (C22)	629-97-0	MKCQ3882	99%	503.6 µg/mL	+/- 13.0098
9	n-Tetracosane (C24)	646-31-1	MKCQ8345	99%	504.0 µg/mL	+/- 13.0201
10	n-Hexacosane (C26)	630-01-3	MKCQ4814	99%	504.0 µg/mL	+/- 13.0201
11	n-Octacosane (C28)	630-02-4	BCCG0084	99%	504.0 µg/mL	+/- 13.0201
12	n-Triacontane (C30)	638-68-6	MKCQ9436	97%	504.0 µg/mL	+/- 13.0204
13	n-Dotriacontane (C32)	544-85-4	BCBW0661	99%	504.0 µg/mL	+/- 13.0201
14	n-Tetratriacontane (C34)	14167-59-0	OML4N	99%	504.4 µg/mL	+/- 13.0305
15	n-Hexatriacontane (C36)	630-06-8	Z27H018	99%	504.0 µg/mL	+/- 13.0201
16	n-Octatriacontane (C38)	7194-85-6	0000145137	96%	503.8 µg/mL	+/- 13.0152
17	n-Tetracontane (C40)	4181-95-7	OKEGA	99%	503.6 µg/mL	+/- 13.0098

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

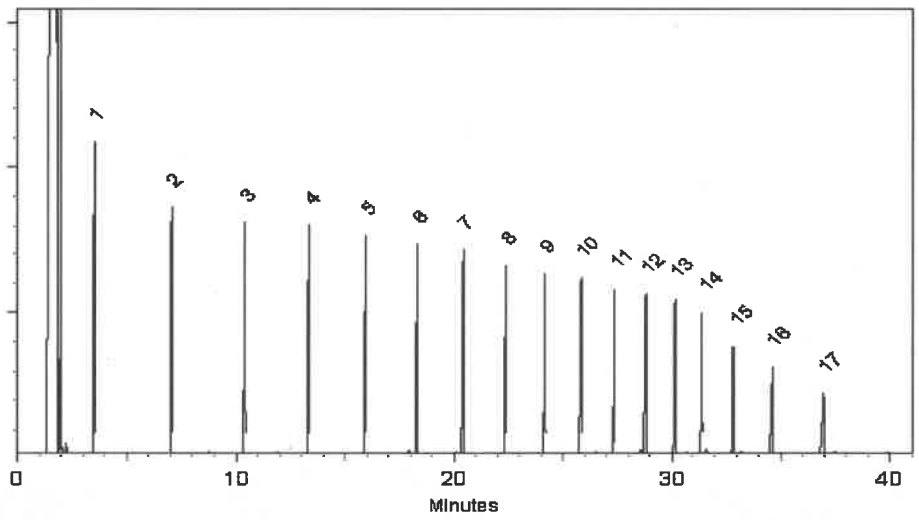
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dakota Parson - Operations Technician I

Date Mixed: 29-Nov-2023 **Balance Serial #** B442140311

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 01-Dec-2023

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u^2_{gravimetric} + u^2_{homogeneity} + u^2_{storage\ stability} + u^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

RESTEK

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: 1-814-353-1300
Fax: 1-814-353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ilac-MRA A2LA ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ilac-MRA A2LA ACCREDITED ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31266 **Lot No.:** A0204859

Description : Florida TRPH Standard

Florida TRPH Standard 500µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : December 31, 2030 **Storage:** 25°C nominal

Handling: Sonicate prior to use. **Ship:** Ambient

P13103 → P13112 Y.P. 01/12/2024

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	n-Octane (C8)	111-65-9	SHBP9758	99%	504.4 µg/mL	+/- 13.0305
2	n-Decane (C10)	124-18-5	SHBQ1342	99%	503.6 µg/mL	+/- 13.0098
3	n-Dodecane (C12)	112-40-3	SHBP7054	99%	503.6 µg/mL	+/- 13.0098
4	n-Tetradecane (C14)	629-59-4	STBK5437	99%	504.0 µg/mL	+/- 13.0201
5	n-Hexadecane (C16)	544-76-3	SHBP8192	99%	504.0 µg/mL	+/- 13.0201
6	n-Octadecane (C18)	593-45-3	UE5NG	98%	504.1 µg/mL	+/- 13.0230
7	n-Eicosane (C20)	112-95-8	MKCN8767	97%	504.0 µg/mL	+/- 13.0204
8	n-Docosane (C22)	629-97-0	MKCQ3882	99%	503.6 µg/mL	+/- 13.0098
9	n-Tetracosane (C24)	646-31-1	MKCQ8345	99%	504.0 µg/mL	+/- 13.0201
10	n-Hexacosane (C26)	630-01-3	MKCQ4814	99%	504.0 µg/mL	+/- 13.0201
11	n-Octacosane (C28)	630-02-4	BCCG0084	99%	504.0 µg/mL	+/- 13.0201
12	n-Triacontane (C30)	638-68-6	MKCQ9436	97%	504.0 µg/mL	+/- 13.0204
13	n-Dotriacontane (C32)	544-85-4	BCBW0661	99%	504.0 µg/mL	+/- 13.0201
14	n-Tetratriacontane (C34)	14167-59-0	OML4N	99%	504.4 µg/mL	+/- 13.0305
15	n-Hexatriacontane (C36)	630-06-8	Z27H018	99%	504.0 µg/mL	+/- 13.0201
16	n-Octatriacontane (C38)	7194-85-6	0000145137	96%	503.8 µg/mL	+/- 13.0152
17	n-Tetracontane (C40)	4181-95-7	OKEGA	99%	503.6 µg/mL	+/- 13.0098

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

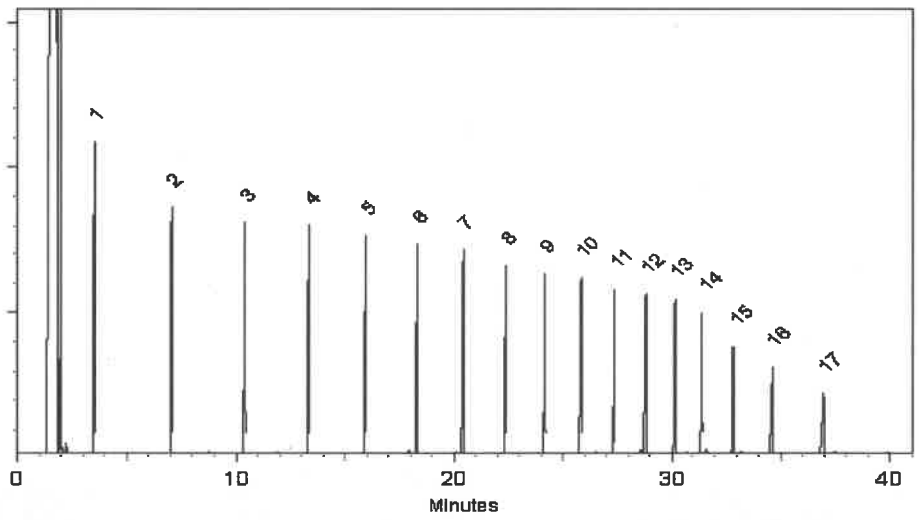
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dakota Parson - Operations Technician I

Date Mixed: 29-Nov-2023 **Balance Serial #** B442140311

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 01-Dec-2023

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u^2_{gravimetric} + u^2_{homogeneity} + u^2_{storage\ stability} + u^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

ABSOLUTE STANDARDS, INC.

ISO - 17034

Certificate of Analysis

Certified Reference Material (CRM)

Conformance: The "Certificate of Analysis" is applicable for CRM's, fulfilling the requirements in the current version of: ISO 17034.

Health & Safety: See the attached SDS & Certified Weight Report before use.

Intended Use: This Certified Reference Material (CRM) is intended primarily for use in the characterization of unknowns and the establishment of analyzer or instrument response factors by qualified personnel. Typical instrumental organic assays include: GC & LC, and inorganic assays include: ICP & AA. This product is for laboratory use only.

Characterization Values: In production, gravimetric/volumetric readings are certified to be within +/- 0.5% of the stated value & are valid between 18 °C & 30 °C. The measured characterization of uncertainty can be found on the Certified Weight Report. All product weighings are performed on an analytical balance that is calibrated to NIST Traceable standard weights & certified by the manufacturer. The volumetric glassware used is Class "A" type & conforms to ASTM E-288 unless otherwise stated. The solvents & compounds used are of the highest practical purity & typically meet or exceed ACS Reagent Grade & ACS Standards Grade specifications. The expanded uncertainty field on Certified Wt. Report represents CRM uncertainty as described in ISO 17034.

Homogeneity: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Stability: Uncertainties for short-term stability are determined in accordance with ISO 17034. Long-term stability is determined in accordance with ISO 17034. The shelf life is limited by the stated expiration for each product. Expiration dates and additional technical information can be found on the Certified Weight Report and on the product label.

Uncertainty: U_{CRM} is the expanded uncertainty which utilizes a K = 2 (coverage factor of 2), in accordance with ISO 17034 as listed above (Characterization, Homogeneity, Verification, and Stability).

Purity & Identity: Organic solutions are typically formulated from neat materials whose purity & identity have been characterized by GC-MSD & LC-PDA techniques with comparison to a NIST Traceable library of mass spectra when available. Additional characterization techniques may include but are not limited to: refractive index measurements of liquids, melting point measurements of solids, & GC-FID, ECD, PID, ELCD, LC-PDA measurements for purity. Inorganic solutions & neats are typically formulated from materials whose purity & identity have been characterized by ICPMS with comparison to a NIST SRM® when available. Additional characterization techniques may include but are not limited to: titrimetry, and densitometry.

Storage: Sealed ampules and other containers should be stored in the dark and at temperatures indicated on the Certified Weight Report or product label. Certification by Absolute Standards, Inc. is typically valid for 3 years from the date of manufacture. Each product will show its own expiration date as the limit of certification. Certified values are not applicable to opened ampules or for any materials stored in re-sealable containers. Please see the "Certified Weight Report" for specific values and any exceptions.

Usage: Ampules & bottles should be brought to room temperature (18 to 30 °C) before opening. Sonication may be required for high concentration solutions or solutions that may precipitate during storage. After opening, care should be exercised to avoid concentration changes owing to evaporation of the solvent or essential components. We recommend that a suitable re-sealable container be available before opening an ampule to decant the standard for short-term storage and use.

Minimum Sample Size: 0.5 uL for analytical applications.

Legal Notice: Warranty of products are as described when shipped. No warranty as to fitness for any particular application is expressed or implied. Errant shipments and/or quality claims must be made within 10 days of receipt. Liability is limited solely to the replacement of the product or refund of purchase price.

Certifying Officer: Stephen J. Arpie, M.S., Director General

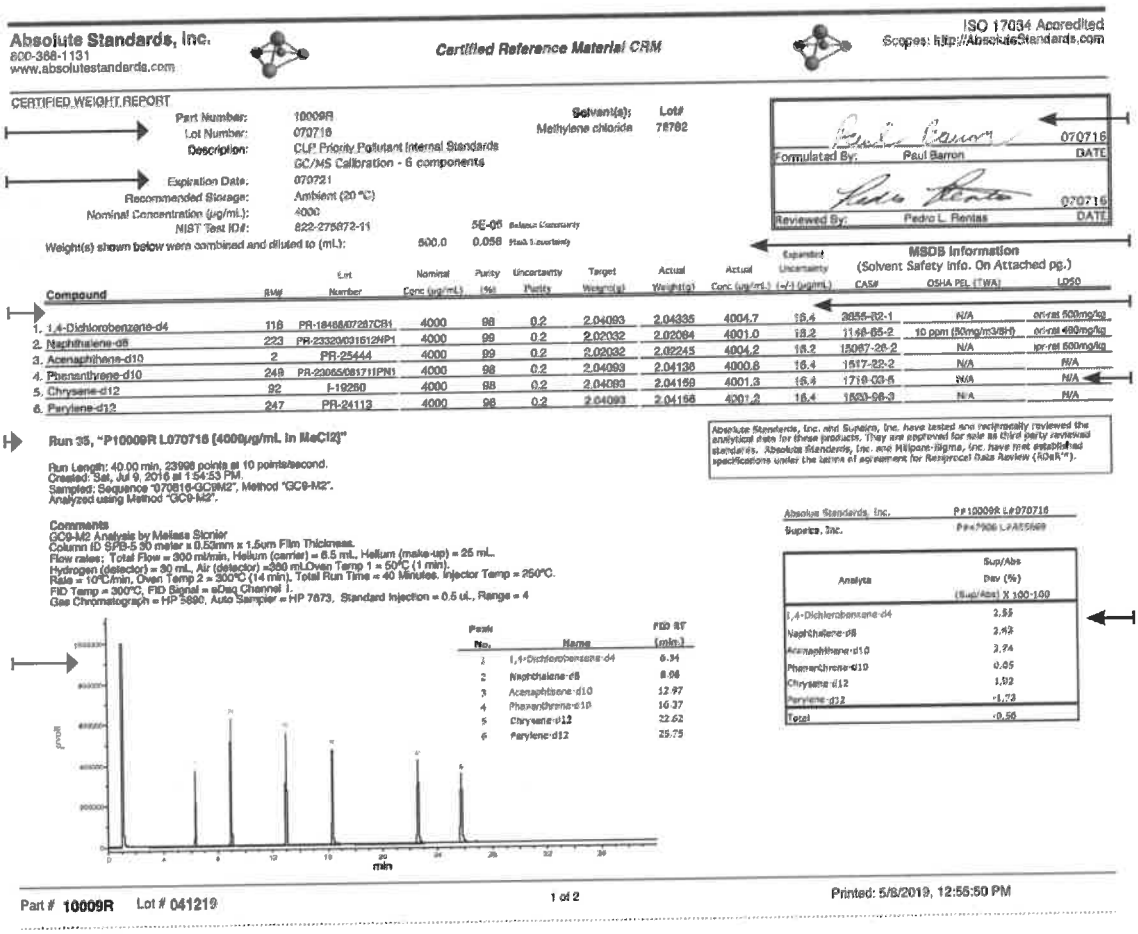
Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

ABSOLUTE STANDARDS, INC.

ISO - 17034

Understanding the Certified Weight Report

Each Certified Reference Material (CRM) is supported by a Certified Weight Report. Assigned values for concentrations and associated uncertainties are based upon NIST traceable masses & volumes used in production.



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 10009R
Lot Number: 070716
Description: CLP Priority Pollutant Internal Standards GC/MS Calibration - 6 components
Expiration Date: 070721
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 4000
NIST Test ID#: 822-275872-11

Solvent(s): Methylene chloride
Lot#: 78782

Formulated By: Paul Barron DATE 070716
Reviewed By: Pedro L. Reinas DATE 070716

Weight(s) shown below were combined and diluted to (mL): 500.0 5E-05 Balance Uncertainty 0.050 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-18488/07267CB1	4000	98	0.2	2.04093	2.04335	4004.7	16.4	3855-82-1	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-233203031612NP1	4000	99	0.2	2.02032	2.02064	4001.0	16.2	1146-65-2	10 ppm (50mg/m3/8H)	or-rat 490mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	16.2	15067-26-2	N/A	ipr-rat 500mg/kg
4. Phenanthrene-d10	248	PR-23065/051711PN1	4000	98	0.2	2.04093	2.04136	4000.8	16.4	1517-22-2	N/A	N/A
5. Chrysene-d12	92	I-19250	4000	98	0.2	2.04093	2.04159	4001.3	16.4	1719-03-5	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	96	0.2	2.04093	2.04156	4001.2	16.4	1520-96-3	N/A	N/A

Absolute Standards, Inc. and Supelco, Inc. have tested and reciprocally reviewed the analytical data for these products. They are approved for sale as third party reviewed standards. Absolute Standards, Inc. and Millipore-Sigma, Inc. have met established specifications under the terms of agreement for Reciprocal Data Review (RDaR™).

Run 35, "P10009R L070716 (4000µg/mL in MeC12)"

Run Length: 40.00 min, 23998 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070816-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9-M2 Analysis by Melissa Sicnier
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness.
Flow rates: Total Flow = 300 ml/min, Helium (carrier) = 6.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) =300 mL.Oven Temp 1 = 50°C (1 min).
Rate = 10°C/min, Oven Temp 2 = 300°C (14 min). Total Run Time = 40 Minutes. Injector Temp = 250°C.
FID Temp = 300°C, FID Signal = aDaq Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 uL, Range = 4

Peak No.	Name	FID RT (min.)
1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.06
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Absolute Standards, Inc. P# 10009R L# 070716
Supelco, Inc. P# [illegible] L# [illegible]

Analyte	Sup/Abs Dev (%) (Sup/Abs) X 100-100
1,4-Dichlorobenzene-d4	2.55
Naphthalene-d8	2.43
Acenaphthene-d10	3.74
Phenanthrene-d10	0.05
Chrysene-d12	1.02
Perylene-d12	-1.73
Total	-0.56

Part # 10009R Lot # 041219 1 of 2 Printed: 5/8/2019, 12:55:50 PM

Part #
Lot #
Shelf Life

Formulator
Reviewer

Actual Concentration

Target Compounds

Uncertainty Values

Health & Safety

Method of Analysis

Qualitative
Quantitative

3rd Party Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number: 72072
Lot Number: 101122
Description: n-Tetracosane-d50

Expiration Date: 101132
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 6UTB

Solvent(s):	Lot#
Methylene chloride	105345

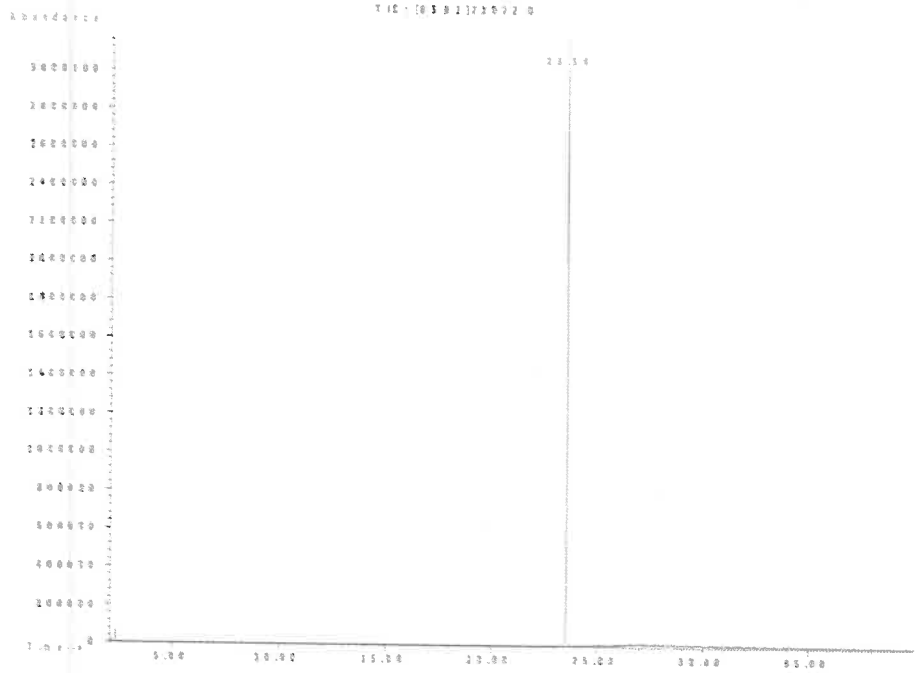
P13477 → P13496 } X.P. 07/24/24

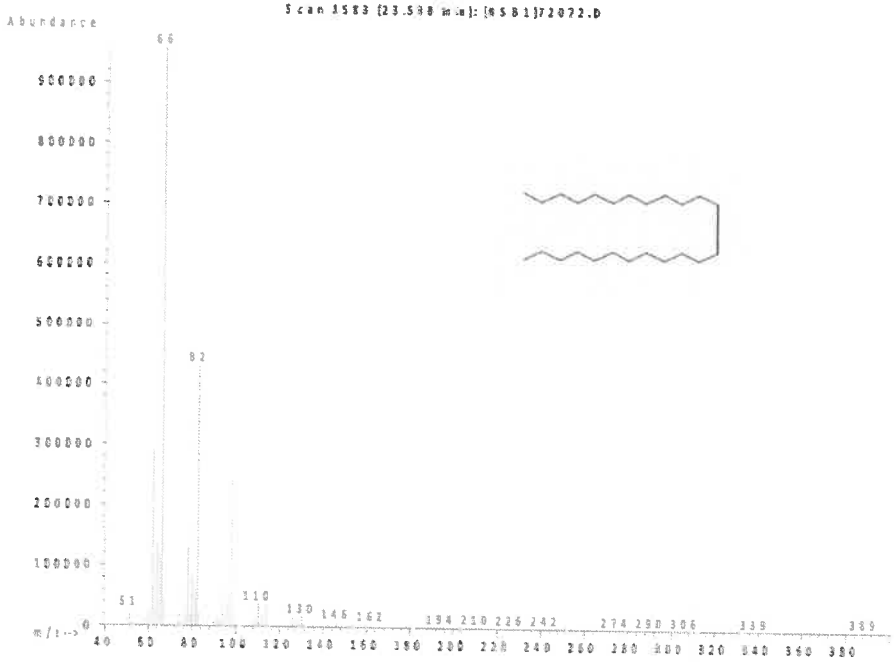
Formulated By:	Prashant Chauhan	101122 DATE
Reviewed By:	Pedro L. Rentas	101122 DATE

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 200.0 0.058 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Assay (%D)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. n-Tetracosane-d50	2072	PR-26606	1000	98.7	0.2	99.0	0.20471	0.20482	1000.6	4.1	16416-32-3	N/A	N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.





- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

ABSOLUTE STANDARDS, INC.

ISO - 17034

Certificate of Analysis

Certified Reference Material (CRM)

Conformance: The "Certificate of Analysis" is applicable for CRM's, fulfilling the requirements in the current version of: ISO 17034.

Health & Safety: See the attached SDS & Certified Weight Report before use.

Intended Use: This Certified Reference Material (CRM) is intended primarily for use in the characterization of unknowns and the establishment of analyzer or instrument response factors by qualified personnel. Typical instrumental organic assays include: GC & LC, and inorganic assays include: ICP & AA. This product is for laboratory use only.

Characterization Values: In production, gravimetric/volumetric readings are certified to be within +/- 0.5% of the stated value & are valid between 18 °C & 30 °C. The measured characterization of uncertainty can be found on the Certified Weight Report. All product weighings are performed on an analytical balance that is calibrated to NIST Traceable standard weights & certified by the manufacturer. The volumetric glassware used is Class "A" type & conforms to ASTM E-288 unless otherwise stated. The solvents & compounds used are of the highest practical purity & typically meet or exceed ACS Reagent Grade & ACS Standards Grade specifications. The expanded uncertainty field on Certified Wt. Report represents CRM uncertainty as described in ISO 17034.

Homogeneity: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Stability: Uncertainties for short-term stability are determined in accordance with ISO 17034. Long-term stability is determined in accordance with ISO 17034. The shelf life is limited by the stated expiration for each product. Expiration dates and additional technical information can be found on the Certified Weight Report and on the product label.

Uncertainty: U_{CRM} is the expanded uncertainty which utilizes a K = 2 (coverage factor of 2), in accordance with ISO 17034 as listed above (Characterization, Homogeneity, Verification, and Stability).

Purity & Identity: Organic solutions are typically formulated from neat materials whose purity & identity have been characterized by GC-MSD & LC-PDA techniques with comparison to a NIST Traceable library of mass spectra when available. Additional characterization techniques may include but are not limited to: refractive index measurements of liquids, melting point measurements of solids, & GC-FID, ECD, PID, ELCD, LC-PDA measurements for purity. Inorganic solutions & neats are typically formulated from materials whose purity & identity have been characterized by ICPMS with comparison to a NIST SRM® when available. Additional characterization techniques may include but are not limited to: titrimetry, and densitometry.

Storage: Sealed ampules and other containers should be stored in the dark and at temperatures indicated on the Certified Weight Report or product label. Certification by Absolute Standards, Inc. is typically valid for 3 years from the date of manufacture. Each product will show its own expiration date as the limit of certification. Certified values are not applicable to opened ampules or for any materials stored in re-sealable containers. Please see the "Certified Weight Report" for specific values and any exceptions.

Usage: Ampules & bottles should be brought to room temperature (18 to 30 °C) before opening. Sonication may be required for high concentration solutions or solutions that may precipitate during storage. After opening, care should be exercised to avoid concentration changes owing to evaporation of the solvent or essential components. We recommend that a suitable re-sealable container be available before opening an ampule to decant the standard for short-term storage and use.

Minimum Sample Size: 0.5 uL for analytical applications.

Legal Notice: Warranty of products are as described when shipped. No warranty as to fitness for any particular application is expressed or implied. Errant shipments and/or quality claims must be made within 10 days of receipt. Liability is limited solely to the replacement of the product or refund of purchase price.

Certifying Officer: Stephen J. Arpie, M.S., Director General

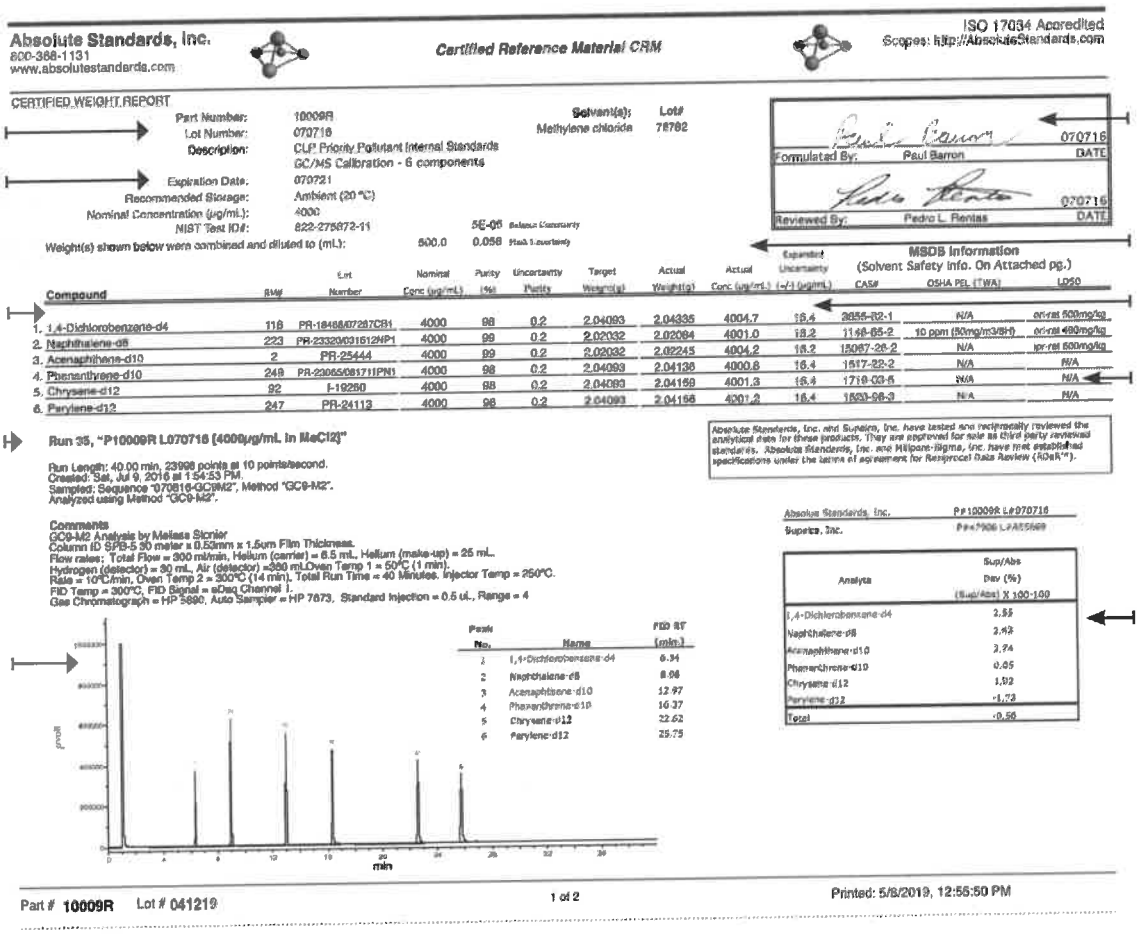
Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

ABSOLUTE STANDARDS, INC.

ISO - 17034

Understanding the Certified Weight Report

Each Certified Reference Material (CRM) is supported by a Certified Weight Report. Assigned values for concentrations and associated uncertainties are based upon NIST traceable masses & volumes used in production.



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 10009R
Lot Number: 070716
Description: CLP Priority Pollutant Internal Standards GC/MS Calibration - 6 components
Expiration Date: 070721
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 4000
NIST Test ID#: 822-275872-11

Solvent(s): Methylene chloride
Lot#: 78782

Formulated By: Paul Barron DATE 070716
Reviewed By: Pedro L. Reinas DATE 070716

Weight(s) shown below were combined and diluted to (mL): 500.0 5E-05 Balance Uncertainty 0.050 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-18488/07267CB1	4000	98	0.2	2.04093	2.04335	4004.7	16.4	3855-82-1	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-233203031612NP1	4000	99	0.2	2.02032	2.02064	4001.0	16.2	1146-65-2	10 ppm (50mg/m3/8H)	or-rat 490mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	16.2	15067-26-2	N/A	ipr-rat 500mg/kg
4. Phenanthrene-d10	248	PR-23065/051711PN1	4000	98	0.2	2.04093	2.04136	4000.8	16.4	1517-22-2	N/A	N/A
5. Chrysene-d12	92	I-19250	4000	98	0.2	2.04093	2.04159	4001.3	16.4	1719-03-5	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	96	0.2	2.04093	2.04156	4001.2	16.4	1520-96-3	N/A	N/A

Absolute Standards, Inc. and Supelco, Inc. have tested and reciprocally reviewed the analytical data for these products. They are approved for sale as third party reviewed standards. Absolute Standards, Inc. and Millipore-Sigma, Inc. have met established specifications under the terms of agreement for Reciprocal Data Review (RDaR™).

Run 35, "P10009R L070716 (4000µg/mL in MeC12)"

Run Length: 40.00 min, 23998 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070816-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9-M2 Analysis by Melissa Sicnier
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness.
Flow rates: Total Flow = 300 ml/min, Helium (carrier) = 6.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) =300 mL.Oven Temp 1 = 50°C (1 min).
Rate = 10°C/min, Oven Temp 2 = 300°C (14 min). Total Run Time = 40 Minutes. Injector Temp = 250°C.
FID Temp = 300°C, FID Signal = aDaq Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 uL, Range = 4

Peak No.	Name	FID RT (min.)
1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.06
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Absolute Standards, Inc. P# 10009R L# 070716
Supelco, Inc. P# [illegible] L# [illegible]

Analyte	Sup/Abs Dev (%) (Sup/Abs) X 100-100
1,4-Dichlorobenzene-d4	2.55
Naphthalene-d8	2.43
Acenaphthene-d10	3.74
Phenanthrene-d10	0.05
Chrysene-d12	1.02
Perylene-d12	-1.73
Total	-0.56

Part # 10009R Lot # 041219 1 of 2 Printed: 5/8/2019, 12:55:50 PM

Part #
Lot #
Shelf Life

Formulator
Reviewer

Actual Concentration

Target Compounds

Uncertainty Values

Health & Safety

Method of Analysis

Qualitative
Quantitative

3rd Party Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

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www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number: 72072
Lot Number: 101122
Description: n-Tetracosane-d50

Expiration Date: 101132
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 6UTB

Solvent(s):	Lot#
Methylene chloride	105345

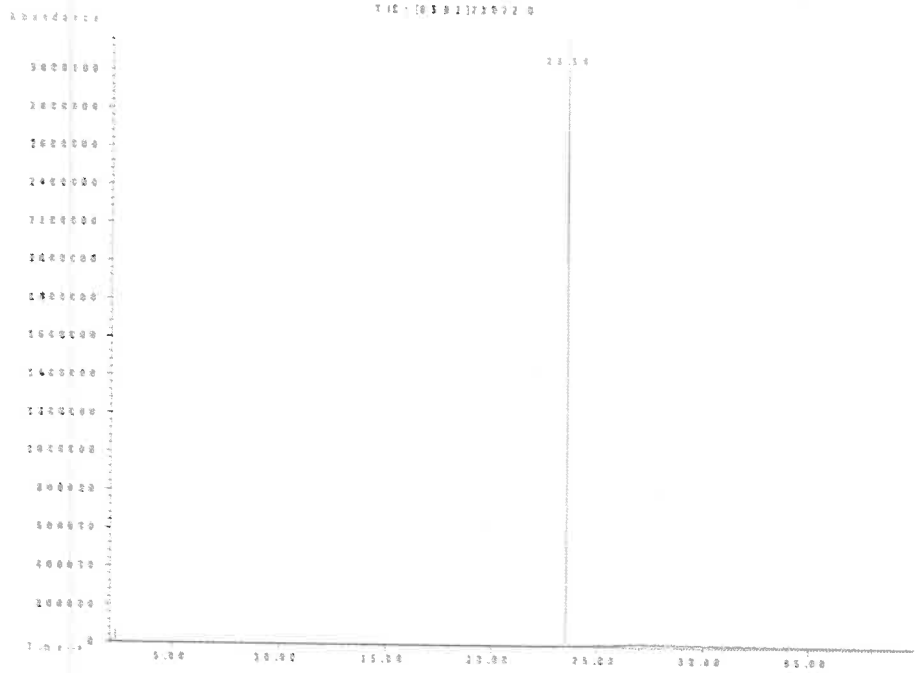
P13477 → P13496 } X.P. 07/24/24

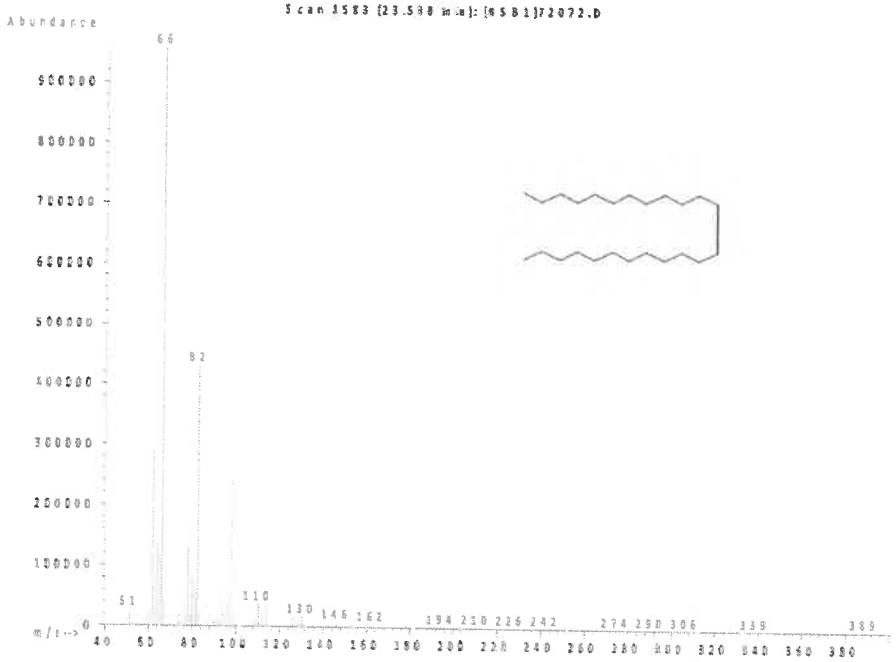
Formulated By:	Prashant Chauhan	101122 DATE
Reviewed By:	Pedro L. Rentas	101122 DATE

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 200.0 0.058 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Assay (%D)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. n-Tetracosane-d50	2072	PR-26606	1000	98.7	0.2	99.0	0.20471	0.20482	1000.6	4.1	16416-32-3	N/A	N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.





- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

ABSOLUTE STANDARDS, INC.

ISO - 17034

Certificate of Analysis

Certified Reference Material (CRM)

Conformance: The "Certificate of Analysis" is applicable for CRM's, fulfilling the requirements in the current version of: ISO 17034.

Health & Safety: See the attached SDS & Certified Weight Report before use.

Intended Use: This Certified Reference Material (CRM) is intended primarily for use in the characterization of unknowns and the establishment of analyzer or instrument response factors by qualified personnel. Typical instrumental organic assays include: GC & LC, and inorganic assays include: ICP & AA. This product is for laboratory use only.

Characterization Values: In production, gravimetric/volumetric readings are certified to be within +/- 0.5% of the stated value & are valid between 18 °C & 30 °C. The measured characterization of uncertainty can be found on the Certified Weight Report. All product weighings are performed on an analytical balance that is calibrated to NIST Traceable standard weights & certified by the manufacturer. The volumetric glassware used is Class "A" type & conforms to ASTM E-288 unless otherwise stated. The solvents & compounds used are of the highest practical purity & typically meet or exceed ACS Reagent Grade & ACS Standards Grade specifications. The expanded uncertainty field on Certified Wt. Report represents CRM uncertainty as described in ISO 17034.

Homogeneity: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Stability: Uncertainties for short-term stability are determined in accordance with ISO 17034. Long-term stability is determined in accordance with ISO 17034. The shelf life is limited by the stated expiration for each product. Expiration dates and additional technical information can be found on the Certified Weight Report and on the product label.

Uncertainty: U_{CRM} is the expanded uncertainty which utilizes a K = 2 (coverage factor of 2), in accordance with ISO 17034 as listed above (Characterization, Homogeneity, Verification, and Stability).

Purity & Identity: Organic solutions are typically formulated from neat materials whose purity & identity have been characterized by GC-MSD & LC-PDA techniques with comparison to a NIST Traceable library of mass spectra when available. Additional characterization techniques may include but are not limited to: refractive index measurements of liquids, melting point measurements of solids, & GC-FID, ECD, PID, ELCD, LC-PDA measurements for purity. Inorganic solutions & neats are typically formulated from materials whose purity & identity have been characterized by ICPMS with comparison to a NIST SRM® when available. Additional characterization techniques may include but are not limited to: titrimetry, and densitometry.

Storage: Sealed ampules and other containers should be stored in the dark and at temperatures indicated on the Certified Weight Report or product label. Certification by Absolute Standards, Inc. is typically valid for 3 years from the date of manufacture. Each product will show its own expiration date as the limit of certification. Certified values are not applicable to opened ampules or for any materials stored in re-sealable containers. Please see the "Certified Weight Report" for specific values and any exceptions.

Usage: Ampules & bottles should be brought to room temperature (18 to 30 °C) before opening. Sonication may be required for high concentration solutions or solutions that may precipitate during storage. After opening, care should be exercised to avoid concentration changes owing to evaporation of the solvent or essential components. We recommend that a suitable re-sealable container be available before opening an ampule to decant the standard for short-term storage and use.

Minimum Sample Size: 0.5 uL for analytical applications.

Legal Notice: Warranty of products are as described when shipped. No warranty as to fitness for any particular application is expressed or implied. Errant shipments and/or quality claims must be made within 10 days of receipt. Liability is limited solely to the replacement of the product or refund of purchase price.

Certifying Officer: Stephen J. Arpie, M.S., Director General

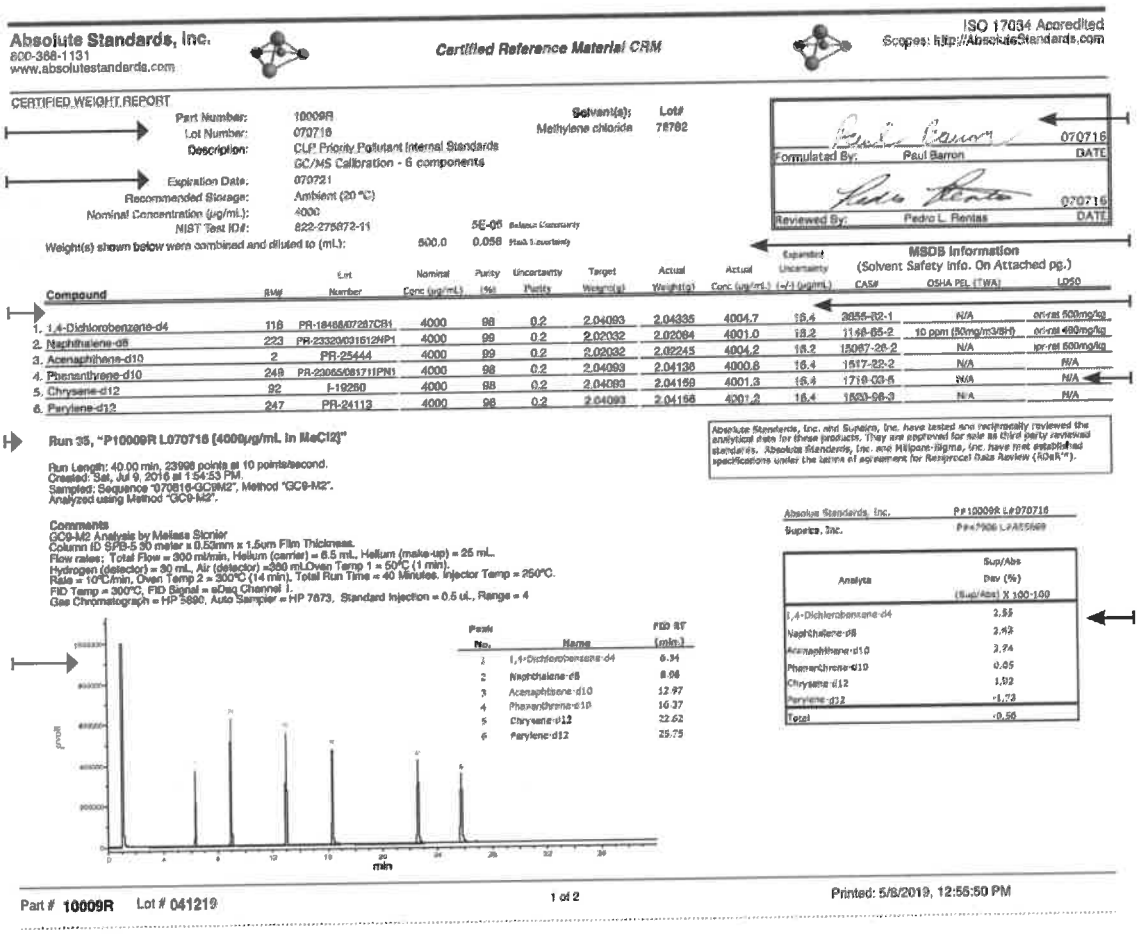
Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

ABSOLUTE STANDARDS, INC.

ISO - 17034

Understanding the Certified Weight Report

Each Certified Reference Material (CRM) is supported by a Certified Weight Report. Assigned values for concentrations and associated uncertainties are based upon NIST traceable masses & volumes used in production.



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 10009R
Lot Number: 070716
Description: CLP Priority Pollutant Internal Standards GC/MS Calibration - 6 components
Expiration Date: 070721
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 4000
NIST Test ID#: 822-275872-11

Solvent(s): Methylene chloride
Lot#: 78782

Formulated By: Paul Barron DATE 070716
Reviewed By: Pedro L. Reinas DATE 070716

Weight(s) shown below were combined and diluted to (mL): 500.0 5E-05 Balance Uncertainty 0.050 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-18488/07267CB1	4000	98	0.2	2.04093	2.04335	4004.7	16.4	3855-82-1	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-233203031612NP1	4000	99	0.2	2.02032	2.02064	4001.0	16.2	1146-65-2	10 ppm (50mg/m3/8H)	or-rat 490mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	16.2	15067-26-2	N/A	ipr-rat 500mg/kg
4. Phenanthrene-d10	248	PR-23065/051711PN1	4000	98	0.2	2.04093	2.04136	4000.8	16.4	1517-22-2	N/A	N/A
5. Chrysene-d12	92	I-19250	4000	98	0.2	2.04093	2.04159	4001.3	16.4	1719-03-5	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	96	0.2	2.04093	2.04156	4001.2	16.4	1520-96-3	N/A	N/A

Absolute Standards, Inc. and Supelco, Inc. have tested and reciprocally reviewed the analytical data for these products. They are approved for sale as third party reviewed standards. Absolute Standards, Inc. and Millipore-Sigma, Inc. have met established specifications under the terms of agreement for Reciprocal Data Review (RDaR™).

Run 35, "P10009R L070716 (4000µg/mL in MeC12)"

Run Length: 40.00 min, 23998 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070816-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9-M2 Analysis by Melissa Sicnier
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness.
Flow rates: Total Flow = 300 ml/min, Helium (carrier) = 6.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) =300 mL.Oven Temp 1 = 50°C (1 min).
Rate = 10°C/min, Oven Temp 2 = 300°C (14 min). Total Run Time = 40 Minutes. Injector Temp = 250°C.
FID Temp = 300°C, FID Signal = aDaq Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 uL, Range = 4

Peak No.	Name	FID RT (min.)
1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.06
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Absolute Standards, Inc. P# 10009R L# 070716
Supelco, Inc. P# [illegible] L# [illegible]

Analyte	Sup/Abs Dev (%) (Sup/Abs) X 100-100
1,4-Dichlorobenzene-d4	2.55
Naphthalene-d8	2.43
Acenaphthene-d10	3.74
Phenanthrene-d10	0.05
Chrysene-d12	1.02
Perylene-d12	-1.73
Total	-0.56

Part # 10009R Lot # 041219 1 of 2 Printed: 5/8/2019, 12:55:50 PM

Part #
Lot #
Shelf Life

Formulator
Reviewer

Actual Concentration

Target Compounds

Uncertainty Values

Health & Safety

Method of Analysis

Qualitative
Quantitative

3rd Party Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

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Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

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Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number: 72072
Lot Number: 101122
Description: n-Tetracosane-d50

Expiration Date: 101132
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 6UTB

Solvent(s):	Lot#
Methylene chloride	105345

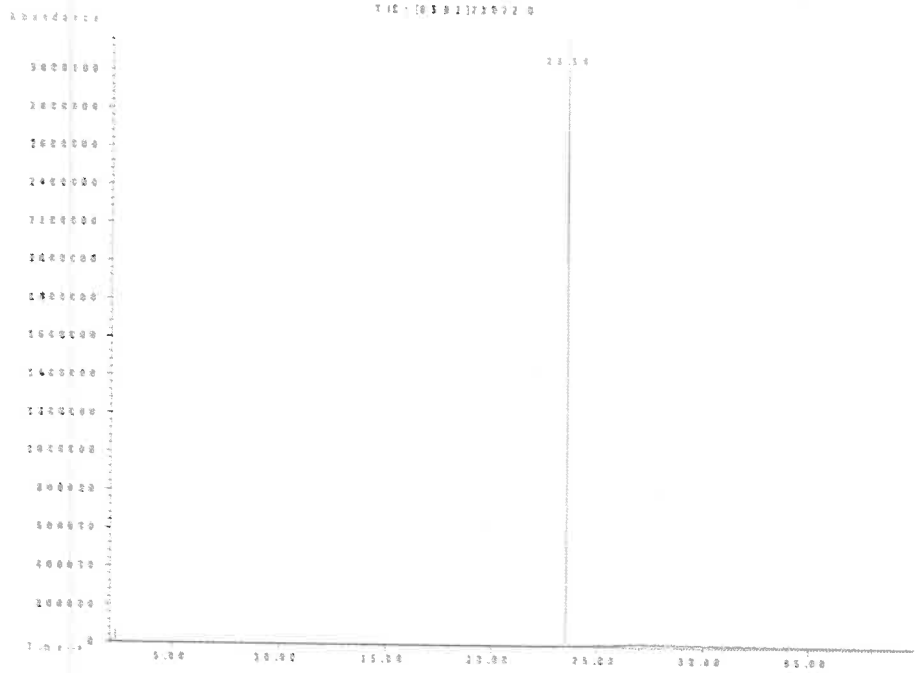
P13477 → P13496 } X.P. 07/24/24

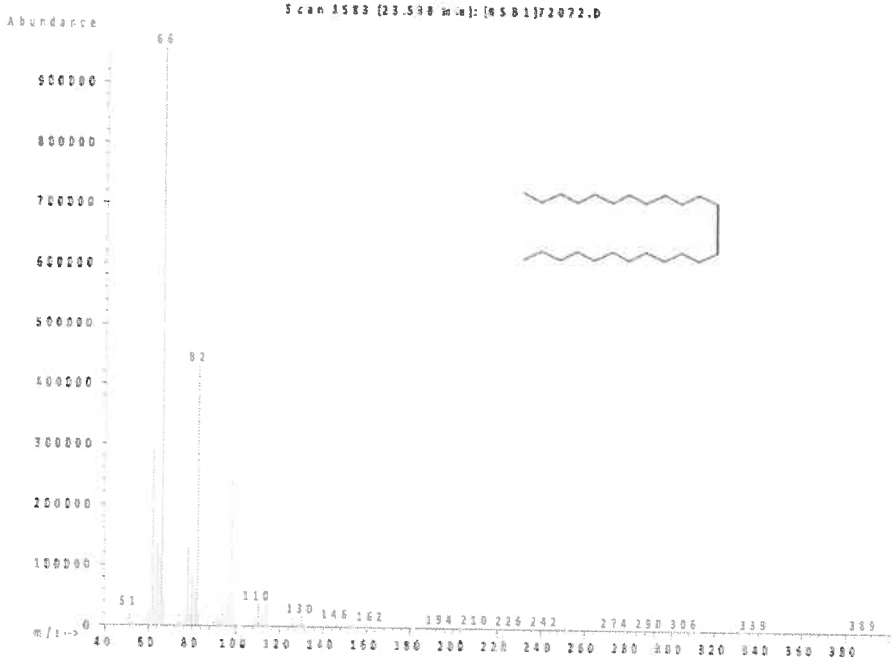
Formulated By:	Prashant Chauhan	101122 DATE
Reviewed By:	Pedro L. Rentas	101122 DATE

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 200.0 0.058 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Assay (%D)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. n-Tetracosane-d50	2072	PR-26606	1000	98.7	0.2	99.0	0.20471	0.20482	1000.6	4.1	16416-32-3	N/A	N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.





- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

ABSOLUTE STANDARDS, INC.

ISO - 17034

Certificate of Analysis

Certified Reference Material (CRM)

Conformance: The "Certificate of Analysis" is applicable for CRM's, fulfilling the requirements in the current version of: ISO 17034.

Health & Safety: See the attached SDS & Certified Weight Report before use.

Intended Use: This Certified Reference Material (CRM) is intended primarily for use in the characterization of unknowns and the establishment of analyzer or instrument response factors by qualified personnel. Typical instrumental organic assays include: GC & LC, and inorganic assays include: ICP & AA. This product is for laboratory use only.

Characterization Values: In production, gravimetric/volumetric readings are certified to be within +/- 0.5% of the stated value & are valid between 18 °C & 30 °C. The measured characterization of uncertainty can be found on the Certified Weight Report. All product weighings are performed on an analytical balance that is calibrated to NIST Traceable standard weights & certified by the manufacturer. The volumetric glassware used is Class "A" type & conforms to ASTM E-288 unless otherwise stated. The solvents & compounds used are of the highest practical purity & typically meet or exceed ACS Reagent Grade & ACS Standards Grade specifications. The expanded uncertainty field on Certified Wt. Report represents CRM uncertainty as described in ISO 17034.

Homogeneity: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Stability: Uncertainties for short-term stability are determined in accordance with ISO 17034. Long-term stability is determined in accordance with ISO 17034. The shelf life is limited by the stated expiration for each product. Expiration dates and additional technical information can be found on the Certified Weight Report and on the product label.

Uncertainty: U_{CRM} is the expanded uncertainty which utilizes a K = 2 (coverage factor of 2), in accordance with ISO 17034 as listed above (Characterization, Homogeneity, Verification, and Stability).

Purity & Identity: Organic solutions are typically formulated from neat materials whose purity & identity have been characterized by GC-MSD & LC-PDA techniques with comparison to a NIST Traceable library of mass spectra when available. Additional characterization techniques may include but are not limited to: refractive index measurements of liquids, melting point measurements of solids, & GC-FID, ECD, PID, ELCD, LC-PDA measurements for purity. Inorganic solutions & neats are typically formulated from materials whose purity & identity have been characterized by ICPMS with comparison to a NIST SRM® when available. Additional characterization techniques may include but are not limited to: titrimetry, and densitometry.

Storage: Sealed ampules and other containers should be stored in the dark and at temperatures indicated on the Certified Weight Report or product label. Certification by Absolute Standards, Inc. is typically valid for 3 years from the date of manufacture. Each product will show its own expiration date as the limit of certification. Certified values are not applicable to opened ampules or for any materials stored in re-sealable containers. Please see the "Certified Weight Report" for specific values and any exceptions.

Usage: Ampules & bottles should be brought to room temperature (18 to 30 °C) before opening. Sonication may be required for high concentration solutions or solutions that may precipitate during storage. After opening, care should be exercised to avoid concentration changes owing to evaporation of the solvent or essential components. We recommend that a suitable re-sealable container be available before opening an ampule to decant the standard for short-term storage and use.

Minimum Sample Size: 0.5 uL for analytical applications.

Legal Notice: Warranty of products are as described when shipped. No warranty as to fitness for any particular application is expressed or implied. Errant shipments and/or quality claims must be made within 10 days of receipt. Liability is limited solely to the replacement of the product or refund of purchase price.

Certifying Officer: Stephen J. Arpie, M.S., Director General

Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

ABSOLUTE STANDARDS, INC.

ISO - 17034

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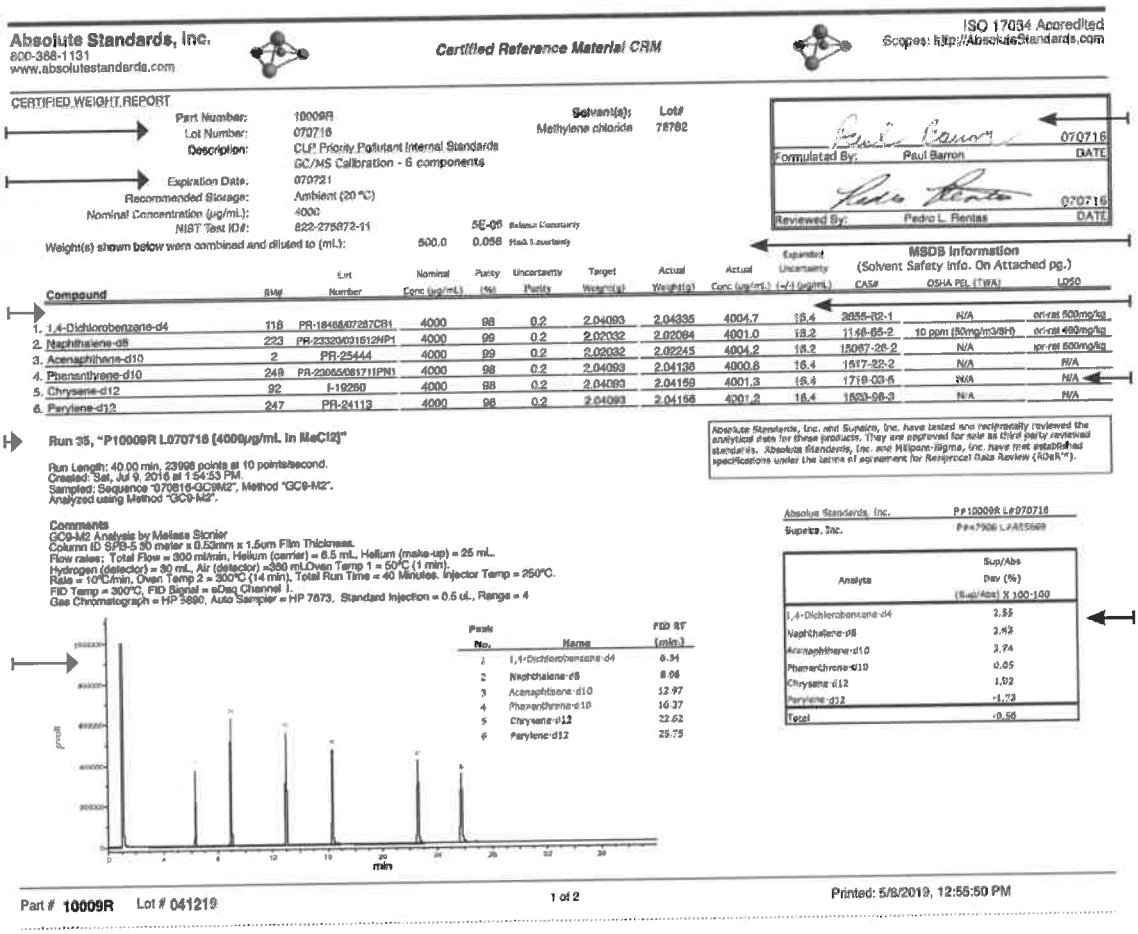

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Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 10009R
Lot Number: 070716
Description: CLP Priority Pollutant Internal Standards GC/MS Calibration - 6 components
Expiration Date: 070721
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 4000
NIST Test ID#: 822-275872-11

Solvent(s): Methylene chloride
Lot#: 78782

Formulated By: Paul Barron DATE 070716
Reviewed By: Pedro L. Reinas DATE 070716

Weight(s) shown below were combined and diluted to (mL): 500.0 5E-05 Balance Uncertainty 0.050 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-18488/07267CB1	4000	98	0.2	2.04093	2.04335	4004.7	16.4	3855-82-1	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-233203031612NP1	4000	99	0.2	2.02032	2.02064	4001.0	16.2	1146-65-2	10 ppm (50mg/m3/8H)	or-rat 490mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	16.2	15067-26-2	N/A	ipr-rat 500mg/kg
4. Phenanthrene-d10	248	PR-23065/051711PN1	4000	98	0.2	2.04093	2.04136	4000.8	16.4	1517-22-2	N/A	N/A
5. Chrysene-d12	92	I-19250	4000	98	0.2	2.04093	2.04159	4001.3	16.4	1719-03-5	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	96	0.2	2.04093	2.04156	4001.2	16.4	1520-96-3	N/A	N/A

Absolute Standards, Inc. and Supelco, Inc. have tested and reciprocally reviewed the analytical data for these products. They are approved for sale as third party reviewed standards. Absolute Standards, Inc. and Millipore-Sigma, Inc. have met established specifications under the terms of agreement for Reciprocal Data Review (RDaR™).

Run 35, "P10009R L070716 (4000µg/mL in MeC12)"

Run Length: 40.00 min, 23998 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070816-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9-M2 Analysis by Melissa Sicnier
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness.
Flow rates: Total Flow = 300 ml/min, Helium (carrier) = 6.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) =300 mL.Oven Temp 1 = 50°C (1 min).
Rate = 10°C/min, Oven Temp 2 = 300°C (14 min). Total Run Time = 40 Minutes. Injector Temp = 250°C.
FID Temp = 300°C, FID Signal = aDaq Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 uL, Range = 4

Peak No.	Name	FID RT (min.)
1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.06
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Absolute Standards, Inc. P# 10009R L# 070716
Supelco, Inc. P# [illegible] L# [illegible]

Analyte	Sup/Abs Dev (%) (Sup/Abs) X 100-100
1,4-Dichlorobenzene-d4	2.55
Naphthalene-d8	2.43
Acenaphthene-d10	3.74
Phenanthrene-d10	0.05
Chrysene-d12	1.02
Perylene-d12	-1.73
Total	-0.56

Part # 10009R Lot # 041219 1 of 2 Printed: 5/8/2019, 12:55:50 PM

Part #
Lot #
Shelf Life

Formulator
Reviewer

Actual Concentration

Target Compounds

Uncertainty Values

Health & Safety

Method of Analysis

Qualitative
Quantitative

3rd Party Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number: 72072
Lot Number: 101122
Description: n-Tetracosane-d50

Expiration Date: 101132
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 6UTB

Solvent(s):	Lot#
Methylene chloride	105345

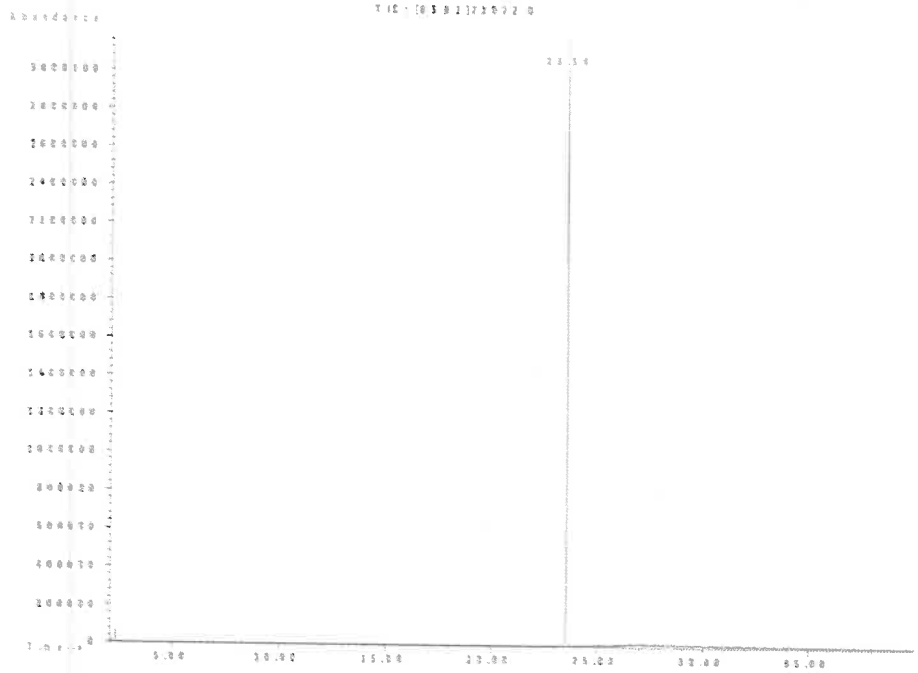
P13477 → P13496 } X.P. 07/24/24

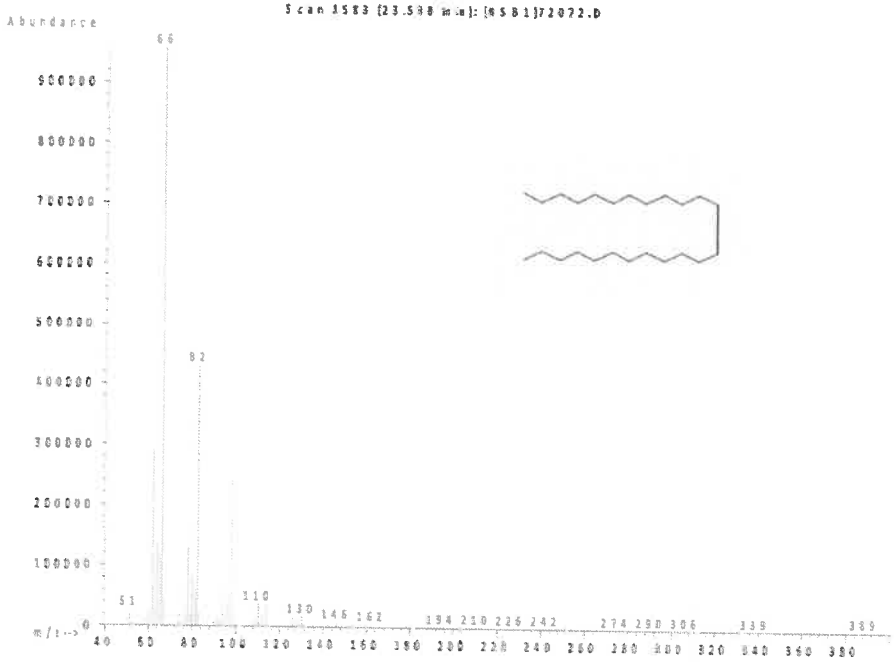
Formulated By:	Prashant Chauhan	101122 DATE
Reviewed By:	Pedro L. Rentas	101122 DATE

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 200.0 0.058 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Assay (%D)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. n-Tetracosane-d50	2072	PR-26606	1000	98.7	0.2	99.0	0.20471	0.20482	1000.6	4.1	16416-32-3	N/A	N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.





- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

ABSOLUTE STANDARDS, INC.

ISO - 17034

Certificate of Analysis

Certified Reference Material (CRM)

Conformance: The "Certificate of Analysis" is applicable for CRM's, fulfilling the requirements in the current version of: ISO 17034.

Health & Safety: See the attached SDS & Certified Weight Report before use.

Intended Use: This Certified Reference Material (CRM) is intended primarily for use in the characterization of unknowns and the establishment of analyzer or instrument response factors by qualified personnel. Typical instrumental organic assays include: GC & LC, and inorganic assays include: ICP & AA. This product is for laboratory use only.

Characterization Values: In production, gravimetric/volumetric readings are certified to be within +/- 0.5% of the stated value & are valid between 18 °C & 30 °C. The measured characterization of uncertainty can be found on the Certified Weight Report. All product weighings are performed on an analytical balance that is calibrated to NIST Traceable standard weights & certified by the manufacturer. The volumetric glassware used is Class "A" type & conforms to ASTM E-288 unless otherwise stated. The solvents & compounds used are of the highest practical purity & typically meet or exceed ACS Reagent Grade & ACS Standards Grade specifications. The expanded uncertainty field on Certified Wt. Report represents CRM uncertainty as described in ISO 17034.

Homogeneity: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Stability: Uncertainties for short-term stability are determined in accordance with ISO 17034. Long-term stability is determined in accordance with ISO 17034. The shelf life is limited by the stated expiration for each product. Expiration dates and additional technical information can be found on the Certified Weight Report and on the product label.

Uncertainty: U_{CRM} is the expanded uncertainty which utilizes a K = 2 (coverage factor of 2), in accordance with ISO 17034 as listed above (Characterization, Homogeneity, Verification, and Stability).

Purity & Identity: Organic solutions are typically formulated from neat materials whose purity & identity have been characterized by GC-MSD & LC-PDA techniques with comparison to a NIST Traceable library of mass spectra when available. Additional characterization techniques may include but are not limited to: refractive index measurements of liquids, melting point measurements of solids, & GC-FID, ECD, PID, ELCD, LC-PDA measurements for purity. Inorganic solutions & neats are typically formulated from materials whose purity & identity have been characterized by ICPMS with comparison to a NIST SRM® when available. Additional characterization techniques may include but are not limited to: titrimetry, and densitometry.

Storage: Sealed ampules and other containers should be stored in the dark and at temperatures indicated on the Certified Weight Report or product label. Certification by Absolute Standards, Inc. is typically valid for 3 years from the date of manufacture. Each product will show its own expiration date as the limit of certification. Certified values are not applicable to opened ampules or for any materials stored in re-sealable containers. Please see the "Certified Weight Report" for specific values and any exceptions.

Usage: Ampules & bottles should be brought to room temperature (18 to 30 °C) before opening. Sonication may be required for high concentration solutions or solutions that may precipitate during storage. After opening, care should be exercised to avoid concentration changes owing to evaporation of the solvent or essential components. We recommend that a suitable re-sealable container be available before opening an ampule to decant the standard for short-term storage and use.

Minimum Sample Size: 0.5 uL for analytical applications.

Legal Notice: Warranty of products are as described when shipped. No warranty as to fitness for any particular application is expressed or implied. Errant shipments and/or quality claims must be made within 10 days of receipt. Liability is limited solely to the replacement of the product or refund of purchase price.

Certifying Officer: Stephen J. Arpie, M.S., Director General

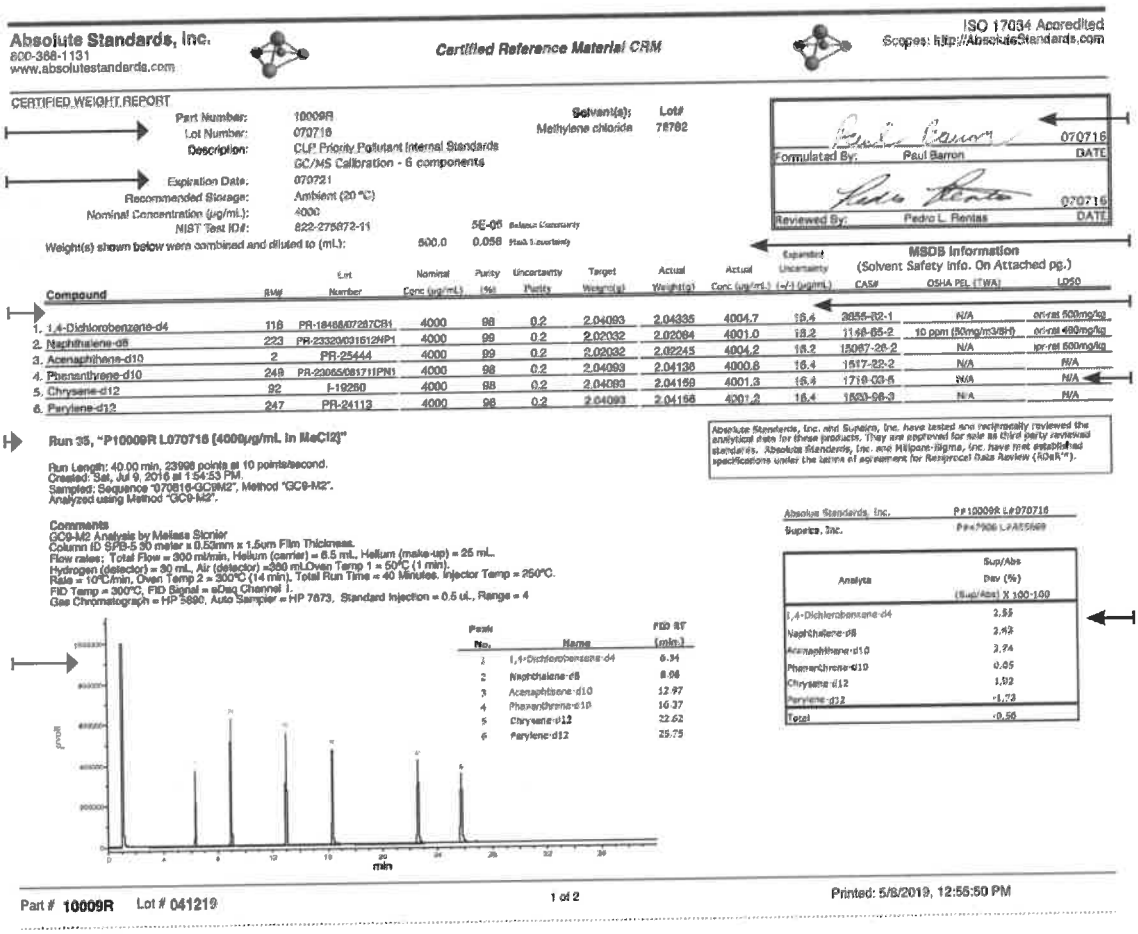
Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

ABSOLUTE STANDARDS, INC.

ISO - 17034

Understanding the Certified Weight Report

Each Certified Reference Material (CRM) is supported by a Certified Weight Report. Assigned values for concentrations and associated uncertainties are based upon NIST traceable masses & volumes used in production.



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 10009R
Lot Number: 070716
Description: CLP Priority Pollutant Internal Standards GC/MS Calibration - 6 components
Expiration Date: 070721
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 4000
NIST Test ID#: 822-275872-11

Solvent(s): Methylene chloride
Lot#: 78782

Formulated By: Paul Barron DATE 070716
Reviewed By: Pedro L. Reinas DATE 070716

Weight(s) shown below were combined and diluted to (mL): 500.0 5E-05 Balance Uncertainty 0.050 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-18488/07267CB1	4000	98	0.2	2.04093	2.04335	4004.7	16.4	3855-82-1	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-233203031612NP1	4000	99	0.2	2.02032	2.02064	4001.0	16.2	1146-65-2	10 ppm (50mg/m3/8H)	or-rat 490mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	16.2	15067-26-2	N/A	ipr-rat 500mg/kg
4. Phenanthrene-d10	248	PR-23065/051711PN1	4000	98	0.2	2.04093	2.04136	4000.8	16.4	1517-22-2	N/A	N/A
5. Chrysene-d12	92	I-19250	4000	98	0.2	2.04093	2.04159	4001.3	16.4	1719-03-5	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	96	0.2	2.04093	2.04156	4001.2	16.4	1520-96-3	N/A	N/A

Absolute Standards, Inc. and Supelco, Inc. have tested and reciprocally reviewed the analytical data for these products. They are approved for sale as third party reviewed standards. Absolute Standards, Inc. and Millipore-Sigma, Inc. have met established specifications under the terms of agreement for Reciprocal Data Review (RDaR™).

Run 35, "P10009R L070716 (4000µg/mL in MeC12)"

Run Length: 40.00 min, 23998 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070816-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9-M2 Analysis by Melissa Sicnier
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness.
Flow rates: Total Flow = 300 ml/min, Helium (carrier) = 6.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) =300 mL.Oven Temp 1 = 50°C (1 min).
Rate = 10°C/min, Oven Temp 2 = 300°C (14 min). Total Run Time = 40 Minutes. Injector Temp = 250°C.
FID Temp = 300°C, FID Signal = aDaq Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 uL, Range = 4

Peak No.	Name	FID RT (min.)
1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.06
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Absolute Standards, Inc. P# 10009R L# 070716
Supelco, Inc. P# [illegible] L# [illegible]

Analyte	Sup/Abs Dev (%) (Sup/Abs) X 100-100
1,4-Dichlorobenzene-d4	2.55
Naphthalene-d8	2.43
Acenaphthene-d10	3.74
Phenanthrene-d10	0.05
Chrysene-d12	1.02
Perylene-d12	-1.73
Total	-0.56

Part # 10009R Lot # 041219 1 of 2 Printed: 5/8/2019, 12:55:50 PM

Part #
Lot #
Shelf Life

Formulator
Reviewer

Actual Concentration

Target Compounds

Uncertainty Values

Health & Safety

Method of Analysis

Qualitative
Quantitative

3rd Party Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

Absolute Standards, Inc.
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www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number: 72072
Lot Number: 101122
Description: n-Tetracosane-d50

Expiration Date: 101132
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 6UTB

Solvent(s):	Lot#
Methylene chloride	105345

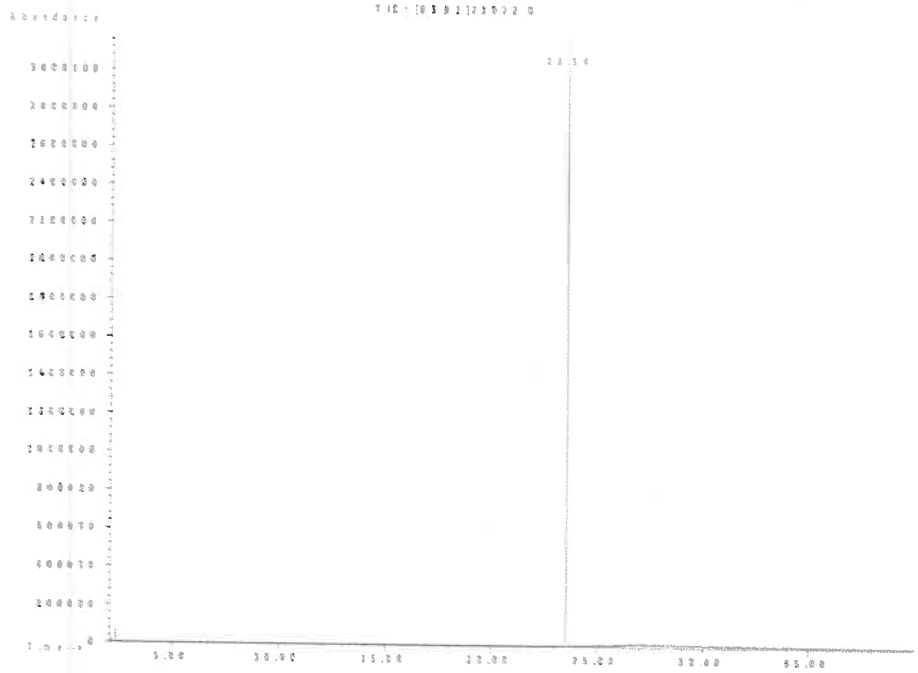
P13477 → P13496 } X.P. 07/24/24

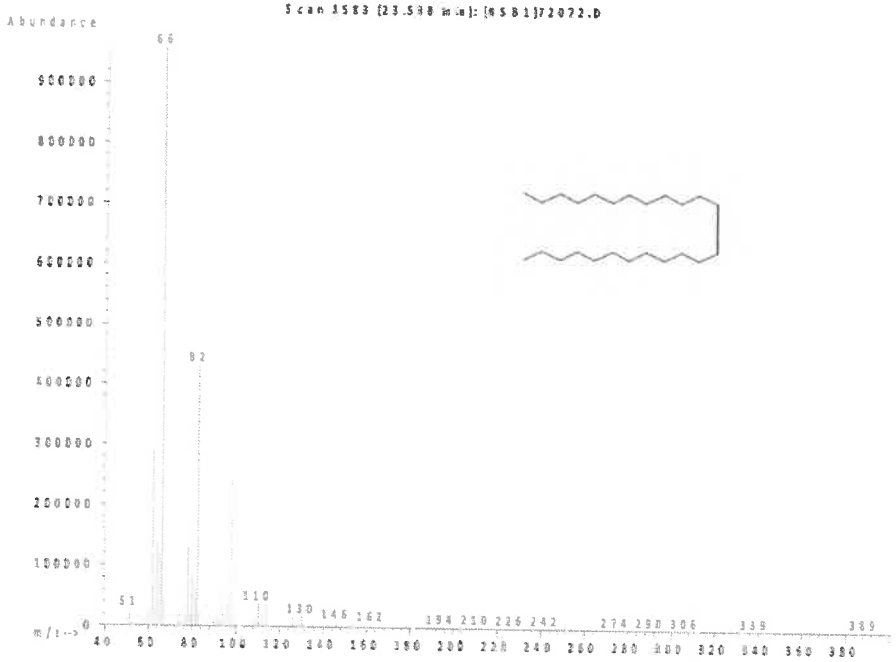
Formulated By:	Prashant Chauhan	101122 DATE
Reviewed By:	Pedro L. Rentas	101122 DATE

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 200.0 0.058 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Assay (%D)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. n-Tetracosane-d50	2072	PR-26606	1000	98.7	0.2	99.0	0.20471	0.20482	1000.6	4.1	16416-32-3	N/A	N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.





- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

ABSOLUTE STANDARDS, INC.

ISO - 17034

Certificate of Analysis

Certified Reference Material (CRM)

Conformance: The "Certificate of Analysis" is applicable for CRM's, fulfilling the requirements in the current version of: ISO 17034.

Health & Safety: See the attached SDS & Certified Weight Report before use.

Intended Use: This Certified Reference Material (CRM) is intended primarily for use in the characterization of unknowns and the establishment of analyzer or instrument response factors by qualified personnel. Typical instrumental organic assays include: GC & LC, and inorganic assays include: ICP & AA. This product is for laboratory use only.

Characterization Values: In production, gravimetric/volumetric readings are certified to be within +/- 0.5% of the stated value & are valid between 18 °C & 30 °C. The measured characterization of uncertainty can be found on the Certified Weight Report. All product weighings are performed on an analytical balance that is calibrated to NIST Traceable standard weights & certified by the manufacturer. The volumetric glassware used is Class "A" type & conforms to ASTM E-288 unless otherwise stated. The solvents & compounds used are of the highest practical purity & typically meet or exceed ACS Reagent Grade & ACS Standards Grade specifications. The expanded uncertainty field on Certified Wt. Report represents CRM uncertainty as described in ISO 17034.

Homogeneity: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Stability: Uncertainties for short-term stability are determined in accordance with ISO 17034. Long-term stability is determined in accordance with ISO 17034. The shelf life is limited by the stated expiration for each product. Expiration dates and additional technical information can be found on the Certified Weight Report and on the product label.

Uncertainty: U_{CRM} is the expanded uncertainty which utilizes a K = 2 (coverage factor of 2), in accordance with ISO 17034 as listed above (Characterization, Homogeneity, Verification, and Stability).

Purity & Identity: Organic solutions are typically formulated from neat materials whose purity & identity have been characterized by GC-MSD & LC-PDA techniques with comparison to a NIST Traceable library of mass spectra when available. Additional characterization techniques may include but are not limited to: refractive index measurements of liquids, melting point measurements of solids, & GC-FID, ECD, PID, ELCD, LC-PDA measurements for purity. Inorganic solutions & neats are typically formulated from materials whose purity & identity have been characterized by ICPMS with comparison to a NIST SRM® when available. Additional characterization techniques may include but are not limited to: titrimetry, and densitometry.

Storage: Sealed ampules and other containers should be stored in the dark and at temperatures indicated on the Certified Weight Report or product label. Certification by Absolute Standards, Inc. is typically valid for 3 years from the date of manufacture. Each product will show its own expiration date as the limit of certification. Certified values are not applicable to opened ampules or for any materials stored in re-sealable containers. Please see the "Certified Weight Report" for specific values and any exceptions.

Usage: Ampules & bottles should be brought to room temperature (18 to 30 °C) before opening. Sonication may be required for high concentration solutions or solutions that may precipitate during storage. After opening, care should be exercised to avoid concentration changes owing to evaporation of the solvent or essential components. We recommend that a suitable re-sealable container be available before opening an ampule to decant the standard for short-term storage and use.

Minimum Sample Size: 0.5 uL for analytical applications.

Legal Notice: Warranty of products are as described when shipped. No warranty as to fitness for any particular application is expressed or implied. Errant shipments and/or quality claims must be made within 10 days of receipt. Liability is limited solely to the replacement of the product or refund of purchase price.

Certifying Officer: Stephen J. Arpie, M.S., Director General

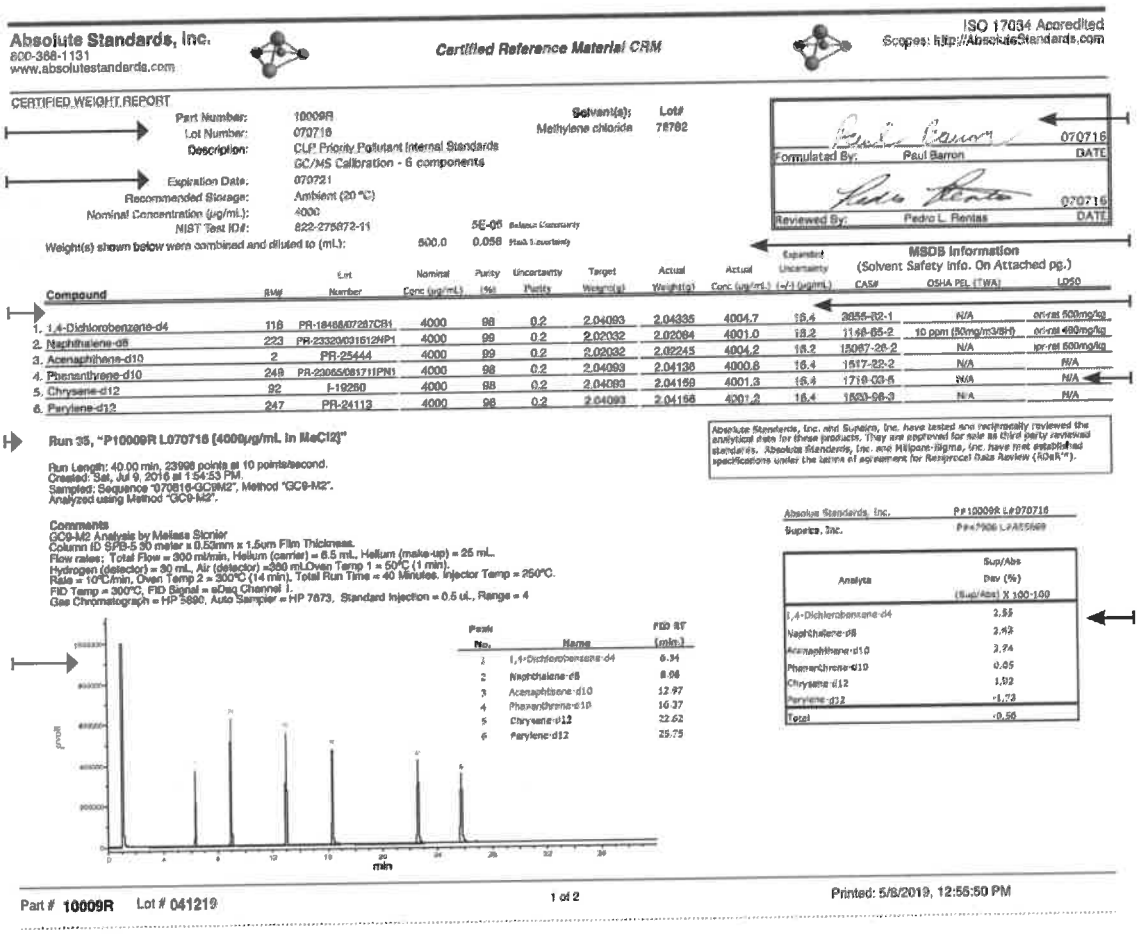
Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

ABSOLUTE STANDARDS, INC.

ISO - 17034

Understanding the Certified Weight Report

Each Certified Reference Material (CRM) is supported by a Certified Weight Report. Assigned values for concentrations and associated uncertainties are based upon NIST traceable masses & volumes used in production.



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 10009R
Lot Number: 070716
Description: CLP Priority Pollutant Internal Standards GC/MS Calibration - 6 components
Expiration Date: 070721
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 4000
NIST Test ID#: 822-275872-11

Solvent(s): Methylene chloride
Lot#: 78782

Formulated By: Paul Barron DATE 070716
Reviewed By: Pedro L. Reinas DATE 070716

Weight(s) shown below were combined and diluted to (mL): 500.0 5E-05 Balance Uncertainty 0.050 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-18488/07267CB1	4000	98	0.2	2.04093	2.04335	4004.7	16.4	3855-82-1	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-233203031612NP1	4000	99	0.2	2.02032	2.02064	4001.0	16.2	1146-65-2	10 ppm (50mg/m3/8H)	or-rat 490mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	16.2	15067-26-2	N/A	ipr-rat 500mg/kg
4. Phenanthrene-d10	248	PR-23065/051711PN1	4000	98	0.2	2.04093	2.04136	4000.8	16.4	1517-22-2	N/A	N/A
5. Chrysene-d12	92	I-19250	4000	98	0.2	2.04093	2.04159	4001.3	16.4	1719-03-5	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	96	0.2	2.04093	2.04156	4001.2	16.4	1520-96-3	N/A	N/A

Absolute Standards, Inc. and Supelco, Inc. have tested and reciprocally reviewed the analytical data for these products. They are approved for sale as third party reviewed standards. Absolute Standards, Inc. and Millipore-Sigma, Inc. have met established specifications under the terms of agreement for Reciprocal Data Review (RDaR™).

Run 35, "P10009R L070716 (4000µg/mL in MeC12)"

Run Length: 40.00 min, 23998 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070816-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9-M2 Analysis by Melissa Sicnier
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness.
Flow rates: Total Flow = 300 ml/min, Helium (carrier) = 6.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) =300 mL.Oven Temp 1 = 50°C (1 min).
Rate = 10°C/min, Oven Temp 2 = 300°C (14 min). Total Run Time = 40 Minutes. Injector Temp = 250°C.
FID Temp = 300°C, FID Signal = aDaq Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 uL, Range = 4

Peak No.	Name	FID RT (min.)
1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.06
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Absolute Standards, Inc. P# 10009R L# 070716
Supelco, Inc. P# [illegible] L# [illegible]

Analyte	Sup/Abs Dev (%) (Sup/Abs) X 100-100
1,4-Dichlorobenzene-d4	2.55
Naphthalene-d8	2.43
Acenaphthene-d10	3.74
Phenanthrene-d10	0.05
Chrysene-d12	1.02
Perylene-d12	-1.73
Total	-0.56

Part # 10009R Lot # 041219 1 of 2 Printed: 5/8/2019, 12:55:50 PM

Part #
Lot #
Shelf Life

Formulator
Reviewer

Actual Concentration

Target Compounds

Uncertainty Values

Health & Safety

Method of Analysis

Qualitative
Quantitative

3rd Party Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number: 72072
Lot Number: 101122
Description: n-Tetracosane-d50

Expiration Date: 101132
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 6UTB

Solvent(s):	Lot#
Methylene chloride	105345

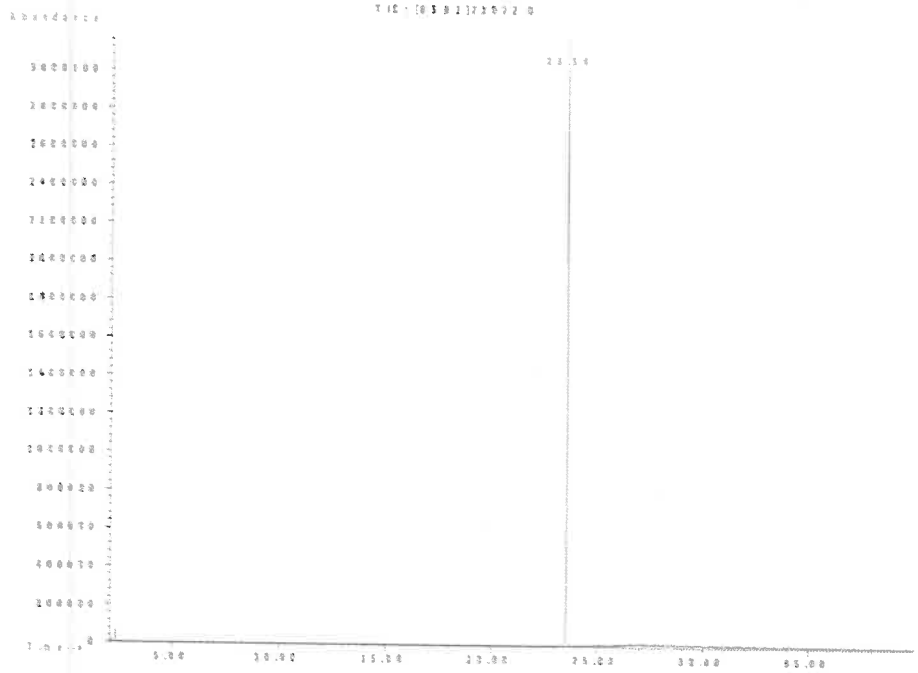
P13477 → P13496 } X.P. 07/24/24

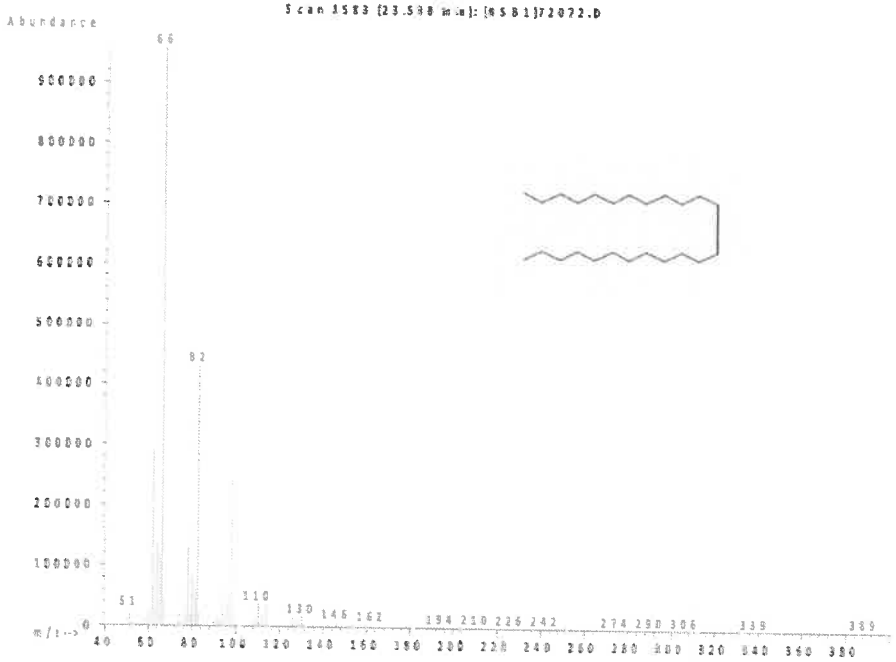
Formulated By:	Prashant Chauhan	101122 DATE
Reviewed By:	Pedro L. Rentas	101122 DATE

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 200.0 0.058 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Assay (%D)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. n-Tetracosane-d50	2072	PR-26606	1000	98.7	0.2	99.0	0.20471	0.20482	1000.6	4.1	16416-32-3	N/A	N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.





- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

SHIPPING DOCUMENTS

Alliance TECHNICAL GROUP
284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

ALLIANCE PROJECT NO.
QUOTE NO. Q2198
COC Number 2046410

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: Gannet Fleming
ADDRESS: 1010 Adams Avenue
CITY Audubon STATE: PA ZIP: 19403
ATTENTION: Joe Knapensky
PHONE: 610-310-8342 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: AMTRAK Sawtooth
PROJECT NO.: 950000878 LOCATION: Kearny, NJ
PROJECT MANAGER: Joe Knapensky
e-mail: QAQC@BEMSYS.com
PHONE: 6103108342 FAX:

CLIENT BILLING INFORMATION

BILL TO: Alliance PO#:
ADDRESS: 284 Sheffield
CITY Mountainside STATE: NJ ZIP: 07092
ATTENTION: Samara Basly PHONE: 9887283143

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): 10 DAYS*
EDD: 10 DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS

DATA DELIVERABLE INFORMATION

☐ Level 1 (Results Only) ☐ Level 4 (QC + Full Raw Data)
☐ Level 2 (Results + QC) ☐ NJ Reduced ☐ US EPA CLP
☐ Level 3 (Results + QC + Raw Data) ☐ NYS ASP A ☐ NYS ASP B
☐ Other _____
☐ EDD FORMAT BCM EDD

ANALYSIS

1 TCL VOC + 10
2 SVOC - BNA + 20
3 PCB
4 Pesticides
5 TAL Metals
6 Cr (III), Cr (IV)
7 Full TCLP
8 RCRA
9 EPH

ALLIANCE SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	PRESERVATIVES 1	2	3	4	5	6	7	8	9	COMMENTS
1.	B-202-SB02	S		X	5/31/25	1605	6	X	X	X		X	X	X	X	X	
2.	B-202-GW01	GW		X		2000	8	X	X	X		X	X	X	X	X	
3.	B-207-SB02	S		X	6/1/25	11:00AM	7	X	X	X		X	X	X	X	X	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

PRESERVATIVES: 1 2 3 4 5 6 7 8 9

COMMENTS ← Specify Preservatives
A-HCl D-NaOH
B-HN03 E-ICE
C-H2SO4 F-OTHER

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

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. Yesenia Pujara	06/02 - 9:57	1. 0452 6-3-25
RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
2.		2.
RELINQUISHED BY SAMPLER:	DATE/TIME: 1902 6-3-25	RECEIVED BY:
3.		3.

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 3-3 °C
Comments: _____

Page ____ of

CLIENT: ☐ Hand Delivered ☐ Other _____

Shipment Complete ☐ YES ☐ NO

WHITE - ALLIANCE COPY FOR RETURN TO CLIENT YELLOW - ALLIANCE COPY PINK - SAMPLER COPY

284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255424 Rev 1
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488

QA Control Code: A2070148

Alliance TECHNICAL GROUP
284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q2198 PORT06
Client Name : Portal Partners Tri-Venture
Client Contact : Joseph Krupansky
Invoice Name : Portal Partners Tri-Venture
Invoice Contact : Joseph Krupansky

Order Date : 6/3/2025 2:31:00 PM
Project Name : Amtrak Sawtooth Bridges 2
Receive DateTime : 6/3/2025 ~~12:00:00~~ AM
Purchase Order : 19:02

Project Mgr :
Report Type : NJ Reduced
EDD Type : EXCEL NJCLEANUP
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q2198-01	B-202-SB02	Solid	05/31/2025	16:55	VOC-TCLVOA-10		8260D		10 Bus. Days
Q2198-03	~~B-207-SB01~~ B-207-SB02	Solid	06/01/2025	~~20:00~~ 11:04	VOC-TCLVOA-10		8260D		10 Bus. Days
Q2198-05	B-202-GW01	Water	05/31/2025	~~11:04~~ 20:00	VOC-TCLVOA-10		8260-Low		10 Bus. Days

Relinguished By :
Date / Time : 6/4/25 1040

Samples received on 6/3/25
Samples placed in SM-REF-2

Received By :
Date / Time : 06/04/25 10:40

Storage Area : VOA Refridgerator Room

Reg #4
Reg #6
FR2 - 2