

# 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

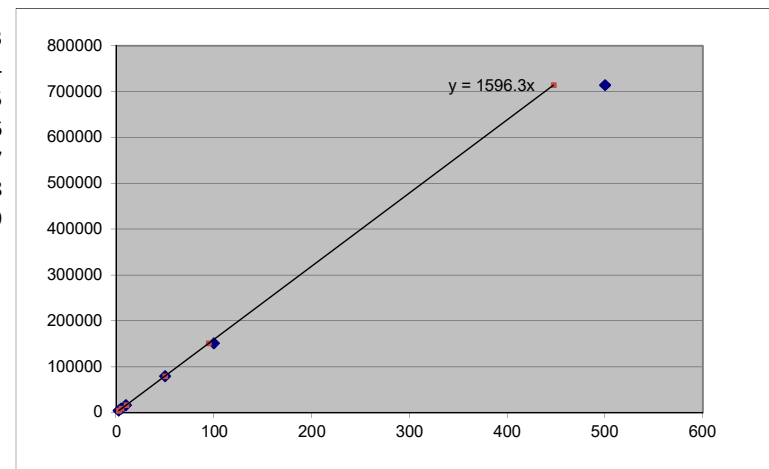
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14188881	Cal2	HC-METHANE-	CAL2		1/20/2021 12:00:	1	R355741		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Ethane	A	ppm		5.15876183		5	0	0	2	2	0	103%	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	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	jdw	MBLK	HC-METHANE-W	Methane
MBLK	0	1	20	0	1/20/2021 11:50	jdw	MBLK	HC-METHANE-W	Ethane
MBLK	0	1	20	0	1/20/2021 11:50	jdw	MBLK	HC-METHANE-W	Ethene
Cal1	4682	1	20	2.9330938	1/20/2021 11:54	jdw	CCV	HC-METHANE-CCV	Methane
Cal1	8164	1	20	2.66692829	1/20/2021 11:54	jdw	CCV	HC-METHANE-CCV	Ethane
Cal1	8384	1	20	2.68217219	1/20/2021 11:54	jdw	CCV	HC-METHANE-CCV	Ethene
Cal2	8741	1	20	5.47590194	1/20/2021 12:00	jdw	CCV	HC-METHANE-CCV	Methane
Cal2	15792	1	20	5.15876183	1/20/2021 12:00	jdw	CCV	HC-METHANE-CCV	Ethane
Cal2	16206	1	20	5.18455183	1/20/2021 12:00	jdw	CCV	HC-METHANE-CCV	Ethene
Cal3	16844	1	20	10.5521213	1/20/2021 12:04	jdw	CCV	HC-METHANE-CCV	Methane
Cal3	31757	1	20	10.37403746	1/20/2021 12:04	jdw	CCV	HC-METHANE-CCV	Ethane
Cal3	31917	1	20	10.21074545	1/20/2021 12:04	jdw	CCV	HC-METHANE-CCV	Ethene
Cal4	79772	1	20	49.97410476	1/20/2021 12:09	jdw	CCV	HC-METHANE-CCV	Methane
Cal4	154538	1	20	50.48282269	1/20/2021 12:09	jdw	CCV	HC-METHANE-CCV	Ethane
Cal4	158708	1	20	50.7731613	1/20/2021 12:09	jdw	CCV	HC-METHANE-CCV	Ethene
Cal5	151345	1	20	94.81184983	1/20/2021 12:14	jdw	CCV	HC-METHANE-CCV	Methane
Cal5	295835	1	20	96.64021698	1/20/2021 12:14	jdw	CCV	HC-METHANE-CCV	Ethane
Cal5	301225	1	20	96.3665695	1/20/2021 12:14	jdw	CCV	HC-METHANE-CCV	Ethene
Cal6	714053	1	20	447.3268744	1/20/2021 12:22	jdw	CCV	HC-METHANE-CCV	Methane
Cal6	1359194	1	20	444.0069737	1/20/2021 12:22	jdw	CCV	HC-METHANE-CCV	Ethane
Cal6	1391019	1	20	445.0086452	1/20/2021 12:22	jdw	CCV	HC-METHANE-CCV	Ethene
Cal7	1331471	1	20	834.11562	1/20/2021 12:22	jdw	CCV	HC-METHANE-CCV	Methane
LCS	154662	1	20	96.88982337	1/20/2021 12:36	jdw	CCV	HC-METHANE-CCV	Methane
LCS	297724	1	20	97.25729532	1/20/2021 12:36	jdw	CCV	HC-METHANE-CCV	Ethane
LCS	303645	1	20	97.1407652	1/20/2021 12:36	jdw	CCV	HC-METHANE-CCV	Ethene

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

\*ID MB

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

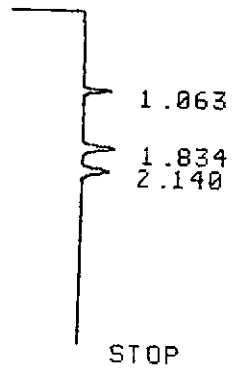


RUN# 16482      JAN 20, 2021 11:50:13

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%

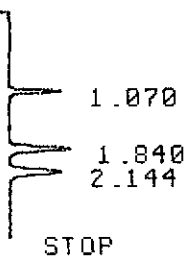
RT	AREA	TYPE	WIDTH	AREA%
1.063	4682	PP	.048	22.05370
1.834	8384	PU	.078	39.49128
2.140	8164	UP	.087	38.45502

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

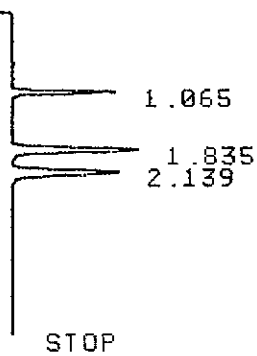
TOTAL AREA= 40739

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

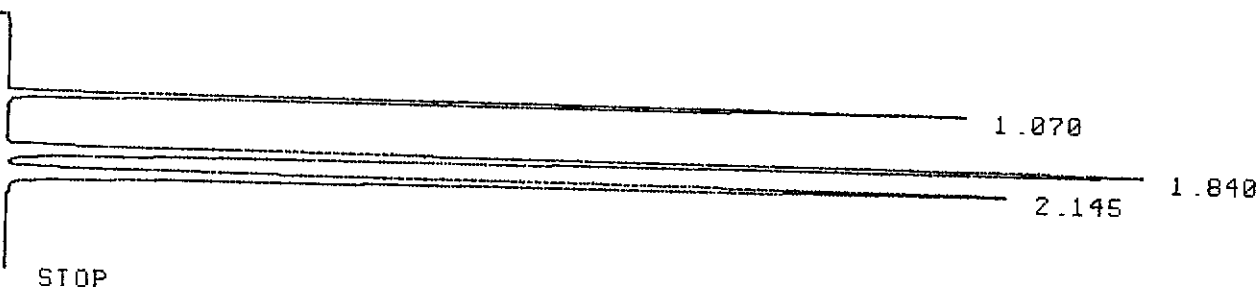
\*CAL5-100PPM

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%

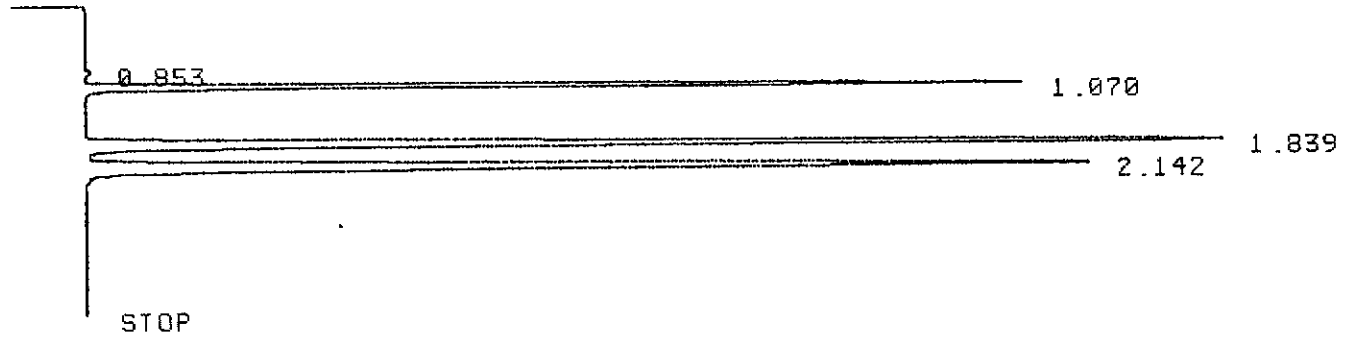
RT	AREA	TYPE	WIDTH	AREA%
1.070	1331471	PB	.049	21.86052

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

17-Jan-22

Run ID FID-HEADSPACE\_220114A

**Run Start Date:** 1/14/2022  
**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					
14978866	CCV	HC-METHANE-	CCV		1/14/2022 8:32:0	1	R373199		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	ppm		96.8465975		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					
14978867	LCS	HC-METHANE-	LCS		1/14/2022 8:37:0	1	R373199		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	ppm		97.1855133		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					
14978868	LCSD	HC-METHANE-	LCSD		1/14/2022 8:41:0	1	R373199		0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	ppm		97.5764254		100	0	97.185513	2	2	0	98%	85	115	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14978869	MBLK	HC-METHANE-	MBLK		1/14/2022 9:40:0	1	R373199		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					
14978870	B22010750-001I	HC-METHANE-	SAMP		1/14/2022 9:50:0	1	R373199		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					
14978871	B22010750-005	HC-METHANE-	SAMP		1/14/2022 9:56:0	1	R373199		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					
14978872	B22010751-001I	HC-METHANE-	SAMP		1/14/2022 10:02:	1	R373199		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0.00948092			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					
14978873	B22010751-001I	HC-METHANE-	DUP		1/14/2022 10:12:	1	R373199		0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0.00951381			0	0.0094809	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					
14978874	B22010751-005	HC-METHANE-	SAMP		1/14/2022 10:23:	1	R373199		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					
14978875	B22010753-001I	HC-METHANE-	SAMP		1/14/2022 10:29:	1	R373199		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					
14978876	B22010753-005	HC-METHANE-	SAMP		1/14/2022 10:35:	1	R373199		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					
14978877	B22010755-001I	HC-METHANE-	SAMP		1/14/2022 11:26:	1	R373199		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					
14978878	B22010755-005	HC-METHANE-	SAMP		1/14/2022 11:32:	1	R373199		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					
14978879	B22010756-001I	HC-METHANE-	SAMP		1/14/2022 11:38:	1	R373199		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					
14978880	B22010756-005	HC-METHANE-	SAMP		1/14/2022 11:51:	1	R373199		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					
14978882	B22010757-001I	HC-METHANE-	SAMP		1/14/2022 12:15:	78	R373199		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		3.19147766			0	0	0.054912	0.156	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					
14978883	B22010757-005	HC-METHANE-	SAMP		1/14/2022 12:31:	1	R373199		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					
14978884	B22010758-001I	HC-METHANE-	SAMP		1/14/2022 12:54:	78	R373199		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0.48574452			0	0	0.054912	0.156	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					
14978885	B22010758-006	HC-METHANE-	SAMP		1/14/2022 1:05:0	1	R373199		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					
14978886	B22010759-001I	HC-METHANE-	SAMP		1/14/2022 1:11:0	1	R373199		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					
14978888	B22010759-005	HC-METHANE-	SAMP		1/14/2022 1:18:0	1	R373199		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					
14978889	B22010754-001I	HC-METHANE-	SAMP		1/14/2022 1:24:0	1	R373199		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					
14978890	B22010754-005	HC-METHANE-	SAMP		1/14/2022 1:29:0	1	R373199		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					
14978891	CCV	HC-METHANE-	CCV		1/14/2022 1:33:0	1	R373199		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	ppm		98.8700689		100	0	0	2	2	0	99%	85	115	0%	

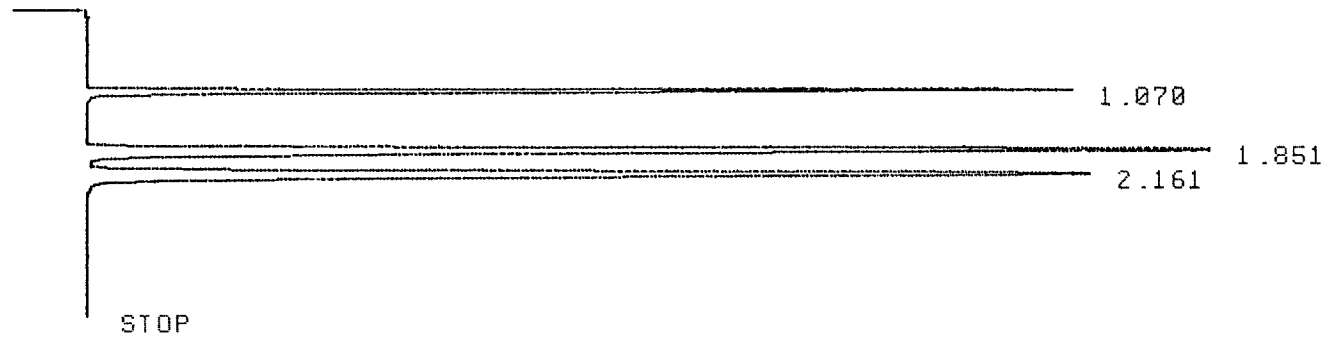
Sample ID	Area Count	Dilution Factor	Temperature (C)	Concentration	Date/Time Analyzed	Analyst	Sample Type	Test Code	Analyte	Headspace Volume	Liquid Volume
CCV	154593	1	20	96.84659751	1/14/2022 8:32	jdw	CCV	HC-METHANE-CCV	Methane		
LCS	155134	1	20	97.18551331	1/14/2022 8:37	jdw	LCS	HC-METHANE-CCV	Methane		
LCS	155758	1	20	97.57642542	1/14/2022 8:41	jdw	LCS	HC-METHANE-CCV	Methane		
MBLK	0	1	20	0	1/14/2022 9:40	jdw	MBLK	HC-METHANE-W	Methane	10	32
B22010750-001I	1012	1	20	0.000147248	1/14/2022 9:50	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010750-005A	870	1	20	0.000126587	1/14/2022 9:56	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010751-001I	65160	1	20	0.009480923	1/14/2022 10:02	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010751-001IDUP	65386	1	20	0.009513806	1/14/2022 10:12	jdw	DUP	HC-METHANE-W	Methane	10	32
B22010751-005A	868	1	20	0.000126296	1/14/2022 10:23	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010753-001I	3538	1	20	0.000514787	1/14/2022 10:29	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010753-005A	715	1	20	0.000104034	1/14/2022 10:35	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010754-001I	1274	1	20	0.00018537	1/14/2022 13:24	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010754-005A	855	1	20	0.000124404	1/14/2022 13:29	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010755-001I	452	1	20	6.5767E-05	1/14/2022 11:26	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010755-005A	523	1	20	7.60976E-05	1/14/2022 11:32	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010756-001I	1277	1	20	0.000185806	1/14/2022 11:38	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010756-005A	1155	1	20	0.000168055	1/14/2022 11:51	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010757-001I	281208	78	20	3.19147766	1/14/2022 12:15	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010757-005A	1028	1	20	0.000149576	1/14/2022 12:31	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010758-001I	42800	78	20	0.485744516	1/14/2022 12:54	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010758-006A	859	1	20	0.000124986	1/14/2022 13:05	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010759-001I	1616	1	20	0.000235132	1/14/2022 13:11	jdw	SAMP	HC-METHANE-W	Methane	10	32
B22010759-005A	808	1	20	0.000117566	1/14/2022 13:18	jdw	SAMP	HC-METHANE-W	Methane	10	32
CCV	157823	1	20	98.87006888	1/14/2022 13:33	jdw	CCV	HC-METHANE-CCV	Methane		



JBW  
1/14/2022

\*ID 12173-500X-CCU

\* RUN #19018      JAN 14, 2022    08:32:04  
START



RUN# 19018                      JAN 14, 2022    08:32:04

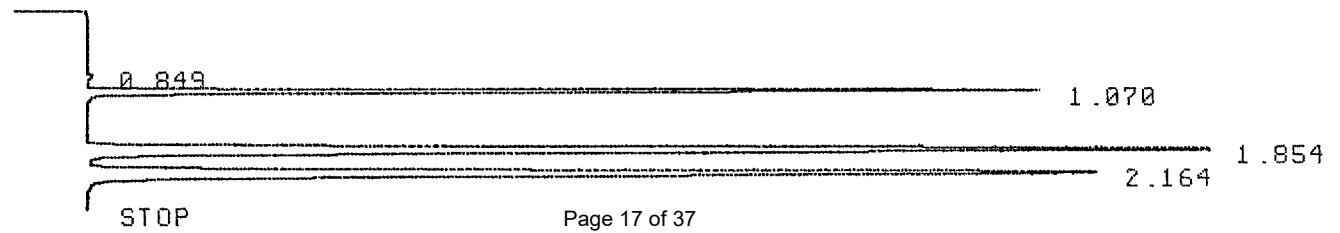
IDENTIFIER : 12173-500X-C  
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.070	154593	PB	.046	20.30714
1.851	306375	PB	.075	40.24504
2.161	300306	BB	.088	39.44781

TOTAL AREA= 761274  
MUL FACTOR=1.0000E+00

\*ID 10711-LCS

\* RUN #19019      JAN 14, 2022    08:37:53  
START



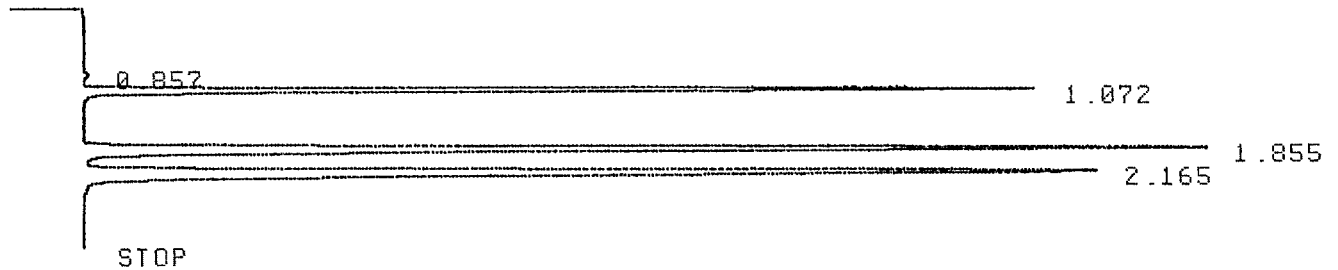
IDENTIFIER : 10711-LCS  
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.849	952	UP	.051	.12425
1.070	155134	UB	.047	20.24719
1.854	308510	PB	.075	40.26496
2.164	301604	BB	.087	39.36362

TOTAL AREA= 766200  
MUL FACTOR=1.0000E+00

\*ID 10711-LCS0

\* RUN #19020                    JAN 14, 2022 08:41:55  
START



IDENTIFIER : 10711-LCS0  
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.857	892	PP	.054	.11564
1.072	155758	PB	.048	20.19202
1.855	310151	PB	.075	40.20707
2.165	304583	PB	.088	39.48526

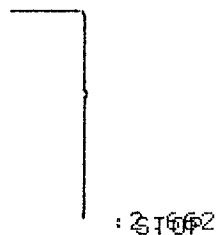
TOTAL AREA= 771384  
MUL FACTOR=1.0000E+00

\*

\*ID MB

\* RUN #19021            JAN 14, 2022  09:40:59

START



RUN# 19021            JAN 14, 2022  09:40:59

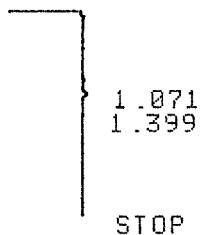
IDENTIFIER : MB  
NO RUN PEAKS STORED

\*ID MB

\*ID 750-1I

\* RUN #19022            JAN 14, 2022  09:50:18

START



RUN# 19022            JAN 14, 2022  09:50:18

IDENTIFIER : 750-1I

AREA%

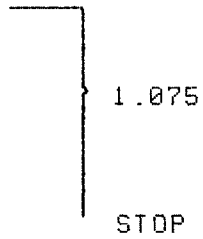
RT	AREA	TYPE	WIDTH	AREA%
1.071	1012	UU	.057	61.74496
1.399	627	PU	.082	38.25504

TOTAL AREA= 1639  
MUL FACTOR=1.0000E+00

\*

\*ID 750-5A

\* RUN #19023      JAN 14, 2022   09:56:20  
START



RUN# 19023              JAN 14, 2022   09:56:20

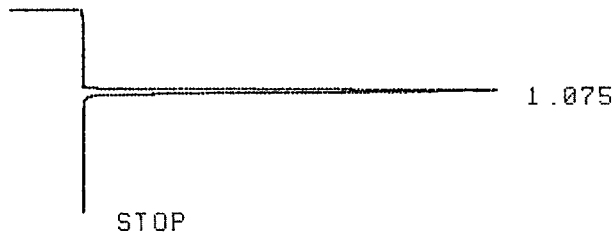
IDENTIFIER : 750-5A  
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.075	870	BP	.059	100.00000

TOTAL AREA=      870  
MUL FACTOR=1.0000E+00

\*ID 751-1I

\* RUN #19024      JAN 14, 2022   10:02:34  
START



RUN# 19024              JAN 14, 2022   10:02:34

IDENTIFIER : 751-1I  
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.075	65160	PB	.046	100.00000

TOTAL AREA=      65160  
MUL FACTOR=1.0000E+00

\* PLOT

STOP

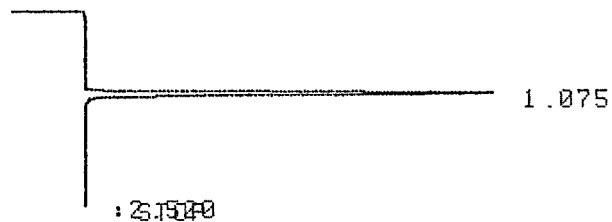
\* PLOT

STOP

\*ID 751-1I-DUP

\* RUN #19025      JAN 14, 2022  10:12:14

START



RUN# 19025              JAN 14, 2022  10:12:14

IDENTIFIER : 751-1I-DUP

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.075	65386	PB	.047	100.00000

TOTAL AREA= 65386

MUL FACTOR=1.0000E+00

\* PLOT

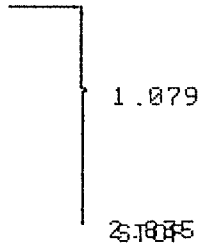
STOP

\* PLOT

STOP

\*ID 751-5A

\* RUN #19026            JAN 14, 2022  10:23:02  
START



RUN# 19026                    JAN 14, 2022  10:23:02

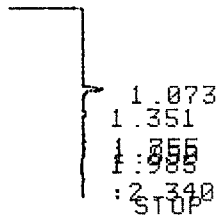
IDENTIFIER : 751-5A  
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.079	868	UU	.062	100.00000

TOTAL AREA=        868  
MUL FACTOR=1.0000E+00

\*ID 753-1I

\* RUN #19027            JAN 14, 2022  10:29:41  
START



RUN# 19027                    JAN 14, 2022  10:29:41

IDENTIFIER : 753-1I  
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.073	3538	UU	.051	62.51990
1.351	693	PP	.090	12.24598
1.850	1104	PP	.084	19.50874
1.985	324	PV	.041	5.72539

TOTAL AREA=        5659  
MUL FACTOR=1.0000E+00

\*ID 753-5A

\* RUN #19028            JAN 14, 2022  10:35:40  
START

```

┌───┐
│   │
│   │ 1.080
│   │ 1.701
│   │ :2.368
│   │ STOP
└───┘

```

RUN# 19028                    JAN 14, 2022  10:35:40

IDENTIFIER : 753-5A  
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.080	715	UP	.059	70.23574
1.701	303	PU	.044	29.76424

TOTAL AREA= 1018  
MUL FACTOR=1.0000E+00

~~\*ID 754-ID 755-11~~

*30w  
11/4/2022*

\*ID 755-11

\* RUN #19029            JAN 14, 2022  11:21:34  
START

```

┌───┐
│   │ 1.085
│   │
│   │ STOP
└───┘

```

*Repeat run - electrical disturbance  
30w  
11/4/2022*

RUN# 19029                    JAN 14, 2022  11:21:34

IDENTIFIER : 755-11  
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.038	1132	I PB	.048	20.62682
.188	1037	I PB	.049	18.89578
.355	789	I BB	.043	14.37682
.620	615	PP	.037	11.20627
.687	564	PP	.029	10.27697
.804	1037	PP	.055	18.89578
1.085	314	PP	.025	5.72157

TOTAL AREA= 5488  
MUL FACTOR=1.0000E+00

\*ID 755-1I

\* RUN #19030            JAN 14, 2022  11:26:42  
START

┌───  
├─── } 1.081  
└─── }  
STOP

RUN# 19030            JAN 14, 2022  11:26:42

IDENTIFIER : 755-1I  
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.081	452	BP	.036	100.00000

TOTAL AREA=        452  
MUL FACTOR=1.0000E+00

\*ID 755-5A

\* RUN #19031            JAN 14, 2022  11:32:55  
START

┌───  
├─── } 1.080  
└─── }  
STOP

RUN# 19031            JAN 14, 2022  11:32:55

IDENTIFIER : 755-5A  
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.080	523	PP	.047	100.00000

TOTAL AREA=        523  
MUL FACTOR=1.0000E+00



\*ID 756-1I

\* RUN #19032            JAN 14, 2022  11:38:46

START

```
┌───┐
│   │
│   │ 1.072
│   │ 1.238
│   │ 1.655
│   │ 1.855
│   │ 2.221
│   │ STOP
```

RUN# 19032                    JAN 14, 2022  11:38:46

IDENTIFIER : 756-1I

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.072	1277	BP	.036	65.02038
1.855	382	BB	.039	19.45010
2.221	305	I PP	.023	15.52953

TOTAL AREA= 1964  
MUL FACTOR=1.0000E+00

\* PLOT

```
┌───┐
│   │
│   │ STOP
```

\* PLOT

```
┌───┐
│   │
│   │ STOP
```

\*

\*ID 756-5A

\* RUN #19033      JAN 14, 2022    11:51:17

START

```

┌───
│
│ 1.079
│ 1.279
│ 1.594
│ 1.912
│ 1.961
│ 2.261
│ STOP
└───
    
```

RUN# 19033                      JAN 14, 2022    11:51:17

IDENTIFIER : 756-5A

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.079	1155	UU	.063	27.34375
1.279	542	PV	.067	12.83144
1.594	1052	UP	.095	24.90530
1.912	451	PP	.047	10.67708
1.961	365	PV	.041	8.64110
2.261	659	PP	.075	15.60132

TOTAL AREA= 4224  
 MUL FACTOR=1.0000E+00

\*ID 757-1I

\* RUN #19034      JAN 14, 2022    11:56:44

START

```

┌───
│
│ 0.131
│ 0.264
└───┬────────────────────────────────────────────────────────────────────────────────── 1.061
      │
      │ 1.061
      │
      │ 2.481
      │
      │ STOP
    
```

RUN# 19034                      JAN 14, 2022    11:56:44

IDENTIFIER : 757-1I

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.131	717	I PB	.064	.01216
.264	894	PB	.068	.01516
1.061	5895248	SPB	.065	99.95290
2.481	1166	PB	.082	.01977

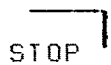
TOTAL AREA=5898026  
 MUL FACTOR=1.0000E+00

\* PLOT



STOP

\* PLOT



STOP

\*  
^BREAK

\* PLOT

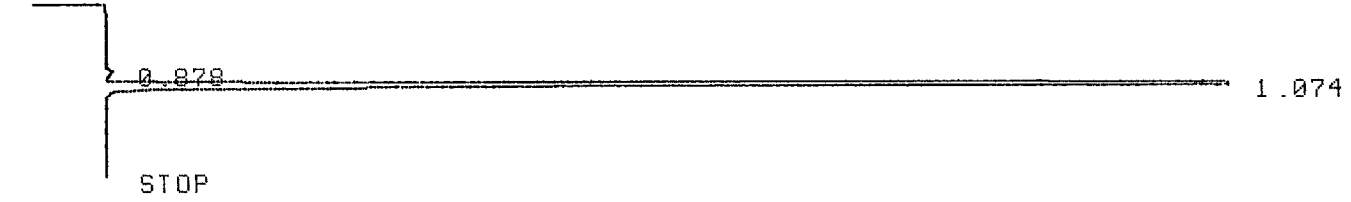


STOP

\*ID 757-1I

\*ID 757-1I-78X

\* RUN #19035      JAN 14, 2022  12:15:33  
START



RUN# 19035              JAN 14, 2022  12:15:33

IDENTIFIER : 757-1I-78X  
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.878	1621	UU	.073	.57314
1.074	281208	PB	.048	99.42688

TOTAL AREA= 282829  
MUL FACTOR=1.0000E+00

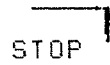
\* PLOT



\* PLOT



\* PLOT



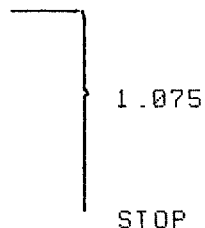
\* PLOT



\*

\*ID 757-5A

\* RUN #19036            JAN 14, 2022  12:31:54  
START



RUN# 19036                    JAN 14, 2022  12:31:54

IDENTIFIER : 757-5A

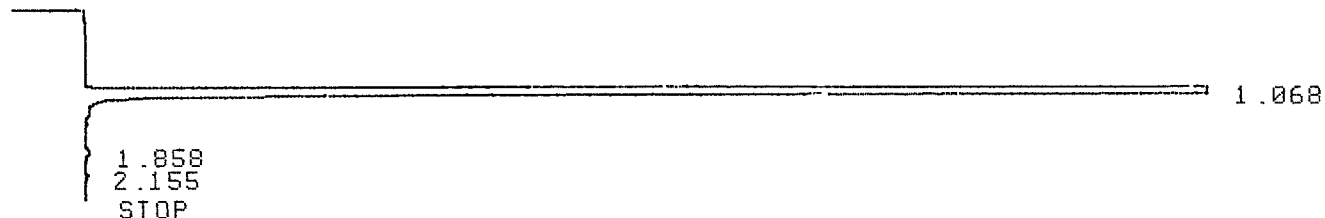
AREA%

RT	AREA TYPE	WIDTH	AREA%
1.075	1028 PU	.058	100.00000

TOTAL AREA= 1028  
MUL FACTOR=1.0000E+00

\*ID 758-1I

\* RUN #19037            JAN 14, 2022  12:39:11  
START



RUN# 19037                    JAN 14, 2022  12:39:11

IDENTIFIER : 758-1I

AREA%

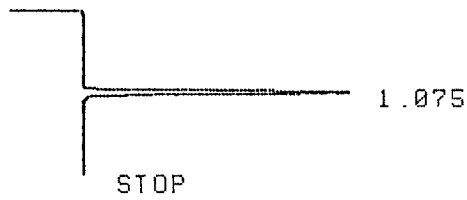
RT	AREA TYPE	WIDTH	AREA%
1.068	2640237 PB	.053	99.90947
1.858	1764 PU	.085	.06675
2.155	628 UP	.076	.02376

TOTAL AREA=2642629  
MUL FACTOR=1.0000E+00

STOP

\*ID 758-1I-78X

\* RUN #19038      JAN 14, 2022  12:54:58  
START



RUN# 19038              JAN 14, 2022  12:54:58

IDENTIFIER : 758-1I-78X  
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.075	42800	PB	.047	100.00000

TOTAL AREA= 42800  
MUL FACTOR=1.0000E+00

\* PLOT



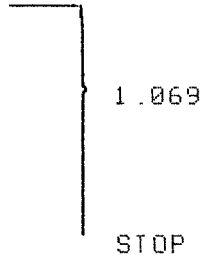
\* PLOT



\*ID 758-6A

\* RUN #19039      JAN 14, 2022 13:05:02

START



RUN# 19039      JAN 14, 2022 13:05:02

IDENTIFIER : 758-6A

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.069	859	UP	.058	100.00000

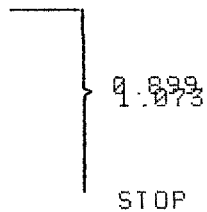
TOTAL AREA= 859

MUL FACTOR=1.0000E+00

\*ID 759-1I

\* RUN #19040      JAN 14, 2022 13:11:40

START



RUN# 19040      JAN 14, 2022 13:11:40

IDENTIFIER : 759-1I

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.899	777	PU	.106	32.46971
1.073	1616	UP	.058	67.53030

TOTAL AREA= 2393

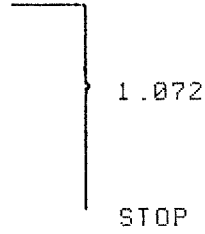
MUL FACTOR=1.0000E+00

\*

\*ID 759-5A

\* RUN #19041            JAN 14, 2022  13:18:19

START



RUN# 19041            JAN 14, 2022  13:18:19

IDENTIFIER : 759-5A

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.072	808	PU	.059	100.00000

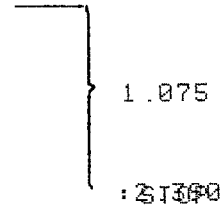
TOTAL AREA=        808

MUL FACTOR=1.00000E+00

\*ID 754-1I

\* RUN #19042            JAN 14, 2022  13:24:23

START



RUN# 19042            JAN 14, 2022  13:24:23

IDENTIFIER : 754-1I

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.075	1274	PP	.056	100.00000

TOTAL AREA=        1274

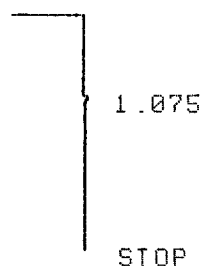
MUL FACTOR=1.00000E+00

\*



\*ID 754-5A

\* RUN #19043      JAN 14, 2022 13:29:21  
START



RUN# 19043      JAN 14, 2022 13:29:21

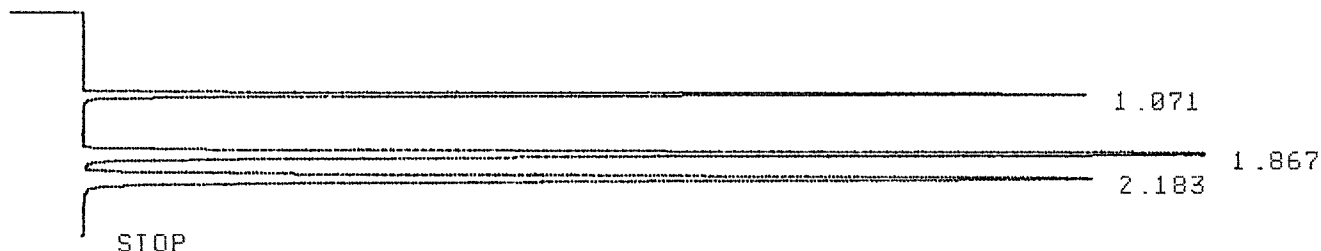
IDENTIFIER : 754-5A  
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.075	855	UP	.062	100.00000

TOTAL AREA= 855  
MUL FACTOR=1.0000E+00

\*ID 12173-500X-CCU

\* RUN #19044      JAN 14, 2022 13:33:50  
START



RUN# 19044      JAN 14, 2022 13:33:50

IDENTIFIER : 12173-500X-C  
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.071	157823	BB	.046	20.31827
1.867	312039	BB	.076	40.17218
2.183	306892	BB	.089	39.50955

TOTAL AREA= 776754  
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

Analtes

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: \_\_\_\_\_

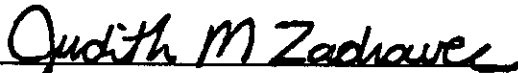
3 Multi-Component Gas Standard in Nitrogen

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	8/9/22

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

<u>COMPONENT</u>	<u>CONCENTRATION</u>
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