Temperature program:

Init temp	Hold	Ramp	Final temp
50.00	2.000	20.000	90.00
90.00	8.000	20.000	210.00
210.00	4.000	0.000	210.00

Events:

Time	Event
0.000	ZERO
0.000	SOUND
0.020	G ON (Valve1-MS5A)
0.060	E ON (Valve3-P&T624)
0.800	G OFF (Valve1-MS5A)
1.000	E OFF (Valve3-P&T624)
9.000	F ON (Valve2-HayD)
14.000	F OFF (Valve2-HayD)

-12.800   64.000

-/0.070
-/1.126
CH4-FID-Alum/1.403
C2H4-FID-Alum/1.756
C2H2-FID-Alum/4.203

1% C2 mix

-/9.473
-/14.643
-/15.086
-/15.776
-/15.996
-/16.360
-/17.410
-/18.046
-/18.673
-/19.136
-/19.430
-/19.846

Component	Retention	Area
CH4-FID-Alum	1.403	256.3230
C2H6-FID-Alum	1.553	483.5316
C2H4-FID-Alum	1.756	496.3906
C3H8-FID-Alum	0.000	0.0000
C2H2-FID-Alum	4.203	487.2642
nButane	0.000	0.0000
nPentane	0.000	0.0000
nHexane	0.000	0.0000

1723.5094

Temperature program:

Init temp	Hold	Ramp	Final temp

Events:

Time	Event
0.000	ZERO
5.000	INTEG BASED IMMEDIATE
15.500	INTEG BASED IMMEDIATE

-102.400   512.000

-/2.596
-/4.156
CH4-FIDm-MS5A/5.880
CO-FIDm-MS5A/7.640
-/9.050
O2+N2+CO-FIDm-HayD/10.176
Methane-FIDm-HayD/10.386
CO2-FIDm-HayD/11.033
C2H2+C2H4-FIDm-HayD/12.040
C2H6-FIDm-HayD/12.870
-/13.786
-/15.756
-/16.043
CO2-FIDm-MS5A/17.360
-/18.646
-/19.613
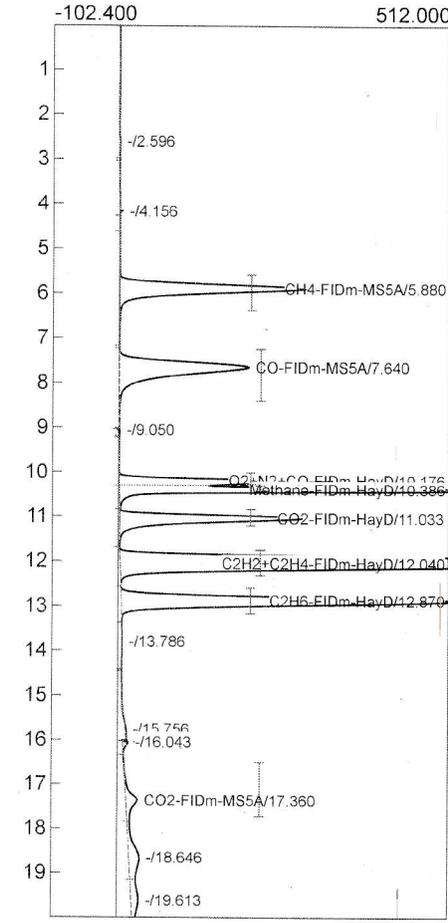
Component	Retention	Area
CH4-FIDm-MS5A	5.880	3992.5498
CO-FIDm-MS5A	7.640	3926.4796
O2+N2+CO-FIDm-HayD	10.176	2454.3546
Methane-FIDm-HayD	10.386	4141.7492
CO2-FIDm-HayD	11.033	3208.2244
C2H2+C2H4-FIDm-HayD	12.040	12434.4416
C2H6-FIDm-HayD	12.870	6463.7380
CO2-FIDm-MS5A	17.360	459.0732

37080.6104

Temperature program:

Init temp	Hold	Ramp	Final temp

Events:

Time	Event
0.000	ZERO
1.300	INTEG BASED IMMEDIATE
2.400	INTEG BASED IMMEDIATE
2.700	INTEG BASED IMMEDIATE
9.300	ZERO
9.350	INTEG BASED IMMEDIATE

-129.024   512.000

-/0.133
-/1.170
H2-TCD-MS5A/1.480
O2-TCD-MS5A/2.496
-/3.033
N2-TCD-MS5A/3.506
CH4-TCD-MS5A/5.843
CO-TCD-MS5A/7.516
-/9.13?
-/9.296
-/9.023
-/10.353
-/10.080
-/10.946
CO2-TCD-HayD/11.903
-/12.836
-/16.226
-/16.023
-/18.206
-/19.316
-/19.846
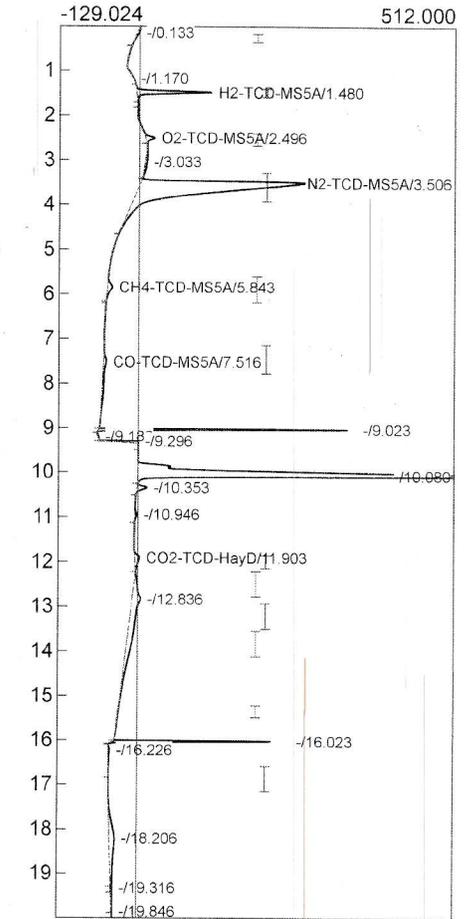
Component	Retention	Area
He-TCD-MS5A	0.000	0.0000
H2-TCD-MS5A	1.480	477.6194
O2-TCD-MS5A	2.496	71.2866
N2-TCD-MS5A	3.506	4234.9088
CH4-TCD-MS5A	5.843	96.3268
CO-TCD-MS5A	7.516	200.7770
CO2-TCD-HayD	11.903	100.1070
C2H2+C2H4-TCD-HayD	0.000	0.0000
C2H6-TCD-HayD	0.000	0.0000
H2O-TCD-HayD	0.000	0.0000
CH4-TCD-HayD	0.000	0.0000
CO2-TCD-MS5A	0.000	0.0000

5181.0256

Column 1

Temperature program:

Init temp	Hold	Ramp	Final temp
50.00	2.000	20.000	90.00
90.00	8.000	20.000	210.00
210.00	4.000	0.000	210.00

Events:

Time	Event
0.000	ZERO
0.000	SOUND
0.020	G ON (Valve1-MS5A)
0.060	E ON (Valve3-P&T624)
0.800	G OFF (Valve1-MS5A)
1.000	E OFF (Valve3-P&T624)
9.000	F ON (Valve2-HayD)
14.000	F OFF (Valve2-HayD)

(handwritten: FID)

-1.600 — 8.000

(handwritten labels: C2H4, C3H8, C2H2)

Peaks labelled on trace:
- /0.103
- /1.076
- CH4-FID-Alum/1.403
- C2H6-FID-Alum/1.566
- C2H4-FID-Alum/1.800
- C3H8-FID-Alum/2.350
- C2H2-FID-Alum/4.633
- nButane/4.920
- /6.533
- /8.300
- /8.976
- nPentane/9.633
- /10.693
- /11.250
- /12.536
- /13.390
- /14.463
- /14.723
- /15.850
- nHexane/16.510
- /17.356
- /17.976
- /18.226
- /18.460
- /19.106
- /19.480
- /19.903

Component	Retention	Area
CH4-FID-Alum	1.403	99.4691
C2H6-FID-Alum	1.566	189.2857
C2H4-FID-Alum	1.800	178.4427
C3H8-FID-Alum	2.350	25.0518
C2H2-FID-Alum	4.633	165.6806
nButane	4.920	28.1692
nPentane	9.633	33.9806
nHexane	16.510	30.6524

750.7321

Column 2

Temperature program:

Init temp	Hold	Ramp	Final temp

Events:

Time	Event
0.000	ZERO
5.000	INTEG BASED IMMEDIATE
15.500	INTEG BASED IMMEDIATE

-102.400 — 512.000

(handwritten: FIDMETH; 30% CO2; 3000 ppm C2 MIX; 300 ppm C1-C6 ALKANES; 30% CO2; C2H2 C2H4 C2H6; BACK FLUSH)

Peaks labelled on trace:
- /0.103
- /2.583
- /4.296
- /5.230
- CH4-FIDm-MS5A/5.873
- CO-FIDm-MS5A/7.623
- /9.050
- O2+N2+CO-FIDm-HayD/10.180
- Methane-FIDm-HayD/10.393
- CO2-FIDm-HayD/10.893
- C2H2+C2H4-FIDm-HayD/12.066
- C2H6-FIDm-HayD/12.900
- /14.050
- /15.530
- /16.000
- CO2-FIDm-MS5A/17.676
- /18.850
- /19.853
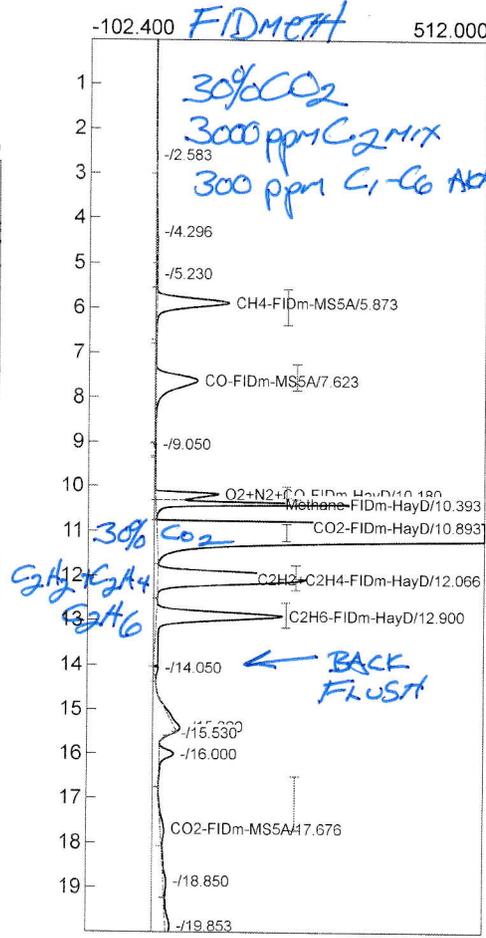
Component	Retention	Area
CH4-FIDm-MS5A	5.873	1497.0250
CO-FIDm-MS5A	7.623	1346.8846
O2+N2+CO-FIDm-HayD	10.180	797.4072
Methane-FIDm-HayD	10.393	1509.1626
CO2-FIDm-HayD	10.893	61792.5761
C2H2+C2H4-FIDm-HayD	12.066	4111.5181
C2H6-FIDm-HayD	12.900	2713.2969
CO2-FIDm-MS5A	17.676	181.9608

73949.8313

Column 3

Temperature program:

Init temp	Hold	Ramp	Final temp

Events:

Time	Event
0.000	ZERO
1.300	INTEG BASED IMMEDIATE
2.400	INTEG BASED IMMEDIATE
2.700	INTEG BASED IMMEDIATE
9.300	ZERO
9.350	INTEG BASED IMMEDIATE

-129.024 — 512.000

(handwritten: TCD)

Peaks labelled on trace:
- /0.136
- H2-TCD-MS5A/1.460
- /2.236
- O2-TCD-MS5A/2.506
- /2.776
- /3.150
- N2-TCD-MS5A/3.630
- CH4-TCD-MS5A/5.840
- /6.383
- /7.066
- /8.030
- /9.123
- /9.303
- /9.633
- CH4-TCD-HayD/10.073
- /10.360
- CO2-TCD-HayD/10.766
- C2H2+C2H4-TCD-HayD/11.916
- C2H6-TCD-HayD/12.856
- /14.023
- /14.260
- CO2-TCD-MS5A/16.706
- /18.213
- /19.466
- /19.983

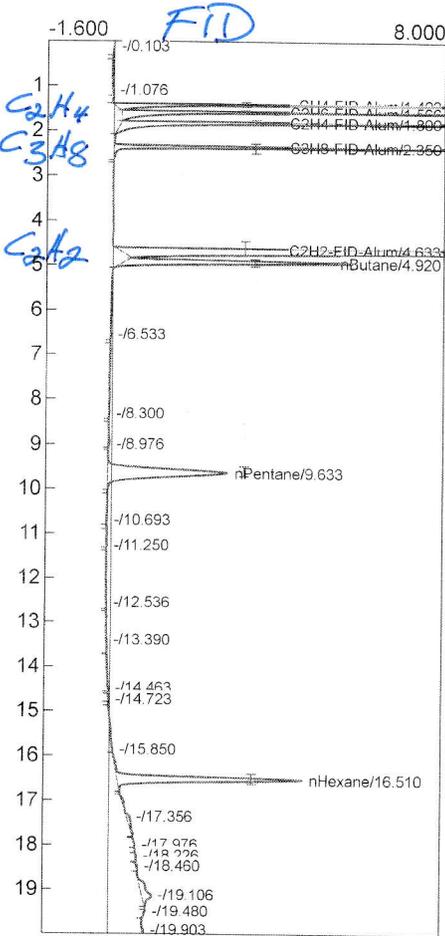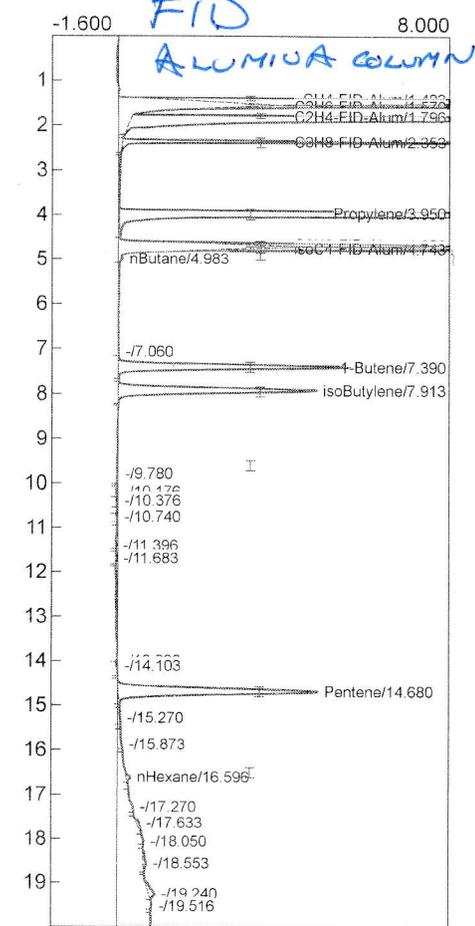| Component	Retention	Area
He-TCD-MS5A	0.000	0.0000
H2-TCD-MS5A	1.460	5599.9482
O2-TCD-MS5A	2.506	85.5371
N2-TCD-MS5A	3.630	1668.0942
CH4-TCD-MS5A	5.840	33.4420
CO-TCD-MS5A	0.000	0.0000
CH4-TCD-HayD	10.073	1551.8601
CO2-TCD-HayD	10.766	592.5153
C2H2+C2H4-TCD-HayD	11.916	11.8229
C2H6-TCD-HayD	12.856	431.9114
H2O-TCD-HayD	0.000	0.0000
CO2-TCD-MS5A	16.706	64.5456

10039.6768

Column 1

Lab name: SRI Instruments
Client: Air Company
Client ID: N12782
Analysis date: 01/06/2025 12:12:15
Method: MG5plus 30MXalumina and wax
Description: FID-Alumina-Relay E
Column: 15MXTwax+30Alumina
Carrier: Argon@C1=40C2=10C3=15psi
Integration: Peak sens=80.0 Base sens=60.0
Data file: GreenECD397.CHR ()
Sample: 60% CO2+mixC1-C5
Comments: H2makeup=30psi Air from BIAC

Temperature program:

Init temp	Hold	Ramp	Final temp
50.00	2.000	20.000	90.00
90.00	8.000	20.000	210.00
210.00	4.000	0.000	210.00

Events:

Time	Event
0.000	ZERO
0.000	SOUND
0.020	G ON (Valve1-MS5A)
0.060	E ON (Valve3-P&T624)
0.800	G OFF (Valve1-MS5A)
1.000	E OFF (Valve3-P&T624)
9.000	F ON (Valve2-HayD)
14.000	F OFF (Valve2-HayD)

(handwritten: FID, ALUMINA COLUMN, 60% CO2)

-1.600   FID   8.000

CH4-FID-Alum/1.403
C2H6-FID-Alum/1.570
C2H4-FID-Alum/1.796
C3H8-FID-Alum/2.353
Propylene/3.950
iSoC4-FID-Alum/4.743
nButane/4.983
-/7.060
1-Butene/7.390
isoButylene/7.913
-/9.780
-/10.376
-/10.740
-/11.396
-/11.683
-/14.103
Pentene/14.680
-/15.270
-/15.873
nHexane/16.596
-/17.270
-/17.633
-/18.050
-/18.553
-/19.240
-/19.516

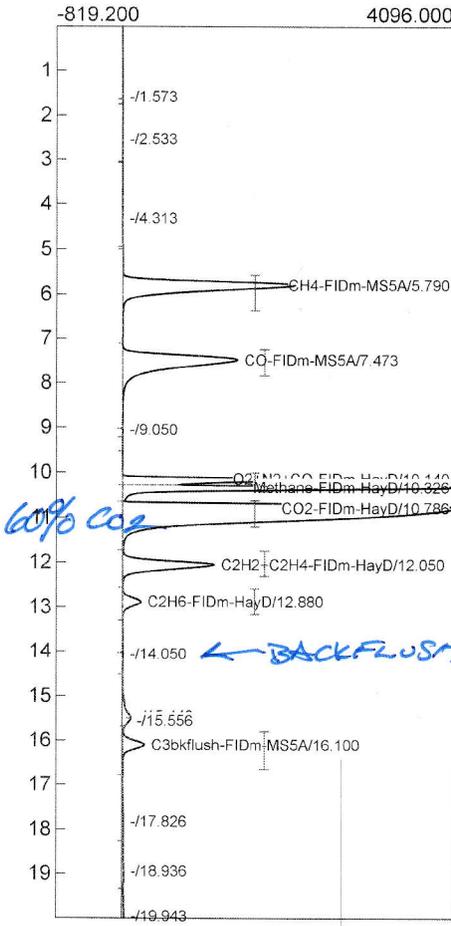| Component	Retention	Area
CH4-FID-Alum	1.403	1829.2131
C2H6-FID-Alum	1.570	218.4759
C2H4-FID-Alum	1.796	1107.3528
C3H8-FID-Alum	2.353	31.0292
Propylene	3.950	269.8616
C2H2-FID-Alum	4.656	17.0467
isoC4-FID-Alum	4.743	30.6564
nButane	4.983	0.1478
1-Butene	7.390	38.6400
isoButylene	7.913	37.4346
nPentane	0.000	0.0000
Pentene	14.680	44.5950
nHexane	16.596	0.8176

3625.2707

Column 2

Lab name: SRI Instruments
Client: Air Company
Client ID: N12782
Analysis date: 01/06/2025 12:12:15
Method: MG5plus 30MXalumina and wax
Description: FIDmeth 300C medgain
Column: 15MXTwax+30Alumina
Carrier: Argon@C1=40C2=10C3=15psi
Integration: Peak sens=80.0 Base sens=60.0
Data file: GreenECD397.chr ()
Sample: 30% CO2+3000ppmC2s+300ppr
Comments: H2makeup=30psi Air from BIAC

Temperature program:

Init temp   Hold   Ramp   Final temp

Events:

Time	Event
0.000	ZERO
5.000	INTEG BASED IMMEDIATE
15.500	INTEG BASED IMMEDIATE

-819.200   4096.000

-/1.573
-/2.533
-/4.313
CH4-FIDm-MS5A/5.790
CO-FIDm-MS5A/7.473
-/9.050
O2+N2+CO-FIDm-HayD/10.140
Methane-FIDm-HayD/10.326
CO2-FIDm-HayD/10.786
C2H2+C2H4-FIDm-HayD/12.050
C2H6-FIDm-HayD/12.880
-/14.050 *(handwritten: ← BACKFLUSH)*
-/15.556
C3bkflush-FIDm-MS5A/16.100
-/17.826
-/18.936
-/19.943

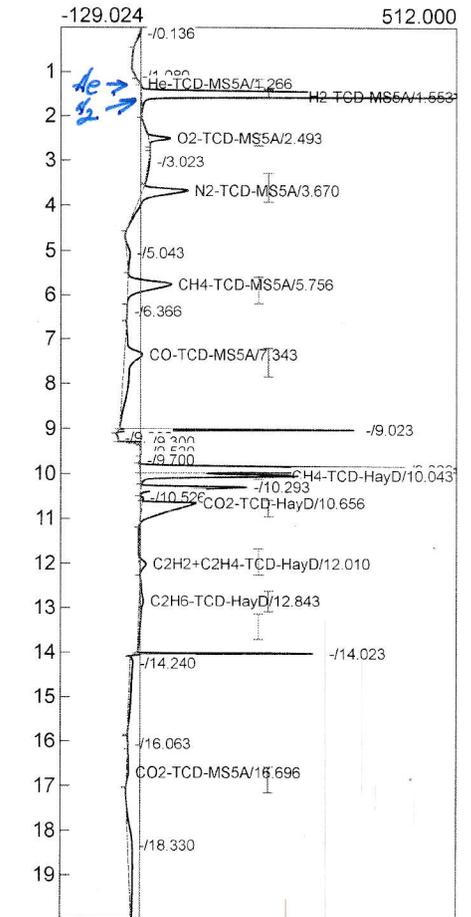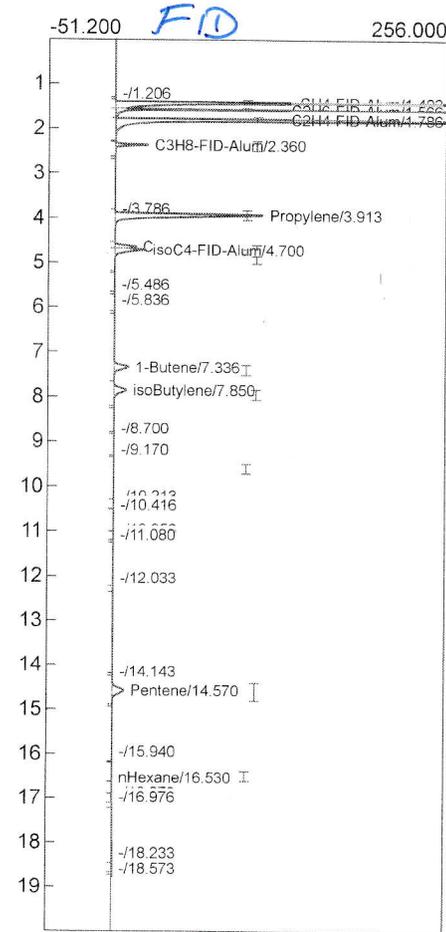| Component	Retention	Area
CH4-FIDm-MS5A	5.790	29782.1830
CO-FIDm-MS5A	7.473	27540.9952
O2+N2+CO-FIDm-HayD	10.140	17472.8546
Methane-FIDm-HayD	10.326	24574.2605
CO2-FIDm-HayD	10.786	94002.6890
C2H2+C2H4-FIDm-HayD	12.050	14416.6266
C2H6-FIDm-HayD	12.880	2840.8372
C3bkflush-FIDm-MS5A	16.100	3523.0051

214153.4512

Column 3

Lab name: SRI Instruments
Client: Air Company
Client ID: N12782
Analysis date: 01/06/2025 12:12:15
Method: MG5plus 30MXalumina and wax
Description: TCD lowcurrent 100C
Column: 15MXTwax+30Alumina
Carrier: Argon@C1=40C2=10C3=15psi
Integration: Peak sens=80.0 Base sens=60.0
Data file: SmartCh3-259.CHR ()
Sample: 30% CO2+3000ppmC2s+300ppr
Comments: H2makeup=30psi Air from BIAC

Temperature program:

Init temp   Hold   Ramp   Final temp

Events:

Time	Event
0.000	ZERO
1.300	INTEG BASED IMMEDIATE
2.400	INTEG BASED IMMEDIATE
2.700	INTEG BASED IMMEDIATE
9.300	ZERO
9.350	INTEG BASED IMMEDIATE

-129.024   512.000

-/0.136
He-TCD-MS5A/1.266 *(handwritten: He →)*
H2-TCD-MS5A/1.553 *(handwritten: H2 →)*
O2-TCD-MS5A/2.493
-/3.023
N2-TCD-MS5A/3.670
-/5.043
CH4-TCD-MS5A/5.756
-/6.366
CO-TCD-MS5A/7.343
-/9.023
-/9.300
-/9.700
CH4-TCD-HayD/10.043
-/10.293
-/10.526
CO2-TCD-HayD/10.656
C2H2+C2H4-TCD-HayD/12.010
C2H6-TCD-HayD/12.843
-/14.023
-/14.240
-/16.063
CO2-TCD-MS5A/16.696
-/18.330

Component	Retention	Area
He-TCD-MS5A	1.266	2.0142
H2-TCD-MS5A	1.553	6545.9820
O2-TCD-MS5A	2.493	195.9590
N2-TCD-MS5A	3.670	818.1418
CH4-TCD-MS5A	5.756	932.1268
CO-TCD-MS5A	7.343	1083.3011
CH4-TCD-HayD	10.043	1153.0573
CO2-TCD-HayD	10.656	1187.5525
C2H2+C2H4-TCD-HayD	12.010	125.8220
C2H6-TCD-HayD	12.843	329.7392
H2O-TCD-HayD	0.000	0.0000
CO2-TCD-MS5A	16.696	73.6276

12447.3235

Column 1

Temperature program:

Init temp	Hold	Ramp	Final temp
50.00	2.000	20.000	90.00
90.00	8.000	20.000	210.00
210.00	4.000	0.000	210.00

Events:

Time	Event
0.000	ZERO
0.000	SOUND
0.020	G ON (Valve1-MS5A)
0.060	E ON (Valve3-P&T624)
0.800	G OFF (Valve1-MS5A)
1.000	E OFF (Valve3-P&T624)
9.000	F ON (Valve2-HayD)
14.000	F OFF (Valve2-HayD)

FID (handwritten)

Component	Retention	Area
CH4-FID-Alum	1.403	3394.3653
C2H6-FID-Alum	1.566	462.8754
C2H4-FID-Alum	1.786	2201.5212
C3H8-FID-Alum	2.360	61.4834
Propylene	3.913	525.8624
C2H2-FID-Alum	4.633	61.8882
isoC4-FID-Alum	4.700	111.7306
nButane	0.000	0.0000
1-Butene	7.336	73.9532
isoButylene	7.850	72.1280
nPentane	0.000	0.0000
Pentene	14.570	79.2673
nHexane	16.530	0.4084

7045.4834

Column 2

Temperature program:

Init temp	Hold	Ramp	Final temp

Events:

Time	Event
0.000	ZERO
5.000	INTEG BASED IMMEDIATE

FIDMETH (handwritten)
CATERPILLAR MIX (handwritten)
14%C1 CO2 (handwritten)
BACKFLUSH (handwritten)
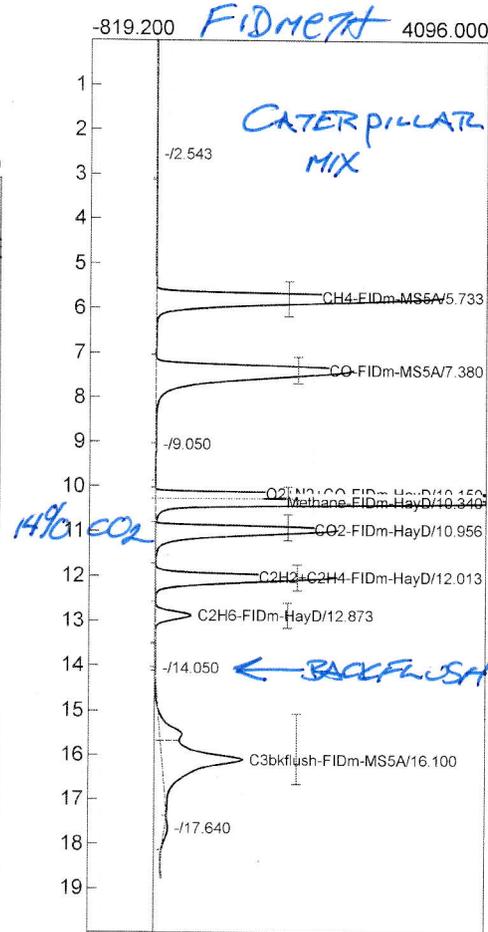
Component	Retention	Area
CH4-FIDm-MS5A	5.733	53917.3773
CO-FIDm-MS5A	7.380	50129.5543
O2+N2+CO-FIDm-HayD	10.150	27716.9188
Methane-FIDm-HayD	10.340	39769.8710
CO2-FIDm-HayD	10.956	31550.2597
C2H2+C2H4-FIDm-HayD	12.013	27297.7596
C2H6-FIDm-HayD	12.873	5523.8888
C3bkflush-FIDm-MS5A	16.100	28843.6239

264749.2534

Column 3

Temperature program:

Init temp	Hold	Ramp	Final temp

Events:

Time	Event
0.000	ZERO
1.300	INTEG BASED IMMEDIATE
2.400	INTEG BASED IMMEDIATE
2.700	INTEG BASED IMMEDIATE
9.300	ZERO
9.350	INTEG BASED IMMEDIATE

TCD (handwritten)
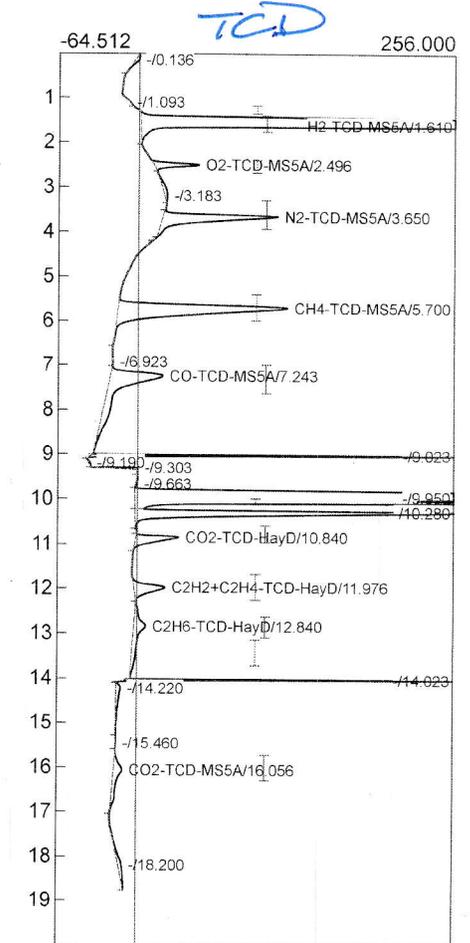
Component	Retention	Area
He-TCD-MS5A	0.000	0.0000
H2-TCD-MS5A	1.610	12386.5140
O2-TCD-MS5A	2.496	190.8544
N2-TCD-MS5A	3.650	911.4044
CH4-TCD-MS5A	5.700	1919.3705
CO-TCD-MS5A	7.243	997.4001
CH4-TCD-HayD	0.000	0.0000
CO2-TCD-HayD	10.840	292.6376
C2H2+C2H4-TCD-HayD	11.976	285.5934
C2H6-TCD-HayD	12.840	349.3760
H2O-TCD-HayD	0.000	0.0000
CO2-TCD-MS5A	16.056	236.5838

17569.7342

Custom GC configuration for _CHICHEU_

_2-13_ 2024
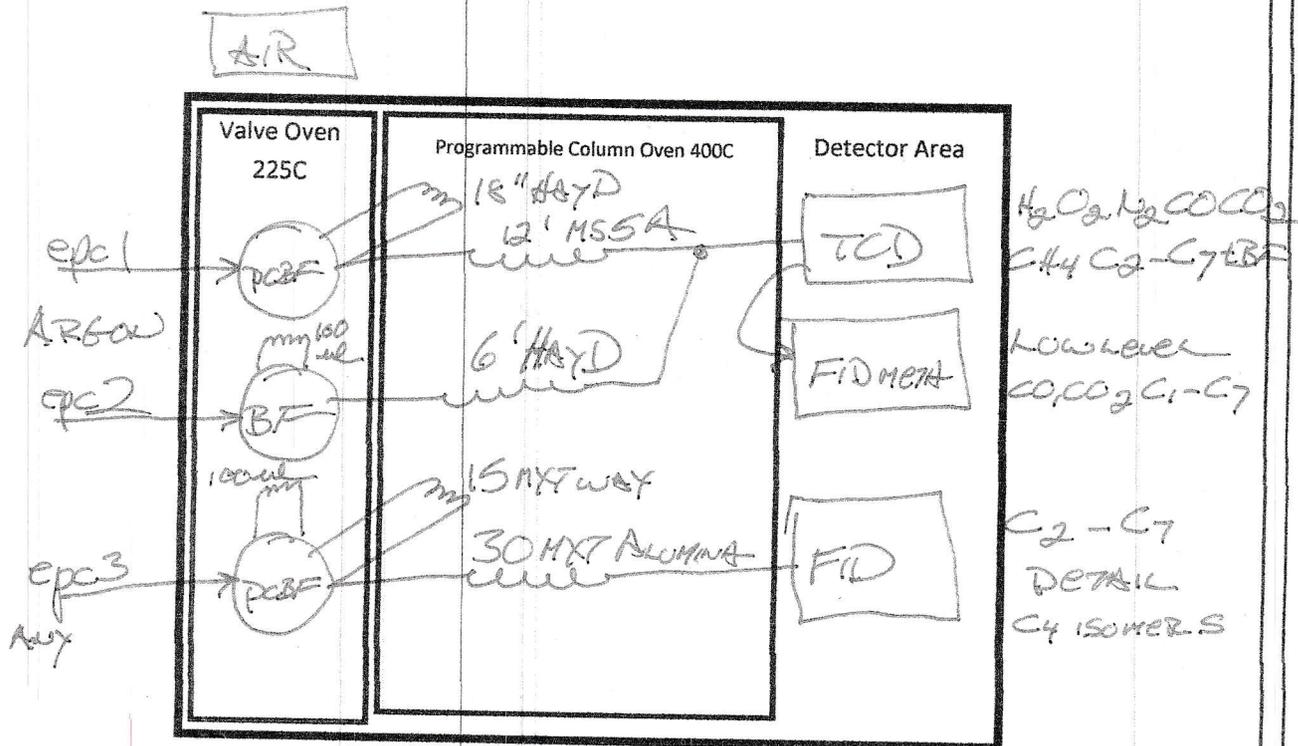
A custom GC was configured for your application:

Describe application:

$H_2 \rightarrow C_7$

Valve oven
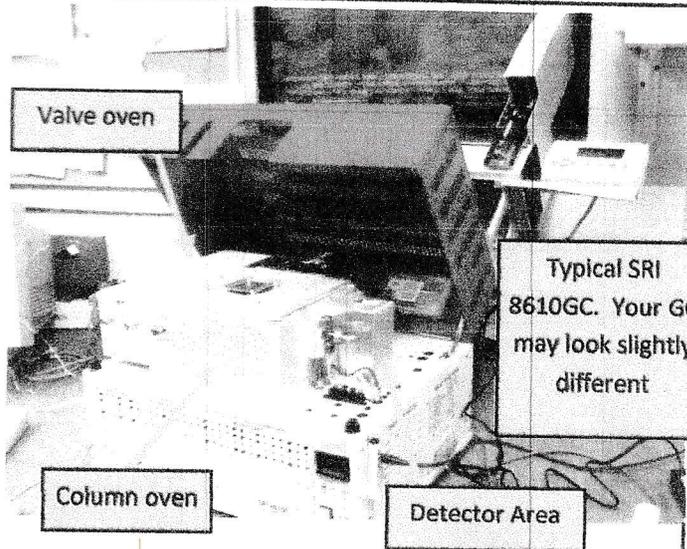
Typical SRI 8610GC. Your GC may look slightly different

Column oven

Detector Area

Schematic drawing of proposed GC

AIR

Valve Oven 225C

Programmable Column Oven 400C

Detector Area

epc1

18" HAYD
12' MSSA

TCD → $H_2 O_2 N_2 CO CO_2$ $CH_4 C_2 - C_7 EtF$

ARGON

epc2

6' HAYD

FID MeH → Low level $CO, CO_2 C_1 - C_7$

100 ul

epc3

AUX

15 MXT WAX
30 MXT ALUMINA

FID → $C_2 - C_7$ DETAIL C_4 ISOMERS

Component	Requested Concentration	Certified Concentration	Analytical Principle	Analytical Accuracy
1-Butene	0.1 %	0.104 %	D	+/-1 %
Pentene	0.1 %	0.105 %	D	+/-1 %
Acetylene	0.25 %	0.249 %	D	+/-1 %
Carbon dioxide	14.2 %	14.0 %	J	+/-1 %
Carbon monoxide	14 %	14.0 %	J	+/-1 %
Ethane	1.1 %	1.10 %	D	+/-1 %
Ethylene	5.5 %	5.54 %	D	+/-1 %
Isobutane	0.1 %	0.103 %	D	+/-1 %
Isobutylene	0.1 %	0.104 %	D	+/-1 %
Methane	19.15 %	19.1 %	D	+/-1 %
Nitrogen	6.1 %	6.16 %	J	+/-1 %
Oxygen	0.6 %	0.609 %	J	+/-1 %
Propane	0.1 %	0.104 %	D	+/-1 %
Propylene	0.9 %	0.914 %	D	+/-1 %
Hydrogen	balance	balance		

Handwritten margin notes (left column): .1, .1, .25, 14.2, 14., 1.1, 5.5, .1, .1, 19.5, 6.1, .6, .1, .9, 37.8

Handwritten note near Propylene: 62.192

Analytical Instruments: **Agilent 7890A**

Cylinder Style: **A3**

Filling Method: **Gravimetric**

handwritten: "CATERPILLAR" MIX