

A. C. N. # 008 130 667

July 14, 2003

PO Box 410

Magill, SA 5072

Esso Australia Limited

GPO Box 400C

Melbourne

VIC 3001

Attention: Mr. Diyar Barzanji

Subject: PVT Study

Well : Scallop # 1

File : E - 23004

Dear Sir,

From February 19 to 28, 2003, representatives of Petrolab transferred eleven Schlumberger MDT tools into Petrolab cylinders on the Sedco 702. Six of them, 450 ccs volume each contained gas reservoir fluid from three different depths, while the others, four 450 ccs and one 1 Gallon volume contained oil from two different horizons.

On-site analyses for light hydrocarbons, CO₂ and H₂S were performed on gas from two zones while the other samples were dispatched to Adelaide for further fluid studies. The results of this study are presented in the following report.

The compositions of the gas and oil reservoir fluids were determined by flashing the samples under atmospheric conditions into two phases. Through measurements of densities, molecular weights, quantities produced and compositions of the evolved stock tank gas and liquid from the flash experiment, we were able to mathematically recombine these products into the desired fluid compositions. The compositions were extended to C₁₂+ by means of Capillary Column Gas Chromatography and High Temperature Vacuum Distillation.

At the reservoir temperatures saturation pressures were determined for each different type of reservoir fluid.

We thank Esso Australia Limited for the opportunity to be of service. Please do not hesitate in contacting us should you require any further information or if we can assist you in any other way.

Yours Sincerely,

Jan G. Bon
Manager



Company : Esso Australia Limited
Well : Scallop # 1

File : E - 23004

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GAS TRANSFER DETAILS

Run / Seat # :	1	2	3	4	5	6
Sample Depth (mdrkb) :	3146.5	3146.5	3120.5	3120.5	3109	3109
Chamber Size (cc / gallon) :	450	450	450	450	450	450
Chamber Serial # :	1591	1584	1590	1583	1581	1582
Date Sampled :	24-2-2003	24-2-2003	24-2-2003	24-2-2003	24-2-2003	24-2-2003
Formation Pressure (psia) :	4598.6	4598.6	04:33	4563.19	4541.3	4541.3
Formation Temperature (°C) :	118.19	118.19	117.37	117.37	116.74	116.74
Date Transferred :	25-2-2003	25-2-2003	25-2-2003	25-2-2003	25-2-2003	26-2-2003
Opening Pressure (psig) :	2100	3000	3900	3820	3900	3900
Transfer Pressure (psig) :	5000	5000	6000	6000	6000	6000
Transfer Temperature (°C) :	23.3	22	21.7	21.4	21	26
Volume Transferred (cc) :	100	100	350	350	380	390
Transferred to Cylinder # :	84094102	84062103	89032109	841218	84062404	84103206
Cylinder Volume (cc) :	650	650	650	650	650	650
Interpreted Fluid :	gas-water	gas-water	gas	gas	gas	gas
Free Water :	250	300	TR	TR	TR	TR



Company : Esso Australia Limited
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OIL TRANSFER DETAILS

Run / Seat # :	7	8	9	10	11
Sample Depth (mdrkb) :	2840	2840	2840	2630.2	2630.2
Chamber Size (cc / gallon) :	SC 1Gal	450	450	450	450
Chamber Serial # :	36	136	316	477	501
Date Sampled :	25-2-2003	25-2-2003	25-2-2003	25-2-2003	25-2-2003
Formation Pressure (psia) :	4092.86	4093.2	4093.2	3661.5	3665.06
Formation Temperature (°C) :	109.3	108.07	108.07	102.68	102.68
Date Transferred :	26-2-2003	26-2-2003	26-2-2003	26-2-2003	26-2-2003
Opening Pressure (psig) :	2525	2800	2850	2300	2480
Transfer Pressure (psig) :		6000	6000	6000	6000
Transfer Temperature (°C) :		21.7	24.4	21	24.1
Volume Transferred (cc) :	4*600	410	420	395	420
Transferred to Cylinder # :	84062601 84103217 84093202 84063609	84032809	84062602	8403-X	84062304
Cylinder Volume (cc) :	4 * 650	650	650	650	650
Interpreted Fluid :	oil	oil	oil	oil	oil
Free Water :	v. clean	TR	TR	TR	TR
Bubble Point Pressure (psig) :	app. 3600	3900	3900	2700	2700
GOR (scf/stbbl) :		1705		1174	
API Gravity @ 60 °F :		40.7		40	
Density @ 60 °F (gr/cc) :		0.8209		0.8241	
Pour Point (°C) :		28		25	



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Field Compositional Gas Analyses

Sample :	1a	1b	3a	3b	5a	5b
Run / Seat # :	1	1	3	3	5	5
Depth (mdrkb) :	3146.5	3146.5	3120.5	3120.5	3109	3109
Chamber # :	1591	1591	1590	1590	1581	1581
Component	Mol %	Mol %	Mol %	Mol %	Mol %	Mol %
Hydrogen Sulphide	0.00	0.00	0.00	0.00	0.00	0.00
Carbon Dioxide	10.43	10.23	18.60	18.94	18.83	18.36
Nitrogen	0.29	0.34	0.21	0.16	0.17	0.13
Methane	76.56	76.66	67.44	67.80	68.87	69.81
Ethane	7.10	7.04	6.22	6.45	6.31	6.18
Propane	2.66	2.65	2.63	2.96	2.64	2.35
Iso-Butane	0.53	0.52	0.76	0.48	0.48	0.61
N-Butane	0.94	0.92	0.91	0.62	0.92	0.72
Iso-Pentane	0.28	0.27	0.40	0.25	0.25	0.32
N-Pentane	0.30	0.29	0.42	0.27	0.27	0.34
Hexanes plus	<u>0.91</u>	<u>1.08</u>	<u>2.42</u>	<u>2.08</u>	<u>1.25</u>	<u>1.18</u>
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00



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FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY

On Stock Tank Oil from atmospheric flash of sample in cylinder # 84062103 - Bottom Gas @ 3146.5 m

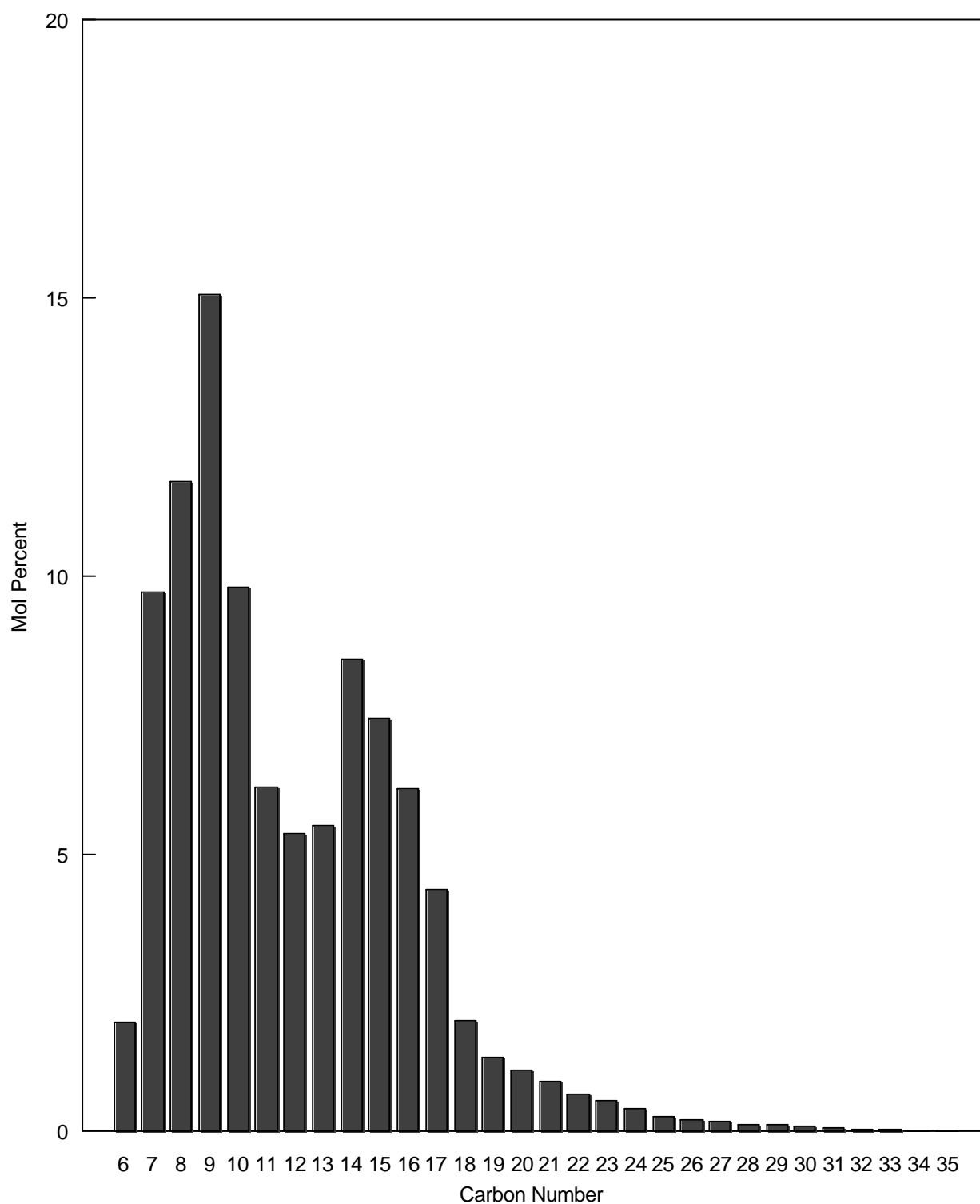
Component	Mol %
Hexanes minus	C6- 0.19
Hexanes	C6 1.98
Heptanes	C7 9.70
Octanes	C8 11.70
Nonanes	C9 15.06
Decanes	C10 9.79
Undecanes	C11 6.21
Dodecanes	C12 5.35
Tridecanes	C13 5.50
Tetradecanes	C14 8.48
Pentadecanes	C15 7.44
Hexadecanes	C16 6.15
Heptadecanes	C17 4.35
Octadecanes	C18 2.01
Nonadecanes	C19 1.34
Eicosanes	C20 1.09
Heneicosanes	C21 0.89
Docosanes	C22 0.67
Tricosanes	C23 0.54
Tetracosanes	C24 0.41
Pentacosanes	C25 0.28
Hexacosanes	C26 0.20
Heptacosanes	C27 0.18
Octacosanes	C28 0.14
Nonacosanes	C29 0.12
Triacontaness	C30 0.09
Hentriacontanes	C31 0.07
Dotriacontanes	C32 0.04
Trtriacontanes	C33 0.03
Tetratriacontanes	C34 0.00
Pentatriacontanes Plus	C35+ 0.00
TOTAL	100.00

Molecular Weight Calculated *	:	162.1
Density @ 60 °F Calculated *	:	0.8028
Molecular Weight Measured	:	--
Density @ 60 °F Measured	:	0.8028

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY

On Stock Tank Oil from atmospheric flash of sample in cylinder # 84062103 - Bottom Gas @ 3146.5 m



COMPOSITIONAL ANALYSIS OF RESERVOIR FLUID

Cylinder # 84062103 - Bottom Gas @ 3146.5 m

Component	Stock Tank Liquid		Stock Tank Gas		Reservoir Fluid
		Mol %		Mol %	Mol %
Hydrogen Sulphide	H2S	0.00		0.00	0.00
Carbon Dioxide	CO2	0.06		3.89	3.73
Nitrogen	N2	0.00		0.30	0.29
Methane	C1	0.47		81.67	78.19
Ethane	C2	0.25		7.50	7.19
Propane	C3	0.39		3.24	3.12
Iso-Butane	iC4	0.14		0.48	0.47
N-Butane	nC4	0.37		0.87	0.85
Iso-Pentane	iC5	0.32		0.28	0.28
N-Pentane	nC5	0.42		0.29	0.30
Hexanes	C6	1.94		0.40	0.47
Heptanes	C7	9.48		0.62	1.00
Octanes	C8	11.44		0.31	0.79
Nonanes	C9	14.72		0.13	0.76
Decanes	C10	9.57		0.02	0.43
Undecanes	C11	6.07		0.00	0.26
Dodecanes Plus	C12+	44.36		0.00	1.87
TOTAL		100.00		100.00	100.00

Ratios

Molar Ratio	:	0.0429	0.9571	1.0000
Mass Ratio	:	0.2511	0.7489	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	6.4413 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	14955 SCF	--

Stream Properties

Molecular Weight	:	158.8	21.23	27.13
Density obs. (gm/cc)	:	0.8003 @ 60 °F	--	0.4964 @ PT*
Gravity (AIR = 1.000)	:	45.1 °API @ 60 °F	0.735	153.3
GHV (BTU/scf)	:	--	1193	--

Hexanes Plus Properties

Mol %	:	97.58	1.48	5.58
Molecular Weight	:	161.6	97.8	145.4
Density (gm/cc @ 60 °F)	:	0.8033	0.6861	0.7806
Gravity (°API @ 60 °F)	:	44.5	74.5	49.6

Heptanes Plus Properties

Mol %	:	95.65	1.08	5.11
Molecular Weight	:	163.1	102.9	151.0
Density (gm/cc @ 60 °F)	:	0.8047	0.6928	0.7873
Gravity (°API @ 60 °F)	:	44.2	72.5	48.1

Decanes Plus Properties

Mol %	:	60.00	0.02	2.56
Molecular Weight	:	194.8	133.9	194.3
Density (gm/cc @ 60 °F)	:	0.8257	0.7277	0.8252
Gravity (°API @ 60 °F)	:	39.7	62.8	39.8

Undecanes Plus Properties

Mol %	:	50.43	0.00	2.13
Molecular Weight	:	206.3	--	206.3
Density (gm/cc @ 60 °F)	:	0.8320	--	0.8320
Gravity (°API @ 60 °F)	:	38.4	--	38.4

Dodecanes Plus Properties

Mol %	:	44.36	0.00	1.87
Molecular Weight	:	214.4	--	214.4
Density (gm/cc @ 60 °F)	:	0.8363	--	0.8363
Gravity (°API @ 60 °F)	:	37.5	--	37.5

* (P)ressure : 6000 psig * (T)emperature : 81 °F

DEW POINT PRESSURE : 5150 @ 118 ° C



FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY

On Stock Tank Oil from atmospheric flash of sample in cylinder # 841218 - Middle Gas @ 3120.5 m

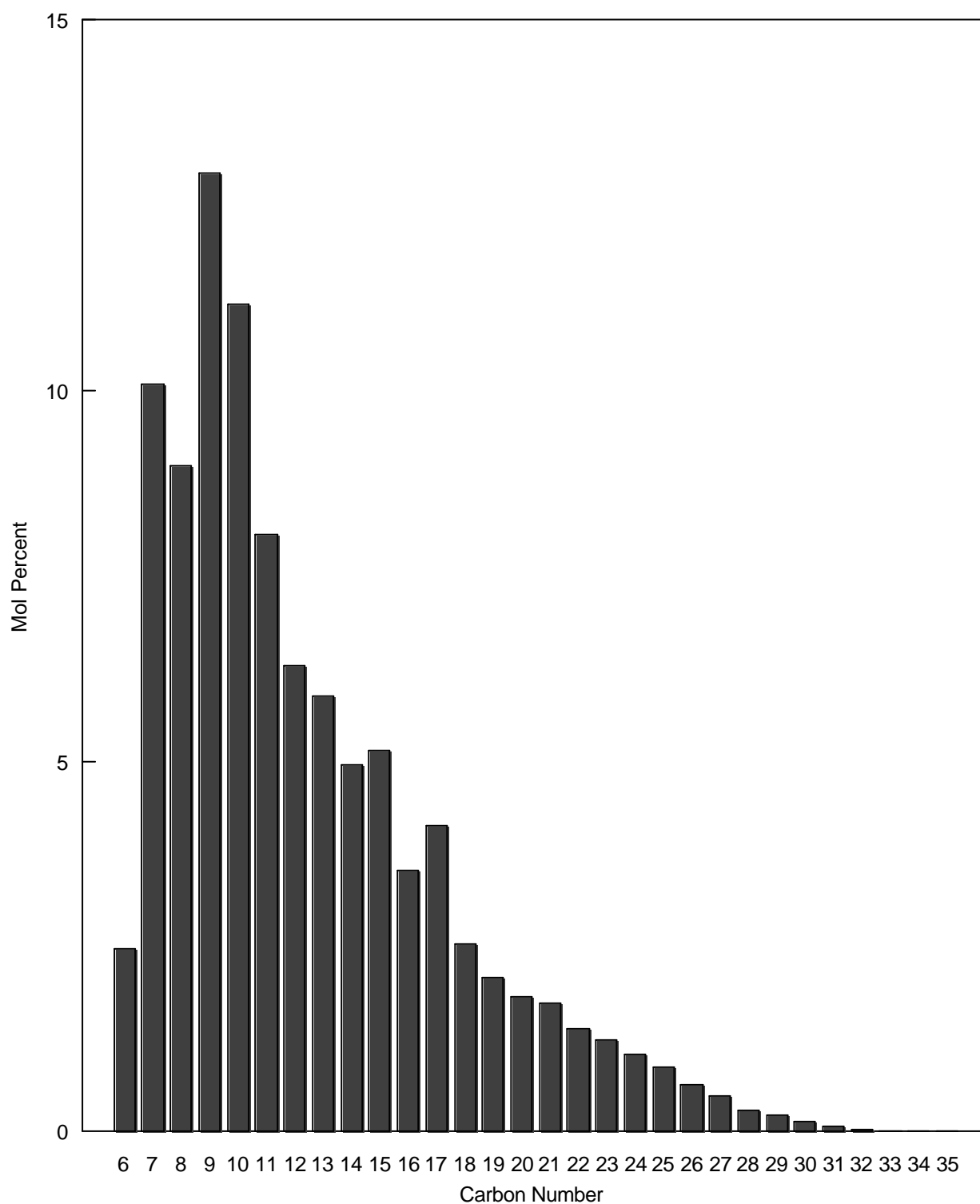
Component	Mol %
Hexanes minus	C6- 1.84
Hexanes	C6 2.47
Heptanes	C7 10.08
Octanes	C8 8.98
Nonanes	C9 12.94
Decanes	C10 11.16
Undecanes	C11 8.05
Dodecanes	C12 6.28
Tridecanes	C13 5.88
Tetradecanes	C14 4.95
Pentadecanes	C15 5.14
Hexadecanes	C16 3.53
Heptadecanes	C17 4.13
Octadecanes	C18 2.52
Nonadecanes	C19 2.08
Eicosanes	C20 1.82
Heneicosanes	C21 1.74
Docosanes	C22 1.38
Tricosanes	C23 1.24
Tetracosanes	C24 1.05
Pentacosanes	C25 0.87
Hexacosanes	C26 0.63
Heptacosanes	C27 0.48
Octacosanes	C28 0.29
Nonacosanes	C29 0.23
Triacontaness	C30 0.13
Hentriacontanes	C31 0.08
Dotriacontanes	C32 0.03
Trtriacontanes	C33 0.00
Tetratriacontanes	C34 0.00
Pentatriacontanes Plus	C35+ 0.00
TOTAL	100.00

Molecular Weight Calculated *	:	167.2
Density @ 60 °F Calculated *	:	0.8065
Molecular Weight Measured	:	--
Density @ 60 °F Measured	:	0.8065

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY

On Stock Tank Oil from atmospheric flash of sample in cylinder # 841218 - Middle Gas @ 3120.5 m



COMPOSITIONAL ANALYSIS OF RESERVOIR FLUID

Cylinder # 841218 - Middle Gas @ 3120.5 m

Component	Stock Tank		Reservoir
	Liquid	Gas	Fluid
	Mol %	Mol %	Mol %
Hydrogen Sulphide	H2S 0.00	0.00	0.00
Carbon Dioxide	CO2 0.26	17.55	17.37
Nitrogen	N2 0.00	0.13	0.13
Methane	C1 0.42	70.77	70.04
Ethane	C2 0.21	5.97	5.91
Propane	C3 0.34	2.68	2.66
Iso-Butane	iC4 0.15	0.46	0.46
N-Butane	nC4 0.31	0.66	0.66
Iso-Pentane	iC5 0.35	0.28	0.28
N-Pentane	nC5 0.43	0.27	0.27
Hexanes	C6 2.45	0.37	0.39
Heptanes	C7 10.02	0.54	0.64
Octanes	C8 8.92	0.21	0.30
Nonanes	C9 12.86	0.10	0.23
Decanes	C10 11.09	0.01	0.13
Undecanes	C11 8.00	0.00	0.08
Dodecanes Plus	C12+ 44.20	0.00	0.45
TOTAL	100.00	100.00	100.00

Ratios

Molar Ratio	:	0.0104	0.9896	1.0000
Mass Ratio	:	0.0669	0.9331	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	23.8902 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	61527 SCF	--

Stream Properties

Molecular Weight	:	165.5	24.33	25.80
Density obs. (gm/cc)	:	0.8062 @ 60 °F	--	0.5069 @ PT*
Gravity (AIR = 1.000)	:	43.8 °API @ 60 °F	0.843	147.4
GHV (BTU/scf)	:	--	1018	--

Hexanes Plus Properties

Mol %	:	97.53	1.23	2.22
Molecular Weight	:	168.5	96.6	129.3
Density (gm/cc @ 60 °F)	:	0.8089	0.6845	0.7532
Gravity (°API @ 60 °F)	:	43.3	75.0	56.2

Heptanes Plus Properties

Mol %	:	95.08	0.86	1.83
Molecular Weight	:	170.6	102.0	138.9
Density (gm/cc @ 60 °F)	:	0.8108	0.6918	0.7660
Gravity (°API @ 60 °F)	:	42.9	72.9	53.0

Decanes Plus Properties

Mol %	:	63.29	0.01	0.66
Molecular Weight	:	201.5	133.9	200.5
Density (gm/cc @ 60 °F)	:	0.8301	0.7277	0.8290
Gravity (°API @ 60 °F)	:	38.8	62.8	39.0

Undecanes Plus Properties

Mol %	:	52.20	0.00	0.53
Molecular Weight	:	215.8	--	215.8
Density (gm/cc @ 60 °F)	:	0.8375	--	0.8375
Gravity (°API @ 60 °F)	:	37.3	--	37.3

Dodecanes Plus Properties

Mol %	:	44.20	0.00	0.45
Molecular Weight	:	228.3	--	228.3
Density (gm/cc @ 60 °F)	:	0.8436	--	0.8436
Gravity (°API @ 60 °F)	:	36.1	--	36.1

* (P)ressure : 6000 psig * (T)emperature : 81 °F

DEW POINT PRESSURE : 4395 @ 117 ° C



Company : Esso Australia Limited
Well : Scallop # 1

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FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY

On Stock Tank Oil from atmospheric flash of sample in cylinder # 84062404 - Top Gas @ 3109 m

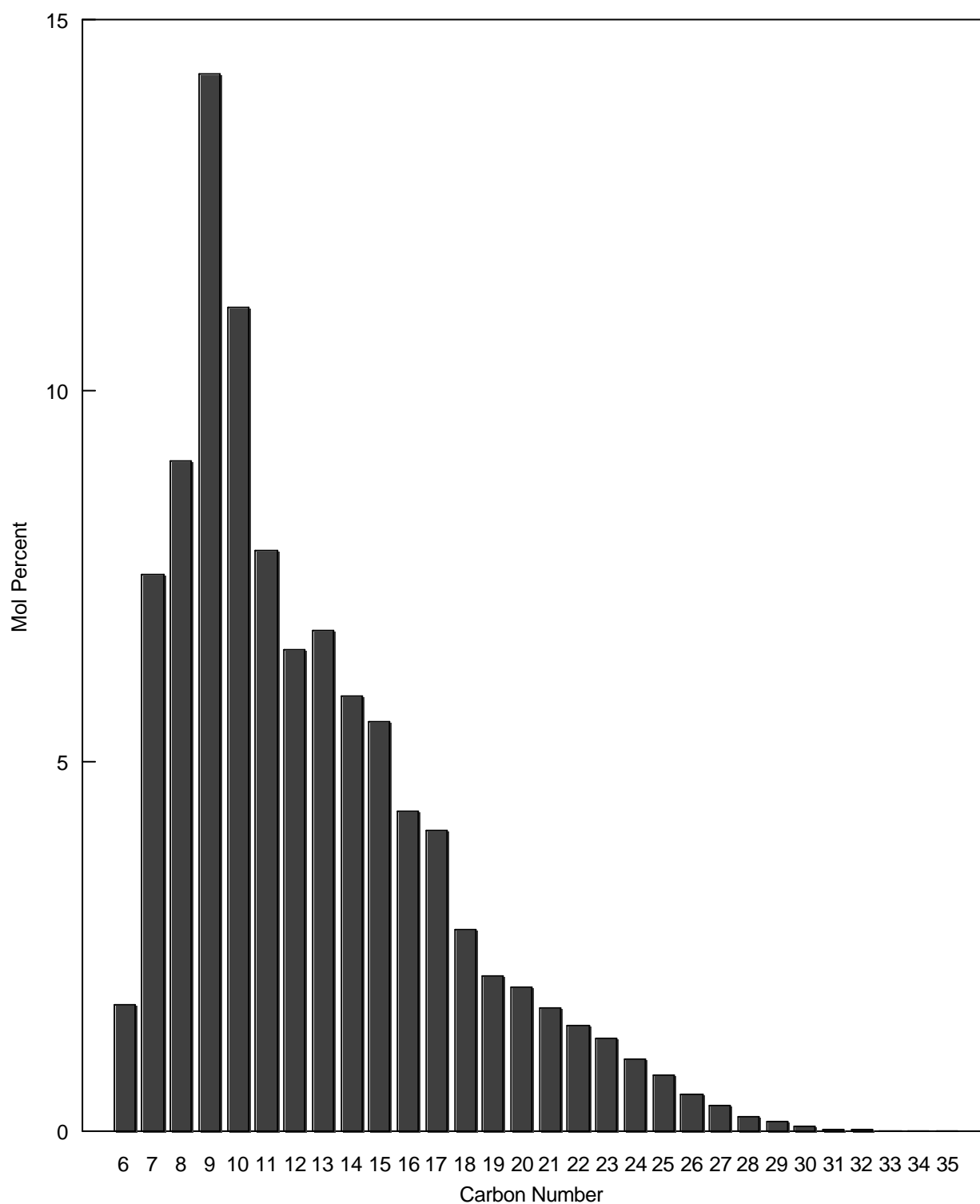
Component	Mol %
Hexanes minus	C6- 1.27
Hexanes	C6 1.72
Heptanes	C7 7.51
Octanes	C8 9.05
Nonanes	C9 14.27
Decanes	C10 11.11
Undecanes	C11 7.84
Dodecanes	C12 6.50
Tridecanes	C13 6.76
Tetradecanes	C14 5.88
Pentadecanes	C15 5.53
Hexadecanes	C16 4.33
Heptadecanes	C17 4.06
Octadecanes	C18 2.72
Nonadecanes	C19 2.10
Eicosanes	C20 1.94
Heneicosanes	C21 1.68
Docosanes	C22 1.43
Tricosanes	C23 1.26
Tetracosanes	C24 0.98
Pentacosanes	C25 0.77
Hexacosanes	C26 0.50
Heptacosanes	C27 0.36
Octacosanes	C28 0.19
Nonacosanes	C29 0.13
Triacontaness	C30 0.06
Hentriacontanes	C31 0.03
Dotriacontanes	C32 0.02
Trtriacontanes	C33 0.00
Tetratriacontanes	C34 0.00
Pentatriacontanes Plus	C35+ 0.00
TOTAL	100.00

Molecular Weight Calculated *	:	169.2
Density @ 60 °F Calculated *	:	0.8082
Molecular Weight Measured	:	--
Density @ 60 °F Measured	:	0.8082

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY

On Stock Tank Oil from atmospheric flash of sample in cylinder # 84062404 - Top Gas @ 3109 m



COMPOSITIONAL ANALYSIS OF RESERVOIR FLUID

Cylinder # 84062404 - Top Gas @ 3109 m

Component	Stock Tank Liquid		Stock Tank Gas		Reservoir Fluid	
		Mol %		Mol %		Mol %
Hydrogen Sulphide	H2S	0.00		0.00		0.00
Carbon Dioxide	CO2	0.26		17.59		17.44
Nitrogen	N2	0.00		0.12		0.12
Methane	C1	0.42		71.15		70.52
Ethane	C2	0.20		5.75		5.70
Propane	C3	0.31		2.42		2.40
Iso-Butane	iC4	0.13		0.39		0.39
N-Butane	nC4	0.31		0.67		0.67
Iso-Pentane	iC5	0.27		0.22		0.22
N-Pentane	nC5	0.35		0.22		0.22
Hexanes	C6	1.70		0.33		0.34
Heptanes	C7	7.43		0.57		0.63
Octanes	C8	8.96		0.32		0.40
Nonanes	C9	14.13		0.19		0.31
Decanes	C10	11.00		0.05		0.15
Undecanes	C11	7.76		0.01		0.08
Dodecanes Plus	C12+	46.76		0.00		0.41
TOTAL		100.00		100.00		100.00

Ratios

Molar Ratio	:	0.0089	0.9911	1.0000
Mass Ratio	:	0.0579	0.9421	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	27.6314 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	71567 SCF	--

Stream Properties

Molecular Weight	:	167.2	24.40	25.67
Density obs. (gm/cc)	:	0.8075 @ 60 °F	--	0.5064 @ PT*
Gravity (AIR = 1.000)	:	43.6 °API @ 60 °F	0.845	147.6
GHV (BTU/scf)	:	--	1021	--

Hexanes Plus Properties

Mol %	:	97.74	1.47	2.32
Molecular Weight	:	170.0	100.6	126.5
Density (gm/cc @ 60 °F)	:	0.8100	0.6899	0.7454
Gravity (°API @ 60 °F)	:	43.0	73.4	58.2

Heptanes Plus Properties

Mol %	:	96.04	1.14	1.98
Molecular Weight	:	171.5	105.4	133.8
Density (gm/cc @ 60 °F)	:	0.8112	0.6960	0.7552
Gravity (°API @ 60 °F)	:	42.8	71.6	55.7

Decanes Plus Properties

Mol %	:	65.52	0.06	0.64
Molecular Weight	:	199.8	136.1	193.7
Density (gm/cc @ 60 °F)	:	0.8289	0.7299	0.8216
Gravity (°API @ 60 °F)	:	39.0	62.2	40.6

Undecanes Plus Properties

Mol %	:	54.52	0.01	0.49
Molecular Weight	:	213.1	146.9	211.7
Density (gm/cc @ 60 °F)	:	0.8359	0.7399	0.8344
Gravity (°API @ 60 °F)	:	37.6	59.6	37.9

Dodecanes Plus Properties

Mol %	:	46.76	0.00	0.41
Molecular Weight	:	224.0	--	224.0
Density (gm/cc @ 60 °F)	:	0.8413	--	0.8413
Gravity (°API @ 60 °F)	:	36.5	--	36.5

* (P)ressure : 6000 psig * (T)emperature : 81 °F

DEW POINT PRESSURE : 4820 @ 117 ° C



Company : Esso Australia Limited
Well : Scallop # 1

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Room Temperature Validity Check On Bottom Hole Sample

Saturation Pressure : 3385 psig @ 26 ° C

Sample # 7a

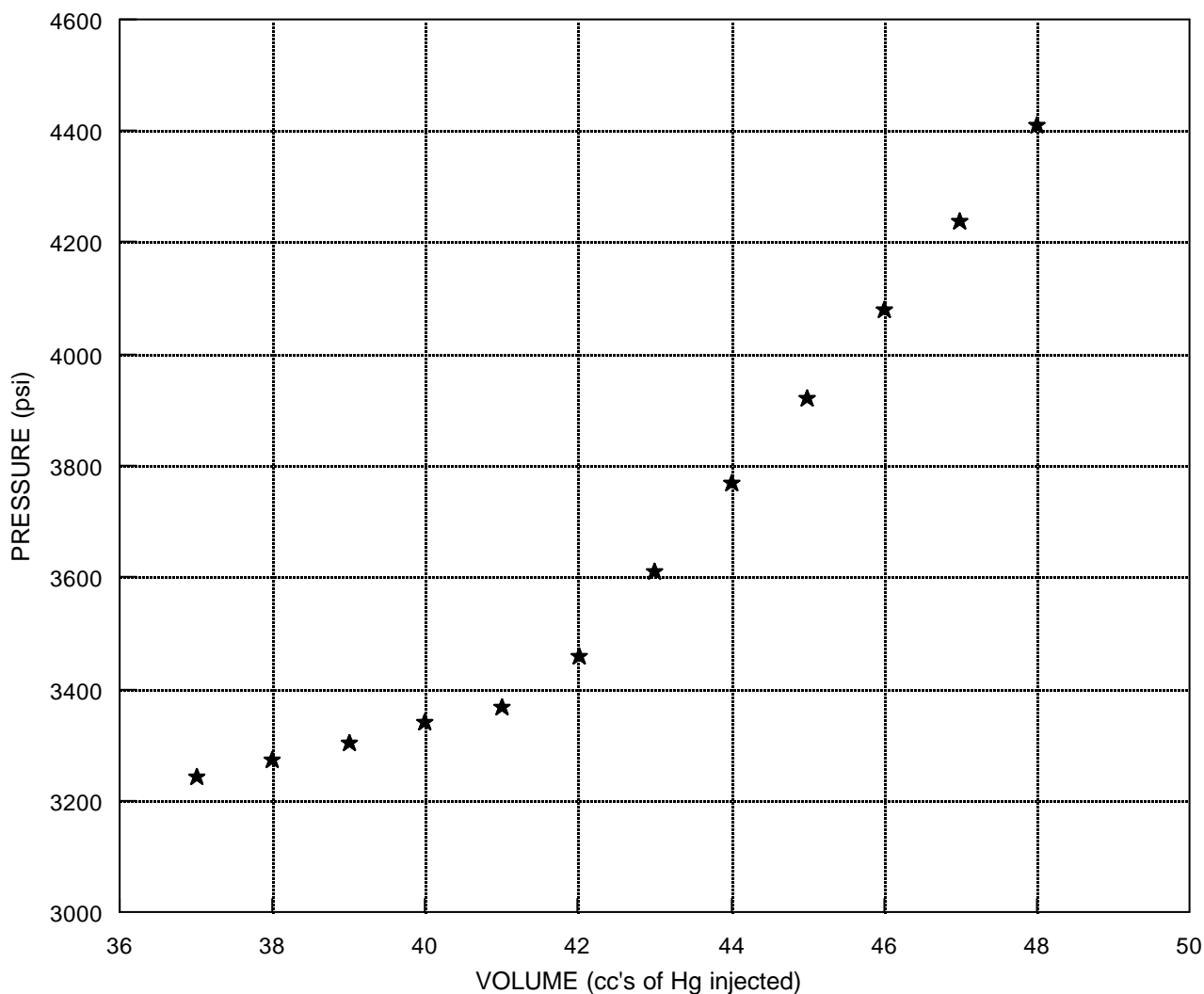
Sampling Conditions

Date	:	February 25, 2003
Reservoir Pressure	:	4093.2 psia
Reservoir Temperature	:	109.3 ° C

Sampler ID	:	MDT - BA 36
Volume	:	1 Gallon
Depth	:	2840 m

Transferred into Cylinder #	:	84062601
-----------------------------	---	----------

Volume (cc's)	Pressure (psi)
48.00	4410
47.00	4240
46.00	4080
45.00	3920
44.00	3770
43.00	3610
42.00	3460
41.00	3370
40.00	3340
39.00	3305
38.00	3275
37.00	3245





Company : Esso Australia Limited
Well : Scallop # 1

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Room Temperature Validity Check On Bottom Hole Sample

Saturation Pressure : 3380 psig @ 26 ° C

Sample # 7b

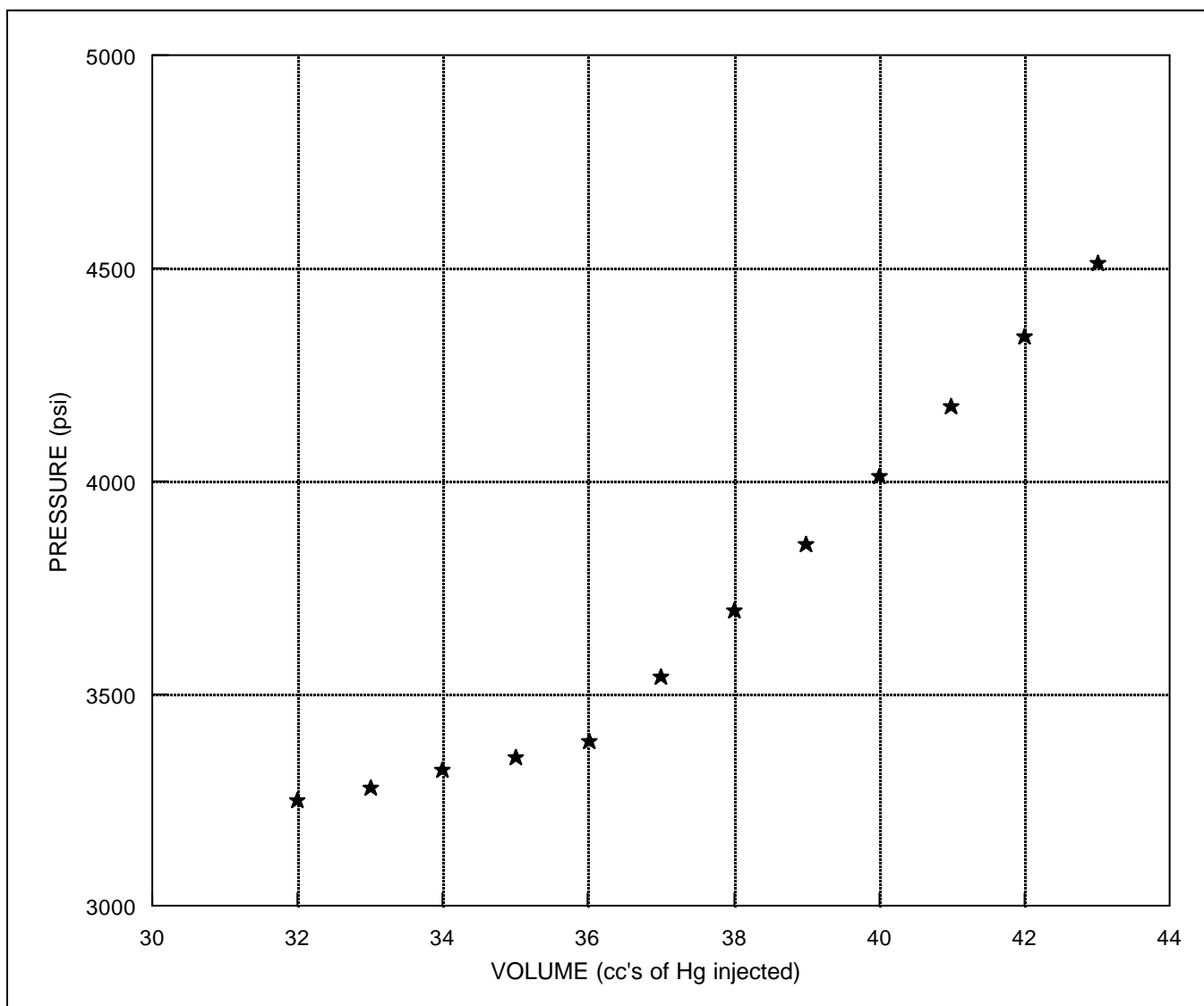
Sampling Conditions

Date	:	February 25, 2003
Reservoir Pressure	:	4093.2 psia
Reservoir Temperature	:	109.3 ° C

Sampler ID	:	MDT - BA 36
Volume	:	1 Gallon
Depth	:	2840 m

Tranferred into Cylinder #	:	84103217
----------------------------	---	----------

Volume (cc's)	Pressure (psi)
43.00	4510
42.00	4340
41.00	4175
40.00	4010
39.00	3850
38.00	3695
37.00	3540
36.00	3390
35.00	3350
34.00	3320
33.00	3280
32.00	3250





Company : Esso Australia Limited
Well : Scallop # 1

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Room Temperature Validity Check On Bottom Hole Sample

Saturation Pressure : 3390 psig @ 26 ° C

Sample # 7c

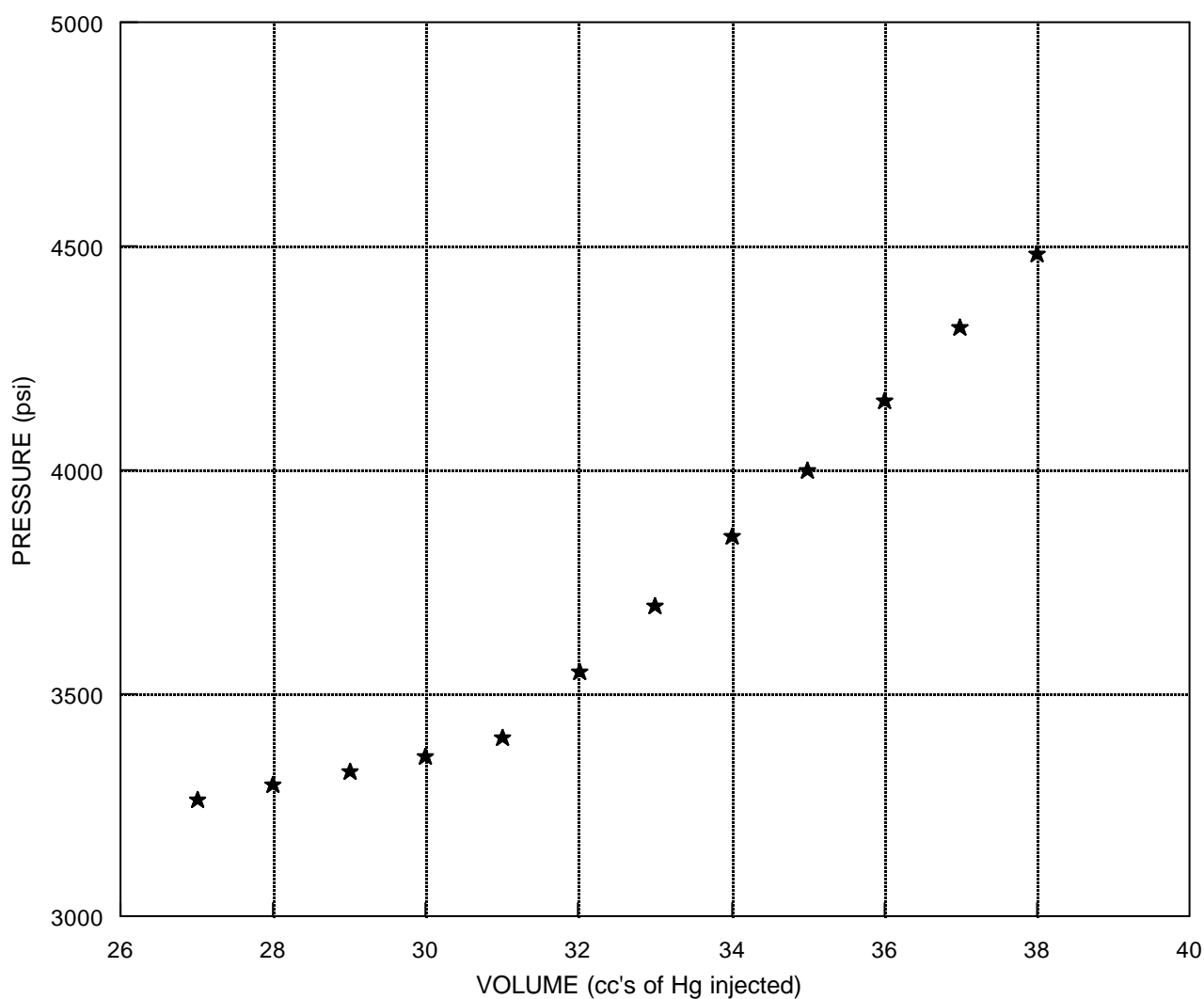
Sampling Conditions

Date	:	February 25, 2003
Reservoir Pressure	:	4093.2 psia
Reservoir Temperature	:	109.3 ° C

Sampler ID	:	MDT - BA 36
Volume	:	1 Gallon
Depth	:	2840 m

Tranferred into Cylinder #	:	84093202
----------------------------	---	----------

Volume (cc's)	Pressure (psi)
38.00	4480
37.00	4320
36.00	4155
35.00	4000
34.00	3850
33.00	3695
32.00	3550
31.00	3400
30.00	3360
29.00	3325
28.00	3295
27.00	3265





Company : Esso Australia Limited
Well : Scallop # 1

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Room Temperature Validity Check On Bottom Hole Sample

Saturation Pressure : 3385 psig @ 26 ° C

Sample # 7d

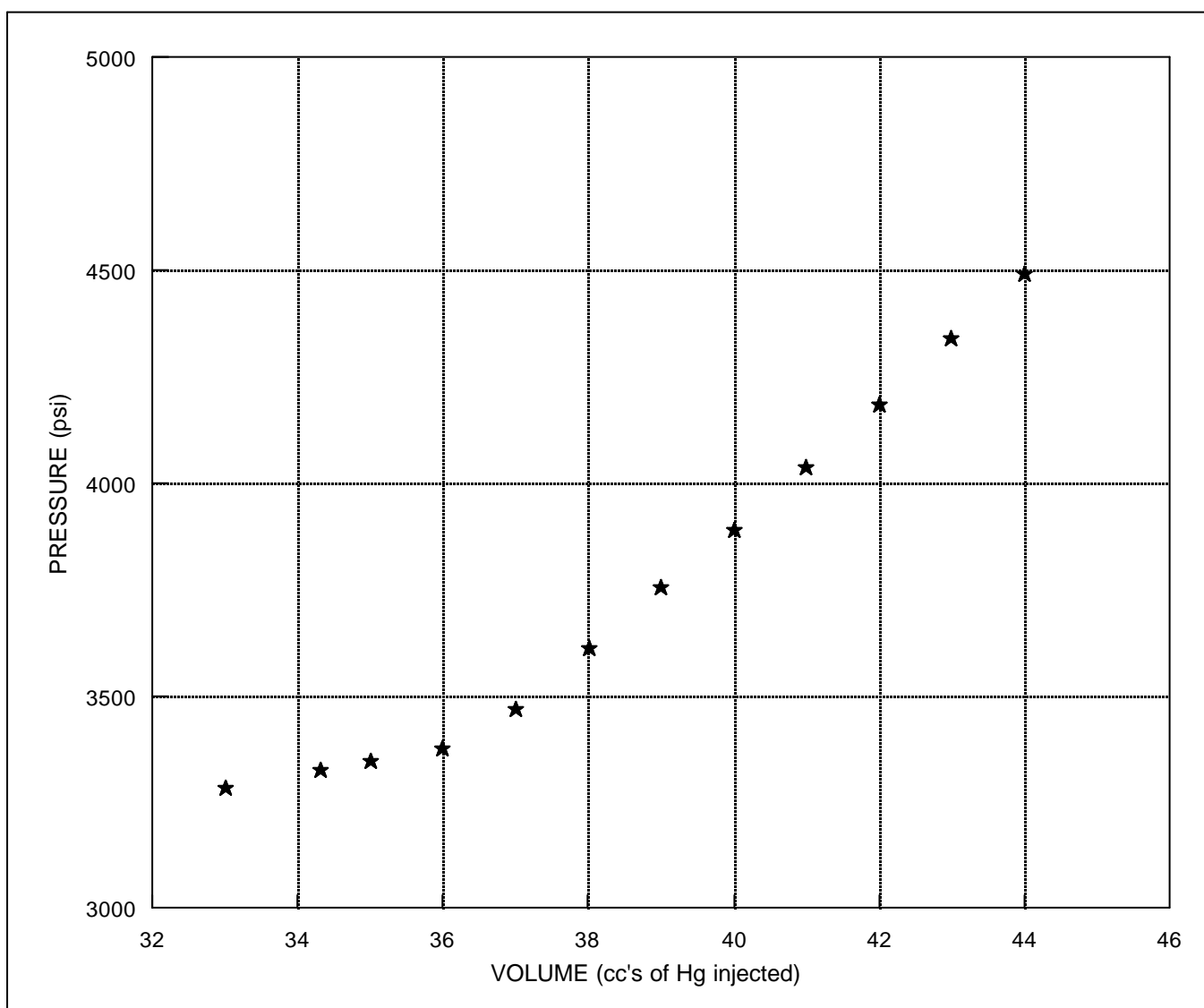
Sampling Conditions

Date	:	February 25, 2003
Reservoir Pressure	:	4093.2 psia
Reservoir Temperature	:	109.3 ° C

Sampler ID	:	MDT - BA 36
Volume	:	1 Gallon
Depth	:	2840 m

Tranferred into Cylinder #	:	84063609
----------------------------	---	----------

Volume (cc's)	Pressure (psi)
44.00	4490
43.00	4340
42.00	4185
41.00	4035
40.00	3890
39.00	3755
38.00	3610
37.00	3470
36.00	3375
35.00	3345
34.30	3325
33.00	3285





Company : Esso Australia Limited
Well : Scallop # 1

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Reservoir Temperature Validity Check On Bottom Hole Sample

Saturation Pressure : 3960 psig @ 109 ° C

Sample # 7a

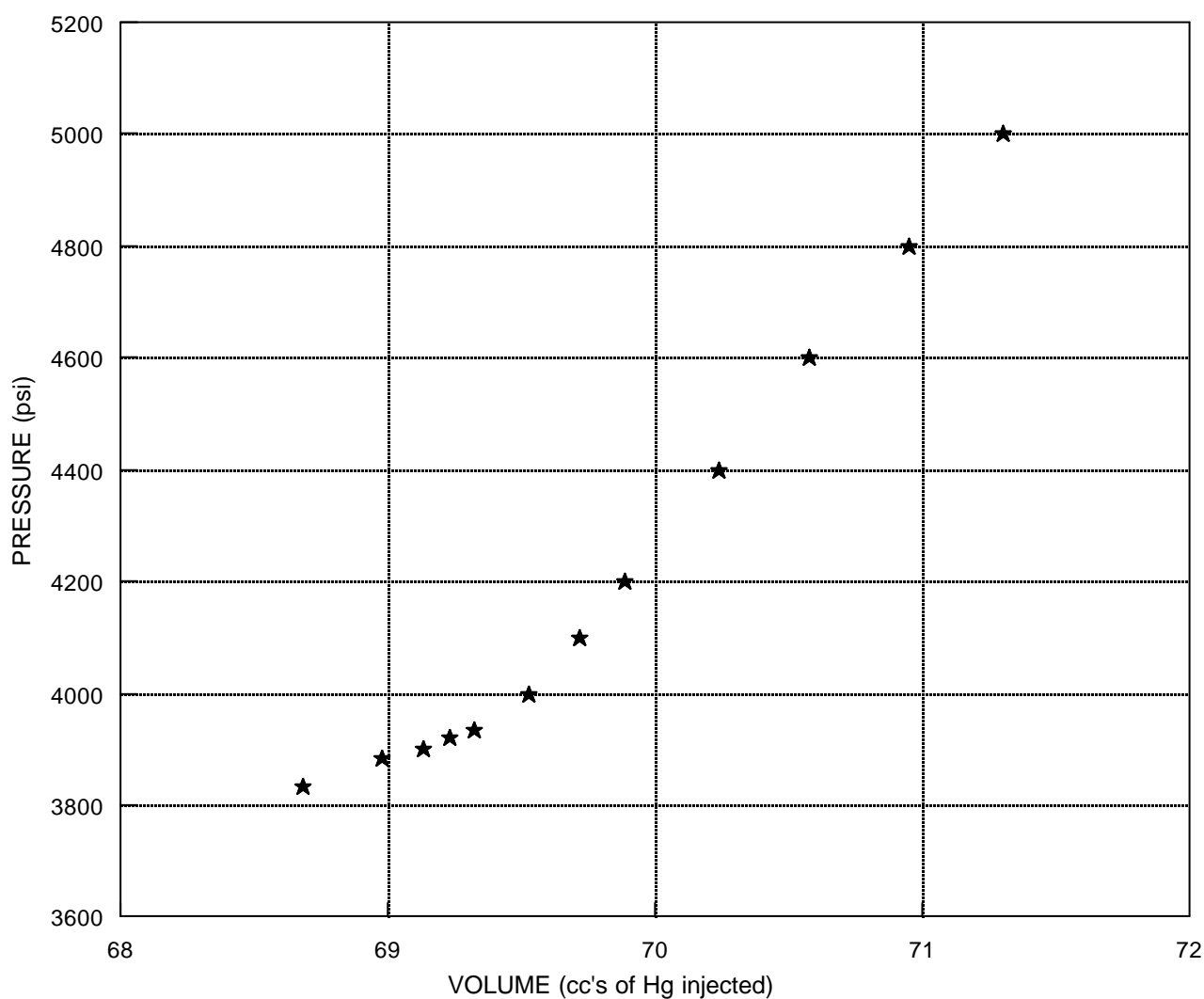
Sampling Conditions

Date	:	February 25, 2003
Reservoir Pressure	:	4093.2 psia
Reservoir Temperature	:	109.3 ° C

Sampler ID	:	MDT - BA 36
Volume	:	1 Gallon
Depth	:	2840 m

Tranferred into Cylinder #	:	84062601
----------------------------	---	----------

Volume (cc's)	Pressure (psi)
71.30	5000
70.95	4800
70.58	4600
70.24	4400
69.89	4200
69.72	4100
69.53	4000
69.32	3933
69.23	3920
69.13	3902
68.98	3883
68.68	3832





Company : Esso Australia Limited
Well : Scallop # 1

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FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY

On Stock Tank Oil from atmospheric flash of sample in cylinder # 84062601 - Bottom Oil @ 2840 m

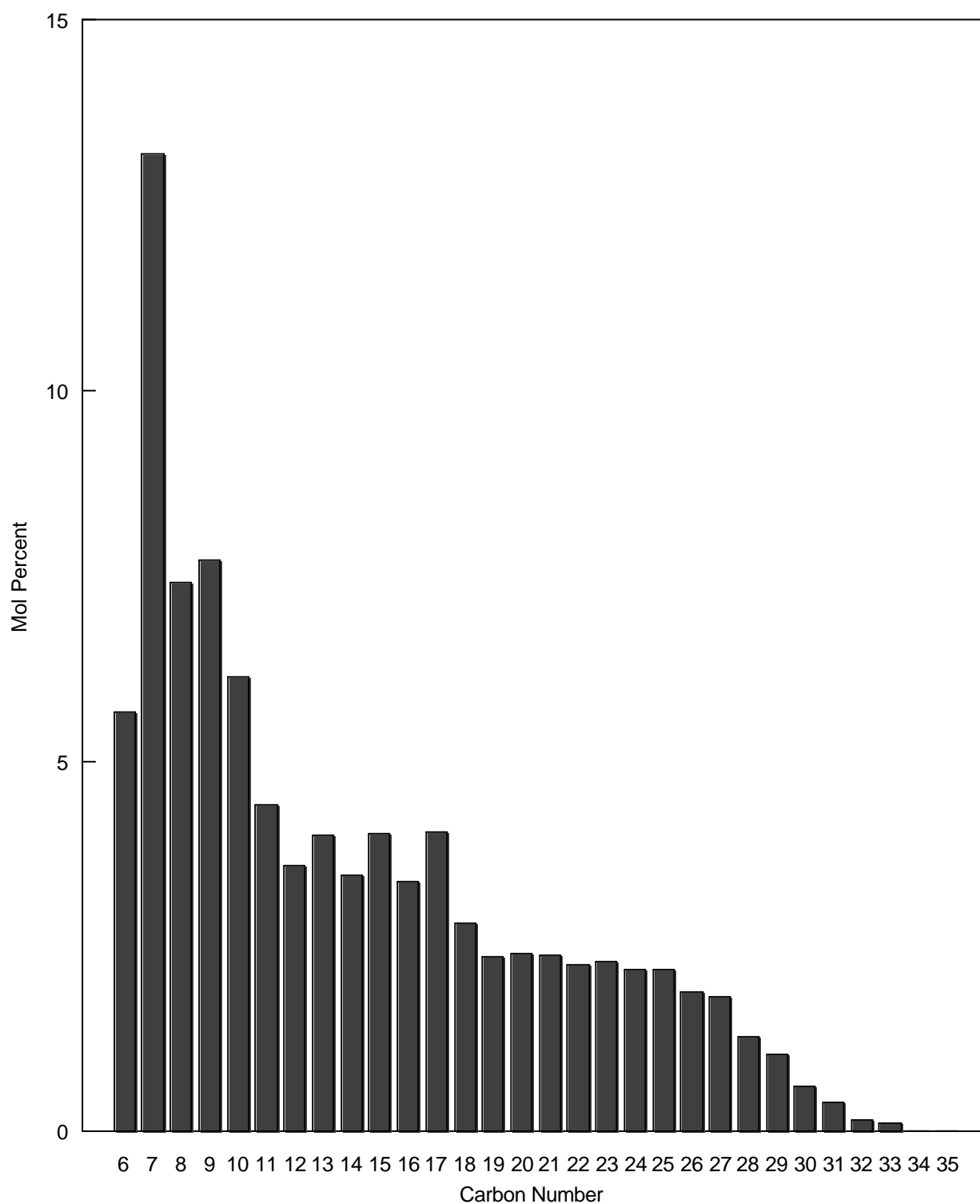
Component	Mol %
Hexanes minus	C6- 6.85
Hexanes	C6 5.66
Heptanes	C7 13.20
Octanes	C8 7.41
Nonanes	C9 7.71
Decanes	C10 6.13
Undecanes	C11 4.40
Dodecanes	C12 3.59
Tridecanes	C13 3.99
Tetradecanes	C14 3.45
Pentadecanes	C15 4.03
Hexadecanes	C16 3.37
Heptadecanes	C17 4.04
Octadecanes	C18 2.81
Nonadecanes	C19 2.36
Eicosanes	C20 2.41
Heneicosanes	C21 2.38
Docosanes	C22 2.26
Tricosanes	C23 2.30
Tetracosanes	C24 2.18
Pentacosanes	C25 2.18
Hexacosanes	C26 1.89
Heptacosanes	C27 1.81
Octacosanes	C28 1.28
Nonacosanes	C29 1.04
Triacontaness	C30 0.61
Hentriacontanes	C31 0.39
Dotriacontanes	C32 0.15
Trtriacontanes	C33 0.12
Tetratriacontanes	C34 0.00
Pentatriacontanes Plus	C35+ 0.00
TOTAL	100.00

Molecular Weight Calculated *	:	182.5
Density @ 60 °F Calculated *	:	0.8168
Molecular Weight Measured	:	--
Density @ 60 °F Measured	:	0.8215

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY

On Stock Tank Oil from atmospheric flash of sample in cylinder # 84062601 - Bottom Oil @ 2840 m



COMPOSITIONAL ANALYSIS OF RESERVOIR FLUID

Cylinder # 84062601 - Bottom Oil @ 2840 m

Component	Stock Tank		Stock Tank		Reservoir
	Liquid	Mol %	Gas	Mol %	Fluid
					Mol %
Hydrogen Sulphide	H2S	0.00	0.00		0.00
Carbon Dioxide	CO2	0.05	3.14		2.20
Nitrogen	N2	0.00	0.15		0.10
Methane	C1	0.42	70.65		49.41
Ethane	C2	0.37	10.34		7.32
Propane	C3	1.00	7.70		5.67
Iso-Butane	iC4	0.48	1.46		1.16
N-Butane	nC4	1.36	2.87		2.41
Iso-Pentane	iC5	1.19	0.94		1.02
N-Pentane	nC5	1.50	0.92		1.10
Hexanes	C6	5.69	0.92		2.36
Heptanes	C7	13.27	0.71		4.51
Octanes	C8	7.45	0.14		2.35
Nonanes	C9	7.75	0.05		2.38
Decanes	C10	6.16	0.01		1.87
Undecanes	C11	4.42	0.00		1.34
Dodecanes Plus	C12+	48.90	0.00		14.80
TOTAL		100.00	100.00		100.00

Ratios

Molar Ratio	:	0.3024	0.6976	1.0000
Mass Ratio	:	0.7613	0.2387	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	1.8489 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	1375 SCF	--

Stream Properties

Molecular Weight	:	182.5	24.80	72.49
Density obs. (gm/cc)	:	0.8179 @ 60 °F	--	0.5819 @ PT*
Gravity (AIR = 1.000)	:	41.3 °API @ 60 °F	0.860	111.4
GHV (BTU/scf)	:	--	1409	--

Hexanes Plus Properties

Mol %	:	93.64	1.83	29.61
Molecular Weight	:	191.0	91.7	186.7
Density (gm/cc @ 60 °F)	:	0.8251	0.6776	0.8213
Gravity (°API @ 60 °F)	:	39.8	77.1	40.6

Heptanes Plus Properties

Mol %	:	87.96	0.91	27.25
Molecular Weight	:	197.9	99.5	195.6
Density (gm/cc @ 60 °F)	:	0.8298	0.6884	0.8277
Gravity (°API @ 60 °F)	:	38.9	73.8	39.3

Decanes Plus Properties

Mol %	:	59.49	0.01	18.01
Molecular Weight	:	242.1	133.9	242.1
Density (gm/cc @ 60 °F)	:	0.8511	0.7277	0.8511
Gravity (°API @ 60 °F)	:	34.6	62.8	34.6

Undecanes Plus Properties

Mol %	:	53.32	0.00	16.14
Molecular Weight	:	254.6	--	254.6
Density (gm/cc @ 60 °F)	:	0.8560	--	0.8560
Gravity (°API @ 60 °F)	:	33.6	--	33.6

Dodecanes Plus Properties

Mol %	:	48.90	0.00	14.80
Molecular Weight	:	264.3	--	264.3
Density (gm/cc @ 60 °F)	:	0.8597	--	0.8597
Gravity (°API @ 60 °F)	:	32.9	--	32.9

* (P)ressure : 3960 psig * (T)emperature : 229 °F



DISTILLATION OF STOCK TANK LIQUID SAMPLE

(Hexanes to Eicosanes Plus)

ON STOCK TANK OIL FLASHED FROM CYLINDER # 84062601 - Bottom Oil @ 2840 m

		Cut (°C)	Mol %	Weight	Weight %	Volume %	Density (gm/cc)	API Gravity
Hexanes	C6	59 - 84	5.68	92	2.50	2.98	0.6920	72.8
Heptanes	C7	85 - 112	12.17	97	5.65	6.20	0.7527	56.3
Octanes	C8	113 - 138	8.83	107	4.52	4.85	0.7700	52.1
Nonanes	C9	139 - 162	7.26	119	4.15	4.33	0.7917	47.1
Decanes	C10	163 - 185	6.29	132	3.97	4.12	0.7958	46.1
Undecanes	C11	186 - 206	4.47	145	3.12	3.22	0.8005	45.1
Dodecanes	C12	207 - 227	3.60	160	2.76	2.83	0.8054	44.0
Tridecanes	C13	228 - 246	4.00	174	3.34	3.40	0.8102	43.0
Tetradecanes	C14	247 - 263	3.56	187	3.20	3.25	0.8151	41.9
Pentadecanes	C15	264 - 280	4.18	200	4.01	4.04	0.8202	40.9
Hexadecanes	C16	281 - 296	3.50	214	3.58	3.58	0.8260	39.6
Heptadecanes	C17	297 - 312	4.17	228	4.55	4.53	0.8308	38.7
Octadecanes	C18	313 - 322	2.87	242	3.33	3.28	0.8377	37.3
Nonadecanes	C19	323 - 335	2.36	256	2.90	2.84	0.8435	36.1
Eicosanes Plus	C20+	> 336	27.06	373	48.42	46.55	0.8588	33.1
TOTAL			100.00		100.00	100.00		



Company : Esso Australia Limited
Well : Scallop # 1

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COMPOSITIONAL ANALYSIS OF RESERVOIR FLUID IN CYLINDER # 84062601 - Bottom Oil @ 2840 m

Component	Stock Tank		Stock Tank		Reservoir	
		Liquid Mol %		Gas Mol %		Fluid Mol %
Hydrogen Sulphide	H2S	0.00		0.00		0.00
Carbon Dioxide	CO2	0.05		3.14		2.26
Nitrogen	N2	0.00		0.15		0.11
Methane	C1	0.42		70.65		50.64
Ethane	C2	0.37		10.34		7.50
Propane	C3	1.00		7.70		5.79
Iso-Butane	iC4	0.48		1.46		1.18
N-Butane	nC4	1.36		2.87		2.44
Iso-Pentane	iC5	1.19		0.94		1.01
N-Pentane	nC5	1.50		0.92		1.08
Hexanes	C6	5.33		0.92		2.18
Heptanes	C7	11.40		0.71		3.76
Octanes	C8	8.27		0.14		2.46
Nonanes	C9	6.79		0.05		1.97
Decanes	C10	5.89		0.01		1.68
Undecanes	C11	4.19		0.00		1.19
Dodecanes	C12	3.37		0.00		0.96
Tridecanes	C13	3.74		0.00		1.07
Tetradecanes	C14	3.33		0.00		0.95
Pentadecanes	C15	3.92		0.00		1.12
Hexadecanes	C16	3.27		0.00		0.93
Heptadecanes	C17	3.90		0.00		1.11
Octadecanes	C18	2.69		0.00		0.77
Nonadecanes	C19	2.21		0.00		0.63
Eicosanes Plus	C20+	25.34		0.00		7.21
TOTAL		100.00		100.00		100.00

Ratios

Molar Ratio	:	0.2849	0.7151	1.0000
Mass Ratio	:	0.7616	0.2384	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	1.8469 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	1375 SCF	--

Stream Properties

Molecular Weight	210.56	:	198.9	24.80	74.46
Density obs. (gm/cc)	0.825	:	0.8192 @ 60 °F	--	0.5832 @ PT*
Gravity (AIR = 1.000)	:	41.1 °API @ 60 °F	0.860	110.9 °API	
GHV (BTU/scf)	:	--	1409	--	

Hexanes Plus Properties

Mol %	:	93.64	1.83	27.99
Molecular Weight	:	208.52	95.76	203.22
Density (gm/cc @ 60 °F)	:	0.8258	0.6834	0.8221
Gravity (°API @ 60 °F)	:	39.67	75.36	40.46

Heptanes Plus Properties

Mol %	:	88.31	0.91	25.81
Molecular Weight	:	215.58	99.94	212.67
Density (gm/cc @ 60 °F)	:	0.8300	0.6890	0.8280
Gravity (°API @ 60 °F)	:	38.83	73.67	39.24

Dodecanes Plus Properties

Mol %	:	51.77	0.00	14.75
Molecular Weight	:	286.96	--	286.96
Density (gm/cc @ 60 °F)	:	0.8457	--	0.8457
Gravity (°API @ 60 °F)	:	35.65	--	35.65

Eicosanes Plus Properties

Mol %	:	25.34	0.00	7.21
Molecular Weight	:	373.00	--	373.00
Density (gm/cc @ 60 °F)	:	0.8588	--	0.8588
Gravity (°API @ 60 °F)	:	33.11	--	33.11

* (P)ressure : 3960 psig * (T)emperature : 229 °F



Company : Esso Australia Limited
Well : Scallop # 1

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Room Temperature Validity Check On Bottom Hole Sample

Saturation Pressure : 4010 psig @ 26 ° C

Sample # 8

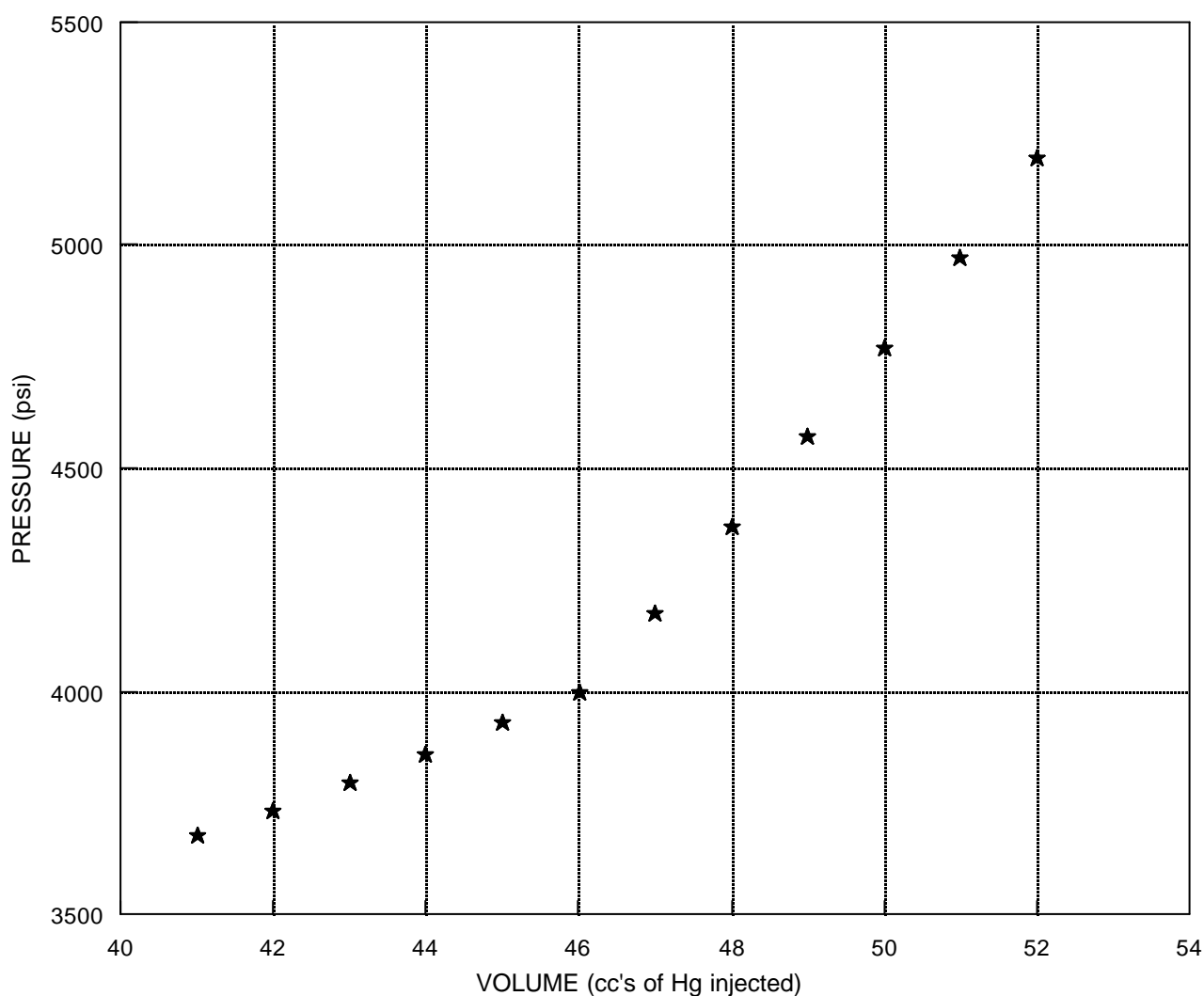
Sampling Conditions

Date	:	February 25, 2003
Reservoir Pressure	:	4092.7 psia
Reservoir Temperature	:	108.07 ° C

Sampler ID	:	MPSR - 136
Volume	:	450 cc
Depth	:	2840 m

Tranferred into Cylinder #	:	84032809
----------------------------	---	----------

Volume (cc's)	Pressure (psi)
52.00	5195
51.00	4970
50.00	4770
49.00	4570
48.00	4370
47.00	4175
46.00	4000
45.00	3930
44.00	3860
43.00	3795
42.00	3735
41.00	3680





Company : Esso Australia Limited
Well : Scallop # 1

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Reservoir Temperature Validity Check On Bottom Hole Sample

Saturation Pressure : 4525 psig @ 108 ° C

Sample # 8

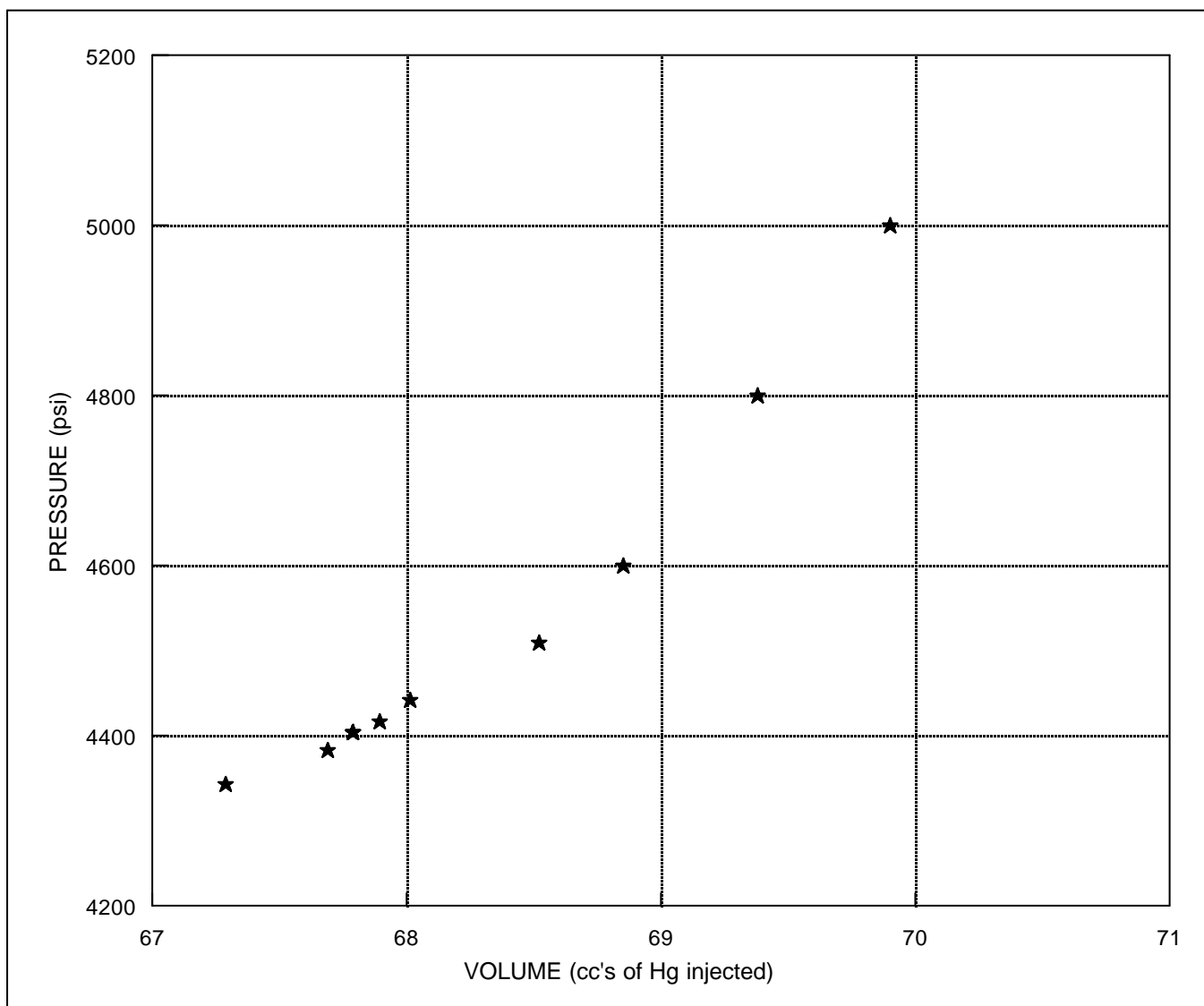
Sampling Conditions

Date	:	February 25, 2003
Reservoir Pressure	:	4092.7 psia
Reservoir Temperature	:	108.07 ° C

Sampler ID	:	MPSR - 136
Volume	:	450 cc
Depth	:	2840 m

Tranferred into Cylinder #	:	84032809
----------------------------	---	----------

Volume (cc's)	Pressure (psi)
69.90	5000
69.38	4800
68.85	4600
68.52	4510
68.01	4442
67.89	4418
67.79	4405
67.69	4384
67.29	4344
67.79	4405
67.79	4405
67.79	4405





Company : Esso Australia Limited
Well : Scallop # 1

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FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY

On Stock Tank Oil from atmospheric flash of sample in cylinder # 84032809 - Bottom Oil @ 2840 m

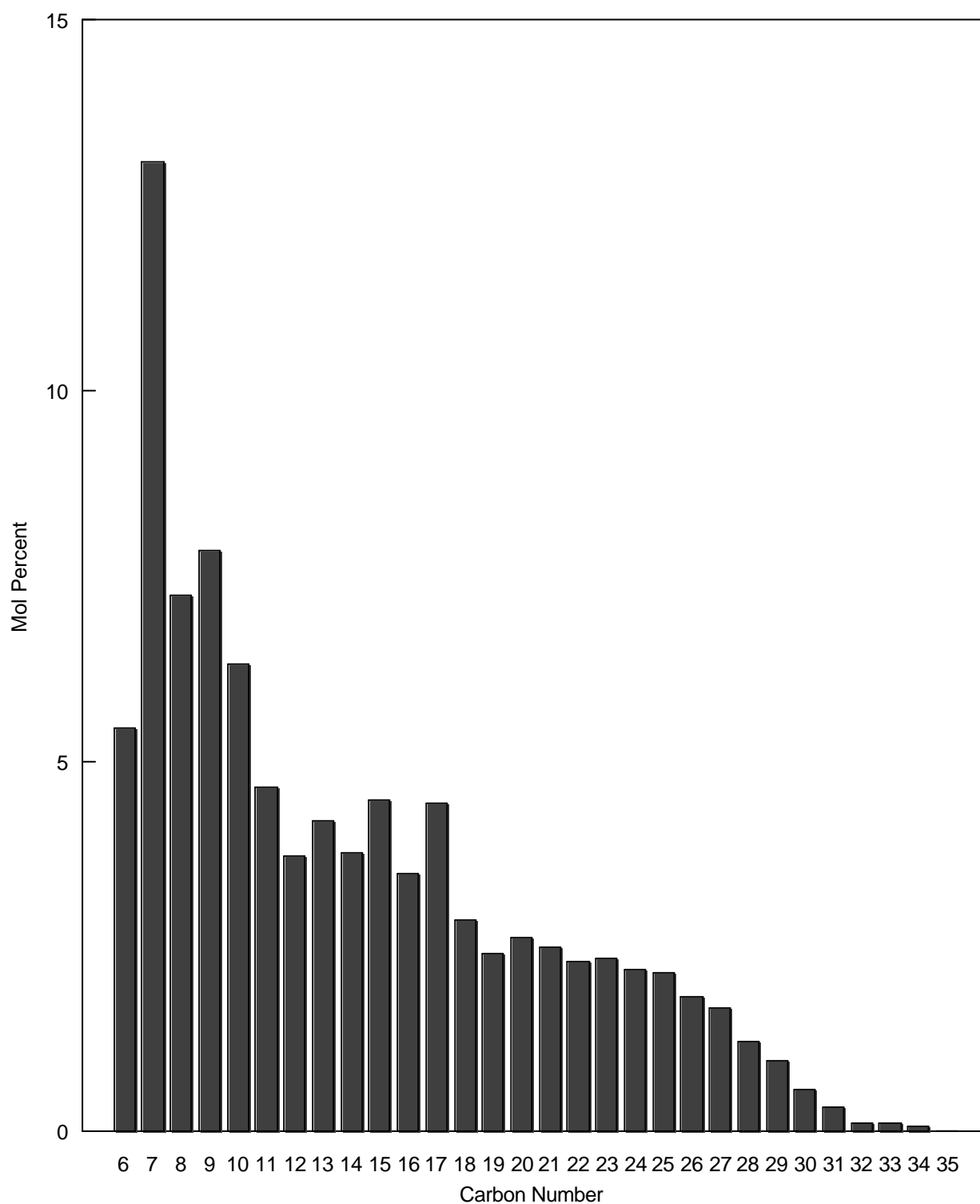
Component	Mol %
Hexanes minus	C6- 5.23
Hexanes	C6 5.45
Heptanes	C7 13.09
Octanes	C8 7.24
Nonanes	C9 7.84
Decanes	C10 6.30
Undecanes	C11 4.64
Dodecanes	C12 3.71
Tridecanes	C13 4.19
Tetradecanes	C14 3.77
Pentadecanes	C15 4.47
Hexadecanes	C16 3.48
Heptadecanes	C17 4.42
Octadecanes	C18 2.85
Nonadecanes	C19 2.41
Eicosanes	C20 2.61
Heneicosanes	C21 2.49
Docosanes	C22 2.29
Tricosanes	C23 2.33
Tetracosanes	C24 2.18
Pentacosanes	C25 2.15
Hexacosanes	C26 1.82
Heptacosanes	C27 1.68
Octacosanes	C28 1.21
Nonacosanes	C29 0.96
Triacontaness	C30 0.57
Hentriacontanes	C31 0.33
Dotriacontanes	C32 0.12
Trtriacontanes	C33 0.11
Tetratriacontanes	C34 0.06
Pentatriacontanes Plus	C35+ 0.00
TOTAL	100.00

Molecular Weight Calculated *	:	184.8
Density @ 60 °F Calculated *	:	0.8188
Molecular Weight Measured	:	--
Density @ 60 °F Measured	:	0.8231

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY

On Stock Tank Oil from atmospheric flash of sample in cylinder # 84032809 - Bottom Oil @ 2840 m



COMPOSITIONAL ANALYSIS OF RESERVOIR FLUID

Cylinder # 84032809 - Bottom Oil @ 2840 m

Component	Stock Tank		Stock Tank		Reservoir
	Liquid	Mol %	Gas	Mol %	Fluid
					Mol %
Hydrogen Sulphide	H2S	0.00	0.00		0.00
Carbon Dioxide	CO2	0.04	2.78		2.06
Nitrogen	N2	0.00	0.18		0.13
Methane	C1	0.42	72.52		53.59
Ethane	C2	0.35	9.99		7.46
Propane	C3	0.89	7.10		5.47
Iso-Butane	iC4	0.42	1.32		1.08
N-Butane	nC4	1.16	2.56		2.19
Iso-Pentane	iC5	1.03	0.86		0.91
N-Pentane	nC5	1.31	0.85		0.97
Hexanes	C6	5.43	0.87		2.07
Heptanes	C7	13.04	0.72		3.95
Octanes	C8	7.21	0.16		2.01
Nonanes	C9	7.81	0.07		2.10
Decanes	C10	6.27	0.02		1.66
Undecanes	C11	4.62	0.00		1.21
Dodecanes Plus	C12+	50.00	0.00		13.14
TOTAL		100.00	100.00		100.00

Ratios

Molar Ratio	:	0.2626	0.7374	1.0000
Mass Ratio	:	0.7293	0.2707	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	1.9989 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	1668 SCF	--

Stream Properties

Molecular Weight	:	183.4	24.24	66.02
Density obs. (gm/cc)	:	0.8186 @ 60 °F	--	0.5624 @ PT*
Gravity (AIR = 1.000)	:	41.2 °API @ 60 °F	0.841	119.8
GHV (BTU/scf)	:	--	1387	--

Hexanes Plus Properties

Mol %	:	94.37	1.84	26.14
Molecular Weight	:	190.9	92.6	185.8
Density (gm/cc @ 60 °F)	:	0.8250	0.6790	0.8204
Gravity (°API @ 60 °F)	:	39.9	76.7	40.8

Heptanes Plus Properties

Mol %	:	88.95	0.97	24.07
Molecular Weight	:	197.4	100.4	194.6
Density (gm/cc @ 60 °F)	:	0.8294	0.6896	0.8268
Gravity (°API @ 60 °F)	:	38.9	73.5	39.5

Decanes Plus Properties

Mol %	:	60.89	0.02	16.01
Molecular Weight	:	239.7	133.9	239.6
Density (gm/cc @ 60 °F)	:	0.8500	0.7277	0.8500
Gravity (°API @ 60 °F)	:	34.8	62.8	34.8

Undecanes Plus Properties

Mol %	:	54.62	0.00	14.35
Molecular Weight	:	251.8	--	251.8
Density (gm/cc @ 60 °F)	:	0.8549	--	0.8549
Gravity (°API @ 60 °F)	:	33.9	--	33.9

Dodecanes Plus Properties

Mol %	:	50.00	0.00	13.14
Molecular Weight	:	261.5	--	261.5
Density (gm/cc @ 60 °F)	:	0.8586	--	0.8586
Gravity (°API @ 60 °F)	:	33.1	--	33.1

* (P)ressure : 4525 psig * (T)emperature : 227 °F



Company : Esso Australia Limited
Well : Scallop # 1

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Room Temperature Validity Check On Bottom Hole Sample

Saturation Pressure : 3805 psig @ 26 ° C

Sample # 9

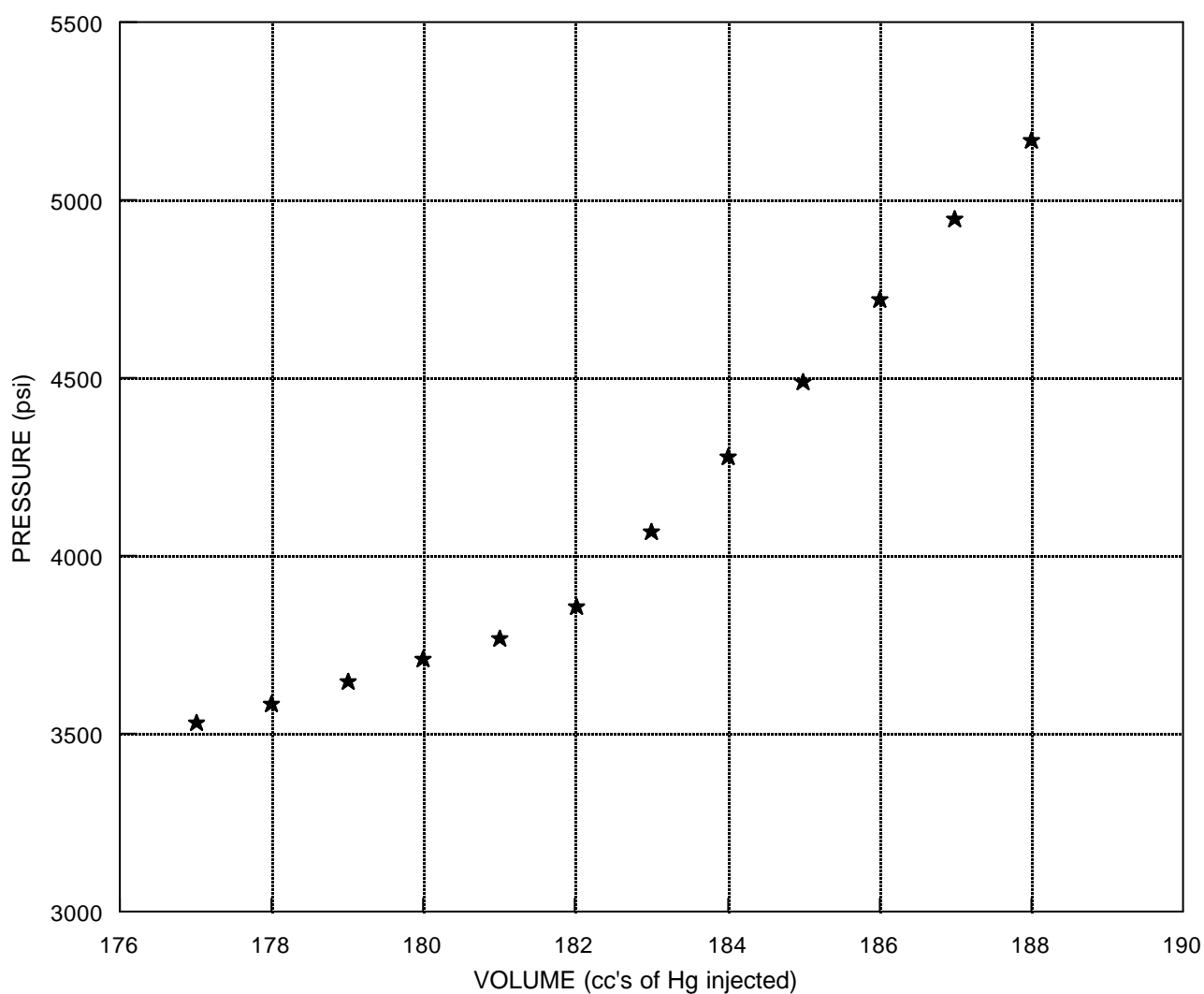
Sampling Conditions

Date	:	February 25, 2003
Reservoir Pressure	:	4092.7 psia
Reservoir Temperature	:	108.07 ° C

Sampler ID	:	MPSR - 316
Volume	:	450 cc
Depth	:	2840 m

Tranferred into Cylinder #	:	84062602
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Volume (cc's)	Pressure (psi)
188.00	5170
187.00	4945
186.00	4720
185.00	4490
184.00	4280
183.00	4070
182.00	3860
181.00	3770
180.00	3710
179.00	3650
178.00	3585
177.00	3535





Company : Esso Australia Limited
Well : Scallop # 1

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Reservoir Temperature Validity Check On Bottom Hole Sample

Saturation Pressure : 4380 psig @ 108 ° C

Sample # 9

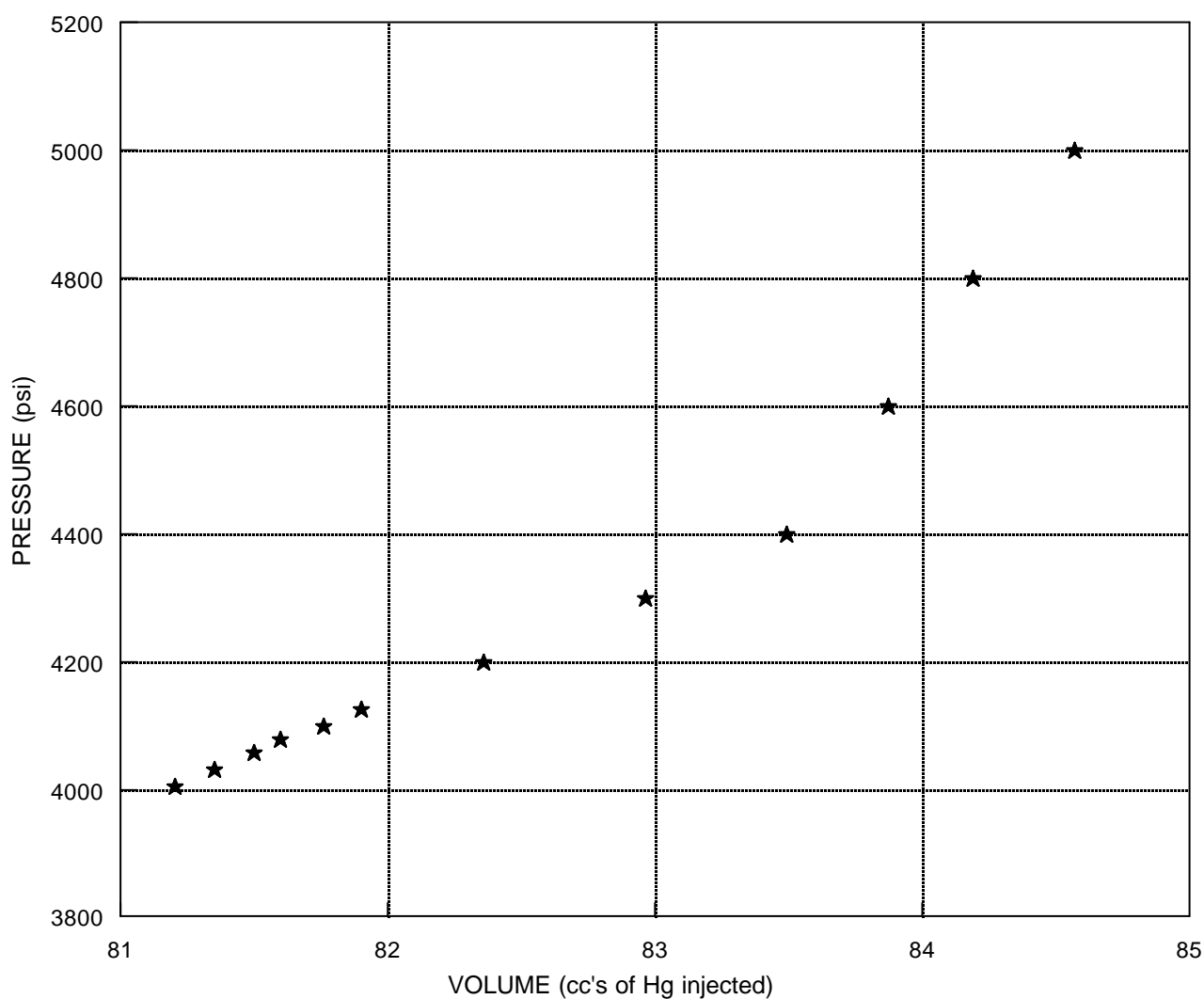
Sampling Conditions

Date	:	February 25, 2003
Reservoir Pressure	:	4092.7 psia
Reservoir Temperature	:	108.07 ° C

Sampler ID	:	MPSR - 316
Volume	:	450 cc
Depth	:	2840 m

Transferred into Cylinder #	:	84062602
-----------------------------	---	----------

Volume (cc's)	Pressure (psi)
84.57	5000
84.19	4800
83.87	4600
83.49	4400
82.96	4300
82.36	4200
81.90	4124
81.76	4099
81.60	4078
81.50	4058
81.35	4030
81.20	4005





Company : Esso Australia Limited
Well : Scallop # 1

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FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY

On Stock Tank Oil from atmospheric flash of sample in cylinder # 84062602 - Bottom oil @ 2840 m

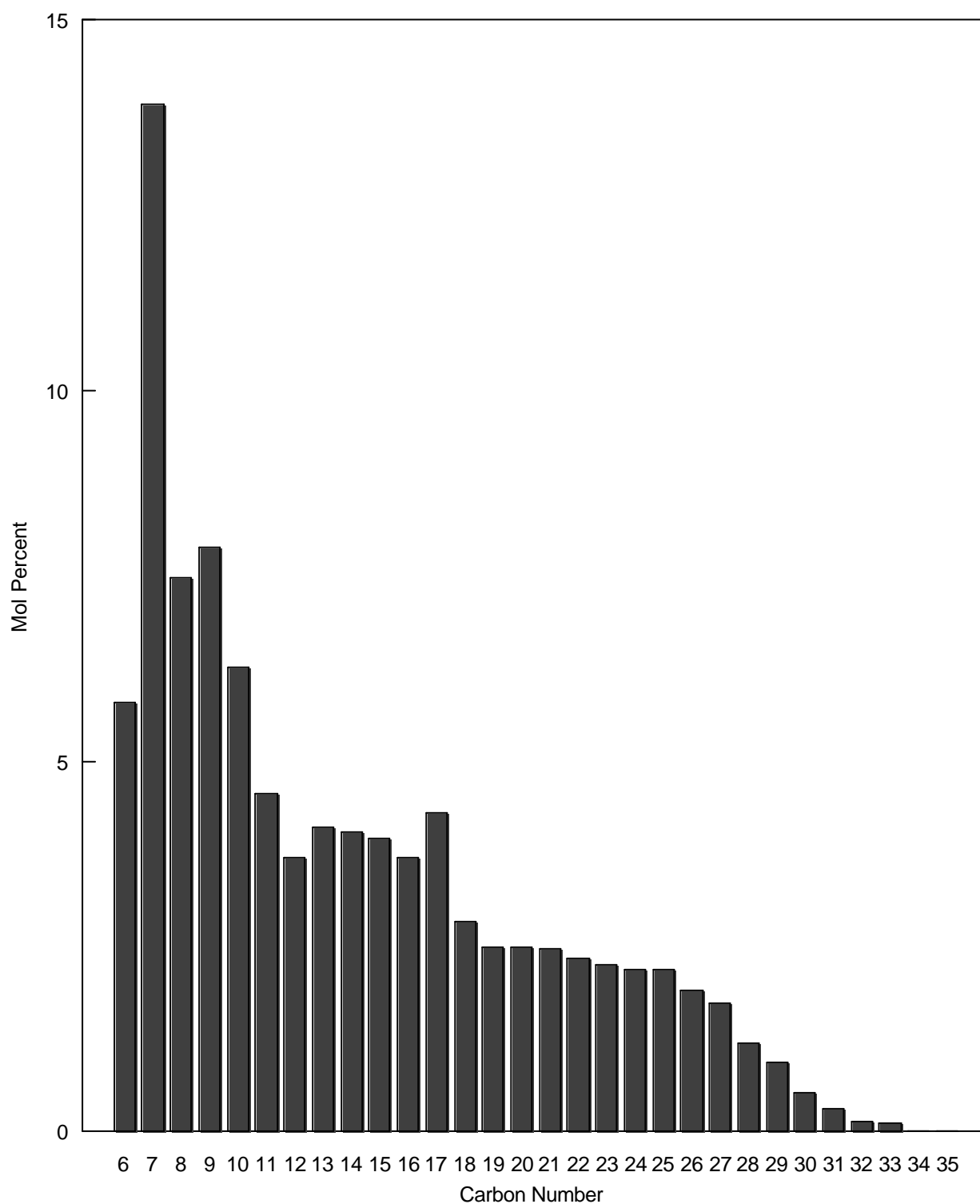
Component	Mol %
Hexanes minus	C6- 4.29
Hexanes	C6 5.79
Heptanes	C7 13.85
Octanes	C8 7.47
Nonanes	C9 7.89
Decanes	C10 6.27
Undecanes	C11 4.55
Dodecanes	C12 3.69
Tridecanes	C13 4.10
Tetradecanes	C14 4.05
Pentadecanes	C15 3.95
Hexadecanes	C16 3.70
Heptadecanes	C17 4.31
Octadecanes	C18 2.83
Nonadecanes	C19 2.48
Eicosanes	C20 2.49
Heneicosanes	C21 2.46
Docosanes	C22 2.34
Tricosanes	C23 2.25
Tetracosanes	C24 2.19
Pentacosanes	C25 2.19
Hexacosanes	C26 1.90
Heptacosanes	C27 1.73
Octacosanes	C28 1.20
Nonacosanes	C29 0.93
Triacontaness	C30 0.53
Hentriacontanes	C31 0.32
Dotriacontanes	C32 0.13
Trtriacontanes	C33 0.12
Tetratriacontanes	C34 0.00
Pentatriacontanes Plus	C35+ 0.00
TOTAL	100.00

Molecular Weight Calculated *	:	184.7
Density @ 60 °F Calculated *	:	0.8191
Molecular Weight Measured	:	--
Density @ 60 °F Measured	:	0.8219

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY

On Stock Tank Oil from atmospheric flash of sample in cylinder # 84062602 - Bottom oil @ 2840 m



COMPOSITIONAL ANALYSIS OF RESERVOIR FLUID

Cylinder # 84062602 - Bottom oil @ 2840 m

Component	Stock Tank		Stock Tank		Reservoir
	Liquid	Mol %	Gas	Mol %	Fluid
Hydrogen Sulphide	H2S	0.00	0.00	0.00	0.00
Carbon Dioxide	CO2	0.04	2.92	2.12	2.12
Nitrogen	N2	0.00	0.17	0.12	0.12
Methane	C1	0.42	72.25	52.36	52.36
Ethane	C2	0.35	10.15	7.44	7.44
Propane	C3	0.90	7.31	5.54	5.54
Iso-Butane	iC4	0.44	1.40	1.13	1.13
N-Butane	nC4	1.15	2.57	2.18	2.18
Iso-Pentane	iC5	0.97	0.82	0.86	0.86
N-Pentane	nC5	1.18	0.78	0.89	0.89
Hexanes	C6	5.72	0.77	2.14	2.14
Heptanes	C7	13.68	0.64	4.25	4.25
Octanes	C8	7.38	0.14	2.14	2.14
Nonanes	C9	7.79	0.06	2.20	2.20
Decanes	C10	6.19	0.02	1.73	1.73
Undecanes	C11	4.49	0.00	1.24	1.24
Dodecanes Plus	C12+	49.28	0.00	13.66	13.66
TOTAL		100.00	100.00	100.00	100.00

Ratios

Molar Ratio	:	0.2770	0.7230	1.0000
Mass Ratio	:	0.7427	0.2573	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	1.9376 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	1559 SCF	--

Stream Properties

Molecular Weight	:	182.1	24.17	67.92
Density obs. (gm/cc)	:	0.8178 @ 60 °F	--	0.5691 @ PT*
Gravity (AIR = 1.000)	:	41.4 °API @ 60 °F	0.838	116.9
GHV (BTU/scf)	:	--	1380	--

Hexanes Plus Properties

Mol %	:	94.54	1.63	27.36
Molecular Weight	:	189.4	92.7	185.2
Density (gm/cc @ 60 °F)	:	0.8240	0.6790	0.8202
Gravity (°API @ 60 °F)	:	40.1	76.7	40.8

Heptanes Plus Properties

Mol %	:	88.82	0.86	25.22
Molecular Weight	:	196.2	100.4	193.8
Density (gm/cc @ 60 °F)	:	0.8286	0.6897	0.8265
Gravity (°API @ 60 °F)	:	39.1	73.5	39.5

Decanes Plus Properties

Mol %	:	59.97	0.02	16.63
Molecular Weight	:	239.8	133.9	239.7
Density (gm/cc @ 60 °F)	:	0.8501	0.7277	0.8500
Gravity (°API @ 60 °F)	:	34.8	62.8	34.8

Undecanes Plus Properties

Mol %	:	53.77	0.00	14.90
Molecular Weight	:	252.0	--	252.0
Density (gm/cc @ 60 °F)	:	0.8549	--	0.8549
Gravity (°API @ 60 °F)	:	33.9	--	33.9

Dodecanes Plus Properties

Mol %	:	49.28	0.00	13.66
Molecular Weight	:	261.6	--	261.6
Density (gm/cc @ 60 °F)	:	0.8586	--	0.8586
Gravity (°API @ 60 °F)	:	33.1	--	33.1

* (P)ressure : 4380 psig * (T)emperature : 227 °F



Company : Esso Australia Limited
Well : Scallop # 1

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Room Temperature Validity Check On Bottom Hole Sample

Saturation Pressure : 2820 psig @ 26 ° C

Sample # 10

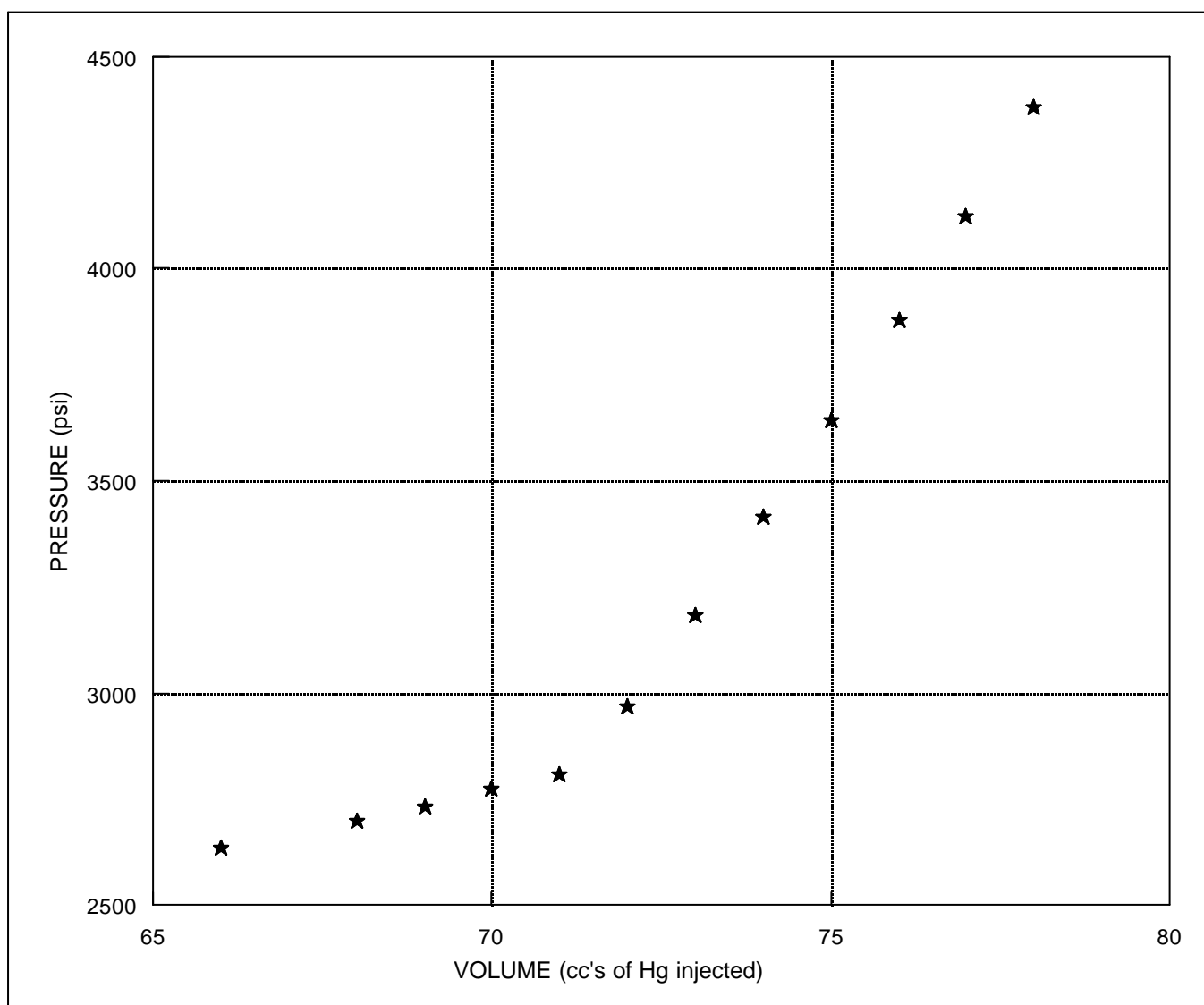
Sampling Conditions

Date	:	February 25, 2003
Reservoir Pressure	:	3668.27 psia
Reservoir Temperature	:	102.68 ° C

Sampler ID	:	MPSR - 477
Volume	:	450 cc
Depth	:	2630.2 m

Tranferred into Cylinder #	:	8403-X
----------------------------	---	--------

Volume (cc's)	Pressure (psi)
78.00	4380
77.00	4125
76.00	3880
75.00	3645
74.00	3415
73.00	3185
72.00	2970
71.00	2810
70.00	2775
69.00	2735
68.00	2700
66.00	2635





Company : Esso Australia Limited
Well : Scallop # 1

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Room Temperature Validity Check On Bottom Hole Sample

Saturation Pressure : 2820 psig @ 26 ° C

Sample # 11

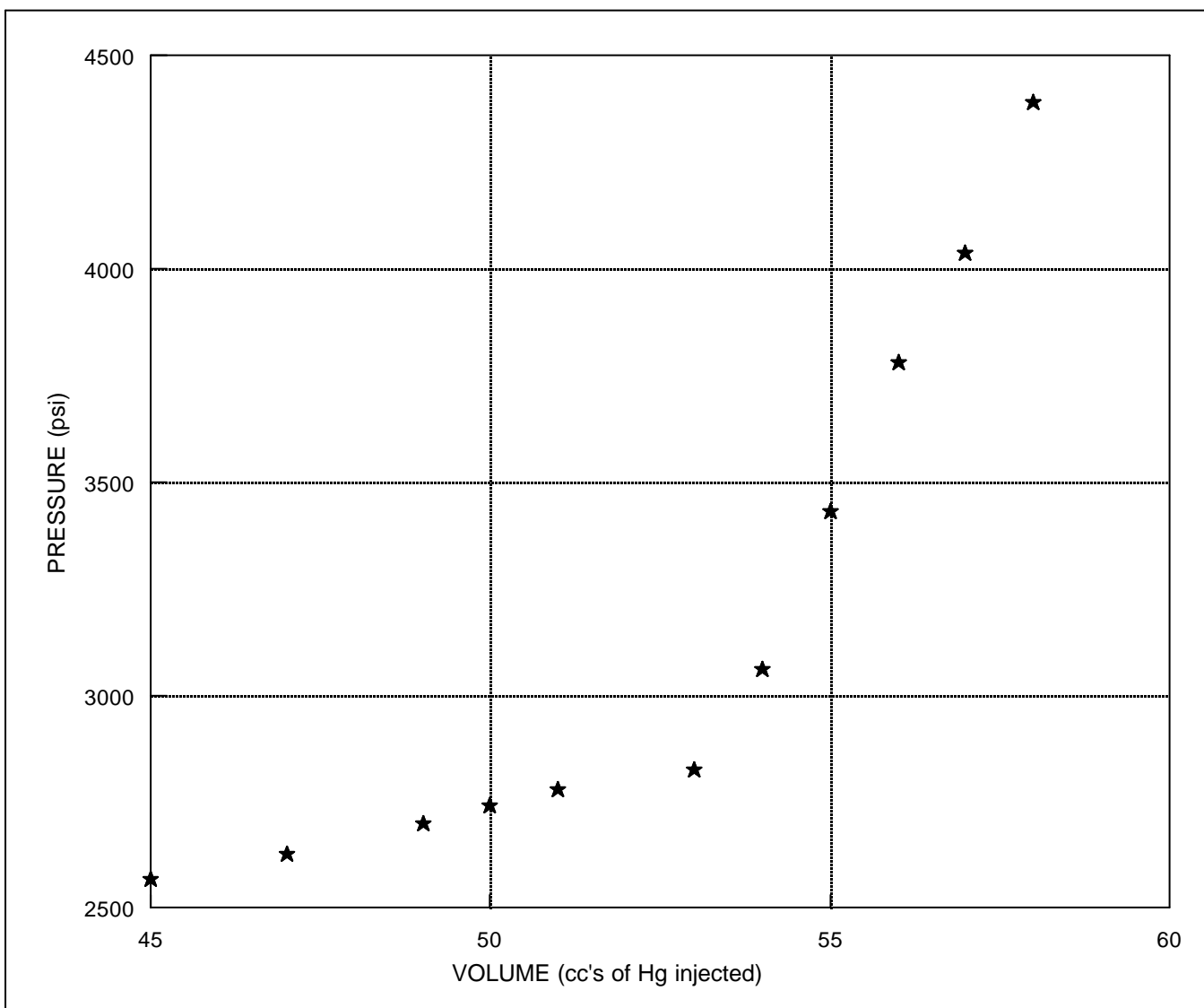
Sampling Conditions

Date	:	February 25, 2003
Reservoir Pressure	:	3668.27 psia
Reservoir Temperature	:	102.68 ° C

Sampler ID	:	MPSR - 501
Volume	:	450 cc
Depth	:	2630.2 m

Tranferred into Cylinder #	:	84062304
----------------------------	---	----------

Volume (cc's)	Pressure (psi)
59.00	4565
58.00	4390
57.00	4035
56.00	3780
55.00	3430
54.00	3060
53.00	2825
51.00	2780
50.00	2740
49.00	2700
47.00	2630
45.00	2570





Company : Esso Australia Limited
Well : Scallop # 1

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Reservoir Temperature Validity Check On Bottom Hole Sample

Saturation Pressure : 3520 psig @ 103 ° C

Sample # 10

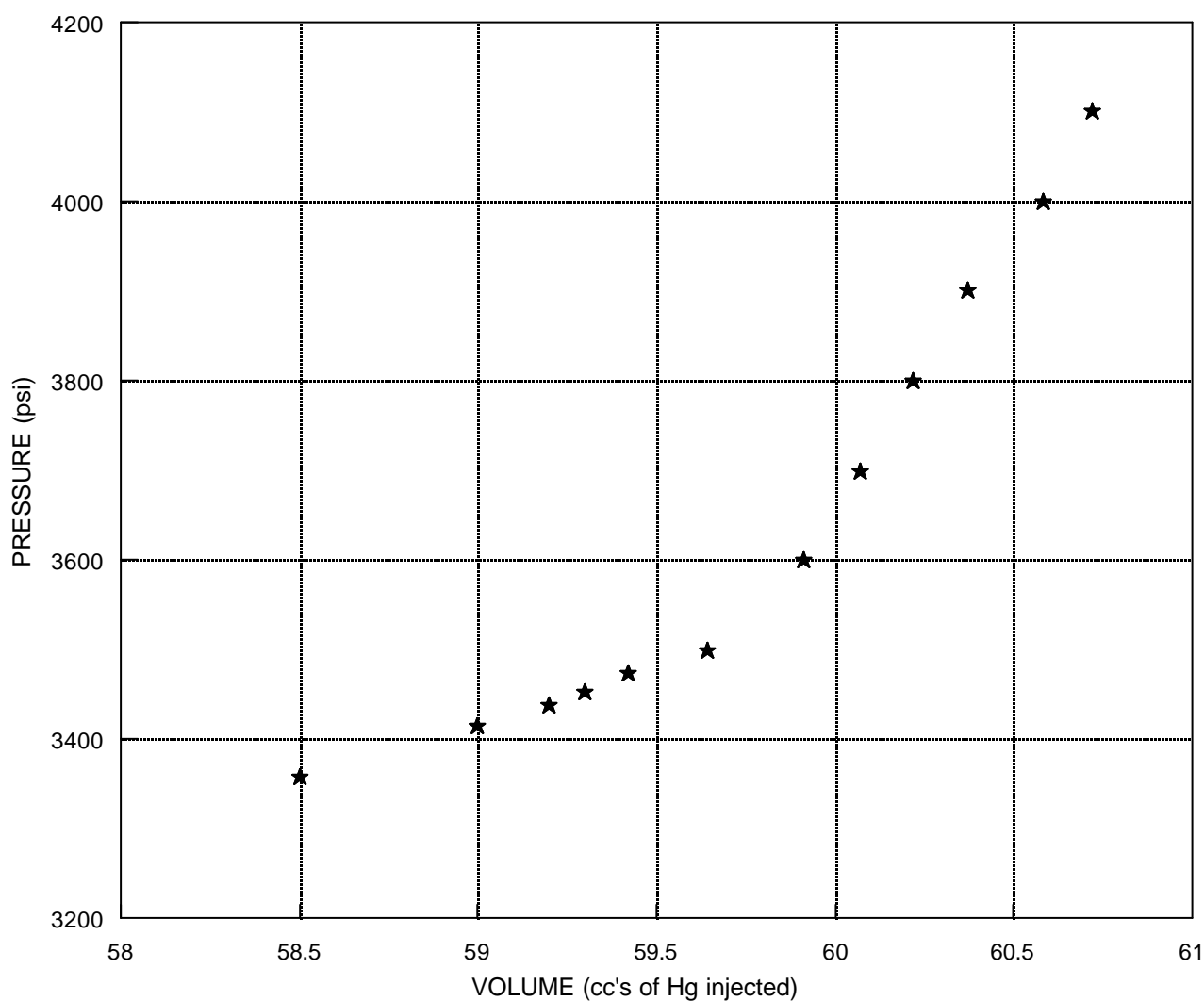
Sampling Conditions

Date	:	February 25, 2003
Reservoir Pressure	:	3668.27 psia
Reservoir Temperature	:	102.68 ° C

Sampler ID	:	MPSR - 477
Volume	:	450 cc
Depth	:	2630.2 m

Tranferred into Cylinder #	:	8403-X
----------------------------	---	--------

Volume (cc's)	Pressure (psi)
60.72	4100
60.58	4000
60.37	3900
60.22	3800
60.07	3700
59.91	3600
59.64	3500
59.42	3475
59.30	3454
59.20	3438
59.00	3416
58.50	3359





Company : Esso Australia Limited
Well : Scallop # 1

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FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY

On Stock Tank Oil from atmospheric flash of sample in cylinder # 8403-X - Top Oil @ 2630.2 m

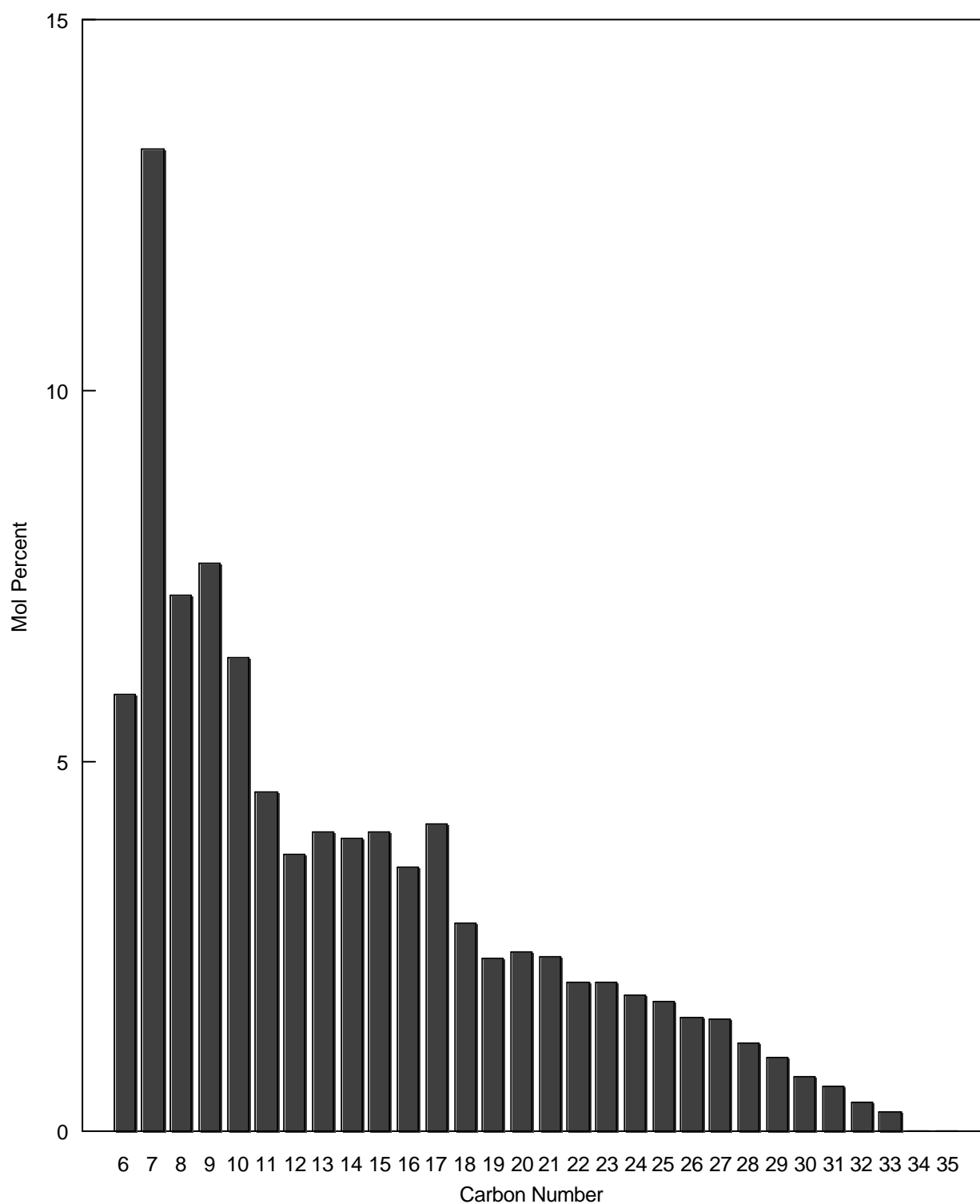
Component	Mol %
Hexanes minus	C6- 6.65
Hexanes	C6 5.90
Heptanes	C7 13.25
Octanes	C8 7.23
Nonanes	C9 7.66
Decanes	C10 6.39
Undecanes	C11 4.57
Dodecanes	C12 3.74
Tridecanes	C13 4.05
Tetradecanes	C14 3.96
Pentadecanes	C15 4.05
Hexadecanes	C16 3.57
Heptadecanes	C17 4.14
Octadecanes	C18 2.82
Nonadecanes	C19 2.33
Eicosanes	C20 2.43
Heneicosanes	C21 2.36
Docosanes	C22 2.01
Tricosanes	C23 2.02
Tetracosanes	C24 1.85
Pentacosanes	C25 1.76
Hexacosanes	C26 1.54
Heptacosanes	C27 1.52
Octacosanes	C28 1.19
Nonacosanes	C29 1.01
Triacontaness	C30 0.73
Hentriacontanes	C31 0.60
Dotriacontanes	C32 0.40
Trtriacontanes	C33 0.27
Tetratriacontanes	C34 0.00
Pentatriacontanes Plus	C35+ 0.00
TOTAL	100.00

Molecular Weight Calculated *	:	181.7
Density @ 60 °F Calculated *	:	0.8164
Molecular Weight Measured	:	--
Density @ 60 °F Measured	:	0.8242

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY

On Stock Tank Oil from atmospheric flash of sample in cylinder # 8403-X - Top Oil @ 2630.2 m



COMPOSITIONAL ANALYSIS OF RESERVOIR FLUID

Cylinder # 8403-X - Top Oil @ 2630.2 m

Component	Stock Tank		Stock Tank		Reservoir
		Liquid Mol %		Gas Mol %	Fluid Mol %
Hydrogen Sulphide	H2S	0.00		0.00	0.00
Carbon Dioxide	CO2	0.02		1.16	0.78
Nitrogen	N2	0.00		0.26	0.17
Methane	C1	0.40		69.09	46.11
Ethane	C2	0.40		11.55	7.82
Propane	C3	1.13		8.91	6.31
Iso-Butane	iC4	0.59		1.86	1.44
N-Butane	nC4	1.47		3.19	2.61
Iso-Pentane	iC5	1.27		1.04	1.12
N-Pentane	nC5	1.56		0.99	1.18
Hexanes	C6	5.89		0.96	2.61
Heptanes	C7	13.22		0.74	4.92
Octanes	C8	7.21		0.16	2.52
Nonanes	C9	7.64		0.07	2.60
Decanes	C10	6.38		0.02	2.15
Undecanes	C11	4.56		0.00	1.53
Dodecanes Plus	C12+	48.25		0.00	16.13
TOTAL		100.00		100.00	100.00

Ratios

Molar Ratio	:	0.3345	0.6655	1.0000
Mass Ratio	:	0.7819	0.2181	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	1.7470 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	1198 SCF	--

Stream Properties

Molecular Weight	:	180.3	25.27	77.12
Density obs. (gm/cc)	:	0.8161 @ 60 °F	--	0.5983 @ PT*
Gravity (AIR = 1.000)	:	41.7 °API @ 60 °F	0.877	104.8
GHV (BTU/scf)	:	--	1483	--

Hexanes Plus Properties

Mol %	:	93.16	1.95	32.46
Molecular Weight	:	189.3	92.3	185.4
Density (gm/cc @ 60 °F)	:	0.8240	0.6785	0.8205
Gravity (°API @ 60 °F)	:	40.1	76.9	40.8

Heptanes Plus Properties

Mol %	:	87.27	0.99	29.85
Molecular Weight	:	196.4	100.3	194.3
Density (gm/cc @ 60 °F)	:	0.8288	0.6895	0.8269
Gravity (°API @ 60 °F)	:	39.1	73.5	39.5

Decanes Plus Properties

Mol %	:	59.19	0.02	19.81
Molecular Weight	:	239.5	133.9	239.4
Density (gm/cc @ 60 °F)	:	0.8500	0.7277	0.8500
Gravity (°API @ 60 °F)	:	34.8	62.8	34.8

Undecanes Plus Properties

Mol %	:	52.81	0.00	17.66
Molecular Weight	:	252.2	--	252.2
Density (gm/cc @ 60 °F)	:	0.8551	--	0.8551
Gravity (°API @ 60 °F)	:	33.8	--	33.8

Dodecanes Plus Properties

Mol %	:	48.25	0.00	16.13
Molecular Weight	:	262.1	--	262.1
Density (gm/cc @ 60 °F)	:	0.8589	--	0.8589
Gravity (°API @ 60 °F)	:	33.1	--	33.1

* (P)ressure : 3520 psig * (T)emperature : 217 °F



Company : Esso Australia Limited
Well : Scallop # 1

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CONSTANT MASS STUDY
@ 243 °F
On MDT Bottom Hole Sample from cylinder # 841218

Pressure (psig)		Relative Volume (V/Vsat) (1)	Formation Volume Factor (Bg) (2)	Gas Expansion Factor (E) (3)	Deviation Factor (Z)	Specific Volume (CFT/LB)	Gas Viscosity (Centipoise) (4)
5000		0.9138	0.00389	257.18	0.982	0.06180	0.0315
4900		0.9267	0.00394	253.60	0.976	0.06267	0.0310
4800		0.9401	0.00400	249.97	0.970	0.06358	0.0305
4700		0.9541	0.00406	246.30	0.964	0.06452	0.0301
4600		0.9687	0.00412	242.59	0.958	0.06551	0.0296
4548	*	0.9757	0.00415	240.86	0.954	0.06598	0.0293
4500		0.9829	0.00418	239.08	0.951	0.06647	0.0291
4450		0.9908	0.00422	237.18	0.948	0.06700	0.0289
4400		0.9989	0.00425	235.27	0.945	0.06755	0.0286
4395	**	1.0000	0.00426	235.00	0.945	0.06763	0.0286

* Reservoir Pressure

** Dew Point Pressure

- (1) Cubic feet of gas at indicated pressure and temperature per cubic foot at reservoir pressure
 (2) Cubic feet of gas at indicated pressure and temperature per cubic foot at 14.696 psia and 60 °F
 (3) Cubic feet of gas at 14.696 psia and 60 °F per cubic foot at indicated pressure and temperature
 (4) Calculated from correlation of Lee, Gonzales and Eakin



Company : Esso Australia Limited
Well : Scallop # 1

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CONSTANT MASS STUDY
@ 243 °F
On MDT Bottom Hole Sample from cylinder # 841218

Pressure (psig)	Relative Volume (V/Vsat) (1)	Retrograde Liquid Deposit	
		(Bbl/MMSCF) (2)	(Volume%) (3)
4395 *	1.0000	0.00	0.00
4300	1.0134	0.61	0.08
4200	1.0308	1.52	0.20
3850	1.0988	4.62	0.61
3500	1.1869	7.58	1.00
3150	1.3020	10.38	1.37
2800	1.4539	12.96	1.71
2450	1.6585	15.46	2.04
2100	1.9418	17.05	2.25
1750	2.3534	17.13	2.26
1400	2.9884	15.76	2.08
1050	4.0497	13.72	1.81

* Dew Point Pressure

- (1) Cubic feet of gas at indicated pressure and temperature per cubic foot at saturation pressure
(2) Barrels of liquid at indicated pressure and temperature per MMSCF of original reservoir fluid
(3) Percent of reservoir hydrocarbon pore space at dew point

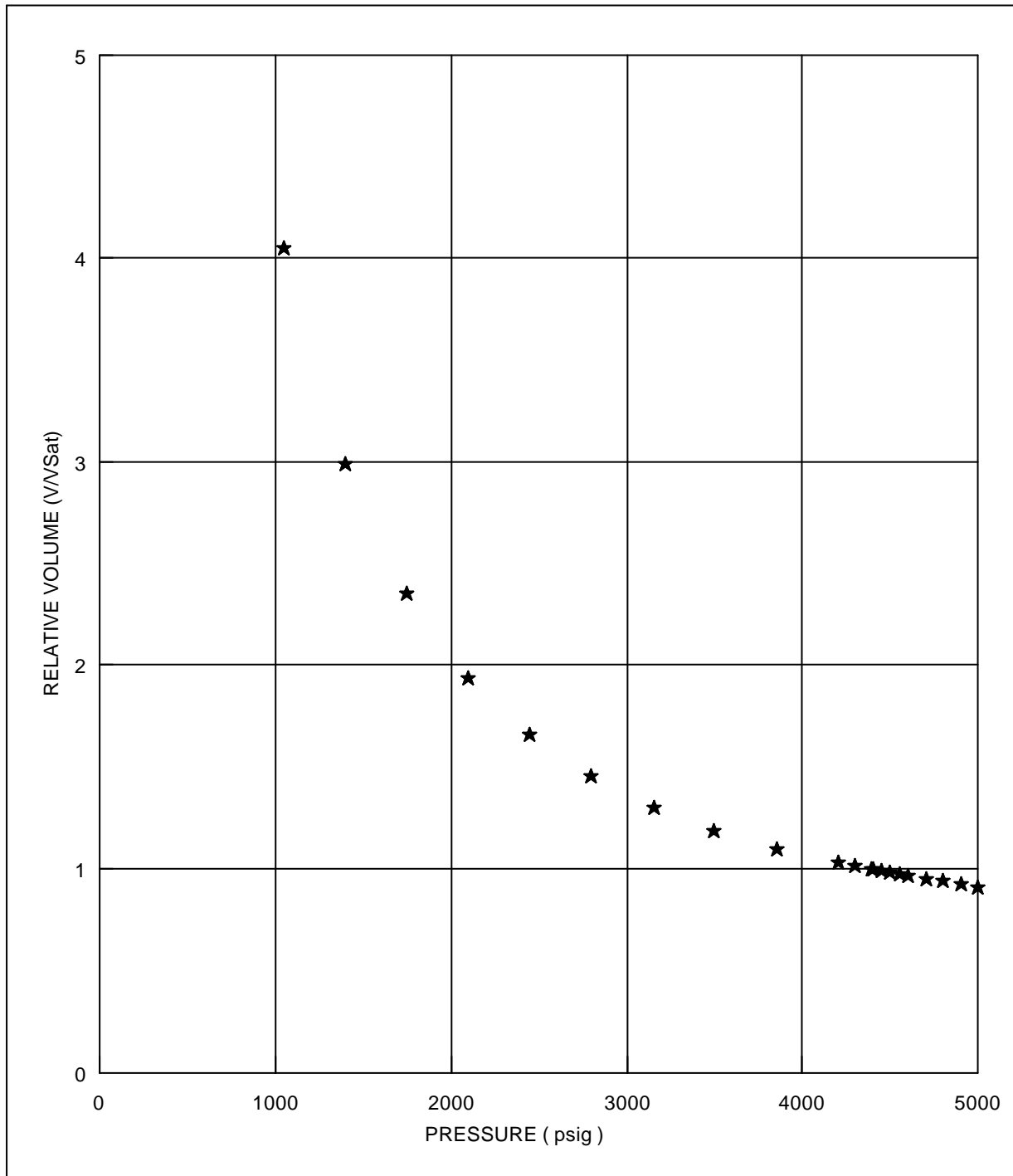


RELATIVE VOLUME

Equation of best fit

V/V_{Sat}

$$V/V_{Sat} = +9.86E+00 - 8.29E-03 * P + 3.14E-06 * P^2 - 5.49E-10 * P^3 + 3.62E-14 * P^4$$

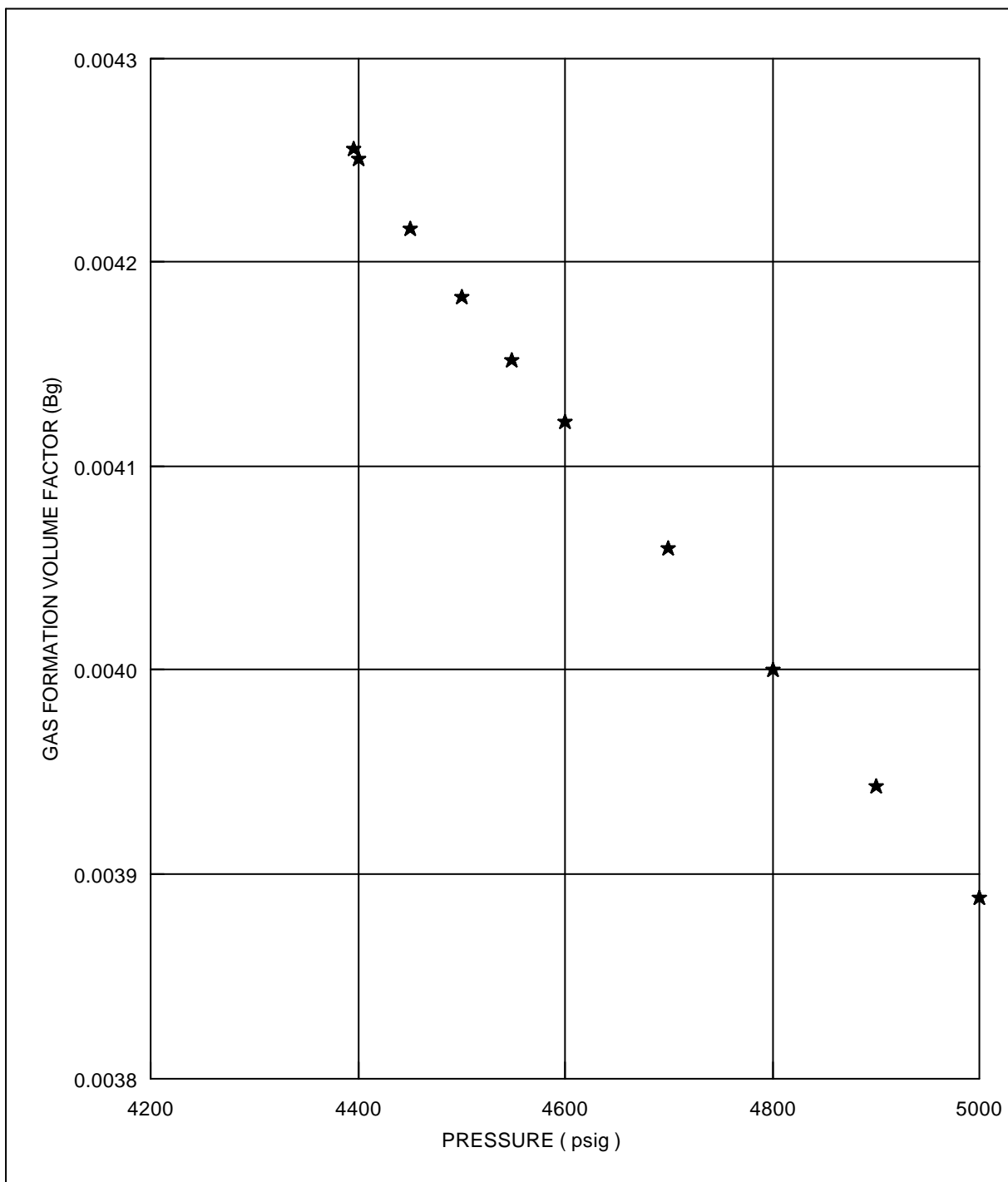




GAS FORMATION VOLUME FACTOR

Equation of best fit

$$B_g = +1.98E-02 - 8.34E-06 * P + 1.54E-09 * P^2 - 1.01E-13 * P^3 + 0.00E+00 * P^4$$

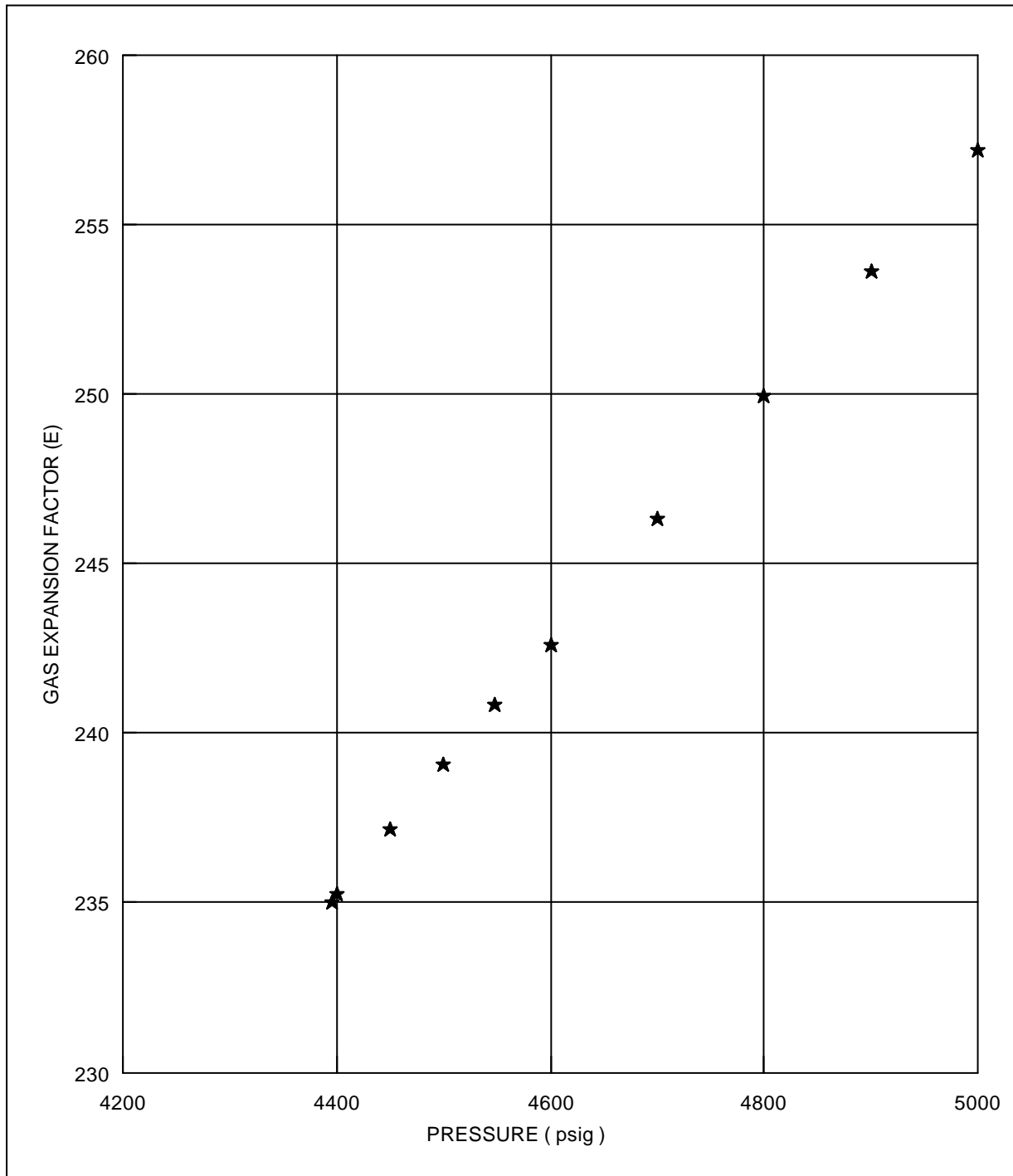




GAS EXPANSION FACTOR

Equation of best fit

$$E = -4.29E+02 + 3.53E-01 * P - 6.61E-05 * P^2 + 4.60E-09 * P^3 + 0.00E+00 * P^4$$



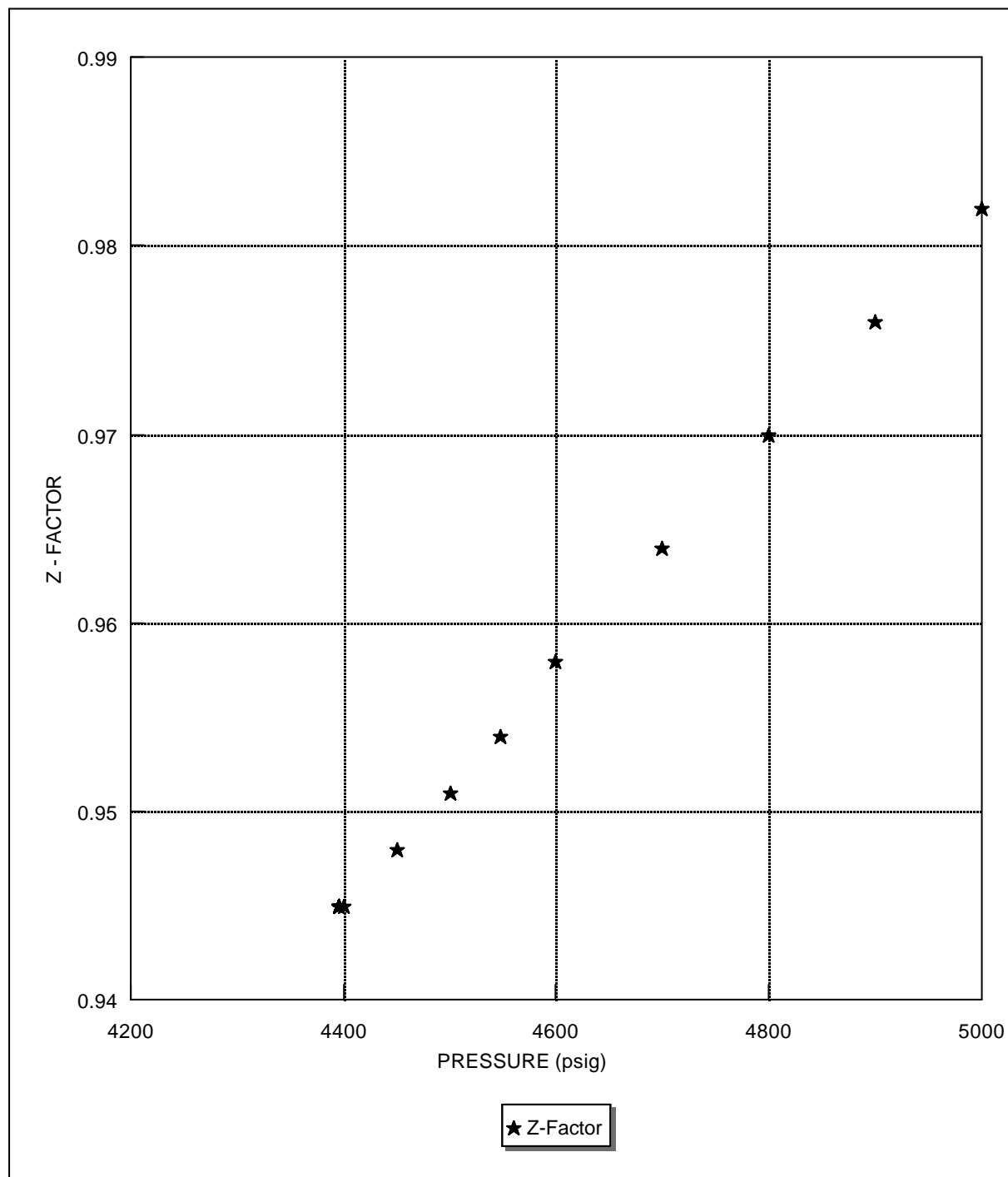


GAS DEVIATION FACTOR

Equation of best fit

Z

$$Z = +3.19E+00 -1.56E-03 * P +3.49E-07 * P^2 -2.50E-11 * P^3 +0.00E+00 * P^4$$





Company : Esso Australia Limited
Well : Scallop # 1

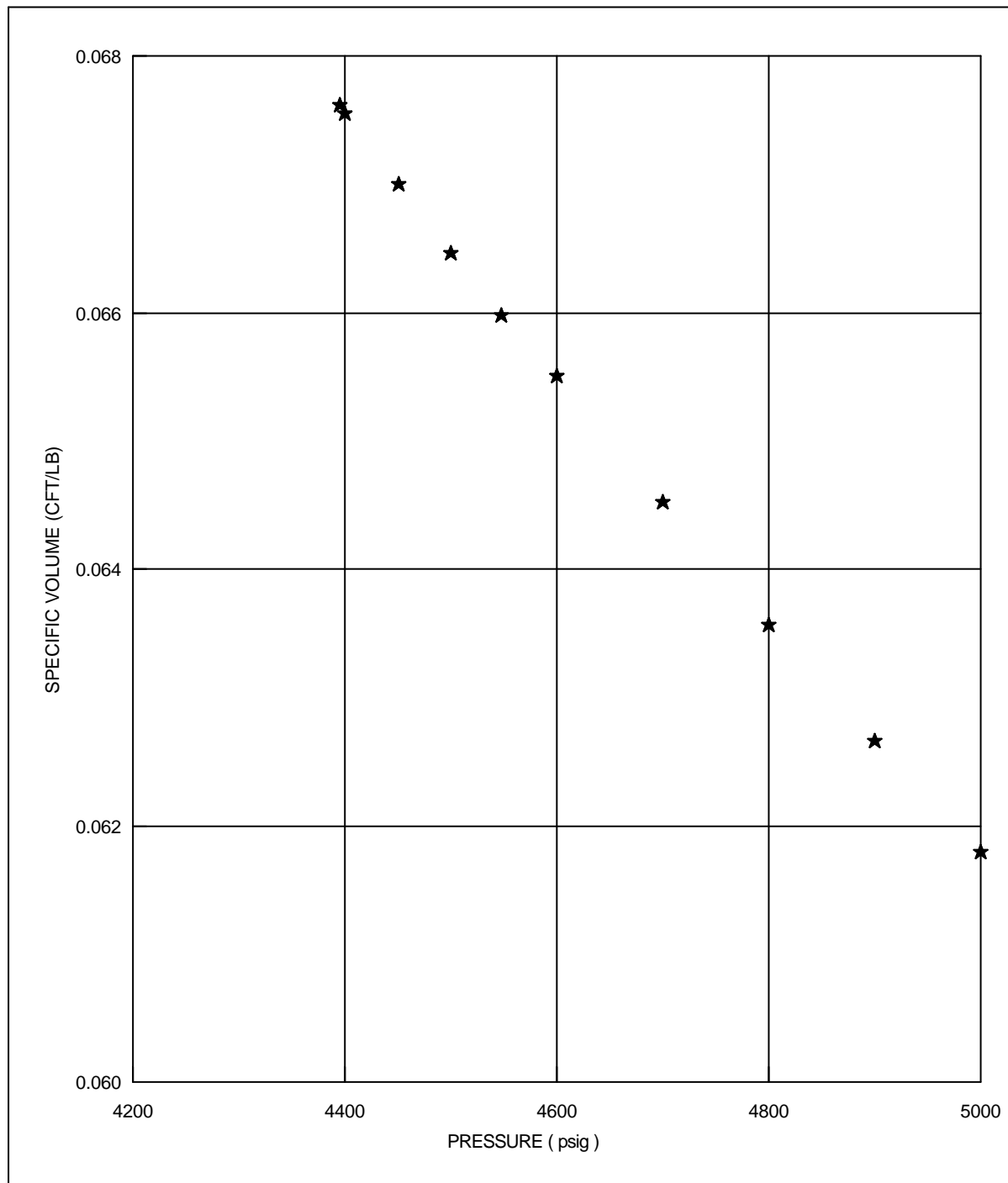
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RESERVOIR FLUID SPECIFIC VOLUME

Equation of best fit

SV

$$SV = +3.15E-01 -1.33E-04 * P +2.44E-08 * P^2 -1.61E-12 * P^3 +0.00E+00 * P^4$$

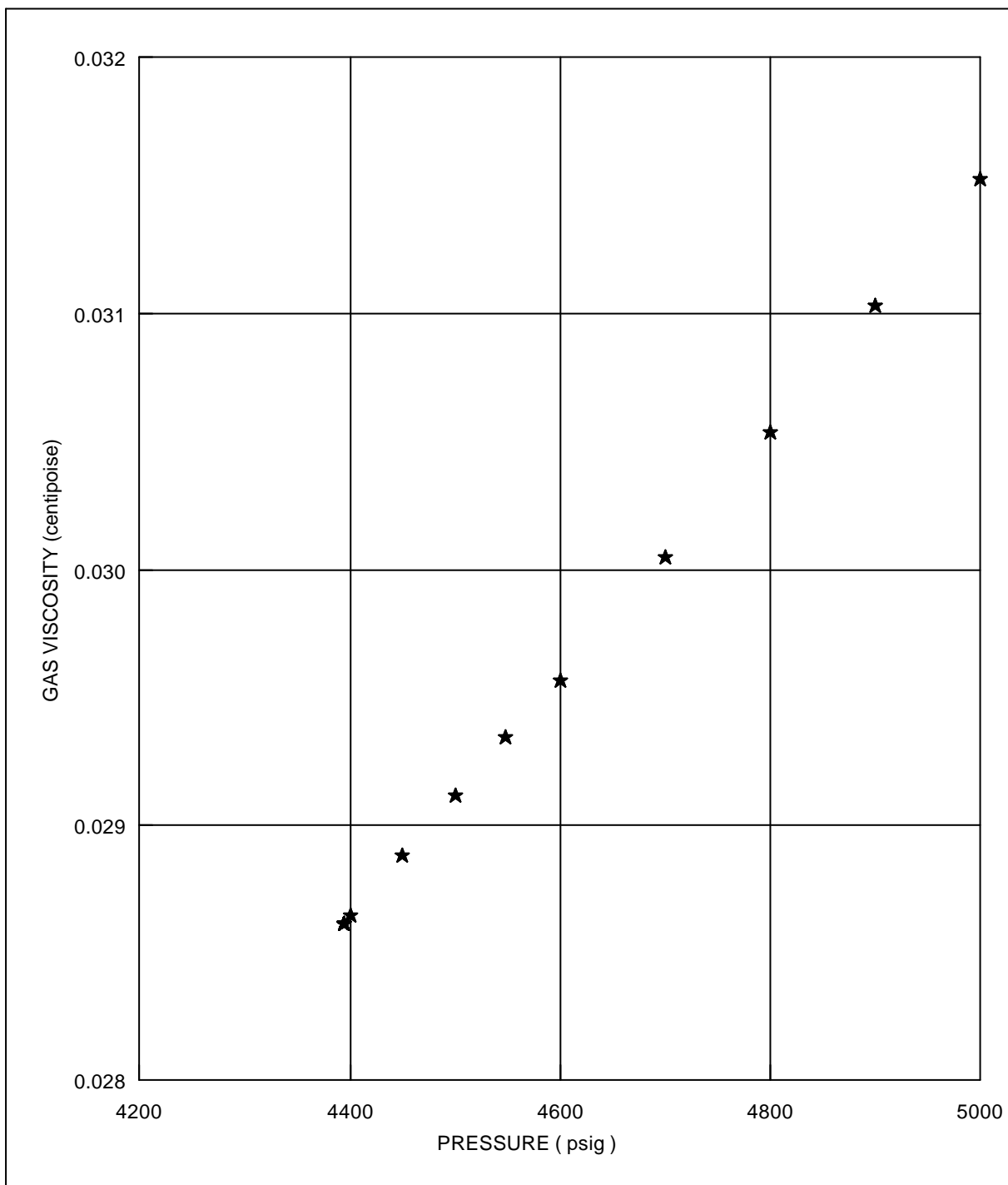




VISCOSITY OF RESERVOIR FLUID

Equation of best fit

$$\mu = -6.98E-02 + 5.56E-05 * P - 1.11E-08 * P^2 + 8.10E-13 * P^3 + 0.00E+00 * P^4$$





RETROGRADE CONDENSATION

Equation of best fit

RLD

$$\text{RLD} = -8.68\text{E-}01 + 3.95\text{E-}03 * P - 1.53\text{E-}06 * P^2 + 1.73\text{E-}10 * P^3 - 4.55\text{E-}15 * P^4$$

