

3 9010  
389001

97-4024  
Vol 1 of 2

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# GREAT SOUTHLAND MINERALS

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**Analyses of gas samples  
by Amdel Limited Petroleum Services  
Drill holes Shittim #1 and Jericho #1  
Bruny Island**

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97-4024

ANALYSES OF GAS SAMPLES - EL 1/88  
GT. SOUTHLAND MINERALS - JERICHO  
AND BRUNY ISLAND - VOL 1 OF 2

389

Volume 1 of 2

**GREAT SOUTHLAND MINERALS PTY LTD**

ACN 068 650 386

**MICROFILMED**  
**FICHE No. 014341-45**

84 WELLS PARADE  
 BLACKMANS BAY  
 TASMANIA 7052  
 TEL: (03) 6229 6576  
 FAX: (03) 6229 2153

15 May, 1997

The Mining Engineer  
 Mineral Resources Tasmania  
 30 Gordons Hill Road  
 ROSNY PARK TAS 7018

Attention: Mr. W Grun

**AMDEL REPORTS**

Dear Wojciech,

Please find attached copies of reports from Amdel Limited Petroleum Services in Adelaide relating to gas sampled at Shittim #1 and Jericho #1 drill holes on Bruny Island.

DATE	WELLNAME	SAMPLE#	DATE	DEPTH
02/12/96	Shittim #1B		22/11/96	1630
			22/11/96	1631
06/12/96	Shittim #1C	105		
24/12/96	Shittim #1C	507	2/12/96	Choke manifold
		3		
		271	5/12/96	1645.3
		4		1643.2
		122	5/12/96	1640
		180	3/12/96	Choke manifold
31/12/96	Shittim #1C	water-GC	16/12/96	1664
			17/12/96	1674, 1676
10-13/01/97	Shittim #1C	core-GC		1676
06/02/97	Shittim #1D	322, 263, 403	28/01/97	1686
		410, 251	28/01/97	1686.8
07/02/97	Shittim #1D	513	29/01/97	1692.8
		113	30/01/97	1693.1
		109	30/01/97	1693.5
		201, 225	30/01/97	1693.6
		244	30/01/97	1695
		216	31/01/97	1695.7
		118	31/01/97	1696.9
		161	31/01/97	1698.3
11/02/97	Shittim #1D	core-GC		1689.2, 1700.1
12/02/97	Shittim #1D	200	1/02/97	1700.1
		206, 240	1/02/97	1703.1

ELI/88PT10  
 -1 JUL 1997  
 See folio 38

389003

DATE	WELLNAME	SAMPLE#	DATE	DEPTH
13/02/97	Shittim #1D	218	1/02/97	1703.6
		230, 288	3/02/97	1715.2
		308	5/02/97	1724.1
14/02/97	Shittim #1D	water-GC		1696.3, 1700.1
		117	6/02/97	1727.1
		316	7/02/97	1731.3
		318	7/02/97	1732.1
		323	7/02/97	1732.8
		313	8/02/97	1733
18/02/97	Shittim #1D	core-GC		1715, 1718
		174	8/02/97	1734.4
		173	11/02/97	1737.3
		321	11/02/97	1741.3
21/02/97	Shittim #1D	250	12/02/97	1745.8
		136, 304, 132	12/02/97	1748.8
		271	12/02/97	1751
11/03/97	Shittim #1D	162-CI		
25/03/97	Jericho #1A	338	12/03/97	232.3
		334	12/03/97	235.3
		336	14/03/97	258
		333	15/03/97	277
		335	19/03/97	350
08/04/97	Shittim #1D	132, 304, 321	26/02/97	1568 choke swab
		250, 341, 136	26/02/97	1568 choke swab
		343, 222, 174	26/02/97	1568 choke swab
		271	26/02/97	1568 choke swab
15/04/97	Jericho #1A	249	22/03/97	436
		350	22/03/97	446
		351	24/03/97	458
		352	25/03/97	500
		349	9/04/97	638
06/05/97	Jericho #1A	202	10/04/97	640
	Jericho #1B	180	17/04/97	Bottoms up

Regards,



David A Tanner, CPEng  
Exploration Manager

**FACSIMILE TRANSMISSION FROM:**

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

---

TO: Malcolm Bendall

---

COMPANY: Condor Oil Investment Pty Ltd

---

FAX NO: 036229 2153

DATE: 2 December, 1996

---

COPY TO:

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FROM: Carmelina Valente

TOTAL PAGES: 75

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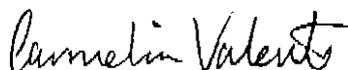
Malcolm,

Results for Shittim-1B at 1630m and 1631m follow,

	1630m	1631m
C1	402	207
C2	8.4	4.0
C3	2.3	1.2
C4	4.8	1.7
C5	2.7	0.96
C6	<1	<1

Results presented above are expressed in parts per million by volume.

Regards,



**Petroleum Chemist  
Petroleum Services**

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5351

 Sample: SHITTIM-1B  
 1630 m  
 22/11/96

GAS	MOL %
Oxygen plus Argon	20.32
Nitrogen	78.92
Helium	0.00
Carbon Dioxide	0.15
Hydrogen	0.61
Methane	0.00
Ethane	0.00
Propane	0.00
I-Butane	0.00
N-Butane	0.00
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.00
Hexanes	0.00
Heptanes	0.00
Octanes and higher h'cs	0.00
<b>Total</b>	<b>100.00</b>

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.69
Lower Flammability limit	654.42
Upper Flammability limit	12139.41
Ratio of upper to lower	18.55
Wobbe Index	0.07
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.991
Real gas Density (Rel to air = 1)	0.990
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.06
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.07
Real Nett Calorific Value MJ/m <sup>3</sup>	0.06
Real Gross Calorific Value MJ/m <sup>3</sup>	0.07
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.04

This report relates specifically to the sample submitted for analysis.

Signed



Date :

02-12-96

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5351

Sample: SHITIM-1B

1630 m

22/11/96

AIR CORRECTED

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	89.75
Helium	0.00
Carbon Dioxide	1.76
Hydrogen	8.49
Methane	0.00
Ethane	0.00
Propane	0.00
I-Butane	0.00
N-Butane	0.00
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.00
Hexanes	0.00
Heptanes	0.00
Octanes and higher hcs	0.00
Total	100.00

(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present. The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	26.09
Lower Flammability limit	47.10
Upper Flammability limit	873.74
Ratio of upper to lower	18.55
Wobbe Index	1.08
Compressibility Factor	1.0006
Ideal Gas Density (Rel to air = 1)	0.901
Real gas Density (Rel to air = 1)	0.900
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.87
Ideal Gross Calorific Value MJ/m <sup>3</sup>	1.03
Real Nett Calorific Value MJ/m <sup>3</sup>	0.87
Real Gross Calorific Value MJ/m <sup>3</sup>	1.03
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.98

This report relates specifically to the sample submitted for analysis.

Signed



Date :

02-12-96

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5351

Sample: SHITIM-1B  
1631 m  
22/11/96

GAS	MOL %
Oxygen plus Argon	16.03
Nitrogen	83.02
Helium	0.00
Carbon Dioxide	0.14
Hydrogen	0.81
Methane	0.00
Ethane	0.00
Propane	0.00
I-Butane	0.00
N-Butane	0.00
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.00
Hexanes	0.00
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

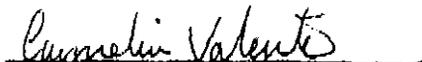
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.46
Lower Flammability limit	492.12
Upper Flammability limit	9139.90
Ratio of upper to lower	18.55
Wobbe Index	0.10
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.983
Real gas Density (Rel to air = 1)	0.983
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.08
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.10
Real Nett Calorific Value MJ/m <sup>3</sup>	0.08
Real Gross Calorific Value MJ/m <sup>3</sup>	0.10
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.07

This report relates specifically to the sample submitted for analysis.

Signed



Date :

02-12-96

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5351

Sample: SHITTIM-1B  
1631 m  
22/11/96

AIR CORRECTED

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	96.51
Helium	0.00
Carbon Dioxide	0.46
Hydrogen	3.03
Methane	0.00
Ethane	0.00
Propane	0.00
I-Butane	0.00
N-Butane	0.00
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.00
Hexanes	0.00
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.30
Lower Flammability limit	132.00
Upper Flammability limit	2448.53
Ratio of upper to lower	18.55
Wobbe Index	0.38
Compressibility Factor	1.0000
Ideal Gas Density (Rel to air = 1)	0.943
Real gas Density (Rel to air = 1)	0.942
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.31
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.37
Real Nett Calorific Value MJ/m <sup>3</sup>	0.31
Real Gross Calorific Value MJ/m <sup>3</sup>	0.37
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.33

This report relates specifically to the sample submitted for analysis.

Signod

Rumelin Valente

Date :

02-12-96



A.C.N. 008 127 802

**FACSIMILE TRANSMISSION FROM:**

389009

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

---

TO: Malcolm Bendall

---

COMPANY: Condor Oil Investment Pty Ltd

---

FAX NO: 036229 2153

DATE: 6 December, 1996

---

COPY TO:

---

FROM: Carmelina Valente

TOTAL PAGES: 4

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Malcolm,

The revised gas compositions for sample 105 follow,

105

C2 53

C3 15

C4 51

C5 46

C6 5.2

Results presented above are expressed in parts per million by volume.

Regards,

Carmelina Valente  
Petroleum Chemist  
Petroleum Services

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5368

Sample: Sample 105  
Air Corrected and Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Carbon Dioxide	5.86
Hydrogen	55.37
Methane	38.77
Ethane	0.00
Propane	0.00
I-Butane	0.00
N-Butane	0.00
Noo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.00
Hexanes	0.00
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	9.92
Lower Flammability limit	4.63
Upper Flammability limit	30.03
Ratio of upper to lower	6.48
Wobbe Index	36.42
Compressibility Factor	1.0051
Ideal Gas Density (Rel to air = 1)	0.342
Real gas Density (Rel to air = 1)	0.340
Ideal Nett Calorific Value MJ/m <sup>3</sup>	18.82
Ideal Gross Calorific Value MJ/m <sup>3</sup>	21.31
Real Nett Calorific Value MJ/m <sup>3</sup>	18.72
Real Gross Calorific Value MJ/m <sup>3</sup>	21.20
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	20.92

This report relates specifically to the sample submitted for analysis.

Signed

Pamela Valente

Date :

06-12-96

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5368

Sample: Sample 105  
Air Uncorrected

GAS	MOL %
Oxygen plus Argon	20.36
Nitrogen	78.51
Carbon Dioxide	0.11
Hydrogen	0.60
Methane	0.42
Ethane	0.00
Propane	0.00
I-Butane	0.00
N-Butane	0.00
Neo Pentane	0.00
1-Pentane	0.00
N-Pentane	0.00
Hexanes	0.00
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.64
Lower Flammability limit	427.35
Upper Flammability limit	2771.14
Ratio of upper to lower	6.48
Wobbe Index	0.23
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.989
Real gas Density (Rel to air = 1)	0.989
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.20
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.23
Real Nett Calorific Value MJ/m <sup>3</sup>	0.20
Real Gross Calorific Value MJ/m <sup>3</sup>	0.23
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.20

This report relates specifically to the sample submitted for analysis.

Signed

Carmelita Valente

Date :

06-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

**389012**

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5368

Sample: Sample 105  
Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	80.83
Carbon Dioxide	1.12
Hydrogen	10.62
Methane	7.43
Ethane	0.00
Propane	0.00
I-Butane	0.00
N-Butane	0.00
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.00
Hexanes	0.00
Heptanes	0.00
Octanes and higher h'ca	0.00
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	24.54
Lower Flammability limit	24.14
Upper Flammability limit	156.56
Ratio of upper to lower	6.48
Wobbe Index	4.44
Compressibility Factor	1.0007
Ideal Gas Density (Rel to air = 1)	0.847
Real gas Density (Rel to air = 1)	0.846
Ideal Nett Calorific Value MJ/m <sup>3</sup>	3.61
Ideal Gross Calorific Value MJ/m <sup>3</sup>	4.09
Real Nett Calorific Value MJ/m <sup>3</sup>	3.61
Real Gross Calorific Value MJ/m <sup>3</sup>	4.08
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	3.99

This report relates specifically to the sample submitted for analysis.

Signed

Lucretia Valente

Date :

06-12-96



A.C.N. 008 127 802

389013

**FACSIMILE TRANSMISSION FROM:**

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

---

TO: Malcolm Bendall

---

COMPANY: Condor Oil Investment Pty Ltd

---

FAX NO: 036229 2153                      DATE: 6 December, 1996

---

COPY TO:

---

FROM: Carmelina Valente                      TOTAL PAGES: 25

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Malcolm,

Gas composition for sample 105 follows,

105

C2 3.0  
C3 0.83  
C4 2.9  
C5 2.6  
C6 0.29

Results presented above are expressed in parts per million by volume.

Regards,

*Carmelina Valente*

Carmelina Valente  
Petroleum Chemist  
Petroleum Services

PETROLEUM SERVICES GAS ANALYSIS

Method OL-01-01/02

ASTM D 1945-91 (modified)

389014

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5368

Sample: Sample 105

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	97.62
Carbon Dioxide	1.36
Hydrogen	0.60
Methane	0.42
Ethane	0.00
Propane	0.00
I-Butane	0.00
N-Butane	0.00
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.00
Hexanes	0.00
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.02
Lower Flammability limit	427.35
Upper Flammability limit	2771.14
Ratio of upper to lower	6.48
Wobbe Index	0.23
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.968
Real gas Density (Rel to air = 1)	0.967
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.20
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.23
Real Net Calorific Value MJ/m <sup>3</sup>	0.20
Real Gross Calorific Value MJ/m <sup>3</sup>	0.23
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.20

This report relates specifically to the sample submitted for analysis.

Signed

Rumenin Valenti

Date :

06-12-96

## PETROLEUM SERVICES GAS ANALYSIS

Method GI-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # 1.Q5368

389015

Sample: Sample 105  
Air Uncorrected

GAS	MOL %
Oxygen plus Argon	20.36
Nitrogen	78.51
Carbon Dioxide	0.11
Hydrogen	0.60
Methane	0.42
Ethane	0.00
Propane	0.00
I-Butane	0.00
N-Butane	0.00
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.00
Hexanes	0.00
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.64
Lower Flammability limit	427.35
Upper Flammability limit	2771.14
Ratio of upper to lower	6.48
Wobbe Index	0.23
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.989
Real gas Density (Rel to air = 1)	0.989
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.20
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.23
Real Nett Calorific Value MJ/m <sup>3</sup>	0.20
Real Gross Calorific Value MJ/m <sup>3</sup>	0.23
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.20

This report relates specifically to the sample submitted for analysis.

Signed

Lucretia Valente

Date :

06-12-96



Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5368

Sample: Sample 105  
Air Corrected and Nitrogen Corrected

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Carbon Dioxide	5.86
Hydrogen	55.33
Methane	38.72
Ethane	0.028
Propane	0.0077
I-Butane	0.000
N-Butane	0.027
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.024
Hexanes	0.0027
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

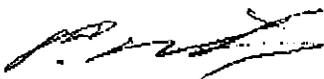
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	9.95
Lower Flammability Limit	4.62
Upper Flammability limit	29.97
Ratio of upper to lower	6.48
Wobbe Index	36.48
Compressibility Factor	1.0051
Ideal Gas Density (Rel to air = 1)	0.344
Real gas Density (Rel to air = 1)	0.342
Ideal Nett Calorific Value MJ/m <sup>3</sup>	18.89
Ideal Gross Calorific Value MJ/m <sup>3</sup>	21.39
Real Nett Calorific Value MJ/m <sup>3</sup>	18.80
Real Gross Calorific Value MJ/m <sup>3</sup>	21.28
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	21.00

This report relates specifically to the sample submitted for analysis.

Signed



Date :

06-12-96

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389018

Client: CONDOR OIL INVESTMENT PTY LTD

Report # I.Q5368

Sample: Sample 105  
Air Uncorrected

GAS	MOL %
Oxygen plus Argon	20.36
Nitrogen	78.51
Carbon Dioxide	0.11
Hydrogen	0.60
Methane	0.42
Ethane	0.0003
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0003
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0003
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

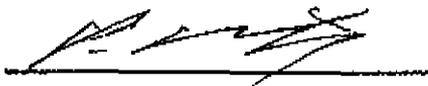
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.64
Lower Flammability limit	426.41
Upper Flammability limit	2763.37
Ratio of upper to lower	6.48
Wobbe Index	0.23
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.989
Real gas Density (Rel to air = 1)	0.989
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.20
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.23
Real Nett Calorific Value MJ/m <sup>3</sup>	0.20
Real Gross Calorific Value MJ/m <sup>3</sup>	0.23
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.20

This report relates specifically to the sample submitted for analysis.

Signed



Date :

06-12-96

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

 ASTM D 1945-91 (modified) **389019**

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5368

 Sample: Sample 105  
 Air Corrected

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	80.81
Carbon Dioxide	1.12
Hydrogen	10.62
Methane	7.43
Ethane	0.0053
Propane	0.0015
I-Butane	0.0000
N-Butane	0.0051
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0046
Hexanes	0.0005
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

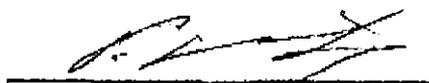
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	24.55
Lower Flammability limit	24.09
Upper Flammability limit	156.15
Ratio of upper to lower	6.48
Wobbe Index	4.46
Compressibility Factor	1.0007
Ideal Gas Density (Rel to air = 1)	0.848
Real gas Density (Rel to air = 1)	0.847
Ideal Nett Calorific Value MJ/m <sup>3</sup>	3.63
Ideal Gross Calorific Value MJ/m <sup>3</sup>	4.10
Real Nett Calorific Value MJ/m <sup>3</sup>	3.62
Real Gross Calorific Value MJ/m <sup>3</sup>	4.10
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	4.00

This report relates specifically to the sample submitted for analysis.

Signed



Date :

06-12-96

**FACSIMILE TRANSMISSION FROM:**

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

---

TO: **Malcolm Bendall**

---

COMPANY: **Condor Oil Investment Pty Ltd**

---

FAX NO: **036229 2153**

DATE: **6 December, 1996**

---

COPY TO:

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FROM: **Carmelina Valente**

TOTAL PAGES: **23**

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Malcolm,

Gas composition for sample 105 follows,

105

C2 3.0  
C3 0.83  
C4 2.9  
C5 2.6  
C6 0.29

Results presented above are expressed in parts per million by volume.

Regards,



**Carmelina Valente  
Petroleum Chemist  
Petroleum Services**

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified) **389021**

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5368

Sample: Sample 105

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	97.62
Carbon Dioxide	1.36
Hydrogen	0.60
Methane	0.42
Ethane	0.00
Propane	0.00
I-Butane	0.00
N-Butane	0.00
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.00
Hexanes	0.00
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.02
Lower Flammability limit	427.35
Upper Flammability limit	2771.14
Ratio of upper to lower	6.48
Wobbe Index	0.23
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.968
Real gas Density (Rel to air = 1)	0.967
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.20
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.23
Real Nett Calorific Value MJ/m <sup>3</sup>	0.20
Real Gross Calorific Value MJ/m <sup>3</sup>	0.23
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.20

This report relates specifically to the sample submitted for analysis.

Signed

Rumelin Valentis

Date :

06-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # I.Q5368

Sample: Sample 105  
Air Uncorrected

GAS	MOL %
Oxygen plus Argon	20.36
Nitrogen	78.51
Carbon Dioxide	0.11
Hydrogen	0.60
Methane	0.42
Ethane	0.00
Propane	0.00
I-Butane	0.00
N-Butane	0.00
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.00
Hexanes	0.00
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.64
Lower Flammability limit	427.35
Upper Flammability limit	2771.14
Ratio of upper to lower	6.48
Wobbe Index	0.23
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.989
Real gas Density (Rel to air = 1)	0.989
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.20
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.23
Real Nett Calorific Value MJ/m <sup>3</sup>	0.20
Real Gross Calorific Value MJ/m <sup>3</sup>	0.23
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.20

This report relates specifically to the sample submitted for analysis.

Signed

Lucretia Valente

Date :

06-12-96



389023

A.C.N. 008 127 802

**FACSIMILE TRANSMISSION FROM:**

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

---

TO: Malcolm Bendall

---

COMPANY: Condor Oil Investment Pty Ltd

---

FAX NO: 036229 2153                      DATE: 11 December, 1996

---

COPY TO:

---

FROM: Carmelina Valente                      TOTAL PAGES: 1

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Malcolm,

We have received a consignment containing the following samples:

500cc cylinder	A Manifold choke	2/12/96	08.00
500cc cylinder	A Manifold choke	3/12/96	04.00
500cc cylinder	Hot wire by suction	37 units	5/12/96 1640m
500cc cylinder	Flowline	37 units	5/12/96 03.20 1645.3m
1 X Glass bulb	700 units		
6 X Glass headspace bottles	"3"		
5 X Glass headspace bottles	"4"		
1 X Glass bottle	"5" Water sample from swab		1635m

Please advise what tests you require on these samples.

Also can you please supply an order number for this work and the tests already completed.

Regards,

Carmelina Valente  
Petroleum Chemist  
Petroleum Services



PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5390

389025

Sample: A - CHOKE MANIFOLD  
 2 psig @ 12°C  
 02/12/96, 8:00h, Cyl# 507  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	16.75
Nitrogen	82.91
Carbon Dioxide	0.02
Helium	0.03
Hydrogen	0.17
Methane	0.12
Ethane	0.0003
Propane	0.0002
I-Butane	0.0000
N-Butane	0.0004
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0004
Hexanes	0.0002
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.62
Lower Flammability limit	1495.42
Upper Flammability limit	9717.48
Ratio of upper to lower	6.50
Wobbe Index	0.07
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.988
Real gas Density (Rel to air = 1)	0.988
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.06
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.07
Real Nett Calorific Value MJ/m <sup>3</sup>	0.06
Real Gross Calorific Value MJ/m <sup>3</sup>	0.07
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.03

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date : 16-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method OL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5390

389026

Sample: A - CHOKE MANIFOLD  
 2 psig @ 12°C  
 02/12/96, 8:00h, Cyl# 507  
 Air and Nitrogen Corrected

GAS	MOL. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Carbon Dioxide	0.00
Helium	9.40
Hydrogen	53.29
Methane	36.86
Ethane	0.0862
Propane	0.0476
I-Butane	0.0000
N-Butane	0.1191
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.1348
Hexanes	0.0517
Heptanes	0.0088
Octanes and higher ncs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	7.63
Lower Flammability limit	4.77
Upper Flammability limit	31.00
Ratio of upper to lower	6.50
Wobbe Index	40.71
Compressibility Factor	1.0051
Ideal Gas Density (Rel to air = 1)	0.263
Real gas Density (Rel to air = 1)	0.262
Ideal Nett Calorific Value MJ/m <sup>3</sup>	18.48
Ideal Gross Calorific Value MJ/m <sup>3</sup>	20.90
Real Nett Calorific Value MJ/m <sup>3</sup>	18.38
Real Gross Calorific Value MJ/m <sup>3</sup>	20.79
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	20.51

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date : 16-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method UL-01-01/02

AS 1M D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5390

Sample: A - CHOKE MANIFOLD  
 2 psig @ 12°C  
 02/12/96, 8:00h, Cyl# 507  
 Air Corrected

389027

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	98.41
Carbon Dioxide	0.00
Helium	0.15
Hydrogen	0.85
Methane	0.59
Ethane	0.0014
Propane	0.0008
I-Butane	0.0000
N-Butane	0.0019
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0022
Hexanes	0.0008
Heptanes	0.0001
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.69
Lower Flammability limit	298.72
Upper Flammability limit	1941.14
Ratio of upper to lower	6.50
Wobbe Index	0.34
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.956
Real gas Density (Rel to air = 1)	0.956
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.30
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.33
Real Net Calorific Value MJ/m <sup>3</sup>	0.30
Real Gross Calorific Value MJ/m <sup>3</sup>	0.33
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.30

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date : 16-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # 1.Q5390

Sample: SAMPLE NO.3  
Air Uncorrected

389028

GAS	MOL %
Oxygen plus Argon	17.59
Nitrogen	74.70
Carbon Dioxide	0.22
Helium	0.09
Hydrogen	0.43
Methane	6.97
Ethane	0.0015
Propane	0.0002
I-Butane	0.0000
N-Butane	0.0004
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0005
Hexanes	0.0003
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.78
Lower Flammability Limit	66.54
Upper Flammability limit	212.43
Ratio of upper to lower	3.19
Wobbe Index	2.74
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.959
Real gas Density (Rel to air = 1)	0.959
Ideal Nett Calorific Value MJ/m <sup>3</sup>	2.41
Ideal Gross Calorific Value MJ/m <sup>3</sup>	2.68
Real Nett Calorific Value MJ/m <sup>3</sup>	2.41
Real Gross Calorific Value MJ/m <sup>3</sup>	2.68
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	2.61

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date : 16-12-96

PETROLBUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5390

Sample: SAMPLE NO.3  
Air Corrected

389029

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	55.64
Carbon Dioxide	0.93
Helium	0.52
Hydrogen	2.49
Methane	40.41
Ethane	0.0086
Propane	0.0013
I-Butane	0.0000
N-Butane	0.0021
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0029
Hexanes	0.0015
Heptanes	0.0001
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	22.55
Lower Flammability limit	11.48
Upper Flammability limit	36.64
Ratio of upper to lower	3.19
Wobbe Index	17.62
Compressibility Factor	0.9995
Ideal Gas Density (Rel to air = 1)	0.779
Real gas Density (Rel to air = 1)	0.779
Ideal Nett Calorific Value MJ/m <sup>3</sup>	13.98
Ideal Gross Calorific Value MJ/m <sup>3</sup>	15.55
Real Nett Calorific Value MJ/m <sup>3</sup>	13.99
Real Gross Calorific Value MJ/m <sup>3</sup>	15.56
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	15.26

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date : 16-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5390

Sample: SAMPLE NO.3  
Air Corrected and Nitrogen Corrected

389030

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Carbon Dioxide	2.09
Helium	1.18
Hydrogen	5.62
Methane	91.08
Ethane	0.0195
Propane	0.0030
I-Butane	0.0000
N-Butane	0.0048
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0064
Hexanes	0.0033
Heptanes	0.0003
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	15.71
Lower Flammability limit	5.09
Upper Flammability limit	16.26
Ratio of upper to lower	3.19
Wobbe Index	47.58
Compressibility Factor	0.9989
Ideal Gas Density (Rel to air = 1)	0.542
Real gas Density (Rel to air = 1)	0.543
Ideal Nett Calorific Value MJ/m <sup>3</sup>	31.52
Ideal Gross Calorific Value MJ/m <sup>3</sup>	35.05
Real Nett Calorific Value MJ/m <sup>3</sup>	31.55
Real Gross Calorific Value MJ/m <sup>3</sup>	35.09
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	34.43

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date : 16-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5390

Sample: FLOW LINE  
37 Units, 1psig, 1645.3m  
05/12/96, 3:20h, Cyl# 271  
Air Uncorrected

389031

GAS	MOL %
Oxygen plus Argon	19.01
Nitrogen	80.60
Carbon Dioxide	0.13
Helium	0.02
Hydrogen	0.20
Methane	0.0427
Ethane	0.0006
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0001
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0001
Hexanes	0.0003
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.73
Lower Flammability limit	1688.61
Upper Flammability limit	17637.77
Ratio of upper to lower	10.45
Wobbe Index	0.04
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.992
Real gas Density (Rel to air = 1)	0.992
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.04
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.04
Real Nett Calorific Value MJ/m <sup>3</sup>	0.04
Real Gross Calorific Value MJ/m <sup>3</sup>	0.04
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.01

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

16-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5390

Sample: FLOW LINE  
37 Units, 1 noig, 1645.3m  
05/12/96, 3:20h, Cyl# 271  
Air Corrected

**389032**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	96.67
Carbon Dioxide	0.79
Helium	0.19
Hydrogen	1.93
Methane	0.4123
Ethane	0.0036
Propane	0.0012
I-Butane	0.0000
N-Butane	0.0011
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0012
Hexanes	0.0026
Heptanes	0.0004
Octanes and higher h'os	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.54
Lower Flammability limit	174.78
Upper Flammability limit	1825.61
Ratio of upper to lower	10.45
Wobbe Index	0.41
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.931
Real gas Density (Rel to air = 1)	0.931
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.35
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.40
Real Nett Calorific Value MJ/m <sup>3</sup>	0.35
Real Gross Calorific Value MJ/m <sup>3</sup>	0.40
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.36

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date : 16-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5390

Sample: FLOW LINE  
37 Units, 1psig, 1645.3m  
05/12/96, 3:20h, Cyl# 271  
Air and Nitrogen Corrected

389033

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Carbon Dioxide	23.70
Helium	5.78
Hydrogen	57.82
Methane	12.3444
Ethane	0.1685
Propane	0.0356
I-Butane	0.0000
N-Butane	0.0330
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0350
Hexanes	0.0783
Heptanes	0.0130
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	13.99
Lower Flammability Limit	5.84
Upper Flammability Limit	61.01
Ratio of upper to lower	10.45
Wobbe Index	17.33
Compressibility Factor	1.0053
Ideal Gas Density (Rel to air = 1)	0.489
Real gas Density (Rel to air = 1)	0.480
Ideal Net Calorific Value MJ/m <sup>3</sup>	10.48
Ideal Gross Calorific Value MJ/m <sup>3</sup>	12.05
Real Net Calorific Value MJ/m <sup>3</sup>	10.42
Real Gross Calorific Value MJ/m <sup>3</sup>	11.98
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	11.81

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date : 16-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5390

Sample: SAMPLE NO.4  
 Cuttings Gas  
 HW 37, 1643.2m  
 Air Uncorrected

389034

GAS	MOL %
Oxygen plus Argon	18.84
Nitrogen	80.94
Carbon Dioxide	0.06
Helium	0.00
Hydrogen	0.11
Methane	0.05
Ethane	0.0005
Propane	0.0002
I-Butane	0.0000
N-Butane	0.0002
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0002
Hexanes	0.0001
Heptanes	0.0000
Octanes and higher h'vs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.74
Lower Flammability limit	2572.67
Upper Flammability limit	19257.80
Ratio of upper to lower	7.49
Webbe Index	0.03
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.992
Real gas Density (Rel to air = 1)	0.992
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.03
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.03
Real Nett Calorific Value MJ/m <sup>3</sup>	0.03
Real Gross Calorific Value MJ/m <sup>3</sup>	0.03
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.00

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

16-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5390

Sample: SAMPLE NO.4  
 Cuttings Gas  
 HW 37, 1643.2m  
 Air Corrected

389035

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	98.29
Carbon Dioxide	0.23
Helium	0.00
Hydrogen	0.99
Methane	0.49
Ethane	0.0045
Propane	0.0015
I-Butane	0.0000
N-Butane	0.0018
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0016
Hexanes	0.0011
Heptanes	0.0000
Octanes and higher hcs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.74
Lower Flammability limit	285.21
Upper Flammability limit	2134.99
Ratio of upper to lower	7.49
Wobbe Index	0.32
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.958
Real gas Density (Rel to air = 1)	0.957
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.28
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.31
Real Nett Calorific Value MJ/m <sup>3</sup>	0.28
Real Gross Calorific Value MJ/m <sup>3</sup>	0.31
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.28

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date : 16-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5390

Sample: SAMPLE NO.4  
Cuttings Gas  
HW 37, 1643.2m  
Air and Nitrogen Corrected

389036

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Carbon Dioxide	13.50
Helium	0.00
Hydrogen	57.64
Methane	28.25
Ethane	0.2631
Propane	0.0875
I-Butane	0.0000
N-Butane	0.1038
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0954
Hexanes	0.0613
Heptanes	0.0000
Octanes and higher h'ns	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	11.93
Lower Flammability limit	4.91
Upper Flammability limit	36.75
Ratio of upper to lower	7.49
Wobbe Index	28.43
Compressibility Factor	1.0052
Ideal Gas Density (Rel to air = 1)	0.412
Real gas Density (Rel to air = 1)	0.410
Ideal Nett Calorific Value MJ/m <sup>3</sup>	16.07
Ideal Gross Calorific Value MJ/m <sup>3</sup>	18.25
Real Nett Calorific Value MJ/m <sup>3</sup>	15.98
Real Gross Calorific Value MJ/m <sup>3</sup>	18.16
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	17.91

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

16-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # IQ5390

Sample: HOT WIRE BY SUCTION  
37 Units, 0 psig, 1640m  
05/12/96, Cyl# 122  
Air Uncorrected

389037

GAS	MOL %
Oxygen plus Argon	18.83
Nitrogen	80.89
Carbon Dioxide	0.04
Helium	0.05
Hydrogen	0.15
Methane	0.04
Ethane	0.00031
Propane	0.00010
I-Butane	0.00000
N-Butane	0.00009
Neo Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.00004
Hexanes	0.00005
Heptanes	0.00003
Octanes and higher h'cs	0.00000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.71
Lower Flammability limit	2183.36
Upper Flammability limit	21060.36
Ratio of upper to lower	9.65
Wobbe Index	0.03
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.991
Real gas Density (Rel to air = 1)	0.991
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.03
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.03
Real Nett Calorific Value MJ/m <sup>3</sup>	0.03
Real Gross Calorific Value MJ/m <sup>3</sup>	0.03
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.00

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

16-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5390

Sample: HOT WIRE BY SUCTION  
37 Units, 0 polg, 1640m  
05/12/96, Cyl# 122  
Air Corrected

389038

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	97.92
Carbon Dioxide	0.11
Helium	0.41
Hydrogen	1.23
Methane	0.33
Ethane	0.00235
Propane	0.00079
I-Butane	0.00000
N-Butane	0.00073
Neo Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.00033
Hexanes	0.00044
Heptanes	0.00020
Octanes and higher h'cs	0.00000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.57
Lower Flammability Limit	266.43
Upper Flammability Limit	2569.90
Ratio of upper to lower	9.65
Wobbe Index	0.28
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.952
Real gas Density (Rel to air = 1)	0.952
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.24
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.28
Real Net Calorific Value MJ/m <sup>3</sup>	0.24
Real Gross Calorific Value MJ/m <sup>3</sup>	0.28
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.24

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

16-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5390

Sample: HOT WIRE BY SUCTION  
37 Units, 0 psig, 1640m  
05/12/96, Cyl# 122  
Air and Nitrogen Corrected

389039

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Carbon Dioxide	5.13
Helium	19.71
Hydrogen	59.14
Methane	15.77
Ethane	0.12262
Propane	0.03785
I-Butane	0.00000
N-Butane	0.03509
Neo Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.01577
Hexanes	0.02129
Heptanes	0.00986
Octanes and higher hcs	0.00000
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	6.88
Lower Flammability Limit	5.54
Upper Flammability Limit	53.42
Ratio of upper to lower	9.65
Wobbe Index	27.35
Compressibility Factor	1.0059
Ideal Gas Density (Rel to air = 1)	0.238
Real gas Density (Rel to air = 1)	0.236
Ideal Nett Calorific Value MJ/m <sup>3</sup>	11.62
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.34
Real Nett Calorific Value MJ/m <sup>3</sup>	11.56
Real Gross Calorific Value MJ/m <sup>3</sup>	13.26
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	13.08

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date : 16-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5390

Sample: A - CHOKE MANIFOLD  
 2 psig @ 12°C  
 03/12/96, 4:00h, Cyl# 180  
 Air Uncorrected

389040

GAS	MOL %
Oxygen plus Argon	12.07
Nitrogen	78.74
Carbon Dioxide	0.01
Helium	0.09
Hydrogen	0.18
Methane	8.90
Ethane	0.0062
Propane	0.0003
I-Butane	0.0000
N-Butane	0.0008
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0010
Hexanes	0.0000
Heptanes	0.0006
Octanes and higher h'cs	0.0003
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.36
Lower Flammability limit	54.66
Upper Flammability limit	167.61
Ratio of upper to lower	3.07
Wobbe Index	3.48
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.945
Real gas Density (Rel to air = 1)	0.945
Ideal Nett Calorific Value MJ/m <sup>3</sup>	3.05
Ideal Gross Calorific Value MJ/m <sup>3</sup>	3.39
Real Nett Calorific Value MJ/m <sup>3</sup>	3.05
Real Gross Calorific Value MJ/m <sup>3</sup>	3.39
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	3.30

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date : 16-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: **CONDOR OIL INVESTMENT Pty Ltd**

Report # **J.Q5390**

Sample: **A - CHOKE MANIFOLD**  
**2 psig @ 12°C**  
**03/12/96, 4:00h, Cyl# 180**  
**Air Corrected**

**389041**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	77.31
Carbon Dioxide	0.00
Helium	0.22
Hydrogen	0.45
Methane	22.00
Ethane	0.0154
Propane	0.0008
I-Butane	0.0000
N-Butane	0.0019
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0024
Hexanes	0.0000
Heptanes	0.0015
Octanes and higher h'cs	0.0008
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	25.21
Lower Flammability Limit	22.11
Upper Flammability Limit	67.79
Ratio of upper to lower	3.07
Wobbe Index	8.97
Compressibility Factor	0.9995
Ideal Gas Density (Rel to air = 1)	0.871
Real gas Density (Rel to air = 1)	0.871
Ideal Nett Calorific Value MJ/m <sup>3</sup>	7.53
Ideal Gross Calorific Value MJ/m <sup>3</sup>	8.37
Real Nett Calorific Value MJ/m <sup>3</sup>	7.54
Real Gross Calorific Value MJ/m <sup>3</sup>	8.37
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	8.20

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date : 16-12-96

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT Pty Ltd

Report # LQ5390

Sample: A - CHOKE MANIFOLD  
2 psig @ 12°C  
03/12/96, 4:00h, Cyl# 180  
Air and Nitrogen Corrected

389042

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Carbon Dioxide	0.00
Helium	0.98
Hydrogen	1.96
Methane	96.96
Ethane	0.0679
Propane	0.0036
I-Butane	0.0000
N-Butane	0.0084
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0107
Hexanes	0.0000
Heptanes	0.0068
Octanes and higher h'os	0.0035
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	15.68
Lower Flammability limit	5.02
Upper Flammability limit	15.39
Ratio of upper to lower	3.07
Wobbe Index	50.13
Compressibility Factor	0.9984
Ideal Gas Density (Rel to air = 1)	0.541
Real gas Density (Rel to air = 1)	0.542
Ideal Nett Calorific Value MJ/m <sup>3</sup>	33.19
Ideal Gross Calorific Value MJ/m <sup>3</sup>	36. .
Real Nett Calorific Value MJ/m <sup>3</sup>	33.25
Real Gross Calorific Value MJ/m <sup>3</sup>	36.94
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	36.23

This report relates specifically to the sample submitted for analysis.

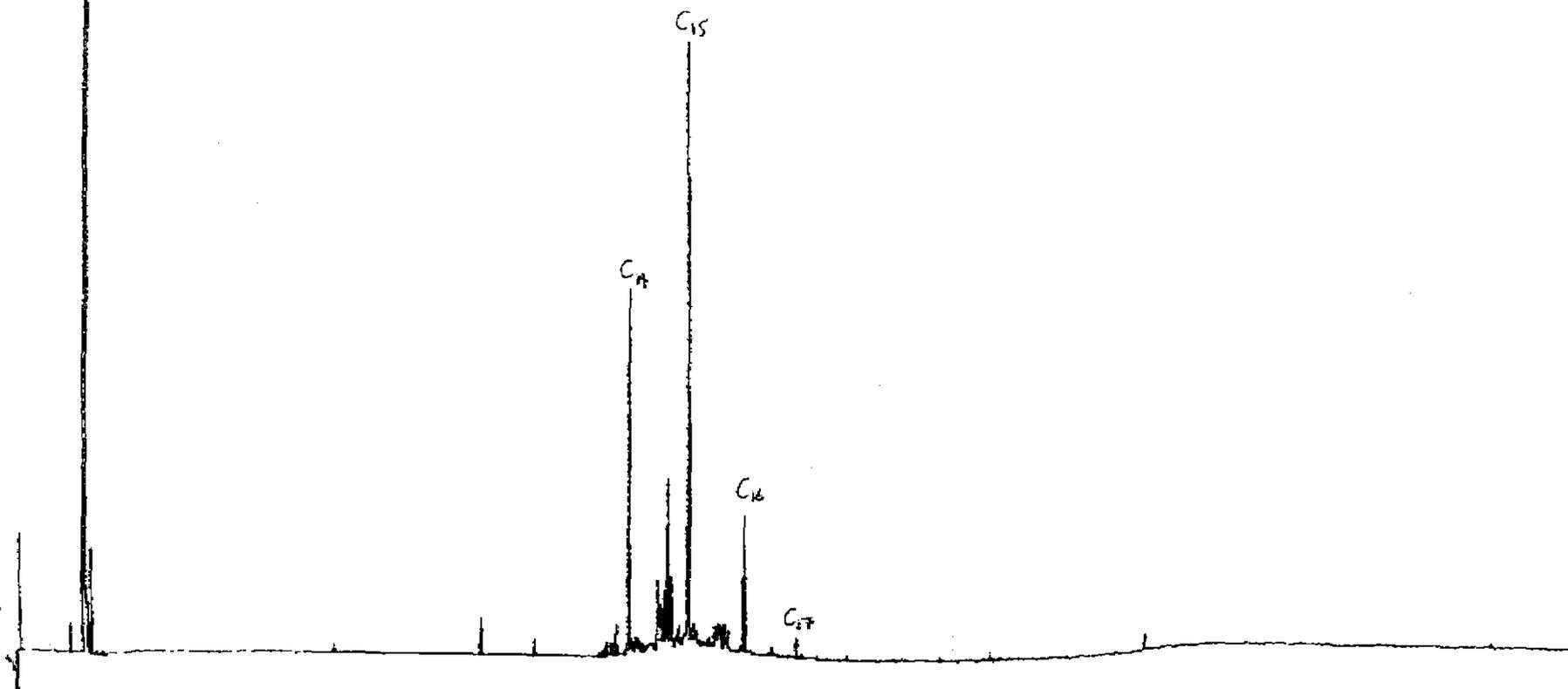
Signed \_\_\_\_\_

Date : 16-12-96



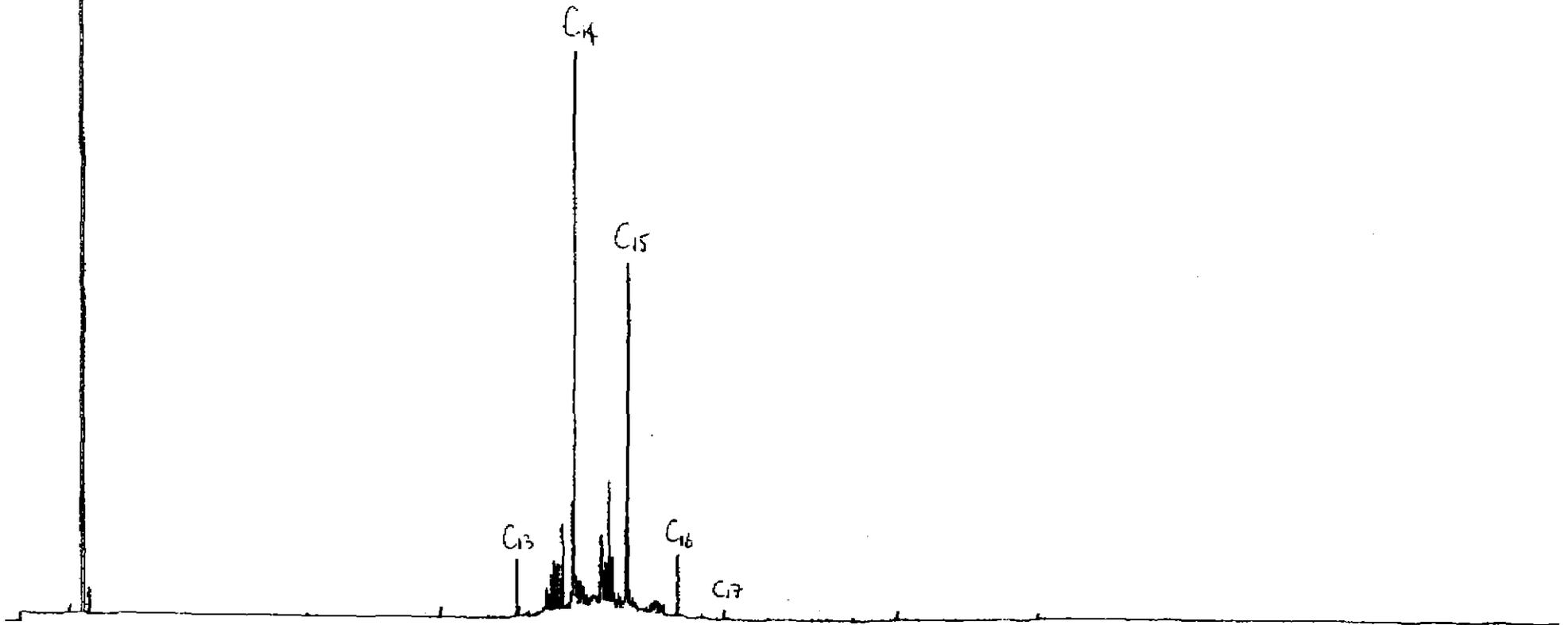
389044

Shittem-1C  
Water Sample  
16/12/96, 1664 m.  
GC of Extractable Organic Matter



389045

Shittem-1C  
Water Sample  
17/12/96, 1674 m.  
GC of Extractable Organic Matter



389046

Shittem-1C  
Water Sample  
17/12/96, 1676 m.  
GC of Extractable Organic Matter

C<sub>14</sub>

C<sub>15</sub>

C<sub>16</sub>

C<sub>17</sub>



**FACSIMILE TRANSMISSION FROM:**

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

389047

---

TO: Malcolm Bendall

---

COMPANY: Condor Oil Investments Pty Ltd

---

FAX NO: 03 6229 2153                      DATE: 10 January, 1997

---

COPY TO: Gerry Carne - 8332 7730

---

FROM: Scott Wythe                      TOTAL PAGES: 2

---

Malcolm/Gerry,

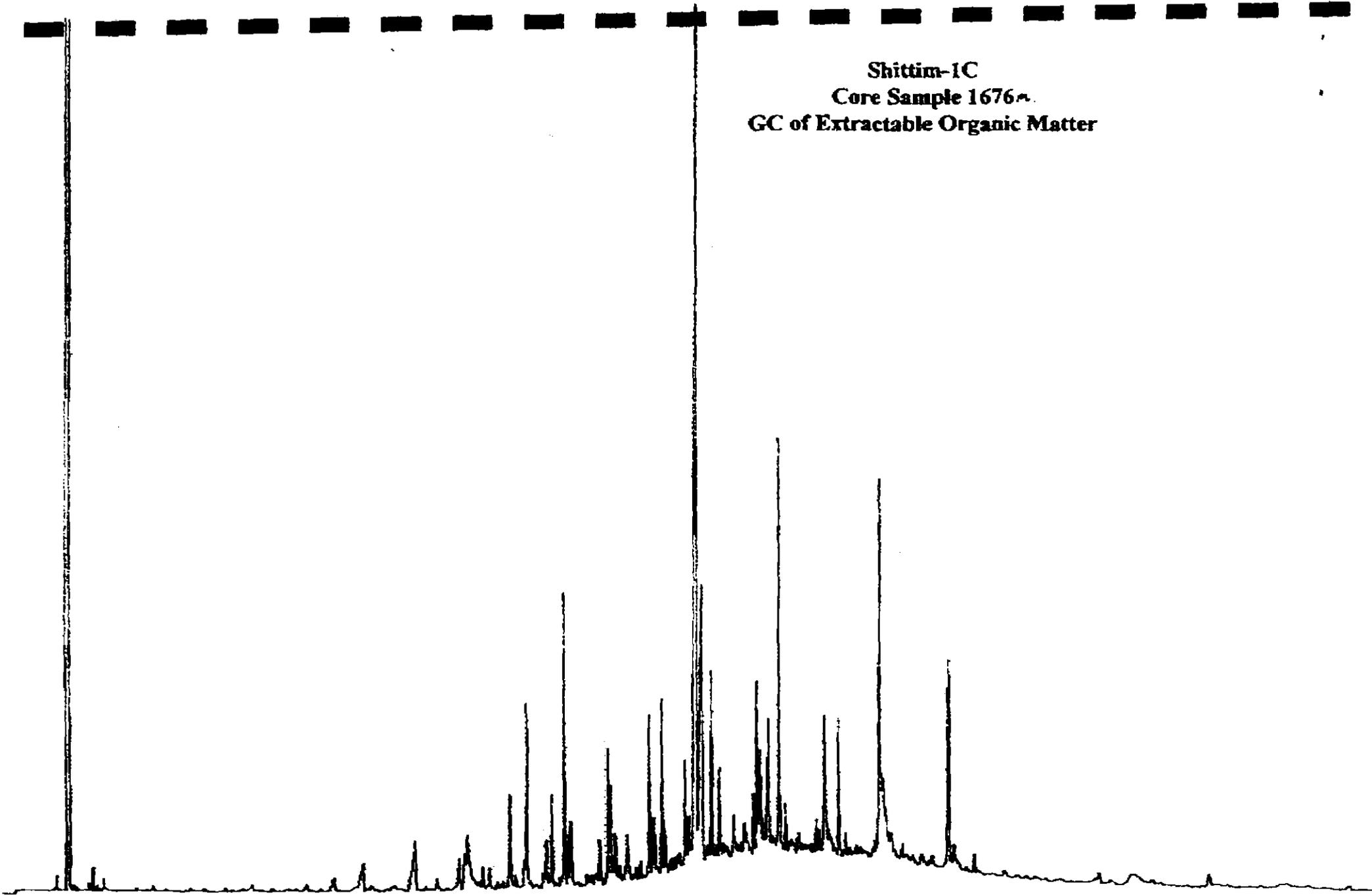
Please find following a gas chromatogram of the second extracted core from Shittim-1C, 1676m. We extracted a large amount of the core and the extract yield was a very low 9.66mg/kg. We are proceeding with liquid chromatography to separate the aromatic and saturated hydrocarbons.

Best Regards,



Scott Wythe  
Petroleum Geochemist  
Petroleum Services

Shittim-1C  
Core Sample 1676a  
GC of Extractable Organic Matter



389048

**FACSIMILE TRANSMISSION FROM:**

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

---

TO: Malcolm Bendall

---

COMPANY: Condor Oil Investments Pty Ltd

---

FAX NO: 03 6229 2153 / 03 6224 2227      DATE: 13 January, 1997

---

COPY TO: Gerry Carne - 8332 7730

---

FROM: Scott Wythe      TOTAL PAGES: 2

---

Malcolm/Gerry,

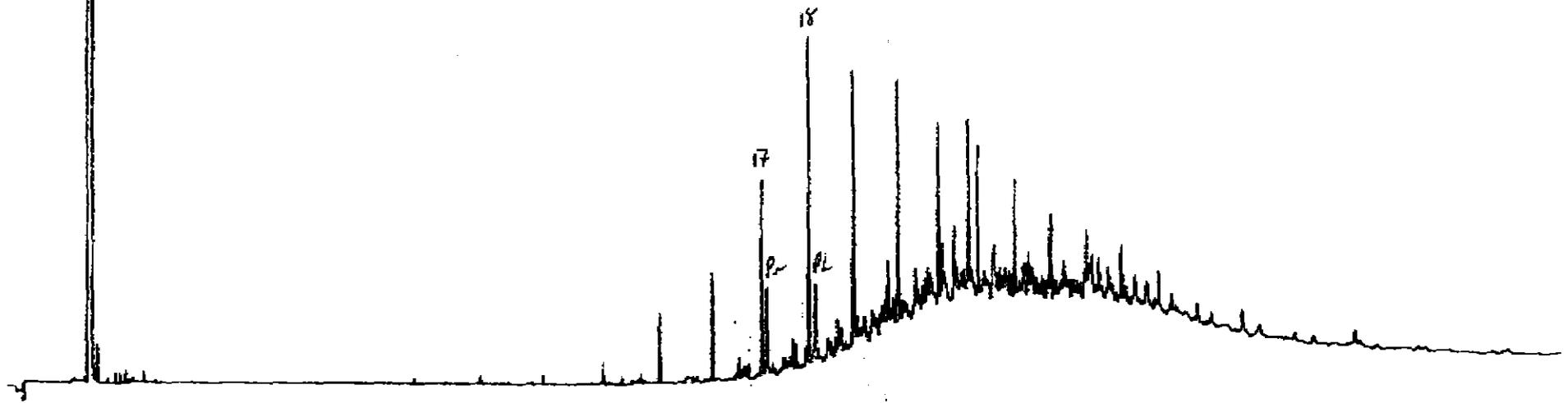
Please find following a gas chromatogram of the saturates fraction of the second extracted core from Shittim-1C, 1676m.

Best Regards,



Scott Wythe  
Petroleum Geochemist  
Petroleum Services

Shittim-1C  
Core Sample, 1676 m  
GC of Saturates Fraction



389050



Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5525

 Sample: SHITTIM 1-D, HOT WIRE SUCTION  
 Gas, 1686 m, 61 units  
 1 kPag @ 15°C, 28/01/97, 1040h, Cyl# 263  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	14.98
Carbon Dioxide	0.00
Hydrogen	51.59
Methane	32.78
Ethane	0.2829
Propane	0.1531
I-Butane	0.0000
N-Butane	0.1265
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0815
Hexanes	0.0062
Heptanes	0.0000
Octanes and higher h'es	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	7.19
Lower Flammability limit	5.06
Upper Flammability limit	33.96
Ratio of upper to lower	6.71
Wobbe Index	38.56
Compressibility Factor	1.0050
Ideal Gas Density (Rel to air = 1)	0.248
Real gas Density (Rel to air = 1)	0.247
Ideal Nett Calorific Value MJ/m <sup>3</sup>	16.97
Ideal Gross Calorific Value MJ/m <sup>3</sup>	19.21
Real Nett Calorific Value MJ/m <sup>3</sup>	16.89
Real Gross Calorific Value MJ/m <sup>3</sup>	19.12
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	18.86

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

05-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5525

 Sample: SHITIM 1-D, HOT WIRE SUCTION  
 Cuttings Gas, 1686.8 m, 27 units  
 1 kPag @ 15°C, 28/01/97, 1638h, Cyl# 410  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	4.99
Carbon Dioxide	0.00
Hydrogen	84.77
Methane	9.97
Ethane	0.194
Propane	0.030
I-Butane	0.000
N-Butane	0.025
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.024
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.61
Lower Flammability limit	4.29
Upper Flammability limit	54.61
Ratio of upper to lower	12.72
Wobbe Index	40.30
Compressibility Factor	1.0085
Ideal Gas Density (Rel to air = 1)	0.125
Real gas Density (Rel to air = 1)	0.124
Ideal Nett Calorific Value MJ/m <sup>3</sup>	12.26
Ideal Gross Calorific Value MJ/m <sup>3</sup>	14.23
Real Nett Calorific Value MJ/m <sup>3</sup>	12.16
Real Gross Calorific Value MJ/m <sup>3</sup>	14.11
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	13.96

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

05-02-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5525

Sample: SHITTIM 1-D, HOT WIRE SUCTION  
 Cuttings Gas, 1686.8 m, 15 units  
 1 kPag @ 15°C, 28/01/97, 1530h, Cyl# 251  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	6.56
Carbon Dioxide	0.00
Hydrogen	65.64
Methane	26.90
Ethane	0.578
Propane	0.098
I-Butane	0.000
N-Butane	0.066
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.098
Hexanes	0.045
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	6.27
Lower Flammability limit	4.51
Upper Flammability limit	36.24
Ratio of upper to lower	8.04
Wobbe Index	40.54
Compressibility Factor	1.0065
Ideal Gas Density (Rel to air = 1)	0.216
Real gas Density (Rel to air = 1)	0.215
Ideal Nett Calorific Value MJ/m <sup>3</sup>	16.57
Ideal Gross Calorific Value MJ/m <sup>3</sup>	18.86
Real Nett Calorific Value MJ/m <sup>3</sup>	16.46
Real Gross Calorific Value MJ/m <sup>3</sup>	18.74
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	18.51

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

05-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5525

Sample: SHITTIM 1-D, HOT WIRE SUCTION  
 Gas, 1686 m, 30 units  
 1 kPag @ 15°C, 28/01/97, 1400h, Cyl# 403  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	13.64
Carbon Dioxide	0.00
Hydrogen	44.32
Methane	40.91
Ethane	0.852
Propane	0.065
I-Butane	0.000
N-Butane	0.044
Noo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.167
Hexanes	0.013
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	8.44
Lower Flammability limit	5.07
Upper Flammability limit	29.21
Ratio of upper to lower	5.77
Wobbe Index	40.24
Compressibility Factor	1.0042
Ideal Gas Density (Rel to air = 1)	0.292
Real gas Density (Rel to air = 1)	0.290
Ideal Nett Calorific Value MJ/m <sup>3</sup>	19.29
Ideal Gross Calorific Value MJ/m <sup>3</sup>	21.73
Real Nett Calorific Value MJ/m <sup>3</sup>	19.21
Real Gross Calorific Value MJ/m <sup>3</sup>	21.64
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	21.33

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

05-02-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5525

Sample: SHITTIM 1-D, HOT WIRE SUCTION  
 Gas, 1686 m, 61 units  
 1 kPag @ 15°C, 28/01/97, 1040h, Cyl# 263  
 Air Uncorrected

GAS	MOI. %
Oxygen plus Argon	19.52
Nitrogen	79.85
Helium	0.09
Carbon Dioxide	0.03
Hydrogen	0.31
Methane	0.20
Ethane	0.00170
Propane	0.00092
1-Butane	0.00000
N-Butane	0.00076
Neo Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.00049
Hexanes	0.00004
Heptanes	0.00000
Octanes and higher h'cs	0.00000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.67
Lower Flammability limit	842.27
Upper Flammability limit	5651.90
Ratio of upper to lower	6.71
Wobbe Index	0.12
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.990
Real gas Density (Rel to air = 1)	0.990
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.10
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.12
Real Net Calorific Value MJ/m <sup>3</sup>	0.10
Real Gross Calorific Value MJ/m <sup>3</sup>	0.12
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.08

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

05-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389057

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5525

Sample: SHITTIM 1-D, HOT WIRE SUCTION  
 Gas, 1686 m, 61 units  
 1 kPag @ 15°C, 28/01/97, 1040h, Cyl# 263  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	93.66
Helium	0.94
Carbon Dioxide	0.05
Hydrogen	3.24
Methane	2.06
Ethane	0.0177
Propane	0.0096
I-Butane	0.0000
N-Butane	0.0079
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0051
Hexanes	0.0004
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	26.71
Lower Flammability limit	80.67
Upper Flammability limit	541.31
Ratio of upper to lower	6.71
Wobbe Index	1.26
Compressibility Factor	1.0000
Ideal Gas Density (Rel to air = 1)	0.922
Real gas Density (Rel to air = 1)	0.922
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.06
Ideal Gross Calorific Value MJ/m <sup>3</sup>	1.21
Real Nett Calorific Value MJ/m <sup>3</sup>	1.06
Real Gross Calorific Value MJ/m <sup>3</sup>	1.21
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.15

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

05-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

38905S

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5525

Sample: SHITTIM 1-D, HOT WIRE SUCTION  
Gas, 1686 m, 61 units  
1 kPag @ 15°C, 28/01/97, 1040h, Cyl# 263  
Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	14.86
Carbon Dioxide	0.76
Hydrogen	51.20
Methane	32.53
Ethane	0.2808
Propane	0.1519
I-Butane	0.0000
N-Butane	0.1255
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0809
Hexanes	0.0061
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	7.47
Lower Flammability limit	5.10
Upper Flammability limit	34.22
Ratio of upper to lower	6.71
Wobbe Index	37.54
Compressibility Factor	1.0050
Ideal Gas Density (Rel to air = 1)	0.258
Real gas Density (Rel to air = 1)	0.257
Ideal Nett Calorific Value MJ/m <sup>3</sup>	16.84
Ideal Gross Calorific Value MJ/m <sup>3</sup>	19.07
Real Nett Calorific Value MJ/m <sup>3</sup>	16.76
Real Gross Calorific Value MJ/m <sup>3</sup>	18.97
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	18.71

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

05-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389059

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5525

Sample: SHITTIM 1-D, HOT WIRE SUCTION  
 Cuttings Gas, 1626.8 m, 27 units  
 1 kPag @ 15°C, 28/01/97, 1638h, Cyl# 410  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	19.95
Nitrogen	79.77
Helium	0.01
Carbon Dioxide	0.08
Hydrogen	0.17
Methane	0.02
Ethane	0.00039
Propane	0.00006
I-Butane	0.00000
N-Butane	0.00005
Neo Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.00005
Hexanes	0.00000
Heptanes	0.00000
Octanes and higher h'cs	0.00000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.77
Lower Flammability limit	2140.16
Upper Flammability limit	27228.97
Ratio of upper to lower	12.72
Wobbe Index	0.03
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.993
Real gas Density (Rel to air = 1)	0.993
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.02
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.03
Real Nett Calorific Value MJ/m <sup>3</sup>	0.02
Real Gross Calorific Value MJ/m <sup>3</sup>	0.03
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.00

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

05-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

**389060**

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5525

Sample: SHITTIM 1-D, HOT WIRE SUCTION  
 Cuttings Gas, 1686.8 m, 27 units  
 1 kPag @ 15°C, 28/01/97, 1638h, Cyl# 410  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	96.88
Helium	0.13
Carbon Dioxide	0.58
Hydrogen	2.16
Methane	0.25
Ethane	0.0050
Propane	0.0008
1-Butane	0.0000
N-Butane	0.0006
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0006
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.48
Lower Flammability limit	168.51
Upper Flammability limit	2143.95
Ratio of upper to lower	12.72
Wobbe Index	0.37
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.949
Real gas Density (Rel to air = 1)	0.949
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.31
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.36
Real Nett Calorific Value MJ/m <sup>3</sup>	0.31
Real Gross Calorific Value MJ/m <sup>3</sup>	0.36
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.32

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

05-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5525

389061

Sample: SHITTIM 1-D, HOT WIRE SUCTION  
Cuttings Gas, 1686.8 m, 27 units  
1 kPag @ 15°C, 28/01/97, 1638h, Cyl# 410  
Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	4.06
Carbon Dioxide	18.51
Hydrogen	69.08
Methane	8.13
Ethane	0.158
Propane	0.025
I-Butane	0.000
N-Butane	0.020
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.020
Hexanes	0.000
Heptanes	0.000
Octanes and higher h/c's	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	11.09
Lower Flammability limit	5.27
Upper Flammability limit	67.01
Ratio of upper to lower	12.72
Wobbe Index	18.74
Compressibility Factor	1.0066
Ideal Gas Density (Rel to air = 1)	0.383
Real gas Density (Rel to air = 1)	0.380
Ideal Nett Calorific Value MJ/m <sup>3</sup>	9.99
Ideal Gross Calorific Value MJ/m <sup>3</sup>	11.60
Real Nett Calorific Value MJ/m <sup>3</sup>	9.93
Real Gross Calorific Value MJ/m <sup>3</sup>	11.52
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	11.37

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

05-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5525

Sample: SHITTIM 1-D, HOT WIRE SUCTION  
 Cuttings Gas, 1686.8 m, 15 units  
 1 kPag @ 15°C, 28/01/97, 1530h, Cyl# 251  
 Air Uncorrected

389062

GAS	MOL %
Oxygen plus Argon	20.43
Nitrogen	79.38
Helium	0.01
Carbon Dioxide	0.04
Hydrogen	0.10
Methane	0.04
Ethane	0.0009
Propane	0.0002
I-Butane	0.0000
N-Butane	0.0001
Neo Pentane	0.0000
1-Pentane	0.0000
N-Pentane	0.0002
Hexanes	0.0001
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.80
Lower Flammability limit	2958.96
Upper Flammability limit	23789.24
Ratio of upper to lower	8.04
Wobbe Index	0.03
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.994
Real gas Density (Rel to air = 1)	0.994
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.03
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.03
Real Nett Calorific Value MJ/m <sup>3</sup>	0.03
Real Gross Calorific Value MJ/m <sup>3</sup>	0.03
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.00

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

05-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTMD 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5525

Sample: SHITTIM 1-D, HOT WIRE SUCTION  
 Cuttings Gas, 1686.8 m, 15 units  
 1 kPag @ 15°C, 28/01/97, 1530h, Cyl# 251  
 Air Corrected

389063

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	97.11
Helium	0.17
Carbon Dioxide	0.29
Hydrogen	1.71
Methane	0.70
Ethane	0.015
Propane	0.003
I-Butane	0.000
N-Butane	0.002
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.003
Hexanes	0.001
Heptanes	0.000
Octanes and higher h'cs	0.000
<b>Total</b>	<b>100.00</b>

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.49
Lower Flammability limit	173.31
Upper Flammability limit	1393.34
Ratio of upper to lower	8.04
Wobbe Index	0.50
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.949
Real gas Density (Rel to air = 1)	0.949
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.43
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.49
Real Nett Calorific Value MJ/m <sup>3</sup>	0.43
Real Gross Calorific Value MJ/m <sup>3</sup>	0.49
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.45

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

05-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5525

Sample: SHITTIM 1-D, HOT WIRE SUCTION  
 Cuttings Gas, 1686.8 m, 15 units  
 1 kPag @ 15°C, 28/01/97, 1530h, Cyl# 251  
 Air & Nitrogen Corrected

389064

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	5.91
Carbon Dioxide	9.90
Hydrogen	59.14
Methane	24.25
Ethane	0.520
Propane	0.089
1-Butane	0.000
N-Butane	0.060
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.089
Hexanes	0.041
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	10.01
Lower Flammability limit	5.00
Upper Flammability limit	40.23
Ratio of upper to lower	8.04
Wobbe Index	28.91
Compressibility Factor	1.0056
Ideal Gas Density (Rel to air = 1)	0.345
Real gas Density (Rel to air = 1)	0.343
Ideal Nett Calorific Value MJ/m <sup>3</sup>	14.93
Ideal Gross Calorific Value MJ/m <sup>3</sup>	17.00
Real Nett Calorific Value MJ/m <sup>3</sup>	14.84
Real Gross Calorific Value MJ/m <sup>3</sup>	16.90
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	16.68

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

05-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5525

Sample: SHITTIM 1-D, HOT WIRE SUCTION  
Gas, 1686 m, 30 units  
1 kPag @ 15°C, 28/01/97, 1400h, Cyl# 403  
Air Uncorrected

### 389065

GAS	MOL %
Oxygen plus Argon	20.82
Nitrogen	78.89
Helium	0.04
Carbon Dioxide	0.00
Hydrogen	0.13
Methano	0.12
Ethane	0.00250
Propane	0.00019
I-Butane	0.00000
N-Butane	0.00013
Neo Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.00049
Hexanes	0.00004
Heptanes	0.00000
Octanes and higher h'cs	0.00000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.79
Lower Flammability limit	1726.95
Upper Flammability limit	9956.54
Ratio of upper to lower	5.77
Wobbe Index	0.06
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.994
Real gas Density (Rel to air = 1)	0.994
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.06
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.06
Real Nett Calorific Value MJ/m <sup>3</sup>	0.06
Real Gross Calorific Value MJ/m <sup>3</sup>	0.06
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.03

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

05-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5525

Sample: SHITTIM 1-D, HOT WIRE SUCTION  
 Gas, 1686 m, 30 units  
 1 kPag @ 15°C, 28/01/97, 1400h, Cyl# 403  
 Air Corrected

389066

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	93.28
Helium	0.92
Carbon Dioxide	0.00
Hydrogen	2.98
Methane	2.75
Ethane	0.0574
Propane	0.0044
I-Butane	0.0000
N-Butane	0.0030
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0112
Hexanes	0.0008
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	26.70
Lower Flammability limit	75.27
Upper Flammability limit	433.99
Ratio of upper to lower	5.77
Wobbe Index	1.52
Compressibility Factor	1.0000
Ideal Gas Density (Rel to air = 1)	0.922
Real gas Density (Rel to air = 1)	0.921
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.30
Ideal Gross Calorific Value MJ/m <sup>3</sup>	1.46
Real Nett Calorific Value MJ/m <sup>3</sup>	1.30
Real Gross Calorific Value MJ/m <sup>3</sup>	1.46
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.41

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

05-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5525

Sample: SHITTIM 1-D, HOT WIRE SUCTION  
 Gas, 1680 m, 30 units  
 1 kPag @ 15°C, 28/01/97, 1400h, Cyl# 403  
 Air & Nitrogen Corrected

**389067**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	13.64
Carbon Dioxide	0.00
Hydrogen	44.32
Methane	40.91
Ethane	0.852
Propane	0.065
1-Butane	0.000
N-Butane	0.044
Neo Pentane	0.000
1-Pentane	0.000
N-Pentane	0.167
Hexanes	0.013
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	8.44
Lower Flammability limit	5.07
Upper Flammability limit	29.21
Ratio of upper to lower	5.77
Wobbe Index	40.24
Compressibility Factor	1.0042
Ideal Gas Density (Rel to air = 1)	0.292
Real gas Density (Rel to air = 1)	0.290
Ideal Nett Calorific Value MJ/m <sup>3</sup>	19.29
Ideal Gross Calorific Value MJ/m <sup>3</sup>	21.73
Real Nett Calorific Value MJ/m <sup>3</sup>	19.21
Real Gross Calorific Value MJ/m <sup>3</sup>	21.64
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	21.33

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

05-02-97



## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

**389069**

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1693.1m, 32units  
 1 kPag @ 15°C, 30/01/97, 1022h, Cyl# 113  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	18.85
Nitrogen	80.81
Helium	0.01
Carbon Dioxide	0.08
Hydrogen	0.24
Methane	0.01
Ethane	0.00023
Propane	0.00008
I-Butane	0.00000
N-Butane	0.00005
Neo Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.00004
Hexanes	0.00000
Heptanes	0.00000
Octanes and higher h'cs	0.00000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.71
Lower Flammability limit	1600.37
Upper Flammability limit	24741.63
Ratio of upper to lower	15.46
Wobbe Index	0.03
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.991
Real gas Density (Rel to air = 1)	0.991
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.03
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.03
Real Nett Calorific Value MJ/m <sup>3</sup>	0.03
Real Gross Calorific Value MJ/m <sup>3</sup>	0.03
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.00

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1693.1m, 52units  
 1 kPag @ 15°C, 30/01/97, 1022h, Cyl# 113  
 Air Corrected

389070

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	97.43
Helium	0.08
Carbon Dioxide	0.41
Hydrogen	1.98
Methane	0.10
Ethane	0.0019
Propane	0.0007
I-Butane	0.0000
N-Butane	0.0005
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0003
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.53
Lower Flammability limit	194.01
Upper Flammability limit	2999.33
Ratio of upper to lower	15.46
Wobbe Index	0.29
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.951
Real gas Density (Rel to air = 1)	0.950
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.24
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.28
Real Nett Calorific Value MJ/m <sup>3</sup>	0.24
Real Gross Calorific Value MJ/m <sup>3</sup>	0.28
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.24

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1693.1m, 32units  
 1 kPag @ 15°C, 30/01/97, 1022h, Cyl# 113  
 Air & Nitrogen Corrected

389071

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	3.21
Carbon Dioxide	15.88
Hydrogen	77.07
Methane	3.71
Ethane	0.074
Propane	0.026
1-Butane	0.000
N-Butane	0.018
Neo Pentane	0.000
1-Pentane	0.000
N-Pentane	0.013
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	9.32
Lower Flammability limit	4.98
Upper Flammability limit	77.04
Ratio of upper to lower	15.46
Wobbe Index	19.09
Compressibility Factor	1.0076
Ideal Gas Density (Rel to air = 1)	0.322
Real gas Density (Rel to air = 1)	0.319
Ideal Nett Calorific Value MJ/m <sup>3</sup>	9.25
Ideal Gross Calorific Value MJ/m <sup>3</sup>	10.83
Real Nett Calorific Value MJ/m <sup>3</sup>	9.18
Real Gross Calorific Value MJ/m <sup>3</sup>	10.75
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	10.62

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTM-1D, HOT WIRE  
 Cuttings Gas, 1693.1m, 32units  
 1 kPag @ 15°C, 30/01/97, 1022h, Cyl# 113  
 Air, Nitrogen & Carbon Dioxide Corrected

389072

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	3.82
Carbon Dioxide	0.00
Hydrogen	91.62
Methane	4.41
Ethane	0.09
Propane	0.03
I-Butane	0.00
N-Butane	0.02
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.01
Hexanes	0.00
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	2.77
Lower Flammability limit	4.19
Upper Flammability limit	64.81
Ratio of upper to lower	15.46
Wobbe Index	41.63
Compressibility Factor	1.0092
Ideal Gas Density (Rel to air = 1)	0.096
Real gas Density (Rel to air = 1)	0.095
Ideal Nett Calorific Value MJ/m <sup>3</sup>	10.99
Ideal Gross Calorific Value MJ/m <sup>3</sup>	12.87
Real Nett Calorific Value MJ/m <sup>3</sup>	10.89
Real Gross Calorific Value MJ/m <sup>3</sup>	12.76
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	12.63

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

 Sample: SHITTIM-1D, HOT WIRE  
 Background Gas, 1693.8m, 60units  
 1 kPag @ 15°C, 30/01/97, 1610h, Cyl# 201  
 Air Uncorrected

**389073**

GAS	MOI. %
Oxygen plus Argon	20.62
Nitrogen	78.83
Helium	0.01
Carbon Dioxide	0.08
Hydrogen	0.45
Methane	0.01
Ethane	0.00015
Propane	0.00004
I-Butane	0.00000
N-Butane	0.00002
Neo Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.00002
Hoxanes	0.00000
Heptanes	0.00000
Octanes and higher h'cs	0.00000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.73
Lower Flammability limit	869.87
Upper Flammability limit	14550.38
Ratio of upper to lower	16.73
Wobbe Index	0.06
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.992
Real gas Density (Rel to air = 1)	0.992
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.05
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.06
Real Nett Calorific Value MJ/m <sup>3</sup>	0.05
Real Gross Calorific Value MJ/m <sup>3</sup>	0.06
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.03

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Background Gas, 1693.8m, 60units  
 1 kPag @ 15°C, 30/01/97, 1610h, Cyl# 201  
 Air Corrected

389074

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	89.89
Helium	0.19
Carbon Dioxide	0.92
Hydrogen	8.77
Methane	0.23
Ethane	0.0029
Propane	0.0009
I-Butane	0.0000
N-Butane	0.0005
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0004
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	25.81
Lower Flammability limit	44.64
Upper Flammability limit	746.67
Ratio of upper to lower	16.73
Wobbe Index	1.22
Compressibility Factor	1.0006
Ideal Gas Density (Rel to air = 1)	0.891
Real gas Density (Rel to air = 1)	0.890
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.98
Ideal Gross Calorific Value MJ/m <sup>3</sup>	1.15
Real Nett Calorific Value MJ/m <sup>3</sup>	0.98
Real Gross Calorific Value MJ/m <sup>3</sup>	1.15
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.10

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Background Gas, 1693.8m, 60units  
 1 kPag @ 15°C, 30/01/97, 1610h, Cyl# 201  
 Air & Nitrogen Corrected

389075

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	1.93
Carbon Dioxide	9.13
Hydrogen	86.63
Methane	2.27
Ethane	0.029
Propane	0.008
I-Butane	0.000
N-Butane	0.005
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.004
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	6.22
Lower Flammability limit	4.52
Upper Flammability limit	75.58
Ratio of upper to lower	16.73
Wobbe Index	24.53
Compressibility Factor	1.0086
Ideal Gas Density (Rel to air = 1)	0.215
Real gas Density (Rel to air = 1)	0.213
Ideal Nett Calorific Value MJ/m <sup>3</sup>	9.67
Ideal Gross Calorific Value MJ/m <sup>3</sup>	11.37
Real Nett Calorific Value MJ/m <sup>3</sup>	9.59
Real Gross Calorific Value MJ/m <sup>3</sup>	11.27
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	11.15

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date : 06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTM-1D, HOT WIRE  
 Background Gas, 1693.8m, 60units  
 1 kPag @ 15°C, 30/01/97, 1610h, Cyl# 201  
 Air, Nitrogen & Carbon Dioxide Corrected

389076

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	2.12
Carbon Dioxide	0.00
Hydrogen	95.33
Methane	2.50
Ethane	0.032
Propane	0.009
I-Butane	0.000
N-Butane	0.005
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.004
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	2.43
Lower Flammability limit	4.11
Upper Flammability limit	68.68
Ratio of upper to lower	16.73
Wobbe Index	43.22
Compressibility Factor	1.0096
Ideal Gas Density (Rel to air = 1)	0.084
Real gas Density (Rel to air = 1)	0.083
Ideal Nett Calorific Value MJ/m <sup>3</sup>	10.64
Ideal Gross Calorific Value MJ/m <sup>3</sup>	12.51
Real Nett Calorific Value MJ/m <sup>3</sup>	10.54
Real Gross Calorific Value MJ/m <sup>3</sup>	12.39
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	12.27

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITIM-1D, HOT WIRE  
 Cuttings Gas, 1695m, 58units  
 1 kPag @ 15°C, 30/01/97, 1710h, Cyl# 244  
 Air Uncorrected

389077

GAS	MOL %
Oxygen plus Argon	18.89
Nitrogen	80.57
Helium	0.01
Carbon Dioxide	0.03
Hydrogen	0.49
Methane	0.01
Ethane	0.00020
Propane	0.00007
I-Butane	0.00000
N-Butane	0.00004
Neo Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.00002
Hexanes	0.00000
Heptanes	0.00000
Octanes and higher h'cs	0.00000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.64
Lower Flammability limit	804.92
Upper Flammability limit	13953.88
Ratio of upper to lower	17.34
Wobbe Index	0.06
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.989
Real gas Density (Rel to air = 1)	0.989
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.05
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.06
Real Nett Calorific Value MJ/m <sup>3</sup>	0.05
Real Gross Calorific Value MJ/m <sup>3</sup>	0.06
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.03

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1695m, 58units  
 1 kPag @ 15°C, 30/01/97, 1710h, Cyl# 244  
 Air Corrected

**389078**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	95.69
Helium	0.08
Carbon Dioxide	0.08
Hydrogen	4.08
Methane	0.07
Ethane	0.0016
Propane	0.0006
I-Butane	0.0000
N-Butane	0.0003
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0001
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	26.94
Lower Flammability limit	96.78
Upper Flammability limit	1677.82
Ratio of upper to lower	17.34
Wobbe Index	0.54
Compressibility Factor	1.0001
Ideal Gas Density (Rel to air = 1)	0.930
Real gas Density (Rel to air = 1)	0.930
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.44
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.52
Real Nett Calorific Value MJ/m <sup>3</sup>	0.44
Real Gross Calorific Value MJ/m <sup>3</sup>	0.52
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.48

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

 Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1695m, 58units  
 1 kPag @ 15°C, 30/01/97, 1710h, Cyl# 244  
 Air & Nitrogen Corrected

**389079**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	1.93
Carbon Dioxide	1.77
Hydrogen	94.69
Methane	1.55
Ethane	0.038
Propane	0.014
I-Butane	0.000
N-Butane	0.008
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.003
Hexanes	0.000
Heptanes	0.000
Octanes and higher h/c's	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.04
Lower Flammability limit	4.17
Upper Flammability limit	72.21
Ratio of upper to lower	17.34
Wobbe Index	37.32
Compressibility Factor	1.0095
Ideal Gas Density (Rel to air = 1)	0.105
Real gas Density (Rel to air = 1)	0.104
Ideal Nett Calorific Value MJ/m <sup>3</sup>	10.26
Ideal Gross Calorific Value MJ/m <sup>3</sup>	12.08
Real Nett Calorific Value MJ/m <sup>3</sup>	10.16
Real Gross Calorific Value MJ/m <sup>3</sup>	11.97
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	11.85

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # I.Q5537

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1695m, 58units  
 1 kPag @ 15°C, 30/01/97, 1710h, Cyl# 244  
 Air, Nitrogen & Carbon Dioxide Corrected

389080

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	1.97
Carbon Dioxide	0.00
Hydrogen	96.40
Methane	1.57
Ethane	0.039
Propane	0.014
I-Butane	0.000
N-Butane	0.008
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.003
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	2.30
Lower Flammability limit	4.09
Upper Flammability limit	70.93
Ratio of upper to lower	17.34
Wobbe Index	43.66
Compressibility Factor	1.0097
Ideal Gas Density (Rel to air = 1)	0.079
Real gas Density (Rel to air = 1)	0.079
Ideal Nett Calorific Value MJ/m <sup>3</sup>	10.44
Ideal Gross Calorific Value MJ/m <sup>3</sup>	12.30
Real Nett Calorific Value MJ/m <sup>3</sup>	10.34
Real Gross Calorific Value MJ/m <sup>3</sup>	12.18
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	12.06

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTMD 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1693.8m, 17units  
 1 kPag @ 15°C, 30/01/97, 1253h, Cyl# 225  
 Air Uncorrected

389081

GAS	MOL %
Oxygen plus Argon	20.20
Nitrogen	79.63
Helium	0.01
Carbon Dioxide	0.04
Hydrogen	0.12
Methane	0.00
Ethane	0.00009
Propane	0.00002
I-Butane	0.00000
N-Butane	0.00000
Neo Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.00001
Hexanes	0.00000
Heptanes	0.00000
Octanes and higher h'os	0.00000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.79
Lower Flammability limit	3256.45
Upper Flammability limit	54123.76
Ratio of upper to lower	16.62
Wobbe Index	0.02
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.994
Real gas Density (Rel to air = 1)	0.994
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.01
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.02
Real Nett Calorific Value MJ/m <sup>3</sup>	0.01
Real Gross Calorific Value MJ/m <sup>3</sup>	0.02
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	-0.02

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITIM-1D, HOT WIRE  
 Cuttings Gas, 1693.8m, 17units  
 1 kPag @ 15°C, 30/01/97, 1253h, Cyl# 225  
 Air Corrected

389082

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	97.85
Helium	0.15
Carbon Dioxide	0.18
Hydrogen	1.77
Methane	0.05
Ethane	0.0013
Propane	0.0003
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0001
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.54
Lower Flammability limit	221.11
Upper Flammability limit	3674.95
Ratio of upper to lower	16.62
Wobbe Index	0.24
Compressibility factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.951
Real gas Density (Rel to air = 1)	0.951
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.20
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.23
Real Nett Calorific Value MJ/m <sup>3</sup>	0.20
Real Gross Calorific Value MJ/m <sup>3</sup>	0.23
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.20

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTM-1D, HOT WIRE  
 Cuttings Gas, 1693.8m, 17units  
 1 kPag @ 15°C, 30/01/97, 1253h, Cyl# 225  
 Air & Nitrogen Corrected

389083

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	6.87
Carbon Dioxide	8.34
Hydrogen	82.44
Methane	2.27
Ethane	0.061
Propane	0.015
I-Butane	0.000
N-Butane	0.000
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.007
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	6.00
Lower Flammability limit	4.74
Upper Flammability limit	78.78
Ratio of upper to lower	16.62
Wobbe Index	23.92
Compressibility Factor	1.0082
Ideal Gas Density (Rel to air = 1)	0.207
Real gas Density (Rel to air = 1)	0.205
Ideal Nett Calorific Value MJ/m <sup>3</sup>	9.26
Ideal Gross Calorific Value MJ/m <sup>3</sup>	10.89
Real Nett Calorific Value MJ/m <sup>3</sup>	9.19
Real Gross Calorific Value MJ/m <sup>3</sup>	10.80
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	10.67

This report relates specifically to the sample submitted for analysis

Signed \_\_\_\_\_

Date

06.02.97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1693.8m, 17units  
 1 kPag @ 15°C, 30/01/97, 1253h, Cyl# 225  
 Air, Nitrogen & Carbon Dioxide Corrected

389084

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	7.50
Carbon Dioxide	0.00
Hydrogen	89.94
Methane	2.46
Ethane	0.067
Propane	0.016
I-Butane	0.000
N-Butane	0.000
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.007
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
<b>Total</b>	<b>99.99</b>

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	2.54
Lower Flammability limit	4.34
Upper Flammability limit	72.21
Ratio of upper to lower	16.62
Wobbe Index	40.09
Compressibility Factor	1.0090
Ideal Gas Density (Rel to air = 1)	0.088
Real gas Density (Rel to air = 1)	0.087
Ideal Net Calorific Value MJ/m <sup>3</sup>	10.11
Ideal Gross Calorific Value MJ/m <sup>3</sup>	11.88
Real Net Calorific Value MJ/m <sup>3</sup>	10.01
Real Gross Calorific Value MJ/m <sup>3</sup>	11.77
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	11.65

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITIM-1D, HOT WIRE  
 Background Gas, 1695.7m, 42units  
 1 kPag @ 15°C, 31/01/97, 1020h, Cyl# 216  
 Air Uncorrected

389085

GAS	MOL %
Oxygen plus Argon	19.69
Nitrogen	79.94
Helium	0.01
Carbon Dioxide	0.04
Hydrogen	0.30
Methane	0.02
Ethane	0.00025
Propane	0.00007
I-Butane	0.00000
N-Butane	0.00008
Neo Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.00005
Hexanes	0.00000
Heptanes	0.00000
Octanes and higher h'os	0.00000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following paramotors are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.72
Lower Flammability limit	1271.91
Upper Flammability limit	19136.38
Ratio of upper to lower	15.05
Wobbe Index	0.04
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.992
Real gas Density (Rel to air = 1)	0.992
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.04
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.04
Real Nett Calorific Value MJ/m <sup>3</sup>	0.04
Real Gross Calorific Value MJ/m <sup>3</sup>	0.04
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.01

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date : 06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Background Gas, 1695.7m, 42units  
 1 kPag @ 15°C, 31/01/97, 1020h, Cyl# 216  
 Air Corrected

389086

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	96.17
Helium	0.11
Carbon Dioxide	0.14
Hydrogen	3.39
Methane	0.19
Ethane	0.0028
Propane	0.0008
I-Butane	0.0000
N-Butane	0.0009
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0006
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.10
Lower Flammability Limit	112.63
Upper Flammability Limit	1694.49
Ratio of upper to lower	15.05
Wobbe Index	0.50
Compressibility Factor	1.0001
Ideal Gas Density (Rel to air = 1)	0.936
Real gas Density (Rel to air = 1)	0.935
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.42
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.49
Real Net Calorific Value MJ/m <sup>3</sup>	0.42
Real Gross Calorific Value MJ/m <sup>3</sup>	0.49
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.45

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

389087

Sample: SHITTIM-1D, HOT WIRE  
 Background Gas, 1695.7m, 42units  
 1 kPag @ 15°C, 31/01/97, 1020h, Cyl# 216  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	2.94
Carbon Dioxide	3.54
Hydrogen	88.35
Methane	5.04
Ethane	0.074
Propane	0.020
I-Butane	0.000
N-Butane	0.024
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.016
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	4.32
Lower Flammability limit	4.32
Upper Flammability limit	64.98
Ratio of upper to lower	15.05
Wobbe Index	32.88
Compressibility Factor	1.0089
Ideal Gas Density (Rel to air = 1)	0.149
Real gas Density (Rel to air = 1)	0.148
Ideal Nett Calorific Value MJ/m <sup>3</sup>	10.86
Ideal Gross Calorific Value MJ/m <sup>3</sup>	12.70
Real Nett Calorific Value MJ/m <sup>3</sup>	10.76
Real Gross Calorific Value MJ/m <sup>3</sup>	12.59
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	12.46

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Background Gas, 1695.7m, 42units  
 1 kPag @ 15°C, 31/01/97, 1020h, Cyl# 216  
 Air, Nitrogen & Carbon Dioxide Corrected

**389088**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	3.05
Carbon Dioxide	0.00
Hydrogen	91.59
Methane	5.22
Ethane	0.08
Propane	0.02
I-Butane	0.00
N-Butane	0.02
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.02
Hexanes	0.00
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	2.86
Lower Flammability limit	4.17
Upper Flammability limit	62.68
Ratio of upper to lower	15.05
Wobbe Index	41.87
Compressibility Factor	1.0092
Ideal Gas Density (Rel to air = 1)	0.099
Real gas Density (Rel to air = 1)	0.098
Ideal Nett Calorific Value MJ/m <sup>3</sup>	11.26
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.17
Real Nett Calorific Value MJ/m <sup>3</sup>	11.15
Real Gross Calorific Value MJ/m <sup>3</sup>	13.05
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	12.91

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITIM-1D, HOT WIRE  
 Gas, 1692.8m  
 0 kPag, 29/01/97, Cyl# 513  
 Air Uncorrected

**389089**

GAS	MOL %
Oxygen plus Argon	19.67
Nitrogen	80.19
Helium	0.01
Carbon Dioxide	0.04
Hydrogen	0.09
Methane	0.004
Ethane	0.00008
Propane	0.00003
I-Butane	0.00000
N-Butane	0.00000
Neo Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.00000
Hexanes	0.00000
Heptanes	0.00000
Octanes and higher h'cs	0.00000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.78
Lower Flammability limit	4280.70
Upper Flammability limit	66875.50
Ratio of upper to lower	15.62
Wobbe Index	0.01
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.994
Real gas Density (Rel to air = 1)	0.994
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.01
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.01
Real Nett Calorific Value MJ/m <sup>3</sup>	0.01
Real Gross Calorific Value MJ/m <sup>3</sup>	0.01
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	-0.02

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Gas, 1692.8m  
 0 kPag, 29/01/97, Cyl# 513  
 Air Corrected

**389000**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	98.67
Helium	0.11
Carbon Dioxide	0.14
Hydrogen	1.03
Methane	0.05
Ethane	0.0009
Propane	0.0003
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.74
Lower Flammability limit	375.60
Upper Flammability limit	5867.85
Ratio of upper to lower	15.62
Wobbe Index	0.15
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.958
Real gas Density (Rel to air = 1)	0.957
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.12
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.14
Real Nett Calorific Value MJ/m <sup>3</sup>	0.12
Real Gross Calorific Value MJ/m <sup>3</sup>	0.14
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.11

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITIM-1D, HOT WIRE  
 Gas, 1692.8m  
 0 kPag, 29/01/97, Cyl# 513  
 Air & Nitrogen Corrected

**389091**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	8.58
Carbon Dioxide	10.59
Hydrogen	77.22
Methane	3.52
Ethane	0.070
Propane	0.022
I-Butane	0.000
N-Butane	0.000
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.000
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	7.16
Lower Flammability limit	4.99
Upper Flammability limit	77.95
Ratio of upper to lower	15.62
Wobbe Index	21.58
Compressibility Factor	1.0077
Ideal Gas Density (Rel to air = 1)	0.247
Real gas Density (Rel to air = 1)	0.245
Ideal Nett Calorific Value MJ/m <sup>3</sup>	9.15
Ideal Gross Calorific Value MJ/m <sup>3</sup>	10.73
Real Nett Calorific Value MJ/m <sup>3</sup>	9.08
Real Gross Calorific Value MJ/m <sup>3</sup>	10.65
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	10.52

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Gas, 1692.8m  
 0 kPag, 29/01/97, Cyl# 513  
 Air, Nitrogen & Carbon Dioxide Corrected

**389092**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	9.60
Carbon Dioxide	0.00
Hydrogen	86.37
Methane	3.93
Ethane	0.079
Propane	0.025
I-Butane	0.000
N-Butane	0.000
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.000
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	2.79
Lower Flammability limit	4.46
Upper Flammability limit	69.69
Ratio of upper to lower	15.62
Wobbe Index	38.66
Compressibility Factor	1.0087
Ideal Gas Density (Rel to air = 1)	0.096
Real gas Density (Rel to air = 1)	0.095
Ideal Nett Calorific Value MJ/m <sup>3</sup>	10.24
Ideal Gross Calorific Value MJ/m <sup>3</sup>	12.00
Real Nett Calorific Value MJ/m <sup>3</sup>	10.15
Real Gross Calorific Value MJ/m <sup>3</sup>	11.90
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	11.77

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1693.5m, 10units  
 1 kPag @ 15°C, 30/01/97, 1140h, Cyl# 109  
 Air Uncorrected

**389093**

GAS	MOL %
Oxygen plus Argon	20.54
Nitrogen	79.34
Helium	0.01
Carbon Dioxide	0.05
Hydrogen	0.06
Methane	0.004
Ethane	0.00005
Propane	0.00000
I-Butane	0.00000
N-Butane	0.00000
Neo Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.00000
Hexanes	0.00000
Heptanes	0.00000
Octanes and higher h'cs	0.00000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.82
Lower Flammability limit	6306.68
Upper Flammability limit	91554.91
Ratio of upper to lower	14.52
Wobbe Index	0.01
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.995
Real gas Density (Rel to air = 1)	0.995
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.01
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.01
Real Nett Calorific Value MJ/m <sup>3</sup>	0.01
Real Gross Calorific Value MJ/m <sup>3</sup>	0.01
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	-0.02

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITIM-1D, HOT WIRE  
 Cuttings Gas, 1693.5m, 10units  
 1 kPag @ 15°C, 30/01/97, 1140h, Cyl# 109  
 Air Corrected

389094

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	98.28
Helium	0.19
Carbon Dioxide	0.33
Hydrogen	1.12
Methane	0.08
Ethane	0.0009
Propane	0.0000
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.72
Lower Flammability limit	337.44
Upper Flammability limit	4898.60
Ratio of upper to lower	14.52
Wobbe Index	0.17
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.957
Real gas Density (Rel to air = 1)	0.957
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.14
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.17
Real Nett Calorific Value MJ/m <sup>3</sup>	0.14
Real Gross Calorific Value MJ/m <sup>3</sup>	0.17
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.13

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1693.5m, 10units  
 1 kPag @ 15°C, 30/01/97, 1140h, Cyl# 109  
 Air & Nitrogen Corrected

389095

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	10.86
Carbon Dioxide	19.39
Hydrogen	65.14
Methane	4.56
Ethane	0.051
Propane	0.000
I-Butane	0.000
N-Butane	0.000
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.000
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	11.03
Lower Flammability limit	5.81
Upper Flammability limit	84.33
Ratio of upper to lower	14.52
Wobbe Index	15.60
Compressibility Factor	1.0063
Ideal Gas Density (Rel to air = 1)	0.381
Real gas Density (Rel to air = 1)	0.378
Ideal Nett Calorific Value MJ/m <sup>3</sup>	8.24
Ideal Gross Calorific Value MJ/m <sup>3</sup>	9.63
Real Nett Calorific Value MJ/m <sup>3</sup>	8.19
Real Gross Calorific Value MJ/m <sup>3</sup>	9.57
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	9.44

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTM-1D, HOT WIRE  
 Cuttings Gas, 1693.5m, 10units  
 1 kPag @ 15°C, 30/01/97, 1140h, Cyl# 109  
 Air, Nitrogen & Carbon Dioxide Corrected

**389096**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	13.47
Carbon Dioxide	0.00
Hydrogen	80.81
Methane	5.66
Ethane	0.063
Propane	0.000
I-Butane	0.000
N-Butane	0.000
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.000
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.09
Lower Flammability limit	4.68
Upper Flammability limit	67.98
Ratio of upper to lower	14.52
Wobbe Index	36.54
Compressibility Factor	1.0081
Ideal Gas Density (Rel to air = 1)	0.107
Real gas Density (Rel to air = 1)	0.106
Ideal Nett Calorific Value MJ/m <sup>3</sup>	10.22
Ideal Gross Calorific Value MJ/m <sup>3</sup>	11.94
Real Nett Calorific Value MJ/m <sup>3</sup>	10.14
Real Gross Calorific Value MJ/m <sup>3</sup>	11.85
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	11.71

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1696.9m, 20units  
 31/01/97, 1345h, Cyl# 118  
 Air Uncorrected

389097

GAS	MOL %
Oxygen plus Argon	20.04
Nitrogen	79.76
Helium	0.01
Carbon Dioxide	0.03
Hydrogen	0.15
Methane	0.01
Ethane	0.00022
Propane	0.00004
I-Butane	0.00000
N-Butane	0.00001
Nco Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.00002
Hexanes	0.00001
Heptanes	0.00000
Octanes and higher h/cs	0.00000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.77
Lower Flammability limit	2492.33
Upper Flammability limit	34710.28
Ratio of upper to lower	13.93
Wobbe Index	0.02
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.993
Real gas Density (Rel to air = 1)	0.993
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.02
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.02
Real Nett Calorific Value MJ/m <sup>3</sup>	0.02
Real Gross Calorific Value MJ/m <sup>3</sup>	0.02
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	-0.01

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1696.9m, 20units  
 31/01/97, 1345h, Cyl# 118  
 Air Corrected

389098

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	97.61
Helium	0.14
Carbon Dioxide	0.04
Hydrogen	2.04
Methane	0.17
Ethane	0.0030
Propane	0.0005
I-Butane	0.0000
N-Butane	0.0002
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0003
Hexanes	0.0001
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (Abs)

Average Molecular Weight	27.44
Lower Flammability limit	183.70
Upper Flammability limit	2558.32
Ratio of upper to lower	13.93
Wobbe Index	0.32
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.947
Real gas Density (Rel to air = 1)	0.947
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.27
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.31
Real Nett Calorific Value MJ/m <sup>3</sup>	0.27
Real Gross Calorific Value MJ/m <sup>3</sup>	0.31
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.28

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1696.9m, 20units  
 31/01/97, 1345h, Cyl# 118  
 Air & Nitrogen Corrected

389099

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	5.70
Carbon Dioxide	1.47
Hydrogen	85.53
Methane	7.13
Ethane	0.125
Propane	0.022
I-Butane	0.000
N-Butane	0.007
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.013
Hexanes	0.004
Heptanes	0.000
Octanes and higher h/cs	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.81
Lower Flammability limit	4.37
Upper Flammability limit	60.88
Ratio of upper to lower	13.93
Wobbe Index	36.31
Compressibility Factor	1.0086
Ideal Gas Density (Rel to air = 1)	0.131
Real gas Density (Rel to air = 1)	0.130
Ideal Nett Calorific Value MJ/m <sup>3</sup>	11.30
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.17
Real Nett Calorific Value MJ/m <sup>3</sup>	11.20
Real Gross Calorific Value MJ/m <sup>3</sup>	13.05
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	12.91

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1696.9m, 20units  
 31/01/97, 1345h, Cyl# 118  
 Air, Nitrogen & Carbon Dioxide Corrected

389100

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	5.79
Carbon Dioxide	0.00
Hydrogen	86.81
Methane	7.23
Ethane	0.127
Propane	0.023
I-Butane	0.000
N-Butane	0.007
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.013
Hexanes	0.004
Heptanes	0.000
Octanes and higher h/cs	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.21
Lower Flammability limit	4.31
Upper Flammability limit	59.98
Ratio of upper to lower	13.93
Wobbe Index	40.16
Compressibility Factor	1.0087
Ideal Gas Density (Rel to air = 1)	0.111
Real gas Density (Rel to air = 1)	0.110
Ideal Nett Calorific Value MJ/m <sup>3</sup>	11.46
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.36
Real Nett Calorific Value MJ/m <sup>3</sup>	11.37
Real Gross Calorific Value MJ/m <sup>3</sup>	13.25
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	13.11

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1698.3m, 28units  
 31/01/97, 1600h, Cyl# 161  
 Air Uncorrected

389101

GAS	MOI. %
Oxygen plus Argon	19.63
Nitrogen	80.02
Helium	0.01
Carbon Dioxide	0.05
Hydrogen	0.22
Methane	0.07
Ethane	0.00029
Propane	0.00012
I-Butane	0.00000
N-Butane	0.00008
Noo Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.00002
Hexanes	0.00001
Heptanes	0.00000
Octanes and higher h'cs	0.00000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.73
Lower Flammability limit	1426.45
Upper Flammability limit	12542.09
Ratio of upper to lower	8.79
Wobbe Index	0.06
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.992
Real gas Density (Rel to air = 1)	0.992
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.05
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.06
Real Nett Calorific Value MJ/m <sup>3</sup>	0.05
Real Gross Calorific Value MJ/m <sup>3</sup>	0.06
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.02

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1698.3m, 28units  
 31/01/97, 1600h, Cyl# 161  
 Air Corrected

389102

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	96.45
Helium	0.11
Carbon Dioxide	0.22
Hydrogen	2.41
Methane	0.81
Ethane	0.00317
Propane	0.00131
i-Butane	0.00000
n-Butane	0.00089
Neo Pentane	0.00000
i-Pentane	0.00000
n-Pentane	0.00024
Hexanes	0.00008
Heptanes	0.00000
Octanes and higher h'cs	0.00000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.30
Lower Flammability limit	130.40
Upper Flammability limit	1146.50
Ratio of upper to lower	8.79
Wobbe Index	0.62
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.943
Real gas Density (Rel to air = 1)	0.942
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.53
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.60
Real Nett Calorific Value MJ/m <sup>3</sup>	0.53
Real Gross Calorific Value MJ/m <sup>3</sup>	0.60
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.56

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1698.3m, 28units  
 31/01/97, 1600h, Cyl# 161  
 Air & Nitrogen Corrected

389103

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	3.08
Carbon Dioxide	6.17
Hydrogen	67.70
Methane	22.89
Ethane	0.089
Propane	0.037
I-Butane	0.000
N-Butane	0.025
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.007
Hexanes	0.002
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	7.94
Lower Flammability limit	4.64
Upper Flammability limit	40.76
Ratio of upper to lower	8.79
Wobbe Index	32.38
Compressibility Factor	1.0066
Ideal Gas Density (Rel to air = 1)	0.274
Real gas Density (Rel to air = 1)	0.272
Ideal Net Calorific Value MJ/m <sup>3</sup>	14.82
Ideal Gross Calorific Value MJ/m <sup>3</sup>	16.95
Real Net Calorific Value MJ/m <sup>3</sup>	14.73
Real Gross Calorific Value MJ/m <sup>3</sup>	16.84
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	16.64

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT PTY LTD

Report # LQ5537

Sample: SHITIM-1D, HOT WIRE  
Cuttings Gas, 1698.3m, 28units  
31/01/97, 1600h, Cyl# 161  
Air, Nitrogen & Carbon Dioxide Corrected

389104

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	3.28
Carbon Dioxide	0.00
Hydrogen	72.15
Methane	24.39
Ethane	0.095
Propane	0.039
I-Butane	0.000
N-Butane	0.027
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.007
Hexanes	0.002
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	5.57
Lower Flammability limit	4.35
Upper Flammability limit	38.24
Ratio of upper to lower	8.79
Wobbe Index	41.21
Compressibility Factor	1.0071
Ideal Gas Density (Rel to air = 1)	0.192
Real gas Density (Rel to air = 1)	0.191
Ideal Nett Calorific Value MJ/m <sup>3</sup>	15.80
Ideal Gross Calorific Value MJ/m <sup>3</sup>	18.07
Real Nett Calorific Value MJ/m <sup>3</sup>	15.68
Real Gross Calorific Value MJ/m <sup>3</sup>	17.94
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	17.73

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

06-02-97



## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5548

 Sample: SH1111M-113  
 Cuttings Gas, 1700.1m, 39units  
 01/02/97, 1018h, Cyl# 200  
 Air Uncorrected

**389106**

GAS	MOL %
Oxygen plus Argon	20.57
Nitrogen	79.04
Helium	0.12
Carbon Dioxide	0.04
Hydrogen	0.22
Methane	0.01
Ethane	0.0004
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

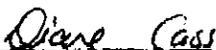
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.75
Lower Flammability limit	1758.37
Upper Flammability limit	28052.07
Ratio of upper to lower	15.95
Wobbe Index	0.03
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.993
Real gas Density (Rel to air = 1)	0.993
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.03
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.03
Real Nett Calorific Value MJ/m <sup>3</sup>	0.03
Real Gross Calorific Value MJ/m <sup>3</sup>	0.03
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.00

This report relates specifically to the sample submitted for analysis.

Signed



Date :

12-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5548

 Sample: SHITTIM-1D  
 Cuttings Gas, 1700.1m, 39units  
 01/02/97, 1018h, Cyl# 200  
 Air Corrected

**389107**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	93.17
Helium	2.28
Carbon Dioxide	0.20
Hydrogen	4.18
Methane	0.16
Ethane	0.007
Propane	0.001
I-Butane	0.000
N-Butane	0.001
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.000
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	26.39
Lower Flammability limit	92.50
Upper Flammability limit	1475.76
Ratio of upper to lower	15.95
Wobbe Index	0.60
Compressibility Factor	1.0002
Ideal Gas Density (Rel to air = 1)	0.911
Real gas Density (Rel to air = 1)	0.911
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.49
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.57
Real Nett Calorific Value MJ/m <sup>3</sup>	0.49
Real Gross Calorific Value MJ/m <sup>3</sup>	0.57
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.53

This report relates specifically to the sample submitted for analysis.

Signed



Date :

12-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5548

Sample: SHITTIM-1D  
 Cuttings Gas, 1700.Im, 39units  
 01/02/97, 1018h, Cyl# 200  
 Air & Nitrogen Corrected

389108

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	33.39
Carbon Dioxide	2.93
Hydrogen	61.22
Methane	2.32
Ethane	0.11
Propane	0.02
I-Butane	0.00
N-Butane	0.01
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.003
Hexanes	0.003
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	4.28
Lower Flammability limit	6.32
Upper Flammability limit	100.80
Ratio of upper to lower	15.95
Wobbe Index	21.82
Compressibility Factor	1.0061
Ideal Gas Density (Rel to air = 1)	0.148
Real gas Density (Rel to air = 1)	0.147
Ideal Nett Calorific Value MJ/m <sup>3</sup>	7.15
Ideal Gross Calorific Value MJ/m <sup>3</sup>	8.39
Real Nett Calorific Value MJ/m <sup>3</sup>	7.11
Real Gross Calorific Value MJ/m <sup>3</sup>	8.34
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	8.22

This report relates specifically to the sample submitted for analysis.

Signed

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Date :

12-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5548

Sample: SHITIM-1D  
 Cuttings Gas, 1700. lm, 39units  
 01/02/97, 1018h, Cyl# 200  
 Air, Nitrogen & Carbon Dioxide Corrected

389109  
 889100

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	34.40
Carbon Dioxide	0.00
Hydrogen	63.06
Methane	2.40
Ethane	0.11
Propane	0.02
I-Butane	0.00
N-Butane	0.01
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.003
Hexanes	0.003
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.08
Lower Flammability limit	6.13
Upper Flammability limit	97.86
Ratio of upper to lower	15.95
Wobbe Index	26.48
Compressibility Factor	1.0053
Ideal Gas Density (Rel to air = 1)	0.107
Real gas Density (Rel to air = 1)	0.106
Ideal Nett Calorific Value MJ/m <sup>3</sup>	7.37
Ideal Gross Calorific Value MJ/m <sup>3</sup>	8.64
Real Nett Calorific Value MJ/m <sup>3</sup>	7.32
Real Gross Calorific Value MJ/m <sup>3</sup>	8.59
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	8.46

This report relates specifically to the sample submitted for analysis.

Signed

Debra Cass

Date :

12-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5548

 Sample: SHTTIM-1D  
 Cuttings Gas, 1703.1m, 60units  
 01/02/97, 1428h, Cyl# 206  
 Air Corrected

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	96.10
Helium	0.25
Carbon Dioxide	0.18
Hydrogen	3.33
Methane	0.13
Ethane	0.006
Propane	0.001
I-Butane	0.000
N-Butane	0.001
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.0005
Hexanes	0.0001
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

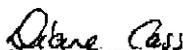
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.10
Lower Flammability limit	116.00
Upper Flammability limit	1848.89
Ratio of upper to lower	15.94
Wobbe Index	0.47
Compressibility Factor	1.0001
Ideal Gas Density (Rel to air = 1)	0.936
Real gas Density (Rel to air = 1)	0.935
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.39
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.46
Real Nett Calorific Value MJ/m <sup>3</sup>	0.39
Real Gross Calorific Value MJ/m <sup>3</sup>	0.46
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.42

This report relates specifically to the sample submitted for analysis.

Signed



Date :

12-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONCOR OIL INVESTMENTS PTY LTD

Report # 1.Q5548

 Sample: SHITTIM-1D  
 Cuttings Gas, 1703.1m, 60units  
 01/02/97, 1428h, Cyl# 206  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	18.88
Nitrogen	80.62
Helium	0.03
Carbon Dioxide	0.05
Hydrogen	0.40
Methane	0.02
Ethane	0.0007
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0001
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0001
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.66
Lower Flammability limit	966.71
Upper Flammability limit	15408.32
Ratio of upper to lower	15.94
Wobbe Index	0.06
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.990
Real gas Density (Rel to air = 1)	0.989
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.05
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.05
Real Nett Calorific Value MJ/m <sup>3</sup>	0.05
Real Gross Calorific Value MJ/m <sup>3</sup>	0.05
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.02

This report relates specifically to the sample submitted for analysis.

Signed



Date :

12-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # I.Q5548

Sample: SHITTIM-1D  
 Cuttings Gas, 1703.1m, 60units  
 01/02/97, 1428h, Cyl# 206  
 Air & Nitrogen Corrected

GAS	MOJ. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	6.42
Carbon Dioxide	4.60
Hydrogen	85.54
Methane	3.24
Ethane	0.14
Propane	0.03
I-Butane	0.00
N-Butane	0.02
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.01
Hexanes	0.002
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.01

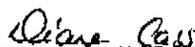
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	4.60
Lower Flammability limit	4.52
Upper Flammability limit	72.05
Ratio of upper to lower	15.94
Wobbe Index	29.45
Compressibility Factor	1.0086
Ideal Gas Density (Rel to air = 1)	0.159
Real gas Density (Rel to air = 1)	0.158
Ideal Nett Calorific Value MJ/m <sup>3</sup>	10.01
Ideal Gross Calorific Value MJ/m <sup>3</sup>	11.74
Real Nett Calorific Value MJ/m <sup>3</sup>	9.93
Real Gross Calorific Value MJ/m <sup>3</sup>	11.64
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	11.51

This report relates specifically to the sample submitted for analysis.

Signed



Date :

12-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5548

 Sample: SHITTIM-1D  
 Cuttings Gas, 1703.1m, 60units  
 01/02/97, 1428h, Cyl# 206  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	6.72
Carbon Dioxide	0.00
Hydrogen	89.65
Methane	3.41
Ethane	0.15
Propane	0.03
I-Butane	0.00
N-Butane	0.03
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.01
Hexanes	0.002
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	2.71
Lower Flammability limit	4.31
Upper Flammability limit	68.75
Ratio of upper to lower	15.94
Wobbe Index	40.25
Compressibility Factor	1.0090
Ideal Gas Density (Rel to air = 1)	0.093
Real gas Density (Rel to air = 1)	0.093
Ideal Nett Calorific Value MJ/m <sup>3</sup>	10.49
Ideal Gross Calorific Value MJ/m <sup>3</sup>	12.30
Real Nett Calorific Value MJ/m <sup>3</sup>	10.40
Real Gross Calorific Value MJ/m <sup>3</sup>	12.19
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	12.07

This report relates specifically to the sample submitted for analysis.

Signed



Date :

12-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5548

 Sample: SHITTIM-1D  
 Cuttings Gas, 1703.1m  
 1442h, Cyl# 240  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	19.59
Nitrogen	79.80
Helium	0.15
Carbon Dioxide	0.05
Hydrogen	0.38
Methane	0.03
Ethane	0.001
Propane	0.0004
I-Butane	0.0000
N-Butane	0.0004
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0003
Hexanes	0.0001
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

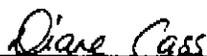
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.66
Lower Flammability limit	986.72
Upper Flammability limit	14090.70
Ratio of upper to lower	14.28
Wobbe Index	0.06
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.990
Real gas Density (Rel to air = 1)	0.990
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.05
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.06
Real Nett Calorific Value MJ/m <sup>3</sup>	0.05
Real Gross Calorific Value MJ/m <sup>3</sup>	0.06
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.03

This report relates specifically to the sample submitted for analysis.

Signed



Date :

12-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # I.Q5548

Sample: SHITTIM-1D  
 Cuttings Gas, 1703.1m  
 1442h, Cyl# 240  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	93.77
Helium	1.62
Carbon Dioxide	0.23
Hydrogen	4.09
Methane	0.28
Ethane	0.01
Propane	0.005
I-Butane	0.000
N-Butane	0.004
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.003
Hexanes	0.001
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.02

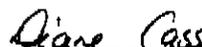
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	26.57
Lower Flammability limit	91.62
Upper Flammability limit	1308.33
Ratio of upper to lower	14.28
Wobbe Index	0.65
Compressibility Factor	1.0001
Ideal Gas Density (Rel to air = 1)	0.917
Real gas Density (Rel to air = 1)	0.917
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.54
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.63
Real Nett Calorific Value MJ/m <sup>3</sup>	0.54
Real Gross Calorific Value MJ/m <sup>3</sup>	0.63
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.58

This report relates specifically to the sample submitted for analysis.

Signed



Date :

12-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5548

Sample: SHITTIM-1D  
 Cuttings Gas, 1703.1m  
 1442h, Cyl# 240  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	25.88
Carbon Dioxide	3.63
Hydrogen	65.56
Methane	4.52
Ethane	0.19
Propane	0.08
I-Butane	0.00
N-Butane	0.07
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.05
Hexanes	0.02
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	4.86
Lower Flammability limit	5.72
Upper Flammability limit	81.67
Ratio of upper to lower	14.28
Wobbe Index	24.45
Compressibility Factor	1.0066
Ideal Gas Density (Rel to air = 1)	0.168
Real gas Density (Rel to air = 1)	0.167
Ideal Nett Calorific Value MJ/m <sup>3</sup>	8.60
Ideal Gross Calorific Value MJ/m <sup>3</sup>	10.02
Real Nett Calorific Value MJ/m <sup>3</sup>	8.54
Real Gross Calorific Value MJ/m <sup>3</sup>	9.95
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	9.82

This report relates specifically to the sample submitted for analysis.

Signed



Date :

12-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5548

Sample: SHITTIM-1D  
Cuttings Gas, 1703.1m  
1442h, Cyl# 240  
Air, Nitrogen & Carbon Dioxide Corrected

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GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	26.85
Carbon Dioxide	0.00
Hydrogen	68.03
Methane	4.70
Ethane	0.20
Propane	0.08
I-Butane	0.00
N-Butane	0.07
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.05
Hexanes	0.02
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.39
Lower Flammability limit	5.51
Upper Flammability limit	78.71
Ratio of upper to lower	14.28
Wobbe Index	30.40
Compressibility Factor	1.0068
Ideal Gas Density (Rel to air = 1)	0.117
Real gas Density (Rel to air = 1)	0.116
Ideal Nett Calorific Value MJ/m <sup>3</sup>	8.92
Ideal Gross Calorific Value MJ/m <sup>3</sup>	10.40
Real Nett Calorific Value MJ/m <sup>3</sup>	8.86
Real Gross Calorific Value MJ/m <sup>3</sup>	10.32
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	10.19

This report relates specifically to the sample submitted for analysis.

Signed

Diane Cass

Date :

12-02-97

**FAXED****FAXED****FACSIMILE TRANSMISSION FROM:**

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 234 2933 or (08) 234 2760  
TELEPHONE NO: (08) 416 5240

389118

---

TO: Dr Clive Burrett

---

COMPANY: Geology Dept - University of Tasmania

---

FAX NO: 002 202 476 232 547      DATE: 15 January, 1996

---

COPY TO: Malcolm Bendall - 002 292 153

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FROM: Scott Wythe      TOTAL PAGES: 13

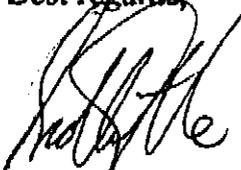
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Clive/Malcolm,

Please find following geochemical data for the Lonnvale seep sample. Brief interpretative notes are given below.

- the oil appears to be early mature-mature with an equivalent vitrinite reflectance value of approximately 0.8%.
- the tricyclic signature associated with *Tasmanites* is present and dominates the 191 mass fragmentogram.
- no evidence of *botryococcane* was detected (m/z 183).
- pristane/phytane as an indicator of the oxicity of the environment of deposition is probably unreliable due to likely loss of a proportion of these lighter compounds.
- source information is difficult to assess. Hopane signatures are unreliable due to the dominance of tricyclic compounds in m/z 191 but the C<sub>29</sub> norhopane appears to be more abundant than the C<sub>30</sub> hopane. This suggests a carbonate source however the presence of significant amounts of diasteranes usually associated with clay-rich environments suggests otherwise. The 27:28:29 steranes are equally abundant implying a dominance of neither C<sub>27</sub> marine or C<sub>29</sub> land plant organic matter in the source material.

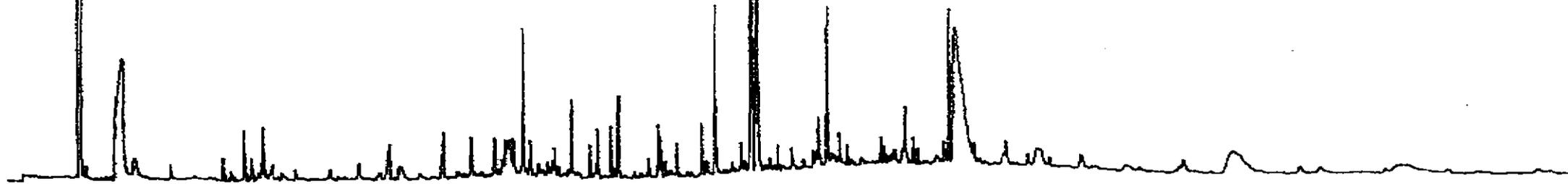
Best regards,



Scott Wythe  
Petroleum Geochemist



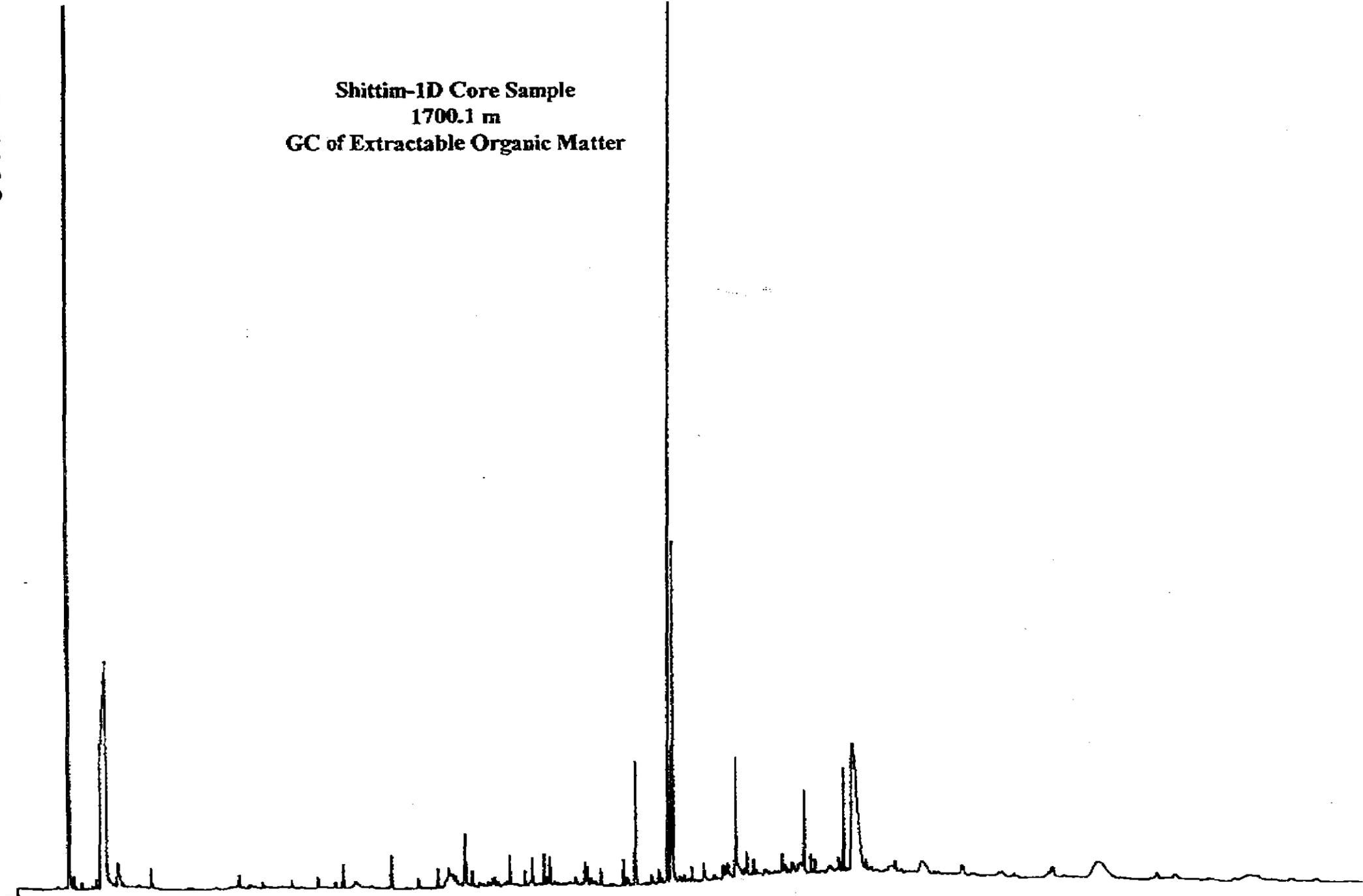
Shittim-1D Core Sample  
1689.2 m  
GC of Extractable Organic Matter



389120

389121

Shittim-1D Core Sample  
1700.1 m  
GC of Extractable Organic Matter



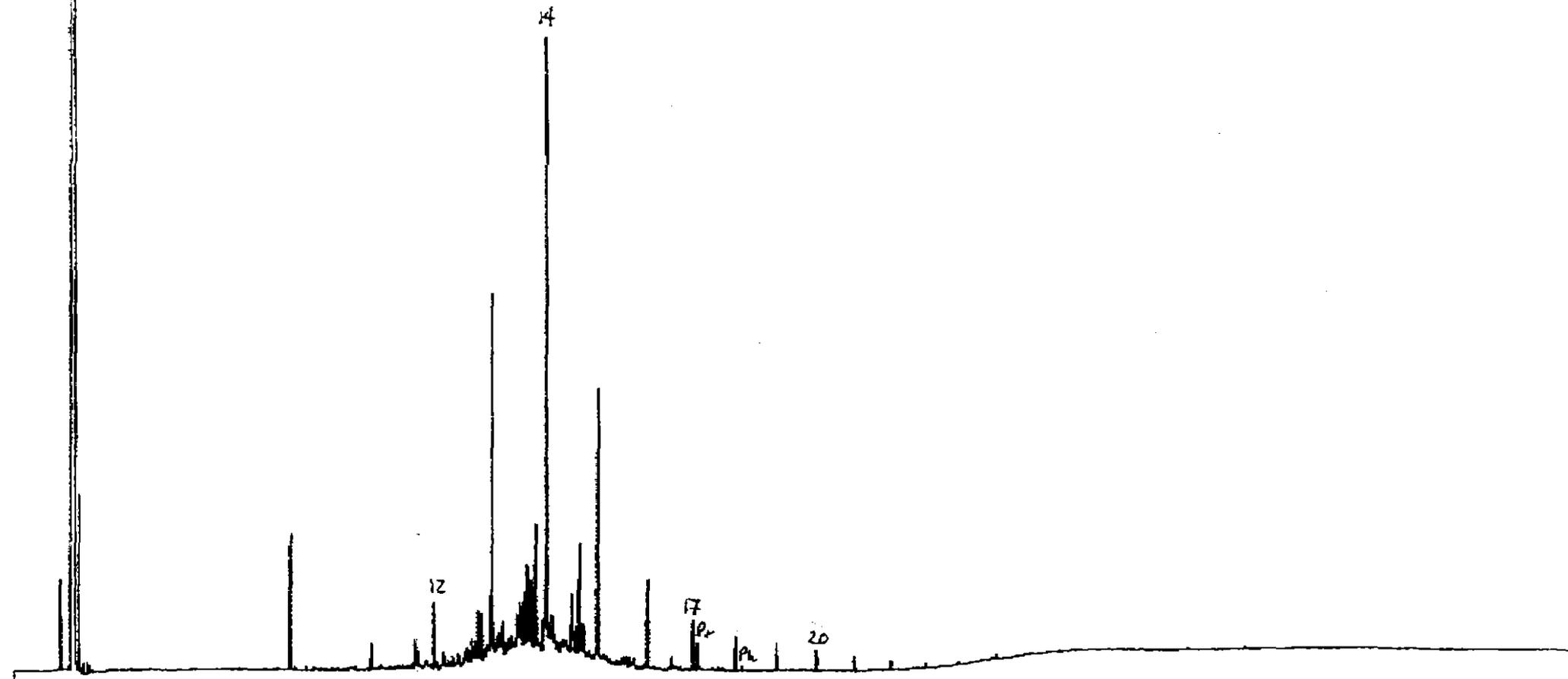
GC 1700.1 m Shittim-1D Core Sample 389121

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200



389123

Shittem-1  
Swab 1635 Water Sample  
GC of Extractable Organic Matter



**FACSIMILE TRANSMISSION FROM:**

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

---

TO: Malcolm Bendall

---

COMPANY: Condor Oil Investments Pty Ltd

---

FAX NO: 03 6229 2153                      DATE: 13 February, 1997

---

COPY TO: Gerry Carne - 8332 7730

---

FROM: Scott Wythe                              TOTAL PAGES: 17

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Malcolm/Gerry,

Please find following gas compositional results for the next four gases. Compositional analysis for the remaining samples is underway and we will endeavor to fax you as much as possible by tomorrow.

Best Regards,



Scott Wythe  
Petroleum Geochemist  
Petroleum Services

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5564

Sample: SHITTIM-1D, HOT WIRE  
Cutting Gas, 1703.6m, 20 Units  
01/02/97, 1750 h, Cyl# 218  
Air Uncorrected

GAS	MOL %
Oxygen plus Argon	19.33
Nitrogen	80.41
Helium	0.02
Carbon Dioxide	0.12
Hydrogen	0.11
Methane	0.01
Ethane	0.0004
Propane	0.0003
I-Butane	0.0000
N-Butane	0.0004
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0003
Hexanes	0.0003
Heptanes	0.0002
Octanes and higher h'cs	0.0000
Total	100.00

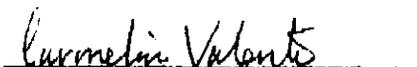
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.77
Lower Flammability limit	3194.19
Upper Flammability limit	38944.27
Ratio of upper to lower	12.19
Wobbe Index	0.02
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.993
Real gas Density (Rel to air = 1)	0.993
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.02
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.02
Real Nett Calorific Value MJ/m <sup>3</sup>	0.02
Real Gross Calorific Value MJ/m <sup>3</sup>	0.02
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	-0.01

This report relates specifically to the sample submitted for analysis.

Signed



Date :

13.02.97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5564

 Sample: SHITTIM-1D, HOT WIRE  
 Cutting Gas, 1703.6m, 20 Units  
 01/02/97, 1750 h, Cyl# 218  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	97.80
Helium	0.20
Carbon Dioxide	0.79
Hydrogen	1.08
Methane	0.13
Ethane	0.004
Propane	0.003
I-Butane	0.000
N-Butane	0.004
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.003
Hexanes	0.003
Heptanes	0.002
Octanes and higher h'cs	0.000
Total	100.02

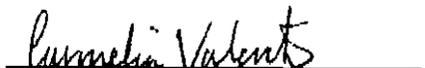
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.80
Lower Flammability limit	325.68
Upper Flammability limit	3970.82
Ratio of upper to lower	12.19
Wobbe Index	0.21
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.960
Real gas Density (Rel to air = 1)	0.960
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.18
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.20
Real Nett Calorific Value MJ/m <sup>3</sup>	0.18
Real Gross Calorific Value MJ/m <sup>3</sup>	0.20
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.17

This report relates specifically to the sample submitted for analysis.

Signed



Date :

13-02-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5564

Sample: SHITTIM-1D, HOT WIRE  
 Cutting Gas, 1703.6m, 20 Units  
 01/02/97, 1750 h, Cyl# 218  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	8.87
Carbon Dioxide	35.73
Hydrogen	48.78
Methane	5.77
Ethane	0.16
Propane	0.12
I-Butane	0.00
N-Butane	0.19
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.13
Hexanes	0.14
Heptanes	0.11
Octanes and higher h'cs	0.00
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	18.52
Lower Flammability limit	7.20
Upper Flammability limit	87.81
Ratio of upper to lower	12.19
Wobbe Index	11.49
Compressibility Factor	1.0040
Ideal Gas Density (Rel to air = 1)	0.639
Real gas Density (Rel to air = 1)	0.637
Ideal Nett Calorific Value MJ/m <sup>3</sup>	7.98
Ideal Gross Calorific Value MJ/m <sup>3</sup>	9.19
Real Nett Calorific Value MJ/m <sup>3</sup>	7.94
Real Gross Calorific Value MJ/m <sup>3</sup>	9.15
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	9.00

This report relates specifically to the sample submitted for analysis.

Signed

Carmelita Valente

Date :

13-02-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5564

Sample: SHITTIM-1D, HOT WIRE  
Cutting Gas, 1724.1m, 16 Units  
05/02/97, 1540 h, Cyl# 308  
Air Uncorrected

GAS	MOL %
Oxygen plus Argon	20.26
Nitrogen	79.62
Helium	0.01
Carbon Dioxide	0.00
Hydrogen	0.09
Methane	0.02
Ethane	0.0003
Propane	0.00007
I-Butane	0.00000
N-Butane	0.00008
Neo Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.00001
Hexanes	0.00003
Heptanes	0.00000
Octanes and higher h'cs	0.00000
Total	100.00

(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.79
Lower Flammability limit	3828.54
Upper Flammability limit	41792.88
Ratio of upper to lower	10.92
Wobbe Index	0.02
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.994
Real gas Density (Rel to air = 1)	0.994
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.02
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.02
Real Nett Calorific Value MJ/m <sup>3</sup>	0.02
Real Gross Calorific Value MJ/m <sup>3</sup>	0.02
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	-0.01

This report relates specifically to the sample submitted for analysis.

Signed

Parmedin Valente

Date :

13-02-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5564

Sample: SHITTIM-1D, HOT WIRE  
Cutting Gas, 1703.6m, 20 Units  
01/02/97, 1750 h, Cyl# 218  
Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	13.80
Carbon Dioxide	0.00
Hydrogen	75.90
Methane	8.97
Ethane	0.26
Propane	0.19
I-Butane	0.00
N-Butane	0.29
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.21
Hexanes	0.21
Heptanes	0.17
Octanes and higher h'cs	0.00
Total	99.99

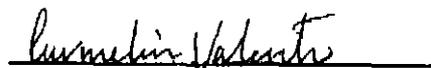
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	4.35
Lower Flammability limit	4.63
Upper Flammability limit	56.44
Ratio of upper to lower	12.19
Wobbe Index	36.87
Compressibility Factor	1.0076
Ideal Gas Density (Rel to air = 1)	0.150
Real gas Density (Rel to air = 1)	0.149
Ideal Nett Calorific Value MJ/m <sup>3</sup>	12.41
Ideal Gross Calorific Value MJ/m <sup>3</sup>	14.29
Real Nett Calorific Value MJ/m <sup>3</sup>	12.32
Real Gross Calorific Value MJ/m <sup>3</sup>	14.18
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	14.02

This report relates specifically to the sample submitted for analysis.

Signed



Date :

13-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389130

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5564

Sample: SHITTIM-1D, HOT WIRE  
Cutting Gas, 1724.1m, 16 Units  
05/02/97, 1540 h, Cyl# 308  
Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	98.21
Helium	0.15
Carbon Dioxide	0.00
Hydrogen	1.37
Methane	0.26
Ethane	0.005
Propane	0.001
1-Butane	0.000
N-Butane	0.001
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0002
Hexanes	0.0005
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.59
Lower Flammability limit	250.62
Upper Flammability limit	2735.79
Ratio of upper to lower	10.92
Wobbe Index	0.28
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.953
Real gas Density (Rel to air = 1)	0.952
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.23
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.27
Real Nett Calorific Value MJ/m <sup>3</sup>	0.24
Real Gross Calorific Value MJ/m <sup>3</sup>	0.27
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.23

This report relates specifically to the sample submitted for analysis.

Signed

Lucretia Valente

Date :

13-02-97

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5564

Sample: SHITTIM-1D, HOT WIRE  
 Cutting Gas, 1724.1m, 16 Units  
 05/02/97, 1540 h, Cyl# 308  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	8.51
Carbon Dioxide	0.00
Hydrogen	76.59
Methane	14.46
Ethane	0.28
Propane	0.06
I-Butane	0.00
N-Butane	0.06
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.01
Hexanes	0.03
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	4.38
Lower Flammability limit	4.50
Upper Flammability limit	49.11
Ratio of upper to lower	10.92
Wobbe Index	38.80
Compressibility Factor	1.0077
Ideal Gas Density (Rel to air = 1)	0.151
Real gas Density (Rel to air = 1)	0.150
Ideal Nett Calorific Value MJ/m <sup>3</sup>	13.09
Ideal Gross Calorific Value MJ/m <sup>3</sup>	15.09
Real Nett Calorific Value MJ/m <sup>3</sup>	12.99
Real Gross Calorific Value MJ/m <sup>3</sup>	14.97
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	14.80

This report relates specifically to the sample submitted for analysis.

Signed

Lucretia Valente

Date :

13-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389132

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5564

Sample: SHITTIM-1D, HOT WIRE  
 Cutting Gas, 1724.1m, 16 Units  
 05/02/97, 1540 h, Cyl# 308  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	8.51
Carbon Dioxide	0.00
Hydrogen	76.59
Methane	14.46
Ethane	0.28
Propane	0.06
I-Butane	0.00
N-Butane	0.06
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.01
Hexanes	0.03
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

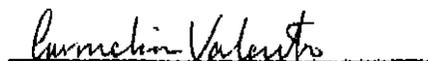
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	4.38
Lower Flammability limit	4.50
Upper Flammability limit	49.11
Ratio of upper to lower	10.92
Wobbe Index	38.80
Compressibility Factor	1.0077
Ideal Gas Density (Rel to air = 1)	0.151
Real gas Density (Rel to air = 1)	0.150
Ideal Nett Calorific Value MJ/m <sup>3</sup>	13.09
Ideal Gross Calorific Value MJ/m <sup>3</sup>	15.09
Real Nett Calorific Value MJ/m <sup>3</sup>	12.99
Real Gross Calorific Value MJ/m <sup>3</sup>	14.97
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	14.80

This report relates specifically to the sample submitted for analysis.

Signed



Date :

13-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5564

Sample: SHITTIM-1D, HOT WIRE  
Cutting Gas, 1715.2m, 30 Units  
03/02/97, 1215 h, Cyl# 288  
Air Uncorrected

GAS	MOL %
Oxygen plus Argon	19.38
Nitrogen	80.33
Helium	0.01
Carbon Dioxide	0.06
Hydrogen	0.20
Methane	0.02
Ethane	0.0008
Propane	0.0004
I-Butane	0.0000
N-Butane	0.0007
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0008
Hexanes	0.0009
Heptanes	0.0010
Octanes and higher h'es	0.0028
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.74
Lower Flammability limit	1690.24
Upper Flammability limit	21228.63
Ratio of upper to lower	12.56
Wobbe Index	0.04
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.992
Real gas Density (Rel to air = 1)	0.992
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.04
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.04
Real Nett Calorific Value MJ/m <sup>3</sup>	0.04
Real Gross Calorific Value MJ/m <sup>3</sup>	0.04
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.01

This report relates specifically to the sample submitted for analysis.

Signed

Purnesh Valente

Date :

13-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389134

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5564

Sample: SHITTIM-1D, HOT WIRE  
Cutting Gas, 1715.2m, 30 Units  
03/02/97, 1215 h, Cyl# 288  
Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	97.38
Helium	0.10
Carbon Dioxide	0.31
Hydrogen	1.98
Methane	0.15
Ethane	0.01
Propane	0.004
I-Butane	0.00
N-Butane	0.01
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.01
Hexanes	0.01
Heptanes	0.01
Octanes and higher h'cs	0.03
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.55
Lower Flammability limit	170.61
Upper Flammability limit	2142.76
Ratio of upper to lower	12.56
Wobbe Index	0.44
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.951
Real gas Density (Rel to air = 1)	0.951
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.37
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.43
Real Nett Calorific Value MJ/m <sup>3</sup>	0.37
Real Gross Calorific Value MJ/m <sup>3</sup>	0.43
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.39

This report relates specifically to the sample submitted for analysis.

Signed

Lucretia Valente

Date :

13-02-97



PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389136

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5564

Sample: SHITTIM-1D, HOT WIRE  
Cutting Gas, 1715.2m, 30 Units  
03/02/97, 1215 h, Cyl# 288  
Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	4.30
Carbon Dioxide	0.00
Hydrogen	86.05
Methane	6.45
Ethane	0.33
Propane	0.19
I-Butane	0.00
N-Butane	0.30
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.34
Hexanes	0.40
Heptanes	0.44
Octanes and higher h'cs	1.20
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	5.70
Lower Flammability limit	3.93
Upper Flammability limit	49.34
Ratio of upper to lower	12.56
Wobbe Index	41.75
Compressibility Factor	1.0085
Ideal Gas Density (Rel to air = 1)	0.197
Real gas Density (Rel to air = 1)	0.195
Ideal Nett Calorific Value MJ/m <sup>3</sup>	16.26
Ideal Gross Calorific Value MJ/m <sup>3</sup>	18.52
Real Nett Calorific Value MJ/m <sup>3</sup>	16.12
Real Gross Calorific Value MJ/m <sup>3</sup>	18.37
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	18.18

This report relates specifically to the sample submitted for analysis.

Signed



Date :

13-02-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT'S PTY LTD

Report # LQ5564

Sample: SHITTIM-1D, HOT WIRE  
Cutting Gas, 45 Units, 1715.2m  
05/02/97, 1250 h, Cyl# 230  
Air Uncorrected

GAS	MOL %
Oxygen plus Argon	15.03
Nitrogen	73.89
Helium	0.01
Carbon Dioxide	0.07
Hydrogen	0.00
Methane	9.69
Ethane	0.67
Propane	0.08
I-Butane	0.00
N-Butane	0.07
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.07
Hexanes	0.15
Heptanes	0.13
Octanes and higher h'cs	0.14
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.84
Lower Flammability limit	17.07
Upper Flammability limit	127.53
Ratio of upper to lower	3.44
Wobbe Index	5.32
Compressibility Factor	0.9994
Ideal Gas Density (Rel to air = 1)	0.961
Real gas Density (Rel to air = 1)	0.961
Ideal Nett Calorific Value MJ/m <sup>3</sup>	4.73
Ideal Gross Calorific Value MJ/m <sup>3</sup>	5.22
Real Nett Calorific Value MJ/m <sup>3</sup>	4.74
Real Gross Calorific Value MJ/m <sup>3</sup>	5.22
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	5.10

This report relates specifically to the sample submitted for analysis.

Signed



Date :

13-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5564

Sample: SHITTIM-1D, HOT WIRE  
Cutting Gas, 45 Units, 1715.2m  
05/02/97, 1250 h, Cyl# 230  
Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	64.69
Helium	0.04
Carbon Dioxide	0.16
Hydrogen	0.00
Methane	30.93
Ethane	2.12
Propane	0.26
I-Butane	0.00
N-Butane	0.24
Noo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.22
Hexanes	0.49
Heptanes	0.41
Octanes and higher h'cs	0.44
Total	100.00

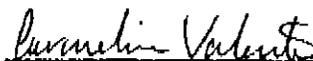
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	25.54
Lower Flammability limit	11.61
Upper Flammability limit	39.95
Ratio of upper to lower	3.44
Wobbe Index	17.74
Compressibility Factor	0.9989
Ideal Gas Density (Rel to air = 1)	0.882
Real gas Density (Rel to air = 1)	0.882
Ideal Nett Calorific Value MJ/m <sup>3</sup>	15.11
Ideal Gross Calorific Value MJ/m <sup>3</sup>	16.66
Real Nett Calorific Value MJ/m <sup>3</sup>	15.13
Real Gross Calorific Value MJ/m <sup>3</sup>	16.68
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	16.35

This report relates specifically to the sample submitted for analysis.

Signed



Date :

13-02-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5564

Sample: SHITIM-1D, HOT WIRE  
 Cutting Gas, 45 Units, 1715.2m  
 05/02/97, 1250 h, Cyl# 230  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.10
Carbon Dioxide	0.45
Hydrogen	0.00
Methane	87.60
Ethane	6.01
Propane	0.75
I-Butane	0.00
N-Butane	0.67
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.63
Hexanes	1.38
Heptanes	1.17
Octanes and higher h'cs	1.24
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	21.01
Lower Flammability limit	4.10
Upper Flammability limit	14.11
Ratio of upper to lower	3.44
Wobbe Index	55.40
Compressibility Factor	0.9961
Ideal Gas Density (Rel to air = 1)	0.725
Real gas Density (Rel to air = 1)	0.728
Ideal Nett Calorific Value MJ/m <sup>3</sup>	42.79
Ideal Gross Calorific Value MJ/m <sup>3</sup>	47.18
Real Nett Calorific Value MJ/m <sup>3</sup>	42.96
Real Gross Calorific Value MJ/m <sup>3</sup>	47.36
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	46.36

This report relates specifically to the sample submitted for analysis.

Signed

Priscilla Valente

Date :

13-02-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # 1.Q5564

Sample: SHITTIM-1D, HOT WIRE  
Cutting Gas, 45 Units, 1715.2m  
05/02/97, 1250 h, Cyl# 230  
Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.10
Carbon Dioxide	0.00
Hydrogen	0.00
Methane	88.01
Ethane	6.04
Propane	0.75
I-Butane	0.00
N-Butane	0.67
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.63
Hexanes	1.38
Heptanes	1.18
Octanes and higher h'cs	1.24
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	20.90
Lower Flammability limit	4.08
Upper Flammability limit	14.04
Ratio of upper to lower	3.44
Wobbe Index	55.79
Compressibility Factor	0.9961
Ideal Gas Density (Rel to air = 1)	0.722
Real gas Density (Rel to air = 1)	0.724
Ideal Nett Calorific Value MJ/m <sup>3</sup>	42.99
Ideal Gross Calorific Value MJ/m <sup>3</sup>	47.39
Real Nett Calorific Value MJ/m <sup>3</sup>	43.15
Real Gross Calorific Value MJ/m <sup>3</sup>	47.58
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	46.57

This report relates specifically to the sample submitted for analysis.

Signed

Lucretia Valente

Date :

13-02-97



A.C.N. 008 127 802

**FACSIMILE TRANSMISSION FROM:**

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

---

TO: Malcolm Bendall

---

COMPANY: Condor Oil Investments Pty Ltd

---

FAX NO: 03 6229 2153                      DATE: 17 January, 1997

---

COPY TO: Gerry Carne - 8332 7730

---

FROM: Scott Wythe                              TOTAL PAGES: 1

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Malcolm/Gerry,

Total organic carbon analysis results for the two Shittim-1C 1676m core samples was 0.12% for both samples. The samples are therefore too lean for Rock-Eval pyrolysis.

Best Regards,

Scott Wythe  
Petroleum Geochemist  
Petroleum Services

389142

97-4024  
Vol 2 of 2

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# GREAT SOUTHLAND MINERALS

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**Analyses of gas samples  
by Amdel Limited Petroleum Services  
Drill holes Shittim #1 and Jericho #1  
Bruny Island**

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97-4024

ANALYSES OF GAS SAMPLES - PL 1/88  
GT SOUTHLAND MINERALS - JERICHO  
AND BRUNY ISLAND - VOL 2 OF 2

389

Volume 2 of 2



A.C.N. 008 127 802

389143



**FACSIMILE TRANSMISSION FROM:**

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

**MICROFILMED**  
FICHE No.014341 -45

TO:	Malcolm Bendall		
COMPANY:	Condor Oil Investments Pty Ltd		
FAX NO:	03 6229 2153 / 03 6224 222.7	DATE:	13 January, 1997
COPY TO:	Gerry Carne - 8332 7730		
FROM:	Scott Wythe	TOTAL PAGES:	2

Malcolm/Gerry,

Please find following a gas chromatogram of the saturates fraction of the second extracted core from Shittim-1C, 1676m.

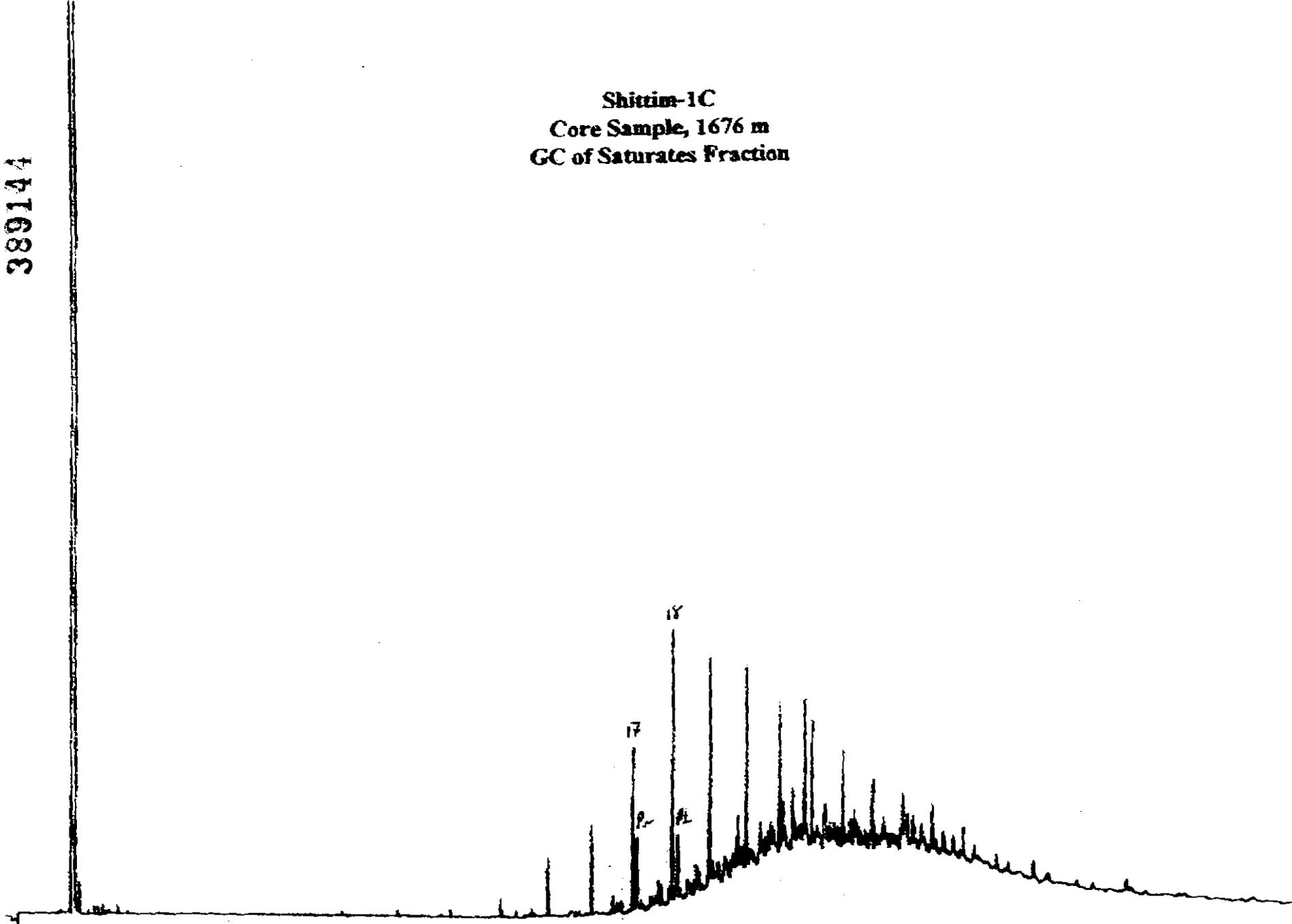
Best Regards,

Scott Wythe  
Petroleum Geochemist  
Petroleum Services

CONFIDENTIAL PERSONNEL  
 2000-ELI/88 PT 10  
 - 1 JUL 1997  
 See folio 3B

389144

Shittim-1C  
Core Sample, 1676 m  
GC of Saturates Fraction



**FACSIMILE TRANSMISSION FROM:**

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

---

TO: Malcolm Bendall

---

COMPANY: Condor Oil Investments Pty Ltd

---

FAX NO: 03 6229 2153 / 03 6224 2227      DATE: 13 January, 1997

---

COPY TO: Gerry Carne - 8332 7730

---

FROM: Scott Wythe      TOTAL PAGES: 2

---

Malcolm Gerry,

Please find following a gas chromatogram of the saturates fraction of the second extracted core from Shittim-1C, 1676m.

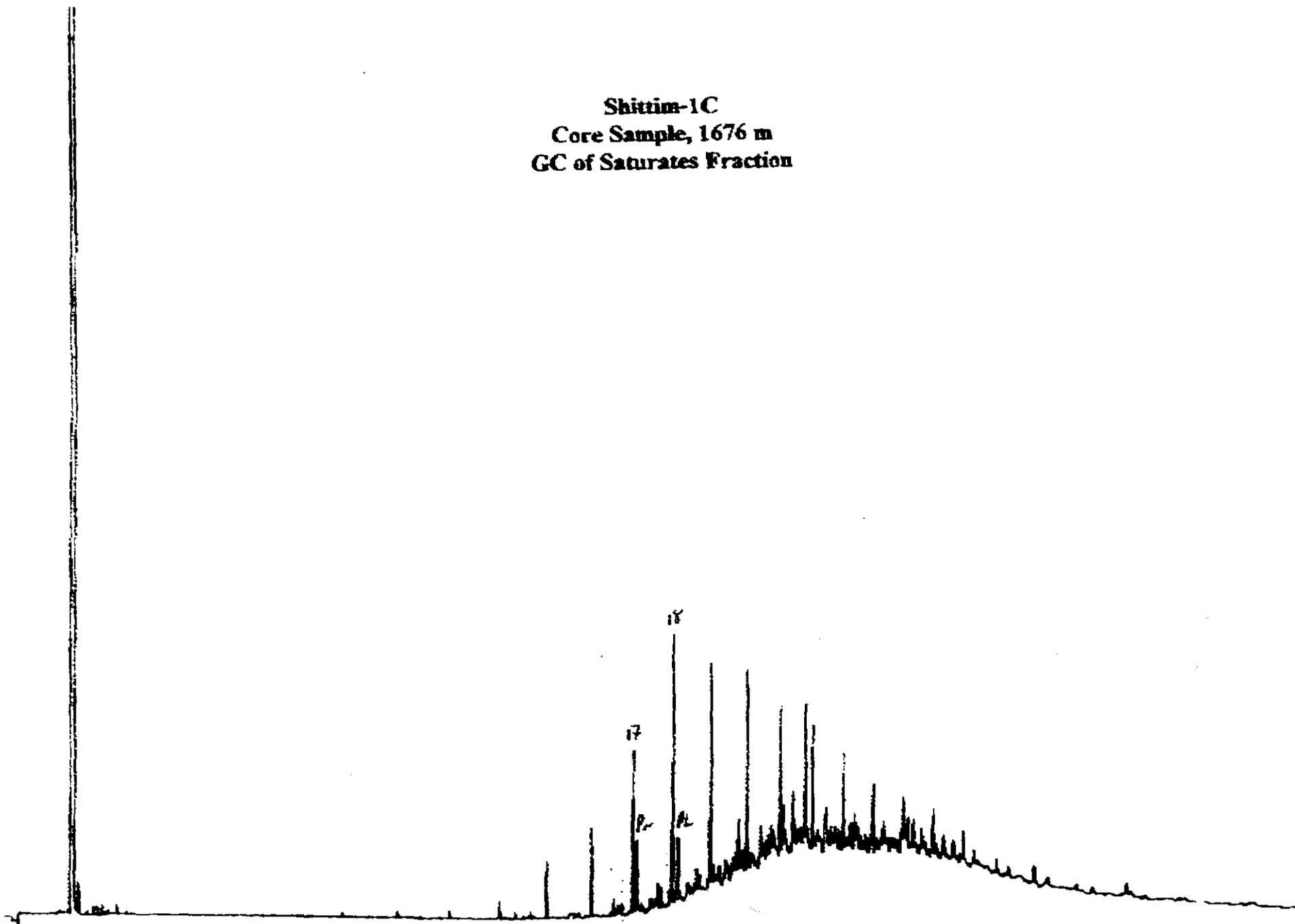
Best Regards,



Scott Wythe  
Petroleum Geochemist  
Petroleum Services

389146

Shittim-1C  
Core Sample, 1676 m  
GC of Saturates Fraction





## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

 Sample: SHTTM-1D  
 Cuttings Gas, 1733m, 52 Units  
 08/02/97, 0910h, Cyl# 313  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	18.49
Nitrogen	81.13
Helium	0.01
Carbon Dioxide	0.02
Hydrogen	0.32
Methane	0.03
Ethane	0.001
Propane	0.0002
I-Butane	0.0000
N-Butane	0.0002
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0001
Hexanes	0.0001
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.66
Lower Flammability limit	1147.12
Upper Flammability limit	15138.31
Ratio of upper to lower	13.20
Wobbe Index	0.05
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.990
Real gas Density (Rel to air = 1)	0.990
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.05
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.05
Real Nett Calorific Value MJ/m <sup>3</sup>	0.05
Real Gross Calorific Value MJ/m <sup>3</sup>	0.05
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.02

This report relates specifically to the sample submitted for analysis.

Signed



Date :

14-02-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

 Sample: SHITIM-1D  
 Cuttings Gas, 1733m, 52 Units  
 08/02/97, 0910h, Cyl# 313  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	97.35
Helium	0.07
Carbon Dioxide	0.00
Hydrogen	2.34
Methane	0.23
Ethane	0.008
Propane	0.002
I-Butane	0.000
N-Butane	0.001
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0005
Hexanes	0.0009
Heptanes	0.0002
Octanes and higher h'cs	0.0000
Total	100.00

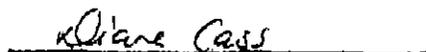
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.36
Lower Flammability limit	156.78
Upper Flammability limit	2069.00
Ratio of upper to lower	13.20
Wobbe Index	0.39
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.945
Real gas Density (Rel to air = 1)	0.944
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.33
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.38
Real Nett Calorific Value MJ/m <sup>3</sup>	0.33
Real Gross Calorific Value MJ/m <sup>3</sup>	0.38
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.34

This report relates specifically to the sample submitted for analysis.

Signed



Date :

14-02-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

Sample: SHITIM-1D  
 Cuttings Gas, 1733m, 52 Units  
 08/02/97, 0910h, Cyl# 313  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	2.75
Carbon Dioxide	0.00
Hydrogen	87.97
Methane	8.80
Ethane	0.30
Propane	0.07
I-Butane	0.00
N-Butane	0.05
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.02
Hexanes	0.03
Heptanes	0.01
Octanes and higher h/cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.49
Lower Flammability limit	4.17
Upper Flammability limit	55.06
Ratio of upper to lower	13.20
Wobbe Index	41.40
Compressibility Factor	1.0088
Ideal Gas Density (Rel to air = 1)	0.121
Real gas Density (Rel to air = 1)	0.120
Ideal Nett Calorific Value MJ/m <sup>3</sup>	12.38
Ideal Gross Calorific Value MJ/m <sup>3</sup>	14.38
Real Nett Calorific Value MJ/m <sup>3</sup>	12.27
Real Gross Calorific Value MJ/m <sup>3</sup>	14.25
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	14.11

This report relates specifically to the sample submitted for analysis.

Signed

Deane Cross

Date :

14-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389151

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

Sample: SHITTIM-1D  
 Cuttings Gas, 1733m, 52 Units  
 08/02/97, 0910h, Cyl# 313  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	2.75
Carbon Dioxide	0.00
Hydrogen	87.97
Methane	8.80
Ethane	0.30
Propane	0.07
I-Butane	0.00
N-Butane	0.05
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.02
Hexanes	0.03
Heptanes	0.01
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.49
Lower Flammability limit	4.17
Upper Flammability limit	55.06
Ratio of upper to lower	13.20
Wobbe Index	41.40
Compressibility Factor	1.0088
Ideal Gas Density (Rel to air = 1)	0.121
Real gas Density (Rel to air = 1)	0.120
Ideal Nett Calorific Value MJ/m <sup>3</sup>	12.38
Ideal Gross Calorific Value MJ/m <sup>3</sup>	14.38
Real Nett Calorific Value MJ/m <sup>3</sup>	12.27
Real Gross Calorific Value MJ/m <sup>3</sup>	14.25
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	14.11

This report relates specifically to the sample submitted for analysis

Signed

Diane Cass

Date :

14-02-97

PETROLEUM SERVICES GAS ANALYSIS

389152

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

Sample: SHITTIM-1D  
 Cuttings Gas, 1727.1m, 23 Units  
 06/02/97, 1137h, Cyl# 117  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	18.39
Nitrogen	81.34
Helium	0.01
Carbon Dioxide	0.07
Hydrogen	0.17
Methane	0.02
Ethane	0.0006
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.71
Lower Flammability limit	2137.81
Upper Flammability limit	27207.95
Ratio of upper to lower	12.73
Wobbe Index	0.03
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.991
Real gas Density (Rel to air = 1)	0.991
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.02
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.03
Real Net Calorific Value MJ/m <sup>3</sup>	0.02
Real Gross Calorific Value MJ/m <sup>3</sup>	0.03
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.00

This report relates specifically to the sample submitted for analysis.

Signed

Debra Cass

Date :

14-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

**389153**

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

 Sample: SHITIM-1D  
 Cuttings Gas, 1727.1m, 23 Units  
 06/02/97, 1137h, Cyl# 117  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	98.28
Helium	0.07
Carbon Dioxide	0.30
Hydrogen	1.21
Methane	0.14
Ethane	0.004
Propane	0.0009
I-Butane	0.0000
N-Butane	0.0003
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0002
Hexanes	0.0001
Heptanes	0.0001
Octanes and higher h'cs	0.0000
Total	100.01

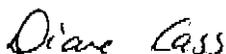
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.71
Lower Flammability limit	300.98
Upper Flammability limit	3830.55
Ratio of upper to lower	12.73
Wobbe Index	0.21
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.957
Real gas Density (Rel to air = 1)	0.957
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.18
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.20
Real Nett Calorific Value MJ/m <sup>3</sup>	0.18
Real Gross Calorific Value MJ/m <sup>3</sup>	0.20
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.17

This report relates specifically to the sample submitted for analysis.

Signed



Date :

14-02-97

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

Sample: SHITIM-1D  
 Cuttings Gas, 1727.1m, 23 Units  
 06/02/97, 1137h, Cyl# 117  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	4.12
Carbon Dioxide	17.43
Hydrogen	70.00
Methane	8.11
Ethane	0.24
Propane	0.05
I-Butane	0.00
N-Butane	0.02
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.01
Hexanes	0.01
Heptanes	0.01
Octanes and higher h'cs	0.0000
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	10.68
Lower Flammability limit	5.19
Upper Flammability limit	66.07
Ratio of upper to lower	12.73
Wobbe Index	19.43
Compressibility Factor	1.0068
Ideal Gas Density (Rel to air = 1)	0.369
Real gas Density (Rel to air = 1)	0.366
Ideal Nett Calorific Value MJ/m <sup>3</sup>	10.17
Ideal Gross Calorific Value MJ/m <sup>3</sup>	11.80
Real Nett Calorific Value MJ/m <sup>3</sup>	10.10
Real Gross Calorific Value MJ/m <sup>3</sup>	11.72
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	11.57

This report relates specifically to the sample submitted for analysis.

Signed

Diane Cass

Date :

14-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method QI-01-01/02

ASTM D 1945-91 (modified)

389155

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

Sample: SHITTIM-1D  
 Cuttings Gas, 1727.1m, 23 Units  
 06/02/97, 1137h, Cyl# 117  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	4.99
Carbon Dioxide	0.00
Hydrogen	84.78
Methane	9.83
Ethane	0.29
Propane	0.06
I-Butane	0.00
N-Butane	0.02
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.01
Hexanes	0.01
Heptanes	0.01
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.64
Lower Flammability limit	4.29
Upper Flammability limit	54.55
Ratio of upper to lower	12.73
Wobbe Index	40.30
Compressibility Factor	1.0085
Ideal Gas Density (Rel to air = 1)	0.126
Real gas Density (Rel to air = 1)	0.125
Ideal Nett Calorific Value MJ/m <sup>3</sup>	12.31
Ideal Gross Calorific Value MJ/m <sup>3</sup>	14.29
Real Nett Calorific Value MJ/m <sup>3</sup>	12.21
Real Gross Calorific Value MJ/m <sup>3</sup>	14.17
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	14.01

This report relates specifically to the sample submitted for analysis.

Signed

Diane Cass

Date :

14-02-97

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

Sample: SHITTIM-1D  
 Cuttings Gas, 1731.3m, 23 Units  
 07/02/97, 1002h, Cyl# 316  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	20.69
Nitrogen	79.09
Helium	0.01
Carbon Dioxide	0.02
Hydrogen	0.17
Methane	0.02
Ethane	0.0004
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.79
Lower Flammability limit	2139.93
Upper Flammability limit	27229.92
Ratio of upper to lower	12.72
Wobbe Index	0.03
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.994
Real gas Density (Rel to air = 1)	0.994
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.02
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.03
Real Nett Calorific Value MJ/m <sup>3</sup>	0.02
Real Gross Calorific Value MJ/m <sup>3</sup>	0.03
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.00

This report relates specifically to the sample submitted for analysis.

Signed

Siobane Cass

Date :

14-02-97

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # I.Q5573

Sample: SHITTIM-1D  
 Cuttings Gas, 1731.3m, 23 Units  
 07/02/97, 1002h, Cyl# 316  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	95.85
Helium	0.21
Carbon Dioxide	0.00
Hydrogen	3.52
Methane	0.41
Ethane	0.008
Propane	0.002
I-Butane	0.000
N-Butane	0.0003
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0002
Hexanes	0.0006
Heptanes	0.0004
Octanes and higher h'cs	0.0000
Total	100.00

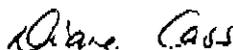
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present.  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.00
Lower Flammability limit	103.32
Upper Flammability limit	1314.68
Ratio of upper to lower	12.72
Wobbe Index	0.61
Compressibility Factor	1.0001
Ideal Gas Density (Rel to air = 1)	0.932
Real gas Density (Rel to air = 1)	0.932
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.51
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.59
Real Nett Calorific Value MJ/m <sup>3</sup>	0.51
Real Gross Calorific Value MJ/m <sup>3</sup>	0.59
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.55

This report relates specifically to the sample submitted for analysis.

Signed



Date :

14-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389158

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

Sample: SHITIM-1D  
 Cuttings Gas, 1731.3m, 23 Units  
 07/02/97, 1002h, Cyl# 316  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	4.99
Carbon Dioxide	0.00
Hydrogen	84.77
Methane	9.98
Ethane	0.19
Propane	0.04
I-Butane	0.000
N-Butane	0.008
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.005
Hexanes	0.013
Heptanes	0.008
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.61
Lower Flammability limit	4.29
Upper Flammability limit	54.61
Ratio of upper to lower	12.72
Wobbe Index	40.30
Compressibility Factor	1.0085
Ideal Gas Density (Rel to air = 1)	0.125
Real gas Density (Rel to air = 1)	0.124
Ideal Nett Calorific Value MJ/m <sup>3</sup>	12.26
Ideal Gross Calorific Value MJ/m <sup>3</sup>	14.24
Real Nett Calorific Value MJ/m <sup>3</sup>	12.16
Real Gross Calorific Value MJ/m <sup>3</sup>	14.12
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	13.96

This report relates specifically to the sample submitted for analysis.

Signed

Diane Cassi

Date :

14-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

389159

Sample: SHITTIM-1D  
 Cuttings Gas, 1731.3m, 23 Units  
 07/02/97, 1002h, Cyl# 316  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	4.99
Carbon Dioxide	0.00
Hydrogen	84.77
Methane	9.98
Ethane	0.19
Propane	0.04
I-Butane	0.000
N-Butane	0.008
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.005
Hexanes	0.01
Heptanes	0.008
Octanes and higher h'cs	0.000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.61
Lower Flammability limit	4.29
Upper Flammability limit	54.61
Ratio of upper to lower	12.72
Wobbe Index	40.30
Compressibility Factor	1.0085
Ideal Gas Density (Rel to air = 1)	0.125
Real gas Density (Rel to air = 1)	0.124
Ideal Nett Calorific Value MJ/m <sup>3</sup>	12.26
Ideal Gross Calorific Value MJ/m <sup>3</sup>	14.24
Real Nett Calorific Value MJ/m <sup>3</sup>	12.16
Real Gross Calorific Value MJ/m <sup>3</sup>	14.12
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	13.96

This report relates specifically to the sample submitted for analysis.

Signed

Diane Cass

Date :

14-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # 1.Q5573

**389160**

Sample: SHITIM-1D  
 Cuttings Gas, 1732.1m, 31 Units  
 07/02/97, 1135h, Cyl# 318  
 Air Uncorrected

GAS	MOI, %
Oxygen plus Argon	17.81
Nitrogen	81.91
Helium	0.01
Carbon Dioxide	0.02
Hydrogen	0.23
Methane	0.02
Ethane	0.0007
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.66
Lower Flammability limit	1618.21
Upper Flammability limit	22236.26
Ratio of upper to lower	13.74
Wobbe Index	0.04
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.990
Real gas Density (Rel to air = 1)	0.990
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.03
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.04
Real Nett Calorific Value MJ/m <sup>3</sup>	0.03
Real Gross Calorific Value MJ/m <sup>3</sup>	0.04
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.00

This report relates specifically to the sample submitted for analysis.

Signed

Diana Cass

Date :

14-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389161

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

Sample: SIITTIM-1D  
Cuttings Gas, 1732.1m, 31 Units  
07/02/97, 1135h, Cyl# 318  
Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	98.41
Helium	0.06
Carbon Dioxide	0.00
Hydrogen	1.41
Methane	0.12
Ethane	0.004
Propane	0.0004
I-Butane	0.0000
N-Butane	0.0001
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0001
Hexanes	0.0001
Heptanes	0.0000
Octanes and higher hcs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.62
Lower Flammability limit	264.28
Upper Flammability limit	3631.54
Ratio of upper to lower	13.74
Wobbe Index	0.23
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.954
Real gas Density (Rel to air = 1)	0.953
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.19
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.22
Real Nett Calorific Value MJ/m <sup>3</sup>	0.19
Real Gross Calorific Value MJ/m <sup>3</sup>	0.22
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.18

This report relates specifically to the sample submitted for analysis.

Signed

Oliver Ross

Date :

14-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

389162

Sample: SHITIM-1D  
 Cuttings Gas, 1732.1m, 31 Units  
 07/02/97, 1135h, Cyl# 318  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	3.83
Carbon Dioxide	0.00
Hydrogen	88.20
Methane	7.68
Ethane	0.25
Propane	0.02
I-Butane	0.000
N-Butane	0.009
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.007
Hexanes	0.004
Heptanes	0.003
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.26
Lower Flammability limit	4.22
Upper Flammability limit	57.99
Ratio of upper to lower	13.74
Wobbe Index	41.04
Compressibility Factor	1.0089
Ideal Gas Density (Rel to air = 1)	0.113
Real gas Density (Rel to air = 1)	0.112
Ideal Nett Calorific Value MJ/m <sup>3</sup>	11.83
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.78
Real Nett Calorific Value MJ/m <sup>3</sup>	11.73
Real Gross Calorific Value MJ/m <sup>3</sup>	13.66
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	13.51

This report relates specifically to the sample submitted for analysis.

Signed

Alan Cass

Date :

14-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

Sample: SHITTIM-1D  
 Cuttings Gas, 1732.1m, 31 Units  
 07/02/97, 1135h, Cyl# 318  
 Air, Nitrogen & Carbon Dioxide Corrected

**389163**

GAS	MOL. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	3.83
Carbon Dioxide	0.00
Hydrogen	88.20
Methane	7.68
Ethane	0.25
Propane	0.02
I-Butane	0.000
N-Butane	0.009
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.007
Hexanes	0.004
Heptanes	0.003
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.26
Lower Flammability limit	4.22
Upper Flammability limit	57.99
Ratio of upper to lower	13.74
Wobbe Index	41.04
Compressibility Factor	1.0089
Ideal Gas Density (Rel to air = 1)	0.113
Real gas Density (Rel to air = 1)	0.112
Ideal Net Calorific Value MJ/m <sup>3</sup>	11.83
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.78
Real Net Calorific Value MJ/m <sup>3</sup>	11.73
Real Gross Calorific Value MJ/m <sup>3</sup>	13.66
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	13.51

This report relates specifically to the sample submitted for analysis.

Signed

Deane Cass

Date :

14-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

389164

Sample: SHITTIM-1D  
Cuttings Gas, 1732.8m, 17 Units  
07/02/97, 1432h, Cyl# 323  
Air Uncorrected

GAS	MOL %
Oxygen plus Argon	21.49
Nitrogen	78.29
Helium	0.08
Carbon Dioxide	0.02
Hydrogen	0.11
Methane	0.01
Ethane	0.0004
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0001
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0001
Hexanes	0.0002
Heptanes	0.0002
Octanes and higher h'cs	0.0004
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.82
Lower Flammability limit	3250.78
Upper Flammability limit	41980.70
Ratio of upper to lower	12.91
Wobbe Index	0.02
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.995
Real gas Density (Rel to air = 1)	0.995
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.02
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.02
Real Nett Calorific Value MJ/m <sup>3</sup>	0.02
Real Gross Calorific Value MJ/m <sup>3</sup>	0.02
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	-0.01

This report relates specifically to the sample submitted for analysis.

Signed

Oliver Cass

Date :

14-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

389165

Sample: SHITTIM-1D  
 Cuttings Gas, 1732.8m, 17 Units  
 07/02/97, 1432h, Cyl# 323  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	87.79
Helium	4.83
Carbon Dioxide	0.00
Hydrogen	6.64
Methane	0.64
Ethane	0.03
Propane	0.006
I-Butane	0.000
N-Butane	0.005
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.008
Hexanes	0.01
Heptanes	0.01
Octanes and higher h'cs	0.02
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	25.10
Lower Flammability limit	53.88
Upper Flammability limit	695.77
Ratio of upper to lower	12.91
Wobbe Index	1.28
Compressibility Factor	1.0004
Ideal Gas Density (Rel to air = 1)	0.866
Real gas Density (Rel to air = 1)	0.866
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.03
Ideal Gross Calorific Value MJ/m <sup>3</sup>	1.19
Real Nett Calorific Value MJ/m <sup>3</sup>	1.03
Real Gross Calorific Value MJ/m <sup>3</sup>	1.19
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.14

This report relates specifically to the sample submitted for analysis.

Signed

Deane Cass

Date :

14-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

Sample: SHITIM-1D  
 Cuttings Gas, 1732.8m, 17 Units  
 07/02/97, 1432h, Cyl# 323  
 Air & Nitrogen Corrected

389166

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	39.57
Carbon Dioxide	0.00
Hydrogen	54.41
Methane	5.24
Ethane	0.21
Propane	0.05
I-Butane	0.00
N-Butane	0.04
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.07
Hexanes	0.09
Heptanes	0.12
Octanes and higher h'cs	0.20
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	4.10
Lower Flammability limit	6.57
Upper Flammability limit	84.87
Ratio of upper to lower	12.91
Wobbe Index	25.92
Compressibility Factor	1.0055
Ideal Gas Density (Rel to air = 1)	0.141
Real gas Density (Rel to air = 1)	0.141
Ideal Nett Calorific Value MJ/m <sup>3</sup>	8.45
Ideal Gross Calorific Value MJ/m <sup>3</sup>	9.75
Real Nett Calorific Value MJ/m <sup>3</sup>	8.40
Real Gross Calorific Value MJ/m <sup>3</sup>	9.70
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	9.55

This report relates specifically to the sample submitted for analysis.

Signed

Diane Cass

Date :

14-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5573

Sample: SHITTIM-1D  
 Cuttings Gas, 1732.8m, 17 Units  
 07/02/97, 1432h, Cyl# 323  
 Air, Nitrogen & Carbon Dioxide Corrected

389167

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	39.57
Carbon Dioxide	0.00
Hydrogen	54.41
Methane	5.24
Ethane	0.21
Propane	0.05
I-Butane	0.00
N-Butane	0.04
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.07
Hexanes	0.09
Heptanes	0.12
Octanes and higher h'cs	0.20
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	4.10
Lower Flammability limit	6.57
Upper Flammability limit	84.87
Ratio of upper to lower	12.91
Wobbe Index	25.92
Compressibility Factor	1.0055
Ideal Gas Density (Rel to air = 1)	0.141
Real gas Density (Rel to air = 1)	0.141
Ideal Nett Calorific Value MJ/m <sup>3</sup>	8.45
Ideal Gross Calorific Value MJ/m <sup>3</sup>	9.75
Real Nett Calorific Value MJ/m <sup>3</sup>	8.40
Real Gross Calorific Value MJ/m <sup>3</sup>	9.70
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	9.55

This report relates specifically to the sample submitted for analysis.

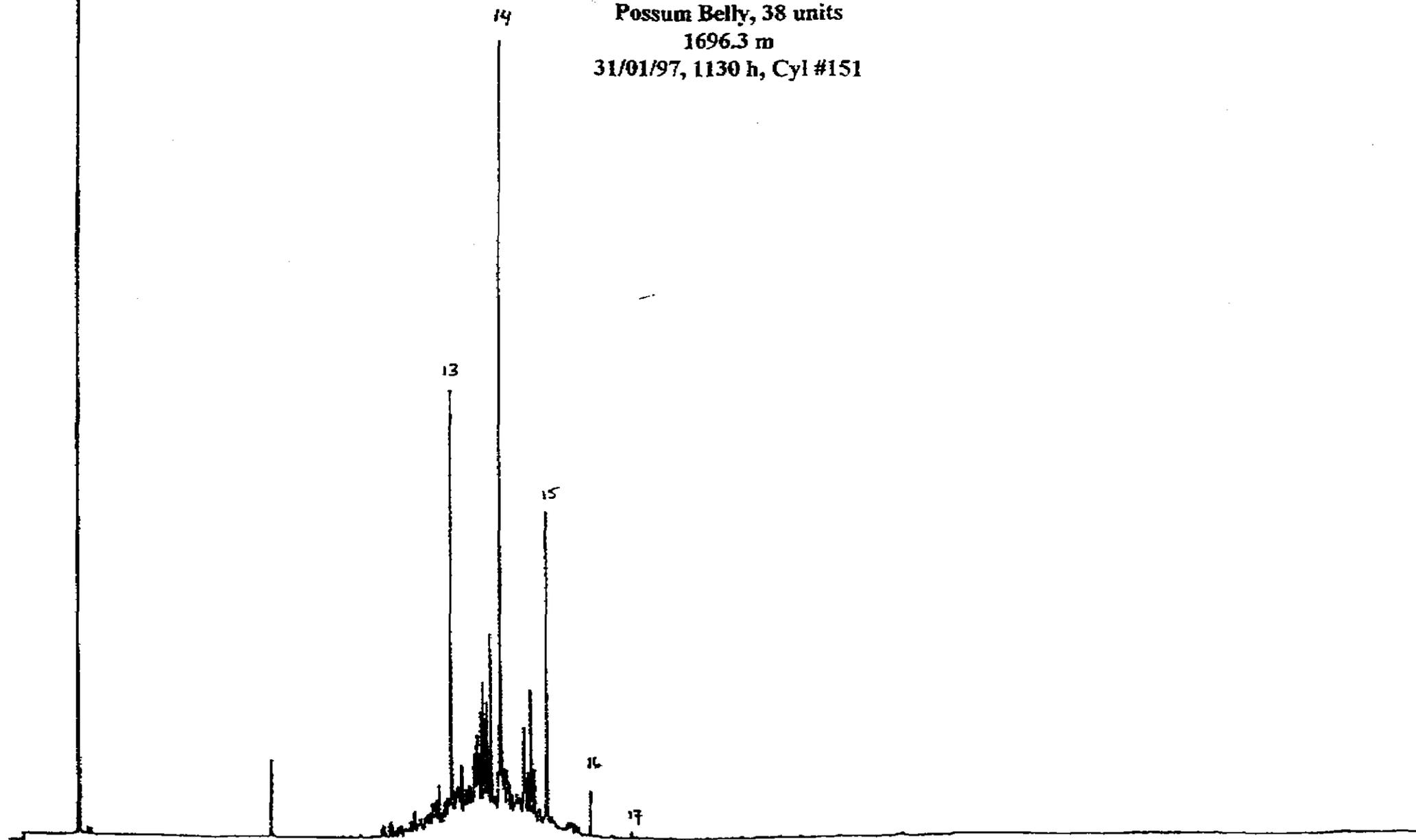
Signed

Steve Cass

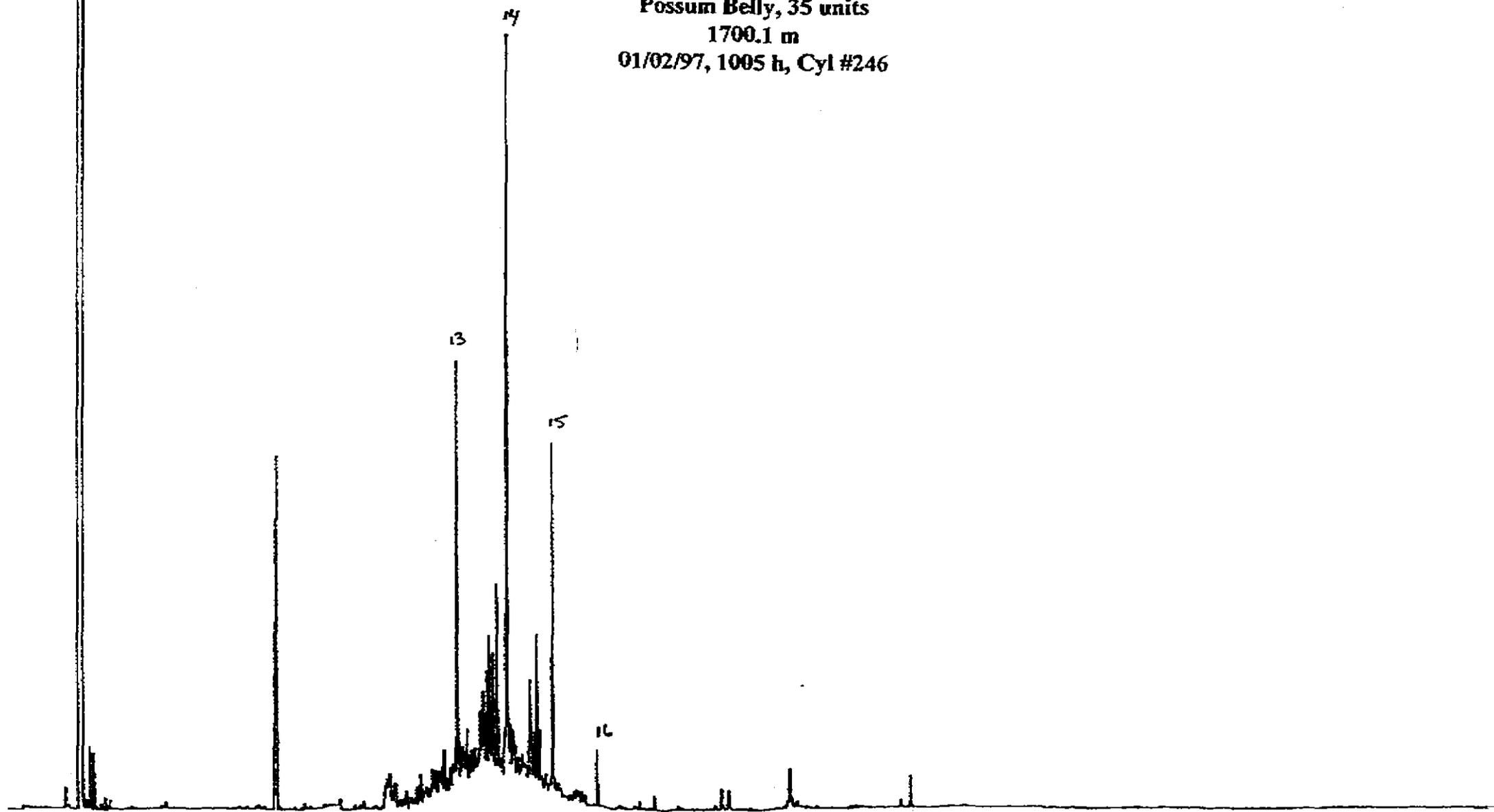
Date :

14-02-97

Shitem-1D  
Gas/Water  
Possum Belly, 38 units  
1696.3 m  
31/01/97, 1130 h, Cyl #151



Shittem-ID  
Gas/Water  
Possum Belly, 35 units  
1700.1 m  
01/02/97, 1005 h, Cyl #246



389169



A.C.N. 008 127 802



389170

**FACSIMILE TRANSMISSION FROM:**

AMDEL LIMITED PETROLEUM SERVICES  
 35-37 STIRLING STREET, THEBARTON SA 5031  
 FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
 TELEPHONE NO: (08) 8416 5240

---

TO: Malcolm Bendall

---

COMPANY: Condor Oil Investments Pty Ltd

---

FAX NO: 03 6229 2153                      DATE: 17 February, 1997

---

COPY TO:

---

FROM: Scott Wythe                              TOTAL PAGES: 1

---

Malcolm,

The previously analysed Lonnvale oil seep is likely to be the biodegraded residue of a mature oil which has precursor organic matter rich in *Tasmanites* alga.

Best Regards,

Scott Wythe  
 Petroleum Geochemist  
 Petroleum Services

**FACSIMILE TRANSMISSION FROM:**

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

---

TO: Malcolm Bendall

---

COMPANY: Condor Oil Investments Pty Ltd

---

FAX NO: 03 6229 2153                      DATE: 18 February, 1997

---

COPY TO: Gerry Carne - 8332 7730

---

FROM: Scott Wythe                              TOTAL PAGES: 15

---

Malcolm/Gerry,

Please find following GC traces of the two outstanding core samples along with gas compositional results for the remaining three gases. We received the next five samples today and will fax you results as soon as they are available. Please advise how many cylinders you require for Fridays planned swabbing. The extract yields for the two core samples are given below.

<u>Depth (m)</u>	<u>Yield (mg/kg)</u>
1715	19.0
1718	18.6

Hydrogen and helium analysis only was able to be performed on the gas/water sample from 1713.8m (cylinder #242, Possum Belly, 22 units). Results (air uncorrected) are given below.

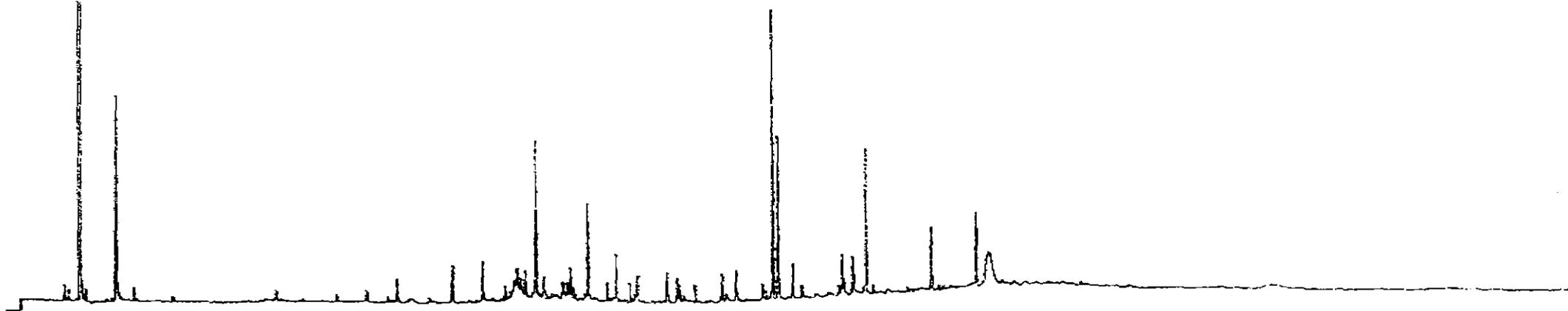
Hydrogen	0.07%
Helium	0.01%

Best Regards,



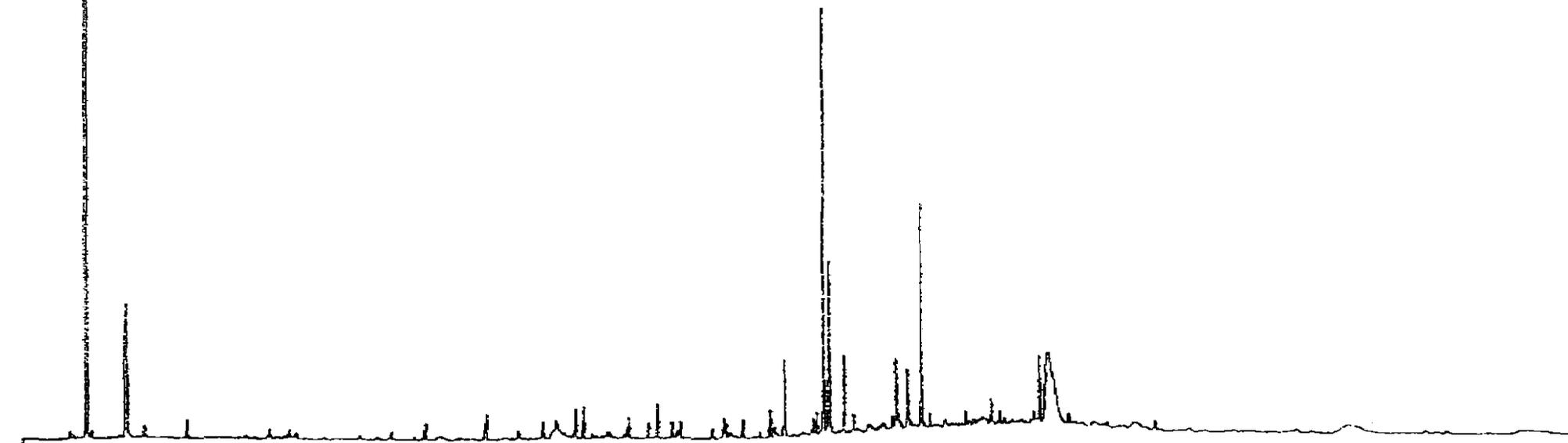
Scott Wythe  
Petroleum Geochemist  
Petroleum Services

Shittim-1D  
Core Sample  
1718 m  
GC of Extractable Organic Matter



389172

Shittim-1D  
Core Sample  
1715 m  
GC of Extractable Organic Matter



389173

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5578

 Sample: SHITIM-1D, HOT WIRE  
 Cuttings Gas, 1737.3m, 21 units  
 11/02/97, 1030 h, Cyl# 173  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	20.93
Nitrogen	78.80
Helium	0.004
Carbon Dioxide	0.16
Hydrogen	0.08
Methane	0.03
Ethane	0.00
Propane	0.00
I-Butane	0.00
N-Butane	0.00
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.00
Hexanes	0.00
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

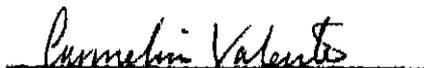
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.85
Lower Flammability limit	3938.24
Upper Flammability limit	34776.27
Ratio of upper to lower	8.83
Wobbe Index	0.02
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.996
Real gas Density (Rel to air = 1)	0.996
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.02
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.02
Real Nett Calorific Value MJ/m <sup>3</sup>	0.02
Real Gross Calorific Value MJ/m <sup>3</sup>	0.02
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	-0.01

This report relates specifically to the sample submitted for analysis.

Signed



Date :

18-02-97

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5578

 Sample: SHITTIM-11D, HOT WIRE  
 Cuttings Gas, 1737.3m, 21 units  
 11/02/97, 1030 h, Cyl# 173  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	94.05
Helium	0.10
Carbon Dioxide	3.15
Hydrogen	2.09
Methane	0.61
Ethane	0.00
Propane	0.00
I-Butane	0.00
N-Butane	0.00
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.00
Hexanes	0.00
Heptanes	0.00
Octanes and higher h/cs	0.00
Total	100.00

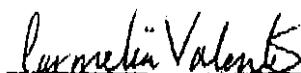
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.88
Lower Flammability limit	154.95
Upper Flammability limit	1449.25
Ratio of upper to lower	9.35
Wobbe Index	0.49
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.962
Real gas Density (Rel to air = 1)	0.962
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.42
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.48
Real Nett Calorific Value MJ/m <sup>3</sup>	0.42
Real Gross Calorific Value MJ/m <sup>3</sup>	0.48
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.44

This report relates specifically to the sample submitted for analysis.

Signed



Date :

18-02-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5578

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1737.3m, 21 units  
 11/02/97, 1030 h, Cyl# 173  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	1.75
Carbon Dioxide	52.88
Hydrogen	35.10
Methane	10.27
Ethane	0.00
Propane	0.00
I-Butane	0.00
N-Butane	0.00
Neo Pentane	0.00
1-Pentane	0.00
N-Pentane	0.00
Hexanes	0.00
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	25.70
Lower Flammability Limit	9.23
Upper Flammability Limit	86.37
Ratio of upper to lower	9.35
Wobbe Index	8.62
Compressibility Factor	1.0016
Ideal Gas Density (Rel to air = 1)	0.887
Real gas Density (Rel to air = 1)	0.885
Ideal Nett Calorific Value MJ/m <sup>3</sup>	7.08
Ideal Gross Calorific Value MJ/m <sup>3</sup>	8.12
Real Nett Calorific Value MJ/m <sup>3</sup>	7.07
Real Gross Calorific Value MJ/m <sup>3</sup>	8.10
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	7.95

This report relates specifically to the sample submitted for analysis.

Signed

Carmelita Valente

Date :

18-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GI-01-01/02

ASTM D 1945-91 (modified)

389177

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5578

Sample: SHITIM-1D, HOT WIRE  
 Cuttings Gas, 1737.3m, 21 units  
 11/02/97, 1030 h, Cyl# 173  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	3.72
Carbon Dioxide	0.00
Hydrogen	74.48
Methane	21.80
Ethane	0.00
Propane	0.00
I-Butane	0.00
N-Butane	0.00
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.00
Hexanes	0.00
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	5.15
Lower Flammability limit	4.35
Upper Flammability limit	40.70
Ratio of upper to lower	9.35
Wobbe Index	40.85
Compressibility factor	1.0074
Ideal Gas Density (Rel to air = 1)	0.178
Real gas Density (Rel to air = 1)	0.176
Ideal Nett Calorific Value MJ/m <sup>3</sup>	15.02
Ideal Gross Calorific Value MJ/m <sup>3</sup>	17.22
Real Nett Calorific Value MJ/m <sup>3</sup>	14.91
Real Gross Calorific Value MJ/m <sup>3</sup>	17.09
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	16.90

This report relates specifically to the sample submitted for analysis.

Signed

*Lucretia Valente*

Date :

18-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

**389178**

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5578

 Sample: SHITTM-1D, HOT WIRE  
 Cuttings Gas, 1741.3m, 36units  
 11/02/97, 1814 h, CV# 321  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	17.91
Nitrogen	81.71
Helium	0.01
Carbon Dioxide	0.14
Hydrogen	0.20
Methane	0.03
Ethane	0.0009
Propane	0.0002
I-Butane	0.0000
N-Butane	0.0001
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0003
Hexanes	0.0007
Heptanes	0.0008
Octanes and higher hcs	0.0003
Total	100.00

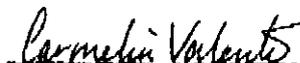
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.69
Lower Flammability limit	1710.42
Upper Flammability limit	19511.77
Ratio of upper to lower	11.41
Wobbe Index	0.04
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.991
Real gas Density (Rel to air = 1)	0.991
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.04
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.04
Real Nett Calorific Value MJ/m <sup>3</sup>	0.04
Real Gross Calorific Value MJ/m <sup>3</sup>	0.04
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.01

This report relates specifically to the sample submitted for analysis.

Signed



Date :

18-02-97

## PETROLEUM SERVICES GAS ANALYSIS

389179

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5578

 Sample: SHITTIM-11D, HOT WIRE  
 Cuttings Gas, 1741.3m, 36units  
 11/02/97, 1814 h, Cyl# 321  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	97.84
Helium	0.06
Carbon Dioxide	0.65
Hydrogen	1.25
Methane	0.19
Ethane	0.006
Propane	0.001
I-Butane	0.000
N-Butane	0.001
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.002
Hexanes	0.004
Heptanes	0.005
Octanes and higher h'cs	0.002
Total	100.01

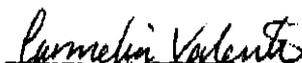
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.76
Lower Flammability limit	273.08
Upper Flammability limit	3115.22
Ratio of upper to lower	11.41
Wobbe Index	0.26
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.959
Real gas Density (Rel to air = 1)	0.958
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.22
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.25
Real Net Calorific Value MJ/m <sup>3</sup>	0.22
Real Gross Calorific Value MJ/m <sup>3</sup>	0.25
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.22

This report relates specifically to the sample submitted for analysis.

Signed



Date :

18-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # T.Q5578

389180

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1741.3m, 36units  
 11/02/97, 1814 h, Cyl# 321  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	2.88
Carbon Dioxide	29.75
Hydrogen	57.61
Methane	8.81
Ethane	0.26
Propane	0.06
1-Butane	0.00
N-Butane	0.03
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.09
Hexanes	0.20
Heptanes	0.23
Octanes and higher hcs	0.08
Total	100.00

( 0.00 = Less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	16.46
Lower Flammability limit	5.94
Upper Flammability limit	67.74
Ratio of upper to lower	11.41
Wobbe Index	15.51
Compressibility Factor	1.0050
Ideal Gas Density (Rel to air = 1)	0.568
Real gas Density (Rel to air = 1)	0.565
Ideal Net Calorific Value MJ/m <sup>3</sup>	10.18
Ideal Gross Calorific Value MJ/m <sup>3</sup>	11.69
Real Net Calorific Value MJ/m <sup>3</sup>	10.13
Real Gross Calorific Value MJ/m <sup>3</sup>	11.63
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	11.46

This report relates specifically to the sample submitted for analysis.

Signed

Purmelin Valente

Date :

18-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTMD 1945-91 (modified)

389181

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5578

Sample: SIFTIM-1D, HOT WIRE  
 Cuttings Gas, 1741.3m, 36units  
 11/02/97, 1814 h, Cyl# 321  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	4.10
Carbon Dioxide	0.00
Hydrogen	82.00
Methane	12.55
Ethane	0.38
Propane	0.08
1-Butane	0.00
N-Butane	0.04
Neo Pentane	0.00
1-Pentane	0.00
N-Pentane	0.13
Hexanes	0.29
Heptanes	0.32
Octanes and higher h'cs	0.11
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	4.79
Lower Flammability limit	4.17
Upper Flammability limit	47.59
Ratio of upper to lower	11.41
Wobbe Index	40.91
Compressibility Factor	1.0082
Ideal Gas Density (Rel to air = 1)	0.165
Real gas Density (Rel to air = 1)	0.164
Ideal Nett Calorific Value MJ/m <sup>3</sup>	14.49
Ideal Gross Calorific Value MJ/m <sup>3</sup>	16.64
Real Nett Calorific Value MJ/m <sup>3</sup>	14.38
Real Gross Calorific Value MJ/m <sup>3</sup>	16.51
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	16.33

This report relates specifically to the sample submitted for analysis.

Signed

Pamela Valente

Date :

18-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389182

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5578

Sample: SHITIM-1D, HOT WIRE  
 Cuttings Gas, 1734.4m, 30units  
 08/02/97, 1405 h, Cyl# 174  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	19.31
Nitrogen	80.30
Helium	0.01
Carbon Dioxide	0.19
Hydrogen	0.17
Methane	0.02
Ethane	0.00041
Propane	0.00003
I-Butane	0.00000
N-Butane	0.00004
Neo Pentane	0.00000
I-Pentane	0.00000
N-Pentane	0.00003
Hexanes	0.00002
Heptanes	0.00000
Octanes and higher h'cs	0.00000
Total	100.00

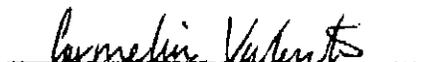
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.77
Lower Flammability limit	2173.22
Upper Flammability limit	29098.52
Ratio of upper to lower	13.39
Wobbe Index	0.03
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.993
Real gas Density (Rel to air = 1)	0.993
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.02
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.03
Real Nett Calorific Value MJ/m <sup>3</sup>	0.02
Real Gross Calorific Value MJ/m <sup>3</sup>	0.03
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.00

This report relates specifically to the sample submitted for analysis.

Signed



Date :

18-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389183

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5578

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1734.4m, 30units  
 08/02/97, 1405 h, Cyl# 174  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	96.67
Helium	0.10
Carbon Dioxide	1.43
Hydrogen	1.64
Methane	0.16
Ethane	0.0039
Propane	0.0003
I-Butane	0.0000
N-Butane	0.0004
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0003
Hexanes	0.0002
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.78
Lower Flammability limit	225.95
Upper Flammability limit	3025.40
Ratio of upper to lower	13.39
Wobbe Index	0.27
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.959
Real gas Density (Rel to air = 1)	0.959
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.22
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.26
Real Nett Calorific Value MJ/m <sup>3</sup>	0.22
Real Gross Calorific Value MJ/m <sup>3</sup>	0.26
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.23

This report relates specifically to the sample submitted for analysis.

Signed

*Carmelita Valente*

Date :

18-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5578

**389184**

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1734.4m, 30units  
 08/02/97, 1405 h, Cyl# 174  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	2.89
Carbon Dioxide	42.96
Hydrogen	49.21
Methane	4.78
Ethane	0.12
Propane	0.01
I-Butane	0.00
N-Butane	0.01
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.008
Hexanes	0.005
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	20.84
Lower Flammability limit	7.51
Upper Flammability limit	100.52
Ratio of upper to lower	13.39
Wobbe Index	9.28
Compressibility Factor	1.0038
Ideal Gas Density (Rel to air = 1)	0.720
Real gas Density (Rel to air = 1)	0.717
Ideal Nett Calorific Value MJ/m <sup>3</sup>	6.77
Ideal Gross Calorific Value MJ/m <sup>3</sup>	7.87
Real Nett Calorific Value MJ/m <sup>3</sup>	6.74
Real Gross Calorific Value MJ/m <sup>3</sup>	7.84
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	7.71

This report relates specifically to the sample submitted for analysis.

Signed

Carmelita Valente

Date :

18-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5578

389185

Sample: SHITIM-1D, HOT WIRE  
Cuttings Gas, 1734.4m, 30units  
08/02/97, 1405 h, Cyl# 174  
Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	5.08
Carbon Dioxide	0.00
Hydrogen	86.28
Methane	8.37
Ethane	0.21
Propane	0.02
I-Butane	0.00
N-Butane	0.02
Non Pentane	0.00
I-Pentane	0.00
N-Pentane	0.01
Hexanes	0.01
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water-free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.39
Lower Flammability limit	4.28
Upper Flammability limit	57.33
Ratio of upper to lower	13.39
Wobbe Index	40.37
Compressibility Factor	1.0087
Ideal Gas Density (Rel to air = 1)	0.117
Real gas Density (Rel to air = 1)	0.116
Ideal Nett Calorific Value MJ/m <sup>3</sup>	11.87
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.80
Real Nett Calorific Value MJ/m <sup>3</sup>	11.76
Real Gross Calorific Value MJ/m <sup>3</sup>	13.69
Gross calorific value of water saturated gas MJ/m <sup>3</sup>	13.54

This report relates specifically to the sample submitted for analysis.

Signed

Carmelita Valente

Date :

18-02-97



## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5591

 Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1748.8m, 43units  
 12/02/97, 1505 h, Cyl# 136  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	17.08
Nitrogen	82.46
Helium	0.06
Carbon Dioxide	0.04
Hydrogen	0.33
Methane	0.03
Ethane	0.0009
Propane	0.0002
I-Butane	0.0000
N-Butane	0.0001
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0001
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.60
Lower Flammability limit	1136.57
Upper Flammability limit	16079.66
Ratio of upper to lower	14.15
Wobbe Index	0.05
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air - 1)	0.987
Real gas Density (Rel to air - 1)	0.987
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.04
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.05
Real Nett Calorific Value MJ/m <sup>3</sup>	0.04
Real Gross Calorific Value MJ/m <sup>3</sup>	0.05
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.02

This report relates specifically to the sample submitted for analysis.

Signed



Date :

21-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

**389188**

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5591

 Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1748.8m, 43units  
 12/02/97, 1505 h, Cyl# 136  
 Air Corrected

GAS	MOL. %
Oxygen plus Argon	0.00
Nitrogen	97.74
Helium	0.31
Carbon Dioxide	0.10
Hydrogen	1.72
Methane	0.13
Ethane	0.004
Propane	0.0008
i-Butane	0.0000
n-Butane	0.0007
Neo Pentane	0.0000
1-Pentane	0.0000
n-Pentane	0.0003
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h/c's	0.0000
Total	100.01

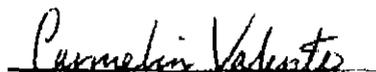
(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.49
Lower Flammability limit	218.49
Upper Flammability limit	3091.11
Ratio of upper to lower	14.15
Wobbe Index	0.27
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.949
Real gas Density (Rel to air = 1)	0.949
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.22
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.26
Real Net Calorific Value MJ/m <sup>3</sup>	0.22
Real Gross Calorific Value MJ/m <sup>3</sup>	0.26
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.23

This report relates specifically to the sample submitted for analysis.

Signed



Date :

21-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method 01-01-01/02

ASTM D 1945-91 (modified)

**389189**

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5591

Sample: SHUTTIN-11D, HOT WIRE  
Cuttings Gas, 1748.8m, 43units  
12/02/97, 1505 h, Cyl# 136  
Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	13.77
Carbon Dioxide	4.47
Hydrogen	75.74
Methane	5.74
Ethane	0.20
Propane	0.037
1-Butane	0.000
N-Butane	0.030
Neo Pentane	0.000
1-Pentane	0.000
N-Pentane	0.014
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

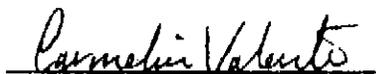
( 0.00 - less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	5.07
Lower Flammability limit	4.95
Upper Flammability limit	70.06
Ratio of upper to lower	14.15
Wobbe Index	27.59
Compressibility Factor	1.0076
Ideal Gas Density (Rel to air = 1)	0.175
Real gas Density (Rel to air = 1)	0.174
Ideal Nett Calorific Value MJ/m <sup>3</sup>	9.90
Ideal Gross Calorific Value MJ/m <sup>3</sup>	11.54
Real Nett Calorific Value MJ/m <sup>3</sup>	9.82
Real Gross Calorific Value MJ/m <sup>3</sup>	11.45
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	11.32

This report relates specifically to the sample submitted for analysis.

Signed



Date :

21-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

**389190**

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5591

 Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1748.8m, 43units  
 12/02/97, 1505 h, Cyl# 136  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	14.42
Carbon Dioxide	0.00
Hydrogen	79.29
Methane	6.01
Ethane	0.20
Propane	0.038
I-Butane	0.000
N-Butane	0.031
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.014
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'es	0.000
Total	100.01

(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.25
Lower Flammability limit	4.73
Upper Flammability limit	66.92
Ratio of upper to lower	14.15
Wobbe Index	36.09
Compressibility Factor	1.0080
Ideal Gas Density (Rel to air = 1)	0.112
Real gas Density (Rel to air = 1)	0.111
Ideal Nett Calorific Value MJ/m <sup>3</sup>	10.36
Ideal Gross Calorific Value MJ/m <sup>3</sup>	12.08
Real Nett Calorific Value MJ/m <sup>3</sup>	10.28
Real Gross Calorific Value MJ/m <sup>3</sup>	11.99
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	11.85

This report relates specifically to the sample submitted for analysis.

Signed



Date :

21-02-97



PETROLEUM SERVICES GAS ANALYSIS

Method OL-01-01/02

ASTM D 1945-91 (modified)

389191

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5591

Sample: SHITTM-11), HOT WIRE  
Cuttings Gas, 1748.8m, 33units  
12/02/97, 1522 h, Cyl# 304  
Air Uncorrected

GAS	MOL %
Oxygen plus Argon	17.59
Nitrogen	82.00
Helium	0.04
Carbon Dioxide	0.02
Hydrogen	0.32
Methane	0.03
Ethane	0.0011
Propane	0.0002
I-Butane	0.0000
N-Butane	0.0001
Nco Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Oclanes and higher h'os	0.0000
Total	100.00

( 0.00 - less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.62
Lower Flammability limit	1158.40
Upper Flammability limit	15717.09
Ratio of upper to lower	13.57
Wobbe Index	0.05
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.988
Real gas Density (Rel to air = 1)	0.988
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.04
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.05
Real Nett Calorific Value MJ/m <sup>3</sup>	0.04
Real Gross Calorific Value MJ/m <sup>3</sup>	0.05
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.02

This report relates specifically to the sample submitted for analysis.

Signed Carmedin Valente

Date : 21-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389192

Client: CONGOR OIL INVESTMENTS PTY LTD

Report # LQ5591

Sample: SHUTTUM-11D, HOT WIRE  
Cuttings Gas, 1748.8m, 33units  
12/02/97, 1522 h, Cyl# 304  
Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	97.72
Helium	0.23
Carbon Dioxide	0.00
Hydrogen	1.87
Methane	0.17
Ethane	0.0064
Propane	0.0012
1-Butane	0.0000
N-Butane	0.0005
Neo Pentane	0.0000
1-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h/c's	0.0000
Total	100.00

(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.45
Lower Flammability limit	198.28
Upper Flammability limit	2690.27
Ratio of upper to lower	13.57
Wobbe Index	0.30
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.948
Real gas Density (Rel to air = 1)	0.948
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.25
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.30
Real Nett Calorific Value MJ/m <sup>3</sup>	0.25
Real Gross Calorific Value MJ/m <sup>3</sup>	0.30
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.25

This report relates specifically to the sample submitted for analysis.

Signed Carmelita Valente

Date : 21-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GJ-01-01/02

ASTM D 1945-91 (modified)

**389193**

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5591

 Sample: SHITIM-1D, HOT WIRE  
 Cuttings Gas, 1748.8m, 33units  
 12/02/97, 1522 h, Cyl# 304  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	10.25
Carbon Dioxide	0.00
Hydrogen	81.97
Methane	7.43
Ethane	0.28
Propane	0.051
I-Butane	0.000
N-Butane	0.021
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.002
Hexanes	0.000
Heptanes	0.000
Octanes and higher hcs	0.000
Total	100.01

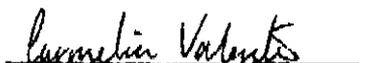
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.38
Lower Flammability limit	4.52
Upper Flammability limit	61.36
Ratio of upper to lower	13.57
Wobbe Index	38.00
Compressibility Factor	1.0082
Ideal Gas Density (Rel to air = 1)	0.117
Real gas Density (Rel to air = 1)	0.116
Ideal Nett Calorific Value MJ/m <sup>3</sup>	11.15
Ideal Gross Calorific Value MJ/m <sup>3</sup>	12.97
Real Nett Calorific Value MJ/m <sup>3</sup>	11.06
Real Gross Calorific Value MJ/m <sup>3</sup>	12.87
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	12.72

This report relates specifically to the sample submitted for analysis.

Signed



Date :

21-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

**389194**

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5591

 Sample: SHITIM-1D, HOT WIRE  
 Cuttings Gas, 1748.8m, 33units  
 12/02/97, 1522 h, Cyl# 304  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	10.25
Carbon Dioxide	0.00
Hydrogen	81.97
Methane	7.43
Ethane	0.28
Propane	0.051
I-Butane	0.000
N-Butane	0.021
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.002
Hexanes	0.000
Heptanes	0.000
Octanes and higher lies	0.000
Total	100.01

(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.38
Lower Flammability limit	4.52
Upper Flammability limit	61.36
Ratio of upper to lower	13.57
Wobbe Index	38.00
Compressibility Factor	1.0082
Ideal Gas Density (Rel to air = 1)	0.117
Real gas Density (Rel to air = 1)	0.116
Ideal Nett Calorific Value MJ/m <sup>3</sup>	11.15
Ideal Gross Calorific Value MJ/m <sup>3</sup>	12.97
Real Nett Calorific Value MJ/m <sup>3</sup>	11.06
Real Gross Calorific Value MJ/m <sup>3</sup>	12.87
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	12.72

This report relates specifically to the sample submitted for analysis.

Signed



Date :

21-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389195

Client: CONIDOR OIL INVESTMENTS PTY LTD

Report # LQ5591

Sample: SHITTIM-11D, HOT WIRE  
 Cuttings Gas, 1751m, 18units  
 12/02/97, 1845 h, Cyl# 271  
 Air Uncorrected

GAS	MOL. %
Oxygen plus Argon	18.86
Nitrogen	80.90
Helium	0.01
Carbon Dioxide	0.08
Hydrogen	0.13
Methane	0.02
Ethane	0.0004
Propane	0.0000
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h/c's	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.74
Lower Flammability limit	2801.11
Upper Flammability limit	35701.90
Ratio of upper to lower	12.75
Wobbe Index	0.02
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.992
Real gas Density (Rel to air = 1)	0.992
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.02
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.02
Real Net Calorific Value MJ/m <sup>3</sup>	0.02
Real Gross Calorific Value MJ/m <sup>3</sup>	0.02
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	-0.01

This report relates specifically to the sample submitted for analysis.

Signed

Lamelin Valentis

Date :

21-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method 01-01-01/02

ASTM D 1945-91 (modified)

389196

Client: CONDOR OIL INVESTMENTS PTY LTD

Report #: LQ5591

Sample: SHITIM-1D, HOT WIRE  
Cuttings Gas, 1751m, 18units  
12/02/97, 1845 h, Cyl# 271  
Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	98.31
Helium	0.08
Carbon Dioxide	0.41
Hydrogen	1.07
Methane	0.13
Ethane	0.0036
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.77
Lower Flammability limit	339.50
Upper Flammability limit	4327.12
Ratio of upper to lower	12.75
Wobbe Index	0.18
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.959
Real gas Density (Rel to air = 1)	0.958
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.15
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.18
Real Nett Calorific Value MJ/m <sup>3</sup>	0.15
Real Gross Calorific Value MJ/m <sup>3</sup>	0.18
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.14

This report relates specifically to the sample submitted for analysis.

Signed



Date :

21-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01:02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PVTY LTD

Report # LQ5591

389197

Sample: SHTTIM-112, HOT WIRE  
 Cuttings Gas, 1751m, 18units  
 12/02/97, 1845 h, Cyl# 271  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	4.87
Carbon Dioxide	24.20
Hydrogen	63.31
Methane	7.40
Ethane	0.21
Propane	0.006
I-Butane	0.000
N-Butane	0.0010
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0010
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher H's	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	13.38
Lower Flammability limit	5.75
Upper Flammability limit	73.31
Ratio of upper to lower	12.75
Wobbe Index	15.59
Compressibility Factor	1.0059
Ideal Gas Density (Rel to air = 1)	0.462
Real gas Density (Rel to air = 1)	0.459
Ideal Nett Calorific Value MJ/m <sup>3</sup>	9.13
Ideal Gross Calorific Value MJ/m <sup>3</sup>	10.59
Real Nett Calorific Value MJ/m <sup>3</sup>	9.07
Real Gross Calorific Value MJ/m <sup>3</sup>	10.53
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	10.39

This report relates specifically to the sample submitted for analysis.

Signed

Permelia Valente

Date :

21-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5591

389198

Sample: SHITTIM-11D, HOT WIRE  
 Cuttings Gas, 1751m, 18units  
 12/02/97, 1845 h, Cyl# 271  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	6.42
Carbon Dioxide	0.00
Hydrogen	83.52
Methane	9.77
Ethane	0.28
Propane	0.008
I-Butane	0.000
N-Butane	0.0013
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0013
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h/c's	0.0000
Total	100.00

(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.60
Lower Flammability limit	4.36
Upper Flammability limit	55.57
Ratio of upper to lower	12.75
Wobbe Index	39.66
Compressibility Factor	1.0084
Ideal Gas Density (Rel to air = 1)	0.124
Real gas Density (Rel to air = 1)	0.123
Ideal Nett Calorific Value MJ/m <sup>3</sup>	12.04
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.98
Real Nett Calorific Value MJ/m <sup>3</sup>	11.94
Real Gross Calorific Value MJ/m <sup>3</sup>	13.86
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	13.71

This report relates specifically to the sample submitted for analysis.

Signed

Carmedin Valente

Date :

21-02-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5591

**389199**

 Sample: SJH/TIM-1D, HOT WIRE  
 Cuttings Gas, 1748.8m, 55units  
 12/02/97, 1528 h, Cyl# 132  
 Air Uncorrected

GAS	MOL. %
Oxygen plus Argon	17.46
Nitrogen	82.11
Helium	0.03
Carbon Dioxide	0.04
Hydrogen	0.34
Methane	0.02
Ethane	0.0009
Propane	0.0002
I-Butane	0.0000
N-Butane	0.0002
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0002
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'es	0.0000
Total	100.00

( 0.00 - less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.62
Lower Flammability limit	1105.51
Upper Flammability limit	15824.91
Ratio of upper to lower	14.31
Wobbe Index	0.05
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.988
Real gas Density (Rel to air = 1)	0.988
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.04
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.05
Real Nett Calorific Value MJ/m <sup>3</sup>	0.04
Real Gross Calorific Value MJ/m <sup>3</sup>	0.05
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.02

This report relates specifically to the sample submitted for analysis

Signed



Date :

21-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONCOR OIL INVESTMENTS PTY LTD

Report # 1.Q5591

389200

Sample: SITTITM-1D, HOT WIRE  
 Cuffings Gas, 1748.8m, 55units  
 12/02/97, 1528 h, Cyl# 132  
 Air Corrected

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	97.64
Helium	0.17
Carbon Dioxide	0.11
Hydrogen	1.93
Methane	0.14
Ethane	0.0051
Propane	0.0010
1-Butane	0.0000
N-Butane	0.0011
Neo Pentane	0.0000
1-Pentane	0.0000
N-Pentane	0.0011
Hexanes	0.0001
Heptanes	0.0000
Octanes and higher h/cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.47
Lower Flammability limit	194.93
Upper Flammability limit	2790.34
Ratio of upper to lower	14.31
Wobbe Index	0.30
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.949
Real gas Density (Rel to air = 1)	0.948
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.25
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.29
Real Nett Calorific Value MJ/m <sup>3</sup>	0.25
Real Gross Calorific Value MJ/m <sup>3</sup>	0.29
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.26

This report relates specifically to the sample submitted for analysis.

Signed



Date :

21-02-97



PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5591

389201

Sample: SHITTIM-11D, HOT WIRE  
Cuttings Gas, 1748.8m, 55units  
12/02/97, 1528 h, Cyl# 132  
Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	7.23
Carbon Dioxide	4.75
Hydrogen	81.89
Methane	5.77
Ethane	0.22
Propane	0.045
I-Butane	0.000
N-Butane	0.047
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.045
Hexanes	0.004
Heptanes	0.000
Octanes and higher h'es	0.000
Total	100.00

( 0.00 - less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	5.11
Lower Flammability limit	4.59
Upper Flammability limit	65.71
Ratio of upper to lower	14.31
Wobbe Index	29.52
Compressibility Factor	1.0082
Ideal Gas Density (Rel to air = 1)	0.176
Real gas Density (Rel to air = 1)	0.175
Ideal Nett Calorific Value MJ/m <sup>3</sup>	10.63
Ideal Gross Calorific Value MJ/m <sup>3</sup>	12.40
Real Nett Calorific Value MJ/m <sup>3</sup>	10.54
Real Gross Calorific Value MJ/m <sup>3</sup>	12.30
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	12.16

This report relates specifically to the sample submitted for analysis.

Signed *Lumelia Valente*

Date : 21-02-97



PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5591

389202

Sample: SHITTIM-1D, HOT WJRR  
Cuttings Gas, 1748.8m, 55units  
12/02/97, 1528 h, Cyl# 132  
Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	7.59
Carbon Dioxide	0.00
Hydrogen	85.97
Methane	6.06
Ethane	0.23
Propane	0.047
I-Butane	0.000
N-Butane	0.049
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.048
Hexanes	0.005
Heptanes	0.000
Octanes and higher h'es	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.17
Lower Flammability limit	4.37
Upper Flammability limit	62.59
Ratio of upper to lower	14.31
Wobbe Index	39.37
Compressibility Factor	1.0086
Ideal Gas Density (Rel to air = 1)	0.109
Real gas Density (Rel to air = 1)	0.108
Ideal Nett Calorific Value MJ/m <sup>3</sup>	11.16
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.02
Real Nett Calorific Value MJ/m <sup>3</sup>	11.07
Real Gross Calorific Value MJ/m <sup>3</sup>	12.90
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	12.77

This report relates specifically to the sample submitted for analysis.

Signed Carmelita Valentis

Date : 21-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5591

389203

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1745 8m, 21 units  
 12/02/97, 1215 h, Cyl# 250  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	21.53
Nitrogen	78.31
Helium	0.01
Carbon Dioxide	0.03
Hydrogen	0.09
Methane	0.03
Ethane	0.0004
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.85
Lower Flammability limit	3563.81
Upper Flammability limit	32839.39
Ratio of upper to lower	9.21
Wobbe Index	0.02
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.996
Real gas Density (Rel to air = 1)	0.996
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.02
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.02
Real Nett Calorific Value MJ/m <sup>3</sup>	0.02
Real Gross Calorific Value MJ/m <sup>3</sup>	0.02
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	-0.01

This report relates specifically to the sample submitted for analysis.

Signed

Carmita Valente

Date :

21-02-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5591

389204

Sample: SHITBIM-1D, HOT WIRE  
 Cuttings Gas, 1745.8m, 21units  
 12/02/97, 1215 h, Cyl# 250  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	91.00
Helium	0.67
Carbon Dioxide	0.44
Hydrogen	6.06
Methane	1.81
Ethane	0.024
Propane	0.0042
I-Butane	0.0000
N-Butane	0.0011
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0007
Hexanes	0.0009
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.01

(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	26.13
Lower Flammability limit	52.89
Upper Flammability limit	487.38
Ratio of upper to lower	9.21
Wobbe Index	1.52
Compressibility Factor	1.0003
Ideal Gas Density (Rel to air = 1)	0.902
Real gas Density (Rel to air = 1)	0.902
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.26
Ideal Gross Calorific Value MJ/m <sup>3</sup>	1.44
Real Nett Calorific Value MJ/m <sup>3</sup>	1.26
Real Gross Calorific Value MJ/m <sup>3</sup>	1.44
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.38

This report relates specifically to the sample submitted for analysis.

Signed

Curmeline Valente

Date : 21-02-97

PETROLIUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5591

Sample: SHITTIM-1D, HOT WIRE  
 Cuttings Gas, 1745 8m, 21 units  
 12/02/97, 1215 h, Cyl# 250  
 Air & Nitrogen Corrected

389205

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	7.47
Carbon Dioxide	4.91
Hydrogen	67.20
Methane	20.07
Ethane	0.27
Propane	0.046
I-Butane	0.000
N-Butane	0.013
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.0076
Hexanes	0.0097
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	99.99

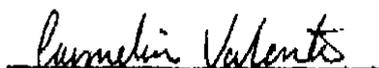
(0.00 - less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	7.16
Lower Flammability Limit	4.77
Upper Flammability limit	43.98
Ratio of upper to lower	9.21
Wobbe Index	32.11
Compressibility Factor	1.0066
Ideal Gas Density (Rel to air = 1)	0.247
Real gas Density (Rel to air = 1)	0.245
Ideal Net Calorific Value MJ/m <sup>3</sup>	13.93
Ideal Gross Calorific Value MJ/m <sup>3</sup>	15.96
Real Net Calorific Value MJ/m <sup>3</sup>	13.84
Real Gross Calorific Value MJ/m <sup>3</sup>	15.85
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	15.66

This report relates specifically to the sample submitted for analysis.

Signed



Date :

21-02-97





A.C.N. 008 127 802

389207

**FACSIMILE TRANSMISSION FROM:**

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

---

TO: Malcolm Bendall

---

COMPANY: Condor Oil Investments Pty Ltd

---

FAX NO: 03 6229 2153 DATE: 11 March, 1997

---

COPY TO: Gerry Carne - 8332 7730

---

FROM: Scott Wythe TOTAL PAGES: 1

---

Malcolm/Gerry,

The carbon isotopic value of the Shittim-1D gas from cylinder #162 with 360 units and 1.9% methane was determined to be -56.7‰ PDB.

Best Regards,

Scott Wythe  
Petroleum Geochemist  
Petroleum Services



A.C.N. 008 127 802

389208

FACSIMILE TRANSMISSION FROM:

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

---

TO: Malcolm Bendall

---

COMPANY: Condor Oil Investment Pty Ltd

---

FAX NO: 036229 2153

DATE: 25 March, 1997

---

COPY TO:

---

FROM: Carmelina Valente

TOTAL PAGES: 21

---

Malcolm,

Gas compositions for Jericho-1A follow,

Regards,

Carmelina Valente  
Petroleum Chemist  
Petroleum Services

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5699

 Sample: JERICO-1A  
 Hot Wire Cuttings Gas 258m, 38units  
 14/03/97, 1458 h, Cyl# 336  
 Air Uncorrected

**389209**

GAS	MOI. %
Oxygen plus Argon	19.87
Nitrogen	79.78
Helium	0.00
Carbon Dioxide	0.08
Hydrogen	0.26
Methane	0.01
Ethane	0.0003
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.75
Lower Flammability limit	1500.36
Upper Flammability limit	24853.90
Ratio of upper to lower	16.57
Wobbe Index	0.03
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.993
Real gas Density (Rel to air = 1)	0.993
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.03
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.03
Real Nett Calorific Value MJ/m <sup>3</sup>	0.03
Real Gross Calorific Value MJ/m <sup>3</sup>	0.03
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.00

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5699

**389210**

 Sample: JERICHO-1A  
 Hot Wire Cuttings Gas 258m, 38units  
 14/03/97, 1458 h, Cyl# 336  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	96.17
Helium	0.00
Carbon Dioxide	0.58
Hydrogen	3.16
Methane	0.09
Ethane	0.0041
Propane	0.0015
1-Butane	0.0000
N-Butane	0.0004
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0003
Hexanes	0.0000
Heptanes	0.0004
Octanes and higher hcs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.28
Lower Flammability limit	123.63
Upper Flammability limit	2047.98
Ratio of upper to lower	16.57
Wobbe Index	0.43
Compressibility Factor	1.0000
Ideal Gas Density (Rel to air = 1)	0.942
Real gas Density (Rel to air = 1)	0.941
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.36
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.42
Real Nett Calorific Value MJ/m <sup>3</sup>	0.36
Real Gross Calorific Value MJ/m <sup>3</sup>	0.42
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.38

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # 1.Q5699

 Sample: JERICHO-1A  
 Hot Wire Cuttings Gas 258m, 38units  
 14/03/97, 1458 h, Cyl# 336  
 Air & Nitrogen Corrected

**389211**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	15.09
Hydrogen	82.50
Methane	2.23
Ethane	0.11
Propane	0.039
I-Butane	0.000
N-Butane	0.0092
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0076
Hexanes	0.0000
Heptanes	0.011
Octanes and higher h'cs	0.0000
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	8.73
Lower Flammability limit	4.73
Upper Flammability limit	78.33
Ratio of upper to lower	16.57
Wobbe Index	19.98
Compressibility Factor	1.0081
Ideal Gas Density (Rel to air = 1)	0.302
Real gas Density (Rel to air = 1)	0.299
Ideal Nett Calorific Value MJ/m <sup>3</sup>	9.34
Ideal Gross Calorific Value MJ/m <sup>3</sup>	10.97
Real Nett Calorific Value MJ/m <sup>3</sup>	9.26
Real Gross Calorific Value MJ/m <sup>3</sup>	10.88
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	10.75

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date : 25-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5699

 Sample: JERICHO-1A  
 Hot Wire Cuttings Gas 258m, 38units  
 14/03/97, 1458 h, Cyl# 336  
 Air, Nitrogen & Carbon Dioxide Corrected

**389212**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	0.00
Hydrogen	97.16
Methane	2.63
Ethane	0.13
Propane	0.046
I-Butane	0.00
N-Butane	0.011
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.0090
Hexanes	0.0000
Heptanes	0.013
Octanes and higher h'cs	0.0000
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	2.46
Lower Flammability limit	4.01
Upper Flammability limit	66.51
Ratio of upper to lower	16.57
Wobbe Index	44.29
Compressibility Factor	1.0098
Ideal Gas Density (Rel to air = 1)	0.085
Real gas Density (Rel to air = 1)	0.084
Ideal Nett Calorific Value MJ/m <sup>3</sup>	11.00
Ideal Gross Calorific Value MJ/m <sup>3</sup>	12.92
Real Nett Calorific Value MJ/m <sup>3</sup>	10.89
Real Gross Calorific Value MJ/m <sup>3</sup>	12.79
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	12.67

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5699

 Sample: JERICHO-1A  
 Hot Wire Cuttings Gas 235.3m, 50mits  
 12/03/97, 0735 h, Cyl# 334  
 Air Uncorrected

**389213**

GAS	MOL %
Oxygen plus Argon	19.62
Nitrogen	79.94
Helium	0.00
Carbon Dioxide	0.05
Hydrogen	0.35
Methane	0.04
Ethane	0.0004
Propane	0.0000
I-Butane	0.0000
N-Butane	0.0001
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher hcs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.71
Lower Flammability limit	1040.76
Upper Flammability limit	13233.47
Ratio of upper to lower	12.72
Wobbe Index	0.06
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.991
Real gas Density (Rel to air = 1)	0.991
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.05
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.06
Real Nett Calorific Value MJ/m <sup>3</sup>	0.05
Real Gross Calorific Value MJ/m <sup>3</sup>	0.06
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.03

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5699

 Sample: JERICHO-1A  
 Hot Wire Cuttings Gas 235 3m, 50units  
 12/03/97, 0735 h, Cyl# 334  
 Air Corrected

**389214**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	95.55
Helium	0.00
Carbon Dioxide	0.21
Hydrogen	3.79
Methane	0.45
Ethane	0.0039
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0008
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0001
Hexanes	0.0001
Heptanes	0.0000
Octanes and higher hcs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.01
Lower Flammability limit	96.16
Upper Flammability limit	1222.69
Ratio of upper to lower	12.72
Wobbe Index	0.66
Compressibility Factor	1.0001
Ideal Gas Density (Rel to air = 1)	0.932
Real gas Density (Rel to air = 1)	0.932
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.55
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.63
Real Net Calorific Value MJ/m <sup>3</sup>	0.55
Real Gross Calorific Value MJ/m <sup>3</sup>	0.63
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.59

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5699

Sample: JERICHO-1A  
 Hot Wire Cuttings Gas 235.3m, 50units  
 12/03/97, 0735 h, Cyl# 334  
 Air & Nitrogen Corrected

389215

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	4.67
Hydrogen	85.01
Methane	10.21
Ethane	0.087
Propane	0.0032
I-Butane	0.000
N-Butane	0.017
Neo Pentane	0.000
1-Pentane	0.000
N-Pentane	0.0024
Hexanes	0.0022
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	5.45
Lower Flammability limit	4.28
Upper Flammability limit	54.48
Ratio of upper to lower	12.72
Wobbe Index	32.77
Compressibility Factor	1.0085
Ideal Gas Density (Rel to air = 1)	0.188
Real gas Density (Rel to air = 1)	0.186
Ideal Net Calorific Value MJ/m <sup>3</sup>	12.24
Ideal Gross Calorific Value MJ/m <sup>3</sup>	14.21
Real Net Calorific Value MJ/m <sup>3</sup>	12.14
Real Gross Calorific Value MJ/m <sup>3</sup>	14.09
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	13.94

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5699

 Sample: JERICHO-1A  
 Hot Wire Cuttings Gas 235.3m, 50units  
 12/03/97, 0735 h, Cyl# 334  
 Air, Nitrogen & Carbon Dioxide Corrected

**389216**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	0.00
Hydrogen	89.18
Methane	10.71
Ethane	0.091
Propane	0.0033
I-Butane	0.000
N-Butane	0.018
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.0025
Hexanes	0.0023
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (nbs)

Average Molecular Weight	3.56
Lower Flammability limit	4.08
Upper Flammability limit	51.94
Ratio of upper to lower	12.72
Wobbe Index	42.54
Compressibility Factor	1.0089
Ideal Gas Density (Rel to air = 1)	0.123
Real gas Density (Rel to air = 1)	0.122
Ideal Net Calorific Value MJ/m <sup>3</sup>	12.84
Ideal Gross Calorific Value MJ/m <sup>3</sup>	14.91
Real Net Calorific Value MJ/m <sup>3</sup>	12.73
Real Gross Calorific Value MJ/m <sup>3</sup>	14.78
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	14.63

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5699

 Sample: JERICO-1A  
 Hot Wire Cuttings Gas 350m, 70units  
 19/03/97, 0900 h, Cyl# 335  
 Air Uncorrected

**389217**

GAS	MOL %
Oxygen plus Argon	18.55
Nitrogen	80.92
Helium	0.00
Carbon Dioxide	0.03
Hydrogen	0.48
Methane	0.02
Ethane	0.0007
Propane	0.0003
1-Butane	0.0000
N-Butane	0.0002
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0001
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.63
Lower Flammability limit	804.52
Upper Flammability limit	12768.69
Ratio of upper to lower	15.87
Wobbe Index	0.07
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.989
Real gas Density (Rel to air = 1)	0.988
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.06
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.07
Real Nett Calorific Value MJ/m <sup>3</sup>	0.06
Real Gross Calorific Value MJ/m <sup>3</sup>	0.07
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.03

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # I.Q5699

 Sample: JBRICHO-1A  
 1lot Wire Cuttings Gas 350m, 70units  
 19/03/97, 0900 h, Cyl# 335  
 Air Corrected

**389218**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	96.27
Helium	0.00
Carbon Dioxide	0.04
Hydrogen	3.54
Methane	0.14
Ethane	0.0051
Propane	0.0020
I-Butane	0.0000
N-Butane	0.0011
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0004
Hexanes	0.0002
Heptanes	0.0003
Octanes und higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.09
Lower Flammability limit	109.18
Upper Flammability limit	1732.83
Ratio of upper to lower	15.87
Wobbe Index	0.50
Compressibility Factor	1.0001
Ideal Gas Density (Rel to air = 1)	0.935
Real gas Density (Rel to air = 1)	0.935
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.42
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.49
Real Nett Calorific Value MJ/m <sup>3</sup>	0.42
Real Gross Calorific Value MJ/m <sup>3</sup>	0.49
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.45

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5699

 Sample: JIRICHO-1A  
 Hot Wire Cuttings Gas 350m, 70units  
 19/03/97, 0900 h, Cyl# 335  
 Air & Nitrogen Corrected

**389210**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	1.20
Hydrogen	94.86
Methane	3.69
Ethane	0.14
Propane	0.052
I-Butane	0.000
N-Butane	0.030
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.012
Hexanes	0.0057
Heptanes	0.0083
Octanes and higher hcs	0.0000
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.13
Lower Flammability limit	4.07
Upper Flammability limit	64.61
Ratio of upper to lower	15.87
Wobbe Index	39.77
Compressibility Factor	1.0095
Ideal Gas Density (Rel to air = 1)	0.108
Real gas Density (Rel to air = 1)	0.107
Ideal Nett Calorific Value MJ/m <sup>3</sup>	11.16
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.08
Real Nett Calorific Value MJ/m <sup>3</sup>	11.06
Real Gross Calorific Value MJ/m <sup>3</sup>	12.96
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	12.83

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENT'S PTY LTD

Report # LQ5699

Sample: JERICO-1A  
Hot Wire Cuttings Gas 350m, 70units  
19/03/97, 0900 h, Cyl# 335  
Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	0.00
Hydrogen	96.01
Methane	3.74
Ethane	0.14
Propane	0.053
I-Butane	0.000
N-Butane	0.030
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.012
Hexanes	0.0058
Heptanes	0.0084
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	2.64
Lower Flammability limit	4.02
Upper Flammability limit	63.84
Ratio of upper to lower	15.87
Wobbe Index	43.86
Compressibility Factor	1.0096
Ideal Gas Density (Rel to air = 1)	0.091
Real gas Density (Rel to air = 1)	0.090
Ideal Nett Calorific Value MJ/m <sup>3</sup>	11.30
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.24
Real Nett Calorific Value MJ/m <sup>3</sup>	11.19
Real Gross Calorific Value MJ/m <sup>3</sup>	13.12
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	12.99

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5699

 Sample: JERICHO-1A  
 Hot Wire Cuttings Gas 277m, 60mits  
 15/03/97, 0635 h, Cyl# 333  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	20.55
Nitrogen	79.00
Helium	0.00
Carbon Dioxide	0.04
Hydrogen	0.39
Methane	0.02
Ethane	0.0006
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0001
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher Hcs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.74
Lower Flammability limit	987.10
Upper Flammability limit	15423.43
Ratio of upper to lower	15.63
Wobbe Index	0.05
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.992
Real gas Density (Rel to air = 1)	0.992
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.05
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.05
Real Net Calorific Value MJ/m <sup>3</sup>	0.05
Real Gross Calorific Value MJ/m <sup>3</sup>	0.05
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.02

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GI-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5699

 Sample: JERICHO-1A  
 Hot Wire Cuttings Gas 277m, 60muts  
 15/03/97, 0635 h, Cyl# 333  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	92.36
Helium	0.00
Carbon Dioxide	0.24
Hydrogen	7.08
Methane	0.31
Ethane	0.012
Propane	0.0022
I-Butane	0.0000
N-Butane	0.0005
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0011
Hexanes	0.0002
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	26.17
Lower Flammability limit	54.39
Upper Flammability limit	849.91
Ratio of upper to lower	15.63
Wobbe Index	1.04
Compressibility Factor	1.0004
Ideal Gas Density (Rel to air = 1)	0.904
Real gas Density (Rel to air = 1)	0.903
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.84
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.99
Real Nett Calorific Value MJ/m <sup>3</sup>	0.84
Real Gross Calorific Value MJ/m <sup>3</sup>	0.99
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.94

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5699

 Sample: JERICHO-1A  
 Hot Wire Cuttings Gas 277m, 60units  
 15/03/97, 0635 h, Cyl# 333  
 Air & Nitrogen Corrected

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	3.08
Hydrogen	92.61
Methane	4.11
Ethane	0.15
Propane	0.029
I-Butane	0.000
N-Butane	0.006
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.014
Hexanes	0.0026
Heptanes	0.0000
Octanes and higher h/cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present.  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.95
Lower Flammability limit	4.16
Upper Flammability limit	64.95
Ratio of upper to lower	15.63
Wobbe Index	34.93
Compressibility Factor	1.0093
Ideal Gas Density (Rel to air = 1)	0.137
Real gas Density (Rel to air = 1)	0.135
Ideal Net Calorific Value MJ/m <sup>3</sup>	11.02
Ideal Gross Calorific Value MJ/m <sup>3</sup>	12.91
Real Net Calorific Value MJ/m <sup>3</sup>	10.92
Real Gross Calorific Value MJ/m <sup>3</sup>	12.79
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	12.66

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # I.Q5699

 Sample: JERICHO-1A  
 Hot Wire Cuttings Gas 277m, 60units  
 15/03/97, 0635 h, Cyl# 333  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	0.00
Hydrogen	95.55
Methane	4.24
Ethane	0.16
Propane	0.030
I-Butane	0.000
N-Butane	0.0061
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.015
Hexanes	0.0027
Heptanes	0.0000
Octanes and higher h/cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	2.68
Lower Flammability limit	4.03
Upper Flammability limit	62.95
Ratio of upper to lower	15.63
Wobbe Index	43.75
Compressibility Factor	1.0096
Ideal Gas Density (Rel to air = 1)	0.093
Real gas Density (Rel to air = 1)	0.092
Ideal Nett Calorific Value MJ/m <sup>3</sup>	11.37
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.32
Real Nett Calorific Value MJ/m <sup>3</sup>	11.26
Real Gross Calorific Value MJ/m <sup>3</sup>	13.19
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	13.06

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5699

 Sample: JERICHO-1A  
 Hot Wire Cuttings Gas 232.3m, 55units  
 12/03/97, 1755 h, Cyl# 338  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	18.96
Nitrogen	80.57
Helium	0.00
Carbon Dioxide	0.05
Hydrogen	0.37
Methane	0.05
Ethane	0.0003
Propane	0.0000
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0001
Hexanes	0.0001
Heptanes	0.0002
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.67
Lower Flammability limit	963.48
Upper Flammability limit	11515.86
Ratio of upper to lower	11.95
Wobbe Index	0.07
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.990
Real gas Density (Rel to air = 1)	0.990
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.06
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.07
Real Nett Calorific Value MJ/m <sup>3</sup>	0.06
Real Gross Calorific Value MJ/m <sup>3</sup>	0.07
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.03

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GI-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5699

 Sample: JERICHO-1A  
 Hot Wire Cuttings Gas 232.3m, 55units  
 12/03/97, 1755 h, Cyl# 338  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	96.30
Helium	0.00
Carbon Dioxide	0.17
Hydrogen	3.08
Methane	0.45
Ethane	0.0022
Propane	0.0003
I-Butane	0.0000
N-Butane	0.0002
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0006
Hexanes	0.0007
Heptanes	0.0014
Octanes and higher hcs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.19
Lower Flammability limit	115.59
Upper Flammability limit	1381.52
Ratio of upper to lower	11.95
Wobbe Index	0.57
Compressibility Factor	1.0000
Ideal Gas Density (Rel to air = 1)	0.939
Real gas Density (Rel to air = 1)	0.938
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.48
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.55
Real Net Calorific Value MJ/m <sup>3</sup>	0.48
Real Gross Calorific Value MJ/m <sup>3</sup>	0.55
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.51

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5699

 Sample: JERICHO-1A  
 Hot Wire Cuttings Gas 232.3m, 55units  
 12/03/97, 1755 h, Cyl# 338  
 Air & Nitrogen Corrected

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	4.54
Hydrogen	83.09
Methane	12.22
Ethane	0.058
Propane	0.0085
I-Butane	0.0000
N-Butane	0.0065
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.015
Hexanes	0.020
Heptanes	0.038
Octanes and higher h'es	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	5.72
Lower Flammability limit	4.29
Upper Flammability limit	51.28
Ratio of upper to lower	11.95
Wobbe Index	33.38
Compressibility Factor	1.0083
Ideal Gas Density (Rel to air = 1)	0.198
Real gas Density (Rel to air = 1)	0.196
Ideal Nett Calorific Value MJ/m <sup>3</sup>	12.82
Ideal Gross Calorific Value MJ/m <sup>3</sup>	14.84
Real Nett Calorific Value MJ/m <sup>3</sup>	12.72
Real Gross Calorific Value MJ/m <sup>3</sup>	14.72
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	14.56

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date :

25-03-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5699

Sample: JERICHO-1A  
 Hot Wire Cuttings Gas 232.3m, 55units  
 12/03/97, 1755 h, Cyl# 338  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	0.00
Hydrogen	87.05
Methane	12.79
Ethane	0.061
Propane	0.0089
I-Butane	0.0000
N-Butane	0.0068
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.016
Hexanes	0.020
Heptanes	0.039
Octanes and higher h'es	0.000
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.90
Lower Flammability limit	4.10
Upper Flammability limit	48.95
Ratio of upper to lower	11.95
Wobbe Index	42.35
Compressibility Factor	1.0087
Ideal Gas Density (Rel to air = 1)	0.135
Real gas Density (Rel to air = 1)	0.134
Ideal Net Calorific Value MJ/m <sup>3</sup>	13.43
Ideal Gross Calorific Value MJ/m <sup>3</sup>	15.55
Real Net Calorific Value MJ/m <sup>3</sup>	13.31
Real Gross Calorific Value MJ/m <sup>3</sup>	15.41
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	15.25

This report relates specifically to the sample submitted for analysis.

Signed \_\_\_\_\_

Date : 25-03-97

**FACSIMILE TRANSMISSION FROM:**

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

TO:	Malcolm Bendall	
COMPANY:	Condor Oil Investment Pty Ltd	
FAX NO:	036229 2153	DATE: <del>26 March, 1997</del> 8 April
COPY TO:		
FROM:	Carmelina Valente	TOTAL PAGES: 41

Malcolm,

Gas compositions for Shittim-ID follow,

Regards,

*Carmelina Valente*

Carmelina Valente  
Petroleum Chemist  
Petroleum Services

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

 Sample: SHITUM-1D  
 Choke Swab from 1568m, 30psig  
 26/02/97, 0510 h, Cyl# 132  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	3.14
Nitrogen	91.83
Helium	0.03
Carbon Dioxide	0.03
Hydrogen	0.57
Methane	4.40
Ethane	0.0007
Propane	0.0004
I-Butane	0.0000
N-Butane	0.0005
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0006
Hexanes	0.0002
Heptanes	0.0001
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.46
Lower Flammability limit	97.62
Upper Flammability limit	331.75
Ratio of upper to lower	3.40
Wobbe Index	1.78
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.948
Real gas Density (Rel to air = 1)	0.948
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.55
Ideal Gross Calorific Value MJ/m <sup>3</sup>	1.73
Real Nett Calorific Value MJ/m <sup>3</sup>	1.56
Real Gross Calorific Value MJ/m <sup>3</sup>	1.73
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.67

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

**389231**

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # I.Q5639

 Sample: SHITTIM-1D  
 Choke Swab from 1568m, 30psig  
 26/02/97, 0510 h, Cyl# 132  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	94.05
Helium	0.04
Carbon Dioxide	0.03
Hydrogen	0.74
Methane	5.14
Ethane	0.0009
Propane	0.0005
I-Butane	0.0000
N-Butane	0.0007
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0008
Hexanes	0.0002
Heptanes	0.0001
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.20
Lower Flammability limit	82.34
Upper Flammability limit	283.52
Ratio of upper to lower	3.44
Wobbe Index	2.09
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.939
Real gas Density (Rel to air = 1)	0.939
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.82
Ideal Gross Calorific Value MJ/m <sup>3</sup>	2.03
Real Nett Calorific Value MJ/m <sup>3</sup>	1.82
Real Gross Calorific Value MJ/m <sup>3</sup>	2.03
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.96

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389232

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

Sample: SHITIM-1D  
 Choke Swab from 1568m, 30psig  
 26/02/97, 0510 h, Cyl# 132  
 Air & Nitrogen Corrected

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.66
Carbon Dioxide	0.45
Hydrogen	12.49
Methane	86.36
Ethane	0.014
Propane	0.0083
I-Butane	0.000
N-Butane	0.011
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.014
Hexanes	0.0040
Heptanes	0.0011
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.36
Lower Flammability limit	4.90
Upper Flammability limit	16.86
Ratio of upper to lower	3.44
Wobbe Index	48.46
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.496
Real gas Density (Rel to air = 1)	0.496
Ideal Nett Calorific Value MJ/m <sup>3</sup>	30.64
Ideal Gross Calorific Value MJ/m <sup>3</sup>	34.12
Real Nett Calorific Value MJ/m <sup>3</sup>	30.64
Real Gross Calorific Value MJ/m <sup>3</sup>	34.13
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	33.52

This report relates specifically to the sample submitted for analysis.

Signed

Carmelita Valente

Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GI-01-01/02

ASTM D 1945-91 (modified)

**389233**

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

 Sample: SHITTIM-1D  
 Choke Swab from 1568m, 30psig  
 26/02/97, 0510 h, Cyl# 132  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.66
Carbon Dioxide	0.00
Hydrogen	12.55
Methane	86.75
Ethane	0.014
Propane	0.0083
I-Butane	0.000
N-Butane	0.011
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.014
Hexanes	0.0040
Heptanes	0.0011
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.22
Lower Flammability limit	4.87
Upper Flammability limit	16.79
Ratio of upper to lower	3.44
Wobbe Index	48.91
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.491
Real gas Density (Rel to air = 1)	0.491
Ideal Nett Calorific Value MJ/m <sup>3</sup>	30.78
Ideal Gross Calorific Value MJ/m <sup>3</sup>	34.27
Real Nett Calorific Value MJ/m <sup>3</sup>	30.78
Real Gross Calorific Value MJ/m <sup>3</sup>	34.28
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	33.67

This report relates specifically to the sample submitted for analysis.

Signed



Date:

26-03-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

389234

Sample: SHITIM-1D  
 Choke Swab from 1568m, 10psig  
 26/02/97, 0550 h, Cyl# 304  
 Air Uncorrected

GAS	MOL. %
Oxygen plus Argon	2.69
Nitrogen	91.88
Helium	0.03
Carbon Dioxide	0.02
Hydrogen	0.63
Methane	4.75
Ethane	0.0005
Propane	0.0003
I-Butane	0.0000
N-Butane	0.0005
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0005
Hexanes	0.0001
Heptanes	0.0001
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.38
Lower Flammability limit	90.20
Upper Flammability limit	307.34
Ratio of upper to lower	3.41
Wobbe Index	1.92
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.945
Real gas Density (Rel to air = 1)	0.945
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.68
Ideal Gross Calorific Value MJ/m <sup>3</sup>	1.87
Real Nett Calorific Value MJ/m <sup>3</sup>	1.68
Real Gross Calorific Value MJ/m <sup>3</sup>	1.87
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.81

This report relates specifically to the sample submitted for analysis.

Signed

Carmelita Valente

Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

 Sample: SHFITM-1D  
 Choke Swab from 1568m, 10psig  
 26/02/97, 0550 h, Cyl# 304  
 Air Corrected

**389235**

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	93.73
Helium	0.04
Carbon Dioxide	0.01
Hydrogen	0.81
Methane	5.41
Ethane	0.0006
Propane	0.0004
I-Butane	0.0000
N-Butane	0.0006
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0006
Hexanes	0.0002
Heptanes	0.0001
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.15
Lower Flammability limit	77.80
Upper Flammability limit	268.89
Ratio of upper to lower	3.46
Wobbe Index	2.21
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.937
Real gas Density (Rel to air = 1)	0.937
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.92
Ideal Gross Calorific Value MJ/m <sup>3</sup>	2.14
Real Nett Calorific Value MJ/m <sup>3</sup>	1.92
Real Gross Calorific Value MJ/m <sup>3</sup>	2.14
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	2.07

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

 Sample: SHTTIM-1D  
 Choke Swab from 1568m, 10psig  
 26/02/97, 0550 h, Cyl# 304  
 Air & Nitrogen Corrected

**389236**

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.61
Carbon Dioxide	0.22
Hydrogen	12.86
Methane	86.27
Ethane	0.010
Propane	0.0059
I-Butane	0.000
N-Butane	0.010
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.010
Hexanes	0.0027
Heptanes	0.0012
Octanes and higher hcs	0.0000
Total	100.00

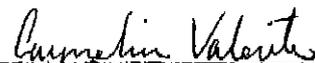
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.24
Lower Flammability limit	4.88
Upper Flammability limit	16.87
Ratio of upper to lower	3.46
Wobbe Index	48.66
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.492
Real gas Density (Rel to air = 1)	0.492
Ideal Nett Calorific Value MJ/m <sup>3</sup>	30.63
Ideal Gross Calorific Value MJ/m <sup>3</sup>	34.12
Real Nett Calorific Value MJ/m <sup>3</sup>	30.64
Real Gross Calorific Value MJ/m <sup>3</sup>	34.12
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	33.52

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # I.Q5639

 Sample: SHITIM-1D  
 Choke Swab from 1568m, 10psig  
 26/02/97, 0550 h, Cyl# 304  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.61
Carbon Dioxide	0.00
Hydrogen	12.89
Methane	86.46
Ethane	0.010
Propane	0.0059
I-Butane	0.000
N-Butane	0.010
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.010
Hexanes	0.0027
Heptanes	0.0012
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.18
Lower Flammability limit	4.87
Upper Flammability limit	16.83
Ratio of upper to lower	3.46
Wobbe Index	48.88
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.489
Real gas Density (Rel to air = 1)	0.489
Ideal Net Calorific Value MJ/m <sup>3</sup>	30.70
Ideal Gross Calorific Value MJ/m <sup>3</sup>	34.19
Real Net Calorific Value MJ/m <sup>3</sup>	30.71
Real Gross Calorific Value MJ/m <sup>3</sup>	34.20
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	33.59

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

 Sample: SHITIM-1D  
 Choke Swab from 1568m, 25psig  
 26/02/97, 0517 h, Cyl# 321  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	6.38
Nitrogen	89.55
Helium	0.03
Carbon Dioxide	0.05
Hydrogen	0.40
Methane	3.59
Ethane	0.0005
Propane	0.0003
I-Butane	0.0000
N-Butane	0.0004
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0002
Hexanes	0.0002
Heptanes	0.0001
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.73
Lower Flammability limit	122.11
Upper Flammability limit	408.31
Ratio of upper to lower	3.34
Wobbe Index	1.43
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.958
Real gas Density (Rel to air = 1)	0.957
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.26
Ideal Gross Calorific Value MJ/m <sup>3</sup>	1.40
Real Nett Calorific Value MJ/m <sup>3</sup>	1.26
Real Gross Calorific Value MJ/m <sup>3</sup>	1.40
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.35

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # I.Q5639

 Sample: SHITTIM-1D  
 Choke Swab from 1568m, 25psig  
 26/02/97, 0517 h, Cy# 321  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	94.21
Helium	0.05
Carbon Dioxide	0.05
Hydrogen	0.63
Methane	5.06
Ethane	0.0008
Propane	0.0004
I-Butane	0.0000
N-Butane	0.0007
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0003
Hexanes	0.0003
Heptanes	0.0001
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.24
Lower Flammability limit	85.39
Upper Flammability limit	288.79
Ratio of upper to lower	3.38
Wobbe Index	2.05
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.941
Real gas Density (Rel to air = 1)	0.940
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.79
Ideal Gross Calorific Value MJ/m <sup>3</sup>	1.99
Real Nett Calorific Value MJ/m <sup>3</sup>	1.79
Real Gross Calorific Value MJ/m <sup>3</sup>	1.99
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.92

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

**389240**

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

 Sample: SIFTIM-1D  
 Choke Swab from 1568m, 25psig  
 26/02/97, 0517 h, Cyl# 321  
 Air & Nitrogen Corrected

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.81
Carbon Dioxide	0.92
Hydrogen	10.84
Methane	87.39
Ethane	0.014
Propane	0.0070
I-Butane	0.000
N-Butane	0.012
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.0056
Hexanes	0.0050
Heptanes	0.0021
Octanes and higher h'cs	0.0000
Total	100.01

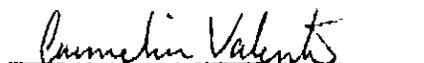
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.70
Lower Flammability limit	4.95
Upper Flammability limit	16.73
Ratio of upper to lower	3.38
Wobbe Index	48.15
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.507
Real gas Density (Rel to air = 1)	0.507
Ideal Nett Calorific Value MJ/m <sup>3</sup>	30.81
Ideal Gross Calorific Value MJ/m <sup>3</sup>	34.30
Real Nett Calorific Value MJ/m <sup>3</sup>	30.82
Real Gross Calorific Value MJ/m <sup>3</sup>	34.32
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	33.69

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS P'PY LTD

Report # LQ5639

 Sample: SIITTIM-1D  
 Choke Swab from 1568m, 25psig  
 26/02/97, 0517 h, Cyl# 321  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.82
Carbon Dioxide	0.00
Hydrogen	10.94
Methane	88.19
Ethane	0.014
Propane	0.0071
I-Butane	0.000
N-Butane	0.012
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.0056
Hexanes	0.0050
Heptanes	0.0021
Octanes and higher h'cs	0.0000
Total	100.00

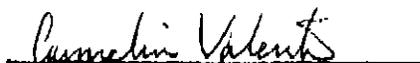
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.43
Lower Flammability limit	4.90
Upper Flammability limit	16.58
Ratio of upper to lower	3.38
Wobbe Index	49.05
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.498
Real gas Density (Rel to air = 1)	0.498
Ideal Nett Calorific Value MJ/m <sup>3</sup>	31.10
Ideal Gross Calorific Value MJ/m <sup>3</sup>	34.62
Real Nett Calorific Value MJ/m <sup>3</sup>	31.11
Real Gross Calorific Value MJ/m <sup>3</sup>	34.63
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	34.01

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # 1.Q5639

 Sample: SHEETIM-1D  
 Choke Swab from 1568m, 30psig  
 26/02/97, 0514 h, Cyl# 250  
 Air Uncorrected

GAS	MOL. %
Oxygen plus Argon	3.32
Nitrogen	91.63
Helium	0.03
Carbon Dioxide	0.01
Hydrogen	0.58
Methane	4.43
Ethane	0.0001
Propane	0.0000
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.46
Lower Flammability limit	97.03
Upper Flammability limit	330.03
Ratio of upper to lower	3.40
Wobbe Index	1.79
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.948
Real gas Density (Rel to air = 1)	0.948
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.56
Ideal Gross Calorific Value MJ/m <sup>3</sup>	1.74
Real Nett Calorific Value MJ/m <sup>3</sup>	1.56
Real Gross Calorific Value MJ/m <sup>3</sup>	1.74
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.68

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

PETROLEUM SERVICES GAS ANALYSIS

389243

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

Sample: SHUTTM-1D  
 Choke Swab from 1568m, 30psig  
 26/02/97, 0514 h, Cyl# 250  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	93.98
Helium	0.04
Carbon Dioxide	0.01
Hydrogen	0.76
Methane	5.21
Ethane	0.0001
Propane	0.0000
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.18
Lower Flammability limit	81.06
Upper Flammability limit	279.42
Ratio of upper to lower	3.45
Wobbe Index	2.12
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.939
Real gas Density (Rel to air = 1)	0.938
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.85
Ideal Gross Calorific Value MJ/m <sup>3</sup>	2.06
Real Nett Calorific Value MJ/m <sup>3</sup>	1.85
Real Gross Calorific Value MJ/m <sup>3</sup>	2.06
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.99

This report relates specifically to the sample submitted for analysis.

Signed

Lucretia Valente

Date :

26-03-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

 Sample: SHITTIM-1D  
 Choke Swab from 1568m, 30psig  
 26/02/97, 0514 h, Cyl# 250  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.66
Carbon Dioxide	0.11
Hydrogen	12.68
Methane	86.55
Ethane	0.0012
Propane	0.0004
I-Butane	0.0003
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

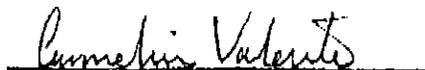
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.22
Lower Flammability Limit	4.88
Upper Flammability limit	16.83
Ratio of upper to lower	3.45
Wobbe Index	48.76
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.491
Real gas Density (Rel to air = 1)	0.491
Ideal Nett Calorific Value MJ/m <sup>3</sup>	30.67
Ideal Gross Calorific Value MJ/m <sup>3</sup>	34.16
Real Nett Calorific Value MJ/m <sup>3</sup>	30.68
Real Gross Calorific Value MJ/m <sup>3</sup>	34.17
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	33.56

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

PETROLEUM SERVICES GAS ANALYSIS

389245

Method GI-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

Sample: SHITTIM-1D  
 Choke Swab from 1568m, 30psig  
 26/02/97, 0514 h, Cyl# 250  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.66
Carbon Dioxide	0.00
Hydrogen	12.69
Methane	86.65
Ethane	0.0012
Propane	0.0004
I-Butane	0.0003
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.18
Lower Flammability limit	4.88
Upper Flammability limit	16.81
Ratio of upper to lower	3.45
Wobbe Index	48.87
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.490
Real gas Density (Rel to air = 1)	0.490
Ideal Net Calorific Value MJ/m <sup>3</sup>	30.71
Ideal Gross Calorific Value MJ/m <sup>3</sup>	34.20
Real Net Calorific Value MJ/m <sup>3</sup>	30.71
Real Gross Calorific Value MJ/m <sup>3</sup>	34.20
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	33.59

This report relates specifically to the sample submitted for analysis.

Signed

Carmelina Valerato

Date :

26-03-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

Sample: SHUTTIM-1D  
 Choke Swab from 1568m, 30psig  
 26/02/97, 0455 h, Cyl# 341  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	5.00
Nitrogen	90.24
Helium	0.03
Carbon Dioxide	0.01
Hydrogen	0.38
Methane	4.34
Ethane	0.0004
Propane	0.0002
I-Butane	0.0000
N-Butane	0.0003
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0003
Hexanes	0.0001
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

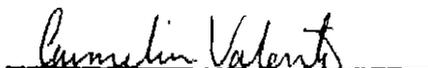
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.59
Lower Flammability limit	103.78
Upper Flammability limit	339.50
Ratio of upper to lower	3.27
Wobbe Index	1.72
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.953
Real gas Density (Rel to air = 1)	0.952
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.51
Ideal Gross Calorific Value MJ/m <sup>3</sup>	1.68
Real Nett Calorific Value MJ/m <sup>3</sup>	1.51
Real Gross Calorific Value MJ/m <sup>3</sup>	1.68
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.62

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389247

Client: CONGOR OIL INVESTMENTS PTY LTD

Report # LQ5639

Sample: SHITJIM-11D  
 Choke Swab from 1568m, 30psig  
 26/02/97, 0455 h, Cyl# 341  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	93.78
Helium	0.04
Carbon Dioxide	0.01
Hydrogen	0.55
Methane	5.62
Ethane	0.0005
Propane	0.0003
I-Butane	0.0000
N-Butane	0.0004
Neo Pentane	0.0000
1-Pentane	0.0000
N-Pentane	0.0004
Hexanes	0.0001
Heptanes	0.0001
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.19
Lower Flammability limit	79.22
Upper Flammability limit	261.58
Ratio of upper to lower	3.30
Wobbe Index	2.26
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.939
Real gas Density (Rel to air = 1)	0.939
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.97
Ideal Gross Calorific Value MJ/m <sup>3</sup>	2.19
Real Nett Calorific Value MJ/m <sup>3</sup>	1.97
Real Gross Calorific Value MJ/m <sup>3</sup>	2.19
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	2.12

This report relates specifically to the sample submitted for analysis.

Signed

*Amelina Valente*

Date :

26-03-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389248

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

Sample: SHPTIM-1D  
 Choke Swab from 1568m, 30psig  
 26/02/97, 0455 h, Cyl# 341  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.70
Carbon Dioxide	0.13
Hydrogen	8.82
Methane	90.32
Ethane	0.0081
Propane	0.0042
I-Butane	0.0000
N-Butane	0.0063
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0062
Hexanes	0.0016
Heptanes	0.0010
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.77
Lower Flammability limit	4.93
Upper Flammability limit	16.28
Ratio of upper to lower	3.30
Wobbe Index	49.22
Compressibility Factor	0.9993
Ideal Gas Density (Rel to air = 1)	0.510
Real gas Density (Rel to air = 1)	0.510
Ideal Nett Calorific Value MJ/m <sup>3</sup>	31.58
Ideal Gross Calorific Value MJ/m <sup>3</sup>	35.14
Real Nett Calorific Value MJ/m <sup>3</sup>	31.60
Real Gross Calorific Value MJ/m <sup>3</sup>	35.17
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	34.52

This report relates specifically to the sample submitted for analysis.

Signed

Assmetin Valente

Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

**389249**

 Sample: SHITTIM-11D  
 Choke Swab from 1568m, 30psig  
 26/02/97, 0455 h, Cyl# 341  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.70
Carbon Dioxide	0.00
Hydrogen	8.83
Methane	90.44
Ethane	0.0082
Propane	0.0043
I-Butane	0.0000
N-Butane	0.0063
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0062
Hexanes	0.0016
Heptanes	0.0010
Octanes and higher h'cs	0.0000
Total	100.00

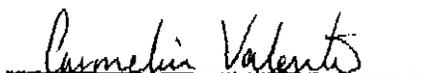
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.73
Lower Flammability limit	4.92
Upper Flammability limit	16.26
Ratio of upper to lower	3.30
Wobbe Index	49.35
Compressibility Factor	0.9993
Ideal Gas Density (Rel to air = 1)	0.509
Real gas Density (Rel to air = 1)	0.509
Ideal Net Calorific Value MJ/m <sup>3</sup>	31.63
Ideal Gross Calorific Value MJ/m <sup>3</sup>	35.19
Real Net Calorific Value MJ/m <sup>3</sup>	31.65
Real Gross Calorific Value MJ/m <sup>3</sup>	35.21
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	34.57

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

**389250**

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

 Sample: SHITIM-1D  
 Choko Swab from 1568m, 15psig  
 26/02/97, 0540 h, Cyl# 136  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	2.87
Nitrogen	91.78
Helium	0.03
Carbon Dioxide	0.04
Hydrogen	0.58
Methane	4.70
Ethane	0.0006
Propane	0.0003
I-Butane	0.0000
N-Butane	0.0005
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0006
Hexanes	0.0005
Heptanes	0.0018
Octanes and higher h'cs	0.0000
Total	100.00

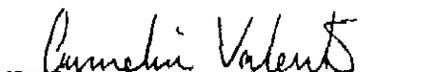
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.42
Lower Flammability limit	91.92
Upper Flammability limit	310.96
Ratio of upper to lower	3.38
Wobbe Index	1.90
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.947
Real gas Density (Rel to air = 1)	0.946
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.66
Ideal Gross Calorific Value MJ/m <sup>3</sup>	1.85
Real Nett Calorific Value MJ/m <sup>3</sup>	1.66
Real Gross Calorific Value MJ/m <sup>3</sup>	1.85
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.79

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

389251

Sample: SHITTIM-11D  
Choke Swab from 1568m, 15psig  
26/02/97, 0540 h, Cyl# 136  
Air Corrected

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	93.77
Helium	0.04
Carbon Dioxide	0.04
Hydrogen	0.75
Methane	5.40
Ethane	0.0008
Propane	0.0004
I-Butane	0.0000
N-Butane	0.0007
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0007
Hexanes	0.0007
Heptanes	0.0023
Octanes and higher h'cs	0.0000
Total	100.01

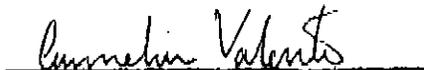
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.17
Lower Flammability limit	78.64
Upper Flammability limit	269.64
Ratio of upper to lower	3.43
Wobbe Index	2.20
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.938
Real gas Density (Rel to air = 1)	0.938
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.92
Ideal Gross Calorific Value MJ/m <sup>3</sup>	2.14
Real Nett Calorific Value MJ/m <sup>3</sup>	1.92
Real Gross Calorific Value MJ/m <sup>3</sup>	2.14
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	2.07

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # I.Q5639

389252

Sample: SHITTIM-1D  
 Choke Swab from 1568m, 15psig  
 26/02/97, 0540 h, Cyl# 136  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.62
Carbon Dioxide	0.66
Hydrogen	12.01
Methane	86.62
Ethane	0.012
Propane	0.006
I-Butane	0.000
N-Butane	0.011
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.012
Hexanes	0.011
Heptanes	0.037
Octanes and higher h'es	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.52
Lower Flammability limit	4.90
Upper Flammability limit	16.81
Ratio of upper to lower	3.43
Wobbe Index	48.36
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.501
Real gas Density (Rel to air = 1)	0.501
Ideal Nett Calorific Value MJ/m <sup>3</sup>	30.75
Ideal Gross Calorific Value MJ/m <sup>3</sup>	34.24
Real Nett Calorific Value MJ/m <sup>3</sup>	30.76
Real Gross Calorific Value MJ/m <sup>3</sup>	34.25
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	33.64

This report relates specifically to the sample submitted for analysis.

Signed

Bumelia Valente

Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

**389253**

 Sample: SHITTIM-1D  
 Choke Swab from 1568m, 15psig  
 26/02/97, 0540 h, Cyl# 136  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOJ. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.63
Carbon Dioxide	0.00
Hydrogen	12.09
Methane	87.19
Ethane	0.012
Propane	0.006
I-Butane	0.000
N-Butane	0.011
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.012
Hexanes	0.011
Heptanes	0.037
Octanes and higher hcs	0.000
Total	100.00

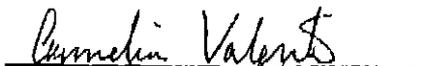
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.33
Lower Flammability limit	4.87
Upper Flammability limit	16.70
Ratio of upper to lower	3.43
Wobbe Index	49.01
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.495
Real gas Density (Rel to air = 1)	0.495
Ideal Nett Calorific Value MJ/m <sup>3</sup>	30.96
Ideal Gross Calorific Value MJ/m <sup>3</sup>	34.47
Real Nett Calorific Value MJ/m <sup>3</sup>	30.97
Real Gross Calorific Value MJ/m <sup>3</sup>	34.48
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	33.86

*This report relates specifically to the sample submitted for analysis.*

Signed



Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

**389254**

 Sample: SHITTIM-1D  
 Choke Swab from 1568m, 5psig  
 26/02/97, 0554 h, Cyl# 343  
 Air Uncorrected

GAS	MOI. %
Oxygen plus Argon	2.42
Nitrogen	92.26
Helium	0.03
Carbon Dioxide	0.07
Hydrogen	0.64
Methane	4.58
Ethane	0.0043
Propane	0.0003
I-Butane	0.0000
N-Butane	0.0005
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0005
Hexanes	0.0001
Heptanes	0.0001
Octanes and higher h'es	0.0000
Total	100.01

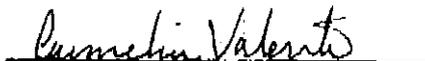
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.40
Lower Flammability limit	92.80
Upper Flammability limit	318.30
Ratio of upper to lower	3.43
Wobbe Index	1.86
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.946
Real gas Density (Rel to air = 1)	0.946
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.62
Ideal Gross Calorific Value MJ/m <sup>3</sup>	1.81
Real Nett Calorific Value MJ/m <sup>3</sup>	1.62
Real Gross Calorific Value MJ/m <sup>3</sup>	1.81
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.75

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

Sample: SHITTIM-1D  
Choke Swab from 1568m, 5psig  
26/02/97, 0554 h, Cyl# 343  
Air Corrected

389255

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	93.92
Helium	0.04
Carbon Dioxide	0.07
Hydrogen	0.82
Methane	5.14
Ethane	0.0054
Propane	0.0004
I-Butane	0.0000
N-Butane	0.0007
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0007
Hexanes	0.0002
Heptanes	0.0001
Octanes and higher hcs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.19
Lower Flammability limit	80.98
Upper Flammability limit	282.35
Ratio of upper to lower	3.49
Wobbe Index	2.11
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.939
Real gas Density (Rel to air = 1)	0.939
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.83
Ideal Gross Calorific Value MJ/m <sup>3</sup>	2.04
Real Nett Calorific Value MJ/m <sup>3</sup>	1.83
Real Gross Calorific Value MJ/m <sup>3</sup>	2.04
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.98

This report relates specifically to the sample submitted for analysis.

Signed

Carmelita Valente

Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

Sample: SHITTIM-1D  
 Choke Swab from 1568m, 5psig  
 26/02/97, 0554 h, Cyl# 343  
 Air & Nitrogen Corrected

**389256**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.63
Carbon Dioxide	1.23
Hydrogen	13.45
Methane	84.57
Ethane	0.089
Propane	0.0067
I-Butane	0.000
N-Butane	0.011
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.011
Hexanes	0.0026
Heptanes	0.0016
Octanes and higher lies	0.0000
Total	100.00

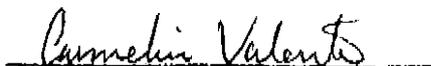
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.45
Lower Flammability limit	4.92
Upper Flammability limit	17.15
Ratio of upper to lower	3.49
Wobbe Index	47.57
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.499
Real gas Density (Rel to air = 1)	0.499
Ideal Nett Calorific Value MJ/m <sup>3</sup>	30.17
Ideal Gross Calorific Value MJ/m <sup>3</sup>	33.61
Real Nett Calorific Value MJ/m <sup>3</sup>	30.17
Real Gross Calorific Value MJ/m <sup>3</sup>	33.61
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	33.01

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # I,Q5639

 Sample: SHITIM-1D  
 Choke Swab from 1568in, 5psig  
 26/02/97, 0554 h, Cyl# 343  
 Air, Nitrogen & Carbon Dioxide Corrected

**389257**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.64
Carbon Dioxide	0.00
Hydrogen	13.61
Methane	85.63
Ethane	0.090
Propane	0.0067
1-Butane	0.000
N-Butane	0.011
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.011
Hexanes	0.0027
Heptanes	0.0016
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.08
Lower Flammability limit	4.86
Upper Flammability limit	16.94
Ratio of upper to lower	3.49
Wobbe Index	48.79
Compressibility Factor	1.0000
Ideal Gas Density (Rel to air = 1)	0.486
Real gas Density (Rel to air = 1)	0.486
Ideal Nett Calorific Value MJ/m <sup>3</sup>	30.55
Ideal Gross Calorific Value MJ/m <sup>3</sup>	34.03
Real Nett Calorific Value MJ/m <sup>3</sup>	30.55
Real Gross Calorific Value MJ/m <sup>3</sup>	34.03
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	33.42

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONIDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

Sample: SHITIM-1D  
 Choke Swab from 1568m, 5psig  
 26/02/97, 0850 h, Cyl# 222  
 Air Uncorrected

389258

GAS	MOL %
Oxygen plus Argon	2.28
Nitrogen	92.11
Helium	0.06
Carbon Dioxide	0.19
Hydrogen	0.00
Methane	5.36
Ethane	0.0043
Propane	0.0006
I-Butane	0.0000
N-Butane	0.0006
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0006
Hexanes	0.0002
Heptanes	0.0001
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.48
Lower Flammability limit	93.03
Upper Flammability limit	279.38
Ratio of upper to lower	3.00
Wobbe Index	2.08
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.949
Real gas Density (Rel to air = 1)	0.949
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.82
Ideal Gross Calorific Value MJ/m <sup>3</sup>	2.03
Real Nett Calorific Value MJ/m <sup>3</sup>	1.82
Real Gross Calorific Value MJ/m <sup>3</sup>	2.03
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	1.96

This report relates specifically to the sample submitted for analysis.

Signed

Carmelita Valente

Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

 Sample: SHITTIM-1D  
 Choke Swab from 1568m, 5psig  
 26/02/97, 0850 h, Cyl# 222  
 Air Corrected

**389259**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	93.72
Helium	0.08
Carbon Dioxide	0.21
Hydrogen	0.00
Methane	5.98
Ethane	0.0054
Propane	0.0007
1-Butane	0.0000
N-Butane	0.0008
Neo Pentane	0.0000
1-Pentane	0.0000
N-Pentane	0.0008
Hexanes	0.0003
Heptanes	0.0001
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.31
Lower Flammability limit	83.33
Upper Flammability limit	250.26
Ratio of upper to lower	3.00
Wobbe Index	2.33
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.943
Real gas Density (Rel to air = 1)	0.943
Ideal Nett Calorific Value MJ/m <sup>3</sup>	2.04
Ideal Gross Calorific Value MJ/m <sup>3</sup>	2.26
Real Nett Calorific Value MJ/m <sup>3</sup>	2.04
Real Gross Calorific Value MJ/m <sup>3</sup>	2.26
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	2.19

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

Sample: SHIFIM-1D  
 Choke Swab from 1568m, 5psig  
 26/02/97, 0850 h, Cyl# 222  
 Air & Nitrogen Corrected

389260

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	1.22
Carbon Dioxide	3.36
Hydrogen	0.00
Methane	95.30
Ethane	0.086
Propane	0.012
I-Butane	0.000
N-Butane	0.012
Nco Pentane	0.000
I-Pentane	0.000
N-Pentane	0.013
Hexanes	0.004
Heptanes	0.002
Octanes and higher h'cs	0.000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	16.87
Lower Flammability limit	5.23
Upper Flammability limit	15.71
Ratio of upper to lower	3.00
Wobbe Index	47.22
Compressibility Factor	0.9981
Ideal Gas Density (Rel to air = 1)	0.582
Real gas Density (Rel to air = 1)	0.583
Ideal Nett Calorific Value MJ/m <sup>3</sup>	32.44
Ideal Gross Calorific Value MJ/m <sup>3</sup>	36.03
Real Nett Calorific Value MJ/m <sup>3</sup>	32.51
Real Gross Calorific Value MJ/m <sup>3</sup>	36.10
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	35.40

This report relates specifically to the sample submitted for analysis.

Signed

Paumelin Valente

Date :

26-03-97



PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

Sample: SHITIM-1D  
 Choke Swab from 1568m, 5psig  
 26/02/97, 0850 h, Cyl# 222  
 Air, Nitrogen & Carbon Dioxide Corrected

389261

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	1.26
Carbon Dioxide	0.00
Hydrogen	0.00
Methane	98.62
Ethane	0.089
Propane	0.012
I-Butane	0.000
N-Butane	0.012
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.014
Hexanes	0.004
Heptanes	0.002
Octanes and higher hcs	0.000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	15.92
Lower Flammability limit	5.06
Upper Flammability limit	15.18
Ratio of upper to lower	3.00
Wobbe Index	50.28
Compressibility Factor	0.9982
Ideal Gas Density (Rel to air = 1)	0.550
Real gas Density (Rel to air = 1)	0.551
Ideal Nett Calorific Value MJ/m <sup>3</sup>	33.57
Ideal Gross Calorific Value MJ/m <sup>3</sup>	37.28
Real Nett Calorific Value MJ/m <sup>3</sup>	33.63
Real Gross Calorific Value MJ/m <sup>3</sup>	37.35
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	36.63

This report relates specifically to the sample submitted for analysis.

Signed

Carmelina Valente

## PETROLEUM SERVICES GAS ANALYSIS

Method GI-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

 Sample: SHITIM-1D  
 Choke Swab from 1568m, 20psig  
 26/02/97, 0522 h, Cyl# 174  
 Air Uncorrected

**389262**

GAS	MOL %
Oxygen plus Argon	4.09
Nitrogen	93.99
Helium	0.03
Carbon Dioxide	0.27
Hydrogen	0.58
Methane	1.04
Ethane	0.0009
Propane	0.0004
I-Butane	0.0000
N-Butane	0.0006
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0007
Hexanes	0.0010
Heptanes	0.0012
Octanes and higher h'cs	0.0000
Total	100.00

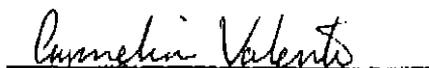
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.94
Lower Flammability limit	280.95
Upper Flammability limit	1289.08
Ratio of upper to lower	4.59
Wobbe Index	0.48
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.965
Real gas Density (Rel to air = 1)	0.965
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.42
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.47
Real Net Calorific Value MJ/m <sup>3</sup>	0.42
Real Gross Calorific Value MJ/m <sup>3</sup>	0.47
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.43

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-G1-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

 Sample: SHITIM-1D  
 Choke Swab from 1568m, 20psig  
 26/02/97, 0522 h, Cyl# 174  
 Air Corrected

**389263**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	97.51
Helium	0.04
Carbon Dioxide	0.33
Hydrogen	0.85
Methane	1.27
Ethane	0.0013
Propane	0.0006
1-Butane	0.0000
N-Butane	0.0009
Neo Pentane	0.0000
1-Pentane	0.0000
N-Pentane	0.0011
Hexanes	0.0015
Heptanes	0.0017
Octanes and higher h'cs	0.0000
Total	100.01

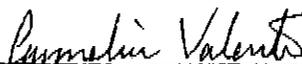
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.69
Lower Flammability limit	211.81
Upper Flammability limit	1028.53
Ratio of upper to lower	4.86
Wobbe Index	0.61
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.956
Real gas Density (Rel to air = 1)	0.956
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.53
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.59
Real Nett Calorific Value MJ/m <sup>3</sup>	0.53
Real Gross Calorific Value MJ/m <sup>3</sup>	0.59
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.55

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

Sample: SHITTM-1D  
 Choke Swab from 1568m, 20psig  
 26/02/97, 0522 h, Cyl# 174  
 Air & Nitrogen Corrected

389264

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	1.75
Carbon Dioxide	13.22
Hydrogen	33.90
Methane	50.85
Ethane	0.051
Propane	0.023
1-Butane	0.000
N-Butane	0.035
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.043
Hexanes	0.060
Heptanes	0.068
Octanes and higher h'cs	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.93
Lower Flammability limit	5.31
Upper Flammability limit	25.77
Ratio of upper to lower	4.86
Wobbe Index	32.98
Compressibility Factor	1.0023
Ideal Gas Density (Rel to air = 1)	0.515
Real gas Density (Rel to air = 1)	0.514
Ideal Nett Calorific Value MJ/m <sup>3</sup>	21.10
Ideal Gross Calorific Value MJ/m <sup>3</sup>	23.67
Real Nett Calorific Value MJ/m <sup>3</sup>	21.05
Real Gross Calorific Value MJ/m <sup>3</sup>	23.62
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	23.25

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

PETROLEUM SERVICES GAS ANALYSIS

Method GI-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

Sample: SHITIM-1D  
 Choke Swab from 1568m, 20psig  
 26/02/97, 0522 h, Cyl# 174  
 Air, Nitrogen & Carbon Dioxide Corrected

389265

GAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	2.02
Carbon Dioxide	0.00
Hydrogen	39.06
Methane	58.59
Ethane	0.059
Propane	0.027
I-Butane	0.000
N-Butane	0.040
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.049
Hexanes	0.069
Heptanes	0.078
Octanes and higher h'cs	0.000
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	10.49
Lower Flammability limit	4.61
Upper Flammability limit	22.37
Ratio of upper to lower	4.86
Wobbe Index	45.32
Compressibility Factor	1.0032
Ideal Gas Density (Rel to air = 1)	0.362
Real gas Density (Rel to air = 1)	0.361
Ideal Nett Calorific Value MJ/m <sup>3</sup>	24.32
Ideal Gross Calorific Value MJ/m <sup>3</sup>	27.28
Real Nett Calorific Value MJ/m <sup>3</sup>	24.24
Real Gross Calorific Value MJ/m <sup>3</sup>	27.19
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	26.79

This report relates specifically to the sample submitted for analysis.

Signed

Carmelita Valente

Date :

26-03-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

Sample: SHITTM-1D  
 Choke Swab from 1568m, 5psig  
 26/02/97, 0720 h, Cyl# 271  
 Air Uncorrected

389266

GAS	MOI, %
Oxygen plus Argon	4.74
Nitrogen	88.98
Helium	0.05
Carbon Dioxide	0.07
Hydrogen	0.77
Methane	5.39
Ethane	0.0003
Propane	0.0002
1-Butane	0.0000
N-Butane	0.0003
Neo Pentane	0.0000
1-Pentane	0.0000
N-Pentane	0.0003
Hexanes	0.0001
Heptanes	0.0001
Octanes and higher h/cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.36
Lower Flammability limit	78.71
Upper Flammability limit	270.58
Ratio of upper to lower	3.44
Wobbe Index	2.19
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.945
Real gas Density (Rel to air = 1)	0.944
Ideal Nett Calorific Value MJ/m <sup>3</sup>	1.91
Ideal Gross Calorific Value MJ/m <sup>3</sup>	2.12
Real Nett Calorific Value MJ/m <sup>3</sup>	1.91
Real Gross Calorific Value MJ/m <sup>3</sup>	2.13
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	2.06

This report relates specifically to the sample submitted for analysis.

Signed

Carmelina Valente

Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

Sample: SHITTIM-1D  
 Choke Swab from 1568m, 5psig  
 26/02/97, 0720 h, Cyl# 271  
 Air Corrected

**389267**

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	91.88
Helium	0.07
Carbon Dioxide	0.08
Hydrogen	1.11
Methane	6.86
Ethane	0.0005
Propane	0.0002
1-Butane	0.0000
N-Butane	0.0004
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0005
Hexanes	0.0001
Heptanes	0.0001
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	26.90
Lower Flammability limit	60.58
Upper Flammability limit	211.55
Ratio of upper to lower	3.49
Wobbe Index	2.83
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.929
Real gas Density (Rel to air = 1)	0.929
Ideal Nett Calorific Value MJ/m <sup>3</sup>	2.44
Ideal Gross Calorific Value MJ/m <sup>3</sup>	2.72
Real Nett Calorific Value MJ/m <sup>3</sup>	2.45
Real Gross Calorific Value MJ/m <sup>3</sup>	2.72
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	2.65

This report relates specifically to the sample submitted for analysis.

Signed

*Carmelita Valente*

Date :

26-03-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

**389268**

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

 Sample: SHITIM-1D  
 Choke Swab from 1568m, Spsig  
 26/02/97, 0720 h, Cyl# 271  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.89
Carbon Dioxide	1.02
Hydrogen	13.64
Methane	84.42
Ethane	0.0061
Propane	0.0029
I-Butane	0.0000
N-Butane	0.0054
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0056
Hexanes	0.0015
Heptanes	0.0010
Octanes and higher h'cs	0.0000
Total	99.99

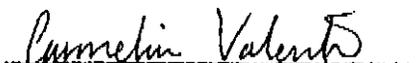
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.32
Lower Flammability limit	4.92
Upper Flammability limit	17.20
Ratio of upper to lower	3.49
Wobbe Index	47.65
Compressibility Factor	1.0000
Ideal Gas Density (Rel to air = 1)	0.494
Real gas Density (Rel to air = 1)	0.494
Ideal Nett Calorific Value MJ/m <sup>3</sup>	30.07
Ideal Gross Calorific Value MJ/m <sup>3</sup>	33.50
Real Nett Calorific Value MJ/m <sup>3</sup>	30.08
Real Gross Calorific Value MJ/m <sup>3</sup>	33.50
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	32.91

This report relates specifically to the sample submitted for analysis.

Signed



Date :

26-03-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389269

Client: CONDOR OIL INVESTMENTS PTY LTD

Report # LQ5639

Sample: SHITIM-1D  
 Choke Swab from 1568m, 5psig  
 26/02/97, 0720 h, Cyl# 271  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.89
Carbon Dioxide	0.00
Hydrogen	13.78
Methane	85.30
Ethane	0.0062
Propane	0.0030
I-Butane	0.0000
N-Butane	0.0054
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0056
Hexanes	0.0015
Heptanes	0.0010
Octanes and higher h'cs	0.0000
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	14.01
Lower Flammability limit	4.87
Upper Flammability limit	17.02
Ratio of upper to lower	3.49
Wobbe Index	48.66
Compressibility Factor	1.0000
Ideal Gas Density (Rel to air = 1)	0.484
Real gas Density (Rel to air = 1)	0.484
Ideal Nett Calorific Value MJ/m <sup>3</sup>	30.38
Ideal Gross Calorific Value MJ/m <sup>3</sup>	33.85
Real Nett Calorific Value MJ/m <sup>3</sup>	30.38
Real Gross Calorific Value MJ/m <sup>3</sup>	33.85
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	33.25

This report relates specifically to the sample submitted for analysis.

Signed

Carmelita Valente

Date :

26-03-97



A.C.N. 008 127 802

389270

**FACSIMILE TRANSMISSION FROM:**

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

---

TO: Malcolm Bendall

---

COMPANY: Condor Oil Investments Pty Ltd

---

FAX NO: 036229 2153

DATE: 15 April, 1997

---

COPY TO:

---

FROM: Carmelina Valente

TOTAL PAGES: 21

---

Malcolm,

Gas compositions for Jericho-1A follow,

Regards,

**Carmelina Valente  
Petroleum Chemist  
Petroleum Services**

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389271

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

Sample: JERICHO-1A  
 Cuttings Gas 30units, 458m  
 24/03/97, 1110h, Cyl# 351  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	20.67
Nitrogen	79.27
Helium	0.00
Carbon Dioxide	0.06
Hydrogen	0.00
Methane	0.004
Ethane	0.0002
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0001
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher hcs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.85
Lower Flammability limit	100247.33
Upper Flammability limit	325524.32
Ratio of upper to lower	3.25
Wubbe Index	0.00
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.996
Real gas Density (Rel to air = 1)	0.996
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.00
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.00
Real Net Calorific Value MJ/m <sup>3</sup>	0.00
Real Gross Calorific Value MJ/m <sup>3</sup>	0.00
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	-0.03

This report relates specifically to the sample submitted for analysis.

Signed

Lucretia Valente

Date :

15-04-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

389272

Sample: JBRICHO-1A  
 Cuttings Gas 30units, 458m  
 24/03/97, 1110h, Cyl# 351  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	99.27
Helium	0.00
Carbon Dioxide	0.62
Hydrogen	0.00
Methane	0.10
Ethane	0.0055
Propane	0.0019
I-Butane	0.0000
N-Butane	0.0017
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0010
Hexanes	0.0005
Heptanes	0.0000
Octanes and higher h/c's	0.0000
Total	100.00

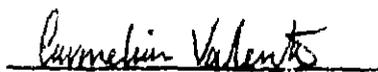
(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.10
Lower Flammability limit	4185.89
Upper Flammability limit	13592.45
Ratio of upper to lower	3.25
Wobbe Index	0.05
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.970
Real gas Density (Rel to air = 1)	0.970
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.04
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.05
Real Net Calorific Value MJ/m <sup>3</sup>	0.04
Real Gross Calorific Value MJ/m <sup>3</sup>	0.05
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.05

This report relates specifically to the sample submitted for analysis

Signed



Date :

15-04-97

PETROLEUM SERVICES GAS ANALYSIS

Method OL-01-01/02

ASTM D 1945-91 (modified)

389273

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

Sample: JIRCHO-1A  
 Cuttings Gas 30units, 458m  
 24/03/97, 1110b, Cyl# 351  
 Air & Nitrogen Corrected

GAS	MOL. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	85.38
Hydrogen	0.00
Methane	13.17
Ethane	0.76
Propane	0.26
I-Butane	0.00
N-Butane	0.23
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.13
Hexanes	0.07
Heptanes	0.00
Octanes and higher lies	0.00
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	40.32
Lower Flammability limit	30.29
Upper Flammability limit	98.35
Ratio of upper to lower	3.25
Wobbe Index	5.35
Compressibility Factor	0.9948
Ideal Gas Density (Rel to air = 1)	1.392
Real gas Density (Rel to air = 1)	1.399
Ideal Net Calorific Value MJ/m <sup>3</sup>	5.71
Ideal Gross Calorific Value MJ/m <sup>3</sup>	6.31
Real Net Calorific Value MJ/m <sup>3</sup>	5.74
Real Gross Calorific Value MJ/m <sup>3</sup>	6.35
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	6.18

This report relates specifically to the sample submitted for analysis.

Signed

Carmelita Valente

Date :

15-04-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389274

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

Sample: JERICO-1A  
 Cuttings Gas 30units, 458m  
 24/03/97, 1110h, Cyl# 351  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	0.00
Hydrogen	0.00
Methane	90.06
Ethane	5.20
Propane	1.81
I-Butane	0.00
N-Butane	1.58
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.90
Hexanes	0.45
Heptanes	0.00
Octanes and higher h'os	0.00
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	18.77
Lower Flammability limit	4.43
Upper Flammability limit	14.39
Ratio of upper to lower	3.25
Wobbe Index	53.62
Compressibility Factor	0.9972
Ideal Gas Density (Rel to air = 1)	0.648
Real gas Density (Rel to air = 1)	0.650
Ideal Nett Calorific Value MJ/m <sup>3</sup>	39.04
Ideal Gross Calorific Value MJ/m <sup>3</sup>	43.16
Real Nett Calorific Value MJ/m <sup>3</sup>	39.15
Real Gross Calorific Value MJ/m <sup>3</sup>	43.29
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	42.41

This report relates specifically to the sample submitted for analysis.

Signed

Rumelia Valenti

Date :

15.04.97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

389275

Sample: JERICHO-1A  
 Cutting# Gas 28units, 500m  
 25/03/97, 1315h, Cyl# 352  
 Air Uncorrected

GAS	MOL. %
Oxygen plus Argon	20.70
Nitrogen	79.24
Helium	0.01
Carbon Dioxide	0.04
Hydrogen	0.00
Methane	0.01
Ethane	0.0003
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0002
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h/c	0.0000
Total	100.00

(0.00 ~ less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.84
Lower Flammability limit	43425.00
Upper Flammability limit	136816.36
Ratio of upper to lower	3.15
Wobbe Index	0.00
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.996
Real gas Density (Rel to air = 1)	0.996
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.00
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.00
Real Net Calorific Value MJ/m <sup>3</sup>	0.00
Real Gross Calorific Value MJ/m <sup>3</sup>	0.00
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	-0.03

This report relates specifically to the sample submitted for analysis.

Signed

Caroline Valentis

Date :

15-04-97

PETROLIUM SERVICES GAS ANALYSIS

Method OL-01-01/02

ASTM D 1945-91 (modified)

389276

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

Sample: JERICHO-1A  
 Cuttings Gas 28units, 500m  
 25/03/97, 1315h, Cyl# 352  
 Air Corrected

OAS	MOI. %
Oxygen plus Argon	0.00
Nitrogen	99.35
Helium	0.21
Carbon Dioxide	0.22
Hydrogen	0.00
Methane	0.21
Ethane	0.0067
Propane	0.0027
I-Butane	0.0000
N-Butane	0.0031
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0008
Hexanes	0.0004
Heptanes	0.0000
Octanes and higher h/c's	0.0000
Total	100.00

(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present. The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs).

Average Molecular Weight	27.98
Lower Flammability limit	2084.02
Upper Flammability limit	6565.97
Ratio of upper to lower	3.15
Wobbe Index	0.09
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.966
Real gas Density (Rel to air = 1)	0.966
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.08
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.09
Real Net Calorific Value MJ/m <sup>3</sup>	0.08
Real Gross Calorific Value MJ/m <sup>3</sup>	0.09
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.06

This report relates specifically to the sample submitted for analysis.

Signed

Carmelita Valente

Date :

15-04-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

**389277**

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

 Sample: JERICHO-1A  
 Cuttings Gas 28units, 500m  
 25/03/97, 1315h, Cyl# 352  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	31.83
Carbon Dioxide	34.21
Hydrogen	0.00
Methane	31.86
Ethane	1.02
Propane	0.41
I-Butane	0.00
N-Butane	0.48
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.13
Hexanes	0.06
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

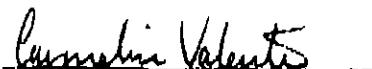
(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	22.35
Lower Flammability limit	13.64
Upper Flammability limit	42.99
Ratio of upper to lower	3.15
Wobbe Index	15.89
Compressibility Factor	0.9986
Ideal Gas Density (Rel to air = 1)	0.772
Real gas Density (Rel to air = 1)	0.773
Ideal Nett Calorific Value MJ/m <sup>3</sup>	12.60
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.96
Real Nett Calorific Value MJ/m <sup>3</sup>	12.62
Real Gross Calorific Value MJ/m <sup>3</sup>	13.98
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	13.69

This report relates specifically to the sample submitted for analysis.

Signed



Date :

15-04-97



PETROLEUM SERVICES GAS ANALYSIS

Method OL-01-01/02

ASTM D 1945-91 (modified)

389278

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

Sample: JERICHO-1A  
Cuttings Gas 28 units, 500m  
25/03/97, 1315h, Cyl# 352  
Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	48.38
Carbon Dioxide	0.00
Hydrogen	0.00
Methane	48.42
Ethane	1.58
Propane	0.26
I-Butane	0.00
N-Butane	0.35
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.02
Hexanes	0.01
Heptanes	0.00
Octanes and higher hcs	0.00
Total	99.01

(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	11.09
Lower Flammability limit	8.98
Upper Flammability limit	28.28
Ratio of upper to lower	3.15
Wobbe Index	34.28
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.383
Real gas Density (Rel to air = 1)	0.383
Ideal Net Calorific Value MJ/m <sup>3</sup>	19.16
Ideal Gross Calorific Value MJ/m <sup>3</sup>	21.21
Real Net Calorific Value MJ/m <sup>3</sup>	19.16
Real Gross Calorific Value MJ/m <sup>3</sup>	21.22
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	20.83

This report relates specifically to the sample submitted for analysis.

Signed Caroselin Valente

Date : 15-04-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389279

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

Sample: JBRICHO-1A  
 Cuttings Gas 14 units, 436m  
 22/03/97, 1400h, Cyl# 249  
 Air Uncorrected

GAS	MOI. %
Oxygen plus Argon	20.76
Nitrogen	79.11
Helium	0.01
Carbon Dioxide	0.01
Hydrogen	0.10
Methane	0.01
Ethane	0.0003
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0001
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher hcs	0.0000
Total	100.00

(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.81
Lower Flammability limit	3674.42
Upper Flammability limit	48791.05
Ratio of upper to lower	13.28
Wobbe Index	0.02
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.995
Real gas Density (Rel to air = 1)	0.995
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.01
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.02
Real Nett Calorific Value MJ/m <sup>3</sup>	0.01
Real Gross Calorific Value MJ/m <sup>3</sup>	0.02
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	-0.02

This report relates specifically to the sample submitted for analysis.

Signed

Carsten Valentin

Date :

15-04-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389280

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

Sample: JERCIHO-1A  
 Cuttings Gas 14units, 436m  
 22/03/97, 1400l, Cyl# 249  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	97.37
Helium	0.22
Carbon Dioxide	0.00
Hydrogen	2.19
Methane	0.21
Ethane	0.0100
Propane	0.0000
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 - less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.37
Lower Flammability limit	167.61
Upper Flammability limit	2225.66
Ratio of upper to lower	13.28
Wobbe Index	0.37
Compressibility Factor	0.9999
Ideal Gas Density (Rel to air = 1)	0.945
Real gas Density (Rel to air = 1)	0.945
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.31
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.36
Real Net Calorific Value MJ/m <sup>3</sup>	0.31
Real Gross Calorific Value MJ/m <sup>3</sup>	0.36
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.32

This report relates specifically to the sample submitted for analysis.

Signed

*Rumelin Valente*

Date :

15-04-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389281

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

Sample: JERICHO-1A  
 Cuttings Gas 14units, 436m  
 22/03/97, 1400h, Cyl# 249  
 Air & Nitrogen Corrected

GAS	MOJ. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	8.32
Carbon Dioxide	0.00
Hydrogen	83.16
Methane	7.99
Ethane	0.26
Propane	0.11
I-Butane	0.00
N-Butane	0.10
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.03
Hexanes	0.03
Heptanes	0.00
Octanes and higher h'vs	0.00
Total	100.00

(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.52
Lower Flammability limit	4.42
Upper Flammability limit	58.67
Ratio of upper to lower	13.28
Wobbe Index	38.88
Compressibility Factor	1.0083
Ideal Gas Density (Rel to air = 1)	0.122
Real gas Density (Rel to air = 1)	0.121
Ideal Net Calorific Value MJ/m <sup>3</sup>	11.68
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.56
Real Net Calorific Value MJ/m <sup>3</sup>	11.58
Real Gross Calorific Value MJ/m <sup>3</sup>	13.45
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	13.30

This report relates specifically to the sample submitted for analysis

Signed

Carmelita Valente

Date

15-04-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS

Report # 1.Q5765

Sample: JERICHO-1A  
 Cuttings Gas 14 units, 436m  
 22/03/97, 1400h, Cyl# 249  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	8.32
Carbon Dioxide	0.00
Hydrogen	83.16
Methane	7.99
Ethane	0.26
Propane	0.11
I-Butane	0.00
N-Butane	0.10
Nco Pentane	0.00
I-Pentane	0.00
N-Pentane	0.03
Hexanes	0.03
Heptanes	0.00
Octanes and higher h/c's	0.00
Total	100.00

(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	3.52
Lower Flammability Limit	4.42
Upper Flammability limit	58.67
Ratio of upper to lower	13.28
Wobbe Index	38.88
Compressibility Factor	1.0083
Ideal Gas Density (Rel to air = 1)	0.122
Real gas Density (Rel to air = 1)	0.121
Ideal Net Calorific Value MJ/m <sup>3</sup>	11.68
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.56
Real Net Calorific Value MJ/m <sup>3</sup>	11.58
Real Gross Calorific Value MJ/m <sup>3</sup>	13.45
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	13.30

This report relates specifically to the sample submitted for analysis.

Signed



Date :

15-04-97

Method GL-01-01/02

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

Sample: JBRICHO-1A  
 Cullings Gas 638446m.  
 09/04/97, 1430h, Cyl# 349  
 Air Uncorrected

GAS	MOL %
Oxygen plus Argon	20.77
Nitrogen	79.10
Helium	0.01
Carbon Dioxide	0.06
Hydrogen	0.05
Methane	0.01
Ethane	0.0002
Propane	0.0000
I-Butane	0.0000
N-Butane	0.0000
Nco Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h/c's	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.83
Lower Flammability Limit	7065.65
Upper Flammability Limit	82817.15
Ratio of upper to lower	11.72
Wobbe Index	0.01
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.996
Real gas Density (Rel to air = 1)	0.996
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.01
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.01
Real Net Calorific Value MJ/m <sup>3</sup>	0.01
Real Gross Calorific Value MJ/m <sup>3</sup>	0.01
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	-0.02

This report relates specifically to the sample submitted for analysis

Signed

Sumesh Verma

Date :

15-04-97

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

 Sample: JERICHO-1A  
 Cuttings Gas 638446m  
 09/04/97, 1430h, Cyl# 349  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	97.85
Helium	0.22
Carbon Dioxide	0.64
Hydrogen	1.12
Methane	0.17
Ethane	0.0038
Propane	0.0009
I-Butane	0.0000
N-Butane	0.0000
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0010
Hexanes	0.0006
Heptanes	0.0000
Octanes and higher h'os	0.0000
Total	100.01

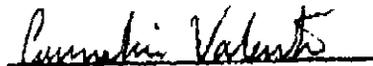
(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.75
Lower Flammability limit	315.76
Upper Flammability limit	1701.07
Ratio of upper to lower	11.72
Wobbe Index	0.21
Compressibility Factor	0.9998
Ideal Gas Density (Rel to air = 1)	0.958
Real gas Density (Rel to air = 1)	0.958
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.18
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.21
Real Net Calorific Value MJ/m <sup>3</sup>	0.18
Real Gross Calorific Value MJ/m <sup>3</sup>	0.21
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.17

This report relates specifically to the sample submitted for analysis.

Signed



Date :

15-04-97

## PETROLEUM SERVICES GAS ANALYSIS

Method 01-01-01/02

ASTM D 1945-91 (modified)

**389285**

Client: CONDOR OIL INVESTMENTS

Report # 1.Q5765

 Sample: JRRICHO-1A  
 Cuttings Gas 638446m  
 09/04/97, 1430h, Cyl# 349  
 Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	10.34
Carbon Dioxide	29.77
Hydrogen	51.71
Methane	7.88
Ethane	0.18
Propane	0.04
I-Butane	0.00
N-Butane	0.00
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.05
Hexanes	0.03
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	99.99

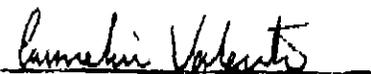
(0.00 ~ less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present.  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	15.95
Lower Flammability limit	6.83
Upper Flammability limit	80.07
Ratio of upper to lower	11.72
Wobbe Index	12.79
Compressibility Factor	1.0046
Ideal Gas Density (Ref to air = 1)	0.551
Real gas Density (Ref to air = 1)	0.548
Ideal Net Calorific Value MJ/m <sup>3</sup>	8.21
Ideal Gross Calorific Value MJ/m <sup>3</sup>	9.49
Real Net Calorific Value MJ/m <sup>3</sup>	8.17
Real Gross Calorific Value MJ/m <sup>3</sup>	9.45
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	9.30

This report relates specifically to the sample submitted for analysis

Signed



Date :

15-04-97

## PETROLEUM SERVICES GAS ANALYSIS

389286

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

Sample: JBRUCHO-1A  
 Cuttings Gas 638446m  
 09/04/97, 1430h, Cyl# 349  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	14.73
Carbon Dioxide	0.00
Hydrogen	73.64
Methane	11.22
Ethane	0.25
Propane	0.06
I-Butane	0.00
N-Butane	0.00
Neo Pentane	0.00
I-Pentane	0.00
N-Pentane	0.06
Hexanes	0.04
Heptanes	0.00
Octanes and higher h'cs	0.00
Total	100.00

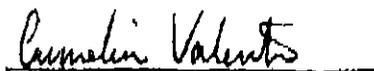
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (nbs)

Average Molecular Weight	4.05
Lower Flammability limit	4.80
Upper Flammability limit	56.23
Ratio of upper to lower	11.72
Wobbe Index	36.13
Compressibility Factor	1.0074
Ideal Gas Density (Rel to air = 1)	0.140
Real gas Density (Rel to air = 1)	0.139
Ideal Nett Calorific Value MJ/m <sup>3</sup>	11.69
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.51
Real Nett Calorific Value MJ/m <sup>3</sup>	11.61
Real Gross Calorific Value MJ/m <sup>3</sup>	13.42
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	13.26

This report relates specifically to the sample submitted for analysis.

Signed



Date :

15-04-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389287

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

Sample: JERICHO-1A  
 Cuttings Gas 25units, 446m  
 22/03/97, 1610h, Cyl# 350  
 Air Uncorrected

GAS	MOL. %
Oxygen plus Argon	20.87
Nitrogen	78.94
Helium	0.00
Carbon Dioxide	0.02
Hydrogen	0.16
Methane	0.01
Ethane	0.0003
Propane	0.0001
i-Butane	0.0000
n-Butane	0.0001
Neo Pentane	0.0000
i-Pentane	0.0000
n-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'os	0.0000
Total	100.00

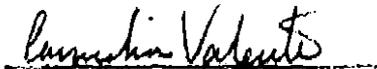
( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.81
Lower Flammability limit	2410.19
Upper Flammability limit	38008.18
Ratio of upper to lower	15.77
Wobbe Index	0.02
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.995
Real gas Density (Rel to air = 1)	0.995
Ideal Net Calorific Value MJ/m <sup>3</sup>	0.02
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.02
Real Net Calorific Value MJ/m <sup>3</sup>	0.02
Real Gross Calorific Value MJ/m <sup>3</sup>	0.02
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	-0.01

This report relates specifically to the sample submitted for analysis.

Signed



Date :

15-04-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389288

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

Sample: JERICO-1A  
 Cuttings Gas 25units, 446m  
 22/03/97, 1610h, Cyl# 350  
 Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	95.94
Helium	0.00
Carbon Dioxide	0.00
Hydrogen	3.89
Methane	0.16
Ethane	0.0072
Propane	0.0025
I-Butane	0.0000
N-Butane	0.0020
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	26.98
Lower Flammability limit	99.08
Upper Flammability limit	1562.50
Ratio of upper to lower	15.77
Wobbe Index	0.56
Compressibility Factor	1.0001
Ideal Gas Density (Rel to air = 1)	0.932
Real gas Density (Rel to air = 1)	0.931
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.46
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.54
Real Nett Calorific Value MJ/m <sup>3</sup>	0.46
Real Gross Calorific Value MJ/m <sup>3</sup>	0.54
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.50

This report relates specifically to the sample submitted for analysis.

Signed

Carmelita Valente

Date :

15-04-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389289

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

Sample: JERICHO-1A  
 Cuttings Gas 25units, 44Gm  
 22/03/97, 1610h, Cyl# 350  
 Air & Nitrogen Corrected

Gas	MOL. %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	0.00
Hydrogen	95.84
Methane	3.87
Ethane	0.18
Propane	0.061
I-Butane	0.000
N-Butane	0.049
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.000
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

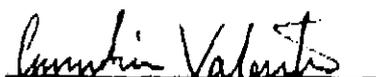
(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	2.66
Lower Flammability limit	4.02
Upper Flammability limit	63.46
Ratio of upper to lower	15.77
Wobbe Index	43.81
Compressibility factor	1.0096
Ideal Gas Density (Rel to air = 1)	0.092
Real gas Density (Rel to air = 1)	0.091
Ideal Net Calorific Value MJ/m <sup>3</sup>	11.33
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.28
Real Net Calorific Value MJ/m <sup>3</sup>	11.23
Real Gross Calorific Value MJ/m <sup>3</sup>	13.16
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	13.03

This report relates specifically to the sample submitted for analysis.

Signed



Date :

15-04-97

PETROLEUM SERVICES GAS ANALYSIS

Method OL-01-01/02

ASTM D 1945-91 (modified)

389290

Client: CONDOR OIL INVESTMENTS

Report # LQ5765

Sample: JBRICHO-1A  
 Cullings Gas 25 units, 446m  
 22/03/97, 1610h, Cyl# 350  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	0.00
Hydrogen	95.84
Methane	3.87
Ethane	0.18
Propane	0.061
I-Butane	0.000
N-Butane	0.049
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.000
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'os	0.000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	2.66
Lower Flammability limit	4.02
Upper Flammability limit	63.46
Ratio of upper to lower	15.77
Wobbe Index	43.81
Compressibility Factor	1.0006
Ideal Gas Density (Rel to air = 1)	0.092
Real gas Density (Rel to air = 1)	0.091
Ideal Net Calorific Value MJ/m <sup>3</sup>	11.33
Ideal Gross Calorific Value MJ/m <sup>3</sup>	13.28
Real Net Calorific Value MJ/m <sup>3</sup>	11.23
Real Gross Calorific Value MJ/m <sup>3</sup>	13.16
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	13.03

This report relates specifically to the sample submitted for analysis.

Signed

*Carmelita Valente*

Date :

15-04-97

**FACSIMILE TRANSMISSION FROM:**

389291

AMDEL LIMITED PETROLEUM SERVICES  
35-37 STIRLING STREET, THEBARTON SA 5031  
FACSIMILE NO: (08) 8234 2933 or (08) 8234 2760  
TELEPHONE NO: (08) 8416 5240

TO:	Malcolm Bendall		
COMPANY:	Condor Oil Investments Pty Ltd		
FAX NO:	036229 2153	DATE:	6 May, 1997
COPY TO:			
FROM:	Diane Cass	TOTAL PAGES:	9

Malcolm,

Gas compositions for Jericho-1A and Jericho-1B follow. It should be noted that Jericho-1B contained carbon monoxide which has been quantified on the gas analysis printout.

Regards,



Diane Cass  
Petroleum Chemist  
Petroleum Services

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PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389292

Client: CONDOR OIL INVESTMENTS

Report # I.Q5820

Sample: JERICHO-113  
Hot Wire Bottoms Up, 140 units  
14 kPag @ 15°C, 17/04/97, 1000h, Cyl# 180  
Air Uncorrected

GAS	MOL. %
Oxygen plus Argon	18.62
Nitrogen	79.26
Helium	0.00
Carbon Dioxide	0.18
Carbon Monoxide	0.48
Hydrogen	0.86
Methane	0.51
Ethane	0.07
Propane	0.02
I-Butane	0.000
N-Butane	0.003
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.001
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	100.00

(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.50
Lower Flammability limit	257.86
Upper Flammability limit	1687.56
Ratio of upper to lower	6.54
Wobbe Index	0.42
Compressibility Factor	0.9997
Ideal Gas Density (Rel to air = 1)	0.984
Real gas Density (Rel to air = 1)	0.984
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.38
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.42
Real Nett Calorific Value MJ/m <sup>3</sup>	0.38
Real Gross Calorific Value MJ/m <sup>3</sup>	0.42
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.38

This report relates specifically to the sample submitted for analysis.

Signed

Oliver Cass

Date :

06-05-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

389293

Client: CONCOR OIL INVESTMENTS

Report # LQ5820

Sample: JERICHO-1B  
Hot Wire Bottoms Up, 140 units  
14 kPag @ 15°C, 17/04/97, 1000h, Cyl# 180  
Air Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	84.49
Helium	0.00
Carbon Dioxide	1.04
Carbon Monoxide	3.78
Hydrogen	6.77
Methane	3.36
Ethane	0.43
Propane	0.10
I-Butane	0.000
N-Butane	0.02
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.006
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	26.05
Lower Flammability limit	34.72
Upper Flammability limit	242.00
Ratio of upper to lower	6.97
Wobbe Index	3.11
Compressibility Factor	1.0003
Ideal Gas Density (Rel to air = 1)	0.899
Real gas Density (Rel to air = 1)	0.899
Ideal Nett Calorific Value MJ/m <sup>3</sup>	2.66
Ideal Gross Calorific Value MJ/m <sup>3</sup>	2.95
Real Nett Calorific Value MJ/m <sup>3</sup>	2.66
Real Gross Calorific Value MJ/m <sup>3</sup>	2.95
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	2.87

This report relates specifically to the sample submitted for analysis.

Signed

Oliver Cass

Date :

06-05-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTMD 1945-91 (modified)

389234

Client: CONDOR OIL INVESTMENTS

Report # LQ5820

Sample: JERICHO-1B  
Hot Wire Bottoms Up, 140 units  
14 kPag @ 15°C, 17/04/97, 1000h, Cyl# 180  
Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	6.71
Carbon Monoxide	24.37
Hydrogen	43.65
Methane	21.66
Ethane	2.79
Propane	0.67
I-Butane	0.000
N-Butane	0.11
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.04
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	99.99

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	15.36
Lower Flammability limit	5.39
Upper Flammability limit	37.55
Ratio of upper to lower	6.97
Wobbe Index	26.12
Compressibility Factor	1.0038
Ideal Gas Density (Rel to air = 1)	0.530
Real gas Density (Rel to air = 1)	0.528
Ideal Nett Calorific Value MJ/m <sup>3</sup>	17.17
Ideal Gross Calorific Value MJ/m <sup>3</sup>	19.02
Real Nett Calorific Value MJ/m <sup>3</sup>	17.10
Real Gross Calorific Value MJ/m <sup>3</sup>	18.95
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	18.67

This report relates specifically to the sample submitted for analysis.

Signed

Deane Cass

Date :

06-05-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS

Report # LQ5820

 Sample: JERICHO-1B  
 Hot Wire Bottoms Up, 140 units  
 14 kPag @ 15°C, 17/04/97, 1000h, Cyl# 180  
 Air, Nitrogen & Carbon Dioxide Corrected

OAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	0.00
Carbon Monoxide	26.12
Hydrogen	46.80
Methane	23.21
Ethane	2.99
Propane	0.72
I-Butane	0.000
N-Butane	0.12
Neo Pentane	0.000
I-Pentane	0.000
N-Pentane	0.04
Hexanes	0.000
Heptanes	0.000
Octanes and higher h'cs	0.000
Total	99.99

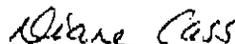
(&lt; 0.00 - less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	13.30
Lower Flammability limit	5.03
Upper Flammability limit	35.02
Ratio of upper to lower	6.97
Wobbe Index	30.09
Compressibility Factor	1.0043
Ideal Gas Density (Rel to air = 1)	0.459
Real gas Density (Rel to air = 1)	0.457
Ideal Nett Calorific Value MJ/m <sup>3</sup>	18.40
Ideal Gross Calorific Value MJ/m <sup>3</sup>	20.39
Real Nett Calorific Value MJ/m <sup>3</sup>	18.33
Real Gross Calorific Value MJ/m <sup>3</sup>	20.30
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	20.01

This report relates specifically to the sample submitted for analysis.

Signed



Date :

06-05-97

PETROLEUM SERVICES GAS ANALYSIS

Method OL-01-01/02

ASTM D 1945-91 (modified)

389296

Client: CONDOR OIL INVESTMENTS

Report # LQ5820

Sample: JERICHO-1A  
Hot Wire Cuttings Gas, 27 units  
640m, 10/04/97, 1200h, Cyl# 202  
Air Uncorrected

GAS	MOL %
Oxygen plus Argon	19.34
Nitrogen	79.30
Helium	0.00
Carbon Dioxide	0.20
Hydrogen	0.00
Methane	1.16
Ethane	0.0004
Propane	0.0001
I-Butane	0.0000
N-Butane	0.0000
Nco Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	28.68
Lower Flammability limit	429.99
Upper Flammability limit	1290.33
Ratio of upper to lower	3.00
Wobbe Index	0.44
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.990
Real gas Density (Rel to air = 1)	0.990
Ideal Nett Calorific Value MJ/m <sup>3</sup>	0.39
Ideal Gross Calorific Value MJ/m <sup>3</sup>	0.44
Real Nett Calorific Value MJ/m <sup>3</sup>	0.39
Real Gross Calorific Value MJ/m <sup>3</sup>	0.44
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	0.40

This report relates specifically to the sample submitted for analysis.

Signed

Orlene Cass

Date :

06-05-97

PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

ASTM D 1945-91 (modified)

**389297**

Client: CONDOR OIL INVESTMENTS

Report # LQ5820

Sample: JERICHO-1A  
Hot Wire Cuttings Gas, 27 units  
640m, 10/04/97, 1200h, Cyl# 202  
Air Corrected

GAS	MOL. %
Oxygen plus Argon	0.00
Nitrogen	88.55
Helium	0.00
Carbon Dioxide	1.50
Hydrogen	0.00
Methane	9.95
Ethane	0.004
Propane	0.001
i-Butane	0.0000
N-Butane	0.0001
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.01

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	27.06
Lower Flammability limit	50.22
Upper Flammability limit	150.71
Ratio of upper to lower	3.00
Wobbe Index	3.88
Compressibility Factor	0.9996
Ideal Gas Density (Rel to air = 1)	0.934
Real gas Density (Rel to air = 1)	0.934
Ideal Nett Calorific Value MJ/m <sup>3</sup>	3.38
Ideal Gross Calorific Value MJ/m <sup>3</sup>	3.75
Real Nett Calorific Value MJ/m <sup>3</sup>	3.38
Real Gross Calorific Value MJ/m <sup>3</sup>	3.75
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	3.66

This report relates specifically to the sample submitted for analysis.

Signed

Deane Cass

Date :

06-05-97

Method GL-01-01/02

ASTM D 1945-91 (modified)

Client: CONDOR OIL INVESTMENTS

Report # LQ5820

Sample: JERICO-1A  
Hot Wire Cuttings Gas, 27 units  
640m, 10/04/97, 1200h, Cyl# 202  
Air & Nitrogen Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	13.13
Hydrogen	0.00
Methane	86.82
Ethane	0.04
Propane	0.009
I-Butane	0.0000
N-Butane	0.0009
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher h'cs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	19.72
Lower Flammability limit	5.75
Upper Flammability limit	17.26
Ratio of upper to lower	3.00
Wobbe Index	39.70
Compressibility Factor	0.9977
Ideal Gas Density (Rel to air = 1)	0.681
Real gas Density (Rel to air = 1)	0.682
Ideal Nett Calorific Value MJ/m <sup>3</sup>	29.50
Ideal Gross Calorific Value MJ/m <sup>3</sup>	32.76
Real Nett Calorific Value MJ/m <sup>3</sup>	29.56
Real Gross Calorific Value MJ/m <sup>3</sup>	32.84
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	32.18

This report relates specifically to the sample submitted for analysis.

Signed

Diane Cass

Date :

06-05-97

## PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01/02

 ASTM D 1945-91 (modified) **389299**

Client: CONDOR OIL INVESTMENTS

Report # J.Q5820

 Sample: JERICHO-1A  
 Hot Wire Cuttings Gas, 27 units  
 640m, 10/04/97, 1200h, Cyl# 202  
 Air, Nitrogen & Carbon Dioxide Corrected

GAS	MOL %
Oxygen plus Argon	0.00
Nitrogen	0.00
Helium	0.00
Carbon Dioxide	0.00
Hydrogen	0.00
Methane	99.95
Ethane	0.04
Propane	0.01
I-Butane	0.0000
N-Butane	0.001
Neo Pentane	0.0000
I-Pentane	0.0000
N-Pentane	0.0000
Hexanes	0.0000
Heptanes	0.0000
Octanes and higher hcs	0.0000
Total	100.00

( 0.00 = less than 0.01% )

The above results are calculated on an air and water free basis assuming only the measured constituents are present  
 The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs)

Average Molecular Weight	16.05
Lower Flammability limit	5.00
Upper Flammability limit	15.00
Ratio of upper to lower	3.00
Wobbe Index	50.66
Compressibility Factor	0.9981
Ideal Gas Density (Rel to air = 1)	0.554
Real gas Density (Rel to air = 1)	0.555
Ideal Nett Calorific Value MJ/m <sup>3</sup>	33.95
Ideal Gross Calorific Value MJ/m <sup>3</sup>	37.71
Real Nett Calorific Value MJ/m <sup>3</sup>	34.02
Real Gross Calorific Value MJ/m <sup>3</sup>	37.78
Gross calorific value of water-saturated gas MJ/m <sup>3</sup>	37.05

This report relates specifically to the sample submitted for analysis.

Signed



Date :

06-05-97