NORTHLAND ENERGY

A Division of Precision Drilling Technology Services Group Inc.

Precision Drilling

N.E.B. COPY

Petro-Canada Oil and Gas
PCI et al Tweed M-47TEST2
N 66 56' 47.11" W 125 54' 9.42"
Mount Clark

Testing Operation Performed:	Tight Hole
Customer Representative(s) on Location:	Jim Messervey
Northland Energy Supervisor(s):	C. Komery, C. Moylan, R. Lotzer
Separator Unit Number:	FS-135
Test Start and End Dates:	04/03/11-04/03/14
Northland Energy Job Number:	4400761C
Northland Energy Representative:	Steve Beaudet
Report Prepared By:	J. Zhu
Date Prepared:	April 29, 2004

Northland Energy
4600, 150 - 6th Avenue S.W.
Calgary, AB T2P 3Y7
Telephone: 403.716.4500
Facsimile: 403.716.4869
www.precisiondrilling.com

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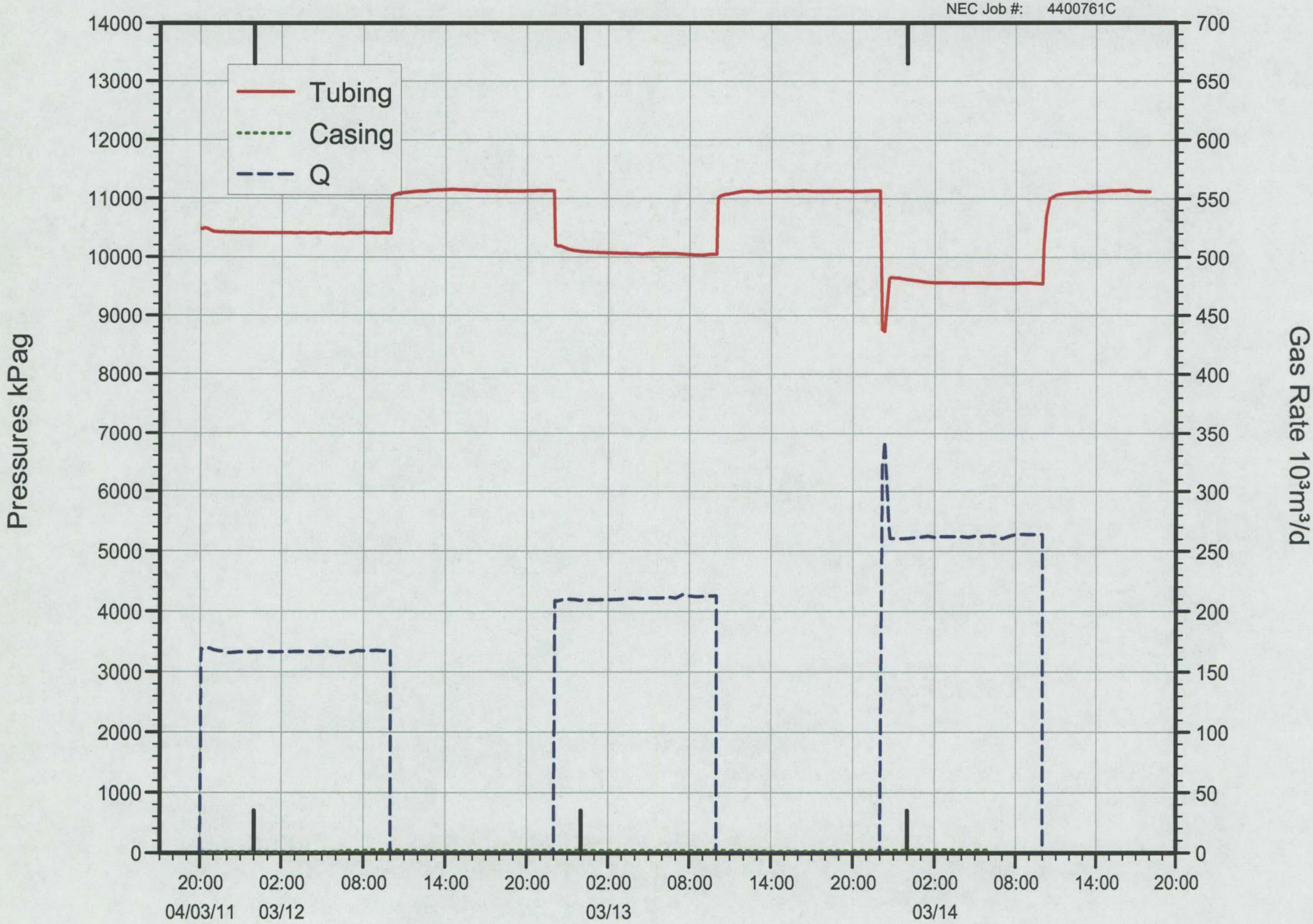
Petro-Canada Oil and Gas
N 66 56' 47.11" W 125 54' 9.42"

Operation:	Tight Hole
Pool or Zone:	Mount Clark
Field or Pool:	Tweed Lake
Test Start:	11 Mar 2004
Test End:	14 Mar 2004
NEC Job #:	4400761C



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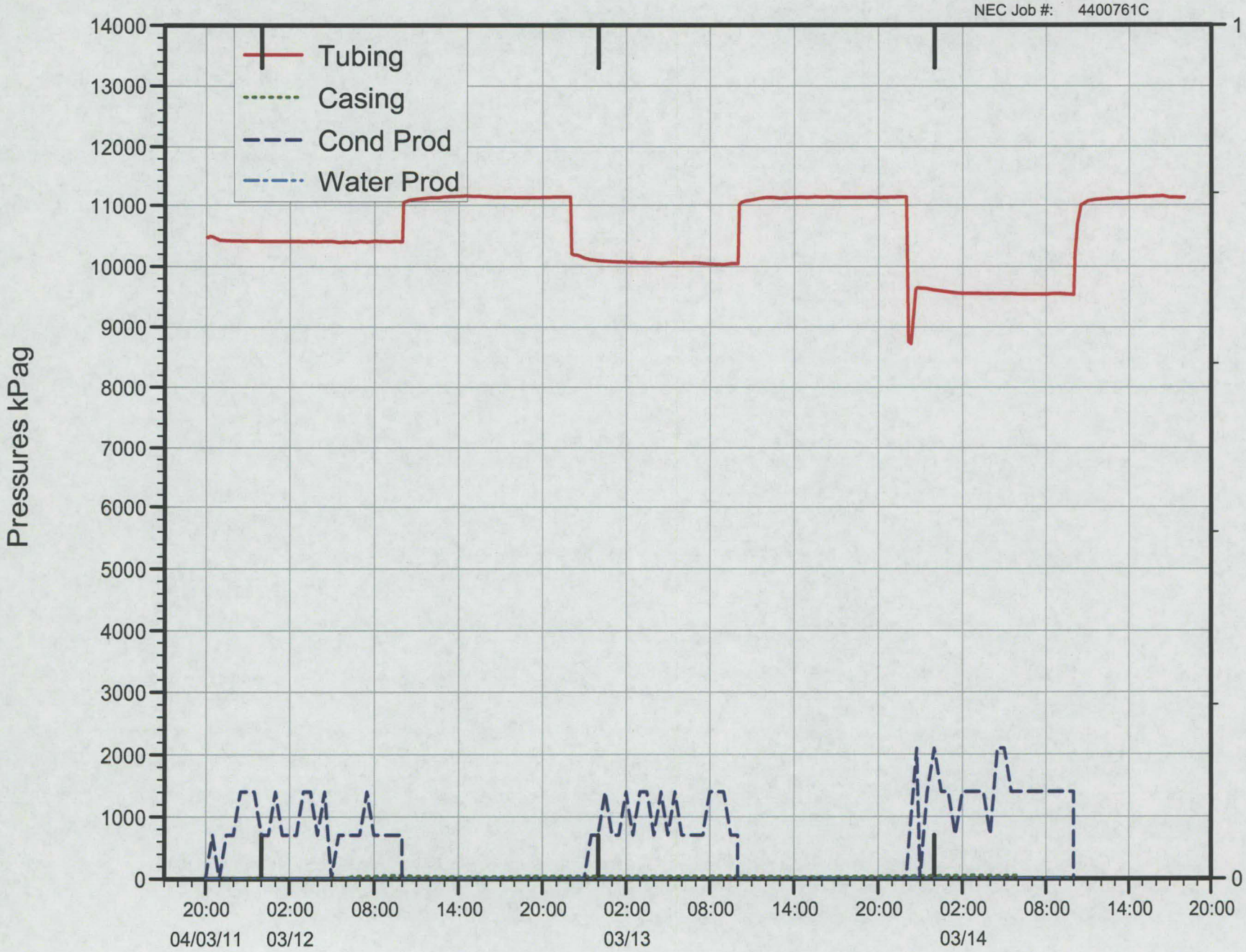

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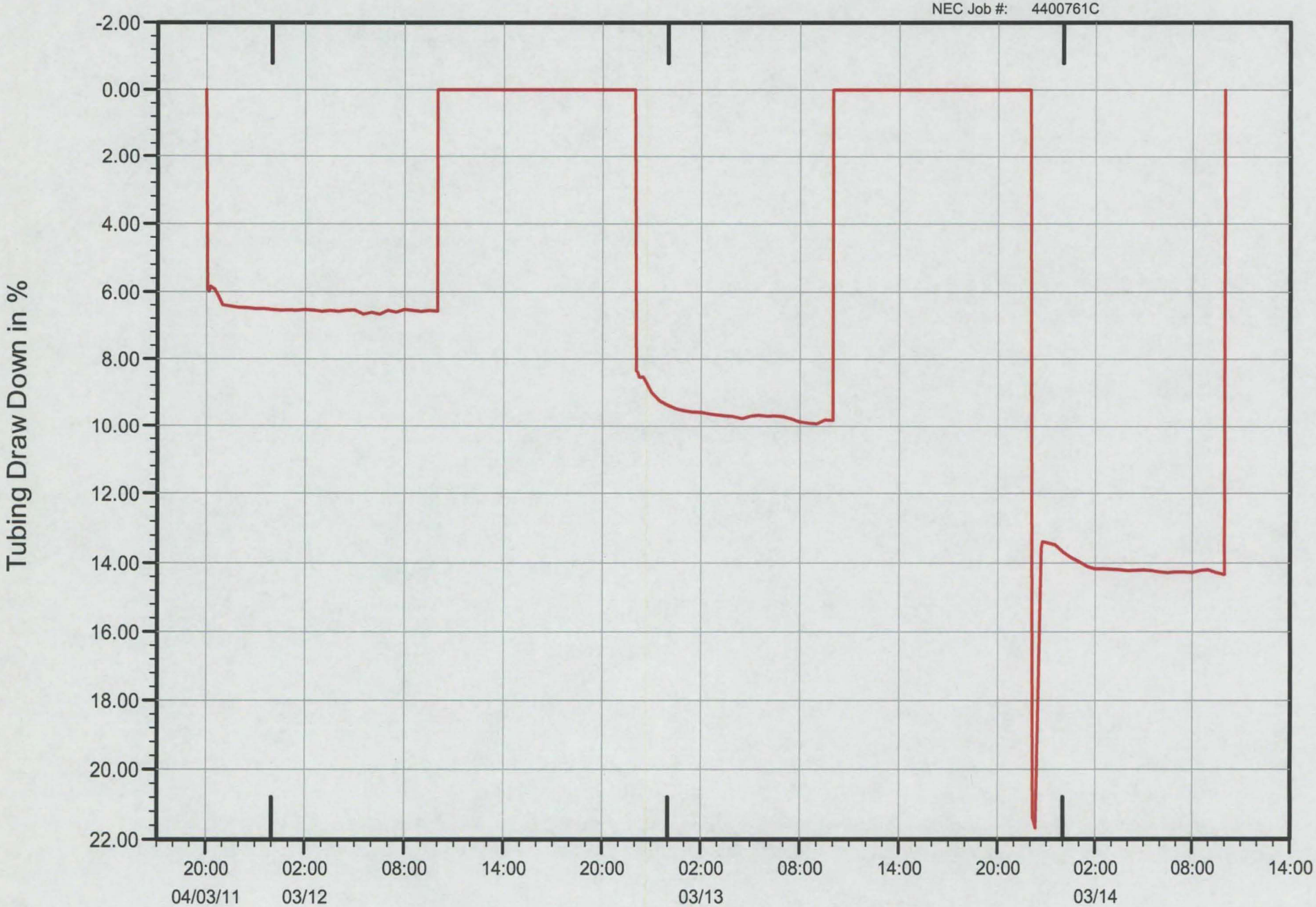

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Company:	**Petro-Canada Oil and Gas**		
Company Representative:	**Jim Messervey**	**Meter Type:**	**Meter Run**
		Tap Type:	**Flange**
Wellname:	**Tweed M-47TEST2**	**Tap Location:**	**Down Stream**
UWI:	**N 66 56' 47.11" W 125 54' 9.42"**	**Test Unit:**	**FS-135**
		Upstream Meter Internal Diameter:	**154.20 mm**
Pool or Zone:	**Mount Clark**		
Field or Area:	**Tweed Lake**	**H_2**	
		He	
Operation:	**Tight Hole**	**N_2**	
		CO_2	
Test Supervisors:	**C. Komery, C. Moylan, R. Lotzer**	**H_2S**	
NEC Job #:	**4400761C**	**C1**	
		C2	
Northland Energy Corporation division:	**Northland Energy**	**C3**	
		iC4	
		nC4	
Fluid1 Type:	**Cond/Oil**	**iC5**	
Tank Measurement:	**Incremental**	**nC5**	
		C6	
Fluid2 Type:	**Water**	**C7**	
Tank Measurement:	**Incremental**	**C8**	
		C9	
		C10	
Flow Duration:	**38.00 hours**	**O**	
Final Gas Production Rate:	**263.56 $10^3m^3/d$**	**CO**	
Cumulative Gas Produced:	**331.96 10^3m^3**	**H_2O**	
Cumulative Water Produced:	**0.00 m^3**		
Cumulative Condensate/Oil Produced:	**5.65 m^3**		
Initial Tubing Pressure:	**11138.00 kPa**		
Final Tubing Pressure:	**11122.00 kPa**	**Specific Gravity:**	**0.722**
		pPc:	
		pTc:	

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Time	Elapsed Time	Well Head Data			H.P. Sep Gas Metering				Cum. Q Total	Cond/Oil Prod.		Water Production			Tubing Draw Down	Casing Draw Down	pH	BSW	Cond %
		Tubing Pressure	Tubing Temp	Casing Pressure	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity					
hh:mm	Hours	kPag	°C	kPag	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%	%
04/03/11																			
19:15		Begin methanol injection.																	
19:30		Conduct safety meeting.																	
19:55		Open well to manifold, pressure test flowline.																	
19:55		11138													0.0				
20:00		Open well on 11.1100 mm choke.																	
20:02		Meter in service on 69.8500 mm orifice plate.																	
20:05	0.1	10479	-4	0	794	33.10	12	168.65	0.35						5.9				
20:10	0.2	10471	-4		794	32.50	10	167.73	0.93						6.0				
20:15	0.2	10488	-3		798	32.50	9	168.44	1.52						5.8				
20:30	0.5	10480	-1		812	32.10	9	168.72	3.28	0.05	0.05				5.9			0.0	
20:45	0.8	10455	-1		813	32.10	9	168.81	5.03						6.1				
21:00	1.0	10426	-2		815	31.60	9	167.67	6.78	0.00	0.05	0.00	0.00		6.4			0.0	
21:30	1.5	10421	-3		812	31.30	9	166.58	10.25	0.05	0.10				6.4			0.0	
22:00	2.0	10417	-2	0	802	31.10	9	165.11	13.69	0.05	0.15	0.00	0.00		6.5			0.0	
22:30	2.5	10416	-2		806	31.00	9	165.22	17.13	0.10	0.25				6.5			0.0	
23:00	3.0	10413	-2		809	31.00	8	165.82	20.59	0.10	0.35	0.00	0.00		6.5			0.1	
23:30	3.5	10413	-2		808	31.00	9	165.40	24.03	0.10	0.45				6.5			0.0	
24:00	4.0	10410	-2	0	811	31.00	9	165.68	27.49	0.05	0.50	0.00	0.00		6.5			0.1	
24:00		Gas rate accumulation from start of frac clean-up (20:07 hrs. March 8, 2004) = 302.13 E3m3.																	
24:00		Gas rate accumulation from start of test 1 (08:00 hrs. March 10, 2004) = 174.82 E3m3.																	
24:00		Gas rate accumulation from start of test 2 (20:00 hrs. March 11, 2004) = 27.49 E3m3.																	
24:00		Frac oil returns from start of frac clean-up = 23.63 m3.																	
24:00		Frac oil returns from start of test 1 = 4.55 m3.																	
24:00		Frac oil returns from start of test 2 = 0.5 m3.																	

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Time	Elapsed Time	Well Head Data			H.P. Sep Gas Metering				Cum. Q Total	Cond/Oil Prod.		Water Production			Tubing Draw Down	Casing Draw Down	pH	BSW	Cond %
		Tubing Pressure	Tubing Temp	Casing Pressure	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity					
hh:mm	Hours	kPag	°C	kPag	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%	%
04/03/11																			

Day Summary

Cum. Prod. Since: 20:00 04/03/11			
Gas Production (4.0 Hrs)			27.49 10^3m^3
Cumulative (4.0 Hrs)			27.49 10^3m^3
Liquid Production (4.0 Hrs)			
Cond/Oil	0.50 m^3	Water	0.00 m^3
Liquid Production Cumulative (4.0 Hrs)			
Cond/Oil	0.50 m^3	Water	0.00 m^3

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		Tubing Pressure	Tubing Temp	Casing Pressure	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity					
hh:mm	Hours	kPag	°C	kPag	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%	%
04/03/11																			
04/03/12																			
00:30	4.5	10408	-1		804	31.30	9	165.83	30.94	0.05	0.55				6.6			0.1	
01:00	5.0	10409	-1		807	31.20	9	165.85	34.40	0.10	0.65	0.00	0.00		6.5			0.1	
01:30	5.5	10408	-1		811	31.00	9	165.68	37.85	0.05	0.70				6.6			0.1	
02:00	6.0	10410	-2	0	812	31.00	9	165.77	41.30	0.05	0.75	0.00	0.00		6.5			0.1	
02:30	6.5	10408	-1		812	31.00	9	165.77	44.75	0.05	0.80				6.6			0.1	
03:00	7.0	10404	0		811	31.20	9	166.22	48.22	0.10	0.90	0.00	0.00		6.6			0.1	
03:30	7.5	10407	0		811	31.20	9	166.22	51.68	0.10	1.00				6.6			0.1	
04:00	8.0	10404	0	0	811	31.20	9	166.22	55.14	0.05	1.05	0.00	0.00		6.6			0.1	
04:30	8.5	10408	0		810	31.20	10	165.81	58.60	0.10	1.15				6.6			0.1	
05:00	9.0	10409	-1		807	31.30	9	166.11	62.06	0.00	1.15	0.00	0.00		6.5			0.1	
05:30	9.5	10395	-1		810	31.30	9	166.40	65.52	0.05	1.20				6.7				
06:00	10.0	10401	-2	0	798	31.30	9	165.27	68.97	0.05	1.25	0.00	0.00		6.6				
06:30		Methanol injection rate for a 24 hour period = 256 litres.																	
06:30	10.5	10395	-2	35	799	31.20	8	165.42	72.41	0.05	1.30				6.7			0.1	
07:00	11.0	10408	-2	35	807	31.10	10	165.26	75.86	0.05	1.35	0.00	0.00		6.6			0.2	
07:30	11.5	10402	-2	35	807	31.50	8	166.97	79.34	0.10	1.45				6.6			0.2	
08:00	12.0	10411	-2	35	808	31.50	9	166.74	82.81	0.05	1.50	0.00	0.00		6.5			0.4	
08:30	12.5	10407	-1	43	807	31.60	9	166.92	86.29	0.05	1.55				6.6			0.2	
09:00	13.0	10404	-1	48	811	31.40	8	167.08	89.77	0.05	1.60	0.00	0.00		6.6			0.2	
09:30	13.5	10407	-2	48	805	31.50	8	166.78	93.24	0.05	1.65				6.6			0.1	
09:55		Core Lab rep. collects samples.																	
10:00	14.0	10405	-2	48	802	31.70	7	167.36	96.73	0.05	1.70	0.00	0.00		6.6			0.1	
10:00		Trace of condensate in sample.																	
10:00		Shut in well.																	
10:05	0.1	11040													0.9				
10:10	0.2	11055													0.7				
10:15	0.2	11063													0.7				
10:30	0.5	11081		44											0.5				
10:45	0.8	11091		40											0.4				

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		Tubing Pressure	Tubing Temp	Casing Pressure	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity					
hh:mm	Hours	kPag	°C	kPag	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%	%
04/03/12																			
11:00	1.0	11098		40											0.4				
11:30	1.5	11112		37											0.2				
12:00	2.0	11122		33											0.1				
12:30	2.5	11123		33											0.1				
13:00	3.0	11135		30											0.0				
13:30	3.5	11141		30											0.0				
14:00	4.0	11146		30											-0.1				
14:30	4.5	11151		30											-0.1				
15:00	5.0	11146		30											-0.1				
15:30	5.5	11146		30											-0.1				
16:00	6.0	11135		30											0.0				
16:30	6.5	11129		30											0.1				
17:00	7.0	11131		30											0.1				
17:30	7.5	11130		30											0.1				
18:00	8.0	11127		30											0.1				
18:30	8.5	11125		37											0.1				
19:00	9.0	11127		37											0.1				
19:30	9.5	11126		38											0.1				
20:00	10.0	11129		38											0.1				
20:30	10.5	11130		39											0.1				
21:00	11.0	11132		39											0.1				
21:30	11.5	11132		39											0.1				
21:59		Open well to manifold, pressure test flowline.																	
22:00	12.0	11132		39											0.1				
22:00		Open well on 12.7000 mm choke.																	
22:00		Change orifice plate to 76.2000 mm.																	
22:05	0.1	10208	-8	39	808	35.00	18	207.99	97.45						8.3				
22:10	0.2	10203	-7	39	804	34.90	16	207.99	98.17						8.4				
22:15	0.2	10186	-6	39	799	35.00	16	207.71	98.89	0.00	1.70	0.00	0.00		8.5			0.0	0.0
22:30	0.5	10187	-5	39	811	34.50	14	208.38	101.07	0.00	1.70	0.00	0.00		8.5			0.0	0.0

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		Tubing Pressure	Tubing Temp	Casing Pressure	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity					
hh:mm	Hours	kPag	°C	kPag	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%	%
04/03/12																			
22:45	0.8	10162	-5	39	813	34.50	13	209.01	103.24	0.00	1.70	0.00	0.00		8.8			0.0	0.0
23:00	1.0	10136	-4	39	804	34.50	10	209.15	105.42	0.00	1.70	0.00	0.00		9.0			0.0	0.0
23:20		Fluid to surface.																	
23:30	1.5	10108	-5	39	810	34.00	8	209.13	109.78	0.05	1.75				9.2			0.0	0.0
24:00	2.0	10094	-4	39	801	33.80	6	208.26	114.12	0.05	1.80	0.00	0.00		9.4			0.0	0.0

Day Summary

Cum. Prod. Since: 20:00 04/03/11	
Gas Production (12.0 Hrs)	86.63 10^3m^3
Cumulative (16.0 Hrs)	114.12 10^3m^3
Liquid Production (12.0 Hrs)	
Cond/Oil 1.30 m^3 Water	0.00 m^3
Liquid Production Cumulative (16.0 Hrs)	
Cond/Oil 1.80 m^3 Water	0.00 m^3

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		Tubing Pressure	Tubing Temp	Casing Pressure	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity					
hh:mm	Hours	kPag	°C	kPag	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%	%
04/03/12																			
04/03/13																			
00:30	2.5	10083	-4	39	799	33.90	5	208.74	118.47	0.10	1.90				9.5			0.1	0.0
01:00	3.0	10076	-3	39	799	33.70	4	208.52	122.81	0.05	1.95	0.00	0.00		9.5			0.1	0.0
01:30	3.5	10072	-4	39	801	33.70	4	208.76	127.16	0.05	2.00				9.6			0.1	0.0
02:00	4.0	10071	-4	39	801	33.60	3	208.86	131.51	0.10	2.10	0.00	0.00		9.6			0.0	0.0
02:30	4.5	10066	-3	39	800	33.70	3	209.06	135.87	0.05	2.15				9.6			0.1	0.0
03:00	5.0	10062	-3	39	799	33.80	3	209.25	140.22	0.10	2.25	0.00	0.00		9.7			0.0	0.0
03:30	5.5	10059	-3	39	798	33.90	2	209.86	144.60	0.10	2.35				9.7			0.1	0.0
04:00	6.0	10057	-3	39	795	34.00	1	210.23	148.98	0.05	2.40	0.00	0.00		9.7			0.1	0.0
04:30	6.5	10050	-2	39	794	34.00	2	209.69	153.34	0.10	2.50				9.8			0.0	0.0
05:00	7.0	10058	-2	39	798	33.90	1	210.28	157.73	0.05	2.55	0.00	0.00		9.7			0.0	0.0
05:30	7.5	10061	-2	39	801	33.90	2	210.22	162.11	0.10	2.65				9.7			0.0	0.0
06:00	8.0	10058	-3	39	803	33.80	2	210.14	166.48	0.05	2.70	0.00	0.00		9.7			0.0	0.0
06:00		Methanol injection rate for a 24 hour period = 300 litres.																	
06:30	8.5	10059	-3	39	806	34.00	2	211.13	170.88	0.05	2.75				9.7			0.1	0.0
07:00	9.0	10057	-2	39	800	33.80	1	210.20	175.26	0.05	2.80	0.00	0.00		9.7			0.1	0.0
07:30	9.5	10049	-2	39	818	33.90	0	213.09	179.70	0.05	2.85				9.8			0.0	0.0
08:00	10.0	10039	-2	39	807	34.00	0	212.09	184.12	0.10	2.95	0.00	0.00		9.9			0.1	0.0
08:15		Line heater went down, problems with fire eye.																	
08:30	10.5	10035	-4	39	793	33.90	-3	211.37	188.52	0.10	3.05				9.9			0.0	0.0
09:00	11.0	10032	-4	42	801	33.80	-2	211.60	192.93	0.10	3.15	0.00	0.00		9.9			0.2	0.0
09:00		Core Lab rep. collects samples.																	
09:30	11.5	10046	-4	42	800	34.00	-2	212.11	197.35	0.05	3.20				9.8			0.5	0.0
10:00	12.0	10044	-4	42	801	34.00	-2	212.23	201.77	0.05	3.25	0.00	0.00		9.8			0.2	0.0
10:00		Shut in well.																	
10:05	0.1	11014													1.1				
10:10	0.2	11033													0.9				
10:15	0.2	11047													0.8				
10:30	0.5	11066													0.6				
10:45	0.8	11075													0.6				

Precision Drilling

Northland Energy
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Calgary, AB T2P 3Y7
Telephone: 403.716.4500
Facsimile: 403.716.4869
www.precisiondrilling.com

Petro-Canada Oil and Gas
N 66 56' 47.11" W 125 54' 9.42"
Operation: Tight Hole
Pool or Zone: Mount Clark
Field or Area: Tweed Lake
Test Start: 11 Mar 2004
Test End: 14 Mar 2004
NEC Job #: 4400761C

		Well Head Data			H.P. Sep Gas Metering					Cond/Oil Prod.		Water Production								
Time	Elapsed Time	Tubing Pressure	Tubing Temp	Casing Pressure	Static Pressure	Diff.	Temp.	Q	Cum. Q Total	Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity	Tubing Draw Down	Casing Draw Down	pH	BSW	Cond %
hh:mm	Hours	kPag	°C	kPag	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%	%
04/03/13																			
11:00	1.0	11085													0.5				
11:30	1.5	11111													0.2				
12:00	2.0	11125													0.1				
12:30	2.5	11126													0.1				
13:00	3.0	11115		30											0.2				
13:30	3.5	11121													0.2				
14:00	4.0	11126													0.1				
14:30	4.5	11130													0.1				
15:00	5.0	11127		23											0.1				
15:30	5.5	11132													0.1				
16:00	6.0	11130													0.1				
16:30	6.5	11132													0.1				
17:00	7.0	11127													0.1				
17:30	7.5	11125													0.1				
18:00	8.0	11127													0.1				
18:30	8.5	11126													0.1				
19:00	9.0	11125													0.1				
19:30	9.5	11130													0.1				
20:00	10.0	11122													0.1				
20:30	10.5	11124													0.1				
21:00	11.0	11128													0.1				
21:30	11.5	11132													0.1				
21:45		Begin methanol injection.																	
21:57		Open well to manifold, pressure test flowline.																	
22:00	12.0	11132													0.1				
22:00		Open well on 12.7000 mm choke.																	
22:05	0.1	9788													12.1				
22:08		Increase adjustable choke to 15.0800 mm.																	
22:08		Change orifice plate to 101.6000 mm.																	
22:10	0.2	8756	-6		1120	16.00	4	321.69	202.22						21.4				

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Petro-Canada Oil and Gas
N 66 56' 47.11" W 125 54' 9.42"
Operation: Tight Hole
Pool or Zone: Mount Clark
Field or Area: Tweed Lake
Test Start: 11 Mar 2004
Test End: 14 Mar 2004
NEC Job #: 4400761C

Time	Elapsed Time	Well Head Data			H.P. Sep Gas Metering				Cum. Q Total	Cond/Oil Prod.		Water Production			Tubing Draw Down	Casing Draw Down	pH	BSW	Cond %
		Tubing Pressure	Tubing Temp	Casing Pressure	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity					
hh:mm	Hours	kPag	°C	kPag	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%	%
04/03/13																			
22:15	0.2	8743	-6		1150	16.00	2	327.15	203.35						21.5				
22:20	0.3	8723	-6		1191	17.00	2	343.00	204.54						21.7				
22:24		Decrease adjustable choke to 14.2800 mm.																	
22:35		Insert 14.2900 mm positive bean choke.																	
22:40	0.7	9627	-6		900	13.50	-2	269.64	208.29						13.6				
22:45	0.8	9647	-6		872	13.00	-1	260.18	209.19	0.15	3.40	0.00	0.00		13.4			0.1	
23:00	1.0	9645	-6		871	13.00	-1	260.04	211.90	0.00	3.40	0.00	0.00		13.4			0.1	
23:30	1.5	9638	-6		870	13.00	-1	259.90	217.32	0.10	3.50	0.00	0.00		13.5			0.1	
24:00	2.0	9615	-6	43	868	13.00	-2	260.15	222.74	0.15	3.65	0.00	0.00		13.7			0.1	

Day Summary

Cum. Prod. Since: 20:00 04/03/11		
Gas Production (12.0 Hrs)		108.62 10^3m^3
Cumulative (28.0 Hrs)		222.74 10^3m^3
Liquid Production (12.0 Hrs)		
Cond/Oil	1.85 m^3 Water	0.00 m^3
Liquid Production Cumulative (28.0 Hrs)		
Cond/Oil	3.65 m^3 Water	0.00 m^3

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Petro-Canada Oil and Gas
N 66 56' 47.11" W 125 54' 9.42"
Operation: Tight Hole
Pool or Zone: Mount Clark
Field or Area: Tweed Lake
Test Start: 11 Mar 2004
Test End: 14 Mar 2004
NEC Job #: 4400761C

Time	Elapsed Time	Well Head Data			H.P. Sep Gas Metering				Cum. Q Total	Cond/Oil Prod.		Water Production			Tubing Draw Down	Casing Draw Down	pH	BSW	Cond %
		Tubing Pressure	Tubing Temp	Casing Pressure	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity					
hh:mm	Hours	kPag	°C	kPag	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%	%
04/03/13																			
04/03/14																			
00:30	2.5	9597	-7		868	13.00	-3	260.69	228.17	0.10	3.75	0.00	0.00		13.8			0.1	
01:00	3.0	9584	-6		864	13.00	-5	261.20	233.61	0.10	3.85	0.00	0.00		14.0			0.1	
01:30	3.5	9568	-7	46	867	13.00	-6	262.17	239.07	0.05	3.90	0.00	0.00		14.1			1.5	
01:30		Bottom sediment becoming much higher in returns with possible water or methanol to surface, will collect more for sample.																	
02:00	4.0	9560	-7		859	13.00	-6	261.04	244.51	0.10	4.00	0.00	0.00		14.2			5.0	
02:30	4.5	9560	-5		857	13.00	-8	261.84	249.96	0.10	4.10	0.00	0.00		14.2			10.0	
03:00	5.0	9558	-6	48	857	13.00	-8	261.84	255.42	0.10	4.20	0.00	0.00		14.2			7.0	
03:10		Core Lab rep. on location to collect fluid and gas samples.																	
03:30	5.5	9557	-6		856	13.00	-8	261.70	260.87	0.10	4.30	0.00	0.00		14.2			6.5	
04:00	6.0	9554	-5		857	13.00	-8	261.84	266.33	0.05	4.35	0.00	0.00		14.2			5.0	
04:30	6.5	9555	-6	43	856	13.00	-7	261.15	271.77	0.15	4.50	0.00	0.00		14.2			3.5	
05:00	7.0	9556	-5		859	13.00	-8	262.13	277.23	0.15	4.65	0.00	0.00		14.2			4.0	
05:30	7.5	9554	-6		861	13.00	-7	261.86	282.68	0.10	4.75	0.00	0.00		14.2			3.5	
06:00	8.0	9549	-6	46	861	13.00	-8	262.41	288.15	0.10	4.85	0.00	0.00		14.3			4.0	
06:00		Methanol injection rate for a 24 hour period = 300 litres.																	
06:00		A fluid sample drawn at 06:00. Contains 1.2% water with a salinity of 253,000 ppm and a pH of 6.5.																	
06:30	8.5	9547	-6		863	13.00	-7	262.15	293.61	0.10	4.95				14.3			3.0	
07:00	9.0	9549	-5		864	12.80	-7	260.26	299.03	0.10	5.05	0.00	0.00	272000	14.3		6.5	1.4	
07:30	9.5	9549	-5		871	12.90	-7	262.26	304.50	0.10	5.15	0.00	0.00		14.3			1.0	
08:00	10.0	9548	-5		873	13.00	-7	263.56	309.99	0.10	5.25	0.00	0.00		14.3			1.0	
08:30	10.5	9555	-4		878	13.00	-6	263.71	315.48	0.10	5.35	0.00	0.00		14.2			1.1	
09:00	11.0	9557	-5		873	13.00	-7	263.56	320.97	0.10	5.45	0.00	0.00		14.2			2.6	
09:00		Core Lab rep. collects samples.																	
09:30	11.5	9548	-6		873	13.00	-7	263.56	326.46	0.10	5.55	0.00	0.00		14.3			2.0	
10:00	12.0	9541	-5		873	13.00	-7	263.56	331.96	0.10	5.65	0.00	0.00		14.3			1.6	
10:00		Shut in well. Meter out of service.																	
10:05		Start to rig out test equipment.																	
10:05	0.1	10224													8.2				
10:10	0.2	10423													6.4				

Precision Drilling

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Petro-Canada Oil and Gas
N 66 56' 47.11" W 125 54' 9.42"

Operation: Tight Hole
Pool or Zone: Mount Clark
Field or Area: Tweed Lake
Test Start: 11 Mar 2004
Test End: 14 Mar 2004
NEC Job #: 4400761C

Time	Elapsed Time	Well Head Data			H.P. Sep Gas Metering				Cum. Q Total	Cond/Oil Prod.		Water Production			Tubing Draw Down	Casing Draw Down	pH	BSW	Cond %
		Tubing Pressure	Tubing Temp	Casing Pressure	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity					
hh:mm	Hours	kPag	°C	kPag	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%	%
04/03/14																			
10:15	0.2	10692													4.0				
10:30	0.5	11003													1.2				
10:45	0.8	11032													1.0				
11:00	1.0	11068													0.6				
11:30	1.5	11087													0.5				
12:00	2.0	11096													0.4				
12:30	2.5	11105													0.3				
13:00	3.0	11116													0.2				
13:30	3.5	11111													0.2				
14:00	4.0	11121													0.2				
14:30	4.5	11125													0.1				
15:00	5.0	11138													0.0				
15:30	5.5	11137													0.0				
16:00	6.0	11146													-0.1				
16:30	6.5	11149													-0.1				
17:00	7.0	11125													0.1				
18:00	8.0	11122													0.1				
18:00		End of test.																	

Day Summary		
Cum. Prod. Since: 20:00 04/03/11		
Gas Production (10.0 Hrs)		109.22 10^3m^3
Cumulative (38.0 Hrs)		331.96 10^3m^3
Liquid Production (10.0 Hrs)		
Cond/Oil	2.00 m^3 Water	0.00 m^3
Liquid Production Cumulative (38.0 Hrs)		
Cond/Oil	5.65 m^3 Water	0.00 m^3

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Petro-Canada Oil and Gas
N 66 56' 47.11" W 125 54' 9.42"

Operation:	Tight Hole
Pool or Zone:	Mount Clark
Field or Area:	Tweed Lake
Test Start:	11 Mar 2004
Test End:	14 Mar 2004
NEC Job #:	4400761C

Time	Description
hh:mm	
04/03/11	
19:15	Begin methanol injection.
19:30	Conduct safety meeting.
19:55	Open well to manifold, pressure test flowline.
20:00	Open well on 11.1100 mm choke.
20:02	Meter in service on 69.8500 mm orifice plate.
24:00	Gas rate accumulation from start of frac clean-up (20:07 hrs. March 8, 2004) = 302.13 E3m3.
24:00	Gas rate accumulation from start of test 1 (08:00 hrs. March 10, 2004) = 174.82 E3m3.
24:00	Gas rate accumulation from start of test 2 (20:00 hrs. March 11, 2004) = 27.49 E3m3.
24:00	Frac oil returns from start of frac clean-up = 23.63 m3.
24:00	Frac oil returns from start of test 1 = 4.55 m3.
24:00	Frac oil returns from start of test 2 = 0.5 m3.
04/03/12	
06:30	Methanol injection rate for a 24 hour period = 256 litres.
09:55	Core Lab rep. collects samples.
10:00	Trace of condensate in sample.
10:00	Shut in well.
21:59	Open well to manifold, pressure test flowline.
22:00	Open well on 12.7000 mm choke.
22:00	Change orifice plate to 76.2000 mm.
23:20	Fluid to surface.
04/03/13	
06:00	Methanol injection rate for a 24 hour period = 300 litres.
08:15	Line heater went down, problems with fire eye.
09:00	Core Lab rep. collects samples.
10:00	Shut in well.
21:45	Begin methanol injection.
21:57	Open well to manifold, pressure test flowline.
22:00	Open well on 12.7000 mm choke.
22:08	Increase adjustable choke to 15.0800 mm.
22:08	Change orifice plate to 101.6000 mm.

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Petro-Canada Oil and Gas
N 66 56' 47.11" W 125 54' 9.42"

Operation:	Tight Hole
Pool or Zone:	Mount Clark
Field or Area:	Tweed Lake
Test Start:	11 Mar 2004
Test End:	14 Mar 2004
NEC Job #:	4400761C

Time	Description
hh:mm	
04/03/13	
22:24	Decrease adjustable choke to 14.2800 mm.
22:35	Insert 14.2900 mm positive bean choke.
04/03/14	
01:30	Bottom sediment becoming much higher in returns with possible water or methanol to surface, will collect more for sample.
03:10	Core Lab rep. on location to collect fluid and gas samples.
06:00	Methanol injection rate for a 24 hour period = 300 litres.
06:00	A fluid sample drawn at 06:00. Contains 1.2% water with a salinity of 253,000 ppm and a pH of 6.5.
09:00	Core Lab rep. collects samples.
10:00	Shut in well. Meter out of service.
10:05	Start to rig out test equipment.
18:00	End of test.

NORTHLAND ENERGY CORPORATION

- NORTHLAND-NORWARD ENERGY SERVICES

- ENTEST

Precision Drilling Corporation

Sample Control Information

Job #: 440076

Client: Petro Canada Oil And Gas
Client Work Order/AFE: B783031

Client Representatives and Contact Numbers
Jim Messervey 1-600-700-7884

Samples Required: ☐Yes ☒No
Samples Taken By:
Comments: Core Lab Rep. On Location Taking All Samples. TIGHT HOLE.

Unique Well Identifier:
Wellname:
Field or Area:
Pool or Zone:
Elevation: KB m GRD m
Tested Interval or Perforations: Highest mKB Lowest mKB

Pressurized Samples

Sample Point	Fluid Type Sampled	Container #	Sample Date (yyyy-mm-dd)	Sample Time (hh:mm)	Pressure (KPag)	Temp (°C)	H_2S %

Atmospheric Samples

Sample Point	Fluid Type Sampled	Number of Containers	Sample Date (yyyy-mm-dd)	Sample Time (hh:mm)	H_2S %	pH	Salinity (ppm)

H_2S detemined in the field by: ☐ Tutweiler ☐ Other:

Lab Delivered to for Analysis:
City:

Samples Delivered By: Print Name Signature Date (yyyy-mm-dd)

Received By (Lab Rep): Print Name Signature Date (yyyy-mm-dd)

Core Lab

EXTENDED GAS ANALYSIS

A0000002 - 43			52134-2004-2647
CONTAINER IDENTITY	METER ID	WELL LICENSE NUMBER	LABORATORY FILE NUMBER

Petro-Canada Oil and Gas — OPERATOR — PAGE

PCI et al Tweed Lake M-47 — LOCATION (UWI) — WELL NAME — KB ELEV (m) — GR ELEV (m)

Tweed Lake — FIELD OR AREA

Mount Clark — POOL OR ZONE

Core Laboratories — SAMPLER

TEST TYPE AND NO. — TEST RECOVERY

Test Separator Meter Run

POINT OF SAMPLE — SAMPLE POINT ID

PUMPING — FLOWING — GAS LIFT — SWAB

1222.5 - 1233.5 — TEST INTERVAL or PERFS (meters)

WATER m³/d — OIL m³/d — GAS m³/d

873 — SEPARATOR — RESERVOIR — OTHER

Pressures, kPa (gauge)

@ °C — CONTAINER WHEN SAMPLED

130 @ 22 °C — CONTAINER WHEN RECEIVED

-7.0 — SEPARATOR — OTHER

Temperatures, °C

09:00 Hrs

2004 03 14	2004 04 21	2004 04 27	CC		@ °C
DATE SAMPLED (Y/M/D)	DATE RECEIVED (Y/M/D)	DATE ANALYZED (Y/M/D)	ANALYST	AMT. AND TYPE CUSHION	MUD RESISTIVITY

COMPONENT	MOLE FRACTION AIR FREE AS RECEIVED	MOLE FRACTION AIR FREE ACID GAS FREE	mL/m³ AIR FREE AS RECEIVED
H_2	0.0000	0.0000	
He	0.0094	0.0094	
N_2	0.2243	0.2243	
CO_2	0.0003	0.0000	
H_2S	0.0000	0.0000	
C_1	0.6774	0.6777	
C_2	0.0605	0.0605	214.8
C_3	0.0171	0.0171	62.8
IC_4	0.0035	0.0035	15.3
C_4	0.0040	0.0040	16.8
IC_5	0.0015	0.0015	7.3
C_5	0.0008	0.0008	3.9
C_6	0.0007	0.0007	3.7
C_{7+}	0.0005	0.0005	2.9
Total	1.0000	1.0000	327.5

CALCULATED GROSS HEATING VALUE MJ/m³ @ 15°C & 101.325 kPa (abs.)

32.68	32.69	101.2
MOISTURE FREE	MOISTURE & ACID GAS FREE	PENTANES PLUS

CALCULATED VAPOR PRESSURE kPa (abs.) @ 40 °C

CALCULATED TOTAL SAMPLE PROPERTIES (AIR=1) @ 15°C & 101.325 kPa

MOISTURE FREE AS SAMPLED

0.866 kg/m³	0.707	20.5
DENSITY	RELATIVE DENSITY	RELATIVE MOLECULAR MASS

CALCULATED PSEUDOCRITICAL PROPERTIES

AS SAMPLED		ACID GAS FREE	
4288.7 kPa (abs)	187.2 K	4287.9 kPa (abs)	187.1 K
pPc	pTc	pPc	pTc

C_{7+} PROPERTIES @ 15°C & 101.325 kPa		MOLE FRACTION	LOCATION	METHOD
747.0 kg/m³	95.8	0.0000000	Field	Other
DENSITY	MOLECULAR WEIGHT	HYDROGEN SULPHIDE		

REMARKS:

H2S was not detected in the field.

Sample was air contaminated.
Results may be affected by air contamination.

There was insufficient gas present in the duplicate sample for analysis.

NOTE: THE GROSS HEATING VALUE HAS BEEN CALCULATED IN ACCORDANCE TO AGA REPORT #5 AND ALL PROPERTIES HAVE BEEN CALCULATED UTILIZING GPA 2145 - 00 PHYSICAL CONSTANTS.

NORTHLAND ENERGY CORPORATION

- NORTHLAND-NORWARD ENERGY SERVICES

- ENTEST

Precision Drilling Corporation

EUB Test Information

Job Number: 4400761 **Job Supervisor:** C. Moylan

- All sections must be completed for every well.
- Explain fully in the space provided at the bottom of the form why any information is missing.
- Shaded items should be known by the company representative all others by the job supervisor.
- Company Representative must sign below acknowledging that all information is complete and correct

Company: Petro Canada Oil And Gas	**Company Representative:** Jennifer Taylor
Wellname: PCI Et Al Tweed Lake M-47	**Phone:** 403-296-3537
Unique Well ID: N 66 56' 47.11" W 125 54' 9.42"	
Pool or Zone: Mount Clarke	
Field or Area: Tweed Lake	**Well License:** Na

Well Fluid Status at Test Date (Code): 02

01 - Crude Oil	05 - Undesignated	09 - Solvent	13 - CO_2	17 - Crude Bitumen
02 - Gas	06 - Water	10 - Steam	14 - Polymer	20 - Acid Gas
03 - Oil	07 - Brine	11- Air	15 - Nitrogen	
04 - Gas/Water	08 - Waste	12 - Synthetic Crude	16 - LPG	

Well Type:

- ☒ Vertical
- ☐ Deviated
- ☐ Horizontal
- ☐ Multi-Lateral

Well Status Mode at Test Date (Code): 10

00 - No Selection	05 - Capped	10 - Flowing
01 - Suspended	06 - Potential	11 - Pumping
02 - Abandoned	07 - Standing	12 - Gas Lift
03 - Abandoned Zone	08 - Junked & Abnd.	14 - Abnd & Whipstock
04 - Abandoned/ re-entry	09 - Closed (by EUB)	

Well Status Type at Test Date (Code): 00

00 - No Selection	04 - Disposal	08 - Farm
01 - Reproducer	05 - Observation	09 - Industrial
02 - Storage	06 - Training	10 - Cyclical
03 - Injection	07 - Experimental	11 - Source
		12 - SW Steam Assisted

Whipstock Depth KB (TVD):		m	
Tubing Landed at Depth KB (TVD):	1 201.90	m	
Production Casing ID:	157.07	mm	
Production Tubing OD:	73.00	mm	
Production Tubing ID:	62.00	mm	
Packer Setting Depth KB (TVD):	1 196.00	m	
Test Interval Top mKB (Log):	1222.5	*highest*	
Test Interval Top mKB (TVD):	1 222.50	*highest*	

Open Hole Completion: ☐ Yes ☐ No

If Yes:

Casing Landed at Depth KB (TVD): _____ m

Casing Liner Indicator: ☐ Yes ☐ No

Hole Diameter: _____ mm

Producing Through: ☒Tubing ☐Annular ☐Casing

Test Interval Base mKB (Log): 1233.5 *lowest*

Test Interval Base mKB (TVD): 1 233.50 *lowest*

Start Date of Test (yyyy-mm-dd): 2004-03-14

Start Time of Test(HH:mm): 10:00

Flow Duration: 97.52 hours

Initial Casing Pressure: 0.00 kPag

Final Tubing Pressure: 11 122.00 kPag

Test Type: 3 point

Surface Temp: _____ °C **Reservoir Temp:** 12.0 °C

Initial Tubing Pressure: 0.00 kPag

Formation Temp: _____ °C

Description of Gas Production: ☐Casing ☒Tubing ☐Both

Method of Test Production: ☐Pipeline ☐Vent ☒Flare

Gas Produced in Cleanup and Test: 635.820 $10^3m^3/d$

KB: 435.22 m **GRD:** 429.10 m

Missing Information:

- ☒ Not supplied by Company Representative
- ☐ Other (specify):

Company Representative – print name

Company Representative - signature

NORTHLAND ENERGY

A Division of Precision Drilling Technology Services Group Inc.

Precision Drilling

N.E.B. COPY

Petro-Canada Oil and Gas
PCI et al Tweed Lake M-47
N 66 56' 47.11" W 125 54' 9.42"
Mount Clark

Testing Operation Performed:	Tight Hole
Customer Representative(s) on Location:	Jim Messervey
Northland Energy Supervisor(s):	C. Komery, C. Moylan, R. Lotzer
Separator Unit Number:	FS-135
Test Start and End Dates:	04/03/04-04/03/08
Northland Energy Job Number:	4400761A
Northland Energy Representative:	Steve Beaudet
Report Prepared By:	J. Zhu
Date Prepared:	April 29, 2004

Northland Energy
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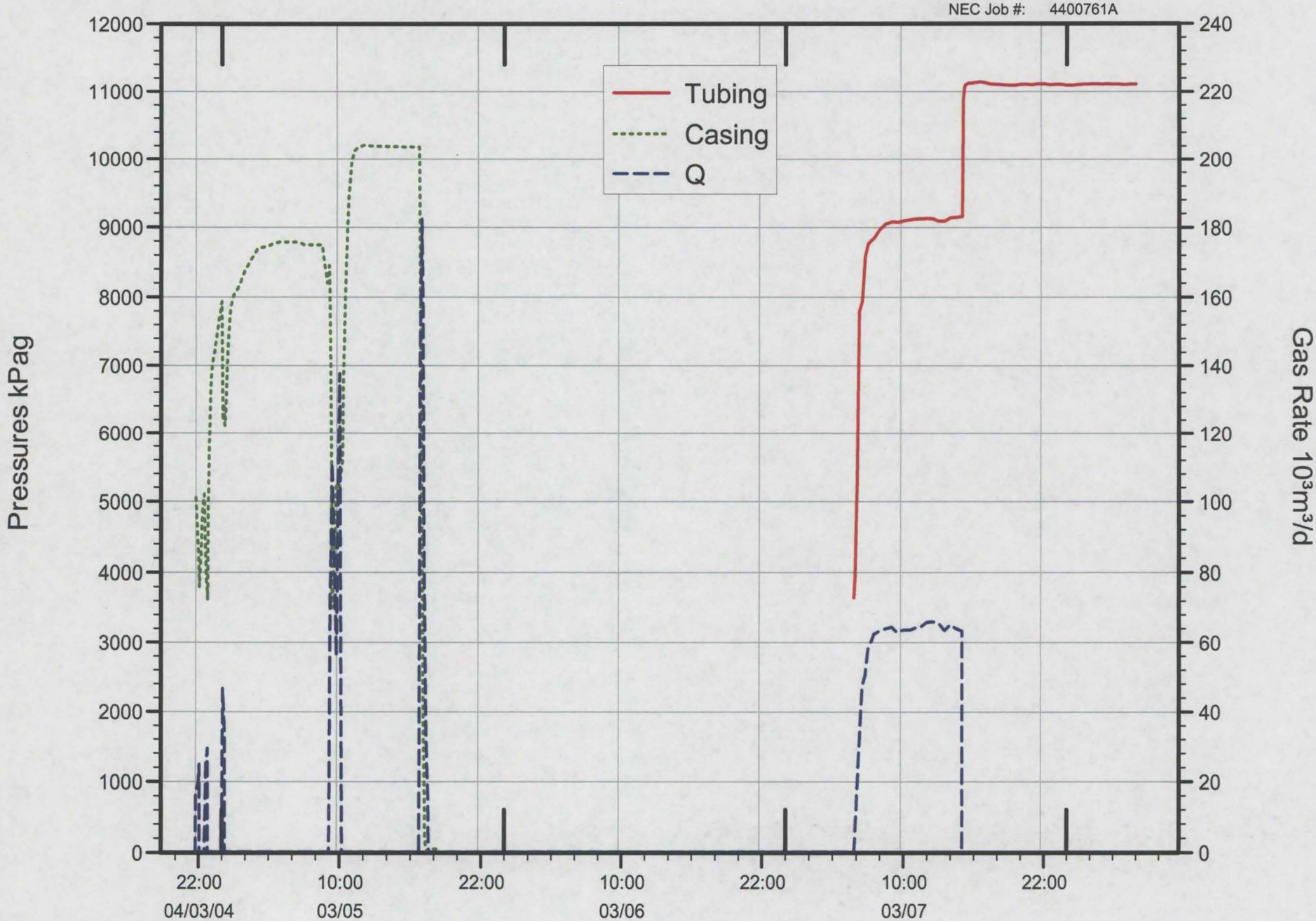
Petro-Canada Oil and Gas
N 66 56' 47.11" W 125 54' 9.42"

Operation:	Tight Hole
Pool or Zone:	Mount Clark
Field or Pool:	Tweed Lake
Test Start:	4 Mar 2004
Test End:	8 Mar 2004
NEC Job #:	4400761A



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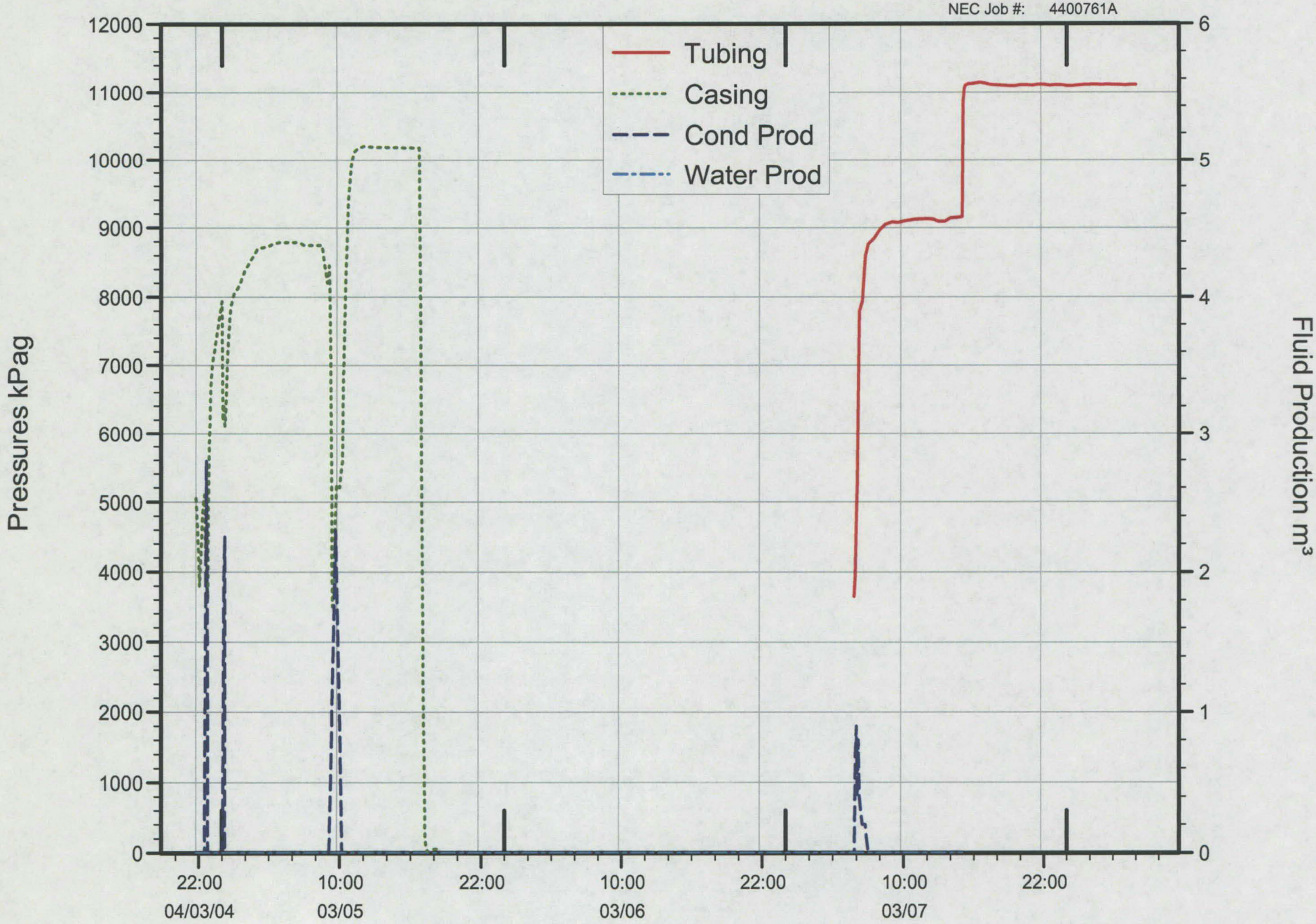

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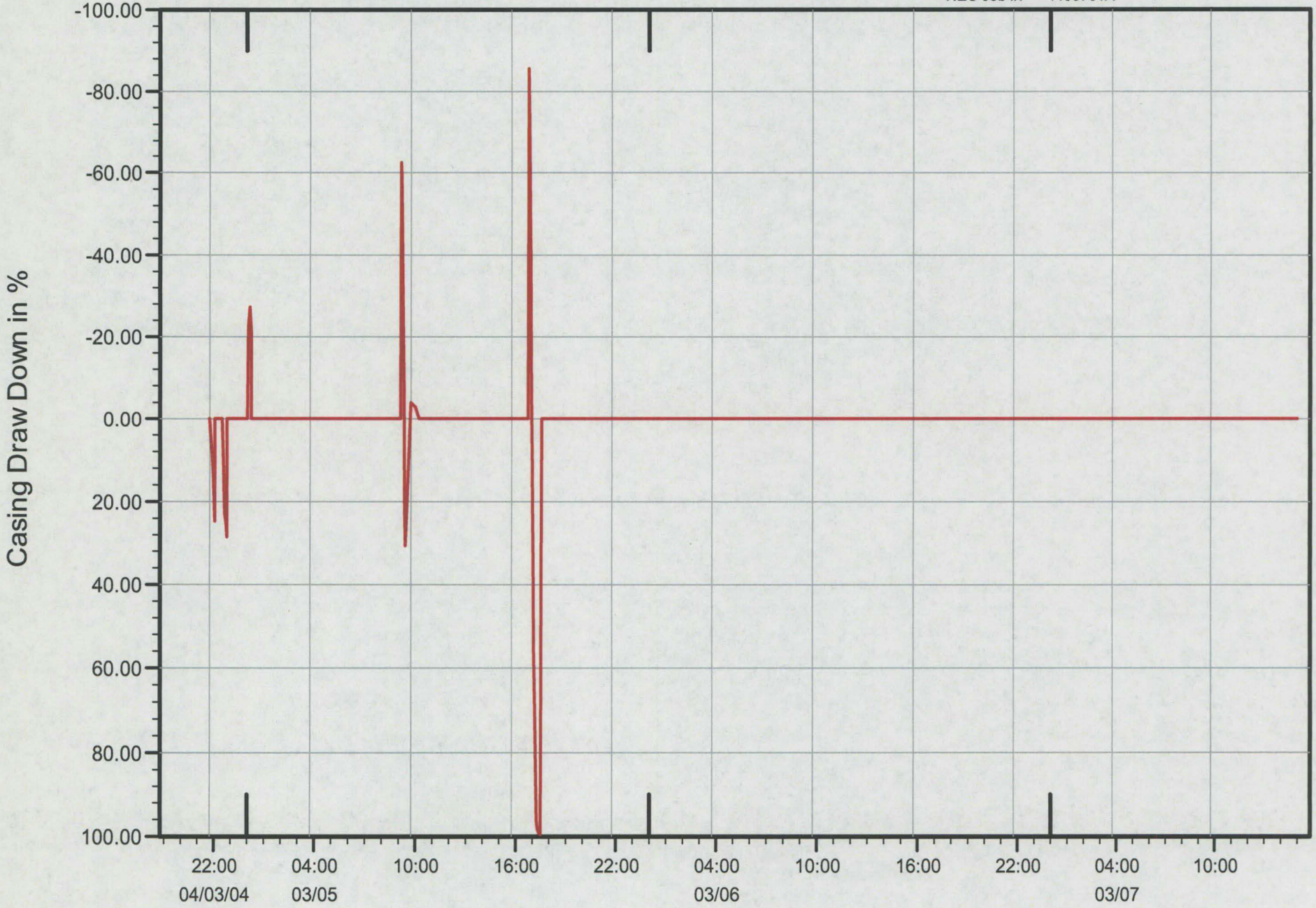

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Operation: Tight Hole
Pool or Zone: Mount Clark
Field or Area: Tweed Lake
Test Start: 4 Mar 2004
Test End: 8 Mar 2004
NEC Job #: 4400761A

Company:	**Petro-Canada Oil and Gas**		
Company Representative:	**Jim Messervey**	**Meter Type:**	**Meter Run**
		Tap Type:	**Flange**
Wellname:	**PCI et al Tweed Lake M-47**	**Tap Location:**	**Down Stream**
UWI:	**N 66 56' 47.11" W 125 54' 9.42"**	**Test Unit:**	**FS-135**
		Upstream Meter Internal Diameter:	**154.20 mm**
Pool or Zone:	**Mount Clark**		
Field or Area:	**Tweed Lake**	**H_2**	
		He	
Operation:	**Tight Hole**	**N_2**	
		CO_2	
Test Supervisors:	**C. Komery, C. Moylan, R. Lotzer**	**H_2S**	
NEC Job #:	**4400761A**	**C1**	
		C2	
Northland Energy Corporation division:	**Northland Energy**	**C3**	
		iC4	
		nC4	
Fluid1 Type:	**Cond/Oil**	**iC5**	
Tank Measurement:	**Incremental**	**nC5**	
		C6	
Fluid2 Type:	**Water**	**C7**	
Tank Measurement:	**Incremental**	**C8**	
		C9	
		C10	
Flow Duration:	**11.87 hours**	**O**	
Final Gas Production Rate:	**66.28 $10^3m^3/d$**	**CO**	
Cumulative Gas Produced:	**31.01 10^3m^3**	**H_2O**	
Cumulative Water Produced:	**0.00 m^3**		
Cumulative Condensate/Oil Produced:	**16.55 m^3**		
Initial Tubing Pressure:			
Final Tubing Pressure:		**Specific Gravity:**	**0.65**
		pPc:	
		pTc:	

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Operation: Tight Hole
Pool or Zone: Mount Clark
Field or Area: Tweed Lake
Test Start: 4 Mar 2004
Test End: 8 Mar 2004
NEC Job #: 4400761A

Time	Elapsed Time	Well Head Data			H.P. Sep Gas Metering				Cum. Q Total	Cond/Oil Prod.		Water Production			Tubing Draw Down	Casing Draw Down	pH	Sand
		Tubing Pressure	Casing Pressure	Casing Temp	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity				
hh:mm	Hours	kPag	kPag	°C	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%
04/02/26																		
06:30		Travel from Crossfield to Camp.																
19:00		PCOG orientation.																
04/02/27																		
07:00		Arrive on location.																
07:30		Conduct safety meeting.																
08:00		Spot and rig in test equipment.																
04/02/28																		
08:30		Arrive on location.																
08:30		Conduct safety meeting.																
09:00		Stand flare stack and test lineheater.																
04/03/01																		
08:30		Arrive on location.																
08:35		Conduct safety meeting.																
18:30		Rig up to circulate to rig tank. Sample water in rig tank.																
18:30														200000			8.0	
18:53		Drilling mud for returns.																
18:53														240000			8.0	
04/03/02																		
08:00		Arrive on location.																
08:05		Conduct safety meeting.																
09:00		Test lineheater.																
04/03/03																		
07:30		Arrive on location.																
07:45		Conduct safety meeting.																
09:00		Test chemical pump. Swab out 10m3, and pull out of hole.																
14:00		Rig up to perforate.																
04/03/04																		
06:00		Unable to perforate.																
07:30		Conduct safety meeting.																
08:00		Wait on perforators.																

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		Tubing Pressure	Casing Pressure	Casing Temp	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity				
hh:mm	Hours	kPag	kPag	°C	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%
04/03/04																		
13:00		Rig up to perforate.																
13:30		Conduct safety meeting.																
13:55		Wireline starts in.																
14:25		1st shot.																
14:30			0													100.0		
14:35			650													87.1		
14:40			3200													36.6		
14:45			4300													14.9		
15:00			5075													-0.5		
15:00		Wireline at surface.																
15:15			5100													-1.0		
15:30			5200													-3.0		
15:45		Conduct safety meeting.																
16:17		Wireline starts in with 2nd run.																
16:30			5275													-4.5		
17:00			5310													-5.1		
17:25		2nd gun fired.																
17:30			5300													-5.0		
17:35			5300													-5.0		
17:40			5300													-5.0		
17:45			5325													-5.4		
18:00			5400													-6.9		
18:30			5475													-8.4		
18:35		Conduct safety meeting.																
18:45		Start in with packer.																
19:30		Wireline stuck in hole.																
20:15		Rig in flowline to casing.																
21:00		Conduct safety meeting.																
21:30		Open well to manifold, pressure test to 5050 kPa.																
21:45		Open well on 5.2900 mm choke.																

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		Tubing Pressure	Casing Pressure	Casing Temp	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity				
hh:mm	Hours	kPag	kPag	°C	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%
04/03/04																		
21:45		Meter in service on 50.8000 mm orifice plate.																
21:45		Fluid to surface but unable to gauge until 2.3m3 is obtained.																
21:46	0.0		5050		15	9.00	-8	17.70	0.01							0.0		
21:55		Increase choke to 6.3500 mm.																
21:55	0.2		4600		15	11.00	-8	19.61	0.13							8.9		
22:00		Increase choke to 7.4100 mm.																
22:00	0.2		4250		15	12.50	-8	20.94	0.21							15.8		
22:05		Increase choke to 8.4700 mm.																
22:05	0.3		3800		15	19.00	-8	25.97	0.30							24.8		
22:05		Shut in well to build up casing pressure.																
22:10	0.1		4100													18.8		
22:15	0.2		4400													12.9		
22:20	0.2		4800													5.0		
22:25	0.3		5000													1.0		
22:30	0.4		5100													-1.0		
22:31		Open well on 8.4700 mm choke.																
22:31		Meter in service on 50.8000 mm orifice plate.																
22:40		Frac oil to surface.																
22:40	0.2		3900		30	19.00	-2	27.27	0.47	2.80	2.80	0.00	0.00			22.8		
22:45	0.2		3784		30	21.00	-4	28.81	0.57	1.70	4.50	0.00	0.00			25.1		
22:48	0.3		3609		30	23.50	-8	30.76	0.63	0.80	5.30	0.00	0.00			28.5		
22:48		Shut in well at manifold, pressure will be applied in tubing on top of wireline tool.																
22:50	0.0		4860													3.8		
22:55	0.1		5751													-13.9		
23:00	0.2		6362													-26.0		
23:05	0.3		6807													-34.8		
23:10	0.4		6980													-38.2		
23:15	0.4		7097													-40.5		
23:20	0.5		7174													-42.1		
24:00	1.2		7935													-57.1		

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Time	Elapsed Time	Well Head Data			H.P. Sep Gas Metering				Cum. Q Total	Cond/Oil Prod.		Water Production			Tubing Draw Down	Casing Draw Down	pH	Sand
		Tubing Pressure	Casing Pressure	Casing Temp	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity				
hh:mm	Hours	kPag	kPag	°C	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%
04/03/04																		

Day Summary

Cum. Prod. Since: 21:45 04/03/04		
Gas Production (0.6 Hrs)		0.63 10^3m^3
Cumulative (0.6 Hrs)		0.63 10^3m^3
Liquid Production (0.6 Hrs)		
Cond/Oil	5.30 m^3 Water	0.00 m^3
Liquid Production Cumulative (0.6 Hrs)		
Cond/Oil	5.30 m^3 Water	0.00 m^3

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		Tubing Pressure	Casing Pressure	Casing Temp	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity				
hh:mm	Hours	kPag	kPag	°C	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%
04/03/04																		
04/03/05																		
00:01		Well will be flowed through casing to retrieve approximate 5m3 of frac oil that was pumped previously.																
00:01		Open well on 8.4700 mm choke.																
00:01		Meter in service on 50.8000 mm orifice plate.																
00:05	0.1		6188		100	39.00	-2	48.75	0.77	0.20	5.50					-22.5		
00:10	0.2		6427		120	27.00	-4	42.43	0.92	1.90	7.40					-27.3		
00:15	0.2		6111		80	21.00	-8	34.05	1.03	2.25	9.65					-21.0		
00:15		Shut in well and monitor casing pressure.																
00:20	0.1		6335													-25.4		
00:25	0.2		6784													-34.3		
00:30	0.2		7175													-42.1		
00:35	0.3		7457													-47.7		
00:40	0.4		7681													-52.1		
00:45	0.5		7853													-55.5		
01:00	0.8		8030													-59.0		
01:15	1.0		8098													-60.4		
01:30	1.2		8170													-61.8		
01:45	1.5		8290													-64.2		
02:00	1.8		8395													-66.2		
02:15	2.0		8465													-67.6		
02:30	2.2		8540													-69.1		
02:45	2.5		8610													-70.5		
03:00	2.8		8690													-72.1		
03:15	3.0		8710													-72.5		
03:30	3.2		8715													-72.6		
03:45	3.5		8720													-72.7		
04:00	3.8		8735													-73.0		
04:15	4.0		8760													-73.5		
04:30	4.2		8775													-73.8		
05:00	4.8		8790													-74.1		

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Operation: Tight Hole
Pool or Zone: Mount Clark
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NEC Job #: 4400761A

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		Tubing Pressure	Casing Pressure	Casing Temp	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity				
hh:mm	Hours	kPag	kPag	°C	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%
04/03/05																		
05:30	5.2		8790													-74.1		
06:00	5.8		8790													-74.1		
06:30	6.2		8790													-74.1		
07:00	6.8		8750													-73.3		
07:30	7.2		8750													-73.3		
08:00	7.8		8750													-73.3		
08:30	8.2		8750													-73.3		
08:35		Conduct safety meeting.																
08:45		Rig up flowline to working spool.																
08:57		Pressure test flowline.																
08:58	8.7		8200													-62.4		
09:08	8.9		8450													-67.3		
09:08		Open well on 3.1750 mm choke.																
09:08		Change orifice plate to 63.5000 mm.																
09:09		Increase choke to 4.7600 mm.																
09:10	0.0		8200													-62.4		
09:10		Increase choke to 6.3500 mm.																
09:11	0.0		8050													-59.4		
09:11		Increase choke to 7.1400 mm.																
09:13	0.1		7600		120	34.20	2	74.89	1.29							-50.5		
09:13		Increase choke to 7.9300 mm.																
09:15	0.1		7100													-40.6		
09:15		Increase choke to 8.7300 mm.																
09:15		Flow rate calculation off.																
09:17	0.2		6300													-24.8		
09:17		Increase choke to 9.5300 mm.																
09:18		Meter in service on 88.9000 mm orifice plate.																
09:20	0.2		5400		195	11.30	-11	103.91	1.44							-6.9		
09:20		Increase choke to 10.3200 mm.																
09:21		Increase choke to 11.1100 mm.																

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		Tubing Pressure	Casing Pressure	Casing Temp	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity				
hh:mm	Hours	kPag	kPag	°C	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%
04/03/05																		
09:22	0.2		4100		235	12.50	-9	116.08	1.60							18.8		
09:22		Increase choke to 11.9100 mm.																
09:24		Increase choke to 12.7000 mm.																
09:25	0.3		3500		205	12.50	-9	110.75	1.83							30.7		
09:30		Liquid to surface, Fx-2.																
09:40	0.5									2.30	11.95	0.00	0.00					
09:40		Ship to 400bbl tank.																
09:45	0.6		5250		90	5.80	-2	58.57	2.64							-4.0		
09:50		Done shipping to 400bbl tank.																
09:54		Decrease back pressure.																
10:00	0.9		5200		370	13.50	-12	143.94	4.14	1.00	12.95	0.00	0.00			-3.0		
10:00		Core lab rep. collects samples.																
10:13		Shut in well. Meter out of service. Record buildups.																
10:15	0.0		5590													-10.7		
10:20	0.1		6782													-34.3		
10:25	0.2		7423													-47.0		
10:30	0.3		8104													-60.5		
10:45	0.5		9394													-86.0		
11:00	0.8		9953													-97.1		
11:15	1.0		10123													-100.5		
11:30	1.3		10172													-101.4		
12:00	1.8		10206													-102.1		
12:30	2.3		10201													-102.0		
13:00	2.8		10191													-101.8		
13:30	3.3		10194													-101.9		
14:00	3.8		10192													-101.8		
14:30	4.3		10190													-101.8		
15:00	4.8		10193													-101.8		
15:30	5.3		10184													-101.7		
15:48		Wireline out of hole, packer set.																

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Petro-Canada Oil and Gas
N 66 56' 47.11" W 125 54' 9.42"

Operation: Tight Hole
Pool or Zone: Mount Clark
Field or Area: Tweed Lake
Test Start: 4 Mar 2004
Test End: 8 Mar 2004
NEC Job #: 4400761A

Time	Elapsed Time	Well Head Data			H.P. Sep Gas Metering				Cum. Q Total	Cond/Oil Prod.		Water Production			Tubing Draw Down	Casing Draw Down	pH	Sand
		Tubing Pressure	Casing Pressure	Casing Temp	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity				
hh:mm	Hours	kPag	kPag	°C	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%
04/03/05																		
16:00	5.8		10186													-101.7		
16:30	6.3		10182													-101.6		
16:45	6.5		10183													-101.6		
16:45		Open well on 4.7600 mm choke to bleed off casing.																
16:45		Meter in service on 88.9000 mm orifice plate.																
16:46		Increase choke to 7.9400 mm.																
16:47	0.0		9372													-85.6		
16:47		Increase choke to 8.7300 mm.																
16:49	0.1		8718		325	15.00	-20	146.62	4.55							-72.6		
16:49		Increase choke to 9.5300 mm.																
16:53	0.1		7346													-45.5		
16:53		Increase choke to 11.1100 mm.																
16:54	0.2		7070		415	17.30	-20	173.62	5.15							-40.0		
16:54		Increase choke to 11.9100 mm.																
16:55	0.2		6375													-26.2		
16:55		Increase choke to 12.7000 mm.																
16:56	0.2		5866													-16.2		
16:56		Increase choke to 13.4900 mm.																
16:57	0.2		5352													-6.0		
16:57		Increase choke to 14.2900 mm.																
16:58	0.2		4849		485	18.50	-18	190.79	5.68							4.0		
17:00	0.2		4438													12.1		
17:00		Increase choke to 15.0800 mm.																
17:01	0.3		3992													21.0		
17:01		Increase choke to 15.8800 mm.																
17:02	0.3		3792													24.9		
17:02		Increase choke to 16.6700 mm.																
17:03	0.3		3295													34.8		
17:03		Increase choke to 17.4600 mm.																
17:04	0.3		2955		405	16.00	-15	163.59	6.36							41.5		

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N 66 56' 47.11" W 125 54' 9.42"
Operation: Tight Hole
Pool or Zone: Mount Clark
Field or Area: Tweed Lake
Test Start: 4 Mar 2004
Test End: 8 Mar 2004
NEC Job #: 4400761A

Time	Elapsed Time	Well Head Data			H.P. Sep Gas Metering				Cum. Q Total	Cond/Oil Prod.		Water Production			Tubing Draw Down	Casing Draw Down	pH	Sand
		Tubing Pressure	Casing Pressure	Casing Temp	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity				
hh:mm	Hours	kPag	kPag	°C	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%
04/03/05																		
17:04		Increase choke to 18.2600 mm.																
17:05	0.3		2278		325	14.50	-15	142.68	6.46							54.9		
17:10	0.4		1366		155	9.50	-13	88.84	6.77							73.0		
17:15	0.5		189		90	6.80	-10	64.41	7.00							96.3		
17:15		Increase choke to 38.1000 mm.																
17:20	0.6		76		10	3.80	-9	36.50	7.12							98.5		
17:25	0.7		31		5	2.00	-6	25.69	7.21							99.4		
17:30	0.8		13		2	1.00	-5	17.88	7.27							99.7		
17:34		Shut in well and monitor casing pressure.																
17:35	0.0		10													99.8		
17:40	0.1		21													99.6		
17:45	0.2		36													99.3		
17:50	0.3		42													99.2		
17:55	0.4		47													99.1		
18:00	0.4		48													99.0		
18:15	0.7		47													99.1		
18:17		Open to flow at manifold to bleed-off casing.																
19:00		Conduct safety meeting.																
19:40		Rig off and night-cap flowline, tie-in rig tank to casing spool.																
20:00		Begin tripping in with tubing and chemical line.																

Day Summary	
Cum. Prod. Since: 21:45 04/03/04	
Gas Production (2.1 Hrs)	6.64 10^3m^3
Cumulative (2.7 Hrs)	7.27 10^3m^3
Liquid Production (2.1 Hrs)	
Cond/Oil 7.65 m^3 Water	0.00 m^3
Liquid Production Cumulative (2.8 Hrs)	
Cond/Oil 12.95 m^3 Water	0.00 m^3

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Operation: Tight Hole
Pool or Zone: Mount Clark
Field or Area: Tweed Lake
Test Start: 4 Mar 2004
Test End: 8 Mar 2004
NEC Job #: 4400761A

Time	Elapsed Time	Well Head Data			H.P. Sep Gas Metering				Cum. Q Total	Cond/Oil Prod.		Water Production			Tubing Draw Down	Casing Draw Down	pH	Sand
		Tubing Pressure	Casing Pressure	Casing Temp	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity				
hh:mm	Hours	kPag	kPag	°C	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%
04/03/05																		
04/03/06																		
07:45		Conduct safety meeting.																
08:00		Continue tripping in with tubing and chemical line.																
19:00		Safety meeting.																
20:10		Pressure test wellhead against back-pressure valve to 18 MPa.																
20:35		Remove back-pressure valve.																
21:20		Pressure test tubing to 10 MPa.																
21:50		Rig-in wireline.																
23:50		Wireline running in hole with prong-puller.																

Day Summary	
Cum. Prod. Since: 21:45 04/03/04	
Gas Production (0.0 Hrs)	0.00 10^3m^3
Cumulative (2.7 Hrs)	7.27 10^3m^3
Liquid Production (0.0 Hrs)	
Cond/Oil 0.00 m^3 Water	0.00 m^3
Liquid Production Cumulative (2.8 Hrs)	
Cond/Oil 12.95 m^3 Water	0.00 m^3

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		Tubing Pressure	Casing Pressure	Casing Temp	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity				
hh:mm	Hours	kPag	kPag	°C	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%
04/03/06																		
04/03/07																		
01:00		Wireline at surface.																
01:20		Wireline running in hole to pull plug.																
02:30		Wireline at surface, begin to rig out.																
04:00		Rig-in flowline to wellhead.																
04:45		Conduct safety meeting.																
05:30		Open up well to manifold.																
05:35		Shut in well due to leak in flowline.																
05:47		Open up to manifold and pressure test flowline at 4000 kPa.																
05:50		Open well on 5.5600 mm choke.																
05:50	0.0	3650																
05:50		Fluid to surface.																
05:55	0.1	3960								0.70	13.65	0.00	0.00					
05:58		Increase choke to 6.3500 mm.																
06:00	0.2	4800								0.90	14.55	0.00	0.00					
06:05	0.2	5300								0.40	14.95	0.00	0.00					
06:10	0.3	6500								0.80	15.75	0.00	0.00					
06:15	0.4	7800								0.40	16.15	0.00	0.00					
06:25		Meter in service on 88.9000 mm orifice plate.																
06:30	0.7	7950			80	4.50	5	49.53	7.45	0.20	16.35	0.00	0.00					
06:45	0.9	8600			90	5.00	12	52.99	8.00	0.20	16.55	0.00	0.00					
07:00	1.2	8763			125	5.50	10	60.72	8.63	0.00	16.55	0.00	0.00					
07:30	1.7	8846			140	6.00	12	65.28	9.99									
08:00	2.2	8968			140	6.20	12	66.37	11.37	0.00	16.55	0.00	0.00					
08:30	2.7	9047			140	6.40	16	66.96	12.77									
09:00	3.2	9078			140	6.50	16	67.49	14.17	0.00	16.55	0.00	0.00					
09:30	3.7	9072			155	5.80	16	65.69	15.54									
10:00	4.2	9091			155	6.00	18	66.59	16.93	0.00	16.55	0.00	0.00					
10:30	4.7	9106			155	6.00	18	66.59	18.32									
11:00	5.2	9119			155	6.10	18	67.14	19.72	0.00	16.55	0.00	0.00					

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Time	Elapsed Time	Well Head Data			H.P. Sep Gas Metering				Cum. Q Total	Cond/Oil Prod.		Water Production			Tubing Draw Down	Casing Draw Down	pH	Sand
		Tubing Pressure	Casing Pressure	Casing Temp	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity				
hh:mm	Hours	kPag	kPag	°C	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%
04/03/07																		
11:00		Core Lab reps. collected samples.																
11:30	5.7	9122			155	6.10	15	67.50	21.12									
12:00	6.2	9126			160	6.10	9	68.89	22.56	0.00	16.55	0.00	0.00					
12:30	6.7	9123			158	6.20	10	69.06	24.00									
12:30		Moved wellhead thermometer.																
13:00	7.2	9088			155	6.30	14	68.72	25.43	0.00	16.55	0.00	0.00					
13:30	7.7	9089			150	6.00	14	66.39	26.81									
14:00	8.2	9138			150	6.30	13	68.16	28.23	0.00	16.55	0.00	0.00					
14:30	8.7	9141			155	6.00	14	67.06	29.63									
15:00	9.2	9157			150	6.00	15	66.28	31.01	0.00	16.55	0.00	0.00					
15:00		Shut in well. Meter out of service. Record buildups.																
15:05	0.1	10876																
15:10	0.2	11059																
15:15	0.2	11103																
15:30	0.5	11126																
15:45	0.8	11127																
16:00	1.0	11133																
16:30	1.5	11146																
17:00	2.0	11132																
17:30	2.5	11113																
18:00	3.0	11107																
18:30	3.5	11102																
19:00	4.0	11095																
19:00		Conduct safety meeting.																
19:30		Continue to monitor tubing pressure.																
19:30	4.5	11097																
20:00	5.0	11109																
20:30	5.5	11107																
21:00	6.0	11102																
21:30	6.5	11114																

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		Tubing Pressure	Casing Pressure	Casing Temp	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity				
hh:mm	Hours	kPag	kPag	°C	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%
04/03/07																		
21:30		Eveready hot-oil service arrives on location, conduct safety meeting.																
22:00	7.0	11115																
22:30	7.5	11101																
23:00	8.0	11109																
23:30	8.5	11107																
23:45		Safety Boss arrives on location, conduct safety meeting.																
24:00	9.0	11094																

Day Summary		
Cum. Prod. Since: 21:45 04/03/04		
Gas Production (9.2 Hrs)		23.73 10^3m^3
Cumulative (11.9 Hrs)		31.01 10^3m^3
Liquid Production (9.2 Hrs)		
Cond/Oil	3.60 m^3 Water	0.00 m^3
Liquid Production Cumulative (11.9 Hrs)		
Cond/Oil	16.55 m^3 Water	0.00 m^3

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Time	Elapsed Time	Well Head Data			H.P. Sep Gas Metering				Cum. Q Total	Cond/Oil Prod.		Water Production			Tubing Draw Down	Casing Draw Down	pH	Sand
		Tubing Pressure	Casing Pressure	Casing Temp	Static Pressure	Diff.	Temp.	Q		Cond/Oil Prod.	Cum. Cond/Oil Prod. Tot.	Water Prod.	Cum. Water Prod. Tot.	Salinity				
hh:mm	Hours	kPag	kPag	°C	kPag	kPa	°C	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	ppm	%	%		%
04/03/07																		
04/03/08																		
00:30	9.5	11097																
01:00	10.0	11106																
01:30	10.5	11111																
02:00	11.0	11112																
02:30	11.5	11114																
03:00	12.0	11113																
03:30	12.5	11114																
04:00	13.0	11112																
04:30	13.5	11113																
05:00	14.0	11105																
05:30	14.5	11110																
06:00	15.0	11111																
06:00		Start new job file.																

Day Summary

Cum. Prod. Since: 21:45 04/03/04		
Gas Production (0.0 Hrs)		0.00 10^3m^3
Cumulative (11.9 Hrs)		31.01 10^3m^3
Liquid Production (0.0 Hrs)		
Cond/Oil	0.00 m^3 Water	0.00 m^3
Liquid Production Cumulative (11.9 Hrs)		
Cond/Oil	16.55 m^3 Water	0.00 m^3

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Test Start:	4 Mar 2004
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NEC Job #:	4400761A

Time	Description
hh:mm	
04/02/26	
06:30	Travel from Crossfield to Camp.
19:00	PCOG orientation.
04/02/27	
07:00	Arrive on location.
07:30	Conduct safety meeting.
08:00	Spot and rig in test equipment.
04/02/28	
08:30	Arrive on location.
08:30	Conduct safety meeting.
09:00	Stand flare stack and test lineheater.
04/03/01	
08:30	Arrive on location.
08:35	Conduct safety meeting.
18:30	Rig up to circulate to rig tank. Sample water in rig tank.
18:53	Drilling mud for returns.
04/03/02	
08:00	Arrive on location.
08:05	Conduct safety meeting.
09:00	Test lineheater.
04/03/03	
07:30	Arrive on location.
07:45	Conduct safety meeting.
09:00	Test chemical pump. Swab out 10m3, and pull out of hole.
14:00	Rig up to perforate.
04/03/04	
06:00	Unable to perforate.
07:30	Conduct safety meeting.
08:00	Wait on perforators.
13:00	Rig up to perforate.
13:30	Conduct safety meeting.

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Time	Description
hh:mm	
04/03/04	
13:55	Wireline starts in.
14:25	1st shot.
15:00	Wireline at surface.
15:45	Conduct safety meeting.
16:17	Wireline starts in with 2nd run.
17:25	2nd gun fired.
18:35	Conduct safety meeting.
18:45	Start in with packer.
19:30	Wireline stuck in hole.
20:15	Rig in flowline to casing.
21:00	Conduct safety meeting.
21:30	Open well to manifold, pressure test to 5050 kPa.
21:45	Open well on 5.2900 mm choke.
21:45	Meter in service on 50.8000 mm orifice plate.
21:45	Fluid to surface but unable to gauge until 2.3m3 is obtained.
21:55	Increase choke to 6.3500 mm.
22:00	Increase choke to 7.4100 mm.
22:05	Increase choke to 8.4700 mm.
22:05	Shut in well to build up casing pressure.
22:31	Open well on 8.4700 mm choke.
22:31	Meter in service on 50.8000 mm orifice plate.
22:40	Frac oil to surface.
22:48	Shut in well at manifold, pressure will be applied in tubing on top of wireline tool.
04/03/05	
00:01	Well will be flowed through casing to retrieve approximate 5m3 of frac oil that was pumped previously.
00:01	Open well on 8.4700 mm choke.
00:01	Meter in service on 50.8000 mm orifice plate.
00:15	Shut in well and monitor casing pressure.
08:35	Conduct safety meeting.
08:45	Rig up flowline to working spool.

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Time	Description
hh:mm	
04/03/05	
08:57	Pressure test flowline.
09:08	Open well on 3.1750 mm choke.
09:08	Change orifice plate to 63.5000 mm.
09:09	Increase choke to 4.7600 mm.
09:10	Increase choke to 6.3500 mm.
09:11	Increase choke to 7.1400 mm.
09:13	Increase choke to 7.9300 mm.
09:15	Increase choke to 8.7300 mm.
09:15	Flow rate calculation off.
09:17	Increase choke to 9.5300 mm.
09:18	Meter in service on 88.9000 mm orifice plate.
09:20	Increase choke to 10.3200 mm.
09:21	Increase choke to 11.1100 mm.
09:22	Increase choke to 11.9100 mm.
09:24	Increase choke to 12.7000 mm.
09:30	Liquid to surface, Fx-2.
09:40	Ship to 400bbl tank.
09:50	Done shipping to 400bbl tank.
09:54	Decrease back pressure.
10:00	Core lab rep. collects samples.
10:13	Shut in well. Meter out of service. Record buildups.
15:48	Wireline out of hole, packer set.
16:45	Open well on 4.7600 mm choke to bleed off casing.
16:45	Meter in service on 88.9000 mm orifice plate.
16:46	Increase choke to 7.9400 mm.
16:47	Increase choke to 8.7300 mm.
16:49	Increase choke to 9.5300 mm.
16:53	Increase choke to 11.1100 mm.
16:54	Increase choke to 11.9100 mm.
16:55	Increase choke to 12.7000 mm.

Precision Drilling

Northland Energy
4600, 150 - 6th Avenue S.W.
Calgary, AB T2P 3Y7
Telephone: 403.716.4500
Facsimile: 403.716.4869
www.precisiondrilling.com

Petro-Canada Oil and Gas
N 66 56' 47.11" W 125 54' 9.42"

Operation:	Tight Hole
Pool or Zone:	Mount Clark
Field or Area:	Tweed Lake
Test Start:	4 Mar 2004
Test End:	8 Mar 2004
NEC Job #:	4400761A

Time	Description
hh:mm	
04/03/05	
16:56	Increase choke to 13.4900 mm.
16:57	Increase choke to 14.2900 mm.
17:00	Increase choke to 15.0800 mm.
17:01	Increase choke to 15.8800 mm.
17:02	Increase choke to 16.6700 mm.
17:03	Increase choke to 17.4600 mm.
17:04	Increase choke to 18.2600 mm.
17:15	Increase choke to 38.1000 mm.
17:34	Shut in well and monitor casing pressure.
18:17	Open to flow at manifold to bleed-off casing.
19:00	Conduct safety meeting.
19:40	Rig off and night-cap flowline, tie-in rig tank to casing spool.
20:00	Begin tripping in with tubing and chemical line.
04/03/06	
07:45	Conduct safety meeting.
08:00	Continue tripping in with tubing and chemical line.
19:00	Safety meeting.
20:10	Pressure test wellhead against back-pressure valve to 18 MPa.
20:35	Remove back-pressure valve.
21:20	Pressure test tubing to 10 MPa.
21:50	Rig-in wireline.
23:50	Wireline running in hole with prong-puller.
04/03/07	
01:00	Wireline at surface.
01:20	Wireline running in hole to pull plug.
02:30	Wireline at surface, begin to rig out.
04:00	Rig-in flowline to wellhead.
04:45	Conduct safety meeting.
05:30	Open up well to manifold.
05:35	Shut in well due to leak in flowline.

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N 66 56' 47.11" W 125 54' 9.42"

Operation:	Tight Hole
Pool or Zone:	Mount Clark
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Test Start:	4 Mar 2004
Test End:	8 Mar 2004
NEC Job #:	4400761A

Time	Description
hh:mm	
04/03/07	
05:47	Open up to manifold and pressure test flowline at 4000 kPa.
05:50	Open well on 5.5600 mm choke.
05:50	Fluid to surface.
05:58	Increase choke to 6.3500 mm.
06:25	Meter in service on 88.9000 mm orifice plate.
11:00	Core Lab reps. collected samples.
12:30	Moved wellhead thermometer.
15:00	Shut in well. Meter out of service. Record buildups.
19:00	Conduct safety meeting.
19:30	Continue to monitor tubing pressure.
21:30	Eveready hot-oil service arrives on location, conduct safety meeting.
23:45	Safety Boss arrives on location, conduct safety meeting.
04/03/08	
06:00	Start new job file.

NORTHLAND ENERGY CORPORATION

- NORTHLAND-NORWARD ENERGY SERVICES

- ENTEST

Precision Drilling Corporation

Sample Control Information

Job #: 440076

Client: Petro Canada Oil And Gas
Client Work Order/AFE: B783031

Client Representatives and Contact Numbers
Jim Messervey 1-600-700-7884

Samples Required: ☐ Yes ☒ No
Samples Taken By:
Comments: Core Lab Rep. On Location Taking All Samples. TIGHT HOLE

Unique Well Identifier:
Wellname:
Field or Area:
Pool or Zone:
Elevation: KB m GRD m
Tested Interval or Perforations: Highest mKB Lowest mKB

Pressurized Samples

Sample Point	Fluid Type Sampled	Container #	Sample Date (yyyy-mm-dd)	Sample Time (hh:mm)	Pressure (KPag)	Temp (°C)	H_2S %

Atmospheric Samples

Sample Point	Fluid Type Sampled	Number of Containers	Sample Date (yyyy-mm-dd)	Sample Time (hh:mm)	H_2S %	pH	Salinity (ppm)

H_2S detemined in the field by: ☐ Tutweiler ☐ Other:

Lab Delivered to for Analysis:
City:

Samples Delivered By: Print Name Signature Date (yyyy-mm-dd)

Received By (Lab Rep): Print Name Signature Date (yyyy-mm-dd)