



RasGas Company Limited
Laboratory

CORRELATION TEST - COMPARISON OF RESULTS

Sample	: Correlation Sample - RG/Lean
Correlation Test Cyl. No.	: BE 5156 (Seal No: I 0495531)
Location	: RasGas / Laboratory
Analysis Date	: 24-Feb-2009
Analyst	: MUSLIM IBRAHIM
Analysis Method	: GC, GPA 2261

COMPONENT	Unit	Gas Chromatograph Nos.			Correlation Limit*
		VAR. No. 10 (A)	VAR. No. 12 (B)	VAR. No. 13 (C)	
CH4	% MOL	93.02	93.01	93.01	0.30
C2H6	% MOL	6.17	6.16	6.17	0.10
C3H8	% MOL	0.13	0.14	0.14	0.05
I-C4H10	% MOL	0.00	0.00	0.00	0.03
N-C4H10	% MOL	0.00	0.00	0.00	0.03
I-C5H12	% MOL	0.00	0.00	0.00	0.03
N-C5H12	% MOL	0.00	0.00	0.00	0.03
C6H14	% MOL	0.00	0.00	0.00	0.03
N2	% MOL	0.68	0.69	0.68	0.00
CO2	% MOL	0.00	0.00	0.00	0.03
O2	% MOL	0.00	0.00	0.00	0.03
TOTAL	% MOL	100.00	100.00	100.00	0.00



Chi

UPDATE GREEN SHADED CELLS

LOG SHEET FOR CORRELATION TEST

SAMPLE	REFERENCE STANDARD GAS
CYLINDER No.	7700983
Correlation Test No.	
LOCATION	
GC- MODEL	RAS GAS LAB / VAR. SYS-10
GC- SERIAL No.	VARIAN CP-3800
DATE CERTIFIED	103806
SAMPLED BY	29-Sep-08
ANALYSIS DATE	SCOTT SPECIALITY GASES
ANALYST	24-FEB-09
ANALYSIS METHOD	MUSMIBRAHIM

COMPONENT	CERTIFICATE MOL%	COUNT 1			COUNT 2			DIFF RESPONSE FACTOR $H=(D-G)*100/I$	AVERAGE RESPONSE FACTOR $I=(D+G)/2$	COUNT 1			COUNT 2			DIFF MOL% $P=(L-O)*100/Q$	TEST RESULT (MOL%)	
		SAMPLE PRESSURE B (mmHg)	PEAK AREA C	RESPONSE FACTOR D=A*B/C	SAMPLE PRESSURE E (mmHg)	PEAK AREA F	RESPONSE FACTOR G=A*E/F			SAMPLE PRESSURE J	PEAK AREA K	MOL% L=K/J	SAMPLE PRESSURE M	PEAK AREA N	MOL% O=N/M		SAMPLE PRESSURE P=(L+O)/2	UNNORMALIZED
O2	0.0000	760	0	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.00		
N2	0.0000	760	28383	0.017304083	760	28371	0.017341107	0.017341107	0.017341107	0.679406303	760	28659	0.679406303	0.679406303	0.678	0.68		
CH4	99.9600	760	4365204	0.018975428	760	3549222	0.018983370	0.018983370	0.018983370	92.424530112	760	361242	92.424530112	92.35324548	92.390	93.02		
CO2	0.0000	760	0	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.00		
C2H8	0.0000	760	38698	0.011808659	760	31614	0.011834652	0.011821655	0.011821655	6.127412894	760	389432	6.127412894	6.12037668	6.124	6.17		
C6H14*	0.0000	760	0	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.00		
C3H8	0.1007	760	2988063	0.000025527	760	2835538	0.000025581	0.000025589	0.000025589	0.133871430	760	334597	0.133871430	0.132859442	0.133	0.13		
I-C4H10	0.0140	760	592996	0.000019186	760	530107	0.000019280	0.000019233	0.000019233	0.000543609	760	3545916	0.000543609	0.000540673	0.001	0.00		
N-C4H10	0.0140	760	588358	0.000019117	760	533343	0.000019213	0.000019165	0.000019165	0.000987982	760	3818	0.000987982	0.000982056	0.001	0.00		
I-C5H12	0.0000	760	0	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.00		
N-C5H12	0.0000	760	0	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.00		
TOTAL	100.1067		8152916			8128725				99.366732330		7874594	99.366732330		99.327	100.00		
HHV(BTU/SCF)																		

Handwritten signature

Handwritten initials 'CAR'



Data File: c:\sys_10 results\cpc correlation 2009\standard005.run



Sample ID: STANDARD

Run Mode: Analysis

Operator (Inj): MUSLIM IBRAHIM

Peak Measurement: Peak Area

Injection Notes: 760 mmHg (CPC Correlation)

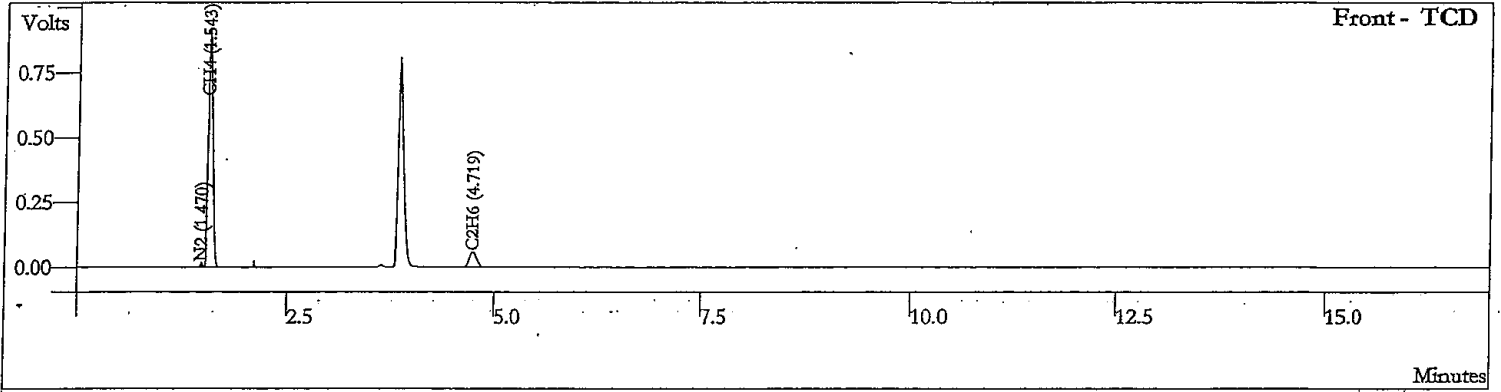
Peak Area External Std.

Injection Date: 02/24/2009 11:36:01 AM

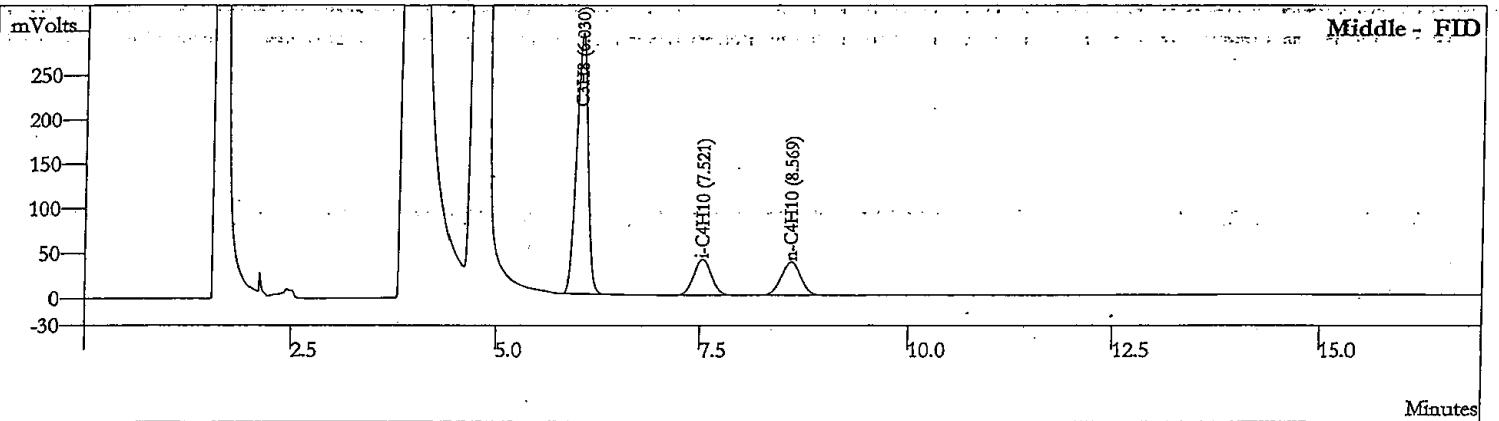
Injection Method: c:\sys_10 methods\feb 09_sys10.mth

Instrument (Inj): SYS_10

Calculation Method: c:\sys_10 methods\feb 09_sys10.mth

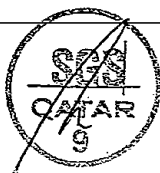


Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	N2	1.470	26371	0.6033
2	CH4	1.543	3549222	93.6670
3	C2H6	4.719	386144	6.0452
	Totals		3961737	100.3155



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	C3H8	6.030	2983538	0.1005
2	i-C4H10	7.521	590107	0.0149
3	n-C4H10	8.569	593343	0.0149
	Totals		4166988	0.1303

Chir



Data File: c:\sys_10 results\cpc correlation 2009\standard004.run

Sample ID: STANDARD

Run Mode:

Analysis



Operator (Inj): MUSLIM IBRAHIM

Peak Measurement:

Peak Area

Injection Notes: 760 mmHg (CPC Correlation)

Peak Area

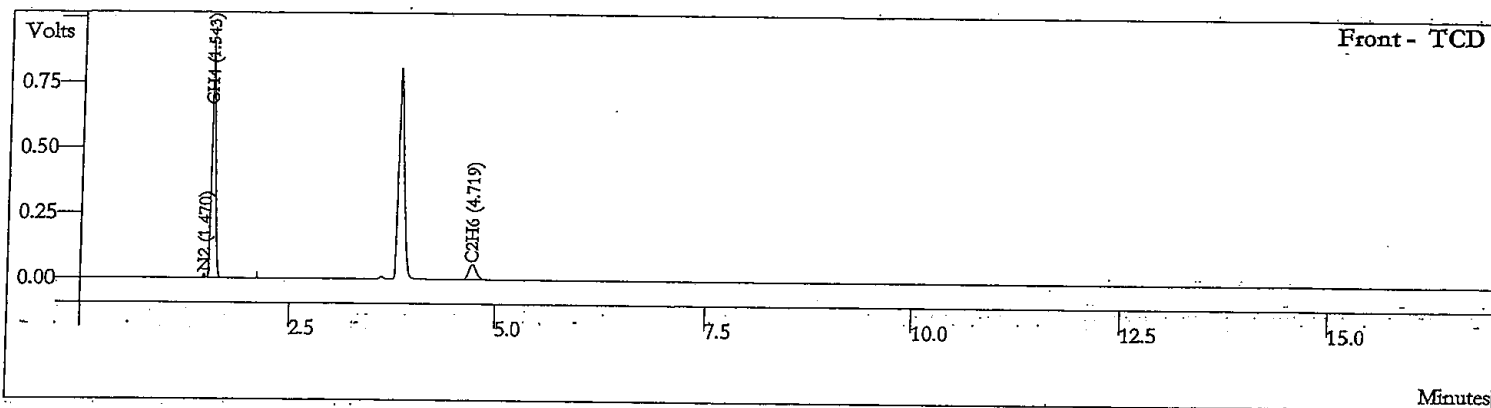
External Std.

Injection Date: 02/24/2009 11:16:40 AM

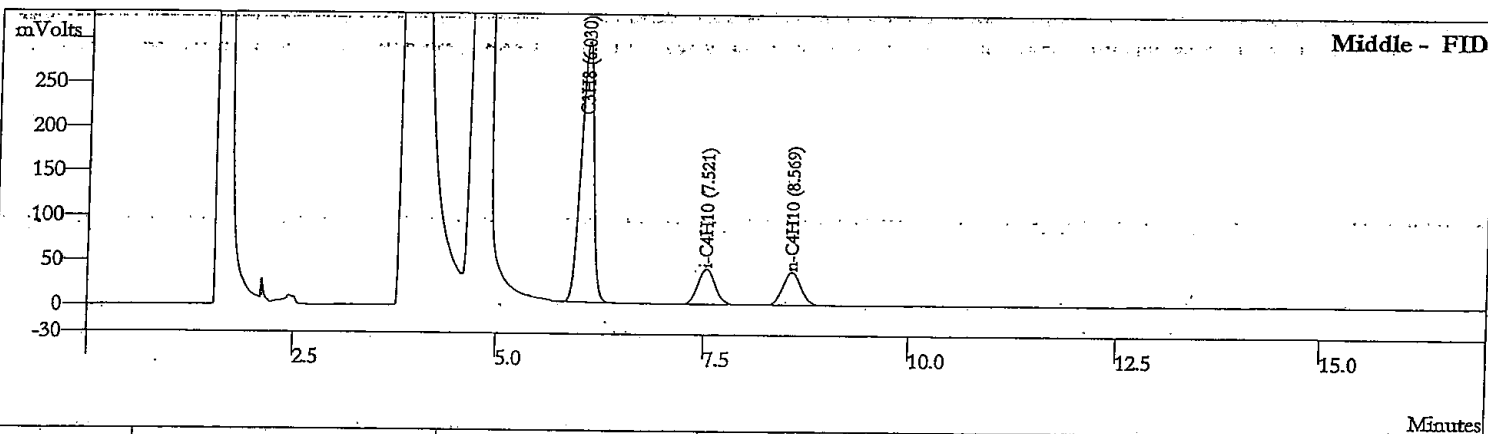
Injection Method: c:\sys_10 methods\feb 09_sys10.mth

Instrument (Inj): SYS_10

Calculation Method: c:\sys_10 methods\feb 09_sys10.mth

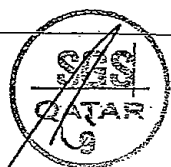


Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	N2	1.470	26484	0.6058
2	CH4	1.543	3552044	93.7415
3	C2H6	4.719	386994	6.0585
	Totals		3965522	100.4058



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	C3H8	6.030	2998063	0.1010
2	i-C4H10	7.521	592996	0.0150
3	n-C4H10	8.569	596335	0.0149
	Totals		4187394	0.1309

cli



Data File: c:\sys_10 results\cpc correlation 2009\cor.sample-lean002.run

Sample ID: Lean LNG Sample

Run Mode:

Analysis



Operator (Inj): MUSLIM IBRAHIM

Peak Measurement: Peak Area

Injection Notes:

Peak Area

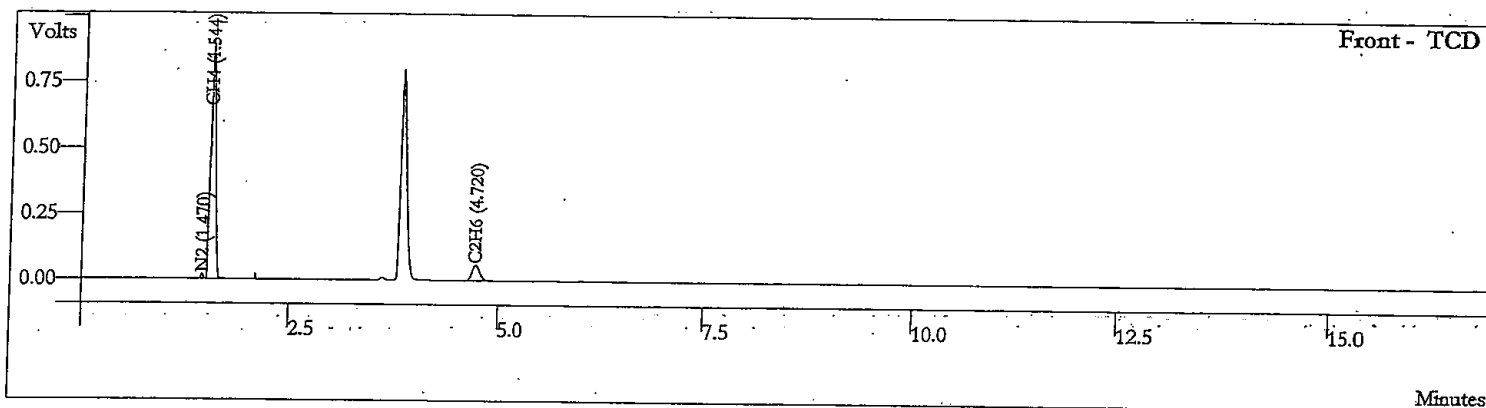
External Std.

Injection Date: 02/24/2009 05:07:58 PM

Injection Method: c:\sys_10 methods\feb 09_sys10.mth

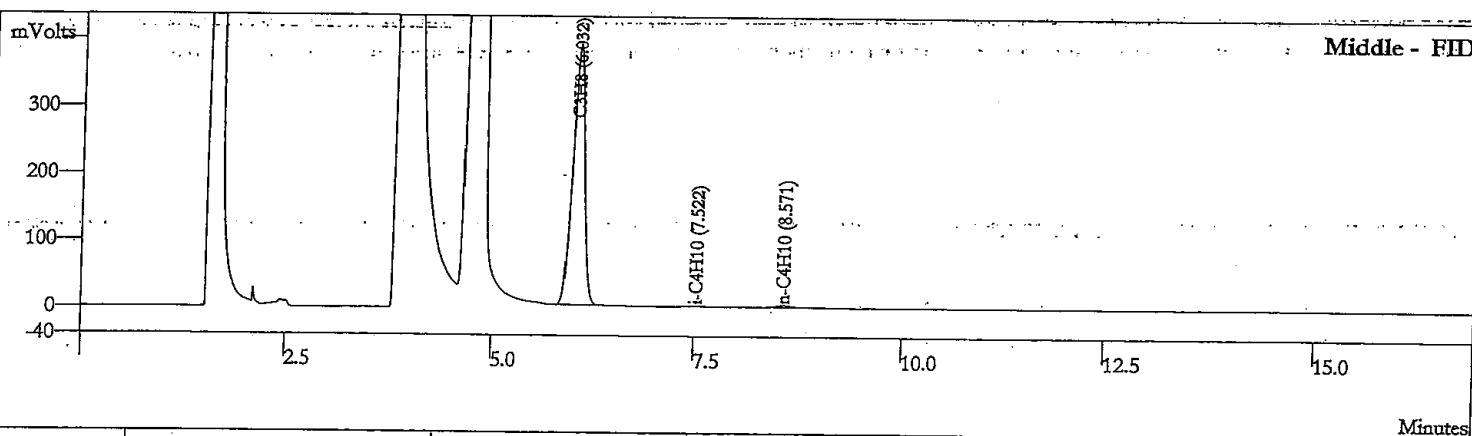
Instrument (Inj): SYS_10

Calculation Method: c:\sys_10 methods\feb 09_sys10.mth



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	N2	1.470	29776	0.6812
2	CH4	1.544	3515055	92.7653
3	C2H6	4.720	393924	6.1670
Totals			3938755	99.6135

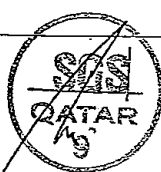
Status Codes:



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	C3H8	6.032	3975972	0.1339
2	i-C4H10	7.522	21481	0.0005
3	n-C4H10	8.571	38386	0.0010
Totals			4035839	0.1354

Status Codes:

C - Result out of calibration range



Data File: c:\sys_10 results\cpc correlation 2009\cor.sample-lean003.run

Sample ID: Lean LNG Sample

Run Mode:

Analysis



Operator (Inj): MUSLIM IBRAHIM

Peak Measurement:

Peak Area

Injection Notes:

Peak Area

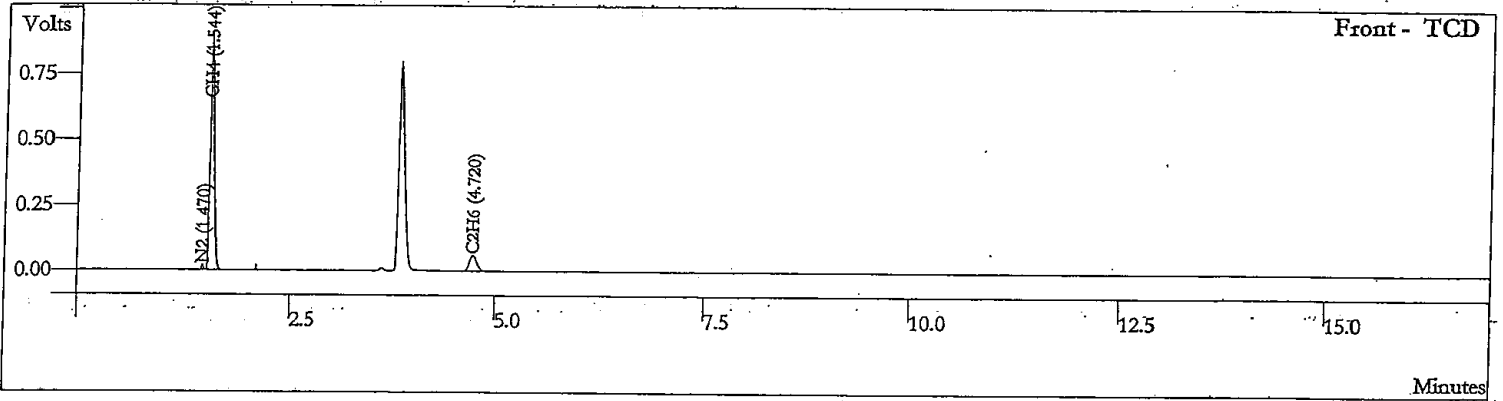
External Std.

Injection Date: 02/24/2009 05:27:20 PM

Injection Method: c:\sys_10 methods\feb 09_sys10.mth

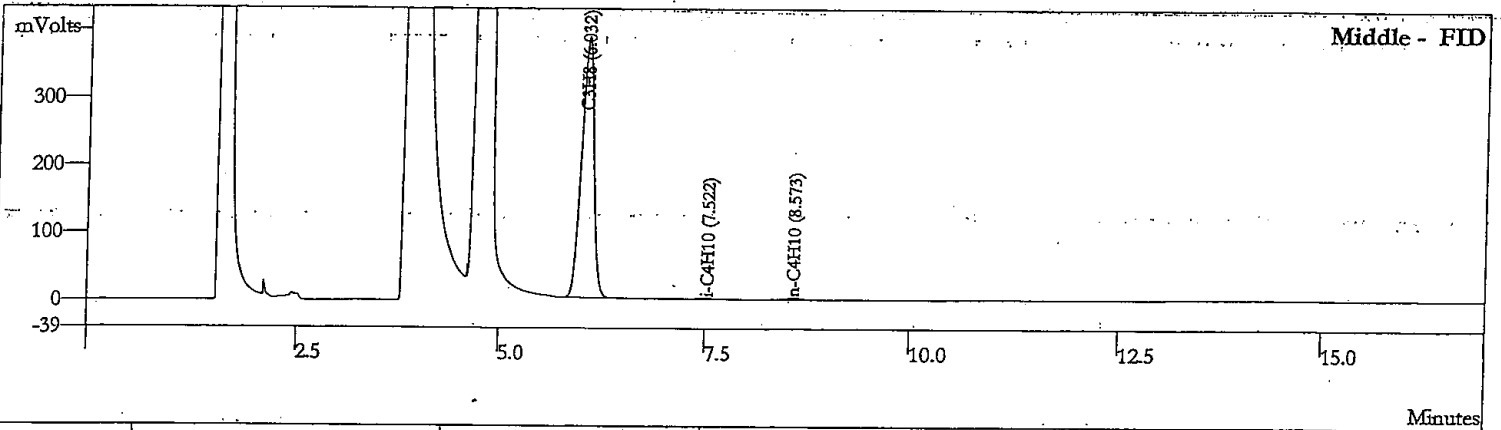
Instrument (Inj): SYS_10

Calculation Method: c:\sys_10 methods\feb 09_sys10.mth



Peak No.	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	N2	1.470	29659	0.6785
2	CH4	1.544	3512423	92.6958
3	C2H6	4.720	393482	6.1601
Totals			3935564	99.5344

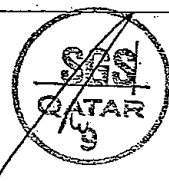
Status Codes:



Peak No.	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	C3H8	6.032	3945916	0.1329
2	i-C4H10	7.522	21365	0.0005
3	n-C4H10	8.573	38151	0.0010
Totals			4005432	0.1344

Status Codes:

C - Result out of calibration range



UPDATE GREEN SHADED CELLS

LOG SHEET FOR CORRELATION TEST

SAMPLE	REFERENCE STANDARD GAS
CYLINDER No.	7700983
Correlation Test No.	
LOCATION	RAS GAS LAB / VAR. SYS-12
3C- MODEL	VARIAN CP-3800
3C- SERIAL No.	104448
DATE CERTIFIED	29-Sep-08
SAMPLED BY	SCOTT SPECIALITY GASES
ANALYSIS DATE	24-Feb-09
ANALYST	MUSEUM BERAHIM
ANALYSIS METHOD	GC, GPA 2281

COMPONENT	CERTIFICATE MOL% A	COUNT 1			COUNT 2			DIFF RESPONSE FACTOR #DIV/01	AVERAGE RESPONSE FACTOR I=(D+G)/2	COUNT 1			COUNT 2			DIFF MOL% P=(L-O)*100/Q	TEST RESULT (MOL%)	
		SAMPLE PRESSURE B (mmHg)	PEAK AREA C	RESPONSE FACTOR D=A*B/C	SAMPLE PRESSURE E (mmHg)	PEAK AREA F	RESPONSE FACTOR G=A*E/F			SAMPLE PRESSURE J	PEAK AREA K	MOL% L=K/J	SAMPLE PRESSURE M	PEAK AREA N	MOL% O=M/N		UNNORMALIZED Q=(L+O)/2	REPORTED VALUE
O2	0.0000	760	0	0.000000000	760	0	0.000000000	0.000000000	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.000000000	0.00	0.00	
N2	0.0000	760	26696	0.017166331	760	26696	0.017166331	0.017166331	0.017166331	760	30239	0.684588040	0.684588040	0.13	0.684	0.89	0.89	
CH4	0.0000	760	3530225	0.020052811	760	3530225	0.020052811	0.020048887	0.020048887	760	925772	92.534180058	92.534180058	0.01	92.531	93.01	93.01	
CO2	0.0000	760	0	0.000000000	760	0	0.000000000	0.000000000	0.000000000	760	0	0.000000000	0.000000000	0.00	0.000	0.00	0.00	
C2H8	0.0000	760	32764	0.013947827	760	32764	0.013947827	0.013954240	0.013954240	760	333695	6.128921113	6.128921113	0.08	6.130	6.16	6.16	
C6H14*	0.0000	760	0	0.000000000	760	0	0.000000000	0.000000000	0.000000000	760	0	0.000000000	0.000000000	0.00	0.000	0.00	0.00	
C3H8	0.0007	760	8755	0.000087414	760	87524	0.000087391	0.000087402	0.000087402	760	95860	0.137499027	0.137499027	0.33	0.137	0.14	0.14	
I-C4H10	0.0150	760	166986	0.000086128	760	167161	0.000086053	0.000086091	0.000086091	760	3240	0.000738249	0.000738249	-	0.001	0.00	0.00	
N-C4H10	0.0150	760	182476	0.000087879	760	183135	0.000087891	0.000087835	0.000087835	760	30588	0.001249228	0.001249228	-	0.001	0.00	0.00	
I-C8H12	0.0000	760	0	0.000000000	760	0	0.000000000	0.000000000	0.000000000	760	0	0.000000000	0.000000000	-	0.000	0.00	0.00	
N-C8H12	0.0000	760	0	0.000000000	760	0	0.000000000	0.000000000	0.000000000	760	0	0.000000000	0.000000000	-	0.000	0.00	0.00	
TOTAL	100.1087		5103715			5105719					5088616	99.485135712	99.485135712		99.484	100.00	100.00	
HHV(BTU/SCF)																		

[Handwritten signature]

[Handwritten signature]

[Circular stamp: SCOTT SPECIALITY GASES]

Data File: c:\star\sys_12 data\cpc correlation\feb-2009\standard004.run



Sample ID: STANDARD

Run Mode: Analysis

Operator (Inj): MUSLIM IBR.

Peak Measurement: Peak Area

Injection Notes: 760 mmHg (CPC Correlation)

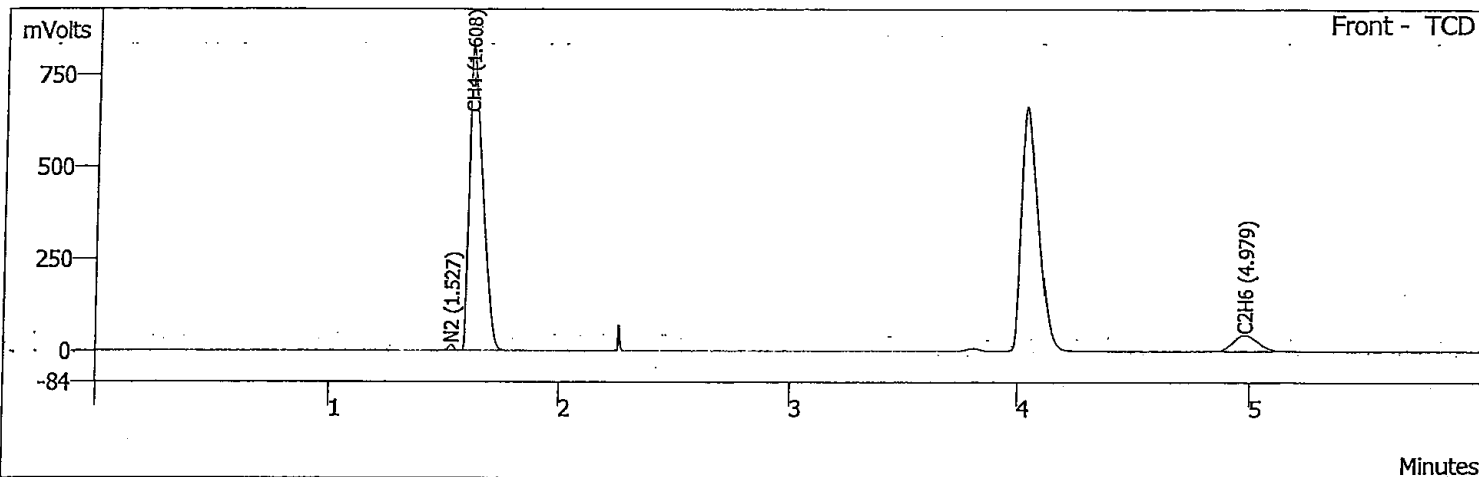
Peak Area External Std.

Injection Date: 02/24/2009 09:06:48 AM

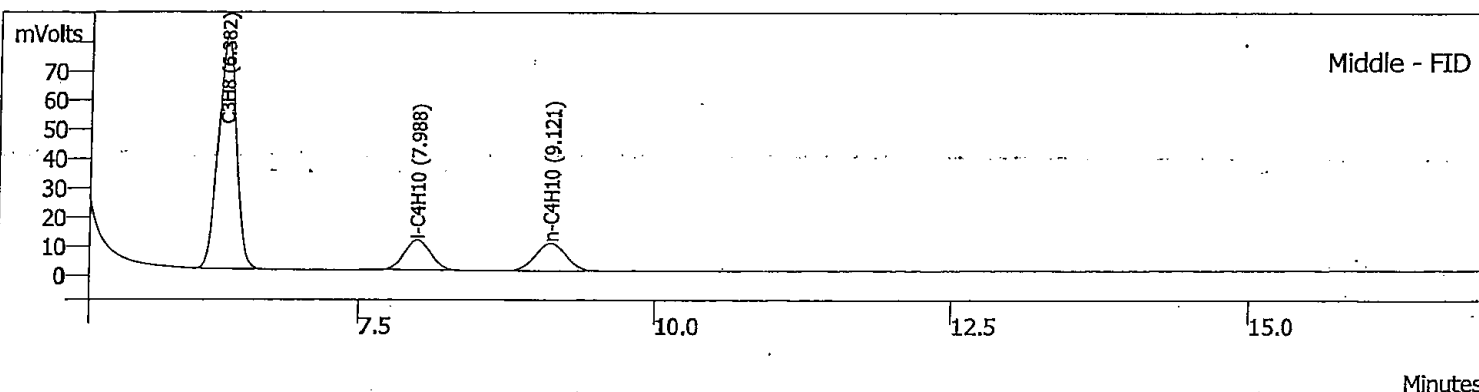
Injection Method: c:\star\sys_12\feb 09_sys 12.mth

Instrument (Inj): SYS_12

Calculation Method: c:\star\sys_12\feb 09_sys 12.mth



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	N2	1.527	26698	0.6098
2	CH4	1.608	3538425	93.8486
3	C2H6	4.979	327641	6.0688
Totals			3892764	100.5272



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	C3H8	6.382	875514	0.0987
2	i-C4H10	7.988	166996	0.0144
3	n-C4H10	9.121	168441	0.0146
Totals			1210951	0.1277

[Handwritten signature]

[Handwritten signature]



Data File: c:\star\sys_12 data\cpc correlation\feb-2009\standard005.run

Sample ID: STANDARD

Run Mode: Analysis



Operator (Inj): MUSLIM IBR.

Peak Measurement: Peak Area

Injection Notes: 760 mmHg (CPC Correlation)

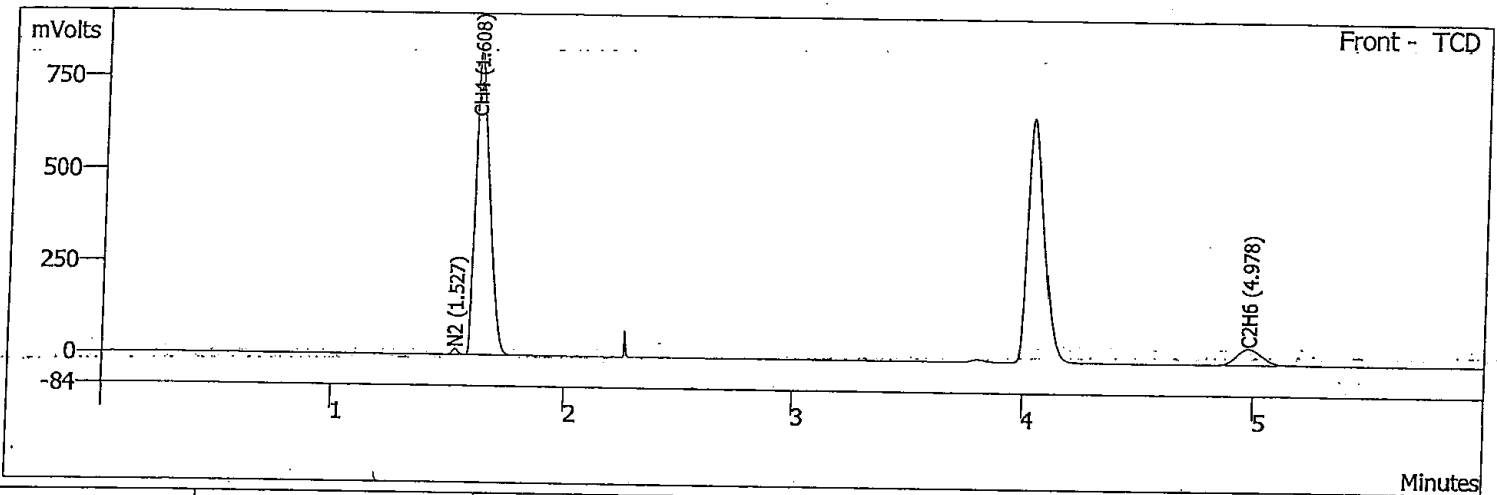
Peak Area External Std.

Injection Date: 02/24/2009 09:27:10 AM

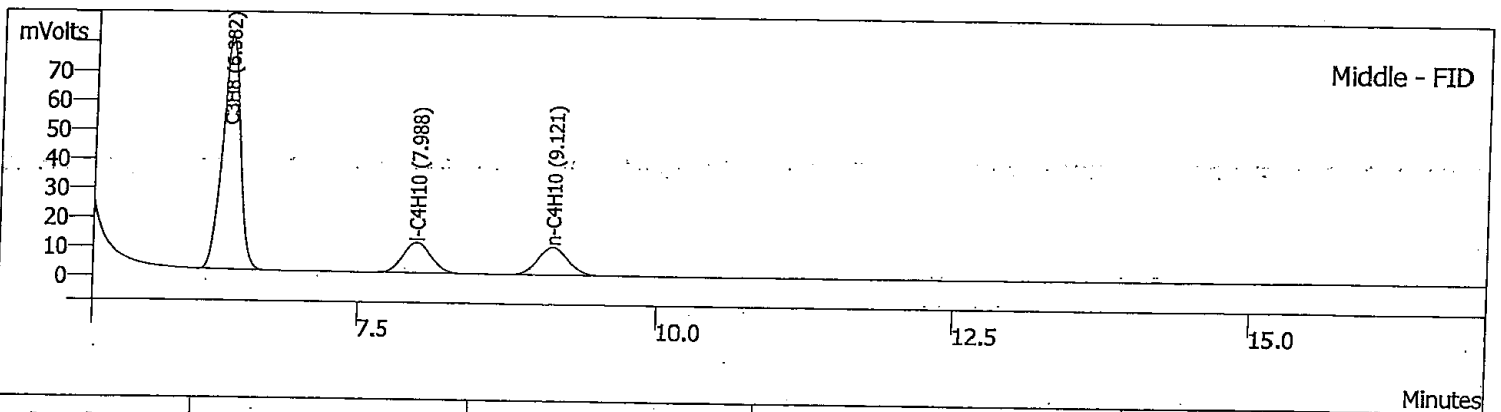
Injection Method: c:\star\sys_12\feb 09_sys 12.mth

Instrument (Inj): SYS_12

Calculation Method: c:\star\sys_12\feb 09_sys 12.mth



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	N2	1.527	26662	0.6090
2	CH4	1.608	3539634	93.8807
3	C2H6	4.978	327340	6.0633
Totals			3893636	100.5530



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	C3H8	6.382	875741	0.0987
2	i-C4H10	7.988	167181	0.0144
3	n-C4H10	9.121	169161	0.0147
Totals			1212083	0.1278

Cli



Data File: c:\star\sys_12 data\cpc correlation\feb-2009\lean lng sample006.run



Sample ID: Lean LNG Sample

Run Mode: Analysis

Operator (Inj): MUSLIM IBR.

Peak Measurement: Peak Area

Injection Notes:

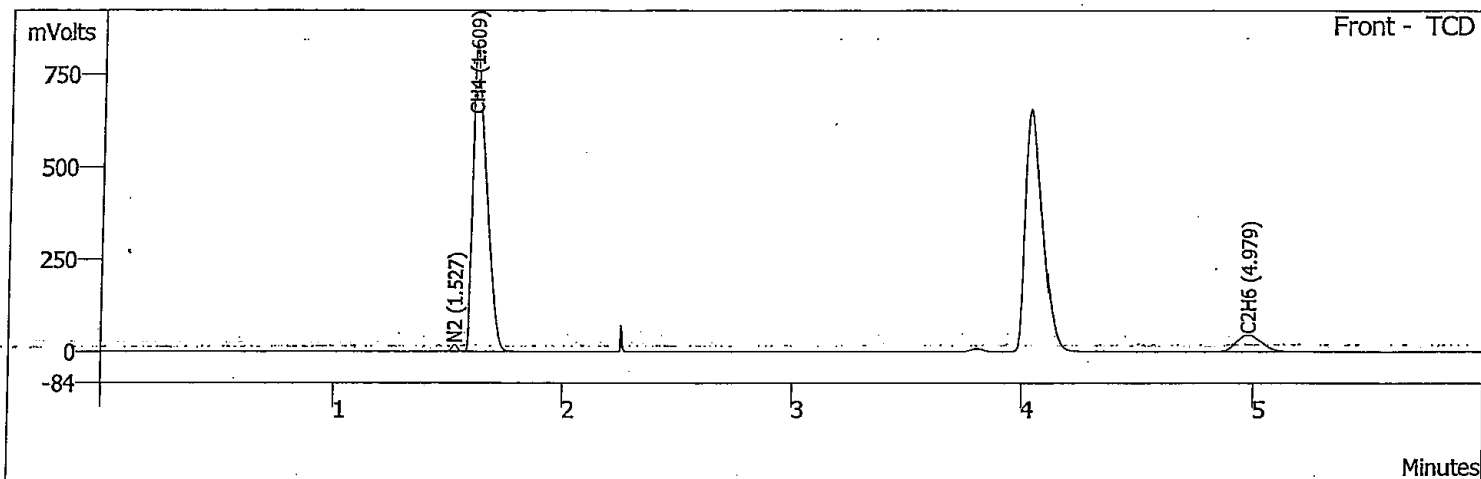
Peak Area External Std.

Injection Date: 02/24/2009 06:18:43 PM

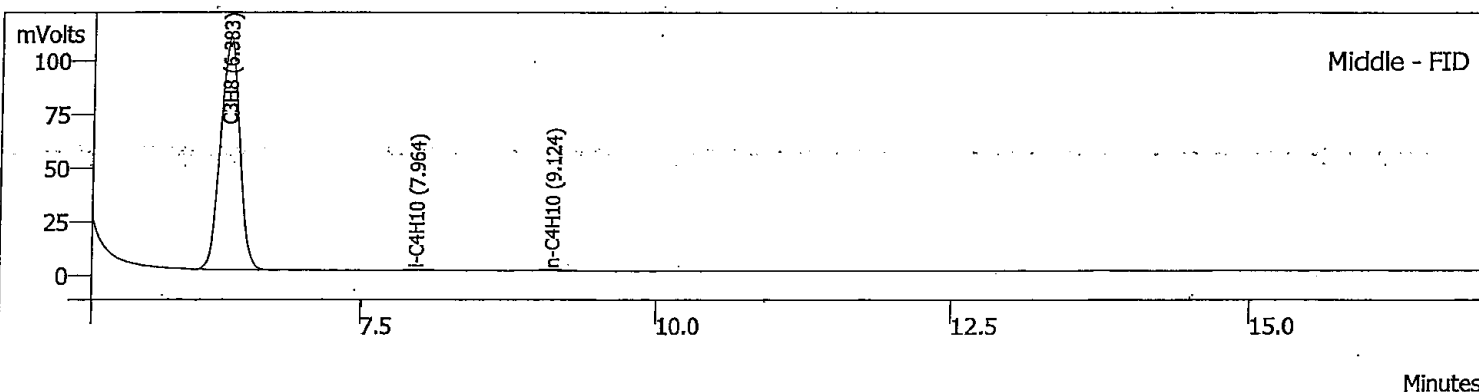
Injection Method: c:\star\sys_12\feb 09_sys 12.mth

Instrument (Inj): SYS_12

Calculation Method: c:\star\sys_12\feb 09_sys 12.mth



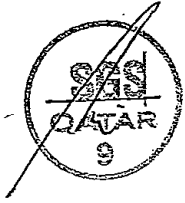
Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	N2	1.527	30249	0.6909
2	CH4	1.609	3507451	93.0271
3	C2H6	4.979	333986	6.1864
Totals			3871686	99.9044



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	C3H8	6.383	1191627	0.1343
2	i-C4H10	7.964	8633	0.0007
3	n-C4H10	9.124	12766	0.0011
Totals			1213026	0.1361

Signature

Chris



Data File: c:\star\sys_12 data\cpc correlation\feb-2009\lean lng sample005.run



Sample ID: Lean LNG Sample

Run Mode: Analysis

Operator (Inj): MUSLIM.IBR.

Peak Measurement: Peak Area

Injection Notes:

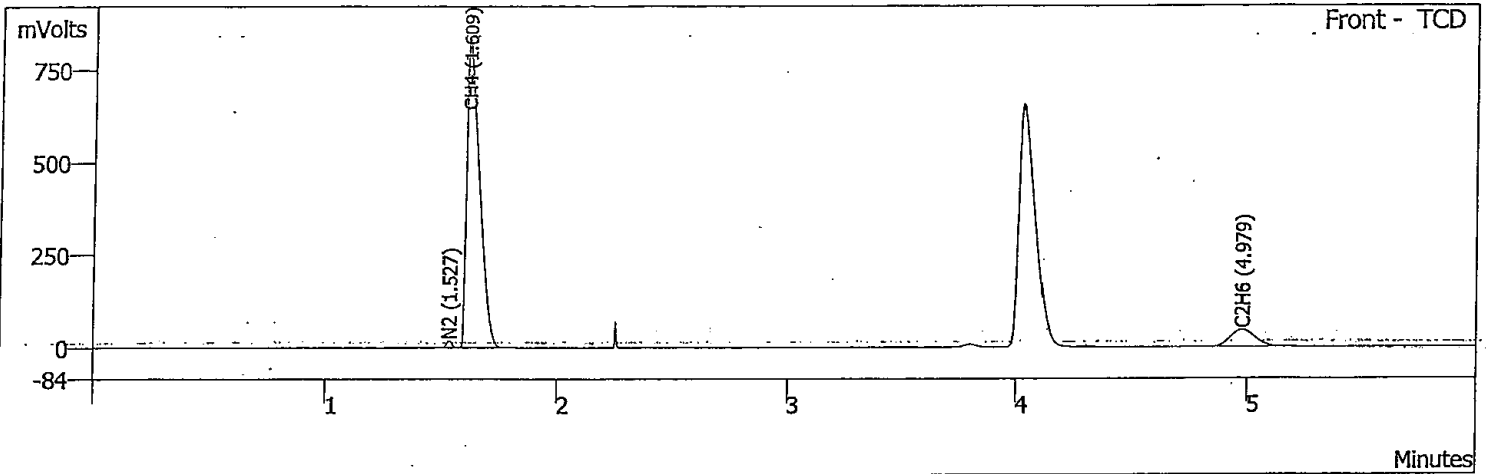
Peak Area External Std.

Injection Date: 02/24/2009 05:58:22 PM

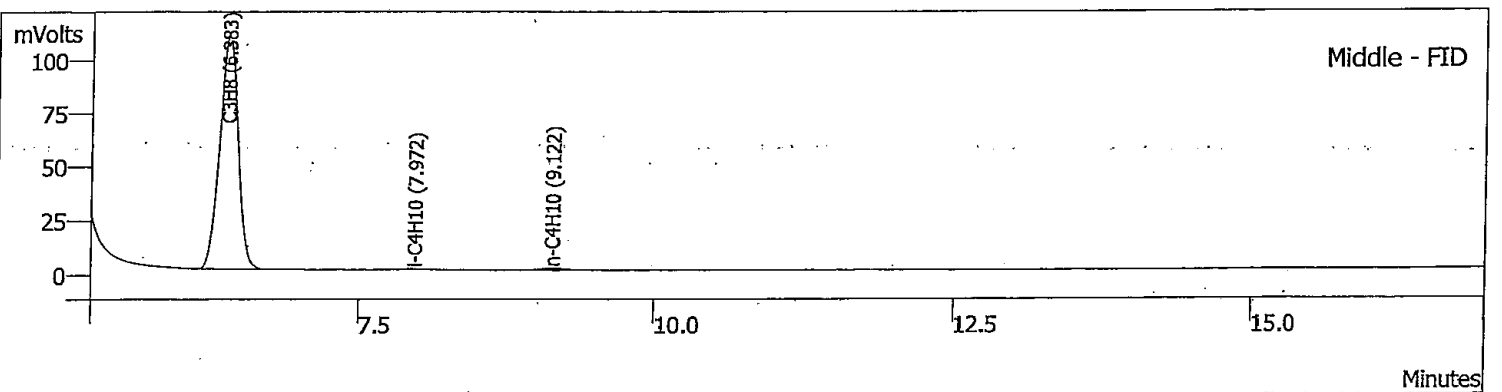
Injection Method: c:\star\sys_12\feb 09_sys 12.mth

Instrument (Inj): SYS_12

Calculation Method: c:\star\sys_12\feb 09_sys 12.mth



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	N2	1.527	30289	0.6919
2	CH4	1.609	3507724	93.0343
3	C2H6	4.979	333695	6.1810
Totals			3871708	99.9072



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	C3H8	6.383	1195610	0.1347
2	i-C4H10	7.972	8240	0.0007
3	n-C4H10	9.122	14058	0.0012
Totals			1217908	0.1366

UPDATE GREEN SHADED CELLS

LOG SHEET FOR CORRELATION TEST

SAMPLE	REFERENCE STANDARD GAS
CYLINDER No.	7700983
Correlation Test No.	
LOCATION	
GC- MODEL	RAS GAS LAB / VAR. SYS-13
GC- SERIAL No.	VARIAN CP-3800
DATE CERTIFIED	104447
SAMPLED BY	29-Sep-08
ANALYSIS DATE	SCOTT SPECIALITY GASES
ANALYST	MUSLIM IBRAHIM
ANALYSIS METHOD	GC, GPA 2261

COMPONENT	CERTIFICATE MOL% A	COUNT 1			COUNT 2			DIFF RESPONSE FACTOR H=(D-G)*100/I	AVERAGE RESPONSE FACTOR I=(D+G)/2	COUNT 1			COUNT 2			DIFF MOL% P=(L-O)*100/Q	TEST RESULT (MOL%)	
		SAMPLE PRESSURE B(mmHg)	PEAK AREA C	RESPONSE FACTOR D=A*B/C	SAMPLE PRESSURE E(mmHg)	PEAK AREA F	RESPONSE FACTOR G=A*E/F			SAMPLE PRESSURE J	PEAK AREA K	MOL% L=M*K/J	SAMPLE PRESSURE M	PEAK AREA N	MOL% O=P*N/M		UNORMALIZED Q=(L+O)/2	REPORTED VALUE
O2	0.0000	760	0	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.00		
N2	0.0030	760	25747	0.015408923	760	228832	0.016381512	0.29	0.016383718	0.680688790	760	33562	0.680688790	0.6799860329	0.680	0.88		
CH4	93.6000	760	3971052	0.017887709	760	3973163	0.017882948	0.05	0.017882948	92.459728781	760	3927044	92.459728781	92.300789043	92.300	93.01		
CO2	0.0000	760	0	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.000000000	760	0	0.000000000	0.000000000	0.000	0.00		
C2H8	0.0133	760	327800	0.013941082	760	327840	0.013947870	0.05	0.013944466	6.133821814	760	3320015	6.133821814	6.126875910	6.130	6.17		
C8H14*	0.0000	760	0	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.000000000	760	0	0.000000000	0.000000000	0.000	0.00		
G3H8	0.010074	760	343335	0.000118777	760	343356	0.000118875	0.09	0.000118726	0.135708588	760	365259	0.135708588	0.13487041	0.135	0.14		
I-C4H10	0.00180	760	128092	0.000088824	760	127973	0.000088903	0.09	0.000088862	0.000697798	760	150739	0.000697798	0.000680378	0.001	0.00		
N-C4H10	0.0000	760	0	0.000000000	760	0	0.000000000	0.31	0.000084482	0.001078696	760	150739	0.001078696	0.00063090	0.001	0.00		
I-C5H12	0.0000	760	0	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.000000000	760	0	0.000000000	0.000000000	0.000	0.00		
N-C5H12	0.0000	760	0	0.000000000	760	0	0.000000000	0.000000000	0.000000000	0.000000000	760	0	0.000000000	0.000000000	0.000	0.00		
TOTAL	100.1087		5236177			5238231				99.411701488		5186121	99.411701488	99.242905191	99.327	100.00		
HHV(BTU/SCF)																		

Chi

Signature

2/25/2009

Data File: c:\star\sys_13 data\cpc correlation\feb-2009\standard003.run



Sample ID: STANDARD

Run Mode: Analysis

Operator (Inj): MUSLIM IBR.

Peak Measurement: Peak Area

Injection Notes: 760 mmHg (CPC Correlation)

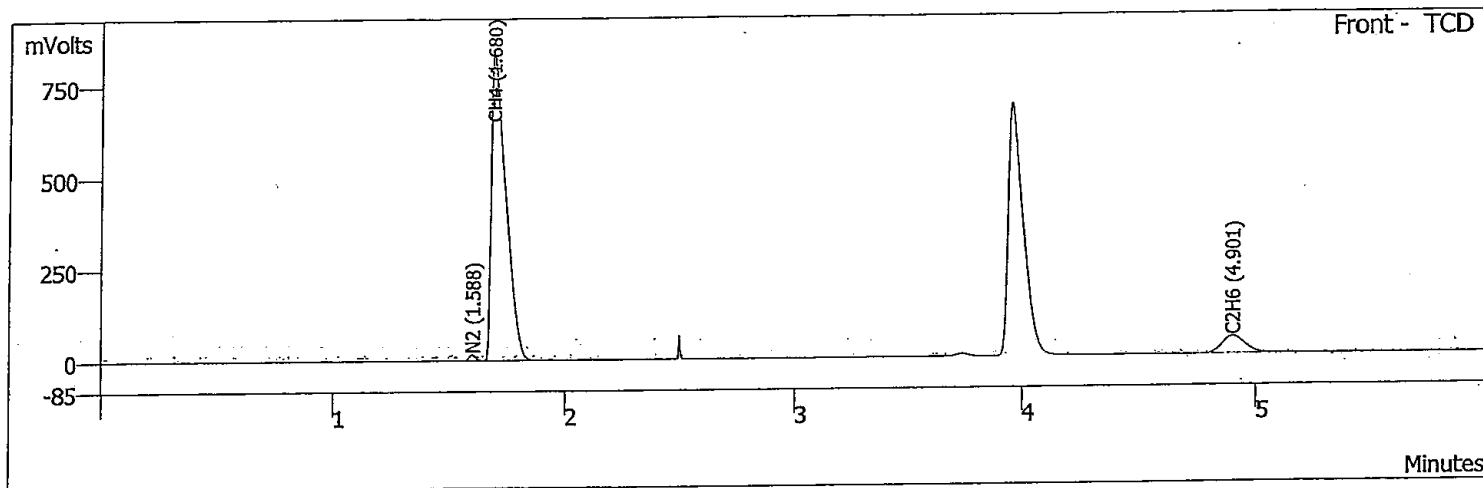
Peak Area External Std.

Injection Date: 02/24/2009 08:59:35 AM

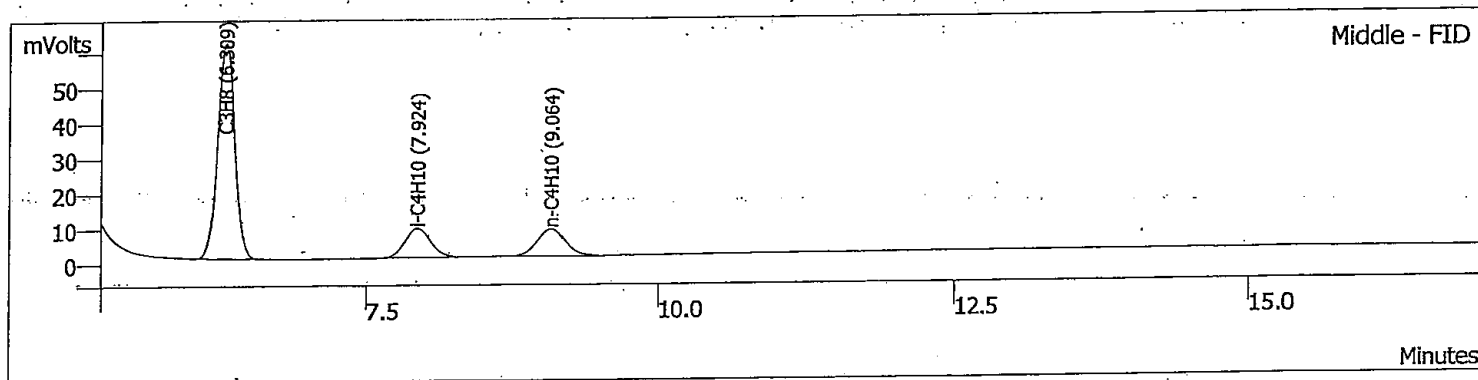
Injection Method: c:\star\sys_13\feb 09_sys 13.mth

Instrument (Inj): SYS_13

Calculation Method: c:\star\sys_13\feb 09_sys 13.mth



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	N2	1.588	29747	0.6069
2	CH4	1.680	3971052	93.9754
3	C2H6	4.901	327800	6.0681
Totals			4328599	100.6504



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	C3H8	6.309	644335	0.1003
2	i-C4H10	7.924	128092	0.0152
3	n-C4H10	9.064	135151	0.0158
Totals			907578	0.1313

Chir



Data File: c:\star\sys_13 data\cpc correlation\feb-2009\standard004.run



Sample ID: STANDARD

Run Mode: Analysis

Operator (Inj): MUSLIM IBR.

Peak Measurement: Peak Area

Injection Notes: 760 mmHg (CPC Correlation)

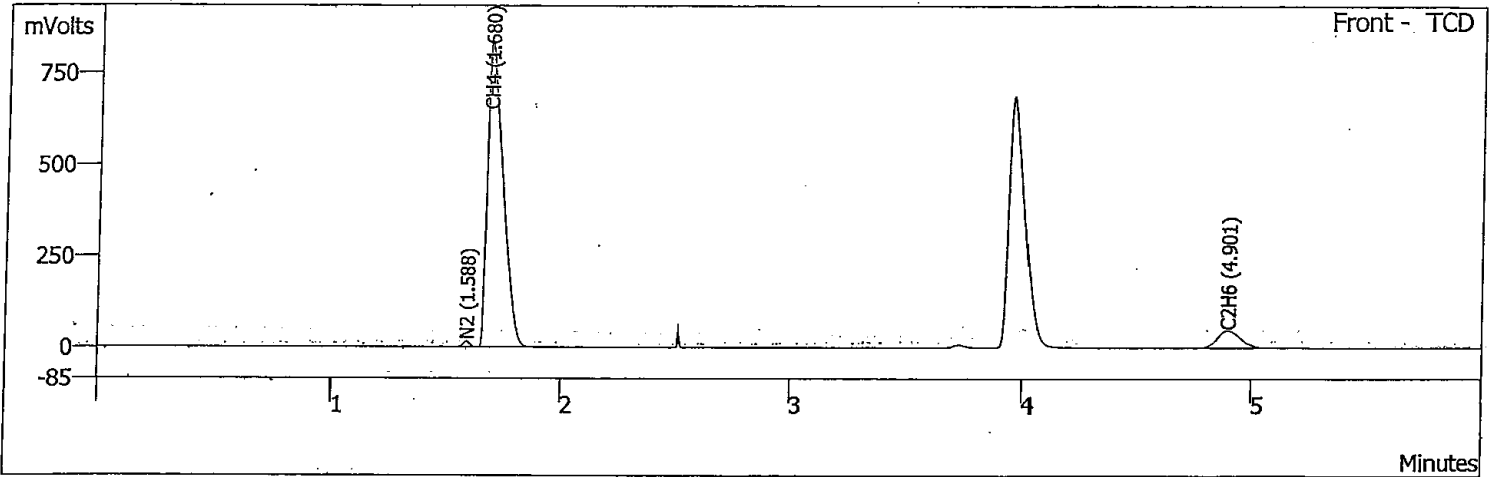
Peak Area External Std.

Injection Date: 02/24/2009 09:19:57 AM

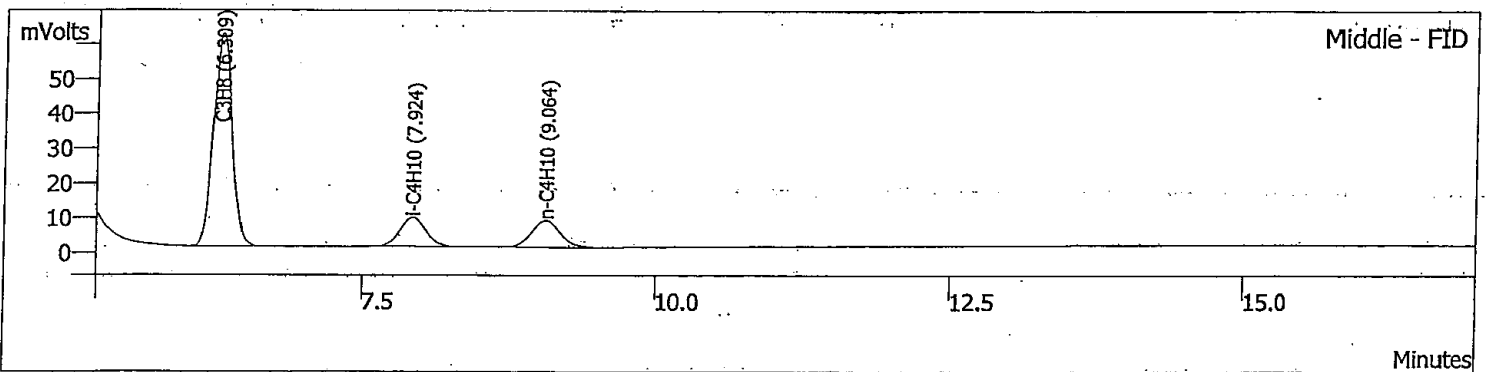
Injection Method: c:\star\sys_13\feb 09_sys 13.mth

Instrument (Inj): SYS_13

Calculation Method: c:\star\sys_13\feb 09_sys 13.mth



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	N2	1.588	29833	0.6087
2	CH4	1.680	3973169	94.0256
3	C2H6	4.901	327640	6.0651
Totals			4330642	100.6994



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	C3H8	6.309	644885	0.1004
2	i-C4H10	7.924	127973	0.0152
3	n-C4H10	9.064	134731	0.0157
Totals			907589	0.1313

Ch



Data File: c:\star\sys_13 data\cpc correlation\feb-2009\lean lng sample002.run



Sample ID: Lean LNG Sample

Run Mode: Analysis

Operator (Inj): MUSLIM IBR.

Peak Measurement: Peak Area

Injection Notes: 760 mmHg (CPC Correlation)

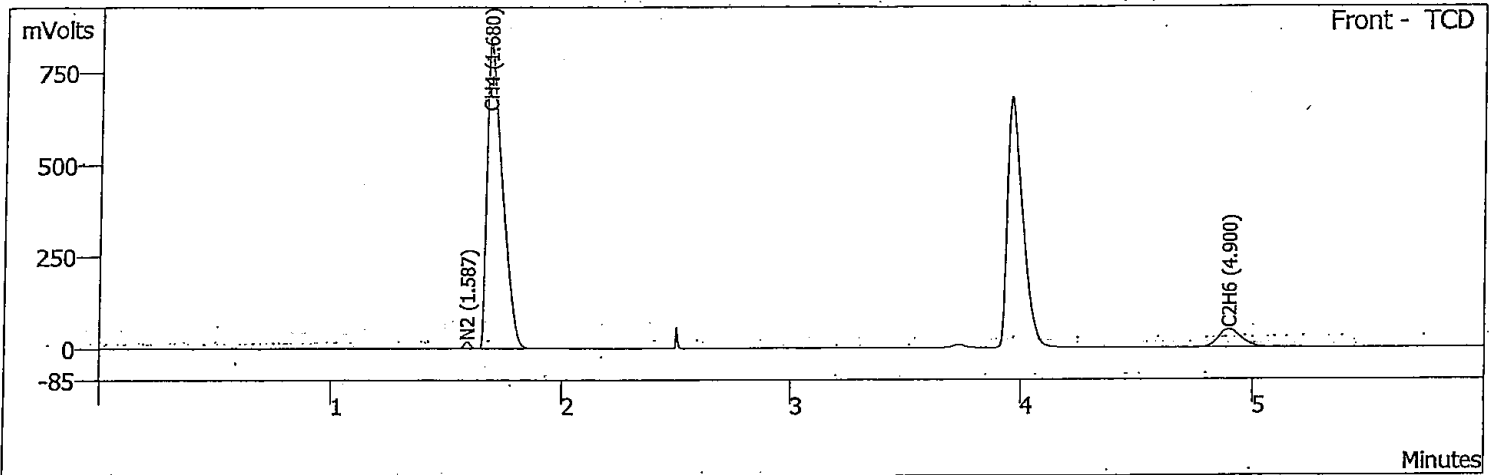
Peak Area External Std.

Injection Date: 02/24/2009 05:04:59 PM

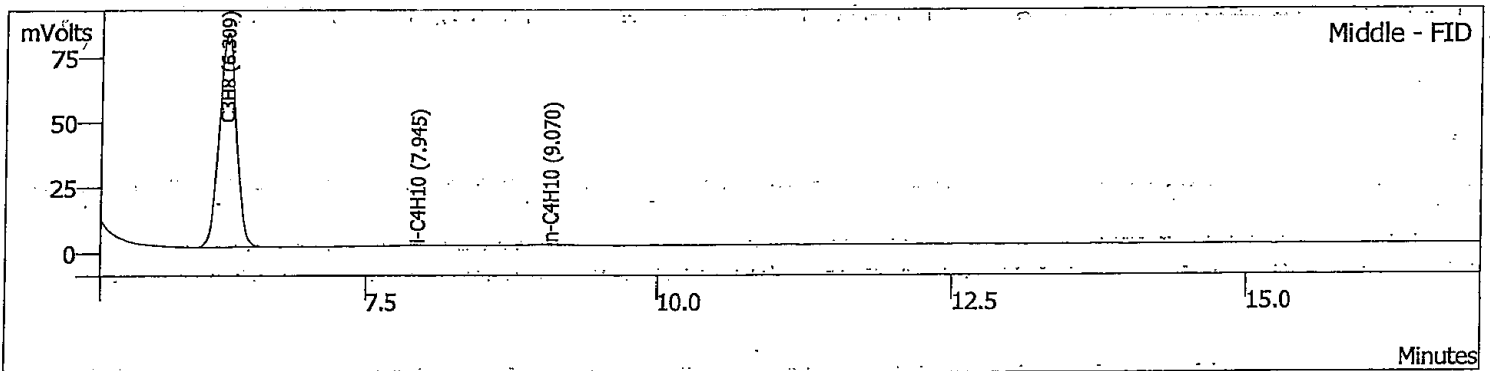
Injection Method: c:\star\sys_13\feb 09_sys 13.mth

Instrument (Inj): SYS_13

Calculation Method: c:\star\sys_13\feb 09_sys 13.mth

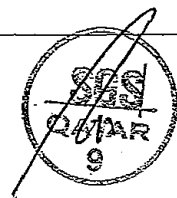


Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	N2	1.587	33627	0.6861
2	CH4	1.680	3933807	93.0940
3	C2H6	4.900	334305	6.1885
Totals			4301739	99.9686



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	C3H8	6.309	868710	0.1352
2	i-C4H10	7.945	5968	0.0007
3	n-C4H10	9.070	9704	0.0011
Totals			884382	0.1370

Chi



Data File: c:\star\sys_13 data\cpc correlation\feb-2009\lean lng sample003.run



Sample ID: Lean LNG Sample

Run Mode: Analysis

Operator (Inj): MUSLIM IBR.

Peak Measurement: Peak Area

Injection Notes: 760 mmHg (CPC Correlation)

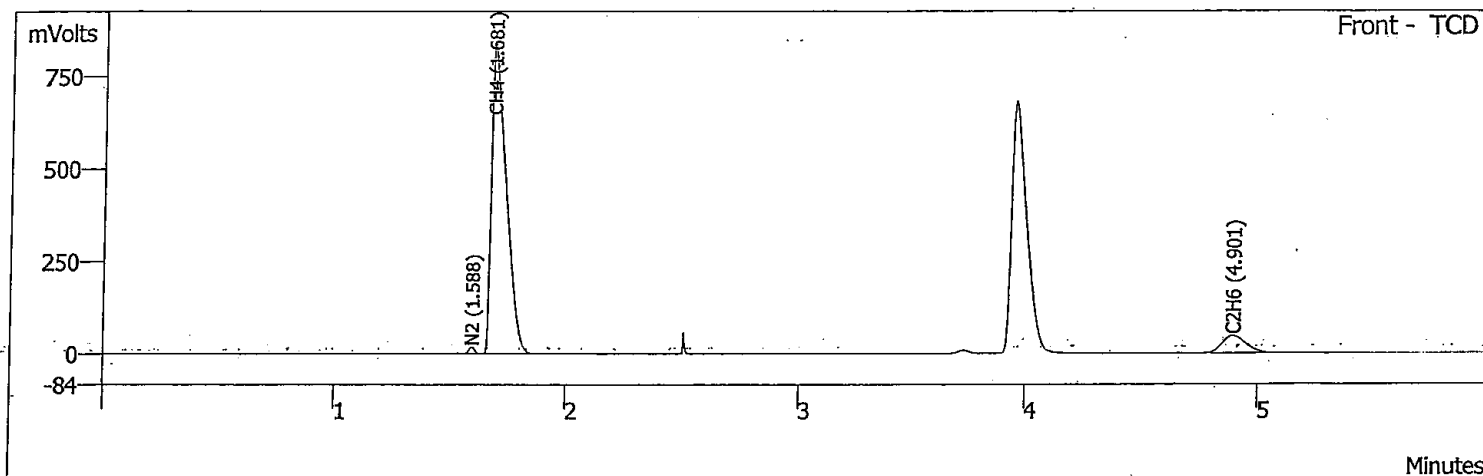
Peak Area External Std.

Injection Date: 02/24/2009 05:25:21 PM

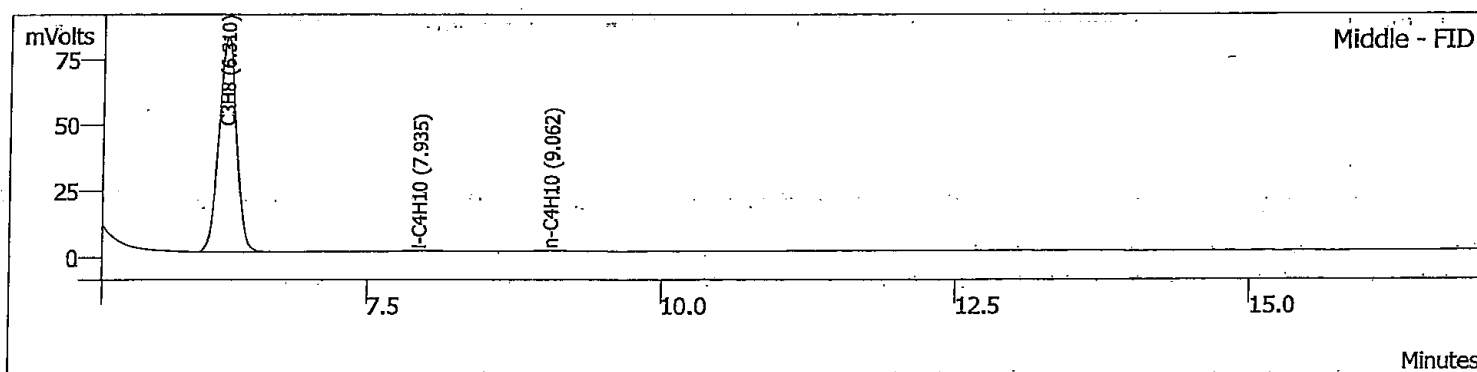
Injection Method: c:\star\sys_13\feb 09_sys 13.mth

Instrument (Inj): SYS_13

Calculation Method: c:\star\sys_13\feb 09_sys 13.mth



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	N2	1.588	33592	0.6854
2	CH4	1.681	3927044	92.9340
3	C2H6	4.901	333861	6.1803
Totals			4294497	99.7997



Peak No	Peak Name	Ret. Time (min)	Area (counts)	Result (mole %)
1	C3H8	6.310	863259	0.1344
2	i-C4H10	7.935	5819	0.0007
3	n-C4H10	9.062	8664	0.0010
Totals			877742	0.1361

clin





Nederlands Meetinstituut

CERTIFICATE

Number 3220957
Page 1 of 1

Description Gaseous certified reference material (CRM) consisting of several components in methane.
Cylinder number 7700983
Material number 1535496
Item 00002.

Method of certification The concentration was determined by comparison with an appropriate set of primary standard gas mixtures in accordance with International Standard ISO 6143:2004 (Gas analysis - Comparison methods for determining and checking the composition of calibration gas mixtures).

Result	Concentration methane	: (93,36 ± 0,32) × 10 ⁻² mol/mol.
	Concentration ethane	: (6,013 ± 0,030) × 10 ⁻² mol/mol.
	Concentration propane	: (0,1007 ± 0,0010) × 10 ⁻² mol/mol.
	Concentration i-butane	: (0,01497 ± 0,00015) × 10 ⁻² mol/mol.
	Concentration n-butane	: (0,01500 ± 0,00015) × 10 ⁻² mol/mol.
	Concentration nitrogen	: (0,603 ± 0,005) × 10 ⁻² mol/mol.

The reported uncertainty of measurement is based on the standard uncertainty multiplied by a coverage factor $k = 2$, which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty has been determined in accordance with the Guide to the Expression of Uncertainty in Measurement (GUM).

Traceability The results of the calibration services of NMI VSL are traceable to primary and/or (internationally accepted measurement standards).

Cylinder The cylinder pressure is 14,3 MPa.
Cylinder outlet conforms to DIN 1 specifications.

01/15 2008-07-29
NMI Van Swinderen Laboratorium B.V.

Calibration & Reference Material



NMI Van Swinderen Laboratorium B.V.
Nijseweg 11, 2623 JA Delft (NL)
P.O. Box 834, 2600 AR Delft, NL
T +31 15 269 15-80
F +31 15 261 29-71
| www.nmi.nl

This certificate is valid only if it is accompanied by the laboratory's certificate of analysis. The certificate of analysis is the primary document for the results of the analysis. The certificate of analysis is the primary document for the results of the analysis. The certificate of analysis is the primary document for the results of the analysis.