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

1

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

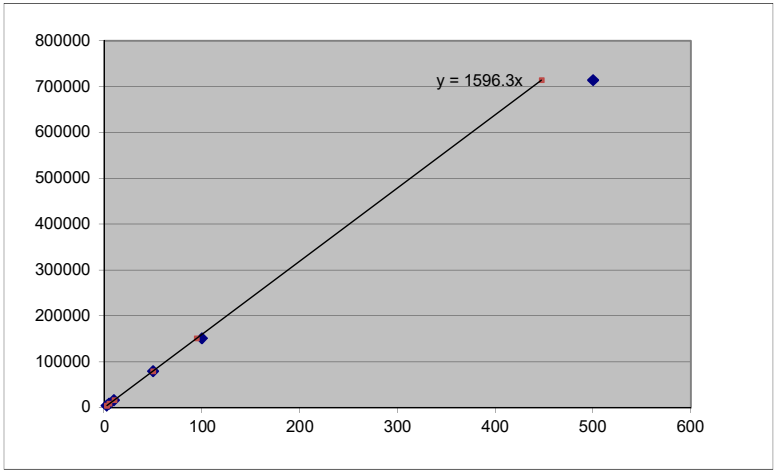
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
14188893	LCS	HC-METHANE- CCV			1/20/2021 12:36:	1	R355741		0	0	

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

Blank,cts	STD ID	Curve Data for samples analyzed after 1/29/2021
0	#12173	1000000

Amnt, Injtd 300ul	Decimal Equivalent	Conc ppm	Sample Area Counts	Response Factor	Date/Time	Run Id
	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

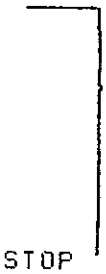
		Calculated Recoveries	
[PPM]	Area Cnts	PPM	% recovery
2.5	4682	2.933094	1.1732375
5	8741	5.475902	1.0951804
10	16844	10.55212	1.0552121
50	79772	49.9741	0.9994821
100	151345	94.81185	0.9481185
500	714053	447.3269	0.8946537
1000	1331471	834.1156	0.8341156

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	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
JDW
1/20/2021

*ID MB

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



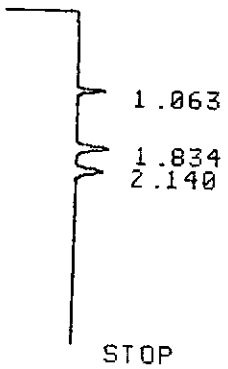
STOP

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

IDENTIFIER : MB
NO RUN PEAKS STORED

*ID CAL1-2.5PPM

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



STOP

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

IDENTIFIER : CAL1-2.5PPM
AREA%

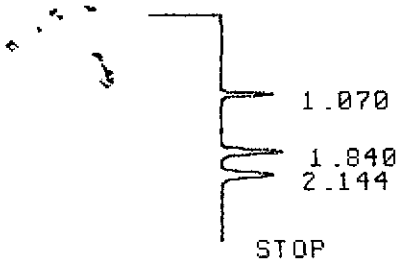
RT	AREA	TYPE	WIDTH	AREA%
1.063	4682	PP	.048	22.05370
1.834	8384	PU	.078	39.49128
2.140	8164	UP	.087	38.45502

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	VP	.049	21.45610
1.840	16206	PV	.076	39.78006
2.144	15792	VV	.088	38.76384

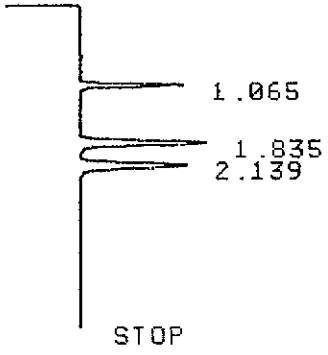
TOTAL AREA= 40739

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%

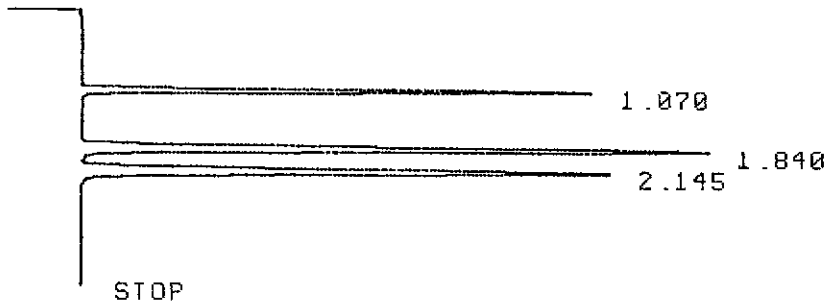
RT	AREA	TYPE	WIDTH	AREA%
1.065	16844	PV	.047	20.91955
1.835	31917	VP	.074	39.63958
2.139	31757	PV	.087	39.44088

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

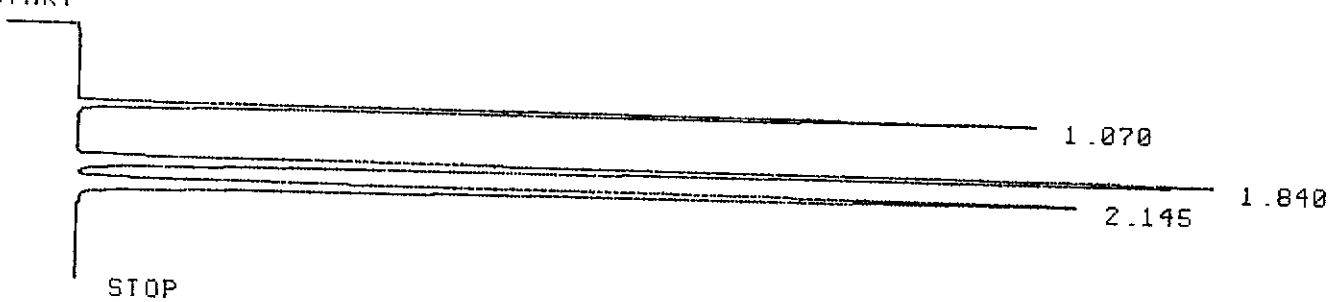
TOTAL AREA= 393018
MUL FACTOR=1.0000E+00

*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

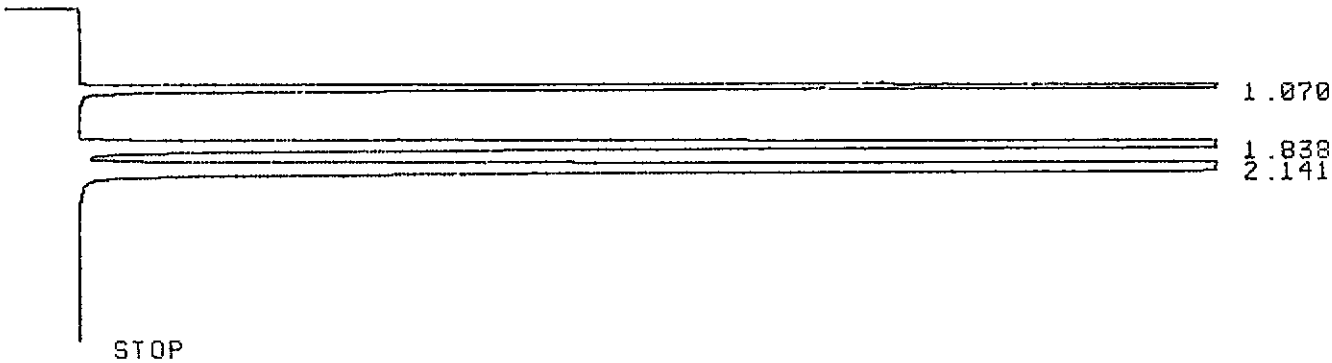
IDENTIFIER : CAL5-100PPM
AREA%

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

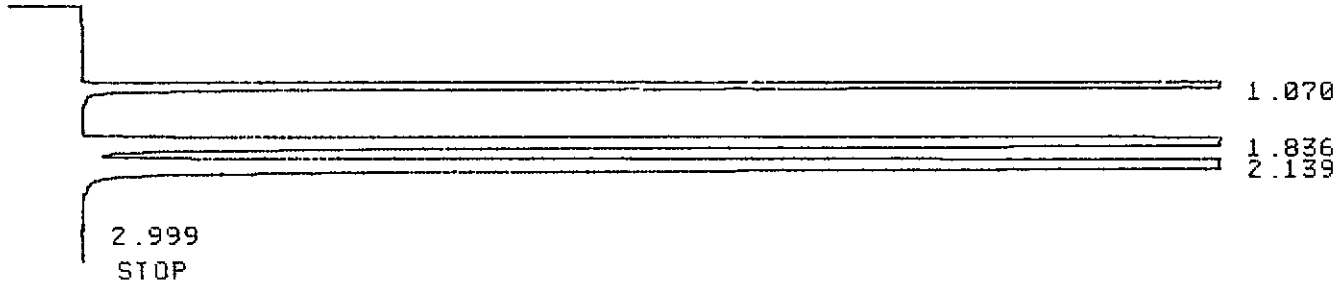
IDENTIFIER : CAL6-500PPM
AREA%

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%

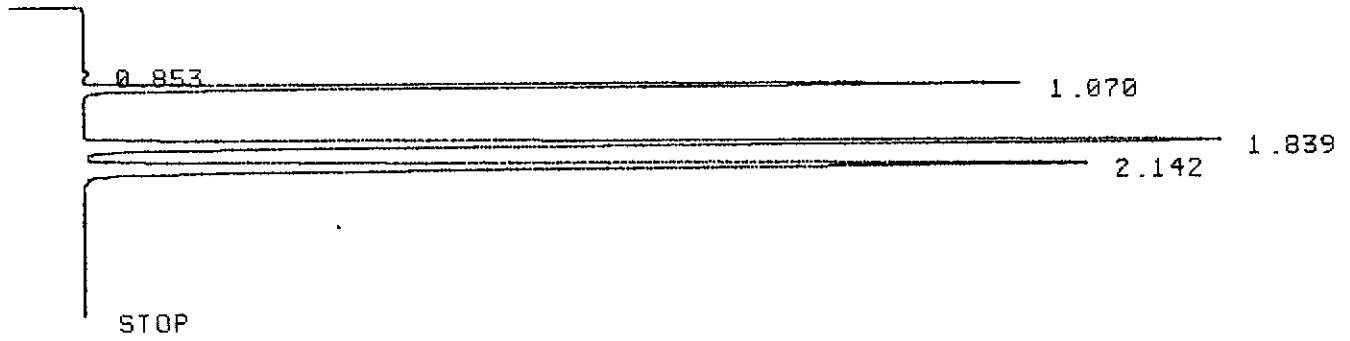
RT	AREA	TYPE	WIDTH	AREA%
1.070	1331471	PB	.049	21.66052

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

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Energy Laboratories Inc

ANALYTICAL RUN Summary

05-Jan-22

Run ID FID-HEADSPACE_220103A

Run Start Date: 1/3/2022
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
14959575	CCV	HC-METHANE- CCV			1/3/2022 9:04:00	1	R372625		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	ppm		96.8014923		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
14959576	LCS	HC-METHANE- LCS			1/3/2022 9:09:00	1	R372625		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	ppm		96.5859894		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
14959577	LCSD	HC-METHANE- LCSD			1/3/2022 9:14:00	1	R372625		0	1E+07	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	ppm		97.0144893		100	0	96.585989	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
14959578	MBLK	HC-METHANE-	MBLK		1/3/2022 10:23:0	1	R372625		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
14959579	B21122077-001I	HC-METHANE-	SAMP		1/3/2022 10:29:0	1	R372625		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
14959580	B21122077-005	HC-METHANE-	SAMP		1/3/2022 10:35:0	1	R372625		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
14959581	B21122088-001I	HC-METHANE-	SAMP		1/3/2022 10:40:0	1	R372625		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
14959582	B21122088-005	HC-METHANE-	SAMP		1/3/2022 10:46:0	1	R372625		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
14959583	B21122090-001I	HC-METHANE-	SAMP		1/3/2022 10:55:0	1	R372625		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0.00266356			0	0	0.000704	0.002	0	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
14959584	B21122090-001I	HC-METHANE-	DUP		1/3/2022 11:06:0	1	R372625		0	1E+07	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0.00277938			0	0.0026636	0.000704	0.002	0	0%	0	0	4%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
14959585	B21122090-005	HC-METHANE-	SAMP		1/3/2022 11:17:0	1	R372625		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
14959586	B21122105-001I	HC-METHANE-	SAMP		1/3/2022 11:24:0	1	R372625		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
14959587	B21122105-005	HC-METHANE-	SAMP		1/3/2022 11:33:0	1	R372625		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
14959588	B21122168-001I	HC-METHANE-	SAMP		1/3/2022 11:40:0	1	R372625		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,T

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
14959589	B21122168-001I	HC-METHANE-	DUP		1/3/2022 11:47:0	1	R372625		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			0	0	0.000704	0.002	0	0%	0	0		

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
14959591	B21122168-005	HC-METHANE-	SAMP		1/3/2022 11:54:0	1	R372625		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0.0023228			0	0	0.000704	0.002	0	0%	0	0	0%	T

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
14959592	B21122168-006I	HC-METHANE-	SAMP		1/3/2022 12:31:0	78	R372625		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		0.56496173			0	0	0.054912	0.156	0	0%	0	0	0%	T

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
14959594	B21122168-012	HC-METHANE-	SAMP		1/3/2022 12:41:0	1	R372625		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,T

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
14959595	B21122180-001I	HC-METHANE-	SAMP		1/3/2022 12:49:0	1	R372625		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
14959596	B21122180-005	HC-METHANE-	SAMP		1/3/2022 12:55:0	1	R372625		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
14959597	B21122188-001I	HC-METHANE-	SAMP		1/3/2022 1:01:00	1	R372625		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
14959598	B21122188-007	HC-METHANE-	SAMP		1/3/2022 1:07:00	1	R372625		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
14959599	B21122190-001I	HC-METHANE-	SAMP		1/3/2022 1:24:00	78	R372625		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	mg/L		3.04555002			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
14959600	B21122190-005	HC-METHANE-	SAMP		1/3/2022 1:34:00	1	R372625		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
14959601	CCV	HC-METHANE-	CCV		1/3/2022 1:40:00	1	R372625		0	0	

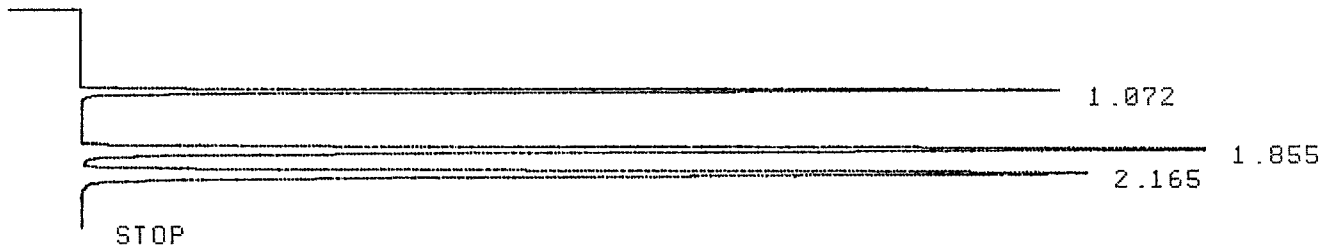
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Methane	A	ppm		96.904232		100	0	0	2	2	0	97%	85	115	0%	

Sample ID	Area Count	Dilution Factor	Temperature (C)	Concentration	Date/Time Analyzed	Analyst	Sample Type	Test Code	Analyte	Headspace Volume	Liquid Volume
CCV	154521	1	20	96.80149227	1/3/2022 9:04	jdw	CCV	HC-METHANE-CCV	Methane		
LCS	154177	1	20	96.58598943	1/3/2022 9:09	jdw	LCS	HC-METHANE-CCV	Methane		
LCSD	154861	1	20	97.01448925	1/3/2022 9:14	jdw	LCSD	HC-METHANE-CCV	Methane		
MBLK	1042	1	20	0.000151613	1/3/2022 10:23	jdw	MBLK	HC-METHANE-W	Methane	10	32
B21122077-001I	1115	1	20	1.06217E-05	1/3/2022 10:29	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122077-005A	3343	1	20	0.000334801	1/3/2022 10:35	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122088-001I	3684	1	20	0.000384417	1/3/2022 10:40	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122088-005A	4305	1	20	0.000474774	1/3/2022 10:46	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122090-001I	19348	1	20	0.002663563	1/3/2022 10:55	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122090-001IDUP	20144	1	20	0.002779383	1/3/2022 11:06	jdw	DUP	HC-METHANE-W	Methane	10	32
B21122090-005A	1411	1	20	5.36903E-05	1/3/2022 11:17	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122105-001I	3805	1	20	0.000402023	1/3/2022 11:24	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122105-005A	1029	1	20	-1.89153E-06	1/3/2022 11:33	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122168-001I	588	1	20	-6.6058E-05	1/3/2022 11:40	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122168-001IDUP	0	1	20	-0.000151613	1/3/2022 11:47	jdw	DUP	HC-METHANE-W	Methane	10	32
B21122168-005A	17006	1	20	0.002322797	1/3/2022 11:54	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122168-006I	50822	78	20	0.564961729	1/3/2022 12:31	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122168-012A	4359	1	20	0.000482631	1/3/2022 12:41	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122180-001I	2711	1	20	0.000242843	1/3/2022 12:49	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122180-005A	1607	1	20	8.22087E-05	1/3/2022 12:55	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122188-001I	1655	1	20	8.91928E-05	1/3/2022 13:01	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122188-007A	1563	1	20	7.58066E-05	1/3/2022 13:07	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122190-001I	269392	78	20	3.04555002	1/3/2022 13:24	jdw	SAMP	HC-METHANE-W	Methane	10	32
B21122190-005A	1689	1	20	9.41399E-05	1/3/2022 13:34	jdw	SAMP	HC-METHANE-W	Methane	10	32
CCV	154685	1	20	96.90423199	1/3/2022 13:40	jdw	CCV	HC-METHANE-CCV	Methane		

JDW
1/3/2022

*ID 12173-500X-CCV

* RUN #18831   JAN 3, 2022 09:04:45
START



RUN# 18831   JAN 3, 2022 09:04:45

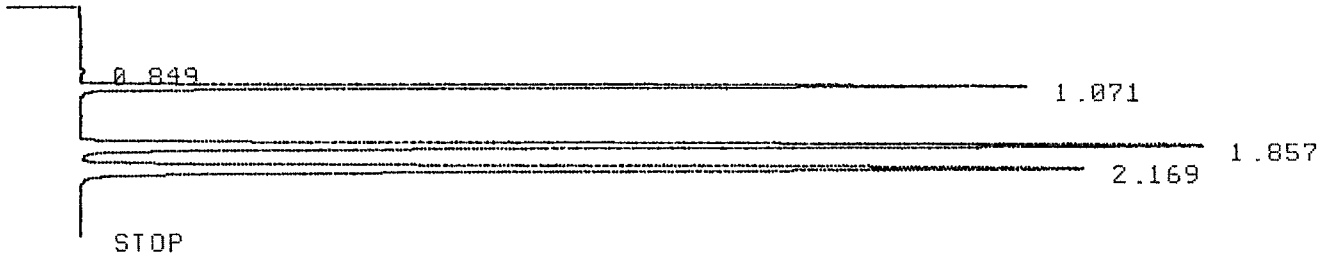
IDENTIFIER : 12173-500X-C
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.072	154521	PB	.046	20.17506
1.855	308502	BB	.075	40.27962
2.165	302878	BB	.088	39.54531

TOTAL AREA= 765901
MUL FACTOR=1.0000E+00

*ID 10711-LCS

* RUN #18832   JAN 3, 2022 09:09:48
START



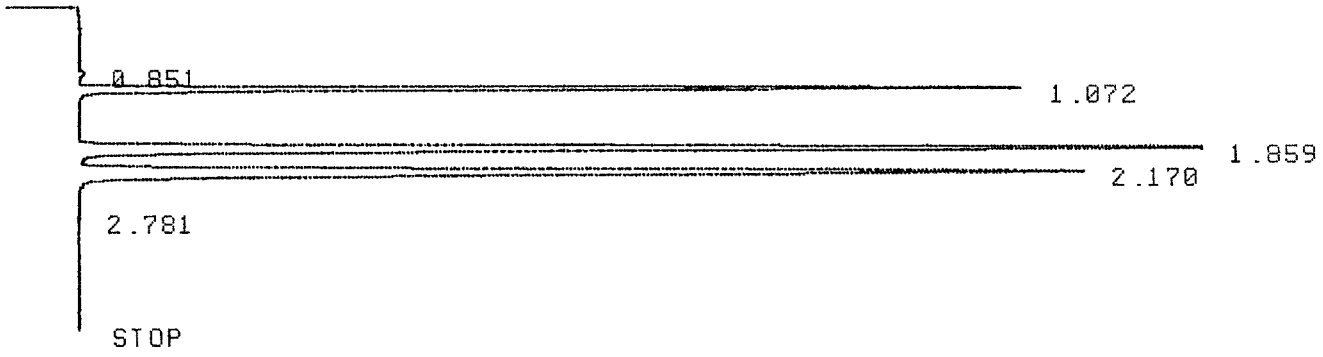
IDENTIFIER : 10711-LCS
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.849	1057	PU	.058	.13865
1.071	154177	BB	.048	20.22317
1.857	306951	BB	.075	40.26232
2.169	300193	BB	.088	39.37587

TOTAL AREA= 762378
MUL FACTOR=1.0000E+00

*ID 10711-LCSD

* RUN #18833 JAN 3, 2022 09:14:08
START



RUN# 18833 JAN 3, 2022 09:14:08

IDENTIFIER : 10711-LCSD
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.851	880	VV	.052	.11451
1.072	154861	PB	.048	20.15146
1.859	309257	PB	.075	40.24243
2.170	303107	BB	.088	39.44216
2.781	380 I	PB	.067	.04945

TOTAL AREA= 768485
MUL FACTOR=1.0000E+00

*

*ID MB

* RUN #18834   JAN 3, 2022 10:23:41
START

RUN# 18834   JAN 3, 2022 10:23:41

IDENTIFIER : MB
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.075	1042	PP	.065	100.00000

TOTAL AREA= 1042
MUL FACTOR=1.0000E+00

*ID 2077-1I

* RUN #18835   JAN 3, 2022 10:29:33
START

RUN# 18835   JAN 3, 2022 10:29:33

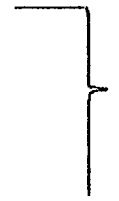
IDENTIFIER : 2077-1I
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.085	1115	PU	.078	100.00000

TOTAL AREA= 1115
MUL FACTOR=1.0000E+00

*ID 2077-5A

START



RUN# 18836 JAN 3, 2022 10:35:17

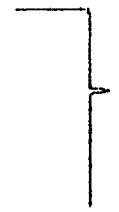
IDENTIFIER : 2077-5A
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.081	3343	PU	.050	100.00000

TOTAL AREA= 3343
MUL FACTOR=1.0000E+00

*ID 2088-1I

* RUN #18837 JAN 3, 2022 10:40:32
START



RUN# 18837 JAN 3, 2022 10:40:32

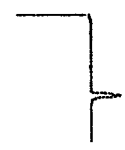
IDENTIFIER : 2088-1I
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.074	3684	UP	.055	100.00000

TOTAL AREA= 3684
MUL FACTOR=1.0000E+00

*ID 2088-5A

* RUN #18838 JAN 3, 2022 10:46:19
START



RUN# 18838 JAN 3, 2022 10:46:19

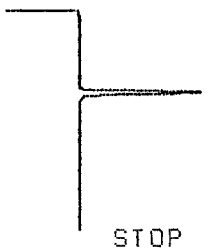
IDENTIFIER : 2088-5A
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.075	4305	BP	.045	100.00000

TOTAL AREA= 4305
MUL FACTOR=1.0000E+00

*ID 2090-1I

* RUN #18839 JAN 3, 2022 10:55:49
START



RUN# 18839 JAN 3, 2022 10:55:49

IDENTIFIER : 2090-1I
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.078	19348	BV	.046	100.00000

TOTAL AREA= 19348
MUL FACTOR=1.0000E+00

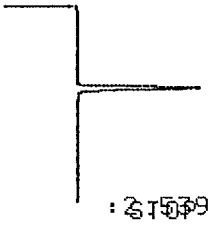
* PLOT
STOP

* PLOT

STOP

*ID 2090-1I-DUP

* RUN #18840   JAN 3, 2022 11:06:43
START



RUN# 18840   JAN 3, 2022 11:06:43

IDENTIFIER : 2090-1I-DUP
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.076	20144	PU	.047	100.00000

TOTAL AREA= 20144
MUL FACTOR=1.0000E+00

* PLOT

STOP

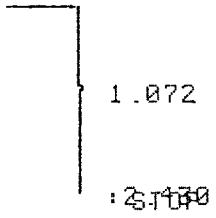
* PLOT

STOP

*

*ID 2090-5A

* RUN #18841   JAN 3, 2022 11:17:55
START



RUN# 18841   JAN 3, 2022 11:17:55

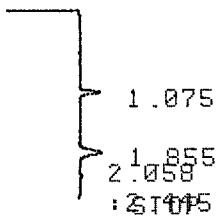
IDENTIFIER : 2090-5A
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.072	1411	PU	.087	100.00000

TOTAL AREA= 1411
MUL FACTOR=1.0000E+00

*ID 2105-1I

* RUN #18842   JAN 3, 2022 11:24:12
START



RUN# 18842   JAN 3, 2022 11:24:12

IDENTIFIER : 2105-1I
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.075	3805	VP	.052	34.13781
1.855	6947	PP	.086	62.32730
2.058	394	PU	.053	3.53490

TOTAL AREA= 11146
MUL FACTOR=1.0000E+00

* PLOT

STOP

* PLOT

STOP

*ID 2105-5A

* RUN #18843   JAN 3, 2022 11:33:39
START

RUN# 18843   JAN 3, 2022 11:33:39

IDENTIFIER : 2105-5A
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.068	1029	PV	.061	100.00000

TOTAL AREA=   1029
MUL FACTOR=1.0000E+00

*ID 2168-1I

* RUN #18844   JAN 3, 2022 11:40:06
START

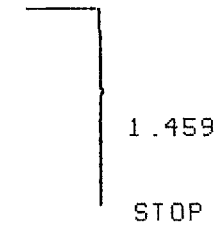
RUN# 18844   JAN 3, 2022 11:40:06

IDENTIFIER : 2168-1I
AREA%

TOTAL AREA= 588
MUL FACTOR=1.0000E+00

*ID 2168-1I-DUP

* RUN #18845 JAN 3, 2022 11:47:38
START



RUN# 18845 JAN 3, 2022 11:47:38

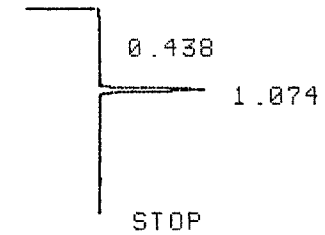
IDENTIFIER : 2168-1I-DUP
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.459	332	PU	.041	100.00000

TOTAL AREA= 332
MUL FACTOR=1.0000E+00

*ID 2168-5A

* RUN #18846 JAN 3, 2022 11:54:29
START



RUN# 18846 JAN 3, 2022 11:54:29

IDENTIFIER : 2168-5A
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.438	423	PU	.055	2.42699
1.074	17006	VP	.046	97.57299

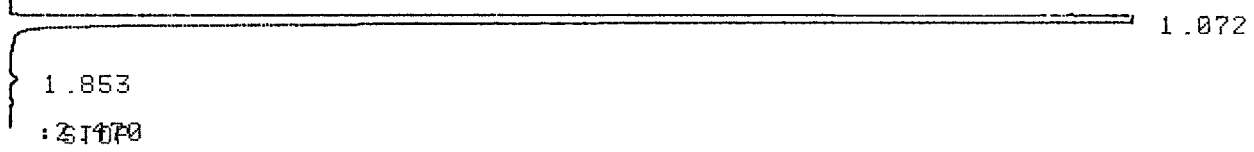
TOTAL AREA= 17429
MUL FACTOR=1.0000E+00

```
*  PLOT
```

```
STOP

*ID 2168-6I

*  RUN #18847     JAN  3, 2022  12:06:28
START
```




```
RUN# 18847          JAN  3, 2022  12:06:28

IDENTIFIER : 2168-6I
AREA%
      RT       AREA TYPE  WIDTH      AREA%
   1.072    3065517   BB    .055   99.92154
   1.853       2407   PU    .088     .07846

TOTAL AREA=3067923
MUL FACTOR=1.0000E+00

*  PLOT
```

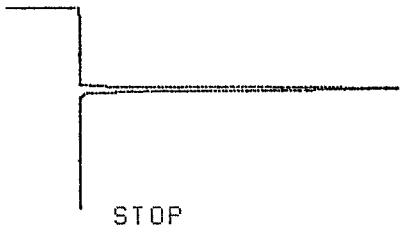
STOP

* PLOT

STOP

*ID 2168-6I-78X

* RUN #18848 JAN 3, 2022 12:31:20
START



RUN# 18848 JAN 3, 2022 12:31:20

IDENTIFIER : 2168-6I-78X
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.072	50822	PB	.046	100.00000

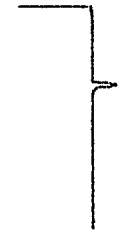
TOTAL AREA= 50822
MUL FACTOR=1.0000E+00

* PLOT

STOP

*ID 2168-12A

START



RUN# 18849 JAN 3, 2022 12:41:30

IDENTIFIER : 2168-12A
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.072	4359	PP	.051	100.00000

TOTAL AREA= 4359
MUL FACTOR=1.0000E+00

*ID 2180-1I

* RUN #18850 JAN 3, 2022 12:49:02
START

RUN# 18850 JAN 3, 2022 12:49:02

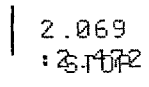
IDENTIFIER : 2180-1I
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.073	2711	BP	.045	100.00000

TOTAL AREA= 2711
MUL FACTOR=1.0000E+00

*ID 2180-5A

* RUN #18851 JAN 3, 2022 12:55:14
START



RUN# 18851 JAN 3, 2022 12:55:14

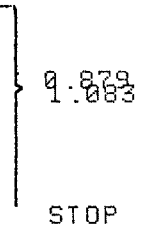
IDENTIFIER : 2180-5A
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.076	1607	PP	.064	73.14522
2.069	590	PU	.066	26.85480

TOTAL AREA= 2197
MUL FACTOR=1.0000E+00

*ID 2188-1I

* RUN #18852 JAN 3, 2022 13:01:33
START



RUN# 18852 JAN 3, 2022 13:01:33

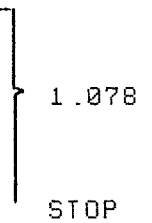
IDENTIFIER : 2188-1I
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.879	564	PU	.064	25.41686
1.083	1655	UP	.066	74.58317

TOTAL AREA= 2219
MUL FACTOR=1.0000E+00

*ID 2188-7A

* RUN #18853 JAN 3, 2022 13:07:06
START



RUN# 18853 JAN 3, 2022 13:07:06

IDENTIFIER : 2188-7A
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.078	1563	BP	.048	100.00000

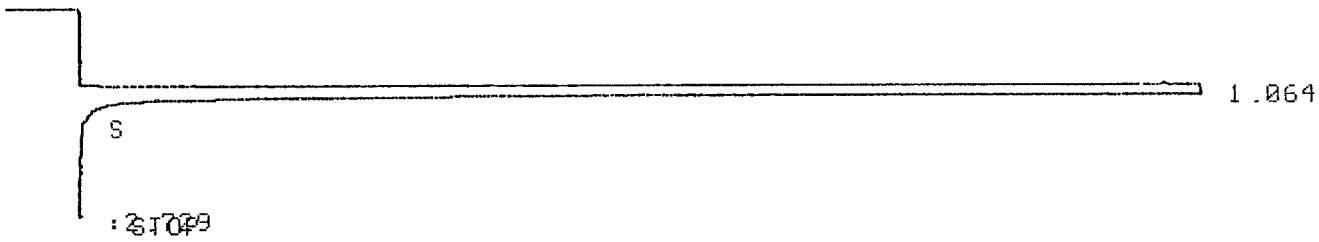
TOTAL AREA= 1563
MUL FACTOR=1.0000E+00

30w 1/31/2022

~~*ID 2188-7A~~

*ID 2190-1I

* RUN #18854 JAN 3, 2022 13:12:52
START



RUN# 18854 JAN 3, 2022 13:12:52

IDENTIFIER : 2190-1I
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.064	6048096	SPB	.065	100.00000

TOTAL AREA=6048096
MUL FACTOR=1.0000E+00

* PLOT

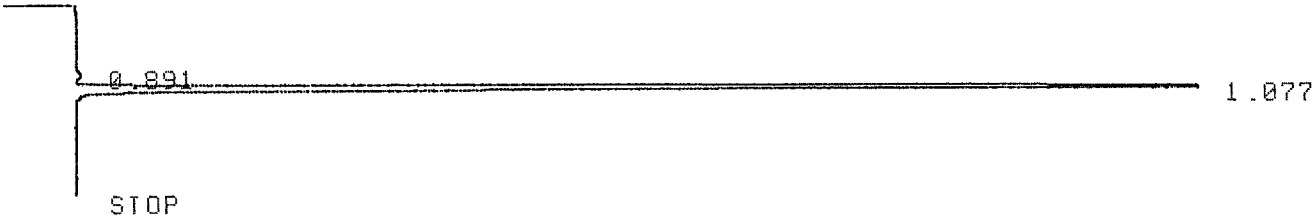
STOP

* PLOT

STOP

*ID 2190-1I-78X

* RUN #18855   JAN 3, 2022 13:24:18
START



RUN# 18855   JAN 3, 2022 13:24:18

IDENTIFIER : 2190-1I-78X
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.891	1351	PP	.074	.49900
1.077	269392	PB	.049	99.50099

TOTAL AREA= 270743
MUL FACTOR=1.0000E+00

* PLOT

STOP

* PLOT

STOP

*

*ID 2190-5A

* RUN #18856   JAN 3, 2022 13:34:16
START

RUN# 18856   JAN 3, 2022 13:34:16

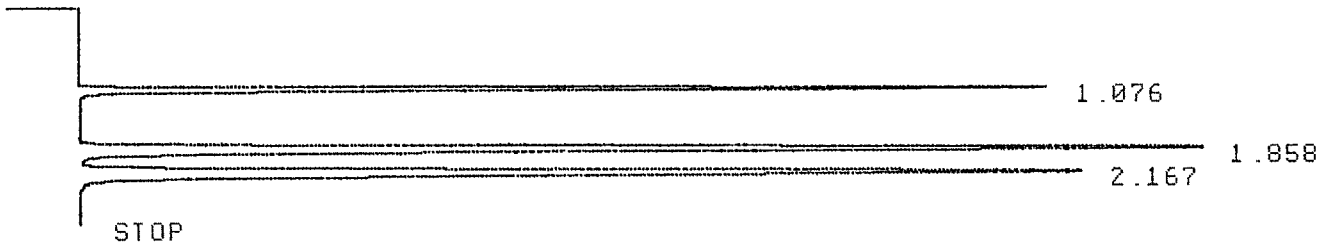
IDENTIFIER : 2190-5A
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.074	1689	PV	.053	100.00000

TOTAL AREA=   1689
MUL FACTOR=1.0000E+00

*ID 12173-500X-CCV

* RUN #18857   JAN 3, 2022 13:40:56
START



RUN# 18857   JAN 3, 2022 13:40:56

IDENTIFIER : 12173-500X-C
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.076	154685	PB	.047	20.15923
1.858	308664	PB	.076	40.22645
2.167	303967	PB	.089	39.61432

TOTAL AREA= 767316
MUL FACTOR=1.0000E+00

Energy Laboratories Inc

Spike LOG

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

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**
Analytes	**CAS**	Conc: **ug/mL**

Page: *1 of 1*

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 ± 2%. NIST traceable by weights or gaseous standards.

Judith M Zadravec

Judy Zadravec, Chemist

10/19/2018
DATE

Energy Laboratories Inc

Spike LOG

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

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	8/9/2

Final Volume: mL

Stock Source	**Base Units**	**Amount Added**
Analytes	**CAS**	Conc: **ug/mL**

Page: *1 of 1*

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 ± 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