

Cover Page

Order ID : P5279

Project ID : MTA Rockaway Park

Client : Tully Construction Co., Inc.

Lab Sample Number

P5279-01
P5279-02
P5279-03

Client Sample Number

ROCKAWAY-PARK
ROCKAWAY-PARK
ROCKAWAY-PARK

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: 12/18/2024

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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 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

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: P5279

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: NILESH PRAJAPATI

Date: 12/18/2024

LAB CHRONICLE

OrderID:	P5279	OrderDate:	12/13/2024 12:03:00 PM
Client:	Tully Construction Co., Inc.	Project:	MTA Rockaway Park
Contact:	Dean Devoe	Location:	L51,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P5279-01	ROCKAWAY-PARK	SOIL			12/13/24			12/13/24
			PCB	8082A		12/16/24	12/16/24	
			TPH GC	8015D		12/18/24	12/19/24	



QC SUMMARY

SOIL TPH GC SURROGATE RECOVERY

Lab Name: Chemtech Client: Tully Construction Co., Inc.
Lab Code: CHEM Case No.: P5279 SAS No.: P5279 SDG No.: P5279

EPA SAMPLE NO.	S1 TETRACOSANE-d50	S2	S3	S4	TOT OUT
PIBLK-FE051698.D	96				0
PIBLK-FE051707.D	92				0
ROCKAWAY-PARK	79				0
ROCKAWAY-PARKMS	72				0
ROCKAWAY-PARKMSD	74				0
PB165731BL	92				0
PB165731BS	97				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

SOIL TPH GC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Tully Construction Co., Inc.
Lab Code: CHEM **Cas No:** P5279 **SAS No :** P5279 **SDG No:** P5279
Client SampleID : ROCKAWAY-PARKMS **Datafile:** FE051704.D

COMPOUND	SPIKE ADDED ug/kg	SAMPLE CONCENTRATION ug/kg	MS/MSD CONCENTRATION ug/kg	% REC	Qual	QC LIMITS
Petroleum Hydrocarbons	12072	72900	76300	28%	*	68-131

SOIL TPH GC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Tully Construction Co., Inc.
Lab Code: CHEM **Cas No:** P5279 **SAS No :** P5279 **SDG No:** P5279
Client SampleID : ROCKAWAY-PARKMSD **Datafile:** FE051705.D

COMPOUND	SPIKE ADDED ug/kg	SAMPLE CONCENTRATION ug/kg	MS/MSD CONCENTRATION ug/kg	% REC	Qual	QC LIMITS
Petroleum Hydrocarbons	12080	72900	76600	30%	*	68-131

MS/MSD % Recovery RPD : 6.9

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

Lab Name: Chemtech **Client:** Tully Construction Co., Inc.
Lab Code: CHEM **Cas No:** P5279 **SAS No :** P5279 **SDG No:** P5279
Matrix Spike - EPA Sample No : PB165731BS **Datafile:** FE051702.D

COMPOUND	SPIKE ADDED ug/kg	CONCENTRATION ug/kg	LCS/LCSD CONCENTRATION ug/kg	% REC	QC LIMITS
Petroleum Hydrocarbons	11330	0	11093	98	68-131

4B
METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB165731BL

Lab Name: CHEMTECH

Contract: TULL02

Lab Code: CHEM Case No.: P5279

SAS No.: P5279 SDG NO.: P5279

Lab File ID: FE051701.D

Lab Sample ID: PB165731BL

Instrument ID: FE

Date Extracted: 12/19/2024

Matrix: (soil/water) Soil

Date Analyzed: 12/19/24

Level: (low/med) low

Time Analyzed: 8:29

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

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
PB165731BS	PB165731BS	FE051702.D	12/19/24
ROCKAWAY-PARKMS	P5279-01MS	FE051704.D	12/19/24
ROCKAWAY-PARKMSD	P5279-01MSD	FE051705.D	12/19/24
ROCKAWAY-PARK	P5279-01	FE051706.D	12/19/24

COMMENTS: _____



SAMPLE DATA

Report of Analysis

Client:	Tully Construction Co., Inc.		Date Collected:	12/13/24	
Project:	MTA Rockaway Park		Date Received:	12/13/24	
Client Sample ID:	ROCKAWAY-PARK		SDG No.:	P5279	
Lab Sample ID:	P5279-01		Matrix:	SOIL	
Analytical Method:	8015D TPH		% Solid:	93.6	Decanted:
Sample Wt/Vol:	30.04	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
FE051706.D	5	12/18/24 13:30	12/19/24 11:00	PB165731

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
PHC	Petroleum Hydrocarbons	72.2		1.70	15.1	mg/Kg
SURROGATES						
16416-32-3	TETRACOSANE-d50	3.15		37 - 130	79%	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

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
Data File : FE051706.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 11:00
Operator : YP\AJ
Sample : P5279-01 5X
Misc :
ALS Vial : 30 Sample Multiplier: 1

Instrument :
FID_E
ClientSampleId :
ROCKAWAY-PARK

Integration File: Sample.e
Quant Time: Dec 20 02:44:09 2024
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Quant Title :
QLast Update : Thu Dec 19 02:46:15 2024
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...	15.074	388024	3.148 ug/ml
Target Compounds			

(f)=RT Delta > 1/2 Window

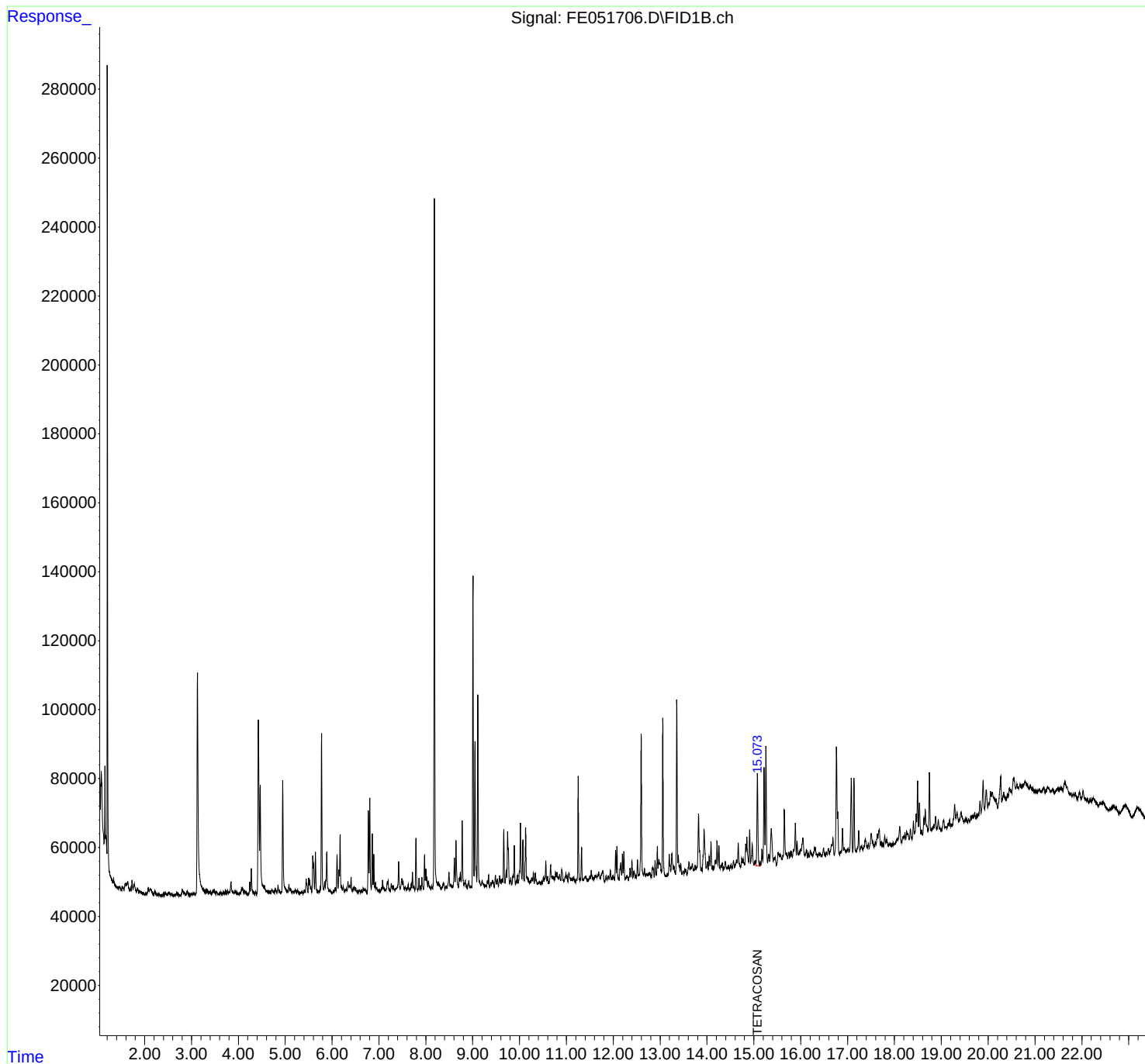
(m)=manual int.

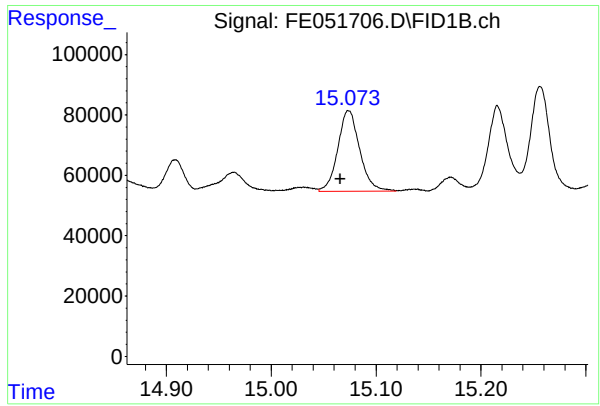
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
Data File : FE051706.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 11:00
Operator : YP\AJ
Sample : P5279-01 5X
Misc :
ALS Vial : 30 Sample Multiplier: 1

Instrument :
FID_E
ClientSampleId :
ROCKAWAY-PARK

Integration File: Sample.e
Quant Time: Dec 20 02:44:09 2024
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Quant Title :
QLast Update : Thu Dec 19 02:46:15 2024
Response via : Initial Calibration
Integrator: ChemStation

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





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 15.074 min
Delta R.T.: 0.008 min
Response: 388024
Conc: 3.15 ug/ml

Instrument :
FID_E
ClientSampleId :
ROCKAWAY-PARK

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
 Data File : FE051706.D
 Signal(s) : FID1B.ch
 Acq On : 19 Dec 2024 11:00
 Sample : P5279-01 5X
 Misc :
 ALS Vial : 30 Sample Multiplier: 1

Integration File: Sample.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
 Title :

Signal : FID1B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	1.074	1.044	1.133	BV	13267	228837	11.09%	0.454%
2	1.152	1.133	1.162	PV	23598	134755	6.53%	0.267%
3	1.171	1.162	1.194	VV	4389	60128	2.91%	0.119%
4	1.202	1.194	1.325	VV	228054	1138985	55.21%	2.259%
5	1.337	1.325	1.441	PV	1457	3630	0.18%	0.007%
6	1.450	1.441	1.458	PV	559	4542	0.22%	0.009%
7	1.467	1.458	1.511	VV	891	10747	0.52%	0.021%
8	1.517	1.511	1.558	PV	1333	22963	1.11%	0.046%
9	1.583	1.558	1.601	VV	2276	41059	1.99%	0.081%
10	1.611	1.601	1.619	VV	2016	21512	1.04%	0.043%
11	1.636	1.619	1.685	VV	2868	61561	2.98%	0.122%
12	1.703	1.685	1.715	VV	1158	14348	0.70%	0.028%
13	1.729	1.715	1.751	VV	3532	40987	1.99%	0.081%
14	1.775	1.751	1.823	VV	2481	62087	3.01%	0.123%
15	1.844	1.823	1.875	VV	1390	26728	1.30%	0.053%
16	1.892	1.875	1.928	VV	659	17044	0.83%	0.034%
17	1.935	1.928	1.951	VV	448	4892	0.24%	0.010%
18	1.956	1.951	1.992	VV	290	4588	0.22%	0.009%
19	1.996	1.992	2.001	PV	92	419	0.02%	0.001%
20	2.017	2.001	2.023	VV	279	1766	0.09%	0.004%
21	2.027	2.023	2.035	VV	230	1179	0.06%	0.002%
22	2.039	2.035	2.049	VV	247	1440	0.07%	0.003%
23	2.074	2.049	2.098	VV	1912	34241	1.66%	0.068%
24	2.113	2.098	2.191	VV	1621	53604	2.60%	0.106%
25	2.215	2.191	2.267	VV	1244	22591	1.10%	0.045%
26	2.274	2.267	2.332	VV	378	8439	0.41%	0.017%
27	2.339	2.332	2.348	PV	190	1192	0.06%	0.002%
28	2.353	2.348	2.372	VV	160	1371	0.07%	0.003%
29	2.401	2.372	2.406	PV	310	3376	0.16%	0.007%
30	2.439	2.406	2.491	VV	729	21749	1.05%	0.043%
31	2.516	2.491	2.550	VV	1030	21489	1.04%	0.043%
32	2.564	2.550	2.606	VV	613	12998	0.63%	0.026%
33	2.634	2.606	2.651	PV	376	5781	0.28%	0.011%
34	2.688	2.651	2.738	VV	638	17621	0.85%	0.035%
35	2.740	2.738	2.746	VV	206	636	0.03%	0.001%
36	2.750	2.746	2.773	VV	210	1526	0.07%	0.003%

					rteres			
37	2.802	2.773	2.831	VV	1769	34637	1.68%	0.069%
38	2.839	2.831	2.882	VV	1002	17703	0.86%	0.035%
39	2.904	2.882	2.962	VV	1266	28027	1.36%	0.056%
40	2.965	2.962	2.969	VV	262	898	0.04%	0.002%
41	2.989	2.969	3.010	VV	604	8485	0.41%	0.017%
42	3.031	3.010	3.072	VV	668	17378	0.84%	0.034%
43	3.126	3.072	3.305	VV	64482	1212004	58.75%	2.404%
44	3.321	3.305	3.329	VV	1291	16838	0.82%	0.033%
45	3.334	3.329	3.384	VV	1236	29742	1.44%	0.059%
46	3.398	3.384	3.430	VV	967	20684	1.00%	0.041%
47	3.452	3.430	3.469	VV	1104	21016	1.02%	0.042%
48	3.481	3.469	3.495	VV	1411	17043	0.83%	0.034%
49	3.500	3.495	3.521	VV	897	11303	0.55%	0.022%
50	3.536	3.521	3.581	VV	932	19589	0.95%	0.039%
51	3.629	3.581	3.651	VV	702	19843	0.96%	0.039%
52	3.658	3.651	3.665	VV	438	3773	0.18%	0.007%
53	3.680	3.665	3.700	VV	788	13275	0.64%	0.026%
54	3.729	3.700	3.751	VV	1069	21466	1.04%	0.043%
55	3.767	3.751	3.789	VV	1184	17943	0.87%	0.036%
56	3.799	3.789	3.812	VV	907	10161	0.49%	0.020%
57	3.840	3.812	3.903	VV	3682	79987	3.88%	0.159%
58	3.927	3.903	3.986	VV	1255	31857	1.54%	0.063%
59	3.993	3.986	4.015	VV	330	4021	0.19%	0.008%
60	4.030	4.015	4.047	VV	473	6949	0.34%	0.014%
61	4.068	4.047	4.078	VV	1719	22073	1.07%	0.044%
62	4.089	4.078	4.122	VV	1968	32368	1.57%	0.064%
63	4.136	4.122	4.192	VV	1056	24114	1.17%	0.048%
64	4.196	4.192	4.201	VV	280	1212	0.06%	0.002%
65	4.205	4.201	4.224	VV	239	2514	0.12%	0.005%
66	4.243	4.224	4.256	VV	3699	35253	1.71%	0.070%
67	4.275	4.256	4.322	VV	7622	105353	5.11%	0.209%
68	4.328	4.322	4.347	VV	577	5955	0.29%	0.012%
69	4.366	4.347	4.387	VV	717	10020	0.49%	0.020%
70	4.426	4.387	4.451	VV	50676	797832	38.67%	1.583%
71	4.465	4.451	4.518	VV	31760	473754	22.96%	0.940%
72	4.522	4.518	4.546	VV	2703	36786	1.78%	0.073%
73	4.559	4.546	4.596	VV	2583	49619	2.41%	0.098%
74	4.601	4.596	4.640	VV	967	21833	1.06%	0.043%
75	4.643	4.640	4.653	VV	792	5889	0.29%	0.012%
76	4.666	4.653	4.676	VV	823	10092	0.49%	0.020%
77	4.678	4.676	4.686	VV	693	3824	0.19%	0.008%
78	4.716	4.686	4.746	VV	1387	31921	1.55%	0.063%
79	4.755	4.746	4.768	VV	811	9185	0.45%	0.018%
80	4.788	4.768	4.816	VV	1719	29688	1.44%	0.059%
81	4.847	4.816	4.865	VV	2644	38786	1.88%	0.077%
82	4.878	4.865	4.895	VV	1130	14366	0.70%	0.028%
83	4.916	4.895	4.922	VV	690	8523	0.41%	0.017%
84	4.947	4.922	4.987	VV	32978	408028	19.78%	0.809%
85	4.990	4.987	5.045	VV	1996	43474	2.11%	0.086%
86	5.053	5.045	5.061	VV	936	7745	0.38%	0.015%
87	5.079	5.061	5.096	VV	2782	35371	1.71%	0.070%
88	5.108	5.096	5.151	VV	1617	30880	1.50%	0.061%
89	5.168	5.151	5.186	VV	678	11509	0.56%	0.023%

					rteres			
90	5.214	5.186	5.241	VV	988	22775	1.10%	0.045%
91	5.262	5.241	5.283	VV	1043	16381	0.79%	0.032%
92	5.286	5.283	5.309	VV	407	4763	0.23%	0.009%
93	5.314	5.309	5.329	VV	408	3409	0.17%	0.007%
94	5.341	5.329	5.351	VV	499	4715	0.23%	0.009%
95	5.357	5.351	5.374	VV	465	4834	0.23%	0.010%
96	5.410	5.374	5.426	VV	804	16425	0.80%	0.033%
97	5.447	5.426	5.459	VV	4157	49140	2.38%	0.097%
98	5.462	5.459	5.483	VV	2954	25278	1.23%	0.050%
99	5.501	5.483	5.514	VV	4477	47636	2.31%	0.094%
100	5.523	5.514	5.538	VV	3978	41882	2.03%	0.083%
101	5.548	5.538	5.566	VV	1913	21686	1.05%	0.043%
102	5.588	5.566	5.598	VV	10993	111111	5.39%	0.220%
103	5.605	5.598	5.626	VV	8609	89228	4.33%	0.177%
104	5.645	5.626	5.687	VV	12009	144534	7.01%	0.287%
105	5.694	5.687	5.705	VV	593	5111	0.25%	0.010%
106	5.717	5.705	5.731	VV	627	7956	0.39%	0.016%
107	5.748	5.731	5.754	VV	1742	15839	0.77%	0.031%
108	5.775	5.754	5.823	VV	46376	514074	24.92%	1.020%
109	5.841	5.823	5.856	VV	3400	43650	2.12%	0.087%
110	5.886	5.856	5.933	VV	11984	188224	9.12%	0.373%
111	5.946	5.933	5.992	VV	923	21082	1.02%	0.042%
112	6.000	5.992	6.006	VV	232	1464	0.07%	0.003%
113	6.030	6.006	6.048	VV	777	11884	0.58%	0.024%
114	6.050	6.048	6.054	VV	714	2149	0.10%	0.004%
115	6.069	6.054	6.083	VV	1648	20003	0.97%	0.040%
116	6.106	6.083	6.127	VV	11123	138638	6.72%	0.275%
117	6.148	6.127	6.157	VV	6750	80255	3.89%	0.159%
118	6.171	6.157	6.193	VV	17066	180377	8.74%	0.358%
119	6.202	6.193	6.218	VV	2137	23407	1.13%	0.046%
120	6.239	6.218	6.264	VV	1907	32686	1.58%	0.065%
121	6.280	6.264	6.291	VV	995	11423	0.55%	0.023%
122	6.302	6.291	6.318	VV	1186	14554	0.71%	0.029%
123	6.339	6.318	6.352	VV	3348	41025	1.99%	0.081%
124	6.358	6.352	6.390	VV	1970	40653	1.97%	0.081%
125	6.405	6.390	6.428	VV	4559	53677	2.60%	0.106%
126	6.477	6.428	6.491	VV	1630	41701	2.02%	0.083%
127	6.503	6.491	6.535	VV	1543	21090	1.02%	0.042%
128	6.549	6.535	6.563	VV	411	5029	0.24%	0.010%
129	6.595	6.563	6.610	VV	566	10391	0.50%	0.021%
130	6.628	6.610	6.648	PV	780	9211	0.45%	0.018%
131	6.664	6.648	6.677	VV	1015	12608	0.61%	0.025%
132	6.684	6.677	6.695	VV	958	8658	0.42%	0.017%
133	6.708	6.695	6.730	VV	917	12562	0.61%	0.025%
134	6.741	6.730	6.750	VV	329	2758	0.13%	0.005%
135	6.774	6.750	6.790	VV	23722	241149	11.69%	0.478%
136	6.805	6.790	6.839	VV	27366	301491	14.61%	0.598%
137	6.858	6.839	6.876	VV	17036	178006	8.63%	0.353%
138	6.891	6.876	6.909	VV	11022	117647	5.70%	0.233%
139	6.924	6.909	6.945	VV	2808	40751	1.98%	0.081%
140	6.953	6.945	6.982	VV	1471	19735	0.96%	0.039%
141	7.002	6.982	7.026	VV	791	10745	0.52%	0.021%

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142	7.054	7.026	7.063	PV	1344	16799	0.81%	0.033%
143	7.078	7.063	7.097	VV	3427	40939	1.98%	0.081%
144	7.104	7.097	7.124	VV	1219	15008	0.73%	0.030%
145	7.128	7.124	7.146	VV	774	8409	0.41%	0.017%
146	7.178	7.146	7.187	VV	2898	42432	2.06%	0.084%
147	7.195	7.187	7.218	VV	3299	35231	1.71%	0.070%
148	7.223	7.218	7.242	VV	702	6775	0.33%	0.013%
149	7.263	7.242	7.291	VV	2262	37136	1.80%	0.074%
150	7.304	7.291	7.341	VV	1744	31649	1.53%	0.063%
151	7.356	7.341	7.370	VV	1056	15062	0.73%	0.030%
152	7.421	7.370	7.451	VV	8656	130602	6.33%	0.259%
153	7.487	7.451	7.505	VV	3736	67778	3.29%	0.134%
154	7.516	7.505	7.544	VV	2889	38457	1.86%	0.076%
155	7.563	7.544	7.588	VV	1276	21258	1.03%	0.042%
156	7.603	7.588	7.613	VV	904	10003	0.48%	0.020%
157	7.624	7.613	7.646	VV	2017	20829	1.01%	0.041%
158	7.661	7.646	7.674	VV	824	9552	0.46%	0.019%
159	7.689	7.674	7.701	VV	2153	22600	1.10%	0.045%
160	7.716	7.701	7.736	VV	5403	56986	2.76%	0.113%
161	7.745	7.736	7.763	VV	1323	13215	0.64%	0.026%
162	7.790	7.763	7.829	PV	15210	164768	7.99%	0.327%
163	7.855	7.829	7.875	VV	3589	38185	1.85%	0.076%
164	7.889	7.875	7.902	VV	1302	12894	0.63%	0.026%
165	7.917	7.902	7.952	VV	3739	48037	2.33%	0.095%
166	7.974	7.952	7.989	VV	10335	113006	5.48%	0.224%
167	8.003	7.989	8.016	VV	6161	69530	3.37%	0.138%
168	8.025	8.016	8.041	VV	3851	40515	1.96%	0.080%
169	8.057	8.041	8.081	VV	2615	38628	1.87%	0.077%
170	8.092	8.081	8.108	VV	1259	13327	0.65%	0.026%
171	8.130	8.108	8.145	VV	1158	16168	0.78%	0.032%
172	8.184	8.145	8.235	VV	200393	2062978	100.00%	4.092%
173	8.240	8.235	8.256	VV	2213	23044	1.12%	0.046%
174	8.273	8.256	8.291	VV	2293	35412	1.72%	0.070%
175	8.295	8.291	8.336	VV	1453	18971	0.92%	0.038%
176	8.383	8.336	8.414	VV	1831	44893	2.18%	0.089%
177	8.431	8.414	8.451	VV	1028	15000	0.73%	0.030%
178	8.496	8.451	8.517	VV	4857	80509	3.90%	0.160%
179	8.526	8.517	8.556	VV	1164	21562	1.05%	0.043%
180	8.568	8.556	8.577	VV	827	9032	0.44%	0.018%
181	8.610	8.577	8.628	VV	8986	115704	5.61%	0.230%
182	8.646	8.628	8.696	VV	14069	197404	9.57%	0.392%
183	8.715	8.696	8.724	VV	3221	32605	1.58%	0.065%
184	8.737	8.724	8.751	VV	4737	54356	2.63%	0.108%
185	8.778	8.751	8.821	VV	19733	247761	12.01%	0.491%
186	8.842	8.821	8.860	VV	2345	34544	1.67%	0.069%
187	8.867	8.860	8.886	VV	958	8885	0.43%	0.018%
188	8.917	8.886	8.939	VV	2112	36518	1.77%	0.072%
189	8.962	8.939	8.967	VV	447	5281	0.26%	0.010%
190	9.007	8.967	9.030	VV	90382	936872	45.41%	1.859%
191	9.050	9.030	9.089	VV	42534	503135	24.39%	0.998%
192	9.111	9.089	9.181	VV	56042	638138	30.93%	1.266%
193	9.205	9.181	9.262	VV	2102	50344	2.44%	0.100%
194	9.274	9.262	9.296	VV	706	10581	0.51%	0.021%

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195	9.313	9.296	9.325	VV	1901	21146	1.03%	0.042%
196	9.340	9.325	9.364	VV	3631	42220	2.05%	0.084%
197	9.385	9.364	9.401	PV	1353	17517	0.85%	0.035%
198	9.432	9.401	9.462	VV	1866	43382	2.10%	0.086%
199	9.486	9.462	9.510	VV	3331	48500	2.35%	0.096%
200	9.526	9.510	9.550	VV	2185	34399	1.67%	0.068%
201	9.577	9.550	9.596	VV	3282	47545	2.30%	0.094%
202	9.605	9.596	9.614	VV	1518	15247	0.74%	0.030%
203	9.625	9.614	9.643	VV	2254	30958	1.50%	0.061%
204	9.665	9.643	9.689	VV	16648	196409	9.52%	0.390%
205	9.717	9.689	9.731	VV	4623	70687	3.43%	0.140%
206	9.747	9.731	9.786	VV	15950	277066	13.43%	0.550%
207	9.814	9.786	9.834	VV	2594	43299	2.10%	0.086%
208	9.861	9.834	9.871	VV	3093	45423	2.20%	0.090%
209	9.890	9.871	9.914	VV	11840	139598	6.77%	0.277%
210	9.931	9.914	9.941	VV	1676	19718	0.96%	0.039%
211	9.955	9.941	9.974	VV	3166	38127	1.85%	0.076%
212	10.020	9.974	10.051	VV	18238	294726	14.29%	0.585%
213	10.073	10.051	10.100	VV	13427	170051	8.24%	0.337%
214	10.130	10.100	10.161	VV	16893	244921	11.87%	0.486%
215	10.166	10.161	10.208	VV	2293	46702	2.26%	0.093%
216	10.231	10.208	10.245	VV	1180	21996	1.07%	0.044%
217	10.258	10.245	10.277	VV	2170	32589	1.58%	0.065%
218	10.295	10.277	10.315	VV	3673	47976	2.33%	0.095%
219	10.337	10.315	10.383	VV	3529	64136	3.11%	0.127%
220	10.388	10.383	10.393	VV	487	2465	0.12%	0.005%
221	10.405	10.393	10.416	VV	751	7970	0.39%	0.016%
222	10.428	10.416	10.443	VV	1123	13174	0.64%	0.026%
223	10.458	10.443	10.471	VV	848	11234	0.54%	0.022%
224	10.477	10.471	10.488	VV	782	6220	0.30%	0.012%
225	10.512	10.488	10.526	VV	2345	31730	1.54%	0.063%
226	10.538	10.526	10.543	VV	2030	17670	0.86%	0.035%
227	10.563	10.543	10.583	VV	6886	87205	4.23%	0.173%
228	10.596	10.583	10.627	VV	2370	35775	1.73%	0.071%
229	10.664	10.627	10.693	VV	5601	102601	4.97%	0.204%
230	10.706	10.693	10.719	VV	2422	31435	1.52%	0.062%
231	10.731	10.719	10.749	VV	2244	34065	1.65%	0.068%
232	10.767	10.749	10.784	VV	3526	51317	2.49%	0.102%
233	10.800	10.784	10.815	VV	3366	51913	2.52%	0.103%
234	10.822	10.815	10.839	VV	2254	27290	1.32%	0.054%
235	10.856	10.839	10.878	VV	2799	46946	2.28%	0.093%
236	10.902	10.878	10.952	VV	4311	91521	4.44%	0.182%
237	10.991	10.952	11.006	VV	3107	65290	3.16%	0.130%
238	11.016	11.006	11.032	VV	2069	23307	1.13%	0.046%
239	11.054	11.032	11.098	VV	3106	74594	3.62%	0.148%
240	11.107	11.098	11.113	VV	1214	10542	0.51%	0.021%
241	11.126	11.113	11.137	VV	1388	17832	0.86%	0.035%
242	11.152	11.137	11.188	VV	1859	36483	1.77%	0.072%
243	11.190	11.188	11.204	VV	782	5353	0.26%	0.011%
244	11.250	11.204	11.297	VV	31035	364240	17.66%	0.723%
245	11.325	11.297	11.368	VV	10267	138159	6.70%	0.274%
246	11.389	11.368	11.401	VV	1774	26994	1.31%	0.054%

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247	11.416	11.401	11.460	VV	2009	43033	2.09%	0.085%
248	11.501	11.460	11.516	VV	1979	44581	2.16%	0.088%
249	11.533	11.516	11.551	VV	3648	47531	2.30%	0.094%
250	11.557	11.551	11.585	VV	1687	26846	1.30%	0.053%
251	11.618	11.585	11.651	VV	1983	64067	3.11%	0.127%
252	11.668	11.651	11.676	VV	2055	26599	1.29%	0.053%
253	11.691	11.676	11.718	VV	3117	50891	2.47%	0.101%
254	11.774	11.718	11.817	VV	3352	112600	5.46%	0.223%
255	11.848	11.817	11.867	PV	1854	29012	1.41%	0.058%
256	11.896	11.867	11.913	VV	1774	33389	1.62%	0.066%
257	11.938	11.913	11.963	VV	3239	52536	2.55%	0.104%
258	11.994	11.963	12.026	VV	1800	39850	1.93%	0.079%
259	12.048	12.026	12.063	VV	9065	103536	5.02%	0.205%
260	12.078	12.063	12.117	VV	10002	121600	5.89%	0.241%
261	12.145	12.117	12.150	VV	3535	35667	1.73%	0.071%
262	12.163	12.150	12.180	VV	5209	66145	3.21%	0.131%
263	12.195	12.180	12.210	VV	7616	86394	4.19%	0.171%
264	12.226	12.210	12.258	VV	8264	104156	5.05%	0.207%
265	12.265	12.258	12.274	VV	646	5349	0.26%	0.011%
266	12.292	12.274	12.325	VV	1368	24422	1.18%	0.048%
267	12.356	12.325	12.377	VV	3421	53196	2.58%	0.106%
268	12.398	12.377	12.421	VV	5577	72034	3.49%	0.143%
269	12.438	12.421	12.473	VV	2265	49050	2.38%	0.097%
270	12.515	12.473	12.536	VV	5683	82440	4.00%	0.164%
271	12.547	12.536	12.555	VV	1409	14262	0.69%	0.028%
272	12.596	12.555	12.644	VV	42101	571930	27.72%	1.135%
273	12.665	12.644	12.680	VV	3040	41591	2.02%	0.083%
274	12.692	12.680	12.700	VV	1260	14325	0.69%	0.028%
275	12.712	12.700	12.730	VV	1493	21431	1.04%	0.043%
276	12.744	12.730	12.751	VV	1350	13516	0.66%	0.027%
277	12.766	12.751	12.776	VV	1650	19714	0.96%	0.039%
278	12.787	12.776	12.814	VV	1591	23359	1.13%	0.046%
279	12.833	12.814	12.844	VV	3106	36426	1.77%	0.072%
280	12.850	12.844	12.871	VV	2928	30471	1.48%	0.060%
281	12.890	12.871	12.919	VV	5011	67147	3.25%	0.133%
282	12.942	12.919	12.958	VV	9018	112051	5.43%	0.222%
283	12.973	12.958	12.993	VV	5204	90182	4.37%	0.179%
284	13.002	12.993	13.029	VV	4022	62523	3.03%	0.124%
285	13.056	13.029	13.110	VV	46236	552696	26.79%	1.096%
286	13.120	13.110	13.134	VV	480	5604	0.27%	0.011%
287	13.154	13.134	13.171	VV	982	13341	0.65%	0.026%
288	13.193	13.171	13.211	VV	6557	86790	4.21%	0.172%
289	13.214	13.211	13.228	VV	3370	26460	1.28%	0.052%
290	13.252	13.228	13.284	VV	6616	137683	6.67%	0.273%
291	13.296	13.284	13.324	VV	2881	46435	2.25%	0.092%
292	13.353	13.324	13.374	VV	51224	578559	28.04%	1.148%
293	13.386	13.374	13.405	VV	6028	81081	3.93%	0.161%
294	13.410	13.405	13.425	VV	3231	30131	1.46%	0.060%
295	13.439	13.425	13.468	VV	3474	48353	2.34%	0.096%
296	13.488	13.468	13.507	VV	1419	21943	1.06%	0.044%
297	13.524	13.507	13.538	VV	1927	24076	1.17%	0.048%
298	13.550	13.538	13.573	VV	1671	21284	1.03%	0.042%
299	13.615	13.573	13.638	PV	3796	75445	3.66%	0.150%

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300	13.654	13.638	13.666	VV	2163	33138	1.61%	0.066%
301	13.685	13.666	13.707	VV	3235	58010	2.81%	0.115%
302	13.710	13.707	13.726	VV	1535	14951	0.72%	0.030%
303	13.746	13.726	13.766	VV	2638	45764	2.22%	0.091%
304	13.779	13.766	13.787	VV	2262	25463	1.23%	0.051%
305	13.818	13.787	13.836	VV	17547	273252	13.25%	0.542%
306	13.841	13.836	13.888	VV	6891	93876	4.55%	0.186%
307	13.937	13.888	13.986	VV	12703	305019	14.79%	0.605%
308	14.007	13.986	14.025	VV	3345	52187	2.53%	0.104%
309	14.046	14.025	14.064	VV	4705	71597	3.47%	0.142%
310	14.084	14.064	14.107	VV	9124	113853	5.52%	0.226%
311	14.130	14.107	14.148	VV	1822	33799	1.64%	0.067%
312	14.177	14.148	14.193	VV	3199	67439	3.27%	0.134%
313	14.213	14.193	14.234	VV	8924	120100	5.82%	0.238%
314	14.253	14.234	14.277	VV	7508	102170	4.95%	0.203%
315	14.294	14.277	14.304	VV	1649	20571	1.00%	0.041%
316	14.327	14.304	14.351	VV	2380	41735	2.02%	0.083%
317	14.361	14.351	14.371	VV	938	9758	0.47%	0.019%
318	14.391	14.371	14.422	VV	2709	48100	2.33%	0.095%
319	14.433	14.422	14.446	VV	842	10628	0.52%	0.021%
320	14.459	14.446	14.478	VV	1536	18847	0.91%	0.037%
321	14.515	14.478	14.535	VV	1545	34154	1.66%	0.068%
322	14.565	14.535	14.589	VV	2677	48884	2.37%	0.097%
323	14.628	14.589	14.646	VV	2874	64631	3.13%	0.128%
324	14.665	14.646	14.712	VV	7741	124234	6.02%	0.246%
325	14.740	14.712	14.757	VV	3190	52621	2.55%	0.104%
326	14.769	14.757	14.786	VV	2875	39549	1.92%	0.078%
327	14.792	14.786	14.804	VV	1774	16189	0.78%	0.032%
328	14.825	14.804	14.836	VV	7222	90909	4.41%	0.180%
329	14.850	14.836	14.887	VV	9106	156850	7.60%	0.311%
330	14.908	14.887	14.930	VV	11144	146613	7.11%	0.291%
331	14.964	14.930	15.002	VV	6921	139255	6.75%	0.276%
332	15.031	15.002	15.046	VV	1927	35418	1.72%	0.070%
333	15.074	15.046	15.124	VV	27033	409605	19.86%	0.813%
334	15.138	15.124	15.149	VV	1068	12914	0.63%	0.026%
335	15.171	15.149	15.189	VV	5021	66837	3.24%	0.133%
336	15.216	15.189	15.237	VV	28698	379813	18.41%	0.753%
337	15.257	15.237	15.291	VV	34908	456172	22.11%	0.905%
338	15.320	15.291	15.336	VV	3344	62516	3.03%	0.124%
339	15.370	15.336	15.412	VV	10672	259707	12.59%	0.515%
340	15.425	15.412	15.434	VV	2050	24201	1.17%	0.048%
341	15.453	15.434	15.483	VV	2383	40604	1.97%	0.081%
342	15.517	15.483	15.544	PV	3559	80832	3.92%	0.160%
343	15.555	15.544	15.564	VV	2868	32157	1.56%	0.064%
344	15.571	15.564	15.601	VV	2627	45178	2.19%	0.090%
345	15.620	15.601	15.628	VV	2560	33294	1.61%	0.066%
346	15.649	15.628	15.693	VV	15785	260846	12.64%	0.517%
347	15.701	15.693	15.720	VV	3163	38865	1.88%	0.077%
348	15.740	15.720	15.761	VV	3215	57246	2.77%	0.114%
349	15.797	15.761	15.822	VV	3351	89549	4.34%	0.178%
350	15.841	15.822	15.852	VV	3755	52225	2.53%	0.104%
351	15.884	15.852	15.906	VV	11262	191989	9.31%	0.381%

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352	15.921	15.906	15.943	VV	6086	86707	4.20%	0.172%
353	15.950	15.943	15.958	VV	2458	20254	0.98%	0.040%
354	15.969	15.958	15.981	VV	2709	35772	1.73%	0.071%
355	15.997	15.981	16.011	VV	3426	56819	2.75%	0.113%
356	16.045	16.011	16.086	VV	6796	187496	9.09%	0.372%
357	16.090	16.086	16.094	VV	1804	7582	0.37%	0.015%
358	16.123	16.094	16.146	VV	3223	65791	3.19%	0.131%
359	16.164	16.146	16.182	VV	1827	29866	1.45%	0.059%
360	16.206	16.182	16.223	VV	2821	46830	2.27%	0.093%
361	16.233	16.223	16.253	VV	1880	27500	1.33%	0.055%
362	16.305	16.253	16.339	VV	3189	113781	5.52%	0.226%
363	16.346	16.339	16.361	VV	1163	13821	0.67%	0.027%
364	16.382	16.361	16.396	VV	1338	23552	1.14%	0.047%
365	16.412	16.396	16.441	VV	1385	29781	1.44%	0.059%
366	16.443	16.441	16.454	VV	745	4993	0.24%	0.010%
367	16.487	16.454	16.507	VV	2843	54782	2.66%	0.109%
368	16.515	16.507	16.529	VV	1319	12265	0.59%	0.024%
369	16.547	16.529	16.561	VV	1645	21655	1.05%	0.043%
370	16.588	16.561	16.613	VV	2575	52677	2.55%	0.104%
371	16.659	16.613	16.668	VV	3386	76685	3.72%	0.152%
372	16.686	16.668	16.715	VV	5354	85158	4.13%	0.169%
373	16.762	16.715	16.781	VV	31546	477318	23.14%	0.947%
374	16.789	16.781	16.830	VV	12881	147704	7.16%	0.293%
375	16.847	16.830	16.870	VV	1186	22069	1.07%	0.044%
376	16.891	16.870	16.913	VV	7805	104371	5.06%	0.207%
377	16.928	16.913	16.969	VV	2168	47106	2.28%	0.093%
378	17.009	16.969	17.030	VV	1809	42052	2.04%	0.083%
379	17.079	17.030	17.108	VV	21924	368170	17.85%	0.730%
380	17.136	17.108	17.186	VV	21778	270105	13.09%	0.536%
381	17.236	17.186	17.266	VV	6419	107376	5.20%	0.213%
382	17.292	17.266	17.327	VV	1756	44870	2.18%	0.089%
383	17.379	17.327	17.421	VV	3587	112277	5.44%	0.223%
384	17.442	17.421	17.461	VV	2200	35027	1.70%	0.069%
385	17.505	17.461	17.533	VV	4819	127930	6.20%	0.254%
386	17.537	17.533	17.565	VV	2599	34758	1.68%	0.069%
387	17.593	17.565	17.608	VV	2422	44430	2.15%	0.088%
388	17.633	17.608	17.647	VV	4605	76406	3.70%	0.152%
389	17.673	17.647	17.701	VV	5723	135035	6.55%	0.268%
390	17.719	17.701	17.736	VV	2137	34925	1.69%	0.069%
391	17.746	17.736	17.761	VV	1387	17788	0.86%	0.035%
392	17.793	17.761	17.815	VV	3608	69279	3.36%	0.137%
393	17.832	17.815	17.870	VV	2746	56280	2.73%	0.112%
394	17.888	17.870	17.938	VV	1183	35819	1.74%	0.071%
395	17.944	17.938	17.952	VV	712	5086	0.25%	0.010%
396	17.972	17.952	17.991	VV	1354	22946	1.11%	0.046%
397	18.002	17.991	18.009	VV	1019	9484	0.46%	0.019%
398	18.058	18.009	18.072	VV	2214	61749	2.99%	0.122%
399	18.113	18.072	18.147	VV	5784	145983	7.08%	0.290%
400	18.182	18.147	18.191	VV	2747	48489	2.35%	0.096%
401	18.201	18.191	18.209	VV	2457	24863	1.21%	0.049%
402	18.224	18.209	18.240	VV	3808	53379	2.59%	0.106%
403	18.261	18.240	18.280	VV	4164	74607	3.62%	0.148%
404	18.283	18.280	18.314	VV	3435	55447	2.69%	0.110%

					rteres			
405	18.342	18.314	18.371	VV	4588	98625	4.78%	0.196%
406	18.404	18.371	18.423	VV	6727	119895	5.81%	0.238%
407	18.434	18.423	18.439	VV	3591	31472	1.53%	0.062%
408	18.463	18.439	18.476	VV	8776	135819	6.58%	0.269%
409	18.494	18.476	18.513	VV	18190	257354	12.47%	0.511%
410	18.532	18.513	18.563	VV	11706	215537	10.45%	0.428%
411	18.580	18.563	18.602	VV	3783	73051	3.54%	0.145%
412	18.628	18.602	18.641	VV	7203	118841	5.76%	0.236%
413	18.658	18.641	18.719	VV	9421	263099	12.75%	0.522%
414	18.747	18.719	18.775	VV	20171	314602	15.25%	0.624%
415	18.786	18.775	18.805	VV	3676	62346	3.02%	0.124%
416	18.834	18.805	18.846	VV	4714	99497	4.82%	0.197%
417	18.876	18.846	18.900	VV	7144	167083	8.10%	0.331%
418	18.936	18.900	18.962	VV	5931	163354	7.92%	0.324%
419	18.972	18.962	18.991	VV	3537	56850	2.76%	0.113%
420	19.000	18.991	19.011	VV	3098	35440	1.72%	0.070%
421	19.053	19.011	19.075	VV	5774	171599	8.32%	0.340%
422	19.082	19.075	19.089	VV	3641	29176	1.41%	0.058%
423	19.109	19.089	19.120	VV	3715	65675	3.18%	0.130%
424	19.145	19.120	19.158	VV	4602	91649	4.44%	0.182%
425	19.176	19.158	19.193	VV	5638	95578	4.63%	0.190%
426	19.206	19.193	19.216	VV	4180	54315	2.63%	0.108%
427	19.219	19.216	19.234	VV	4155	42706	2.07%	0.085%
428	19.285	19.234	19.309	VV	9746	291828	14.15%	0.579%
429	19.332	19.309	19.376	VV	7196	241255	11.69%	0.479%
430	19.386	19.376	19.390	VV	5142	40101	1.94%	0.080%
431	19.420	19.390	19.486	VV	7307	327842	15.89%	0.650%
432	19.502	19.486	19.511	VV	4865	69188	3.35%	0.137%
433	19.526	19.511	19.566	VV	5073	152988	7.42%	0.303%
434	19.582	19.566	19.609	VV	5004	115365	5.59%	0.229%
435	19.633	19.609	19.655	VV	5766	141824	6.87%	0.281%
436	19.660	19.655	19.676	VV	5466	68159	3.30%	0.135%
437	19.688	19.676	19.695	VV	5456	59652	2.89%	0.118%
438	19.712	19.695	19.741	VV	6535	151675	7.35%	0.301%
439	19.752	19.741	19.772	VV	5742	101204	4.91%	0.201%
440	19.788	19.772	19.802	VV	5936	104032	5.04%	0.206%
441	19.825	19.802	19.851	VV	9648	222854	10.80%	0.442%
442	19.892	19.851	19.924	VV	15606	437550	21.21%	0.868%
443	19.961	19.924	19.991	VV	12677	390118	18.91%	0.774%
444	20.012	19.991	20.021	VV	8700	149133	7.23%	0.296%
445	20.051	20.021	20.069	VV	12042	294589	14.28%	0.584%
446	20.090	20.069	20.126	VV	11699	366792	17.78%	0.728%
447	20.132	20.126	20.138	VV	9754	71260	3.45%	0.141%
448	20.141	20.138	20.159	VV	9675	116104	5.63%	0.230%
449	20.172	20.159	20.205	VV	9442	229895	11.14%	0.456%
450	20.267	20.205	20.291	VV	15898	555195	26.91%	1.101%
451	20.331	20.291	20.352	VV	11105	363787	17.63%	0.722%
452	20.358	20.352	20.381	VV	9818	158868	7.70%	0.315%
453	20.409	20.381	20.422	VV	10380	243049	11.78%	0.482%
454	20.454	20.422	20.465	VV	12226	284947	13.81%	0.565%
455	20.477	20.465	20.502	VV	11677	249972	12.12%	0.496%
456	20.543	20.502	20.586	VV	14834	654390	31.72%	1.298%

					rteres			
457	20.617	20.586	20.632	VV	12914	344865	16.72%	0.684%
458	20.644	20.632	20.653	VV	12028	148058	7.18%	0.294%
459	20.676	20.653	20.708	VV	12825	403363	19.55%	0.800%
460	20.727	20.708	20.731	VV	12159	166724	8.08%	0.331%
461	20.752	20.731	20.756	VV	12449	183442	8.89%	0.364%
462	20.786	20.756	20.812	VV	13303	431458	20.91%	0.856%
463	20.815	20.812	20.821	VV	12713	64644	3.13%	0.128%
464	20.826	20.821	20.865	VV	12545	314695	15.25%	0.624%
465	20.872	20.865	20.885	VV	11506	136158	6.60%	0.270%
466	20.903	20.885	20.940	VV	11813	372294	18.05%	0.739%
467	20.945	20.940	20.972	VV	10857	208349	10.10%	0.413%
468	20.983	20.972	21.009	VV	10542	225554	10.93%	0.447%
469	21.015	21.009	21.034	VV	10154	146737	7.11%	0.291%
470	21.058	21.034	21.068	VV	10058	202786	9.83%	0.402%
471	21.084	21.068	21.117	VV	10531	298731	14.48%	0.593%
472	21.132	21.117	21.142	VV	9976	146790	7.12%	0.291%
473	21.184	21.142	21.225	VV	10769	504495	24.45%	1.001%
474	21.265	21.225	21.277	VV	10809	318264	15.43%	0.631%
475	21.279	21.277	21.345	VV	10711	398888	19.34%	0.791%
476	21.375	21.345	21.426	VV	9994	457784	22.19%	0.908%
477	21.476	21.426	21.501	VV	9937	427379	20.72%	0.848%
478	21.508	21.501	21.521	VV	9653	113983	5.53%	0.226%
479	21.537	21.521	21.541	VV	9798	111691	5.41%	0.222%
480	21.556	21.541	21.598	VV	10050	329864	15.99%	0.654%
481	21.647	21.598	21.671	VV	11441	460869	22.34%	0.914%
482	21.683	21.671	21.743	VV	10043	384622	18.64%	0.763%
483	21.751	21.743	21.760	VV	7938	77970	3.78%	0.155%
484	21.768	21.760	21.784	VV	7902	109439	5.30%	0.217%
485	21.813	21.784	21.836	VV	7675	227454	11.03%	0.451%
486	21.855	21.836	21.894	VV	7674	247137	11.98%	0.490%
487	21.902	21.894	21.911	VV	6096	60300	2.92%	0.120%
488	21.948	21.911	21.986	VV	7984	308183	14.94%	0.611%
489	22.025	21.986	22.068	VV	8079	327860	15.89%	0.650%
490	22.781	22.777	22.795	VV	268	1514	0.07%	0.003%

Sum of corrected areas: 50410098

FE121824.M Fri Dec 20 03:52:15 2024



CALIBRATION SUMMARY

TPH GC INITIAL CALIBRATION SUMMARY

Lab Name: Chemtech Contract: TULL02
 ProjectID: MTA Rockaway Park
 Lab Code: CHEM Case No.: P5279 SAS No.: P5279 SDG No.: P5279

Calibration Sequence : FE121824		Test : TPH GC	
Concentration (PPM)	Area Count	Reference Factor	File ID
1700	192672641	113337	FE051691.D
850	99687123	117279	FE051692.D
340	40415474	118869	FE051693.D
170	22588561	132874	FE051694.D
85	11368168	133743	FE051695.D
AVG RF : 123220		% RSD : 7.654	AVG RT : 15.0678

TPH GC CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: TULL02
ProjectID: MTA Rockaway Park
Lab Code: CHEM Case No.: P5279 SAS No.: P5279 SDG No.: P5279
DataFile: FE051699.D Analyst Name: YP\AJ Analyst Date: 12-19-2024

Conc. (PPM)	Area Count	RF	Average RF	%D
850	102786657	120925	123220	1.863

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
 Data File : FE051699.D
 Signal(s) : FID1B.ch
 Acq On : 19 Dec 2024 07:29
 Operator : YP\AJ
 Sample : 50 PPM TRPH STD
 Misc :
 ALS Vial : 23 Sample Multiplier: 1

Instrument :
 FID_E
 ClientSampleId :
 50 PPM TRPH STD

Integration File: Sample.e
 Quant Time: Dec 20 02:41:31 2024
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
 Quant Title :
 QLast Update : Thu Dec 19 02:46:15 2024
 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...	15.075	6089460	49.409 ug/ml
Target Compounds			
1) N-OCTANE	2.214	5268419	48.550 ug/ml
2) N-DECANE	4.716	5647048	48.866 ug/ml
3) N-DODECANE	6.854	6120610	48.859 ug/ml
4) N-TETRADECANE	8.665	6224201	48.986 ug/ml
5) N-HEXADECANE	10.260	6554179	49.094 ug/ml
6) N-OCTADECANE	11.693	6934867	49.220 ug/ml
7) N-EICOSANE	12.994	6878628	49.327 ug/ml
8) N-DOCOSANE	14.183	6813585	49.396 ug/ml
10) N-TETRACOSANE	15.278	6736455	49.311 ug/ml
11) N-HEXACOSANE	16.291	6559032	49.256 ug/ml
12) N-OCTACOSANE	17.234	6404548	49.122 ug/ml
13) N-TRIACONTANE	18.113	6288184	48.825 ug/ml
14) N-DOTRIACONTANE	18.939	6159308	48.980 ug/ml
15) N-TETRATRIACONTANE	19.715	5599441	48.624 ug/ml
16) N-HEXATRIACONTANE	20.450	4952013	48.433 ug/ml
17) N-OCTATRIACONTANE	21.187	4673313	48.134 ug/ml
18) N-TETRACONTANE	22.108	4972826	51.073 ug/ml

(f)=RT Delta > 1/2 Window

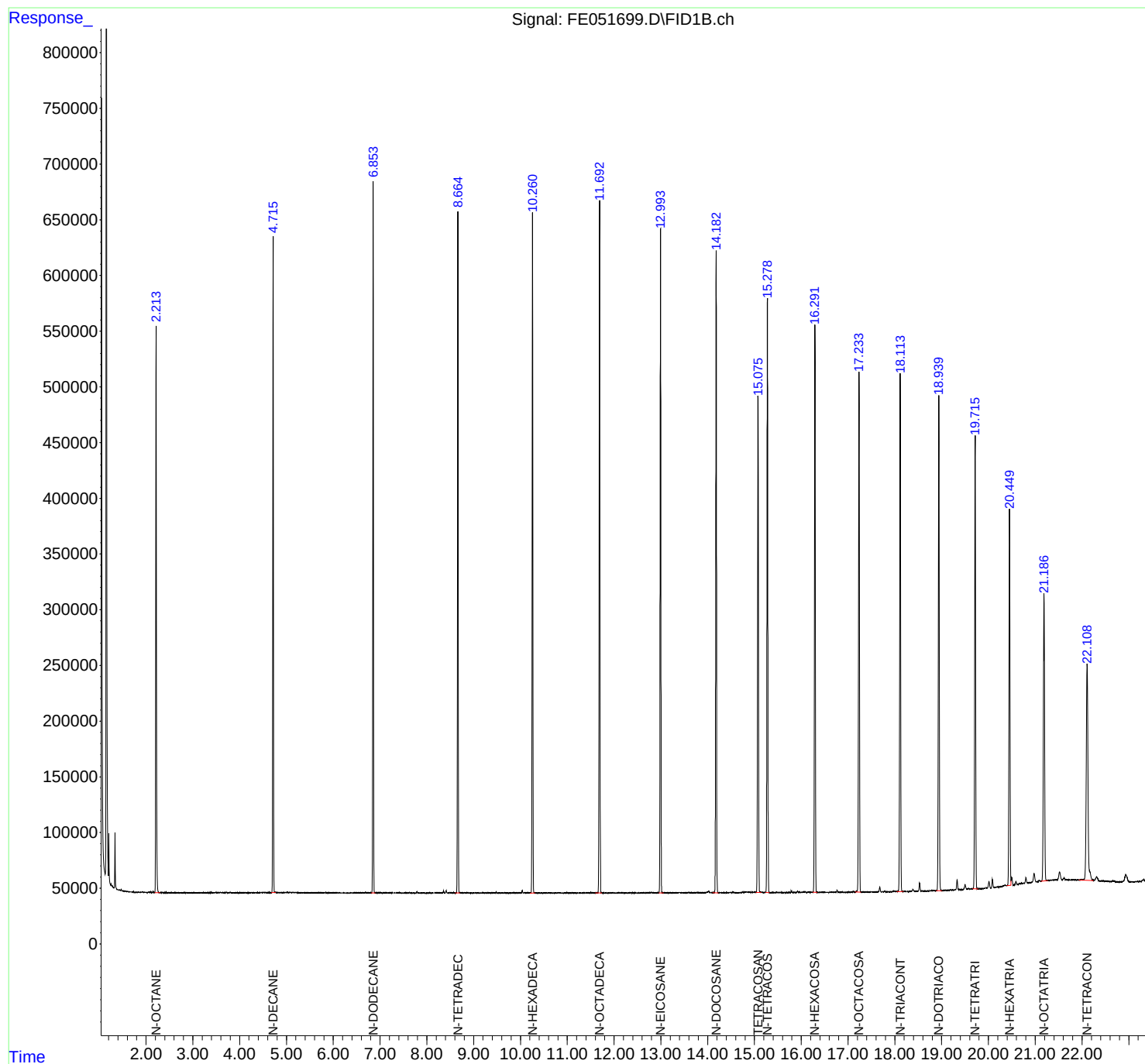
(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
Data File : FE051699.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 07:29
Operator : YP\AJ
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 23 Sample Multiplier: 1

Instrument :
FID_E
ClientSampleId :
50 PPM TRPH STD

Integration File: Sample.e
Quant Time: Dec 20 02:41:31 2024
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Quant Title :
QLast Update : Thu Dec 19 02:46:15 2024
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_E\Data\FE121924\
Data File : FE051699.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 07:29
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 23 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Title :

Signal : FID1B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	2.214	2.183	2.301	BB	508457	5268419	75.97%	4.839%
2	4.716	4.675	4.768	BB	588482	5647048	81.43%	5.187%
3	6.854	6.811	6.896	BB	638018	6120610	88.26%	5.622%
4	8.665	8.604	8.709	BV	611785	6224201	89.75%	5.717%
5	10.260	10.211	10.315	BB	610659	6554179	94.51%	6.020%
6	11.693	11.598	11.739	BB	621277	6934867	100.00%	6.370%
7	12.994	12.955	13.059	BB	595181	6878628	99.19%	6.318%
8	14.183	14.104	14.226	BB	575651	6813585	98.25%	6.258%
9	15.075	15.033	15.146	BV	444651	6089460	87.81%	5.593%
10	15.278	15.235	15.323	BB	533588	6736455	97.14%	6.187%
11	16.291	16.241	16.345	BB	509248	6559032	94.58%	6.024%
12	17.234	17.151	17.276	BB	467360	6404548	92.35%	5.882%
13	18.113	18.041	18.185	BB	464467	6288184	90.67%	5.776%
14	18.939	18.883	19.013	BB	443922	6159308	88.82%	5.657%
15	19.715	19.661	19.781	BB	406313	5599441	80.74%	5.143%
16	20.450	20.391	20.481	BV	338383	4952013	71.41%	4.548%
17	21.187	21.121	21.267	BV	257265	4673313	67.39%	4.292%
18	22.108	21.932	22.234	BV	194298	4972826	71.71%	4.567%
Sum of corrected areas:						108876117		

FE121824.M Fri Dec 20 03:07:41 2024

TPH GC CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: TULL02
ProjectID: MTA Rockaway Park
Lab Code: CHEM Case No.: P5279 SAS No.: P5279 SDG No.: P5279
DataFile: FE051708.D Analyst Name: YP\AJ Analyst Date: 12-19-2024

Conc. (PPM)	Area Count	RF	Average RF	%D
850	101277419	119150	123220	3.303

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
 Data File : FE051708.D
 Signal(s) : FID1B.ch
 Acq On : 19 Dec 2024 12:00
 Operator : YP\AJ
 Sample : 50 PPM TRPH STD
 Misc :
 ALS Vial : 23 Sample Multiplier: 1

Instrument :
 FID_E
 ClientSampleId :
 50 PPM TRPH STD

Integration File: Sample.e
 Quant Time: Dec 20 02:44:47 2024
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
 Quant Title :
 QLast Update : Thu Dec 19 02:46:15 2024
 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...	15.077	6005171	48.726 ug/ml
Target Compounds			
1) N-OCTANE	2.214	5197899	47.900 ug/ml
2) N-DECANE	4.716	5582276	48.305 ug/ml
3) N-DODECANE	6.855	6053677	48.325 ug/ml
4) N-TETRADECANE	8.666	6144228	48.357 ug/ml
5) N-HEXADECANE	10.262	6469013	48.456 ug/ml
6) N-OCTADECANE	11.694	6831088	48.484 ug/ml
7) N-EICOSANE	12.995	6777057	48.598 ug/ml
8) N-DOCOSANE	14.184	6710341	48.648 ug/ml
10) N-TETRACOSANE	15.280	6655799	48.721 ug/ml
11) N-HEXACOSANE	16.293	6491688	48.750 ug/ml
12) N-OCTACOSANE	17.236	6349416	48.699 ug/ml
13) N-TRIACONTANE	18.115	6221027	48.304 ug/ml
14) N-DOTRIACONTANE	18.942	6038570	48.020 ug/ml
15) N-TETRATRIACONTANE	19.720	5530551	48.026 ug/ml
16) N-HEXATRIACONTANE	20.452	4885757	47.785 ug/ml
17) N-OCTATRIACONTANE	21.190	4677516	48.178 ug/ml
18) N-TETRACONTANE	22.114	4661516	47.876 ug/ml

(f)=RT Delta > 1/2 Window

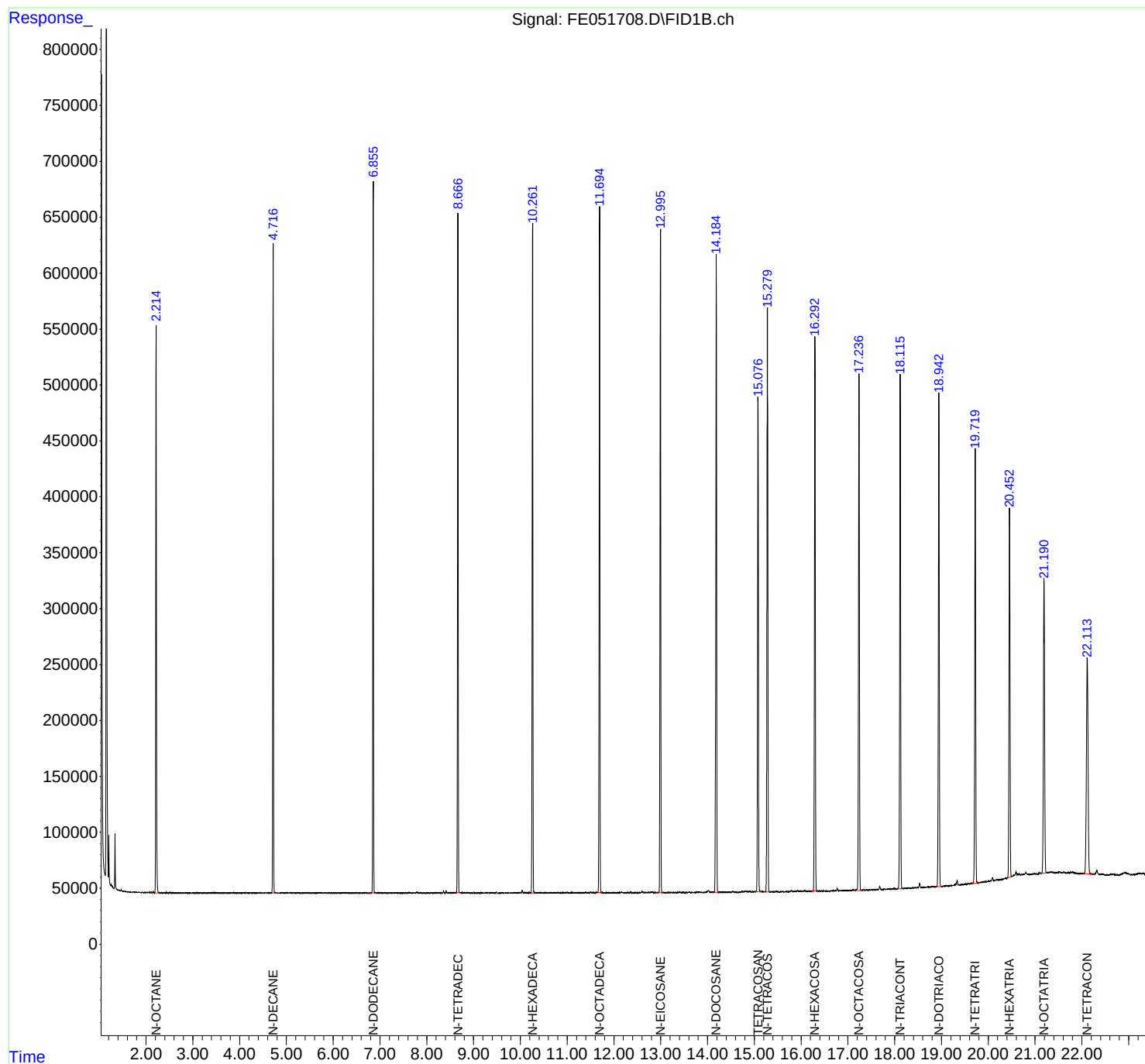
(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
Data File : FE051708.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 12:00
Operator : YP\AJ
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 23 Sample Multiplier: 1

Instrument :
FID_E
ClientSampleId :
50 PPM TRPH STD

Integration File: Sample.e
Quant Time: Dec 20 02:44:47 2024
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Quant Title :
QLast Update : Thu Dec 19 02:46:15 2024
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_E\Data\FE121924\
Data File : FE051708.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 12:00
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 23 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Title :

Signal : FID1B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	2.214	2.183	2.296	BB	507098	5197899	76.09%	4.845%
2	4.716	4.674	4.776	BB	580674	5582276	81.72%	5.203%
3	6.855	6.765	6.902	BB	636524	6053677	88.62%	5.643%
4	8.666	8.623	8.707	BB	608097	6144228	89.95%	5.727%
5	10.262	10.216	10.329	BB	598881	6469013	94.70%	6.030%
6	11.694	11.657	11.743	BB	613290	6831088	100.00%	6.367%
7	12.995	12.957	13.040	BB	591761	6777057	99.21%	6.317%
8	14.184	14.122	14.228	BB	570805	6710341	98.23%	6.255%
9	15.077	15.027	15.149	BV	442298	6005171	87.91%	5.598%
10	15.280	15.199	15.323	BB	522080	6655799	97.43%	6.204%
11	16.293	16.239	16.336	BB	494870	6491688	95.03%	6.051%
12	17.236	17.152	17.299	BB	460186	6349416	92.95%	5.918%
13	18.115	18.041	18.171	BB	459835	6221027	91.07%	5.799%
14	18.942	18.885	19.006	BB	441500	6038570	88.40%	5.629%
15	19.720	19.661	19.777	BB	388930	5530551	80.96%	5.155%
16	20.452	20.391	20.491	BV	329946	4885757	71.52%	4.554%
17	21.190	21.121	21.263	BB	263664	4677516	68.47%	4.360%
18	22.114	22.027	22.235	BV	193285	4661516	68.24%	4.345%
Sum of corrected areas:						107282590		

FE121824.M Fri Dec 20 03:11:05 2024

Analytical Sequence

Client: Tully Construction Co., Inc.

SDG No.: P5279

Project: MTA Rockaway Park

Instrument ID: FID_E

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 15.0678					
EPA SAMPLE NO.	LAB SAMPLE ID	DATE AND TIME ANALYZED	DATAFILE	RT	#
PIBLK01	LBLK01	19 Dec 2024 06:59	FE051698.D	15.072	
50 PPM TRPH STD	50 PPM TRPH STD	19 Dec 2024 07:29	FE051699.D	15.075	
PB165731BL	PB165731BL	19 Dec 2024 08:29	FE051701.D	15.071	
PB165731BS	PB165731BS	19 Dec 2024 08:59	FE051702.D	15.072	
ROCKAWAY-PARKMS	P5279-01MS	19 Dec 2024 10:00	FE051704.D	15.030	
ROCKAWAY-PARKMSD	P5279-01MSD	19 Dec 2024 10:30	FE051705.D	15.032	
ROCKAWAY-PARK	P5279-01	19 Dec 2024 11:00	FE051706.D	15.031	
PIBLK02	LBLK02	19 Dec 2024 11:30	FE051707.D	15.074	
50 PPM TRPH STD	50 PPM TRPH STD	19 Dec 2024 12:00	FE051708.D	15.077	



QC SAMPLE DATA

Report of Analysis

Client:	Tully Construction Co., Inc.		Date Collected:		
Project:	MTA Rockaway Park		Date Received:		
Client Sample ID:	PB165731BL		SDG No.:	P5279	
Lab Sample ID:	PB165731BL		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
FE051701.D	1	12/18/24 13:30	12/19/24 8:29	PB165731

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
PHC	Petroleum Hydrocarbons	0.32	U	0.32	2.83	mg/Kg
SURROGATES						
16416-32-3	TETRACOSANE-d50	18.4		37 - 130	92%	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

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
Data File : FE051701.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 08:29
Operator : YP\AJ
Sample : PB165731BL
Misc :
ALS Vial : 25 Sample Multiplier: 1

Instrument :
FID_E
ClientSampleId :
PB165731BL

Integration File: Sample.e
Quant Time: Dec 20 02:42:16 2024
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Quant Title :
QLast Update : Thu Dec 19 02:46:15 2024
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...	15.071	2268979	18.410 ug/ml

Target Compounds

(f)=RT Delta > 1/2 Window

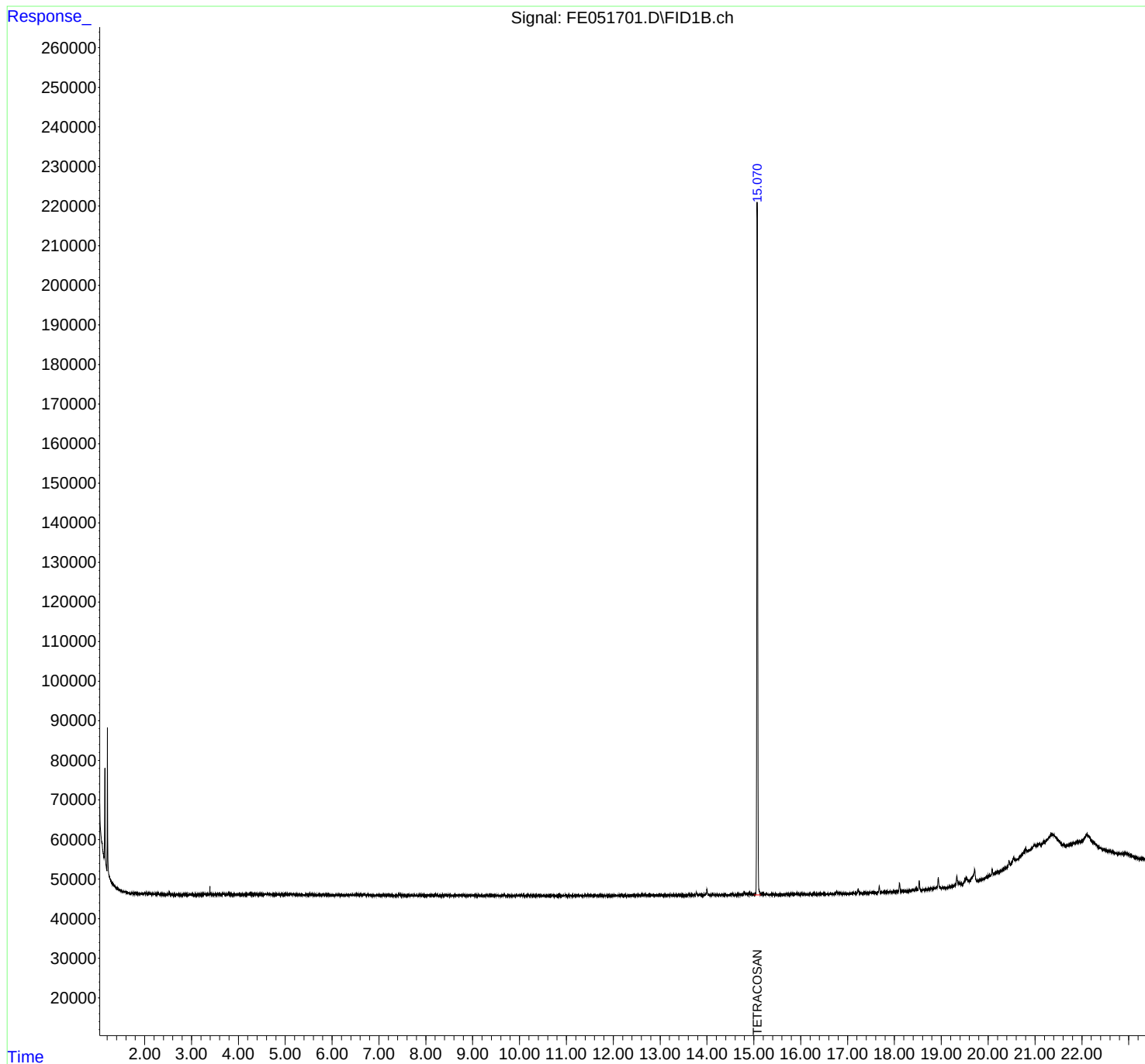
(m)=manual int.

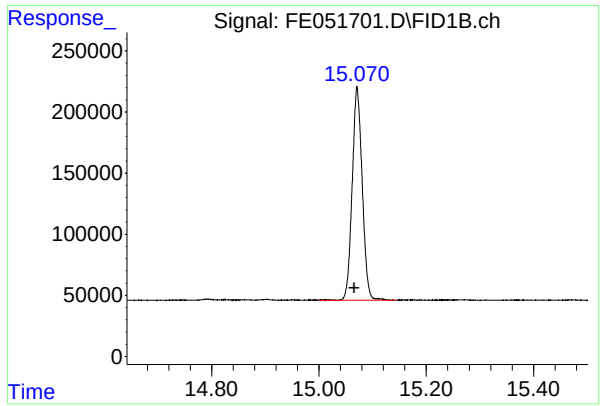
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
Data File : FE051701.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 08:29
Operator : YP\AJ
Sample : PB165731BL
Misc :
ALS Vial : 25 Sample Multiplier: 1

Instrument :
FID_E
ClientSampleId :
PB165731BL

Integration File: Sample.e
Quant Time: Dec 20 02:42:16 2024
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Quant Title :
QLast Update : Thu Dec 19 02:46:15 2024
Response via : Initial Calibration
Integrator: ChemStation

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





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 15.071 min
Delta R.T.: 0.005 min
Response: 2268979
Conc: 18.41 ug/ml

Instrument :

FID_E

ClientSampleId :

PB165731BL

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
Data File : FE051701.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 08:29
Sample : PB165731BL
Misc :
ALS Vial : 25 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Title :

Signal : FID1B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	15.071	15.000	15.143	BB	174874	2268979	100.00%	100.000%
Sum of corrected areas:						2268979		

FE121824.M Fri Dec 20 03:08:39 2024

Report of Analysis

Client:	Tully Construction Co., Inc.		Date Collected:	12/19/24	
Project:	MTA Rockaway Park		Date Received:	12/19/24	
Client Sample ID:	PIBLK-FE051698.D		SDG No.:	P5279	
Lab Sample ID:	I.BLK-FE051698.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
FE051698.D	1		12/19/24	FE121924

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
PHC	Petroleum Hydrocarbons	0.0090	U	0.0090	0.085	mg/L
SURROGATES						
16416-32-3	TETRACOSANE-d50	19.1		29 - 130	96%	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

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
Data File : FE051698.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 06:59
Operator : YP\AJ
Sample : I.BLK
Misc :
ALS Vial : 21 Sample Multiplier: 1

Instrument :
FID_E
ClientSampleId :
I.BLK

Integration File: Sample.e
Quant Time: Dec 20 02:41:16 2024
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Quant Title :
QLast Update : Thu Dec 19 02:46:15 2024
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...	15.072	2354429	19.104 ug/ml

Target Compounds

(f)=RT Delta > 1/2 Window

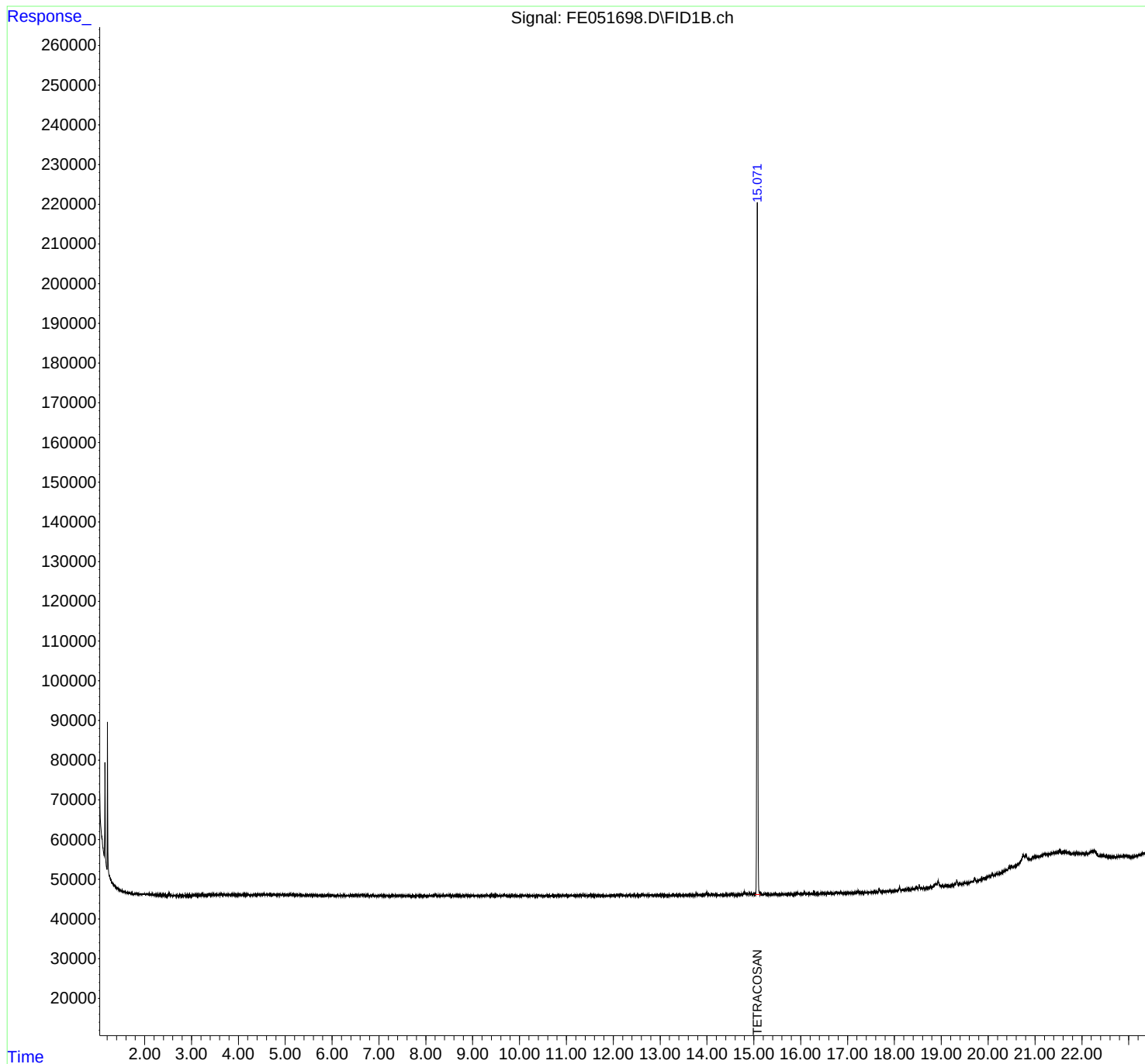
(m)=manual int.

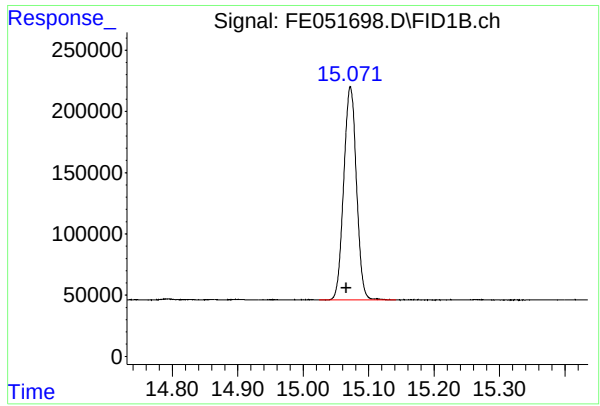
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
Data File : FE051698.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 06:59
Operator : YP\AJ
Sample : I.BLK
Misc :
ALS Vial : 21 Sample Multiplier: 1

Instrument :
FID_E
ClientSampleId :
I.BLK

Integration File: Sample.e
Quant Time: Dec 20 02:41:16 2024
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Quant Title :
QLast Update : Thu Dec 19 02:46:15 2024
Response via : Initial Calibration
Integrator: ChemStation

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





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 15.072 min

Delta R.T.: 0.006 min

Response: 2354429

Conc: 19.10 ug/ml

Instrument :

FID_E

ClientSampleId :

I.BLK

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
Data File : FE051698.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 06:59
Sample : I.BLK
Misc :
ALS Vial : 21 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Title :

Signal : FID1B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	15.072	15.024	15.142	BB	174272	2354429	100.00%	100.000%
Sum of corrected areas:						2354429		

FE121824.M Fri Dec 20 03:06:01 2024

Report of Analysis

Client:	Tully Construction Co., Inc.		Date Collected:	12/19/24	
Project:	MTA Rockaway Park		Date Received:	12/19/24	
Client Sample ID:	PIBLK-FE051707.D		SDG No.:	P5279	
Lab Sample ID:	I.BLK-FE051707.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
FE051707.D	1		12/19/24	FE121924

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
PHC	Petroleum Hydrocarbons	0.0090	U	0.0090	0.085	mg/L
SURROGATES						
16416-32-3	TETRACOSANE-d50	18.5		29 - 130	92%	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

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
Data File : FE051707.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 11:30
Operator : YP\AJ
Sample : I.BLK
Misc :
ALS Vial : 21 Sample Multiplier: 1

Instrument :
FID_E
ClientSampleId :
I.BLK

Integration File: Sample.e
Quant Time: Dec 20 02:44:29 2024
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Quant Title :
QLast Update : Thu Dec 19 02:46:15 2024
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...	15.074	2278861	18.491 ug/ml
Target Compounds			

(f)=RT Delta > 1/2 Window

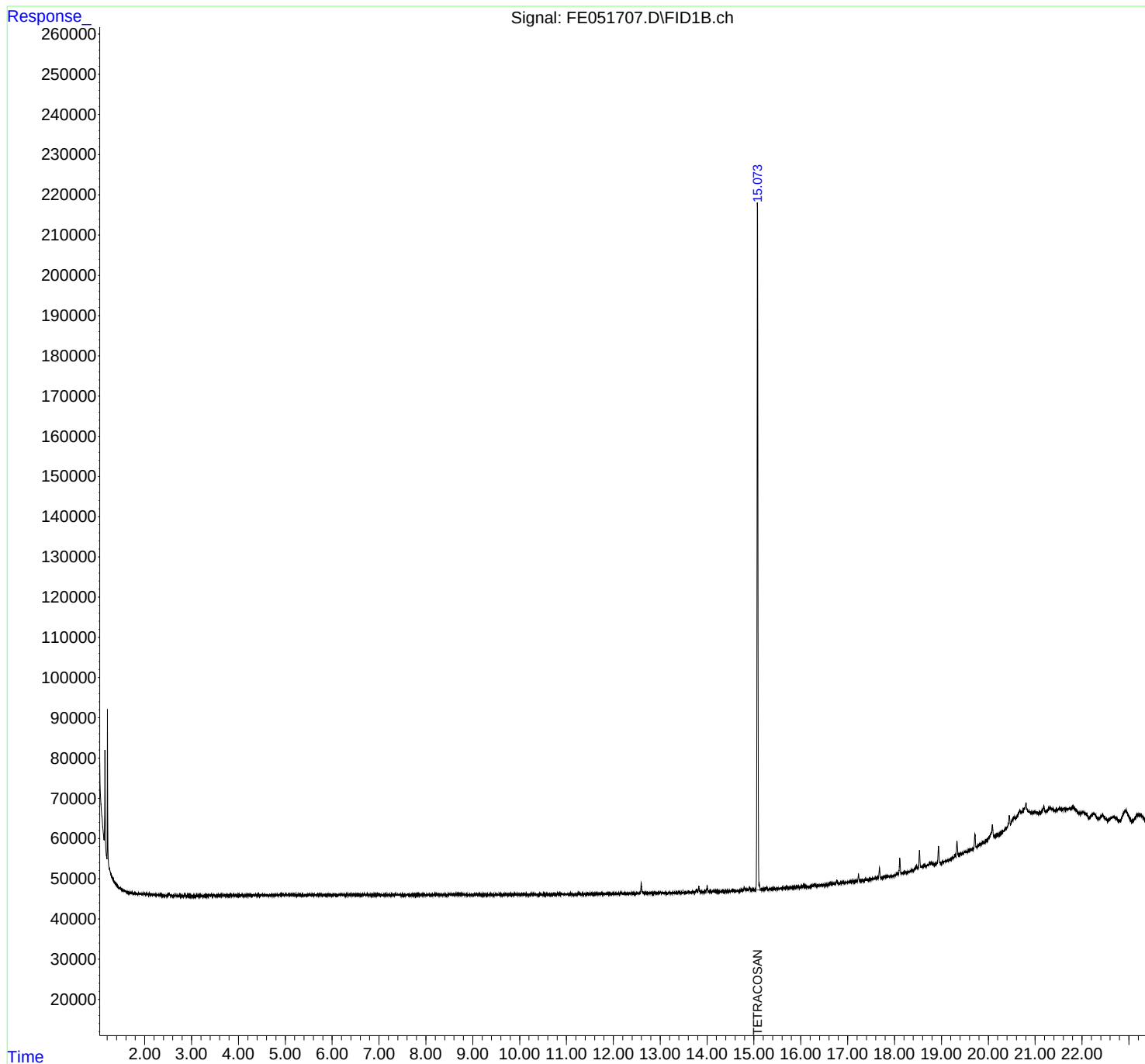
(m)=manual int.

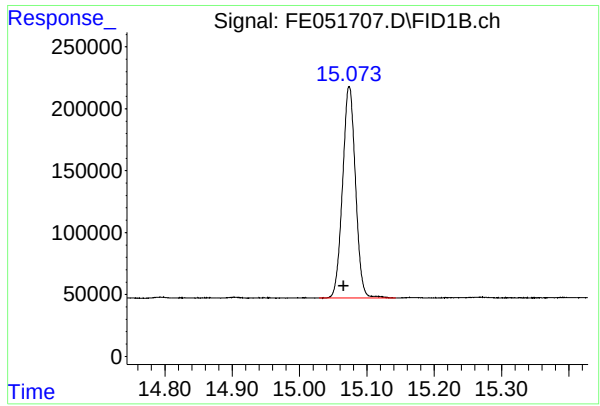
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
Data File : FE051707.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 11:30
Operator : YP\AJ
Sample : I.BLK
Misc :
ALS Vial : 21 Sample Multiplier: 1

Instrument :
FID_E
ClientSampleId :
I.BLK

Integration File: Sample.e
Quant Time: Dec 20 02:44:29 2024
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Quant Title :
QLast Update : Thu Dec 19 02:46:15 2024
Response via : Initial Calibration
Integrator: ChemStation

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





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 15.074 min

Delta R.T.: 0.008 min

Response: 2278861

Conc: 18.49 ug/ml

Instrument :

FID_E

ClientSampleId :

I.BLK

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
Data File : FE051707.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 11:30
Sample : I.BLK
Misc :
ALS Vial : 21 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Title :

Signal : FID1B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	15.074	15.029	15.143	BB	170760	2278861	100.00%	100.000%
Sum of corrected areas:						2278861		

FE121824.M Fri Dec 20 03:10:08 2024

Report of Analysis

Client:	Tully Construction Co., Inc.		Date Collected:		
Project:	MTA Rockaway Park		Date Received:		
Client Sample ID:	PB165731BS		SDG No.:	P5279	
Lab Sample ID:	PB165731BS		Matrix:	SOIL	
Analytical Method:	8015D TPH		% Solid:	100	Decanted:
Sample Wt/Vol:	30.01	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
FE051702.D	1	12/18/24 13:30	12/19/24 8:59	PB165731

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
PHC	Petroleum Hydrocarbons	11.1		0.32	2.83	mg/Kg
SURROGATES						
16416-32-3	TETRACOSANE-d50	19.4		37 - 130	97%	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

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
 Data File : FE051702.D
 Signal(s) : FID1B.ch
 Acq On : 19 Dec 2024 08:59
 Operator : YP\AJ
 Sample : PB165731BS
 Misc :
 ALS Vial : 26 Sample Multiplier: 1

Instrument :
 FID_E
 ClientSampleId :
 PB165731BS

Integration File: Sample.e
 Quant Time: Dec 20 02:42:34 2024
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
 Quant Title :
 QLast Update : Thu Dec 19 02:46:15 2024
 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...	15.072	2388194	19.378 ug/ml
Target Compounds			
1) N-OCTANE	2.212	2148207	19.796 ug/ml
2) N-DECANE	4.714	2312077	20.007 ug/ml
3) N-DODECANE	6.852	2501796	19.971 ug/ml
4) N-TETRADECANE	8.663	2524156	19.866 ug/ml
5) N-HEXADECANE	10.258	2632020	19.715 ug/ml
6) N-OCTADECANE	11.690	2756684	19.566 ug/ml
7) N-EICOSANE	12.991	2718247	19.493 ug/ml
8) N-DOCOSANE	14.180	2675718	19.398 ug/ml
10) N-TETRACOSANE	15.275	2641878	19.339 ug/ml
11) N-HEXACOSANE	16.287	2576251	19.347 ug/ml
12) N-OCTACOSANE	17.230	2521323	19.338 ug/ml
13) N-TRIACONTANE	18.110	2493045	19.357 ug/ml
14) N-DOTRIACONTANE	18.936	2429662	19.321 ug/ml
15) N-TETRATRIACONTANE	19.714	2237721	19.432 ug/ml
16) N-HEXATRIACONTANE	20.447	1987049	19.434 ug/ml
17) N-OCTATRIACONTANE	21.185	1915376	19.728 ug/ml
18) N-TETRACONTANE	22.104	1947128	19.998 ug/ml

(f)=RT Delta > 1/2 Window

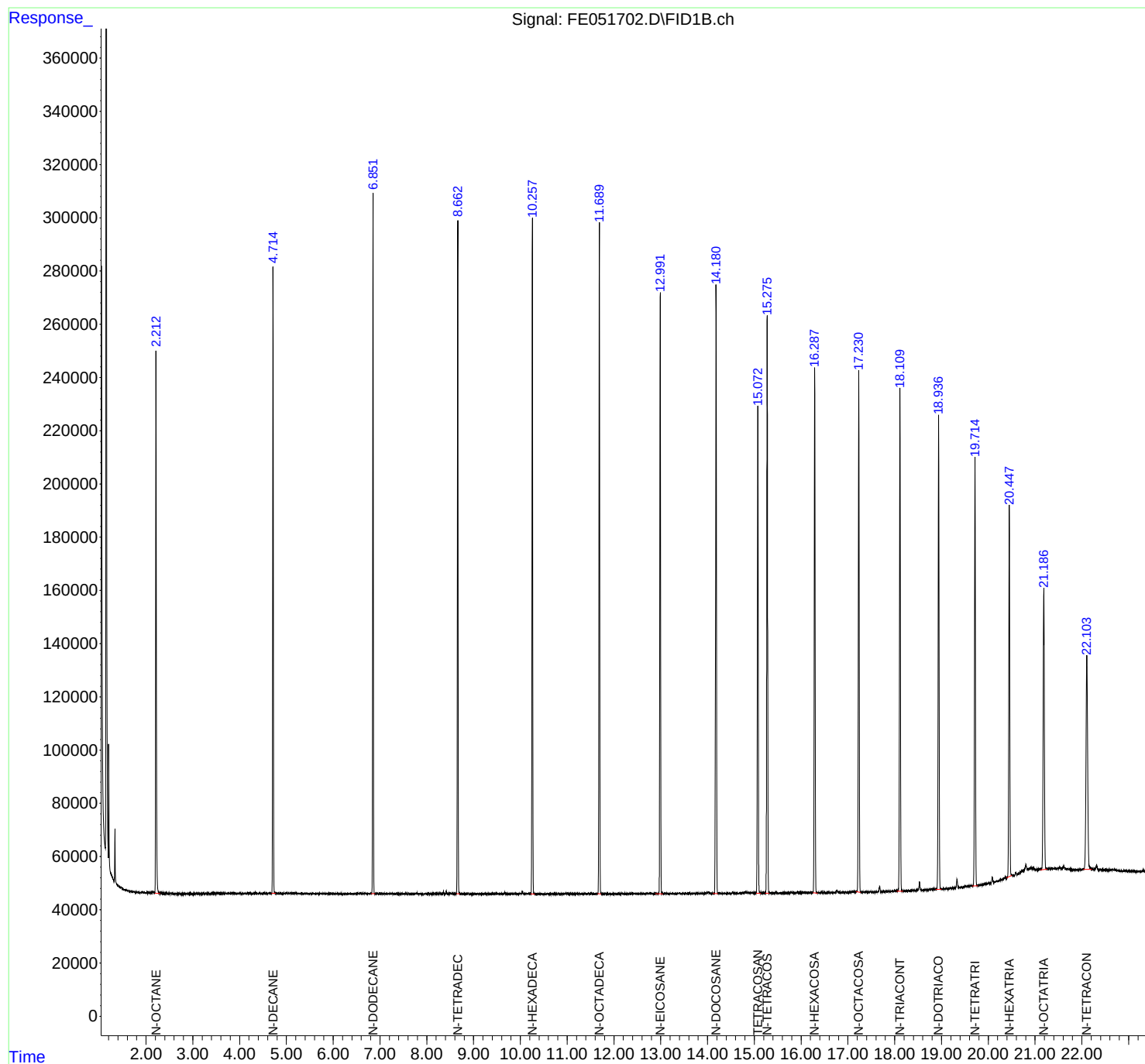
(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
Data File : FE051702.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 08:59
Operator : YP\AJ
Sample : PB165731BS
Misc :
ALS Vial : 26 Sample Multiplier: 1

Instrument :
FID_E
ClientSampleId :
PB165731BS

Integration File: Sample.e
Quant Time: Dec 20 02:42:34 2024
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Quant Title :
QLast Update : Thu Dec 19 02:46:15 2024
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_E\Data\FE121924\
Data File : FE051702.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 08:59
Sample : PB165731BS
Misc :
ALS Vial : 26 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Title :

Signal : FID1B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	2.212	2.187	2.294	BB	203576	2148207	77.93%	4.949%
2	4.714	4.678	4.765	BB	235270	2312077	83.87%	5.327%
3	6.852	6.815	6.888	BB	263168	2501796	90.75%	5.764%
4	8.663	8.630	8.706	BB	253161	2524156	91.56%	5.815%
5	10.258	10.214	10.312	BB	253862	2632020	95.48%	6.064%
6	11.690	11.644	11.727	BB	252217	2756684	100.00%	6.351%
7	12.991	12.882	13.038	BB	225624	2718247	98.61%	6.262%
8	14.180	14.111	14.219	BB	228827	2675718	97.06%	6.164%
9	15.072	15.035	15.139	BB	183006	2388194	86.63%	5.502%
10	15.275	15.232	15.315	BB	217240	2641878	95.84%	6.086%
11	16.287	16.249	16.344	BB	197229	2576251	93.45%	5.935%
12	17.230	17.177	17.271	BB	195826	2521323	91.46%	5.809%
13	18.110	18.041	18.178	BB	188766	2493045	90.44%	5.743%
14	18.936	18.877	18.998	BB	178110	2429662	88.14%	5.597%
15	19.714	19.661	19.777	BB	160958	2237721	81.17%	5.155%
16	20.447	20.391	20.505	BB	139544	1987049	72.08%	4.578%
17	21.185	21.121	21.262	BB	105633	1915376	69.48%	4.413%
18	22.104	22.025	22.213	BB	80360	1947128	70.63%	4.486%
Sum of corrected areas:							43406531	

FE121824.M Fri Dec 20 03:09:26 2024

Report of Analysis

Client:	Tully Construction Co., Inc.		Date Collected:	12/13/24	
Project:	MTA Rockaway Park		Date Received:	12/13/24	
Client Sample ID:	ROCKAWAY-PARKMS		SDG No.:	P5279	
Lab Sample ID:	P5279-01MS		Matrix:	SOIL	
Analytical Method:	8015D TPH		% Solid:	93.6	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
FE051704.D	1	12/18/24 13:30	12/19/24 10:00	PB165731

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
PHC	Petroleum Hydrocarbons	76.3	E	0.34	3.02	mg/Kg
SURROGATES						
16416-32-3	TETRACOSANE-d50	14.5		37 - 130	72%	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

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
 Data File : FE051704.D
 Signal(s) : FID1B.ch
 Acq On : 19 Dec 2024 10:00
 Operator : YP\AJ
 Sample : P5279-01MS
 Misc :
 ALS Vial : 28 Sample Multiplier: 1

Instrument :
 FID_E
 ClientSampleId :
 ROCKAWAY-PARKMS

Manual Integrations
 APPROVED

Reviewed By :Yogesh Patel 12/20/2024
 Supervised By :Ankita Jodhani 12/20/2024

Integration File: Sample.e
 Quant Time: Dec 20 02:43:23 2024
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
 Quant Title :
 QLast Update : Thu Dec 19 02:46:15 2024
 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...	15.073	1781888	14.458 ug/mlm
Target Compounds			
1) N-OCTANE	2.214	1366394	12.592 ug/ml
2) N-DECANE	4.716	1697382	14.688 ug/ml
3) N-DODECANE	6.854	2676414	21.365 ug/ml
4) N-TETRADECANE	8.665	2940474	23.142 ug/ml
5) N-HEXADECANE	10.259	2468633	18.491 ug/ml
6) N-OCTADECANE	11.692	2591439	18.393 ug/ml
7) N-EICOSANE	12.992	3001943	21.527 ug/ml
8) N-DOCOSANE	14.182	2610661	18.926 ug/ml
10) N-TETRACOSANE	15.272	4476242	32.766 ug/ml
11) N-HEXACOSANE	16.291	2427289	18.228 ug/mlm
12) N-OCTACOSANE	17.234	2590231	19.867 ug/mlm
13) N-TRIACONTANE	18.115	2658385	20.641 ug/ml
14) N-DOTRIACONTANE	18.940	2294820	18.249 ug/ml
15) N-TETRATRIACONTANE	19.717	1987228	17.257 ug/ml
16) N-HEXATRIACONTANE	20.450	2001609	19.577 ug/ml
17) N-OCTATRIACONTANE	21.186	1937292	19.954 ug/mlm
18) N-TETRACONTANE	22.110	1993860	20.478 ug/ml

(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
Data File : FE051704.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 10:00
Operator : YP\AJ
Sample : P5279-01MS
Misc :
ALS Vial : 28 Sample Multiplier: 1

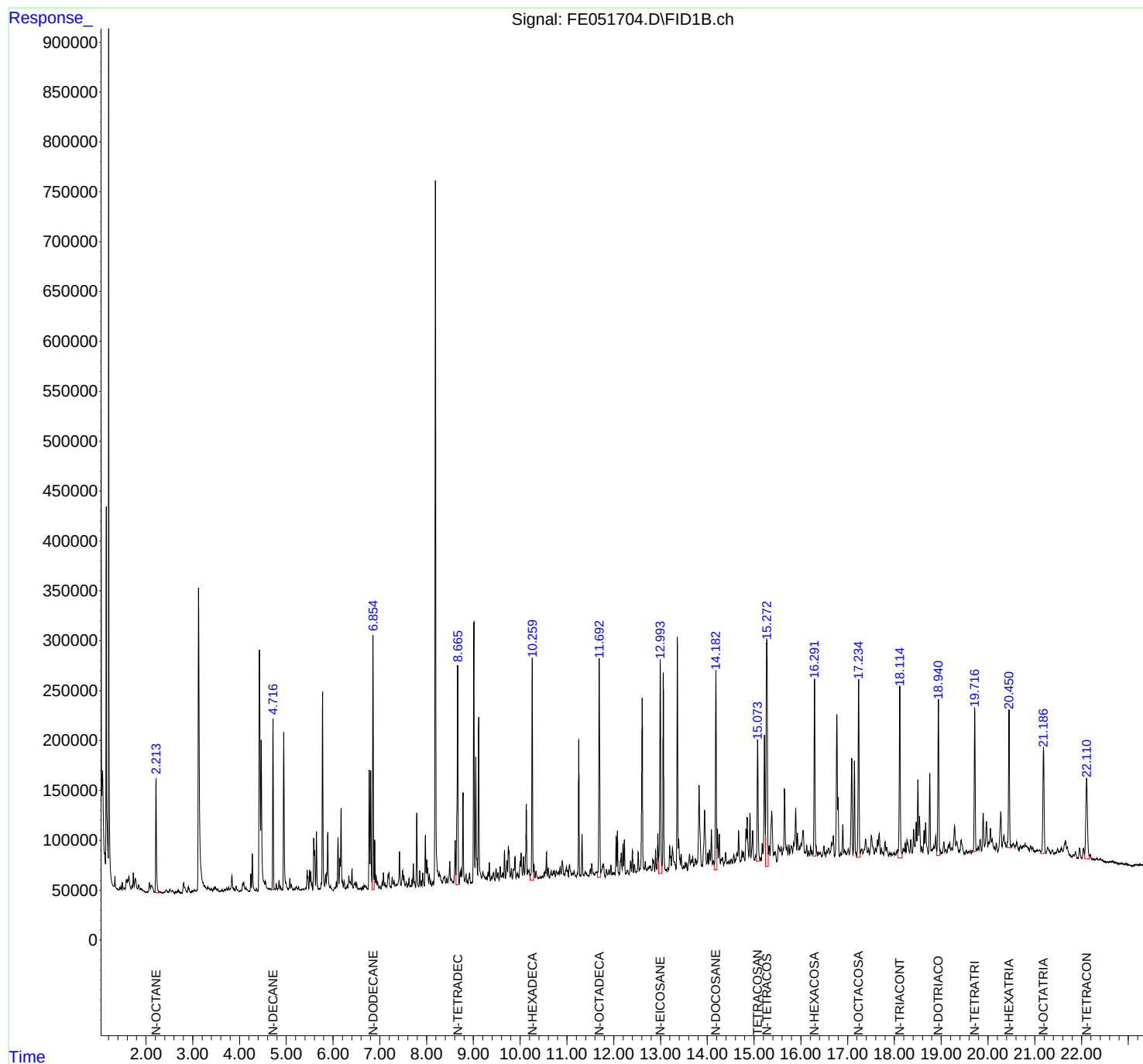
Instrument :
FID_E
ClientSampleId :
ROCKAWAY-PARKMS

Manual Integrations
APPROVED

Reviewed By :Yogesh Patel 12/20/2024
Supervised By :Ankita Jodhani 12/20/2024

Integration File: Sample.e
Quant Time: Dec 20 02:43:23 2024
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Quant Title :
QLast Update : Thu Dec 19 02:46:15 2024
Response via : Initial Calibration
Integrator: ChemStation

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



rteres

Instrument :

FID_E

ClientSampleId :

ROCKAWAY-PARKMS

Area Percent Report

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 12/20/2024

Supervised By :Ankita Jodhani 12/20/2024

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE12192
Data File : FE051704.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 10:00
Sample : P5279-01MS
Misc :
ALS Vial : 28 Sample Multiplier: 1

Integration File: Sample.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Title :

Signal : FID1B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	2.073	2.030	2.095	VV	9333	153392	1.96%	0.058%
2	2.112	2.095	2.124	VV	7233	101594	1.30%	0.038%
3	2.130	2.124	2.188	VV	6364	124855	1.59%	0.047%
4	2.214	2.188	2.306	VV	114434	1363850	17.42%	0.512%
5	2.310	2.306	2.348	VV	726	10370	0.13%	0.004%
6	2.352	2.348	2.373	PV	175	1315	0.02%	0.000%
7	2.394	2.373	2.407	VV	837	11136	0.14%	0.004%
8	2.429	2.407	2.467	VV	3121	69490	0.89%	0.026%
9	2.472	2.467	2.483	VV	992	8697	0.11%	0.003%
10	2.512	2.483	2.547	VV	3452	80531	1.03%	0.030%
11	2.566	2.547	2.616	VV	2542	51747	0.66%	0.019%
12	2.635	2.616	2.647	PV	1453	15880	0.20%	0.006%
13	2.686	2.647	2.768	VV	2593	77187	0.99%	0.029%
14	2.803	2.768	2.883	PV	9794	270437	3.45%	0.101%
15	2.903	2.883	2.951	VV	5986	121695	1.55%	0.046%
16	2.988	2.951	3.007	VV	2328	42039	0.54%	0.016%
17	3.031	3.007	3.053	VV	2489	55590	0.71%	0.021%
18	3.058	3.053	3.072	VV	2124	20406	0.26%	0.008%
19	3.124	3.072	3.303	VV	305480	5700036	72.79%	2.139%
20	3.320	3.303	3.335	VV	5514	90201	1.15%	0.034%
21	3.341	3.335	3.382	VV	4547	97948	1.25%	0.037%
22	3.396	3.382	3.427	VV	3539	75015	0.96%	0.028%
23	3.452	3.427	3.466	VV	4310	76405	0.98%	0.029%
24	3.480	3.466	3.519	VV	6018	124921	1.60%	0.047%
25	3.535	3.519	3.570	VV	3649	62645	0.80%	0.024%
26	3.604	3.570	3.613	VV	1669	32424	0.41%	0.012%
27	3.629	3.613	3.647	VV	2607	40011	0.51%	0.015%
28	3.657	3.647	3.663	VV	1538	14018	0.18%	0.005%
29	3.681	3.663	3.707	VV	2818	59429	0.76%	0.022%
30	3.727	3.707	3.751	VV	4425	80939	1.03%	0.030%
31	3.767	3.751	3.785	VV	5147	70862	0.90%	0.027%
32	3.799	3.785	3.807	VV	3350	40423	0.52%	0.015%
33	3.836	3.807	3.878	VV	16532	313903	4.01%	0.118%
34	3.885	3.878	3.907	VV	2847	39130	0.50%	0.015%
35	3.927	3.907	3.955	VV	6191	107210	1.37%	0.040%
36	3.959	3.955	3.992	VV	2259	28296	0.36%	0.011%

				rters				
37	4.006	3.992	4.013	VV	863	9385	0.12%	0.004%
38	4.030	4.013	4.045	VV	1796	24209		
39	4.068	4.045	4.077	VV	8923	109595		
40	4.090	4.077	4.122	VV	9796	160431		
41	4.135	4.122	4.154	VV	4455	65295		
42	4.157	4.154	4.202	VV	2517	40262		
43	4.208	4.202	4.219	VV	703	4944	0.06%	0.002%
44	4.241	4.219	4.256	VV	18033	167151	2.13%	0.063%
45	4.274	4.256	4.322	VV	38043	519807	6.64%	0.195%
46	4.328	4.322	4.348	VV	2080	22357	0.29%	0.008%
47	4.367	4.348	4.387	VV	3151	41640	0.53%	0.016%
48	4.425	4.387	4.451	VV	241903	3834445	48.97%	1.439%
49	4.465	4.451	4.518	VV	151885	2223442	28.39%	0.834%
50	4.523	4.518	4.541	VV	10235	127019	1.62%	0.048%
51	4.556	4.541	4.629	VV	10502	267988	3.42%	0.101%
52	4.634	4.629	4.658	VV	2693	43243	0.55%	0.016%
53	4.663	4.658	4.675	VV	2297	21846	0.28%	0.008%
54	4.716	4.675	4.745	VV	173099	1783937	22.78%	0.670%
55	4.757	4.745	4.771	VV	2767	36953	0.47%	0.014%
56	4.787	4.771	4.814	VV	7457	108344	1.38%	0.041%
57	4.845	4.814	4.864	VV	10965	154811	1.98%	0.058%
58	4.878	4.864	4.898	VV	4798	63026	0.80%	0.024%
59	4.911	4.898	4.922	VV	2406	26968	0.34%	0.010%
60	4.946	4.922	4.988	VV	159497	1946702	24.86%	0.731%
61	4.992	4.988	5.040	VV	8147	144580	1.85%	0.054%
62	5.055	5.040	5.060	VV	3126	33310	0.43%	0.013%
63	5.076	5.060	5.095	VV	13082	154324	1.97%	0.058%
64	5.110	5.095	5.146	VV	6623	115007	1.47%	0.043%
65	5.167	5.146	5.183	VV	2244	38403	0.49%	0.014%
66	5.215	5.183	5.245	VV	4423	105367	1.35%	0.040%
67	5.263	5.245	5.304	VV	4513	76926	0.98%	0.029%
68	5.317	5.304	5.330	VV	1581	18290	0.23%	0.007%
69	5.341	5.330	5.348	VV	2011	18302	0.23%	0.007%
70	5.359	5.348	5.375	VV	2331	27813	0.36%	0.010%
71	5.412	5.375	5.424	VV	3308	65484	0.84%	0.025%
72	5.447	5.424	5.482	VV	20750	361579	4.62%	0.136%
73	5.499	5.482	5.512	VV	21137	216459	2.76%	0.081%
74	5.524	5.512	5.539	VV	19153	207671	2.65%	0.078%
75	5.548	5.539	5.567	VV	8100	90437	1.15%	0.034%
76	5.588	5.567	5.598	VV	52851	532660	6.80%	0.200%
77	5.605	5.598	5.626	VV	40682	420976	5.38%	0.158%
78	5.645	5.626	5.693	VV	59380	697217	8.90%	0.262%
79	5.707	5.693	5.712	VV	2057	21531	0.27%	0.008%
80	5.720	5.712	5.731	VV	2346	23470	0.30%	0.009%
81	5.748	5.731	5.755	VV	8000	79749	1.02%	0.030%
82	5.776	5.755	5.822	VV	199446	2195633	28.04%	0.824%
83	5.841	5.822	5.854	VV	16619	205196	2.62%	0.077%
84	5.867	5.854	5.871	VV	18408	142821	1.82%	0.054%
85	5.886	5.871	5.934	VV	58606	747394	9.54%	0.280%
86	5.946	5.934	6.002	VV	4443	79360	1.01%	0.030%
87	6.030	6.002	6.040	VV	3074	35915	0.46%	0.013%
88	6.044	6.040	6.055	VV	2840	22467	0.29%	0.008%
89	6.070	6.055	6.083	VV	8257	92909	1.19%	0.035%

Instrument :
FID_E
ClientSampleId :
ROCKAWAY-PARKMS

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 12/20/2024
Supervised By :Ankita Jodhani 12/20/2024

90	6.106	6.083	6.127	VV	53117	667710	8.53%	0.251%
91	6.148	6.127	6.157	VV	32467	375955		
92	6.171	6.157	6.193	VV	82198	887035		
93	6.202	6.193	6.218	VV	9699	104037		
94	6.238	6.218	6.265	VV	9175	145796		
95	6.281	6.265	6.290	VV	2834	32357		
96	6.302	6.290	6.318	VV	5241	61902	0.79%	0.023%
97	6.338	6.318	6.352	VV	14682	173957	2.22%	0.065%
98	6.360	6.352	6.389	VV	8632	168587	2.15%	0.063%
99	6.405	6.389	6.428	VV	21629	239093	3.05%	0.090%
100	6.456	6.428	6.467	VV	6681	116511	1.49%	0.044%
101	6.477	6.467	6.490	VV	7876	81821	1.04%	0.031%
102	6.504	6.490	6.534	VV	7016	94901	1.21%	0.036%
103	6.549	6.534	6.560	VV	1710	19641	0.25%	0.007%
104	6.594	6.560	6.612	VV	2307	40943	0.52%	0.015%
105	6.627	6.612	6.644	PV	3466	36379	0.46%	0.014%
106	6.663	6.644	6.674	VV	4533	53632	0.68%	0.020%
107	6.684	6.674	6.695	VV	3603	38827	0.50%	0.015%
108	6.707	6.695	6.728	VV	3911	53619	0.68%	0.020%
109	6.737	6.728	6.749	VV	1254	12152	0.16%	0.005%
110	6.774	6.749	6.789	VV	120083	1209298	15.44%	0.454%
111	6.805	6.789	6.832	VV	119275	1338157	17.09%	0.502%
112	6.854	6.832	6.877	VV	254903	2678781	34.21%	1.005%
113	6.891	6.877	6.910	VV	49768	526146	6.72%	0.197%
114	6.923	6.910	6.942	VV	13606	184478	2.36%	0.069%
115	6.954	6.942	6.984	VV	7471	102881	1.31%	0.039%
116	7.004	6.984	7.023	VV	3782	49628	0.63%	0.019%
117	7.050	7.023	7.062	VV	6748	86538	1.11%	0.032%
118	7.078	7.062	7.095	VV	16676	188258	2.40%	0.071%
119	7.106	7.095	7.121	VV	6297	73235	0.94%	0.027%
120	7.126	7.121	7.147	VV	3481	50450	0.64%	0.019%
121	7.176	7.147	7.185	VV	14311	193183	2.47%	0.073%
122	7.195	7.185	7.219	VV	16085	192278	2.46%	0.072%
123	7.224	7.219	7.242	VV	2729	27705	0.35%	0.010%
124	7.264	7.242	7.289	VV	11513	176093	2.25%	0.066%
125	7.304	7.289	7.327	VV	8347	128641	1.64%	0.048%
126	7.332	7.327	7.339	VV	3403	24599	0.31%	0.009%
127	7.352	7.339	7.365	VV	4835	62533	0.80%	0.023%
128	7.421	7.365	7.455	VV	37286	598012	7.64%	0.224%
129	7.487	7.455	7.504	VV	17968	319936	4.09%	0.120%
130	7.515	7.504	7.543	VV	13503	184145	2.35%	0.069%
131	7.565	7.543	7.587	VV	6443	107656	1.37%	0.040%
132	7.604	7.587	7.612	VV	4780	49634	0.63%	0.019%
133	7.624	7.612	7.644	VV	10058	112988	1.44%	0.042%
134	7.660	7.644	7.672	VV	2749	37696	0.48%	0.014%
135	7.689	7.672	7.702	VV	8569	95918	1.22%	0.036%
136	7.717	7.702	7.737	VV	24793	274026	3.50%	0.103%
137	7.745	7.737	7.765	VV	6531	68707	0.88%	0.026%
138	7.790	7.765	7.827	VV	75472	826166	10.55%	0.310%
139	7.856	7.827	7.874	VV	17544	204343	2.61%	0.077%
140	7.889	7.874	7.901	VV	7214	76172	0.97%	0.029%
141	7.918	7.901	7.952	VV	15203	222456	2.84%	0.083%

Instrument :
FID_E
ClientSampleId :
ROCKAWAY-PARKMS

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 12/20/2024
Supervised By :Ankita Jodhani 12/20/2024

							Instrument : FID_E ClientSampleId : ROCKAWAY-PARKMS	
195	10.259	10.210	10.282	VV	226796	2641274	33.73%	0.991%
196	10.294	10.282	10.316	VV	19827	270774		
197	10.340	10.316	10.393	VV	13097	380271		
198	10.407	10.393	10.415	VV	6732	83851		
199	10.430	10.415	10.445	VV	7037	115073		
200	10.475	10.445	10.495	VV	7792	202793		
201	10.514	10.495	10.526	VV	11796	168953	2.16%	0.063%
202	10.539	10.526	10.548	VV	12739	144231	1.84%	0.054%
203	10.564	10.548	10.582	VV	31493	393137	5.02%	0.148%
204	10.598	10.582	10.628	VV	15586	283229	3.62%	0.106%
205	10.663	10.628	10.692	VV	12553	350859	4.48%	0.132%
206	10.707	10.692	10.719	VV	12327	174417	2.23%	0.065%
207	10.732	10.719	10.754	VV	12618	212075	2.71%	0.080%
208	10.772	10.754	10.787	VV	12407	207098	2.64%	0.078%
209	10.792	10.787	10.810	VV	11082	137454	1.76%	0.052%
210	10.826	10.810	10.837	VV	11767	168524	2.15%	0.063%
211	10.856	10.837	10.875	VV	16455	291159	3.72%	0.109%
212	10.902	10.875	10.951	VV	22159	575386	7.35%	0.216%
213	10.973	10.951	10.978	VV	12971	179309	2.29%	0.067%
214	10.991	10.978	11.007	VV	16571	239515	3.06%	0.090%
215	11.015	11.007	11.032	VV	12703	162752	2.08%	0.061%
216	11.055	11.032	11.094	VV	18023	468955	5.99%	0.176%
217	11.124	11.094	11.136	VV	9547	225533	2.88%	0.085%
218	11.154	11.136	11.186	VV	12256	279842	3.57%	0.105%
219	11.191	11.186	11.204	VV	6735	67930	0.87%	0.025%
220	11.220	11.204	11.226	VV	8704	100421	1.28%	0.038%
221	11.252	11.226	11.298	VV	142760	1700795	21.72%	0.638%
222	11.325	11.298	11.349	VV	48264	639676	8.17%	0.240%
223	11.354	11.349	11.367	VV	7544	79441	1.01%	0.030%
224	11.388	11.367	11.410	VV	10476	235536	3.01%	0.088%
225	11.415	11.410	11.443	VV	9184	161419	2.06%	0.061%
226	11.447	11.443	11.467	VV	6992	95329	1.22%	0.036%
227	11.501	11.467	11.517	VV	13182	281523	3.60%	0.106%
228	11.532	11.517	11.551	VV	18808	273601	3.49%	0.103%
229	11.556	11.551	11.587	VV	9637	180929	2.31%	0.068%
230	11.615	11.587	11.630	VV	10122	231697	2.96%	0.087%
231	11.639	11.630	11.649	VV	9784	110431	1.41%	0.041%
232	11.692	11.649	11.722	VV	224073	2794209	35.68%	1.049%
233	11.774	11.722	11.818	VV	17970	693024	8.85%	0.260%
234	11.847	11.818	11.868	VV	12186	249669	3.19%	0.094%
235	11.898	11.868	11.913	VV	11888	252365	3.22%	0.095%
236	11.940	11.913	11.962	VV	16432	320798	4.10%	0.120%
237	11.975	11.962	11.982	VV	7753	90471	1.16%	0.034%
238	11.996	11.982	12.025	VV	8688	200916	2.57%	0.075%
239	12.049	12.025	12.063	VV	45776	567256	7.24%	0.213%
240	12.079	12.063	12.100	VV	50237	601254	7.68%	0.226%
241	12.104	12.100	12.120	VV	8889	95086	1.21%	0.036%
242	12.145	12.120	12.151	VV	20724	250303	3.20%	0.094%
243	12.163	12.151	12.178	VV	28452	347750	4.44%	0.131%
244	12.196	12.178	12.210	VV	37895	471250	6.02%	0.177%
245	12.227	12.210	12.259	VV	41181	612603	7.82%	0.230%
246	12.267	12.259	12.275	VV	7861	72483	0.93%	0.027%

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247	12.292	12.275	12.327	VV	11020	276128		
248	12.359	12.327	12.379	VV	19832	401637		
249	12.400	12.379	12.421	VV	30700	457989		
250	12.441	12.421	12.476	VV	16123	394881		
251	12.489	12.476	12.497	VV	9221	114493		
252	12.521	12.497	12.542	VV	28233	472705		
253	12.555	12.542	12.562	VV	11843	128248	1.64%	0.048%
254	12.608	12.562	12.651	VV	182660	2959162	37.79%	1.111%
255	12.671	12.651	12.692	VV	19086	344163	4.40%	0.129%
256	12.696	12.692	12.710	VV	11483	114770	1.47%	0.043%
257	12.725	12.710	12.736	VV	12101	175701	2.24%	0.066%
258	12.745	12.736	12.756	VV	12806	146714	1.87%	0.055%
259	12.768	12.756	12.778	VV	14671	179579	2.29%	0.067%
260	12.788	12.778	12.812	VV	14051	239675	3.06%	0.090%
261	12.834	12.812	12.843	VV	20263	285158	3.64%	0.107%
262	12.851	12.843	12.873	VV	19659	270944	3.46%	0.102%
263	12.893	12.873	12.920	VV	29681	497565	6.35%	0.187%
264	12.944	12.920	12.961	VV	46160	664036	8.48%	0.249%
265	12.992	12.961	13.031	VV	220874	3273798	41.81%	1.229%
266	13.060	13.031	13.112	VV	207743	2841277	36.28%	1.066%
267	13.122	13.112	13.138	VV	10234	148868	1.90%	0.056%
268	13.154	13.138	13.170	VV	11762	200817	2.56%	0.075%
269	13.194	13.170	13.208	VV	33679	511796	6.54%	0.192%
270	13.216	13.208	13.232	VV	23501	276860	3.54%	0.104%
271	13.257	13.232	13.291	VV	31634	830694	10.61%	0.312%
272	13.296	13.291	13.330	VV	17441	342184	4.37%	0.128%
273	13.358	13.330	13.377	VV	242731	2855379	36.46%	1.072%
274	13.387	13.377	13.426	VV	40602	782886	10.00%	0.294%
275	13.441	13.426	13.468	VV	25005	421325	5.38%	0.158%
276	13.491	13.468	13.508	VV	13404	287594	3.67%	0.108%
277	13.526	13.508	13.541	VV	16472	263034	3.36%	0.099%
278	13.555	13.541	13.576	VV	16177	272996	3.49%	0.102%
279	13.617	13.576	13.637	VV	24327	611592	7.81%	0.230%
280	13.656	13.637	13.671	VV	18780	345436	4.41%	0.130%
281	13.686	13.671	13.710	VV	22190	419974	5.36%	0.158%
282	13.747	13.710	13.766	VV	20054	528014	6.74%	0.198%
283	13.779	13.766	13.788	VV	17567	222631	2.84%	0.084%
284	13.822	13.788	13.892	VV	93331	2380820	30.40%	0.894%
285	13.940	13.892	13.983	VV	68609	1852479	23.66%	0.695%
286	14.008	13.983	14.026	VV	25556	493630	6.30%	0.185%
287	14.048	14.026	14.066	VV	28083	524231	6.69%	0.197%
288	14.086	14.066	14.109	VV	48529	753927	9.63%	0.283%
289	14.128	14.109	14.151	VV	17465	382891	4.89%	0.144%
290	14.182	14.151	14.203	VV	208747	2854522	36.45%	1.071%
291	14.215	14.203	14.233	VV	49017	650085	8.30%	0.244%
292	14.255	14.233	14.276	VV	43749	731272	9.34%	0.274%
293	14.292	14.276	14.306	VV	18805	306728	3.92%	0.115%
294	14.324	14.306	14.348	VV	20291	438598	5.60%	0.165%
295	14.365	14.348	14.371	VV	14957	192356	2.46%	0.072%
296	14.392	14.371	14.424	VV	24798	593541	7.58%	0.223%
297	14.437	14.424	14.450	VV	15572	227866	2.91%	0.086%
298	14.463	14.450	14.481	VV	17445	295089	3.77%	0.111%
299	14.515	14.481	14.540	VV	18506	562809	7.19%	0.211%

Instrument :

FID_E

ClientSampleId :

ROCKAWAY-PARKMS

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300	14.565	14.540	14.588	VV	22740	537549	6.86%	0.202%
301	14.632	14.588	14.649	VV	24367	730854		
302	14.667	14.649	14.709	VV	46731	968399	12.84%	0.377%
303	14.742	14.709	14.756	VV	25709	573186	7.76%	0.228%
304	14.772	14.756	14.801	VV	25483	561245	7.76%	0.228%
305	14.825	14.801	14.837	VV	47148	738910	6.80%	0.200%
306	14.853	14.837	14.889	VV	59908	1184576	15.13%	0.445%
307	14.911	14.889	14.932	VV	63813	1005135	12.84%	0.377%
308	14.968	14.932	15.012	VV	46302	1291654	16.49%	0.485%
309	15.030	15.012	15.045	VV	20937	387800	4.95%	0.146%
310	15.074	15.045	15.124	VV	137096	2504369	31.98%	0.940%
311	15.138	15.124	15.151	VV	18695	286348	3.66%	0.107%
312	15.173	15.151	15.191	VV	32919	585808	7.48%	0.220%
313	15.220	15.191	15.242	VV	141813	2284861	29.18%	0.858%
314	15.272	15.242	15.302	VV	237229	4825933	61.63%	1.811%
315	15.322	15.302	15.340	VV	30218	595279	7.60%	0.223%
316	15.376	15.340	15.414	VV	64975	1876510	23.96%	0.704%
317	15.425	15.414	15.438	VV	22844	317622	4.06%	0.119%
318	15.453	15.438	15.489	VV	24380	607843	7.76%	0.228%
319	15.518	15.489	15.560	VV	30575	1044016	13.33%	0.392%
320	15.577	15.560	15.599	VV	28795	599906	7.66%	0.225%
321	15.621	15.599	15.628	VV	27392	425305	5.43%	0.160%
322	15.650	15.628	15.690	VV	86768	1755909	22.42%	0.659%
323	15.704	15.690	15.723	VV	29063	512915	6.55%	0.192%
324	15.744	15.723	15.762	VV	30581	607941	7.76%	0.228%
325	15.792	15.762	15.797	VV	29554	547127	6.99%	0.205%
326	15.801	15.797	15.821	VV	29051	386971	4.94%	0.145%
327	15.843	15.821	15.857	VV	32773	603128	7.70%	0.226%
328	15.888	15.857	15.909	VV	67298	1359612	17.36%	0.510%
329	15.925	15.909	15.961	VV	42185	971438	12.41%	0.365%
330	15.973	15.961	15.987	VV	28775	424662	5.42%	0.159%
331	16.001	15.987	16.015	VV	31213	519814	6.64%	0.195%
332	16.046	16.015	16.095	VV	44797	1553727	19.84%	0.583%
333	16.125	16.095	16.146	VV	29536	739397	9.44%	0.277%
334	16.164	16.146	16.186	VV	23480	501497	6.40%	0.188%
335	16.206	16.186	16.223	VV	28506	532380	6.80%	0.200%
336	16.236	16.223	16.256	VV	24054	431913	5.52%	0.162%
337	16.292	16.256	16.320	VV	196063	3134664	40.03%	1.176%
338	16.326	16.320	16.362	VV	27989	583483	7.45%	0.219%
339	16.383	16.362	16.401	VV	22242	487746	6.23%	0.183%
340	16.418	16.401	16.450	VV	22359	592136	7.56%	0.222%
341	16.493	16.450	16.509	VV	28454	803192	10.26%	0.301%
342	16.518	16.509	16.533	VV	21629	299537	3.83%	0.112%
343	16.552	16.533	16.567	VV	23913	428045	5.47%	0.161%
344	16.594	16.567	16.616	VV	25892	699607	8.93%	0.263%
345	16.653	16.616	16.666	VV	30419	761319	9.72%	0.286%
346	16.694	16.666	16.720	VV	38526	938529	11.99%	0.352%
347	16.768	16.720	16.786	VV	159538	2806572	35.84%	1.053%
348	16.795	16.786	16.827	VV	76806	1045777	13.35%	0.392%
349	16.847	16.827	16.870	VV	20405	489523	6.25%	0.184%
350	16.895	16.870	16.918	VV	49136	900451	11.50%	0.338%
351	16.932	16.918	16.946	VV	23824	386649	4.94%	0.145%

Instrument :

FID_E

ClientSampleId :

ROCKAWAY-PARKMS

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							Instrument : FID_E	
rteres							ClientSampleId : ROCKAWAY-PARKMS	
352	16.952	16.946	16.971	VV	21358	300510	3.84%	0.113%
353	17.012	16.971	17.034	VV	24973	813169	10.00%	0.113%
354	17.087	17.034	17.114	VV	115541	2458578	31.00%	0.113%
355	17.144	17.114	17.193	VV	112695	2011924	25.00%	0.113%
356	17.234	17.193	17.269	VV	193973	3311692	42.00%	0.149%
357	17.303	17.269	17.327	VV	23874	763918	9.00%	0.149%
358	17.353	17.327	17.357	VV	23296	396358	5.06%	0.149%
359	17.384	17.357	17.428	VV	33835	1120670	14.31%	0.421%
360	17.444	17.428	17.464	VV	24650	468300	5.98%	0.176%
361	17.507	17.464	17.568	VV	36091	1647143	21.03%	0.618%
362	17.595	17.568	17.614	VV	24686	599686	7.66%	0.225%
363	17.637	17.614	17.651	VV	32683	628667	8.03%	0.236%
364	17.672	17.651	17.703	VV	39062	937383	11.97%	0.352%
365	17.721	17.703	17.740	VV	24273	484296	6.18%	0.182%
366	17.749	17.740	17.767	VV	20214	315375	4.03%	0.118%
367	17.799	17.767	17.822	VV	30257	780430	9.97%	0.293%
368	17.835	17.822	17.874	VV	25141	662463	8.46%	0.249%
369	17.892	17.874	17.913	VV	18929	423439	5.41%	0.159%
370	17.927	17.913	17.948	VV	18801	367828	4.70%	0.138%
371	17.978	17.948	17.991	VV	19305	466573	5.96%	0.175%
372	18.008	17.991	18.022	VV	18849	338724	4.33%	0.127%
373	18.066	18.022	18.073	VV	21441	590403	7.54%	0.222%
374	18.115	18.073	18.166	VV	186290	3435027	43.87%	1.289%
375	18.188	18.166	18.212	VV	23493	574403	7.34%	0.216%
376	18.230	18.212	18.248	VV	28266	515226	6.58%	0.193%
377	18.269	18.248	18.288	VV	31617	642331	8.20%	0.241%
378	18.289	18.288	18.321	VV	26940	455778	5.82%	0.171%
379	18.349	18.321	18.379	VV	31987	825865	10.55%	0.310%
380	18.410	18.379	18.432	VV	41950	908249	11.60%	0.341%
381	18.439	18.432	18.443	VV	25502	173302	2.21%	0.065%
382	18.465	18.443	18.481	VV	49085	848537	10.84%	0.318%
383	18.501	18.481	18.520	VV	91544	1385640	17.69%	0.520%
384	18.534	18.520	18.567	VV	54874	1092840	13.96%	0.410%
385	18.584	18.567	18.609	VV	24300	532685	6.80%	0.200%
386	18.633	18.609	18.648	VV	40599	707197	9.03%	0.265%
387	18.666	18.648	18.723	VV	48271	1325621	16.93%	0.498%
388	18.756	18.723	18.781	VV	97777	1581757	20.20%	0.594%
389	18.792	18.781	18.807	VV	20940	314867	4.02%	0.118%
390	18.841	18.807	18.856	VV	24496	659987	8.43%	0.248%
391	18.882	18.856	18.906	VV	34294	786097	10.04%	0.295%
392	18.940	18.906	18.972	VV	171551	2894569	36.96%	1.086%
393	18.977	18.972	18.995	VV	19964	260786	3.33%	0.098%
394	19.006	18.995	19.011	VV	17713	165990	2.12%	0.062%
395	19.057	19.011	19.080	VV	28617	911268	11.64%	0.342%
396	19.099	19.080	19.123	VV	20287	496179	6.34%	0.186%
397	19.152	19.123	19.167	VV	25296	575076	7.34%	0.216%
398	19.182	19.167	19.204	VV	27750	534495	6.83%	0.201%
399	19.223	19.204	19.240	VV	22462	455189	5.81%	0.171%
400	19.285	19.240	19.314	VV	43917	1366477	17.45%	0.513%
401	19.333	19.314	19.373	VV	28316	854175	10.91%	0.321%
402	19.387	19.373	19.396	VV	19532	253889	3.24%	0.095%
403	19.426	19.396	19.492	VV	29562	1300629	16.61%	0.488%
404	19.506	19.492	19.511	VV	16746	192923	2.46%	0.072%

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405	19.533	19.511	19.560	VV	19435	516775	6.60%	0.194%
406	19.592	19.560	19.614	VV	18688	559741		
407	19.634	19.614	19.651	VV	18959	386927		
408	19.664	19.651	19.669	VV	18309	193192		
409	19.674	19.669	19.683	VV	18257	151490		
410	19.717	19.683	19.747	VV	162287	2664674	34.14%	0.194%
411	19.761	19.747	19.773	VV	20318	302753	3.87%	0.114%
412	19.791	19.773	19.808	VV	22387	433655	5.54%	0.163%
413	19.834	19.808	19.861	VV	29552	770575	9.84%	0.289%
414	19.898	19.861	19.926	VV	55875	1315513	16.80%	0.494%
415	19.967	19.926	19.997	VV	47452	1370720	17.50%	0.514%
416	20.015	19.997	20.029	VV	26823	478047	6.10%	0.179%
417	20.053	20.029	20.074	VV	40450	861845	11.01%	0.323%
418	20.090	20.074	20.134	VV	29169	887927	11.34%	0.333%
419	20.141	20.134	20.158	VV	21216	291347	3.72%	0.109%
420	20.178	20.158	20.209	VV	25368	646398	8.25%	0.243%
421	20.274	20.209	20.301	VV	55917	1769427	22.60%	0.664%
422	20.341	20.301	20.393	VV	33058	1437067	18.35%	0.539%
423	20.450	20.393	20.487	VV	158933	3155906	40.30%	1.184%
424	20.497	20.487	20.507	VV	22214	256460	3.28%	0.096%
425	20.539	20.507	20.577	VV	24289	949689	12.13%	0.356%
426	20.588	20.577	20.597	VV	22018	251182	3.21%	0.094%
427	20.616	20.597	20.662	VV	25779	843666	10.77%	0.317%
428	20.690	20.662	20.718	VV	22289	681401	8.70%	0.256%
429	20.753	20.718	20.771	VV	21774	649452	8.29%	0.244%
430	20.793	20.771	20.814	VV	23265	564537	7.21%	0.212%
431	20.827	20.814	20.884	VV	21185	825220	10.54%	0.310%
432	20.909	20.884	20.937	VV	21160	617920	7.89%	0.232%
433	20.957	20.937	21.002	VV	19778	675709	8.63%	0.254%
434	21.012	21.002	21.018	VV	15991	155683	1.99%	0.058%
435	21.042	21.018	21.047	VV	16699	271925	3.47%	0.102%
436	21.054	21.047	21.074	VV	16922	270491	3.45%	0.102%
437	21.101	21.074	21.130	VV	16938	547226	6.99%	0.205%
438	21.187	21.130	21.237	VV	120022	2796938	35.72%	1.050%
439	21.279	21.237	21.347	VV	19051	1047754	13.38%	0.393%
440	21.379	21.347	21.409	VV	16708	545759	6.97%	0.205%
441	21.445	21.409	21.456	VV	13566	373831	4.77%	0.140%
442	21.487	21.456	21.517	VV	17233	556419	7.11%	0.209%
443	21.536	21.517	21.540	VV	15138	209392	2.67%	0.079%
444	21.568	21.540	21.606	VV	18185	632404	8.08%	0.237%
445	21.660	21.606	21.682	VV	25314	947176	12.10%	0.355%
446	21.696	21.682	21.802	VV	19261	917660	11.72%	0.344%
447	21.826	21.802	21.846	VV	11323	276778	3.53%	0.104%
448	21.872	21.846	21.927	VV	13538	486940	6.22%	0.183%
449	21.960	21.927	21.997	VV	17269	485780	6.20%	0.182%
450	22.044	21.997	22.065	VV	16870	477988	6.10%	0.179%
451	22.110	22.065	22.167	VV	87560	2390358	30.53%	0.897%
Sum of corrected areas:					266453729			

Instrument :
FID_E
ClientSampleId :
ROCKAWAY-PARKMS

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 12/20/2024
Supervised By :Ankita Jodhani 12/20/2024

Report of Analysis

Client:	Tully Construction Co., Inc.		Date Collected:	12/13/24	
Project:	MTA Rockaway Park		Date Received:	12/13/24	
Client Sample ID:	ROCKAWAY-PARKMSD		SDG No.:	P5279	
Lab Sample ID:	P5279-01MSD		Matrix:	SOIL	
Analytical Method:	8015D TPH		% Solid:	93.6	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
FE051705.D	1	12/18/24 13:30	12/19/24 10:30	PB165731

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
PHC	Petroleum Hydrocarbons	76.6	E	0.34	3.02	mg/Kg
SURROGATES						
16416-32-3	TETRACOSANE-d50	14.7		37 - 130	74%	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

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
 Data File : FE051705.D
 Signal(s) : FID1B.ch
 Acq On : 19 Dec 2024 10:30
 Operator : YP\AJ
 Sample : P5279-01MSD
 Misc :
 ALS Vial : 29 Sample Multiplier: 1

Instrument :
 FID_E
 ClientSampleId :
 ROCKAWAY-PARKMSD

Manual Integrations
 APPROVED

Reviewed By :Yogesh Patel 12/20/2024
 Supervised By :Ankita Jodhani 12/20/2024

Integration File: Sample.e
 Quant Time: Dec 20 02:43:47 2024
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
 Quant Title :
 QLast Update : Thu Dec 19 02:46:15 2024
 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...	15.074	1811917	14.702 ug/mlm
Target Compounds			
1) N-OCTANE	2.217	1308137	12.055 ug/ml
2) N-DECANE	4.716	1710598	14.802 ug/ml
3) N-DODECANE	6.855	2765356	22.075 ug/ml
4) N-TETRADECANE	8.665	2986860	23.507 ug/ml
5) N-HEXADECANE	10.260	2513769	18.829 ug/ml
6) N-OCTADECANE	11.693	2631203	18.675 ug/ml
7) N-EICOSANE	12.993	3076591	22.062 ug/ml
8) N-DOCOSANE	14.183	2648616	19.202 ug/ml
10) N-TETRACOSANE	15.268	4313800	31.577 ug/mlm
11) N-HEXACOSANE	16.292	2475018	18.587 ug/mlm
12) N-OCTACOSANE	17.234	2742051	21.031 ug/ml
13) N-TRIACONTANE	18.115	2658968	20.646 ug/ml
14) N-DOTRIACONTANE	18.940	2298234	18.276 ug/ml
15) N-TETRATRIACONTANE	19.718	2004622	17.408 ug/ml
16) N-HEXATRIACONTANE	20.451	2000669	19.568 ug/ml
17) N-OCTATRIACONTANE	21.189	1865388	19.213 ug/ml
18) N-TETRACONTANE	22.111	1945233	19.978 ug/ml

(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE121924\
Data File : FE051705.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 10:30
Operator : YP\AJ
Sample : P5279-01MSD
Misc :
ALS Vial : 29 Sample Multiplier: 1

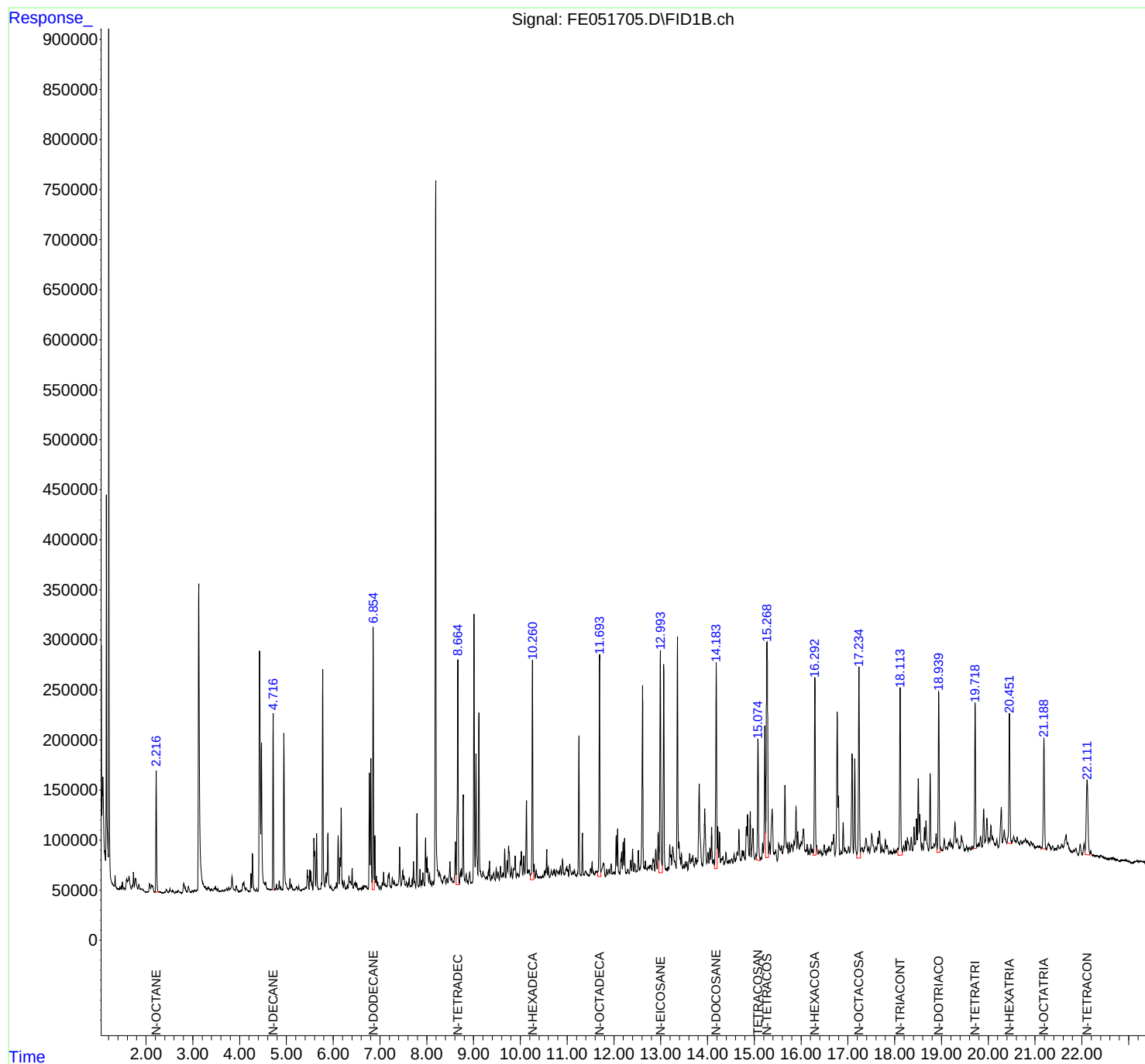
Instrument :
FID_E
ClientSampleId :
ROCKAWAY-PARKMSD

Manual Integrations
APPROVED

Reviewed By :Yogesh Patel 12/20/2024
Supervised By :Ankita Jodhani 12/20/2024

Integration File: Sample.e
Quant Time: Dec 20 02:43:47 2024
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Quant Title :
QLast Update : Thu Dec 19 02:46:15 2024
Response via : Initial Calibration
Integrator: ChemStation

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



rteres

Instrument :

FID_E

ClientSampleId :

ROCKAWAY-PARKMSD

Area Percent Report

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 12/20/2024

Supervised By :Ankita Jodhani 12/20/2024

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_E\Data\FE12192
Data File : FE051705.D
Signal(s) : FID1B.ch
Acq On : 19 Dec 2024 10:30
Sample : P5279-01MSD
Misc :
ALS Vial : 29 Sample Multiplier: 1

Integration File: Sample.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_E\methods\FE121824.M
Title :

Signal : FID1B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	2.217	2.192	2.267	VV	121978	1332852	16.83%	0.499%
2	2.276	2.267	2.357	VV	1022	30308	0.38%	0.011%
3	2.361	2.357	2.369	PV	74	381	0.00%	0.000%
4	2.433	2.369	2.481	PV	3176	84292	1.06%	0.032%
5	2.512	2.481	2.550	VV	3703	80765	1.02%	0.030%
6	2.569	2.550	2.617	VV	2551	50804	0.64%	0.019%
7	2.636	2.617	2.651	PV	1481	16733	0.21%	0.006%
8	2.689	2.651	2.770	VV	2560	79277	1.00%	0.030%
9	2.807	2.770	2.884	PV	9768	276633	3.49%	0.104%
10	2.904	2.884	2.952	VV	6321	125249	1.58%	0.047%
11	2.960	2.952	2.965	VV	963	6106	0.08%	0.002%
12	2.989	2.965	3.010	VV	2355	39184	0.49%	0.015%
13	3.037	3.010	3.051	VV	2557	51690	0.65%	0.019%
14	3.059	3.051	3.074	VV	2221	27743	0.35%	0.010%
15	3.126	3.074	3.303	VV	308489	5601559	70.72%	2.097%
16	3.323	3.303	3.335	VV	5297	83042	1.05%	0.031%
17	3.342	3.335	3.382	VV	4419	92538	1.17%	0.035%
18	3.398	3.382	3.429	VV	3254	71160	0.90%	0.027%
19	3.456	3.429	3.468	VV	4227	75679	0.96%	0.028%
20	3.482	3.468	3.521	VV	6004	118647	1.50%	0.044%
21	3.536	3.521	3.568	VV	3297	56966	0.72%	0.021%
22	3.582	3.568	3.590	VV	1167	13239	0.17%	0.005%
23	3.606	3.590	3.615	VV	1538	19450	0.25%	0.007%
24	3.629	3.615	3.648	VV	2496	37141	0.47%	0.014%
25	3.656	3.648	3.661	VV	1410	10039	0.13%	0.004%
26	3.685	3.661	3.707	VV	2769	59359	0.75%	0.022%
27	3.728	3.707	3.751	VV	4306	77374	0.98%	0.029%
28	3.769	3.751	3.785	VV	5007	71174	0.90%	0.027%
29	3.801	3.785	3.808	VV	3653	43078	0.54%	0.016%
30	3.837	3.808	3.878	VV	16045	311586	3.93%	0.117%
31	3.886	3.878	3.908	VV	2920	41112	0.52%	0.015%
32	3.928	3.908	3.992	VV	6485	137784	1.74%	0.052%
33	4.008	3.992	4.017	VV	877	9877	0.12%	0.004%
34	4.031	4.017	4.047	VV	1635	21919	0.28%	0.008%
35	4.069	4.047	4.079	VV	8913	112158	1.42%	0.042%
36	4.091	4.079	4.123	VV	9917	159484	2.01%	0.060%

					rters			
37	4.137	4.123	4.199	VV	4487	101608	1.28%	0.038%
38	4.208	4.199	4.221	VV	681	5956		
39	4.242	4.221	4.256	VV	18625	172233		
40	4.275	4.256	4.323	VV	38705	523342		
41	4.328	4.323	4.348	VV	1909	20224		
42	4.368	4.348	4.387	VV	3197	41216		
43	4.426	4.387	4.452	VV	240692	3795292	47.92%	1.421%
44	4.466	4.452	4.515	VV	148606	2116651	26.72%	0.792%
45	4.524	4.515	4.544	VV	9078	141823	1.79%	0.053%
46	4.557	4.544	4.602	VV	9523	185774	2.35%	0.070%
47	4.604	4.602	4.637	VV	2749	50879	0.64%	0.019%
48	4.641	4.637	4.658	VV	2351	26477	0.33%	0.010%
49	4.665	4.658	4.675	VV	2175	20919	0.26%	0.008%
50	4.683	4.675	4.691	VV	2260	19975	0.25%	0.007%
51	4.716	4.691	4.743	VV	177940	1767588	22.32%	0.662%
52	4.758	4.743	4.769	VV	2656	34680	0.44%	0.013%
53	4.787	4.769	4.813	VV	7360	105953	1.34%	0.040%
54	4.846	4.813	4.865	VV	10813	153306	1.94%	0.057%
55	4.878	4.865	4.899	VV	4721	61674	0.78%	0.023%
56	4.912	4.899	4.924	VV	2520	28366	0.36%	0.011%
57	4.947	4.924	4.988	VV	158112	1934839	24.43%	0.724%
58	4.993	4.988	5.018	VV	7655	99595	1.26%	0.037%
59	5.025	5.018	5.040	VV	2997	33808	0.43%	0.013%
60	5.056	5.040	5.062	VV	3088	32815	0.41%	0.012%
61	5.077	5.062	5.096	VV	12986	152028	1.92%	0.057%
62	5.110	5.096	5.146	VV	6425	109751	1.39%	0.041%
63	5.168	5.146	5.185	VV	2260	38861	0.49%	0.015%
64	5.215	5.185	5.244	VV	4406	102459	1.29%	0.038%
65	5.264	5.244	5.308	VV	4820	79440	1.00%	0.030%
66	5.317	5.308	5.328	VV	1447	13547	0.17%	0.005%
67	5.340	5.328	5.350	VV	1896	18816	0.24%	0.007%
68	5.360	5.350	5.372	VV	2223	23646	0.30%	0.009%
69	5.412	5.372	5.425	VV	3730	80240	1.01%	0.030%
70	5.447	5.425	5.483	VV	21280	364248	4.60%	0.136%
71	5.499	5.483	5.512	VV	21214	214322	2.71%	0.080%
72	5.524	5.512	5.539	VV	19704	208165	2.63%	0.078%
73	5.548	5.539	5.567	VV	8120	90358	1.14%	0.034%
74	5.588	5.567	5.599	VV	52523	536906	6.78%	0.201%
75	5.605	5.599	5.626	VV	39954	398669	5.03%	0.149%
76	5.646	5.626	5.692	VV	57400	672418	8.49%	0.252%
77	5.723	5.692	5.731	VV	2180	44244	0.56%	0.017%
78	5.749	5.731	5.755	VV	8048	74317	0.94%	0.028%
79	5.776	5.755	5.822	VV	221270	2424669	30.61%	0.908%
80	5.842	5.822	5.854	VV	15883	198677	2.51%	0.074%
81	5.867	5.854	5.871	VV	18375	144999	1.83%	0.054%
82	5.887	5.871	5.932	VV	57599	726635	9.17%	0.272%
83	5.947	5.932	6.000	VV	4525	79065	1.00%	0.030%
84	6.031	6.000	6.039	VV	3000	33375	0.42%	0.012%
85	6.044	6.039	6.054	VV	3006	23754	0.30%	0.009%
86	6.070	6.054	6.084	VV	7998	91051	1.15%	0.034%
87	6.107	6.084	6.127	VV	55014	671787	8.48%	0.251%
88	6.148	6.127	6.157	VV	32852	380633	4.81%	0.142%
89	6.171	6.157	6.192	VV	82415	880614	11.12%	0.330%

Instrument :

FID_E

ClientSampleId :

ROCKAWAY-PARKMSD

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 12/20/2024
Supervised By :Ankita Jodhani 12/20/2024

90	6.202	6.192	6.218	VV	9516	107795	1.36%	0.040%
91	6.237	6.218	6.266	VV	9124	142634		
92	6.282	6.266	6.289	VV	2672	27170		
93	6.302	6.289	6.320	VV	5423	66363		
94	6.338	6.320	6.353	VV	14741	178407		
95	6.361	6.353	6.365	VV	8610	61386		
96	6.369	6.365	6.390	VV	8692	109336	1.38%	0.041%
97	6.405	6.390	6.428	VV	21966	241769	3.05%	0.090%
98	6.456	6.428	6.467	VV	6957	114410	1.44%	0.043%
99	6.477	6.467	6.491	VV	7929	84219	1.06%	0.032%
100	6.504	6.491	6.534	VV	7103	94008	1.19%	0.035%
101	6.549	6.534	6.560	VV	1848	19472	0.25%	0.007%
102	6.594	6.560	6.611	VV	2294	42783	0.54%	0.016%
103	6.628	6.611	6.644	PV	3744	37824	0.48%	0.014%
104	6.663	6.644	6.675	VV	4572	54940	0.69%	0.021%
105	6.685	6.675	6.695	VV	3795	40413	0.51%	0.015%
106	6.708	6.695	6.728	VV	4089	55880	0.71%	0.021%
107	6.737	6.728	6.750	VV	1331	13127	0.17%	0.005%
108	6.774	6.750	6.790	VV	116901	1160083	14.65%	0.434%
109	6.805	6.790	6.832	VV	131211	1430055	18.06%	0.535%
110	6.855	6.832	6.877	VV	262353	2766755	34.93%	1.036%
111	6.892	6.877	6.910	VV	54161	568100	7.17%	0.213%
112	6.923	6.910	6.943	VV	13719	177139	2.24%	0.066%
113	6.955	6.943	6.983	VV	6921	93244	1.18%	0.035%
114	7.004	6.983	7.024	VV	3713	47791	0.60%	0.018%
115	7.050	7.024	7.063	VV	6668	87161	1.10%	0.033%
116	7.078	7.063	7.095	VV	17451	192041	2.42%	0.072%
117	7.106	7.095	7.122	VV	5813	71605	0.90%	0.027%
118	7.130	7.122	7.150	VV	3279	50448	0.64%	0.019%
119	7.178	7.150	7.186	VV	14277	190339	2.40%	0.071%
120	7.195	7.186	7.218	VV	16402	185330	2.34%	0.069%
121	7.225	7.218	7.243	VV	2547	28777	0.36%	0.011%
122	7.264	7.243	7.291	VV	11148	176996	2.23%	0.066%
123	7.304	7.291	7.327	VV	8040	123139	1.55%	0.046%
124	7.331	7.327	7.338	VV	3305	22496	0.28%	0.008%
125	7.351	7.338	7.366	VV	4772	66223	0.84%	0.025%
126	7.422	7.366	7.453	VV	41768	628507	7.94%	0.235%
127	7.487	7.453	7.505	VV	17802	320069	4.04%	0.120%
128	7.515	7.505	7.546	VV	12849	174922	2.21%	0.065%
129	7.565	7.546	7.587	VV	6413	101256	1.28%	0.038%
130	7.604	7.587	7.612	VV	5283	52787	0.67%	0.020%
131	7.625	7.612	7.645	VV	10308	113393	1.43%	0.042%
132	7.661	7.645	7.674	VV	2635	36800	0.46%	0.014%
133	7.689	7.674	7.701	VV	8677	91210	1.15%	0.034%
134	7.717	7.701	7.736	VV	26595	290094	3.66%	0.109%
135	7.745	7.736	7.764	VV	6573	71953	0.91%	0.027%
136	7.791	7.764	7.828	VV	74494	799032	10.09%	0.299%
137	7.856	7.828	7.875	VV	18717	212691	2.69%	0.080%
138	7.889	7.875	7.902	VV	7247	78416	0.99%	0.029%
139	7.918	7.902	7.952	VV	15126	218042	2.75%	0.082%
140	7.975	7.952	7.991	VV	49937	559644	7.07%	0.209%
141	8.005	7.991	8.017	VV	29792	352832	4.45%	0.132%

Instrument :

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ROCKAWAY-PARKMSD

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rteres									
142	8.025	8.017	8.043	VV	19455	204892	2.59%	0.077%	
143	8.059	8.043	8.082	VV	13288	194364			
144	8.093	8.082	8.110	VV	6123	70078			
145	8.134	8.110	8.148	VV	6048	87307			
146	8.191	8.148	8.235	VV	705888	7920442	100		
147	8.240	8.235	8.257	VV	16602	191997	2		
148	8.273	8.257	8.288	VV	15095	234992	2.97%	0.088%	
149	8.292	8.288	8.337	VV	11365	210687	2.66%	0.079%	
150	8.386	8.337	8.409	VV	11433	336881	4.25%	0.126%	
151	8.432	8.409	8.454	VV	8595	161963	2.04%	0.061%	
152	8.497	8.454	8.518	VV	25175	463107	5.85%	0.173%	
153	8.529	8.518	8.556	VV	8010	149720	1.89%	0.056%	
154	8.567	8.556	8.580	VV	5233	66202	0.84%	0.025%	
155	8.612	8.580	8.629	VV	44736	602860	7.61%	0.226%	
156	8.665	8.629	8.701	VV	226467	3059088	38.62%	1.145%	
157	8.717	8.701	8.726	VV	13298	138415	1.75%	0.052%	
158	8.738	8.726	8.751	VV	18154	213116	2.69%	0.080%	
159	8.779	8.751	8.818	VV	91299	1151868	14.54%	0.431%	
160	8.843	8.818	8.860	VV	12110	202568	2.56%	0.076%	
161	8.871	8.860	8.887	VV	5416	67574	0.85%	0.025%	
162	8.919	8.887	8.942	VV	14382	266063	3.36%	0.100%	
163	8.954	8.942	8.977	VV	3486	66396	0.84%	0.025%	
164	9.011	8.977	9.034	VV	271454	3049974	38.51%	1.142%	
165	9.053	9.034	9.092	VV	131826	1769036	22.34%	0.662%	
166	9.114	9.092	9.183	VV	172663	2291362	28.93%	0.858%	
167	9.203	9.183	9.262	VV	14004	460469	5.81%	0.172%	
168	9.281	9.262	9.297	VV	8670	162945	2.06%	0.061%	
169	9.314	9.297	9.325	VV	13733	173203	2.19%	0.065%	
170	9.341	9.325	9.368	VV	24240	340358	4.30%	0.127%	
171	9.387	9.368	9.401	VV	9659	140250	1.77%	0.052%	
172	9.432	9.401	9.465	VV	12572	324884	4.10%	0.122%	
173	9.485	9.465	9.505	VV	16545	252875	3.19%	0.095%	
174	9.524	9.505	9.551	VV	13217	260211	3.29%	0.097%	
175	9.577	9.551	9.597	VV	18694	307909	3.89%	0.115%	
176	9.608	9.597	9.614	VV	9167	91220	1.15%	0.034%	
177	9.627	9.614	9.647	VV	11745	197193	2.49%	0.074%	
178	9.667	9.647	9.689	VV	35965	482705	6.09%	0.181%	
179	9.719	9.689	9.733	VV	24194	411117	5.19%	0.154%	
180	9.750	9.733	9.788	VV	38956	832251	10.51%	0.312%	
181	9.815	9.788	9.833	VV	15915	292887	3.70%	0.110%	
182	9.857	9.833	9.867	VV	15709	227659	2.87%	0.085%	
183	9.891	9.867	9.915	VV	28400	494328	6.24%	0.185%	
184	9.931	9.915	9.943	VV	10413	150365	1.90%	0.056%	
185	9.954	9.943	9.970	VV	10337	143475	1.81%	0.054%	
186	9.999	9.970	10.008	VV	21930	319910	4.04%	0.120%	
187	10.022	10.008	10.053	VV	32707	567882	7.17%	0.213%	
188	10.074	10.053	10.097	VV	28030	460555	5.81%	0.172%	
189	10.131	10.097	10.155	VV	83315	1194287	15.08%	0.447%	
190	10.172	10.155	10.183	VV	13567	207383	2.62%	0.078%	
191	10.192	10.183	10.211	VV	13651	189840	2.40%	0.071%	
192	10.260	10.211	10.283	VV	223649	2686374	33.92%	1.006%	
193	10.296	10.283	10.319	VV	19445	268748	3.39%	0.101%	
194	10.340	10.319	10.395	VV	13003	364382	4.60%	0.136%	

Instrument :

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ROCKAWAY-PARKMSD

Manual IntegrationsAPPROVED

 Reviewed By :Yogesh Patel 12/20/2024
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195	10.407	10.395	10.417	VV	6206	78826		
196	10.431	10.417	10.445	VV	6660	104425		
197	10.477	10.445	10.495	VV	7469	191593		
198	10.515	10.495	10.526	VV	12202	169587		
199	10.540	10.526	10.548	VV	12812	143435		
200	10.565	10.548	10.583	VV	33734	403900		
201	10.599	10.583	10.629	VV	15422	274514	3.47%	0.103%
202	10.664	10.629	10.692	VV	12207	335265	4.23%	0.125%
203	10.708	10.692	10.719	VV	12269	166631	2.10%	0.062%
204	10.733	10.719	10.754	VV	12759	203041	2.56%	0.076%
205	10.773	10.754	10.785	VV	12110	184363	2.33%	0.069%
206	10.790	10.785	10.811	VV	10870	158411	2.00%	0.059%
207	10.827	10.811	10.838	VV	11995	167606	2.12%	0.063%
208	10.858	10.838	10.882	VV	16284	312536	3.95%	0.117%
209	10.903	10.882	10.947	VV	22683	518842	6.55%	0.194%
210	10.972	10.947	10.978	VV	12760	190490	2.41%	0.071%
211	10.992	10.978	11.006	VV	16123	227635	2.87%	0.085%
212	11.017	11.006	11.032	VV	12490	168716	2.13%	0.063%
213	11.056	11.032	11.095	VV	18035	463691	5.85%	0.174%
214	11.107	11.095	11.114	VV	8992	94387	1.19%	0.035%
215	11.125	11.114	11.137	VV	9373	121676	1.54%	0.046%
216	11.154	11.137	11.187	VV	12168	268987	3.40%	0.101%
217	11.192	11.187	11.203	VV	6414	60661	0.77%	0.023%
218	11.224	11.203	11.227	VV	8585	103923	1.31%	0.039%
219	11.253	11.227	11.300	VV	146192	1726367	21.80%	0.646%
220	11.326	11.300	11.352	VV	48308	636189	8.03%	0.238%
221	11.357	11.352	11.367	VV	7256	64854	0.82%	0.024%
222	11.391	11.367	11.438	VV	10458	362812	4.58%	0.136%
223	11.445	11.438	11.465	VV	6649	100874	1.27%	0.038%
224	11.501	11.465	11.518	VV	12873	285113	3.60%	0.107%
225	11.534	11.518	11.587	VV	19151	435195	5.49%	0.163%
226	11.614	11.587	11.631	VV	9706	221046	2.79%	0.083%
227	11.642	11.631	11.657	VV	9655	144453	1.82%	0.054%
228	11.693	11.657	11.723	VV	226370	2806753	35.44%	1.051%
229	11.774	11.723	11.819	VV	17533	677889	8.56%	0.254%
230	11.849	11.819	11.869	VV	11890	236447	2.99%	0.089%
231	11.899	11.869	11.916	VV	11668	250024	3.16%	0.094%
232	11.941	11.916	11.964	VV	16665	310168	3.92%	0.116%
233	11.996	11.964	12.025	VV	8525	267083	3.37%	0.100%
234	12.049	12.025	12.065	VV	44992	573046	7.24%	0.215%
235	12.080	12.065	12.101	VV	51848	601808	7.60%	0.225%
236	12.105	12.101	12.121	VV	8506	89056	1.12%	0.033%
237	12.145	12.121	12.152	VV	20164	247944	3.13%	0.093%
238	12.164	12.152	12.180	VV	27799	342715	4.33%	0.128%
239	12.197	12.180	12.212	VV	38031	475449	6.00%	0.178%
240	12.228	12.212	12.254	VV	41613	579951	7.32%	0.217%
241	12.266	12.254	12.275	VV	7374	85329	1.08%	0.032%
242	12.293	12.275	12.328	VV	10475	269277	3.40%	0.101%
243	12.360	12.328	12.380	VV	19773	388043	4.90%	0.145%
244	12.401	12.380	12.423	VV	30768	455939	5.76%	0.171%
245	12.442	12.423	12.476	VV	15989	378268	4.78%	0.142%
246	12.523	12.476	12.544	VV	29301	578619	7.31%	0.217%

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ROCKAWAY-PARKMSD

1.00% 0.030%

Manual IntegrationsAPPROVED

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				rters				
247	12.559	12.544	12.564	VV	11370	126519	1.60%	0.047%
248	12.611	12.564	12.651	VV	194210	3035722	38.11%	0.047%
249	12.672	12.651	12.688	VV	18490	312738	3.12%	0.047%
250	12.695	12.688	12.711	VV	10814	137106	1.37%	0.047%
251	12.725	12.711	12.734	VV	11532	145528	1.45%	0.070%
252	12.747	12.734	12.755	VV	12318	145283	1.45%	0.070%
253	12.768	12.755	12.779	VV	13937	186744	2.36%	0.070%
254	12.790	12.779	12.811	VV	13610	220206	2.78%	0.082%
255	12.834	12.811	12.845	VV	19823	300268	3.79%	0.112%
256	12.852	12.845	12.875	VV	18841	256106	3.23%	0.096%
257	12.894	12.875	12.922	VV	29612	484021	6.11%	0.181%
258	12.944	12.922	12.961	VV	46445	658608	8.32%	0.247%
259	12.993	12.961	13.033	VV	228236	3334097	42.09%	1.248%
260	13.062	13.033	13.114	VV	214312	2863579	36.15%	1.072%
261	13.124	13.114	13.138	VV	9688	127556	1.61%	0.048%
262	13.155	13.138	13.171	VV	11542	193407	2.44%	0.072%
263	13.196	13.171	13.209	VV	33752	495050	6.25%	0.185%
264	13.217	13.209	13.232	VV	23467	273276	3.45%	0.102%
265	13.256	13.232	13.291	VV	31409	811373	10.24%	0.304%
266	13.297	13.291	13.331	VV	17105	337111	4.26%	0.126%
267	13.359	13.331	13.379	VV	241040	2901964	36.64%	1.086%
268	13.387	13.379	13.406	VV	36360	474000	5.98%	0.177%
269	13.412	13.406	13.427	VV	20607	233186	2.94%	0.087%
270	13.442	13.427	13.470	VV	24513	415679	5.25%	0.156%
271	13.492	13.470	13.510	VV	12847	264593	3.34%	0.099%
272	13.526	13.510	13.541	VV	16004	237420	3.00%	0.089%
273	13.557	13.541	13.577	VV	15661	263070	3.32%	0.098%
274	13.618	13.577	13.638	VV	23576	596143	7.53%	0.223%
275	13.659	13.638	13.672	VV	18531	332254	4.19%	0.124%
276	13.686	13.672	13.717	VV	21834	444569	5.61%	0.166%
277	13.747	13.717	13.766	VV	19771	470156	5.94%	0.176%
278	13.780	13.766	13.790	VV	17235	222658	2.81%	0.083%
279	13.824	13.790	13.892	VV	93130	2312994	29.20%	0.866%
280	13.941	13.892	13.986	VV	68335	1816867	22.94%	0.680%
281	14.009	13.986	14.028	VV	24119	457340	5.77%	0.171%
282	14.049	14.028	14.067	VV	28733	501082	6.33%	0.188%
283	14.087	14.067	14.110	VV	49081	752758	9.50%	0.282%
284	14.131	14.110	14.149	VV	16851	342242	4.32%	0.128%
285	14.183	14.149	14.204	VV	213991	2911421	36.76%	1.090%
286	14.217	14.204	14.235	VV	50185	652515	8.24%	0.244%
287	14.256	14.235	14.278	VV	44166	708885	8.95%	0.265%
288	14.293	14.278	14.307	VV	17836	277500	3.50%	0.104%
289	14.327	14.307	14.349	VV	19618	419703	5.30%	0.157%
290	14.391	14.349	14.426	VV	23417	751905	9.49%	0.281%
291	14.434	14.426	14.452	VV	14597	211918	2.68%	0.079%
292	14.467	14.452	14.482	VV	15749	263458	3.33%	0.099%
293	14.516	14.482	14.541	VV	17277	532782	6.73%	0.199%
294	14.566	14.541	14.594	VV	21771	552805	6.98%	0.207%
295	14.632	14.594	14.650	VV	23789	656835	8.29%	0.246%
296	14.669	14.650	14.708	VV	46183	929917	11.74%	0.348%
297	14.742	14.708	14.758	VV	24571	577431	7.29%	0.216%
298	14.773	14.758	14.803	VV	24375	545936	6.89%	0.204%
299	14.828	14.803	14.839	VV	48546	762141	9.62%	0.285%

Instrument :

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ROCKAWAY-PARKMSD

1.60% 0.047%

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						Instrument : FID_E ClientSampleId : ROCKAWAY-PARKMSD		
300	14.853	14.839	14.889	VV	60705	1167091	14.74%	0.437%
Manual IntegrationsAPPROVED								
301	14.913	14.889	14.933	VV	63273	1005809	12.20%	0.437%
302	14.970	14.933	15.010	VV	46866	1228027	15.40%	0.437%
303	15.032	15.010	15.045	VV	20632	382139	4.00%	0.437%
304	15.076	15.045	15.126	VV	135630	2537059	32.20%	0.437%
305	15.140	15.126	15.154	VV	17635	274064	3.00%	0.437%
306	15.175	15.154	15.191	VV	31777	538375	6.80%	0.202%
307	15.222	15.191	15.243	VV	148494	2313066	29.20%	0.866%
308	15.268	15.243	15.303	VV	232145	4908355	61.97%	1.837%
309	15.324	15.303	15.340	VV	31230	574726	7.26%	0.215%
310	15.379	15.340	15.418	VV	65320	1945114	24.56%	0.728%
311	15.429	15.418	15.437	VV	21737	240320	3.03%	0.090%
312	15.455	15.437	15.490	VV	24267	619575	7.82%	0.232%
313	15.520	15.490	15.558	VV	30075	980413	12.38%	0.367%
314	15.578	15.558	15.602	VV	28101	652102	8.23%	0.244%
315	15.622	15.602	15.629	VV	27239	382425	4.83%	0.143%
316	15.652	15.629	15.694	VV	88603	1810827	22.86%	0.678%
317	15.706	15.694	15.725	VV	30385	481220	6.08%	0.180%
318	15.746	15.725	15.765	VV	31242	612796	7.74%	0.229%
319	15.796	15.765	15.824	VV	28884	928642	11.72%	0.348%
320	15.844	15.824	15.856	VV	32262	550186	6.95%	0.206%
321	15.890	15.856	15.910	VV	67678	1369482	17.29%	0.513%
322	15.926	15.910	15.960	VV	41969	950945	12.01%	0.356%
323	15.975	15.960	15.987	VV	28435	438203	5.53%	0.164%
324	16.003	15.987	16.016	VV	31598	507442	6.41%	0.190%
325	16.048	16.016	16.081	VV	44332	1351418	17.06%	0.506%
326	16.085	16.081	16.097	VV	22569	206467	2.61%	0.077%
327	16.126	16.097	16.148	VV	28891	718484	9.07%	0.269%
328	16.166	16.148	16.187	VV	23224	486854	6.15%	0.182%
329	16.207	16.187	16.224	VV	28205	514637	6.50%	0.193%
330	16.241	16.224	16.259	VV	23401	454861	5.74%	0.170%
331	16.293	16.259	16.321	VV	195051	3135624	39.59%	1.174%
332	16.328	16.321	16.365	VV	27239	595477	7.52%	0.223%
333	16.381	16.365	16.403	VV	22004	468849	5.92%	0.176%
334	16.419	16.403	16.442	VV	21799	467334	5.90%	0.175%
335	16.492	16.442	16.511	VV	27795	896979	11.32%	0.336%
336	16.518	16.511	16.537	VV	21357	305947	3.86%	0.115%
337	16.554	16.537	16.567	VV	23582	383003	4.84%	0.143%
338	16.591	16.567	16.618	VV	25424	705309	8.90%	0.264%
339	16.629	16.618	16.635	VV	22504	224821	2.84%	0.084%
340	16.653	16.635	16.668	VV	29880	537905	6.79%	0.201%
341	16.694	16.668	16.720	VV	37751	887779	11.21%	0.332%
342	16.770	16.720	16.788	VV	159936	2814438	35.53%	1.054%
343	16.796	16.788	16.830	VV	75572	1047751	13.23%	0.

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352	17.384	17.331	17.427	VV	32824	1432722	18.09%	0.536%
353	17.446	17.427	17.465	VV	23987	475386	6.00%	0.175%
354	17.507	17.465	17.569	VV	35847	1619563	20.00%	0.112%
355	17.595	17.569	17.612	VV	24035	539471	6.00%	0.289%
356	17.639	17.612	17.653	VV	31878	663289	8.29%	0.246%
357	17.671	17.653	17.704	VV	39292	924588	11.00%	0.141%
358	17.723	17.704	17.741	VV	24215	466970	5.90%	0.175%
359	17.751	17.741	17.767	VV	20112	299856	3.79%	0.112%
360	17.798	17.767	17.822	VV	30087	773005	9.76%	0.289%
361	17.837	17.822	17.874	VV	24506	656687	8.29%	0.246%
362	17.896	17.874	17.910	VV	18300	377236	4.76%	0.141%
363	17.915	17.910	17.922	VV	18236	133687	1.69%	0.050%
364	17.926	17.922	17.957	VV	17969	351594	4.44%	0.132%
365	17.978	17.957	17.995	VV	19586	416208	5.25%	0.156%
366	18.007	17.995	18.020	VV	18705	266523	3.37%	0.100%
367	18.023	18.020	18.028	VV	17479	84845	1.07%	0.032%
368	18.059	18.028	18.075	VV	21243	542255	6.85%	0.203%
369	18.115	18.075	18.165	VV	180959	3416014	43.13%	1.279%
370	18.189	18.165	18.210	VV	23504	568607	7.18%	0.213%
371	18.230	18.210	18.250	VV	28598	545434	6.89%	0.204%
372	18.271	18.250	18.287	VV	31172	589963	7.45%	0.221%
373	18.291	18.287	18.322	VV	26412	482119	6.09%	0.180%
374	18.352	18.322	18.382	VV	32153	856863	10.82%	0.321%
375	18.412	18.382	18.433	VV	42144	892059	11.26%	0.334%
376	18.464	18.433	18.481	VV	50232	1003472	12.67%	0.376%
377	18.503	18.481	18.520	VV	90284	1391115	17.56%	0.521%
378	18.535	18.520	18.571	VV	54817	1125672	14.21%	0.421%
379	18.585	18.571	18.607	VV	24827	476097	6.01%	0.178%
380	18.634	18.607	18.649	VV	41142	744225	9.40%	0.279%
381	18.667	18.649	18.723	VV	47763	1314044	16.59%	0.492%
382	18.756	18.723	18.783	VV	94742	1600165	20.20%	0.599%
383	18.795	18.783	18.808	VV	21276	316873	4.00%	0.119%
384	18.813	18.808	18.820	VV	20859	144760	1.83%	0.054%
385	18.839	18.820	18.857	VV	24552	507643	6.41%	0.190%
386	18.883	18.857	18.906	VV	34676	776070	9.80%	0.290%
387	18.940	18.906	18.969	VV	176775	2896562	36.57%	1.084%
388	18.979	18.969	18.999	VV	20340	336855	4.25%	0.126%
389	19.007	18.999	19.024	VV	18051	262871	3.32%	0.098%
390	19.059	19.024	19.084	VV	28236	822339	10.38%	0.308%
391	19.105	19.084	19.126	VV	20597	493937	6.24%	0.185%
392	19.155	19.126	19.167	VV	24637	546206	6.90%	0.204%
393	19.183	19.167	19.200	VV	27535	485112	6.12%	0.182%
394	19.214	19.200	19.218	VV	23010	242333	3.06%	0.091%
395	19.224	19.218	19.242	VV	22914	306837	3.87%	0.115%
396	19.287	19.242	19.311	VV	44927	1322134	16.69%	0.495%
397	19.332	19.311	19.375	VV	28610	945436	11.94%	0.354%
398	19.388	19.375	19.399	VV	20268	280753	3.54%	0.105%
399	19.426	19.399	19.492	VV	30866	1308962	16.53%	0.490%
400	19.504	19.492	19.512	VV	17885	207077	2.61%	0.078%
401	19.536	19.512	19.565	VV	20709	590286	7.45%	0.221%
402	19.593	19.565	19.619	VV	19803	596754	7.53%	0.223%
403	19.636	19.619	19.650	VV	20243	345508	4.36%	0.129%
404	19.669	19.650	19.677	VV	19477	307101	3.88%	0.115%

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405	19.718	19.677	19.748	VV	163790	2782686	35.13%	1.042%
406	19.760	19.748	19.772	VV	21693	297360		
407	19.790	19.772	19.807	VV	23367	459097		
408	19.834	19.807	19.862	VV	30160	816236	10.62%	0.196%
409	19.900	19.862	19.925	VV	57354	1326834	16.98%	0.326%
410	19.968	19.925	19.999	VV	47651	1447174	18.11%	0.389%
411	20.015	19.999	20.032	VV	28255	524459	6.62%	0.196%
412	20.056	20.032	20.076	VV	40397	870056	10.98%	0.326%
413	20.088	20.076	20.145	VV	29579	1038726	13.11%	0.389%
414	20.149	20.145	20.162	VV	21824	212629	2.68%	0.080%
415	20.180	20.162	20.209	VV	26356	627656	7.92%	0.235%
416	20.276	20.209	20.301	VV	58515	1847777	23.33%	0.692%
417	20.340	20.301	20.395	VV	35410	1532388	19.35%	0.574%
418	20.451	20.395	20.493	VV	151407	3301928	41.69%	1.236%
419	20.500	20.493	20.512	VV	23639	268214	3.39%	0.100%
420	20.541	20.512	20.583	VV	28469	1090827	13.77%	0.408%
421	20.617	20.583	20.668	VV	28059	1217873	15.38%	0.456%
422	20.695	20.668	20.717	VV	24348	663451	8.38%	0.248%
423	20.756	20.717	20.770	VV	24079	720120	9.09%	0.270%
424	20.789	20.770	20.818	VV	25457	703524	8.88%	0.263%
425	20.828	20.818	20.889	VV	23637	919003	11.60%	0.344%
426	20.910	20.889	20.940	VV	22853	655562	8.28%	0.245%
427	20.953	20.940	21.001	VV	20709	689429	8.70%	0.258%
428	21.009	21.001	21.014	VV	17343	132479	1.67%	0.050%
429	21.023	21.014	21.031	VV	17390	182353	2.30%	0.068%
430	21.055	21.031	21.077	VV	18085	474844	6.00%	0.178%
431	21.100	21.077	21.129	VV	17916	535843	6.77%	0.201%
432	21.189	21.129	21.237	VV	126113	2854270	36.04%	1.068%
433	21.281	21.237	21.347	VV	20205	1144329	14.45%	0.428%
434	21.376	21.347	21.409	VV	17720	585418	7.39%	0.219%
435	21.429	21.409	21.456	VV	14735	408949	5.16%	0.153%
436	21.491	21.456	21.522	VV	18361	636620	8.04%	0.238%
437	21.571	21.522	21.595	VV	19122	733667	9.26%	0.275%
438	21.600	21.595	21.607	VV	16521	110630	1.40%	0.041%
439	21.662	21.607	21.685	VV	27549	1043954	13.18%	0.391%
440	21.699	21.685	21.779	VV	20472	842996	10.64%	0.316%
441	21.784	21.779	21.798	VV	11100	122310	1.54%	0.046%
442	21.824	21.798	21.850	VV	12900	369388	4.66%	0.138%
443	21.873	21.850	21.917	VV	14699	465320	5.87%	0.174%
444	21.962	21.917	21.996	VV	18604	570267	7.20%	0.213%
445	22.000	21.996	22.011	VV	8610	78332	0.99%	0.029%
446	22.045	22.011	22.067	VV	18641	462092	5.83%	0.173%
447	22.111	22.067	22.170	VV	82554	2407420	30.40%	0.901%
Sum of corrected areas:							267150524	

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 12/20/2024
Supervised By :Ankita Jodhani 12/20/2024

FE121824.M Fri Dec 20 04:34:00 2024

Manual Integration Report

Sample ID	ClientID ID	File ID	Sequence ID	Parameter	Supervised By	Supervised On	Reason
P5279-01		FE051703.D	FE121924	TETRACOSANE-d50 (SURROGA	Ankita	12/20/2024 10:39:55 AM	Peak Integrated by Software incorrectly
P5279-01MS		FE051704.D	FE121924	N-HEXACOSANE	Ankita	12/20/2024 10:39:56 AM	Peak Integrated by Software incorrectly
P5279-01MS		FE051704.D	FE121924	N-OCTACOSANE	Ankita	12/20/2024 10:39:56 AM	Peak Integrated by Software incorrectly
P5279-01MS		FE051704.D	FE121924	N-OCTATRIACONTANE	Ankita	12/20/2024 10:39:56 AM	Peak Integrated by Software incorrectly
P5279-01MS		FE051704.D	FE121924	TETRACOSANE-d50 (SURROGA	Ankita	12/20/2024 10:39:56 AM	Peak Integrated by Software incorrectly
P5279-01MSD		FE051705.D	FE121924	N-HEXACOSANE	Ankita	12/20/2024 10:39:58 AM	Peak Integrated by Software incorrectly
P5279-01MSD		FE051705.D	FE121924	N-TETRACOSANE	Ankita	12/20/2024 10:39:58 AM	Peak Integrated by Software incorrectly
P5279-01MSD		FE051705.D	FE121924	TETRACOSANE-d50 (SURROGA	Ankita	12/20/2024 10:39:58 AM	Peak Integrated by Software incorrectly

Instrument ID: FID_E

Daily Analysis Runlog For Sequence/QCBatch ID # FE121824

Review By	yogesh	Review On	12/18/2024 5:36:44 PM
Supervise By	Ankita	Supervise On	12/19/2024 10:28:07 AM
SubDirectory	FE121824	HP Acquire Method	HP Processing Method FE121824
STD. NAME	STD REF.#		
Tune/Reschk Initial Calibration Stds	PP23961,PP23963,PP23964,PP23965,PP23966		
CCC Internal Standard/PEM	PP23963		
ICV/I.BLK Surrogate Standard MS/MSD Standard LCS Standard	PP23962,PP23967		

Sr#	SampleId	Data File Name	Date-Time	Operator	Status
1	MECL2	FE051689.D	18 Dec 2024 20:29	YP\AJ	Ok
2	I.BLK	FE051690.D	18 Dec 2024 20:59	YP\AJ	Ok
3	100 TRPH STD	FE051691.D	18 Dec 2024 21:29	YP\AJ	Ok
4	50 TRPH STD	FE051692.D	18 Dec 2024 21:59	YP\AJ	Ok
5	20 TRPH STD	FE051693.D	18 Dec 2024 22:29	YP\AJ	Ok
6	10 TRPH STD	FE051694.D	18 Dec 2024 23:00	YP\AJ	Ok
7	5 TRPH STD	FE051695.D	18 Dec 2024 23:30	YP\AJ	Ok
8	FE121824ICV	FE051696.D	18 Dec 2024 23:59	YP\AJ	Ok

M : Manual Integration

Instrument ID: FID_E

Daily Analysis Runlog For Sequence/QCBatch ID # FE121924

Review By	yogesh	Review On	12/19/2024 8:21:57 AM
Supervise By	Ankita	Supervise On	12/20/2024 10:40:03 AM
SubDirectory	FE121924	HP Acquire Method	HP Processing Method FE121824
STD. NAME	STD REF.#		
Tune/Reschk Initial Calibration Stds	PP23961,PP23963,PP23964,PP23965,PP23966		
CCC Internal Standard/PEM	PP23963		
ICV/I.BLK Surrogate Standard MS/MSD Standard LCS Standard	PP23962,PP23967		

Sr#	SampleId	Data File Name	Date-Time	Operator	Status
1	MECL2	FE051697.D	19 Dec 2024 06:29	YP\AJ	Ok
2	I.BLK	FE051698.D	19 Dec 2024 06:59	YP\AJ	Ok
3	50 PPM TRPH STD	FE051699.D	19 Dec 2024 07:29	YP\AJ	Ok
4	RT MARKER	FE051700.D	19 Dec 2024 07:59	YP\AJ	Ok
5	PB165731BL	FE051701.D	19 Dec 2024 08:29	YP\AJ	Ok
6	PB165731BS	FE051702.D	19 Dec 2024 08:59	YP\AJ	Ok
7	P5279-01	FE051703.D	19 Dec 2024 09:30	YP\AJ	Dilution
8	P5279-01MS	FE051704.D	19 Dec 2024 10:00	YP\AJ	Ok,M
9	P5279-01MSD	FE051705.D	19 Dec 2024 10:30	YP\AJ	Ok,M
10	P5279-01	FE051706.D	19 Dec 2024 11:00	YP\AJ	Ok
11	I.BLK	FE051707.D	19 Dec 2024 11:30	YP\AJ	Ok
12	50 PPM TRPH STD	FE051708.D	19 Dec 2024 12:00	YP\AJ	Ok

M : Manual Integration

Instrument ID: FID_E

Daily Analysis Runlog For Sequence/QC Batch ID # FE121824

Review By	yogesh	Review On	12/18/2024 5:36:44 PM
Supervise By	Ankita	Supervise On	12/19/2024 10:28:07 AM
SubDirectory	FE121824	HP Acquire Method	HP Processing Method FE121824

STD. NAME	STD REF.#
Tune/Reschk Initial Calibration Stds	PP23961,PP23963,PP23964,PP23965,PP23966
CCC	PP23963
Internal Standard/PEM	
ICV/I.BLK	PP23962,PP23967
Surrogate Standard	
MS/MSD Standard	
LCS Standard	

Sr#	SampleID	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	MECL2		FE051689.D	18 Dec 2024 20:29		YP\AJ	Ok
2	I.BLK		FE051690.D	18 Dec 2024 20:59		YP\AJ	Ok
3	100 TRPH STD		FE051691.D	18 Dec 2024 21:29		YP\AJ	Ok
4	50 TRPH STD		FE051692.D	18 Dec 2024 21:59		YP\AJ	Ok
5	20 TRPH STD		FE051693.D	18 Dec 2024 22:29		YP\AJ	Ok
6	10 TRPH STD		FE051694.D	18 Dec 2024 23:00		YP\AJ	Ok
7	5 TRPH STD		FE051695.D	18 Dec 2024 23:30		YP\AJ	Ok
8	FE121824ICV		FE051696.D	18 Dec 2024 23:59		YP\AJ	Ok

M : Manual Integration

Instrument ID: FID_E

Daily Analysis Runlog For Sequence/QC Batch ID # FE121924

Review By	yogesh	Review On	12/19/2024 8:21:57 AM
Supervise By	Ankita	Supervise On	12/20/2024 10:40:03 AM
SubDirectory	FE121924	HP Acquire Method	HP Processing Method FE121824

STD. NAME	STD REF.#
Tune/Reschk Initial Calibration Stds	PP23961,PP23963,PP23964,PP23965,PP23966
CCC	PP23963
Internal Standard/PEM	
ICV/I.BLK	PP23962,PP23967
Surrogate Standard	
MS/MSD Standard	
LCS Standard	

Sr#	SampleID	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	MECL2		FE051697.D	19 Dec 2024 06:29		YP\AJ	Ok
2	I.BLK		FE051698.D	19 Dec 2024 06:59		YP\AJ	Ok
3	50 PPM TRPH STD		FE051699.D	19 Dec 2024 07:29		YP\AJ	Ok
4	RT MARKER		FE051700.D	19 Dec 2024 07:59		YP\AJ	Ok
5	PB165731BL		FE051701.D	19 Dec 2024 08:29		YP\AJ	Ok
6	PB165731BS		FE051702.D	19 Dec 2024 08:59		YP\AJ	Ok
7	P5279-01		FE051703.D	19 Dec 2024 09:30	Need 5X	YP\AJ	Dilution
8	P5279-01MS		FE051704.D	19 Dec 2024 10:00		YP\AJ	Ok,M
9	P5279-01MSD		FE051705.D	19 Dec 2024 10:30		YP\AJ	Ok,M
10	P5279-01		FE051706.D	19 Dec 2024 11:00		YP\AJ	Ok
11	I.BLK		FE051707.D	19 Dec 2024 11:30		YP\AJ	Ok
12	50 PPM TRPH STD		FE051708.D	19 Dec 2024 12:00		YP\AJ	Ok

M : Manual Integration



PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 12/16/2024

OVENTEMP IN Celsius(°C): 107
Time IN: 17:00
In Date: 12/13/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:25
Out Date: 12/14/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC:LB133946

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
P5277-01	COMP-1A	1	1.15	8.66	9.81	8.81	88.5	
P5277-02	COMP-2A	2	1.16	8.64	9.8	7.98	78.9	
P5277-03	COMP-3A	3	1.19	8.45	9.64	8.79	89.9	
P5277-04	SB-13	4	1.14	8.61	9.75	8.89	90.0	
P5277-05	SB-14	5	1.15	8.81	9.96	9.14	90.7	
P5277-06	SB-15	6	1.18	8.74	9.92	9.08	90.4	
P5277-07	SB-16	7	1.15	8.81	9.96	8.68	85.5	
P5277-08	SB-17	8	1.12	8.86	9.98	7.98	77.4	
P5277-09	SB-18	9	1.16	8.74	9.9	8.34	82.2	
P5277-10	SB-19	10	1.14	8.83	9.97	8.42	82.4	
P5277-11	SB-20	11	1.19	8.52	9.71	8.13	81.5	
P5277-12	SB-21	12	1.17	8.72	9.89	9.05	90.4	
P5277-13	SB-22	13	1.15	8.80	9.95	9.03	89.5	
P5277-14	SB-23	14	1.14	8.61	9.75	8.51	85.6	
P5277-15	SB-24	15	1.16	8.40	9.56	8.68	89.5	
P5279-01	ROCKAWAY-PARK	16	1.18	8.47	9.65	9.11	93.6	
P5279-03	ROCKAWAY-PARK	17	1.15	8.50	9.65	9.14	94.0	
P5287-01	STONES-A	18	1.00	1.00	2.00	2.00	100.0	stone sample, 100 % solids
P5287-02	STONES-A-E2	19	1.00	1.00	2.00	2.00	100.0	stone sample, 100 % solids
P5287-03	STONES-B	20	1.00	1.00	2.00	2.00	100.0	stone sample, 100 % solids
P5287-04	STONES-B-E2	21	1.00	1.00	2.00	2.00	100.0	stone sample, 100 % solids
P5288-05	SVOC-GPC-BLANK	22	1.00	1.00	2.00	2.00	100.0	
P5288-06	PEST-GPC-BLANK	23	1.00	1.00	2.00	2.00	100.0	
P5288-07	PEST-GPC-BLANK-SPIKE	24	1.00	1.00	2.00	2.00	100.0	
P5288-08	PCB-GPC-BLANK	25	1.00	1.00	2.00	2.00	100.0	
P5288-09	PCB-GPC-BLANK-SPIKE	26	1.00	1.00	2.00	2.00	100.0	
P5288-10	SVOC-GPC2-BLANK	27	1.00	1.00	2.00	2.00	100.0	
P5288-11	PEST-GPC2-BLANK	28	1.00	1.00	2.00	2.00	100.0	



PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 12/16/2024

OVENTEMP IN Celsius(°C): 107
Time IN: 17:00
In Date: 12/13/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:25
Out Date: 12/14/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC:LB133946

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
P5288-12	PEST-GPC2-BLANK-SPIKE	29	1.00	1.00	2.00	2.00	100.0	
P5288-13	PCB-GPC2-BLANK	30	1.00	1.00	2.00	2.00	100.0	
P5288-14	PCB-GPC2-BLANK-SPIKE	31	1.00	1.00	2.00	2.00	100.0	

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

SOP ID: M3541-ASE Extraction-14

Clean Up SOP #: N/A

Matrix : Solid

Weigh By: EH

Balance check: RJ

Balance ID: EX-SC-2

pH Strip Lot#: N/A

Extraction By: RS

Filter By: RJ

pH Meter ID: N/A

Hood ID: 3,7

Extraction Start Date : 12/18/2024

Extraction Start Time : 13:30

Extraction End Date : 12/18/2024

Extraction End Time : 16:30

Concentration By: EH

Supervisor By : rajesh

Extraction Method: ☐ Separatory Funnel ☐ Continuous Liquid/Liquid ☐ Sonication ☐ Waste Dilution ☒ Soxhlet

Standard Name	MLS USED	Concentration ug/mL	STD REF. # FROM LOG
Surrogate	1.0ML	20 PPM	PP23935
Spike Sol 1	1.0ML	20 PPM	PP23913
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
MeCl2/Acetone/1:1	N/A	EP2560
Baked Na2SO4	N/A	EP2573
Sand	N/A	E2865
Methylene Chloride	N/A	E3848
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

KD Bath Temperature: N/A

Envap ID: NEVAP-02

Envap Temperature: 40 °C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
12/18/24	RP (Est. Lab)	Y-P. Pesh PCB
16:35	Preparation Group	Analysis Group

Analytical Method: M3541-ASE Extraction-14

Concentration Date: 12/18/2024

Sample ID	Client Sample ID	Test	g/mL	PH	Surr/Spike By:		Final Vol. (mL)	JarID	Comments	Prep Pos
					AddedBy	VerifiedBy				
PB165731BL	PB165731BL	TPH GC	30.03	N/A	ritesh	Evelyn	1			U7-1
PB165731BS	PB165731BS	TPH GC	30.01	N/A	ritesh	Evelyn	1			U6-1
P5279-01	ROCKAWAY-PARK	TPH GC	30.04	N/A	ritesh	Evelyn	1	A		3
P5279-01MS	ROCKAWAY-PARKMS	TPH GC	30.09	N/A	ritesh	Evelyn	1	A		4
P5279-01MS D	ROCKAWAY-PARKMSD	TPH GC	30.07	N/A	ritesh	Evelyn	1	A		5

* Extracts relinquished on the same date as received.

8
12/18/24

105731
13:30

WORKLIST(Hardcopy Internal Chain)

Worklist Name : P5279T

Worklist ID : 186448

Department : Extraction

Date : 12-18-2024 13:25:13

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P5279-01	ROCKAWAY-PARK	Solid	TPH GC	Cool 4 deg C	TULL02	L51	12/13/2024	8015D

Date/Time

12/18/24

13:27

Raw Sample Received by:

RJ (for Lab)

Raw Sample Relinquished by:

Jan 15/25

Date/Time

12/18/24

13:45

Raw Sample Received by:

RJ (for Lab)

Raw Sample Relinquished by:

Jan 15/25

Prep Standard - Chemical Standard Summary

Order ID : P5279

Test : TPH GC

Prepbatch ID : PB165731,

Sequence ID/Qc Batch ID: FE121924,

Standard ID :

EP2560,EP2573,PP23913,PP23935,PP23961,PP23962,PP23963,PP23964,PP23965,PP23966,PP23967,

Chemical ID :

E2865,E3551,E3822,E3827,E3828,E3848,P11958,P11959,P13104,P13109,P13213,P13218,P13219,P13492,P13493,P13494,P13495,

Extractions STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2017	1:1 ACETONE/METHYLENE CHLORIDE	EP2560	11/14/2024	05/08/2025	Rajesh Parikh	None	None	RUPESHKUMAR SHAH 11/14/2024

FROM 8000.00000ml of E3827 + 8000.00000ml of E3828 = Final Quantity: 16000.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3923	Baked Sodium Sulfate	EP2573	12/16/2024	06/16/2025	Rajesh Parikh	Extraction_SC ALE_2 (EX-SC-2)	None	RUPESHKUMAR SHAH 12/16/2024

FROM 4000.00000gram of E3551 = Final Quantity: 4000.000 gram

Pest/Pcb STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3609	20 PPM DRO SPIKE SOLUTION (RESTEK)	PP23913	10/25/2024	04/23/2025	Yogesh Patel	None	None	Ankita Jodhani
								10/25/2024

FROM 1.00000ml of P13104 + 1.00000ml of P13109 + 48.00000ml of E3822 = Final Quantity: 50.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
147	20 PPM DRO Surrogate Spike Solution	PP23935	11/01/2024	04/23/2025	Yogesh Patel	None	None	Ankita Jodhani
								11/04/2024

FROM 1.00000ml of P13492 + 1.00000ml of P13493 + 1.00000ml of P13494 + 1.00000ml of P13495 + 196.00000ml of E3822 = Final Quantity: 200.000 ml



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

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

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

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

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

Pest/Pcb STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
435	50 PPM ICC DRO STD (Restek)	PP23963	11/13/2024	05/09/2025	Yogesh Patel	None	None	Ankita Jodhani
								11/13/2024

FROM 0.50000ml of E3828 + 0.50000ml of PP23961 = Final Quantity: 1.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
437	20 PPM ICC DRO STD (Restek)	PP23964	11/13/2024	05/09/2025	Yogesh Patel	None	None	Ankita Jodhani
								11/13/2024

FROM 0.80000ml of E3828 + 0.20000ml of PP23961 = Final Quantity: 1.000 ml

Pest/Pcb STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
438	10 PPM ICC DRO STD (Restek)	PP23965	11/13/2024	05/09/2025	Yogesh Patel	None	None	Ankita Jodhani
11/13/2024								

FROM 0.90000ml of E3828 + 0.10000ml of PP23961 = Final Quantity: 1.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
439	5 PPM ICC DRO STD (Restek)	PP23966	11/13/2024	05/09/2025	Yogesh Patel	None	None	Ankita Jodhani
11/13/2024								

FROM 0.90000ml of E3828 + 0.10000ml of PP23963 = Final Quantity: 1.000 ml



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3797	50 PPM DRO ICV STD (CPI)	PP23967	11/13/2024	02/14/2025	Yogesh Patel	None	None	Ankita Jodhani
<u>FROM</u>	0.80000ml of E3828 + 0.50000ml of PP23962 = Final Quantity: 1.000 ml							

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	12/31/2024	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	07/01/2025	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)	24I2662006	04/23/2025	10/24/2024 / Rajesh	10/24/2024 / Rajesh	E3822

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	05/08/2025	11/08/2024 / Rajesh	11/07/2024 / Rajesh	E3827

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)	24G0862003	05/09/2025	11/09/2024 / Rajesh	11/04/2024 / Rajesh	E3828

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)	24K1762005	06/18/2025	12/18/2024 / Rajesh	12/09/2024 / Rajesh	E3848

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	A0186840	05/13/2025	11/13/2024 / yogesh	07/11/2022 / Yogesh	P11958

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31266 / Florida TRPH Standard	A0186840	05/13/2025	11/13/2024 / yogesh	07/11/2022 / Yogesh	P11959

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31266 / Florida TRPH Standard	A0204859	04/25/2025	10/25/2024 / yogesh	01/12/2024 / Yogesh	P13104

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31266 / Florida TRPH Standard	A0204859	04/25/2025	10/25/2024 / yogesh	01/12/2024 / Yogesh	P13109

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	05/13/2025	11/13/2024 / yogesh	01/17/2024 / Ankita	P13213

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	Z-110400-05-01 / TRPH Standard (C8-C40), 500 mg/L, 1 ml	514983	02/14/2025	08/14/2024 / yogesh	01/31/2024 / Ankita	P13218

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	Z-110400-05-01 / TRPH Standard (C8-C40), 500 mg/L, 1 ml	514983	05/13/2025	11/13/2024 / yogesh	01/31/2024 / Ankita	P13219

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	05/01/2025	11/01/2024 / yogesh	07/24/2024 / yogesh	P13492

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	05/01/2025	11/01/2024 / yogesh	07/24/2024 / yogesh	P13493

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	05/01/2025	11/01/2024 / yogesh	07/24/2024 / yogesh	P13494

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	05/01/2025	11/01/2024 / yogesh	07/24/2024 / yogesh	P13495

Sand
Purified
Washed and Ignited



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

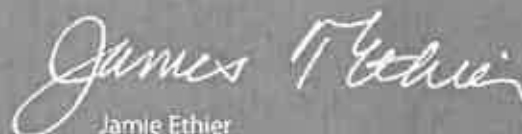
Certificate of Analysis

Test	Specification	Result
Substances Soluble in HCl	$\leq 0.16\%$	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


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
QUÍMICOS
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 ₂ SO ₄
SPECIFICATION NUMBER :	6399	RELEASE DATE:	ABR/21/2023
LOT NUMBER :	313201		

TEST	SPECIFICATIONS	LOT VALUES
Assay (Na ₂ SO 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 foreign 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.

Recd. by R3 on 7/24/23 **E 3551**

RC-02-01, Ed. 3

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



Material No.: 9266-A4

Batch No.: 24I2662006

Manufactured Date: 2024-08-29

Expiration Date: 2025-11-28

Revision No.: 0

Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	2
ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)	≤ 10	3
Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	$\geq 99.8 \%$	99.9 %
Color (APHA)	≤ 10	5
Residue after Evaporation	$\leq 1.0 \text{ ppm}$	0.2 ppm
Titration Acid ($\mu\text{eq/g}$)	≤ 0.3	< 0.1
Chloride (Cl)	$\leq 10 \text{ ppm}$	$< 5 \text{ ppm}$
Water (by KF, coulometric)	$\leq 0.02 \%$	$< 0.01 \%$

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

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

E 3822

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

Acetone

BAKER RESI-ANALYZED® Reagent

For Organic Residue Analysis

avantor™



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) ₂ CO) (by GC, corrected for water)	>= 99.4 %	99.8 %
Color (APHA)	<= 10	5
Residue after Evaporation	<= 1.0 ppm	0.2 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titration Acid (μeq/g)	<= 0.3	0.2
Titration Base (μeq/g)	<= 0.6	<0.1
Water (H ₂ O)	<= 0.5 %	0.2 %
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	<= 5	<1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	<= 10	1

For Laboratory, Research, or Manufacturing Use

MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: United States

Packaging Site: Phillipsburg Mfg Ctr & DC

E 3827

Rec'd by RS on ~~11/8/24~~ 11/7/24
RS
11/7

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

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

 **avantors**TM



Material No.: 9266-A4

Batch No.: 24J0862003

Manufactured Date: 2024-09-12

Expiration Date: 2025-12-12

Revision No.: 0

Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	2
ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)	≤ 10	1
Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	$\geq 99.8\%$	100.0 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.2 ppm
Titration Acid ($\mu\text{eq/g}$)	≤ 0.3	< 0.1
Chloride (Cl)	≤ 10 ppm	< 5 ppm
Water (by KF, coulometric)	$\leq 0.02\%$	$< 0.01\%$

For Laboratory, Research, or Manufacturing Use

MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: United States

Packaging Site: Phillipsburg Mfg Ctr & DC

E 3828



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

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



Material No.: 9266-A4
Batch No.: 24K1762005
Manufactured Date: 2024-10-08
Expiration Date: 2026-01-07
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)	$\geq 99.8\%$	100.0 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.5 ppm
Titration Acid ($\mu\text{eq/g}$)	≤ 0.3	0.0
Chloride (Cl)	≤ 10 ppm	< 5 ppm
Water (by KF, coulometric)	$\leq 0.02\%$	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 3848

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



CERTIFIED REFERENCE MATERIAL

110 Benner Circle

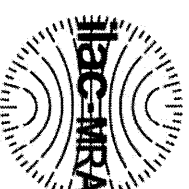
Bellefonte, PA 16823-8812

Tel: (800)356-1688

Fax: (814)353-1309

www.restek.com

Certificate of Analysis



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.: 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 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 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 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 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 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 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 Purity 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed

P11948 } 7.8
P11962 } 07/11/16

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:

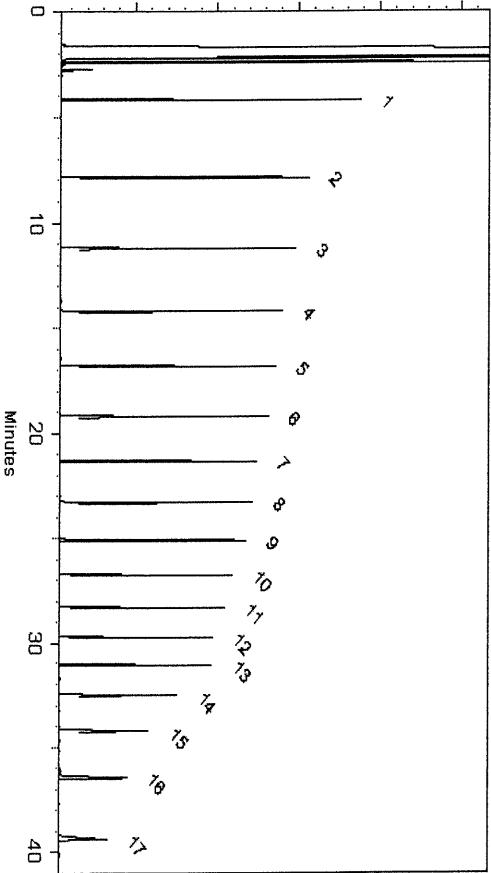
250°C

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
Brittany Federinko - Operations Tech I

Date Mixed: 29-Jun-2022

Balance: 1128360905

Christie Mills
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:

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

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.



CERTIFIED REFERENCE MATERIAL

110 Benner Circle

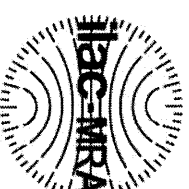
Belleville, PA 16823-8812

Tel: (800)356-1688

Fax: (814)353-1309

www.restek.com

Certificate of Analysis



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.: 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 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 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 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 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 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 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 Purity 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed

P11948 } 7.8
P11962 } 07/11/16

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:

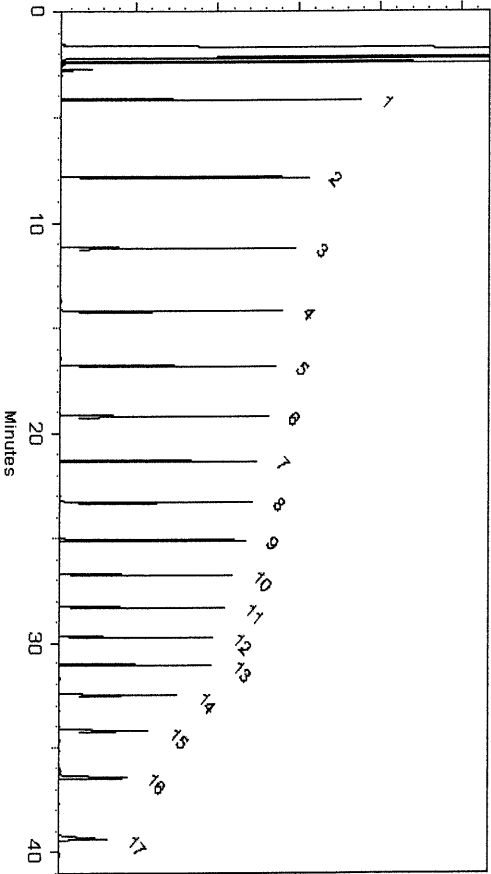
250°C

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

Brittany Federinko - Operations Tech I

Date Mixed: 29-Jun-2022

Balance: 1128360905

Christie Mills

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:

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

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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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



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 } Y.P.
↓
P13112 } 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

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.)

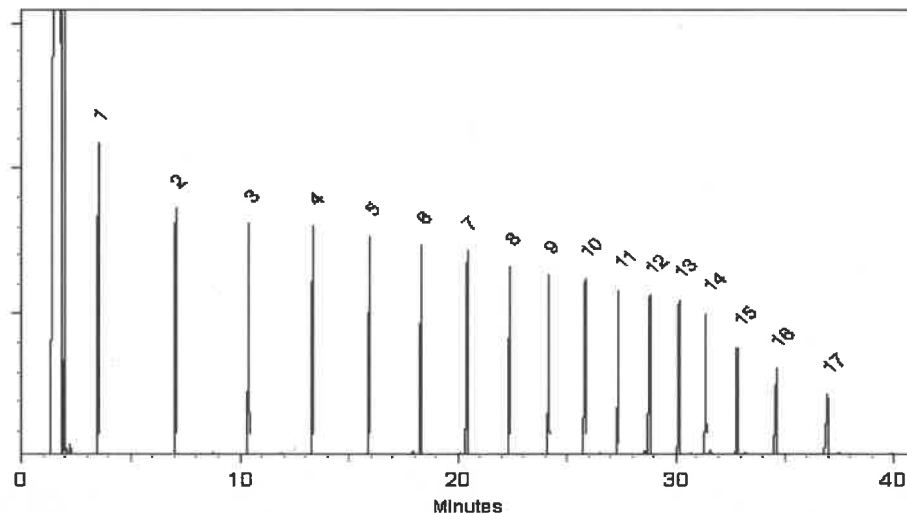
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl

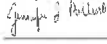


This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


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/ μ ECD, 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:

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

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.



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Tel: 1-814-353-1300
Fax: 1-814-353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus



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 } Y.P.
↓
P13112 } 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	MKQC3882	99%	503.6 µg/mL	+/- 13.0098
9	n-Tetracosane (C24)	646-31-1	MKQC8345	99%	504.0 µg/mL	+/- 13.0201
10	n-Hexacosane (C26)	630-01-3	MKQC4814	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	MKQC9436	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

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.)

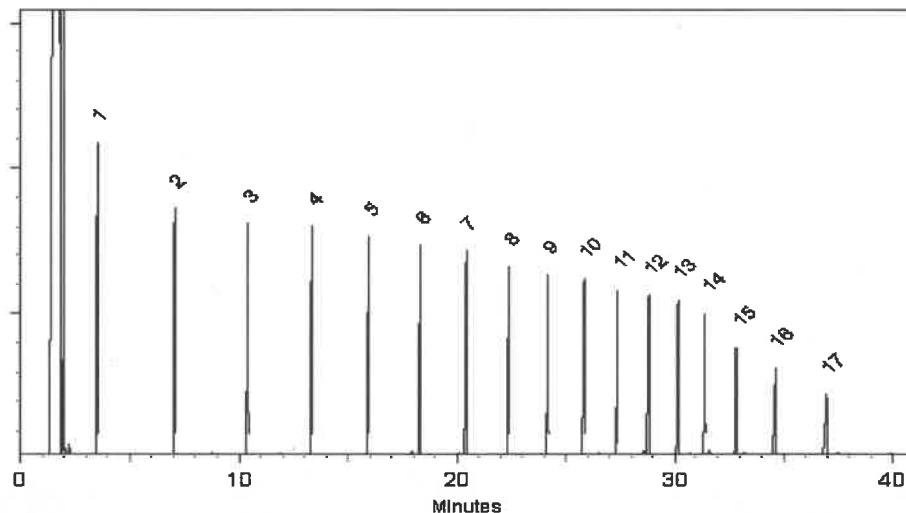
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl

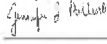


This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


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/ μ ECD, 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:

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

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.



CERTIFIED WEIGHT REPORT

Part Number:	Lot Number:	Description:

72072
101122
n-Tetracosane-d50

Solvent(s):	Lot#
Methylene chloride	105345

Formulated By: Prashant Chauhan	101122	DATE
---------------------------------	--------	------

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

Weight(s) shown below were combined and diluted to (mL): 200.0

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Expanded Uncertainty (+/-) (u/g/mL)	CAS#	OSHA PEL (TWA)	LD50
SDS Information			
(Solvent Safety Info. On Attached pg.)			

Expanded Uncertainty (+/-) (u/g/mL)	CAS#	OSHA PEL (TWA)	LD50
SDS Information (Solvent Safety Info. On Attached pg.)			

1. n-Tetracosane-d50

N/A

A1 16416-32-3

0 20482 1000 6

0 2047

990

02

98

10

PB-266

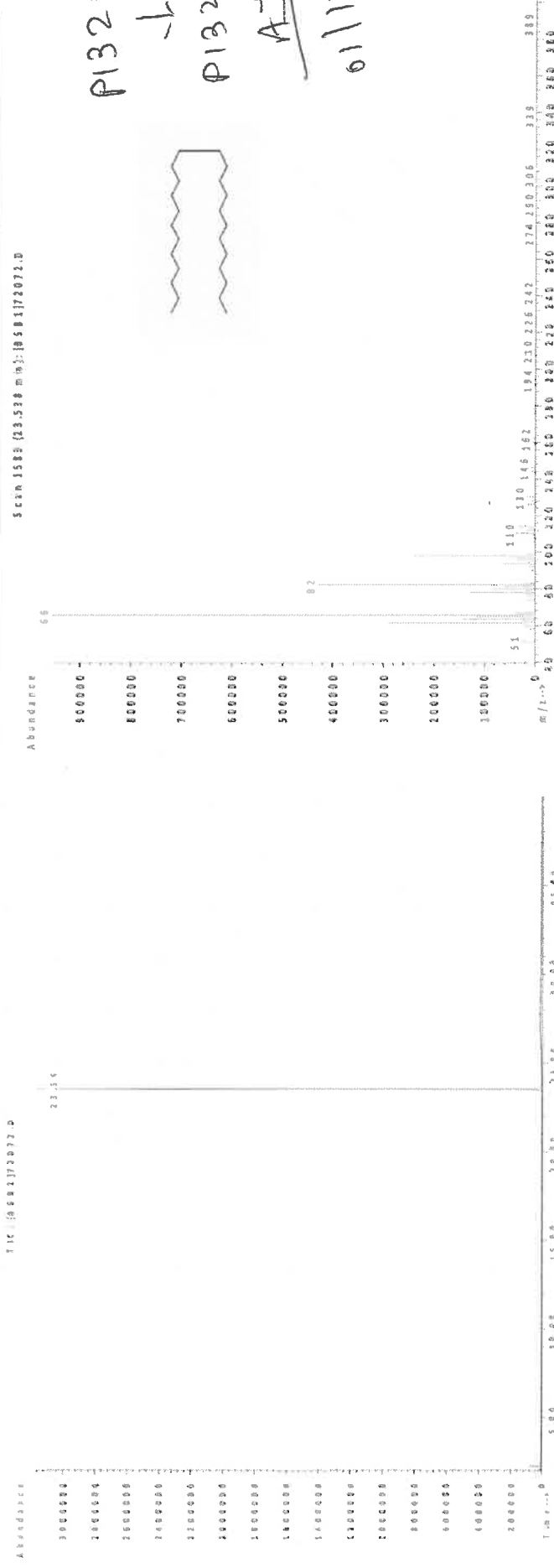
2072

50

| **Tracosar** |

1

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.), Plate = 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).



5580 Skylane Blvd
Santa Rosa, CA 95403
(707)525-5788
(800)878-7654 Toll Free
(707)545-7901 Fax

Manufacturer's Quality System
Audited & Registered
by TUV USA to ISO 9001:2015

Date Received: _____

Certificate of Analysis

Page 1 of 1

Catalog No.: Lot No.: Storage:

Z-110400-05 514983 ≤-10 Degrees C

Solvent:

Hexane

Exp. Date:

11/20/2028

Description:

TRPH Standard (C8-C40), 500 mg/L, 1 ml

-01

Compound

CAS No.

Purity (%)

Compound Lot No.

Concentration, mg/L

decane (C10)

124-18-5

99.7

415.7.2P

498.5 ± 6.92

docosane (C22)

629-97-0

98.8

420.9.1P

499.4 ± 6.93

dodecane (C12)

112-40-3

99.7

416.9.3P

502 ± 6.97

dotriacontane (C32)

544-85-4

97

425.9.2.2P

499.6 ± 8.53

eicosane (C20)

112-95-8

99.8

419.7.1P

501 ± 6.95

hexacosane (C26)

630-01-3

99.3

422.7.2.1P

501 ± 6.95

hexatriacontane (C36)

630-06-8

98

427.29.1.1P

499.3 ± 8.53

n-hexadecane (C16)

544-76-3

99.45

368.27.1.1P

498.7 ± 6.91

octacosane (C28)

630-02-4

99.1

423.24.1P

500.5 ± 6.95

n-octadecane (C18)

593-45-3

99.5

418.29.1P

499.5 ± 6.92

octane (C8)

111-65-9

99.4

385.7.2.1P

498.5 ± 6.92

octatriacontane (C38)

7194-85-6

95

428.1.2P

500.2 ± 6.94

tetracontane (C40)

4181-95-7

97

429.7.2P

499.6 ± 6.93

n-tetracosane (C24)

646-31-1

99.5

421.7.1P

499.5 ± 6.93

n-tetradecane (C14)

629-59-4

99.3

417.9.1P

500 ± 6.94

tetratriacontane (C34)

14167-59-0

96.1

426.7.2.2P

499.7 ± 8.53

triacontane (C30)

638-68-6

99.5

424.7.1.1P

500 ± 6.94

Let the standard warm to room temperature and sonicate before opening.

P13215

↓

P13224

AJ
01131124

*Not a certified value

Andrea Schaible

Certified By: _____
Andrea Schaible
Chemist

All weights are traceable through N. I. S. T. Test No. 822/264157-00.
Concentration (correct for purity) and uncertainty (95% confidence) values
listed are determined gravimetrically.



5580 Skylane Blvd
Santa Rosa, CA 95403
(707)525-5788
(800)878-7654 Toll Free
(707)545-7901 Fax

Manufacturer's Quality System
Audited & Registered
by TUV USA to ISO 9001:2015

Date Received: _____

Certificate of Analysis

Page 1 of 1

Catalog No.: Lot No.: Storage:

Z-110400-05 514983 ≤-10 Degrees C

Solvent:

Hexane

Exp. Date:

11/20/2028

Description:

TRPH Standard (C8-C40), 500 mg/L, 1 ml

-01

Compound

CAS No.

Purity (%)

Compound Lot No.

Concentration, mg/L

decane (C10)

124-18-5

99.7

415.7.2P

498.5 ± 6.92

docosane (C22)

629-97-0

98.8

420.9.1P

499.4 ± 6.93

dodecane (C12)

112-40-3

99.7

416.9.3P

502 ± 6.97

dotriacontane (C32)

544-85-4

97

425.9.2.2P

499.6 ± 8.53

eicosane (C20)

112-95-8

99.8

419.7.1P

501 ± 6.95

hexacosane (C26)

630-01-3

99.3

422.7.2.1P

501 ± 6.95

hexatriacontane (C36)

630-06-8

98

427.29.1.1P

499.3 ± 8.53

n-hexadecane (C16)

544-76-3

99.45

368.27.1.1P

498.7 ± 6.91

octacosane (C28)

630-02-4

99.1

423.24.1P

500.5 ± 6.95

n-octadecane (C18)

593-45-3

99.5

418.29.1P

499.5 ± 6.92

octane (C8)

111-65-9

99.4

385.7.2.1P

498.5 ± 6.92

octatriacontane (C38)

7194-85-6

95

428.1.2P

500.2 ± 6.94

tetracontane (C40)

4181-95-7

97

429.7.2P

499.6 ± 6.93

n-tetracosane (C24)

646-31-1

99.5

421.7.1P

499.5 ± 6.93

n-tetradecane (C14)

629-59-4

99.3

417.9.1P

500 ± 6.94

tetratriacontane (C34)

14167-59-0

96.1

426.7.2.2P

499.7 ± 8.53

triacontane (C30)

638-68-6

99.5

424.7.1.1P

500 ± 6.94

Let the standard warm to room temperature and sonicate before opening.

P13215

↓

P13224

AJ
01131124

*Not a certified value

Andrea Schaible

Andrea Schaible
Chemist

Certified By: _____

All weights are traceable through N. I. S. T. Test No. 822/264157-00.
Concentration (correct for purity) and uncertainty (95% confidence) values
listed are determined gravimetrically.

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 $\pm 0.5\%$ 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 $\pm 5\%$ unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within $\pm 5\%$ 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: UCRM 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

Page 1 of 2



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
Scope: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part # 10009R
Lot # 070716
Shelf Life Description: CLP Priority Pollutant Internal Standards
GC/MS Calibration - 6 components
070721
Expiration Date: Ambient (20 °C)
Recommended Storage: 4000
Nominal Concentration (µg/mL): 822-275872-11
NIST Test ID#: 5E-05 Balance Uncertainty
0.058 Mass Uncertainty

Solvent(s): Methylene chloride
Lot# 78782

Formulated By: Paul Barron
Reviewed By: Pedro L. Rentes

070716
070716

Weight(s) shown below were combined and diluted to (mL): 500.0

Compound	SMW	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight (µg)	Actual Weight (µg)	Actual Conc (µg/mL)	Expanded Uncertainty (µg/mL)	CAS#	MSDS Information (Solvent Safety Info. On Attached pg.)	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-1845M07287CB1	4000	98	0.2	2.04093	2.04335	4004.7	15.4	2055-02-1	N/A	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-2339M031612HP1	4000	99	0.2	2.02032	2.02084	4001.0	15.2	1146-85-2	10 ppm (50mg/m3/8h)	N/A	or-rat 400mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	15.2	15067-26-2	N/A	N/A	or-rat 500mg/kg
4. Phenanthrene-d10	248	PR-2305M081711PM1	4000	98	0.2	2.04093	2.04135	4000.8	15.4	1517-25-2	N/A	N/A	N/A
5. Chrysene-d12	92	I-19290	4000	98	0.2	2.04093	2.04150	4001.3	15.4	1719-03-5	N/A	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	98	0.2	2.04093	2.04155	4001.2	15.4	1503-58-3	N/A	N/A	N/A

Run 35, "P10009R L070716 [4000µg/mL in MeCl2]"
Run Length: 40.00 min, 23900 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070716-GC/MS", Method "GC-MS".
Analyzed using Method "GC-MS".

Comments:
GC-MS Analysis by Melissa Siciric
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness.
Flow rates: Total Flow = 300 mL/min, Helium (carrier) = 0.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) = 300 mL, Oven Temp 1 = 50°C (1 min).
Rise = 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 µL, Range = 4

Peak No. Name FID RT (min)

1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.98
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Printed: 5/8/2019, 12:55:50 PM

Part # 10009R Lot # 041219 1 of 2

Formulator
Reviewer

Actual
Concentration

Uncertainty
Values

Health &
Safety

3rd Party
Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

Page 2 of 2



CERTIFIED WEIGHT REPORT

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

Solvent(s):
Methylene chloride
Lot#
105345

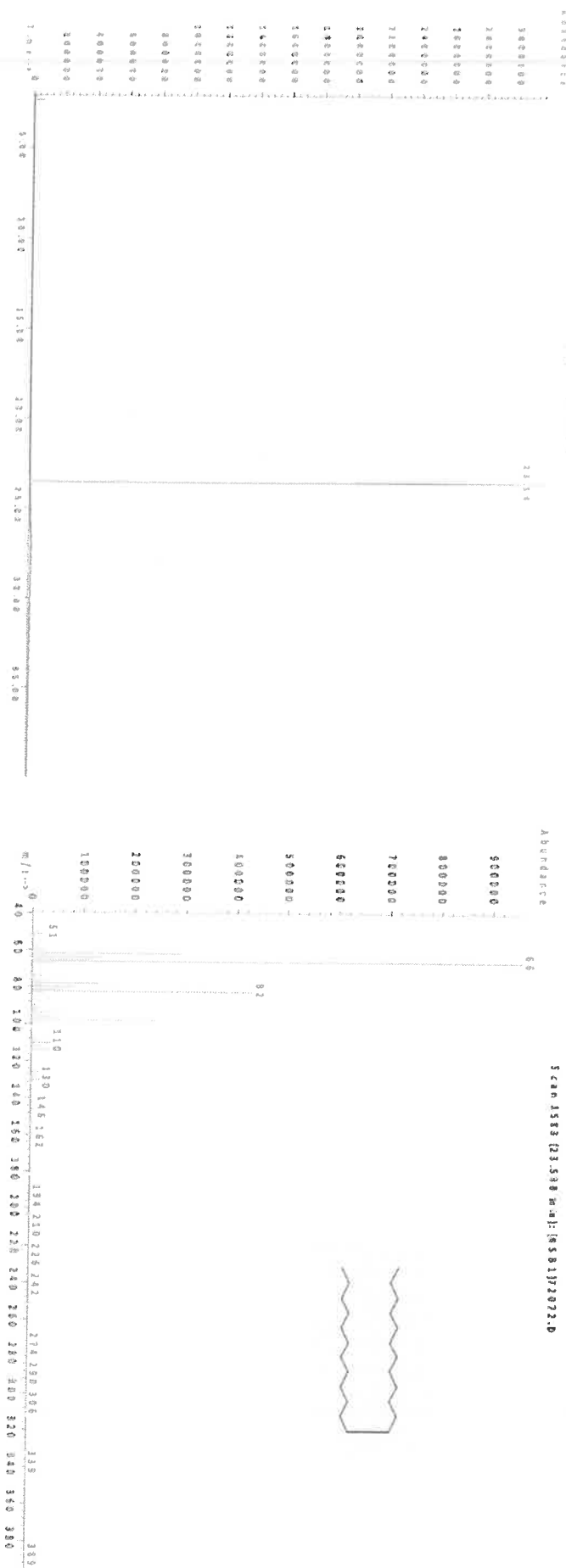
Expiration Date: **101132**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test ID#: **6UB3**
Weight(s) shown below were combined and diluted to (mL): **200.0**
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

P13437
13436
07/24/24
X.F.

Formulated By:	<i>Prashant Chauhan</i>	101122
Reviewed By:	<i>Pedro L. Rentas</i>	101122
DATE		DATE

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.)	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

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 Results," 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 $\pm 0.5\%$ 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 $\pm 5\%$ unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within $\pm 5\%$ 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: UCRM 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

Page 1 of 2



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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



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
Scope: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part # 10009R
Lot # 070716
Shelf Life Description: CLP Priority Pollutant Internal Standards
GC/MS Calibration - 6 components
070721
Expiration Date: Ambient (20 °C)
Recommended Storage: 4000
Nominal Concentration (µg/mL): 822-275872-11
NIST Test ID#: 5E-05 Balance Uncertainty
0.058 Mass Uncertainty

Solvent(s): Methylene chloride
Lot# 78782

Formulated By: Paul Barron
Reviewed By: Pedro L. Rentes

070716
070716

Weight(s) shown below were combined and diluted to (mL): 500.0

Compound	SMW	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight (µg)	Actual Weight (µg)	Actual Conc (µg/mL)	Expanded Uncertainty (µg/mL)	CAS#	MSDS Information (Solvent Safety Info. On Attached pg.)	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-1845M07287CB1	4000	98	0.2	2.04093	2.04335	4004.7	15.4	2055-02-1	N/A	en-ra 500mg/kg	
2. Naphthalene-d8	223	PR-2339M031612HP1	4000	99	0.2	2.02032	2.02084	4001.0	15.2	1146-85-2	10 ppm (50mg/m3/8h)	en-ra 400mg/kg	
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	15.2	15067-28-2	N/A	en-ra 500mg/kg	
4. Phenanthrene-d10	248	PR-2305M081711PM1	4000	98	0.2	2.04093	2.04135	4000.8	15.4	1517-25-2	N/A	N/A	
5. Chrysene-d12	92	I-19290	4000	98	0.2	2.04093	2.04150	4001.3	15.4	1719-03-5	N/A	N/A	
6. Perylene-d12	247	PR-24113	4000	98	0.2	2.04093	2.04155	4001.2	15.4	1503-58-3	N/A	N/A	

Run 35, "P10009R L070716 [4000µg/mL in MeCl2]"

Run Length: 40.00 min, 23900 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070716-GC/MS2", Method "GC-MS2".
Analyzed using Method "GC-MS2".

Comments:
GC-MS2 Analysis by Melissa Siciric
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness.
Flow rates: Total Flow = 300 mL/min, Helium (carrier) = 0.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) = 300 mL, Oven Temp 1 = 50°C (1 min).
Rise = 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 = sData Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 µL, Range = 4

Peak No. Name FID RT (min)

1	1,4-Dichlorobenzene-d4	8.34
2	Naphthalene-d8	8.98
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Printed: 5/8/2019, 12:55:50 PM

Formulator
Reviewer

Actual
Concentration
Uncertainty
Values

Health &
Safety

3rd Party
Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

Page 2 of 2



CERTIFIED WEIGHT REPORT

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

Solvent(s):
Methylene chloride
Lot#
105345

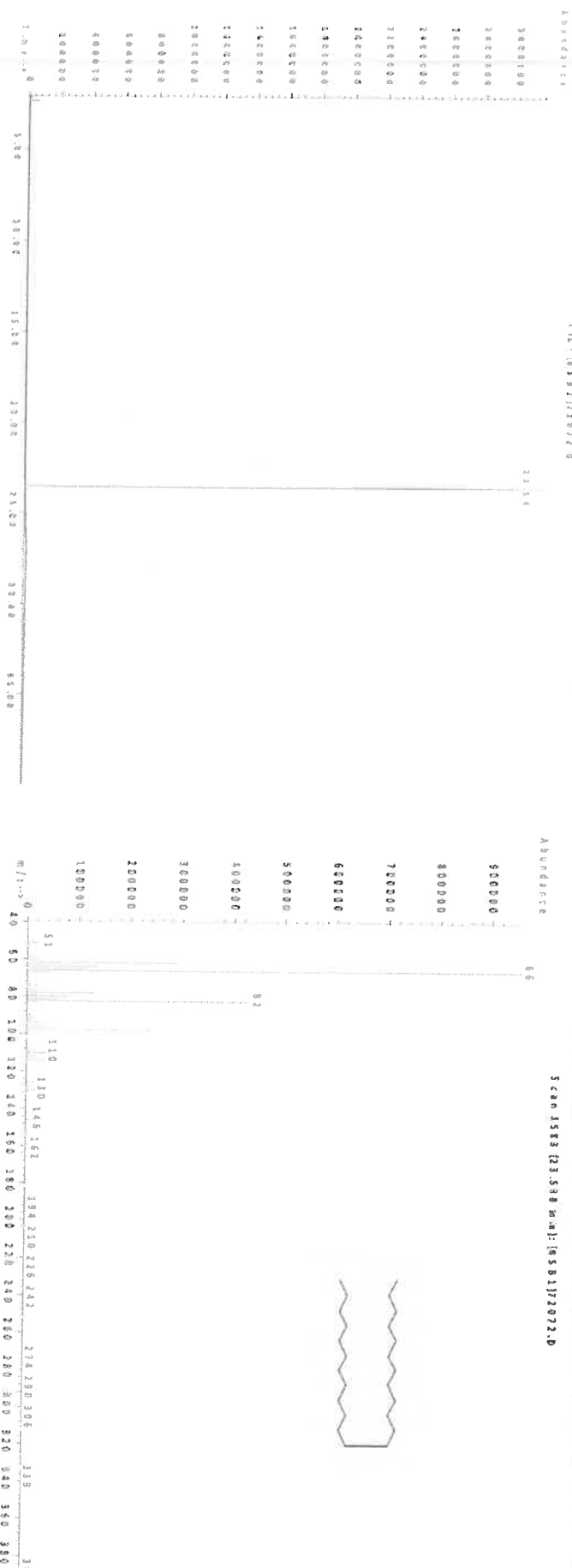
Expiration Date: **101132**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test ID#: **6UB3**
Weight(s) shown below were combined and diluted to (mL): **200.0**
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

P13437
13436
07/24/24
X.F.

Formulated By:	<i>Prashant Chauhan</i>	101122
Reviewed By:	<i>Pedro L. Rentas</i>	101122
	Pedro L. Rentas	DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)	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

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 References: Taylor, B.N., and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results," 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 $\pm 0.5\%$ 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 $\pm 5\%$ unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within $\pm 5\%$ 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: UCRM 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

Page 1 of 2



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Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019



ABSOLUTE STANDARDS, INC.

ISO - 17034

Understanding the Certified Weight Report

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800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

Part # 10009R
Lot # 070716
Shelf Life Description: CLP Priority Pollutant Internal Standards
GC/MS Calibration - 6 components
070721
Expiration Date: Ambient (20 °C)
Recommended Storage: 4000
Nominal Concentration (µg/mL): 822-275872-11
NIST Test ID#: 5E-05 Balance Uncertainty
0.058 Mass Uncertainty

Solvent(s): Methylene chloride
Lot# 78782

Formulated By: Paul Barron
Reviewed By: Pedro L. Rentes

070716
070716

Weight(s) shown below were combined and diluted to (mL): 500.0

Compound	SMW	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight (µg)	Actual Weight (µg)	Actual Conc (µg/mL)	Expanded Uncertainty (µg/mL)	CAS#	MSDS Information (Solvent Safety Info. On Attached pg.)	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-1845M07287CB1	4000	98	0.2	2.04093	2.04335	4004.7	15.4	2055-02-1	N/A	en-ra 500mg/kg	
2. Naphthalene-d8	223	PR-2339M031612HP1	4000	99	0.2	2.02032	2.02084	4001.0	15.2	1146-85-2	10 ppm (50mg/m3/8h)	en-ra 400mg/kg	
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	15.2	15067-28-2	N/A	en-ra 500mg/kg	
4. Phenanthrene-d10	248	PR-2305M081711PM1	4000	98	0.2	2.04093	2.04135	4000.8	15.4	1517-25-2	N/A	N/A	
5. Chrysene-d12	92	I-19290	4000	98	0.2	2.04093	2.04150	4001.3	15.4	1719-03-5	N/A	N/A	
6. Perylene-d12	247	PR-24113	4000	98	0.2	2.04093	2.04155	4001.2	15.4	1503-58-3	N/A	N/A	

Run 35, "P10009R L070716 [4000µg/mL in MeCl2]"
Run Length: 40.00 min, 23900 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070716-GC/MS", Method "GC-MS".
Analyzed using Method "GC-MS".

Comments:
GC-MS Analysis by Melissa Siciric
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness.
Flow rates: Total Flow = 300 mL/min, Helium (carrier) = 0.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) = 300 mL, Oven Temp 1 = 50°C (1 min).
Rise = 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 µL, Range = 4

Peak No. Name FID RT (min)

1	1,4-Dichlorobenzene-d4	8.34
2	Naphthalene-d8	8.98
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Printed: 5/8/2019, 12:55:50 PM

Part # 10009R Lot # 041219 1 of 2

Formulator
Reviewer

Actual
Concentration
Uncertainty
Values

Health &
Safety

3rd Party
Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

Page 2 of 2



CERTIFIED WEIGHT REPORT

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

Solvent(s):
Methylene chloride
Lot#
105345

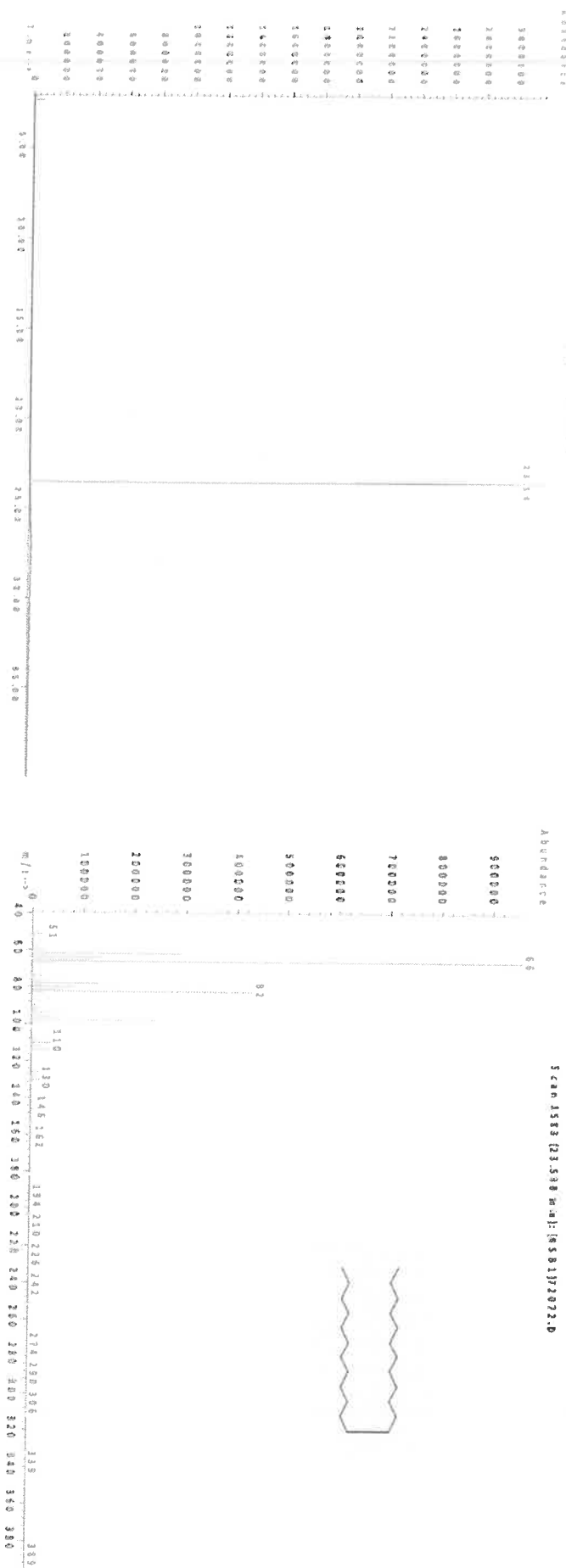
Expiration Date: **101132**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test ID#: **6UB3**
Weight(s) shown below were combined and diluted to (mL): **200.0**
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

P13437
13436
07/24/24
X.F.

Formulated By:	<i>Prashant Chauhan</i>	101122
Reviewed By:	<i>Pedro L. Rentas</i>	101122
DATE		DATE

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.)	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

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 Results," 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 $\pm 0.5\%$ 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 $\pm 5\%$ unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within $\pm 5\%$ 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: UCRM 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

Page 1 of 2



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
Scope: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part # 10009R
Lot # 070716
Shelf Life Description: CLP Priority Pollutant Internal Standards
GC/MS Calibration - 6 components
070721
Expiration Date: Ambient (20 °C)
Recommended Storage: 4000
Nominal Concentration (µg/mL): 822-275872-11
NIST Test ID#: 5E-05 Balance Uncertainty
0.058 Mass Uncertainty

Solvent(s): Methylene chloride
Lot# 78782

Formulated By: Paul Barron
Reviewed By: Pedro L. Rentes

070716
070716

Weight(s) shown below were combined and diluted to (mL): 500.0

Compound	SMW	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight (µg)	Actual Weight (µg)	Actual Conc (µg/mL)	Expanded Uncertainty (µg/mL)	CAS#	MSDS Information (Solvent Safety Info. On Attached pg.)	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-1845M07287CB1	4000	98	0.2	2.04093	2.04335	4004.7	15.4	2055-02-1	N/A	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-2339M031612HP1	4000	99	0.2	2.02032	2.02084	4001.0	15.2	1146-85-2	10 ppm (50mg/m3/8h)	N/A	or-rat 400mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	15.2	15067-28-2	N/A	N/A	or-rat 500mg/kg
4. Phenanthrene-d10	248	PR-2305M081711PM1	4000	98	0.2	2.04093	2.04136	4000.8	15.4	1517-25-2	N/A	N/A	N/A
5. Chrysene-d12	92	I-19290	4000	98	0.2	2.04093	2.04159	4001.3	15.4	1719-03-5	N/A	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	98	0.2	2.04093	2.04156	4001.2	15.4	1503-58-3	N/A	N/A	N/A

Run 35, "P10009R L070716 [4000µg/mL in MeCl2]"

Run Length: 40.00 min, 23900 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070716-GC/MS", Method "GC-MS".
Analyzed using Method "GC-MS".

Comments:
GC-MS Analysis by Melissa Siciric
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness.
Flow rates: Total Flow = 300 mL/min, Helium (carrier) = 0.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) = 300 mL, Oven Temp 1 = 50°C (1 min).
Rise = 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 µL, Range = 4

Peak No. Name FID RT (min)

1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.98
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Printed: 5/8/2019, 12:55:50 PM

Part # 10009R Lot # 041219 1 of 2

Formulator
Reviewer

Actual
Concentration

Uncertainty
Values

Health &
Safety

3rd Party
Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

Page 2 of 2



CERTIFIED WEIGHT REPORT

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

Solvent(s):
Methylene chloride
Lot#
105345

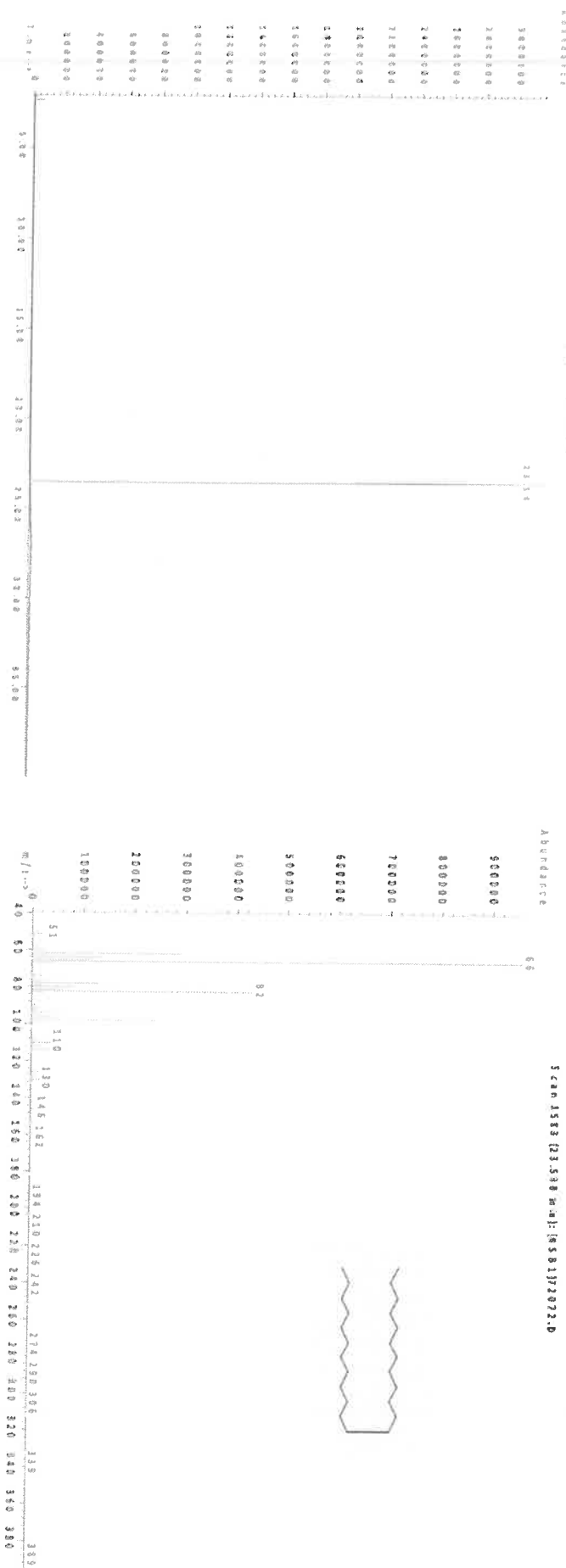
Expiration Date: **101132**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test ID#: **6UB3**
Weight(s) shown below were combined and diluted to (mL): **200.0**
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

P13437
13436
07/24/24
X.F.

Formulated By:	<i>Prashant Chauhan</i>	101122
Reviewed By:	<i>Pedro L. Rentas</i>	101122
DATE		DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)	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

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.



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- Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
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- Uncertainty Reference: Taylor, B.N., and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).



SHIPPING DOCUMENTS

CHEMTECH

CHAIN OF CUSTODY RECORD

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

CHEMTECH PROJECT NO. **P5279**
QUOTE NO.
COC Number **2041523**

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: Tully Construction Co.
ADDRESS: 112-01 beach Channel
CITY Rockaway STATE: NJ ZIP:
ATTENTION: Dean Devoe
PHONE: FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME:
PROJECT NO.: LOCATION:
PROJECT MANAGER:
e-mail:
PHONE: FAX:

CLIENT BILLING INFORMATION

BILL TO: PO#:
ADDRESS:
CITY Same STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

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

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) ☐ NYS ASP A ☐ NYS ASP B
+ Raw Data ☐ Other
☐ EDD FORMAT

SVOC-PAH
TEL P
Corrosivity
PCB
Mercury
TPH
VOC-TEL-VOC-10

ANALYSIS

PRESERVATIVES

COMMENTS

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES										COMMENTS
			COMP	GRAB	DATE	TIME		1	2	3	4	5	6	7	8	9	
1.	Rockaway Park	90L	X		12-13-24	0820	9	X	X	X	X	X	X				PID=0.0
2.	1	1		X	1	0822	4							X			PID=0.0
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

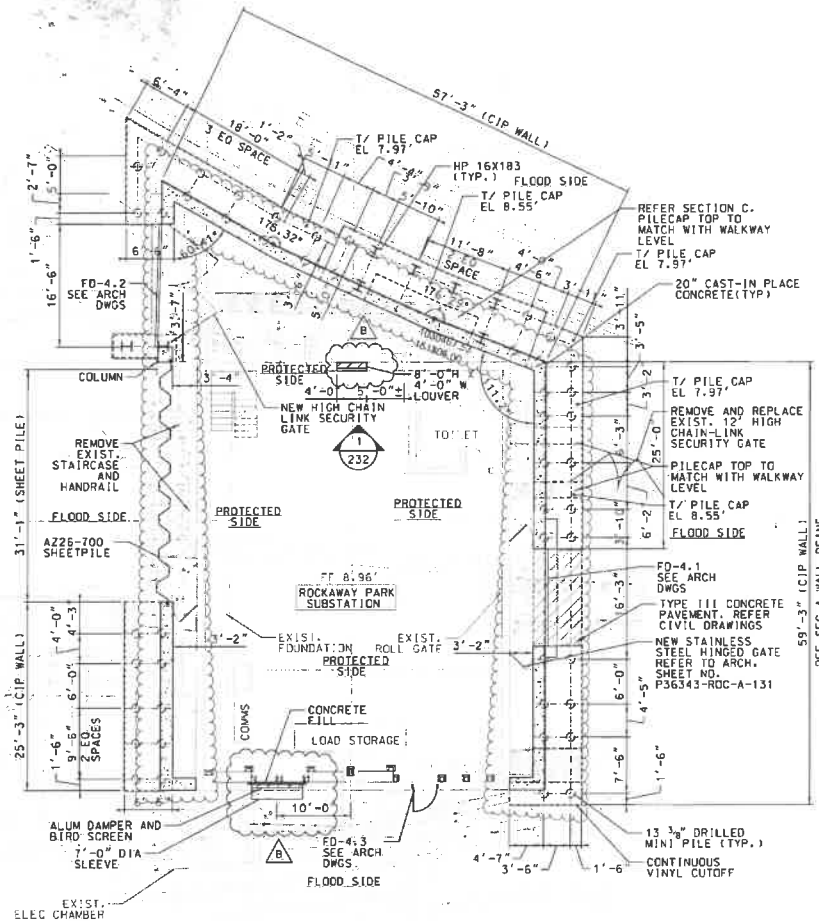
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <u>L. C. [Signature]</u>	DATE/TIME: <u>0900</u> <u>12-13-2024</u>	RECEIVED BY: 1. <u>[Signature]</u>	Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☒ COOLER TEMP <u>2.9°C</u> Comments: <u>*PID Meter Calibrated 12-13-2024 *</u> <u>Equal volume of soil used 5:1 composite</u>
RELINQUISHED BY SAMPLER: 2. <u>[Signature]</u>	DATE/TIME:	RECEIVED BY: 2. <u>[Signature]</u>	
RELINQUISHED BY SAMPLER: 3. <u>[Signature]</u>	DATE/TIME: <u>12:00</u> <u>12-13-2024</u>	RECEIVED BY: 3. <u>[Signature]</u>	

Page 1 of 1

CLIENT: ☐ Hand Delivered ☐ Other
CHEMTECH: ☐ Picked Up ☐ Field Sampling

Shipment Complete
☐ YES ☐ NO



Rockaway Park

NOTE:

1. REFER TO P36343-A-G-701 FOR FLOOD DEVICE OPENING SCHEDULE.

FLOOD WALL LAYOUT PLAN

SCALE: 1/8"=1'-0"



IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/REGISTERED ARCHITECT. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX TO THE DRAWING HIS/HER SEAL AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

REVISION	DESCRIPTION	DATE	APPROVED
B	ADDED NEW LOUVER	11/06/2024	CJ
A	REVISED PILE AND INTERNAL HARDENING LAYOUT	10/28/2024	CJ

REVISIONS



CONTRACT P-36343
FLOOD MITIGATION AT TWENTY-SIX (26) SUBSTATIONS
IN THE BOROUGH OF BROOKLYN, MANHATTAN AND QUEENS
**ROCKAWAY PARK SUBSTATION
FLOOD WALL PLAN**



DRAWN BY	R. NUTHAN	DATE	11/06/2024
DESIGNED BY	K. UDAY	DISCIPLINE	STRUCTURE
CHECKED BY	DINAKAR KN	PROJECT NO.	P36343-ROC-CS-131
APPROVED BY	C. JEDRICH, PE	REVISION	

SDDESIGN\$FILE\$EXPANDED\$SPEC\$

PRINT AS OF SDATES\$OF\$PLOTTINGS

USER\$NAME

CHEMTECH

Environmental Laboratory

www.chemtech.net | EMAIL: PM@chemtech.net

Project Name: Rockaway Park
Queens

Chemtech Order ID: _____
Sampler Name: Lawrence Carter
Client Project Coordinator & Phone: _____

Service Order #: _____

Work Order #: _____

Labor WBS #: _____

Facility/Site: _____

Site Address: 112-01 beach

Page #: 1 of 1
Date: 12.13.2024

Channel Backway Queens, N.Y.

Arrive Time: 0730

Depart Time: 0900

Waste Stream (circle one): drum / roll-off / soil pile / in-situ / linear construction / frac-tank

Sample Matrices (circle all that apply): Water / ☒ Solid / ☒ NAPL / Concrete / Wipe

soil cover

Collection Depths: _____

Dimensions/CY: _____

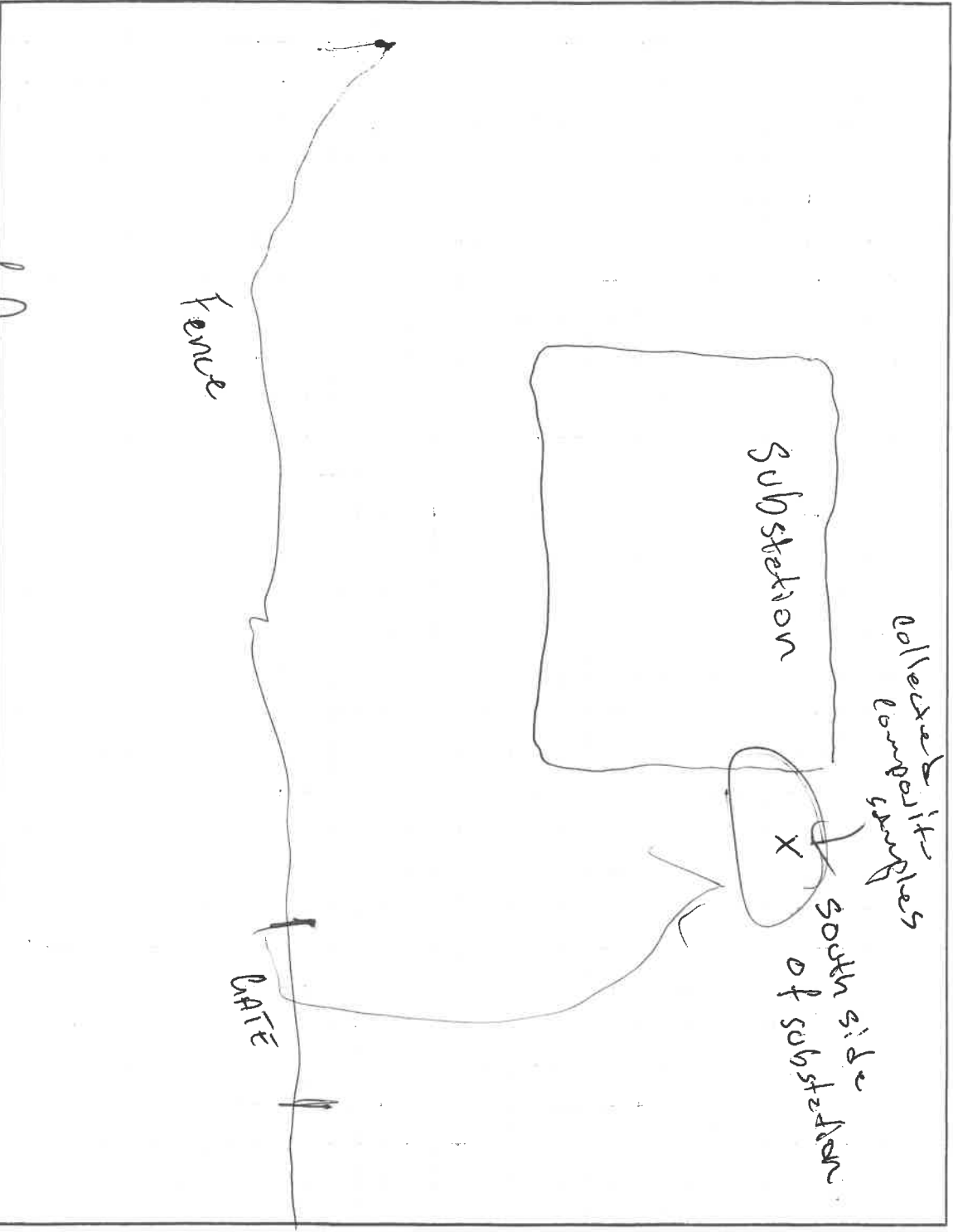
Temp (range): _____ °C PID Readings (range): 0.0 PPM Odor: Y ☒ N Color: Y / N

Sample Description: Dark GRAY soil

Field Observations: Sampled, Rockaway Park.

Grid/Area Composite Map:

QA Control # A3041134



Sampler Signature: [Signature] 12.13.2024

Supervisor Review/Date: _____

Client Signature: _____

Date/Time Arrived at Lab: _____



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

LOGIN REPORT/SAMPLE TRANSFER

Order ID : P5279	TULL02	Order Date : 12/13/2024 12:03:00 PM	Project Mgr :
Client Name : Tully Construction Co., Inc.		Project Name : Rockaway Park	Report Type : Level 1
Client Contact : Dean Devoe		Receive DateTime : 12/13/2024 12:00:00 AM	EDD Type : Excel NYS 375
Invoice Name : Tully Construction Co., Inc.		Purchase Order :	Hard Copy Date :
Invoice Contact : Dean Devoe			Date Signoff :

LAB ID	CLIENT ID	MATRIX SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
P5279-03	ROCKAWAY-PARK	Solid	12/13/2024	08:22		VOC-TCLVOA-10	8260D	5 Bus. Days

Relinquished By :

Date / Time : 12-13-2024 12:18

Received By :

Date / Time : 12-13-24 12:18

Storage Area : VOA Refrigerator Room