

Energy Laboratories Inc

ANALYTICAL RUN Summary

20-Sep-21

Run ID FID-HEADSPACE_210120A

Run Start Date: 1/20/2021
 Analyst: Jeff Whitmer
 Ical:
 Column ID: porapak Q
 Comments: thermometer used for temp:S94278.

Instrument ID	Description
1000_SGE_041819	1000 mL SGE Syringe _ Gas Tight

Std ID	Std Name	Std Amount	Std Units	Samp Amount	Samp Units	SampType	Expiration Date
10711	HC-Methane-W-CCV	0.3	ml			lcs	8/9/2022
12173	HC-Methane-W-CCV	0.3	ml			CCV	11/23/2023

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14188877	MBLK	HC-METHANE-	MBLK		1/20/2021 11:50:	1	R355741		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Ethane	A	mg/L		0			0	0	0.00031	0.001	0	0%	0	0	0%	
Ethene	A	mg/L		0			0	0	0.00023	0.001	0	0%	0	0	0%	
Methane	A	mg/L		0			0	0	0.000704	0.001	0	0%	0	0	0%	
Ethylene	X	mg/L		0			0	0	0.001	0.001	0	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14188879	Cal1	HC-METHANE-	CAL1		1/20/2021 11:54:	1	R355741		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Ethane	A	ppm		2.66692829		2.5	0	0	2	2	0	107%	50	150	0%	
Ethene	A	ppm		2.68217219		2.5	0	0	2	2	0	107%	50	150	0%	
Methane	A	ppm		2.9330938		2.5	0	0	2	2	0	117%	50	150	0%	
Ethylene	X	ppm		2.68217219		1000	0	0	2	2	0	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14188881	Cal2	HC-METHANE-	CAL2		1/20/2021 12:00:	1	R355741		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

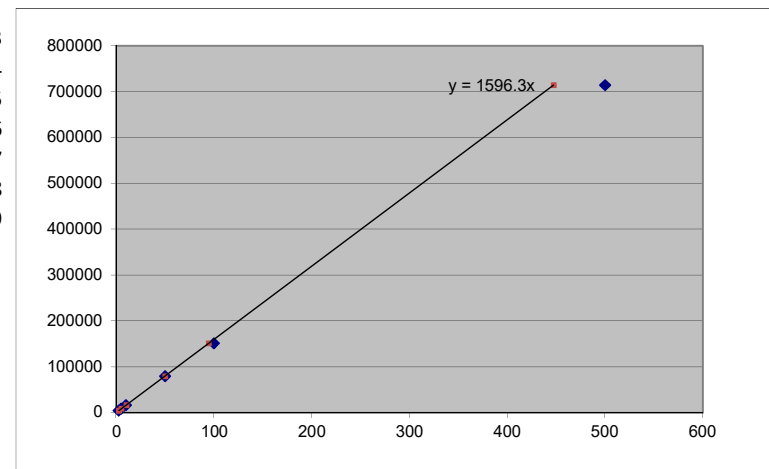
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14188881	Cal2	HC-METHANE-	CAL2		1/20/2021 12:00:	1	R355741		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Ethane	A	ppm		5.15876183		5	0	0	2	2	0	103%	85	115	0%	
Ethene	A	ppm		5.18455183		5	0	0	2	2	0	104%	85	115	0%	
Methane	A	ppm		5.47590194		5	0	0	2	2	0	110%	85	115	0%	
Ethylene	X	ppm		5.18455183		1000	0	0	2	2	0	1%	0	0	0%	S
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14188883	Cal3	HC-METHANE-	CAL3		1/20/2021 12:04:	1	R355741		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Ethane	A	ppm		10.3740375		10	0	0	2	2	0	104%	85	115	0%	
Ethene	A	ppm		10.2107455		10	0	0	2	2	0	102%	85	115	0%	
Methane	A	ppm		10.5521213		10	0	0	2	2	0	106%	85	115	0%	
Ethylene	X	ppm		10.2107455		1000	0	0	2	2	0	1%	0	0	0%	S
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14188885	Cal4	HC-METHANE-	CAL4		1/20/2021 12:09:	1	R355741		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Ethane	A	ppm		50.4828227		50	0	0	2	2	0	101%	85	115	0%	
Ethene	A	ppm		50.7731613		50	0	0	2	2	0	102%	85	115	0%	
Methane	A	ppm		49.9741048		50	0	0	2	2	0	100%	85	115	0%	
Ethylene	X	ppm		50.7731613		1000	0	0	2	2	0	5%	0	0	0%	S
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14188887	Cal5	HC-METHANE-	CAL5		1/20/2021 12:14:	1	R355741		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Ethane	A	ppm		96.640217		100	0	0	2	2	0	97%	85	115	0%	
Ethene	A	ppm		96.3665695		100	0	0	2	2	0	96%	85	115	0%	
Methane	A	ppm		94.8118498		100	0	0	2	2	0	95%	85	115	0%	
Ethylene	X	ppm		96.3665695		1000	0	0	2	2	0	10%	0	0	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14188889	Cal6	HC-METHANE-	CAL6		1/20/2021 12:22:	1	R355741		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Ethane	A	ppm		444.006974		500	0	0	2	2	0	89%	85	115	0%	
Ethene	A	ppm		445.008645		500	0	0	2	2	0	89%	85	115	0%	
Methane	A	ppm		447.326874		500	0	0	2	2	0	89%	85	115	0%	
Ethylene	X	ppm		445.008645		1000	0	0	2	2	0	45%	0	0	0%	S
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14188891	Cal7	HC-METHANE-	CAL7		1/20/2021 12:31:	1	R355741		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	ppm		834.11562		1000	0	0	2	2	0	83%	85	115	0%	S
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14188893	LCS	HC-METHANE-	CCV		1/20/2021 12:36:	1	R355741		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Ethane	A	ppm		97.2572953		100	0	0	2	2	0	97%	85	115	0%	
Ethene	A	ppm		97.1407652		100	0	0	2	2	0	97%	85	115	0%	
Methane	A	ppm		96.8898234		100	0	0	2	2	0	97%	85	115	0%	
Ethylene	X	ppm		97.1407652		1000	0	0	2	2	0	10%	85	115	0%	S

Inst ID FID-HeadSpace

Curve Data for samples analyzed after 1/29/2021

Blank,cts	STD ID					
0	#12173	1000000				
Decimal	Sample	Response	Date/Time	Run Id		
Amnt, Injtd	Conc ppm	Area				
Equivalent		Counts				
300ul						
0.0000025	2.5	4682	1872.8	1/21/2021 11:54	16483	
0.000005	5	8741	1748.2	1/21/2021 12:00	16484	
0.00001	10	16844	1684.4	1/21/2021 12:04	16485	
0.00005	50	79772	1595.44	1/21/2021 12:09	16486	
0.0001	100	151345	1513.45	1/21/2021 12:14	16487	
0.0005	500	714053	1428.106	1/21/2021 12:22	16488	
0.001	1000	1331471	1331.471	1/21/2021 12:31	16489	



		StdDev	188.2268
Methane	MW= 16.04	Avg RF	1596.267
		%RSD	11.79169

		Calculated Recoveries	
[PPM]	Area Cnts	PPM	% recovery
2.5	4682	2.933094	1.1732375
5	8741	5.475902	1.0951804
10	16844	10.55212	1.0552121
50	79772	49.9741	0.9994821
100	151345	94.81185	0.9481185
500	714053	447.3269	0.8946537
1000	1331471	834.1156	0.8341156

Sample	Area Count	Dilution	Temperature (°C)	Concentration ppm and mg/L	Date and Time	Analyst	Sample	Test Code	Analyte
MBLK	0	1	20	0	1/20/2021 11:50	jdww	MBLK	HC-METHANE-W	Methane
MBLK	0	1	20	0	1/20/2021 11:50	jdww	MBLK	HC-METHANE-W	Ethane
MBLK	0	1	20	0	1/20/2021 11:50	jdww	MBLK	HC-METHANE-W	Ethene
Cal1	4682	1	20	2.9330938	1/20/2021 11:54	jdww	CCV	HC-METHANE-CCV	Methane
Cal1	8164	1	20	2.66692829	1/20/2021 11:54	jdww	CCV	HC-METHANE-CCV	Ethane
Cal1	8384	1	20	2.68217219	1/20/2021 11:54	jdww	CCV	HC-METHANE-CCV	Ethene
Cal2	8741	1	20	5.47590194	1/20/2021 12:00	jdww	CCV	HC-METHANE-CCV	Methane
Cal2	15792	1	20	5.15876183	1/20/2021 12:00	jdww	CCV	HC-METHANE-CCV	Ethane
Cal2	16206	1	20	5.18455183	1/20/2021 12:00	jdww	CCV	HC-METHANE-CCV	Ethene
Cal3	16844	1	20	10.5521213	1/20/2021 12:04	jdww	CCV	HC-METHANE-CCV	Methane
Cal3	31757	1	20	10.37403746	1/20/2021 12:04	jdww	CCV	HC-METHANE-CCV	Ethane
Cal3	31917	1	20	10.21074545	1/20/2021 12:04	jdww	CCV	HC-METHANE-CCV	Ethene
Cal4	79772	1	20	49.97410476	1/20/2021 12:09	jdww	CCV	HC-METHANE-CCV	Methane
Cal4	154538	1	20	50.48282269	1/20/2021 12:09	jdww	CCV	HC-METHANE-CCV	Ethane
Cal4	158708	1	20	50.7731613	1/20/2021 12:09	jdww	CCV	HC-METHANE-CCV	Ethene
Cal5	151345	1	20	94.81184983	1/20/2021 12:14	jdww	CCV	HC-METHANE-CCV	Methane
Cal5	295835	1	20	96.64021698	1/20/2021 12:14	jdww	CCV	HC-METHANE-CCV	Ethane
Cal5	301225	1	20	96.3665695	1/20/2021 12:14	jdww	CCV	HC-METHANE-CCV	Ethene
Cal6	714053	1	20	447.3268744	1/20/2021 12:22	jdww	CCV	HC-METHANE-CCV	Methane
Cal6	1359194	1	20	444.0069737	1/20/2021 12:22	jdww	CCV	HC-METHANE-CCV	Ethane
Cal6	1391019	1	20	445.0086452	1/20/2021 12:22	jdww	CCV	HC-METHANE-CCV	Ethene
Cal7	1331471	1	20	834.11562	1/20/2021 12:22	jdww	CCV	HC-METHANE-CCV	Methane
LCS	154662	1	20	96.88982337	1/20/2021 12:36	jdww	CCV	HC-METHANE-CCV	Methane
LCS	297724	1	20	97.25729532	1/20/2021 12:36	jdww	CCV	HC-METHANE-CCV	Ethane
LCS	303645	1	20	97.1407652	1/20/2021 12:36	jdww	CCV	HC-METHANE-CCV	Ethene

Calibration
Methane, Ethane,
Ethene
JOW
1/20/2021

*ID MB

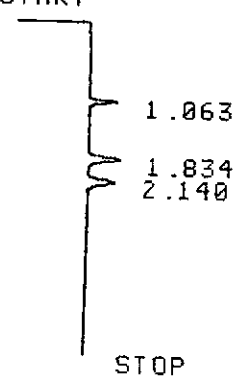
* RUN #16482 JAN 20, 2021 11:50:13
START



RUN# 16482 JAN 20, 2021 11:50:13
IDENTIFIER : MB
NO RUN PERKS STORED

*ID CAL1-2.5PPM

* RUN #16483 JAN 20, 2021 11:54:22
START



RUN# 16483 JAN 20, 2021 11:54:22

IDENTIFIER : CAL1-2.5PPM

AREA%

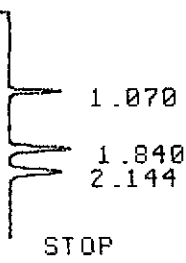
RT	AREA	TYPE	WIDTH	AREA%
1.063	4682	PP	.048	22.05370
1.834	8384	PV	.078	39.49128
2.140	8164	UP	.087	38.45502

TOTAL AREA= 21230
MUL FACTOR=1.0000E+00

*ID CAL2-5PPM

* RUN #16484 JAN 20, 2021 12:00:03

START



RUN# 16484 JAN 20, 2021 12:00:03

IDENTIFIER : CAL2-5PPM

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.070	8741	UP	.049	21.45610
1.840	16206	PU	.076	39.78006
2.144	15792	UU	.088	38.76384

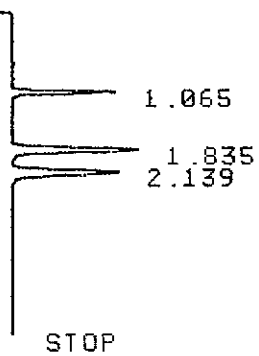
TOTAL AREA= 40739

MUL FACTOR=1.0000E+00

*ID CAL3-10PPM

* RUN #16485 JAN 20, 2021 12:04:08

START



RUN# 16485 JAN 20, 2021 12:04:08

IDENTIFIER : CAL3-10PPM

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.065	16844	PU	.047	20.91955
1.835	31917	UP	.074	39.63958
2.139	31757	PU	.087	39.44088

TOTAL AREA= 80518

MUL FACTOR=1.0000E+00

*ID CAL4-50PPM

* RUN #16486 JAN 20, 2021 12:09:55

START



RUN# 16486 JAN 20, 2021 12:09:55

IDENTIFIER : CAL4-50PPM
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.070	79772	PB	.046	20.29729
1.840	158708	PB	.075	40.38187
2.145	154538	BB	.087	39.32085

TOTAL AREA= 393018
MUL FACTOR=1.0000E+00

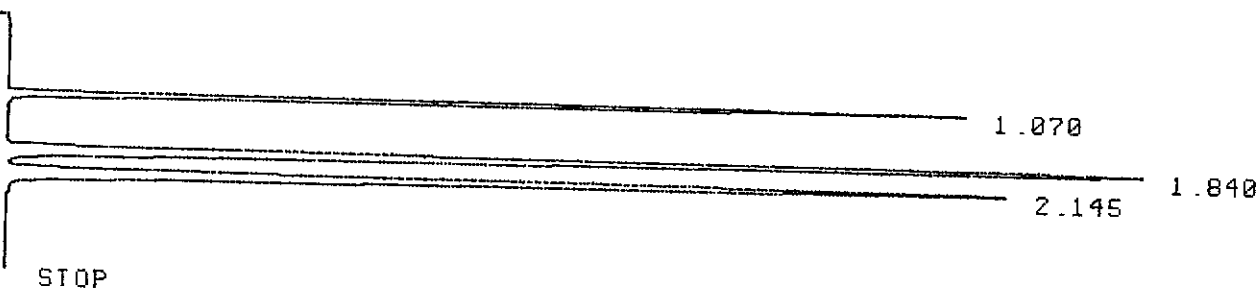
*CAL5-100PPM

INVALID SYSTEM COMMAND

*ID CAL5-100PPM

* RUN #16487 JAN 20, 2021 12:14:46

START



RUN# 16487 JAN 20, 2021 12:14:46

IDENTIFIER : CAL5-100PPM
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.070	151345	PB	.047	20.22234
1.840	301225	PB	.075	40.24893
2.145	295835	BB	.088	39.52874

TOTAL AREA= 748405
MUL FACTOR=1.0000E+00

*ID CAL6-500PPM

* RUN #16488 JAN 20, 2021 12:22:48
START



RUN# 16488 JAN 20, 2021 12:22:48

IDENTIFIER : CAL6-500PPM
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.070	714053	PB	.047	20.61195
1.838	1391019	PB	.077	40.15334
2.141	1359194	BB	.090	39.23469

TOTAL AREA=3464266
MUL FACTOR=1.0000E+00

*ID CAL7-1000PPM

* RUN #16489 JAN 20, 2021 12:31:25
START



RUN# 16489 JAN 20, 2021 12:31:25

IDENTIFIER : CAL7-1000PPM
AREA%

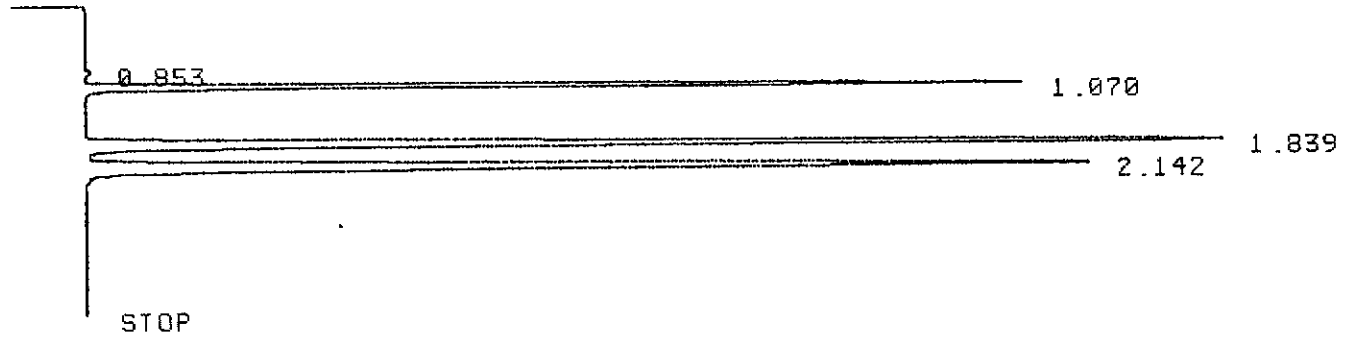
RT	AREA	TYPE	WIDTH	AREA%
1.070	1331471	PB	.049	21.86052

2.139 2333118 UB .095 37.95542
2.999 795 PP .068 .01293

TOTAL AREA=6146995
MUL FACTOR=1.0000E+00

*ID 10711-LCS

* RUN #16490 JAN 20, 2021 12:36:18
START



RUN# 16490 JAN 20, 2021 12:36:18

IDENTIFIER : 10711-LCS
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.853	1141	PU	.054	.15069
1.070	154662	BB	.049	20.42627
1.839	303645	BU	.075	40.10251
2.142	297724	UU	.088	39.32053

TOTAL AREA= 757172
MUL FACTOR=1.0000E+00

*

Energy Laboratories Inc

ANALYTICAL RUN Summary

20-Jan-22

Run ID FID-HEADSPACE_220118A

Run Start Date: 1/18/2022
Analyst: Jeff Whitmer
Ical:
Column ID: porapak Q
Comments: See Preservation Comment column for sample pH; thermometer used for temp:S94278.

Instrument ID	Description
1000_SGE_041819	1000 mL SGE Syringe _ Gas Tight

Std ID	Std Name	Std Amount	Std Units	Samp Amount	Samp Units	SampType	Expiration Date
10711	HC-Methane-W-CCV	0.3	ml			lcs	8/9/2022
12173	HC-Methane-W-CCV	0.3	ml			CCV	11/23/2023

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986388	CCV	HC-METHANE-	CCV		1/18/2022 8:39:0	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	ppm		96.7419784		100	0	0	2	2	0	97%	85	115	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986389	LCS	HC-METHANE-	LCS		1/18/2022 8:44:0	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	ppm		95.6888962		100	0	0	2	2	0	96%	85	115	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986390	LCSD	HC-METHANE-	LCSD		1/18/2022 8:48:0	1	R373380		0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	ppm		97.5877017		100	0	95.688896	2	2	0	98%	85	115	2%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986391	MBLK	HC-METHANE-	MBLK		1/18/2022 9:47:0	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.001	0	0%	0	0	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986392	B22010971-001I	HC-METHANE-	SAMP		1/18/2022 9:53:0	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986393	B22010971-005	HC-METHANE-	SAMP		1/18/2022 9:58:0	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986394	B22010972-001I	HC-METHANE-	SAMP		1/18/2022 10:14:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986395	B22010972-005	HC-METHANE-	SAMP		1/18/2022 10:20:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986396	B22010973-001I	HC-METHANE-	SAMP		1/18/2022 10:26:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986397	B22010973-005	HC-METHANE-	SAMP		1/18/2022 10:32:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986398	B22010974-001I	HC-METHANE-	SAMP		1/18/2022 10:38:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986399	B22010974-005	HC-METHANE-	SAMP		1/18/2022 10:44:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986400	B22010975-001I	HC-METHANE-	SAMP		1/18/2022 10:49:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986401	B22010975-005	HC-METHANE-	SAMP		1/18/2022 10:56:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986402	B22010976-001I	HC-METHANE-	SAMP		1/18/2022 11:00:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0.00092830			0	0	0.000704	0.002	0	0%	0	0	0%	J

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986403	B22010976-005	HC-METHANE-	SAMP		1/18/2022 11:07:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986404	B22010977-001I	HC-METHANE-	SAMP		1/18/2022 11:13:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0.00993009			0	0	0.000704	0.002	0	0%	0	0	0%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986405	B22010977-001I	HC-METHANE-	DUP		1/18/2022 11:23:	1	R373380		0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0.00975519			0	0.0099301	0.000704	0.002	0	0%	0	0	2%	
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986406	B22010977-005	HC-METHANE-	SAMP		1/18/2022 11:33:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986407	B22010978-001I	HC-METHANE-	SAMP		1/18/2022 11:38:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986408	B22010978-005	HC-METHANE-	SAMP		1/18/2022 11:44:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U

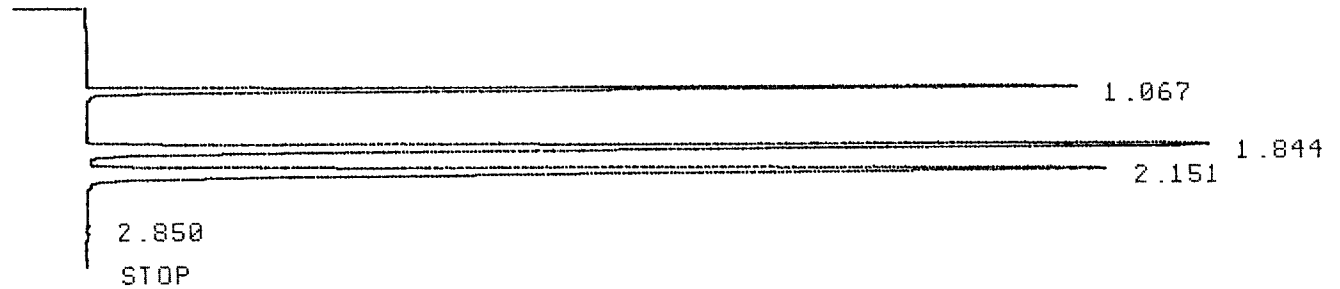
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986409	B22010979-001I	HC-METHANE-	SAMP		1/18/2022 11:49:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986410	B22010979-005	HC-METHANE-	SAMP		1/18/2022 11:55:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986411	B22010980-001I	HC-METHANE-	SAMP		1/18/2022 12:01:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986412	B22010980-005	HC-METHANE-	SAMP		1/18/2022 12:06:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0			0	0	0.000704	0.002	0	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14986413	CCV	HC-METHANE-	CCV		1/18/2022 12:10:	1	R373380		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	ppm		99.0097698		100	0	0	2	2	0	99%	85	115	0%	

Sample ID	Area Count	Dilution Factor	Temperature (C)	Concentration	Date/Time Analyzed	Analyst	Sample Type	Test Code	Analyte	Headspace Volume	Liquid Volume
CCV	154426	1	20	96.7419784	1/18/2022 8:39	jdw	CCV	HC-METHANE-CCV	Methane		
LCS	152745	1	20	95.68889624	1/18/2022 8:44	jdw	LCS	HC-METHANE-CCV	Methane		
LCS	155776	1	20	97.58770173	1/18/2022 8:48	jdw	LCS	HC-METHANE-CCV	Methane		
MBLK	1199	1	20	0.000174457	1/18/2022 9:47	jdw	MBLK	HC-METHANE-W	Methane	10	32
B22010971-001I	5812	1	20	0.000671202	1/18/2022 9:53	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010971-005A	836	1	20	-5.28173E-05	1/18/2022 9:58	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010972-001I	1114	1	20	-1.23677E-05	1/18/2022 10:14	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010972-005A	859	1	20	-4.94707E-05	1/18/2022 10:20	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010973-001I	2484	1	20	0.00018697	1/18/2022 10:26	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010973-005A	740	1	20	-6.67855E-05	1/18/2022 10:32	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010974-001I	567	1	20	-9.19574E-05	1/18/2022 10:38	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010974-005A	1132	1	20	-9.74865E-06	1/18/2022 10:44	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010975-001I	658	1	20	-7.87167E-05	1/18/2022 10:49	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010975-005A	865	1	20	-4.85977E-05	1/18/2022 10:56	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010976-001I	7579	1	20	0.000928304	1/18/2022 11:00	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010976-005A	530	1	20	-9.7341E-05	1/18/2022 11:07	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010977-001I	69446	1	20	0.009930088	1/18/2022 11:13	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010977-001IDUP	68244	1	20	0.009755194	1/18/2022 11:23	jdw	DUP	HC-METHANE-W	Methane	10	32
B22010977-005A	800	1	20	-5.80554E-05	1/18/2022 11:33	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010978-001I	2819	1	20	0.000235714	1/18/2022 11:38	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010978-005A	669	1	20	-7.71162E-05	1/18/2022 11:44	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010979-001I	1046	1	20	-2.22618E-05	1/18/2022 11:49	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010979-005A	841	1	20	-5.20898E-05	1/18/2022 11:55	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010980-001I	3897	1	20	0.000392565	1/18/2022 12:01	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010980-005A	1518	1	20	4.64152E-05	1/18/2022 12:06	jdw	SAMP	HC-METHANE-W	Methane	10	32
CCV	158046	1	20	99.00976985	1/18/2022 12:10	jdw	CCV	HC-METHANE-CCV	Methane		

JW
1/18/2022

*ID 12173-500X-CCU

* RUN #19076 JAN 18, 2022 08:39:13
START



RUN# 19076 JAN 18, 2022 08:39:13

IDENTIFIER : 12173-500X-C
AREA%

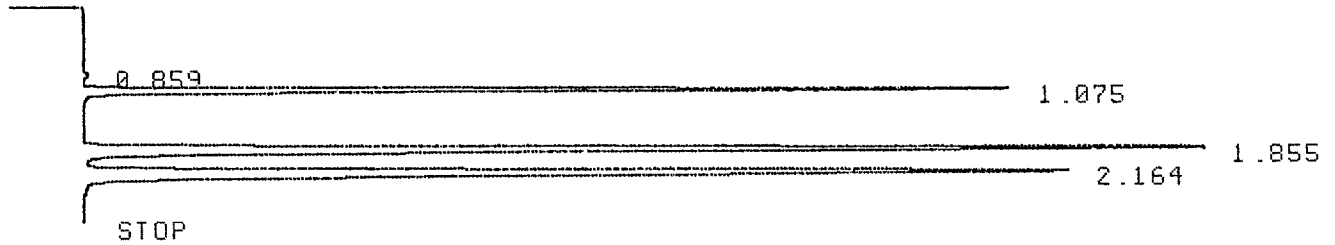
RT	AREA	TYPE	WIDTH	AREA%
1.067	154426	BB	.046	20.08509
1.844	309578	PB	.075	40.26461
2.151	304354	BB	.087	39.58515
2.850	501	UP	.034	.06516

TOTAL AREA= 768859
MUL FACTOR=1.0000E+00

*

*ID 10711-LCS

* RUN #19077 JAN 18, 2022 08:44:19
START



RUN# 19077 JAN 18, 2022 08:44:19

IDENTIFIER : 10711-LCS
AREA%

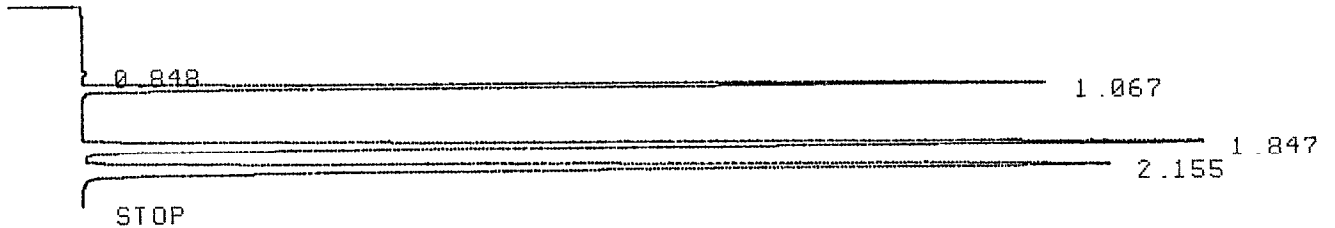
RT	AREA	TYPE	WIDTH	AREA%
.859	1387	UP	.066	.18407
1.075	152745	PB	.048	20.27137
1.855	302813	PB	.075	40.18747
2.164	296556	BB	.088	39.35709

TOTAL AREA= 753501
MUL FACTOR=1.0000E+00

*ID 1072

*ID 10711-LCSD

* RUN #19078 JAN 18, 2022 08:48:32
START



RUN# 19078 JAN 18, 2022 08:48:32

IDENTIFIER : 10711-LCSD
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.848	679	BP	.042	.08798
1.067	155776	PB	.047	20.18430
1.847	310700	PB	.074	40.25821
2.155	304613	BB	.087	39.46950

TOTAL AREA= 771768

*ID MB

* RUN #19079 JAN 18, 2022 09:47:11
START

┌───┐
│
│ } 1.069
│ } 1.828
│
└───┘ STOP

RUN# 19079 JAN 18, 2022 09:47:11

IDENTIFIER : MB

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.069	1199	UU	.077	75.88608
1.828	381	PU	.052	24.11392

TOTAL AREA= 1580
MUL FACTOR=1.0000E+00

*ID 971-1I

* RUN #19080 JAN 18, 2022 09:53:02
START

┌───┐
│
│ } 1.075
│ } 1.856
│ } 2.148
└───┘ STOP

RUN# 19080 JAN 18, 2022 09:53:02

IDENTIFIER : 971-1I

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.075	5812	PP	.054	58.05616
1.856	3174	UU	.087	31.70512
2.148	1025	PP	.106	10.23874

TOTAL AREA= 10011
MUL FACTOR=1.0000E+00

*ID 971-5A

* RUN #19081 JAN 18, 2022 09:58:20
START

┌───┐
│ │ } 1.071
│ │
│ │
└───┘ STOP

RUN# 19081 JAN 18, 2022 09:58:20

IDENTIFIER : 971-5A
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.071	836	UP	.056	100.00000

TOTAL AREA= 836
MUL FACTOR=1.0000E+00

*ID 972-1I

* RUN #19082 JAN 18, 2022 10:14:25
START

┌───┐
│ │ } 1.080
│ │
│ │
└───┘ :STOP

RUN# 19082 JAN 18, 2022 10:14:25

IDENTIFIER : 972-1I
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.080	1114	UP	.070	100.00000

TOTAL AREA= 1114
MUL FACTOR=1.0000E+00

*

*ID 972-5A

* RUN #19083 JAN 18, 2022 10:20:48
START

┌───┐
│ │ } 1.075
│ │
└───┘
STOP

RUN# 19083 JAN 18, 2022 10:20:48

IDENTIFIER : 972-5A
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.075	859	BP	.060	100.00000

TOTAL AREA= 859
MUL FACTOR=1.0000E+00

*ID 973-1I

* RUN #19084 JAN 18, 2022 10:26:30
START

┌───┐
│ │ } 1.077
│ │
└───┘
STOP

RUN# 19084 JAN 18, 2022 10:26:30

IDENTIFIER : 973-1I
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.077	2484	UU	.052	100.00000

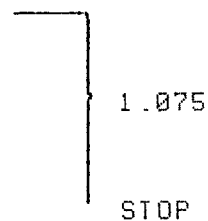
TOTAL AREA= 2484
MUL FACTOR=1.0000E+00

*

*ID 973-5A

* RUN #19085 JAN 18, 2022 10:32:29

START



RUN# 19085 JAN 18, 2022 10:32:29

IDENTIFIER : 973-5A

AREA%

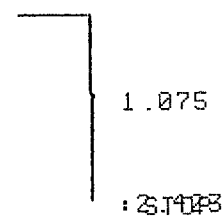
RT	AREA	TYPE	WIDTH	AREA%
1.075	740	UP	.053	100.00000

TOTAL AREA= 740
MUL FACTOR=1.0000E+00

*ID 974-1I

* RUN #19086 JAN 18, 2022 10:38:11

START



RUN# 19086 JAN 18, 2022 10:38:11

IDENTIFIER : 974-1I

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.075	567	PU	.054	100.00000

TOTAL AREA= 567
MUL FACTOR=1.0000E+00

*

*ID 974-5A

*ID 974-5A

* RUN #19087 JAN 18, 2022 10:44:08

START

|
|
|
| } 1.071
|
| } 2.245
| STOP

RUN# 19087 JAN 18, 2022 10:44:08

IDENTIFIER : 974-5A

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.071	1132	PV	.069	100.00000

TOTAL AREA= 1132
MUL FACTOR=1.0000E+00

*ID 975-1I

* RUN #19088 JAN 18, 2022 10:49:58

START

|
|
| } 1.074
|
| STOP

RUN# 19088 JAN 18, 2022 10:49:58

IDENTIFIER : 975-1I

AREA%

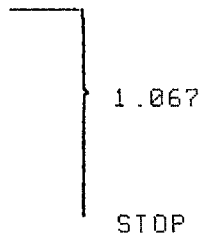
RT	AREA	TYPE	WIDTH	AREA%
1.074	658	BP	.062	100.00000

TOTAL AREA= 658
MUL FACTOR=1.0000E+00

*

*ID 975-5A

* RUN #19089 JAN 18, 2022 10:56:13
START



RUN# 19089 JAN 18, 2022 10:56:13

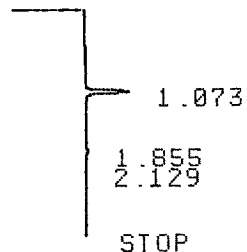
IDENTIFIER : 975-5A
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.067	865	UU	.062	100.00000

TOTAL AREA= 865
MUL FACTOR=1.0000E+00

*ID 976-1I

* RUN #19090 JAN 18, 2022 11:00:13
START



RUN# 19090 JAN 18, 2022 11:00:13

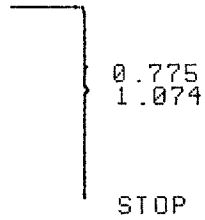
IDENTIFIER : 976-1I
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.073	7579	UU	.049	75.08419
1.855	1624	PU	.131	16.08877
2.129	891	PP	.105	8.82703

TOTAL AREA= 10094
MUL FACTOR=1.0000E+00

*
*
*ID 976-5A

* RUN #19091 JAN 18, 2022 11:07:36
START



RUN# 19091 JAN 18, 2022 11:07:36

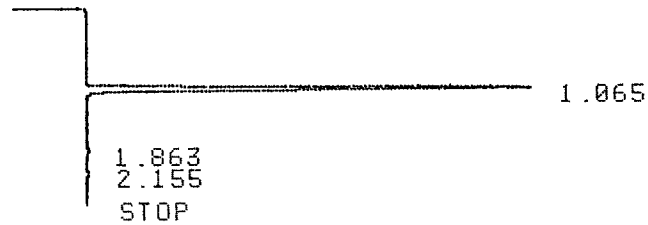
IDENTIFIER : 976-5A
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.074	530	BP	.047	100.00000

TOTAL AREA= 530 .
MUL FACTOR=1.0000E+00

*ID 977-1I

* RUN #19092 JAN 18, 2022 11:13:09
START



RUN# 19092 JAN 18, 2022 11:13:09

IDENTIFIER : 977-1I
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.065	69446	PU	.045	97.39696
1.863	873	PP	.067	1.22437
2.155	983	UU	.092	1.37864

TOTAL AREA= 71302
MUL FACTOR=1.0000E+00

* PLOT

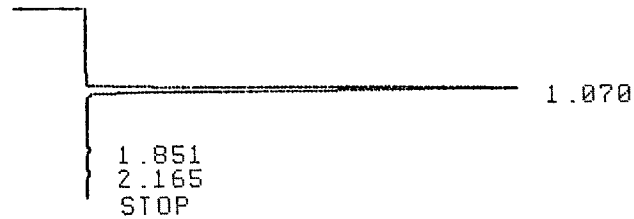
STOP

* PLOT

STOP

*ID 977-1I-DUP

* RUN #19093 JAN 18, 2022 11:23:40
START



RUN# 19093 JAN 18, 2022 11:23:40

IDENTIFIER : 977-1I-DUP
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.070	68244	PB	.046	96.50566
1.851	981	UP	.078	1.38726
2.165	1490	UP	.122	2.10705

TOTAL AREA= 70715
MUL FACTOR=1.0000E+00

* PLOT

STOP

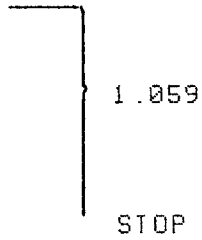
* PLOT

STOP

*ID 977-5A

* RUN #19094 JAN 18, 2022 11:33:02

START



RUN# 19094 JAN 18, 2022 11:33:02

IDENTIFIER : 977-5A

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.059	800	PU	.062	100.00000

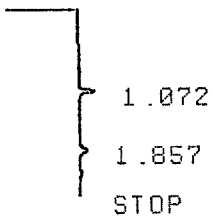
TOTAL AREA= 800

MUL FACTOR=1.0000E+00

*ID 978-1I

* RUN #19095 JAN 18, 2022 11:38:53

START



RUN# 19095 JAN 18, 2022 11:38:53

IDENTIFIER : 978-1I

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.072	2819	PU	.050	49.56920
1.857	2868	UU	.086	50.43082

TOTAL AREA= 5687

MUL FACTOR=1.0000E+00

*

*ID 978-5A

* RUN #19096 JAN 18, 2022 11:44:31
START

```
┌───┐  
│   │  
│   │  
│   │  
│   │  
│   │  
│   │  
│   │  
│   │  
│   │  
└───┘  
1.075  
1.995  
:STOP
```

RUN# 19096 JAN 18, 2022 11:44:31

IDENTIFIER : 978-5A
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.075	669	BP	.053	100.00000

TOTAL AREA= 669
MUL FACTOR=1.0000E+00

*ID 979-1I

* RUN #19097 JAN 18, 2022 11:49:38
START

```
┌───┐  
│   │  
│   │  
│   │  
│   │  
│   │  
│   │  
│   │  
│   │  
│   │  
└───┘  
1.071  
1.381  
  
STOP
```

RUN# 19097 JAN 18, 2022 11:49:38

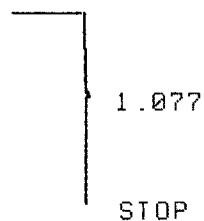
IDENTIFIER : 979-1I
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.071	1046	UP	.064	60.18411
1.381	692	PP	.087	39.81587

TOTAL AREA= 1738
MUL FACTOR=1.0000E+00

*ID 979-5A

* RUN #19098 JAN 18, 2022 11:55:42
START



RUN# 19098 JAN 18, 2022 11:55:42

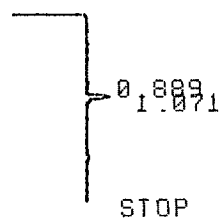
IDENTIFIER : 979-5A
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.077	841	BP	.060	100.00000

TOTAL AREA= 841
MUL FACTOR=1.0000E+00

*ID 980-1I

* RUN #19099 JAN 18, 2022 12:01:07
START



RUN# 19099 JAN 18, 2022 12:01:07

IDENTIFIER : 980-1I
AREA%

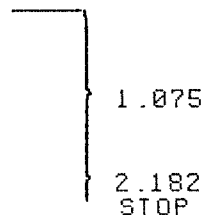
RT	AREA	TYPE	WIDTH	AREA%
.889	328	PU	.054	7.76331
1.071	3897	BP	.049	92.23670

TOTAL AREA= 4225
MUL FACTOR=1.0000E+00

*

*ID 980-5A

* RUN #19100 JAN 18, 2022 12:06:50
START



RUN# 19100 JAN 18, 2022 12:06:50

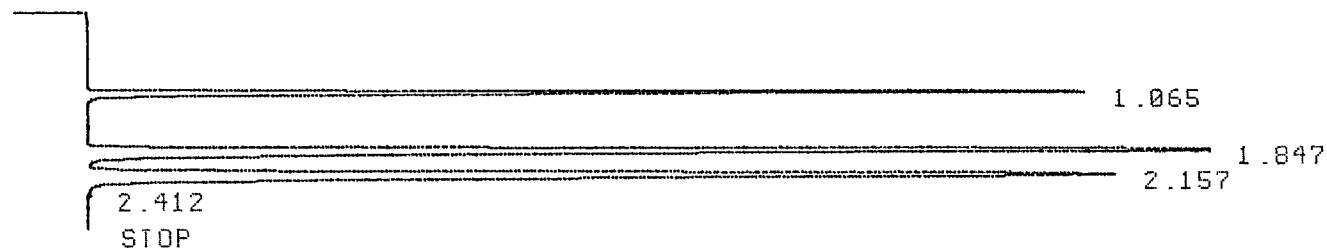
IDENTIFIER : 980-5A
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.075	1518	UU	.093	76.12838
2.182	476	PV	.060	23.87162

TOTAL AREA= 1994
MUL FACTOR=1.0000E+00

*ID 12173-500X-CCU

* RUN #19101 JAN 18, 2022 12:10:16
START



RUN# 19101 JAN 18, 2022 12:10:16

IDENTIFIER : 12173-500X-C
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.065	158046	PB	.046	20.09495
1.847	316596	PB	.076	40.25398
2.157	311854	BU	.089	39.65106

TOTAL AREA= 786496
MUL FACTOR=1.0000E+00

Energy Laboratories Inc

Spike LOG

Standard ID: 12173
 Standard Name: HC-Methane-W-CCV
 Date Prepared: 11/22/2019
 Date Expires: 11/23/2023
 Department: GAS
 Vendor: Matheson
 Lot Number: 109-96-04454
 Balance ID:

Type: Primary
 BY:
 Status: New

Comments: CCV Gas Standard for Methane, Ethene, Ethane: 50000ppm stock diluted from 100 - 500ppm with Helium for CCV. Diluted from 2.5ppm - 1000ppm with Helium for Calibration.

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
3 Multi-Component Gas Standard in Ni	12173		mL	11/23

Final Volume: mL

Stock Source

Base Units

Amount Added

Analyses

CAS

Conc: ug/mL

MATHESON TRI-GAS INC
1650 Enterprise Pkwy
Twinsburg, OH 44087
1-215-648-4000

CERTIFICATE OF ANALYSIS

Energy Laboratories Inc
1120 South 27th Street
Billings, MT 59101

Ref Po# 3008099

14 LITER DISPOSABLE

LOT NUMBER: 109-96-04454

COMPONENT

CONCENTRATION

methane	50010	ppm
ethane	50030	ppm
ethylene	50030	ppm
nitrogen	Bal	

ITEM NUMBER: GMT2685284TC

CGA: 160

PSIG: 240

FILL DATE: 11/22/19

EXPIRATION DATE: 11/23/23

ID #: 12173

Opened: _____

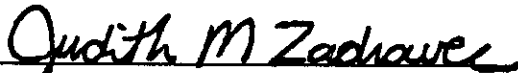
3 Multi-Component Gas Standard in Nitrogen

Expires: 11/23/2023

Rec'd: 12/3/2019

Energy Laboratories Inc 1120 So. 27th Street
Billings MT 59107

Above are the results of the analysis you requested, as reported by our laboratory. Results are in mole percent, unless otherwise indicated. Mixture accuracy is $\pm 2\%$. NIST traceable by weights or gaseous standards.



Judy Zadravec, Chemist

10/19/2018

DATE

Energy Laboratories Inc

Spike LOG

Standard ID: 10711
 Standard Name: HC-Methane-W-CCV
 Date Prepared: 8/8/2018
 Date Expires: 8/9/2022
 Department: GAS
 Vendor: Matheson
 Lot Number: 109-86-03507
 Balance ID:

Type: Primary
 BY:

Status: New

Comments: LCS Gas Standard for Methane, Ethene, Ethane: 100ppm per standard used undiluted for LCS

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
3 Multi-Component Gas Standard in Ni	10711		mL	8/9/2022

Final Volume: mL

Stock Source

Base Units

Amount Added

Analyses

CAS

Conc: ug/mL

MATHESON TRI-GAS INC
1650 Enterprise Pkwy
Twinsburg, OH 44087
1-215-648-4000

CERTIFICATE OF ANALYSIS

Energy Laboratories Inc
1120 South 27th Street
Billings, MT 59101

Ref Po# 3005062

14 LITER DISPOSABLE

LOT NUMBER: 109-86-03507

COMPONENT

CONCENTRATION

methane	100.0	ppm
ethane	100.0	ppm
ethylene	100.0	ppm
nitrogen	Bal	

ITEM NUMBER: GMT2677328TC

CGA: 160

PSIG: 240

FILL DATE: 08/08/18

EXPIRATION DATE: 08/09/22

Above are the results of the analysis you requested, as reported by our laboratory. Results are in mole percent, unless otherwise indicated. Mixture accuracy is $\pm 2\%$. NIST traceable by weights or gaseous standards.

Judith M Zadravec

Judy Zadravec, Chemist

8/14/2018

DATE

ID #: 10711
Opened: _____
3 Multi-Component Gas Standard in Nitrogen
Expires: 8/9/2022
Rec'd: 8/27/2018
Energy Laboratories Inc 1120 So. 27th Street
Billings MT 59107