

EXTRA COPY

Chevron Canada Resources

Static Gradient
Chevron Et Al Liard
M-25
Jun 21, 01

Service Company Contact Info

Report Writer	Wade Nicks, 309-7940	Service Company	Lee Tool, Div. of Schlumberger
Operator	Cody Green, 347-2524	Job ID	M-25Chevsg
		Test Date	Jun 21, 01

Gauge: Lee Memory Recorder Model 3000s (Quartz)
Manufacturer: Lee Tool, Division of Schlumberger Canada Limited

Static Gradient

Chevron Canada Resources
North West Territories, Canada

Jun 21, 01

Chevron Et Al Liard

M-25

Liard, Nahanni

Well					
Client	Chevron Canada Resources		Province	North West Territories	
			Country	Canada	
Well Name	Chevron Et Al Liard		Deviated Well	No.	Well Status
					Gas
Well No.	M-25		KB Elevation	917.80 m	CF Elevation
					910.60 m
Field	Liard	Pool	Nahanni		
			Pool Datum		

Test						
Test Name			Atmospheric			
Static Gradient			101.30 KPa A			
Test Start (mm/dd/yy)		Test Finish		Casing ID		Tubing ID
06/21/01		11:59 AM		06/21/01		02:47 PM
On Bottom		Off Bottom		C. Pres. Before		T. Pres. Before
06/21/01		01:53 PM		06/21/01		02:08 PM
Shut In		ETO		C. Pres. After		T. Pres. After
		06/21/01		11:59 AM		
Meas. Depth [mCF]		TVD [mCF]		Est. Pressure [KPa G]		Est. Gradient [KPa/m]
						Est. Temperature [DegC]
						Grad. Threshold
						2.00 KPa/m
Well Datum						Grad. Recorder
						1831
Run Depth		3457.00		3457.00		24867.67
						1.44
Avg. MPP Depth		3596.85		3596.85		25069.51
						1.44
Operator		Cody Green, 347-2524		Service Company		
				Lee Tool, Div. of Schlumberger		
Remarks						
9454Q-16E Bot. Rec. & WCQR-B 1831 Top Rec.						

Depth References		
Depth Reference	Offset [m]	Elevation [mMSL]
Casing Flange (CF)		910.60
Kelly Bushing (KB)	CF + 7.20	917.80

Perforations					
	Intvl. Top MD, [mCF]	Intvl. Bottom MD, [mCF]	MPP TVD, [mCF]	Pressure [KPa G]	Gradient [KPa/m]
Interval 1	3430.90	3762.80	3596.85	25069.51	1.44

Top Recorder

Model	Serial	Latest Calibration
WCQR-B	1831	
Max. Rated Press.	Max. Rated Temp.	

Gradient Stops

Depth

Tool String MD. [mCF]	Recorder MD. [mCF]	Sample R/T [mmm dd, 24hr]	Pressure [KPa G]	Gradient [KPa/m]	Temperature [DegC]
0.00	-1.50	Jun 21,01 12:19:00	19279.65		18.55
2000.00	1998.50	12:51:00	22784.23	1.75	110.04
3000.00	2998.50	13:12:00	24244.68	1.46	140.97
3200.00	3198.50	13:25:00	24520.47	1.38	147.77
3400.00	3398.50	13:38:00	24789.48	1.35	152.71
3450.00	3448.50	13:52:00	24855.40	1.32	153.62
3457.00	3455.50	14:09:00	24865.51	1.44	153.66

Bottom Hole Pressure

	Tool String MD. [mCF]	Sample R/T [mmm dd, yy 24 hr.]	Pressure [KPa G]	
Sample 1	3457.00	Jun 21,01 13:56:00	24865.16	
Sample 2		14:08:00	24865.48	
Difference:		00:12:00	0.32	Build Up Rate 1.59 KPa/Hr.

Bottom Recorder

Model	Serial	Latest Calibration
LMR-5000S	9454Q-16E	12/20/00
Max. Rated Press.	Max. Rated Temp.	
110212.74 KPa G	174.99 DegC	

Gradient Stops

Depth

Tool String MD. [mCF]	Recorder MD. [mCF]	Sample R/T [mmm dd, 24hr]	Pressure [KPa G]	Gradient [KPa/m]	Temperature [DegC]
0.00	0.00	Jun 21,01 12:19:00	19294.53		14.25
2000.00	2000.00	12:51:00	22761.15	1.73	106.73
3000.00	3000.00	13:12:00	24195.21	1.43	139.01
3200.00	3200.00	13:25:00	24485.30	1.45	146.90
3400.00	3400.00	13:38:00	24764.36	1.40	152.23
3450.00	3450.00	13:52:00	24848.86	1.69	153.69
3457.00	3457.00	14:09:00	24864.64	2.25	153.86

Bottom Hole Pressure

	Tool String MD. [mCF]	Sample R/T [mmm dd, yy 24 hr.]	Pressure [KPa G]	
Sample 1	3457.00	Jun 21,01 13:56:00	24861.93	
Sample 2		14:08:00	24864.52	
Difference:		00:12:00	2.59	Build Up Rate 12.96 KPa/Hr.

Tool Summary

Chevron Canada Resources
North West Territories, Canada

Jun 21, 01

Chevron Et Al Liard

M-25

Liard, Nahanni

Top Recorder			
Tool	Serial	Latest Calibration	Battery Serial
WCQR-B	1831		
Landed Depth	3455.50 mCF MD	Depth Offset	Min. Battery
		-1.50 m	-999.25 V

Program												
Intervals				Expected Samples			Actual Samples					
Mode	Interval [d hh:mm:ss]	Rate [hh:mm:ss]	Delta []	Periodic [hh:mm:ss]	Regular Samples	Percent Storage	Energy [Ahr]	Regular Samples	Delta Samples	Percent Storage	Energy [Ahr]	Duration [d hh:mm:ss]
Totals:					0	0.0%	0.0000					

Bottom Recorder			
Tool	Serial	Latest Calibration	Battery Serial
LMR-5000S	9454Q-16E	12/20/00	165 C
Landed Depth	3457.00 mCF MD	Depth Offset	Min. Battery
		0.00 m	5.92 V

Program: ChevronExt060701												
Intervals				Expected Samples			Actual Samples					
Mode	Interval [d hh:mm:ss]	Rate [hh:mm:ss]	Delta [KPa]	Periodic [hh:mm:ss]	Regular Samples	Percent Storage	Energy [Ahr]	Regular Samples	Delta Samples	Percent Storage	Energy [Ahr]	Duration [d hh:mm:ss]
HB	10:00	1			600	0.2%	0.0022	600		0.2%	0.0022	10:00
HB	60	15			345600	98.9%	10.6596	53464		15.3%	1.6490	9 6:46:00
HB	30	30:00			1440	0.4%	5.0424					
Totals:	90	10:00			347640	99.5%	15.7042	54064		15.5%	1.6512	9 6:56:00

Calibration Summary

Chevron Canada Resources
North West Territories, Canada

Jun 21, 01

Chevron Et Al Liard

M-25

Liard, Nahanni

Top Recorder

Tool	Serial	Latest Calibration	Battery Serial
WCQR-B	1831		
Landed Depth	3455.50 mCF MD	Depth Offset	Min. Battery
		-1.50 m	-999.25 V

Equations

FP = Pres Freq (Hz)

FT = Temp Freq (Hz)

XP = 0.000000e+000 + (0.000000e+000) FP

XT = 0.000000e+000 + (0.000000e+000) FT

Bottom Recorder

Tool	Serial	Latest Calibration	Battery Serial
LMR-5000S	9454Q-16E	12/20/00	165 C
Landed Depth	3457.00 mCF MD	Depth Offset	Min. Battery
		0.00 m	5.92 V

Equations

FP = Pres Freq (Hz)

FT = Temp Freq (Hz)

XP = 2.440500e+004 + (1.000000e-002) FP

XT = 4.998300e+004 + (1.000000e-002) FT

$P_0 = 1.976447e+001 + (-1.305054e+000) XT + (-1.962763e-002) XT^2 + (1.212749e-006) XT^3 + (-1.362605e-008) XT^4$

$P_1 = 4.051596e+001 + (-1.928565e-002) XT + (3.954019e-005) XT^2 + (6.976157e-008) XT^3 + (2.565960e-010) XT^4$

$P_2 = -1.827029e-003 + (7.461565e-006) XT + (-9.399187e-008) XT^2 + (-4.805569e-010) XT^3 + (-1.194110e-012) XT^4$

$P_3 = 7.574884e-007 + (2.797308e-009) XT + (1.403946e-010) XT^2 + (8.559528e-013) XT^3 + (1.891385e-015) XT^4$

Pressure (psiA) = $P_0 + P_1 XP + P_2 XP^2 + P_3 XP^3$

$T_0 = 2.542346e+001$

$T_1 = -7.289854e-001$

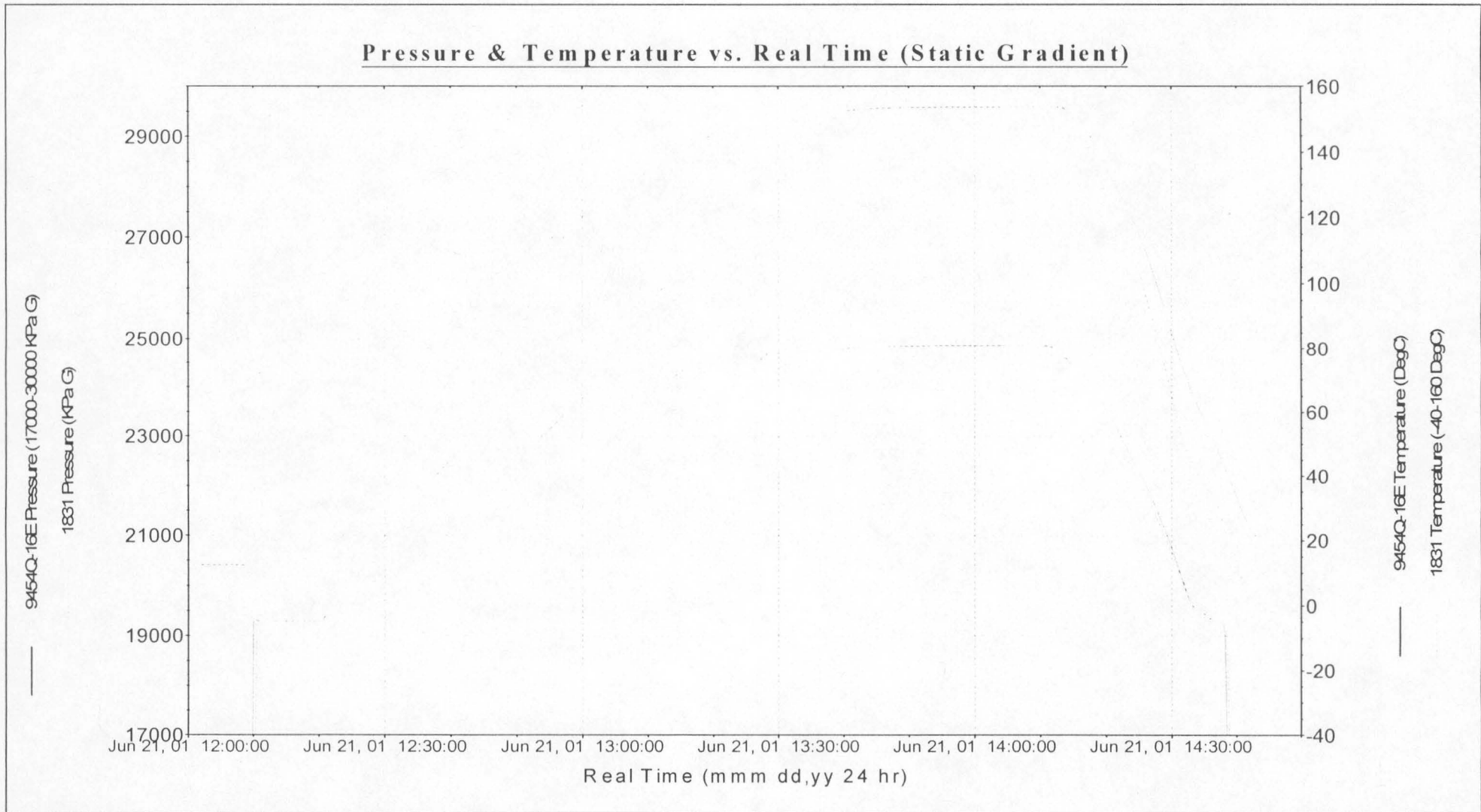
$T_2 = -9.796268e-004$

$T_3 = -1.608876e-006$

$T_4 = -1.886088e-009$

Temperature (degC) = $T_0 + T_1 XT + T_2 XT^2 + T_3 XT^3 + T_4 XT^4$

Well							
Client	Chevron Canada Resources	Well Name	Chevron Et Al Liard	Well No.	M-25	Province	North West Territories
Test Name	Static Gradient	Test Date	Jun 21, 01	Field	Liard	Pool	Nahanni

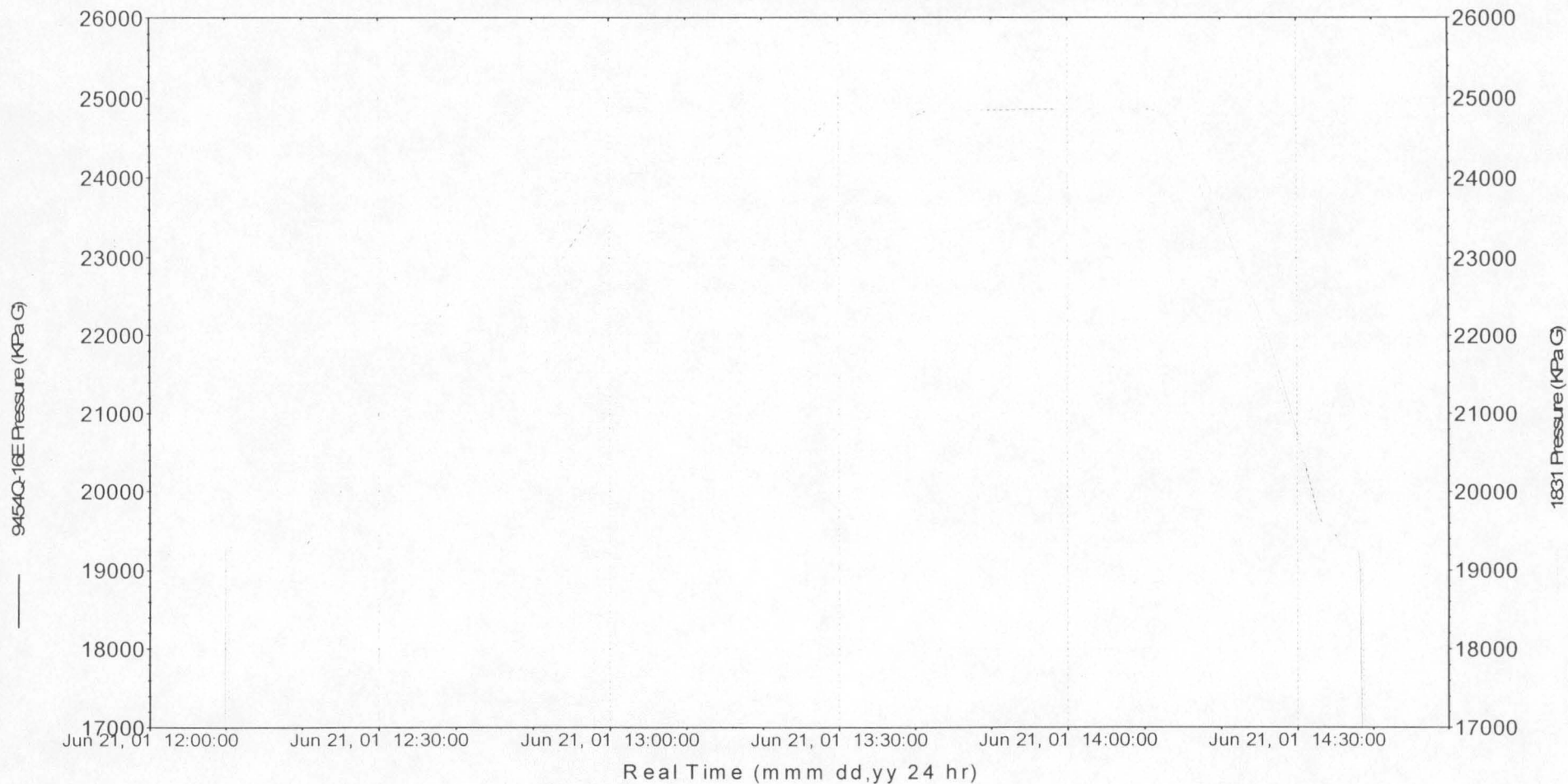


Remarks
9454Q-16E Bot. Rec & WCQR-B 1831 Top Rec.
Job ID: M-25Chevsg
Service Company: Lee Tool, Div. of Schlumberger

Well

Client	Chevron Canada Resources	Well Name	Chevron Et Al Liard	Well No	M-25	Province	North West Territories
Test Name	Static Gradient	Test Date	Jun 21, 01	Field	Liard	Pool	Nahanni

Pressure vs. Real Time (Static Gradient)



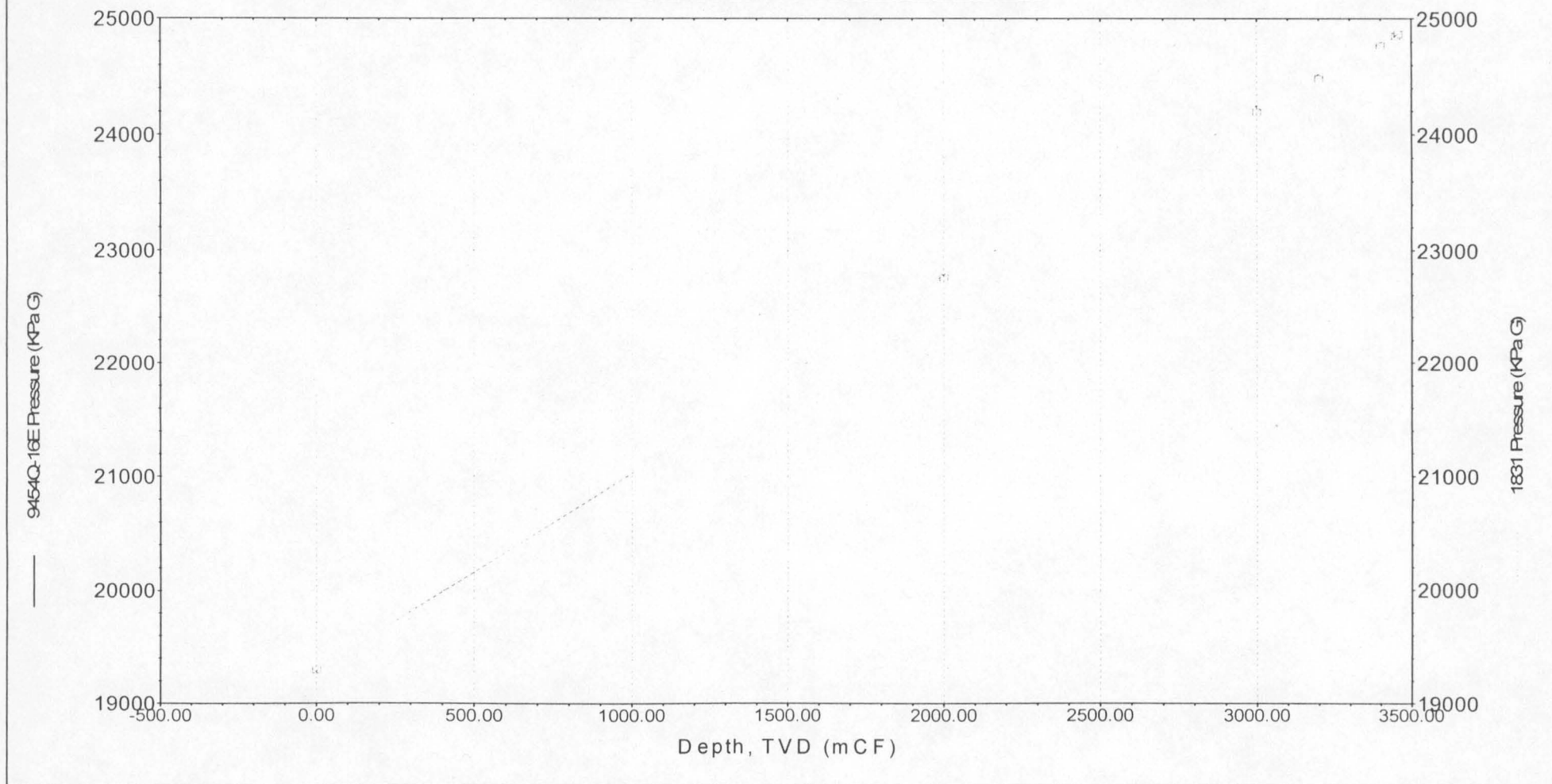
Remarks

9454Q-16E Bot. Rec & WCQR-B 1831 Top Rec.

Well

Client	Chevron Canada Resources	Well Name	Chevron Et Al Liard	Well No	M-25	Province	North West Territories
Test Name	Static Gradient	Test Date	Jun 21, 01	Field	Liard	Pool	Nahanni

Pressure vs. Depth (Static Gradient)



Remarks

9454Q-16E Bot. Rec & WCQR-B 1831 Top Rec.