



April 08, 2016

300/P-20 65-00 126-45/0

Flow and Buildup Report (Downhole)

Mirror Lake Field

Canol Formation

2245.00 – 3199.00 mKB

Attached for your information and files, please find a copy of the subject report as required.

Bryan Benoit
Well Test Group

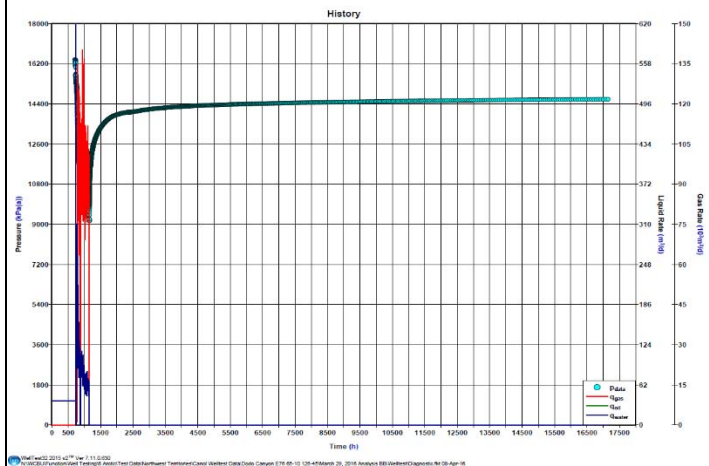
Attachment

Cc:

Kim Clarke

Wellfiles

WELL NAME:	COPRC Mirror Lk P-20 65-00 126-45
WELL LOCATION:	Bottomhole 300/P-20 65-00 126-45/0
Location:	
Surface Location:	P-20 65-00 126-45
Well License #:	EL 470
FIELD, ZONE:	Mirror Lake NWT, Canol
TEST DATE:	Mar 16 th 2014 – Jan 30 th , 2016
STAGE OF WELL TEST:	Flow and Buildup
ORIENTATION:	Horizontal
TYPE/SIZE OF STIMULATION:	1000T (10 Stage) X-Link Frac Mar 7- 10 , 2014 (plug & perf)



Reservoir Properties				Pressure Transient Analysis Results Ranges Summary		
Perf Depths:		2245.00 – 3199.00 m MD 2015.90 – 2025.32 m TVD	Net Pay (h): 40 m Porosity (ϕ): 9.00 % H ₂ S Content: 0.00 % BHT: 87.1 °C	Horizontal Multifrac General Boundary: Closed (259 Ha)		
Gas Specific Gravity:		0.714			Model 1	Model 2
Water Saturation (Sw):		10 %		k	0.0017 mD	~
Typecurve Δp/q_{data} Derivative_{data}				kh	0.0688 mDm	~
				Xf	~	~
				FCD	~	~
				S'	~	~
				# Stages	~	~
				P*	19590 kPaa	~
				Confidence	Good	
				AOF Results Summary (Simplified Analysis)		
				Extended Sandface (S/F) AOF		129.393 e ³ m ³ /d
				Stabilized Sandface (S/F) AOF		~
Inverse Slope ("n")		1				
Stabilized S/F Flowing Pressure		~				
Extended Wellhead (W/H) AOF		~				
Stabilized Wellhead (W/H) AOF		~				

Flow Data								
Test	Time	Final Rates				Final Pressures		
		Gas	Oil/ C ₅ +	Water	Load	Tubing	Casing	BHP
	Hours	e ³ m ³ /d	m ³ /d	m ³ /d	m ³ /d	kPag	kPag	kPaa
Ext. Flow	507	84.7	3.7	0.0	39.3	5235	8705	11449
Ext. S.I.	15912	0.0	0.0	0.0	0.0	~	~	19158

Total Production Summary								
New Fluid				Load Fluid		Remaining Load		
Gas Flared (E ³ m ³)	Gas Inline (E ³ m ³)	O/C (m ³)	Water (m ³)	Oil (m ³)	Water (m ³)	Oil (m ³)	Water (m ³)	
1553.4*	0.0	73.2	0.0	0.0	1857.0	0.0	6062.8	

*Represents Burnable Gas

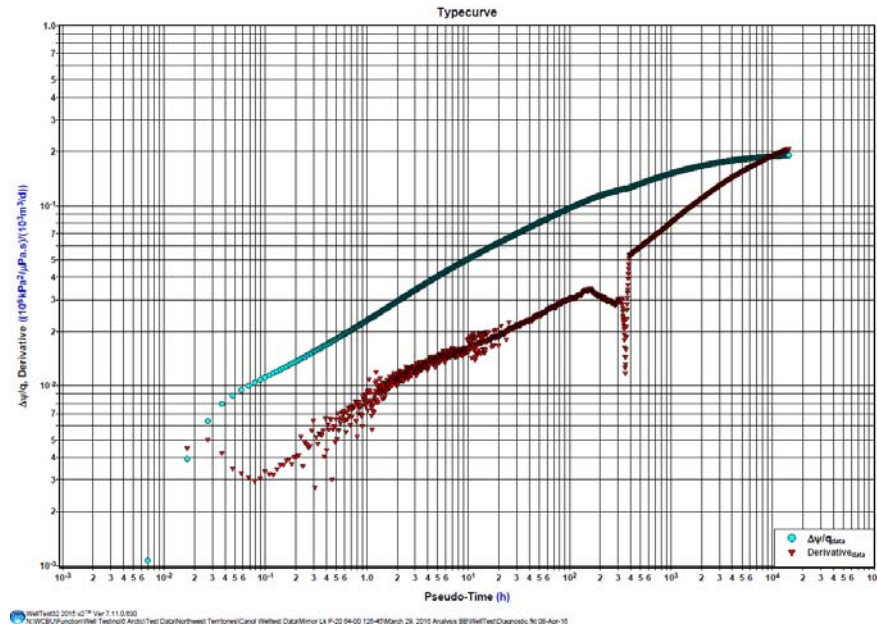
Test Procedure:

On March 16th, 2014 tandem downhole gauges were run to a depth of 1938.91 m TVD. A pressure correction from the run depth of 1938.91 m TVD to a MPP of 2020.61 m TVD was performed, using a measured gradient of 10.452 kPa/m. The final test period was flowed at a rate of 84.7 e³m³/d burnable for a period of 507 hours before being shut in on April 7th, 2014 for 15912 hours.

Analysis/ Discussion:

The flow and build appears to be successful in obtaining reservoir flow characteristics, pressure, and wellbore efficiencies. The analytical impact of the proposed long term build-up testing on E-76 and P-20 has proven to be useful in observing compound radial flow, a key flow regime that must be observed in order to determine accurate pressure and permeability. As ConocoPhillips Canada has limited information in the area and these wells will not be produced, the long term analyses provides key reservoir information of the E-76 and P-20 wells that is crucial in our understanding of the reservoir.

The data was modeled using a Horizontal Multifrac – General Model, allowing for individual fractures to have different lengths, conductivities and locations, and the wellbore can be activated. For the purpose of this analysis, the horizontal well was not activated due to a cemented casing completion, and each fracture was assumed an identical length, conductivity and equal spacing. The [model match](#) indicated a maximum effective radial flow permeability of (k) 0.0017 mD (kh of 0.0688 mDm) for 40.0 m of net pay.



The model match indicated an extrapolated pressure of $P_{syn} = 19590$ kPaa.

Conclusions/Recommendations:

The well test was designed to obtain reservoir flow characteristics, pressure, and wellbore efficiencies. The overall confidence of the results from this analysis was considered to be good.

Analyzed by:

Bryan Benoit

Report Date:

April 08 2016

Copy:

Kim Clarke

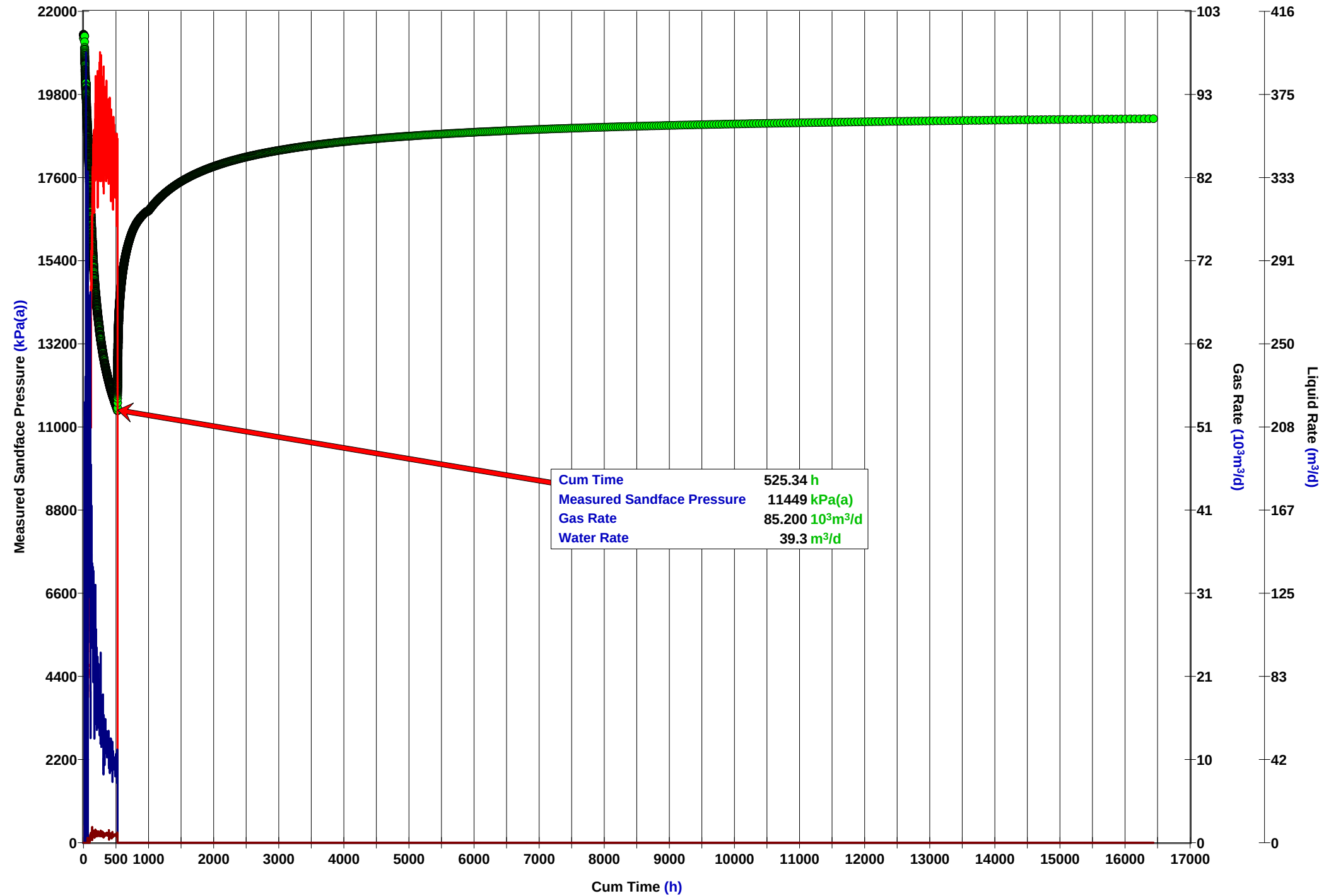
COPRC Mirror Lk P-20 65-00 126-45
Canol

Test OverView

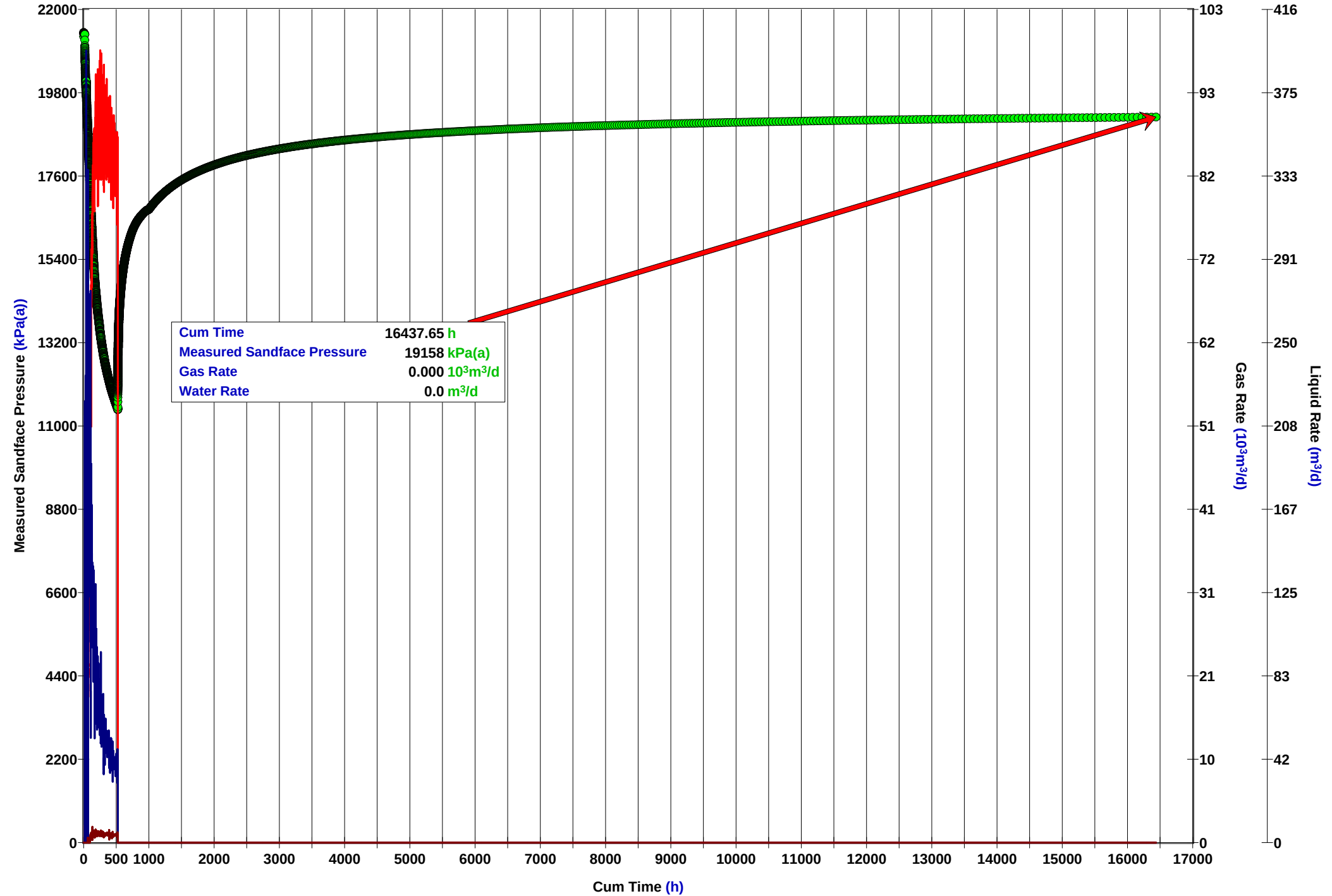
Flow and Buildup

01-30-2016

Flow Period



Final Measured Pressure



COPRC Mirror Lk P-20 65-00 126-45
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Initial Pressure

Flow and Buildup

01-30-2016

Initial Pressure



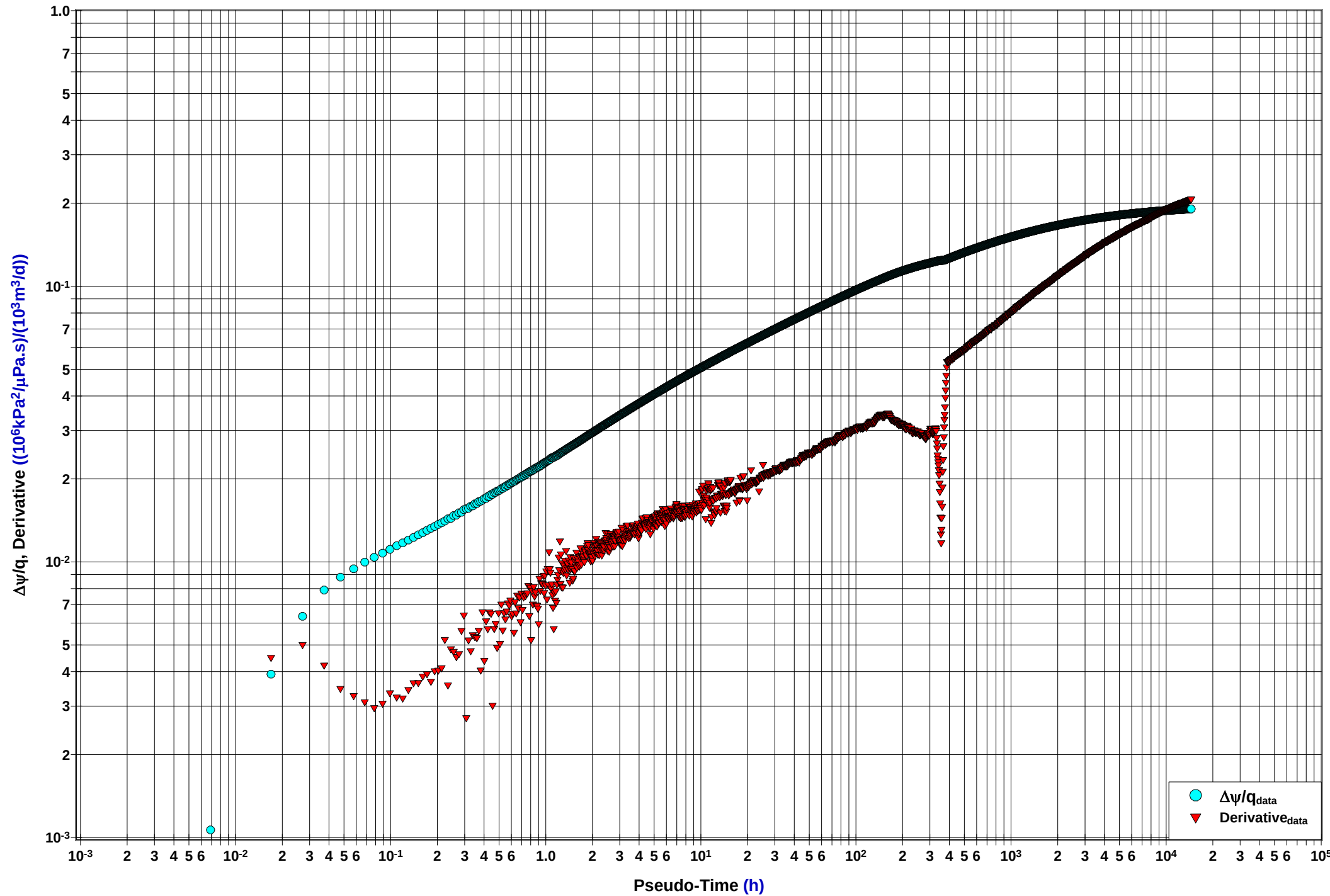
COPRC Mirror Lk P-20 65-00 126-45
Canol

Analysis & Model

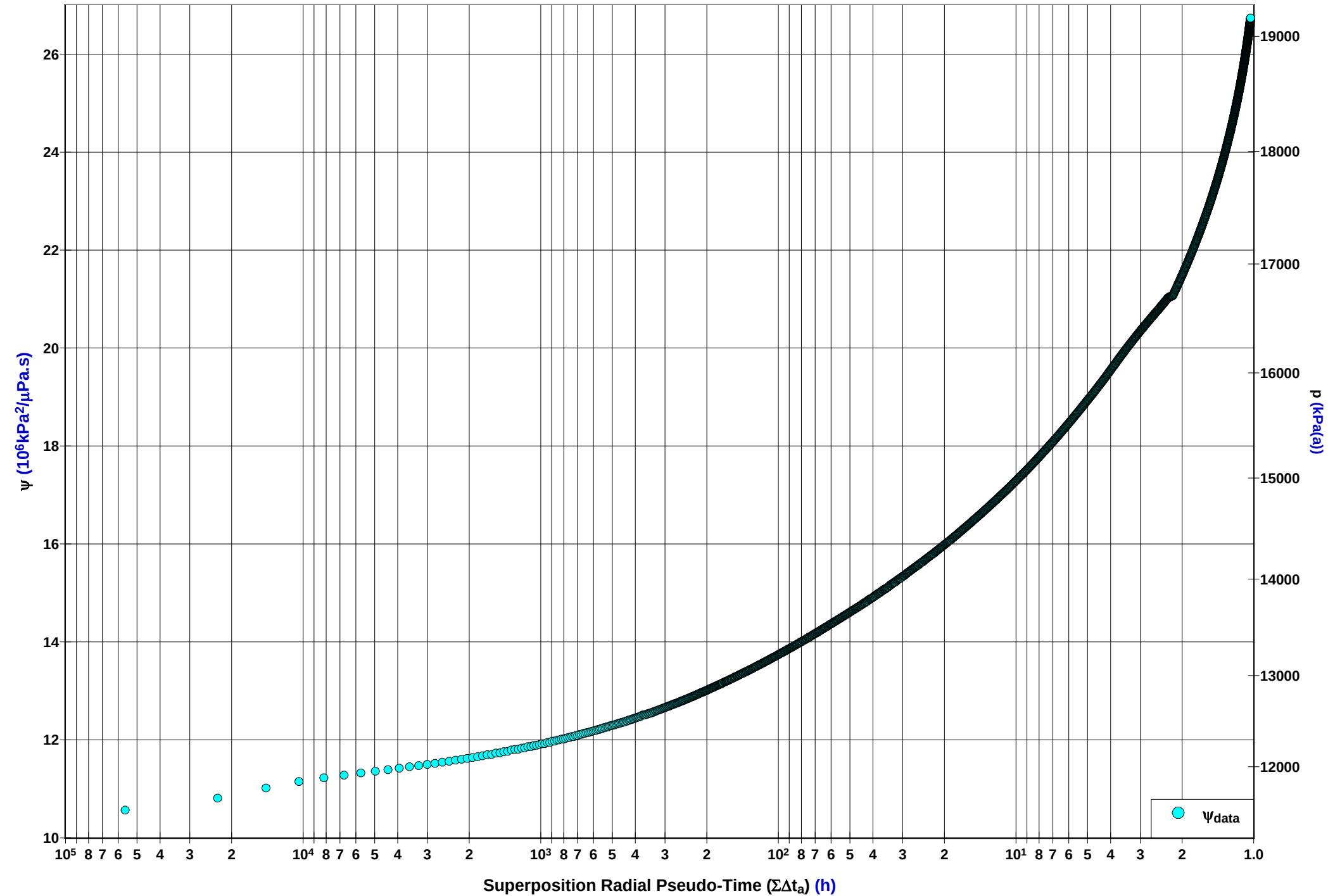
Flow and Buildup

01-30-2016

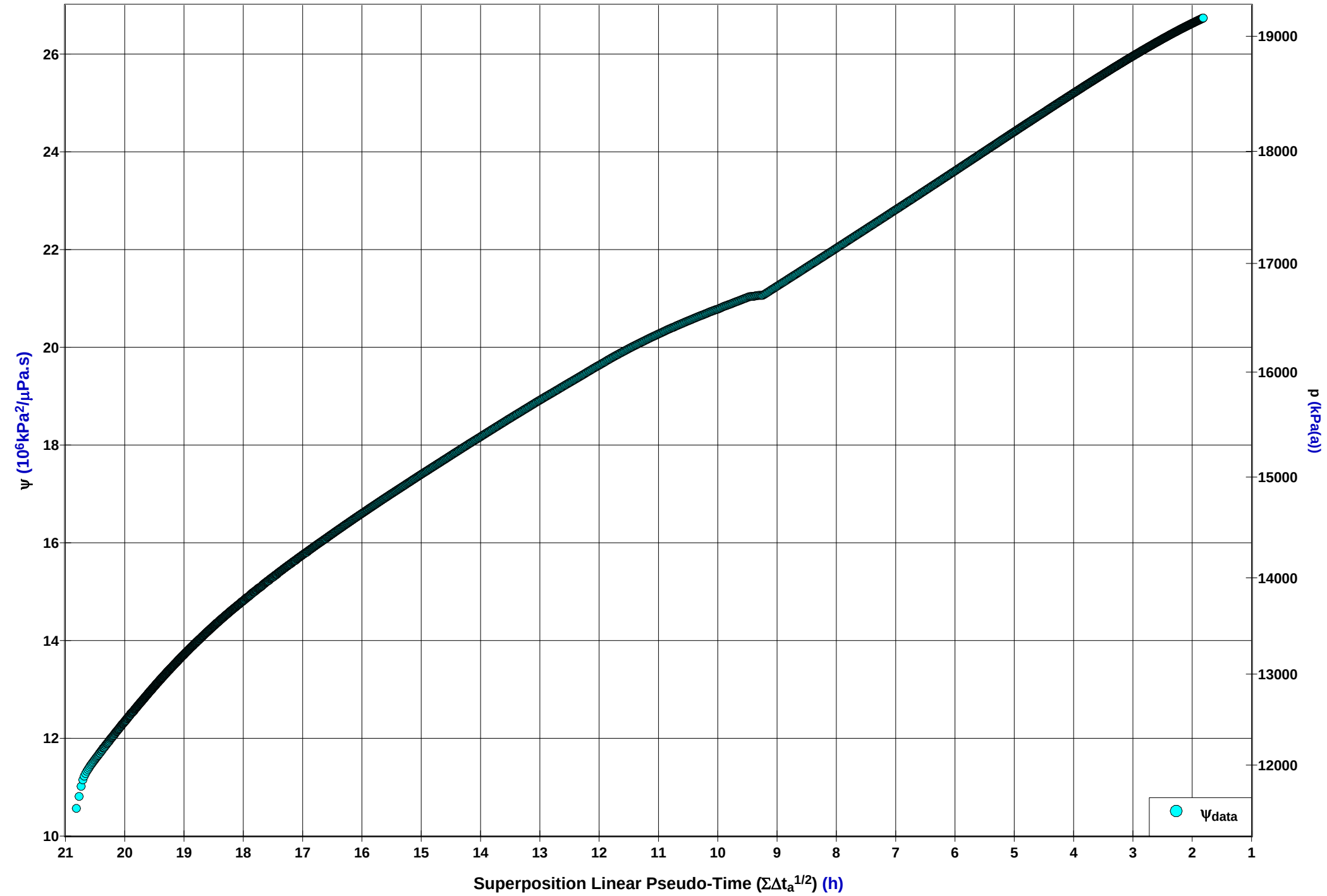
Typecurve



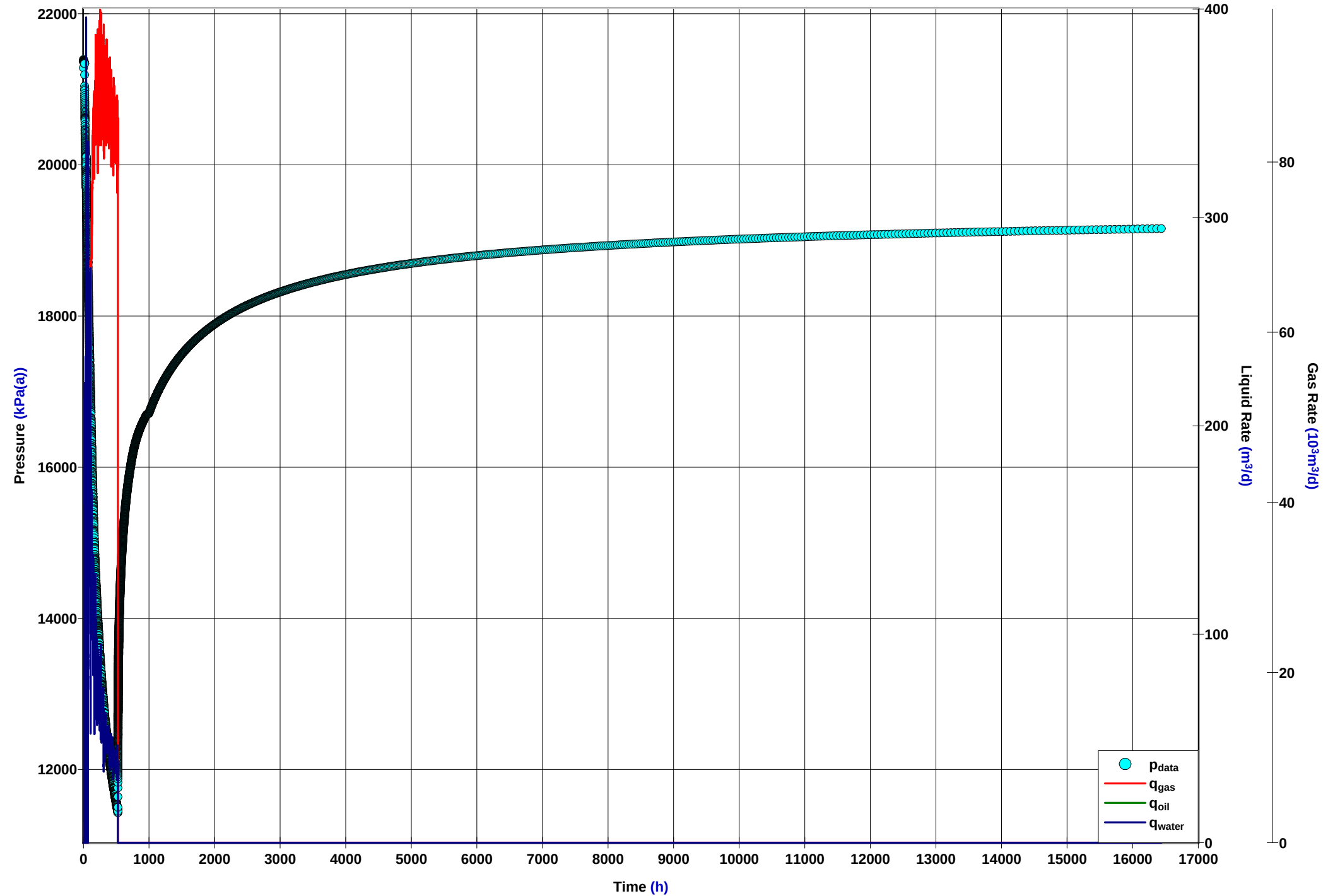
Radial



Linear - Fracture



History



COPRC Mirror Lk P-20 65-00 126-45
Canol

Deliverability

Flow and Buildup

01-30-2016

Sandface Deliverability Curve

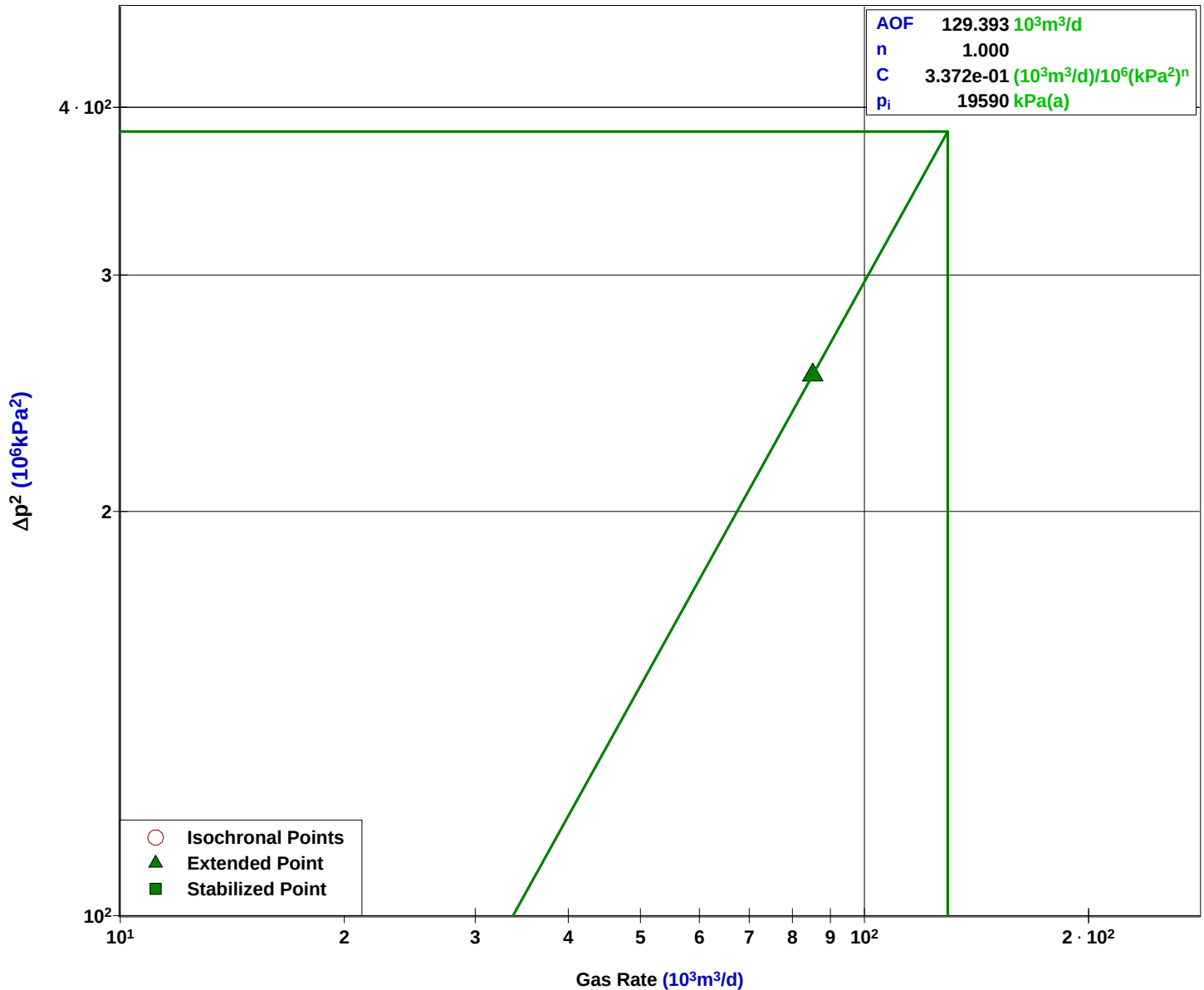
Simplified Analysis

(Pressure Squared)

	Time	Sandface Pressure	p^2	Δp^2	Gas Rate
	h	kPa(a)	10^6kPa^2	10^6kPa^2	$10^3 \text{m}^3/\text{d}$
Extended Flow	458.44	11449	131.0725	252.6956	85.200
Stab. Shut-in		19590	383.7681		
Stab. Flow					

	Stabilized	Extended	Isochronal
AOF		129.393	$10^3 \text{m}^3/\text{d}$
n	1.000	1.000	1.000
C		3.372×10^{-1}	$(10^3 \text{m}^3/\text{d})/10^6 (\text{kPa}^2)^n$

Simplified Sandface AOF



Sandface Deliverability Curve

Simplified Analysis

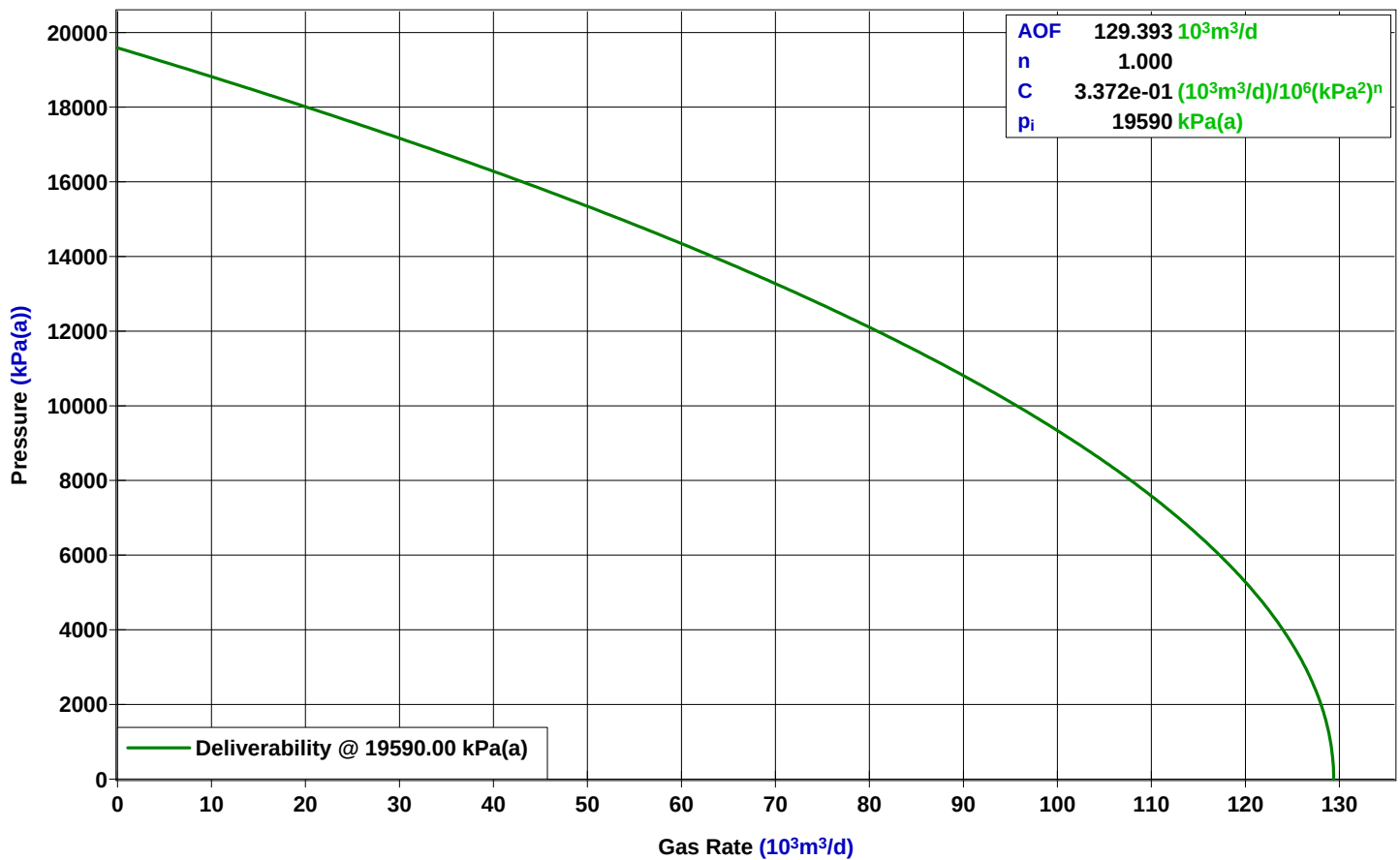
(Pressure Squared)

Stabilized Shut In Pressure = 19590 kPa(a)

Flowing Gas Rate
Pressure @ 19590 kPa(a)

kPa(a)	10 ³ m ³ /d
0	129.393
2000	128.044
4000	123.998
6000	117.255
8000	107.814
10000	95.676
11449	85.200
12000	80.841
14000	63.309
16000	43.079
18000	20.152
19590	0.000

Simplified Sandface IPR



COPRC Mirror Lk P-20 65-00 126-45
Canol

Fluid Analysis

Flow and Buildup

01-30-2016



Container Identification
00004687N

Operator Name
CONOCOPHILLIPS CANADA RES. CORP.

Laboratory Number
14C842295N

Unique Well Identifier	Well Name
300/P-20 65-00 126-45	COPRC MIRROR LAKE P-20 65-00 126-45

Field or Area	Pool or Zone	Sampler's Company
NOT AVAILABLE	NOT AVAILABLE	WEATHERFORD TESTING

Well License	Elevation	Test Type	Test No.	Name of Sampler
	KB m	GRD m		JAMES PAYNE

Test Interval or Perfs mKB	Sampling Point	Separator	Reservoir	Source	Sampled	Received
	HIGH STAGE OIL LEG	Pressure (kPa)		1150	1150	900
		Temperature		22	22	23

Date Sampled	Date Received	Date Analyzed	Date Reported	Location - Approved By - Title
Apr 07, 2014	May 21, 2014	May 28, 2014	May 28, 2014	Calgary - Liming Zhao - Reporter

Other Information
Sampled @ 07:00 Hr.

* Results relate only to the items tested

Note: Sampling Point, Unique Well Identifier and/or Pool or Zone information was unavailable at time of reporting. This information is integral to AGAT's WebFLUIDs, a comparison, history and trending analysis system.

COMP.	MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
N2	0.0001	TRACE	TRACE
CO2	0.0015	0.0007	0.0006
H2S	0.0000	0.0000	0.0000
C1	0.0341	0.0055	0.0129
C2	0.0314	0.0094	0.0186
C3	0.0335	0.0148	0.0206
IC4	0.0161	0.0093	0.0117
NC4	0.0326	0.0190	0.0229
IC5	0.0272	0.0196	0.0222
NC5	0.0335	0.0242	0.0271
C6	0.0801	0.0689	0.0732
C7+	0.7099	0.8286	0.7902
TOTAL	1.0000	1.0000	1.0000

Observed Properties of C7+ Residue (15/15° C)

Density	Relative Density	API @ 15°
740.9 kg/m ³	0.7416	59.3

Relative Molecular Mass

116.7

Calculated Properties of Total Sample (15/15° C)

Density	Relative Density	API @ 15°
706.5 kg/m ³	0.7072	68.6

Relative Molecular Mass

100.0

Gas Equivalency

167.1

Calculations for C6 and C7 are based on Boiling Point Grouping. If Carbon Number Grouping had been done, the mole fractions would be (C6: 0.1222) (C7+:0.6677)

This analysis and calculations are based on GPA 2186, GPA 2286, ASTM 2597, and ASTM 5307



File No.	Company	UWI / LSD
14C842295N	CONOCOPHILLIPS CANADA RES. CORP.	300/P-20 65-00 126-45

BOILING POINT RANGE (C)	COMPONENT		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
36.1 - 68.9	HEXANES.....	C6	0.0790	0.0681	0.0725
68.9 - 98.3	HEPTANES.....	C7	0.1465	0.1463	0.1489
98.3 - 125.6	OCTANES.....	C8	0.1606	0.1831	0.1816
125.6 - 150.6	NONANES.....	C9	0.1063	0.1359	0.1318
150.6 - 173.9	DECANES.....	C10	0.0701	0.0995	0.0949
173.9 - 196.1	UNDECANES.....	C11	0.0303	0.0471	0.0445
196.1 - 215.0	DODECANES.....	C12	0.0130	0.0221	0.0206
215.0 - 235.0	TRIDECANES.....	C13	0.0074	0.0136	0.0125
235.0 - 252.2	TETRADECANES.....	C14	0.0039	0.0076	0.0070
252.2 - 270.6	PENTADECANES.....	C15	0.0023	0.0049	0.0044
270.6 - 287.8	HEXADECANES.....	C16	0.0014	0.0031	0.0028
287.8 - 302.8	HEPTADECANES.....	C17	0.0010	0.0024	0.0022
302.8 - 317.2	OCTADECANES.....	C18	0.0006	0.0015	0.0013
317.2 - 330.0	NONADECANES.....	C19	0.0004	0.0011	0.0009
330.0 - 344.4	EICOSANES.....	C20	0.0002	0.0006	0.0006
344.4 - 357.2	HENEICOSANES.....	C21	0.0002	0.0005	0.0005
357.2 - 369.4	DOCOSANES.....	C22	0.0001	0.0002	0.0002
369.4 - 380.0	TRICOSANES.....	C23	0.0001	0.0002	0.0002
380.0 - 391.1	TETRACOSANES.....	C24	0.0000	0.0001	0.0001
391.1 - 401.7	PENTACOSANES.....	C25	0.0001	0.0002	0.0002
401.7 - 412.2	HEXACOSANES.....	C26	0.0001	0.0002	0.0002
412.2 - 422.2	HEPTACOSANES.....	C27	0.0000	0.0001	0.0001
422.2 - 431.7	OCTACOSANES.....	C28	0.0000	0.0000	0.0000
431.7 - 441.1	NONACOSANES.....	C29	0.0000	0.0000	0.0000
441.1 - PLUS	TRIACONTANES	C30+	0.0000	0.0000	0.0000

BOILING POINT RANGE (C)	Aromatics		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
80.0	BENZENE.....	C6	0.0063	0.0049	0.0039
110.6	TOLUENE.....	C7	0.0300	0.0275	0.0221
136.2	ETHYLBENZENE.....	C8	0.0030	0.0032	0.0026
138.4 - 144.4	XYLENES.....	C8	0.0402	0.0426	0.0342
168.9	1,2,4 TRIMETHYLBENZENE	C9	0.0058	0.0070	0.0056

BOILING POINT RANGE (C)	Naphthenes		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
48.9	CYCLOPENTANE.....	CC5	0.0011	0.0008	0.0007
72.2	METHYLCYCLOPENTANE.....	MCC5	0.0138	0.0115	0.0107
81.1	CYCLOHEXANE.....	CC6	0.0220	0.0184	0.0165
101.1	METHYLCYCLOHEXANE.....	MCC6	0.0442	0.0432	0.0391

The above hexanes plus values are based upon a measured mass fraction and a calculated mole fraction, and assume a total hydrocarbon recovery from the chromatographic system.

Container Identification
PB19L

Operator Name
CONOCOPHILLIPS CANADA RES. CORP.

Laboratory Number
14W842295L

Unique Well Identifier	Well Name
300/P-20 65-00 126-45	COPRC MIRROR LAKE P-20 65-00 126-45

Field or Area	Pool or Zone	Sampler's Company
NOT AVAILABLE	NOT AVAILABLE	WEATHERFORD TESTING

Well License	Elevation	Test Type	Test No.	Name of Sampler
	KB m	GRD m		JAMES PAYNE

Test Interval or Perfs mKB	Sampling Point	Separator	Reservoir	Source	Sampled	Received
	HIGH STAGE WATER LEG					
		Pressure (kPa)				
		Temperature		23		

Date Sampled	Date Received	Date Analyzed	Date Reported	Location - Approved By - Title
Apr 03, 2014	May 21, 2014	May 26, 2014	May 26, 2014	Calgary - Benita Cortez - Reporter

Other Information
Sampled @ 08:00

* Results relate only to the items tested

Note: Sampling Point, Unique Well Identifier and/or Pool or Zone information was unavailable at time of reporting. This information is integral to AGAT's WebFLUIDs, a comparison, history and trending analysis system.

Cations

ION	mg/L	mmol/L	meq/L
Na	18600.0	809.1	809.1
K	189.0	4.8	4.8
Ca	1090.0	27.2	54.4
Mg	191.0	7.9	15.7
Fe	49.1	0.9	1.8

Total Cations 885.8

Anions

ION	mg/L	mmol/L	meq/L
Cl	33252.0	937.9	937.9
HCO ₃	593.7	9.7	9.7
SO ₄	TRACE	TRACE	TRACE
CO ₃	Nil	Nil	Nil
OH	Nil	Nil	Nil

Total Anions 947.6

Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	53614
Observed pH	6.74
H ₂ S (25°C) mg/L	N/D
Relative Density (25°C)	1.048
Refractive Index (25°C)	1.3440
Resistivity/OHM·m (25°C)	0.180
Salinity %	5.73
Total Alkalinity as CaCO ₃	486.67

This analysis and calculations are

based on:

pH = SM 4500 H+

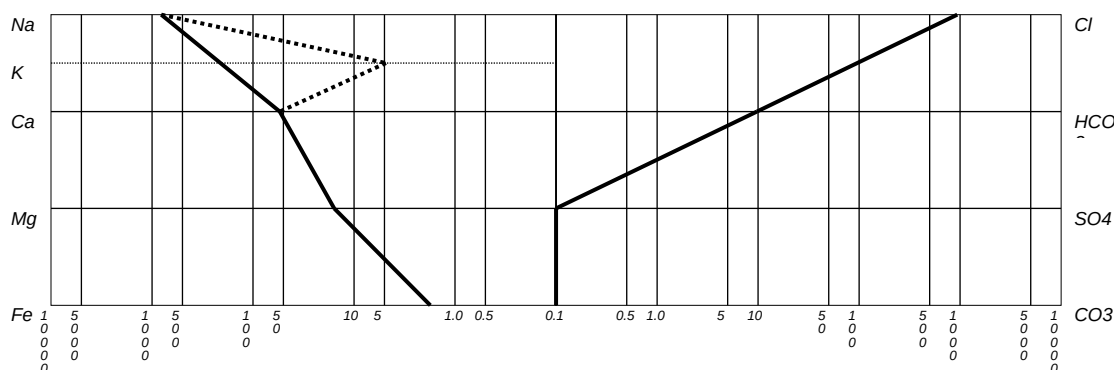
Alkalinity = SM 2320

Cations = EPA SW-846 7000B

Anions = SM 4110B

H₂S = SM 4500 S⁻²

Stiff Diagram (meq/L)





Container Identification
11002215N

Operator Name
CONOCOPHILLIPS CANADA RES. CORP.

Laboratory Number
14G842295N

Unique Well Identifier	Well Name
300/P-20 65-00 126-45	COPRC MIRROR LAKE P-20 65-00 126-45

Field or Area	Pool or Zone	Sampler's Company
NOT AVAILABLE	NOT AVAILABLE	WEATHERFORD TESTING

Well License	Elevation	Test Type	Test No.	Name of Sampler
	KB m	GRD m		JAMES PAYNE

Test Interval or Perfs mKB	Sampling Point	Separator	Reservoir	Source	Sampled	Received
	HIGH STAGE METER RUN	Pressure (kPa)		1150	1150	1100
		Temperature		22	22	23

Date Sampled	Date Received	Date Analyzed	Date Reported	Location - Approved By - Title
Apr 07, 2014	May 21, 2014	May 26, 2014	May 26, 2014	Calgary - Liming Zhao - Reporter

Other Information
Sampled @ 07:00 Hr, FIELD H2S = 0.2 ppm.

* Results relate only to the items tested

Note: Sampling Point, Unique Well Identifier and/or Pool or Zone information was unavailable at time of reporting. This information is integral to AGAT's WebFLUIDs, a comparison, history and trending analysis system.

COMP	MOLE FRACTION		PETROLEUM LIQUID
	AIR FREE AS RECEIVED	AIR FREE ACID GAS FREE	
H2	0.0001	0.0001	mL / m ³
He	0.0001	0.0001	
N2	0.0041	0.0042	
CO2	0.0148	0.0000	
H2S	TRACE	0.0000	
C1	0.8036	0.8155	
C2	0.1091	0.1107	
C3	0.0367	0.0373	
IC4	0.0074	0.0075	
NC4	0.0110	0.0112	
IC5	0.0039	0.0040	134.9
NC5	0.0036	0.0037	32.3
C6	0.0034	0.0035	46.3
C7+	0.0022	0.0022	19.0
C7+	0.0022	0.0022	17.4
C6	0.0034	0.0035	18.6
C7+	0.0022	0.0022	14.0
Total	1.0000	1.0000	282.5

GROSS HEATING VALUE MJ/m³ 15° C AND 101.325 kPa

Air Free As Received	Moisture & Acid Gas Free	C7+, Air Free As Received
45.55	46.24	0.47

RELATIVE DENSITY (CALCULATED)

DENSITY

Moisture Free	Moisture & Acid Gas Free	C7+, Moisture Free	C7+, Portion Whole Density	C7+ Density (kg/m3)	Total Sample Density(kg/m3)
0.714	0.703	3.592	0.008	693.4	0.875

PSEUDO CRITICAL PROPERTIES (CALCULATED)

As Sampled		Acid Gas Free	
pPc (abs) kPa	pTc K	pPc (abs) kPa	pTc K
4616.6	219.2	4575.0	217.9

RELATIVE MOLECULAR MASS

Total Gas	C ₇ +
20.7	104.0

VAPOUR PRESSURE (Pentanes +)

H2S g/m³

81.96 kPa

0.00

This analysis and calculations are based on GPA 2261, GPA 2145, and AGA#5



COPRC Mirror Lk P-20 65-00 126-45
Canol

Schematic

Other Attachments

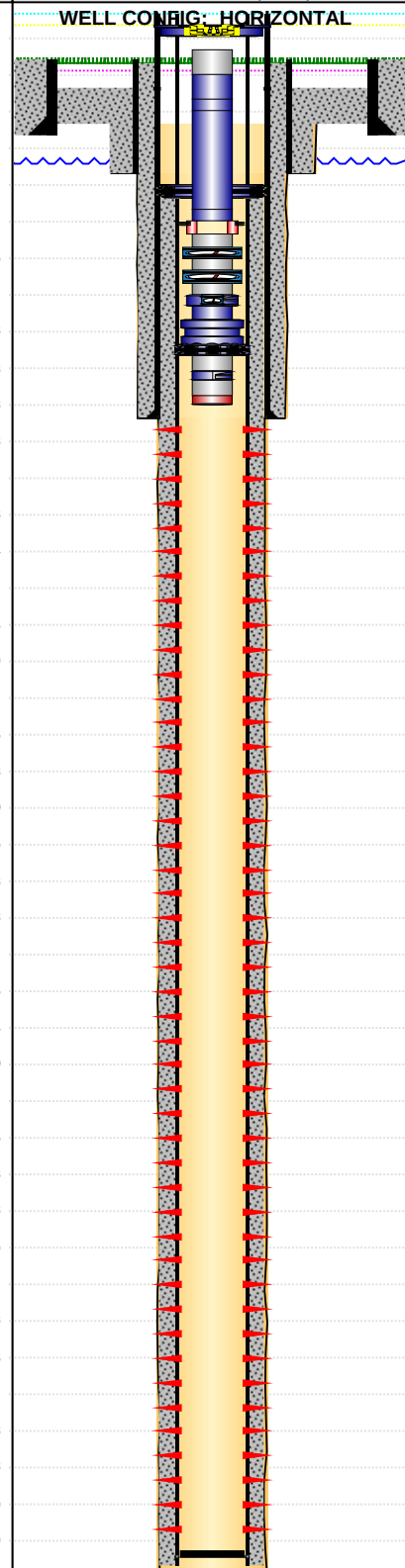
Flow and Buildup

01-30-2016

Country CANADA		State/Province N.W.T.	Region / Division WCBU	District NEW VENTURES	Field Name Mirror Lake	Field Code						
Surface Legal Location P-20 65-00 126-45			API / UWI 200/D-020/L094P1699		License No. EL 470							
Orig KB/RT (m) 289.35		Ground Elevation (m) 284.15	KB-Ground Distance (m) 5.20	KB-CF (m) 5.40	KB-TF (m) 4.10	Total Depth (mKB) 3,152.00						
HORIZONTAL - Original Hole, 4/11/2014 6:00:00 AM			Report Start Date 4/10/2014 06:00		Report End Date 4/11/2014 06:00							
MD (mKB) Incl (°) Vertical schematic (actual) WELL CONFIG: HORIZONTAL			Primary Wellbore Affected Original Hole									
			WELLHEADS									
			Type UHWB Split System									
			Install Date 2/6/2014									
			Des		Make	Model	MAOP (kPa)	Top Ring Gasket	Bore Min (mm)			
			Cap installed until drilling rig is off...		STREAM FLO...							
			Left Csg valve		STREAM FLO...	Gate Valve	69,000	BX152	52.4			
			Right CSG valve		STREAM FLO...	Gate Valve	69,000	bx152	52.4			
			Left intermediate casing valve		STREAM FLO...	Gate Valve	34,500	R24	52.4			
			Right intermediate casing valve		STREAM FLO...	Gate Valve	34,000	R24	52.4			
			Right wing valve		STREAM FLO...	Gate Valve	69,000	bx152	52.4			
			Left wing valve		STREAM FLO...	Gate Valve	69,000	bx152	52.4			
			lower master valve		STREAM FLO...	Gate Valve	69,000	bx152	52.4			
			upper master valve		STREAM FLO...	Gate Valve	69,000	bx152	52.4			
			Tubing Head		STREAM FLO...		69,000	bx156	52.4			
			Well head adaptor		STREAM FLO...		69,000	bx152	52.4			
			Flow Tee		STREAM FLO...		69,000	bx152	52.4			
			Casing Bowl		STREAM FLO...	CC-22	34,500	RX-54	215.0			
			Intermediate spool		STREAM FLO...	FBD100	34,500	RX-54	215.0			
			CASING STRINGS									
			Csg Des		OD (mm)	Wt/Len (kg/m)	Grade	Top Thread	Set Depth (mKB)			
			Conductor		508.0	197.926	K-55		25.16			
			Surface		244.5	53.574	J-55	LTC	602.00			
			Intermediate		177.8	38.692	P-110	LTC	2,152.00			
			Production		114.3	17.263	P-110	LTC	3,148.70			
			PBTDs									
			Date		Type	Depth (mKB)	KO MD (mKB)	TD (max) (mKB)				
			3/6/2014		Float Collar	3,129.60		3,152.00				
			TUBING STRING									
			Tubing Description		Run Date	Pull Date	String Length (m)	Set Depth (mKB)				
			Tubing - Production		3/14/2014		2,021.20	2,025.30				
			Comment									
			Jts	Item Des	OD Nominal (mm)	Nominal ID (mm)	Wt (kg/m)	Grade	Make	Model	Len (m)	Top (mKB)
			1	Extended neckTubing Hanger c/w 2-1/2" ports	179.0	50.7			streamflo	PSL-2	0.16	4.10
			1	Depth Correction - compression	60.3						-0.82	4.26
			1	Depth Correction	60.3						1.66	3.44
			2	Tubing Pup Joint (spacer nipple)	60.3	50.7	6.994	J-55		T&C Upset	0.38	5.10
			1	Tubing	60.3	50.7	6.994	J-55		T&C Upset	9.65	5.48
			1	Tubing Pup Joint (4')	60.3	50.7	6.994	J-55		T&C Upset	1.23	15.13
			207	Tubing	60.3	50.7	6.994	J-55		T&C Upset	1,984.06	16.36
			1	Tubing	60.3	50.7	6.994	J-55		T&C Upset	1.24	2,000.42
			1	Sliding Sleeve	79.2	47.6					0.86	2,001.66
			1	Tubing Pup Joint	60.3	50.7	6.994	J-55		T&C Upset	3.11	2,002.52
			1	Pressure / Temperature Sensor	90.7	50.7					1.56	2,005.63

HORIZONTAL - Original Hole, 4/11/2014 6:00:00 AM												
MD (mKB)	Incl (°)	Vertical schematic (actual)	Jts	Item Des	OD Nominal (mm)	Nominal ID (mm)	Wt (kg/m)	Grade	Make	Model	Len (m)	Top (mKB)
		WELL CONFIG: HORIZONTAL	1	Tubing Pup Joint	60.3	50.7	6.994	J-55		T&C Upset	3.07	2,007.19
4.3	0.5		1	Gauge Carrier	90.7	50.7					1.56	2,010.26
5.5	0.5		1	Tubing Pup Joint	60.3	50.7	6.994	J-55		T&C Upset	2.47	2,011.82
16.4	0.5		1	47.63mm X Profile Nipple	77.7	47.6					0.29	2,014.29
161.0	0.3		1	Tubing	60.3	50.7	6.994	J-55		T&C Upset	9.61	2,014.58
1727.5	1.7		1	Extended no-jay NFT on/ off tool	95.3	50.7					1.11	2,024.19
2001.7	52.7		Tubing Description		Run Date		Pull Date		String Length (m)		Set Depth (mKB)	
2007.2	54.6	Tubing - Production		3/12/2014				5.10		2,030.23		
2014.3	57.1	Comment										
2025.1	60.8	- 60.3mm PPMP Pump out plug (Dressed for 21.0MPa differential)										
2029.1	62.3	- 60.3mm J-55 6.99 kg/m EUE Pup Jt - 0.65m (2')										
2030.2	62.8	- 47.63mm XN - No-Go Profile Nipple. 45.49mm No-Go.										
2246.0	89.3	- 60.3mm J-55 6.99 kg/m EUE Pup Jt - 2.46m (8')										
2284.0	89.2	- WDH 114mm WL Set Packer Retrievable Double Grip Packer. 69.0MPa. O.D = 95.3mm (3.771")										
2304.0	89.8	- 47.63mm Extended Slick Joint										
2342.0	90.4		Jts	Item Des	OD Nominal (mm)	Nominal ID (mm)	Wt (kg/m)	Grade	Make	Model	Len (m)	Top (mKB)
2362.0	90.7	1	Slick Joint c/w 47.63mm x profile	60.3	47.6	6.994	J-55			T&C Upset	0.17	2,025.13
2400.0	89.4	1	Weatherford WDH double grip packer (69MPa rated)	114.3	50.7				Weatherford WDH114 WL	T&C Upset	1.38	2,025.30
2420.0	89.9											
2458.0	89.1	1	Tubing Pup Joint	60.3	50.7	6.994	J-55			T&C Upset	2.46	2,026.68
2479.0	88.6											
2516.0	87.8	1	XN no-go profile nipple 45.49mm no go	60.3	45.5		L-80			T&C Upset	0.32	2,029.14
2537.0	88.0											
2575.0	88.5	1	Tubing Pup Joint	60.3	50.7	6.994	J-55			T&C Upset	0.65	2,029.46
2595.0	89.3											
2633.0	89.8	1	PPMP Pump out plug	60.3	50.7		L-80			T&C Upset	0.12	2,030.11
2653.0	89.7											
2691.0	89.6	PERFORATIONS										
2711.0	89.4		Date	Top (mKB)	Btm (mKB)	Type	Zone		Current Status			
2749.0	89.0		3/10/2014	2,245.00	2,246.00	Perforated	CANOL, Original Hole		Open - Flowing			
2770.0	89.2		3/10/2014	2,264.00	2,265.00	Perforated	CANOL, Original Hole		Open - Flowing			
2807.0	89.5		3/10/2014	2,284.00	2,285.00	Perforated	CANOL, Original Hole		Open - Flowing			
2828.0	89.8		3/10/2014	2,303.00	2,304.00	Perforated	CANOL, Original Hole		Open - Flowing			
2866.0	89.3		3/10/2014	2,322.00	2,323.00	Perforated	CANOL, Original Hole		Open - Flowing			
2886.0	88.9		3/10/2014	2,342.00	2,343.00	Perforated	CANOL, Original Hole		Open - Flowing			
2924.0	89.1		3/10/2014	2,361.00	2,362.00	Perforated	CANOL, Original Hole		Open - Flowing			
2944.0	89.3		3/10/2014	2,381.00	2,382.00	Perforated	CANOL, Original Hole		Open - Flowing			
2982.0	89.6		3/10/2014	2,400.00	2,401.00	Perforated	CANOL, Original Hole		Open - Flowing			
3002.0	89.7		3/10/2014	2,419.00	2,420.00	Perforated	CANOL, Original Hole		Open - Flowing			
3040.0	89.8		3/10/2014	2,439.00	2,440.00	Perforated	CANOL, Original Hole		Open - Flowing			
3060.0	89.8		3/10/2014	2,458.00	2,459.00	Perforated	CANOL, Original Hole		Open - Flowing			
3098.0	89.9		3/10/2014	2,478.00	2,479.00	Perforated	CANOL, Original Hole		Open - Flowing			
3119.0	89.9		3/10/2014	2,497.00	2,498.00	Perforated	CANOL, Original Hole		Open - Flowing			
3152.0	89.9		3/10/2014	2,516.00	2,517.00	Perforated	CANOL, Original Hole		Open - Flowing			
			3/9/2014	2,536.00	2,537.00	Perforated	CANOL, Original Hole		Open - Flowing			
			3/9/2014	2,555.00	2,556.00	Perforated	CANOL, Original Hole		Open - Flowing			
			3/9/2014	2,575.00	2,576.00	Perforated	CANOL, Original Hole		Open - Flowing			

HORIZONTAL - Original Hole, 4/11/2014 6:00:00 AM			PERFORATIONS					
MD (mKB)	Incl (°)	Vertical schematic (actual) WELL CONFIG: HORIZONTAL	Date	Top (mKB)	Btm (mKB)	Type	Zone	Current Status
			3/9/2014	2,594.00	2,595.00	Perforated	CANOL, Original Hole	Open - Flowing
			3/9/2014	2,613.00	2,614.00	Perforated	CANOL, Original Hole	Open - Flowing
4.3	0.5		3/9/2014	2,633.00	2,634.00	Perforated	CANOL, Original Hole	Open - Flowing
5.5	0.5		3/9/2014	2,652.00	2,653.00	Perforated	CANOL, Original Hole	Open - Flowing
16.4	0.5		3/9/2014	2,672.00	2,673.00	Perforated	CANOL, Original Hole	Open - Flowing
161.0	0.3		3/9/2014	2,691.00	2,692.00	Perforated	CANOL, Original Hole	Open - Flowing
1,727.5	1.7		3/9/2014	2,710.00	2,711.00	Perforated	CANOL, Original Hole	Open - Flowing
2,001.7	52.7		3/8/2014	2,749.00	2,750.00	Perforated	CANOL, Original Hole	Open - Flowing
2,007.2	54.6		3/8/2014	2,769.00	2,770.00	Perforated	CANOL, Original Hole	Open - Flowing
2,014.3	57.1		3/8/2014	2,788.00	2,789.00	Perforated	CANOL, Original Hole	Open - Flowing
2,025.1	60.8		3/8/2014	2,807.00	2,808.00	Perforated	CANOL, Original Hole	Open - Flowing
2,029.1	62.3		3/8/2014	2,827.00	2,828.00	Perforated	CANOL, Original Hole	Open - Flowing
2,030.2	62.8		3/8/2014	2,846.00	2,847.00	Perforated	CANOL, Original Hole	Open - Flowing
2,246.0	89.3		3/8/2014	2,866.00	2,867.00	Perforated	CANOL, Original Hole	Open - Flowing
2,284.0	89.2		3/8/2014	2,885.00	2,886.00	Perforated	CANOL, Original Hole	Open - Flowing
2,304.0	89.8		3/8/2014	2,904.00	2,905.00	Perforated	CANOL, Original Hole	Open - Flowing
2,342.0	90.4		3/7/2014	2,924.00	2,925.00	Perforated	CANOL, Original Hole	Open - Flowing
2,362.0	90.7		3/7/2014	2,943.00	2,944.00	Perforated	CANOL, Original Hole	Open - Flowing
2,400.0	89.4		3/7/2014	2,962.00	2,963.00	Perforated	CANOL, Original Hole	Open - Flowing
2,420.0	89.9		3/7/2014	2,982.00	2,983.00	Perforated	CANOL, Original Hole	Open - Flowing
2,458.0	89.1		3/7/2014	3,001.00	3,002.00	Perforated	CANOL, Original Hole	Open - Flowing
2,479.0	88.6		3/7/2014	3,021.00	3,022.00	Perforated	CANOL, Original Hole	Open - Flowing
2,516.0	87.8		3/4/2014	3,040.00	3,041.00	Perforated	CANOL, Original Hole	Open - Flowing
2,537.0	88.0		3/4/2014	3,059.00	3,060.00	Perforated	CANOL, Original Hole	Open - Flowing
2,575.0	88.5		3/4/2014	3,079.00	3,080.00	Perforated	CANOL, Original Hole	Open - Flowing
2,595.0	89.3		3/4/2014	3,098.00	3,099.00	Perforated	CANOL, Original Hole	Open - Flowing
2,633.0	89.8		3/4/2014	3,118.00	3,119.00	Perforated	CANOL, Original Hole	Open - Flowing
2,653.0	89.7		STIMULATION & TREATMENTS					
2,691.0	89.6		Date	Zone		Type	Proppant Design (kg)	Proppant Frm (kg)
2,711.0	89.4		3/10/2014	CANOL, Original Hole			100,000.0	108,526.0
2,749.0	89.0		3/10/2014	CANOL, Original Hole		X-Link	100,000.0	102,853.0
2,770.0	89.2		3/10/2014	CANOL, Original Hole		X-Link	100,000.0	106,505.0
2,807.0	89.5		3/10/2014	CANOL, Original Hole		X-Link	100,000.0	106,992.0
2,828.0	89.8		3/9/2014	CANOL, Original Hole		X-Link	100,000.0	104,701.0
2,866.0	89.3		3/9/2014	CANOL, Original Hole		X-Link	100,000.0	113,824.0
2,886.0	88.9		3/8/2014	CANOL, Original Hole		X-Link	100,000.0	107,699.0
2,924.0	89.1		3/8/2014	CANOL, Original Hole		X-Link	100,000.0	100,000.0
2,944.0	89.3		3/8/2014	CANOL, Original Hole		X-Link	100,000.0	100,000.0
2,982.0	89.6		3/7/2014	CANOL, Original Hole		X-Link	100,000.0	101,046.0
3,002.0	89.7		3/7/2014	CANOL, Original Hole		X-Link	100,000.0	92,100.0
3,040.0	89.8		3/7/2014	CANOL, Original Hole		X-Link	100,000.0	
3,060.0	89.8		3/6/2014	CANOL, Original Hole		X-Link	100,000.0	7,840.0
3,098.0	89.9							
3,119.0	89.9							
3,152.0	89.9							

HORIZONTAL - Original Hole, 4/11/2014 6:00:00 AM			OTHER IN HOLE			
MD (mKB)	Incl (°)	Vertical schematic (actual)	Run Date	Description	Top Depth (mKB)	Bottom Depth (mKB)
			2/21/2014	Barrier - Packer	1,727.49	1,728.60
			OD (mm)	ID (mm)	Make	Model
			153.7	120.7	Weatherford	'NTD' Liner Top Packer
4.3	0.5		Comment Rig up Hallmark power tongs, make up 1-114.3mm float shoe, 1-joint of 114.3mm, 17.26kg/m, P-110, LTC production liner and 1-114.3mm float collar and then run 100-joints of 114.3mm, 17.26kg/m, P-110, LTC production liner from 3148.70m to 1727.49m. Run 101 x Volant Hydroform centralizers from 1729m to 3148m, fill every 20 joints and break circulation every 600m, tag bottom at 3152mMD, circulate bottoms up and clean hole, rig up cementers, cement liner at 3148.70mMD up to liner top, drop dart and displace with fresh water, bump plug 3,500kPA over final circulating pressure, bleed off, check floats, pressure up to 28,000kPA and set liner with liner top packer at 1727.49, circulate out pre-flush and 2m3 of excess cement out, displace hole with fresh water, rig out cementers, flowcheck, rig up laydown truck, laydown drill pipe and heavy weight drill pipe, run in the rest of the drill pipe in the derrick, laydown drill pipe, rig up and run USIT log and pressure pass USIT log, rig up power tongs, run 114.3mm tie-back liner, space out, land liner hanger seal assembly with 19,000dan compression and tie into top of liner top packer, remove landing joint, pressure test packoff seal assembly, pressure test 114.3mm x 177.8mm annulus to 15,000kPA with Schlumberger cementers.			
5.5	0.5		Run Date	Description	Top Depth (mKB)	Bottom Depth (mKB)
16.4	0.5		3/16/2014	Pressure / Temperatur...	2,014.29	2,014.58
161.0	0.3		OD (mm)	ID (mm)	Make	Model
1727.9	1.7		31.8		Weatherford	SN 8954 (Top gauge)
2001.7	52.7		Comment Weatherford 10,000PSI Secondary Memory Gauge Primary gauge SN# 8954 Approximate Start Time programmed to tool - 03/14/14 - 11:56:43 a.m. Calibration Date - 03/03/14 Battery - M22091 - Load 3.43 Start: 12:00 P.M 3/14/14			
2007.2	54.6		Run Date	Description	Top Depth (mKB)	Bottom Depth (mKB)
2014.3	57.1		3/16/2014	Pressure / Temperatur...	2,014.29	2,014.59
2025.1	60.8		OD (mm)	ID (mm)	Make	Model
2029.1	62.3		31.8		Weatherford	SN 8955 (bottom gauge)
2030.2	62.8		Comment Weatherford 10,000PSI Primary Memory Gauge Primary gauge SN# 8955 Approximate Start Time programmed to tool - 03/14/14 - 11:52:10 a.m. Calibration Date - 03/03/14 Battery - M22090 - Load 3.45 Start: 12:00 P.M 3/14/14			
2246.0	89.3		Run Date	Description	Top Depth (mKB)	Bottom Depth (mKB)
2284.0	89.2		3/16/2014	Pressure / Temperatur...	2,014.29	2,014.59
2304.0	89.8		OD (mm)	ID (mm)	Make	Model
2342.0	90.4		31.8		Weatherford	SN 8955 (bottom gauge)
2362.0	90.7		Comment Weatherford 10,000PSI Primary Memory Gauge Primary gauge SN# 8955 Approximate Start Time programmed to tool - 03/14/14 - 11:52:10 a.m. Calibration Date - 03/03/14 Battery - M22090 - Load 3.45 Start: 12:00 P.M 3/14/14			
2400.0	89.4		Run Date	Description	Top Depth (mKB)	Bottom Depth (mKB)
2420.0	89.9		3/16/2014	Pressure / Temperatur...	2,014.29	2,014.59
2458.0	89.1		OD (mm)	ID (mm)	Make	Model
2479.0	88.6		31.8		Weatherford	SN 8955 (bottom gauge)
2516.0	87.8		Comment Weatherford 10,000PSI Primary Memory Gauge Primary gauge SN# 8955 Approximate Start Time programmed to tool - 03/14/14 - 11:52:10 a.m. Calibration Date - 03/03/14 Battery - M22090 - Load 3.45 Start: 12:00 P.M 3/14/14			
2537.0	88.0		Run Date	Description	Top Depth (mKB)	Bottom Depth (mKB)
2575.0	88.5		3/16/2014	Pressure / Temperatur...	2,014.29	2,014.59
2595.0	89.3		OD (mm)	ID (mm)	Make	Model
2633.0	89.8		31.8		Weatherford	SN 8955 (bottom gauge)
2653.0	89.7		Comment Weatherford 10,000PSI Primary Memory Gauge Primary gauge SN# 8955 Approximate Start Time programmed to tool - 03/14/14 - 11:52:10 a.m. Calibration Date - 03/03/14 Battery - M22090 - Load 3.45 Start: 12:00 P.M 3/14/14			
2691.0	89.6		Run Date	Description	Top Depth (mKB)	Bottom Depth (mKB)
2711.0	89.4		3/16/2014	Pressure / Temperatur...	2,014.29	2,014.59
2749.0	89.0		OD (mm)	ID (mm)	Make	Model
2770.0	89.2		31.8		Weatherford	SN 8955 (bottom gauge)
2807.0	89.5		Comment Weatherford 10,000PSI Primary Memory Gauge Primary gauge SN# 8955 Approximate Start Time programmed to tool - 03/14/14 - 11:52:10 a.m. Calibration Date - 03/03/14 Battery - M22090 - Load 3.45 Start: 12:00 P.M 3/14/14			
2828.0	89.8		Run Date	Description	Top Depth (mKB)	Bottom Depth (mKB)
2866.0	89.3		3/16/2014	Pressure / Temperatur...	2,014.29	2,014.59
2886.0	88.9		OD (mm)	ID (mm)	Make	Model
2924.0	89.1		31.8		Weatherford	SN 8955 (bottom gauge)
2944.0	89.3		Comment Weatherford 10,000PSI Primary Memory Gauge Primary gauge SN# 8955 Approximate Start Time programmed to tool - 03/14/14 - 11:52:10 a.m. Calibration Date - 03/03/14 Battery - M22090 - Load 3.45 Start: 12:00 P.M 3/14/14			
2962.0	89.6		Run Date	Description	Top Depth (mKB)	Bottom Depth (mKB)
3002.0	89.7		3/16/2014	Pressure / Temperatur...	2,014.29	2,014.59
3040.0	89.8		OD (mm)	ID (mm)	Make	Model
3060.0	89.8		31.8		Weatherford	SN 8955 (bottom gauge)
3098.0	89.9		Comment Weatherford 10,000PSI Primary Memory Gauge Primary gauge SN# 8955 Approximate Start Time programmed to tool - 03/14/14 - 11:52:10 a.m. Calibration Date - 03/03/14 Battery - M22090 - Load 3.45 Start: 12:00 P.M 3/14/14			
3119.0	89.9		Run Date	Description	Top Depth (mKB)	Bottom Depth (mKB)
3152.0	89.9		3/16/2014	Pressure / Temperatur...	2,014.29	2,014.59

COPRC Mirror Lk P-20 65-00 126-45
Canol

Surface Data

Flow and Buildup

01-30-2016



Weatherford®

**ConocoPhillips Canada
COPRC Mirror Lake P-20 65-00 126-45
P-20 65-00 126-45**

Tight Hole

Testing Operation Performed:	Tight Hole
Customer Representative(s) on Location:	Chris Kendall
Weatherford Supervisor(s):	James Payne
Test Start and End Dates:	14/03/17 - 14/04/09
Weatherford Job Number:	4413812
Interval Top and Base:	m - m
Surface Location:	P-20 65-00 126-45

Weatherford Representative:	James Dixon
Report Prepared By:	Shane Hasselberg
Date Prepared:	16/03/30



Weatherford®

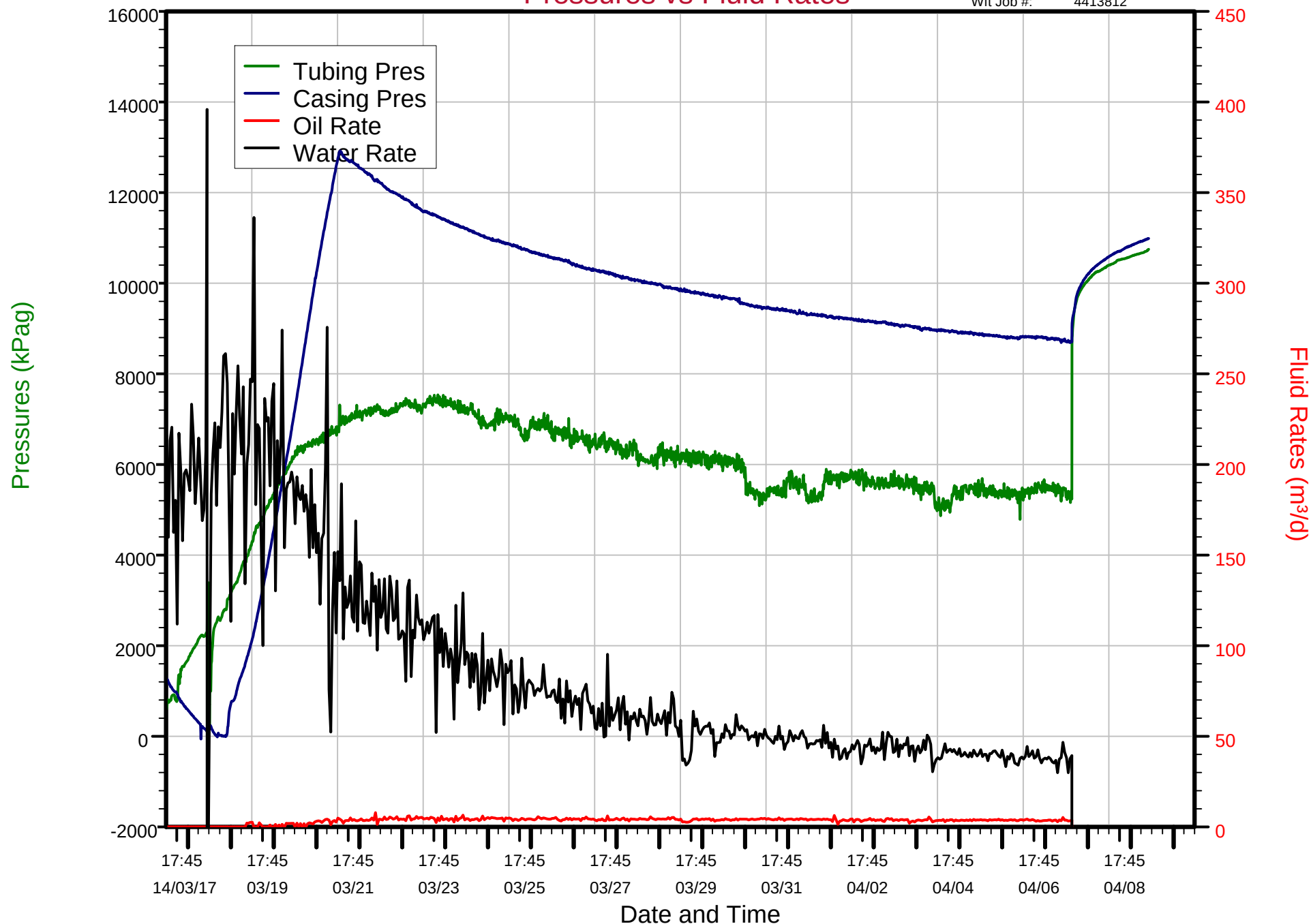
CPD and Testing Services (Canada)
Weatherford 1200, 333 - 5th Avenue S.W.
Calgary, AB T2P 3B6
Telephone: 403.693.7500
Facsimile: 403.693.7769

ConocoPhillips Canada

P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17/03/14
Test End: 09/04/14
Wft Job #: 4413812

Pressures vs Fluid Rates

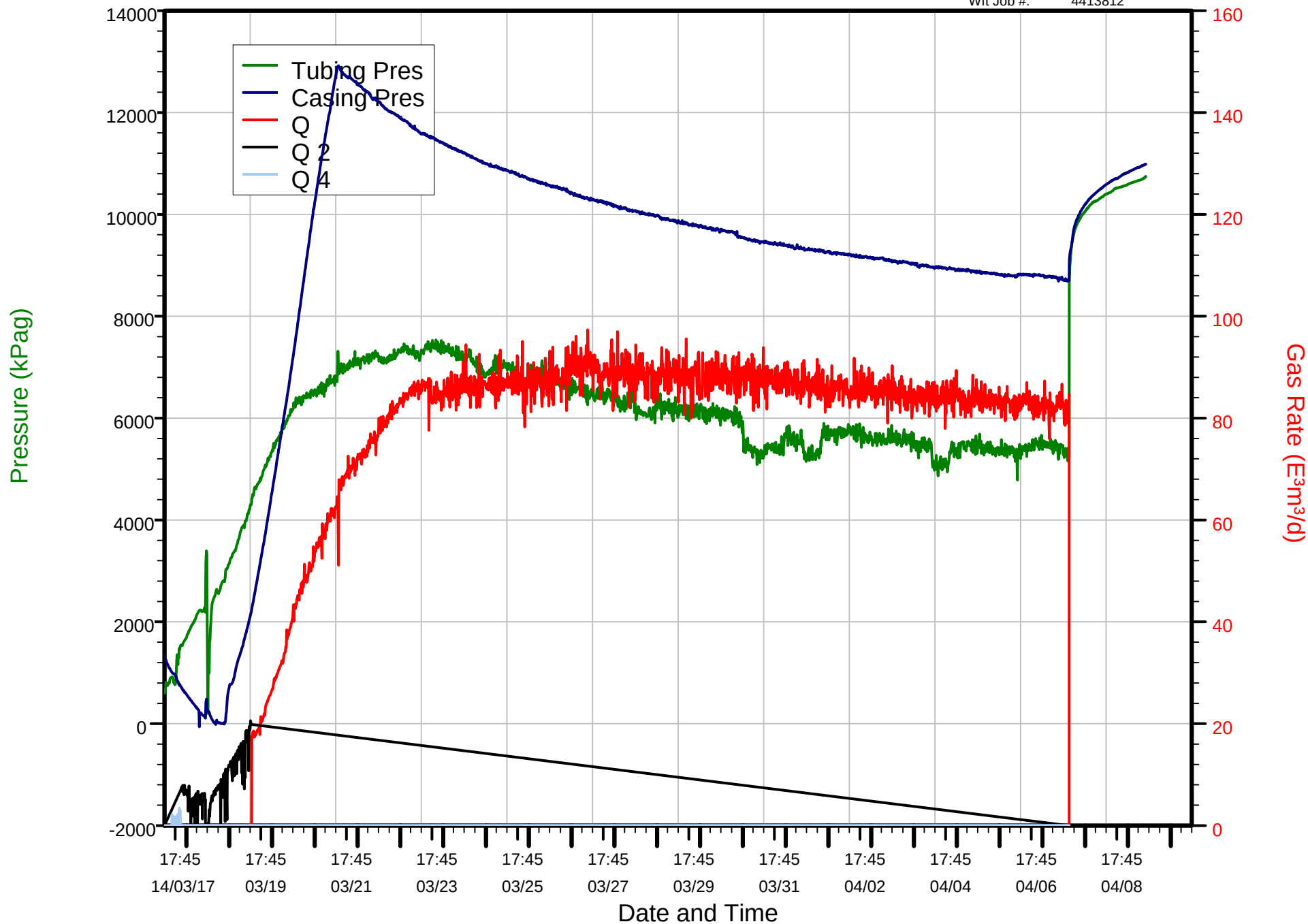




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Calgary, AB T2P 3B6
Telephone: 403.693.7500
Facsimile: 403.693.7769

ConocoPhillips Canada
P-20 65-00 126-45
Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17/03/14
Test End: 09/04/14
Wft Job #: 4413812





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Calgary, AB T2P 3B6
Telephone: 403.693.7500
Facsimile: 403.693.7769

ConocoPhillips Canada
P-20 65-00 126-45
Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Company Representative: Chris Kendall
Wellname: COPRC Mirror Lake P-20 65-00 126-45
Test Supervisors: James Payne
Fluid 1 Type: Oil (BSW)
Tank Measurement: Incremental
Fluid 2 Type: Water (BSW)
Tank Measurement: Incremental

Flow Duration: 506.50 hours
Final Gas Production Rate: 84.71 E³m³/d
Cumulative Gas Produced: 1553.41 E³m³
Cumulative Water Produced: 1857.04 m³
Cumulative Condensate/Oil Produced: 73.16 m³
Initial Tubing Pressure: 73.445009002434 kPaa
Final Tubing Pressure: 914.014246632097 kPaa

1 - MeterType: Orifice Meter Run
Tap Type: Flange
Tap Location: Down Stream
Test Unit: High Stage
Upstream Meter Internal Diameter: 102.290 mm
N₂ 0.0041
CO₂ 0.0148
H₂S
H₂O
He 0.0001
C1 0.8036
C2 0.1091
C3 0.0367
nC4 0.0110
iC4 0.0074
nC5 0.0036
iC5 0.0039
C6 0.0034
C7 0.0022
C8
C9
C10
O
CO
H₂ 0.0001
Specific Gravity: 0.714
pPc: 4616.60 kPaa
pTc: 219.20 °K



CPD and Testing Services (Canada)
Weatherford 1200, 333 - 5th Avenue S.W.
Calgary, AB T2P 3B6
Telephone: 403.693.7500
Facsimile: 403.693.7769

ConocoPhillips Canada
P-20 65-00 126-45

Operation:	Tight Hole
Pool or Zone:	Tight Hole
Field or Area:	Norman Wells
Test Start:	17 Mar 2014
Test End:	9 Apr 2014
Wft Job #:	4413812

2 - MeterType:	Orifice Meter Run
Tap Type:	Flange
Tap Location:	Down Stream
Test Unit:	Hot Head
Upstream Meter Internal Diameter:	146.460 mm
N ₂	0.0041
CO ₂	0.0148
H ₂ S	
H ₂ O	
He	0.0001
C1	0.8036
C2	0.1091
C3	0.0367
nC4	0.0110
iC4	0.0074
nC5	0.0036
iC5	0.0039
C6	0.0034
C7	0.0022
C8	
C9	
C10	
O	
CO	
H ₂	0.0001
Specific Gravity:	0.714
pPc:	4616.60 kPaa
pTc:	219.20 °K

3 - MeterType:	Orifice Meter Run
Tap Type:	Flange
Tap Location:	Down Stream
Test Unit:	Meter Skid
Upstream Meter Internal Diameter:	49.280 mm
N ₂	0.0041
CO ₂	0.0148
H ₂ S	
H ₂ O	
He	0.0001
C1	0.8036
C2	0.1091
C3	0.0367
nC4	0.0110
iC4	0.0074
nC5	0.0036
iC5	0.0039
C6	0.0034
C7	0.0022
C8	
C9	
C10	
O	
CO	
H ₂	0.0001
Specific Gravity:	0.714
pPc:	4616.60 kPaa
pTc:	219.20 °K



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P-20 65-00 126-45

Operation:	Tight Hole
Pool or Zone:	Tight Hole
Field or Area:	Norman Wells
Test Start:	17 Mar 2014
Test End:	9 Apr 2014
Wft Job #:	4413812

4 - MeterType: Test Unit:	Turbine Meter Skid
N ₂	0.0041
CO ₂	0.0148
H ₂ S	
H ₂ O	
He	0.0001
C1	0.8036
C2	0.1091
C3	0.0367
nC4	0.0110
iC4	0.0074
nC5	0.0036
iC5	0.0039
C6	0.0034
C7	0.0022
C8	
C9	
C10	
O	
CO	
H ₂	0.0001
Specific Gravity:	0.714

5 - MeterType: Test Unit:	Turbine Meter Skid
N ₂	0.0041
CO ₂	0.0148
H ₂ S	
H ₂ O	
He	0.0001
C1	0.8036
C2	0.1091
C3	0.0367
nC4	0.0110
iC4	0.0074
nC5	0.0036
iC5	0.0039
C6	0.0034
C7	0.0022
C8	
C9	
C10	
O	
CO	
H ₂	0.0001
Specific Gravity:	0.714



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Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/02/27																												
07:00																												
08:00																												
18:00																												
14/02/28																												
06:15																												
06:45																												
07:30																												
18:00																												
14/03/01																												
06:15																												
06:45																												
07:30																												
18:00																												
14/03/02																												
06:15																												
06:45																												
07:30																												
18:15																												
18:45																												
19:00																												
19:15																												
14/03/03																												
06:15																												
06:45																												
07:05																												
07:15																												
14:00																												
15:30																												
14/03/04																												
00:00																												
00:10																												
01:00																												
03:55																												
04:25																												
04:40																												
05:35																												
05:44																												
06:50																												
09:50																												
17:30																												
14/03/05																												
00:00																												



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Tight Hole
Tight Hole
Norman We
17 Mar 2014
9 Apr 2014
4413812

[illegible]



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Operation:	Tight Hole
Pool or Zone:	Tight Hole
Field or Area:	Norman Wells
Test Start:	17 Mar 2014
Test End:	9 Apr 2014
Wft Job #:	4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/05																												
06:45		Attend morning safety meeting																										
07:00		Conduct shift hand over																										
07:15		Perform general house keeping duties / Wait on frac																										
17:30		Attend frac safety meeting																										
18:20		Frac pumps pump H2O over to testers to warm pumps																										
22:00		Start Frac #1																										
14/03/06																												
03:15		Frac shut down due to equipment issues.																										
14/03/07																												
00:00		Continue to wait on Fracing operations.																										
01:00		Continue Frac #1																										
03:00		Shut down frac equipment issues																										
08:00		Pressure test frac iron to 69.0 Mpa																										
09:33		Continue Frac #1																										
11:10		frac #1 Complete																										
11:40		Wireline operations																										
17:10		prime frac pumps																										
17:50		Start frac #2																										
19:55		Frac #2 complete.																										
21:45		Wire line run in hole to perforate stage #3.																										
14/03/08																												
00:45		Wireline to surface.																										
04:20		Start frac stage #3																										
06:45		Frac #3 Complete / Winterize frac gear																										
07:30		Wireline operations																										
09:30		Attend safety meeting																										
09:45		Continue with wireline operations																										
17:30		Wireline RIH with guns to perforate stage #4																										
20:00		Wireline to surface.																										
22:00		Start frac stage #4																										
14/03/09																												
00:35		Stage #4 frac complete																										
01:50		Wireline run in hole to perforate stage #5																										
05:10		Wireline to surface.																										
07:45		Start Frac # 5																										
09:50		Frac #5 Complete																										
10:20		Wireline ops / RIH to perforate stage #6																										
12:40		Wireline on surface / Prepare frac equipment																										
13:44		Start Frac #6																										
15:41		Frac #6 complete																										
15:54		Wireline rig up / RIH to perforate stage #7																										
18:18		Wireline to surface.																										



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Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%



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Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/09																												
22:30		Start frac Stage #7																										
14/03/10																												
00:35		Frac #7 complete																										
01:20		Wireline run in hole to perforate stage # 8																										
04:25		Wireline to surface																										
07:05		Start frac stage #8																										
08:20		Frac #8 Complete																										
08:50		Rig up wireline / RIH																										
11:20		Wireline to surface.																										
11:30		IES grease up well head.																										
12:30		Wellhead all greased up.																										
13:05		Press test frac iron.																										
13:15		Start frac stage #9																										
14:55		Frac # 9 complete																										
15:30		Start wireline operations for / RIH to perforate stage # 10																										
18:00		Wireline complete / Prepare to frac																										
18:30		Start frac on Stage #10																										
20:10		Frac complete / Shut down frac operations and shut in master valve																										
20:45		Circulate surface lines with meth water to winterize.																										
21:45		Rig down frac equipment and prepare to rig in coil equipment for drill out operations.																										
14/03/11																												
04:25		Circulate to testers to fill coil and pressure test.																										
05:25		Start to pressure test.																										
06:05		Shut down pressure test, stripper on coil injector leaking.																										
08:00		Coil injector repaired. Break circulation through test equipment, and prepare to re-pressure test coil equipment.																										
08:20		Shut in at [10K manifold] and commence low test to [1.5 M.P.A]																										
08:40		Low test complete, begin high test to [50 M.P.A]																										
08:53		Stop pressure test, bleed off to testers to fix leaks.																										
09:40		Leaks repaired, begin to pressure test to [1.5 M.P.A] and then to [50 M.P.A]																										
10:00		Pressure test good, bleed down through test equipment. Hook vac truck up to junk catcher to suck out coil B.O.P. Stack																										
10:30		Remove Coil off well head to install tool string for milling operations.																										
12:00		Coil back on well head.																										
12:21		Function test tool through test equipment.																										
12:28		Function test complete, pressure test lubricator and commence To R.I.H. to complete milling operations.																										
12:41								4200																				
12:41		Equalize well pressure. Coil start to R.I.H.																										
12:41		Open well on adjustable and maintain fluid rates has per instructed by company rep while milling out well bore plugs.																										
12:47		Coil kick pumps in at 125 Liters/min.																										
13:00						9	3060																					
13:00		Coil pump rate [125 Liters/min] Testers return rate [125 Liters/min]																										
13:00		0 % Sand in samples.																										
13:30						10	3115																					



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Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
12:41							0.00											0.00			
13:00							0.00											0.00	58000	5.0	0.0
13:30							0.00											0.00			



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Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/11																												
14:00	-					22	3180																					
14:00	-	Coil pump rate [125 Liters/min] Testers return rate [125 Liters/min]																										
14:00	-	0 % Sand in samples.																										
14:30	-					25	3105																					
14:30	-	Increase pump rate to 400 Liters/min.																										
15:00	-					27	3108																					
15:00	-	Coil pump rate [400 Liters/min] Testers return rate [400 Liters/min]																										
15:00	-	Trace of sand in samples.																										
15:30	-					32	2731																					
16:00	-					32	2752																					
16:00	-	Coil pump rate [400 Liters/min] Testers return rate [400 Liters/min]																										
16:00	-	Trace of sand in samples.																										
16:30	-					30	2500																					
17:00	-					30	2400																					
17:00	-	Coil pump rate [400 Liters/min] Testers return rate [400 Liters/min]																										
17:00	-	1 % Sand in samples.																										
17:30	-					30	2300																					
18:00	-					30	2450																					
18:00	-	Coil pump rate [400 Liters/min] Testers return rate [400 Liters/min]																										
18:00	-	1 % Sand in samples.																										
18:30	-					31	2650																					
19:00	-					31	2740																					
19:00	-	Coil pump rate [400 Liters/min] Testers return rate [400 Liters/min]																										
19:00	-	1 % Sand in samples																										
19:30	-					32	2696																					
20:00	-					31	2552																					
20:00	-	Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]																										
20:00	-	Trace of sand in sample.																										
20:30	-					30	2505																					
21:00	-					30	1683																					
21:00	-	Coil pump rate [400 Liters/min] Testers return rate [400 Liters/min]																										
21:00	-	1 % sand in sample.																										
21:10	-	Lost fluid returns. Switched sides on Junk catcher.																										
21:15	-	Checked junk catcher and some sand and smaller pieces of plug.																										
21:30	-					30	2190																					
22:00	-					30	2134																					
22:00	-	Coil pump rate [400 Liters/min] Testers return rate [400 Liters/min]																										
22:00	-	1 % sand in sample.																										
22:30	-					30	2170																					
23:00	-					31	2134																					
23:00	-	Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]																										
23:00	-	1 % sand in sample.																										



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Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
14:00							0.00											0.00	55000	5.0	0.0
14:30							0.00											0.00			
15:00							0.00											0.00	10000	11.0	Trace
15:30							0.00											0.00			
16:00							0.00											0.00	18000	10.0	Trace
16:30							0.00											0.00			
17:00							0.00											0.00	28800	10.0	1.0
17:30							0.00											0.00			
18:00							0.00											0.00	28800	10.0	1.0
18:30							0.00											0.00			
19:00							0.00											0.00	28800	10.0	1.0
19:30							0.00											0.00			
20:00							0.00											0.00	24000	10.0	1.0
20:30							0.00											0.00			
21:00							0.00											0.00	24000	10.0	trace
21:30							0.00											0.00			
22:00							0.00											0.00	19000	8.0	1.0
22:30							0.00											0.00			
23:00							0.00											0.00	21000	6.0	1.0



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Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/11																												
23:30	-					31	2248																					
14/03/12						31	2006																					
00:00	-	Coil pump rate [375 Liters/min] Testers return rate [400 Liters/min]																										
00:00	-	1 % sand in sample.																										
00:10	-	Switch sides on junk catcher																										
00:15	-	Checked junk catcher and some sand and big chunks of rubber. Company Rep witnessed the big chunks.																										
00:30	-					31	2052																					
01:00	-					31	2104																					
01:00	-	Coil pump rate [375 Liters/min] Testers return rate [375 Liters/min]																										
01:00	-	1 % sand in sample.																										
01:30	-					31	2206																					
02:00	-					31	2174																					
02:00	-	Trace of sand in sample.																										
02:00	-	Coil pump rate [375 Liters/min] Testers return rate [375 Liters/min]																										
02:30	-					30	1596																					
03:00	-					30	2530																					
03:00	-	2 % sand in sample.																										
03:00	-	Coil pump rate [375 Liters/min] Testers return rate [375 Liters/min]																										
03:30	-					30	2254																					
04:00	-					30	2189																					
04:00	-	2 % sand in sample.																										
04:00	-	Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]																										
04:30	-					30	2213																					
05:00	-					30	2288																					
05:00	-	2 % sand in sample.																										
05:00	-	Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]																										
05:30	-					30	2142																					
06:00	-					30	2187																					
06:00	-	1 % sand in sample.																										
06:00	-	Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]																										
06:30	-					30	2310																					
07:00	-					30	2370																					
07:00	-	3 % sand in sample.																										
07:00	-	Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]																										
07:30	-					30	2505																					
08:00	-					30	2360																					
08:00	-	1 % sand in sample.																										
08:00	-	Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]																										
08:30	-					25	2260																					
09:00	-					25	2080																					
09:00	-	Trace of sand in sample.																										



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	Sand %
	hh:mm kPag	°C	E³m³/d	E³m³/d	E³m³			m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³		ppm		%
23:30							0.00											0.00			
00:00							0.00											0.00	22000	7.0	1.0
00:30							0.00											0.00			
01:00							0.00											0.00	22000	7.0	1.0
01:30							0.00											0.00			
02:00							0.00											0.00	22000	7.0	1.0
02:30							0.00											0.00			
03:00							0.00											0.00			
03:30							0.00											0.00			
04:00							0.00											0.00			
04:30							0.00											0.00			
05:00							0.00											0.00			
05:30							0.00											0.00			
06:00							0.00											0.00			
06:30							0.00											0.00			
07:00							0.00											0.00			
07:30							0.00											0.00			
08:00							0.00											0.00			
08:30							0.00											0.00			
09:00							0.00											0.00	22000	6.0	Trace



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/12																												
09:00		Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]																										
09:30	-					25	2045																					
10:00	-					26	2300																					
10:00		Trace of sand in sample.																										
10:00		Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]																										
10:30	-					26	2320																					
10:54	-					26	2310																					
10:54		Trace of sand in sample.																										
10:54		Shut in well. Coil at surface. Milling operations complete.																										
11:00	-					26	2501																					
11:03		Shut in master valve. Coil topside.																										
12:00		Purge coil back through test equipment.																										
12:30		Shut down nitrogen, purge complete.																										
12:45		Schlumberger Pump 26 m³ in well bore.																										
13:50		Pumping operations complete.																										
14:00		Rig coil off well head.																										
14:30		Schlumberger E-line services prepare tools to R.I.H with gauge ring.																										
15:50		Attend Operational safety meeting for wireline.																										
15:57		Wireline prime and purge equipment to testers iron.																										
16:19		Circulation established. Shut in at manifold. Begin pressure test. LOW [1.5 M.P.A] HIGH [35 M.P.A]																										
17:00	-						2745																					
17:17	-	Pressure test good. Bleed down pressure test to 1 M.P.A over well bore pressure. Wireline begin to R.I.H. with gauge ring.																										
18:00	-						2746																					
18:30	-						2702																					
19:00	-						2687																					
19:10		Wireline @ surface.																										
19:25		Wireline rig up to RIH with Packer.																										
20:31		Pressure test																										
20:48		Wireline Start to RIh with packer																										
21:00	-						894																					
22:00	-						860																					
22:46		Wireline @ Surface																										
23:00	-						44																					
23:10		Casing went on VAC.																										
23:17	-						-16																					
23:20	-						-14																					
23:25	-						-13																					
23:30	-						-12																					
23:35	-						-11																					
23:40	-						-10																					
23:50	-						-9																					
14/03/13																												



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Tight Hole
Norman Wells
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Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	Sand %
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		
09:30							0.00											0.00			
10:00							0.00											0.00	22000	6.0	Trace
10:30							0.00											0.00			
10:54							0.00											0.00	22000	6.0	Trace
11:00							0.00											0.00			
17:00							0.00											0.00			
18:00							0.00											0.00			
18:30							0.00											0.00			
19:00							0.00											0.00			
21:00							0.00											0.00			
22:00							0.00											0.00			
23:00							0.00											0.00			
23:17							0.00											0.00			
23:20							0.00											0.00			
23:25							0.00											0.00			
23:30							0.00											0.00			
23:35							0.00											0.00			
23:40							0.00											0.00			
23:50							0.00											0.00			



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P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Seperator					Low Stage Seperator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/13																												
00:00	-							-6																				
01:00	-							47																				
02:00	-							72																				
02:03	-	Attend safety operations meeting on rig out for frac head and testers flow line.																										
03:00	-							98																				
04:00	-							120																				
05:00	-	Start to rig out flare lines so we can put more matting down underneath flare stacks.																										
05:00	-							138																				
06:00	-							151																				
07:00	-							162																				
08:00	-							171																				
08:00	-	Rig on location.																										
08:30	-	Attend safety operations meeting.																										
09:00	-							183																				
10:00	-							194																				
11:00	-							209																				
12:00	-							216																				
13:00	-							225																				
14:00	-							238																				
15:00	-							244																				
16:00	-							251																				
17:00	-							258																				
18:00	-							264																				
18:30	-	Attend safety operations meeting.																										
18:45	-	Continue rig operations.																										
19:00	-							269																				
20:00	-							272																				
21:00	-							276																				
22:00	-							280																				
23:00	-							282																				
14/03/14								286																				
00:00	-	Bleed off casing to 0 KPA.																										
00:20	-	Stop taking pressure as rig crew rigging into the well head. Remove Well Head.																										
06:30	-	Attend safety operations meeting.																										
06:45	-	Continue rig operations.																										
16:00	-	Nabours rig services start to R.I.H. with production string & downhole fiber-optics cable.																										
18:30	-	Attend safety operations meeting.																										
18:50	-	Continue rig operations.																										
14/03/15																												
06:30	-	Attend safety operations meeting.																										
06:50	-	Continue rig operations.																										



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Norman Wells
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9 Apr 2014
4413812

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	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
00:00							0.00											0.00			
01:00							0.00											0.00			
02:00							0.00											0.00			
03:00							0.00											0.00			
04:00							0.00											0.00			
05:00							0.00											0.00			
06:00							0.00											0.00			
07:00							0.00											0.00			
08:00							0.00											0.00			
09:00							0.00											0.00			
10:00							0.00											0.00			
11:00							0.00											0.00			
12:00							0.00											0.00			
13:00							0.00											0.00			
14:00							0.00											0.00			
15:00							0.00											0.00			
16:00							0.00											0.00			
17:00							0.00											0.00			
18:00							0.00											0.00			
19:00							0.00											0.00			
20:00							0.00											0.00			
21:00							0.00											0.00			
22:00							0.00											0.00			
23:00							0.00											0.00			
00:00							0.00											0.00			



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Tight Hole
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	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
18:00							0.00											0.00			
18:15							0.00											0.00			
18:30							0.00											0.00			
18:45							0.00											0.00			
19:00							0.00											0.00			
19:15							0.00											0.00			
19:30							0.00											0.00			
19:45							0.00											0.00			
20:00							0.00											0.00			
20:15							0.00											0.00			
20:30							0.00											0.00			
20:45							0.00											0.00			
21:00							0.00											0.00			
21:15							0.00											0.00			
21:30							0.00											0.00			
21:45							0.00											0.00			
22:00							0.00											0.00			
22:15							0.00											0.00			
22:30							0.00											0.00			
22:45							0.00											0.00			
23:00							0.00											0.00			
23:15							0.00											0.00			
23:30							0.00											0.00			
23:45							0.00											0.00			
00:00							0.00											0.00			
00:15							0.00											0.00			



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						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³	
14/03/17																													
00:30	-	20595.6	82.6	1557		70	1573		1982		31			28		24													
00:45	-	20594.0	82.7	1559		69	1574		1984		31			26		26													
01:00	-	20592.3	82.6	1559		69	1565		1984		31			27		27													
01:15	-	20587.7	82.7	1560		69	1570		1981		31			24		28													
01:30	-	20560.8	82.6	1568		69	1566		1981		31			23		29													
01:45	-	20587.0	82.6	1575		69	1573		1981		31			23		29													
02:00	-	20581.5	82.6	1553		68	1563		1980		31			21		29													
02:15	-	20583.1	82.7	1533		68	1562		1982		31			21		29													
02:30	-	20584.9	82.7	1523		68	1561		1977		31			20		29													
02:45	-	20588.7	82.7	1532		68	1580		1979		31			18		30													
03:00	-	20412.4	82.7	1560		68	1577		1979		31			17		30													
03:15	-	20431.1	82.7	1569		68	1576		1978		31			19		30													
03:30	-	20436.2	82.7	1570		68	1575		1979		31			15		29													
03:45	-	20433.1	82.7	1571		69	1567		1976		30			13		26													
04:00	-	20430.2	82.8	1573		69	1564		1973		28			12		23													
04:15	-	20438.0	82.7	1562		68	1560		1972		27			11		21													
04:30	-	20426.9	82.8	1571		69	1579		1970		26			11		20													
04:45	-	20435.5	82.8	1579		69	1576		1968		25			12		19													
05:00	-	20433.1	82.8	1584		70	1576		1965		25			10		19													
05:15	-	20436.8	82.8	1589		69	1572		1964		24			10		18													
05:30	-	20429.8	82.8	1592		70	1569		1962		24			9		18													
05:45	-	20427.6	82.7	1595		70	1569		1957		24			7		17													
06:00	-	20419.3	82.8	1590		71	1571		1956		23			8		17													
		Daily Summary to 06:00 hrs March 17/2014																											
		DHP = 20419kpa																											
		SITP = 1590kpa																											
		SICP = 1571kpa																											
		Flow Temp = N/A																											
		Meter Run Temp = N/A																											
		Choke Size = N/A																											
		Gas Rate = Shut In																											
		Cumulative Gas to Flare = 0 E3m3																											
		Gas to Flare last 6hrs = 0 E3m3																											
		Gas to Flare last 24hrs = 0 E3m3																											
		LFTR = 7919.81m3																											
		LFR last hour = 0m3																											
		LFR last 6hrs = 0m3																											
		LFR last 24hrs = 0m3																											
		TLFR = 0m3																											
		TLFLTR = 7919.81m3																											
		Condensate Produced last hour = 0m3																											
		Condensate Produced last 6hrs = 0m3																											



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hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
00:30							0.00											0.00			
00:45							0.00											0.00			
01:00							0.00											0.00			
01:15							0.00											0.00			
01:30							0.00											0.00			
01:45							0.00											0.00			
02:00							0.00											0.00			
02:15							0.00											0.00			
02:30							0.00											0.00			
02:45							0.00											0.00			
03:00							0.00											0.00			
03:15							0.00											0.00			
03:30							0.00											0.00			
03:45							0.00											0.00			
04:00							0.00											0.00			
04:15							0.00											0.00			
04:30							0.00											0.00			
04:45							0.00											0.00			
05:00							0.00											0.00			
05:15							0.00											0.00			
05:30							0.00											0.00			
05:45							0.00											0.00			
06:00							0.00											0.00			



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						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³	
14/03/17		Condensate Produced last 24hrs = 0m3 Cumulative Condensate Produced = 0m3 Salinity = N/A ph = N/A Sand = N/A Hrs Flowed = 0hrs 0min Hours Flared = 0 Surface Total = 35.05m3 Api = N/A H2s = N/A																										
06:15	-	20418.2	82.7	1587		71	1560		1954		23			7		17												
06:30	-	20423.5	82.8	1578		71	1563		1952		23			6		17												
06:45	-	20426.0	82.8	1569		70	1565		1949		23			5		16												
07:00	-	20427.6	82.7	1568		70	1558		1948		23			6		16												
07:30	-	20474.5	82.9	1567		70	1566		1949		23			7		16												
07:45	-	20472.1	82.9	1565		71	1560		1944		24			3		18												
08:00	-	20472.2	82.9	1570		71	1561		1946		25			4		20												
08:15	-	20470.2	82.8	1572		72	1566		1942		25			5		20												
08:30	-	20469.7	82.9	1572		72	1562		1945		26			2		20												
08:45	-	20464.5	82.9	1577		71	1557		1945		26			2		21												
09:00	-	20463.2	82.8	1574		71	1552		1943		26			3		21												
09:15	-	20465.5	82.8	1573		71	1558		1944		26			2		21												
09:30	-	20384.0	82.7	1569		71	1557		1944		26			3		22												
09:45	-	20420.0	82.8	1573		71	1555		1944		27			2		24												
10:00	-	Down hole system operator making adjustment to system																										
10:00	-			1575		71	1558		1941		26			1		25												
10:15	-			1572		72	1554		1942		27			0		27												
10:30	-	20462.8	83.0	1569		72	1556		1943		27			1		28												
10:45	-	20481.0	83.0	1572		72	1553		1942		27			1		28												
11:00	-	20516.3	83.2	1563		73	1550		1945		28			0		29												
11:15	-	20500.8	83.1	1560		72	1548		1944		28			-1		29												
11:30	-	20486.3	83.0	1558		73	1542		1946		29			-1		30												
11:45	-	20513.8	83.1	1554		73	1551		1885		29			36		30												
11:45	-	Open well on 12.70mm choke																										
11:46	-	Fluid to surface.																										
11:50	0:05	20199.7	83.0	653		63	1331		1781		29			77		30												
11:55	0:10	20131.4	83.4	626		44	1294		1789		30			84		30												
12:00	0:15	20115.5	83.7	603		37	1271		1792		30			91		29												
12:15	0:30	20066.4	81.3	671		35	1250		1798		31			115		29												
12:17	-	Bottoms up. 4.66m3 recovered.																										
12:30	0:45	20052.9	80.9	813		35	1250		1801		31			90		27												
12:45	1:00	20004.0	80.7	748		36	1224		1801		32			136		24												



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:15							0.00											0.00			
06:30							0.00											0.00			
06:45							0.00											0.00			
07:00							0.00											0.00			
07:30							0.00											0.00			
07:45							0.00											0.00			
08:00							0.00											0.00			
08:15							0.00											0.00			
08:30							0.00											0.00			
08:45							0.00											0.00			
09:00							0.00											0.00			
09:15							0.00											0.00			
09:30							0.00											0.00			
09:45							0.00											0.00			
10:00							0.00											0.00			
10:15							0.00											0.00			
10:30							0.00											0.00			
10:45							0.00											0.00			
11:00							0.00											0.00			
11:15							0.00											0.00			
11:30							0.00											0.00			
11:45							0.00										7919.81				
11:50							0.00										7919.81				
11:55							0.00										7919.81				
12:00							0.00	2.25	100.0	0.00	0.00	0.00			2.25	216.00	2.25	7917.56	22000	6.0	0.0
12:15							0.00										7917.56				
12:30							0.00										7917.56				
12:45							0.00										7917.56				



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P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1					
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³	
14/03/17																													
13:00	1:15	19975.7	80.5	747		37	1206		1804		32			114		21													
13:15	1:30	19956.8	80.3	748		40	1175		1806		33			133		21													
13:30	1:45	19932.5	80.3	752		40	1165		1806		33			117		20													
13:45	2:00	19913.3	80.2	801		40	1140		1807		34			129		20													
14:00	2:15	19863.1	80.2	793		42	1124		1812		34			110		19													
14:15	2:30	19837.7	80.2	789		42	1090		1813		34			90		19													
14:30	2:45	19844.0	80.1	801		42	1095		1813		34			124		19													
14:45	3:00	19800.5	80.1	869		41	1086		1812		34			123		19													
15:00	3:15	19785.3	80.1	889		42	1068		1816		34			161		18													
15:15	3:30	19775.5	80.0	906		44	1041		1815		35			188		20								8	8	0.02	0.02	0.00	
15:15		Trace of gas to surface.																											
15:15		Meter #4 in service.																											
15:30	3:45	19752.4	80.1	912		45	1031		1819		36			152		21								9	8	0.07	0.08	0.00	
15:45	4:00	19727.3	80.1	916		43	1019		1821		36			148		22								10	8	0.07	0.08	0.01	
16:00	4:15	19707.7	80.1	914		38	1007		1819		35			105		25								9	8	2.08	2.15	0.03	
16:00		ProTechnics sample #1 taken. Total load fluid recovered =33.75m³																											
16:15	4:30	19690.6	80.1	919		31	994		1821		35			94		24								8	8	1.65	1.68	0.04	
16:30	4:45	19681.4	80.1	896		31	987		1820		34			101		24								6	8	1.87	1.87	0.06	
16:45	5:00	19673.1	80.1	825		32	981		1824		33			87		25								9	8	1.70	1.76	0.08	
17:00	5:15	19665.9	80.1	803		31	980		1821		33			113		22								8	8	0.11	0.11	0.08	
17:15	5:30	19669.3	80.1	795		31	981		1822		32			130		21								8	10	0.14	0.14	0.09	
17:30	5:45	19659.7	80.1	770		32	974		1823		32			122		24								9	10	1.30	1.33	0.10	
17:45	6:00	19632.3	80.1	765		32	957		1823		31			129		24								8	12	1.54	1.55	0.12	
18:00	6:15	19625.7	80.1	788		32	935		1821		31			107		27								7	11	1.72	1.73	0.13	
18:15	6:30	19605.0	80.0	930		32	918		1819		31			129	14.93	25								10	13	0.12	0.12	0.13	
18:30	6:45	19535.2	80.0	1196		34	883		1820		31			136	14.89	28								7	12	1.37	1.38	0.15	
18:45	7:00	19526.5	80.0	1344		35	857		1818		31			119	14.88	28								8	13	0.15	0.15	0.15	
19:00	7:15	19527.2	80.0	1359		34	844		1819		30			116	14.89	29								9	15	1.95	1.96	0.17	
19:00		Trace of sediment in fluid returns.																											
19:15	7:30	19498.6	79.9	1158		35	834		1819		30			117	14.87	30								9	16	2.23	2.23	0.19	
19:30	7:45	19469.5	79.9	1346		35	813		1819		30			111	14.91	30								10	16	1.02	1.03	0.21	
19:45	8:00	19464.6	79.9	1298		34	777		1820		31			112	14.89	32								6	16	0.13	0.12	0.21	
20:00	8:15	19422.7	79.9	1484		34	756		1818		31			134	14.89	31								8	15	3.39	3.40	0.24	
20:00		ProTechnics sample #2 taken. Total fluid recovered to date = 63.15m³																											
20:00		Trace of Sediment in fluid returns.																											
20:15	8:30	19430.8	79.9	1454		34	774		1820		32			189	14.93	32								9	21	1.52	1.50	0.26	
20:30	8:45	19412.8	79.9	1505		35	753		1820		33			127	17.71	35								10	22	2.96	2.94	0.29	
20:30		Burnable gas to surface.																											
20:40		Meter #2 in service on a 25.400mm orifice plate.																											
20:45	9:00	19399.5	79.9	1535		35	738		1824		34			123	14.92	36	6.90	0.02						11	33	0.00	0.00	0.29	
21:00	9:15	19388.1	79.8	1547		36	727		1826		36			133	14.76	37	7.00	0.10						9	42	0.00	0.00	0.29	
21:15	9:30	19379.2	79.8	1544		37	710		1825		37			112	18.74	38	7.55	0.18						13	49	0.00	0.00	0.29	



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
13:00							0.00	6.66	100.0	0.00	0.00	0.00			6.66	159.84	8.91	7910.90	17000	5.0	0.0
13:15							0.00											7910.90			
13:30							0.00											7910.90			
13:45							0.00											7910.90			
14:00							0.00	8.88	100.0	0.00	0.00	0.00			8.88	213.12	17.79	7902.02	16000	6.0	Trace
14:15							0.00											7902.02			
14:30							0.00											7902.02			
14:45							0.00											7902.02			
15:00							0.00	9.19	100.0	0.00	0.00	0.00			9.19	220.56	26.98	7892.83	16000	6.0	Trace
15:15						0.00	0.00											7892.83			
15:30						0.00	0.00											7892.83			
15:45						0.01	0.00											7892.83			
16:00						0.03	0.00	6.77	100.0	0.00	0.00	0.00			6.77	162.48	33.75	7886.06	17000	6.0	Trace
16:15						0.04	0.00											7886.06			
16:30						0.06	0.00											7886.06			
16:45						0.08	0.00											7886.06			
17:00						0.08	0.00	7.51	100.0	0.00	0.00	0.00			7.51	180.24	41.26	7878.55	17000	6.0	Trace
17:15						0.09	0.00											7878.55			
17:30						0.10	0.00											7878.55			
17:45						0.12	0.00											7878.55			
18:00						0.13	0.00	4.66	100.0	0.00	0.00	0.00			4.66	111.84	45.92	7873.89	17000	6.0	Trace
18:15						0.13	0.00											7873.89			
18:30						0.15	0.00											7873.89			
18:45						0.15	0.00											7873.89			
19:00						0.17	0.00	9.05	100.0	0.00	0.00	0.00			9.05	217.20	54.97	7864.84	18000	6.0	Trace
19:15						0.19	0.00											7864.84			
19:30						0.21	0.00											7864.84			
19:45						0.21	0.00											7864.84			
20:00						0.24	0.00	8.18	100.0	0.00	0.00	0.00			8.18	196.32	63.15	7856.66	18000	7.0	Trace
20:15						0.26	0.00											7856.66			
20:30						0.29	0.00											7856.66			
20:45						0.31	0.00											7856.66			
21:00						0.38	0.00	6.58	100.0	0.00	0.00	0.00			6.58	157.92	69.73	7850.08	19000	7.0	Trace
21:15						0.46	0.00											7850.08			



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Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	°C	E ³ m ³ /d	E ³ m ³ /d	E ³ m ³
14/03/17																												
21:30	9:45	19369.1	79.8	1536		36	704		1830		38			105	18.90	38	7.45	0.25						10	54	0.00	0.00	0.29
21:45	10:00	19366.3	79.8	1537		36	674		1831		39			111	14.72	38	6.65	0.32						8	58	0.00	0.00	0.29
22:00	10:15	19327.1	79.8	1567		37	666		1830		38			130	18.83	37	7.89	0.40						8	54	0.00	0.00	0.29
22:15	10:30	19325.6	79.8	1589		37	649		1834		38			113	17.59	37	7.34	0.48						9	57	0.00	0.00	0.29
22:30	10:45	19295.2	79.8	1605		36	657		1834		39			76	16.68	37	6.47	0.55						10	61	0.00	0.00	0.29
22:45	11:00	19292.1	79.8	1617		36	637		1836		40			75	14.72	37	6.06	0.61						7	64	0.00	0.00	0.29
23:00	11:15	19269.0	79.8	1633		37	612		1836		41			155	17.18	36	7.94	0.69						9	66	0.00	0.00	0.29
23:15	11:30	19264.2	79.7	1651		38	613		1839		41			102	16.08	37	6.82	0.77						8	68	0.00	0.00	0.29
23:30	11:45	19194.6	80.0	1661		36	603		1841		42			89	14.75	37	6.30	0.83						9	70	0.00	0.00	0.29
14/03/18																												
00:00	12:15	19229.4	79.9	1687		36	581		1845		42			70	20.01	38	7.00	0.98						7	72	0.00	0.00	0.29
00:15	12:30	19201.4	79.9	1715		37	562		1845		42			66	15.07	37	5.98	1.04						9	72	0.00	0.00	0.29
00:30	12:45	19211.8	79.8	1756		37	557		1848		43			57	15.47	37	5.88	1.10						4	62	0.00	0.00	0.29
00:30		Increase back pressure.																										
00:45	13:00	19196.9	79.8	1766		38	545		1848		43			110	15.04	36	6.73	1.17						5	45	0.00	0.00	0.29
01:00	13:15	19188.6	79.8	1771		38	526		1850		43			76	3.24	36	2.82	1.20						7	41	0.00	0.00	0.29
01:00		Trace of sediment in fluid returns.																										
01:15	13:30	19211.7	79.8	1810		40	517		1854		43			166	5.86	36	4.71	1.25						9	40	0.00	0.00	0.29
01:28		LS Orifice Plate Size changed from 1 to 1.0 by field																										
01:28	13:43																											
01:30	13:45	19165.7	79.8	1832		40	504		1854		43			130	18.21	36	7.77	1.33						7	38	0.00	0.00	0.29
01:45	14:00	19151.2	80.0	1831		39	491		1854		43			109	6.13	36	4.25	1.37						8	36	0.00	0.00	0.29
02:00	14:15	19134.0	80.0	1849		40	489		1857		43			195	3.93	35	4.07	1.42						9	34	0.00	0.00	0.29
02:00		Trace of sediment in fluid returns.																										
02:15	14:30	19129.3	80.0	1879		39	467		1855		44			201	6.14	35	5.14	1.47						8	33	0.00	0.00	0.29
02:30	14:45	19104.9	80.0	1891		39	457		1855		44			165	0.00	35	0.00	1.47						7	31	0.00	0.00	0.29
02:45	15:00	19102.7	80.0	1916		39	453		1858		44			179	5.72	35	4.77	1.52						9	30	0.00	0.00	0.29
03:00	15:15	19058.1	80.0	1935		39	445		1858		44			174	6.68	36	5.10	1.57						8	28	0.00	0.00	0.29
03:00		Trace of sediment in fluid returns. Very slight skim of oil in grind outs																										
03:15	15:30	19078.0	80.1	1948		40	419		1860		44			182	6.76	36	5.21	1.63						9	27	0.00	0.00	0.29
03:30	15:45	19074.0	80.1	1949		40	411		1859		44			177	7.31	36	5.37	1.68						9	26	0.00	0.00	0.29
03:45	16:00	19063.3	80.1	1976		40	399		1859		44			170	7.30	36	5.30	1.74						9	25	0.00	0.00	0.29
04:00	16:15	19027.9	80.1	1981		40	391		1859		44			170	0.82	35	1.77	1.76						8	24	0.00	0.00	0.29
04:00		ProTechnics sample #4 taken. Total fluid recovered to date = 127.93m ³																										
04:00		Trace of sediment in fluid returns.																										
04:15	16:30	19058.2	80.1	2008		42	381		1862		44			181	7.78	36	5.58	1.81						10	23	0.00	0.00	0.29
04:30	16:45	19020.1	80.1	2027		41	371		1859		44			161	8.27	36	5.54	1.87						9	22	0.00	0.00	0.29
04:45	17:00	19005.8	80.0	2025		41	362		1861		44			224	0.00	34	0.00	1.87						8	20	0.00	0.00	0.29
05:00	17:15	18993.1	80.2	2051		41	349		1860		44			199	8.34	36	5.96	1.93						11	16	0.00	0.00	0.29
05:15	17:30	19002.7	80.1	2075		41	332		1862		44			255	0.00	33	0.10	1.94						7	13	0.00	0.00	0.29
05:30	17:45	18992.2	80.1	2104		42	331		1863		43			274	7.38	36	6.29	2.00						10	11	0.00	0.00	0.29
05:45	18:00	18989.7	80.1	2121		41	311		1860		43			272	7.44	36	6.29	2.07						11	9	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
21:30						0.54	0.00											7850.08			
21:45						0.61	0.00											7850.08			
22:00						0.69	0.00	8.12	100.0	0.00	0.00	0.00			8.12	194.88	77.85	7841.96	19000	7.0	Trace
22:15						0.77	0.00											7841.96			
22:30						0.84	0.00											7841.96			
22:45						0.90	0.00	8.21	100.0	0.00	0.00	0.00			8.21	197.04	86.06	7833.75	19000	7.0	Trace
23:00						0.98	0.00											7833.75			
23:15						1.05	0.00											7833.75			
23:30						1.12	0.00											7833.75			
00:00						1.26	0.00	8.01	100.0	0.00	0.00	0.00			8.01	192.24	94.07	7825.74	17000	7.0	Trace
00:15						1.33	0.00											7825.74			
00:30						1.39	0.00											7825.74			
00:45						1.46	0.00											7825.74			
01:00						1.49	0.00	7.73	100.0	0.00	0.00	0.00			7.73	185.52	101.80	7818.01	17000	7.0	Trace
01:15						1.54	0.00											7818.01			
01:28							0.00											7818.01			
01:30						1.62	0.00											7818.01			
01:45						1.66	0.00											7818.01			
02:00						1.70	0.00	9.72	100.0	0.00	0.00	0.00			9.72	233.28	111.52	7808.29	18000	7.0	Trace
02:15						1.76	0.00											7808.29			
02:30						1.76	0.00											7808.29			
02:45						1.81	0.00											7808.29			
03:00						1.86	0.00	8.98	100.0	0.00	0.00	0.00			8.98	215.52	120.50	7799.31	18000	7.0	Trace
03:15						1.92	0.00											7799.31			
03:30						1.97	0.00											7799.31			
03:45						2.03	0.00											7799.31			
04:00						2.04	0.00	7.43	100.0	0.00	0.00	0.00			7.43	178.32	127.93	7791.88	18000	7.0	Trace
04:15						2.10	0.00											7791.88			
04:30						2.16	0.00											7791.88			
04:45						2.16	0.00											7791.88			
05:00						2.22	0.00	8.10	100.0	0.00	0.00	0.00			8.10	194.40	136.03	7783.78	18000	7.0	Trace
05:15						2.22	0.00											7783.78			
05:30						2.29	0.00											7783.78			
05:45						2.35	0.00											7783.78			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1					
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³	
14/03/18																													
05:45	18:00	18960.6	80.1	2129		41	314		1861		43			252	1.24	36	2.50	2.07						9	8	0.00	0.00	0.29	
06:00	18:15	18965.0	80.1	2150		41	306		1860		43			255	1.31	36	2.58	2.09						10	6	0.00	0.00	0.29	
		Trace of sediment in fluid returns.																											
		Daily Summary to 06:00 hrs March 18/2014																											
		DHP = 18965kpa																											
		FTP = 2150kpa																											
		SICP = 306kpa																											
		Flow Temp = 41DegC																											
		Meter Run Temp = 43DegC																											
		Choke Size = 12.70mm																											
		Gas Rate = 2.58 E3m3/Day																											
		Cummulative Gas to Flare = 2.38 E3m3																											
		Gas to Flare last 24hrs = 2.38 E3m3																											
		LFTR = 7919.81m3																											
		LFR last 24hrs = 144.97m3																											
		TLFR = 144.97m3																											
		TLFLTR = 7774.84m3																											
		Condensate Produced last 24hrs = 0m3																											
		Cummulative Condensate Produced = 0m3																											
		Salinity = 18000ppm																											
		ph = 7																											
		Sand = Trace																											
		Hrs Flowed = 18.25																											
		Hours Flared = 14.75																											
		Surface Total = 94.61m3																											
		Api = N/A																											
		H2s = ppm																											
06:15	18:30	18948.1	80.1	2163		42	288		1861		43			301	0.00	34	0.10	2.09						8	5	0.00	0.00	0.29	
06:30	18:45	18927.9	80.2	2175		42	283		1860		43			244	9.23	36	6.74	2.16						12	5	0.00	0.00	0.29	
06:45	19:00	18933.4	80.2	2196		42	270		1860		43			167	9.93	36	6.15	2.23						10	5	0.00	0.00	0.29	
07:00	19:15	18912.4	80.2	2209		42	264		1861		43			178	7.45	36	5.42	2.29						12	6	0.00	0.00	0.29	
07:15		Zeroed Casing Gauge.																											
07:15	19:30	18892.5	80.2	2219		41	-62		1861		42			135	10.62	37	5.95	2.35						13	13	0.00	0.00	0.29	
07:30	19:45	18894.1	80.2	2230		42	212		1858		42			99	6.21	38	4.16	2.39						12	25	0.00	0.00	0.29	
07:45	20:00	18881.0	80.2	2235		41	216		1859		42			130	10.41	39	5.80	2.45						13	33	0.00	0.00	0.29	
08:00	20:15	18856.0	80.2	2223		41	217		1859		43			104	11.93	39	5.86	2.51						11	40	0.00	0.00	0.29	
		ProTechnics sample #5 taken. Total fluid recovered to date = 160.02m³																											
08:15	20:30	18857.4	80.2	2229		40	206		1859		43			84	12.96	40	5.80	2.57						11	44	0.00	0.00	0.29	
08:30	20:45	18848.1	80.2	2216		40	190		1861		43			110	12.20	40	6.00	2.63						8	40	0.00	0.00	0.29	
08:45	21:00	18860.6	80.2	2200		40	184		1863		43			151	11.24	40	6.30	2.70						8	36	0.00	0.00	0.29	
		Agat on location to take gas and fluid samples.																											
09:00	21:15	18826.0	80.3	2201		40	176		1863		44			146	0.48	40	1.28	2.71						7	33	0.00	0.00	0.29	



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P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
05:45						2.36	0.00											7783.78			
06:00						2.38	0.00	8.94	100.0	0.00	0.00	0.00			8.94	214.56	144.97	7774.84	18000	7.0	trace
06:15						2.38	0.00											7774.84			
06:30						2.45	0.00											7774.84			
06:45						2.52	0.00											7774.84			
07:00						2.57	0.00	8.01	100.0	0.00	0.00	0.00			8.01	192.24	152.98	7766.83	19000	7.0	Trace
07:15						2.64	0.00											7766.83			
07:30						2.68	0.00											7766.83			
07:45						2.74	0.00											7766.83			
08:00						2.80	0.00	7.04	100.0	0.00	0.00	0.00			7.04	168.96	160.02	7759.79	19000	7.0	Trace
08:15						2.86	0.00											7759.79			
08:30						2.92	0.00											7759.79			
08:45						2.99	0.00											7759.79			
09:00						3.00	0.00	7.31	100.0	0.00	0.00	0.00			7.31	175.44	167.33	7752.48	19000	7.0	Trace



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P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/18																												
09:15	21:30	18798.7	80.3	2211		39	168		1861	44				117	12.89	39	6.29	2.78						4	28	0.00	0.00	0.29
09:30	21:45	18803.6	80.3	2225		39	160		1863	44				93	13.15	40	5.98	2.84						6	26	0.00	0.00	0.29
09:45	22:00	18777.8	80.3	2236		40	155		1864	44				72	12.20	39	5.43	2.90						5	23	0.00	0.00	0.29
10:00	22:15	18767.5	80.2	2255		39	147		1864	45				143	11.61	40	6.31	2.96						9	21	0.00	0.00	0.29
10:15	22:30	18803.9	80.4	2284		39	133		1862	45				112	13.48	40	6.35	3.03						6	17	0.00	0.00	0.29
10:30	22:45	18743.1	80.4	2235		39	116		1867	45				114	7.42	40	4.71	3.08						7	16	0.00	0.00	0.29
10:45	23:00	18723.6	80.4	2186		39	107		1865	44				132	7.87	40	5.06	3.13						9	15	0.00	0.00	0.29
10:45		Trace of condensate in sample.																										
10:45		Shut in well. Meter out of service.																										
10:45		Lay over service rig.																										
10:50	23:00	18935.9	80.3	3024		38	353		1865	44				2	33.26	32								8	13	0.00	0.00	0.29
10:55	23:00	19037.3	80.4	3165		35	408		1867	44				-6	0.00	33								7	12	0.00	0.00	0.29
11:00	23:00	19340.5	0.1	3238		33	438		1868	44				-8	0.00	33								6	12	0.00	0.00	0.29
11:00		Weatherford Downhole crew reset Scada.																										
11:15	23:00	19173.2	80.7	3394		29	485		1866	44				-5	0.00	34								8	13	0.00	0.00	0.29
11:30	23:00	19168.3	80.9	3335		23	478		1867	45				-7	0.00	34								9	9	0.00	0.00	0.29
11:30		Open well on 12.7 mm choke																										
11:45	23:15	18914.6	80.9	1994		34	243		1867	45				157	0.00	35	0.00	3.13						11	7	0.00	0.00	0.29
11:45		Increase choke 2 to 38.100 mm.																										
11:46		Meter #2 in service on 25.400 mm orifice plate.																										
12:00	23:30	18843.4	80.5	201		38	249		1868	46				106	0.06	33	0.44	3.14						8	6	0.00	0.00	0.29
12:15	23:45	18883.3	80.5	1015		35	244		1870	46				69	0.00	32	0.00	3.14						9	7	0.00	0.00	0.29
12:30	24:00	18880.5	80.5	990		39	242		1872	46				157	0.04	33	0.37	3.14						11	7	0.00	0.00	0.29
12:45	24:15	18855.6	80.5	996		40	224		1872	47				167	2.54	35	3.10	3.17						10	8	0.00	0.00	0.29
13:00	24:30	18853.5	80.5	1603		38	199		1873	47				125	0.99	35	1.78	3.19						9	9	0.00	0.00	0.29
13:15	24:45	18802.0	80.4	1654		38	167		1876	47				102	3.95	36	3.34	3.23						11	10	0.00	0.00	0.29
13:30	25:00	18776.9	80.4	1865		39	148		1874	47				86	7.47	37	4.42	3.27						10	10	0.00	0.00	0.29
13:45	25:15	18767.0	80.4	1988		39	136		1873	45				107	7.16	37	4.57	3.32						11	11	0.00	0.00	0.29
14:00	25:30	18713.5	80.4	2179		38	107		1873	44				88	10.43	38	5.25	3.37						11	12	0.00	0.00	0.29
14:15	25:45	18713.1	80.4	2293		36	92		1871	44				116	11.07	39	5.80	3.43						11	16	0.00	0.00	0.29
14:30	26:00	18700.8	80.4	2366		37	82		1873	43				91	8.64	38	4.81	3.48						11	19	0.00	0.00	0.29
14:45	26:15	18668.7	80.4	2404		36	61		1872	43				76	14.68	39	6.05	3.55						11	20	0.00	0.00	0.29
15:00	26:30	18678.7	80.4	2426		41	47		1870	43				64	15.78	39	6.06	3.61						10	22	0.00	0.00	0.29
15:15	26:45	18652.9	80.4	2452		43	34		1871	41				54	15.02	39	5.72	3.67						9	21	0.00	0.00	0.29
15:30	27:00	18659.9	80.4	2478		42	28		1863	35				47	21.60	39	6.75	3.74						11	20	0.00	0.00	0.29
15:45	27:15	18636.1	80.4	2497		45	14		1857	31				41	22.84	39	6.82	3.81						8	20	0.00	0.00	0.29
16:00	27:30	18602.5	80.4	2511		45	7		1853	29				37	23.99	39	6.90	3.88						9	19	0.00	0.00	0.29
16:00		ProTechnics sample #7 taken. Total fluid recovered to date = 224.80 m³																										
16:15	27:45	18592.3	80.4	2542		43	-3		1847	27				33	19.43	39	6.08	3.95						9	21	0.00	0.00	0.29
16:30	28:00	18585.7	80.4	2579		45	-16		1842	25				35	26.28	39	7.18	4.02						11	24	0.00	0.00	0.29
16:30		Zeroed Casing Sensor.																										
16:45	28:15	18567.8	80.4	2617		40	40		1836	24				48	24.99	40	7.30	4.10						9	25	0.00	0.00	0.29



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Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
09:15						3.07	0.00											7752.48			
09:30						3.13	0.00											7752.48			
09:45						3.19	0.00											7752.48			
10:00						3.25	0.00	8.65	100.0	0.00	0.00	0.00			8.65	207.60	175.98	7743.83	19000	7.0	Trace
10:15						3.32	0.00											7743.83			
10:30						3.37	0.00											7743.83			
10:45						3.42	0.00	12.37	100.0	0.00	0.00	0.00			12.37	395.84	188.35	7731.46	19000	7.0	Trace
10:50						3.42	0.00											7731.46			
10:55						3.42	0.00											7731.46			
11:00						3.42	0.00											7731.46			
11:15						3.42	0.00											7731.46			
11:30						3.42	0.00											7731.46			
11:45						3.42	0.00											7731.46			
12:00						3.42	0.00	3.52	100.0	0.00	0.00	0.00			3.52	67.58	191.87	7727.94	19000	7.0	Trace
12:15						3.42	0.00											7727.94			
12:30						3.43	0.00											7727.94			
12:45						3.46	0.00											7727.94			
13:00						3.48	0.00	7.66	100.0	0.00	0.00	0.00			7.66	183.84	199.53	7720.28	19000	7.0	
13:15						3.51	0.00											7720.28			
13:30						3.56	0.00											7720.28			
13:45						3.61	0.00											7720.28			
14:00						3.66	0.00	8.59	100.0	0.00	0.00	0.00			8.59	206.16	208.12	7711.69	18000	7.0	
14:15						3.72	0.00											7711.69			
14:30						3.77	0.00											7711.69			
14:45						3.84	0.00											7711.69			
15:00						3.90	0.00	9.29	100.0	0.00	0.00	0.00			9.29	222.96	217.41	7702.40	18000	7.0	
15:15						3.96	0.00											7702.40			
15:30						4.03	0.00											7702.40			
15:45						4.10	0.00											7702.40			
16:00						4.17	0.00	7.39	100.0	0.00	0.00	0.00			7.39	177.36	224.80	7695.01	18000	7.0	
16:15						4.23	0.00											7695.01			
16:30						4.31	0.00											7695.01			
16:45						4.39	0.00											7695.01			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	°C	E ³ m ³ /d	E ³ m ³ /d	E ³ m ³
14/03/18																												
17:00	28:30	18537.8	80.4	2637		45	73		1832		23			74	22.37	41	7.46	4.18						11	27	0.00	0.00	0.29
17:15	28:45	18533.2	80.4	2589		41	36		1828		22			63	20.59	41	6.92	4.25						10	29	0.00	0.00	0.29
17:30	29:00	18535.3	80.4	2571		36	24		1822		21			55	25.46	41	7.56	4.33						10	32	0.00	0.00	0.29
17:45	29:15	18507.4	80.4	2587		40	17		1821		21			72	25.00	41	7.87	4.41						1	36	0.00	0.00	0.29
18:00	29:30	18499.2	80.4	2552		39	21		1814		20			58	22.82	41	7.19	4.48						10	35	0.00	0.00	0.29
18:30	30:00	18474.2	80.4	2601		38	21		1811		23			45	30.19	40	8.01	4.65						9	29	0.00	0.00	0.29
18:45	30:15	18468.2	80.4	2623		35	20		1811		26			44	29.46	40	7.87	4.73						8	29	0.00	0.00	0.29
19:00	30:30	18477.7	80.4	2645		33	3		1812		28			40	32.65	40	8.21	4.82						11	28	0.00	0.00	0.29
19:00		Increase back pressure.																										
19:15	30:45	18449.1	80.3	2695		36	12		1813		29			326	0.00	42	0.18	4.82						6	27	0.00	0.00	0.29
19:30	31:00	18425.6	80.3	2728		36	16		1810		29			334	13.36	41	9.06	4.91						11	26	0.00	0.00	0.29
19:45	31:15	18427.4	80.4	2744		38	0		1809		29			292	8.50	41	6.86	4.99						9	25	0.00	0.00	0.29
20:00	31:30	18417.6	80.4	2775		34	2		1808		29			282	12.91	40	8.36	5.07						10	24	0.00	0.00	0.29
20:00		ProTechnics sample #8 taken. Total fluid recovered to date = 263.09 m ³																										
20:15	31:45	18443.3	80.4	2772		31	0		1802		28			274	11.09	40	7.67	5.15						9	23	0.00	0.00	0.29
20:30	32:00	18383.4	80.3	2802		30	0		1798		28			287	5.56	39	5.52	5.21						10	22	0.00	0.00	0.29
20:45	32:15	18410.4	80.2	2804		32	-1		1797		28			333	16.23	39	10.03	5.31						10	21	0.00	0.00	0.29
21:00	32:30	18361.3	80.2	2793		36	21		1799		28			327	6.81	39	6.43	5.38						8	19	0.00	0.00	0.29
21:15	32:45	18357.6	80.2	2796		35	-7		1800		29			312	17.92	38	10.30	5.49						12	18	0.00	0.00	0.29
21:30	33:00	18342.7	80.1	2792		37	9		1799		30			295	18.25	38	10.18	5.59						10	17	0.00	0.00	0.29
21:45	33:15	18334.8	80.1	2870		36	31		1799		31			353	0.10	38	0.79	5.60						6	17	0.00	0.00	0.29
22:00	33:30	18304.6	80.5	3006		32	79		1801		32			458	15.30	38	11.10	5.72						11	16	0.00	0.00	0.29
22:15	33:45	18333.4	80.5	3035		33	206		1802		33			411	10.64	37	8.85	5.81						12	15	0.00	0.00	0.29
22:30	34:00	18333.0	80.5	3035		31	222		1801		33			412	12.31	37	9.52	5.91						12	15	0.00	0.00	0.29
22:45	34:15	18315.3	80.5	3038		36	414		1804		34			485	0.16	38	1.15	5.92						7	14	0.00	0.00	0.29
22:50		Zero Casing gauge																										
23:00	34:30	18318.1	80.5	3062		40	513		1804		34			421	16.32	38	11.07	6.04						13	13	0.00	0.00	0.29
23:15	34:45	18303.7	80.5	3070		36	578		1805		34			421	15.44	38	10.75	6.15						12	13	0.00	0.00	0.29
23:30	35:00	18313.9	80.6	3122		30	626		1806		35			437	16.74	38	11.38	6.27						14	12	0.00	0.00	0.29
23:45	35:15	18284.2	80.6	3125		34	678		1806		35			424	18.72	38	11.89	6.39						15	12	0.00	0.00	0.29
14/03/19																												
00:00	35:30	18265.8	80.5	3138		27	717		1805		35			485	16.19	39	11.67	6.51						15	12	0.00	0.00	0.29
00:00		ProTechnics sample #9 taken. Total fluid recovered to date = 293.62 m ³																										
00:00		2% CO ₂ and 0 ppm H ₂ S taken with Ray tube pump																										
00:15	35:45	18266.7	80.5	3166		33	753		1809		35			428	17.72	39	11.59	6.63						14	11	0.00	0.00	0.29
00:30	36:00	18259.5	80.6	3210		31	778		1808		35			390	21.02	39	12.17	6.76						14	11	0.00	0.00	0.29
00:45	36:15	18240.8	80.6	3242		31	774		1809		35			461	19.76	41	12.61	6.89						15	10	0.00	0.00	0.29
01:00	36:30	18249.5	80.6	3255		29	773		1809		36			422	20.16	41	12.26	7.02						13	10	0.00	0.00	0.29
01:15	36:45	18221.9	80.6	3263		27	776		1809		36			506	17.37	41	12.27	7.15						16	10	0.00	0.00	0.29
01:30	37:00	18202.9	80.6	3287		32	791		1810		36			480	12.25	41	10.07	7.25						12	10	0.00	0.00	0.29
01:45	37:15	18204.9	80.6	3316		30	803		1809		36			490	9.18	41	8.79	7.34						12	9	0.00	0.00	0.29
02:00	37:30	18166.0	80.6	3337		31	823		1809		36			472	20.72	40	13.04	7.48						16	9	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
17:00						4.46	0.00	9.20	100.0	0.00	0.00	0.00			9.20	220.80	234.00	7685.81	18000	7.0	
17:15						4.54	0.00											7685.81			
17:30						4.61	0.00											7685.81			
17:45						4.70	0.00											7685.81			
18:00						4.77	0.00	8.72	100.0	0.00	0.00	0.00			8.72	209.28	242.72	7677.09	18000	7.0	
18:30						4.94	0.00											7677.09			
18:45						5.02	0.00											7677.09			
19:00						5.11	0.00	9.54	100.0	0.00	0.00	0.00			9.54	228.96	252.26	7667.55	19500	7.0	Trace
19:15						5.11	0.00											7667.55			
19:30						5.20	0.00											7667.55			
19:45						5.27	0.00											7667.55			
20:00						5.36	0.00	10.83	100.0	0.00	0.00	0.00			10.83	259.92	263.09	7656.72	20000	7.0	Trace
20:15						5.44	0.00											7656.72			
20:30						5.50	0.00											7656.72			
20:45						5.60	0.00											7656.72			
21:00						5.67	0.00	10.88	100.0	0.00	0.00	0.00			10.88	261.12	273.97	7645.84	20000	7.0	Trace
21:15						5.78	0.00											7645.84			
21:30						5.88	0.00											7645.84			
21:45						5.89	0.00											7645.84			
22:00						6.01	0.00	10.20	100.0	0.00	0.00	0.00			10.20	244.80	284.17	7635.64	21000	7.0	Trace
22:15						6.10	0.00											7635.64			
22:30						6.20	0.00											7635.64			
22:45						6.21	0.00											7635.64			
23:00						6.33	0.00											7635.64			
23:15						6.44	0.00											7635.64			
23:30						6.56	0.00											7635.64			
23:45						6.68	0.00											7635.64			
00:00						6.80	0.00	9.45	100.0	0.00	0.00	0.00			9.45	113.40	293.62	7626.19	21000	7.0	Trace
00:15						6.92	0.00											7626.19			
00:30						7.05	0.00											7626.19			
00:45						7.18	0.00											7626.19			
01:00						7.31	0.00	9.50	100.0	0.00	0.00	0.00			9.50	228.00	303.12	7616.69	22000	7.0	Trace
01:15						7.44	0.00											7616.69			
01:30						7.54	0.00											7616.69			
01:45						7.63	0.00											7616.69			
02:00						7.77	0.00	8.11	100.0	0.00	0.00	0.00			8.11	194.64	311.23	7608.58	22000	7.0	Trace



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P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/19																												
02:15	37:45	18169.3	80.6	3349		33	839		1811	36				468	11.27	40	9.56	7.58						13	9	0.00	0.00	0.29
02:30	38:00	18161.2	80.6	3362		34	883		1813	37				521	20.28	41	13.44	7.72						15	9	0.00	0.00	0.29
02:45	38:15	18162.8	80.6	3371		33	907		1810	37				478	12.00	40	9.95	7.82						13	9	0.00	0.00	0.29
03:00	38:30	18149.2	80.6	3386		31	948		1814	37				506	21.01	40	13.52	7.96						16	9	0.00	0.00	0.29
03:15	38:45	18151.8	80.6	3405		29	994		1813	37				616	9.50	41	9.86	8.07						13	8	0.00	0.00	0.29
03:30	39:00	18136.8	80.6	3397		31	1034		1814	37				561	18.28	41	13.16	8.20						14	8	0.00	0.00	0.29
03:45	39:15	18130.9	80.6	3432		26	1079		1816	37				540	21.78	40	14.15	8.35						17	8	0.00	0.00	0.29
04:00	39:30	18101.1	80.6	3475		26	1120		1813	37				554	19.64	41	13.58	8.49						16	8	0.00	0.00	0.29
04:00		ProTechnics sample #10 taken. Total fluid recovered to date = 293.62 m³																										
04:15	39:45	18096.6	80.6	3505		23	1152		1816	37				584	10.65	41	10.20	8.60						13	7	0.00	0.00	0.29
04:30	40:00	18089.2	80.6	3532		23	1198		1815	37				530	23.43	40	14.58	8.75						16	7	0.00	0.00	0.29
04:45	40:15	18074.4	80.6	3557		25	1222		1814	37				523	24.42	40	14.81	8.90						18	6	0.00	0.00	0.29
05:00	40:30	18069.9	80.6	3601		22	1251		1815	37				552	23.34	41	14.80	9.06						18	6	0.00	0.00	0.29
05:15	40:45	18064.7	80.6	3612		25	1278		1815	37				541	18.09	41	12.90	9.19						15	6	0.00	0.00	0.29
05:30	41:00	18051.4	80.6	3638		26	1302		1818	37				503	27.58	40	15.49	9.35						19	6	0.00	0.00	0.29
05:45	41:15	18056.1	80.7	3673		28	1322		1814	37				532	23.07	41	14.47	9.51						17	6	0.00	0.00	0.29
06:00	41:30	18026.9	80.7	3721		29	1349		1813	37				498	24.48	41	14.50	9.66						16	6	0.00	0.00	0.29
06:00		Daily Summary to 06:00 hrs March 19/2014																										
		DHP = 18029kpa																										
		FTP =3721 kpa																										
		SICP = 1349kpa																										
		Flow Temp = 29DegC																										
		Meter Run Temp =41 DegC																										
		Choke Size = 12.70mm																										
		Gas Rate = 14.50 E3m3/Day																										
		Cumulative Gas to Flare = 9.94 E3m3																										
		Gas to Flare last 24hrs = 7.56 E3m3																										
		LFTR = 7919.81m3																										
		LFR last 24hrs = 204.37m3																										
		TLFR = 349.34m3																										
		TLFLTR = 7570.47m3																										
		Condensate Produced last 24hrs = 0m3																										
		Cumulative Condensate Produced = 0m3																										
		Salinity = 22000ppm																										
		ph = 7																										
		Sand = Trace																										
		Hrs Flowed = 41.5																										
		Hours Flared = 38.00 Hrs.																										
		Surface Total = 65.05m3																										
		Api = N/A																										
		H2s = 0ppm																										
06:00																												
06:15	41:45	18015.3	80.7	3754		28	1378		1813	37				547	23.71	41	14.84	9.81						17	6	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	Sand %
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
02:15						7.87	0.00											7608.58			
02:30						8.01	0.00											7608.58			
02:45						8.11	0.00											7608.58			
03:00						8.25	0.00	9.53	100.0	0.00	0.00	0.00			9.53	228.72	320.76	7599.05	22000	7.0	Trace
03:15						8.35	0.00											7599.05			
03:30						8.49	0.00											7599.05			
03:45						8.64	0.00											7599.05			
04:00						8.78	0.00	10.60	100.0	0.00	0.00	0.00			10.60	254.40	331.36	7588.45	22000	7.0	Trace
04:15						8.89	0.00											7588.45			
04:30						9.04	0.00											7588.45			
04:45						9.19	0.00											7588.45			
05:00						9.35	0.00	9.41	100.0	0.00	0.00	0.00			9.41	225.84	340.77	7579.04	22000	7.0	Trace
05:15						9.48	0.00											7579.04			
05:30						9.64	0.00											7579.04			
05:45						9.79	0.00											7579.04			
06:00						9.94	0.00	8.57	100.0	0.00	0.00	0.00			8.57	205.68	349.34	7570.47	22000	7.0	Trace
06:15						10.10	0.00											7570.47			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/19																												
06:30	42:00	18010.3	80.7	3787		29	1406		1815		37			511	28.99	41	15.97	9.98						19	6	0.00	0.00	0.29
06:45	42:15	18001.2	80.7	3803		22	1429		1815		37			539	28.47	42	16.17	10.15						20	6	0.00	0.00	0.29
07:00	42:30	17975.8	80.7	3843		23	1465		1816		37			459	13.38	41	10.33	10.25						14	6	0.00	0.00	0.29
07:00		Trace of oil in fluid returns.																										
07:15	42:45	17976.8	80.7	3859		31	1489		1814		37			406	35.13	42	16.02	10.42						19	6	0.00	0.00	0.29
07:25		Adjusted position of flow line temperature sensor.																										
07:30	43:00	17959.1	80.7	3874		51	1519		1815		37			400	9.33	41	8.13	10.50						15	12	0.00	0.00	0.29
07:45	43:15	17945.6	80.7	3888		51	1543		1814		37			379	39.42	41	16.54	10.68						22	20	0.00	0.00	0.29
08:00	43:30	17939.8	80.7	3890		51	1586		1814		37			579	27.35	43	16.30	10.85						17	25	0.00	0.00	0.29
08:00		ProTechnics sample #11 taken. Total fluid recovered to date = 365.05m³																										
08:15	43:45	17934.3	80.7	3899		51	1623		1813		37			687	20.16	43	15.06	11.00						17	29	0.00	0.00	0.29
08:30	44:00	17919.3	80.7	3845		51	1661		1809		36			678	4.67	41	7.20	11.08						12	32	0.00	0.00	0.29
08:45	44:15	17866.8	80.7	3928		51	1692		1449		31			696	21.27	42	15.58	11.24						18	32	0.00	0.00	0.29
09:00	44:30	17911.9	80.7	3981		51	1726		1463		31			673	8.06	42	9.42	11.34						12	29	0.00	0.00	0.29
09:00		API = 56.2@15.6°C																										
09:15	44:45	17895.8	80.7	3981		51	1762		1462		31			733	27.87	43	18.27	11.53						19	27	0.00	0.00	0.29
09:30	45:00	17893.0	80.7	3982		51	1786		1465		32			728	29.24	42	18.68	11.72						17	25	0.00	0.00	0.29
09:45	45:15	17881.6	80.8	4017		51	1821		1462		32			673	28.60	42	17.84	11.91						17	22	0.00	0.00	0.29
10:00	45:30	17858.7	80.8	4053		51	1858		1463		32			649	28.62	42	17.56	12.09						19	20	0.00	0.00	0.29
10:15	45:45	17861.3	80.8	4119		51	1891		1463		33			731	22.60	42	16.43	12.26						17	16	0.00	0.00	0.29
10:30	46:00	17837.4	80.8	4112		51	1929		1463		34			703	30.24	42	18.69	12.46						20	16	0.00	0.00	0.29
10:45	46:15	17842.6	80.8	4128		51	1964		1466		36			669	30.39	43	18.33	12.65						22	16	0.00	0.00	0.29
11:00	46:30	17817.7	80.8	4169		52	1995		1467		36			641	10.97	43	10.76	12.76						11	12	0.00	0.00	0.29
11:00		Trace of sediment in fluid returns																										
11:15	46:45	17807.4	80.8	4210		52	2031		1463		35			619	36.50	43	19.43	12.96						21	6	0.00	0.00	0.29
11:30	47:00	17808.6	80.8	4213		52	2073		1465		35			699	30.54	44	18.68	13.16						21	2	0.00	0.00	0.29
11:45	47:15	17783.0	80.8	4274		52	2107		1459		34			656	33.22	43	19.00	13.36						21	3	0.00	0.00	0.29
12:00	47:30	17771.6	80.8	4306		52	2143		1457		31			695	37.11	44	20.60	13.57						26	4	0.00	0.00	0.29
12:00		ProTechnics sample #12 taken. Total fluid recovered to date = 402.72m³				*** Per program samples are now at 12 hour intervals***																						
12:15	47:45	17773.2	80.8	4298		52	2183		1455	-0.01	30	0.00	0.00	640	37.12	43	19.88	13.78						21	5	0.00	0.00	0.29
12:30		Switched flow to High Stage.																										
12:30		Meter #1 in service on 38.100 mm orifice plate.																										
12:30	48:00	17742.3	80.8	4339		52	2220		1116	0.00	24	0.00	0.00	602		43								27	6	0.00	0.00	0.29
12:34		LS Orifice Plate Size changed from 1 to 0 by field																										
12:45	48:15	17748.3	80.8	4412		52	2269		924	3.98	39	17.53	0.14	676		41								12	6	0.00	0.00	0.29
13:00	48:30	17731.8	80.9	4441		52	2312		961	4.01	43	17.81	0.32	652		40								12	7	0.00	0.00	0.29
		Trace of condensate in fluid returns.																										
13:15	48:45	17709.5	80.9	4507		52	2361		1203	3.47	44	18.37	0.52	599		38								12	8	0.00	0.00	0.29
13:30	49:00	17711.1	80.9	4481		52	2402		966	3.81	45	17.33	0.70	596		36								12	8	0.00	0.00	0.29
13:45	49:15	17694.4	80.8	4512		52	2450		1106	3.87	46	18.59	0.89	555		36								11	9	0.00	0.00	0.29
14:00	49:30	17667.9	80.8	4574		52	2498		997	4.00	47	17.98	1.08	521		35								11	9	0.00	0.00	0.29
		Trace of condensate in fluid returns.																										



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	Sand %
hh:mm	kPag	°C	E³m³/d	E²m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:30						10.27	0.00											7570.47			
06:45						10.43	0.00											7570.47			
07:00						10.54	0.00	10.12	100.0	0.00	0.00	0.00			10.12	242.88	359.46	7560.35	23000	7.0	Trace
07:15						10.71	0.00											7560.35			
07:30						10.79	0.00											7560.35			
07:45						10.97	0.00											7560.35			
08:00						11.13	0.00	5.59	100.0	0.00	0.00	0.00			5.59	134.16	365.05	7554.76	23000	7.0	Trace
08:15						11.29	0.00											7554.76			
08:30						11.37	0.00											7554.76			
08:45						11.53	0.00											7554.76			
09:00						11.63	0.00	8.43	99.0	0.08	2.02	0.08			8.35	200.30	373.40	7546.41	23000	7.0	Trace
09:15						11.82	0.00											7546.41			
09:30						12.01	0.00											7546.41			
09:45						12.20	0.00											7546.41			
10:00						12.38	0.00	8.88	99.0	0.09	2.13	0.17			8.79	210.99	382.19	7537.62	23000	7.0	Trace
10:15						12.55	0.00											7537.62			
10:30						12.75	0.00											7537.62			
10:45						12.94	0.00											7537.62			
11:00						13.05	0.00	10.40	99.0	0.10	2.50	0.28			10.30	247.10	392.48	7527.33	23000	7.0	Trace
11:15						13.25	0.00											7527.33			
11:30						13.45	0.00											7527.33			
11:45						13.64	0.00											7527.33			
12:00						13.86	0.00	10.34	99.0	0.10	2.48	0.38			10.24	245.68	402.72	7517.09	23000	7.0	Trace
12:15						14.07	0.00											7517.09			
12:30						14.07	0.00											7517.09			
12:45						14.21	0.00											7517.09			
13:00						14.39	0.00	14.01	100.0	0.00	0.00	0.38			14.01	336.24	416.73	7503.08	24000	7.0	Trace
13:15						14.58	0.00											7503.08			
13:30						14.76	0.00											7503.08			
13:45						14.96	0.00											7503.08			
14:00						15.14	0.00	7.41	100.0	0.00	0.00	0.38			7.41	177.84	424.14	7495.67	24000	7.0	Trace



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P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/19																												
14:01		Changed orifice plate to 25.400 mm on Meter #1.																										
14:15	49:45	17676.3	80.9	4633		52	2543		997	19.37	47	17.41	1.26	481		34								10	8	0.00	0.00	0.29
14:30	50:00	17649.7	80.9	4628		52	2592		1007	19.54	48	17.55	1.44	427		33								11	8	0.00	0.00	0.29
14:45	50:15	17655.9	80.9	4652		52	2641		1027	19.99	48	17.91	1.63	392		32								13	8	0.00	0.00	0.29
15:00	50:30	17627.6	80.9	4603		53	2698		1027	20.01	48	17.90	1.81	394		33								12	8	0.00	0.00	0.29
		Trace of condensate in fluid returns.																										
15:15	50:45	17601.9	80.9	4658		53	2747		1042	20.22	48	18.12	2.00	388		33								13	9	0.00	0.00	0.29
15:30	51:00	17614.3	80.9	4663		53	2793		1062	20.69	48	18.50	2.20	385		34								10	10	0.00	0.00	0.29
15:45	51:15	17600.9	80.9	4695		53	2830		1067	21.04	48	18.70	2.39	384		34								10	7	0.00	0.00	0.29
16:00	51:30	17597.0	80.9	4708		53	2882		1065	20.98	48	18.67	2.59	383		34								9	4	0.00	0.00	0.29
16:15	51:45	17589.1	80.9	4713		53	2946		1071	21.35	47	18.90	2.78	378		33								10	2	0.00	0.00	0.29
16:30	52:00	17561.9	80.9	4726		53	2986		1078	21.58	47	19.06	2.98	377		34								12	1	0.00	0.00	0.29
16:45	52:15	17589.5	81.0	4747		53	3026		1087	21.73	47	19.20	3.18	25		16								28	5	0.00	0.00	0.29
17:00	52:30	17525.2	81.0	4746		53	3073		1105	22.01	47	19.47	3.38	0		18								14	18	0.00	0.00	0.29
		Trace of condensate in fluid returns.																										
17:15	52:45	17520.4	80.9	4773		53	3133		1007	20.21	47	17.87	3.57	0		25								15	26	0.00	0.00	0.29
17:30	53:00	17457.9	80.9	4823		53	3175		1142	22.92	48	20.15	3.78	0		28								12	31	0.00	0.00	0.29
17:45	53:15	17553.1	80.9	4778		53	3236		1204	24.60	48	21.41	4.00	0		30								8	32	0.00	0.00	0.29
18:00	53:30	17507.3	80.9	4841		53	3276		1150	23.12	49	20.28	4.21	0		31								9	30	0.00	0.00	0.29
18:30	54:00	17419.7	80.9	4868		53	3383		1175	23.57	48	20.73	4.65	6		27								10	27	0.00	0.00	0.29
18:45	54:15	17448.2	80.9	4899		53	3427		1167	23.55	47	20.67	4.86	7		24								9	26	0.00	0.00	0.29
19:00	54:30	17437.5	80.9	4940		53	3480		1194	24.03	47	21.10	5.08	9		22								7	24	0.00	0.00	0.29
		Trace of condensate in fluid returns.																										
19:15	54:45	17431.6	80.9	4979		53	3521		1218	24.44	48	21.47	5.30	7		23								7	23	0.00	0.00	0.29
19:30	55:00	17404.5	80.9	4995		53	3568		1228	24.87	48	21.75	5.53	8		23								8	22	0.00	0.00	0.29
19:45	55:15	17372.8	80.8	5009		53	3623		1242	25.10	48	21.97	5.76	5		24								9	21	0.00	0.00	0.29
20:00	55:30	17386.0	80.7	5031		53	3674		1089	27.64	48	21.66	5.99	8		26								9	20	0.00	0.00	0.29
20:15	55:45	17372.0	80.7	5083		53	3730		1164	29.35	48	23.03	6.23	8		27								10	20	0.00	0.00	0.29
20:30	56:00	17380.5	80.7	5039		53	3777		1192	30.06	48	23.57	6.47	7		28								8	19	0.00	0.00	0.29
20:45	56:15	17365.5	80.7	5069		53	3829		1200	30.31	49	23.73	6.72	3		29								11	19	0.00	0.00	0.29
21:00	56:30	17367.2	80.7	5079		53	3890		1215	30.66	49	24.02	6.97	6		30								9	18	0.00	0.00	0.29
		Trace of condensate in fluid returns.																										
21:15	56:45	17345.3	80.7	5124		53	3956		1227	30.86	49	24.21	7.22	5		30								9	18	0.00	0.00	0.29
21:30	57:00	17353.7	80.7	5150		53	4002		1244	31.28	49	24.53	7.48	5		31								10	17	0.00	0.00	0.29
21:45	57:15	17326.0	80.7	5217		53	4053		1242	31.33	49	24.52	7.73	5		31								11	17	0.00	0.00	0.29
22:00	57:30	17314.0	80.7	5196		53	4100		1260	31.72	49	24.84	7.99	7		32								10	17	0.00	0.00	0.29
22:15	57:45	17306.0	80.7	5174		53	4155		1279	32.27	49	25.23	8.25	4		33								8	17	0.00	0.00	0.29
22:30	58:00	17261.4	80.7	5230		53	4209		1288	32.51	49	25.41	8.52	3		33								9	17	0.00	0.00	0.29
22:45	58:15	17273.2	81.0	5245		53	4265		1291	32.63	49	25.49	8.78	3		34								11	16	0.00	0.00	0.29
23:00	58:30	17277.3	81.0	5269		53	4326		1304	32.70	49	25.63	9.05	3		34								10	16	0.00	0.00	0.29
		Trace of condensate in fluid returns.																										
23:15	58:45	17263.8	81.0	5246		53	4379		1313	33.13	49	25.88	9.32	3		34								11	16	0.00	0.00	0.29



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Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
14:15						15.32	0.00											7495.67			
14:30						15.51	0.00											7495.67			
14:45						15.69	0.00											7495.67			
15:00						15.88	0.00	9.25	100.0	0.00	0.00	0.38			9.25	222.00	433.39	7486.42	25000	7.0	Trace
15:15						16.07	0.00											7486.42			
15:30						16.26	0.00											7486.42			
15:45						16.46	0.00											7486.42			
16:00						16.65	0.00	9.25	99.0	0.09	2.22	0.47			9.16	219.78	442.55	7477.26	25000	7.0	Trace
16:15						16.85	0.00											7477.26			
16:30						17.05	0.00											7477.26			
16:45						17.25	0.00											7477.26			
17:00						17.45	0.00											7477.26			
17:15						17.64	0.00											7477.26			
17:30						17.85	0.00											7477.26			
17:45						18.07	0.00											7477.26			
18:00						18.28	0.00	8.34	100.0	0.00	0.00	0.47			8.34	100.08	450.89	7468.92	25000	7.0	Trace
18:30						18.71	0.00											7468.92			
18:45						18.93	0.00											7468.92			
19:00						19.15	0.00	9.85	100.0	0.00	0.00	0.47			9.85	236.40	460.74	7459.07	25000	7.0	Trace
19:15						19.37	0.00											7459.07			
19:30						19.60	0.00											7459.07			
19:45						19.83	0.00											7459.07			
20:00						20.05	0.00	9.33	100.0	0.00	0.00	0.47			9.33	223.92	470.07	7449.74	26000	7.0	Trace
20:15						20.29	0.00											7449.74			
20:30						20.54	0.00											7449.74			
20:45						20.78	0.00											7449.74			
21:00						21.03	0.00	9.41	100.0	0.00	0.00	0.47			9.41	225.84	479.48	7440.33	28000	7.0	Trace
21:15						21.29	0.00											7440.33			
21:30						21.54	0.00											7440.33			
21:45						21.80	0.00											7440.33			
22:00						22.06	0.00	7.88	99.5	0.04	0.95	0.51			7.84	188.17	487.32	7432.49	28000	7.0	Trace
22:15						22.32	0.00											7432.49			
22:30						22.58	0.00											7432.49			
22:45						22.85	0.00											7432.49			
23:00						23.12	0.00	9.79	100.0	0.00	0.00	0.51			9.79	234.96	497.11	7422.70	26000	7.0	Trace
23:15						23.39	0.00											7422.70			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	°C	E ³ m ³ /d	E ³ m ³ /d	E ³ m ³
14/03/19																												
23:30	59:00	17236.6	81.0	5322		53	4447		1326	33.47	49	26.14	9.59	5		33								9	16	0.00	0.00	0.29
23:45	59:15	17237.3	81.0	5324		53	4496		1331	33.95	49	26.37	9.87	2		33								11	16	0.00	0.00	0.29
14/03/20																												
00:00	59:30	17223.3	81.0	5342		53	4543		1343	34.41	49	26.68	10.14	4		33								10	15	0.00	0.00	0.29
00:00		ProTechnics sample #13 taken. Total fluid recovered to date = 507.30m ³																										
00:15	59:45	17216.9	81.0	5380		53	4599		1323	35.30	49	26.84	10.42	3		32								9	15	0.00	0.00	0.29
00:30	60:00	17199.0	81.0	5351		53	4655		1320	35.25	49	26.80	10.70	3		32								9	15	0.00	0.00	0.29
00:45	60:15	17162.2	81.0	5458		53	4715		1334	36.98	49	27.59	10.99	3		32								10	15	0.00	0.00	0.29
01:00	60:30	17182.0	81.0	5509		53	4765		1338	37.98	49	28.00	11.28	1		31								10	15	0.00	0.00	0.29
		Trace of condensate in fluid returns.																										
01:15	60:45	17161.2	81.0	5408		53	4819		1320	40.81	49	28.85	11.58	2		31								10	15	0.00	0.00	0.29
01:30	61:00	17150.2	81.0	5428		53	4874		1297	40.38	49	28.46	11.88	1		31								11	15	0.00	0.00	0.29
01:45	61:15	17155.6	81.0	5469		53	4926		1306	40.39	49	28.57	12.18	1		31								10	15	0.00	0.00	0.29
02:00	61:30	17118.0	81.0	5481		53	4974		1332	41.36	49	29.18	12.48	0		31								11	15	0.00	0.00	0.29
02:15	61:45	17086.8	80.9	5549		53	5035		1322	41.10	48	28.99	12.78	2		30								11	14	0.00	0.00	0.29
02:30	62:00	17110.9	80.9	5565		53	5095		1327	41.42	48	29.17	13.09	0		30								10	14	0.00	0.00	0.29
02:45	62:15	17106.4	80.9	5573		53	5159		1282	44.33	48	29.71	13.40	1		30								12	14	0.00	0.00	0.29
03:00	62:30	17104.1	80.8	5557		53	5211		1336	42.92	49	29.77	13.71	-1		29								11	13	0.00	0.00	0.29
		Trace of condensate in fluid returns.																										
03:15	62:45	17093.1	80.9	5600		53	5266		1340	43.37	48	30.01	14.02	0		29								11	13	0.00	0.00	0.29
03:30	63:00	17085.7	80.9	5613		53	5319		1351	43.81	48	30.28	14.33	-2		29								9	13	0.00	0.00	0.29
03:45	63:15	17060.2	80.9	5624		53	5381		1371	44.14	48	30.60	14.65	1		28								11	13	0.00	0.00	0.29
04:00	63:30	17049.5	80.9	5649		53	5427		1370	44.33	48	30.68	14.97	1		28								12	13	0.00	0.00	0.29
04:15	63:45	17045.2	81.1	5631		53	5489		1390	44.92	48	31.08	15.30	-2		28								11	13	0.00	0.00	0.29
04:30	64:00	17031.9	81.0	5651		53	5537		1403	44.97	48	31.22	15.62	-2		28								11	12	0.00	0.00	0.29
04:45	64:15	17005.6	81.0	5722		53	5596		1404	45.30	48	31.36	15.95	-1		28								12	12	0.00	0.00	0.29
05:00	64:30	17004.2	81.0	5704		53	5659		1418	45.81	48	31.69	16.28	2		28								12	12	0.00	0.00	0.29
		Trace of condensate in fluid returns.																										
05:15	64:45	16999.0	81.0	5728		53	5711		1430	46.25	48	31.98	16.61	-1		28								12	12	0.00	0.00	0.29
05:30	65:00	16994.6	81.0	5700		53	5764		1452	46.72	48	32.36	16.95	-1		28								13	12	0.00	0.00	0.29
05:45	65:15	16980.6	81.0	5816		53	5824		1444	46.62	48	32.26	17.28	-1		29								9	12	0.00	0.00	0.29
06:00	65:30	16979.4	81.0	5780		53	5879		1424	46.01	48	31.83	17.62	-3		29								10	12	0.00	0.00	0.29
06:00		Daily Summary to 06:00 hrs March 20/2014																										
		DHP = 16979kpa																										
		FTP = 5780kpa																										
		SICP = 5879kpa																										
		Flow Temp = 53DegC																										
		Meter Run Temp = 48DegC																										
		Choke Size = 12.7mm																										
		Gas Rate = 31.83 E3m3/Day																										
		Cumulative Gas to Flare = 31.68 E3m3																										
		Gas to Flare last 24hrs = 21.74 E3m3																										



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
23:30						23.66	0.00											7422.70			
23:45						23.93	0.00											7422.70			
00:00						24.21	0.00	10.19	100.0	0.00	0.00	0.51			10.19	244.56	507.30	7412.51	28000	7.0	Trace
00:15						24.49	0.00											7412.51			
00:30						24.77	0.00											7412.51			
00:45						25.06	0.00											7412.51			
01:00						25.35	0.00	5.48	99.0	0.05	1.32	0.57			5.43	130.20	512.72	7407.09	28000	7.0	Trace
01:15						25.65	0.00											7407.09			
01:30						25.95	0.00											7407.09			
01:45						26.24	0.00											7407.09			
02:00						26.55	0.00	8.88	100.0	0.00	0.00	0.57			8.88	213.12	521.60	7398.21	28000	7.0	Trace
02:15						26.85	0.00											7398.21			
02:30						27.15	0.00											7398.21			
02:45						27.46	0.00											7398.21			
03:00						27.77	0.00	7.94	99.5	0.04	0.95	0.61			7.90	189.61	529.50	7390.31	28000	7.0	Trace
03:15						28.09	0.00											7390.31			
03:30						28.40	0.00											7390.31			
03:45						28.72	0.00											7390.31			
04:00						29.04	0.00	8.92	100.0	0.00	0.00	0.61			8.92	214.08	538.42	7381.39	28000	7.0	Trace
04:15						29.36	0.00											7381.39			
04:30						29.69	0.00											7381.39			
04:45						30.01	0.00	8.61	99.5	0.04	1.38	0.65			8.57	274.14	546.99	7372.82	28000	7.0	Trace
05:00						30.34	0.00											7372.82			
05:15						30.68	0.00											7372.82			
05:30						31.01	0.00											7372.82			
05:45						31.35	0.00											7372.82			
06:00						31.68	0.00	8.02	100.0	0.00	0.00	0.65			8.02	153.98	555.01	7364.80	28000	7.0	Trace



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/20																												
		LFTR = 7919.81m3																										
		LFR last 24hrs = 205.67m3																										
		TLFR = 555.01m3																										
		TLFLTR = 7364.80m3																										
		Condensate Produced last 24hrs = 0.65m3																										
		Cummulative Condensate Produced = 0.65m3																										
		Salinity = 28000ppm																										
		ph = 7																										
		Sand = Trace																										
		Hrs Flowed = 65.5																										
		Hours Flared =62																										
		Surface Total = 280.02m3																										
		Api = 58.8@15.6°C																										
		H2s = 0ppm																										
		CO2 = 2.0%																										
06:15	65:45	16963.4	81.0	5795		53	5920		1356	48.92	48	32.08	17.95	6		29								13	12	0.00	0.00	0.29
06:30	66:00	16942.8	81.0	5792		53	5987		1399	50.07	48	32.97	18.29	9		29								13	12	0.00	0.00	0.29
06:45	66:15	16938.5	81.0	5797		53	6042		1422	51.05	48	33.53	18.64	8		29								11	12	0.00	0.00	0.29
07:00	66:30	16880.6	81.0	5835		53	6095		1439	51.65	48	33.92	19.00	9		29								11	12	0.00	0.00	0.29
07:15	66:45	16909.3	81.1	5873		53	6154		1443	51.61	48	33.97	19.35	6		29								11	13	0.00	0.00	0.29
07:30	67:00	16892.5	81.1	5932		53	6203		1442	51.84	48	34.02	19.70	6		30								12	18	0.00	0.00	0.29
07:45	67:15	16889.0	81.1	5888		53	6246		1495	53.28	48	35.08	20.07	5		30								11	21	0.00	0.00	0.29
08:00	67:30	16879.9	81.1	5912		53	6303		1485	53.26	48	34.97	20.43	6		29								9	23	0.00	0.00	0.29
08:15	67:45	16881.8	81.1	5958		53	6359		1129	81.80	45	38.42	20.83	4		27								9	22	0.00	0.00	0.29
08:30	68:00	16860.0	81.1	5945		53	6416		1138	74.45	48	36.59	21.22	4		27								28	22	0.00	0.00	0.29
08:45	68:15	16827.3	81.1	5990		53	6470		1149	75.32	48	36.98	21.60	6		26								10	20	0.00	0.00	0.29
09:00	68:30	16833.7	81.1	5997		53	6527		1157	75.94	48	37.23	21.99	6		26								10	20	0.00	0.00	0.29
09:15	68:45	16813.9	81.0	6048		53	6579		1160	76.55	48	37.45	22.38	7		27								13	26	0.00	0.00	0.29
09:30	69:00	16817.1	81.1	6051		53	6638		1166	76.79	47	37.62	22.77	6		28								11	30	0.00	0.00	0.29
09:45	69:15	16793.1	81.1	6045		53	6709		1187	78.42	47	38.37	23.17	4		28								10	33	0.00	0.00	0.29
10:00	69:30	16788.3	81.1	6054		53	6771		1195	78.92	47	38.60	23.57	5		28								11	35	0.00	0.00	0.29
10:15	69:45	16778.2	81.2	6123		53	6838		1203	79.49	47	38.89	23.98	6		28								9	33	0.00	0.00	0.29
10:30	70:00	16755.1	81.2	6171		53	6888		1205	79.69	47	38.96	24.38	5		29								9	31	0.00	0.00	0.29
10:45	70:15	16741.9	81.2	6113		52	6941		1233	80.76	47	39.65	24.80	6		28								8	27	0.00	0.00	0.29
11:00	70:30	16757.8	81.3	6125		52	7013		1235	81.34	47	39.80	25.21	5		29								8	26	0.00	0.00	0.29
11:15	70:45	16717.1	81.3	6166		52	7067		1248	82.55	47	40.31	25.63	5		29								9	24	0.00	0.00	0.29
11:30	71:00	16735.0	81.3	6174		52	7125		1252	82.85	46	40.50	26.05	5		29								10	23	0.00	0.00	0.29
11:45	71:15	16700.0	81.3	6171		52	7181		1282	84.66	47	41.38	26.48	6		28								10	22	0.00	0.00	0.29
12:00	71:30	16688.0	81.2	6222		52	7243		1343	88.90	47	43.35	26.94	5		28								8	21	0.00	0.00	0.29
12:15	71:45	16655.7	81.2	6304		52	7308		1235	82.05	46	40.11	27.35	6		28								11	20	0.00	0.00	0.29
12:30	72:00	16647.9	81.2	6216		52	7365		1340	88.22	47	43.12	27.80	9		28								11	20	0.00	0.00	0.29
12:34		HS Orifice Plate Size changed from 1 to 1.5 by field																										



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P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:15						32.02	0.00											7364.80			
06:30						32.36	0.00											7364.80			
06:45						32.71	0.00											7364.80			
07:00						33.06	0.00	7.84	99.0	0.08	1.88	0.73			7.76	186.28	562.77	7357.04	29000	7.0	Trace
07:15						33.42	0.00											7357.04			
07:30						33.77	0.00											7357.04			
07:45						34.14	0.00											7357.04			
08:00						34.50	0.00	7.99	99.0	0.08	1.92	0.81			7.91	189.84	570.68	7349.13	30000	7.0	Trace
08:15						34.90	0.00											7349.13			
08:30						35.28	0.00											7349.13			
08:45						35.67	0.00											7349.13			
09:00						36.05	0.00	8.01	99.0	0.08	1.92	0.89			7.93	190.32	578.61	7341.20	30000	7.0	Trace
09:15						36.44	0.00											7341.20			
09:30						36.84	0.00											7341.20			
09:45						37.24	0.00											7341.20			
10:00						37.64	0.00	8.24	99.0	0.08	1.98	0.97			8.16	195.78	586.77	7333.04	31000	7.0	Trace
10:15						38.04	0.00											7333.04			
10:30						38.45	0.00											7333.04			
10:45						38.86	0.00											7333.04			
11:00						39.28	0.00	8.01	99.0	0.08	1.92	1.05			7.93	190.32	594.70	7325.11	31000	7.0	Trace
11:15						39.70	0.00											7325.11			
11:30						40.12	0.00											7325.11			
11:45						40.55	0.00											7325.11			
12:00						41.00	0.00	6.97	100.0	0.00	0.00	1.05			6.97	167.28	601.67	7318.14	31000	7.0	Trace
12:15						41.42	0.00											7318.14			
12:30						41.87	0.00											7318.14			



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Calgary, AB T2P 3B6
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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1					
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³	
14/03/20																													
12:35		Changed orifice plate to 38.100 mm on Meter #1.																											
12:45	72:15	16632.8	81.3	6265		52	7432		1327	17.33	47	42.88	28.25	6		29								11	19	0.00	0.00	0.29	
13:00	72:30	16632.3	81.3	6211		52	7493		1345	17.58	47	43.46	28.70	5		30								11	19	0.00	0.00	0.29	
13:15	72:45	16611.7	81.3	6314		52	7549		1312	17.25	46	42.62	29.15	7		31								12	19	0.00	0.00	0.29	
13:30	73:00	16625.0	81.3	6402		52	7615		1066	21.59	46	43.26	29.60	7		31								11	19	0.00	0.00	0.29	
13:45	73:15	16602.9	81.3	6333		52	7680		1123	20.80	46	43.50	30.05	8		32								11	18	0.00	0.00	0.29	
14:00	73:30	16581.7	81.3	6318		52	7734		1161	21.28	47	44.65	30.51	5		33								30	17	0.00	0.00	0.29	
14:00		Trace of Condensate in fluid returns.																											
14:15	73:45	16573.1	81.3	6283		52	7802		1163	21.38	47	44.77	30.98	7		33								29	16	0.00	0.00	0.29	
14:30	74:00	16566.8	81.3	6297		52	7868		1172	21.62	47	45.20	31.45	9		34								33	15	0.00	0.00	0.29	
14:45	74:15	16562.8	81.3	6351		52	7934		1043	23.52	46	44.68	31.92	8		35								33	14	0.00	0.00	0.29	
15:00	74:30	16536.1	81.3	6330		52	8005		1051	23.67	46	45.02	32.39	8		35								35	20	0.00	0.00	0.29	
15:15	74:45	16546.5	81.3	6414		52	8070		1026	23.39	46	44.25	32.85	7		34								32	25	0.00	0.00	0.29	
15:30	75:00	16528.5	81.3	6303		51	8127		1082	24.40	47	46.27	33.33	8		32								32	25	0.00	0.00	0.29	
15:45	75:15	16513.9	81.2	6353		51	8189		1084	24.49	46	46.41	33.81	9		30								34	24	0.00	0.00	0.29	
16:00	75:30	16488.4	81.2	6391		52	8247		1071	24.26	46	45.97	34.29	9		28								33	23	0.00	0.00	0.29	
16:00		Trace of Condensate in fluid returns.																											
16:15	75:45	16501.8	81.3	6361		52	8312		1061	24.10	45	45.67	34.77	9		27								31	22	0.00	0.00	0.29	
16:30	76:00	16467.8	81.2	6260		51	8371		1111	25.11	46	47.60	35.26	18		26								33	21	0.00	0.00	0.29	
16:45	76:15	16443.5	81.3	6413		51	8450		1055	24.07	44	45.57	35.74	18		25								33	21	0.00	0.00	0.29	
17:00	76:30	16462.0	81.3	6413		51	8515		1077	24.41	45	46.29	36.22	19		25								32	21	0.00	0.00	0.29	
17:15	76:45	16441.8	81.3	6313		51	8579		1034	27.26	45	47.99	36.72	23		24								34	21	0.00	0.00	0.29	
17:30	77:00	16431.6	81.3	6434		51	8639		1006	26.51	44	46.82	37.21	25		21								33	22	0.00	0.00	0.29	
17:45	77:15	16410.7	81.2	6444		51	8694		1026	27.07	45	47.71	37.70	25		19								35	22	0.00	0.00	0.29	
18:00	77:30	16408.3	81.2	6407		51	8764		1036	27.19	45	48.00	38.20	27		17								34	22	0.00	0.00	0.29	
18:15	77:45	16402.0	81.2	6422		51	8814		989	32.25	44	51.30	38.74	27		16								36	22	0.00	0.00	0.29	
18:30	78:00	16402.9	81.2	6395		51	8895		1031	27.71	45	48.35	39.24	33		17								36	24	0.00	0.00	0.29	
18:45	78:15	16400.0	81.2	6432		51	8946		1019	27.50	44	47.96	39.74	29		16								34	31	0.00	0.00	0.29	
19:00	78:30	16376.0	81.2	6396		51	9014		1038	28.00	45	48.78	40.25	32		15								38	36	0.00	0.00	0.29	
19:15	78:45	16361.3	81.2	6446		51	9076		1047	28.21	45	49.13	40.76	32		14								37	39	0.00	0.00	0.29	
19:30	79:00	16365.3	81.2	6498		51	9138		1011	27.35	43	47.74	41.26	35		14								34	42	0.00	0.00	0.29	
19:45	79:15	16340.3	81.1	6456		51	9198		1022	27.49	44	48.07	41.76	38		14								33	44	0.00	0.00	0.29	
20:00	79:30	16338.0	81.1	6404		51	9269		1036	27.85	44	48.66	42.27	38		15								36	46	0.00	0.00	0.29	
20:15	79:45	16293.9	81.1	6446		51	9331		1053	28.08	44	49.25	42.78	39		15								36	48	0.00	0.00	0.29	
20:30	80:00	16320.0	81.0	6439		50	9381		1057	28.42	44	49.64	43.30	41		15								36	49	0.00	0.00	0.29	
20:45	80:15	16304.2	80.9	6443		50	9447		1094	29.23	45	51.07	43.83	40		14								38	49	0.00	0.00	0.29	
21:00	80:30	16296.4	80.9	6480		50	9506		1108	29.57	46	51.63	44.37	42		17								38	48	0.00	0.00	0.29	
21:15	80:45	16300.1	80.9	6427		50	9575		1103	29.22	45	51.27	44.90	42		19								37	45	0.00	0.00	0.29	
21:30	81:00	16286.8	80.8	6395		50	9655		1091	29.10	44	50.96	45.43	44		21								37	41	0.00	0.00	0.29	
21:45	81:15	16364.3	80.8	6535		50	9711		1059	28.68	44	49.93	45.95	46		22								34	35	0.00	0.00	0.29	
22:00	81:30	16279.2	80.8	6471		50	9776		1082	28.91	44	50.63	46.48	46		23								33	28	0.00	0.00	0.29	
22:15	81:45	16270.4	81.3	6554		50	9814		1087	29.01	44	50.84	47.01	47		23								34	23	0.00	0.00	0.29	



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
12:45						42.32	0.00											7318.14			
13:00						42.77	0.00	8.13	99.0	0.08	1.95	1.13			8.05	193.17	609.72	7310.09			
13:15						43.21	0.00											7310.09	33000	7.0	Trace
13:30						43.66	0.00											7310.09			
13:45						44.12	0.00											7310.09			
14:00						44.58	0.00	7.63	100.0	0.00	0.00	1.13			7.63	183.12	617.35	7302.46			
14:15						45.05	0.00											7302.46			
14:30						45.52	0.00											7302.46			
14:45						45.98	0.00											7302.46			
15:00						46.45	0.00	7.60	99.0	0.08	1.82	1.21			7.52	180.58	624.87	7294.94	33000	7.0	Trace
15:15						46.91	0.00											7294.94			
15:30						47.40	0.00											7294.94			
15:45						47.88	0.00											7294.94			
16:00						48.36	0.00	7.85	100.0	0.00	0.00	1.21			7.85	188.40	632.72	7287.09	34000	7.0	Trace
16:15						48.83	0.00											7287.09			
16:30						49.33	0.00											7287.09			
16:45						49.80	0.00											7287.09			
17:00						50.29	0.00	7.33	99.0	0.07	1.76	1.28			7.26	174.16	639.98	7279.83	34000	7.0	Trace
17:15						50.79	0.00											7279.83			
17:30						51.27	0.00											7279.83			
17:45						51.77	0.00											7279.83			
18:00						52.27	0.00	7.64	100.0	0.00	0.00	1.28			7.64	183.36	647.62	7272.19	34000	7.0	Trace
18:15						52.80	0.00											7272.19			
18:30						53.31	0.00											7272.19			
18:45						53.81	0.00											7272.19			
19:00						54.32	0.00	7.33	99.0	0.07	1.76	1.35			7.26	174.16	654.88	7264.93	33000	7.0	Trace
19:15						54.83	0.00											7264.93			
19:30						55.33	0.00											7264.93			
19:45						55.83	0.00											7264.93			
20:00						56.33	0.00	6.29	98.5	0.09	2.26	1.45			6.20	148.70	661.07	7258.74	32000	7.0	Trace
20:15						56.85	0.00											7258.74			
20:30						57.36	0.00											7258.74			
20:45						57.89	0.00											7258.74			
21:00						58.43	0.00	8.30	99.0	0.08	1.99	1.53			8.22	197.21	669.29	7250.52	35000	7.0	Trace
21:15						58.97	0.00											7250.52			
21:30						59.50	0.00											7250.52			
21:45						60.02	0.00											7250.52			
22:00						60.55	0.00	6.48	99.0	0.06	1.56	1.60			6.42	153.96	675.70	7244.11	34000	7.0	Trace
22:15						61.07	0.00											7244.11			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1					
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³	
14/03/20																													
22:30	82:00	16266.2	81.2	6504		50	9890		1094	29.17	44	51.11	47.54	45		23								37	18	0.00	0.00	0.29	
22:45	82:15	16242.3	81.2	6503		50	9950		1084	28.98	43	50.79	48.07	47		23								36	14	0.00	0.00	0.29	
23:00	82:30	16252.2	81.2	6466		50	10010		1115	29.68	43	52.10	48.61	51		23								37	12	0.00	0.00	0.29	
23:15	82:45	16226.6	81.2	6440		50	10112		1351	27.45	45	54.76	49.18	50		23								41	9	0.00	0.00	0.29	
23:30	83:00	16219.9	81.2	6515		50	10111		1269	26.07	44	51.84	49.72	52		22								38	7	0.00	0.00	0.29	
23:45	83:15	16205.6	81.2	6538		50	10180		1276	26.66	43	52.61	50.27	54		21								38	6	0.00	0.00	0.29	
14/03/21																													
00:00	83:30	16205.6	81.2	6560		50	10240		1307	27.17	44	53.69	50.83	54		21								39	4	0.00	0.00	0.29	
00:15	83:45	16192.3	81.2	6514		50	10277		1308	27.35	44	53.88	51.39	52		21								41	3	0.00	0.00	0.29	
00:30	84:00	16188.6	81.2	6552		50	10346		1308	27.28	43	53.86	51.95	56		21								40	2	0.00	0.00	0.29	
00:45	84:15	16172.2	81.2	6552		50	10397		1313	27.58	44	54.23	52.52	55		21								40	1	0.00	0.00	0.29	
01:00	84:30	16175.4	81.1	6431		49	10462		1348	28.25	44	55.52	53.10	57		21								42	0	0.00	0.00	0.29	
01:15	84:45	16160.6	81.1	6491		49	10510		1346	28.23	44	55.50	53.67	58		22								41	0	0.00	0.00	0.29	
01:30	85:00	16158.1	81.1	6478		49	10586		1328	27.80	43	54.75	54.24	60		22								41	-1	0.00	0.00	0.29	
01:45	85:15	16174.6	81.1	6571		50	10631		1324	27.70	43	54.62	54.81	60		23								40	-1	0.00	0.00	0.29	
02:00	85:30	16143.8	81.3	6611		49	10703		1269	29.19	43	54.92	55.39	60		24								44	9	0.00	0.00	0.29	
02:15	85:45	16136.1	81.3	6483		49	10743		1280	29.57	43	55.53	55.96	61		25								40	17	0.00	0.00	0.29	
02:30	86:00	16111.6	81.3	6495		49	10803		1309	30.04	43	56.54	56.55	63		25								42	25	0.00	0.00	0.29	
02:45	86:15	16113.8	81.3	6542		49	10861		1303	29.94	44	56.31	57.14	65		26								39	31	0.00	0.00	0.29	
03:00	86:30	16106.8	81.3	6651		49	10917		1271	29.14	43	54.97	57.71	64		26								41	36	0.00	0.00	0.29	
03:15	86:45	16101.8	81.3	6580		49	10964		1307	30.16	43	56.64	58.30	65		26								40	39	0.00	0.00	0.29	
03:30	87:00	16077.8	81.3	6599		49	11030		1314	30.18	43	56.78	58.89	65		26								40	42	0.00	0.00	0.29	
03:45	87:15	16092.5	81.3	6697		49	11088		1296	29.78	43	56.09	59.48	68		26								42	44	0.00	0.00	0.29	
04:00	87:30	16085.0	81.3	6481		49	11146		1210	27.83	43	52.48	60.02	68		27								38	46	0.00	0.00	0.29	
04:15	87:45	16039.8	81.3	6681		49	11174		1311	32.78	42	59.28	60.64	69		27								45	47	0.00	0.00	0.29	
04:30	88:00	16045.9	81.3	6674		49	11232		1257	31.38	43	56.78	61.23	71		27								43	48	0.00	0.00	0.29	
04:45	88:15	16035.2	81.3	6621		49	11284		1252	31.32	42	56.64	61.82	71		26								42	49	0.00	0.00	0.29	
05:00	88:30	16018.1	81.3	6597		49	11341		1296	32.32	43	58.41	62.43	73		26								42	49	0.00	0.00	0.29	
05:15	88:45	16013.6	81.3	6429		49	11395		1250	31.36	42	56.66	63.02	73		26								40	45	0.00	0.00	0.29	
05:30	89:00	16023.0	81.2	6659		49	11442		1351	30.67	44	57.93	63.63	73		26								41	40	0.00	0.00	0.29	
05:45	89:15	16030.7	81.3	6645		49	11506		1303	29.82	42	56.31	64.21	72		26								40	44	0.00	0.00	0.29	
06:00	89:30	16012.0	81.3	6527		49	11563		1336	30.87	42	58.04	64.82	75		26								44	47	0.00	0.00	0.29	
		Daily Summary to 06:00 hrs March 21/2014																											
		DHP = 16012kpa																											
		FTP = 6527kpa																											
		SICP = 11563kpa																											
		Flow Temp = 49DegC																											
		Meter Run Temp = 42DegC																											
		Choke Size = 12.70mm																											
		Gas Rate = 58.04 E3m3/Day																											
		Cumulative Gas to Flare = 78.88 E3m3																											
		Gas to Flare last 24hrs = 47.20 E3m3																											



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P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	Sand %
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
22:30						61.61	0.00											7244.11			
22:45						62.14	0.00											7244.11			
23:00						62.68	0.00	7.52	98.5	0.11	2.71	1.71			7.41	177.77	683.11	7236.70			
23:15						63.25	0.00											7236.70			
23:30						63.79	0.00											7236.70			
23:45						64.34	0.00											7236.70			
00:00						64.90	0.00	6.43	98.0	0.13	3.09	1.84			6.30	151.23	689.41	7230.40			
00:15						65.46	0.00											7230.40			
00:30						66.02	0.00											7230.40			
00:45						66.58	0.00											7230.40			
01:00						67.16	0.00	6.89	98.0	0.14	3.31	1.98			6.75	162.05	696.16	7223.65	36000	7.0	Trace
01:15						67.74	0.00											7223.65			
01:30						68.31	0.00											7223.65			
01:45						68.88	0.00											7223.65			
02:00						69.45	0.00	5.25	97.5	0.13	3.15	2.11			5.12	122.85	701.28	7218.53	34000	7.0	Trace
02:15						70.03	0.00											7218.53			
02:30						70.62	0.00											7218.53			
02:45						71.21	0.00											7218.53			
03:00						71.78	0.00	6.73	98.5	0.10	2.42	2.21			6.63	159.10	707.91	7211.90	36000	7.0	Trace
03:15						72.37	0.00											7211.90			
03:30						72.96	0.00											7211.90			
03:45						73.54	0.00											7211.90			
04:00						74.09	0.00	6.89	98.0	0.14	3.31	2.35			6.75	162.05	714.66	7205.15	36000	7.0	Trace
04:15						74.71	0.00											7205.15			
04:30						75.30	0.00											7205.15			
04:45						75.89	0.00											7205.15			
05:00						76.50	0.00	8.45	98.0	0.17	4.06	2.52			8.28	198.74	722.94	7196.87	36000	7.0	Trace
05:15						77.09	0.00											7196.87			
05:30						77.69	0.00											7196.87			
05:45						78.28	0.00											7196.87			
06:00						78.88	0.00	11.66	98.5	0.17	4.20	2.69			11.49	275.64	734.43	7185.38	36000	7.0	Trace



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/21		LFTR = 7919.81m3 LFR last 24hrs = 179.42m3 TLFR = 734.43m3 TLFLTR = 7185.38m3 Condensate Produced last 24hrs = 2.04m3 Cumulative Condensate Produced = 2.69m3 Salinity = 36000ppm ph = 7 Sand = Trace Hrs Flowed = 89.5 Hours Flared = 86 Surface Total = 274.06m3 Api = 60.1@15.6°C H2s = 0ppm CO₂ = 2.1%																										
06:15	89:45	15986.3	81.3	6574		49	11598		1324	32.46	42	59.23	65.43	76		26								42	48	0.00	0.00	0.29
06:30	90:00	15995.6	81.4	6662		49	11649		1313	32.18	42	58.74	66.05	77		26								42	49	0.00	0.00	0.29
06:45	90:15	15983.2	81.4	6742		49	11710		1292	31.76	42	57.97	66.65	77		26								42	50	0.00	0.00	0.29
07:00	90:30	15965.7	81.4	6635		49	11757		1193	36.18	42	59.57	67.27	79		26								44	51	0.00	0.00	0.29
07:15	90:45	15959.3	81.3	6765		49	11807		1013	44.33	41	61.28	67.91	78		26								47	51	0.00	0.00	0.29
07:30	91:00	15944.8	81.3	6653		49	11866		1137	37.89	42	59.62	68.53	79		26								45	52	0.00	0.00	0.29
07:45	91:15	15929.2	81.3	6649		49	11913		1045	41.29	41	59.91	69.15	82		26								43	51	0.00	0.00	0.29
08:00	91:30	15923.2	81.3	6672		49	11963		1062	41.91	42	60.79	69.79	80		26								42	46	0.00	0.00	0.29
08:15	91:45	15931.6	81.3	6719		49	11979		1059	41.73	42	60.57	70.42	81		26								42	41	0.00	0.00	0.29
08:30	92:00	15913.2	81.3	6839		49	12031		1065	41.78	42	60.75	71.05	83		26								42	37	0.00	0.00	0.29
08:45	92:15	15914.6	81.3	6753		49	12092		1039	41.17	41	59.75	71.67	88		26								41	34	0.00	0.00	0.29
09:00	92:30	15894.1	81.3	6763		49	12163		1078	42.55	41	61.74	72.32	86		26								45	32	0.00	0.00	0.29
09:15	92:45	15882.7	81.3	6683		49	12215		1089	42.96	42	62.29	72.96	87		26								47	30	0.00	0.00	0.29
09:30	93:00	15869.0	81.3	6753		49	12275		1074	42.03	41	61.21	73.60	88		26								46	28	0.00	0.00	0.29
09:45	93:15	15868.3	81.4	6731		49	12322		1091	42.83	42	62.24	74.25	88		27								46	26	0.00	0.00	0.29
10:00	93:30	15868.5	81.4	6750		48	12377		1060	41.89	41	60.83	74.88	86		27								44	27	0.00	0.00	0.29
10:15	93:45	15865.7	81.5	6708		49	12425		1070	41.83	41	61.02	75.52	90		27								47	36	0.00	0.00	0.29
10:30	94:00	15829.1	81.5	6775		49	12471		1084	42.53	41	61.91	76.16	90		27								46	38	0.00	0.00	0.29
10:45	94:15	15804.6	81.6	6762		48	12529		1082	42.41	41	61.80	76.81	89		27								44	35	0.00	0.00	0.29
11:00	94:30	15814.6	81.6	6828		49	12577		1057	41.57	41	60.46	77.44	93		27								45	33	0.00	0.00	0.29
11:15	94:45	15800.1	81.7	6642		48	12621		1077	42.38	41	61.65	78.08	90		27								45	31	0.00	0.00	0.29
11:30	95:00	15780.8	81.7	6832		49	12664		1100	42.88	41	62.55	78.73	100		27								47	30	0.00	0.00	0.29
11:45	95:15	15763.0	81.7	6785		48	12711		1088	42.77	40	62.28	79.38	97		27								44	28	0.00	0.00	0.29
12:00	95:30	15762.3	81.7	6789		49	12756		1101	42.96	41	62.68	80.03	97		26								45	27	0.00	0.00	0.29
12:00		ProTechnics sample #16 taken. Total fluid recovered to date = 761.84m³																										
12:15	95:45	15749.1	81.7	6765		49	12804		1097	43.04	41	62.65	80.69	93		25								44	26	0.00	0.00	0.29
12:30	96:00	15725.6	81.7	6716		49	12850		1137	44.26	41	64.57	81.36	96		25								47	21	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production				Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:15						79.50	0.00											7185.38			
06:30						80.11	0.00											7185.38			
06:45						80.72	0.00											7185.38			
07:00						81.34	0.00	3.31	95.3	0.16	3.73	2.85			3.15	75.71	737.58		36000	7.0	0.0
07:15						81.97	0.00											7182.23			
07:30						82.60	0.00											7182.23			
07:45						83.22	0.00											7182.23			
08:00						83.85	0.00	2.23	97.8	0.05	1.18	2.89			2.18	52.34	739.77		36000	7.0	0.0
08:15						84.48	0.00											7180.04			
08:30						85.12	0.00											7180.04			
08:45						85.74	0.00											7180.04			
09:00						86.38	0.00	5.10	97.5	0.13	3.06	3.02			4.97	119.34	744.74		37000	7.0	0.0
09:15						87.03	0.00											7175.07			
09:30						87.67	0.00											7175.07			
09:45						88.32	0.00											7175.07			
10:00						88.95	0.00	6.46	97.7	0.15	3.57	3.17			6.31	151.47	751.05		37000	7.0	0.0
10:15						89.59	0.00											7168.76			
10:30						90.23	0.00											7168.76			
10:45						90.87	0.00											7168.76			
11:00						91.50	0.00	4.57	97.6	0.11	2.63	3.28			4.46	107.05	755.51		37000	7.0	0.0
11:15						92.15	0.00											7164.30			
11:30						92.80	0.00											7164.30			
11:45						93.45	0.00											7164.30			
12:00						94.10	0.00	6.53	96.9	0.20	4.86	3.48			6.33	151.86	761.84		38000	7.0	0.0
12:15						94.75	0.00											7157.97			
12:30						95.42	0.00											7157.97			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1					
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³	
14/03/21																													
12:45	96:15	15733.2	81.8	6893		49	12893		1123	43.73	41	63.85	82.02	96		26								50	23	0.00	0.00	0.29	
13:00	96:30	15656.8	81.8	7313		49	12908		1125	44.13	40	64.27	82.69	98		26								49	24	0.00	0.00	0.29	
13:15	96:45	15660.0	81.8	6992		48	12919		954	32.31	37	51.11	83.23	93		26								38	23	0.00	0.00	0.29	
13:30	97:00	15647.3	81.8	6995		49	12889		1093	50.62	41	67.92	83.93	97		27								52	21	0.00	0.00	0.29	
13:45	97:15	15622.9	81.8	6872		49	12891		1099	50.29	41	67.84	84.64	98		28								49	20	0.00	0.00	0.29	
14:00	97:30	15627.5	81.9	6954		48	12891		1083	49.70	41	67.03	85.34	96		27								53	20	0.00	0.00	0.29	
14:00		Removed insulation up stream of manifold to well head.																											
14:15	97:45	15624.6	81.9	6973		48	12850		993	53.46	39	67.01	86.04	98		27								51	20	0.00	0.00	0.29	
14:30	98:00	15628.2	81.9	7007		47	12833		985	53.21	38	66.63	86.73	98		26								54	20	0.00	0.00	0.29	
14:45	98:15	15593.7	82.0	7070		47	12813		971	52.66	38	65.90	87.42	99		26								51	20	0.00	0.00	0.29	
15:00	98:30	15579.6	82.0	7006		48	12795		1101	50.11	39	67.96	88.12	99		25								51	23	0.00	0.00	0.29	
15:15	98:45	15563.8	82.0	6904		47	12782		1060	52.34	38	68.42	88.84	99		25								56	21	0.00	0.00	0.29	
15:30	99:00	15537.2	82.0	7034		47	12797		1064	52.53	39	68.55	89.55	101		26								54	23	0.00	0.00	0.29	
15:45	99:15	15550.8	82.0	6879		47	12770		1055	52.06	38	68.10	90.26	99		26								51	23	0.00	0.00	0.29	
16:00	99:30	15552.4	81.3	7009		47	12766		1029	51.20	38	66.78	90.96	103		27								49	22	0.00	0.00	0.29	
16:15	99:45	15533.5	81.3	7061		47	12748		1047	51.68	38	67.60	91.66	101		27								51	22	0.00	0.00	0.29	
16:30	100:00	15520.7	81.3	7042		47	12741		1058	52.42	38	68.42	92.37	102		27								52	22	0.00	0.00	0.29	
16:45	100:15	15515.0	81.3	6966		47	12747		1060	52.34	38	68.44	93.09	101		27								52	21	0.00	0.00	0.29	
17:00	100:30	15508.5	81.3	6918		47	12736		1063	52.63	38	68.74	93.80	102		28								53	22	0.00	0.00	0.29	
17:15	100:45	15489.4	81.3	6987		47	12722		1055	52.16	37	68.26	94.51	101		27								50	21	0.00	0.00	0.29	
17:30	101:00	15478.4	81.5	6986		47	12709		1070	52.76	38	69.07	95.23	99		26								53	20	0.00	0.00	0.29	
17:45	101:15	15475.4	81.3	6969		47	12708		1058	52.37	37	68.47	95.95	103		25								52	20	0.00	0.00	0.29	
18:00	101:30	15461.9	81.4	6971		47	12710		1079	52.97	38	69.44	96.67	100		24								55	20	0.00	0.00	0.29	
18:15	101:45	15444.5	81.4	7057		47	12684		1084	53.23	38	69.77	97.40	102		23								54	21	0.00	0.00	0.29	
18:30	102:00	15401.8	81.4	6949		47	12684		1074	52.76	38	69.13	98.12	103		22								54	22	0.00	0.00	0.29	
18:45	102:15	15436.8	81.4	7006		47	12676		1134	55.33	39	72.55	98.87	105		23								57	21	0.00	0.00	0.29	
19:00	102:30	15411.3	81.4	7076		47	12683		1008	54.90	37	68.58	99.59	105		24								53	21	0.00	0.00	0.29	
19:15	102:45	15400.4	81.4	7092		47	12704		1051	52.48	39	68.18	100.30	104		25								51	21	0.00	0.00	0.29	
19:30	103:00	15395.1	81.4	6984		47	12717		1086	54.53	38	70.64	101.03	104		25								55	21	0.00	0.00	0.29	
19:45	103:15	15378.6	81.4	7130		47	12688		1070	53.81	38	69.75	101.76	109		26								56	20	0.00	0.00	0.29	
20:00	103:30	15372.9	81.4	7120		47	12690		1062	53.49	37	69.31	102.48	109		27								53	20	0.00	0.00	0.29	
20:15	103:45	15382.7	81.3	7036		47	12672		1086	54.23	38	70.40	103.21	108		28								54	20	0.00	0.00	0.29	
20:30	104:00	15342.6	81.3	7073		47	12665		1070	53.88	38	69.81	103.94	107		28								53	18	0.00	0.00	0.29	
20:45	104:15	15343.5	81.2	7076		47	12655		1084	54.31	37	70.54	104.68	107		27								54	18	0.00	0.00	0.29	
21:00	104:30	15353.2	81.1	7057		47	12651		1088	54.44	38	70.71	105.41	108		26								56	18	0.00	0.00	0.29	
21:15	104:45	15344.6	81.1	7019		47	12643		1081	54.10	38	70.23	106.14	108		26								55	18	0.00	0.00	0.29	
21:30	105:00	15335.1	81.0	7014		47	12635		1115	55.61	38	72.19	106.90	108		25								56	17	0.00	0.00	0.29	
21:45	105:15	15311.6	81.0	7169		47	12630		1091	54.52	37	70.87	107.63	108		25								54	17	0.00	0.00	0.29	
22:00	105:30	15312.6	81.0	7072		47	12619		1109	55.21	37	71.88	108.38	108		24								57	17	0.00	0.00	0.29	
22:15	105:45	15310.6	80.9	7104		47	12621		1092	54.56	37	70.95	109.12	109		23								55	17	0.00	0.00	0.29	
22:30	106:00	15301.9	80.9	7309		47	12601		1055	52.92	37	68.74	109.84	111		25								53	17	0.00	0.00	0.29	
22:45	106:15	15305.6	80.9	7040		47	12598		1102	54.95	38	71.42	110.58	107		26								55	17	0.00	0.00	0.29	



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Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production			Load Fluid Left			Sand %	
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job	Salinity	pH		
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
12:45						96.09	0.00											7157.97			
13:00						96.76	0.00	5.84	96.9	0.18	4.34	3.66			5.66	135.82	767.50	7152.31	39000	7.0	0.0
13:15						97.29	0.00											7152.31			
13:30						98.00	0.00											7152.31			
13:45						98.71	0.00											7152.31			
14:00						99.40	0.00	8.04	98.1	0.15	3.67	3.82			7.89	189.29	775.38	7144.43	39000	7.0	0.0
14:15						100.10	0.00											7144.43			
14:30						100.80	0.00											7144.43			
14:45						101.48	0.00											7144.43			
15:00						102.19	0.00	4.40	98.1	0.08	2.01	3.90			4.32	103.59	779.70	7140.11	40000	7.0	0.0
15:15						102.90	0.00											7140.11			
15:30						103.62	0.00											7140.11			
15:45						104.33	0.00											7140.11			
16:00						105.02	0.00	5.66	97.5	0.14	3.40	4.04			5.52	132.44	785.22	7134.59	40000	7.0	0.0
16:15						105.73	0.00											7134.59			
16:30						106.44	0.00											7134.59			
16:45						107.15	0.00											7134.59			
17:00						107.87	0.00	5.19	97.1	0.15	3.59	4.19			5.04	120.97	790.26	7129.55	40000	7.0	0.0
17:15						108.58	0.00											7129.55			
17:30						109.30	0.00											7129.55			
17:45						110.01	0.00											7129.55			
18:00						110.74	0.00	5.31	97.3	0.14	3.44	4.33			5.17	124.00	795.43	7124.38	40000	7.0	0.0
18:15						111.46	0.00											7124.38			
18:30						112.18	0.00											7124.38			
18:45						112.94	0.00											7124.38			
19:00						113.65	0.00	5.98	96.5	0.21	5.02	4.54			5.77	138.50	801.20	7118.61	42000	7.0	Trace
19:15						114.36	0.00											7118.61			
19:30						115.10	0.00											7118.61			
19:45						115.83	0.00											7118.61			
20:00						116.55	0.00	4.97	97.0	0.15	3.58	4.69			4.82	115.70	806.02	7113.79	42000	7.0	Trace
20:15						117.28	0.00											7113.79			
20:30						118.01	0.00											7113.79			
20:45						118.74	0.00											7113.79			
21:00						119.48	0.00	4.88	96.5	0.17	4.10	4.86			4.71	113.02	810.73	7109.08	42000	7.0	Trace
21:15						120.21	0.00											7109.08			
21:30						120.96	0.00											7109.08			
21:45						121.70	0.00											7109.08			
22:00						122.45	0.00	7.18	98.0	0.14	3.45	5.01			7.04	168.87	817.76	7102.05	42000	7.0	Trace
22:15						123.19	0.00											7102.05			
22:30						123.90	0.00											7102.05			
22:45						124.65	0.00											7102.05			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production			Load Fluid Left				
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job	Salinity	pH	Sand %	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
23:00						125.39	0.00	4.64	97.0	0.14	3.34	5.15			4.50	108.02	822.26	7097.55	42000	7.0	Trace
23:15						126.12	0.00											7097.55			
23:30						126.85	0.00											7097.55			
23:45						127.60	0.00											7097.55			
00:00						128.35	0.00	6.25	97.5	0.16	3.75	5.30			6.09	146.25	828.36	7091.45	42000	7.0	Trace
00:15						129.11	0.00											7091.45			
00:30						129.86	0.00											7091.45			
00:45						130.62	0.00											7091.45			
01:00						131.37	0.00	6.21	97.0	0.19	4.47	5.49			6.02	144.57	834.38	7085.43	42000	7.0	Trace
01:15						132.12	0.00											7085.43			
01:30						132.88	0.00											7085.43			
01:45						133.64	0.00											7085.43			
02:00						134.38	0.00	4.84	97.0	0.15	3.48	5.63			4.69	112.68	839.08	7080.73	42000	7.0	Trace
02:15						135.12	0.00											7080.73			
02:30						135.88	0.00											7080.73			
02:45						136.64	0.00											7080.73			
03:00						137.41	0.00	4.82	97.0	0.14	3.47	5.78			4.68	112.21	843.75	7076.06	42000	7.0	Trace
03:15						138.17	0.00											7076.06			
03:30						138.94	0.00											7076.06			
03:45						139.70	0.00											7076.06			
04:00						140.47	0.00	5.35	97.0	0.16	3.85	5.94			5.19	124.55	848.94	7070.87	42000	7.0	Trace
04:15						141.22	0.00											7070.87			
04:30						141.99	0.00											7070.87			
04:45						142.75	0.00											7070.87			
05:00						143.51	0.00	4.98	97.0	0.15	3.59	6.09			4.83	115.93	853.77	7066.04	42000	7.0	Trace
05:15						144.27	0.00											7066.04			
05:30						145.05	0.00											7066.04			
05:45						145.81	0.00											7066.04			
06:00						146.58	0.00	4.56	96.5	0.16	3.83	6.25			4.40	105.61	858.17	7061.64	42000	7.0	Trace



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/22																												
		LFR last 24hrs = 123.74m3 TLFR = 858.17m3 TLFLTR = 7061.64m3 Condensate Produced last 24hrs = 3.56m3 Cumulative Condensate Produced = 6.25m3 Salinity = 42000ppm ph = 7 Sand = Trace Hrs Flowed = 113.5 Hours Flared = 110 Surface Total = 344.56m3 Api = 59.8@15°C H2s = 0ppm CO₂ = 1.8%																										
06:15	113:45	15071.9	81.4	7075		47	12389		1179	57.59	37	75.61	133.30	116		28								60	60	0.00	0.00	0.29
06:30	114:00	15044.0	81.3	7253		47	12359		1170	56.94	37	74.96	134.08	115		29								61	61	0.00	0.00	0.29
06:45	114:15	15043.5	81.4	7200		47	12380		1153	56.30	36	74.08	134.86	115		29								58	62	0.00	0.00	0.29
07:00	114:30	15026.0	81.5	7200		47	12369		1176	57.65	37	75.61	135.64	117		29								61	63	0.00	0.00	0.29
07:15	114:45	15027.7	81.5	7181		47	12335		1107	63.02	37	76.94	136.45	114		30								62	63	0.00	0.00	0.29
07:30	115:00	15004.0	81.6	7120		47	12307		1063	64.21	36	76.35	137.24	118		30								58	63	0.00	0.00	0.29
07:45	115:15	15003.7	81.6	7146		47	12299		1060	63.76	36	75.90	138.03	118		31								59	52	0.00	0.00	0.29
08:00	115:30	14968.2	81.7	7252		47	12282		1052	63.11	37	75.18	138.81	117		31								57	44	0.00	0.00	0.29
08:15	115:45	14961.5	81.7	7245		47	12268		1050	63.25	36	75.30	139.60	118		31								57	40	0.00	0.00	0.29
08:30	116:00	14961.9	81.6	7282		47	12259		1059	63.70	37	75.78	140.39	119		31								59	38	0.00	0.00	0.29
08:45	116:15	14947.1	81.7	7233		47	12253		1063	64.04	36	76.19	141.18	119		31								57	35	0.00	0.00	0.29
09:00	116:30	14963.4	81.7	7185		47	12271		1055	63.68	37	75.62	141.97	127		32								59	33	0.00	0.00	0.29
09:15	116:45	14940.7	81.7	7171		47	12286		1046	63.16	36	75.12	142.75	122		32								58	31	0.00	0.00	0.29
09:30	117:00	14970.5	81.8	7212		47	12285		1079	65.21	37	77.35	143.56	120		33								60	29	0.00	0.00	0.29
09:45	117:15	14916.9	81.8	7233		47	12278		1069	64.22	37	76.42	144.35	118		34								60	28	0.00	0.00	0.29
10:00	117:30	14904.0	81.9	7321		47	12290		973	68.91	36	75.91	145.14	121		34								58	27	0.00	0.00	0.29
10:15	117:45	14887.8	82.0	7221		46	12238		970	63.40	36	72.75	145.90	119		35								58	26	0.00	0.00	0.29
10:30	118:00	14891.7	82.0	7236		47	12259		1021	66.10	36	76.05	146.69	122		35								58	26	0.00	0.00	0.29
10:45	118:15	14874.8	82.1	7209		46	12257		1013	65.75	35	75.61	147.48	124		34								62	26	0.00	0.00	0.29
11:00	118:30	14858.0	82.1	7234		46	12237		1022	66.20	35	76.18	148.28	123		34								61	25	0.00	0.00	0.29
11:15	118:45	14904.0	82.1	7275		47	12223		1029	66.69	36	76.65	149.07	123		34								60	26	0.00	0.00	0.29
11:30	119:00	14860.7	82.2	7213		47	12222		1024	66.59	36	76.42	149.87	122		34								61	25	0.00	0.00	0.29
11:45	119:15	14854.8	82.3	7227		46	12209		1050	67.79	37	77.93	150.68	125		33								63	25	0.00	0.00	0.29
12:00	119:30	14785.4	82.3	7117		46	12208		1077	69.56	36	80.00	151.52	125		34								65	25	0.00	0.00	0.29
12:00		ProTechnics sample #18 taken. Total fluid recovered to date = 889.30m³																										
12:15	119:45	14819.3	82.3	7177		46	12198		1045	67.31	35	77.62	152.32	125		34								62	24	0.00	0.00	0.29
12:30	120:00	14829.3	82.3	7124		46	12209		1037	66.99	35	77.15	153.13	125		34								63	24	0.00	0.00	0.29
12:45	120:15	14805.1	82.4	7185		46	12189		1031	67.07	35	77.04	153.93	124		33								61	22	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production				Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:15						147.37	0.00											7061.64			
06:30						148.15	0.00											7061.64			
06:45						148.92	0.00											7061.64			
07:00						149.71	0.00	6.04	96.6	0.21	4.93	6.45			5.83	140.03	864.01	7055.80	44000	7.0	0.0
07:15						150.51	0.00											7055.80			
07:30						151.31	0.00											7055.80			
07:45						152.10	0.00											7055.80			
08:00						152.88	0.00	5.34	97.1	0.15	3.72	6.61			5.19	124.44	869.19	7050.62	44000	7.0	0.0
08:15						153.66	0.00											7050.62			
08:30						154.45	0.00											7050.62			
08:45						155.25	0.00											7050.62			
09:00						156.04	0.00	5.87	94.4	0.33	7.89	6.94			5.54	132.99	874.73	7045.08	44000	7.0	0.0
09:15						156.82	0.00											7045.08			
09:30						157.62	0.00											7045.08			
09:45						158.42	0.00											7045.08			
10:00						159.21	0.00	4.12	98.6	0.06	1.38	7.00			4.06	97.50	878.79	7041.02	44000	7.0	0.0
10:15						159.97	0.00											7041.02			
10:30						160.76	0.00											7041.02			
10:45						161.55	0.00											7041.02			
11:00						162.34	0.00	5.86	97.0	0.18	4.21	7.17			5.68	136.43	884.48	7035.33	44000	7.0	0.0
11:15						163.14	0.00											7035.33			
11:30						163.94	0.00											7035.33			
11:45						164.75	0.00											7035.33			
12:00						165.58	0.00	4.99	96.5	0.17	4.19	7.34			4.82	115.57	889.30	7030.51	44000	7.0	0.0
12:15						166.39	0.00											7030.51			
12:30						167.19	0.00											7030.51			
12:45						168.00	0.00											7030.51			



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P-20 65-00 126-45

Operation:
Pool or Zone:
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Test Start:
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Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
	hh:mm kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
13:00						168.83	0.00	5.12	96.9	0.16	3.81	7.50			4.96	119.07	894.26	7025.55	44000	7.0	0.0
13:15						169.64	0.00											7025.55			
13:30						170.45	0.00											7025.55			
13:45						171.26	0.00											7025.55			
14:00						172.06	0.00	5.93	96.2	0.23	5.41	7.73			5.70	136.91	899.96	7019.85	46000	7.0	0.0
14:15						172.90	0.00											7019.85			
14:30						173.73	0.00											7019.85			
14:45						174.55	0.00											7019.85			
15:00						175.37	0.00	4.72	96.4	0.17	4.08	7.90			4.55	109.20	904.51	7015.30	46000	7.0	0.0
15:15						176.19	0.00											7015.30			
15:30						177.02	0.00											7015.30			
15:45						177.84	0.00											7015.30			
16:00						178.66	0.00	4.63	96.2	0.18	4.22	8.07			4.45	106.90	908.97	7010.84	46000	7.0	0.0
16:15						179.48	0.00											7010.84			
16:30						180.31	0.00											7010.84			
16:45						181.15	0.00											7010.84			
17:00						181.97	0.00	5.99	96.2	0.23	5.46	8.30			5.76	138.30	914.73	7005.08	46000	7.0	0.0
17:15						182.81	0.00											7005.08			
17:30						183.65	0.00											7005.08			
17:45						184.49	0.00											7005.08			
18:00						185.32	0.00	5.66	96.3	0.21	5.03	8.51			5.45	130.81	920.18	6999.63	46000	7.0	0.0
18:15						186.18	0.00											6999.63			
18:30						187.04	0.00											6999.63			
18:45						187.89	0.00											6999.63			
19:00						188.73	0.00	4.92	96.4	0.18	4.25	8.69			4.74	113.83	924.92	6994.89	46000	7.0	Trace
19:15						189.56	0.00											6994.89			
19:30						190.43	0.00											6994.89			
19:45						191.29	0.00											6994.89			
20:00						192.13	0.00	5.00	96.1	0.20	4.68	8.88			4.80	115.32	929.73	6990.08	46000	7.0	Trace
20:15						192.99	0.00											6990.08			
20:30						193.83	0.00											6990.08			
20:45						194.68	0.00											6990.08			
21:00						195.54	0.00	5.89	96.0	0.24	5.65	9.12			5.65	135.71	935.38	6984.43	46000	7.0	Trace
21:15						196.39	0.00											6984.43			
21:30						197.25	0.00											6984.43			
21:45						198.11	0.00											6984.43			
22:00						198.95	0.00	4.47	96.5	0.16	3.75	9.28			4.31	103.53	939.69	6980.12	45000	7.0	Trace
22:15						199.81	0.00											6980.12			
22:30						200.67	0.00											6980.12			
22:45						201.53	0.00											6980.12			
23:00						202.39	0.00	4.54	96.0	0.18	4.36	9.46			4.36	104.63	944.05	6975.76	45000	7.0	Trace
23:15						203.25	0.00											6975.76			



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P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production			Load Fluid Left			Sand %	
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job	Salinity	pH		
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
23:30						204.12	0.00											6975.76			
23:45						204.99	0.00											6975.76			
00:00						205.86	0.00	4.68	96.3	0.17	4.15	9.63			4.51	108.14	948.56	6971.25	46000	7.0	Trace
00:15						206.73	0.00											6971.25			
00:30						207.59	0.00											6971.25			
00:45						208.46	0.00											6971.25			
01:00						209.33	0.00	4.62	96.1	0.18	4.33	9.81			4.44	106.58	953.00	6966.81	45000	7.0	Trace
01:15						210.21	0.00											6966.81			
01:30						211.06	0.00											6966.81			
01:45						211.95	0.00											6966.81			
02:00						212.81	0.00	3.49	95.9	0.14	3.43	9.95			3.35	80.33	956.35	6963.46	45000	7.0	Trace
02:15						213.69	0.00											6963.46			
02:30						214.57	0.00											6963.46			
02:45						215.44	0.00											6963.46			
03:00						216.32	0.00	5.75	95.7	0.25	5.93	10.20			5.50	132.07	961.85	6957.96	46000	7.0	Trace
03:15						217.21	0.00											6957.96			
03:30						218.09	0.00											6957.96			
03:45						218.97	0.00											6957.96			
04:00						219.84	0.00	5.93	95.7	0.25	6.12	10.46			5.68	136.20	967.52	6952.29	46000	7.0	Trace
04:15						220.72	0.00											6952.29			
04:30						221.60	0.00											6952.29			
04:45						222.48	0.00											6952.29			
05:00						223.37	0.00	3.61	95.7	0.16	3.73	10.61			3.45	82.91	970.98	6948.83	46000	7.0	Trace
05:15						224.26	0.00											6948.83			
05:30						225.15	0.00											6948.83			
05:45						226.03	0.00											6948.83			
06:00						226.93	0.00	4.71	96.1	0.18	4.41	10.80			4.53	108.63	975.50	6944.31	45000	7.0	Trace



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production			Load Fluid Left			Sand %	
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job	Salinity	pH		
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:15						227.81	0.00											6944.31			
06:30						228.69	0.00											6944.31			
06:45						229.59	0.00											6944.31			
07:00						230.49	0.00	4.53	95.9	0.19	4.46	10.98			4.34	104.24	979.85	6939.96	47000	7.0	0.0
07:15						231.37	0.00											6939.96			
07:30						232.27	0.00											6939.96			
07:45						233.18	0.00											6939.96			
08:00						234.06	0.00	5.57	95.7	0.24	5.75	11.22			5.33	127.93	985.18	6934.63	47000	7.0	0.0
08:15						234.95	0.00											6934.63			
08:30						235.85	0.00											6934.63			
08:45						236.74	0.00											6934.63			
09:00						237.63	0.00	5.01	96.1	0.20	4.69	11.42			4.81	115.55	989.99	6929.82	47000	7.0	0.0
09:15						238.53	0.00											6929.82			
09:30						239.43	0.00											6929.82			
09:45						240.33	0.00											6929.82			
10:00						241.24	0.00	4.87	95.6	0.21	5.14	11.63			4.66	111.74	994.65	6925.16	47000	7.0	0.0
10:15						242.11	0.00											6925.16			
10:30						243.01	0.00											6925.16			
10:45						243.92	0.00											6925.16			
11:00						244.82	0.00	4.98	95.6	0.22	5.26	11.85			4.76	114.26	999.41	6920.40	48000	7.0	0.0
11:15						245.70	0.00											6920.40			
11:30						246.59	0.00											6920.40			
11:45						247.48	0.00											6920.40			
12:00						248.38	0.00	4.49	95.9	0.18	4.42	12.03			4.31	103.34	1003.72	6916.09	48000	7.0	0.0
12:15						249.29	0.00											6916.09			
12:30						250.20	0.00											6916.09			
12:45						251.10	0.00											6916.09			
13:00						252.00	0.00	4.65		0.19	4.58	12.22			4.46	107.02	1008.18	6911.63	49000	7.0	0.0
13:15						252.91	0.00											6911.63			
13:30						253.82	0.00											6911.63			



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Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	Sand %
hh:mm	kPag	°C	E³m³/d	E²m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
13:45						254.71	0.00											6911.63			
14:00						255.61	0.00	4.91	95.9	0.20	4.83	12.43			4.71	113.01	1012.88	6906.93	49000	7.0	0.0
14:15						256.51	0.00											6906.93			
14:30						257.41	0.00											6906.93			
14:45						258.32	0.00											6906.93			
15:00						259.22	0.00	4.63	96.2	0.18	4.22	12.60			4.45	106.90	1017.34	6902.47	49000	7.0	0.0
15:15						260.12	0.00											6902.47			
15:30						261.02	0.00											6902.47			
15:45						261.93	0.00											6902.47			
16:00						262.74	0.00	4.88	95.4	0.22	5.39	12.83			4.66	111.73	1021.99	6897.82	49000	7.0	0.0
16:15						263.65	0.00											6897.82			
16:30						264.54	0.00											6897.82			
16:45						265.41	0.00											6897.82			
17:00						266.32	0.00	5.03	95.8	0.21	5.07	13.04			4.82	115.65	1026.81	6893.00	50000	7.0	0.0
17:15						267.19	0.00											6893.00			
17:30						268.06	0.00											6893.00			
17:45						268.92	0.00											6893.00			
18:00						269.79	0.00	5.05	96.2	0.19	4.61	13.23			4.86	116.59	1031.67	6888.14	50000	7.0	0.0
18:15						270.65	0.00											6888.14			
18:30						271.53	0.00											6888.14			
18:45						272.39	0.00											6888.14			
19:00						273.29	0.00	2.27	95.6	0.10	2.40	13.33			2.17	52.08	1033.84	6885.97	46000	7.0	0.0
19:15						274.18	0.00											6885.97			
19:30						275.07	0.00											6885.97			
19:45						275.96	0.00											6885.97			
20:00						276.82	0.00	5.09	95.9	0.21	5.01	13.54			4.88	117.15	1038.72	6881.09	46000	7.0	0.0
20:15						277.73	0.00											6881.09			
20:30						278.62	0.00											6881.09			
20:45						279.52	0.00											6881.09			
21:00						280.39	0.00	4.15	96.6	0.14	3.39	13.68			4.01	96.21	1042.73	6877.08	48000	7.0	Trace
21:15						281.28	0.00											6877.08			
21:30						282.15	0.00											6877.08			
21:45						283.04	0.00											6877.08			
22:00						283.91	0.00	4.80	94.9	0.24	5.88	13.92			4.56	109.32	1047.29	6872.52	48000	7.0	Trace
22:15						284.80	0.00											6872.52			
22:30						285.68	0.00											6872.52			
22:45						286.56	0.00											6872.52	46000	7.0	0.0
23:00						287.41	0.00	3.85	95.8	0.16	3.88	14.09			3.69	88.52	1050.97	6868.84			
23:15						288.29	0.00											6868.84			
23:30						289.18	0.00											6868.84			
23:45						290.06	0.00											6868.84			



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Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production			Load Fluid Left			Sand %	
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job	Salinity	pH		
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
00:00						290.92	0.00	4.63	96.1	0.18	4.33	14.27			4.45	106.79	1055.42	6864.39	46000	7.0	0.0
00:15						291.80	0.00											6864.39			
00:30						292.71	0.00											6864.39			
00:45						293.60	0.00											6864.39			
01:00						294.49	0.00	4.30	95.5	0.19	4.64	14.46			4.11	98.56	1059.53	6860.28	48000	7.0	0.0
01:15						295.37	0.00											6860.28			
01:30						296.27	0.00											6860.28			
01:45						297.16	0.00											6860.28			
02:00						298.04	0.00	3.82	96.1	0.15	3.58	14.61			3.67	88.10	1063.20	6856.61	50000	7.0	0.0
02:15						298.94	0.00											6856.61			
02:30						299.86	0.00											6856.61			
02:45						300.75	0.00											6856.61			
03:00						301.62	0.00	4.28	95.6	0.19	4.52	14.80			4.09	98.20	1067.29	6852.52	50000	7.0	Trace
03:15						302.51	0.00											6852.52			
03:30						303.40	0.00											6852.52			
03:45						304.26	0.00											6852.52			
04:00						305.17	0.00	4.04	95.3	0.19	4.56	14.99			3.85	92.40	1071.14	6848.67	50000	7.0	0.0
04:15						306.08	0.00											6848.67			
04:30						307.01	0.00											6848.67			
04:45						307.90	0.00											6848.67			
05:00						308.78	0.00	2.59	95.6	0.11	2.74	15.10			2.48	59.42	1073.62	6846.19	48000	7.0	0.0
05:15						309.65	0.00											6846.19			
05:30						310.55	0.00											6846.19			
05:45						311.43	0.00											6846.19			
06:00						312.33	0.00	5.34	95.4	0.25	5.90	15.35			5.09	122.26	1078.71	6841.10	48000	7.0	0.0



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Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/24																												
		Salinity = 48000ppm ph = 7 Sand = Nil Hrs Flowed = 161.5 Hours Flared = 158 Surface Total = 438.26m3 Api = 60.5@15.6°C H2s = 0ppm CO₂ = 2.0%																										
06:15	161:45	13676.0	81.5	7250		45	11300		1015	24.97	32	85.15	299.15	144		25								73	27	0.00	0.00	0.29
06:30	162:00	13631.3	81.5	7278		45	11272		1059	25.99	33	88.49	300.07	142		26								76	28	0.00	0.00	0.29
06:45	162:15	13642.9	81.6	7218		45	11289		1019	25.05	32	85.46	300.96	145		27								73	29	0.00	0.00	0.29
07:00	162:30	13641.5	81.8	7217		45	11269		1020	25.10	32	85.52	301.85	147		28								73	33	0.00	0.00	0.29
07:15	162:45	13673.9	81.7	7412		46	11289		1016	22.94	32	81.54	302.70	144		28								67	32	0.00	0.00	0.29
07:30	163:00	13661.3	81.7	7141		44	11267		1041	25.72	32	87.37	303.61	144		28								75	29	0.00	0.00	0.29
07:45	163:15	13653.3	81.6	7266		45	11252		1096	25.16	33	88.38	304.53	143		28								74	26	0.00	0.00	0.29
08:00	163:30	13645.6	81.6	7271		45	11265		1058	24.40	32	85.74	305.42	143		28								71	25	0.00	0.00	0.29
08:15	163:45	13651.5	81.6	7294		45	11245		1050	24.30	32	85.30	306.31	143		28								72	24	0.00	0.00	0.29
08:30	164:00	13639.3	81.6	7394		45	11260		1011	23.57	31	82.59	307.17	143		29								71	23	0.00	0.00	0.29
08:45	164:15	13642.7	81.6	7148		45	11233		1045	24.20	32	84.84	308.06	140		29								74	22	0.00	0.00	0.29
09:00	164:30	13464.0	81.6	7314		45	11246		993	24.74	32	83.89	308.93	143		29								75	22	0.00	0.00	0.29
09:15	164:45	13620.2	81.7	7176		44	11242		991	26.98	31	87.66	309.84	156		28								81	21	0.00	0.00	0.29
09:30	165:00	13614.5	81.8	7257		45	11229		1006	25.74	31	86.19	310.74	147		26								75	21	0.00	0.00	0.29
09:45	165:15	13588.5	81.8	7248		45	11238		989	25.30	31	84.82	311.62	144		24								73	20	0.00	0.00	0.29
10:00	165:30	13586.5	81.9	7150		45	11246		1045	26.27	33	88.36	312.54	143		24								73	18	0.00	0.00	0.29
10:15	165:45	13587.5	82.0	7256		45	11233		1042	26.45	33	88.52	313.47	141		24								75	17	0.00	0.00	0.29
10:30	166:00	13557.1	82.1	7214		44	11217		995	26.79	32	87.43	314.38	143		24								77	18	0.00	0.00	0.29
10:45	166:15	13558.5	82.3	7306		45	11226		1001	25.13	31	84.98	315.26	145		25								77	19	0.00	0.00	0.29
11:00	166:30	13543.4	82.3	7225		44	11210		1004	27.20	31	88.59	316.18	144		25								81	19	0.00	0.00	0.29
11:15	166:45	13520.8	82.4	7121		44	11200		1014	28.53	31	91.09	317.13	145		25								84	19	0.00	0.00	0.29
11:30	167:00	13526.2	81.8	7216		45	11207		1003	25.43	31	85.50	318.02	145		25								76	19	0.00	0.00	0.29
11:45	167:15	13533.0	81.9	7155		44	11210		993	26.36	32	86.49	318.93	148		26								77	19	0.00	0.00	0.29
12:00	167:30	13517.8	81.9	7246		45	11212		994	25.51	32	85.21	319.81	148		27								76	20	0.00	0.00	0.29
12:15	167:45	13482.5	82.0	7191		45	11207		1015	25.75	32	86.48	320.71	150		27								77	20	0.00	0.00	0.29
12:30	168:00	13489.0	82.0	7259		45	11191		996	25.49	31	85.35	321.60	151		28								75	20	0.00	0.00	0.29
12:45	168:15	13501.0	82.1	7107		45	11185		1042	30.15	34	94.40	322.58	151		28								80	20	0.00	0.00	0.29
13:00	168:30	13501.1	82.0	7203		45	11189		980	25.74	32	85.05	323.47	154		27								75	18	0.00	0.00	0.29
13:15	168:45	13476.3	82.0	7224		45	11158		994	26.09	32	86.17	324.37	150		26								76	15	0.00	0.00	0.29
13:30	169:00	13512.8	82.0	7194		45	11172		989	26.42	32	86.52	325.27	153		24								77	15	0.00	0.00	0.29
13:45	169:15	13486.2	82.0	7206		45	11159		997	26.42	32	86.83	326.18	151		20								75	16	0.00	0.00	0.29
14:00	169:30	13464.5	82.1	7225		44	11155		1011	26.69	32	87.84	327.09	152		18								80	16	0.00	0.00	0.29
14:15	169:45	13478.7	82.1	7244		45	11169		970	25.81	31	84.80	327.97	151		20								74	16	0.00	0.00	0.29



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9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:15						313.21	0.00											6841.10			
06:30						314.13	0.00											6841.10			
06:45						315.02	0.00											6841.10			
07:00						315.92	0.00	3.46	95.8	0.15	3.49	15.49			3.31	79.55	1082.03	6837.78	48000	7.0	0.0
07:15						316.76	0.00											6837.78			
07:30						317.67	0.00											6837.78			
07:45						318.60	0.00											6837.78			
08:00						319.49	0.00	3.96	95.2	0.19	4.56	15.68			3.77	90.48	1085.80	6834.01	48000	7.0	0.0
08:15						320.38	0.00											6834.01			
08:30						321.24	0.00											6834.01			
08:45						322.12	0.00											6834.01			
09:00						322.99	0.00	4.42	95.3	0.21	4.99	15.89			4.21	101.09	1090.01	6829.80	49000	7.0	0.0
09:15						323.91	0.00											6829.80			
09:30						324.81	0.00											6829.80			
09:45						325.69	0.00											6829.80			
10:00						326.61	0.00	5.65	95.2	0.27	6.51	16.16			5.38	129.09	1095.39	6824.42	49000	7.0	0.0
10:15						327.53	0.00											6824.42			
10:30						328.44	0.00											6824.42			
10:45						329.33	0.00											6824.42			
11:00						330.25	0.00	3.89	95.9	0.16	3.83	16.32			3.73	89.53	1099.12	6820.69	49000	7.0	0.0
11:15						331.20	0.00											6820.69			
11:30						332.09	0.00											6820.69			
11:45						332.99	0.00											6820.69			
12:00						333.88	0.00	4.21	95.5	0.19	4.55	16.51			4.02	96.49	1103.14	6816.67	50000	7.0	0.0
12:15						334.78	0.00											6816.67			
12:30						335.67	0.00											6816.67			
12:45						336.65	0.00											6816.67			
13:00						337.54	0.00	4.14	95.5	0.19	4.47	16.70			3.95	94.89	1107.09	6812.72	50000	7.0	0.0
13:15						338.44	0.00											6812.72			
13:30						339.34	0.00											6812.72			
13:45						340.24	0.00											6812.72			
14:00						341.16	0.00	3.35	95.7	0.14	3.46	16.84			3.21	76.94	1110.30	6809.51	50000	7.0	0.0
14:15						342.04	0.00											6809.51			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/24																												
14:30	170:00	13485.0	82.1	7351		45	11157		966	25.69	32	84.34	328.85	150		22								71	17	0.00	0.00	0.29
14:45	170:15	13461.0	82.1	7286		45	11150		976	26.79	32	86.64	329.75	152		22								74	17	0.00	0.00	0.29
15:00	170:30	13565.9	82.2	7209		44	11153		984	26.68	32	86.77	330.66	152		23								77	18	0.00	0.00	0.29
15:15	170:45	13362.6	82.2	7333		45	11140		957	24.41	30	82.08	331.51	153		25								72	18	0.00	0.00	0.29
15:30	171:00	13556.8	82.2	7158		44	11120		1052	25.96	32	88.25	332.43	152		26								77	18	0.00	0.00	0.29
15:45	171:15	13138.5	82.2	7114		44	11146		1038	25.55	32	87.05	333.34	153		29								75	19	0.00	0.00	0.29
16:00	171:30	13413.8	82.2	7157		44	11119		1023	25.39	31	86.24	334.24	154		30								75	19	0.00	0.00	0.29
16:15	171:45	13388.4	81.9	7152		45	11139		1002	25.50	32	85.45	335.13	155		30								73	20	0.00	0.00	0.29
16:30	172:00	13441.4	81.8	7171		44	11111		987	25.31	31	84.72	336.01	154		31								74	20	0.00	0.00	0.29
16:45	172:15	13430.3	81.9	7062		44	11112		1015	25.88	31	86.77	336.91	154		31								74	19	0.00	0.00	0.29
17:00	172:30	13427.7	81.9	7127		44	11106		994	25.43	31	85.27	337.80	156		31								73	19	0.00	0.00	0.29
17:15	172:45	13426.2	81.8	7059		44	11107		984	25.18	30	84.52	338.68	156		30								74	19	0.00	0.00	0.29
17:30	173:00	13415.1	81.8	7068		44	11098		1076	25.42	32	88.21	339.60	157		30								75	19	0.00	0.00	0.29
17:45	173:15	13413.5	81.8	7049		44	11092		1035	25.12	31	86.32	340.50	158		31								77	20	0.00	0.00	0.29
18:00	173:30	13341.2	81.8	7014		44	11096		1022	25.61	31	86.69	341.40	156		30								75	20	0.00	0.00	0.29
18:15	173:45	13386.4	81.8	7043		44	11091		1035	25.88	31	87.59	342.32	157		29								74	20	0.00	0.00	0.29
18:30	174:00	13360.0	81.8	7017		44	11083		1016	25.46	30	86.28	343.22	156		30								74	20	0.00	0.00	0.29
18:45	174:15	13389.0	81.8	7205		45	11089		994	23.51	30	82.04	344.07	160		29								68	19	0.00	0.00	0.29
19:00	174:30	13396.3	81.8	6904		44	11074		1040	25.43	31	87.11	344.98	156		29								74	19	0.00	0.00	0.29
19:15	174:45	13373.3	81.8	7030		44	11076		1014	25.07	30	85.56	345.87	158		29								73	19	0.00	0.00	0.29
19:30	175:00	13341.6	81.8	6961		43	11057		1004	25.76	29	86.43	346.77	158		29								77	19	0.00	0.00	0.29
19:45	175:15	13344.9	81.8	6867		43	11066		1018	25.03	29	85.75	347.66	157		29								73	19	0.00	0.00	0.29
20:00	175:30	13295.9	81.7	7038		44	11052		1129	24.34	30	88.60	348.58	155		29								74	19	0.00	0.00	0.29
20:15	175:45	13311.7	81.7	6799		43	11049		1102	27.19	31	92.57	349.55	159		29								80	18	0.00	0.00	0.29
20:30	176:00	13357.0	81.7	7038		44	11052		1047	22.35	29	82.15	350.40	157		27								68	18	0.00	0.00	0.29
20:45	176:15	13324.9	81.6	6921		43	11037		1055	25.63	29	88.25	351.32	155		26								76	18	0.00	0.00	0.29
21:00	176:30	13356.1	81.6	7065		44	11044		1063	23.03	29	84.01	352.20	156		25								71	18	0.00	0.00	0.29
21:15	176:45	13341.3	81.6	6982		44	11052		1075	23.45	29	85.13	353.09	158		25								71	17	0.00	0.00	0.29
21:30	177:00	13369.8	81.9	7027		44	11046		1086	23.67	30	85.76	353.98	157		25								70	17	0.00	0.00	0.29
21:45	177:15	13318.8	81.8	6861		43	11022		1092	24.82	30	88.13	354.90	154		26								77	17	0.00	0.00	0.29
22:00	177:30	13346.4	81.8	6956		44	11046		1083	22.84	30	84.20	355.77	160		25								69	17	0.00	0.00	0.29
22:15	177:45	13316.1	81.8	6864		43	11005		1066	24.27	29	86.34	356.67	157		25								73	17	0.00	0.00	0.29
22:30	178:00	13332.5	81.8	6921		43	11014		1081	24.20	29	86.71	357.58	156		26								73	17	0.00	0.00	0.29
22:45	178:15	13313.9	81.8	6878		43	11016		1072	24.63	29	87.15	358.48	155		26								75	17	0.00	0.00	0.29
23:00	178:30	13314.6	81.8	6803		43	11008		1055	24.63	29	86.55	359.39	156		26								75	17	0.00	0.00	0.29
23:15	178:45	13304.4	81.8	6877		43	11005		1091	24.32	30	87.25	360.30	156		25								74	17	0.00	0.00	0.29
23:30	179:00	13306.5	81.7	6877		43	11002		1079	24.16	29	86.57	361.20	157		26								75	16	0.00	0.00	0.29
23:45	179:15	13358.4	81.7	6803		43	10990		1076	24.12	29	86.41	362.10	157		27								74	16	0.00	0.00	0.29
14/03/25																												
00:00	179:30	13299.6	81.7	6859		43	10996		1082	24.20	29	86.73	363.00	158		28								74	16	0.00	0.00	0.29
00:15	179:45	13292.6	81.7	6849		43	10993		1068	23.94	29	85.80	363.89	158		29								73	16	0.00	0.00	0.29
00:30	180:00	13301.2	81.7	6883		43	11000		1136	23.04	31	86.42	364.79	158		29								70	16	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
14:30						342.92	0.00											6809.51			
14:45						343.82	0.00											6809.51			
15:00						344.72	0.00	4.16	95.9	0.17	4.09	17.01			3.99	95.75	1114.29	6805.52	50000	7.0	0.0
15:15						345.58	0.00											6805.52			
15:30						346.50	0.00											6805.52			
15:45						347.41	0.00											6805.52			
16:00						348.30	0.00	3.50	95.3	0.16	3.95	17.17			3.34	80.05	1117.63	6802.18	52000	7.0	0.0
16:15						349.19	0.00											6802.18			
16:30						350.08	0.00											6802.18			
16:45						350.98	0.00											6802.18			
17:00						351.87	0.00	4.16	95.6	0.18	4.39	17.36			3.98	95.45	1121.60	6798.21	52000	7.0	0.0
17:15						352.75	0.00											6798.21			
17:30						353.67	0.00											6798.21			
17:45						354.57	0.00											6798.21			
18:00						355.47	0.00	3.91	95.2	0.19	4.50	17.55			3.72	89.34	1125.32	6794.49			
18:15						356.38	0.00											6794.49			
18:30						357.28	0.00											6794.49			
18:45						358.14	0.00											6794.49			
19:00						359.04	0.00	2.84	95.0	0.14	3.41	17.69			2.70	64.75	1128.02	6791.79	50000	7.0	0.0
19:15						359.93	0.00											6791.79			
19:30						360.83	0.00											6791.79			
19:45						361.73	0.00											6791.79			
20:00						362.65	0.00	3.22	94.9	0.16	3.94	17.85			3.06	73.34	1131.08	6788.73	50000	7.0	0.0
20:15						363.61	0.00											6788.73			
20:30						364.47	0.00											6788.73			
20:45						365.39	0.00											6788.73			
21:00						366.26	0.00	4.70	94.7	0.25	5.98	18.10			4.45	106.82	1135.53	6784.28	49000	7.0	0.0
21:15						367.15	0.00											6784.28			
21:30						368.05	0.00											6784.28			
21:45						368.96	0.00											6784.28			
22:00						369.84	0.00	3.01	94.6	0.16	3.90	18.26			2.85	68.34	1138.38	6781.43	50000	7.0	0.0
22:15						370.74	0.00											6781.43			
22:30						371.64	0.00											6781.43			
22:45						372.55	0.00											6781.43			
23:00						373.45	0.00	3.54	94.5	0.19	4.67	18.46			3.35	80.29	1141.72	6778.09	51000	7.0	Trace
23:15						374.36	0.00											6778.09			
23:30						375.26	0.00											6778.09			
23:45						376.16	0.00											6778.09			
00:00						377.07	0.00	4.05	94.7	0.21	5.15	18.67			3.84	92.05	1145.56	6774.25	50000	7.0	0.0
00:15						377.96	0.00											6774.25			
00:30						378.86	0.00											6774.25			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/25																												
00:45	180:15	13295.7	81.7	6900		43	10994		1081	23.58	29	85.65	365.69	159		29								75	16	0.00	0.00	0.29
01:00	180:30	13286.8	81.6	6882		43	10987		1090	23.76	29	86.25	366.59	160		27								75	16	0.00	0.00	0.29
01:15	180:45	13293.8	81.6	6897		43	10976		1073	24.54	30	86.96	367.49	158		26								73	15	0.00	0.00	0.29
01:30	181:00	13284.7	81.9	6857		43	10976		1045	24.27	29	85.55	368.38	158		27								74	15	0.00	0.00	0.29
01:45	181:15	13266.0	81.9	6938		43	10957		1043	25.59	28	87.86	369.30	161		28								77	15	0.00	0.00	0.29
02:00	181:30	13269.0	81.9	6904		43	10966		1049	24.21	29	85.60	370.19	160		30								72	15	0.00	0.00	0.29
02:15	181:45	13264.2	81.9	6949		43	10945		1090	24.63	30	87.76	371.10	162		30								74	15	0.00	0.00	0.29
02:30	182:00	13279.9	81.8	6919		43	10990		1084	24.98	31	87.98	372.02	163		29								73	15	0.00	0.00	0.29
02:45	182:15	13236.1	81.8	6891		43	10962		1078	23.89	29	86.01	372.92	161		29								73	15	0.00	0.00	0.29
03:00	182:30	13235.3	81.8	6861		43	10939		1076	24.61	29	87.29	373.82	163		29								75	15	0.00	0.00	0.29
03:15	182:45	13246.8	81.8	6989		44	10958		1089	23.09	29	84.97	374.71	162		29								71	15	0.00	0.00	0.29
03:30	183:00	13240.2	81.8	6897		43	10940		1047	24.38	29	85.85	375.60	162		29								73	14	0.00	0.00	0.29
03:45	183:15	13231.6	81.8	6756		43	10934		1091	25.31	30	89.02	376.53	161		29								76	14	0.00	0.00	0.29
04:00	183:30	13225.4	81.8	6817		43	10934		1082	24.59	29	87.48	377.44	162		29								77	14	0.00	0.00	0.29
04:15	183:45	13220.7	81.8	7120		44	10941		1051	23.68	29	84.66	378.32	165		29								72	15	0.00	0.00	0.29
04:30	184:00	13226.5	81.8	7137		43	10953		1057	24.24	29	85.88	379.22	162		29								76	15	0.00	0.00	0.29
04:45	184:15	13177.8	81.7	6950		43	10927		1072	25.50	29	88.72	380.14	164		29								79	15	0.00	0.00	0.29
05:00	184:30	13200.3	81.7	7076		44	10926		1084	24.67	29	87.65	381.06	164		29								74	15	0.00	0.00	0.29
05:15	184:45	13218.2	81.7	7231		44	10945		1022	23.12	30	82.49	381.92	164		29								69	15	0.00	0.00	0.29
05:30	185:00	13195.0	81.7	7079		44	10953		1012	23.01	29	81.94	382.77	165		29								74	15	0.00	0.00	0.29
05:45	185:15	13218.4	81.7	7015		44	10959		1087	24.77	31	87.72	383.68	165		29								75	15	0.00	0.00	0.29
05:50	185:20	13198.8	81.7	7117		44	10941		1071	24.58	30	86.88	383.98	163		29								75	15	0.00	0.00	0.29
06:00	185:30	13216.9	81.7	6879		44	10944		1076	25.09	30	88.01	384.60	166		29								74	15	0.00	0.00	0.29
		Daily Summary to 06:00 hrs March 25/2014																										
		DHP = 13216kpa																										
		FTP =6879 kpa																										
		SICP = 10944kpa																										
		Flow Temp = 44DegC																										
		Meter Run Temp = 30DegC																										
		Choke Size = 12.70mm																										
		Gas Rate = 88.01 E3m3/Day																										
		Cumulative Gas to Flare = 398.66 E3m3																										
		Gas to Flare last 24hrs = 86.34 E3m3																										
		LFTR = 7919.81m3																										
		LFR last 24hrs = 87.53m3																										
		TLFR = 1166.24m3																										
		TLFLTR = 6753.57m3																										
		Condensate Produced last 24hrs = 4.52m3																										
		Cumulative Condensate Produced = 19.87m3																										
		Salinity = 50000ppm																										
		ph = 7																										
		Sand = Nil																										



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	Sand %
	hh:mm kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
00:45						379.75	0.00											6774.25			
01:00						380.65	0.00	3.32	94.3	0.19	4.54	18.86			3.13	75.14	1148.69	6771.12	50000	7.0	0.0
01:15						381.56	0.00											6771.12			
01:30						382.45	0.00											6771.12			
01:45						383.36	0.00											6771.12			
02:00						384.25	0.00	4.08	94.7	0.22	5.19	19.08			3.86	92.73	1152.55	6767.26	50000	7.0	0.0
02:15						385.17	0.00											6767.26			
02:30						386.09	0.00											6767.26			
02:45						386.98	0.00											6767.26			
03:00						387.89	0.00	3.79	94.5	0.21	5.00	19.29			3.58	85.96	1156.13	6763.68	50000	7.0	0.0
03:15						388.78	0.00											6763.68			
03:30						389.67	0.00											6763.68			
03:45						390.60	0.00											6763.68			
04:00						391.51	0.00	3.64	94.5	0.20	4.80	19.49			3.44	82.56	1159.57	6760.24	51000	7.0	0.0
04:15						392.39	0.00											6760.24			
04:30						393.28	0.00											6760.24			
04:45						394.21	0.00											6760.24			
05:00						395.12	0.00	3.41	94.5	0.19	4.50	19.67			3.22	77.34	1162.80	6757.01	50000	7.0	0.0
05:15						395.98	0.00											6757.01			
05:30						396.84	0.00											6757.01			
05:45						397.75	0.00											6757.01			
05:50						398.05	0.00											6757.01			
06:00						398.66	0.00	3.64	94.7	0.19	4.63	19.87			3.45	82.73	1166.24	6753.57	50000	7.0	0.0



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/25																												
		Hrs Flowed = 185.5 Hours Flared = 182 Surface Total = 428.23m3 Api = 59.5@15.6°6 H2s = 0.10ppm CO2 = 2%																										
06:15	185:45	13199.0	81.6	6985		44	10928		1062	25.26	30	87.79	385.51	166		28								73	15	0.00	0.00	0.29
06:30	186:00	13200.9	81.6	6928		44	10909		1066	25.17	31	87.64	386.42	166		28								75	15	0.00	0.00	0.29
06:45	186:15	13183.6	81.6	7208		44	10934		1014	23.88	29	83.59	387.29	166		27								71	15	0.00	0.00	0.29
07:00	186:30	13213.1	81.9	7202		44	10933		1010	23.91	30	83.43	388.16	173		27								70	15	0.00	0.00	0.29
07:15	186:45	13187.1	81.9	7063		43	10924		1102	27.04	30	92.43	389.13	168		26								80	15	0.00	0.00	0.29
07:30	187:00	13179.0	81.9	7116		43	10901		1092	23.60	29	86.08	390.02	166		25								76	14	0.00	0.00	0.29
07:45	187:15	13168.2	82.0	7115		43	10902		1040	23.85	29	84.60	390.90	163		25								74	14	0.00	0.00	0.29
08:00	187:30	13133.3	82.0	6985		43	10891		1094	27.76	29	93.39	391.88	163		25								87	14	0.00	0.00	0.29
08:15	187:45	13173.9	82.0	7061		43	10887		1123	24.40	30	88.52	392.80	165		26								76	14	0.00	0.00	0.29
08:30	188:00	13181.8	82.0	6931		44	10913		1067	23.83	30	85.45	393.69	165		25								75	14	0.00	0.00	0.29
08:45	188:15	13177.0	82.0	7022		44	10899		1068	24.32	30	86.38	394.59	164		25								78	14	0.00	0.00	0.29
09:00	188:30	13136.7	82.0	7061		43	10884		1037	25.52	29	87.40	395.50	165		24								81	14	0.00	0.00	0.29
09:15	188:45	13155.2	82.0	7035		43	10895		1062	24.04	29	85.71	396.39	165		24								80	14	0.00	0.00	0.29
09:30	189:00	13141.1	82.0	6996		44	10872		1086	24.78	30	87.79	397.31	165		24								78	15	0.00	0.00	0.29
09:45	189:15	13135.6	82.1	6991		43	10866		1076	24.60	29	87.21	398.21	168		23								78	15	0.00	0.00	0.29
10:00	189:30	13153.1	82.1	7132		44	10891		1063	23.89	30	85.42	399.10	168		23								72	15	0.00	0.00	0.29
10:15	189:45	13079.6	82.2	7074		44	10876		1078	24.40	30	86.82	400.01	167		23								76	15	0.00	0.00	0.29
10:30	190:00	13133.1	82.2	7042		43	10877		1095	24.43	30	87.56	400.92	165		24								75	15	0.00	0.00	0.29
10:45	190:15	13128.1	82.3	7018		43	10873		1062	24.23	29	86.04	401.82	167		24								76	15	0.00	0.00	0.29
11:00	190:30	13133.4	82.3	7066		44	10875		1071	24.43	30	86.64	402.72	166		25								76	16	0.00	0.00	0.29
11:15	190:45	13130.1	82.4	7075		43	10873		1072	24.31	30	86.53	403.62	170		26								76	16	0.00	0.00	0.29
11:30	191:00	13104.9	82.0	6978		43	10875		1072	24.44	30	86.74	404.52	168		26								75	17	0.00	0.00	0.29
11:45	191:15	13111.6	82.0	7054		43	10863		1046	24.88	30	86.48	405.43	171		27								76	17	0.00	0.00	0.29
12:00	191:30	13069.2	82.1	6939		43	10858		1081	25.47	30	88.84	406.35	170		27								77	17	0.00	0.00	0.29
12:15	191:45	13071.8	82.1	7036		43	10859		1038	24.79	30	86.01	407.25	169		27								74	18	0.00	0.00	0.29
12:30	192:00	13071.5	82.1	7078		43	10862		1065	25.47	30	88.22	408.17	170		27								76	18	0.00	0.00	0.29
12:45	192:15	13048.8	82.1	7072		43	10846		1047	24.64	30	86.09	409.06	171		27								76	18	0.00	0.00	0.29
13:00	192:30	13083.6	82.1	6988		43	10843		1040	25.37	30	87.06	409.97	169		27								73	18	0.00	0.00	0.29
13:15	192:45	13076.1	82.1	7052		43	10832		1041	24.93	30	86.40	410.87	174		25								74	19	0.00	0.00	0.29
13:30	193:00	13044.9	82.1	6976		43	10822		1061	25.08	30	87.36	411.78	171		23								77	19	0.00	0.00	0.29
13:45	193:15	13063.2	82.1	6944		43	10837		1050	24.94	30	86.75	412.68	172		22								76	19	0.00	0.00	0.29
14:00	193:30	13070.1	82.1	6998		43	10827		1043	24.66	30	85.98	413.58	170		21								75	19	0.00	0.00	0.29
14:15	193:45	13079.6	82.1	6841		43	10853		1079	25.47	31	88.59	414.50	169		20								75	19	0.00	0.00	0.29
14:30	194:00	13052.8	82.1	6948		43	10821		1079	25.66	31	89.01	415.43	171		20								75	19	0.00	0.00	0.29
14:45	194:15	13045.5	82.1	7030		43	10830		1009	24.56	29	84.64	416.31	172		19								75	19	0.00	0.00	0.29
15:00	194:30	13053.9	82.1	7093		44	10830		1094	24.98	32	88.19	417.23	172		19								73	19	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:15						399.58	0.00											6753.57			
06:30						400.49	0.00											6753.57			
06:45						401.36	0.00											6753.57			
07:00						402.23	0.00	4.27	95.4	0.20	4.71	20.06			4.07	97.77	1170.32	6749.49	50000	7.0	trace
07:15						403.19	0.00											6749.49			
07:30						404.09	0.00											6749.49			
07:45						404.97	0.00											6749.49			
08:00						405.94	0.00	3.96	94.8	0.21	4.94	20.27			3.75	90.10	1174.07	6745.74	52000	7.0	trace
08:15						406.86	0.00											6745.74			
08:30						407.75	0.00											6745.74			
08:45						408.65	0.00											6745.74			
09:00						409.56	0.00	2.48	94.8	0.13	3.10	20.40			2.35	56.42	1176.42	6743.39	52000	7.0	trace
09:15						410.46	0.00											6743.39			
09:30						411.37	0.00											6743.39			
09:45						412.28	0.00											6743.39			
10:00						413.17	0.00	3.95	94.7	0.21	5.02	20.61			3.74	89.78	1180.16	6739.65	52000	7.0	0.0
10:15						414.07	0.00											6739.65			
10:30						414.99	0.00											6739.65			
10:45						415.88	0.00											6739.65			
11:00						416.79	0.00	3.74	94.8	0.19	4.67	20.80			3.55	85.09	1183.71	6736.10	52000	7.0	0.0
11:15						417.69	0.00											6736.10			
11:30						418.59	0.00											6736.10			
11:45						419.49	0.00											6736.10			
12:00						420.42	0.00	3.82	94.6	0.21	4.95	21.01			3.61	86.73	1187.32	6732.49	52000	7.0	0.0
12:15						421.31	0.00											6732.49			
12:30						422.23	0.00											6732.49			
12:45						423.13	0.00											6732.49			
13:00						424.04	0.00	4.02	95.2	0.19	4.63	21.20			3.83	91.85	1191.15	6728.66	50000	7.0	0.0
13:15						424.94	0.00											6728.66			
13:30						425.85	0.00											6728.66			
13:45						426.75	0.00											6728.66			
14:00						427.64	0.00	2.74	94.8	0.14	3.42	21.34			2.60	62.34	1193.75	6726.06	50000	7.0	0.0
14:15						428.57	0.00											6726.06			
14:30						429.49	0.00											6726.06			
14:45						430.38	0.00											6726.06			
15:00						431.29	0.00	3.44	94.9	0.18	4.21	21.52			3.26	78.35	1197.01	6722.80	50000	7.0	0.0



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P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E ^m /d	E ^m ³	kPag	kPa	°C	E ^m /d	E ^m ³	kPag	kPa	°C	E ^m /d	E ^m ³	kPag	°C	E ^m /d	E ^m /d	E ^m ³
14/03/25																												
15:15	194:45	13032.0	82.1	6914		43	10836		1071	24.71	31	87.02	418.14	171		19								76	19	0.00	0.00	0.29
15:30	195:00	13020.6	82.1	6828		43	10826		1067	25.26	30	87.89	419.05	172		18								77	20	0.00	0.00	0.29
15:45	195:15	13021.6	82.1	6968		43	10810		1047	26.47	30	89.28	419.98	171		18								79	20	0.00	0.00	0.29
16:00	195:30	13047.2	82.1	6907		43	10828		1035	24.27	30	84.98	420.87	171		18								72	20	0.00	0.00	0.29
16:15	195:45	13018.1	82.1	6905		43	10799		1034	25.01	29	86.31	421.77	170		18								76	20	0.00	0.00	0.29
16:30	196:00	13053.4	82.1	6871		43	10828		1070	24.31	30	86.37	422.66	172		18								72	20	0.00	0.00	0.29
16:45	196:15	13037.6	82.1	7008		43	10803		1050	24.29	31	85.49	423.56	170		18								71	20	0.00	0.00	0.29
17:00	196:30	13076.0	82.1	6907		43	10782		1034	25.39	30	86.94	424.46	172		16								75	19	0.00	0.00	0.29
17:15	196:45	13007.5	82.1	6891		43	10797		1021	24.47	29	84.86	425.34	172		15								74	19	0.00	0.00	0.29
17:30	197:00	13024.3	82.1	6763		43	10780		1103	26.95	30	92.25	426.31	170		16								78	18	0.00	0.00	0.29
17:45	197:15	13001.0	82.0	6828		43	10788		1104	26.74	30	92.02	427.26	169		15								78	18	0.00	0.00	0.29
18:00	197:30	13024.3	82.0	6791		43	10773		1099	25.03	30	88.75	428.19	171		15								72	18	0.00	0.00	0.29
18:15	197:45	13021.4	82.0	6812		43	10796		1069	23.41	30	84.66	429.07	168		18								70	18	0.00	0.00	0.29
18:30	198:00	12964.5	82.0	6640		43	10754		1097	25.09	30	88.86	430.00	168		20								74	18	0.00	0.00	0.29
18:45	198:15	12991.7	82.0	6669		42	10757		1034	25.05	28	86.66	430.90	168		22								77	18	0.00	0.00	0.29
19:00	198:30	12971.0	82.0	6639		43	10748		1063	24.62	29	86.88	431.80	169		24								73	18	0.00	0.00	0.29
19:15	198:45	12979.6	82.0	6608		42	10750		1079	24.38	29	87.08	432.71	169		23								75	17	0.00	0.00	0.29
19:30	199:00	12987.7	82.0	6642		43	10751		1077	23.42	27	85.46	433.60	169		22								73	17	0.00	0.00	0.29
19:45	199:15	12962.2	81.9	6560		43	10746		1092	23.56	28	86.10	434.50	168		21								73	16	0.00	0.00	0.29
20:00	199:30	12967.8	81.9	6571		43	10757		1140	24.78	29	90.11	435.44	168		21								77	15	0.00	0.00	0.29
20:15	199:45	12969.4	81.9	6578		42	10767		1089	23.96	28	86.76	436.34	168		19								72	15	0.00	0.00	0.29
20:30	200:00	12967.9	81.9	6517		42	10747		1147	27.47	29	95.05	437.33	167		20								80	16	0.00	0.00	0.29
20:45	200:15	12972.6	81.8	6786		43	10744		1062	23.74	28	85.28	438.22	168		22								74	16	0.00	0.00	0.29
21:00	200:30	12977.7	81.8	6749		43	10746		1046	21.68	28	80.98	439.06	170		24								67	16	0.00	0.00	0.29
21:15	200:45	12955.9	81.8	6607		42	10728		1090	24.08	29	86.92	439.97	180		26								74	24	0.00	0.00	0.29
21:30	201:00	12928.2	81.8	6685		42	10741		1077	23.65	28	85.80	440.86	221		27								70	23	0.00	0.00	0.29
21:45	201:15	12949.8	81.7	6733		43	10750		1009	20.84	27	78.24	441.68	211		28								66	22	0.00	0.00	0.29
22:00	201:30	12940.8	81.7	6534		42	10735		1116	23.91	28	87.79	442.59	207		29								74	23	0.00	0.00	0.29
22:15	201:45	12944.1	81.7	6601		42	10734		1114	23.55	28	86.99	443.50	201		30								73	22	0.00	0.00	0.29
22:30	202:00	12939.0	81.7	6626		43	10724		1099	23.62	28	86.60	444.40	197		31								72	22	0.00	0.00	0.29
22:45	202:15	12934.5	81.7	6591		42	10710		1074	22.07	28	82.73	445.26	193		31								67	21	0.00	0.00	0.29
23:00	202:30	12929.7	81.7	6763		43	10720		1083	23.42	28	85.59	446.15	192		32								71	20	0.00	0.00	0.29
23:15	202:45	12934.4	82.1	6765		43	10702		1064	25.17	28	88.03	447.07	186		29								77	19	0.00	0.00	0.29
23:30	203:00	12925.6	82.1	6832		43	10688		1124	25.49	29	90.72	448.01	182		27								78	20	0.00	0.00	0.29
23:45	203:15	12928.6	82.0	6910		43	10697		1118	24.10	30	87.82	448.93	180		29								71	20	0.00	0.00	0.29
14/03/26																												
00:00	203:30	12920.1	82.0	6976		43	10704		1122	23.99	29	87.97	449.85	178		30								73	19	0.00	0.00	0.29
00:15	203:45	12924.6	82.0	6808		43	10703		1078	24.85	28	87.92	450.76	176		31								73	18	0.00	0.00	0.29
00:30	204:00	12900.3	82.0	6917		43	10676		1102	23.59	29	86.44	451.66	175		31								73	18	0.00	0.00	0.29
00:45	204:15	12909.3	82.0	6877		43	10670		1050	24.24	28	85.85	452.56	174		31								74	19	0.00	0.00	0.29
01:00	204:30	12893.8	82.0	6981		43	10672		1067	25.82	27	89.31	453.49	171		32								78	23	0.00	0.00	0.29
01:15	204:45	12905.7	82.0	7047		43	10678		1038	21.93	27	81.23	454.33	167		31								71	32	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
15:15						432.20	0.00											6722.80			
15:30						433.12	0.00											6722.80			
15:45						434.05	0.00											6722.80			
16:00						434.93	0.00	3.35	94.8	0.17	4.18	21.69			3.18	76.22	1200.19	6719.62	48000	7.0	0.0
16:15						435.83	0.00											6719.62			
16:30						436.73	0.00											6719.62			
16:45						437.62	0.00											6719.62			
17:00						438.53	0.00	2.78	94.7	0.15	3.54	21.84			2.63	63.18	1202.82	6716.99	48000	7.0	0.0
17:15						439.41	0.00											6716.99			
17:30						440.37	0.00											6716.99			
17:45						441.33	0.00											6716.99			
18:00						442.25	0.00	3.09	94.7	0.16	3.93	22.00			2.93	70.23	1205.75	6714.06	48000	7.0	0.0
18:15						443.14	0.00											6714.06			
18:30						444.06	0.00											6714.06			
18:45						444.96	0.00											6714.06			
19:00						445.87	0.00	4.08	95.1	0.20	4.80	22.20			3.88	93.12	1209.63	6710.18	49000	7.0	0.0
19:15						446.78	0.00											6710.18			
19:30						447.67	0.00											6710.18			
19:45						448.56	0.00											6710.18			
20:00						449.50	0.00	3.34	94.5	0.18	4.41	22.39			3.16	75.75	1212.78	6707.03	49000	7.0	0.0
20:15						450.41	0.00											6707.03			
20:30						451.40	0.00											6707.03			
20:45						452.29	0.00											6707.03			
21:00						453.13	0.00	2.89	94.4	0.16	3.88	22.55			2.73	65.48	1215.51	6704.30	49000	7.0	0.0
21:15						454.03	0.00											6704.30			
21:30						454.93	0.00											6704.30			
21:45						455.74	0.00											6704.30			
22:00						456.66	0.00	3.46	94.8	0.18	4.32	22.73			3.28	78.72	1218.79	6701.02	49000	7.0	0.0
22:15						457.56	0.00											6701.02			
22:30						458.47	0.00											6701.02			
22:45						459.33	0.00											6701.02			
23:00						460.22	0.00	3.56	94.8	0.19	4.44	22.92			3.37	81.00	1222.16	6697.65	49000	7.0	0.0
23:15						461.14	0.00											6697.65			
23:30						462.08	0.00											6697.65			
23:45						463.00	0.00											6697.65			
00:00						463.91	0.00	3.50	94.8	0.18	4.37	23.10			3.32	79.63	1225.48	6694.33	49000	7.0	0.0
00:15						464.83	0.00											6694.33			
00:30						465.73	0.00											6694.33			
00:45						466.62	0.00											6694.33			
01:00						467.55	0.00	3.43	95.1	0.17	4.03	23.27			3.26	78.29	1228.74	6691.07	49000	7.0	0.0
01:15						468.40	0.00											6691.07			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	Sand %
	hh:mm kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
01:30						469.32	0.00											6691.07			
01:45						470.25	0.00											6691.07			
02:00						471.13	0.00	3.18	94.9	0.16	3.89	23.43			3.02	72.43	1231.76	6688.05	49000	7.0	0.0
02:15						472.03	0.00											6688.05			
02:30						472.92	0.00											6688.05			
02:45						473.87	0.00											6688.05			
03:00						474.80	0.00	3.31	94.6	0.18	4.29	23.61			3.13	75.15	1234.89	6684.92	49000	7.0	0.0
03:15						475.67	0.00											6684.92			
03:30						476.59	0.00											6684.92			
03:45						477.51	0.00											6684.92			
04:00						478.44	0.00	3.42	93.1	0.24	5.66	23.84			3.18	76.42	1238.08	6681.73	49000	7.0	0.0
04:15						479.34	0.00											6681.73			
04:30						480.23	0.00											6681.73			
04:45						481.16	0.00											6681.73			
05:00						482.10	0.00	3.33	93.8	0.21	4.96	24.05			3.12	74.96	1241.20	6678.61	49000	7.0	0.0
05:15						483.01	0.00											6678.61			
05:30						483.91	0.00											6678.61			
05:45						484.83	0.00											6678.61			
06:00						485.73	0.00	3.37	94.5	0.19	4.45	24.23			3.18	76.43	1244.39	6675.42	49000	7.0	0.0



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/26																												
		H ₂ S = 0.2ppm CO ₂ = 1.9%																										
06:15	209:45	12848.6	82.1	6821		42	10629		1115	25.14	29	89.72	472.60	167		24								72	21	0.00	0.00	0.29
06:30	210:00	12838.7	82.1	6937		42	10620		1052	24.36	28	86.10	473.49	168		25								73	22	0.00	0.00	0.29
06:45	210:15	12818.8	82.1	6865		42	10602		1078	25.18	28	88.47	474.42	168		26								74	21	0.00	0.00	0.29
07:00	210:30	12827.5	82.1	6877		43	10632		1069	23.60	28	85.40	475.31	171		27								69	20	0.00	0.00	0.29
07:15	210:45	12837.6	82.1	7074		43	10620		1076	22.40	28	83.41	476.17	168		28								68	19	0.00	0.00	0.29
07:30	211:00	12821.9	82.0	7129		43	10627		1072	21.97	29	82.29	477.03	170		28								66	18	0.00	0.00	0.29
07:45	211:15	12815.0	82.1	6881		42	10621		1052	23.49	27	84.64	477.91	170		28								71	17	0.00	0.00	0.29
08:00	211:30	12815.2	82.1	6780		42	10602		1119	23.84	28	87.60	478.83	168		27								74	17	0.00	0.00	0.29
08:15	211:45	12843.0	82.1	7015		43	10613		1079	22.85	29	84.26	479.70	171		27								68	16	0.00	0.00	0.29
08:30	212:00	12795.6	82.1	6862		42	10594		1103	24.22	28	87.74	480.62	173		27								74	16	0.00	0.00	0.29
08:45	212:15	12761.4	82.1	6873		42	10593		1090	25.32	28	89.29	481.55	170		28								80	16	0.00	0.00	0.29
09:00	212:30	12787.0	82.1	6788		42	10601		1074	23.81	28	85.94	482.44	173		28								76	16	0.00	0.00	0.29
09:15	212:45	12797.6	82.2	6916		42	10602		1120	26.25	30	91.80	483.40	173		28								85	16	0.00	0.00	0.29
09:30	213:00	12814.5	82.1	7087		43	10620		1136	25.40	31	90.73	484.34	173		29								77	16	0.00	0.00	0.29
09:45	213:15	12752.8	82.2	6846		42	10571		1122	24.25	28	88.54	485.27	174		28								78	16	0.00	0.00	0.29
10:00	213:30	12773.0	82.3	6903		43	10585		1099	23.80	29	86.65	486.17	173		29								71	16	0.00	0.00	0.29
10:15	213:45	12780.4	82.3	6731		43	10585		1032	23.94	29	84.50	487.05	174		28								70	16	0.00	0.00	0.29
10:30	214:00	12746.9	82.3	6722		42	10574		1085	24.68	28	87.89	487.97	176		27								73	16	0.00	0.00	0.29
10:45	214:15	12770.1	82.4	6812		42	10583		1030	24.09	28	84.80	488.85	178		26								76	16	0.00	0.00	0.29
11:00	214:30	12747.0	82.4	6687		42	10568		1057	25.83	27	88.96	489.78	178		25								80	16	0.00	0.00	0.29
11:15	214:45	12831.4	82.4	6764		42	10577		1035	22.52	26	82.37	490.63	177		25								75	16	0.00	0.00	0.29
11:30	215:00	12774.4	82.4	6952		43	10576		1034	23.70	27	84.39	491.51	177		26								75	16	0.00	0.00	0.29
11:45	215:15	12753.6	82.4	6583		42	10565		1130	26.75	29	93.19	492.48	178		26								81	17	0.00	0.00	0.29
12:00	215:30	12751.9	82.4	6656		42	10563		1059	25.04	28	87.51	493.39	179		27								75	17	0.00	0.00	0.29
12:15	215:45	12735.4	82.5	6779		42	10549		1085	24.21	28	87.05	494.30	177		27								76	17	0.00	0.00	0.29
12:30	216:00	12735.7	82.5	6546		42	10565		1088	24.04	28	86.87	495.21	180		26								74	17	0.00	0.00	0.29
12:45	216:15	12706.0	82.5	6529		42	10537		1057	25.35	28	87.98	496.12	179		27								76	17	0.00	0.00	0.29
13:00	216:30	12700.4	82.5	6703		42	10537		1054	25.35	28	87.89	497.04	180		28								76	17	0.00	0.00	0.29
13:15	216:45	12717.5	82.5	6749		42	10563		1033	23.39	28	83.59	497.91	181		28								70	18	0.00	0.00	0.29
13:30	217:00	12726.1	82.5	6523		42	10552		1133	27.11	29	93.96	498.89	180		29								80	18	0.00	0.00	0.29
13:45	217:15	12723.4	82.5	6832		43	10554		953	24.54	27	82.61	499.75	187		29								71	18	0.00	0.00	0.29
14:00	217:30	12684.9	82.6	6740		42	10533		1051	26.10	28	89.11	500.68	185		30								78	18	0.00	0.00	0.29
14:15	217:45	12828.5	82.6	6781		42	10544		1041	24.81	28	86.44	501.58	180		29								75	18	0.00	0.00	0.29
14:30	218:00	12715.2	82.6	6767		42	10551		1002	26.42	28	87.57	502.49	186		29								76	18	0.00	0.00	0.29
14:45	218:15	12710.5	82.6	6680		42	10548		1070	25.79	28	89.26	503.42	185		28								78	18	0.00	0.00	0.29
15:00	218:30	12686.2	82.2	6799		42	10540		1046	24.87	28	86.67	504.32	183		26								75	18	0.00	0.00	0.29
15:15	218:45	12678.3	82.2	6716		42	10527		1083	26.12	30	90.05	505.26	177		24								76	18	0.00	0.00	0.29
15:30	219:00	12691.1	82.2	6807		42	10543		1043	25.04	28	86.91	506.17	178		23								75	19	0.00	0.00	0.29
15:45	219:15	12712.7	82.2	6659		42	10553		1094	26.03	30	90.34	507.11	177		22								75	19	0.00	0.00	0.29
16:00	219:30	12697.8	82.2	6777		42	10539		1056	25.65	29	88.36	508.03	177		22								74	19	0.00	0.00	0.29



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Tight Hole
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Norman Wells
17 Mar 2014
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4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:15						486.66	0.00											6675.42			
06:30						487.56	0.00											6675.42			
06:45						488.48	0.00											6675.42			
07:00						489.37	0.00	3.94	94.7	0.21	5.01	24.44			3.73	89.55	1248.12	6671.69	49000	7.0	0.0
07:15						490.24	0.00											6671.69			
07:30						491.10	0.00											6671.69			
07:45						491.98	0.00											6671.69			
08:00						492.89	0.00	3.44	94.2	0.20	4.79	24.64			3.24	77.77	1251.36	6668.45	50000	7.0	0.0
08:15						493.77	0.00											6668.45			
08:30						494.68	0.00											6668.45			
08:45						495.61	0.00											6668.45			
09:00						496.51	0.00	3.16	94.1	0.19	4.47	24.83			2.97	71.37	1254.33	6665.48	52000	7.0	0.0
09:15						497.47	0.00											6665.48			
09:30						498.41	0.00											6665.48			
09:45						499.33	0.00											6665.48			
10:00						500.24	0.00	3.18	94.5	0.17	4.20	25.00			3.01	72.12	1257.34	6662.47	52000	7.0	0.0
10:15						501.12	0.00											6662.47			
10:30						502.03	0.00											6662.47			
10:45						502.91	0.00											6662.47			
11:00						503.84	0.00	3.17	94.4	0.18	4.26	25.18			2.99	71.82	1260.33	6659.48	53000	7.0	0.0
11:15						504.70	0.00											6659.48			
11:30						505.58	0.00											6659.48			
11:45						506.55	0.00											6659.48			
12:00						507.46	0.00	3.32	94.1	0.20	4.70	25.38			3.12	74.98	1263.45	6656.36	53000	7.0	0.0
12:15						508.37	0.00											6656.36			
12:30						509.27	0.00											6656.36			
12:45						510.19	0.00											6656.36			
13:00						511.10	0.00	3.35	94.1	0.20	4.74	25.57			3.15	75.66	1266.61	6653.20	52000	7.0	0.0
13:15						511.97	0.00											6653.20			
13:30						512.95	0.00											6653.20			
13:45						513.81	0.00											6653.20			
14:00						514.74	0.00	3.13	93.1	0.22	5.18	25.79			2.91	69.94	1269.52	6650.29	52000	7.0	0.0
14:15						515.64	0.00											6650.29			
14:30						516.56	0.00											6650.29			
14:45						517.48	0.00											6650.29			
15:00						518.39	0.00	3.03	94.3	0.17	4.15	25.96			2.86	68.57	1272.38	6647.43	50000	7.0	0.0
15:15						519.33	0.00											6647.43			
15:30						520.23	0.00											6647.43			
15:45						521.17	0.00											6647.43			
16:00						522.09	0.00	3.55	95.8	0.15	3.58	26.11			3.40	81.62	1275.78	6644.03	50000	7.0	0.0



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/26																												
16:15	219:45	12690.9	82.2	6685		42	10536		1063	25.77	29	88.93	508.95	175		21								75	19	0.00	0.00	0.29
16:30	220:00	12681.0	82.2	6703		42	10517		1088	25.67	29	89.63	509.89	176		21								76	19	0.00	0.00	0.29
16:45	220:15	12660.8	82.2	6764		42	10508		1055	25.04	28	87.37	510.80	171		21								76	19	0.00	0.00	0.29
17:00	220:30	12674.1	82.2	6684		42	10525		1042	25.14	28	87.04	511.70	172		20								75	19	0.00	0.00	0.29
17:15	220:45	12656.5	82.2	6647		42	10531		1045	25.40	28	87.55	512.62	172		19								75	19	0.00	0.00	0.29
17:30	221:00	12644.8	82.2	6623		42	10509		1063	24.98	29	87.50	513.53	173		19								72	19	0.00	0.00	0.29
17:45	221:15	12658.6	82.2	6773		42	10512		1061	24.78	29	86.97	514.43	172		20								75	20	0.00	0.00	0.29
18:00	221:30	12656.7	82.2	6531		42	10503		1057	24.41	28	86.41	515.33	171		20								73	20	0.00	0.00	0.29
18:15	221:45	12651.1	82.2	6770		42	10497		1004	23.70	27	83.16	516.20	172		20								73	20	0.00	0.00	0.29
18:30	222:00	12651.2	82.2	6806		42	10485		1062	25.29	29	88.02	517.12	169		19								76	20	0.00	0.00	0.29
18:45	222:15	12637.6	82.2	6818		42	10505		1053	25.00	28	87.21	518.02	168		19								73	20	0.00	0.00	0.29
19:00	222:30	12626.2	82.2	6647		42	10486		1054	26.41	27	89.82	518.96	170		18								75	20	0.00	0.00	0.29
19:15	222:45	12809.4	82.2	6801		42	10489		1022	25.61	27	87.22	519.87	170		17								74	19	0.00	0.00	0.29
19:30	223:00	12667.5	82.2	6699		42	10518		1080	25.44	30	88.77	520.79	168		17								70	18	0.00	0.00	0.29
19:45	223:15	12641.5	82.2	6572		42	10491		1033	25.84	29	87.84	521.71	170		18								76	17	0.00	0.00	0.29
20:00	223:30	12645.4	82.1	6637		42	10500		1085	24.68	29	87.83	522.62	169		19								70	17	0.00	0.00	0.29
20:15	223:45	12630.9	82.1	6646		42	10496		1071	25.06	29	87.95	523.54	170		20								73	16	0.00	0.00	0.29
20:30	224:00	12634.5	82.3	6793		43	10481		1046	24.73	27	86.64	524.44	170		21								72	17	0.00	0.00	0.29
20:45	224:15	12629.5	82.2	6685		42	10478		1128	27.13	29	93.76	525.42	170		22								77	18	0.00	0.00	0.29
21:00	224:30	12613.7	82.2	6599		42	10457		1092	26.23	27	91.03	526.37	170		23								79	21	0.00	0.00	0.29
21:15	224:45	12653.6	82.1	7014		43	10505		1062	21.74	29	81.49	527.22	173		25								63	26	0.00	0.00	0.29
21:30		Check choke. No wash.																										
21:30	225:00	12603.0	82.1	6660		43	10457		1112	25.04	29	89.36	528.15	171		27								73	25	0.00	0.00	0.29
21:45	225:15	12613.8	82.1	6680		43	10469		1072	24.86	29	87.61	529.06	172		27								72	23	0.00	0.00	0.29
22:00	225:30	12583.4	82.1	6403		42	10444		1131	27.21	29	94.03	530.04	171		26								80	22	0.00	0.00	0.29
22:15	225:45	12591.5	82.0	6577		42	10454		1072	25.76	28	89.37	530.97	175		25								77	22	0.00	0.00	0.29
22:30	226:00	12573.3	82.0	6542		42	10428		1094	26.13	29	90.72	531.91	174		25								76	21	0.00	0.00	0.29
22:45	226:15	12537.1	82.0	6364		42	10434		1112	26.65	29	92.35	532.88	174		24								78	21	0.00	0.00	0.29
23:00	226:30	12578.0	81.9	6637		43	10430		1078	24.06	28	86.56	533.78	174		24								73	20	0.00	0.00	0.29
23:15	226:45	12531.1	81.9	6493		42	10401		1091	26.31	29	90.98	534.73	173		23								77	20	0.00	0.00	0.29
23:30	227:00	12567.6	81.9	6566		42	10439		1065	25.89	28	89.28	535.66	174		21								76	19	0.00	0.00	0.29
23:45	227:15	12557.6	81.9	6522		42	10431		1061	25.55	28	88.51	536.58	176		23								76	19	0.00	0.00	0.29
14/03/27																												
00:00	227:30	12562.1	81.9	6455		42	10433		1097	25.30	29	89.34	537.51	173		25								73	20	0.00	0.00	0.29
00:15	227:45	12538.9	81.8	6783		41	10414		1092	26.99	27	92.41	538.47	176		26								82	19	0.00	0.00	0.29
00:30	228:00	12550.1	81.8	6696		42	10414		1060	25.86	28	88.94	539.40	175		27								74	24	0.00	0.00	0.29
00:45	228:15	12542.0	81.8	6504		42	10401		1128	27.76	29	94.95	540.39	175		27								84	32	0.00	0.00	0.29
01:00	228:30	12547.0	81.8	6552		42	10397		1056	26.30	28	89.67	541.32	173		27								76	31	0.00	0.00	0.29
01:15	228:45	12525.2	81.7	6733		42	10373		1100	25.87	27	90.72	542.27	176		26								74	29	0.00	0.00	0.29
01:30	229:00	12560.6	81.7	6570		42	10394		1092	25.05	29	88.75	543.19	175		26								72	26	0.00	0.00	0.29
01:45	229:15	12607.9	81.7	6719		43	10415		1106	24.72	30	88.55	544.11	176		25								70	25	0.00	0.00	0.29
02:00	229:30	12562.7	81.7	6684		42	10379		1153	25.46	30	91.69	545.07	173		25								74	24	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production				Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
16:15						523.02	0.00											6644.03			
16:30						523.95	0.00											6644.03			
16:45						524.86	0.00											6644.03			
17:00						525.77	0.00	2.63	94.9	0.13	3.22	26.25			2.50	59.90	1278.27		52000	7.0	0.0
17:15						526.68	0.00											6641.54			
17:30						527.58	0.00											6641.54			
17:45						528.50	0.00											6641.54			
18:00						529.40	0.00	3.11	94.6	0.17	4.03	26.41			2.94	70.61	1281.22		52000	7.0	0.0
18:15						530.27	0.00											6638.59			
18:30						531.18	0.00											6638.59			
18:45						532.09	0.00											6638.59			
19:00						533.03	0.00	2.55	93.5	0.17	3.98	26.58			2.38	57.22	1283.60		52000	7.0	0.0
19:15						533.93	0.00											6636.21			
19:30						534.86	0.00											6636.21			
19:45						535.77	0.00											6636.21			
20:00						536.69	0.00	3.56	94.3	0.20	4.87	26.78			3.36	80.57	1286.96		52000	7.0	0.0
20:15						537.61	0.00											6632.85			
20:30						538.51	0.00											6632.85			
20:45						539.48	0.00											6632.85			
21:00						540.43	0.00	3.04	94.4	0.17	4.09	26.95			2.87	68.87	1289.83		52000	7.0	0.0
21:15						541.28	0.00											6629.98			
21:30						542.21	0.00											6629.98			
21:45						543.13	0.00											6629.98			
22:00						544.10	0.00	3.33	94.0	0.20	4.80	27.15			3.13	75.12	1292.96		52000	7.0	0.0
22:15						545.04	0.00											6626.85			
22:30						545.98	0.00											6626.85			
22:45						546.94	0.00											6626.85			
23:00						547.84	0.00	2.70	94.1	0.16	3.82	27.31			2.54	60.98	1295.50		53000	7.0	0.0
23:15						548.79	0.00											6624.31			
23:30						549.72	0.00											6624.31			
23:45						550.64	0.00											6624.31			
00:00						551.57	0.00	3.03	93.8	0.19	4.51	27.50			2.84	68.21	1298.34		53000	7.0	0.0
00:15						552.54	0.00											6621.47			
00:30						553.46	0.00											6621.47			
00:45						554.45	0.00											6621.47			
01:00						555.39	0.00	3.18	94.5	0.17	4.20	27.68			3.01	72.12	1301.34		54000	7.0	0.0
01:15						556.33	0.00											6618.47			
01:30						557.26	0.00											6618.47			
01:45						558.18	0.00											6618.47			
02:00						559.13	0.00	2.99	94.0	0.18	4.31	27.85			2.81	67.45	1304.16		54000	7.0	0.0



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1					
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³	
14/03/27																													
02:15	229:45	12540.0	81.7	6502		42	10381		1094	25.87	28	90.35	546.01	174		25								76	23	0.00	0.00	0.29	
02:30	230:00	12527.1	81.7	6536		42	10387		1158	27.80	29	96.09	547.01	175		24								80	22	0.00	0.00	0.29	
02:45	230:15	12534.1	81.7	6535		42	10371		1066	25.52	27	88.84	547.93	175		24								74	21	0.00	0.00	0.29	
03:00	230:30	12523.6	81.6	6607		42	10369		1077	24.96	28	88.15	548.85	177		24								75	21	0.00	0.00	0.29	
03:15	230:45	12500.4	81.6	6570		42	10384		1118	25.90	28	91.38	549.81	175		23								76	22	0.00	0.00	0.29	
03:30	231:00	12506.3	81.6	6594		42	10357		1111	26.44	28	92.13	550.76	174		23								79	21	0.00	0.00	0.29	
03:45	231:15	12514.0	81.7	6575		42	10366		1122	26.22	28	92.07	551.72	179		23								78	20	0.00	0.00	0.29	
04:00	231:30	12525.8	81.7	6614		42	10376		1081	24.96	28	88.29	552.64	177		23								74	19	0.00	0.00	0.29	
04:15	231:45	12503.8	81.7	6594		42	10346		1081	26.14	28	90.39	553.59	176		23								78	27	0.00	0.00	0.29	
04:30	232:00	12486.5	81.6	6568		42	10352		1087	26.18	28	90.67	554.53	176		23								77	34	0.00	0.00	0.29	
04:45	232:15	12518.6	81.6	6746		42	10380		1060	23.28	28	84.48	555.41	177		23								69	32	0.00	0.00	0.29	
05:00	232:30	12509.6	81.6	6662		42	10340		1081	25.96	28	90.10	556.35	175		22								71	29	0.00	0.00	0.29	
05:15	232:45	12509.6	82.3	6614		42	10355		1145	26.76	29	93.76	557.32	176		20								75	27	0.00	0.00	0.29	
05:30	233:00	12500.4	82.3	6495		42	10351		1129	25.96	29	91.82	558.28	176		18								75	25	0.00	0.00	0.29	
05:45	233:15	12482.9	82.3	6616		42	10336		1070	26.16	28	90.04	559.22	177		17								75	23	0.00	0.00	0.29	
06:00	233:30	12487.0	82.3	6589		42	10325		1102	25.77	28	90.57	560.16	177		15								76	23	0.00	0.00	0.29	
		Daily Summary to 06:00 hrs March 27/2014																											
		DHP = 12487kpa																											
		FTP = 6589kpa																											
		SICP = 10325kpa																											
		Flow Temp = 42DegC																											
		Meter Run Temp = 28DegC																											
		Choke Size = 12.7mm																											
		Gas Rate = 90.57 E³m3/Day																											
		Cummulative Gas to Flare = 574.23 E3m3																											
		Gas to Flare last 24hrs = 88.36 E3m3																											
		LFTR = 7919.81m3																											
		LFR last 24hrs = 71.20m3																											
		TLFR = 1315.59m3																											
		TLFLTR = 6604.22m3																											
		Condensate Produced last 24hrs = 4.34m3																											
		Cummulative Condensate Produced = 28.57m3																											
		Salinity = 56000ppm																											
		ph = 7																											
		Sand = Nill																											
		Hrs Flowed = 233.5																											
		Hours Flared = 230																											
		Surface Total = 388.67m3																											
		Api = 60.9@15.6°C																											
		H2s = 0.20 ppm																											
		CO₂ = 1.8%																											
06:15	233:45	12484.4	82.2	6566		42	10341		1048	23.45	27	84.45	561.04	176		15								71	25	0.00	0.00	0.29	



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
02:15						560.07	0.00											6615.65			
02:30						561.08	0.00											6615.65			
02:45						562.00	0.00											6615.65			
03:00						562.92	0.00	3.14	94.1	0.19	4.45	28.04			2.95	70.91	1307.11	6612.70	56000	7.0	0.0
03:15						563.87	0.00											6612.70			
03:30						564.83	0.00											6612.70			
03:45						565.79	0.00											6612.70			
04:00						566.71	0.00	2.38	94.0	0.14	3.43	28.18			2.24	53.69	1309.35	6610.46	56000	7.0	0.0
04:15						567.65	0.00											6610.46			
04:30						568.60	0.00											6610.46			
04:45						569.48	0.00											6610.46			
05:00						570.41	0.00	3.27	93.9	0.20	4.79	28.38			3.07	73.69	1312.42	6607.39	56000	7.0	0.0
05:15						571.39	0.00											6607.39			
05:30						572.35	0.00											6607.39			
05:45						573.29	0.00											6607.39			
06:00						574.23	0.00	3.36	94.5	0.18	4.44	28.57			3.18	76.20	1315.59	6604.22	56000	7.0	0.0
06:15						575.11	0.00											6604.22			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data			Scada Casing	High Stage Separator					Low Stage Sperator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure			Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/27																													
06:30	234:00	12504.6	82.3	6426		42	10340			1078	25.69	28	89.46	561.97	177		14								72	23	0.00	0.00	0.29
06:45	234:15	12501.5	82.3	6492		42	10342			1079	26.39	28	90.65	562.92	177		14								75	22	0.00	0.00	0.29
07:00	234:30	12464.5	82.3	6481		42	10325			1094	25.91	28	90.53	563.86	182		13								74	21	0.00	0.00	0.29
07:15	234:45	12463.6	82.3	6653		42	10306			1094	26.84	28	92.09	564.82	176		16								79	20	0.00	0.00	0.29
07:30	235:00	12470.1	82.2	6502		42	10315			1110	25.43	27	90.32	565.76	176		18								74	16	0.00	0.00	0.29
07:45	235:15	12488.9	82.2	6557		42	10317			1064	25.82	27	89.26	566.69	178		19								74	13	0.00	0.00	0.29
08:00	235:30	12462.6	82.2	6393		41	10327			1104	26.37	28	91.74	567.65	177		21								77	11	0.00	0.00	0.29
08:15	235:45	12462.1	82.2	6481		42	10320			1158	26.67	28	94.26	568.63	178		21								80	12	0.00	0.00	0.29
08:30	236:00	12483.4	82.2	6307		42	10334			1100	25.66	28	90.26	569.57	177		22								79	12	0.00	0.00	0.29
08:45	236:15	12471.3	82.2	6641		42	10316			1098	24.60	28	88.21	570.49	179		22								74	12	0.00	0.00	0.29
09:00	236:30	12449.4	82.2	6261		41	10305			1165	28.32	29	97.35	571.50	179		23								86	12	0.00	0.00	0.29
09:15	236:45	12455.6	82.2	6518		42	10320			1150	26.98	29	94.39	572.49	181		24								84	13	0.00	0.00	0.29
09:30	237:00	12433.8	82.3	6454		41	10299			1083	26.48	27	91.15	573.43	180		25								84	13	0.00	0.00	0.29
09:45	237:15	12433.3	82.5	6449		42	10295			1114	25.22	29	89.92	574.37	182		25								78	14	0.00	0.00	0.29
10:00	237:30	12408.3	82.5	6386		41	10278			1114	26.30	27	92.10	575.33	178		25								82	14	0.00	0.00	0.29
10:15	237:45	12431.6	82.6	6486		42	10311			1165	25.63	29	92.57	576.29	184		25								79	14	0.00	0.00	0.29
10:30	238:00	12423.7	82.8	6527		42	10283			1133	26.53	29	92.93	577.26	180		26								81	15	0.00	0.00	0.29
10:45	238:15	12418.3	82.9	6468		42	10323			1094	24.96	28	88.71	578.19	187		27								74	15	0.00	0.00	0.29
11:00	238:30	12390.5	83.0	6558		41	10280			1103	26.80	28	92.37	579.15	183		27								84	16	0.00	0.00	0.29
11:15	238:45	12382.8	83.0	6445		42	10283			1106	25.36	28	89.98	580.09	187		27								77	16	0.00	0.00	0.29
11:30	239:00	12388.0	83.0	6472		42	10287			1066	25.37	29	88.33	581.01	185		28								76	17	0.00	0.00	0.29
11:45	239:15	12387.5	83.0	6428		42	10300			1108	26.03	28	91.15	581.96	186		28								81	18	0.00	0.00	0.29
12:00	239:30	12399.6	83.0	6674		42	10301			1066	23.64	28	85.38	582.85	189		29								73	18	0.00	0.00	0.29
12:15	239:45	12384.2	83.1	6482		42	10284			1103	25.57	29	90.12	583.78	187		29								77	18	0.00	0.00	0.29
12:30	240:00	12380.9	83.1	6379		42	10288			1131	26.33	30	92.38	584.75	190		29								80	19	0.00	0.00	0.29
12:45	240:15	12348.3	83.1	6417		42	10286			1078	26.42	28	90.69	585.69	190		29								79	19	0.00	0.00	0.29
13:00	240:30	12380.8	83.1	6337		42	10272			1117	26.64	30	92.37	586.65	192		29								79	19	0.00	0.00	0.29
13:15	240:45	12364.1	83.1	6384		42	10281			1062	25.81	28	88.99	587.58	193		29								76	20	0.00	0.00	0.29
13:30	241:00	12372.3	82.4	6415		42	10275			1060	25.84	29	88.92	588.51	194		28								76	20	0.00	0.00	0.29
13:45	241:15	12354.0	82.4	6404		41	10259			1076	26.61	28	91.06	589.46	190		27								81	20	0.00	0.00	0.29
14:00	241:30	12345.4	82.3	6454		41	10266			1043	26.34	28	89.15	590.38	192		26								78	20	0.00	0.00	0.29
14:15	241:45	12366.4	82.3	6569		42	10286			1122	25.97	30	91.35	591.34	191		25								76	21	0.00	0.00	0.29
14:30	242:00	12339.0	82.3	6540		41	10261			1094	26.50	28	91.47	592.29	193		24								82	21	0.00	0.00	0.29
14:45	242:15	12334.2	82.3	6387		41	10247			1086	26.49	28	91.12	593.24	192		24								77	21	0.00	0.00	0.29
15:00	242:30	12338.5	82.4	6458		42	10239			1032	25.32	27	87.09	594.14	191		24								76	21	0.00	0.00	0.29
15:15	242:45	12352.3	82.4	6607		42	10250			1079	25.31	28	88.79	595.07	191		23								77	21	0.00	0.00	0.29
15:30	243:00	12357.8	82.4	6447		42	10271			1081	26.20	28	90.40	596.01	193		23								78	21	0.00	0.00	0.29
15:45	243:15	12352.9	82.5	6446		41	10253			1040	25.85	28	88.23	596.93	191		23								78	21	0.00	0.00	0.29
16:00	243:30	12377.3	82.5	6648		42	10256			1030	23.45	27	83.72	597.80	193		23								73	21	0.00	0.00	0.29
16:15	243:45	12348.1	82.5	6605		42	10274			1081	24.42	30	87.08	598.71	194		22								73	21	0.00	0.00	0.29
16:30	244:00	12328.1	82.4	6547		42	10269			1059	24.12	28	85.89	599.60	196		22								72	21	0.00	0.00	0.29
16:45	244:15	12305.6	82.4	6545		42	10248			1032	24.53	27	85.69	600.50	194		22								76	21	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production			Load Fluid Left				
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job	Salinity	pH	Sand %	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:30						576.04	0.00											6604.22			
06:45						576.98	0.00											6604.22			
07:00						577.93	0.00	3.51	93.5	0.23	5.48	28.80			3.28	78.76	1318.87	6600.94	56000	7.0	0.0
07:15						578.89	0.00											6600.94			
07:30						579.83	0.00											6600.94			
07:45						580.76	0.00											6600.94			
08:00						581.71	0.00	3.08	94.0	0.18	4.44	28.98			2.90	69.48	1321.77	6598.04	54000	7.0	0.0
08:15						582.69	0.00											6598.04			
08:30						583.63	0.00											6598.04			
08:45						584.55	0.00											6598.04			
09:00						585.57	0.00	3.00	94.0	0.18	4.32	29.16			2.82	67.68	1324.59	6595.22	54000	7.0	0.0
09:15						586.55	0.00											6595.22			
09:30						587.50	0.00											6595.22			
09:45						588.44	0.00											6595.22			
10:00						589.40	0.00	2.79	93.8	0.17	4.15	29.33			2.62	62.81	1327.21	6592.60	54000	7.0	0.0
10:15						590.36	0.00											6592.60			
10:30						591.33	0.00											6592.60			
10:45						592.25	0.00											6592.60			
11:00						593.22	0.00	2.96	93.8	0.18	4.40	29.52			2.78	66.64	1329.98	6589.83	54000	7.0	0.0
11:15						594.15	0.00											6589.83			
11:30						595.07	0.00											6589.83			
11:45						596.02	0.00											6589.83			
12:00						596.91	0.00	2.43	93.5	0.16	3.79	29.67			2.27	54.53	1332.26	6587.55	54000	7.0	0.0
12:15						597.85	0.00											6587.55			
12:30						598.81	0.00											6587.55			
12:45						599.76	0.00											6587.55			
13:00						600.72	0.00	2.38	94.2	0.14	3.31	29.81			2.24	53.81	1334.50	6585.31	52000	7.0	0.0
13:15						601.65	0.00											6585.31			
13:30						602.57	0.00											6585.31			
13:45						603.52	0.00											6585.31			
14:00						604.45	0.00	2.89	94.2	0.17	4.02	29.98			2.72	65.34	1337.22	6582.59	52000	7.0	0.0
14:15						605.40	0.00											6582.59			
14:30						606.35	0.00											6582.59			
14:45						607.30	0.00											6582.59			
15:00						608.21	0.00	2.48	93.7	0.16	3.75	30.14			2.32	55.77	1339.54	6580.27	52000	7.0	0.0
15:15						609.14	0.00											6580.27			
15:30						610.08	0.00											6580.27			
15:45						611.00	0.00											6580.27			
16:00						611.87	0.00	3.03	93.9	0.18	4.44	30.32			2.85	68.28	1342.39	6577.42	52000	7.0	0.0
16:15						612.78	0.00											6577.42			
16:30						613.67	0.00											6577.42			
16:45						614.56	0.00											6577.42			



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P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1						
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4		
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³		
14/03/27																														
17:00	244:30	12339.0	82.4	6702		42	10271		1006	24.91	27	85.37	601.39	194		22									73	21	0.00	0.00	0.29	
17:15	244:45	12323.8	82.4	6616		42	10234		1059	25.75	28	88.82	602.31	192		22									79	21	0.00	0.00	0.29	
17:30	245:00	12275.1	82.4	6363		41	10227		1056	26.05	29	89.10	603.24	195		22									78	22	0.00	0.00	0.29	
17:45	245:15	12298.6	82.4	6498		41	10247		1023	25.72	27	87.44	604.15	195		22									77	22	0.00	0.00	0.29	
18:00	245:30	12325.9	82.4	6504		42	10255		1094	24.62	29	88.02	605.07	192		22									74	22	0.00	0.00	0.29	
18:15	245:45	12284.1	82.3	6276		41	10220		1077	26.40	28	90.74	606.01	196		22									80	22	0.00	0.00	0.29	
18:30	246:00	12292.3	82.3	6391		41	10229		1052	25.67	28	88.46	606.93	194		22									77	22	0.00	0.00	0.29	
18:45	246:15	12266.2	82.3	6346		41	10217		1064	26.10	28	89.67	607.87	197		22									77	22	0.00	0.00	0.29	
19:00	246:30	12324.7	82.4	6501		42	10240		1106	24.40	29	88.06	608.78	195		21									73	21	0.00	0.00	0.29	
19:15	246:45	12267.2	82.4	6329		41	10225		1057	25.67	28	88.67	609.71	195		21									75	21	0.00	0.00	0.29	
19:30	247:00	12290.3	82.3	6453		41	10246		1061	25.65	28	88.73	610.63	194		21									74	20	0.00	0.00	0.29	
19:45	247:15	12262.3	82.3	6383		41	10196		1080	26.37	28	90.77	611.58	194		21									77	20	0.00	0.00	0.29	
20:00	247:30	12285.0	82.4	6561		41	10211		1044	26.76	28	89.98	612.52	197		21									76	20	0.00	0.00	0.29	
20:15	247:45	12270.2	82.3	6573		42	10234		1100	25.40	28	89.72	613.45	195		23									77	20	0.00	0.00	0.29	
20:30	248:00	12247.1	82.3	6449		41	10211		1049	25.22	27	87.69	614.36	194		27									76	20	0.00	0.00	0.29	
20:45	248:15	12292.9	82.3	6515		42	10228		1081	24.17	29	86.69	615.27	196		27									71	21	0.00	0.00	0.29	
21:00	248:30	12288.8	82.3	6559		42	10223		1043	24.63	27	86.34	616.17	195		26									73	19	0.00	0.00	0.29	
21:15	248:45	12270.5	82.2	6435		42	10211		1060	24.81	27	87.31	617.08	196		27									73	18	0.00	0.00	0.29	
21:30	249:00	12261.6	82.2	6492		41	10193		1067	26.02	28	89.69	618.01	195		27									77	17	0.00	0.00	0.29	
21:45	249:15	12242.9	82.1	6398		41	10191		1061	25.58	27	88.74	618.93	196		26									77	18	0.00	0.00	0.29	
22:00	249:30	12289.0	82.1	6510		42	10216		1108	27.29	29	93.30	619.91	191		26									79	18	0.00	0.00	0.29	
22:15	249:45	12275.6	82.1	6347		41	10194		1072	25.67	28	89.24	620.84	195		27									76	18	0.00	0.00	0.29	
22:30	250:00	12263.9	82.1	6372		41	10169		1149	27.54	28	95.41	621.83	195		29									81	18	0.00	0.00	0.29	
22:45	250:15	12249.8	82.4	6367		41	10185		1060	25.21	27	88.03	622.75	197		31									74	18	0.00	0.00	0.29	
23:00	250:30	12266.5	82.4	6431		42	10195		1100	24.33	28	87.91	623.66	195		32									73	18	0.00	0.00	0.29	
23:15	250:45	12258.2	82.4	6489		42	10202		1015	22.47	27	81.48	624.51	197		32									71	18	0.00	0.00	0.29	
23:30	251:00	12233.5	82.3	6228		41	10149		1111	26.80	28	92.70	625.48	195		33									80	18	0.00	0.00	0.29	
23:45	251:15	12263.4	82.3	6270		41	10179		1063	24.48	27	86.90	626.38	195		33									72	18	0.00	0.00	0.29	
14/03/28																														
00:00	251:30	12242.0	82.3	6358		41	10163		1074	25.88	27	89.78	627.32	194		33										75	18	0.00	0.00	0.29
00:15	251:45	12244.9	82.3	6353		41	10165		1078	24.39	28	87.17	628.23	195		33										73	19	0.00	0.00	0.29
00:30	252:00	12213.0	82.3	6331		41	10172		1121	25.01	27	90.03	629.16	196		33										77	18	0.00	0.00	0.29
00:45	252:15	12227.9	82.3	6537		42	10176		1066	23.97	26	86.18	630.06	196		33										71	20	0.00	0.00	0.29
01:00	252:30	12260.2	82.3	6434		42	10169		1055	23.42	27	84.70	630.94	196		33										71	19	0.00	0.00	0.29
01:15	252:45	12249.5	82.2	6334		42	10151		1073	23.48	27	85.51	631.83	195		32										71	19	0.00	0.00	0.29
01:30	253:00	12243.0	82.2	6401		41	10151		1035	23.52	27	84.10	632.71	197		32										72	19	0.00	0.00	0.29
01:45	253:15	12208.3	82.2	6308		41	10136		1150	28.40	28	96.98	633.72	193		32										82	19	0.00	0.00	0.29
02:00	253:30	12229.9	82.1	6225		41	10158		1103	24.58	27	88.56	634.64	196		32										75	19	0.00	0.00	0.29
02:15	253:45	12231.3	82.1	6431		41	10140		1101	24.73	27	88.74	635.57	195		31										75	21	0.00	0.00	0.29
02:30	254:00	12209.6	82.1	6356		41	10126		1101	25.46	27	90.19	636.51	193		30										78	21	0.00	0.00	0.29
02:45	254:15	12233.7	82.2	6379		41	10121		1076	24.50	27	87.46	637.42	195		29										73	20	0.00	0.00	0.29
03:00	254:30	12181.6	82.2	6251		41	10104		1105	25.10	27	89.62	638.35	193		28										77	24	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
	hh:mm kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
17:00						615.45	0.00	2.21	93.4	0.15	3.50	30.47			2.06	49.54	1344.45	6575.36	52000	7.0	0.0
17:15						616.38	0.00											6575.36			
17:30						617.31	0.00											6575.36			
17:45						618.22	0.00											6575.36			
18:00						619.13	0.00	2.23	93.7	0.14	3.37	30.61			2.09	50.15	1346.54	6573.27	55000	7.0	0.0
18:15						620.08	0.00											6573.27			
18:30						621.00	0.00											6573.27			
18:45						621.93	0.00											6573.27			
19:00						622.85	0.00	4.22	94.0	0.25	6.08	30.86			3.97	95.20	1350.51	6569.30	55000	7.0	0.0
19:15						623.77	0.00											6569.30			
19:30						624.70	0.00											6569.30			
19:45						625.64	0.00											6569.30			
20:00						626.58	0.00	2.47	93.8	0.15	3.68	31.01			2.32	55.60	1352.83	6566.98	55000	7.0	0.0
20:15						627.52	0.00											6566.98			
20:30						628.43	0.00											6566.98			
20:45						629.33	0.00											6566.98			
21:00						630.23	0.00	2.91	94.4	0.16	3.91	31.18			2.75	65.93	1355.57	6564.24	56000	7.0	0.0
21:15						631.14	0.00											6564.24			
21:30						632.08	0.00											6564.24			
21:45						633.00	0.00											6564.24			
22:00						633.97	0.00	2.61	93.8	0.16	3.88	31.34			2.45	58.76	1358.02	6561.79	56000	7.0	0.0
22:15						634.90	0.00											6561.79			
22:30						635.90	0.00											6561.79			
22:45						636.81	0.00											6561.79			
23:00						637.73	0.00	2.73	93.7	0.17	4.13	31.51			2.56	61.39	1360.58	6559.23	56000	7.0	0.0
23:15						638.58	0.00											6559.23			
23:30						639.54	0.00											6559.23			
23:45						640.45	0.00											6559.23			
00:00						641.38	0.00	2.89	93.1	0.20	4.79	31.71			2.69	64.57	1363.27	6556.54	56000	7.0	0.0
00:15						642.29	0.00											6556.54			
00:30						643.23	0.00											6556.54			
00:45						644.13	0.00											6556.54			
01:00						645.01	0.00	3.14	94.5	0.17	4.14	31.88			2.97	71.22	1366.24	6553.57	56000	7.0	0.0
01:15						645.90	0.00											6553.57			
01:30						646.78	0.00											6553.57			
01:45						647.79	0.00											6553.57			
02:00						648.71	0.00	2.39	93.4	0.16	3.79	32.04			2.23	53.57	1368.47	6551.34	56000	7.0	0.0
02:15						649.63	0.00											6551.34			
02:30						650.57	0.00											6551.34			
02:45						651.48	0.00											6551.34			
03:00						652.42	0.00	2.98	93.7	0.19	4.51	32.23			2.79	67.01	1371.26	6548.55	56000	7.0	0.0



Operation:	Tight Hole
Pool or Zone:	Tight Hole
Field or Area:	Norman Wells
Test Start:	17 Mar 2014
Test End:	9 Apr 2014
Wft Job #:	4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data			Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure	Scada Casing		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/28																													
03:15	254:45	12204.4	82.2	6131		41	10134			1087	25.45	27	89.62	639.28	192		26								76	30	0.00	0.00	0.29
03:30	255:00	12222.4	82.2	6303		42	10157			1089	24.38	27	87.63	640.20	191		27								70	27	0.00	0.00	0.29
03:45	255:15	12205.2	82.2	6336		41	10126			1100	24.92	27	89.16	641.13	192		27								73	25	0.00	0.00	0.29
04:00	255:30	12182.0	82.2	6245		41	10115			1089	25.43	26	89.66	642.06	191		28								75	24	0.00	0.00	0.29
04:15	255:45	12192.9	82.2	6206		41	10111			1116	26.61	27	92.72	643.03	192		27								78	24	0.00	0.00	0.29
04:30	256:00	12237.7	82.2	6321		42	10119			1133	25.18	28	90.72	643.97	195		28								74	23	0.00	0.00	0.29
04:45	256:15	12203.0	82.1	6172		41	10116			1146	25.53	28	91.73	644.93	194		28								73	22	0.00	0.00	0.29
05:00	256:30	12206.7	82.1	6178		41	10131			1076	24.96	26	88.37	645.85	193		27								74	22	0.00	0.00	0.29
05:15	256:45	12199.5	82.2	6181		41	10115			1115	25.73	27	91.14	646.80	190		26								76	23	0.00	0.00	0.29
05:30	257:00	12213.2	82.2	6437		42	10135			1112	23.18	28	86.21	647.69	191		25								69	21	0.00	0.00	0.29
05:45	257:15	12186.4	82.2	6135		41	10121			1108	25.03	27	89.64	648.63	190		25								75	21	0.00	0.00	0.29
06:00	257:30	12197.7	82.2	6313		41	10129			1128	24.51	28	89.22	649.56	192		27								72	21	0.00	0.00	0.29
		Daily Summary to 06:00 hrs March 28/2014																											
		DHP = 12197.7kpa																											
		FTP = 6313kpa																											
		SICP = 10129kpa																											
		Flow Temp = 41DegC																											
		Meter Run Temp = 28DegC																											
		Choke Size = 12.7mm																											
		Gas Rate = 89.22 E3m3/Day																											
		Cumulative Gas to Flare = 663.62 E3m3																											
		Gas to Flare last 24hrs = 89.39 E3m3																											
		LFTR = 7919.81m3																											
		LFR last 24hrs = 63.68m3																											
		TLFR = 1379.27m3																											
		TLFLTR = 6540.54m3																											
		Condensate Produced last 24hrs = 4.21m3																											
		Cumulative Condensate Produced = 32.78m3																											
		Salinity = 56000ppm																											
		ph = 7																											
		Sand = Null																											
		Hrs Flowed = 257.5																											
		Hours Flared = 254																											
		Surface Total = 303.56m3																											
		Api = 61@15.6°C																											
		H2s = 0.40ppm																											
		CO2 = 1.8%																											
06:15	257:45	12200.3	82.2	6294		41	10132			1136	26.60	27	93.44	650.53	192		28								77	24	0.00	0.00	0.29
06:30	258:00	12168.8	82.2	6247		41	10118			1124	25.04	27	90.27	651.47	191		30								74	20	0.00	0.00	0.29
06:45	258:15	12194.6	82.5	6187		41	10119			1088	24.32	27	87.62	652.38	192		31								73	17	0.00	0.00	0.29
07:00	258:30	12174.4	82.5	6220		41	10085			1105	25.60	27	90.52	653.33	192		32								76	15	0.00	0.00	0.29
07:15	258:45	12163.0	82.4	6369		41	10088			1150	26.03	27	92.96	654.30	193		31								76	13	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	Sand %
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
03:15						653.35	0.00											6548.55			
03:30						654.26	0.00											6548.55			
03:45						655.19	0.00											6548.55			
04:00						656.13	0.00	3.21	93.6	0.21	4.93	32.43			3.00	72.11	1374.27	6545.54	56000	7.0	0.0
04:15						657.09	0.00											6545.54			
04:30						658.04	0.00											6545.54			
04:45						658.99	0.00											6545.54			
05:00						659.91	0.00	2.52	93.7	0.16	3.81	32.59			2.36	56.67	1376.63	6543.18	56000	7.0	0.0
05:15						660.86	0.00											6543.18			
05:30						661.76	0.00											6543.18			
05:45						662.69	0.00											6543.18			
06:00						663.62	0.00	2.83	93.5	0.18	4.41	32.78			2.65	63.51	1379.27	6540.54	56000	7.0	0.0
06:15						664.60	0.00											6540.54			
06:30						665.54	0.00											6540.54			
06:45						666.45	0.00											6540.54			
07:00						667.39	0.00	2.13	93.7	0.13	3.22	32.91			2.00	47.90	1381.27	6538.54	56000	7.0	0.0
07:15						668.36	0.00											6538.54			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	°C	E ³ m ³ /d	E ³ m ³ /d	E ³ m ³
14/03/28																												
07:30	259:00	12153.6	82.4	6497		41	10098		1102	23.75	26	87.14	655.20	193		31								75	13	0.00	0.00	0.29
07:45	259:15	12155.5	82.4	6439		41	10076		1072	24.18	26	86.78	656.11	194		30								75	14	0.00	0.00	0.29
08:00	259:30	12171.3	82.4	6381		41	10081		1095	25.73	26	90.52	657.05	192		30								79	14	0.00	0.00	0.29
08:15	259:45	12171.0	82.4	6388		41	10100		1039	22.26	25	82.16	657.91	195		29								72	14	0.00	0.00	0.29
08:30	260:00	12149.7	82.4	6315		41	10064		1131	26.11	26	92.58	658.87	193		28								79	14	0.00	0.00	0.29
08:45	260:15	12178.8	82.4	6344		41	10077		1068	25.36	26	88.82	659.79	194		28								76	14	0.00	0.00	0.29
09:00	260:30	12160.8	82.4	6317		41	10081		1078	24.37	26	87.43	660.71	195		27								74	13	0.00	0.00	0.29
09:15	260:45	12150.9	82.4	6470		41	10080		1084	23.17	26	85.45	661.60	194		26								72	13	0.00	0.00	0.29
09:30	261:00	12147.9	82.5	6422		41	10075		1095	24.95	27	89.00	662.52	191		27								74	14	0.00	0.00	0.29
09:45	261:15	12141.8	82.5	6544		42	10076		1077	23.52	27	85.69	663.42	195		27								72	13	0.00	0.00	0.29
10:00	261:30	12161.0	82.5	6481		41	10088		1102	23.95	27	87.40	664.33	193		26								73	13	0.00	0.00	0.29
10:15	261:45	12129.8	82.5	6331		41	10050		1122	25.24	27	90.56	665.27	196		25								78	13	0.00	0.00	0.29
10:30	262:00	12133.2	82.6	6317		41	10074		1082	25.46	26	89.45	666.20	196		25								76	13	0.00	0.00	0.29
10:45	262:15	12110.5	82.7	6461		41	10067		1089	24.48	26	87.98	667.12	197		26								77	13	0.00	0.00	0.29
11:00	262:30	12134.5	82.8	6422		41	10068		1071	23.19	26	84.98	668.00	197		24								71	14	0.00	0.00	0.29
11:15	262:45	12117.2	82.8	6107		40	10069		1121	24.13	27	88.50	668.92	197		24								74	15	0.00	0.00	0.29
11:30	263:00	12080.0	82.9	6202		40	10069		1062	22.39	26	83.20	669.79	197		24								72	15	0.00	0.00	0.29
11:45	263:15	12135.9	82.9	6293		41	10078		1102	22.26	27	84.30	670.67	201		25								68	15	0.00	0.00	0.29
12:00	263:30	12125.6	82.9	6168		41	10070		1160	26.63	27	94.40	671.65	199		25								78	15	0.00	0.00	0.29
12:15	263:45	12094.8	82.5	5967		40	10051		1099	22.82	25	85.43	672.54	197		25								72	16	0.00	0.00	0.29
12:30	264:00	12095.5	82.5	6048		40	10047		1108	24.49	26	88.78	673.47	197		26								74	16	0.00	0.00	0.29
12:45	264:15	12068.5	82.6	6085		41	10045		1128	23.73	27	88.06	674.38	201		26								73	16	0.00	0.00	0.29
13:00	264:30	12106.5	82.6	6085		40	10062		1120	24.31	26	88.96	675.31	200		27								76	17	0.00	0.00	0.29
13:15	264:45	12089.1	82.6	6121		41	10062		1117	23.24	26	86.75	676.21	201		28								71	17	0.00	0.00	0.29
13:30	265:00	12109.7	82.6	6229		41	10056		1160	24.25	28	89.96	677.15	200		26								71	17	0.00	0.00	0.29
13:45	265:15	12089.2	82.6	6112		41	10043		1152	25.52	27	92.19	678.11	199		25								78	18	0.00	0.00	0.29
14:00	265:30	12090.1	82.7	6099		41	10050		1142	25.90	27	92.48	679.08	200		24								79	18	0.00	0.00	0.29
14:15	265:45	12028.3	82.7	6113		40	10020		1118	25.49	26	91.05	680.02	202		23								78	18	0.00	0.00	0.29
14:30	266:00	11986.2	82.7	6134		41	10006		1138	26.05	26	92.72	680.99	203		22								82	18	0.00	0.00	0.29
14:45	266:15	12093.7	82.6	6156		41	10039		1114	23.81	27	87.63	681.90	202		22								72	19	0.00	0.00	0.29
15:00	266:30	12067.6	82.6	6073		40	10033		1112	23.99	26	87.97	682.82	202		21								75	19	0.00	0.00	0.29
15:15	266:45	12064.7	82.6	6079		40	10012		1116	25.30	26	90.56	683.76	202		21								76	19	0.00	0.00	0.29
15:30	267:00	12079.9	82.6	6095		41	10052		1165	22.83	28	87.52	684.67	202		21								70	19	0.00	0.00	0.29
15:45	267:15	12050.3	82.6	6120		40	10009		1141	26.02	26	92.75	685.64	202		20								80	19	0.00	0.00	0.29
16:00	267:30	12049.9	82.6	6113		41	10017		1131	23.96	26	88.64	686.56	203		20								74	19	0.00	0.00	0.29
16:15	267:45	12055.4	82.6	6046		40	10009		1115	25.05	26	90.06	687.50	202		20								74	18	0.00	0.00	0.29
16:30	268:00	12060.6	82.6	6091		40	10024		1146	23.56	27	88.42	688.42	203		19								72	18	0.00	0.00	0.29
16:45	268:15	12062.2	82.6	6098		40	10031		1149	22.54	26	86.61	689.32	205		19								73	18	0.00	0.00	0.29
17:00	268:30	12039.3	82.6	6078		40	10005		1169	23.29	25	88.96	690.25	200		19								76	18	0.00	0.00	0.29
17:15	268:45	12023.0	82.6	6107		40	10003		1132	21.39	25	83.90	691.13	203		19								73	18	0.00	0.00	0.29
17:30	269:00	12049.3	82.7	6100		40	10011		1147	21.39	25	84.46	692.00	204		21								74	18	0.00	0.00	0.29
17:45	269:15	12053.7	82.7	6068		40	10007		1149	21.72	25	85.19	692.89	203		22								75	18	0.00	0.00	0.29



Weatherford®

CPD and Testing Services (Canada)
Weatherford 1200, 333 - 5th Avenue S.W.
Calgary, AB T2P 3B6
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Facsimile: 403.693.7769

ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
07:30						669.27	0.00											6538.54			
07:45						670.17	0.00											6538.54			
08:00						671.12	0.00	2.73	93.2	0.19	4.46	33.10			2.54	61.06	1383.81	6536.00	56000	7.0	0.0
08:15						671.97	0.00											6536.00			
08:30						672.94	0.00											6536.00			
08:45						673.86	0.00											6536.00			
09:00						674.77	0.00	2.66	93.4	0.18	4.21	33.27			2.48	59.63	1386.30	6533.51	58000	7.0	0.0
09:15						675.66	0.00											6533.51			
09:30						676.59	0.00											6533.51			
09:45						677.48	0.00											6533.51			
10:00						678.39	0.00	2.80	93.7	0.18	4.23	33.45			2.62	62.97	1388.92	6530.89	58000	7.0	0.0
10:15						679.34	0.00											6530.89			
10:30						680.27	0.00											6530.89			
10:45						681.18	0.00											6530.89			
11:00						682.07	0.00	2.61	93.5	0.17	4.07	33.62			2.44	58.57	1391.36	6528.45	58000	7.0	0.0
11:15						682.99	0.00											6528.45			
11:30						683.86	0.00											6528.45			
11:45						684.74	0.00											6528.45			
12:00						685.72	0.00	2.49	93.3	0.17	4.00	33.78			2.32	55.76	1393.69	6526.12	59000	7.0	0.0
12:15						686.61	0.00											6526.12			
12:30						687.53	0.00											6526.12			
12:45						688.45	0.00											6526.12			
13:00						689.38	0.00	2.90	93.3	0.19	4.66	33.98			2.71	64.94	1396.39	6523.42	58000	7.0	0.0
13:15						690.28	0.00											6523.42			
13:30						691.22	0.00											6523.42			
13:45						692.18	0.00											6523.42			
14:00						693.14	0.00	2.71	93.4	0.18	4.29	34.16			2.53	60.75	1398.92	6520.89	58000	7.0	0.0
14:15						694.09	0.00											6520.89			
14:30						695.06	0.00											6520.89			
14:45						695.97	0.00											6520.89			
15:00						696.88	0.00	2.73	93.4	0.18	4.32	34.34			2.55	61.20	1401.47	6518.34	58000	7.0	0.0
15:15						697.83	0.00											6518.34			
15:30						698.74	0.00											6518.34			
15:45						699.71	0.00											6518.34			
16:00						700.63	0.00	2.62	93.3	0.18	4.21	34.51			2.44	58.67	1403.92	6515.89	58000	7.0	0.0
16:15						701.57	0.00											6515.89			
16:30						702.49	0.00											6515.89			
16:45						703.39	0.00											6515.89			
17:00						704.32	0.00	2.29	92.9	0.16	3.90	34.68			2.13	51.06	1406.04	6513.77	62000	7.0	0.0
17:15						705.19	0.00											6513.77			
17:30						706.07	0.00											6513.77			
17:45						706.96	0.00											6513.77			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	°C	E ³ m ³ /d	E ³ m ³ /d	E ³ m ³
14/03/28																												
18:00	269:30	12034.1	82.6	6027		40	9998		1146	22.06	25	85.82	693.79	201		21								75	18	0.00	0.00	0.29
18:15	269:45	12035.8	82.6	6052		40	10001		1208	23.65	27	90.81	694.73	205		21								75	18	0.00	0.00	0.29
18:30	270:00	12039.1	82.6	6053		40	9998		1201	23.75	26	90.85	695.68	207		20								77	18	0.00	0.00	0.29
18:45	270:15	12039.9	82.6	6035		40	10010		1167	20.58	25	83.56	696.55	203		19								71	18	0.00	0.00	0.29
19:00	270:30	12013.1	82.6	6048		40	10005		1200	22.50	25	88.49	697.47	205		19								71	17	0.00	0.00	0.29
19:00		Zero refractometer.																										
19:15	270:45	12007.6	82.6	6052		40	9985		1248	22.36	26	89.78	698.41	203		19								75	17	0.00	0.00	0.29
19:30	271:00	12013.4	82.6	6176		41	10019		1243	22.50	27	89.78	699.34	205		20								73	17	0.00	0.00	0.29
19:45	271:15	12009.7	82.6	6200		41	10014		1210	22.60	26	88.87	700.27	203		20								73	17	0.00	0.00	0.29
20:00	271:30	12008.5	82.5	6159		40	9991		1198	23.01	25	89.40	701.20	205		21								76	18	0.00	0.00	0.29
20:15	271:45	12028.9	82.5	6122		41	10000		1236	22.07	27	88.65	702.12	205		21								74	18	0.00	0.00	0.29
20:30	272:00	12020.0	82.5	6025		40	9996		1223	23.20	27	90.38	703.06	208		20								78	18	0.00	0.00	0.29
20:45	272:15	11994.1	82.5	5971		40	9986		1165	23.63	26	89.29	703.99	207		19								74	18	0.00	0.00	0.29
21:00	272:30	12003.5	82.5	5996		41	9997		1149	21.18	26	83.92	704.87	208		20								68	19	0.00	0.00	0.29
21:15	272:45	11999.3	82.4	6122		40	9986		1173	24.46	26	91.22	705.82	206		23								80	19	0.00	0.00	0.29
21:30	273:00	11989.5	82.4	5996		40	9982		1145	24.14	26	89.55	706.75	209		26								74	19	0.00	0.00	0.29
21:45	273:15	12005.0	82.4	6212		41	10000		1138	21.67	26	84.50	707.63	208		28								69	18	0.00	0.00	0.29
22:00	273:30	12009.5	82.4	6152		40	9988		1095	21.63	25	83.10	708.50	210		30								71	18	0.00	0.00	0.29
22:15	273:45	12049.3	82.3	6171		40	9966		1135	24.23	26	89.28	709.43	210		31								74	18	0.00	0.00	0.29
22:30	274:00	11998.6	82.5	6099		40	9978		1183	23.06	27	88.68	710.35	209		32								71	18	0.00	0.00	0.29
22:45	274:15	12006.4	82.5	5904		40	9983		1104	21.97	25	84.04	711.23	210		32								70	18	0.00	0.00	0.29
23:00	274:30	11997.1	82.5	6240		40	9957		1126	23.93	26	88.46	712.15	212		33								73	18	0.00	0.00	0.29
23:15	274:45	11980.8	82.5	6143		40	9977		1092	22.92	25	85.39	713.04	211		33								71	18	0.00	0.00	0.29
23:30	275:00	11986.7	82.5	6381		41	9978		1139	23.00	27	87.04	713.94	214		33								72	18	0.00	0.00	0.29
23:45	275:15	11995.4	82.5	6158		40	9975		1114	24.44	26	88.97	714.87	210		34								75	18	0.00	0.00	0.29
14/03/29																												
00:00	275:30	11992.6	82.5	6219		40	9983		1122	23.58	26	87.66	715.78	209		34								73	18	0.00	0.00	0.29
00:15	275:45	12011.1	82.5	6281		41	9987		1101	21.73	26	83.44	716.65	212		34								68	18	0.00	0.00	0.29
00:30	276:00	11984.2	82.4	6442		41	9980		1125	23.41	26	87.39	717.56	211		34								70	18	0.00	0.00	0.29
00:45	276:15	11990.4	82.4	6238		40	9965		1144	24.44	27	89.87	718.50	212		35								73	18	0.00	0.00	0.29
01:00	276:30	11971.3	82.4	6291		40	9958		1113	24.63	26	89.27	719.43	212		35								78	19	0.00	0.00	0.29
01:15	276:45	11987.6	82.4	6215		40	9960		1112	24.12	25	88.40	720.35	214		35								77	20	0.00	0.00	0.29
01:30	277:00	11997.4	82.4	6196		41	9949		1097	23.77	26	87.06	721.26	214		35								72	20	0.00	0.00	0.29
01:45	277:15	11958.0	82.4	6481		41	9922		1097	23.51	25	86.70	722.16	214		34								76	24	0.00	0.00	0.29
02:00	277:30	11957.2	82.4	6220		40	9943		1092	24.04	26	87.41	723.07	210		34								72	24	0.00	0.00	0.29
02:15	277:45	11963.6	82.3	6122		40	9929		1127	25.10	26	90.59	724.01	214		33								73	23	0.00	0.00	0.29
02:30	278:00	11929.7	82.2	5979		39	9896		1155	26.33	26	93.88	724.99	210		32								81	24	0.00	0.00	0.29
02:45	278:15	11974.1	82.2	6314		40	9925		1148	24.80	27	90.80	725.94	209		31								73	22	0.00	0.00	0.29
03:00	278:30	11942.9	82.2	6147		40	9910		1113	25.27	25	90.51	726.88	211		31								75	21	0.00	0.00	0.29
03:15	278:45	11970.2	82.2	6099		40	9911		1122	25.22	26	90.65	727.82	211		30								76	21	0.00	0.00	0.29
03:30	279:00	11958.5	82.1	6212		40	9920		1133	23.64	26	88.16	728.74	207		28								72	27	0.00	0.00	0.29
03:45	279:15	11947.0	82.1	6130		39	9906		1100	24.52	24	88.78	729.67	206		27								74	26	0.00	0.00	0.29



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P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
18:00						707.85	0.00	2.60	93.4	0.17	4.12	34.85			2.43	58.28	1408.47	6511.34	60000	7.0	0.0
18:15						708.80	0.00											6511.34			
18:30						709.74	0.00											6511.34			
18:45						710.61	0.00											6511.34			
19:00						711.54	0.00	3.21	92.7	0.23	5.62	35.08			2.98	71.42	1411.45	6508.36	56000	7.0	0.0
19:15						712.47	0.00											6508.36			
19:30						713.41	0.00											6508.36			
19:45						714.33	0.00											6508.36			
20:00						715.26	0.00	2.62	92.6	0.19	4.65	35.28			2.43	58.23	1413.87	6505.94	56000	7.0	0.0
20:15						716.19	0.00											6505.94			
20:30						717.13	0.00											6505.94			
20:45						718.06	0.00											6505.94			
21:00						718.93	0.00	2.52	92.9	0.18	4.29	35.45			2.34	56.19	1416.22	6503.59	56000	7.0	0.0
21:15						719.88	0.00											6503.59			
21:30						720.82	0.00											6503.59			
21:45						721.70	0.00											6503.59			
22:00						722.56	0.00	2.51	93.5	0.16	3.92	35.62			2.35	56.32	1418.56	6501.25	56000	7.0	0.0
22:15						723.49	0.00											6501.25			
22:30						724.42	0.00											6501.25			
22:45						725.29	0.00											6501.25			
23:00						726.21	0.00	2.78	93.3	0.19	4.47	35.80			2.59	62.25	1421.16	6498.65	56000	7.0	0.0
23:15						727.10	0.00											6498.65			
23:30						728.01	0.00											6498.65			
23:45						728.94	0.00											6498.65			
00:00						729.85	0.00	2.63	93.1	0.18	4.36	35.99			2.45	58.76	1423.60	6496.21	56000	7.0	0.0
00:15						730.72	0.00											6496.21			
00:30						731.63	0.00											6496.21			
00:45						732.56	0.00											6496.21			
01:00						733.49	0.00	2.55	93.1	0.18	4.22	36.16			2.37	56.98	1425.98	6493.83	56000	7.0	0.0
01:15						734.41	0.00											6493.83			
01:30						735.32	0.00											6493.83			
01:45						736.22	0.00											6493.83			
02:00						737.14	0.00	2.71	93.2	0.18	4.42	36.35			2.53	60.62	1428.50	6491.31	56000	7.0	0.0
02:15						738.06	0.00											6491.31			
02:30						739.06	0.00											6491.31			
02:45						740.00	0.00											6491.31			
03:00						740.95	0.00	2.85	93.8	0.18	4.24	36.52			2.67	64.16	1431.18	6488.63	57000	7.0	0.0
03:15						741.89	0.00											6488.63			
03:30						742.81	0.00											6488.63			
03:45						743.73	0.00											6488.63			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:	Tight Hole
Pool or Zone:	Tight Hole
Field or Area:	Norman Wells
Test Start:	17 Mar 2014
Test End:	9 Apr 2014
Wft Job #:	4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Sperator					Low Stage Sperator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/03/29																												
04:00	279:30	11968.0	82.1	6084		40	9924		1132	24.26	26	89.33	730.60	204		26								74	26	0.00	0.00	0.29
04:15	279:45	11962.7	82.1	6326		40	9920		1083	23.03	24	85.39	731.49	206		25								68	28	0.00	0.00	0.29
04:30	280:00	11757.7	82.1	6237		40	9899		1109	24.02	24	88.28	732.41	206		25								75	26	0.00	0.00	0.29
04:45	280:15	11956.3	82.0	6255		40	9920		1118	23.26	25	87.00	733.31	205		25								72	29	0.00	0.00	0.29
05:00	280:30	11921.4	82.0	6222		40	9893		1128	24.45	26	89.57	734.25	204		24								72	30	0.00	0.00	0.29
05:15	280:45	11973.6	82.0	6162		40	9901		1179	25.59	26	93.46	735.22	202		23								71	28	0.00	0.00	0.29
05:30	281:00	11961.3	82.6	6303		40	9919		1101	23.07	25	86.06	736.12	204		20								68	24	0.00	0.00	0.29
05:45	281:15	11952.4	82.6	6150		39	9913		1116	24.00	24	88.45	737.04	202		18								72	21	0.00	0.00	0.29
06:00	281:30	11923.9	82.6	6196		40	9922		1113	22.18	25	84.79	737.92	202		18								67	25	0.00	0.00	0.29
		Daily Summary to 06:00 hrs March 29/2014																										
		DHP = 11923.9kpa																										
		FTP = 6196kpa																										
		SICP = 9922kpa																										
		Flow Temp = 40DegC																										
		Meter Run Temp = 25DegC																										
		Choke Size = 12.7mm																										
		Gas Rate = 84.79 E3m3/Day																										
		Cumulative Gas to Flare = 751.99 E3m3																										
		Gas to Flare last 24hrs = 88.37 E3m3																										
		LFTR = 7919.81m3																										
		LFR last 24hrs = 59.03m3																										
		TLFR = 1438.30m3																										
		TLFLTR = 6481.51m3																										
		Condensate Produced last 24hrs = 5.38m3																										
		Cumulative Condensate Produced = 37.09m3																										
		Salinity = 57000ppm																										
		ph = 7																										
		Sand = 0																										
		Hours Flowed = 281.5																										
		Hours Flared = 278																										
		Surface Total = 164.9m3																										
		Api = 62.3@15.6°C																										
		H2s = 0.40ppm																										
		CO₂ = 1.8%																										
06:15	281:45	11938.3	82.5	6223		40	9893		1196	25.02	26	93.04	738.89	200		19								74	27	0.00	0.00	0.29
06:30	282:00	11950.5	82.5	6372		39	9894		1045	23.38	23	84.80	739.77	200		21								68	25	0.00	0.00	0.29
06:45	282:15	11928.7	82.5	6099		39	9890		1018	26.37	25	88.77	740.70	196		22								72	22	0.00	0.00	0.29
07:00	282:30	11941.5	82.5	6113		39	9879		1072	26.50	25	91.10	741.65	199		23								73	20	0.00	0.00	0.29
07:15	282:45	11946.8	82.4	6214		39	9876		1041	25.61	24	88.52	742.57	198		24								73	18	0.00	0.00	0.29
07:30	283:00	11948.6	82.4	6245		40	9886		1053	24.79	25	87.42	743.48	198		24								69	17	0.00	0.00	0.29
07:45	283:15	11923.3	82.3	6282		40	9885		1008	24.51	23	85.37	744.37	197		24								64	16	0.00	0.00	0.29
08:00	283:30	11943.2	82.4	6218		39	9886		1037	25.92	23	88.97	745.30	197		24								75	14	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
04:00						744.66	0.00	2.28	92.3	0.18	4.21	36.70			2.10	50.51	1433.28	6486.53	57000	7.0	0.0
04:15						745.55	0.00											6486.53			
04:30						746.47	0.00											6486.53			
04:45						747.38	0.00											6486.53			
05:00						748.31	0.00	2.84	92.5	0.21	5.11	36.91			2.63	63.05	1435.91	6483.90	57000	7.0	0.0
05:15						749.29	0.00											6483.90			
05:30						750.18	0.00											6483.90			
05:45						751.10	0.00											6483.90			
06:00						751.99	0.00	2.57	93.1	0.18	4.26	37.09			2.39	57.42	1438.30	6481.51	57000	7.0	0.0
06:15						752.96	0.00											6481.51			
06:30						753.84	0.00											6481.51			
06:45						754.76	0.00											6481.51			
07:00						755.71	0.00	3.31	93.5	0.22	5.16	37.30			3.09	74.28	1441.40	6478.41	58000	7.0	0.0
07:15						756.63	0.00											6478.41			
07:30						757.55	0.00											6478.41			
07:45						758.43	0.00											6478.41			
08:00						759.36	0.00	3.16	93.1	0.22	5.23	37.52			2.94	70.61	1444.34	6475.47	58000	7.0	0.0



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1					
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³	
14/03/29																													
08:15	283:45	11944.3	82.4	6034		39	9885		1052	26.07	24	89.76	746.23	195		23									74	13	0.00	0.00	0.29
08:30	284:00	11939.2	82.4	6133		39	9875		1034	25.55	24	88.06	747.15	196		23									71	12	0.00	0.00	0.29
08:45	284:15	11932.9	82.5	5990		39	9881		1051	25.89	24	89.36	748.08	196		22									76	12	0.00	0.00	0.29
09:00	284:30	11940.8	82.5	5942		39	9893		1077	25.38	25	89.43	749.01	193		22									73	11	0.00	0.00	0.29
09:15	284:45	11930.9	82.5	6292		40	9879		1070	26.88	25	91.61	749.96	195		21									77	11	0.00	0.00	0.29
09:30	285:00	11900.7	82.5	6261		40	9865		1033	25.95	25	88.66	750.89	196		21									74	10	0.00	0.00	0.29
09:45	285:15	11923.3	82.5	6118		39	9873		1054	26.19	25	89.91	751.82	195		21									77	10	0.00	0.00	0.29
10:00	285:30	11928.3	82.5	6099		39	9889		1014	25.39	24	86.97	752.73	194		20									73	10	0.00	0.00	0.29
10:15	285:45	11893.7	82.6	6407		40	9858		1028	25.68	24	88.15	753.65	195		20									74	9	0.00	0.00	0.29
10:30	286:00	11880.0	82.5	6161		39	9853		1061	26.77	24	91.35	754.60	193		20									77	9	0.00	0.00	0.29
10:45	286:15	11882.1	82.6	6166		39	9847		1033	26.15	24	89.13	755.53	196		20									76	9	0.00	0.00	0.29
11:00	286:30	11904.6	82.5	6207		40	9872		1041	25.65	24	88.49	756.45	193		20									74	9	0.00	0.00	0.29
11:15	286:45	11884.2	82.5	6190		39	9829		1062	26.40	25	90.54	757.39	196		20									77	8	0.00	0.00	0.29
11:30	287:00	11864.0	82.6	6013		39	9835		1009	25.99	23	88.01	758.31	192		19									77	8	0.00	0.00	0.29
11:45	287:15	11885.8	82.6	6038		39	9849		1018	24.48	24	85.54	759.20	194		19									71	8	0.00	0.00	0.29
12:00	287:30	11979.2	82.6	6230		40	9879		1034	22.84	25	83.13	760.07	194		19									66	8	0.00	0.00	0.29
12:15	287:45	11877.8	82.6	6061		39	9835		1081	26.96	25	92.33	761.03	193		18									77	7	0.00	0.00	0.29
12:30	288:00	11878.8	82.6	6256		39	9849		989	24.70	23	85.03	761.91	192		19									74	7	0.00	0.00	0.29
12:45	288:15	11850.2	82.6	6181		39	9839		1049	25.82	24	89.12	762.84	193		19									73	7	0.00	0.00	0.29
13:00	288:30	11826.9	82.7	6213		39	9822		1013	25.37	24	87.01	763.75	189		20									75	7	0.00	0.00	0.29
13:15	288:45	11856.0	82.7	6131		39	9836		1019	26.60	23	89.46	764.68	190		21									80	7	0.00	0.00	0.29
13:30	289:00	11856.9	82.7	6254		39	9833		1043	24.77	24	87.06	765.59	190		21									75	7	0.00	0.00	0.29
13:45	289:15	11861.9	82.7	6216		39	9832		1031	24.65	24	86.45	766.49	191		21									76	7	0.00	0.00	0.29
14:00	289:30	11696.8	82.7	6191		40	9879		1059	24.86	26	87.65	767.40	190		21									70	7	0.00	0.00	0.29
14:15	289:45	11859.6	82.7	6163		39	9830		1050	26.06	24	89.65	768.34	192		21									79	7	0.00	0.00	0.29
14:30	290:00	11833.8	82.7	6063		39	9811		1070	26.90	25	91.78	769.29	188		21									81	7	0.00	0.00	0.29
14:45	290:15	11849.6	82.7	6091		39	9823		1052	26.92	24	91.19	770.24	190		21									79	7	0.00	0.00	0.29
15:00	290:30	11853.6	82.7	6193		39	9834		1066	26.02	25	90.04	771.18	189		22									75	8	0.00	0.00	0.29
15:15	290:45	11873.7	82.7	6325		40	9854		974	22.76	24	80.77	772.02	190		21									67	8	0.00	0.00	0.29
15:30	291:00	11825.1	82.7	6194		39	9813		1059	26.86	25	91.31	772.97	191		21									80	8	0.00	0.00	0.29
15:45	291:15	11838.9	82.8	6063		39	9837		1070	25.64	25	89.51	773.90	189		21									74	8	0.00	0.00	0.29
16:00	291:30	11859.5	82.8	6268		40	9836		1049	25.56	25	88.53	774.83	190		22									71	8	0.00	0.00	0.29
16:15	291:45	11822.3	82.8	5983		39	9821		1099	28.51	25	95.60	775.82	190		21									83	8	0.00	0.00	0.29
16:30	292:00	11803.1	82.8	6251		40	9814		1005	25.34	24	86.51	776.72	192		21									73	8	0.00	0.00	0.29
16:45	292:15	11842.5	82.8	6133		39	9833		1029	26.01	25	88.54	777.65	190		21									70	8	0.00	0.00	0.29
17:00	292:30	11812.8	82.8	6237		39	9807		1013	26.14	25	88.12	778.56	192		21									76	8	0.00	0.00	0.29
17:15	292:45	11815.8	82.9	6246		40	9820		1016	25.94	25	87.89	779.48	190		21									73	8	0.00	0.00	0.29
17:30	293:00	11798.3	82.9	6066		39	9793		1001	26.36	24	88.10	780.40	192		20									70	8	0.00	0.00	0.29
17:45	293:15	11802.0	82.9	5944		39	9785		1027	26.54	24	89.54	781.33	189		18									78	8	0.00	0.00	0.29
18:00	293:30	11790.0	82.9	6232		39	9800		983	25.50	24	85.98	782.23	187		17									73	7	0.00	0.00	0.29
18:15	293:45	11799.9	82.9	6095		39	9797		1002	25.52	25	86.68	783.13	190		16									71	7	0.00	0.00	0.29
18:30	294:00	11802.3	82.9	6205		40	9800		1034	26.20	25	89.03	784.06	187		16									74	7	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	Sand %
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
08:15						760.30	0.00											6475.47			
08:30						761.21	0.00											6475.47			
08:45						762.14	0.00											6475.47			
09:00						763.08	0.00	2.49	93.1	0.17	4.12	37.69			2.32	55.64	1446.66	6473.15	58000	7.0	0.0
09:15						764.03	0.00											6473.15			
09:30						764.95	0.00											6473.15			
09:45						765.89	0.00											6473.15			
10:00						766.80	0.00	2.45	92.9	0.17	4.17	37.87			2.28	54.63	1448.93	6470.88	58000	7.0	0.0
10:15						767.71	0.00											6470.88			
10:30						768.67	0.00											6470.88			
10:45						769.59	0.00											6470.88			
11:00						770.52	0.00	2.24	92.9	0.16	3.82	38.03			2.08	49.94	1451.01	6468.80	58000	7.0	0.0
11:15						771.46	0.00											6468.80			
11:30						772.38	0.00											6468.80			
11:45						773.27	0.00											6468.80			
12:00						774.13	0.00	2.63	93.2	0.18	4.29	38.21			2.45	58.83	1453.46	6466.35	58000	7.0	0.0
12:15						775.10	0.00											6466.35			
12:30						775.98	0.00											6466.35			
12:45						776.91	0.00											6466.35			
13:00						777.82	0.00	1.64	93.0	0.11	2.76	38.32			1.53	36.60	1454.99	6464.82	58000	7.0	0.0
13:15						778.75	0.00											6464.82			
13:30						779.65	0.00											6464.82			
13:45						780.55	0.00											6464.82			
14:00						781.47	0.00	1.68	93.0	0.12	2.82	38.44			1.56	37.50	1456.55	6463.26	58000	7.0	0.0
14:15						782.40	0.00											6463.26			
14:30						783.36	0.00											6463.26			
14:45						784.31	0.00											6463.26			
15:00						785.25	0.00	1.53	92.9	0.11	2.61	38.55			1.42	34.11	1457.97	6461.84	55000	7.0	0.0
15:15						786.09	0.00											6461.84			
15:30						787.04	0.00											6461.84			
15:45						787.97	0.00											6461.84			
16:00						788.89	0.00	1.57	93.2	0.11	2.56	38.65			1.46	35.12	1459.44	6460.37	56000	7.0	0.0
16:15						789.89	0.00											6460.37			
16:30						790.79	0.00											6460.37			
16:45						791.71	0.00											6460.37			
17:00						792.63	0.00	1.66	92.9	0.12	2.83	38.77			1.54	37.01	1460.98	6458.83	52000	7.0	0.0
17:15						793.55	0.00											6458.83			
17:30						794.46	0.00											6458.83			
17:45						795.40	0.00											6458.83			
18:00						796.29	0.00	1.90	92.6	0.14	3.37	38.91			1.76	42.23	1462.74	6457.07	53000	7.0	0.0
18:15						797.19	0.00											6457.07			
18:30						798.12	0.00											6457.07			



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P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	°C	E ³ m ³ /d	E ³ m ³ /d	E ³ m ³
14/03/29																												
18:45	294:15	11786.0	82.6	6092		39	9790		1021	26.44	24	89.10	784.98	189		16								77	6	0.00	0.00	0.29
19:00	294:30	11811.4	82.6	6301		39	9804		976	22.20	24	79.96	785.82	190		17								66	6	0.00	0.00	0.29
19:15	294:45	11785.1	82.6	6110		39	9792		1039	26.46	24	89.95	786.75	188		18								77	6	0.00	0.00	0.29
19:30	295:00	11798.1	82.6	6030		39	9805		1015	25.37	24	87.09	787.66	188		19								73	7	0.00	0.00	0.29
19:45	295:15	11766.5	82.6	6065		39	9774		1041	26.05	23	89.40	788.59	189		20								80	15	0.00	0.00	0.29
20:00	295:30	11811.2	82.6	6253		40	9821		1010	22.46	25	81.55	789.44	187		20								64	16	0.00	0.00	0.29
20:15	295:45	11780.1	82.6	6260		39	9784		1033	25.22	23	87.65	790.35	188		21								72	20	0.00	0.00	0.29
20:30	296:00	11794.9	82.6	6018		39	9796		1064	25.99	24	90.02	791.29	188		22								75	18	0.00	0.00	0.29
20:45	296:15	11775.3	82.5	6215		39	9780		1023	25.97	24	88.46	792.21	188		23								73	22	0.00	0.00	0.29
21:00	296:30	11803.2	82.5	6148		39	9776		1044	25.91	25	89.05	793.14	186		23								72	22	0.00	0.00	0.29
21:15	296:45	11783.8	82.4	6050		39	9783		1073	26.44	25	91.11	794.09	192		23								73	23	0.00	0.00	0.29
21:30	297:00	11791.8	82.4	6261		40	9800		1080	25.32	25	89.34	795.02	188		24								69	21	0.00	0.00	0.29
21:45	297:15	11814.9	82.4	6034		39	9800		1073	25.64	25	89.64	795.95	188		24								70	20	0.00	0.00	0.29
22:00	297:30	11792.3	82.3	6196		40	9779		1093	25.65	25	90.37	796.90	189		24								72	26	0.00	0.00	0.29
22:15	297:45	11788.7	82.5	6281		40	9776		1030	24.54	24	86.22	797.79	188		24								68	26	0.00	0.00	0.29
22:30	298:00	11801.6	82.3	6246		40	9773		999	24.37	24	84.71	798.68	186		24								66	24	0.00	0.00	0.29
22:45	298:15	11784.7	82.3	6164		39	9786		1061	25.58	24	89.19	799.61	187		24								71	21	0.00	0.00	0.29
23:00	298:30	11803.0	82.3	6225		40	9766		1091	27.05	26	92.70	800.57	185		23								72	21	0.00	0.00	0.29
23:15	298:45	11770.4	82.3	6046		39	9746		1095	26.96	24	92.98	801.54	185		23								78	27	0.00	0.00	0.29
23:30	299:00	11766.8	82.3	5984		39	9746		1068	25.92	25	90.05	802.48	183		22								71	28	0.00	0.00	0.29
23:45	299:15	11798.2	82.3	6211		39	9771		1012	23.42	23	83.59	803.35	185		22								64	25	0.00	0.00	0.29
14/03/30																												
00:00	299:30	11817.4	82.2	6208		39	9786		1079	23.14	25	85.44	804.24	186		21								65	24	0.00	0.00	0.29
00:15	299:45	11786.3	82.2	6208		39	9778		1069	23.06	24	84.98	805.12	186		21								66	21	0.00	0.00	0.29
00:30	300:00	11795.0	82.2	6277		40	9788		1075	23.63	24	86.22	806.02	182		21								66	26	0.00	0.00	0.29
00:45	300:15	11801.3	82.2	6154		40	9773		1074	23.39	25	85.66	806.91	182		20								67	30	0.00	0.00	0.29
01:00	300:30	11781.1	82.2	6224		39	9750		1000	23.78	23	83.88	807.79	181		20								68	30	0.00	0.00	0.29
01:15	300:45	11776.3	82.2	6208		39	9768		1025	24.43	23	85.98	808.68	184		20								66	27	0.00	0.00	0.29
01:30	301:00	11757.0	82.7	5999		39	9745		1103	26.70	24	92.83	809.65	182		20								75	28	0.00	0.00	0.29
01:45	301:15	11779.8	82.7	6190		39	9757		1066	24.58	24	87.71	810.56	182		21								68	28	0.00	0.00	0.29
02:00	301:30	11749.3	82.7	5981		38	9740		1030	25.59	23	88.16	811.48	179		21								71	30	0.00	0.00	0.29
02:15	301:45	11767.1	82.6	6209		39	9754		1083	23.91	25	86.96	812.39	182		20								69	29	0.00	0.00	0.29
02:30	302:00	11759.6	82.6	6179		39	9737		1086	24.67	24	88.57	813.31	180		20								71	29	0.00	0.00	0.29
02:45	302:15	11760.1	82.6	5927		39	9739		1037	25.38	23	88.01	814.23	179		21								72	29	0.00	0.00	0.29
03:00	302:30	11769.4	82.6	6194		39	9761		1021	23.56	23	84.28	815.11	180		22								65	27	0.00	0.00	0.29
03:15	302:45	11754.1	82.6	6151		39	9740		1100	25.56	24	90.79	816.05	180		22								75	28	0.00	0.00	0.29
03:30	303:00	11780.9	82.5	6100		39	9731		1092	25.13	24	89.63	816.98	179		21								72	27	0.00	0.00	0.29
03:45	303:15	11743.2	82.6	5891		39	9734		1090	25.89	24	90.93	817.93	180		22								74	25	0.00	0.00	0.29
04:00	303:30	11745.9	82.6	6132		39	9722		1082	24.73	24	88.50	818.85	178		23								73	24	0.00	0.00	0.29
04:15	303:45	11768.9	82.6	6026		39	9733		1089	25.00	24	89.26	819.78	178		22								72	26	0.00	0.00	0.29
04:30	304:00	11340.5	82.6	6015		39	9717		1079	25.97	24	90.58	820.73	177		20								73	25	0.00	0.00	0.29
04:45	304:15	11741.1	82.6	6129		39	9721		1004	23.45	23	83.43	821.60	178		16								67	23	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
18:45						799.05	0.00											6457.07			
19:00						799.88	0.00	2.84	93.7	0.18	4.29	39.09			2.66	63.87	1465.40	6454.41	58000	7.0	0.0
19:15						800.82	0.00											6454.41			
19:30						801.73	0.00											6454.41			
19:45						802.66	0.00											6454.41			
20:00						803.51	0.00	2.50	92.8	0.18	4.32	39.27			2.32	55.68	1467.72	6452.09	59000	7.0	0.0
20:15						804.42	0.00											6452.09			
20:30						805.36	0.00											6452.09			
20:45						806.28	0.00											6452.09			
21:00						807.21	0.00	2.67	92.9	0.19	4.55	39.46			2.48	59.53	1470.20	6449.61	59000	7.0	0.0
21:15						808.16	0.00											6449.61			
21:30						809.09	0.00											6449.61			
21:45						810.02	0.00											6449.61			
22:00						810.96	0.00	2.36	93.3	0.16	3.79	39.62			2.20	52.85	1472.40	6447.41	59000	7.0	0.0
22:15						811.86	0.00											6447.41			
22:30						812.74	0.00											6447.41			
22:45						813.67	0.00											6447.41			
23:00						814.64	0.00	2.29	92.7	0.17	4.01	39.79			2.12	50.95	1474.52	6445.29	59000	7.0	0.0
23:15						815.61	0.00											6445.29			
23:30						816.54	0.00											6445.29			
23:45						817.41	0.00											6445.29			
00:00						818.30	0.00	2.41	92.4	0.18	4.40	39.97			2.23	53.44	1476.75	6443.06	59000	7.0	0.0
00:15						819.19	0.00											6443.06			
00:30						820.09	0.00											6443.06			
00:45						820.98	0.00											6443.06			
01:00						821.85	0.00	2.46	93.1	0.17	4.07	40.14			2.29	54.97	1479.04	6440.77	59000	7.0	0.0
01:15						822.75	0.00											6440.77			
01:30						823.72	0.00											6440.77			
01:45						824.63	0.00											6440.77			
02:00						825.55	0.00	2.50	92.6	0.19	4.44	40.32			2.31	55.56	1481.36	6438.45	59000	7.0	0.0
02:15						826.45	0.00											6438.45			
02:30						827.38	0.00											6438.45			
02:45						828.29	0.00											6438.45			
03:00						829.17	0.00	2.49	92.9	0.18	4.24	40.50			2.31	55.52	1483.67	6436.14	59000	7.0	0.0
03:15						830.12	0.00											6436.14			
03:30						831.05	0.00											6436.14			
03:45						832.00	0.00											6436.14			
04:00						832.92	0.00	2.58	92.7	0.19	4.52	40.69			2.39	57.40	1486.06	6433.75	59000	7.0	0.0
04:15						833.85	0.00											6433.75			
04:30						834.79	0.00											6433.75			
04:45						835.66	0.00											6433.75			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1					
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³	
14/03/30																													
05:00	304:30	11740.3	82.6	6176		39	9735		1024	24.24	23	85.53	822.49	181		15								68	23	0.00	0.00	0.29	
05:15	304:45	11721.1	82.6	5942		39	9723		1093	25.90	24	91.12	823.44	180		13								74	23	0.00	0.00	0.29	
05:30	305:00	11748.9	82.6	6096		39	9743		1022	24.13	23	85.30	824.33	180		12								70	25	0.00	0.00	0.29	
05:45	305:15	11825.1	82.6	6038		39	9737		1080	25.24	24	89.44	825.26	178		15								73	26	0.00	0.00	0.29	
06:00	305:30	11736.6	82.6	6208		39	9719		1044	25.15	22	88.08	826.17	181		18								72	24	0.00	0.00	0.29	
		Daily Summary to 06:00 hrs March 30/2014																											
		DHP = 11736.6kpa																											
		FTP = 6208kpa																											
		SICP = 9719kpa																											
		Flow Temp = 39DegC																											
		Meter Run Temp = 22DegC																											
		Choke Size = 12.7mm																											
		Gas Rate = 88.08 E3m3/Day																											
		Cumulative Gas to Flare = 840.24 E3m3																											
		Gas to Flare last 24hrs = 88.25 E3m3																											
		LFTR = 7919.81m3																											
		LFR last 24hrs = 52.15m3																											
		TLFR = 1490.45m3																											
		TLFLTR = 6429.36m3																											
		Condensate Produced last 24hrs = 3.93m3																											
		Cumulative Condensate Produced = 41.02m3																											
		Salinity = 59000ppm																											
		ph = 7																											
		Sand = Null																											
		Hrs Flowed = 305.5																											
		Hours Flared = 332																											
		Surface Total = 95.1m3																											
		Api = 62.1@15.6°C																											
		H2s = 0.50ppm																											
		CO2 = 1.8%																											
06:15	305:45	11728.6	82.6	6129		39	9740		1087	24.48	24	88.30	827.09	180		20								71	23	0.00	0.00	0.29	
06:30	306:00	11741.5	82.6	6208		39	9719		1040	23.81	24	85.34	827.98	178		21								67	20	0.00	0.00	0.29	
06:45	306:15	11715.4	82.6	6042		39	9689		1110	25.82	24	91.64	828.94	177		23								74	18	0.00	0.00	0.29	
07:00	306:30	11727.6	82.6	6034		39	9720		1058	24.05	23	86.47	829.84	178		23								68	17	0.00	0.00	0.29	
07:15	306:45	11729.4	82.6	6288		39	9729		1048	23.80	24	85.59	830.73	181		24								68	15	0.00	0.00	0.29	
07:30	307:00	11738.9	82.6	6114		39	9725		1066	24.30	24	87.22	831.64	181		24								69	14	0.00	0.00	0.29	
07:45	307:15	11715.3	82.6	6064		39	9689		1108	25.48	24	90.87	832.59	179		24								75	13	0.00	0.00	0.29	
08:00	307:30	11693.8	82.6	6137		39	9704		1082	24.45	23	88.14	833.50	181		24								73	12	0.00	0.00	0.29	
08:15	307:45	11732.7	82.6	6154		39	9709		1103	24.81	24	89.47	834.44	182		24								72	12	0.00	0.00	0.29	
08:30	308:00	11725.6	82.7	6190		39	9705		1111	25.37	24	90.83	835.38	182		24								77	11	0.00	0.00	0.29	
08:45	308:15	11685.4	82.8	6199		39	9682		1058	24.14	24	86.62	836.28	181		24								75	10	0.00	0.00	0.29	
09:00	308:30	11771.3	82.8	6013		39	9695		1130	26.24	24	93.10	837.25	182		24								79	10	0.00	0.00	0.29	



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
05:00						836.55	0.00	2.30	93.5	0.15	3.59	40.84			2.15	51.61	1488.21	6431.60	59000	7.0	0.0
05:15						837.50	0.00								6431.60						
05:30						838.39	0.00								6431.60						
05:45						839.32	0.00								6431.60						
06:00						840.24	0.00	2.42	92.6	0.18	4.30	41.02			2.24	53.78	1490.45	6429.36	59000	7.0	0.0
06:15						841.16	0.00											6429.36			
06:30						842.05	0.00											6429.36			
06:45						843.00	0.00											6429.36			
07:00						843.90	0.00	1.75	92.6	0.13	3.11	41.15			1.62	38.89	1492.07	6427.74	59000	7.0	0.0
07:15						844.80	0.00											6427.74			
07:30						845.70	0.00											6427.74			
07:45						846.65	0.00											6427.74			
08:00						847.57	0.00	2.09	92.7	0.15	3.66	41.30			1.94	46.50	1494.01	6425.80	58000	7.0	0.0
08:15						848.50	0.00											6425.80			
08:30						849.45	0.00											6425.80			
08:45						850.35	0.00											6425.80			
09:00						851.32	0.00	2.09	92.8	0.15	3.61	41.45			1.94	46.55	1495.95	6423.86	58000	7.0	0.0



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1					
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³	
14/03/30																													
09:15	308:45	11714.5	82.8	6011		39	9728		1114	24.82	25	89.76	838.19	181		24									76	10	0.00	0.00	0.29
09:30	309:00	11712.0	82.9	6242		39	9727		1079	23.65	23	86.59	839.09	182		24									74	10	0.00	0.00	0.29
09:45	309:15	11702.6	82.9	6125		40	9731		1106	23.40	25	86.87	840.00	183		25									70	10	0.00	0.00	0.29
10:00	309:30	11682.9	83.0	6081		39	9700		1116	26.49	25	92.87	840.96	186		25									77	10	0.00	0.00	0.29
10:15	309:45	11697.1	83.0	6153		39	9701		1072	25.88	24	90.29	841.90	184		25									78	10	0.00	0.00	0.29
10:30	310:00	11656.8	83.0	5997		39	9693		1079	25.35	24	89.62	842.84	183		24									76	10	0.00	0.00	0.29
10:45	310:15	11658.1	83.1	6190		40	9686		1060	24.89	25	87.90	843.75	184		24									72	10	0.00	0.00	0.29
11:00	310:30	11510.2	83.1	5947		39	9648		1069	25.46	23	89.48	844.68	187		22									76	10	0.00	0.00	0.29
11:15	310:45	11668.3	83.1	6137		39	9664		1037	24.17	24	85.78	845.58	187		19									72	10	0.00	0.00	0.29
11:30	311:00	11672.3	83.2	5857		39	9707		1043	25.38	24	88.15	846.50	188		20									73	10	0.00	0.00	0.29
11:45	311:15	11661.3	83.2	5986		39	9687		1049	24.08	24	86.13	847.39	188		22									74	10	0.00	0.00	0.29
12:00	311:30	11655.3	83.2	6045		39	9709		1088	24.30	25	87.81	848.31	187		24									72	10	0.00	0.00	0.29
12:15	311:45	11615.2	83.2	5994		39	9670		1066	26.27	24	90.71	849.25	188		25									81	10	0.00	0.00	0.29
12:30	312:00	11640.2	83.3	6126		39	9676		1095	25.04	25	89.47	850.18	191		25									74	11	0.00	0.00	0.29
12:45	312:15	11635.6	83.3	6199		39	9695		1015	24.51	24	85.49	851.08	188		23									71	11	0.00	0.00	0.29
13:00	312:30	11647.5	83.3	6130		39	9693		1064	26.37	25	90.49	852.02	190		22									75	11	0.00	0.00	0.29
13:15	312:45	11640.6	83.4	6180		39	9677		1023	25.19	24	87.06	852.92	192		22									75	12	0.00	0.00	0.29
13:30	313:00	11632.6	83.4	6028		39	9689		1029	25.04	24	86.95	853.83	190		21									72	12	0.00	0.00	0.29
13:45	313:15	11614.1	83.4	5958		39	9680		1070	26.18	25	90.43	854.77	192		20									76	12	0.00	0.00	0.29
14:00	313:30	11651.0	83.4	5961		39	9682		1091	26.85	26	92.35	855.73	192		20									78	12	0.00	0.00	0.29
14:15	313:45	11609.4	83.4	5952		39	9674		1031	25.64	24	88.10	856.65	191		19									73	13	0.00	0.00	0.29
14:30	314:00	11633.5	83.5	6169		39	9667		1082	26.11	25	90.84	857.60	192		21									76	13	0.00	0.00	0.29
14:45	314:15	11627.2	83.5	6148		39	9663		1020	25.16	25	86.75	858.50	192		23									74	13	0.00	0.00	0.29
15:00	314:30	11632.0	83.5	6065		39	9668		1069	25.89	26	89.82	859.44	191		24									74	13	0.00	0.00	0.29
15:15	314:45	11599.2	83.5	6099		39	9660		1010	25.28	24	86.72	860.34	192		24									72	13	0.00	0.00	0.29
15:30	315:00	11597.0	83.5	6156		39	9651		1003	24.33	24	84.79	861.22	192		23									73	13	0.00	0.00	0.29
15:45	315:15	11624.7	83.6	5995		39	9672		1027	25.33	25	87.31	862.13	191		21									70	12	0.00	0.00	0.29
16:00	315:30	11613.2	83.6	6032		39	9655		1039	25.69	25	88.46	863.06	193		20									76	12	0.00	0.00	0.29
16:15	315:45	11584.0	83.6	6021		39	9655		1060	25.66	25	89.20	863.98	193		20									75	12	0.00	0.00	0.29
16:30	316:00	11607.9	82.8	6034		40	9663		1046	24.04	26	85.63	864.88	195		20									67	11	0.00	0.00	0.29
16:45	316:15	11578.4	82.8	6112		39	9652		1051	24.79	25	87.34	865.79	193		21									71	11	0.00	0.00	0.29
17:00	316:30	11605.2	82.8	6137		40	9665		1028	24.65	26	86.02	866.68	197		21									72	11	0.00	0.00	0.29
17:15	316:45	11601.7	82.9	6124		40	9663		992	24.57	24	84.70	867.56	194		22									71	11	0.00	0.00	0.29
17:30	317:00	11590.6	82.9	6045		40	9668		1062	24.37	26	86.76	868.47	198		22									67	11	0.00	0.00	0.29
17:45	317:15	11590.1	83.0	6112		40	9663		1028	25.35	25	87.35	869.38	197		23									73	12	0.00	0.00	0.29
18:00	317:30	11590.6	83.0	5923		39	9661		1080	26.08	25	90.64	870.32	196		23									78	12	0.00	0.00	0.29
18:15	317:45	11524.5	83.0	6023		40	9658		1083	26.68	26	91.76	871.28	198		23									79	13	0.00	0.00	0.29
18:30	318:00	11609.1	83.0	6001		40	9660		1065	25.46	26	88.82	872.20	200		25									74	14	0.00	0.00	0.29
18:45	318:15	11560.3	83.1	5861		39	9633		1077	27.08	26	92.16	873.16	198		26									78	14	0.00	0.00	0.29
19:00	318:30	11569.3	83.1	6063		40	9647		1044	25.08	26	87.42	874.07	202		27									73	15	0.00	0.00	0.29
19:15	318:45	11558.2	83.1	6011		40	9633		1012	24.74	25	85.71	874.97	199		27									73	15	0.00	0.00	0.29
19:30	319:00	11551.9	83.1	6229		40	9652		1004	24.45	25	84.86	875.85	201		27									69	16	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production				Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
09:15						852.25	0.00											6423.86			
09:30						853.16	0.00											6423.86			
09:45						854.06	0.00											6423.86			
10:00						855.03	0.00	2.10	92.7	0.15	3.68	41.60			1.95	46.72	1497.90		57000	7.0	0.0
10:15						855.97	0.00											6421.91			
10:30						856.90	0.00											6421.91			
10:45						857.82	0.00											6421.91			
11:00						858.75	0.00	2.31	92.6	0.17	4.10	41.77			2.14	51.34	1500.04		56000	7.0	0.0
11:15						859.64	0.00											6419.77			
11:30						860.56	0.00											6419.77			
11:45						861.46	0.00											6419.77			
12:00						862.37	0.00	2.21	92.8	0.16	3.82	41.93			2.05	49.22	1502.09		56000	7.0	0.0
12:15						863.32	0.00											6417.72			
12:30						864.25	0.00											6417.72			
12:45						865.14	0.00											6417.72			
13:00						866.08	0.00	2.54	92.6	0.19	4.51	42.12			2.35	56.45	1504.44		56000	7.0	0.0
13:15						866.99	0.00											6415.37			
13:30						867.90	0.00											6415.37			
13:45						868.84	0.00											6415.37			
14:00						869.80	0.00	2.38	92.8	0.17	4.11	42.29			2.21	53.01	1506.65		56000	7.0	0.0
14:15						870.72	0.00											6413.16			
14:30						871.66	0.00											6413.16			
14:45						872.57	0.00											6413.16			
15:00						873.50	0.00	2.37	92.9	0.17	4.04	42.46			2.20	52.84	1508.85		56000	7.0	0.0
15:15						874.41	0.00											6410.96			
15:30						875.29	0.00											6410.96			
15:45						876.20	0.00											6410.96			
16:00						877.12	0.00	2.18	93.2	0.15	3.56	42.61			2.03	48.76	1510.88		56000	7.0	0.0
16:15						878.05	0.00											6408.93			
16:30						878.94	0.00											6408.93			
16:45						879.85	0.00											6408.93			
17:00						880.75	0.00	2.29	92.9	0.16	3.90	42.77			2.13	51.06	1513.01		55000	7.0	0.0
17:15						881.63	0.00											6406.80			
17:30						882.53	0.00											6406.80			
17:45						883.44	0.00											6406.80			
18:00						884.39	0.00	2.28	92.9	0.16	3.89	42.93			2.12	50.83	1515.13		55000	7.0	0.0
18:15						885.34	0.00											6404.68			
18:30						886.27	0.00											6404.68			
18:45						887.23	0.00											6404.68			
19:00						888.14	0.00	2.77	93.2	0.19	4.52	43.12			2.58	61.96	1517.71		59500	7.0	0.0
19:15						889.03	0.00											6402.10			
19:30						889.92	0.00											6402.10			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1					
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³	
14/03/30																													
19:45	319:15	11533.9	83.1	6066		39	9625		994	25.01	24	85.58	876.74	202		27									72	17	0.00	0.00	0.29
20:00	319:30	11571.8	83.0	5895		39	9595		1033	26.78	25	90.08	877.68	202		28									78	17	0.00	0.00	0.29
20:15	319:45	11556.6	83.0	6025		39	9615		987	25.52	25	86.07	878.58	202		28									73	17	0.00	0.00	0.29
20:30	320:00	11565.2	82.9	6195		40	9628		988	23.66	24	82.93	879.44	202		29									68	17	0.00	0.00	0.29
20:45	320:15	11561.0	82.9	6000		40	9664		1090	26.73	26	92.02	880.40	201		29									74	17	0.00	0.00	0.29
21:00	320:30	11565.0	82.9	5952		40	9562		1045	25.61	26	88.35	881.32	199		29									72	17	0.00	0.00	0.29
21:15	320:45	11551.4	82.8	6087		40	9547		1044	25.44	25	88.09	882.24	201		29									71	17	0.00	0.00	0.29
21:30	321:00	11561.7	82.8	5999		39	9560		1039	24.73	24	86.94	883.14	201		29									75	17	0.00	0.00	0.29
21:45	321:15	11546.2	82.7	5822		39	9550		1087	27.16	25	92.89	884.11	201		30									79	20	0.00	0.00	0.29
22:00	321:30	11558.8	82.8	6015		40	9572		1008	23.81	24	84.01	884.99	200		30									78	20	0.00	0.00	0.29
22:15	321:45	11589.8	82.8	6117		40	9575		1090	24.55	26	88.18	885.90	200		30									69	20	0.00	0.00	0.29
22:30	322:00	11561.1	82.7	5888		39	9553		1033	23.32	24	84.11	886.78	202		30									68	19	0.00	0.00	0.29
22:45	322:15	11544.1	82.7	5908		39	9543		1046	24.57	24	86.88	887.69	199		30									74	19	0.00	0.00	0.29
23:00	322:30	11555.9	82.7	6034		39	9560		1035	24.66	25	86.46	888.59	200		30									71	22	0.00	0.00	0.29
23:15	322:45	11557.8	82.7	5878		40	9543		1105	25.17	26	89.89	889.52	200		28									71	21	0.00	0.00	0.29
23:30	323:00	11552.2	82.6	5825		39	9545		1029	25.43	24	87.72	890.44	200		26									70	21	0.00	0.00	0.29
23:45	323:15	11566.2	82.6	5711		39	9554		1073	24.57	25	87.74	891.35	196		26									71	21	0.00	0.00	0.29
14/03/31																													
00:00	323:30	11541.2	82.6	5936		39	9545		1080	24.86	25	88.59	892.27	198		26									73	21	0.00	0.00	0.29
00:15	323:45	11562.5	82.7	5762		39	9543		1098	24.03	25	87.69	893.19	196		24									69	22	0.00	0.00	0.29
00:30	324:00	11541.7	82.7	5337		38	9538		1095	25.37	24	90.15	894.13	197		23									73	20	0.00	0.00	0.29
00:45	324:15	11529.8	82.7	5476		39	9530		1051	23.11	23	84.55	895.01	197		24									68	21	0.00	0.00	0.29
01:00	324:30	11543.2	82.7	5581		39	9540		1091	24.28	24	88.15	895.92	197		24									71	21	0.00	0.00	0.29
01:15	324:45	11514.9	82.7	5571		39	9535		1083	23.79	23	87.03	896.83	195		24									69	22	0.00	0.00	0.29
01:30	325:00	11517.4	82.7	5320		38	9516		1121	24.73	23	90.21	897.77	193		25									72	21	0.00	0.00	0.29
01:45	325:15	11530.1	82.7	5477		39	9535		1048	23.58	22	85.46	898.66	194		24									69	20	0.00	0.00	0.29
02:00	325:30	11546.6	82.6	5539		39	9523		1125	25.13	24	90.94	899.61	193		24									74	22	0.00	0.00	0.29
02:15	325:45	11524.2	82.6	5383		38	9521		1075	24.43	22	88.00	900.52	191		23									73	27	0.00	0.00	0.29
02:30	326:00	11531.4	82.6	5424		39	9507		1124	23.74	24	88.38	901.45	190		23									67	27	0.00	0.00	0.29
02:45	326:15	11539.7	82.6	5607		39	9517		1130	23.18	23	87.61	902.36	192		22									65	25	0.00	0.00	0.29
03:00	326:30	11473.1	82.6	5404		38	9492		1126	25.37	23	91.58	903.31	192		22									73	25	0.00	0.00	0.29
03:15	326:45	11525.1	82.6	5364		38	9507		1096	23.77	23	87.45	904.22	189		22									68	25	0.00	0.00	0.29
03:30	327:00	11517.4	82.6	5375		39	9523		1138	24.77	24	90.76	905.17	189		21									68	24	0.00	0.00	0.29
03:45	327:15	11513.4	82.6	5458		39	9515		1120	24.04	23	88.84	906.09	191		21									71	23	0.00	0.00	0.29
04:00	327:30	11505.9	82.5	5465		39	9501		1112	23.85	23	88.24	907.01	190		22									70	23	0.00	0.00	0.29
04:15	327:45	11498.8	82.5	5384		38	9496		1119	24.76	23	90.19	907.95	190		21									73	24	0.00	0.00	0.29
04:30	328:00	11553.1	82.5	5459		38	9501		1062	22.80	22	84.56	908.83	190		19									68	22	0.00	0.00	0.29
04:45	328:15	11508.1	82.5	5328		38	9496		1126	24.44	23	89.93	909.77	189		19									75	23	0.00	0.00	0.29
05:00	328:30	11488.8	82.5	5421		38	9486		1075	23.87	22	87.01	910.68	190		20									71	26	0.00	0.00	0.29
05:15	328:45	11498.5	82.5	5388		38	9480		1137	25.70	23	92.60	911.64	188		18									73	24	0.00	0.00	0.29
05:30	329:00	11494.6	82.5	5226		38	9472		1145	24.77	23	91.29	912.59	188		16									72	21	0.00	0.00	0.29
05:45	329:15	11501.6	82.5	5397		38	9487		1095	22.69	22	85.60	913.48	188		16									69	22	0.00	0.00	0.29



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P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	Sand %
hh:mm	kPag	°C	E³m³/d	E²m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
19:45						890.81	0.00											6402.10			
20:00						891.75	0.00	2.47	93.8	0.15	3.68	43.27			2.32	55.60	1520.03	6399.78	59500	7.0	0.0
20:15						892.64	0.00											6399.78			
20:30						893.51	0.00											6399.78			
20:45						894.47	0.00											6399.78			
21:00						895.39	0.00	2.41	92.5	0.18	4.34	43.46			2.23	53.50	1522.25	6397.56	59500	7.0	0.0
21:15						896.30	0.00											6397.56			
21:30						897.21	0.00											6397.56			
21:45						898.18	0.00											6397.56			
22:00						899.05	0.00	2.50	92.9	0.18	4.26	43.63			2.32	55.74	1524.58	6395.23	59500	7.0	0.0
22:15						899.97	0.00											6395.23			
22:30						900.85	0.00											6395.23			
22:45						901.75	0.00											6395.23			
23:00						902.65	0.00	2.45	92.8	0.18	4.23	43.81			2.27	54.57	1526.85	6392.96	60000	7.0	0.0
23:15						903.59	0.00											6392.96			
23:30						904.50	0.00											6392.96			
23:45						905.42	0.00											6392.96			
00:00						906.34	0.00	2.38	92.6	0.18	4.23	43.99			2.20	52.89	1529.05	6390.76	60000	7.0	0.0
00:15						907.25	0.00											6390.76			
00:30						908.19	0.00											6390.76			
00:45						909.07	0.00											6390.76			
01:00						909.99	0.00	2.41	92.7	0.18	4.22	44.16			2.23	53.62	1531.29	6388.52	60000	7.0	0.0
01:15						910.90	0.00											6388.52			
01:30						911.84	0.00											6388.52			
01:45						912.73	0.00											6388.52			
02:00						913.67	0.00	2.16	92.6	0.16	3.84	44.32			2.00	48.00	1533.29	6386.52	60000	7.0	0.0
02:15						914.59	0.00											6386.52			
02:30						915.51	0.00											6386.52			
02:45						916.42	0.00											6386.52			
03:00						917.38	0.00	2.24	92.3	0.17	4.14	44.49			2.07	49.62	1535.36	6384.45	60000	7.0	0.0
03:15						918.29	0.00											6384.45			
03:30						919.23	0.00											6384.45			
03:45						920.16	0.00											6384.45			
04:00						921.08	0.00	2.28	92.0	0.18	4.38	44.68			2.10	50.34	1537.45	6382.36	60000	7.0	0.0
04:15						922.02	0.00											6382.36			
04:30						922.90	0.00											6382.36			
04:45						923.84	0.00											6382.36			
05:00						924.74	0.00	2.23	92.5	0.17	4.01	44.84			2.06	49.51	1539.52	6380.29	60000	7.0	0.0
05:15						925.71	0.00											6380.29			
05:30						926.66	0.00											6380.29			
05:45						927.55	0.00											6380.29			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1					
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³	
14/03/31 06:00	329:30	11525.8	82.5	5410		38	9500		1073	20.90	21	81.49	914.33	190		17								66	23	0.00	0.00	0.29	
		Daily Summary to 06:00 hrs March 31/2014 DHP = 11525.8kpa FTP = 5410kpa SICP = 9500kpa Flow Temp = 38DegC Meter Run Temp = 21DegC Choke Size = 12.7mm Gas Rate = 81.49 E3m3/Day Cummulative Gas to Flare = 928.40 E3m3 Gas to Flare last 24hrs = 88.16 E3m3 LFTR = 7919.81m3 LFR last 24hrs = 51.25m3 TLFR = 1541.70m3 TLFLTR = 6378.11m3 Condensate Produced last 24hrs = 3.99m3 Cummulative Condensate Produced = 45.01m3 Salinity = 60000ppm ph = 7 Sand = Nill Hrs Flowed = 329.5 Hours Flared = 326 Surface Total = 100.34m3 Api = 62@15.6°C H2s = 0.40ppm CO2 = 1.8%																											
06:15	329:45	11523.1	82.4	5369		38	9494		1158	24.69	22	91.67	915.29	184		15								70	22	0.00	0.00	0.29	
06:30	330:00	11523.5	82.4	5438		39	9506		1146	21.77	23	85.53	916.18	188		11								64	20	0.00	0.00	0.29	
06:45	330:15	11502.3	82.4	5378		38	9476		1168	23.33	22	89.51	917.11	186		8								72	18	0.00	0.00	0.29	
07:00	330:30	11494.0	82.4	5357		38	9490		1122	22.95	22	87.11	918.02	185		10								71	17	0.00	0.00	0.29	
07:15	330:45	11471.7	82.8	5354		38	9464		1083	21.46	21	83.03	918.88	186		14								69	15	0.00	0.00	0.29	
07:30	331:00	11513.8	82.8	5307		38	9474		1100	22.55	21	85.72	919.78	184		18								69	14	0.00	0.00	0.29	
07:45	331:15	11506.0	82.8	5384		38	9488		1128	23.47	21	88.41	920.70	183		20								71	13	0.00	0.00	0.29	
08:00	331:30	11487.0	82.8	5089		38	9474		1102	23.10	21	86.75	921.60	182		21								72	12	0.00	0.00	0.29	
08:15	331:45	11517.2	82.8	5377		38	9486		1110	21.92	22	84.74	922.48	187		21								69	12	0.00	0.00	0.29	
08:30	332:00	11489.6	82.8	5305		38	9462		1155	23.82	22	90.09	923.42	181		21								74	11	0.00	0.00	0.29	
08:45	332:15	11489.1	82.8	5335		38	9476		1098	20.77	21	82.12	924.28	183		21								70	10	0.00	0.00	0.29	
09:00	332:30	11499.5	82.8	5288		38	9480		1121	22.65	21	86.62	925.18	187		22								72	10	0.00	0.00	0.29	
09:15	332:45	11481.3	82.8	5331		38	9462		1141	22.97	21	88.00	926.10	186		21								74	11	0.00	0.00	0.29	
09:30	333:00	11470.2	82.8	5126		37	9428		1156	24.00	21	90.47	927.04	185		20								79	10	0.00	0.00	0.29	
09:45	333:15	11468.0	82.8	5310		38	9443		1117	22.58	21	86.46	927.94	186		20								73	10	0.00	0.00	0.29	
10:00	333:30	11476.8	82.8	5239		38	9458		1094	23.06	21	86.41	928.84	186		20								70	10	0.00	0.00	0.29	



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:00						928.40	0.00	2.35	92.7	0.17	4.12	45.01			2.18	52.28	1541.70	6378.11	60000	7.0	0.0
06:15						929.35	0.00											6378.11			
06:30						930.24	0.00											6378.11			
06:45						931.18	0.00											6378.11			
07:00						932.08	0.00	2.04	91.4	0.18	4.21	45.19			1.86	44.75	1543.56	6376.25	60000	7.0	0.0
07:15						932.95	0.00											6376.25			
07:30						933.84	0.00											6376.25			
07:45						934.76	0.00											6376.25			
08:00						935.67	0.00	2.32	92.2	0.18	4.34	45.37			2.14	51.34	1545.70	6374.11	60000	7.0	0.0
08:15						936.55	0.00											6374.11			
08:30						937.49	0.00											6374.11			
08:45						938.34	0.00											6374.11			
09:00						939.25	0.00	2.33	91.5	0.20	4.75	45.57			2.13	51.17	1547.83	6371.98	59000	7.0	0.0
09:15						940.16	0.00											6371.98			
09:30						941.10	0.00											6371.98			
09:45						942.01	0.00											6371.98			
10:00						942.91	0.00	2.22	91.6	0.19	4.48	45.76			2.03	48.80	1549.86	6369.95	59000	7.0	0.0



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P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	kPa	°C	E ³ m ³ /d	E ³ m ³	kPag	°C	E ³ m ³ /d	E ³ m ³ /d	E ³ m ³
14/03/31																												
10:15	333:45	11494.7	82.9	5373		38	9467		1141	22.12	22	86.20	929.74	186		20								69	9	0.00	0.00	0.29
10:30	334:00	11489.2	82.9	5299		38	9457		1155	22.59	22	87.68	930.65	186		20								73	9	0.00	0.00	0.29
10:45	334:15	11458.9	82.9	5233		38	9468		1152	23.36	23	88.86	931.58	189		20								71	9	0.00	0.00	0.29
11:00	334:30	11475.8	82.9	5215		38	9463		1140	23.86	22	89.44	932.51	188		20								73	9	0.00	0.00	0.29
11:15	334:45	11469.4	82.9	5335		38	9460		1132	22.23	22	86.05	933.40	189		20								71	9	0.00	0.00	0.29
11:30	335:00	11439.9	82.9	5213		38	9455		1170	25.62	22	93.86	934.38	190		20								78	9	0.00	0.00	0.29
11:45	335:15	11442.2	82.9	5251		38	9443		1116	23.18	21	87.45	935.29	191		20								74	9	0.00	0.00	0.29
12:00	335:30	11449.3	83.0	5269		38	9444		1113	23.04	22	87.00	936.20	188		20								73	9	0.00	0.00	0.29
12:15	335:45	11457.4	83.0	5466		38	9475		1088	22.32	21	84.77	937.08	190		20								70	9	0.00	0.00	0.29
12:30	336:00	11442.3	83.0	5392		38	9448		1082	22.67	21	85.19	937.97	191		21								71	9	0.00	0.00	0.29
12:45	336:15	11445.9	83.0	5351		38	9459		1099	21.69	22	83.76	938.84	193		21								71	9	0.00	0.00	0.29
13:00	336:30	11466.6	82.9	5473		39	9474		1139	24.28	23	90.11	939.78	192		22								72	10	0.00	0.00	0.29
13:15	336:45	11453.6	82.9	5296		38	9449		1119	24.09	22	89.06	940.71	197		23								74	10	0.00	0.00	0.29
13:30	337:00	11429.3	82.9	5329		38	9451		1087	20.79	21	81.78	941.56	193		24								68	10	0.00	0.00	0.29
13:45	337:15	11467.1	82.9	5487		39	9456		1168	23.87	24	90.26	942.50	193		24								74	10	0.00	0.00	0.29
14:00	337:30	11443.4	82.9	5506		39	9435		1144	22.25	23	86.39	943.40	193		24								72	10	0.00	0.00	0.29
14:15	337:45	11430.3	82.9	5401		38	9450		1143	23.30	23	88.37	944.32	196		24								71	11	0.00	0.00	0.29
14:30	338:00	11448.6	82.9	5438		39	9447		1137	23.56	23	88.61	945.24	192		24								73	11	0.00	0.00	0.29
14:45	338:15	11414.1	82.9	5408		38	9446		1096	23.87	22	87.76	946.16	197		24								74	11	0.00	0.00	0.29
15:00	338:30	11389.4	82.9	5422		38	9419		1109	24.50	23	89.42	947.09	193		24								75	11	0.00	0.00	0.29
15:15	338:45	11435.3	82.9	5466		38	9431		1120	23.60	23	88.06	948.01	196		22								73	11	0.00	0.00	0.29
15:30	339:00	11421.0	83.0	5469		38	9444		1126	22.75	22	86.78	948.91	194		21								72	11	0.00	0.00	0.29
15:45	339:15	11400.9	83.0	5477		38	9429		1104	23.74	22	87.89	949.83	196		20								72	11	0.00	0.00	0.29
16:00	339:30	11424.2	83.0	5368		38	9442		1098	23.35	23	86.80	950.73	198		20								71	11	0.00	0.00	0.29
16:15	339:45	11405.8	83.0	5380		38	9414		1126	24.21	23	89.50	951.66	195		21								75	11	0.00	0.00	0.29
16:30	340:00	11398.6	83.0	5497		38	9428		1126	23.40	23	87.91	952.58	196		20								72	11	0.00	0.00	0.29
16:45	340:15	11409.1	83.0	5416		38	9424		1086	23.99	22	87.78	953.49	196		20								76	10	0.00	0.00	0.29
17:00	340:30	11428.2	83.0	5425		38	9433		1099	22.67	22	85.78	954.39	201		20								72	10	0.00	0.00	0.29
17:15	340:45	11379.4	83.0	5401		38	9409		1120	23.57	22	88.12	955.30	199		19								74	10	0.00	0.00	0.29
17:30	341:00	11393.9	83.0	5331		38	9427		1094	23.49	22	87.14	956.21	199		19								74	9	0.00	0.00	0.29
17:45	341:15	11400.5	83.0	5328		38	9438		1121	23.51	23	87.98	957.13	196		19								72	9	0.00	0.00	0.29
18:00	341:30	11428.9	83.0	5511		39	9453		1143	21.88	23	85.61	958.02	198		21								68	9	0.00	0.00	0.29
18:15	341:45	11407.3	83.0	5432		38	9434		1148	23.95	23	89.84	958.96	198		23								74	9	0.00	0.00	0.29
18:30	342:00	11396.1	83.0	5526		38	9429		1106	22.57	21	85.87	959.85	201		25								71	10	0.00	0.00	0.29
18:45	342:15	11389.9	83.0	5321		38	9411		1133	23.65	22	88.79	960.78	201		25								74	10	0.00	0.00	0.29
19:00	342:30	11388.5	83.0	5375		38	9417		1084	22.53	22	84.90	961.66	201		24								70	10	0.00	0.00	0.29
19:15	342:45	11398.8	83.0	5412		38	9425		1147	24.19	23	90.26	962.60	199		24								75	10	0.00	0.00	0.29
19:30	343:00	11376.2	83.0	5329		38	9395		1110	23.33	21	87.49	963.51	202		25								74	10	0.00	0.00	0.29
19:45	343:15	11372.8	83.0	5317		38	9406		1116	22.72	22	86.49	964.41	200		26								73	11	0.00	0.00	0.29
20:00	343:30	11370.0	83.0	5385		38	9406		1155	22.82	22	87.99	965.33	202		26								73	11	0.00	0.00	0.29
20:15	343:45	11390.5	83.0	5479		39	9428		1132	21.63	22	84.90	966.21	204		27								69	11	0.00	0.00	0.29
20:30	344:00	11383.5	83.0	5455		38	9416		1147	22.91	23	87.88	967.13	201		29								73	11	0.00	0.00	0.29



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Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production			Load Fluid Left			Sand %	
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job	Salinity	pH		
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
10:15						943.80	0.00											6369.95			
10:30						944.72	0.00											6369.95			
10:45						945.64	0.00											6369.95			
11:00						946.57	0.00	2.44	91.9	0.20	4.74	45.95			2.24	53.82	1552.11	6367.70	60000	7.0	0.0
11:15						947.47	0.00											6367.70			
11:30						948.45	0.00											6367.70			
11:45						949.36	0.00											6367.70			
12:00						950.27	0.00	2.28	92.4	0.17	4.16	46.13			2.11	50.56	1554.21	6365.60	60000	7.0	0.0
12:15						951.15	0.00											6365.60			
12:30						952.04	0.00											6365.60			
12:45						952.91	0.00											6365.60			
13:00						953.85	0.00	2.24	91.4	0.19	4.62	46.32			2.05	49.14	1556.26	6363.55	60000	7.0	0.0
13:15						954.77	0.00											6363.55			
13:30						955.63	0.00											6363.55			
13:45						956.57	0.00											6363.55			
14:00						957.47	0.00	2.19	91.9	0.18	4.26	46.50			2.01	48.30	1558.27	6361.54	60000	7.0	0.0
14:15						958.39	0.00											6361.54			
14:30						959.31	0.00											6361.54			
14:45						960.22	0.00											6361.54			
15:00						961.16	0.00	2.13	92.1	0.17	4.04	46.67			1.96	47.08	1560.23	6359.58	60000	7.0	0.0
15:15						962.07	0.00											6359.58			
15:30						962.98	0.00											6359.58			
15:45						963.89	0.00											6359.58			
16:00						964.80	0.00	2.08	92.3	0.16	3.84	46.83			1.92	46.08	1562.15	6357.66	60000	7.0	0.0
16:15						965.73	0.00											6357.66			
16:30						966.64	0.00											6357.66			
16:45						967.56	0.00											6357.66			
17:00						968.45	0.00	2.26	92.2	0.18	4.23	47.00			2.08	50.01	1564.24	6355.57	58000	7.0	0.0
17:15						969.37	0.00											6355.57			
17:30						970.28	0.00											6355.57			
17:45						971.19	0.00											6355.57			
18:00						972.09	0.00	2.17	92.4	0.16	3.96	47.17			2.01	48.12	1566.24	6353.57	60000	7.0	0.0
18:15						973.02	0.00											6353.57			
18:30						973.92	0.00											6353.57			
18:45						974.84	0.00											6353.57			
19:00						975.73	0.00	2.53	91.7	0.21	5.04	47.38			2.32	55.68	1568.56	6351.25	60000	7.0	0.0
19:15						976.67	0.00											6351.25			
19:30						977.58	0.00											6351.25			
19:45						978.48	0.00											6351.25			
20:00						979.40	0.00	2.19	92.2	0.17	4.10	47.55			2.02	48.46	1570.58	6349.23	60000	7.0	0.0
20:15						980.28	0.00											6349.23			
20:30						981.19	0.00											6349.23			



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CPD and Testing Services (Canada)
Weatherford 1200, 333 - 5th Avenue S.W.
Calgary, AB T2P 3B6
Telephone: 403.693.7500
Facsimile: 403.693.7769

ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1					
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³	
14/03/31																													
20:45	344:15	11390.8	82.9	5282		38	9437		1147	23.24	23	88.46	968.05	203		28								74	11	0.00	0.00	0.29	
21:00	344:30	11406.0	82.9	5452		38	9444		1148	23.44	23	88.81	968.98	202		28								73	11	0.00	0.00	0.29	
21:15	344:45	11402.7	82.8	5297		38	9398		1145	22.97	24	87.73	969.89	204		27								71	11	0.00	0.00	0.29	
21:30	345:00	11377.7	82.9	5424		38	9398		1086	22.87	22	85.58	970.78	201		28								71	11	0.00	0.00	0.29	
21:45	345:15	11369.7	82.9	5639		38	9424		1103	22.21	22	84.96	971.67	201		28								71	11	0.00	0.00	0.29	
22:00	345:30	11375.4	82.9	5521		38	9400		1108	24.50	23	89.38	972.60	204		26								76	12	0.00	0.00	0.29	
22:15	345:45	11379.9	82.8	5538		38	9407		1109	23.75	22	88.07	973.51	204		24								73	12	0.00	0.00	0.29	
22:30	346:00	11385.2	82.8	5439		39	9416		1123	22.94	23	86.98	974.42	203		23								72	12	0.00	0.00	0.29	
22:45	346:15	11371.0	82.8	5271		38	9387		1123	24.28	23	89.45	975.35	200		22								74	12	0.00	0.00	0.29	
23:00	346:30	11406.3	82.8	5494		39	9426		1124	22.50	24	86.05	976.25	205		23								70	12	0.00	0.00	0.29	
23:15	346:45	11379.1	82.8	5585		39	9404		1122	23.03	24	87.00	977.15	201		25								69	12	0.00	0.00	0.29	
23:30	347:00	11365.1	82.8	5699		38	9386		1145	24.59	23	90.86	978.10	201		27								76	12	0.00	0.00	0.29	
23:45	347:15	11381.9	82.8	5647		38	9392		1125	23.78	23	88.59	979.02	204		27								72	12	0.00	0.00	0.29	
14/04/01																													
00:00	347:30	11379.4	82.8	5677		38	9393		1140	23.99	23	89.56	979.96	203		27								74	12	0.00	0.00	0.29	
00:15	347:45	11378.6	82.8	5625		38	9393		1147	24.12	23	90.07	980.89	204		27								75	12	0.00	0.00	0.29	
00:30	348:00	11374.0	82.8	5717		39	9389		1094	22.09	23	84.29	981.77	206		27								67	11	0.00	0.00	0.29	
00:45	348:15	11396.6	82.8	5831		39	9403		1116	22.36	24	85.47	982.66	203		28								69	11	0.00	0.00	0.29	
01:00	348:30	11346.0	82.8	5677		38	9376		1154	24.51	23	91.07	983.61	204		29								75	11	0.00	0.00	0.29	
01:15	348:45	11379.5	82.8	5462		38	9390		1142	23.39	23	88.47	984.53	205		27								72	11	0.00	0.00	0.29	
01:30	349:00	11197.0	82.8	5612		38	9365		1103	23.14	23	86.59	985.44	201		26								72	11	0.00	0.00	0.29	
01:45	349:15	11364.8	82.8	5852		39	9401		1108	22.24	23	85.04	986.32	204		25								69	11	0.00	0.00	0.29	
02:00	349:30	11393.9	82.7	5849		39	9403		1081	22.52	23	84.61	987.20	204		25								70	11	0.00	0.00	0.29	
02:15	349:45	11423.5	82.7	5797		38	9378		1161	23.56	23	89.47	988.13	203		26								72	11	0.00	0.00	0.29	
02:30	350:00	11358.5	82.7	5729		38	9376		1158	23.56	24	89.28	989.06	201		26								72	11	0.00	0.00	0.29	
02:45	350:15	11343.9	82.7	5592		38	9369		1108	24.12	23	88.68	989.99	203		25								74	11	0.00	0.00	0.29	
03:00	350:30	11331.1	82.7	5478		38	9353		1122	22.66	22	86.51	990.89	202		24								70	11	0.00	0.00	0.29	
03:15	350:45	11358.5	82.7	5667		39	9356		1130	23.27	23	87.80	991.80	204		23								71	11	0.00	0.00	0.29	
03:30	351:00	11359.7	82.7	5496		38	9386		1132	23.36	24	88.02	992.72	199		23								70	11	0.00	0.00	0.29	
03:45	351:15	11362.4	82.7	5493		39	9364		1115	23.08	23	86.92	993.63	202		23								71	11	0.00	0.00	0.29	
04:00	351:30	11363.7	82.7	5642		39	9383		1081	22.50	23	84.57	994.51	200		23								69	11	0.00	0.00	0.29	
04:15	351:45	11358.2	82.7	5709		39	9352		1105	22.70	23	85.85	995.40	200		23								69	10	0.00	0.00	0.29	
04:30	352:00	11342.8	82.8	5575		39	9345		1106	22.95	23	86.26	996.30	201		23								70	10	0.00	0.00	0.29	
04:45	352:15	11335.9	82.8	5722		39	9342		1126	22.88	23	86.95	997.21	203		22								71	10	0.00	0.00	0.29	
05:00	352:30	11317.8	83.0	5446		38	9322		1128	24.17	23	89.56	998.14	202		22								76	10	0.00	0.00	0.29	
05:15	352:45	11317.0	83.0	5551		39	9333		1090	22.67	22	85.38	999.03	200		22								71	10	0.00	0.00	0.29	
05:30	353:00	11339.1	83.0	5468		38	9326		1089	23.13	22	86.23	999.93	201		24								72	10	0.00	0.00	0.29	
05:45	353:15	11306.8	83.0	5611		38	9328		1096	23.27	23	86.65	1000.83	200		25								72	10	0.00	0.00	0.29	
06:00	353:30	11306.5	83.0	5355		38	9340		1064	22.87	22	84.79	1001.71	202		27								72	10	0.00	0.00	0.29	
		Daily Summary to 06:00 hrs April 01/2014																											
		DHP = 11306kpa																											
		FTP = 5355kpa																											



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production			Load Fluid Left			Sand %	
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job	Salinity	pH		
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
20:45						982.12	0.00											6349.23			
21:00						983.04	0.00	2.27	91.8	0.19	4.47	47.73			2.08	50.01	1572.67	6347.14	60000	7.0	0.0
21:15						983.96	0.00											6347.14			
21:30						984.85	0.00											6347.14			
21:45						985.73	0.00											6347.14			
22:00						986.66	0.00	1.93	92.3	0.15	3.57	47.88			1.78	42.75	1574.45	6345.36	60000	7.0	0.0
22:15						987.58	0.00											6345.36			
22:30						988.49	0.00											6345.36			
22:45						989.42	0.00											6345.36			
23:00						990.31	0.00	2.08	91.7	0.17	4.14	48.05			1.91	45.78	1576.36	6343.45	60000	7.0	0.0
23:15						991.22	0.00											6343.45			
23:30						992.17	0.00											6343.45			
23:45						993.09	0.00											6343.45			
00:00						994.02	0.00	2.14	91.8	0.18	4.21	48.23			1.96	47.15	1578.32	6341.49	60000	7.0	0.0
00:15						994.96	0.00											6341.49			
00:30						995.84	0.00											6341.49			
00:45						996.73	0.00											6341.49			
01:00						997.68	0.00	2.39	92.5	0.18	4.30	48.41			2.21	53.06	1580.53	6339.28	59000	7.0	0.0
01:15						998.60	0.00											6339.28			
01:30						999.50	0.00											6339.28			
01:45						1000.39	0.00											6339.28			
02:00						1001.27	0.00	2.30	92.0	0.18	4.42	48.59			2.12	50.78	1582.65	6337.16	60000	7.0	0.0
02:15						1002.20	0.00											6337.16			
02:30						1003.13	0.00											6337.16			
02:45						1004.05	0.00											6337.16			
03:00						1004.96	0.00	2.14	92.3	0.16	3.95	48.76			1.98	47.41	1584.62	6335.19	60000	7.0	0.0
03:15						1005.87	0.00											6335.19			
03:30						1006.79	0.00											6335.19			
03:45						1007.69	0.00											6335.19			
04:00						1008.57	0.00	2.27	92.6	0.17	4.03	48.93			2.10	50.45	1586.72	6333.09	60000	7.0	0.0
04:15						1009.47	0.00											6333.09			
04:30						1010.37	0.00											6333.09			
04:45						1011.27	0.00											6333.09			
05:00						1012.21	0.00	2.23	91.7	0.19	4.44	49.11			2.04	49.08	1588.77	6331.04	60000	7.0	0.0
05:15						1013.09	0.00											6331.04			
05:30						1013.99	0.00											6331.04			
05:45						1014.90	0.00											6331.04			
06:00						1015.78	0.00	2.19	92.5	0.16	3.94	49.28			2.03	48.62	1590.79	6329.02	60000	7.0	0.0



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P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/01																												
		SICP = 9340kpa Flow Temp = 38DegC Meter Run Temp = 22DegC Choke Size = 12.7mm Gas Rate = 84.79 E3m3/Day Cumulative Gas to Flare = 1015.78 E3m3 Gas to Flare last 24hrs = 87.38 E3m3 LFTR = 7919.81m3 LFR last 24hrs = 49.09m3 TLFR = 1590.79m3 TLFLTR = 6329.02m3 Condensate Produced last 24hrs = 4.27m3 Cumulative Condensate Produced = 49.28m3 Salinity = 60000ppm ph = 7 Sand = Nil Hrs Flowed = 353.5 Hours Flared = 350 Surface Total = 103.7m3 Api = 63.4@15.6°C H2s = 0.40ppm CO2 = 2.3%																										
06:15	353:45	11316.3	83.0	5486		38	9344		1106	23.44	23	87.30	1002.62	201		27								72	10	0.00	0.00	0.29
06:30	354:00	11351.9	83.0	5678		39	9407		1103	21.74	24	83.80	1003.49	201		28								65	10	0.00	0.00	0.29
06:45	354:15	11317.3	83.0	5517		38	9351		1141	24.01	24	89.56	1004.43	203		29								76	10	0.00	0.00	0.29
07:00	354:30	11328.2	83.0	5498		38	9349		1120	23.06	23	87.06	1005.33	202		28								72	10	0.00	0.00	0.29
07:15	354:45	11328.2	83.0	5556		39	9351		1087	22.57	23	84.98	1006.22	201		28								70	10	0.00	0.00	0.29
07:30	355:00	11308.5	83.0	5497		38	9327		1110	23.03	22	86.76	1007.12	202		27								74	10	0.00	0.00	0.29
07:45	355:15	11306.0	82.9	5487		38	9347		1087	22.94	22	85.84	1008.02	200		26								74	10	0.00	0.00	0.29
08:00	355:30	11319.5	82.9	5544		39	9355		1090	23.02	23	85.82	1008.91	203		26								70	10	0.00	0.00	0.29
08:15	355:45	11312.7	82.9	5522		39	9336		1111	23.28	23	87.13	1009.82	202		25								72	10	0.00	0.00	0.29
08:30	356:00	11332.6	83.0	5730		39	9368		1074	21.76	23	82.82	1010.68	202		23								67	10	0.00	0.00	0.29
08:45	356:15	11308.7	83.0	5769		39	9338		1112	23.19	23	86.99	1011.59	200		22								72	9	0.00	0.00	0.29
09:00	356:30	11283.1	83.0	5508		38	9328		1083	23.13	22	85.99	1012.46	201		21								75	9	0.00	0.00	0.29
09:15	356:45	11256.8	83.0	5444		38	9325		1131	24.80	23	90.70	1013.43	200		21								78	9	0.00	0.00	0.29
09:30	357:00	11312.8	83.0	5474		38	9326		1139	23.05	23	87.70	1014.34	201		22								73	9	0.00	0.00	0.29
09:45	357:15	11307.4	83.1	5566		39	9322		1095	22.07	23	84.24	1015.22	202		22								67	9	0.00	0.00	0.29
10:00	357:30	11300.6	83.1	5325		38	9324		1080	23.20	22	85.97	1016.12	202		23								72	9	0.00	0.00	0.29
10:15	357:45	11316.8	83.1	5347		38	9341		1152	24.74	23	91.35	1017.07	204		25								75	9	0.00	0.00	0.29
10:30	358:00	11302.6	83.1	5200		38	9327		1086	22.48	23	84.79	1017.95	202		26								72	10	0.00	0.00	0.29
10:45	358:15	11277.4	83.1	5341		38	9294		1141	24.13	23	89.84	1018.89	202		26								74	10	0.00	0.00	0.29
11:00	358:30	11280.3	83.1	5236		38	9311		1125	22.81	22	86.92	1019.79	202		27								73	11	0.00	0.00	0.29



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Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:15						1016.69	0.00											6329.02			
06:30						1017.56	0.00											6329.02			
06:45						1018.49	0.00											6329.02			
07:00						1019.40	0.00	2.34	91.8	0.19	4.61	49.47			2.15	51.55	1592.94	6326.87	60000	7.0	0.0
07:15						1020.29	0.00											6326.87			
07:30						1021.19	0.00											6326.87			
07:45						1022.08	0.00											6326.87			
08:00						1022.98	0.00	2.40	92.2	0.19	4.49	49.65			2.21	53.11	1595.16	6324.65	58000	7.0	0.0
08:15						1023.89	0.00											6324.65			
08:30						1024.75	0.00											6324.65			
08:45						1025.65	0.00											6324.65			
09:00						1026.55	0.00	2.25	92.3	0.17	4.16	49.83			2.08	49.84	1597.23	6322.58	58000	7.0	0.0
09:15						1027.49	0.00											6322.58			
09:30						1028.41	0.00											6322.58			
09:45						1029.29	0.00											6322.58			
10:00						1030.18	0.00	2.22	91.8	0.18	4.37	50.01			2.04	48.91	1599.27	6320.54	58000	7.0	0.0
10:15						1031.13	0.00											6320.54			
10:30						1032.02	0.00											6320.54			
10:45						1032.95	0.00											6320.54			
11:00						1033.86	0.00	1.96	92.3	0.15	3.62	50.16			1.81	43.42	1601.08	6318.73	60000	7.0	0.0



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Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/01																												
11:15	358:45	11272.4	83.1	5198		38	9298		1117	22.95	21	87.00	1020.70	203		26								73	11	0.00	0.00	0.29
11:30	359:00	11266.0	83.2	5147		38	9303		1099	22.92	22	86.22	1021.60	205		27								73	11	0.00	0.00	0.29
11:45	359:15	11290.8	83.2	5174		38	9310		1125	23.43	22	88.05	1022.51	202		27								70	11	0.00	0.00	0.29
12:00	359:30	11255.9	83.2	5205		38	9298		1103	23.45	22	87.28	1023.42	204		27								73	11	0.00	0.00	0.29
12:15	359:45	11274.2	83.2	5245		38	9307		1115	22.71	22	86.37	1024.32	202		27								72	11	0.00	0.00	0.29
12:30	360:00	11263.8	83.2	5315		38	9318		1102	22.40	22	85.37	1025.21	206		26								72	12	0.00	0.00	0.29
12:45	360:15	11281.4	83.2	5357		38	9323		1112	22.58	22	86.00	1026.11	204		23								72	12	0.00	0.00	0.29
13:00	360:30	11274.3	83.2	5419		38	9338		1158	23.31	23	88.93	1027.03	205		22								74	12	0.00	0.00	0.29
13:15	360:45	11271.0	83.0	5168		38	9307		1078	21.11	21	82.12	1027.89	205		21								70	12	0.00	0.00	0.29
13:30	361:00	11280.6	83.0	5340		38	9298		1114	21.22	23	83.32	1028.76	203		20								68	12	0.00	0.00	0.29
13:45	361:15	11232.7	83.0	5269		38	9303		1094	23.67	22	87.48	1029.67	204		20								73	12	0.00	0.00	0.29
14:00	361:30	11261.5	83.0	5189		38	9307		1109	22.06	22	84.88	1030.55	205		20								70	12	0.00	0.00	0.29
14:15	361:45	11255.1	83.0	5344		38	9318		1128	21.50	23	84.39	1031.43	206		21								67	12	0.00	0.00	0.29
14:30	362:00	11246.6	83.0	5300		38	9299		1120	22.96	22	87.02	1032.34	206		22								73	12	0.00	0.00	0.29
14:45	362:15	11258.1	83.0	5465		38	9322		1142	22.47	24	86.67	1033.24	204		23								68	12	0.00	0.00	0.29
15:00	362:30	11253.0	83.0	5323		38	9316		1139	22.50	22	86.80	1034.14	201		24								71	12	0.00	0.00	0.29
15:15	362:45	11210.9	83.0	5184		37	9299		1121	23.44	22	88.01	1035.06	205		24								75	12	0.00	0.00	0.29
15:30	363:00	11241.9	83.0	5245		38	9299		1091	22.50	22	85.11	1035.95	205		25								71	12	0.00	0.00	0.29
15:45	363:15	11238.7	83.0	5287		38	9292		1144	22.95	23	87.75	1036.86	206		25								73	12	0.00	0.00	0.29
16:00	363:30	11232.0	83.0	5217		38	9293		1138	23.21	23	88.07	1037.78	204		25								74	12	0.00	0.00	0.29
16:15	363:45	11224.9	83.0	5210		38	9308		1107	22.30	22	85.35	1038.67	206		24								70	12	0.00	0.00	0.29
16:30	364:00	11248.2	83.0	5302		38	9317		1154	22.99	24	88.09	1039.59	206		23								72	13	0.00	0.00	0.29
16:45	364:15	11219.4	83.0	5185		38	9277		1116	23.82	22	88.51	1040.51	206		23								74	13	0.00	0.00	0.29
17:00	364:30	11247.7	83.1	5262		38	9295		1102	22.05	22	84.61	1041.39	206		22								71	13	0.00	0.00	0.29
17:15	364:45	11241.3	83.1	5357		38	9295		1162	23.27	24	88.92	1042.32	203		20								71	13	0.00	0.00	0.29
17:30	365:00	11229.7	83.1	5279		38	9297		1127	22.60	22	86.55	1043.22	205		20								72	13	0.00	0.00	0.29
17:45	365:15	11259.6	83.1	5388		38	9297		1160	24.74	24	91.56	1044.17	205		21								74	14	0.00	0.00	0.29
18:00	365:30	11232.6	83.1	5328		38	9289		1125	21.30	23	83.78	1045.04	209		20								68	14	0.00	0.00	0.29
18:15	365:45	11243.3	83.1	5364		38	9303		1082	22.61	23	84.81	1045.93	207		20								70	13	0.00	0.00	0.29
18:30	366:00	11216.4	83.1	5268		38	9275		1131	23.89	23	89.03	1046.85	210		20								72	13	0.00	0.00	0.29
18:45	366:15	11212.6	83.1	5217		38	9273		1157	24.08	23	90.31	1047.79	209		21								74	13	0.00	0.00	0.29
19:00	366:30	11230.3	83.0	5338		38	9314		1102	22.37	23	85.12	1048.68	208		23								68	13	0.00	0.00	0.29
19:15	366:45	11227.4	83.0	5407		38	9304		1130	22.36	23	86.16	1049.58	206		24								71	13	0.00	0.00	0.29
19:30	367:00	11208.5	83.0	5303		38	9272		1142	23.47	23	88.64	1050.50	210		25								73	13	0.00	0.00	0.29
19:45	367:15	11220.7	83.0	5562		39	9305		1117	21.32	24	83.51	1051.37	209		26								65	13	0.00	0.00	0.29
20:00	367:30	11215.3	83.0	5459		38	9292		1149	22.91	23	87.87	1052.29	208		27								73	13	0.00	0.00	0.29
20:15	367:45	11229.4	83.0	5623		38	9288		1101	22.53	23	85.40	1053.18	208		28								71	13	0.00	0.00	0.29
20:30	368:00	11199.2	83.0	5613		38	9289		1094	22.67	22	85.45	1054.07	211		28								72	13	0.00	0.00	0.29
20:45	368:15	11204.0	83.0	5774		38	9291		1148	23.94	24	89.55	1055.00	211		29								74	13	0.00	0.00	0.29
21:00	368:30	11196.2	83.0	5617		38	9262		1132	24.07	23	89.38	1055.93	209		29								76	13	0.00	0.00	0.29
21:15	368:45	11209.9	82.9	5690		38	9291		1094	22.96	23	85.94	1056.83	210		30								72	13	0.00	0.00	0.29
21:30	369:00	11227.9	82.9	5897		39	9274		1121	21.88	23	84.78	1057.71	208		30								70	13	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production			Load Fluid Left			Sand %	
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job	Salinity	pH		
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
11:15						1034.76	0.00											6318.73			
11:30						1035.66	0.00											6318.73			
11:45						1036.58	0.00											6318.73			
12:00						1037.49	0.00	2.07	91.9	0.17	4.02	50.33			1.90	45.66	1602.98	6316.83	60000	7.0	0.0
12:15						1038.39	0.00											6316.83			
12:30						1039.28	0.00											6316.83			
12:45						1040.17	0.00											6316.83			
13:00						1041.10	0.00	2.09	91.6	0.18	4.21	50.50			1.91	45.95	1604.90	6314.91	60000	7.0	0.0
13:15						1041.95	0.00											6314.91			
13:30						1042.82	0.00											6314.91			
13:45						1043.73	0.00											6314.91			
14:00						1044.62	0.00	2.07	92.0	0.17	3.97	50.67			1.90	45.71	1606.80	6313.01	60000	7.0	0.0
14:15						1045.50	0.00											6313.01			
14:30						1046.40	0.00											6313.01			
14:45						1047.31	0.00											6313.01			
15:00						1048.21	0.00	2.08	92.0	0.17	3.99	50.84			1.91	45.93	1608.71	6311.10	60000	7.0	0.0
15:15						1049.13	0.00											6311.10			
15:30						1050.01	0.00											6311.10			
15:45						1050.93	0.00											6311.10			
16:00						1051.85	0.00	2.16	92.0	0.17	4.15	51.01			1.99	47.69	1610.70	6309.11	60000	7.0	0.0
16:15						1052.73	0.00											6309.11			
16:30						1053.65	0.00											6309.11			
16:45						1054.57	0.00											6309.11			
17:00						1055.46	0.00	2.15	91.8	0.18	4.23	51.19			1.97	47.37	1612.67	6307.14	61000	7.0	0.0
17:15						1056.38	0.00											6307.14			
17:30						1057.28	0.00											6307.14			
17:45						1058.24	0.00											6307.14			
18:00						1059.11	0.00	2.18	92.0	0.17	4.19	51.36			2.01	48.13	1614.68	6305.13	61000	7.0	0.0
18:15						1059.99	0.00											6305.13			
18:30						1060.92	0.00											6305.13			
18:45						1061.86	0.00											6305.13			
19:00						1062.75	0.00	1.99	91.8	0.16	3.92	51.52			1.83	43.84	1616.51	6303.30	61000	7.0	0.0
19:15						1063.65	0.00											6303.30			
19:30						1064.57	0.00											6303.30			
19:45						1065.44	0.00											6303.30			
20:00						1066.35	0.00	2.52	92.7	0.18	4.42	51.71			2.34	56.06	1618.84	6300.97	61000	7.0	0.0
20:15						1067.24	0.00											6300.97			
20:30						1068.13	0.00											6300.97			
20:45						1069.07	0.00											6300.97			
21:00						1070.00	0.00	2.09	91.9	0.17	4.06	51.88			1.92	46.10	1620.76	6299.05	60000	7.0	
21:15						1070.89	0.00											6299.05			
21:30						1071.78	0.00											6299.05			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1					
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/01																													
21:45	369:15	11202.2	82.8	5731		38	9255		1078	22.37	22	84.28	1058.59	210		29									70	13	0.00	0.00	0.29
22:00	369:30	11205.3	82.9	5710		38	9244		1090	23.30	22	86.52	1059.49	205		28									71	12	0.00	0.00	0.29
22:15	369:45	11220.6	82.8	5837		39	9258		1055	21.20	23	81.15	1060.33	207		27									66	12	0.00	0.00	0.29
22:30	370:00	11203.3	82.8	5796		38	9249		1055	22.03	22	82.81	1061.20	208		26									71	12	0.00	0.00	0.29
22:45	370:15	11221.5	82.8	5569		38	9264		1094	22.65	23	85.36	1062.09	209		26									72	12	0.00	0.00	0.29
23:00	370:30	11201.0	82.8	5718		38	9260		1087	22.76	23	85.28	1062.97	203		27									69	12	0.00	0.00	0.29
23:15	370:45	11217.7	82.8	5649		38	9265		1115	23.14	24	86.92	1063.88	207		27									70	14	0.00	0.00	0.29
23:30	371:00	11035.3	82.8	5570		38	9257		1124	23.64	23	88.28	1064.80	208		27									74	17	0.00	0.00	0.29
23:45	371:15	11225.2	82.8	5848		39	9281		1073	21.44	23	82.24	1065.66	209		27									67	20	0.00	0.00	0.29
14/04/02																													
00:00	371:30	11207.5	82.7	5779		38	9270		1100	22.54	24	85.25	1066.54	208		27									71	26	0.00	0.00	0.29
00:15	371:45	11212.8	82.7	5566		38	9271		1105	22.77	23	85.92	1067.44	210		27									70	31	0.00	0.00	0.29
00:30	372:00	11227.9	82.7	5649		39	9278		1080	22.14	23	83.83	1068.31	211		27									70	35	0.00	0.00	0.29
00:45	372:15	11208.1	82.7	5699		38	9239		1104	22.59	23	85.61	1069.20	210		27									71	38	0.00	0.00	0.29
01:00	372:30	11189.4	82.6	5679		38	9236		1056	21.68	22	82.21	1070.06	209		27									70	40	0.00	0.00	0.29
01:15	372:45	11210.7	82.6	5662		38	9261		1093	23.22	23	86.38	1070.96	209		26									70	42	0.00	0.00	0.29
01:30	373:00	11208.1	82.6	5776		38	9238		1137	23.00	24	87.49	1071.87	211		27									75	44	0.00	0.00	0.29
01:45	373:15	11221.9	82.6	5697		38	9225		1113	22.60	23	85.93	1072.77	213		26									71	46	0.00	0.00	0.29
02:00	373:30	11202.9	82.6	5652		38	9220		1175	23.75	24	90.29	1073.71	209		26									76	47	0.00	0.00	0.29
02:15	373:45	11227.5	82.5	5716		38	9237		1083	22.12	23	83.95	1074.58	208		26									70	47	0.00	0.00	0.29
02:30	374:00	11225.2	82.5	5670		39	9238		1098	21.54	23	83.28	1075.45	206		26									70	48	0.00	0.00	0.29
02:45	374:15	11211.2	82.5	5690		38	9226		1127	22.10	24	85.40	1076.34	208		26									71	49	0.00	0.00	0.29
03:00	374:30	11207.3	82.5	5681		39	9251		1106	21.66	23	83.89	1077.21	208		27									62	42	0.00	0.00	0.29
03:15	374:45	11195.2	82.5	5778		38	9252		1150	22.63	24	87.27	1078.12	208		27									68	35	0.00	0.00	0.29
03:30	375:00	11202.8	82.5	5532		38	9248		1112	21.91	23	84.50	1079.00	207		27									66	31	0.00	0.00	0.29
03:45	375:15	11195.5	82.6	5635		38	9246		1137	22.37	24	86.20	1079.90	207		27									68	29	0.00	0.00	0.29
04:00	375:30	11184.2	82.5	5560		38	9248		1136	22.53	23	86.60	1080.80	207		27									69	27	0.00	0.00	0.29
04:15	375:45	11202.6	82.6	5771		39	9251		1094	22.67	23	85.34	1081.69	203		28									67	25	0.00	0.00	0.29
04:30	376:00	11173.0	82.5	5625		38	9212		1110	22.89	23	86.36	1082.59	208		28									69	24	0.00	0.00	0.29
04:45	376:15	11198.2	82.5	5477		38	9251		1152	22.56	24	87.20	1083.50	207		27									70	22	0.00	0.00	0.29
05:00	376:30	11199.6	82.5	5569		38	9249		1131	22.34	24	85.97	1084.39	206		27									68	18	0.00	0.00	0.29
05:15	376:45	11193.7	82.5	5689		38	9249		1118	22.70	24	86.18	1085.29	206		26									68	15	0.00	0.00	0.29
05:30	377:00	11179.5	82.5	5796		38	9244		1109	22.66	24	85.74	1086.19	207		25									68	14	0.00	0.00	0.29
05:45	377:15	11190.6	83.1	5682		38	9238		1146	23.29	24	88.28	1087.10	206		25									72	14	0.00	0.00	0.29
06:00	377:30	11192.1	83.1	5822		39	9242		1080	21.96	23	83.48	1087.97	207		25									68	13	0.00	0.00	0.29
		Daily Summary to 06:00 hrs April 02/2014																											
		DHP = 11192kpa																											
		FTP = 5822kpa																											
		SICP = 9242kpa																											
		Flow Temp = 39DegC																											
		Meter Run Temp = 23DegC																											
		Choke Size = 12.70mm																											



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P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production			Load Fluid Left			Sand %	
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job	Salinity	pH		
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
21:45						1072.65	0.00											6299.05			
22:00						1073.55	0.00	2.35	92.4	0.18	4.29	52.05			2.17	52.11	1622.94	6296.87	61000	7.0	0.0
22:15						1074.40	0.00											6296.87			
22:30						1075.26	0.00											6296.87			
22:45						1076.15	0.00											6296.87			
23:00						1077.04	0.00	1.98	91.7	0.16	3.94	52.22			1.82	43.58	1624.75	6295.06	61000	7.0	0.0
23:15						1077.95	0.00											6295.06			
23:30						1078.87	0.00											6295.06			
23:45						1079.72	0.00											6295.06			
00:00						1080.61	0.00	2.11	92.2	0.16	3.95	52.38			1.95	46.69	1626.70	6293.11	61000	7.0	0.0
00:15						1081.50	0.00											6293.11			
00:30						1082.38	0.00											6293.11			
00:45						1083.27	0.00											6293.11			
01:00						1084.13	0.00	1.72	92.9	0.12	2.93	52.51			1.60	38.35	1628.29	6291.52	61000	7.0	0.0
01:15						1085.03	0.00											6291.52			
01:30						1085.94	0.00											6291.52			
01:45						1086.83	0.00											6291.52			
02:00						1087.77	0.00	2.28	88.5	0.26	6.29	52.77			2.02	48.43	1630.31	6289.50	61000	7.0	0.0
02:15						1088.65	0.00											6289.50			
02:30						1089.52	0.00											6289.50			
02:45						1090.40	0.00											6289.50			
03:00						1091.28	0.00	1.95	91.8	0.16	3.84	52.93			1.79	42.96	1632.10	6287.71	60000	7.0	0.0
03:15						1092.19	0.00											6287.71			
03:30						1093.07	0.00											6287.71			
03:45						1093.97	0.00											6287.71			
04:00						1094.87	0.00	1.92	96.9	0.06	1.43	52.99			1.86	44.65	1633.96	6285.85	61000	7.0	0.0
04:15						1095.76	0.00											6285.85			
04:30						1096.66	0.00											6285.85			
04:45						1097.56	0.00											6285.85			
05:00						1098.46	0.00	1.68	92.3	0.13	3.10	53.12			1.55	37.22	1635.51	6284.30	61000	7.0	0.0
05:15						1099.36	0.00											6284.30			
05:30						1100.25	0.00											6284.30			
05:45						1101.17	0.00											6284.30			
06:00						1102.04	0.00	1.73	91.8	0.14	3.40	53.26			1.59	38.12	1637.10	6282.71	61000	7.0	0.0



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1					
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³	
14/04/02																													
		Gas Rate = 83.48 E3m3/Day Cumulative Gas to Flare = 1102.04 E3m3 Gas to Flare last 24hrs = 86.26 E3m3 LFTR = 7919.81m3 LFR last 24hrs = 46.31m3 TLFR = 1637.10m3 TLFLTR = 6282.71m3 Condensate Produced last 24hrs = 3.98m3 Cumulative Condensate Produced = 53.26m3 Salinity = 61000ppm ph = 7 Sand = Nil Hrs Flowed = 377.5 Hours Flared = 374.0 Surface Total = 103.99m3 Api = 63.2@15.6°C H2s = 0.45ppm CO2 = 2.0 %																											
06:15	377:45	11179.8	83.1	5740		38	9230		1115	22.94	23	86.64	1088.88	203		25									70	13	0.00	0.00	0.29
06:30	378:00	11166.3	83.1	5784		38	9234		1118	22.96	23	86.74	1089.78	203		24									72	12	0.00	0.00	0.29
06:45	378:15	11177.2	83.1	5815		38	9231		1101	22.76	23	85.81	1090.67	204		25									71	12	0.00	0.00	0.29
07:00	378:30	11168.8	83.1	5669		38	9216		1150	23.29	24	88.52	1091.60	204		26									73	11	0.00	0.00	0.29
07:15	378:45	11179.8	83.1	5614		38	9232		1118	22.78	23	86.44	1092.50	204		27									71	11	0.00	0.00	0.29
07:30	379:00	11170.0	83.1	5617		38	9213		1150	22.49	24	86.98	1093.40	203		27									70	11	0.00	0.00	0.29
07:45	379:15	11191.1	83.1	5653		38	9234		1120	23.15	23	87.22	1094.31	207		26									71	11	0.00	0.00	0.29
08:00	379:30	11192.6	83.1	5797		38	9233		1158	22.06	24	86.37	1095.21	203		26									71	10	0.00	0.00	0.29
08:15	379:45	11173.0	83.1	5733		38	9235		1066	21.64	23	82.42	1096.07	204		25									69	10	0.00	0.00	0.29
08:30	380:00	11174.6	83.1	5628		38	9228		1116	22.04	24	84.88	1096.95	205		25									70	9	0.00	0.00	0.29
08:45	380:15	11135.2	83.1	5681		38	9209		1131	22.89	23	87.19	1097.86	206		24									75	9	0.00	0.00	0.29
09:00	380:30	11170.5	83.2	5786		38	9232		1142	22.74	24	87.06	1098.77	205		24									73	9	0.00	0.00	0.29
09:15	380:45	11124.8	83.2	5642		38	9217		1142	22.92	24	87.52	1099.68	206		23									76	9	0.00	0.00	0.29
09:30	381:00	11140.1	83.3	5674		37	9204		1091	22.84	22	85.67	1100.57	206		23									77	10	0.00	0.00	0.29
09:45	381:15	11136.2	83.3	5738		38	9212		1093	22.56	22	85.27	1101.46	208		24									72	9	0.00	0.00	0.29
10:00	381:30	11131.6	83.3	5761		38	9220		1085	22.43	22	84.70	1102.34	204		25									69	9	0.00	0.00	0.29
10:15	381:45	11136.9	83.4	5665		37	9211		1111	23.56	23	87.72	1103.26	209		25									76	10	0.00	0.00	0.29
10:30	382:00	11170.3	83.4	5681		38	9217		1089	22.91	23	85.58	1104.15	206		25									70	10	0.00	0.00	0.29
10:45	382:15	11171.3	83.5	5692		38	9211		1078	22.76	22	85.01	1105.03	209		26									71	10	0.00	0.00	0.29
11:00	382:30	11141.8	83.5	5829		38	9199		1086	22.92	23	85.62	1105.93	209		26									70	10	0.00	0.00	0.29
11:15	382:45	11145.1	83.5	5879		38	9220		1067	22.42	22	83.99	1106.80	208		26									69	11	0.00	0.00	0.29
11:30	383:00	11132.6	83.5	5731		38	9224		1110	22.11	24	84.71	1107.68	209		26									67	11	0.00	0.00	0.29
11:45	383:15	11109.5	83.5	5824		38	9204		1062	22.18	23	83.26	1108.55	207		26									69	11	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:	Tight Hole
Pool or Zone:	Tight Hole
Field or Area:	Norman Wells
Test Start:	17 Mar 2014
Test End:	9 Apr 2014
Wft Job #:	4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left	Salinity	pH	Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job				
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:15						1102.94	0.00											6282.71			
06:30						1103.85	0.00											6282.71			
06:45						1104.74	0.00											6282.71			
07:00						1105.66	0.00	1.91	91.2	0.17	4.03	53.43			1.74	41.81	1638.84	6280.97	60000	7.0	0.0
07:15						1106.56	0.00											6280.97			
07:30						1107.47	0.00											6280.97			
07:45						1108.38	0.00											6280.97			
08:00						1109.28	0.00	1.95	92.2	0.15	3.65	53.58			1.80	43.15	1640.64	6279.17	62000	7.0	0.0
08:15						1110.14	0.00											6279.17			
08:30						1111.02	0.00											6279.17			
08:45						1111.93	0.00											6279.17			
09:00						1112.83	0.00	1.71	91.7	0.14	3.41	53.72			1.57	37.63	1642.21	6277.60	62000	7.0	0.0
09:15						1113.75	0.00											6277.60			
09:30						1114.64	0.00											6277.60			
09:45						1115.53	0.00											6277.60			
10:00						1116.41	0.00	1.85	92.3	0.14	3.42	53.86			1.71	40.98	1643.92	6275.89	62000	7.0	0.0
10:15						1117.32	0.00											6275.89			
10:30						1118.21	0.00											6275.89			
10:45						1119.10	0.00											6275.89			
11:00						1119.99	0.00	1.91	90.7	0.18	4.26	54.04			1.73	41.58	1645.65	6274.16	62000	7.0	0.0
11:15						1120.87	0.00											6274.16			
11:30						1121.75	0.00											6274.16			
11:45						1122.62	0.00											6274.16			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/02																												
12:00	383:30	11132.5	83.5	5837		38	9214		1052	21.70	23	82.06	1109.40	208		25								68	11	0.00	0.00	0.29
12:15	383:45	11119.2	83.5	5714		38	9207		1097	22.50	24	85.06	1110.29	207		24								70	11	0.00	0.00	0.29
12:30	384:00	11109.9	83.6	5701		38	9212		1080	22.47	23	84.46	1111.17	208		24								70	11	0.00	0.00	0.29
12:45	384:15	11094.5	83.6	5671		38	9187		1096	23.10	23	86.26	1112.07	209		23								69	11	0.00	0.00	0.29
13:00	384:30	11094.4	83.6	5734		38	9202		1091	22.82	22	85.67	1112.96	208		22								71	11	0.00	0.00	0.29
13:15	384:45	11092.1	83.6	5781		38	9182		1070	22.23	23	83.68	1113.83	207		23								72	11	0.00	0.00	0.29
13:30	385:00	11117.9	83.6	5750		38	9191		1081	22.63	22	84.89	1114.72	209		23								71	10	0.00	0.00	0.29
13:45	385:15	11107.0	83.1	5842		38	9192		1083	22.87	23	85.43	1115.61	208		23								73	11	0.00	0.00	0.29
14:00	385:30	11123.3	83.1	5777		38	9208		1088	22.86	24	85.43	1116.50	208		24								70	11	0.00	0.00	0.29
14:15	385:45	11102.0	83.1	5752		38	9198		1103	23.15	23	86.55	1117.40	205		24								68	11	0.00	0.00	0.29
14:30	386:00	11081.7	83.2	5587		37	9172		1148	25.04	23	91.77	1118.35	210		23								75	10	0.00	0.00	0.29
14:45	386:15	11090.5	83.2	5819		38	9185		1089	22.98	23	85.85	1119.25	211		22								72	10	0.00	0.00	0.29
15:00	386:30	11104.3	83.2	5654		38	9189		1063	22.43	22	83.85	1120.12	208		23								68	10	0.00	0.00	0.29
15:15	386:45	11108.5	83.2	5664		38	9169		1092	22.89	23	85.64	1121.01	210		24								70	10	0.00	0.00	0.29
15:30	387:00	11088.8	83.2	5550		37	9163		1134	23.68	24	88.68	1121.94	207		24								73	10	0.00	0.00	0.29
15:45	387:15	11115.3	83.2	5877		38	9207		1079	22.45	23	84.35	1122.82	206		24								68	10	0.00	0.00	0.29
16:00	387:30	11089.9	83.2	5545		37	9171		1130	23.97	23	89.13	1123.75	206		23								74	10	0.00	0.00	0.29
16:15	387:45	11079.4	83.2	5619		37	9180		1127	23.02	23	87.23	1124.65	210		23								72	10	0.00	0.00	0.29
16:30	388:00	11066.5	83.2	5648		38	9165		1102	22.29	23	85.01	1125.54	208		23								71	10	0.00	0.00	0.29
16:45	388:15	11086.3	83.2	5700		38	9176		1035	22.32	22	82.65	1126.40	207		21								69	10	0.00	0.00	0.29
17:00	388:30	11091.1	83.2	5677		38	9184		1034	22.11	22	82.16	1127.26	208		20								69	10	0.00	0.00	0.29
17:15	388:45	11066.6	83.2	5683		38	9155		1094	22.48	23	84.99	1128.14	208		19								70	10	0.00	0.00	0.29
17:30	389:00	11094.9	83.2	5890		38	9197		1085	21.97	23	83.77	1129.01	206		18								68	10	0.00	0.00	0.29
17:45	389:15	11100.8	83.3	5817		38	9197		1075	22.58	22	84.60	1129.90	207		19								71	10	0.00	0.00	0.29
18:00	389:30	11075.9	83.3	5758		37	9168		1142	23.90	24	89.35	1130.83	208		19								70	10	0.00	0.00	0.29
18:15	389:45	11057.9	83.2	5582		37	9169		1103	23.25	23	86.84	1131.73	207		19								71	9	0.00	0.00	0.29
18:30	390:00	11024.4	83.3	5427		37	9152		1124	24.65	23	90.26	1132.67	208		18								75	9	0.00	0.00	0.29
18:45	390:15	11061.3	83.3	5644		37	9177		1076	22.53	22	84.59	1133.55	207		17								71	9	0.00	0.00	0.29
19:00	390:30	11060.1	83.3	5656		38	9154		1058	22.31	22	83.46	1134.42	206		16								69	9	0.00	0.00	0.29
19:15	390:45	11069.7	83.3	5635		37	9157		1067	22.55	22	84.29	1135.30	207		15								68	8	0.00	0.00	0.29
19:30	391:00	11081.8	83.3	5819		38	9173		1060	22.29	22	83.61	1136.17	207		14								69	8	0.00	0.00	0.29
19:45	391:15	11066.4	83.2	5776		37	9159		1084	22.62	22	85.00	1137.06	204		14								69	8	0.00	0.00	0.29
20:00	391:30	11046.2	83.2	5516		37	9155		1110	24.09	22	88.75	1137.98	204		13								74	7	0.00	0.00	0.29
20:15	391:45	11076.7	83.2	5625		37	9167		1080	23.27	22	86.07	1138.88	206		13								71	7	0.00	0.00	0.29
20:30	392:00	11060.5	83.1	5705		38	9166		1045	22.42	22	83.25	1139.74	205		13								67	7	0.00	0.00	0.29
20:45	392:15	11043.3	83.1	5670		38	9168		1069	22.85	22	84.87	1140.63	202		12								69	6	0.00	0.00	0.29
21:00	392:30	11064.1	83.1	5616		38	9181		1144	22.11	23	86.09	1141.52	204		13								70	7	0.00	0.00	0.29
21:15	392:45	11051.5	83.1	5586		37	9173		1067	22.38	22	83.95	1142.40	206		16								69	7	0.00	0.00	0.29
21:30	393:00	11061.7	83.0	5660		38	9166		1113	22.31	22	85.49	1143.29	202		19								71	7	0.00	0.00	0.29
21:45	393:15	11050.6	83.0	5567		38	9165		1155	22.75	23	87.77	1144.20	202		19								71	8	0.00	0.00	0.29
22:00	393:30	11052.9	83.0	5530		37	9147		1148	23.02	23	88.02	1145.12	203		19								73	8	0.00	0.00	0.29
22:15	393:45	11055.9	83.2	5643		38	9160		1105	22.26	23	85.00	1146.01	204		22								69	14	0.00	0.00	0.29



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P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
12:00						1123.47	0.00	2.07	91.2	0.18	4.37	54.22			1.89	45.32	1647.54	6272.27	60000	7.0	0.0
12:15						1124.36	0.00											6272.27			
12:30						1125.24	0.00											6272.27			
12:45						1126.13	0.00											6272.27			
13:00						1127.03	0.00	1.90	94.1	0.11	2.69	54.33			1.79	42.91	1649.33	6270.48	60000	7.0	0.0
13:15						1127.90	0.00											6270.48			
13:30						1128.78	0.00											6270.48			
13:45						1129.67	0.00											6270.48			
14:00						1130.56	0.00	2.06	91.9	0.17	4.00	54.50			1.89	45.44	1651.22	6268.59	59000	7.0	0.0
14:15						1131.46	0.00											6268.59			
14:30						1132.42	0.00											6268.59			
14:45						1133.31	0.00											6268.59			
15:00						1134.19	0.00	2.16	92.0	0.17	4.15	54.67			1.99	47.69	1653.21	6266.60	59000	7.0	0.0
15:15						1135.08	0.00											6266.60			
15:30						1136.00	0.00											6266.60			
15:45						1136.88	0.00											6266.60			
16:00						1137.81	0.00	2.06	92.0	0.16	3.96	54.84			1.90	45.48	1655.10	6264.71	59000	7.0	0.0
16:15						1138.72	0.00											6264.71			
16:30						1139.61	0.00											6264.71			
16:45						1140.47	0.00											6264.71			
17:00						1141.32	0.00	1.57	92.3	0.12	2.90	54.96			1.45	34.78	1656.55	6263.26	62000	7.0	0.0
17:15						1142.21	0.00											6263.26			
17:30						1143.08	0.00											6263.26			
17:45						1143.96	0.00											6263.26			
18:00						1144.89	0.00	1.73	91.9	0.14	3.36	55.10			1.59	38.16	1658.14	6261.67	62000	7.0	0.0
18:15						1145.80	0.00											6261.67			
18:30						1146.74	0.00											6261.67			
18:45						1147.62	0.00											6261.67			
19:00						1148.49	0.00	2.04	92.2	0.16	3.82	55.26			1.88	45.14	1660.02	6259.79	62000	7.0	0.0
19:15						1149.37	0.00											6259.79			
19:30						1150.24	0.00											6259.79			
19:45						1151.12	0.00											6259.79			
20:00						1152.05	0.00	2.01	92.1	0.16	3.81	55.42			1.85	44.43	1661.87	6257.94	60000	7.0	0.0
20:15						1152.94	0.00											6257.94			
20:30						1153.81	0.00											6257.94			
20:45						1154.69	0.00											6257.94			
21:00						1155.59	0.00	2.07	91.8	0.17	4.07	55.59			1.90	45.61	1663.77	6256.04	62000	7.0	0.0
21:15						1156.47	0.00											6256.04			
21:30						1157.36	0.00											6256.04			
21:45						1158.27	0.00											6256.04			
22:00						1159.19	0.00	2.22	91.2	0.20	4.69	55.78			2.02	48.59	1665.80	6254.01	61000	7.0	0.0
22:15						1160.07	0.00											6254.01			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1					
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/02																													
22:30	394:00	11059.0	83.1	5512		37	9152		1064	22.78	22	84.67	1146.89	200		24									71	26	0.00	0.00	0.29
22:45	394:15	11050.4	83.1	5559		37	9146		1159	23.74	23	89.86	1147.82	200		25									74	34	0.00	0.00	0.29
23:00	394:30	11045.5	83.1	5556		37	9154		1142	23.40	23	88.53	1148.75	200		26									70	39	0.00	0.00	0.29
23:15	394:45	11078.9	83.1	5729		38	9166		1123	21.98	23	85.05	1149.63	200		27									68	43	0.00	0.00	0.29
23:30	395:00	11062.3	83.1	5646		38	9144		1091	22.22	22	84.54	1150.51	201		26									69	45	0.00	0.00	0.29
23:45	395:15	11057.0	83.1	5602		37	9157		1130	22.76	23	86.91	1151.42	201		23									70	48	0.00	0.00	0.29
14/04/03																													
00:00	395:30	11054.0	83.1	5650		37	9150		1139	22.86	23	87.39	1152.33	202		22									71	49	0.00	0.00	0.29
00:15	395:45	11048.5	83.1	5556		37	9152		1081	21.90	22	83.58	1153.20	200		23									68	50	0.00	0.00	0.29
00:30	396:00	11043.6	83.1	5590		38	9152		1094	22.11	22	84.41	1154.08	201		23									69	51	0.00	0.00	0.29
00:45	396:15	11030.3	83.1	5462		37	9124		1136	23.65	22	88.96	1155.01	198		23									72	51	0.00	0.00	0.29
01:00	396:30	11053.8	83.0	5511		37	9161		1074	22.38	22	84.21	1155.88	199		24									69	53	0.00	0.00	0.29
01:15	396:45	11028.9	83.0	5550		38	9143		1092	22.24	22	84.63	1156.76	197		21									69	54	0.00	0.00	0.29
01:30	397:00	11051.4	83.0	5546		37	9138		1105	22.59	22	85.72	1157.66	200		20									70	56	0.00	0.00	0.29
01:45	397:15	11036.2	83.0	5563		37	9116		1111	22.66	22	86.17	1158.55	199		21									71	57	0.00	0.00	0.29
02:00	397:30	11033.8	83.0	5542		37	9133		1093	22.39	22	85.03	1159.44	200		20									68	55	0.00	0.00	0.29
02:15	397:45	11049.9	83.0	5701		37	9143		1046	21.76	22	82.07	1160.30	200		21									62	45	0.00	0.00	0.29
02:30	398:00	11023.0	83.0	5691		37	9133		1114	22.73	23	86.30	1161.19	198		19									62	35	0.00	0.00	0.29
02:45	398:15	11045.2	83.0	5510		37	9130		1115	22.64	22	86.24	1162.09	201		20									65	28	0.00	0.00	0.29
03:00	398:30	11041.5	83.0	5702		37	9137		1081	22.16	22	84.14	1162.97	199		21									64	24	0.00	0.00	0.29
03:15	398:45	11023.3	83.0	5456		37	9127		1111	22.47	23	85.72	1163.86	200		23									68	22	0.00	0.00	0.29
03:30	399:00	11032.9	83.0	5501		37	9140		1061	21.76	21	82.70	1164.72	199		23									67	21	0.00	0.00	0.29
03:45	399:15	11054.6	83.0	5639		37	9142		1109	22.42	23	85.53	1165.61	197		24									68	20	0.00	0.00	0.29
04:00	399:30	11027.4	83.0	5594		37	9128		1100	22.14	22	84.75	1166.50	200		24									70	21	0.00	0.00	0.29
04:15	399:45	11024.3	83.0	5616		38	9128		1091	21.93	22	83.98	1167.37	198		22									67	22	0.00	0.00	0.29
04:30	400:00	11023.3	82.9	5545		37	9136		1134	22.70	23	86.95	1168.28	197		22									69	20	0.00	0.00	0.29
04:45	400:15	11035.3	82.9	5704		38	9132		1136	22.61	23	86.80	1169.18	197		24									71	27	0.00	0.00	0.29
05:00	400:30	11044.0	82.9	5591		38	9148		1113	22.36	23	85.47	1170.07	198		22									69	35	0.00	0.00	0.29
05:15	400:45	11043.0	82.9	5529		37	9136		1144	22.78	23	87.40	1170.98	197		23									70	37	0.00	0.00	0.29
05:30	401:00	11030.2	82.9	5602		38	9146		1095	22.08	23	84.32	1171.86	199		23									65	33	0.00	0.00	0.29
05:45	401:15	11018.1	82.9	5476		38	9137		1128	22.54	23	86.42	1172.76	197		24									67	30	0.00	0.00	0.29
06:00	401:30	11032.3	82.9	5659		38	9139		1096	21.91	22	84.10	1173.64	200		24									63	28	0.00	0.00	0.29
Daily Summary to 06:00 hrs April 03/2014																													
DHP = 11032kpa																													
FTP = 5659kpa																													
SICP = 9139kpa																													
Flow Temp = 38DegC																													
Meter Run Temp = 22DegC																													
Choke Size = 12.70mm																													
Gas Rate = 84.10 E³m³/Day																													
Cumulative Gas to Flare = 1187.70 E³m³																													
Gas to Flare last 24hrs = 85.66 E³m³																													



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
22:30						1160.95	0.00											6254.01			
22:45						1161.89	0.00											6254.01			
23:00						1162.81	0.00	1.90	92.1	0.15	3.60	55.93			1.75	42.00	1667.55	6252.26	61000	7.0	0.0
23:15						1163.70	0.00											6252.26			
23:30						1164.58	0.00											6252.26			
23:45						1165.48	0.00											6252.26			
00:00						1166.40	0.00	2.01	91.4	0.17	4.15	56.11			1.84	44.08	1669.38	6250.43	61000	7.0	0.0
00:15						1167.27	0.00											6250.43			
00:30						1168.14	0.00											6250.43			
00:45						1169.07	0.00											6250.43			
01:00						1169.95	0.00	1.83	92.2	0.14	3.43	56.25			1.69	40.50	1671.07	6248.74	61000	7.0	0.0
01:15						1170.83	0.00											6248.74			
01:30						1171.72	0.00											6248.74			
01:45						1172.62	0.00											6248.74			
02:00						1173.51	0.00	1.98	91.9	0.16	3.85	56.41			1.82	43.67	1672.89	6246.92	62000	7.0	0.0
02:15						1174.36	0.00											6246.92			
02:30						1175.26	0.00											6246.92			
02:45						1176.16	0.00											6246.92			
03:00						1177.03	0.00	1.91	91.9	0.15	3.71	56.56			1.76	42.13	1674.65	6245.16	62000	7.0	0.0
03:15						1177.93	0.00											6245.16			
03:30						1178.79	0.00											6245.16			
03:45						1179.68	0.00											6245.16			
04:00						1180.56	0.00	1.96	91.5	0.17	4.00	56.73			1.79	43.04	1676.44	6243.37	62000	7.0	0.0
04:15						1181.44	0.00											6243.37			
04:30						1182.34	0.00											6243.37			
04:45						1183.25	0.00											6243.37			
05:00						1184.14	0.00	2.31	94.2	0.13	3.22	56.86			2.18	52.22	1678.62	6241.19	62000	7.0	0.0
05:15						1185.05	0.00											6241.19			
05:30						1185.93	0.00											6241.19			
05:45						1186.83	0.00											6241.19			
06:00						1187.70	0.00	1.67	92.6	0.12	2.97	56.99			1.55	37.11	1680.16	6239.65	62000	7.0	0.0



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1					
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4	
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³	
14/04/03																													
		LFTR = 7919.81m3 LFR last 24hrs = 43.06m3 TLFR = 1680.16m3 TLFLTR = 6239.65m3 Condensate Produced last 24hrs = 3.73m3 Cumulative Condensate Produced = 56.99m3 Salinity = 62000ppm ph = 7 Sand = Nil Hrs Flowed = 401.5 Hours Flared = 398 Surface Total = 100.78m3 Api = 63.2@15.6°C H2s = 0.50ppm CO2 = 1.20 %																											
06:15	401:45	11047.5	83.2	5660		39	9152		1114	21.62	24	83.94	1174.51	199		23									62	26	0.00	0.00	0.29
06:30	402:00	11029.1	83.2	5557		38	9135		1142	21.92	23	85.61	1175.40	198		24									67	25	0.00	0.00	0.29
06:45	402:15	11034.9	83.2	5692		38	9145		1096	21.24	23	82.65	1176.26	199		22									64	23	0.00	0.00	0.29
07:00	402:30	11017.4	83.2	5571		38	9117		1088	22.66	24	85.06	1177.15	202		22									66	22	0.00	0.00	0.29
07:15	402:45	11014.1	83.1	5524		38	9104		1133	23.34	24	87.95	1178.07	201		23									69	21	0.00	0.00	0.29
07:30	403:00	11027.3	83.2	5579		38	9126		1106	22.76	23	85.92	1178.96	200		24									67	21	0.00	0.00	0.29
07:45	403:15	11017.9	83.2	5496		38	9105		1155	22.47	24	87.02	1179.87	199		24									68	20	0.00	0.00	0.29
08:00	403:30	11007.7	83.2	5588		38	9112		1117	22.32	23	85.58	1180.76	201		24									70	19	0.00	0.00	0.29
08:15	403:45	11010.5	83.1	5505		38	9091		1076	22.56	23	84.51	1181.64	199		24									67	18	0.00	0.00	0.29
08:30	404:00	11014.9	83.2	5593		38	9116		1087	22.59	24	84.89	1182.52	201		24									68	17	0.00	0.00	0.29
08:45	404:15	11016.6	83.2	5488		37	9093		1105	23.45	23	87.34	1183.43	202		23									71	17	0.00	0.00	0.29
09:00	404:30	11004.4	83.2	5555		38	9107		1066	22.50	22	84.11	1184.31	201		22									67	15	0.00	0.00	0.29
09:15	404:45	10993.6	83.2	5602		37	9101		1026	20.53	22	79.00	1185.13	201		21									69	14	0.00	0.00	0.29
09:30	405:00	11005.4	83.3	5550		37	9099		1114	23.98	23	88.57	1186.06	198		20									71	13	0.00	0.00	0.29
09:45	405:15	11021.6	83.3	5787		38	9119		1128	22.72	24	86.60	1186.96	200		20									71	13	0.00	0.00	0.29
10:00	405:30	10977.7	83.3	5703		38	9085		1114	22.02	23	84.92	1187.84	198		19									69	12	0.00	0.00	0.29
10:15	405:45	11006.5	83.4	5673		38	9113		1078	22.08	22	83.77	1188.72	199		18									69	12	0.00	0.00	0.29
10:30	406:00	10996.3	83.4	5527		37	9096		1107	22.73	23	86.00	1189.61	201		18									70	12	0.00	0.00	0.29
10:45	406:15	10980.5	83.4	5519		37	9090		1121	23.08	22	87.33	1190.52	199		17									72	11	0.00	0.00	0.29
11:00	406:30	10991.5	83.4	5760		38	9097		1092	22.50	23	85.00	1191.41	200		16									66	11	0.00	0.00	0.29
11:15	406:45	10972.6	83.4	5554		37	9073		1059	22.83	22	84.54	1192.29	199		15									69	11	0.00	0.00	0.29
11:30	407:00	10973.5	83.4	5857		38	9103		1056	21.34	22	81.56	1193.14	198		15									64	10	0.00	0.00	0.29
11:45	407:15	10960.8	83.5	5527		37	9064		1131	24.51	22	90.29	1194.08	198		14									73	10	0.00	0.00	0.29
12:00	407:30	10967.5	83.5	5631		37	9075		1086	22.38	22	84.63	1194.96	201		14									67	10	0.00	0.00	0.29
12:15	407:45	10983.8	83.5	5616		37	9075		1127	23.38	23	87.98	1195.88	198		14									71	10	0.00	0.00	0.29
12:30	408:00	10986.3	83.5	5697		38	9086		1125	22.99	23	87.07	1196.78	197		15									69	10	0.00	0.00	0.29
12:45	408:15	10960.5	83.5	5684		38	9084		1104	22.25	23	84.98	1197.67	197		15									68	10	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:15						1188.58	0.00											6239.65			
06:30						1189.47	0.00											6239.65			
06:45						1190.33	0.00											6239.65			
07:00						1191.22	0.00	2.12	91.3	0.18	4.43	57.17			1.94	46.44	1682.10	6237.71	62000	7.0	0.0
07:15						1192.13	0.00											6237.71			
07:30						1193.03	0.00											6237.71			
07:45						1193.93	0.00											6237.71			
08:00						1194.83	0.00	2.37	91.7	0.20	4.72	57.37			2.17	52.16	1684.27	6235.54	62000	7.0	0.0
08:15						1195.71	0.00											6235.54			
08:30						1196.59	0.00											6235.54			
08:45						1197.50	0.00											6235.54			
09:00						1198.38	0.00	2.26	92.3	0.17	4.18	57.54			2.09	50.06	1686.36	6233.45	61000	7.0	0.0
09:15						1199.20	0.00											6233.45			
09:30						1200.12	0.00											6233.45			
09:45						1201.02	0.00											6233.45			
10:00						1201.91	0.00	2.26	91.7	0.19	4.50	57.73			2.07	49.74	1688.43	6231.38	61000	7.0	0.0
10:15						1202.78	0.00											6231.38			
10:30						1203.68	0.00											6231.38			
10:45						1204.59	0.00											6231.38			
11:00						1205.47	0.00	1.85	92.3	0.14	3.42	57.87			1.71	40.98	1690.14	6229.67	61000	7.0	0.0
11:15						1206.35	0.00											6229.67			
11:30						1207.20	0.00											6229.67			
11:45						1208.14	0.00											6229.67			
12:00						1209.02	0.00	1.90	91.6	0.16	3.83	58.03			1.74	41.77	1691.88	6227.93	61000	7.0	0.0
12:15						1209.94	0.00											6227.93			
12:30						1210.85	0.00											6227.93			
12:45						1211.73	0.00											6227.93			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/03																												
13:00	408:30	10970.4	83.6	5660		38	9094		1065	22.26	22	83.63	1198.54	197		15								69	10	0.00	0.00	0.29
13:15	408:45	10960.6	83.6	5533		37	9077		1110	23.23	23	87.04	1199.44	197		15								71	10	0.00	0.00	0.29
13:30	409:00	10978.0	83.6	5624		37	9090		1101	23.14	22	86.61	1200.35	197		15								71	10	0.00	0.00	0.29
13:45	409:15	10963.9	83.7	5660		38	9079		1090	21.85	23	83.71	1201.22	201		14								66	10	0.00	0.00	0.29
14:00	409:30	10961.0	83.7	5748		37	9075		1052	22.16	22	83.04	1202.08	199		14								67	10	0.00	0.00	0.29
14:15	409:45	10970.4	83.6	5700		38	9058		1063	22.25	23	83.50	1202.95	199		14								68	10	0.00	0.00	0.29
14:30	410:00	10957.5	83.7	5471		37	9067		1094	22.92	22	85.96	1203.85	197		14								71	10	0.00	0.00	0.29
14:45	410:15	10959.6	83.7	5592		37	9070		1082	22.67	22	85.05	1204.74	198		14								69	10	0.00	0.00	0.29
15:00	410:30	10910.3	83.7	5499		37	9036		1093	22.73	22	85.54	1205.63	197		14								71	10	0.00	0.00	0.29
15:15	410:45	10954.4	83.2	5586		38	9064		1070	22.23	23	83.71	1206.50	198		14								66	10	0.00	0.00	0.29
15:30	411:00	10950.2	83.3	5687		38	9066		1044	22.24	23	82.76	1207.36	199		14								69	10	0.00	0.00	0.29
15:45	411:15	10937.9	83.3	5531		37	9070		1055	22.49	23	83.59	1208.23	197		14								67	10	0.00	0.00	0.29
16:00	411:30	10909.5	83.3	5670		38	9054		1102	23.50	22	87.36	1209.14	200		15								72	10	0.00	0.00	0.29
16:15	411:45	10928.2	83.3	5670		38	9078		1038	21.46	22	81.12	1209.99	199		14								68	10	0.00	0.00	0.29
16:30	412:00	10934.5	83.3	5515		38	9058		1080	22.52	23	84.63	1210.87	199		13								70	10	0.00	0.00	0.29
16:45	412:15	10914.1	83.4	5544		37	9052		1118	22.99	23	86.88	1211.77	198		14								72	10	0.00	0.00	0.29
17:00	412:30	10920.5	83.4	5443		37	9046		1127	23.56	23	88.23	1212.69	198		14								73	10	0.00	0.00	0.29
17:15	412:45	10934.5	83.3	5506		37	9055		1093	22.69	23	85.42	1213.58	198		14								71	10	0.00	0.00	0.29
17:30	413:00	10941.0	83.3	5528		38	9069		1121	23.30	24	87.47	1214.49	198		14								70	10	0.00	0.00	0.29
17:45	413:15	10951.6	83.4	5583		38	9084		1081	22.29	24	84.09	1215.37	201		15								67	10	0.00	0.00	0.29
18:00	413:30	10922.1	83.4	5504		38	9072		1083	22.29	23	84.25	1216.25	198		15								69	10	0.00	0.00	0.29
18:15	413:45	10945.0	83.3	5728		38	9075		1138	21.69	25	84.79	1217.13	201		16								64	11	0.00	0.00	0.29
18:30	414:00	10926.4	83.3	5777		38	9068		1051	21.93	23	82.37	1217.99	198		16								67	11	0.00	0.00	0.29
18:45	414:15	10929.2	83.3	5685		38	9066		1108	22.94	24	86.27	1218.89	201		16								69	11	0.00	0.00	0.29
19:00	414:30	10907.1	83.3	5571		38	9066		1078	22.26	23	83.96	1219.76	203		16								67	11	0.00	0.00	0.29
19:15	414:45	10938.8	83.3	5593		38	9072		1048	21.61	23	81.67	1220.61	202		16								65	11	0.00	0.00	0.29
19:30	415:00	10931.9	83.3	5680		38	9070		1094	22.03	24	83.98	1221.49	201		16								65	11	0.00	0.00	0.29
19:45	415:15	10926.5	83.3	5482		37	9064		1084	22.36	23	84.37	1222.36	201		16								66	11	0.00	0.00	0.29
20:00	415:30	10929.5	83.4	5544		37	9054		1093	22.57	23	85.12	1223.25	203		16								71	11	0.00	0.00	0.29
20:15	415:45	10911.3	83.3	5665		38	9068		1069	21.23	24	81.53	1224.10	203		16								62	11	0.00	0.00	0.29
20:30	416:00	10899.5	83.3	5663		38	9046		1053	22.15	23	82.89	1224.96	204		15								66	11	0.00	0.00	0.29
20:45	416:15	10886.4	83.3	5556		38	9041		1071	22.59	23	84.35	1225.84	203		14								69	11	0.00	0.00	0.29
21:00	416:30	10904.1	83.2	5596		38	9049		1048	22.27	22	83.04	1226.71	204		13								69	10	0.00	0.00	0.29
21:15	416:45	10924.7	83.2	5609		38	9047		1097	23.14	24	86.28	1227.61	203		12								69	10	0.00	0.00	0.29
21:30	417:00	10912.7	83.2	5678		38	9040		1081	22.08	24	83.58	1228.48	206		11								67	10	0.00	0.00	0.29
21:45	417:15	10904.0	83.1	5495		38	9037		1110	22.52	23	85.63	1229.37	204		10								71	10	0.00	0.00	0.29
22:00	417:30	10897.0	83.1	5579		38	9041		1109	22.73	24	85.95	1230.26	207		10								70	10	0.00	0.00	0.29
22:15	417:45	10886.1	83.1	5468		37	9018		1103	23.70	23	87.67	1231.18	205		10								72	10	0.00	0.00	0.29
22:30	418:00	10880.1	83.0	5349		37	9013		1069	22.85	22	84.92	1232.06	206		10								69	9	0.00	0.00	0.29
22:45	418:15	10923.8	83.0	5725		38	9048		1042	20.81	23	79.97	1232.90	205		12								64	9	0.00	0.00	0.29
23:00	418:30	10920.6	83.0	5644		38	9020		1068	20.69	23	80.61	1233.74	206		12								62	9	0.00	0.00	0.29
23:15	418:45	10915.3	83.0	5602		38	9041		1070	21.57	23	82.44	1234.59	206		13								67	9	0.00	0.00	0.29



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Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
	hh:mm kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
13:00						1212.60	0.00	2.18	92.5	0.16	3.92	58.20			2.02	48.40	1693.89	6225.92	60000	7.0	0.0
13:15						1213.51	0.00											6225.92			
13:30						1214.41	0.00											6225.92			
13:45						1215.29	0.00											6225.92			
14:00						1216.15	0.00	1.76	91.7	0.15	3.51	58.34			1.61	38.73	1695.51	6224.30	60000	7.0	0.0
14:15						1217.02	0.00											6224.30			
14:30						1217.92	0.00											6224.30			
14:45						1218.80	0.00											6224.30			
15:00						1219.69	0.00	2.05	91.9	0.17	3.99	58.51			1.88	45.21	1697.39	6222.42	60000	7.0	0.0
15:15						1220.56	0.00											6222.42			
15:30						1221.43	0.00											6222.42			
15:45						1222.30	0.00											6222.42			
16:00						1223.21	0.00	1.97	91.3	0.17	4.11	58.68			1.80	43.17	1699.19	6220.62	60000	7.0	0.0
16:15						1224.05	0.00											6220.62			
16:30						1224.93	0.00											6220.62			
16:45						1225.84	0.00											6220.62			
17:00						1226.76	0.00	2.06	92.5	0.15	3.71	58.83			1.91	45.73	1701.10	6218.71	60000	7.0	0.0
17:15						1227.65	0.00											6218.71			
17:30						1228.56	0.00											6218.71			
17:45						1229.43	0.00											6218.71			
18:00						1230.31	0.00	2.05	92.0	0.16	3.94	59.00			1.89	45.26	1702.98	6216.83	60000	7.0	0.0
18:15						1231.20	0.00											6216.83			
18:30						1232.05	0.00											6216.83			
18:45						1232.95	0.00											6216.83			
19:00						1233.83	0.00	2.22	92.4	0.17	4.05	59.17			2.05	49.23	1705.03	6214.78	60000	7.0	0.0
19:15						1234.68	0.00											6214.78			
19:30						1235.55	0.00											6214.78			
19:45						1236.43	0.00											6214.78			
20:00						1237.32	0.00	1.72	95.1	0.08	2.02	59.25			1.64	39.26	1706.67	6213.14	61000	7.0	0.0
20:15						1238.17	0.00											6213.14			
20:30						1239.03	0.00											6213.14			
20:45						1239.91	0.00											6213.14			
21:00						1240.77	0.00	1.97	94.0	0.12	2.84	59.37			1.85	44.44	1708.52	6211.29	62000	7.0	0.0
21:15						1241.67	0.00											6211.29			
21:30						1242.54	0.00											6211.29			
21:45						1243.44	0.00											6211.29			
22:00						1244.33	0.00	2.00	93.2	0.14	3.26	59.51			1.86	44.74	1710.38	6209.43	62000	7.0	0.0
22:15						1245.24	0.00											6209.43			
22:30						1246.13	0.00											6209.43			
22:45						1246.96	0.00											6209.43			
23:00						1247.80	0.00	1.62	93.0	0.11	2.72	59.62			1.51	36.16	1711.89	6207.92	61000	7.0	0.0
23:15						1248.66	0.00											6207.92			



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P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/03																												
23:30	419:00	10911.1	82.9	5683		38	9044		1058	21.64	22	82.24	1235.45	206		17								65	10	0.00	0.00	0.29
23:45	419:15	10888.2	82.9	5699		37	9040		1093	22.15	23	84.36	1236.33	207		19								71	10	0.00	0.00	0.29
14/04/04																												
00:00	419:30	10885.8	82.9	5422		37	9036		1113	22.46	23	85.63	1237.22	206		19								72	11	0.00	0.00	0.29
00:15	419:45	10952.3	82.8	5483		37	9024		1088	22.15	23	84.24	1238.10	207		19								68	11	0.00	0.00	0.29
00:30	420:00	10889.1	82.8	5545		38	9003		1099	22.35	23	84.88	1238.96	211		19								69	12	0.00	0.00	0.29
00:45	420:15	10900.3	83.3	5436		37	9040		1089	22.63	23	85.15	1239.87	210		20								71	12	0.00	0.00	0.29
01:00	420:30	10890.9	83.2	5552		38	9007		1089	21.35	23	82.70	1240.73	210		20								67	13	0.00	0.00	0.29
01:15	420:45	10898.3	83.2	5364		37	9006		1077	22.49	23	84.45	1241.61	214		19								70	13	0.00	0.00	0.29
01:30	421:00	10920.9	83.2	5530		38	9037		1086	21.26	23	82.30	1242.47	213		18								67	18	0.00	0.00	0.29
01:45	421:15	10918.7	83.2	5549		38	9036		1078	20.91	23	81.39	1243.32	212		17								67	28	0.00	0.00	0.29
02:00	421:30	10898.8	83.2	5453		37	8978		1076	22.36	23	84.14	1244.19	214		17								69	36	0.00	0.00	0.29
02:15	421:45	10889.2	83.2	5360		37	8988		1139	22.28	23	86.28	1245.09	212		16								72	41	0.00	0.00	0.29
02:30	422:00	10889.9	83.2	5217		37	8970		1140	22.24	23	86.22	1245.99	212		16								72	45	0.00	0.00	0.29
02:45	422:15	10899.9	83.2	5439		38	8981		1104	21.71	23	83.96	1246.86	216		18								69	47	0.00	0.00	0.29
03:00	422:30	10877.4	83.2	5341		37	8956		1123	22.38	22	85.99	1247.76	216		24								70	49	0.00	0.00	0.29
03:15	422:45	10894.9	83.2	5539		38	8991		1109	21.78	23	84.25	1248.64	214		25								69	51	0.00	0.00	0.29
03:30	423:00	10900.8	83.2	5483		38	9002		1091	21.48	22	83.07	1249.50	213		27								68	52	0.00	0.00	0.29
03:45	423:15	10901.0	83.2	5340		38	8996		1135	22.27	23	86.11	1250.40	214		30								67	53	0.00	0.00	0.29
04:00	423:30	10894.9	83.2	5510		37	8995		1102	21.78	23	83.96	1251.27	216		30								66	51	0.00	0.00	0.29
04:15	423:45	10865.6	83.2	5425		37	8991		1100	21.71	22	83.91	1252.15	216		28								64	47	0.00	0.00	0.29
04:30	424:00	10897.6	83.2	5609		38	9008		1080	21.34	22	82.40	1253.01	217		26								63	43	0.00	0.00	0.29
04:45	424:15	10896.7	83.2	5526		37	9014		1135	22.15	23	85.90	1253.90	217		24								66	39	0.00	0.00	0.29
05:00	424:30	10891.8	83.2	5477		38	8997		1090	21.67	22	83.38	1254.77	216		23								63	36	0.00	0.00	0.29
05:15	424:45	10891.0	83.2	5595		38	9004		1084	21.47	23	82.75	1255.63	180		21								61	34	0.00	0.00	0.29
05:30	425:00	10878.4	83.2	5418		37	8984		1119	22.19	22	85.59	1256.52	187		19								66	31	0.00	0.00	0.29
05:45	425:15	10888.7	83.2	5619		38	8993		1068	21.17	22	81.73	1257.37	188		18								63	29	0.00	0.00	0.29
06:00	425:30	10880.7	83.2	5563		38	9001		1057	20.92	21	80.92	1258.22	191		17								61	27	0.00	0.00	0.29
		Daily Summary to 06:00 hrs April 04/2014																										
		DHP = 10880kpa																										
		FTP = 5563kpa																										
		SICP = 9001kpa																										
		Flow Temp = 38DegC																										
		Meter Run Temp = 21DegC																										
		Choke Size = 12.70mm																										
		Gas Rate = 80.92 E³m³/Day																										
		Cummulative Gas to Flare = 1272.28 E³m³																										
		Gas to Flare last 24hrs = 84.58 E³m³																										
		LFTR = 7919.81m³																										
		LFR last 24hrs = 44.70m³																										
		TLFR = 1724.86m³																										
		TLFLTR = 6194.95m³																										



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
23:30						1249.52	0.00											6207.92			
23:45						1250.40	0.00											6207.92			
00:00						1251.29	0.00	1.91	92.3	0.15	3.53	59.77			1.76	42.31	1713.65	6206.16	61000	7.0	0.0
00:15						1252.16	0.00											6206.16			
00:30						1253.09	0.00											6206.16			
00:45						1253.94	0.00											6206.16			
01:00						1254.80	0.00	2.02	92.0	0.16	3.88	59.93			1.86	44.60	1715.51	6204.30	60000	7.0	0.0
01:15						1255.68	0.00											6204.30			
01:30						1256.53	0.00											6204.30			
01:45						1257.38	0.00											6204.30			
02:00						1258.26	0.00	1.85	91.9	0.15	3.60	60.08			1.70	40.80	1717.21	6202.60	61000	7.0	0.0
02:15						1259.16	0.00											6202.60			
02:30						1260.06	0.00											6202.60			
02:45						1260.93	0.00											6202.60			
03:00						1261.83	0.00	1.91	92.7	0.14	3.35	60.22			1.77	42.49	1718.98	6200.83	62000	7.0	0.0
03:15						1262.70	0.00											6200.83			
03:30						1263.57	0.00											6200.83			
03:45						1264.47	0.00											6200.83			
04:00						1265.34	0.00	2.15	92.8	0.15	3.72	60.37			2.00	47.88	1720.98	6198.83	61000	7.0	0.0
04:15						1266.21	0.00											6198.83			
04:30						1267.07	0.00											6198.83			
04:45						1267.97	0.00											6198.83			
05:00						1268.84	0.00	1.94	91.5	0.16	3.96	60.54			1.78	42.60	1722.75	6197.06	62000	7.0	0.0
05:15						1269.70	0.00											6197.06			
05:30						1270.59	0.00											6197.06			
05:45						1271.44	0.00											6197.06			
06:00						1272.28	0.00	2.27	92.9	0.16	3.87	60.70			2.11	50.61	1724.86	6194.95	62000	7.0	0.0



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/04																												
		Condensate Produced last 24hrs = 3.71m3 Cumulative Condensate Produced = 60.70m3 Salinity = 62000ppm ph = 7 Sand = 0 Hrs Flowed = 425.5 Hours Flared = 422 Surface Total = 69.34m3 Api = 63.6@15.6°C H2s = 0.55ppm CO₂ = 1.0%																										
06:15	425:45	10891.5	83.1	5383		37	8995		1106	21.81	22	84.38	1259.10	193		15								65	25	0.00	0.00	0.29
06:30	426:00	10903.4	83.2	5474		38	9001		1091	21.59	22	83.29	1259.96	191		14								62	24	0.00	0.00	0.29
06:45	426:15	10897.9	83.2	5534		38	8999		1125	21.58	23	84.46	1260.84	191		14								64	22	0.00	0.00	0.29
07:00	426:30	10891.4	83.2	5477		37	9009		1110	22.03	22	84.87	1261.73	193		14								66	21	0.00	0.00	0.29
07:15	426:45	10875.1	83.2	5342		37	8976		1106	23.23	21	87.17	1262.64	190		15								69	20	0.00	0.00	0.29
07:30	427:00	10869.2	83.2	5423		37	8977		1083	21.84	21	83.64	1263.51	193		17								68	19	0.00	0.00	0.29
07:45	427:15	10850.0	83.2	5346		37	8968		1107	22.25	21	85.32	1264.40	192		18								68	18	0.00	0.00	0.29
08:00	427:30	10878.3	83.2	5534		37	8995		1077	21.84	21	83.42	1265.27	193		17								67	16	0.00	0.00	0.29
08:15	427:45	10857.8	83.2	5458		37	8976		1130	22.76	22	87.01	1266.17	194		15								67	15	0.00	0.00	0.29
08:30	428:00	10873.7	83.2	5594		38	8976		1060	20.57	21	80.33	1267.01	195		14								62	14	0.00	0.00	0.29
08:45	428:15	10862.1	83.3	5416		37	8974		1075	21.50	22	82.65	1267.87	196		14								65	13	0.00	0.00	0.29
09:00	428:30	10857.5	83.3	5408		37	8965		1074	21.06	22	81.75	1268.72	196		17								66	13	0.00	0.00	0.29
09:15	428:45	10853.9	83.3	5524		37	8962		1069	21.47	22	82.37	1269.58	196		19								67	13	0.00	0.00	0.29
09:30	429:00	10871.6	83.3	5530		37	8971		1082	21.66	21	83.26	1270.45	197		20								69	18	0.00	0.00	0.29
09:45	429:15	10863.8	83.4	5466		37	8967		1123	22.54	22	86.29	1271.35	197		21								68	17	0.00	0.00	0.29
10:00	429:30	10840.0	83.4	5291		37	8971		1094	22.52	21	85.40	1272.23	198		21								69	16	0.00	0.00	0.29
10:15	429:45	10840.8	83.5	5132		37	8960		1125	22.76	21	86.94	1273.14	200		21								71	16	0.00	0.00	0.29
10:30	430:00	10800.2	83.3	5036		37	8957		1109	22.80	21	86.46	1274.04	200		22								70	15	0.00	0.00	0.29
10:45	430:15	10833.5	83.3	5172		37	8965		1094	21.16	22	82.67	1274.90	204		23								65	15	0.00	0.00	0.29
11:00	430:30	10830.6	83.3	5028		37	8970		1101	21.90	21	84.50	1275.78	201		23								67	15	0.00	0.00	0.29
11:15	430:45	10824.0	83.3	5043		37	8969		1131	22.63	21	86.91	1276.69	200		21								68	14	0.00	0.00	0.29
11:30	431:00	10815.6	83.3	4975		36	8940		1134	22.67	21	87.09	1277.59	203		19								71	13	0.00	0.00	0.29
11:45	431:15	10826.9	83.4	5004		36	8958		1084	20.92	20	82.16	1278.45	201		19								69	13	0.00	0.00	0.29
12:00	431:30	10821.7	83.4	5002		36	8956		1125	22.23	21	86.04	1279.35	204		18								70	13	0.00	0.00	0.29
12:15	431:45	10845.8	83.4	5132		37	8963		1136	21.84	22	85.52	1280.24	203		19								67	12	0.00	0.00	0.29
12:30	432:00	10835.0	83.4	5269		37	8979		1073	20.79	21	81.34	1281.09	205		21								66	13	0.00	0.00	0.29
12:45	432:15	10824.9	83.4	5137		37	8963		1093	21.68	21	83.72	1281.96	204		22								68	13	0.00	0.00	0.29
13:00	432:30	10825.5	83.5	5001		37	8955		1108	22.75	21	86.38	1282.86	206		23								71	12	0.00	0.00	0.29
13:15	432:45	10819.5	83.5	4993		37	8949		1098	20.71	21	82.00	1283.71	203		23								68	13	0.00	0.00	0.29
13:30	433:00	10818.3	83.5	4866		36	8958		1074	21.80	20	83.42	1284.58	206		23								71	13	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:15						1273.16	0.00											6194.95			
06:30						1274.03	0.00											6194.95			
06:45						1274.91	0.00											6194.95			
07:00						1275.79	0.00	2.27	90.0	0.23	5.45	60.93			2.04	49.03	1726.90	6192.91	63000	7.0	0.0
07:15						1276.70	0.00											6192.91			
07:30						1277.57	0.00											6192.91			
07:45						1278.46	0.00											6192.91			
08:00						1279.33	0.00	2.08	91.3	0.18	4.34	61.11			1.90	45.58	1728.80	6191.01	63000	7.0	0.0
08:15						1280.24	0.00											6191.01			
08:30						1281.07	0.00											6191.01			
08:45						1281.94	0.00											6191.01			
09:00						1282.79	0.00	1.38	91.8	0.11	2.72	61.22			1.27	30.40	1730.07	6189.74	63000	7.0	0.0
09:15						1283.64	0.00											6189.74			
09:30						1284.51	0.00											6189.74			
09:45						1285.41	0.00											6189.74			
10:00						1286.30	0.00	1.57	91.5	0.13	3.20	61.35			1.44	34.48	1731.51	6188.30	63000	7.0	0.0
10:15						1287.21	0.00											6188.30			
10:30						1288.11	0.00											6188.30			
10:45						1288.97	0.00											6188.30			
11:00						1289.85	0.00	1.69	91.4	0.15	3.49	61.50			1.54	37.07	1733.05	6186.76	63000	7.0	0.0
11:15						1290.75	0.00											6186.76			
11:30						1291.66	0.00											6186.76			
11:45						1292.52	0.00											6186.76			
12:00						1293.41	0.00	1.74	91.5	0.15	3.55	61.65			1.59	38.21	1734.64	6185.17	63000	7.0	0.0
12:15						1294.30	0.00											6185.17			
12:30						1295.15	0.00											6185.17			
12:45						1296.02	0.00											6185.17			
13:00						1296.92	0.00	1.71	91.1	0.15	3.65	61.80			1.56	37.39	1736.20	6183.61	63000	7.0	0.0
13:15						1297.78	0.00											6183.61			
13:30						1298.65	0.00											6183.61			



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P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/04																												
13:45	433:15	10842.6	83.5	5103		37	8981		1109	20.66	21	82.25	1285.44	208		23								63	13	0.00	0.00	0.29
14:00	433:30	10804.2	83.5	5082		36	8947		1075	21.50	20	82.87	1286.30	208		24								68	13	0.00	0.00	0.29
14:15	433:45	10823.3	83.5	5030		37	8966		1139	20.56	20	83.31	1287.17	208		24								66	13	0.00	0.00	0.29
14:30	434:00	10819.9	83.5	5167		37	8958		1154	20.86	21	84.34	1288.05	204		24								67	13	0.00	0.00	0.29
14:45	434:15	10826.4	83.5	5141		37	8958		1177	20.57	22	84.43	1288.93	209		23								66	12	0.00	0.00	0.29
15:00	434:30	10827.0	83.5	5248		37	8969		1126	20.54	21	82.68	1289.79	210		23								66	12	0.00	0.00	0.29
15:15	434:45	10800.0	83.5	5010		37	8948		1185	21.25	22	86.07	1290.68	209		23								69	12	0.00	0.00	0.29
15:30	435:00	10796.6	83.5	5166		37	8947		1114	21.42	21	83.98	1291.56	207		24								69	11	0.00	0.00	0.29
15:45	435:15	10815.6	83.5	4983		37	8962		1149	21.03	22	84.37	1292.44	208		24								67	11	0.00	0.00	0.29
16:00	435:30	10802.5	83.6	5181		37	8941		1144	22.13	22	86.35	1293.34	205		24								70	11	0.00	0.00	0.29
16:15	435:45	10808.7	83.6	5005		37	8953		1151	22.46	22	87.23	1294.25	174		24								71	11	0.00	0.00	0.29
16:30	436:00	10802.6	83.6	5069		37	8951		1111	21.61	21	84.23	1295.12	179		24								67	11	0.00	0.00	0.29
16:45	436:15	10800.5	83.6	5197		37	8945		1100	21.16	21	82.97	1295.99	181		25								67	11	0.00	0.00	0.29
17:00	436:30	10817.0	83.6	5189		37	8945		1118	21.57	22	84.33	1296.87	186		25								67	11	0.00	0.00	0.29
17:15	436:45	10800.8	83.6	5054		37	8949		1142	22.04	22	86.06	1297.76	187		25								68	11	0.00	0.00	0.29
17:30	437:00	10799.7	83.6	5114		37	8952		1064	19.25	20	77.98	1298.57	187		25								66	11	0.00	0.00	0.29
17:45	437:15	10804.2	83.6	5204		37	8951		1135	20.60	22	82.87	1299.44	189		25								63	11	0.00	0.00	0.29
18:00	437:30	10803.7	83.6	5041		37	8948		1083	20.44	21	80.89	1300.28	189		24								65	11	0.00	0.00	0.29
18:15	437:45	10784.9	83.6	5124		37	8935		1153	22.51	22	87.36	1301.19	192		23								67	11	0.00	0.00	0.29
18:30	438:00	10769.1	83.6	5142		37	8916		1142	22.25	22	86.47	1302.09	193		24								73	11	0.00	0.00	0.29
18:45	438:15	10816.2	83.6	4942		36	8932		1107	22.91	21	86.59	1302.99	195		25								73	11	0.00	0.00	0.29
19:00	438:30	10763.9	83.6	5050		36	8931		1064	22.28	21	83.81	1303.87	197		26								67	11	0.00	0.00	0.29
19:15	438:45	10772.9	83.6	5099		37	8932		1127	22.05	22	85.57	1304.76	194		26								67	11	0.00	0.00	0.29
19:30	439:00	10781.2	83.6	5141		37	8932		1078	21.50	21	82.85	1305.62	196		24								68	11	0.00	0.00	0.29
19:45	439:15	10779.8	83.3	5227		37	8943		1130	21.73	22	85.06	1306.51	201		24								70	13	0.00	0.00	0.29
20:00	439:30	10805.5	83.3	5340		37	8960		1147	20.82	23	83.68	1307.38	200		25								65	17	0.00	0.00	0.29
20:15	439:45	10782.6	83.3	5301		37	8954		1090	21.74	22	83.62	1308.25	200		24								67	22	0.00	0.00	0.29
20:30	440:00	10770.2	83.3	5306		37	8933		1085	21.51	22	83.07	1309.11	203		24								68	26	0.00	0.00	0.29
20:45	440:15	10758.7	83.3	5407		37	8942		1147	22.62	22	87.35	1310.02	204		26								70	29	0.00	0.00	0.29
21:00	440:30	10771.0	83.3	5485		37	8927		1108	21.39	21	83.66	1310.90	205		28								68	34	0.00	0.00	0.29
21:15	440:45	10783.7	83.2	5533		38	8935		1074	20.89	22	81.39	1311.74	206		29								65	38	0.00	0.00	0.29
21:30	441:00	10784.8	83.2	5348		37	8922		1147	22.19	23	86.34	1312.64	206		28								69	41	0.00	0.00	0.29
21:45	441:15	10771.1	83.2	5404		37	8932		1117	21.61	22	84.24	1313.52	208		27								68	43	0.00	0.00	0.29
22:00	441:30	10774.5	83.1	5430		37	8936		1146	22.08	23	86.13	1314.42	208		27								69	47	0.00	0.00	0.29
22:15	441:45	10798.3	83.1	5509		38	8940		1062	20.55	23	80.18	1315.25	208		26								66	49	0.00	0.00	0.29
22:30	442:00	10767.9	83.1	5236		37	8930		1149	22.89	23	87.84	1316.17	213		26								73	51	0.00	0.00	0.29
22:45	442:15	10783.3	83.1	5386		37	8918		1085	21.57	22	83.07	1317.03	211		28								69	52	0.00	0.00	0.29
23:00	442:30	10760.4	83.0	5386		37	8923		1116	22.25	22	85.48	1317.92	213		27								69	54	0.00	0.00	0.29
23:15	442:45	10746.9	83.0	5288		37	8894		1093	21.95	22	84.06	1318.80	215		27								69	55	0.00	0.00	0.29
23:30	443:00	10761.3	83.0	5410		37	8904		1131	22.23	23	85.85	1319.69	215		26								70	56	0.00	0.00	0.29
23:45	443:15	10773.5	82.9	5312		37	8910		1172	23.31	24	89.40	1320.62	215		25								72	57	0.00	0.00	0.29
14/04/05																												



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production			Load Fluid Left			Sand %	
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job	Salinity	pH		
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
13:45						1299.50	0.00											6183.61			
14:00						1300.37	0.00	1.73	91.5	0.15	3.53	61.95			1.58	37.99	1737.78	6182.03	63000	7.0	0.0
14:15						1301.23	0.00											6182.03			
14:30						1302.11	0.00											6182.03			
14:45						1302.99	0.00											6182.03			
15:00						1303.85	0.00	1.92	91.1	0.17	4.10	62.12			1.75	41.98	1739.53	6180.28	64000	7.0	0.0
15:15						1304.75	0.00											6180.28			
15:30						1305.62	0.00											6180.28			
15:45						1306.50	0.00											6180.28			
16:00						1307.40	0.00	2.03	94.2	0.12	2.83	62.23			1.91	45.89	1741.45	6178.36	64000	7.0	0.0
16:15						1308.31	0.00											6178.36			
16:30						1309.19	0.00											6178.36			
16:45						1310.05	0.00											6178.36			
17:00						1310.93	0.00	1.87	91.5	0.16	3.81	62.39			1.71	41.07	1743.16	6176.65	63000	7.0	0.0
17:15						1311.83	0.00											6176.65			
17:30						1312.64	0.00											6176.65			
17:45						1313.50	0.00											6176.65			
18:00						1314.35	0.00	1.91	92.3	0.15	3.53	62.54			1.76	42.31	1744.92	6174.89	63000	7.0	0.0
18:15						1315.26	0.00											6174.89			
18:30						1316.16	0.00											6174.89			
18:45						1317.06	0.00											6174.89			
19:00						1317.93	0.00	1.95	91.6	0.16	3.93	62.70			1.79	42.87	1746.71	6173.10	63000	7.0	0.0
19:15						1318.82	0.00											6173.10			
19:30						1319.69	0.00											6173.10			
19:45						1320.57	0.00											6173.10			
20:00						1321.44	0.00	1.89	91.3	0.16	3.95	62.87			1.73	41.41	1748.43	6171.38	63000	7.0	0.0
20:15						1322.32	0.00											6171.38			
20:30						1323.18	0.00											6171.38			
20:45						1324.09	0.00											6171.38			
21:00						1324.96	0.00	1.91	93.2	0.13	3.12	63.00			1.78	42.72	1750.21	6169.60	64000	7.0	0.0
21:15						1325.81	0.00											6169.60			
21:30						1326.71	0.00											6169.60			
21:45						1327.59	0.00											6169.60			
22:00						1328.48	0.00	1.87	91.4	0.16	3.86	63.16			1.71	41.02	1751.92	6167.89	63000	7.0	0.0
22:15						1329.32	0.00											6167.89			
22:30						1330.23	0.00											6167.89			
22:45						1331.10	0.00											6167.89			
23:00						1331.99	0.00	1.81	92.0	0.14	3.48	63.30			1.67	39.96	1753.59	6166.22	62000	7.0	0.0
23:15						1332.86	0.00											6166.22			
23:30						1333.76	0.00											6166.22			
23:45						1334.69	0.00											6166.22			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/05																												
00:00	443:30	10752.3	82.9	5314		37	8895		1093	22.01	22	84.19	1321.50	214		24								69	57	0.00	0.00	0.29
00:15	443:45	10777.9	82.9	5299		37	8916		1131	21.53	22	84.61	1322.38	215		23								69	57	0.00	0.00	0.29
00:30	444:00	10775.9	82.9	5216		37	8913		1118	21.35	23	83.76	1323.26	217		25								68	56	0.00	0.00	0.29
00:45	444:15	10788.1	82.9	5430		38	8928		1114	21.23	23	83.38	1324.12	218		27								67	55	0.00	0.00	0.29
01:00	444:30	10773.2	82.9	5331		37	8906		1132	21.47	22	84.54	1325.00	219		26								70	54	0.00	0.00	0.29
01:15	444:45	10770.5	82.9	5508		37	8926		1128	21.54	23	84.46	1325.88	218		24								65	54	0.00	0.00	0.29
01:30	445:00	10748.3	82.9	5283		37	8892		1149	21.79	22	85.77	1326.78	219		23								72	53	0.00	0.00	0.29
01:45	445:15	10766.7	82.8	5223		37	8897		1140	21.80	22	85.46	1327.67	218		22								68	49	0.00	0.00	0.29
02:00	445:30	10781.0	82.9	5390		37	8923		1088	20.72	22	81.47	1328.52	220		22								62	44	0.00	0.00	0.29
02:15	445:45	10780.4	82.8	5519		38	8905		1071	20.58	22	80.63	1329.36	221		24								60	40	0.00	0.00	0.29
02:30	446:00	10785.2	82.8	5509		37	8901		1130	21.48	22	84.46	1330.24	220		27								64	37	0.00	0.00	0.29
02:45	446:15	10764.5	82.8	5500		37	8893		1148	21.45	22	85.08	1331.12	220		28								65	35	0.00	0.00	0.29
03:00	446:30	10780.3	82.8	5536		37	8915		1098	21.69	22	83.76	1332.00	221		29								65	32	0.00	0.00	0.29
03:15	446:45	10775.1	82.8	5538		37	8920		1084	21.38	22	82.67	1332.86	222		29								63	30	0.00	0.00	0.29
03:30	447:00	10778.7	82.8	5501		37	8906		1122	22.09	23	85.32	1333.74	222		30								64	29	0.00	0.00	0.29
03:45	447:15	10793.5	83.4	5541		38	8915		1127	20.24	23	81.74	1334.60	222		30								64	33	0.00	0.00	0.29
04:00	447:30	10763.5	83.4	5395		37	8897		1103	21.77	22	84.13	1335.47	222		29								66	32	0.00	0.00	0.29
04:15	447:45	10764.5	83.4	5392		37	8904		1096	21.37	22	83.17	1336.34	222		27								66	29	0.00	0.00	0.29
04:30	448:00	10769.8	83.4	5392		37	8909		1118	21.75	22	84.57	1337.22	222		26								65	28	0.00	0.00	0.29
04:45	448:15	10758.0	83.4	5409		37	8910		1052	20.61	21	80.20	1338.06	222		24								62	26	0.00	0.00	0.29
05:00	448:30	10761.9	83.4	5426		37	8888		1095	21.80	22	83.88	1338.93	224		23								64	25	0.00	0.00	0.29
05:15	448:45	10761.2	83.4	5352		37	8908		1103	21.43	21	83.57	1339.80	225		22								66	22	0.00	0.00	0.29
05:30	449:00	10756.2	83.4	5462		37	8916		1096	20.93	21	82.40	1340.66	191		21								62	18	0.00	0.00	0.29
05:45	449:15	10747.0	83.4	5534		37	8883		1114	21.13	22	83.33	1341.53	198		23								65	14	0.00	0.00	0.29
06:00	449:30	10724.6	83.3	5454		37	8903		1121	21.25	22	83.77	1342.40	200		25								67	11	0.00	0.00	0.29
Daily Summary to 06:00 hrs April 05/2014																												
DHP =10724 kpa																												
FTP = 5454kpa																												
SICP = 8903kpa																												
Flow Temp = 37DegC																												
Meter Run Temp = 22DegC																												
Choke Size = 12.70mm																												
Gas Rate = 83.77 E3m3/Day																												
Cummulative Gas to Flare = 1356.46 E3m3																												
Gas to Flare last 24hrs = 84.18 E3m3																												
LFTR = 7919.81m3																												
LFR last 24hrs = 40.47m3																												
TLFR = 1765.33m3																												
TLFLTR = 6154.48m3																												
Condensate Produced last 24hrs = 3.67m3																												
Cummulative Condensate Produced = 64.37m3																												
Salinity = 62000ppm																												



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
00:00						1335.57	0.00	1.94	92.7	0.14	3.40	63.45			1.80	43.16	1755.38	6164.43	62000	7.0	0.0
00:15						1336.45	0.00											6164.43			
00:30						1337.32	0.00											6164.43			
00:45						1338.19	0.00											6164.43			
01:00						1339.07	0.00	1.78	91.2	0.16	3.76	63.60			1.62	38.96	1757.01	6162.80	62000	7.0	0.0
01:15						1339.95	0.00											6162.80			
01:30						1340.84	0.00											6162.80			
01:45						1341.73	0.00											6162.80			
02:00						1342.58	0.00	1.80	91.6	0.15	3.63	63.75			1.65	39.57	1758.66	6161.15	63000	7.0	0.0
02:15						1343.42	0.00											6161.15			
02:30						1344.30	0.00											6161.15			
02:45						1345.19	0.00											6161.15			
03:00						1346.06	0.00	1.86	92.2	0.15	3.48	63.90			1.71	41.16	1760.37	6159.44	63000	7.0	0.0
03:15						1346.92	0.00											6159.44			
03:30						1347.81	0.00											6159.44			
03:45						1348.66	0.00											6159.44			
04:00						1349.54	0.00	1.81	91.1	0.16	3.87	64.06			1.65	39.57	1762.02	6157.79	63000	7.0	0.0
04:15						1350.41	0.00											6157.79			
04:30						1351.29	0.00											6157.79			
04:45						1352.12	0.00											6157.79			
05:00						1353.00	0.00	1.75	91.8	0.14	3.44	64.20			1.61	38.56	1763.63	6156.18	61000	7.0	0.0
05:15						1353.87	0.00											6156.18			
05:30						1354.72	0.00											6156.18			
05:45						1355.59	0.00											6156.18			
06:00						1356.46	0.00	1.87	91.2	0.16	3.95	64.37			1.71	40.93	1765.33	6154.48	62000	7.0	0.0



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P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/05		ph = 7 Sand = Nil Hrs Flowed = 449.5 Hours Flared = 446 Surface Total = 63.48m³ Api = 63.7@15.6°C H2s = 0.55ppm CO₂ = 1.1 %																										
06:15	449:45	10762.8	83.3	5524		37	8922		1086	20.51	22	81.08	1343.24	201		26								64	8	0.00	0.00	0.29
06:30	450:00	10751.0	83.3	5545		37	8910		1127	21.37	22	84.25	1344.12	201		27								66	6	0.00	0.00	0.29
06:45	450:15	10740.5	83.3	5480		37	8895		1143	21.68	22	85.36	1345.01	203		27								66	5	0.00	0.00	0.29
07:00	450:30	10766.9	83.3	5498		37	8905		1107	20.88	22	82.49	1345.87	201		28								65	3	0.00	0.00	0.29
07:15	450:45	10769.7	83.3	5512		37	8905		1105	21.05	22	82.85	1346.73	204		28								65	2	0.00	0.00	0.29
07:30	451:00	10763.5	83.3	5450		37	8899		1125	21.39	22	84.16	1347.61	205		28								67	1	0.00	0.00	0.29
07:45	451:15	10760.2	83.3	5450		37	8878		1105	20.92	21	82.66	1348.47	204		27								68	2	0.00	0.00	0.29
08:00	451:30	10750.0	83.3	5470		37	8861		1038	20.90	21	80.25	1349.31	203		24								63	3	0.00	0.00	0.29
08:15	451:45	10742.9	83.3	5362		36	8880		1096	21.72	21	83.88	1350.18	206		21								68	3	0.00	0.00	0.29
08:30	452:00	10704.0	83.3	5435		37	8899		1120	21.66	21	84.67	1351.06	205		22								68	4	0.00	0.00	0.29
08:45	452:15	10741.8	83.4	5576		36	8889		1124	21.66	22	84.75	1351.94	206		24								72	5	0.00	0.00	0.29
09:00	452:30	10741.6	83.4	5324		36	8882		1159	22.91	22	88.46	1352.87	205		25								76	6	0.00	0.00	0.29
09:15	452:45	10736.3	83.5	5406		36	8895		1096	21.11	21	82.74	1353.73	204		25								70	7	0.00	0.00	0.29
09:30	453:00	10726.2	83.5	5496		36	8882		1125	21.31	21	84.13	1354.60	207		26								70	8	0.00	0.00	0.29
09:45	453:15	10733.3	83.5	5527		37	8884		1099	20.85	22	82.27	1355.46	207		27								65	8	0.00	0.00	0.29
10:00	453:30	10719.0	83.5	5576		37	8868		1087	21.12	21	82.42	1356.32	209		27								65	8	0.00	0.00	0.29
10:15	453:45	10720.3	83.6	5571		37	8886		1113	21.58	22	84.20	1357.20	208		25								68	9	0.00	0.00	0.29
10:30	454:00	10704.6	83.6	5284		36	8875		1150	21.80	22	85.95	1358.09	210		26								70	9	0.00	0.00	0.29
10:45	454:15	10729.9	83.6	5652		37	8884		1139	21.22	22	84.31	1358.97	210		27								65	9	0.00	0.00	0.29
11:00	454:30	10688.8	83.6	5404		36	8854		1112	23.29	21	87.56	1359.88	210		27								73	9	0.00	0.00	0.29
11:15	454:45	10715.7	83.7	5522		36	8891		1095	21.42	21	83.33	1360.75	210		27								71	10	0.00	0.00	0.29
11:30	455:00	10698.8	83.7	5309		36	8876		1144	21.80	22	85.74	1361.64	212		25								70	10	0.00	0.00	0.29
11:45	455:15	10700.5	83.7	5427		36	8862		1102	21.02	21	82.71	1362.51	213		24								69	10	0.00	0.00	0.29
12:00	455:30	10703.7	83.7	5554		36	8879		1125	21.71	22	84.82	1363.39	214		23								68	10	0.00	0.00	0.29
12:15	455:45	10690.0	83.7	5485		37	8864		1107	21.25	22	83.24	1364.26	213		22								65	6	0.00	0.00	0.29
12:30	456:00	10698.7	83.7	5464		36	8867		1081	22.00	21	83.94	1365.13	213		21								71	6	0.00	0.00	0.29
12:45	456:15	10721.2	83.7	5689		37	8890		1105	20.45	22	81.55	1365.98	214		21								64	7	0.00	0.00	0.29
13:00	456:30	10694.9	83.8	5510		36	8850		1136	21.77	22	85.32	1366.87	218		21								69	8	0.00	0.00	0.29
13:15	456:45	10693.9	83.8	5408		36	8865		1116	21.75	22	84.63	1367.75	215		20								68	9	0.00	0.00	0.29
13:30	457:00	10711.5	83.8	5556		37	8872		1102	21.42	22	83.44	1368.62	215		20								66	8	0.00	0.00	0.29
13:45	457:15	10669.4	83.8	5307		36	8835		1126	22.89	22	87.19	1369.53	214		19								73	9	0.00	0.00	0.29
14:00	457:30	10668.2	83.8	5325		36	8853		1065	22.20	21	83.70	1370.40	215		19								70	9	0.00	0.00	0.29
14:15	457:45	10707.9	83.8	5372		36	8870		1079	20.66	22	81.14	1371.24	215		19								66	10	0.00	0.00	0.29
14:30	458:00	10704.7	83.8	5472		37	8862		1101	21.07	22	82.72	1372.11	215		19								66	10	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:15						1357.31	0.00											6154.48			
06:30						1358.19	0.00											6154.48			
06:45						1359.08	0.00											6154.48			
07:00						1359.94	0.00	1.75	92.0	0.14	3.36	64.51			1.61	38.64	1766.94	6152.87	62000	7.0	0.0
07:15						1360.80	0.00											6152.87			
07:30						1361.67	0.00											6152.87			
07:45						1362.54	0.00											6152.87			
08:00						1363.37	0.00	1.94	91.0	0.17	4.19	64.68			1.77	42.37	1768.71	6151.10	62000	7.0	0.0
08:15						1364.25	0.00											6151.10			
08:30						1365.13	0.00											6151.10			
08:45						1366.01	0.00											6151.10			
09:00						1366.93	0.00	1.84	91.7	0.15	3.67	64.83			1.69	40.49	1770.40	6149.41	62000	7.0	0.0
09:15						1367.79	0.00											6149.41			
09:30						1368.67	0.00											6149.41			
09:45						1369.53	0.00											6149.41			
10:00						1370.39	0.00	1.79	91.1	0.16	3.82	64.99			1.63	39.14	1772.03	6147.78	62000	7.0	0.0
10:15						1371.26	0.00											6147.78			
10:30						1372.16	0.00											6147.78			
10:45						1373.04	0.00											6147.78			
11:00						1373.95	0.00	1.84	91.4	0.16	3.80	65.15			1.68	40.36	1773.71	6146.10	62000	7.0	0.0
11:15						1374.82	0.00											6146.10			
11:30						1375.71	0.00											6146.10			
11:45						1376.57	0.00											6146.10			
12:00						1377.45	0.00	1.94	91.4	0.17	4.00	65.32			1.77	42.56	1775.48	6144.33	62000	7.0	0.0
12:15						1378.32	0.00											6144.33			
12:30						1379.20	0.00											6144.33			
12:45						1380.05	0.00											6144.33			
13:00						1380.93	0.00	1.77	91.3	0.15	3.70	65.47			1.62	38.78	1777.10	6142.71	62000	7.0	0.0
13:15						1381.82	0.00											6142.71			
13:30						1382.69	0.00											6142.71			
13:45						1383.59	0.00											6142.71			
14:00						1384.47	0.00	1.83	91.3	0.16	3.82	65.63			1.67	40.10	1778.77	6141.04	65000	7.0	0.0
14:15						1385.31	0.00											6141.04			
14:30						1386.17	0.00											6141.04			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/05																												
14:45	458:15	10691.6	83.8	5416		36	8855		1109	21.61	22	84.11	1372.98	219		19								67	10	0.00	0.00	0.29
15:00	458:30	10691.3	83.8	5469		36	8855		1080	21.12	21	82.15	1373.84	218		21								67	11	0.00	0.00	0.29
15:15	458:45	10668.2	83.9	5272		36	8848		1126	21.84	22	85.08	1374.72	217		22								69	11	0.00	0.00	0.29
15:30	459:00	10678.4	83.4	5459		36	8865		1106	21.40	22	83.56	1375.59	219		23								67	11	0.00	0.00	0.29
15:45	459:15	10668.8	83.4	5325		36	8851		1123	22.64	22	86.60	1376.50	219		24								70	10	0.00	0.00	0.29
16:00	459:30	10682.7	83.5	5390		36	8846		1080	21.50	21	82.94	1377.36	184		24								68	10	0.00	0.00	0.29
16:15	459:45	10695.1	83.5	5412		37	8862		1127	21.57	22	84.56	1378.24	187		25								67	11	0.00	0.00	0.29
16:30	460:00	10676.4	83.4	5350		36	8845		1127	21.51	22	84.55	1379.12	191		24								68	11	0.00	0.00	0.29
16:45	460:15	10662.4	83.5	5497		37	8863		1072	21.23	22	82.01	1379.98	193		23								65	11	0.00	0.00	0.29
17:00	460:30	10665.1	83.5	5363		36	8841		1088	21.56	21	83.26	1380.84	197		22								68	11	0.00	0.00	0.29
17:15	460:45	10655.5	83.5	5527		37	8854		1136	21.33	22	84.39	1381.72	196		21								64	12	0.00	0.00	0.29
17:30	461:00	10663.1	83.6	5489		37	8850		1098	21.28	22	82.98	1382.59	198		21								65	12	0.00	0.00	0.29
17:45	461:15	10664.1	83.5	5397		36	8854		1103	21.20	21	83.10	1383.45	198		20								69	12	0.00	0.00	0.29
18:00	461:30	10677.4	83.5	5326		36	8847		1089	21.07	21	82.37	1384.31	199		20								68	12	0.00	0.00	0.29
18:15	461:45	10653.5	83.5	5481		36	8844		1132	21.92	22	85.45	1385.20	200		20								67	13	0.00	0.00	0.29
18:30	462:00	10635.7	83.5	5321		36	8840		1128	21.95	22	85.43	1386.09	200		21								71	13	0.00	0.00	0.29
18:45	462:15	10659.7	83.5	5535		37	8843		1083	20.83	22	81.62	1386.94	202		22								65	13	0.00	0.00	0.29
19:00	462:30	10665.6	83.5	5390		36	8832		1134	21.91	22	85.55	1387.83	203		23								68	13	0.00	0.00	0.29
19:15	462:45	10661.8	83.5	5388		37	8852		1114	21.61	22	84.21	1388.71	203		24								65	13	0.00	0.00	0.29
19:30	463:00	10656.6	83.5	5370		36	8832		1115	21.59	21	84.34	1389.59	204		25								66	12	0.00	0.00	0.29
19:45	463:15	10648.3	83.5	5457		36	8839		1094	21.09	21	82.58	1390.45	204		26								66	12	0.00	0.00	0.29
20:00	463:30	10628.2	83.4	5286		36	8828		1124	21.62	22	84.67	1391.33	204		25								67	9	0.00	0.00	0.29
20:15	463:45	10677.9	83.4	5367		36	8842		1102	21.25	22	83.11	1392.20	205		25								67	7	0.00	0.00	0.29
20:30	464:00	10662.4	83.4	5414		36	8847		1104	20.88	22	82.46	1393.05	205		25								64	7	0.00	0.00	0.29
20:45	464:15	10670.3	83.4	5352		36	8842		1134	21.27	21	84.35	1393.93	206		24								68	6	0.00	0.00	0.29
21:00	464:30	10663.6	83.3	5392		37	8852		1087	20.42	22	80.91	1394.78	205		24								61	5	0.00	0.00	0.29
21:15	464:45	10664.8	83.3	5356		36	8842		1104	20.79	21	82.43	1395.63	207		23								67	5	0.00	0.00	0.29
21:30	465:00	10657.7	83.2	5288		36	8835		1140	21.22	22	84.41	1396.51	204		23								69	4	0.00	0.00	0.29
21:45	465:15	10648.7	83.2	5254		36	8822		1083	22.27	20	84.63	1397.40	205		23								68	4	0.00	0.00	0.29
22:00	465:30	10646.7	83.2	5347		36	8821		1104	21.17	21	83.13	1398.26	204		23								66	4	0.00	0.00	0.29
22:15	465:45	10659.7	83.1	5413		37	8842		1122	20.77	22	82.90	1399.13	205		23								65	5	0.00	0.00	0.29
22:30	466:00	10675.6	83.1	5336		36	8841		1101	20.97	21	82.65	1399.99	206		23								66	5	0.00	0.00	0.29
22:45	466:15	10665.6	83.1	5428		37	8828		1113	21.02	21	83.15	1400.85	205		23								65	5	0.00	0.00	0.29
23:00	466:30	10648.7	83.1	5358		36	8822		1122	21.28	21	84.01	1401.73	207		21								65	6	0.00	0.00	0.29
23:15	466:45	10645.6	83.1	5390		36	8818		1089	20.78	21	81.91	1402.58	206		21								66	6	0.00	0.00	0.29
23:30	467:00	10664.0	83.0	5423		36	8823		1145	20.82	22	83.83	1403.45	205		21								65	6	0.00	0.00	0.29
23:45	467:15	10668.1	83.0	5278		36	8815		1135	22.06	20	86.10	1404.35	206		21								69	6	0.00	0.00	0.29
14/04/06																												
00:00	467:30	10648.1	83.0	5342		36	8816		1140	20.98	21	84.13	1405.23	207		21								67	6	0.00	0.00	0.29
00:15	467:45	10655.1	83.0	5384		36	8809		1118	20.49	20	82.42	1406.09	206		21								65	6	0.00	0.00	0.29
00:30	468:00	10644.1	83.0	5333		36	8805		1089	21.94	20	84.31	1406.96	203		20								70	6	0.00	0.00	0.29
00:45	468:15	10651.2	83.0	5296		36	8821		1081	21.02	20	82.13	1407.82	202		20								66	6	0.00	0.00	0.29



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Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
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4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production			Load Fluid Left			Sand %	
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job	Salinity	pH		
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
14:45						1387.05	0.00											6141.04			
15:00						1387.90	0.00	1.82	91.6	0.15	3.67	65.78			1.67	40.01	1780.44	6139.37	64000	7.0	0.0
15:15						1388.79	0.00											6139.37			
15:30						1389.66	0.00											6139.37			
15:45						1390.56	0.00											6139.37			
16:00						1391.43	0.00	1.66	91.6	0.14	3.35	65.92			1.52	36.49	1781.96	6137.85	64000	7.0	0.0
16:15						1392.31	0.00											6137.85			
16:30						1393.19	0.00											6137.85			
16:45						1394.04	0.00											6137.85			
17:00						1394.91	0.00	1.85	90.9	0.17	4.04	66.09			1.68	40.36	1783.64	6136.17	64000	7.0	0.0
17:15						1395.79	0.00											6136.17			
17:30						1396.65	0.00											6136.17			
17:45						1397.52	0.00											6136.17			
18:00						1398.38	0.00	1.84	91.6	0.15	3.71	66.25			1.69	40.45	1785.32	6134.49	63000	7.0	0.0
18:15						1399.27	0.00											6134.49			
18:30						1400.16	0.00											6134.49			
18:45						1401.01	0.00											6134.49			
19:00						1401.90	0.00	1.90	91.5	0.16	3.88	66.41			1.74	41.72	1787.06	6132.75	63000	7.0	0.0
19:15						1402.78	0.00											6132.75			
19:30						1403.65	0.00											6132.75			
19:45						1404.51	0.00											6132.75			
20:00						1405.40	0.00	1.91	91.5	0.16	3.90	66.57			1.75	41.94	1788.81	6131.00	64000	7.0	0.0
20:15						1406.26	0.00											6131.00			
20:30						1407.12	0.00											6131.00			
20:45						1408.00	0.00											6131.00			
21:00						1408.84	0.00	1.85	91.4	0.16	3.82	66.73			1.69	40.58	1790.50	6129.31	64000	7.0	0.0
21:15						1409.70	0.00											6129.31			
21:30						1410.58	0.00											6129.31			
21:45						1411.46	0.00											6129.31			
22:00						1412.33	0.00	1.81	90.2	0.18	4.26	66.91			1.63	39.18	1792.13	6127.68	65000	7.0	0.0
22:15						1413.19	0.00											6127.68			
22:30						1414.05	0.00											6127.68			
22:45						1414.92	0.00											6127.68			
23:00						1415.79	0.00	1.75	91.3	0.15	3.65	67.06			1.60	38.35	1793.73	6126.08	65000	7.0	0.0
23:15						1416.65	0.00											6126.08			
23:30						1417.52	0.00											6126.08			
23:45						1418.42	0.00											6126.08			
00:00						1419.29	0.00	1.93	91.5	0.16	3.94	67.22			1.77	42.38	1795.50	6124.31	65000	7.0	0.0
00:15						1420.15	0.00											6124.31			
00:30						1421.03	0.00											6124.31			
00:45						1421.89	0.00											6124.31			



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P-20 65-00 126-45

Operation: Tight Hole
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Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/06																												
01:00	468:30	10678.5	83.5	5577		36	8820		1102	19.70	20	80.20	1408.65	203		20								63	6	0.00	0.00	0.29
01:15	468:45	10683.4	83.5	5430		36	8825		1102	20.73	21	82.29	1409.51	204		20								64	6	0.00	0.00	0.29
01:30	469:00	10676.1	83.4	5414		36	8817		1112	20.25	21	81.63	1410.36	206		20								64	6	0.00	0.00	0.29
01:45	469:15	10657.1	83.4	5293		36	8797		1081	20.70	20	81.57	1411.21	203		20								65	6	0.00	0.00	0.29
02:00	469:30	10650.2	83.4	5395		36	8794		1134	20.96	21	83.84	1412.09	206		20								66	6	0.00	0.00	0.29
02:15	469:45	10653.2	83.4	5372		36	8801		1085	20.64	20	81.59	1412.94	203		18								65	6	0.00	0.00	0.29
02:30	470:00	10655.0	83.4	5291		36	8819		1126	21.23	21	84.14	1413.81	204		16								66	5	0.00	0.00	0.29
02:45	470:15	10635.3	83.3	5261		36	8779		1101	21.67	19	84.28	1414.69	202		14								68	5	0.00	0.00	0.29
03:00	470:30	10650.3	83.3	5495		36	8807		1120	20.83	20	83.25	1415.56	205		11								67	4	0.00	0.00	0.29
03:15	470:45	10671.3	83.3	5365		36	8819		1086	19.49	19	79.46	1416.38	205		13								65	4	0.00	0.00	0.29
03:30	471:00	10644.4	83.3	5282		36	8808		1130	21.48	20	84.83	1417.27	203		16								69	8	0.00	0.00	0.29
03:45	471:15	10654.6	83.3	5472		36	8792		1153	20.48	20	83.69	1418.14	203		19								68	21	0.00	0.00	0.29
04:00	471:30	10643.7	83.3	5419		36	8805		1134	20.56	20	83.17	1419.01	205		20								65	20	0.00	0.00	0.29
04:15	471:45	10645.2	83.3	5231		36	8788		1187	21.19	21	86.23	1419.90	205		22								64	18	0.00	0.00	0.29
04:30	472:00	10613.6	83.3	5401		36	8811		1117	20.84	20	83.08	1420.77	205		23								65	21	0.00	0.00	0.29
04:45	472:15	10646.3	83.3	5385		36	8822		1159	20.58	21	83.93	1421.64	209		24								65	25	0.00	0.00	0.29
05:00	472:30	10642.2	83.3	5417		36	8803		1155	20.39	21	83.45	1422.51	208		25								66	23	0.00	0.00	0.29
05:15	472:45	10670.4	83.3	5418		36	8818		1154	20.49	21	83.61	1423.38	193		25								64	19	0.00	0.00	0.29
05:30	473:00	10650.2	83.3	5441		36	8809		1148	20.47	21	83.34	1424.25	179		24								63	14	0.00	0.00	0.29
05:45	473:15	10630.5	83.3	5288		36	8792		1148	20.41	21	83.24	1425.12	182		21								62	11	0.00	0.00	0.29
06:00	473:30	10643.9	83.3	5327		36	8800		1119	19.89	21	81.14	1425.96	183		21								61	8	0.00	0.00	0.29
		Daily Summary to 06:00 hrs April 06/2014																										
		DHP = 10643kpa																										
		FTP = 5327kpa																										
		SICP = 8800kpa																										
		Flow Temp = 36DegC																										
		Meter Run Temp = 22DegC																										
		Choke Size = 12.70mm																										
		Gas Rate = 81.14 E3m3/Day																										
		Cumulative Gas to Flare = 1440.03 E3m3																										
		Gas to Flare last 24hrs = 83.57 E3m3																										
		LFTR = 7919.81m3																										
		LFR last 24hrs = 39.66m3																										
		TLFR = 1804.99m3																										
		TLFLTR = 6114.82m3																										
		Condensate Produced last 24hrs = 3.78m3																										
		Cumulative Condensate Produced = 68.15m3																										
		Salinity = 65000ppm																										
		ph = 7																										
		Sand = Nil																										
		Hrs Flowed = 473.5																										
		Hours Flared = 470																										



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	Sand %
	hh:mm kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
01:00						1422.72	0.00	1.73	91.5	0.15	3.53	67.37			1.58	37.99	1797.08	6122.73	65000	7.0	0.0
01:15						1423.58	0.00											6122.73			
01:30						1424.43	0.00											6122.73			
01:45						1425.28	0.00											6122.73			
02:00						1426.15	0.00	1.54	90.0	0.15	3.70	67.53			1.39	33.26	1798.46	6121.35	64000	7.0	0.0
02:15						1427.00	0.00											6121.35			
02:30						1427.88	0.00											6121.35			
02:45						1428.76	0.00											6121.35			
03:00						1429.62	0.00	1.77	91.6	0.15	3.57	67.67			1.62	38.91	1800.09	6119.72	64000	7.0	0.0
03:15						1430.45	0.00											6119.72			
03:30						1431.33	0.00											6119.72			
03:45						1432.21	0.00											6119.72			
04:00						1433.07	0.00	1.72	90.7	0.16	3.84	67.83			1.56	37.44	1801.65	6118.16	65000	7.0	0.0
04:15						1433.97	0.00											6118.16			
04:30						1434.84	0.00											6118.16			
04:45						1435.71	0.00											6118.16			
05:00						1436.58	0.00	1.85	91.2	0.16	3.91	68.00			1.69	40.49	1803.33	6116.48	65000	7.0	0.0
05:15						1437.45	0.00											6116.48			
05:30						1438.32	0.00											6116.48			
05:45						1439.19	0.00											6116.48			
06:00						1440.03	0.00	1.81	91.6	0.15	3.65	68.15			1.66	39.79	1804.99	6114.82	65000	7.0	0.0



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/06																												
		Surface Total = 62.92m3 Api = 64.5@15.6°C H2s = 0.50ppm CO2 = 1.0 %																										
06:15	473:45	10655.9	83.3	5322		36	8792		1153	20.37	21	83.26	1426.83	186		22								64	6	0.00	0.00	0.29
06:30	474:00	10650.1	83.3	5379		36	8804		1148	20.09	21	82.52	1427.69	190		23								62	4	0.00	0.00	0.29
06:45	474:15	10651.6	83.3	5328		36	8797		1108	20.25	20	81.56	1428.54	191		24								64	3	0.00	0.00	0.29
07:00	474:30	10624.7	83.3	5445		36	8794		1118	20.09	21	81.56	1429.39	189		24								64	1	0.00	0.00	0.29
07:15	474:45	10632.8	83.3	5317		36	8785		1141	20.71	21	83.61	1430.26	191		24								65	0	0.00	0.00	0.29
07:30	475:00	10657.2	83.2	5412		36	8795		1158	20.02	21	82.69	1431.12	192		23								65	-1	0.00	0.00	0.29
07:45	475:15	10646.8	83.3	5373		36	8791		1100	19.87	21	80.46	1431.96	191		23								64	-2	0.00	0.00	0.29
07:50		Tubing & Casing pressures taken from Deadweight gauge.																										
07:50		Pressure test wing and Casing valves.																										
08:00	475:30	10664.6	83.3	5401		36	8797		1148	20.50	21	83.30	1432.83	195		22								67	-3	0.00	0.00	0.29
08:15	475:45	10619.0	83.2	5234		36	8793		1147	21.02	21	84.40	1433.71	192		21								67	-3	0.00	0.00	0.29
08:30	476:00	10658.0	83.3	5349		36	8804		1124	19.14	21	79.70	1434.54	193		21								63	-4	0.00	0.00	0.29
08:45	476:15	10637.7	83.4	5151		35	8766		1158	20.71	20	84.23	1435.42	194		21								70	-2	0.00	0.00	0.29
09:00	476:30	10635.1	83.4	5266		36	8779		1100	19.80	20	80.41	1436.25	196		20								68	-1	0.00	0.00	0.29
09:15	476:45	10635.6	83.4	5316		36	8769		1158	20.64	21	84.05	1437.13	197		19								71	1	0.00	0.00	0.29
09:30	477:00	10623.8	83.4	5394		36	8784		1095	19.71	20	80.05	1437.96	196		19								67	2	0.00	0.00	0.29
09:45	477:15	10626.2	83.4	5144		36	8780		1121	20.26	20	82.08	1438.82	198		18								67	2	0.00	0.00	0.29
09:55		Real time tubing & Casing pressure back online.																										
10:00	477:30	10612.1	83.5	4784		36	8819		1100	19.82	20	80.49	1439.66	200		19								64	2	0.00	0.00	0.29
10:15	477:45	10609.6	83.5	5207		36	8812		1115	20.08	20	81.52	1440.51	201		19								64	2	0.00	0.00	0.29
10:30	478:00	10626.8	83.6	5389		36	8825		1119	20.07	21	81.56	1441.36	201		19								65	3	0.00	0.00	0.29
10:45	478:15	10590.6	83.6	5239		36	8805		1132	20.89	20	83.79	1442.23	200		19								69	3	0.00	0.00	0.29
11:00	478:30	10586.4	83.7	5244		36	8813		1142	21.16	20	84.61	1443.11	204		19								68	4	0.00	0.00	0.29
11:15	478:45	10581.2	83.7	5484		36	8822		1096	20.42	21	81.44	1443.96	204		19								66	4	0.00	0.00	0.29
11:30	479:00	10590.3	83.7	5322		36	8832		1120	20.80	21	82.98	1444.82	205		19								67	5	0.00	0.00	0.29
11:45	479:15	10589.4	83.5	5208		36	8818		1142	21.08	21	84.32	1445.70	207		20								67	5	0.00	0.00	0.29
12:00	479:30	10580.5	83.5	5359		36	8823		1107	20.42	21	81.77	1446.55	205		21								66	6	0.00	0.00	0.29
12:15	479:45	10585.4	83.5	5443		36	8810		1132	20.63	21	83.05	1447.42	209		22								66	6	0.00	0.00	0.29
12:30	480:00	10596.3	83.5	5282		36	8807		1126	20.86	21	83.31	1448.29	208		22								69	6	0.00	0.00	0.29
12:45	480:15	10576.3	83.6	5413		36	8821		1132	20.86	22	83.43	1449.15	210		23								67	7	0.00	0.00	0.29
13:00	480:30	10583.7	83.6	5373		36	8830		1116	20.57	21	82.36	1450.01	210		24								67	7	0.00	0.00	0.29
13:15	480:45	10604.6	83.6	5445		36	8825		1149	21.28	22	84.79	1450.90	215		25								67	8	0.00	0.00	0.29
13:30	481:00	10576.2	83.6	5386		36	8810		1149	20.97	22	84.25	1451.77	212		26								67	8	0.00	0.00	0.29
13:45	481:15	10593.1	83.7	5429		36	8825		1160	21.01	22	84.67	1452.65	212		26								67	8	0.00	0.00	0.29
14:00	481:30	10595.7	83.7	5358		36	8815		1118	20.88	21	83.03	1453.52	215		26								65	8	0.00	0.00	0.29
14:15	481:45	10581.2	83.7	5443		36	8825		1114	20.97	22	83.03	1454.38	213		26								67	9	0.00	0.00	0.29
14:30	482:00	10594.2	83.7	5482		36	8819		1113	21.02	22	83.09	1455.25	216		26								67	9	0.00	0.00	0.29
14:45	482:15	10553.2	83.7	5361		36	8827		1139	21.30	22	84.55	1456.13	218		27								68	9	0.00	0.00	0.29



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Operation:
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Field or Area:
Test Start:
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Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production			Load Fluid Left			Sand %	
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job	Salinity	pH		
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:15						1440.90	0.00											6114.82			
06:30						1441.76	0.00											6114.82			
06:45						1442.61	0.00											6114.82			
07:00						1443.46	0.00	1.63	90.0	0.16	3.91	68.31			1.47	35.21	1806.46	6113.35	64000	7.0	0.0
07:15						1444.33	0.00											6113.35			
07:30						1445.19	0.00											6113.35			
07:45						1446.03	0.00											6113.35			
08:00						1446.90	0.00	1.59	91.0	0.14	3.43	68.45			1.45	34.73	1807.91	6111.90	64000	7.0	0.0
08:15						1447.77	0.00											6111.90			
08:30						1448.60	0.00											6111.90			
08:45						1449.48	0.00											6111.90			
09:00						1450.32	0.00	1.56	91.0	0.14	3.37	68.59			1.42	34.07	1809.33	6110.48	64000	7.0	0.0
09:15						1451.20	0.00											6110.48			
09:30						1452.03	0.00											6110.48			
09:45						1452.88	0.00											6110.48			
10:00						1453.72	0.00	1.74	90.6	0.16	3.93	68.76			1.58	37.83	1810.90	6108.91	64000	7.0	0.0
10:15						1454.57	0.00											6108.91			
10:30						1455.42	0.00											6108.91			
10:45						1456.29	0.00											6108.91			
11:00						1457.18	0.00	1.77	90.8	0.16	3.91	68.92			1.61	38.57	1812.51	6107.30	63000	7.0	0.0
11:15						1458.02	0.00											6107.30			
11:30						1458.89	0.00											6107.30			
11:45						1459.77	0.00											6107.30			
12:00						1460.62	0.00	1.71	91.2	0.15	3.61	69.07			1.56	37.43	1814.07	6105.74	63000	7.0	0.0
12:15						1461.48	0.00											6105.74			
12:30						1462.35	0.00											6105.74			
12:45						1463.22	0.00											6105.74			
13:00						1464.08	0.00	1.79	90.7	0.17	4.00	69.24			1.62	38.96	1815.69	6104.12	64000	7.0	0.0
13:15						1464.96	0.00											6104.12			
13:30						1465.84	0.00											6104.12			
13:45						1466.72	0.00											6104.12			
14:00						1467.59	0.00	2.03	91.2	0.18	4.29	69.42			1.85	44.43	1817.54	6102.27	64000	7.0	0.0
14:15						1468.45	0.00											6102.27			
14:30						1469.32	0.00											6102.27			
14:45						1470.20	0.00											6102.27			



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Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data			Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure			Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/06																													
15:00	482:30	10561.4	83.7	5466		36	8812			1113	20.87	22	82.75	1456.99	216		27								66	9	0.00	0.00	0.29
15:15	482:45	10552.9	83.8	5245		36	8812			1147	22.41	22	87.00	1457.90	219		28								72	10	0.00	0.00	0.29
15:30	483:00	10556.1	83.8	5434		36	8823			1090	21.51	22	83.20	1458.77	218		28								64	10	0.00	0.00	0.29
15:45	483:15	10572.8	83.8	5430		36	8821			1110	21.71	22	84.27	1459.64	219		28								66	8	0.00	0.00	0.29
16:00	483:30	10537.5	83.8	5354		36	8808			1099	21.38	22	83.28	1460.51	219		27								68	9	0.00	0.00	0.29
16:15	483:45	10548.0	83.9	5373		36	8820			1111	21.74	22	84.45	1461.39	180		26								69	9	0.00	0.00	0.29
16:30	484:00	10571.0	83.9	5500		37	8824			1068	21.14	22	81.62	1462.24	191		27								62	10	0.00	0.00	0.29
16:45	484:15	10547.3	83.9	5418		36	8796			1123	22.02	22	85.31	1463.13	194		27								67	10	0.00	0.00	0.29
17:00	484:30	10562.7	83.9	5382		36	8822			1098	21.50	22	83.38	1464.00	196		27								67	11	0.00	0.00	0.29
17:15	484:45	10540.1	83.9	5433		36	8809			1077	21.02	22	81.77	1464.85	200		26								66	12	0.00	0.00	0.29
17:30	485:00	10544.7	83.9	5469		36	8808			1075	21.03	22	81.67	1465.70	199		25								66	12	0.00	0.00	0.29
17:45	485:15	10538.4	83.9	5362		36	8795			1107	21.63	22	84.02	1466.58	199		25								70	13	0.00	0.00	0.29
18:00	485:30	10534.3	84.0	5449		36	8811			1103	21.60	22	83.76	1467.45	202		24								69	13	0.00	0.00	0.29
18:15	485:45	10547.1	84.0	5495		36	8815			1064	20.82	21	80.98	1468.29	204		24								64	13	0.00	0.00	0.29
18:30	486:00	10538.7	84.0	5581		37	8807			1069	21.02	22	81.49	1469.14	205		24								65	14	0.00	0.00	0.29
18:45	486:15	10534.0	83.9	5404		36	8780			1109	21.70	22	84.20	1470.02	209		23								67	14	0.00	0.00	0.29
19:00	486:30	10533.4	83.9	5565		37	8806			1041	20.62	21	79.77	1470.85	206		23								64	14	0.00	0.00	0.29
19:15	486:45	10524.4	83.9	5373		36	8827			1065	21.34	22	81.99	1471.70	209		22								65	15	0.00	0.00	0.29
19:30	487:00	10533.5	83.9	5456		36	8808			1048	21.29	21	81.38	1472.55	210		21								65	15	0.00	0.00	0.29
19:45	487:15	10535.5	83.9	5484		36	8801			1093	22.15	22	84.48	1473.43	210		22								66	15	0.00	0.00	0.29
20:00	487:30	10531.3	84.0	5488		36	8819			1064	21.47	22	82.21	1474.29	211		21								65	15	0.00	0.00	0.29
20:15	487:45	10527.9	83.9	5599		36	8819			1070	21.46	21	82.41	1475.15	210		21								65	15	0.00	0.00	0.29
20:30	488:00	10631.6	83.9	5497		37	8815			1041	20.92	21	80.32	1475.98	210		20								63	15	0.00	0.00	0.29
20:45	488:15	10542.4	83.9	5551		36	8808			1071	21.40	21	82.37	1476.84	211		20								65	15	0.00	0.00	0.29
21:00	488:30	10525.0	83.8	5533		36	8809			1073	21.45	21	82.54	1477.70	212		19								65	13	0.00	0.00	0.29
21:15	488:45	10542.8	83.8	5487		36	8807			1073	21.39	21	82.48	1478.56	211		18								65	10	0.00	0.00	0.29
21:30	489:00	10527.2	83.8	5437		36	8805			1094	21.97	21	84.36	1479.44	210		18								68	10	0.00	0.00	0.29
21:45	489:15	10551.3	83.7	5447		36	8819			1043	20.77	21	80.18	1480.27	210		18								66	11	0.00	0.00	0.29
22:00	489:30	10528.4	83.7	5504		36	8822			1090	21.44	21	83.12	1481.14	210		17								67	11	0.00	0.00	0.29
22:15	489:45	10541.1	83.6	5382		36	8807			1097	21.28	22	83.06	1482.00	210		17								66	11	0.00	0.00	0.29
22:30	490:00	10524.1	83.5	5614		36	8796			1066	20.69	21	80.87	1482.85	211		17								64	11	0.00	0.00	0.29
22:45	490:15	10550.3	83.5	5520		37	8816			1075	20.90	21	81.57	1483.70	211		18								64	11	0.00	0.00	0.29
23:00	490:30	10553.8	83.5	5565		36	8798			1086	21.21	21	82.58	1484.56	213		19								66	12	0.00	0.00	0.29
23:15	490:45	10532.8	83.5	5421		36	8788			1079	21.03	21	82.02	1485.41	213		21								64	12	0.00	0.00	0.29
23:30	491:00	10537.7	83.4	5663		37	8798			1083	21.03	22	81.97	1486.26	212		22								64	12	0.00	0.00	0.29
23:45	491:15	10516.3	83.4	5481		36	8794			1095	21.18	21	82.83	1487.13	212		23								65	12	0.00	0.00	0.29
14/04/07																													
00:00	491:30	10525.9	83.4	5385		36	8802			1111	21.48	22	83.93	1488.00	210		24								65	12	0.00	0.00	0.29
00:15	491:45	10549.8	83.4	5554		37	8811			1075	20.92	22	81.50	1488.85	215		25								62	12	0.00	0.00	0.29
00:30	492:00	10520.3	83.4	5522		36	8790			1077	20.75	21	81.35	1489.70	211		26								63	12	0.00	0.00	0.29
00:45	492:15	10542.8	83.4	5554		37	8802			1048	20.35	21	79.59	1490.53	214		26								63	12	0.00	0.00	0.29
01:00	492:30	10545.7	83.4	5542		37	8794			1100	21.32	22	83.18	1491.39	214		26								67	12	0.00	0.00	0.29



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
15:00						1471.06	0.00	1.77	91.3	0.15	3.70	69.57			1.62	38.78	1819.16	6100.65	62000	7.0	0.0
15:15						1471.97	0.00											6100.65			
15:30						1472.83	0.00											6100.65			
15:45						1473.71	0.00											6100.65			
16:00						1474.58	0.00	1.82	91.6	0.15	3.67	69.72			1.67	40.01	1820.83	6098.98	62000	7.0	0.0
16:15						1475.46	0.00											6098.98			
16:30						1476.31	0.00											6098.98			
16:45						1477.20	0.00											6098.98			
17:00						1478.06	0.00	1.92	91.1	0.17	4.10	69.89			1.75	41.98	1822.58	6097.23	64000	7.0	0.0
17:15						1478.92	0.00											6097.23			
17:30						1479.77	0.00											6097.23			
17:45						1480.64	0.00											6097.23			
18:00						1481.51	0.00	1.73	91.2	0.15	3.65	70.05			1.58	37.87	1824.15	6095.66	64000	7.0	0.0
18:15						1482.36	0.00											6095.66			
18:30						1483.21	0.00											6095.66			
18:45						1484.08	0.00											6095.66			
19:00						1484.91	0.00	1.74	92.6	0.13	3.09	70.18			1.61	38.67	1825.76	6094.05	64000	7.0	0.0
19:15						1485.77	0.00											6094.05			
19:30						1486.62	0.00											6094.05			
19:45						1487.50	0.00											6094.05			
20:00						1488.35	0.00	1.92	92.3	0.15	3.55	70.32			1.77	42.53	1827.54	6092.27	64000	7.0	0.0
20:15						1489.21	0.00											6092.27			
20:30						1490.05	0.00											6092.27			
20:45						1490.91	0.00											6092.27			
21:00						1491.77	0.00	1.71	92.3	0.13	3.16	70.46			1.58	37.88	1829.11	6090.70	65000	7.0	0.0
21:15						1492.63	0.00											6090.70			
21:30						1493.50	0.00											6090.70			
21:45						1494.34	0.00											6090.70			
22:00						1495.21	0.00	1.61	91.5	0.14	3.28	70.59			1.47	35.36	1830.59	6089.22	65000	7.0	0.0
22:15						1496.07	0.00											6089.22			
22:30						1496.91	0.00											6089.22			
22:45						1497.76	0.00											6089.22			
23:00						1498.62	0.00	1.70	91.4	0.15	3.51	70.74			1.55	37.29	1832.14	6087.67	64000	7.0	0.0
23:15						1499.48	0.00											6087.67			
23:30						1500.33	0.00											6087.67			
23:45						1501.19	0.00											6087.67			
00:00						1502.07	0.00	1.73	91.4	0.15	3.57	70.89			1.58	37.95	1833.72	6086.09	64000	7.0	0.0
00:15						1502.92	0.00											6086.09			
00:30						1503.76	0.00											6086.09			
00:45						1504.59	0.00											6086.09			
01:00						1505.46	0.00	1.71	91.3	0.15	3.57	71.04			1.56	37.47	1835.28	6084.53	64000	7.0	0.0



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/07																												
01:15	492:45	10513.4	83.4	5436		36	8756		1153	22.44	22	87.32	1492.30	215		26								71	12	0.00	0.00	0.29
01:30	493:00	10519.3	83.4	5540		37	8787		1105	20.05	21	80.87	1493.15	216		26								64	12	0.00	0.00	0.29
01:45	493:15	10505.9	83.4	5453		36	8775		1117	21.40	21	83.99	1494.02	212		25								66	12	0.00	0.00	0.29
02:00	493:30	10518.7	83.4	5520		36	8780		1086	20.96	22	82.02	1494.88	218		25								66	12	0.00	0.00	0.29
02:15	493:45	10515.3	83.4	5426		36	8761		1089	21.50	22	83.17	1495.74	215		24								66	12	0.00	0.00	0.29
02:30	494:00	10514.8	83.4	5525		36	8771		1095	21.15	22	82.69	1496.60	216		23								66	12	0.00	0.00	0.29
02:45	494:15	10505.1	83.3	5473		36	8777		1087	20.93	22	81.93	1497.46	218		21								64	11	0.00	0.00	0.29
03:00	494:30	10512.6	83.3	5514		36	8767		1095	20.84	21	82.17	1498.31	216		19								63	11	0.00	0.00	0.29
03:15	494:45	10521.0	83.3	5449		36	8780		1093	21.58	21	83.53	1499.18	216		17								69	10	0.00	0.00	0.29
03:30	495:00	10514.2	83.3	5424		36	8792		1106	21.07	21	82.99	1500.05	216		16								64	9	0.00	0.00	0.29
03:45	495:15	10519.4	83.3	5508		37	8786		1073	19.37	21	78.51	1500.86	214		15								59	8	0.00	0.00	0.29
04:00	495:30	10515.6	83.3	5514		36	8789		1052	18.40	20	75.94	1501.66	211		14								61	8	0.00	0.00	0.29
04:15	495:45	10523.6	83.3	5418		36	8780		1131	21.67	22	84.96	1502.54	215		13								65	7	0.00	0.00	0.29
04:30	496:00	10520.0	83.3	5595		37	8785		1093	19.96	21	80.34	1503.38	213		12								61	7	0.00	0.00	0.29
04:45	496:15	10526.2	83.3	5450		36	8770		1089	20.72	21	81.67	1504.23	212		11								62	6	0.00	0.00	0.29
05:00	496:30	10501.9	83.2	5391		36	8763		1106	21.10	21	83.12	1505.09	214		10								65	6	0.00	0.00	0.29
05:15	496:45	10508.3	83.2	5443		36	8753		1092	20.73	21	81.88	1505.95	214		9								63	6	0.00	0.00	0.29
05:30	497:00	10526.2	83.2	5544		37	8784		1074	20.35	21	80.48	1506.79	215		8								62	5	0.00	0.00	0.29
05:45	497:15	10514.2	83.2	5437		36	8755		1107	20.97	21	82.87	1507.65	214		8								67	5	0.00	0.00	0.29
06:00	497:30	10504.7	83.2	5304		36	8767		1102	20.83	21	82.45	1508.51	213		8								65	5	0.00	0.00	0.29
		Daily Summary to 06:00 hrs April 07/2014																										
		DHP = 10504kpa																										
		FTP = 5304kpa																										
		SICP = 8767kpa																										
		Flow Temp = 36DegC																										
		Meter Run Temp = 21DegC																										
		Choke Size = 12.70mm																										
		Gas Rate = 82.45 E3m3/Day																										
		Cumulative Gas to Flare = 1522.57 E3m3																										
		Gas to Flare last 24hrs = 82.54 E3m3																										
		LFTR = 7919.81m3																										
		LFR last 24hrs = 37.96m3																										
		TLFR = 1842.95m3																										
		TLFLTR = 6076.86m3																										
		Condensate Produced last 24hrs = 3.64m3																										
		Cumulative Condensate Produced = 71.79m3																										
		Salinity = 64000ppm																										
		ph = 7																										
		Sand = Nil																										
		Hrs Flowed = 497.5																										
		Hours Flared = 494																										
		Surface Total = 65.52m3																										



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	Sand %
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
01:15						1506.37	0.00											6084.53			
01:30						1507.21	0.00											6084.53			
01:45						1508.09	0.00											6084.53			
02:00						1508.94	0.00	1.76	91.1	0.16	3.76	71.19			1.60	38.48	1836.89	6082.92	64000	7.0	0.0
02:15						1509.81	0.00											6082.92			
02:30						1510.67	0.00											6082.92			
02:45						1511.52	0.00											6082.92			
03:00						1512.38	0.00	1.72	90.8	0.16	3.80	71.35			1.56	37.48	1838.45	6081.36	64000	7.0	0.0
03:15						1513.25	0.00											6081.36			
03:30						1514.11	0.00											6081.36			
03:45						1514.93	0.00											6081.36			
04:00						1515.72	0.00	1.63	91.9	0.13	3.17	71.48			1.50	35.95	1839.95	6079.86	64000	7.0	0.0
04:15						1516.61	0.00											6079.86			
04:30						1517.44	0.00											6079.86			
04:45						1518.29	0.00											6079.86			
05:00						1519.16	0.00	1.62	90.7	0.15	3.62	71.63			1.47	35.26	1841.42	6078.39	64000	7.0	0.0
05:15						1520.01	0.00											6078.39			
05:30						1520.85	0.00											6078.39			
05:45						1521.71	0.00											6078.39			
06:00						1522.57	0.00	1.69	90.6	0.16	3.81	71.79			1.53	36.75	1842.95	6076.86	64000	7.0	0.0



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/07																												
		Api = 63.7@15.6°C H2s = 0.25ppm CO2 = 1.0 %																										
06:15	497:45	10526.0	83.2	5523		36	8784		1080	20.47	21	80.97	1509.35	214		8								63	6	0.00	0.00	0.29
06:30	498:00	10514.5	83.2	5457		36	8766		1103	19.37	21	79.42	1510.18	214		8								62	6	0.00	0.00	0.29
06:45	498:15	10525.1	83.2	5510		36	8772		1095	20.49	21	81.46	1511.03	213		8								66	6	0.00	0.00	0.29
07:00	498:30	10514.0	83.2	5367		36	8754		1097	20.52	21	81.67	1511.88	212		8								65	7	0.00	0.00	0.29
07:15	498:45	10510.5	83.2	5565		36	8771		1097	20.31	21	81.23	1512.72	213		11								63	7	0.00	0.00	0.29
07:30	499:00	10530.6	83.2	5511		36	8778		1107	20.80	21	82.46	1513.58	213		13								63	7	0.00	0.00	0.29
07:45	499:15	10514.5	83.2	5406		36	8766		1102	20.43	21	81.59	1514.43	214		15								64	7	0.00	0.00	0.29
08:00	499:30	10505.3	83.2	5512		36	8763		1105	20.25	20	81.44	1515.28	209		16								65	7	0.00	0.00	0.29
08:15	499:45	10504.5	83.6	5379		36	8745		1136	21.21	21	84.37	1516.16	213		18								68	8	0.00	0.00	0.29
08:30	500:00	10501.0	83.7	5488		36	8735		1128	20.98	21	83.66	1517.03	213		19								69	8	0.00	0.00	0.29
08:45	500:15	10510.6	83.7	5302		36	8753		1108	20.74	21	82.44	1517.89	214		20								69	9	0.00	0.00	0.29
09:00	500:30	10466.4	83.7	5189	5316	35	8689	8660	1125	20.96	20	83.58	1518.76	215		20								72	10	0.00	0.00	0.29
09:15	500:45	10482.6	83.7	5330		35	8705		1092	20.83	20	82.16	1519.62	212		19								71	11	0.00	0.00	0.29
09:30	501:00	10486.5	83.8	5422		36	8753		1118	21.18	21	83.65	1520.49	214		18								69	12	0.00	0.00	0.29
09:45	501:15	10477.5	83.8	5300		36	8750		1136	21.58	21	85.10	1521.37	213		18								68	11	0.00	0.00	0.29
10:00	501:30	10496.4	83.9	5485	5385	36	8744	8633	1137	21.33	22	84.48	1522.25	217		18								63	11	0.00	0.00	0.29
10:15	501:45	10498.4	83.9	5489		36	8748		1101	20.60	21	81.85	1523.11	216		17								64	11	0.00	0.00	0.29
10:30	502:00	10522.6	84.0	5460		36	8721		1109	20.74	22	82.40	1523.96	217		16								65	11	0.00	0.00	0.29
10:45	502:15	10492.3	84.0	5478		36	8762		1102	20.68	21	82.08	1524.82	218		16								66	11	0.00	0.00	0.29
11:00	502:30	10476.1	84.0	5447	5399	36	8771	8653	1151	22.23	22	86.69	1525.72	218		17								68	12	0.00	0.00	0.29
11:15	502:45	10468.6	84.0	5444		36	8722		1113	21.12	21	83.41	1526.59	218		18								66	12	0.00	0.00	0.29
11:30	503:00	10491.7	84.1	5468		36	8729		1120	21.00	22	83.19	1527.46	221		19								66	12	0.00	0.00	0.29
11:45	503:15	10451.4	84.1	5279		36	8711		1107	20.82	21	82.52	1528.32	221		18								68	12	0.00	0.00	0.29
12:00	503:30	10477.8	84.1	5326	5337	36	8704	8667	1115	20.40	22	81.87	1529.17	221		17								65	13	0.00	0.00	0.29
12:15	503:45	10459.4	84.1	5226		36	8703		1050	19.91	20	78.85	1529.99	221		15								67	13	0.00	0.00	0.29
12:30	504:00	10444.0	84.2	5273		36	8699		1096	20.70	21	81.95	1530.85	220		13								66	13	0.00	0.00	0.29
12:45	504:15	10476.8	84.2	5284		36	8718		1054	19.75	21	78.58	1531.66	220		12								61	13	0.00	0.00	0.29
13:00	504:30	10468.7	84.2	5409	5316	37	8740	8653	1092	19.48	22	79.19	1532.49	222		11								61	13	0.00	0.00	0.29
13:15	504:45	10459.1	84.3	5336		36	8708		1103	21.42	21	83.52	1533.36	221		10								67	13	0.00	0.00	0.29
13:30	505:00	10450.2	84.3	5254		36	8700		1090	21.13	21	82.51	1534.22	223		9								66	12	0.00	0.00	0.29
13:45	505:15	10434.6	84.3	5242		36	8693		1097	21.39	22	83.26	1535.09	222		8								67	12	0.00	0.00	0.29
14:00	505:30	10460.2	84.3	5326		36	8699		1071	19.77	21	79.12	1535.91	221		8								61	12	0.00	0.00	0.29
14:15	505:45	10444.5	84.3	5158		35	8692		1065	21.17	20	81.86	1536.76	220		7								68	12	0.00	0.00	0.29
14:30	506:00	10469.5	84.3	5410		36	8723		1082	20.64	21	81.33	1537.61	221		7								64	12	0.00	0.00	0.29
14:45	506:15	10449.7	84.3	5277		36	8699		1090	20.95	21	82.17	1538.47	221		6								65	12	0.00	0.00	0.29
15:00	506:30	10451.4	84.3	5235		36	8705		1130	21.58	22	84.71	1539.35	220	0.00	6	0.00	13.78	0	0.00	0	0.00	0.00	64	11	0.00	0.00	0.29
15:00		Shut in well. Meter out of service.																										
15:00		Record build-ups and begin to rig out equipment.																										
15:05	506:30	10848.3	83.6	8611	8639		9034	8984																				



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production			Load Fluid Left			Sand %	
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job	Salinity	pH		
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
06:15						1523.42	0.00											6076.86			
06:30						1524.24	0.00											6076.86			
06:45						1525.09	0.00											6076.86			
07:00						1525.94	0.00	1.36	91.5	0.12	2.77	71.91			1.24	29.87	1844.19		64000	7.0	0.0
07:15						1526.79	0.00											6075.62			
07:30						1527.65	0.00											6075.62			
07:45						1528.50	0.00											6075.62			
08:00						1529.35	0.00	1.72	90.7	0.16	3.84	72.07			1.56	37.44	1845.75		64000	7.0	0.0
08:15						1530.23	0.00											6074.06			
08:30						1531.10	0.00											6074.06			
08:45						1531.96	0.00											6074.06			
09:00						1532.83	0.00	1.73	91.9	0.14	3.36	72.21			1.59	38.16	1847.34		62000	7.0	0.0
09:15						1533.68	0.00											6072.47			
09:30						1534.55	0.00											6072.47			
09:45						1535.44	0.00											6072.47			
10:00						1536.32	0.00	2.16	90.0	0.22	5.18	72.42			1.94	46.66	1849.29		62000	7.0	0.0
10:15						1537.17	0.00											6070.52			
10:30						1538.03	0.00											6070.52			
10:45						1538.89	0.00											6070.52			
11:00						1539.79	0.00	1.87	91.7	0.16	3.73	72.58			1.71	41.15	1851.00		62000	7.0	0.0
11:15						1540.66	0.00											6068.81			
11:30						1541.52	0.00											6068.81			
11:45						1542.38	0.00											6068.81			
12:00						1543.24	0.00	1.74	91.2	0.15	3.67	72.73			1.59	38.09	1852.59		63000	7.0	0.0
12:15						1544.06	0.00											6067.22			
12:30						1544.91	0.00											6067.22			
12:45						1545.73	0.00											6067.22			
13:00						1546.56	0.00	1.38	90.1	0.14	3.28	72.87			1.24	29.84	1853.83		63000	7.0	0.0
13:15						1547.43	0.00											6065.98			
13:30						1548.28	0.00											6065.98			
13:45						1549.15	0.00											6065.98			
14:00						1549.98	0.00	1.71	91.8	0.14	3.37	73.01			1.57	37.67	1855.40		63000	7.0	0.0
14:15						1550.83	0.00											6064.41			
14:30						1551.68	0.00											6064.41			
14:45						1552.53	0.00											6064.41			
15:00	0	0	0.00	0.00	0.00	1553.41	0.00	1.79	91.4	0.15	3.69	73.16			1.64	39.27	1857.04		63000	7.0	0.0
15:05							0.00											6062.77			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/07																												
15:10	506:30	11003.7	83.9	8800	8770		9119	9053																				
15:15	506:30	11121.5	84.0	8835	8832		9161	9081																				
15:30	506:30	11252.8	84.1	8993	8991		9233	9129																				
15:45	506:30	11351.8	84.1	9126	9136		9289	9191																				
16:00	506:30	11428.8	84.1	9250	9294		9328	9246																				
16:05	Change out casing sensor and needle valve due to leaking threads.																											
16:15	506:30	11497.3	84.1				9365																					
16:30	506:30	11571.1	84.2	9426	9453		9417	9363																				
16:45	506:30	11634.0	84.2	9476			9495																					
17:00	506:30	11685.8	84.2		9536		9522	9508																				
17:15	506:30	11744.4	84.3	9552			9629																					
17:30	506:30	11773.0	84.3	9589			9685																					
17:45	506:30	11826.4	84.3	9635			9730																					
18:00	506:30	11882.5	84.4	9682	9715		9765	9687																				
18:00	FINAL SUMMARY to 18:00 hrs April 7/2014																											
18:00	DHP = 11882.5 kpa																											
18:00	SITP = 9682 kpa																											
18:00	SICP = 9765 kpa																											
18:00	Flow Temp = N/A DegC																											
18:00	Meter Run Temp = N/A DegC																											
18:00	Choke Size = N/A mm																											
18:00	Gas Rate = N/A E3m3/Day																											
18:00	Cumulative Gas to Flare = 1553.41 E3m3																											
18:00	Gas to Flare last 12hrs = 10.84 E3m3																											
18:00	LFTR = 7919.81m3																											
18:00	LFR last 12 hour = 14.09 m3																											
18:00	TLFR = 1857.04 m3																											
18:00	TLFLTR = 6062.77 m3																											
18:00	Condensate Produced last 12hrs = 3.11 m3																											
18:00	Cumulative Condensate Produced = 73.16 m3																											
18:00	Salinity = 63000 ppm																											
18:00	ph = 7																											
18:00	Sand = 0																											
18:00	Hrs Flowed = 506.5																											
18:00	Hours Flared = 503																											
18:00	Surface Total = 48.98 m3 @ 15:00 hrs																											
18:00	Api = N/A																											
18:00	H2S = 0.30 ppm @ 15:00 hrs																											
18:00	CO2 =1.0 %																											
18:15	506:30	11920.6	84.4	9698			9798																					
18:30	506:30	11956.0	84.5	9732			9819																					
18:45	506:30	11981.1	84.5	9742			9843																					



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Operation:
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Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
15:10							0.00											6062.77			
15:15							0.00											6062.77			
15:30							0.00											6062.77			
15:45							0.00											6062.77			
16:00							0.00											6062.77			
16:15							0.00											6062.77			
16:30							0.00											6062.77			
16:45							0.00											6062.77			
17:00							0.00											6062.77			
17:15							0.00											6062.77			
17:30							0.00											6062.77			
17:45							0.00											6062.77			
18:00							0.00											6062.77			
18:15							0.00											6062.77			
18:30							0.00											6062.77			
18:45							0.00											6062.77			



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Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/07																												
19:00	506:30	12014.9	84.5	9776	9805			9872	9756																			
19:15	506:30	12042.3	84.6	9788				9898																				
19:30	506:30	12085.9	84.6	9808				9907																				
19:45	506:30	12128.4	84.6	9838				9935																				
20:00	506:30	12141.6	84.6	9846	9880			9947	9894																			
20:15	506:30	12175.8	84.6	9866				9977																				
20:30	506:30	12213.1	84.7	9872				9988																				
20:45	506:30	12225.6	84.7	9898				10006																				
21:00	506:30	12243.4	84.7	9917	9942			10020	9949																			
21:15	506:30	12280.6	84.7	9921				10043																				
21:30	506:30	12302.7	84.7	9944				10064																				
21:45	506:30	12325.9	84.7	9950				10074																				
22:00	506:30	12352.0	84.8	9973	10025			10086	10018																			
22:15	506:30	12375.1	84.8	9979				10108																				
22:30	506:30	12382.5	84.8	10002				10117																				
22:45	506:30	12393.4	84.8	10007				10130																				
23:00	506:30	12411.7	84.8	10021	10066			10147	10087																			
23:15	506:30	12454.4	84.8	10032				10160																				
23:30	506:30	12473.6	84.8	10030				10176																				
23:45	506:30	12485.4	84.8	10049				10184																				
14/04/08																												
00:00	506:30	12513.4	84.8	10056	10135			10192	10128																			
00:15	506:30	12521.2	84.8	10080				10216																				
00:30	506:30	12546.6	84.8	10080				10214																				
00:45	506:30	12557.8	84.8	10103				10228																				
01:00	506:30	12580.0	84.9	10114	10170			10240	10183																			
01:15	506:30	12593.2	84.9	10113				10251																				
01:30	506:30	12616.9	84.9	10133				10264																				
01:45	506:30	12616.5	84.9	10131				10283																				
02:00	506:30	12629.6	84.9	10152	10225			10283	10225																			
02:15	506:30	12647.3	84.9	10154				10302																				
02:30	506:30	12671.4	84.9	10178				10309																				
02:45	506:30	12678.3	84.9	10184				10319																				
03:00	506:30	12695.3	85.0	10185	10252			10318	10294																			
03:15	506:30	12701.6	85.0	10201				10338																				
03:30	506:30	12710.7	85.0	10205				10344																				
03:45	506:30	12720.6	85.0	10222				10353																				
04:00	506:30	12748.1	84.9	10222	10294			10361	10308																			
04:15	506:30	12743.4	84.9	10240				10370																				
04:30	506:30	12768.1	84.9	10236				10381																				
04:45	506:30	12789.6	84.9	10251				10383																				
05:00	506:30	12797.2	84.9	10256	10321			10389	10342																			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production			Load Fluid Left			Sand %	
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job	Salinity	pH		
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
19:00							0.00											6062.77			
19:15							0.00											6062.77			
19:30							0.00											6062.77			
19:45							0.00											6062.77			
20:00							0.00											6062.77			
20:15							0.00											6062.77			
20:30							0.00											6062.77			
20:45							0.00											6062.77			
21:00							0.00											6062.77			
21:15							0.00											6062.77			
21:30							0.00											6062.77			
21:45							0.00											6062.77			
22:00							0.00											6062.77			
22:15							0.00											6062.77			
22:30							0.00											6062.77			
22:45							0.00											6062.77			
23:00							0.00											6062.77			
23:15							0.00											6062.77			
23:30							0.00											6062.77			
23:45							0.00											6062.77			
00:00							0.00											6062.77			
00:15							0.00											6062.77			
00:30							0.00											6062.77			
00:45							0.00											6062.77			
01:00							0.00											6062.77			
01:15							0.00											6062.77			
01:30							0.00											6062.77			
01:45							0.00											6062.77			
02:00							0.00											6062.77			
02:15							0.00											6062.77			
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04:45							0.00											6062.77			
05:00							0.00											6062.77			



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/08																												
05:15	506:30	12789.3	84.9	10252			10402																					
05:30	506:30	12811.8	85.0	10260			10407																					
05:45	506:30	12836.9	85.0	10254			10419																					
06:00	506:30	12830.7	84.9	10264	10349		10421	10377																				
06:15	506:30	12860.9	84.9	10262			10431																					
06:30	506:30	12876.0	84.9	10263			10438																					
06:45	506:30	12869.0	84.9	10278			10448																					
07:00	506:30	12899.9	84.9	10279			10455																					
07:15	506:30	12896.8	84.9	10285			10460																					
07:30	506:30	12917.9	85.0	10291			10474																					
07:45	506:30	12927.9	85.0	10299			10476																					
08:00	506:30	12927.2	85.0	10311	10432		10483	10432																				
08:15	506:30	12945.9	85.0	10307			10485																					
08:30	506:30	12943.0	85.0	10318			10498																					
08:45	506:30	12961.9	85.0	10326			10503																					
09:00	506:30	12977.7	85.0	10331	10467		10514	10439																				
09:15	506:30	12986.5	85.0	10336			10510																					
09:30	506:30	12990.0	85.0	10350			10518																					
09:45	506:30	12989.4	85.1	10345			10530																					
10:00	506:30	13029.1	85.1	10344	10474		10540	10480																				
10:15	506:30	13027.4	85.1	10360			10543																					
10:30	506:30	13037.3	85.1	10366			10551																					
10:45	506:30	13037.4	85.1	10380			10562																					
11:00	506:30	13045.6	85.0	10386	10487		10566	10515																				
11:15	506:30	13076.8	85.0	10391			10576																					
11:30	506:30	13077.7	85.0	10391			10576																					
11:45	506:30	13087.9	85.0	10396			10581																					
12:00	506:30	13083.4	85.0	10402	10515		10593	10529																				
12:15	506:30	13095.5	85.1	10400			10600																					
12:30	506:30	13092.3	85.1	10404			10605																					
12:45	506:30	13118.8	85.1	10415			10605																					
13:00	506:30	13112.1	85.1	10416	10542		10615	10556																				
13:15	506:30	13132.2	85.1	10420			10621																					
13:30	506:30	13136.0	85.1	10426			10627																					
13:45	506:30	13101.2	85.1	10429			10633																					
14:00	506:30	13137.1	85.0	10427	10563		10642	10570																				
14:15	506:30	13137.7	85.0	10433			10640																					
14:30	506:30	13178.8	85.0	10439			10656																					
14:45	506:30	13180.4	85.1	10449			10665																					
15:00	506:30	13192.8	85.0	10455	10590		10661	10604																				
15:15	506:30	13186.3	85.1	10457			10667																					
15:30	506:30	13210.2	85.1	10461			10673																					



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ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
05:15							0.00											6062.77			
05:30							0.00											6062.77			
05:45							0.00											6062.77			
06:00							0.00											6062.77			
06:15							0.00											6062.77			
06:30							0.00											6062.77			
06:45							0.00											6062.77			
07:00							0.00											6062.77			
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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					Zinch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/08																												
15:45	506:30	13214.6	85.2	10473			10681																					
16:00	506:30	13218.2	85.2	10482	10611		10682	10584																				
16:15	506:30	13229.4	85.2	10497			10688																					
16:30	506:30	13223.6	85.2	10506			10688																					
16:45	506:30	13244.6	85.2	10506			10702																					
17:00	506:30	13250.1	85.2	10513	10625		10700	10652																				
17:15	506:30	13260.6	85.2	10519			10698																					
17:30	506:30	13241.7	85.2	10511			10709																					
17:45	506:30	13255.6	85.1	10512			10704																					
18:00	506:30	13276.6	85.1	10514	10653		10707	10667																				
18:15	506:30	13278.1	85.1	10525			10706																					
18:30	506:30	13292.5	85.1	10525			10715																					
18:45	506:30	13288.5	85.2	10526			10724																					
19:00	506:30	13309.3	85.1	10526	10666		10730	10680																				
19:15	506:30	13305.1	85.2	10533			10736																					
19:30	506:30	13304.6	85.2	10533			10741																					
19:45	506:30	13325.5	85.2	10535			10746																					
20:00	506:30	13323.1	85.1	10535	10756		10753	10735																				
20:15	506:30	13346.5	85.2	10542			10760																					
20:30	506:30	13344.4	85.2	10540			10768																					
20:45	506:30	13340.0	85.1	10542			10770																					
21:00	506:30	13341.8	85.1	10546	10707		10781	10707																				
21:15	506:30	13370.0	85.1	10553			10784																					
21:30	506:30	13393.3	85.1	10555			10784																					
21:45	506:30	13391.1	85.1	10555			10798																					
22:00	506:30	13389.0	85.1	10563	10714		10802	10721																				
22:15	506:30	13397.5	85.1	10564			10798																					
22:30	506:30	13393.7	85.2	10569			10797																					
22:45	506:30	13391.2	85.2	10569			10813																					
23:00	506:30	13428.2	85.2	10569	10718		10809	10725																				
23:15	506:30	13428.3	85.2	10580			10813																					
23:30	506:30	13425.9	85.2	10582			10821																					
23:45	506:30	13438.8	85.2	10584			10825																					
14/04/09																												
00:00	506:30	13439.5	85.2	10592	10776		10822	10790																				
00:15	506:30	13438.9	85.2	10595			10835																					
00:30	506:30	13451.5	85.2	10598			10832																					
00:45	506:30	13450.8	85.2	10603			10844																					
01:00	506:30	13474.7	85.2	10608	10784		10850	10777																				
01:15	506:30	13472.7	85.2	10616			10848																					
01:30	506:30	13467.5	85.2	10613			10857																					
01:45	506:30	13491.6	85.2	10614			10855																					



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Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.					Water Production			Load Fluid Left			Sand %
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job		Salinity	pH	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
15:45							0.00											6062.77			
16:00							0.00											6062.77			
16:15							0.00											6062.77			
16:30							0.00											6062.77			
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Operation: Tight Hole
Pool or Zone: Tight Hole
Field or Area: Norman Wells
Test Start: 17 Mar 2014
Test End: 9 Apr 2014
Wft Job #: 4413812

Time	Elapsed Time	DwnHole Press	DwnHole Temp	Tubing Pressure	Scada Tubing	Well Head Data		Scada Casing	High Stage Separator					Low Stage Separator					2inch Daniels					Gas Turbine Meter 1				
						Wellhead Temp	Casing Pressure		Static Pressure	Diff.	Temp.	Q	Cum. Q1	Static Pressure2	Diff2	Temp2	Q2	Cum. Q2	Static Pressure3	Diff3	Temp3	Q3	Cum. Q3	Static Pressure4	Temp4	TFlow4	Q4	Cum. Q4
hh:mm	Hours	kPag	°C	kPag	kPag	°C	kPag	kPag	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	kPa	°C	E³m³/d	E³m³	kPag	°C	E³m³/d	E³m³/d	E³m³
14/04/09																												
02:00	506:30	13489.6	85.2	10619	10790		10865	10818																				
02:15	506:30	13485.9	85.2	10627			10870																					
02:30	506:30	13519.2	85.2	10626			10872																					
02:45	506:30	13514.0	85.3	10628			10874																					
03:00	506:30	13514.1	85.3	10627	10845		10878	10832																				
03:15	506:30	13534.9	85.2	10637			10882																					
03:30	506:30	13533.9	85.2	10639			10887																					
03:45	506:30	13534.6	85.2	10640			10893																					
04:00	506:30	13556.8	85.2	10647	10845		10899	10832																				
04:15	506:30	13555.1	85.2	10646			10898																					
04:30	506:30	13552.1	85.2	10646			10908																					
04:45	506:30	13560.5	85.2	10649			10909																					
05:00	506:30	13558.7	85.2	10657	10847		10914	10836																				
05:15	506:30	13556.3	85.2	10658			10922																					
05:30	506:30	13547.6	85.2	10660			10918																					
05:45	506:30	13578.6	85.2	10665			10923																					
06:00	506:30	13576.9	85.2	10668	10866		10924	10873																				
06:15	506:30	13571.5	85.2	10669			10920																					
06:30	506:30	13606.6	85.2	10671			10924																					
06:45	506:30	13602.7	85.2	10671			10937																					
07:00	506:30	13605.4	85.2	10675			10936																					
07:15	506:30	13626.0	85.2	10679			10949																					
07:30	506:30	13623.5	85.3	10682			10948																					
07:45	506:30	13561.4	85.3	10689			10953																					
08:00	506:30	13647.2	85.3	10699	10900		10952	10914																				
08:15	506:30	13648.3	85.3	10695			10964																					
08:30	506:30	13644.8	85.3	10703			10968																					
08:45	506:30	13645.1	85.3	10706			10968																					
09:00	506:30	13655.2	85.3	10711	10915		10968	10853																				
09:15	506:30	13660.6	85.3	10712			10973																					
09:30	506:30	13661.7	85.3	10735			10987																					
09:45	506:30	13678.8	85.3	10735			10981																					
10:00	506:30	13685.9	85.3	10747	10922		10987	10929																				
10:01		End Of Job.																										



Weatherford®

CPD and Testing Services (Canada)
Weatherford 1200, 333 - 5th Avenue S.W.
Calgary, AB T2P 3B6
Telephone: 403.693.7500
Facsimile: 403.693.7769

ConocoPhillips Canada
P-20 65-00 126-45

Operation:
Pool or Zone:
Field or Area:
Test Start:
Test End:
Wft Job #:

Tight Hole
Tight Hole
Norman Wells
17 Mar 2014
9 Apr 2014
4413812

Time	Gas Turbine Meter 2					Cum. Q Total Job	H2S	BS&W		Oil Prod.				Water Production			Load Fluid Left				
	Static Pressure5	Temp5	TFlow5	Q5	Cum. Q5			BS&W Incr Liq Volume	BS&W %	Incr Oil Volume 1	Oil Rate 1	Cum Oil Total Job	Oil Temperature	Oil Sp Gr @ 60 F	Incr Water Volume 1	Water Rate 1	Cum Water Total Job	Salinity	pH	Sand %	
hh:mm	kPag	°C	E³m³/d	E³m³/d	E³m³	E³m³	molFr	m³	%	m³	m³/d	m³	°C	°API	m³	m³/d	m³	m³	ppm		%
02:00							0.00											6062.77			
02:15							0.00											6062.77			
02:30							0.00											6062.77			
02:45							0.00											6062.77			
03:00							0.00											6062.77			
03:15							0.00											6062.77			
03:30							0.00											6062.77			
03:45							0.00											6062.77			
04:00							0.00											6062.77			
04:15							0.00											6062.77			
04:30							0.00											6062.77			
04:45							0.00											6062.77			
05:00							0.00											6062.77			
05:15							0.00											6062.77			
05:30							0.00											6062.77			
05:45							0.00											6062.77			
06:00							0.00											6062.77			
06:15							0.00											6062.77			
06:30							0.00											6062.77			
06:45							0.00											6062.77			
07:00							0.00											6062.77			
07:15							0.00											6062.77			
07:30							0.00											6062.77			
07:45							0.00											6062.77			
08:00							0.00											6062.77			
08:15							0.00											6062.77			
08:30							0.00											6062.77			
08:45							0.00											6062.77			
09:00							0.00											6062.77			
09:15							0.00											6062.77			
09:30							0.00											6062.77			
09:45							0.00											6062.77			
10:00							0.00											6062.77			



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Time	Description
hh:mm	
14/02/27	
07:00	Attend safety meeting
08:00	Move test equipment from rack site to location and begin to spot/rig in
18:00	Shut down ops for the night
14/02/28	
06:15	Arrive on location
06:45	Attend safety meeting
07:30	Continue with rig in
18:00	Shut down ops for the night
14/03/01	
06:15	Arrive on location
06:45	Attend safety meeting
07:30	Continue with rig in
18:00	Shut down ops for the night
14/03/02	
06:15	Arrive on location
06:45	Attend safety meeting
07:30	Finish rig in / Wait on orders
18:15	Night shift on location
18:45	Night shift attend safety meeting
19:00	Conduct shift hand over
19:15	Night shift wait on orders / help as needed
14/03/03	
06:15	Dayshift on location
06:45	Dayshift attend safety meeting
07:05	Conduct shift handover
07:15	Prepare gear for pressure testing
14:00	Pressure test surface lines to 1.5 Mpa low / 65.0 Mpa High
15:30	Set intermediate pop valve to 20.0 Mpa
14/03/04	
00:00	Attend coil tubing safety meeting.
00:10	Pressure test coil for milling operations
01:00	Pressure test complete, Coil run in hole.
03:55	Coil on bottom, start out of hole.
04:25	First gel sweep to surface, divert fluid returns to slop tank.
04:40	Second gel sweep to surface, divert fluid returns to slop tank.
05:35	Third gel sweep to surface
05:44	Fourth gel sweep to surface
06:50	Coil @ surface / displace coil over to H2O/Meth
09:50	Coil RIH with guns
17:30	Coil @ surface, Perforations complete. Purge surface equipment with N ₂
14/03/05	
00:00	Continue with Frac and Wireline operations.



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Time	Description
hh:mm	
14/03/05	
06:45	Attend morning safety meeting
07:00	Conduct shift hand over
07:15	Perform general house keeping duties / Wait on frac
17:30	Attend frac safety meeting
18:20	Frac pumps pump H2O over to testers to warm pumps
22:00	Start Frac #1
14/03/06	
03:15	Frac shut down due to equipment issues.
14/03/07	
00:00	Continue to wait on Fracing operations.
01:00	Continue Frac #1
03:00	Shut down frac equipment issues
08:00	Pressure test frac iron to 69.0 Mpa
09:33	Continue Frac #1
11:10	frac #1 Complete
11:40	Wireline operations
17:10	prime frac pumps
17:50	Start frac #2
19:55	Frac #2 complete.
21:45	Wire line run in hole to perforate stage #3.
14/03/08	
00:45	Wireline to surface.
04:20	Start frac stage #3
06:45	Frac #3 Complete / Winterize frac gear
07:30	Wireline operations
09:30	Attend safety meeting
09:45	Continue with wireline operations
17:30	Wireline RIH with guns to perforate stage #4
20:00	Wireline to surface.
22:00	Start frac stage #4
14/03/09	
00:35	Stage #4 frac complete
01:50	Wireline run in hole to perforate stage #5
05:10	Wireline to surface.
07:45	Start Frac # 5
09:50	Frac #5 Complete
10:20	Wireline ops / RIH to perforate stage #6
12:40	Wireline on surface / Prepare frac equipment
13:44	Start Frac #6
15:41	Frac #6 complete
15:54	Wireline rig up / RIH to perforate stage #7
18:18	Wireline to surface.



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hh:mm	
14/03/09	
22:30	Start frac Stage #7
14/03/10	
00:35	Frac #7 complete
01:20	Wireline run in hole to perforate stage # 8
04:25	Wireline to surface
07:05	Start frac stage #8
08:20	Frac #8 Complete
08:50	Rig up wireline / RIH
11:20	Wireline to surface.
11:30	IES grease up well head.
12:30	Wellhead all greased up.
13:05	Press test frac iron.
13:15	Start frac stage #9
14:55	Frac # 9 complete
15:30	Start wireline operations for / RIH to perforate stage # 10
18:00	Wireline complete / Prepare to frac
18:30	Start frac on Stage #10
20:10	Frac complete / Shut down frac operations and shut in master valve
20:45	Circulate surface lines with meth water to winterize.
21:45	Rig down frac equipment and prepare to rig in coil equipment for drill out operations.
14/03/11	
04:25	Circulate to testers to fill coil and pressure test.
05:25	Start to pressure test.
06:05	Shut down pressure test, stripper on coil injector leaking.
08:00	Coil injector repaired. Break circulation through test equipment, and prepare to re-pressure test coil equipment.
08:20	Shut in at [10K manifold] and commence low test to [1.5 M.P.A]
08:40	Low test complete, begin high test to [50 M.P.A]
08:53	Stop pressure test, bleed off to testers to fix leaks.
09:40	Leaks repaired, begin to pressure test to [1.5 M.P.A] and then to [50 M.P.A]
10:00	Pressure test good, bleed down through test equipment. Hook vac truck up to junk catcher to suck out coil B.O.P. Stack
10:30	Remove Coil off well head to install tool string for milling operations.
12:00	Coil back on well head.
12:21	Function test tool through test equipment.
12:28	Function test complete, pressure test lubricator and commence To R.I.H. to complete milling operations.
12:41	Equalize well pressure. Coil start to R.I.H.
12:41	Open well on adjustable and maintain fluid rates has per instructed by company rep while milling out well bore plugs.
12:47	Coil kick pumps in at 125 Liters/min.
13:00	Coil pump rate [125 Liters/min] Testers return rate [125 Liters/min]
13:00	0 % Sand in samples.
14:00	Coil pump rate [125 Liters/min] Testers return rate [125 Liters/min]
14:00	0 % Sand in samples.
14:30	Increase pump rate to 400 Liters/min.



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Time	Description
hh:mm	
14/03/11	
15:00	Coil pump rate [400 Liters/min] Testers return rate [400 Liters/min]
15:00	Trace of sand in samples.
16:00	Coil pump rate [400 Liters/min] Testers return rate [400 Liters/min]
16:00	Trace of sand in samples.
17:00	Coil pump rate [400 Liters/min] Testers return rate [400 Liters/min]
17:00	1 % Sand in samples.
18:00	Coil pump rate [400 Liters/min] Testers return rate [400 Liters/min]
18:00	1 % Sand in samples.
19:00	Coil pump rate [400 Liters/min] Testers return rate [400 Liters/min]
19:00	1 % Sand in samples
20:00	Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]
20:00	Trace of sand in sample.
21:00	Coil pump rate [400 Liters/min] Testers return rate [400 Liters/min]
21:00	1 % sand in sample.
21:10	Lost fluid returns. Switched sides on Junk catcher.
21:15	Checked junk catcher and some sand and smaller pieces of plug.
22:00	Coil pump rate [400 Liters/min] Testers return rate [400 Liters/min]
22:00	1 % sand in sample.
23:00	Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]
23:00	1 % sand in sample.
14/03/12	
00:00	Coil pump rate [375 Liters/min] Testers return rate [400 Liters/min]
00:00	1 % sand in sample.
00:10	Switch sides on junk catcher
00:15	Checked junk catcher and some sand and big chunks of rubber. Company Rep witnessed the big chunks.
01:00	Coil pump rate [375 Liters/min] Testers return rate [375 Liters/min]
01:00	1 % sand in sample.
02:00	Trace of sand in sample.
02:00	Coil pump rate [375 Liters/min] Testers return rate [375 Liters/min]
03:00	2 % sand in sample.
03:00	Coil pump rate [375 Liters/min] Testers return rate [375 Liters/min]
04:00	2 % sand in sample.
04:00	Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]
05:00	2 % sand in sample.
05:00	Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]
06:00	1 % sand in sample.
06:00	Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]
07:00	3 % sand in sample.
07:00	Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]
08:00	1 % sand in sample.
08:00	Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]
09:00	Trace of sand in sample.



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Time	Description
hh:mm	
14/03/12	
09:00	Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]
10:00	Trace of sand in sample.
10:00	Coil pump rate [450 Liters/min] Testers return rate [425 Liters/min]
10:54	Trace of sand in sample.
10:54	Shut in well. Coil at surface. Milling operations complete.
11:03	Shut in master valve. Coil topside.
12:00	Purge coil back through test equipment.
12:30	Shut down nitrogen, purge complete.
12:45	Schlumberger Pump 26 m³ in well bore.
13:50	Pumping operations complete.
14:00	Rig coil off well head.
14:30	Schlumberger E-line services prepare tools to R.I.H with gauge ring.
15:50	Attend Operational safety meeting for wireline.
15:57	Wireline prime and purge equipment to testers iron.
16:19	Circulation established. Shut in at manifold. Begin pressure test. LOW [1.5 M.P.A] HIGH [35 M.P.A]
17:17	Pressure test good. Bleed down pressure test to 1 M.P.A over well bore pressure. Wireline begin to R.I.H. with gauge ring.
19:10	Wireline @ surface.
19:25	Wireline rig up to RIH with Packer.
20:31	Pressure test
20:48	Wireline Start to RIh with packer
22:46	Wireline @ Surface
23:10	Casing went on VAC.
14/03/13	
02:03	Attend safety operations meeting on rig out for frac head and testers flow line.
05:00	Start to rig out flare lines so we can put more matting down underneath flare stacks.
08:00	Rig on location.
08:30	Attend safety operations meeting.
18:30	Attend safety operations meeting.
18:45	Continue rig operations.
14/03/14	
00:00	Bleed off casing to 0 KPA.
00:20	Stop taking pressure as rig crew rigging into the well head. Remove Well Head.
06:30	Attend safety operations meeting.
06:45	Continue rig operations.
16:00	Nabours rig services start to R.I.H. with production string & downhole fiber-optics cable.
18:30	Attend safety operations meeting.
18:50	Continue rig operations.
14/03/15	
06:30	Attend safety operations meeting.
06:50	Continue rig operations.
14/03/16	
06:30	Attend safety meeting.



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Time	Description
hh:mm	
14/03/16	
06:45	Continue rig operations.
07:00	wait on RMSeq (weatherford down hole)
14:15	rig up wireline
14:30	attend safety meeting
14:36	pressure test wireline and flowline to testers 30mpa
15:24	wireline RIH with gauge ring
15:56	wireline at surface
15:57	wireline RIH to unset sleeve
16:27	wireline at surface
16:56	disc burst
17:00	wireline RIH with recorders
17:03	Bleed down to testers, shut in at manifold.
18:00	Wireline operations complete. Recorders in place. Rig out wireline.
14/03/17	
06:00	Daily Summary to 06:00 hrs March 17/2014
06:00	DHP = 20419kpa
06:00	SITP = 1590kpa
06:00	SICP = 1571kpa
06:00	Flow Temp = N/A
06:00	Meter Run Temp = N/A
06:00	Choke Size = N/A
06:00	Gas Rate = Shut In
06:00	Cummulative Gas to Flare = 0 E3m3
06:00	Gas to Flare last 6hrs = 0 E3m3
06:00	Gas to Flare last 24hrs = 0 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last hour = 0m3
06:00	LFR last 6hrs = 0m3
06:00	LFR last 24hrs = 0m3
06:00	TLFR = 0m3
06:00	TLFLTR = 7919.81m3
06:00	Condensate Produced last hour = 0m3
06:00	Condensate Produced last 6hrs = 0m3
06:00	Condensate Produced last 24hrs = 0m3
06:00	Cummulative Condensate Produced = 0m3
06:00	Salinity = N/A
06:00	ph = N/A
06:00	Sand = N/A
06:00	Hrs Flowed = 0hrs 0min
06:00	Hours Flared = 0
06:00	Surface Total = 35.05m3
06:00	Api = N/A



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Time	Description
hh:mm	
14/03/17	
06:00	H2s = N/A
10:00	Down hole system operator making adjustment to system
11:45	Open well on 12.70mm choke
11:46	Fluid to surface.
12:17	Bottoms up. 4.66m ³ recovered.
15:15	Trace of gas to surface.
15:15	Meter #4 in service.
16:00	ProTechnics sample #1 taken. Total load fluid recovered =33.75m ³
19:00	Trace of sediment in fluid returns.
20:00	ProTechnics sample #2 taken. Total fluid recovered to date = 63.15m ³
20:00	Trace of Sediment in fluid returns.
20:30	Burnable gas to surface.
20:40	Meter #2 in service on a 25.400mm orifice plate.
14/03/18	
00:30	Increase back pressure.
01:00	Trace of sediment in fluid returns.
01:28	LS Orifice Plate Size changed from 1 to 1.0 by field
02:00	Trace of sediment in fluid returns.
03:00	Trace of sediment in fluid returns. Very slight skim of oil in grind outs
04:00	ProTechnics sample #4 taken. Total fluid recovered to date = 127.93m ³
04:00	Trace of sediment in fluid returns.
06:00	Trace of sediment in fluid returns.
06:00	Daily Summary to 06:00 hrs March 18/2014
06:00	DHP = 18965kpa
06:00	FTP = 2150kpa
06:00	SICP = 306kpa
06:00	Flow Temp = 41DegC
06:00	Meter Run Temp = 43DegC
06:00	Choke Size = 12.70mm
06:00	Gas Rate = 2.58 E3m ³ /Day
06:00	Cummulative Gas to Flare = 2.38 E3m ³
06:00	Gas to Flare last 24hrs = 2.38 E3m ³
06:00	LFTR = 7919.81m ³
06:00	LFR last 24hrs = 144.97m ³
06:00	TLFR = 144.97m ³
06:00	TLFLTR = 7774.84m ³
06:00	Condensate Produced last 24hrs = 0m ³
06:00	Cummulative Condensate Produced = 0m ³
06:00	Salinity = 18000ppm
06:00	ph = 7
06:00	Sand = Trace
06:00	Hrs Flowed = 18.25



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Time	Description
hh:mm	
14/03/18	
06:00	Hours Flared = 14.75
06:00	Surface Total = 94.61m ³
06:00	Api = N/A
06:00	H ₂ S = ppm
07:15	Zeroed Casing Gauge.
08:00	ProTechnics sample #5 taken. Total fluid recovered to date = 160.02m ³
08:45	Agat on location to take gas and fluid samples.
10:45	Trace of condensate in sample.
10:45	Shut in well. Meter out of service.
10:45	Lay over service rig.
11:00	Weatherford Downhole crew reset Scada.
11:30	Open well on 12.7 mm choke
11:45	Increase choke 2 to 38.100 mm.
11:46	Meter #2 in service on 25.400 mm orifice plate.
16:00	ProTechnics sample #7 taken. Total fluid recovered to date = 224.80 m ³
16:30	Zeroed Casing Sensor.
19:00	Increase back pressure.
20:00	ProTechnics sample #8 taken. Total fluid recovered to date = 263.09 m ³
22:50	Zero Casing gauge
14/03/19	
00:00	ProTechnics sample #9 taken. Total fluid recovered to date = 293.62 m ³
00:00	2% CO ₂ and 0 ppm H ₂ S taken with Ray tube pump
04:00	ProTechnics sample #10 taken. Total fluid recovered to date = 293.62 m ³
06:00	Daily Summary to 06:00 hrs March 19/2014
06:00	DHP = 18029kpa
06:00	FTP =3721 kpa
06:00	SICP = 1349kpa
06:00	Flow Temp = 29DegC
06:00	Meter Run Temp =41 DegC
06:00	Choke Size = 12.70mm
06:00	Gas Rate = 14.50 E3m ³ /Day
06:00	Cummulative Gas to Flare = 9.94 E3m ³
06:00	Gas to Flare last 24hrs = 7.56 E3m ³
06:00	LFTR = 7919.81m ³
06:00	LFR last 24hrs = 204.37m ³
06:00	TLFR = 349.34m ³
06:00	TLFLTR = 7570.47m ³
06:00	Condensate Produced last 24hrs = 0m ³
06:00	Cummulative Condensate Produced = 0m ³
06:00	Salinity = 22000ppm
06:00	ph = 7
06:00	Sand = Trace



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Time	Description
hh:mm	
14/03/19	
06:00	Hrs Flowed = 41.5
06:00	Hours Flared = 38.00 Hrs.
06:00	Surface Total = 65.05m ³
06:00	Api = N/A
06:00	H2s = 0ppm
07:00	Trace of oil in fluid returns.
07:25	Adjusted position of flow line temperature sensor.
08:00	ProTechnics sample #11 taken. Total fluid recovered to date = 365.05m ³
09:00	API = 56.2@15.6°C
11:00	Trace of sediment in fluid returns
12:00	ProTechnics sample #12 taken. Total fluid recovered to date = 402.72m ³ *** Per program samples are now at 12 hour intervals***
12:30	Switched flow to High Stage.
12:30	Meter #1 in service on 38.100 mm orifice plate.
12:34	LS Orifice Plate Size changed from 1 to 0 by field
13:00	Trace of condensate in fluid returns.
14:00	Trace of condensate in fluid returns.
14:01	Changed orifice plate to 25.400 mm on Meter #1.
15:00	Trace of condensate in fluid returns.
17:00	Trace of condensate in fluid returns.
19:00	Trace of condensate in fluid returns.
21:00	Trace of condensate in fluid returns.
23:00	Trace of condensate in fluid returns.
14/03/20	
00:00	ProTechnics sample #13 taken. Total fluid recovered to date = 507.30m ³
01:00	Trace of condensate in fluid returns.
03:00	Trace of condensate in fluid returns.
05:00	Trace of condensate in fluid returns.
06:00	Daily Summary to 06:00 hrs March 20/2014
06:00	DHP = 16979kpa
06:00	FTP = 5780kpa
06:00	SICP = 5879kpa
06:00	Flow Temp = 53DegC
06:00	Meter Run Temp = 48DegC
06:00	Choke Size = 12.7mm
06:00	Gas Rate = 31.83 E3m ³ /Day
06:00	Cumulative Gas to Flare = 31.68 E3m ³
06:00	Gas to Flare last 24hrs = 21.74 E3m ³
06:00	LFTR = 7919.81m ³
06:00	LFR last 24hrs = 205.67m ³
06:00	TLFR = 555.01m ³
06:00	TLFLTR = 7364.80m ³
06:00	Condensate Produced last 24hrs = 0.65m ³



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
 Pool or Zone: Tight Hole
 Field or Area: Norman Wells
 Test Start: 17 Mar 2014
 Test End: 9 Apr 2014
 Wft Job #: 4413812

Time	Description
hh:mm	
14/03/20	
06:00	Cummulative Condensate Produced = 0.65m3
06:00	Salinity = 28000ppm
06:00	ph = 7
06:00	Sand = Trace
06:00	Hrs Flowed = 65.5
06:00	Hours Flared =62
06:00	Surface Total = 280.02m3
06:00	Api = 58.8@15.6°C
06:00	H2s = 0ppm
06:00	CO ₂ = 2.0%
12:34	HS Orifice Plate Size changed from 1 to 1.5 by field
12:35	Changed orifice plate to 38.100 mm on Meter #1.
14:00	Trace of Condensate in fluid returns.
16:00	Trace of Condensate in fluid returns.
14/03/21	
06:00	Daily Summary to 06:00 hrs March 21/2014
06:00	DHP = 16012kpa
06:00	FTP = 6527kpa
06:00	SICP = 11563kpa
06:00	Flow Temp = 49DegC
06:00	Meter Run Temp = 42DegC
06:00	Choke Size = 12.70mm
06:00	Gas Rate = 58.04 E3m3/Day
06:00	Cummulative Gas to Flare = 78.88 E3m3
06:00	Gas to Flare last 24hrs = 47.20 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 179.42m3
06:00	TLFR = 734.43m3
06:00	TLFLTR = 7185.38m3
06:00	Condensate Produced last 24hrs = 2.04m3
06:00	Cummulative Condensate Produced = 2.69m3
06:00	Salinity = 36000ppm
06:00	ph = 7
06:00	Sand = Trace
06:00	Hrs Flowed = 89.5
06:00	Hours Flared = 86
06:00	Surface Total = 274.06m3
06:00	Api = 60.1@15.6°C
06:00	H2s = 0ppm
06:00	CO ₂ = 2.1%
12:00	ProTechnics sample #16 taken. Total fluid recovered to date = 761.84m ³
14:00	Removed insulation up stream of manifold to well head.



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P-20 65-00 126-45

Operation: Tight Hole
 Pool or Zone: Tight Hole
 Field or Area: Norman Wells
 Test Start: 17 Mar 2014
 Test End: 9 Apr 2014
 Wft Job #: 4413812

Time	Description
hh:mm	
14/03/21	
14/03/22	
00:00	ProTechnics sample #17 taken. Total fluid recovered to date = 828.36m ³
06:00	Daily Summary to 06:00 hrs March 22/2014
06:00	DHP = 15067kpa
06:00	FTP = 7177kpa
06:00	SICP = 12395kpa
06:00	Flow Temp = 47DegC
06:00	Meter Run Temp = 37DegC
06:00	Choke Size = 12.70mm
06:00	Gas Rate = 74.16 E3m3/Day
06:00	Cummulative Gas to Flare = 146.58 E3m3
06:00	Gas to Flare last 24hrs = 67.70 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 123.74m3
06:00	TLFR = 858.17m3
06:00	TLFLTR = 7061.64m3
06:00	Condensate Produced last 24hrs = 3.56m3
06:00	Cummulative Condensate Produced = 6.25m3
06:00	Salinity = 42000ppm
06:00	ph = 7
06:00	Sand = Trace
06:00	Hrs Flowed = 113.5
06:00	Hours Flared = 110
06:00	Surface Total = 344.56m3
06:00	Api = 59.8@15°C
06:00	H2s = 0ppm
06:00	CO ₂ = 1.8%
12:00	ProTechnics sample #18 taken. Total fluid recovered to date = 889.30m ³
14/03/23	
06:00	Daily Summary to 06:00 hrs March 23/2014
06:00	DHP = 14240kpa
06:00	FTP = 7320kpa
06:00	SICP = 11726kpa
06:00	Flow Temp = 45DegC
06:00	Meter Run Temp = 33DegC
06:00	Choke Size = 12.70mm
06:00	Gas Rate = 86.07 E3m3/Day
06:00	Cummulative Gas to Flare = 226.93 E3m3
06:00	Gas to Flare last 24hrs = 80.34 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 117.33m3
06:00	TLFR = 975.5m3



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P-20 65-00 126-45

Operation: Tight Hole
 Pool or Zone: Tight Hole
 Field or Area: Norman Wells
 Test Start: 17 Mar 2014
 Test End: 9 Apr 2014
 Wft Job #: 4413812

Time	Description
hh:mm	
14/03/23	
06:00	TLFLTR = 6944.31m3
06:00	Condensate Produced last 24hrs = 4.55m3
06:00	Cummulative Condensate Produced = 10.80m3
06:00	Salinity = 45000ppm
06:00	ph = 7
06:00	Sand = Trace
06:00	Hrs Flowed = 137.5
06:00	Hours Flared = 134
06:00	Surface Total = 405.5m3
06:00	Api = 60.3@15.6*
06:00	H2s = 0ppm
06:00	CO ₂ = 2.0%
12:00	ProTechnics sample #20 taken. Total fluid recovered to date = 1003.72 m ³
16:01	Changed orifice plate to 50.800 mm on Meter #1.
14/03/24	
06:00	Daily Summary to 06:00 hrs March 24/2014
06:00	DHP = 13690kpa
06:00	FTP = 7277kpa
06:00	SICP = 11290kpa
06:00	Flow Temp = 45DegC
06:00	Meter Run Temp = 32DegC
06:00	Choke Size = 12.70mm
06:00	Gas Rate = 86.05 E3m3/Day
06:00	Cummulative Gas to Flare = 312.33 E3m3
06:00	Gas to Flare last 24hrs = 85.40 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 103.21m3
06:00	TLFR = 1078.71m3
06:00	TLFLTR = 6841.10m3
06:00	Condensate Produced last 24hrs = 4.55m3
06:00	Cummulative Condensate Produced = 15.35m3
06:00	Salinity = 48000ppm
06:00	ph = 7
06:00	Sand = Nil
06:00	Hrs Flowed = 161.5
06:00	Hours Flared = 158
06:00	Surface Total = 438.26m3
06:00	Api = 60.5@15.6°C
06:00	H2s = 0ppm
06:00	CO ₂ = 2.0%
14/03/25	
06:00	Daily Summary to 06:00 hrs March 25/2014



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P-20 65-00 126-45

Operation: Tight Hole
 Pool or Zone: Tight Hole
 Field or Area: Norman Wells
 Test Start: 17 Mar 2014
 Test End: 9 Apr 2014
 Wft Job #: 4413812

Time	Description
hh:mm	
14/03/25	
06:00	DHP = 13216kpa
06:00	FTP =6879 kpa
06:00	SICP = 10944kpa
06:00	Flow Temp = 44DegC
06:00	Meter Run Temp = 30DegC
06:00	Choke Size = 12.70mm
06:00	Gas Rate = 88.01 E3m3/Day
06:00	Cummulative Gas to Flare = 398.66 E3m3
06:00	Gas to Flare last 24hrs = 86.34 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 87.53m3
06:00	TLFR = 1166.24m3
06:00	TLFLTR = 6753.57m3
06:00	Condensate Produced last 24hrs = 4.52m3
06:00	Cummulative Condensate Produced = 19.87m3
06:00	Salinity = 50000ppm
06:00	ph = 7
06:00	Sand = Nil
06:00	Hrs Flowed = 185.5
06:00	Hours Flared = 182
06:00	Surface Total = 428.23m3
06:00	Api = 59.5@15.6*6
06:00	H2s = 0.10ppm
06:00	CO ₂ = 2%
14/03/26	
06:00	Daily Summary to 06:00 hrs March 26/2014
06:00	DHP = 12843kpa
06:00	FTP =6977 kpa
06:00	SICP =10636 kpa
06:00	Flow Temp = 43DegC
06:00	Meter Run Temp = 29DegC
06:00	Choke Size = 12.7mm
06:00	Gas Rate = 86.71 E3m3/Day
06:00	Cummulative Gas to Flare = 485.73 E3m3
06:00	Gas to Flare last 24hrs = 86.92 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 78.15m3
06:00	TLFR = 1244.39m3
06:00	TLFLTR = 6675.42m3
06:00	Condensate Produced last 24hrs = 4.36m3
06:00	Cummulative Condensate Produced = 24.23m3
06:00	Salinity = 49000ppm



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Operation: Tight Hole
 Pool or Zone: Tight Hole
 Field or Area: Norman Wells
 Test Start: 17 Mar 2014
 Test End: 9 Apr 2014
 Wft Job #: 4413812

Time	Description
hh:mm	
14/03/26	
06:00	ph = 7
06:00	Sand = Nill
06:00	Hrs Flowed = 209.5
06:00	Hours Flared = 206
06:00	Surface Total = m3
06:00	Api = 59.7@15.6°C
06:00	H ₂ S = 0.2ppm
06:00	CO ₂ = 1.9%
21:30	Check choke. No wash.
14/03/27	
06:00	Daily Summary to 06:00 hrs March 27/2014
06:00	DHP = 12487kpa
06:00	FTP = 6589kpa
06:00	SICP = 10325kpa
06:00	Flow Temp = 42DegC
06:00	Meter Run Temp = 28DegC
06:00	Choke Size = 12.7mm
06:00	Gas Rate = 90.57 E3m3/Day
06:00	Cummulative Gas to Flare = 574.23 E3m3
06:00	Gas to Flare last 24hrs = 88.36 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 71.20m3
06:00	TLFR = 1315.59m3
06:00	TLFLTR = 6604.22m3
06:00	Condensate Produced last 24hrs = 4.34m3
06:00	Cummulative Condensate Produced = 28.57m3
06:00	Salinity = 56000ppm
06:00	ph = 7
06:00	Sand = Nill
06:00	Hrs Flowed = 233.5
06:00	Hours Flared = 230
06:00	Surface Total = 388.67m3
06:00	Api = 60.9@15.6°C
06:00	H ₂ s = 0.20 ppm
06:00	CO ₂ = 1.8%
14/03/28	
06:00	Daily Summary to 06:00 hrs March 28/2014
06:00	DHP = 12197.7kpa
06:00	FTP = 6313kpa
06:00	SICP = 10129kpa
06:00	Flow Temp = 41DegC
06:00	Meter Run Temp = 28DegC



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 Pool or Zone: Tight Hole
 Field or Area: Norman Wells
 Test Start: 17 Mar 2014
 Test End: 9 Apr 2014
 Wft Job #: 4413812

Time	Description
hh:mm	
14/03/28	
06:00	Choke Size = 12.7mm
06:00	Gas Rate = 89.22 E3m3/Day
06:00	Cummulative Gas to Flare = 663.62 E3m3
06:00	Gas to Flare last 24hrs = 89.39 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 63.68m3
06:00	TLFR = 1379.27m3
06:00	TLFLTR = 6540.54m3
06:00	Condensate Produced last 24hrs = 4.21m3
06:00	Cummulative Condensate Produced = 32.78m3
06:00	Salinity = 56000ppm
06:00	ph = 7
06:00	Sand = Nill
06:00	Hrs Flowed = 257.5
06:00	Hours Flared = 254
06:00	Surface Total = 303.56m3
06:00	Api = 61@15.6°C
06:00	H2s = 0.40ppm
06:00	CO ₂ = 1.8%
19:00	Zero refractometer.
14/03/29	
06:00	Daily Summary to 06:00 hrs March 29/2014
06:00	DHP = 11923.9kpa
06:00	FTP = 6196kpa
06:00	SICP = 9922kpa
06:00	Flow Temp = 40DegC
06:00	Meter Run Temp = 25DegC
06:00	Choke Size = 12.7mm
06:00	Gas Rate = 84.79 E3m3/Day
06:00	Cummulative Gas to Flare = 751.99 E3m3
06:00	Gas to Flare last 24hrs = 88.37 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 59.03m3
06:00	TLFR = 1438.30m3
06:00	TLFLTR = 6481.51m3
06:00	Condensate Produced last 24hrs = 5.38m3
06:00	Cummulative Condensate Produced = 37.09m3
06:00	Salinity = 57000ppm
06:00	ph = 7
06:00	Sand = 0
06:00	Hours Flowed = 281.5
06:00	Hours Flared = 278



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Operation: Tight Hole
 Pool or Zone: Tight Hole
 Field or Area: Norman Wells
 Test Start: 17 Mar 2014
 Test End: 9 Apr 2014
 Wft Job #: 4413812

Time	Description
hh:mm	
14/03/29	
06:00	Surface Total = 164.9m3
06:00	Api = 62.3@15.6°C
06:00	H2s = 0.40ppm
06:00	CO ₂ = 1.8%
14/03/30	
06:00	Daily Summary to 06:00 hrs March 30/2014
06:00	DHP = 11736.6kpa
06:00	FTP = 6208kpa
06:00	SICP = 9719kpa
06:00	Flow Temp = 39DegC
06:00	Meter Run Temp = 22DegC
06:00	Choke Size = 12.7mm
06:00	Gas Rate = 88.08 E3m3/Day
06:00	Cummulative Gas to Flare = 840.24 E3m3
06:00	Gas to Flare last 24hrs = 88.25 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 52.15m3
06:00	TLFR = 1490.45m3
06:00	TLFLTR = 6429.36m3
06:00	Condensate Produced last 24hrs = 3.93m3
06:00	Cummulative Condensate Produced = 41.02m3
06:00	Salinity = 59000ppm
06:00	ph = 7
06:00	Sand = Nill
06:00	Hrs Flowed = 305.5
06:00	Hours Flared = 332
06:00	Surface Total = 95.1m3
06:00	Api = 62.1@15.6°C
06:00	H2s = 0.50ppm
06:00	CO ₂ = 1.8%
14/03/31	
06:00	Daily Summary to 06:00 hrs March 31/2014
06:00	DHP = 11525.8kpa
06:00	FTP = 5410kpa
06:00	SICP = 9500kpa
06:00	Flow Temp = 38DegC
06:00	Meter Run Temp = 21DegC
06:00	Choke Size = 12.7mm
06:00	Gas Rate = 81.49 E3m3/Day
06:00	Cummulative Gas to Flare = 928.40 E3m3
06:00	Gas to Flare last 24hrs = 88.16 E3m3
06:00	LFTR = 7919.81m3



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 Field or Area: Norman Wells
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 Test End: 9 Apr 2014
 Wft Job #: 4413812

Time	Description
hh:mm	
14/03/31	
06:00	LFR last 24hrs = 51.25m3
06:00	TLFR = 1541.70m3
06:00	TLFLTR = 6378.11m3
06:00	Condensate Produced last 24hrs = 3.99m3
06:00	Cummulative Condensate Produced = 45.01m3
06:00	Salinity = 60000ppm
06:00	ph = 7
06:00	Sand = Nill
06:00	Hrs Flowed = 329.5
06:00	Hours Flared = 326
06:00	Surface Total = 100.34m3
06:00	Api = 62@15.6*c
06:00	H2s = 0.40ppm
06:00	CO ₂ = 1.8%
14/04/01	
06:00	Daily Summary to 06:00 hrs April 01/2014
06:00	DHP = 11306kpa
06:00	FTP = 5355kpa
06:00	SICP = 9340kpa
06:00	Flow Temp = 38DegC
06:00	Meter Run Temp = 22DegC
06:00	Choke Size = 12.7mm
06:00	Gas Rate = 84.79 E3m3/Day
06:00	Cummulative Gas to Flare = 1015.78 E3m3
06:00	Gas to Flare last 24hrs = 87.38 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 49.09m3
06:00	TLFR = 1590.79m3
06:00	TLFLTR = 6329.02m3
06:00	Condensate Produced last 24hrs = 4.27m3
06:00	Cummulative Condensate Produced = 49.28m3
06:00	Salinity = 60000ppm
06:00	ph = 7
06:00	Sand = Nil
06:00	Hrs Flowed = 353.5
06:00	Hours Flared = 350
06:00	Surface Total = 103.7m3
06:00	Api = 63.4@15.6°C
06:00	H2s = 0.40ppm
06:00	CO ₂ = 2.3%
14/04/02	
06:00	Daily Summary to 06:00 hrs April 02/2014



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 Wft Job #: 4413812

Time	Description
hh:mm	
14/04/02	
06:00	DHP = 11192kpa
06:00	FTP = 5822kpa
06:00	SICP = 9242kpa
06:00	Flow Temp = 39DegC
06:00	Meter Run Temp = 23DegC
06:00	Choke Size = 12.70mm
06:00	Gas Rate = 83.48 E3m3/Day
06:00	Cummulative Gas to Flare = 1102.04 E3m3
06:00	Gas to Flare last 24hrs = 86.26 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 46.31m3
06:00	TLFR = 1637.10m3
06:00	TLFLTR = 6282.71m3
06:00	Condensate Produced last 24hrs = 3.98m3
06:00	Cummulative Condensate Produced = 53.26m3
06:00	Salinity = 61000ppm
06:00	ph = 7
06:00	Sand = Nil
06:00	Hrs Flowed = 377.5
06:00	Hours Flared = 374.0
06:00	Surface Total = 103.99m3
06:00	Api = 63.2@15.6°C
06:00	H2s = 0.45ppm
06:00	CO ₂ = 2.0 %
14/04/03	
06:00	Daily Summary to 06:00 hrs April 03/2014
06:00	DHP = 11032kpa
06:00	FTP = 5659kpa
06:00	SICP = 9139kpa
06:00	Flow Temp = 38DegC
06:00	Meter Run Temp = 22DegC
06:00	Choke Size = 12.70mm
06:00	Gas Rate = 84.10 E3m3/Day
06:00	Cummulative Gas to Flare = 1187.70 E3m3
06:00	Gas to Flare last 24hrs = 85.66 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 43.06m3
06:00	TLFR = 1680.16m3
06:00	TLFLTR = 6239.65m3
06:00	Condensate Produced last 24hrs = 3.73m3
06:00	Cummulative Condensate Produced = 56.99m3
06:00	Salinity = 62000ppm



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 Pool or Zone: Tight Hole
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 Test Start: 17 Mar 2014
 Test End: 9 Apr 2014
 Wft Job #: 4413812

Time	Description
hh:mm	
14/04/03	
06:00	ph = 7
06:00	Sand = Nil
06:00	Hrs Flowed = 401.5
06:00	Hours Flared = 398
06:00	Surface Total = 100.78m3
06:00	Api = 63.2@15.6°C
06:00	H2s = 0.50ppm
06:00	CO ₂ = 1.20 %
14/04/04	
06:00	Daily Summary to 06:00 hrs April 04/2014
06:00	DHP = 10880kpa
06:00	FTP = 5563kpa
06:00	SICP = 9001kpa
06:00	Flow Temp = 38DegC
06:00	Meter Run Temp = 21DegC
06:00	Choke Size = 12.70mm
06:00	Gas Rate = 80.92 E3m3/Day
06:00	Cummulative Gas to Flare = 1272.28 E3m3
06:00	Gas to Flare last 24hrs = 84.58 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 44.70m3
06:00	TLFR = 1724.86m3
06:00	TLFLTR = 6194.95m3
06:00	Condensate Produced last 24hrs = 3.71m3
06:00	Cummulative Condensate Produced = 60.70m3
06:00	Salinity = 62000ppm
06:00	ph = 7
06:00	Sand = 0
06:00	Hrs Flowed = 425.5
06:00	Hours Flared = 422
06:00	Surface Total = 69.34m3
06:00	Api = 63.6@15.6°C
06:00	H2s = 0.55ppm
06:00	CO ₂ = 1.0%
14/04/05	
06:00	Daily Summary to 06:00 hrs April 05/2014
06:00	DHP =10724 kpa
06:00	FTP = 5454kpa
06:00	SICP = 8903kpa
06:00	Flow Temp = 37DegC
06:00	Meter Run Temp = 22DegC
06:00	Choke Size = 12.70mm



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Operation: Tight Hole
 Pool or Zone: Tight Hole
 Field or Area: Norman Wells
 Test Start: 17 Mar 2014
 Test End: 9 Apr 2014
 Wft Job #: 4413812

Time	Description
hh:mm	
14/04/05	
06:00	Gas Rate = 83.77 E3m3/Day
06:00	Cummulative Gas to Flare = 1356.46 E3m3
06:00	Gas to Flare last 24hrs = 84.18 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 40.47m3
06:00	TLFR = 1765.33m3
06:00	TLFLTR = 6154.48m3
06:00	Condensate Produced last 24hrs = 3.67m3
06:00	Cummulative Condensate Produced = 64.37m3
06:00	Salinity = 62000ppm
06:00	ph = 7
06:00	Sand = Nil
06:00	Hrs Flowed = 449.5
06:00	Hours Flared = 446
06:00	Surface Total = 63.48m3
06:00	Api = 63.7@15.6°C
06:00	H2s = 0.55ppm
06:00	CO ₂ = 1.1 %
14/04/06	
06:00	Daily Summary to 06:00 hrs April 06/2014
06:00	DHP = 10643kpa
06:00	FTP = 5327kpa
06:00	SICP = 8800kpa
06:00	Flow Temp = 36DegC
06:00	Meter Run Temp = 22DegC
06:00	Choke Size = 12.70mm
06:00	Gas Rate = 81.14 E3m3/Day
06:00	Cummulative Gas to Flare = 1440.03 E3m3
06:00	Gas to Flare last 24hrs = 83.57 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 39.66m3
06:00	TLFR = 1804.99m3
06:00	TLFLTR = 6114.82m3
06:00	Condensate Produced last 24hrs = 3.78m3
06:00	Cummulative Condensate Produced = 68.15m3
06:00	Salinity = 65000ppm
06:00	ph = 7
06:00	Sand = Nil
06:00	Hrs Flowed = 473.5
06:00	Hours Flared = 470
06:00	Surface Total = 62.92m3
06:00	Api = 64.5@15.6°C



CPD and Testing Services (Canada)
 Weatherford 1200, 333 - 5th Avenue S.W.
 Calgary, AB T2P 3B6
 Telephone: 403.693.7500
 Facsimile: 403.693.7769

ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
 Pool or Zone: Tight Hole
 Field or Area: Norman Wells
 Test Start: 17 Mar 2014
 Test End: 9 Apr 2014
 Wft Job #: 4413812

Time	Description
hh:mm	
14/04/06	
06:00	H2s = 0.50ppm
06:00	CO ₂ = 1.0 %
07:50	Tubing & Casing pressures taken from Deadweight gauge.
07:50	Pressure test wing and Casing valves.
09:55	Real time tubing & Casing pressure back online.
14/04/07	
06:00	Daily Summary to 06:00 hrs April 07/2014
06:00	DHP = 10504kpa
06:00	FTP = 5304kpa
06:00	SICP = 8767kpa
06:00	Flow Temp = 36DegC
06:00	Meter Run Temp = 21DegC
06:00	Choke Size = 12.70mm
06:00	Gas Rate = 82.45 E3m3/Day
06:00	Cummulative Gas to Flare = 1522.57 E3m3
06:00	Gas to Flare last 24hrs = 82.54 E3m3
06:00	LFTR = 7919.81m3
06:00	LFR last 24hrs = 37.96m3
06:00	TLFR = 1842.95m3
06:00	TLFLTR = 6076.86m3
06:00	Condensate Produced last 24hrs = 3.64m3
06:00	Cummulative Condensate Produced = 71.79m3
06:00	Salinity = 64000ppm
06:00	ph = 7
06:00	Sand = Nil
06:00	Hrs Flowed = 497.5
06:00	Hours Flared = 494
06:00	Surface Total = 65.52m3
06:00	Api = 63.7@15.6°C
06:00	H2s = 0.25ppm
06:00	CO ₂ = 1.0 %
15:00	Shut in well. Meter out of service.
15:00	Record build-ups and begin to rig out equipment.
16:05	Change out casing sensor and needle valve due to leaking threads.
18:00	FINAL SUMMARY to 18:00 hrs April 7/2014
18:00	DHP = 11882.5 kpa
18:00	SITP = 9682 kpa
18:00	SICP = 9765 kpa
18:00	Flow Temp = N/A DegC
18:00	Meter Run Temp = N/A DegC
18:00	Choke Size = N/A mm
18:00	Gas Rate = N/A E3m3/Day



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ConocoPhillips Canada
P-20 65-00 126-45

Operation: Tight Hole
 Pool or Zone: Tight Hole
 Field or Area: Norman Wells
 Test Start: 17 Mar 2014
 Test End: 9 Apr 2014
 Wft Job #: 4413812

Time	Description
hh:mm	
14/04/07	
18:00	Cummulative Gas to Flare = 1553.41 E3m3
18:00	Gas to Flare last 12hrs = 10.84 E3m3
18:00	LFTR = 7919.81m3
18:00	LFR last 12 hour = 14.09 m3
18:00	TLFR = 1857.04 m3
18:00	TLFLTR = 6062.77 m3
18:00	Condensate Produced last 12hrs = 3.11 m3
18:00	Cummulative Condensate Produced = 73.16 m3
18:00	Salinity = 63000 ppm
18:00	ph = 7
18:00	Sand = 0
18:00	Hrs Flowed = 506.5
18:00	Hours Flared = 503
18:00	Surface Total = 48.98 m3 @ 15:00 hrs
18:00	Api = N/A
18:00	H2S = 0.30 ppm @ 15:00 hrs
18:00	CO2 =1.0 %
14/04/08	
14/04/09	
10:01	End Of Job.

COPRC Mirror Lk P-20 65-00 126-45
Canol

Subsurface Data

Flow and Buildup

01-30-2016

Pressure Survey Report

LONKAR SERVICES

8080 Edgar Industrial Crescent
Red Deer, Alberta
T4P 3R3

RED DEER 403.347.9727
CALGARY 403.269.9477

CONOCOPHILLIPS CANADA RESOURCES CORP.

COPRC MIRROR LAKE P-20 65-00 126-45
300/P20 65-00 126-45/0

CANOL

JAN 30, 2016

Static Gradient

Report Prepared by

E.S. KYLE INSTRUMENT LTD.

Red Deer, AB
PH 403.309.0980

Scott Brilz
Ref #: RD16-0031



Well Information

CONOCOPHILLIPS CANADA RESOURCES CORP.
COPRC MIRROR LAKE P-20 65-00 126-45
300/P20 65-00 126-45/0

JAN 30, 2016

Static Gradient

EUB Well License Number: 2081
Test Purpose: Other
Field: MIRROR LAKE
Formation Name: CANOL
Well Fluid Status: (06) Water H2S: N
Well Type: Horizontal
KB Elevation: 289.35 Open Hole: N
CF Elevation: 283.95

Production Interval:	2015.90 - 2025.32	2245.00 - 3119.00
Mid Point Perfs.:	2020.61 MKB-TVD	2682.00 MKB-LOG

Producing Through: Tubing
60.30 MM Tbg. 2025.30 M KB
114.30 MM Csg. 3148.70 M KB
PBTD: 3129.60 M KB

Test Summary

Start of Test: 2016 01 30 1534
Well Shut-In: 2014 04 07 0800 15921.6 Hrs
Final Test Time: 2016 01 30 1809

Initial Tubing Pressure: 13440.0 Final Tubing Pressure: 13429.0 KPAA
Initial Casing Pressure: 13380.0 Final Casing Pressure: 13380.0

Representative Depth: 1981.41 M KB-TVD 2020.00 MKB-LOG

Primary Gauge (1): Final Pressure: 18320.16 KPAA
Final Temperature: 87.14 Deg. C

Gradient at Representative Depth: 10.452 KPAA / M
Calculated Pressure at MPP: 18729.88 KPAA

Gauge Program: 10 SEC

Report Prepared by:

E.S. KYLE INSTRUMENT LTD.

Ref. #: RD16-0031



Perforations

CONOCOPHILLIPS CANADA RESOURCES CORP.
COPRC MIRROR LAKE P-20 65-00 126-45
300/P20 65-00 126-45/0

JAN 30, 2016

Static Gradient

FORMATION

PERF: (MKB)

PERF: (TVD)

CANOL

2245.00 - 3119.00

2015.90 - 2025.32

Mid Point Perfs:

2682.00 MKB-LOG

2020.61 MKB-TVD

LONKAR SERVICES

Gradient Test Data

Jan 30 - 2016

CONOCOPHILLIPS CANADA RESOURCES CORP.
300/P20 65-00 126-45/0

COPRC MIRROR LAKE P-20 65-00 126-45
Formation: CANOL

Initial Tubing Pressure: 13440.0 KPA
Initial Casing Pressure: 13380.0 KPA

Final Tubing Pressure: 13429.0 KPA
Final Casing Pressure: 13380.0 KPA

Top Gauge

160343
% Acc. 0.05 KPA 41369
% Res. 0.0003 05/28/2015
Boss Recorder - Strain

01/30/16 15:34:17

Gauge Serial # 160496
Range 41369 KPA
Calibration Date 05/28/2015
Gauge Type Boss Recorder - Strain

Gauge Start Time

Bottom Gauge

160496
41369 KPA 0.05 % Acc.
05/28/2015 0.0003 % Res.
Boss Recorder - Strain

01/30/16 15:34:17

Depth MKB-LOG	Depth MKB-TVD	Temp Deg. C	Pressure KPA	Gradient KPA / M	Depth MKB-LOG	Depth MKB-TVD	Temp Deg. C	Pressure KPA	Gradient KPA / M
0.00	0.00	19.94	13439.64	0.000	0.00	0.00	9.36	13436.85	0.000
379.70	379.68	11.07	14265.84	2.176	380.00	379.98	11.21	14270.02	2.193
759.70	759.23	27.31	14990.41	1.909	760.00	759.53	27.47	14998.92	1.920
1139.70	1139.18	47.64	15634.95	1.696	1140.00	1139.48	47.86	15643.59	1.697
1519.70	1519.13	63.78	16215.43	1.528	1520.00	1519.43	63.96	16223.98	1.528
1899.70	1893.49	82.82	17419.92	3.217	1900.00	1893.79	82.84	17428.84	3.218
1929.70	1919.41	84.37	17678.53	9.977	1930.00	1919.71	84.39	17687.84	9.992
1959.70	1942.64	85.59	17915.77	10.213	1960.00	1942.94	85.61	17925.10	10.214
1989.70	1963.48	86.34	18126.77	10.125	1990.00	1963.78	86.35	18135.89	10.115
2019.70	1981.11	87.14	18311.72	10.491	2020.00	1981.41	87.14	18320.16	10.452
0.00	0.00	1.79	13425.10	0.000	0.00	0.00	1.75	13422.29	0.000

M KB-TVD 1981.11

Representative Depth

1981.41 M KB-TVD

On Bottom
Off Bottom

87.06 18311.77
87.14 18311.72

01/30/16 17:08:00
01/30/16 17:34:30

26.5 Mins. 87.08 18320.43
87.14 18320.16

KPA / M 10.491

Gradient

10.452 KPA / M

Calculated Pressure at MPP

KPA 18726.10 2020.61 18729.88 KPA

Pressure Corrected to Run Depth

KPA 18314.87 1981.41 18320.16 KPA

16673.00 KPA M KB-TVD 1818.63 Calculated Fluid Level 1819.01 M KB-TVD KPA 16681.60

Remarks:

Top Gauge

Bottom Gauge

##	Real Time (yyyy mm dd hh:mm:ss)	Time (Hrs)	Pressure (Kpa)	Temp (C)	Time (Hrs)	Pressure (Kpa)	Temp (C)
12	2016 01 30 15:34:22	0.0014	98.62	13.28	0.0014	98.59	14.39
24	2016 01 30 15:34:34	0.0047	98.59	13.37	0.0047	98.60	15.07
36	2016 01 30 15:34:46	0.0081	98.59	13.34	0.0081	98.59	15.98
48	2016 01 30 15:36:30	0.0369	98.60	14.25	0.0369	98.59	17.65
60	2016 01 30 15:38:30	0.0703	98.60	14.23	0.0703	98.60	16.71
72	2016 01 30 15:40:30	0.1036	98.69	17.99	0.1036	98.64	15.82
84	2016 01 30 15:42:30	0.1369	3103.01	18.73	0.1369	2788.16	13.81
96	2016 01 30 15:44:30	0.1703	13548.32	24.33	0.1703	13559.29	19.29
108	2016 01 30 15:46:30	0.2036	13438.21	22.67	0.2036	13436.97	15.20
120	2016 01 30 15:48:30	0.2369	13439.08	20.85	0.2369	13436.81	11.20
127	2016 01 30 15:49:40	0.2564	13439.64	19.94	0.2564	13436.85	9.36
					0.00 MKB-TVD - Initial Surface		
132	2016 01 30 15:50:30	0.2703	13452.31	19.29	0.2703	13441.90	8.28
144	2016 01 30 15:52:30	0.3036	13730.45	0.69	0.3036	13710.53	0.38
156	2016 01 30 15:54:30	0.3369	14095.04	5.28	0.3369	14073.68	5.23
168	2016 01 30 15:56:30	0.3703	14266.63	10.38	0.3703	14271.03	10.56
180	2016 01 30 15:58:30	0.4036	14265.30	10.91	0.4036	14270.10	11.07
192	2016 01 30 16:00:30	0.4369	14265.84	11.07	0.4369	14270.02	11.21
					379.98 MKB-TVD -		
204	2016 01 30 16:02:30	0.4703	14409.76	12.82	0.4703	14396.06	12.87
216	2016 01 30 16:04:30	0.5036	14687.56	18.70	0.5036	14674.22	18.78
228	2016 01 30 16:06:30	0.5369	14962.15	25.12	0.5369	14956.85	25.21
240	2016 01 30 16:08:30	0.5703	14992.05	27.10	0.5703	14998.82	27.32
252	2016 01 30 16:10:30	0.6036	14990.71	27.26	0.6036	14998.93	27.44
258	2016 01 30 16:11:30	0.6203	14990.41	27.31	0.6203	14998.92	27.47
					759.53 MKB-TVD -		
264	2016 01 30 16:12:30	0.6369	14990.55	27.35	0.6369	14999.20	27.50
276	2016 01 30 16:14:30	0.6703	15279.63	33.02	0.6703	15266.39	33.03
288	2016 01 30 16:16:30	0.7036	15587.33	43.56	0.7036	15575.80	43.63
300	2016 01 30 16:18:30	0.7369	15636.41	47.40	0.7369	15642.82	47.66
312	2016 01 30 16:20:30	0.7703	15635.13	47.59	0.7703	15643.38	47.82
319	2016 01 30 16:21:40	0.7897	15634.95	47.64	0.7897	15643.59	47.86
					1139.48 MKB-TVD -		
324	2016 01 30 16:22:30	0.8036	15635.19	47.67	0.8036	15643.99	47.88
336	2016 01 30 16:24:30	0.8369	15808.22	51.60	0.8369	15802.63	51.70
348	2016 01 30 16:26:30	0.8703	16003.49	57.47	0.8703	15996.70	57.58
360	2016 01 30 16:28:30	0.9036	16194.93	62.35	0.9036	16190.21	62.49
372	2016 01 30 16:30:30	0.9369	16215.43	63.68	0.9369	16223.08	63.88
384	2016 01 30 16:32:30	0.9703	16215.36	63.76	0.9703	16223.64	63.94

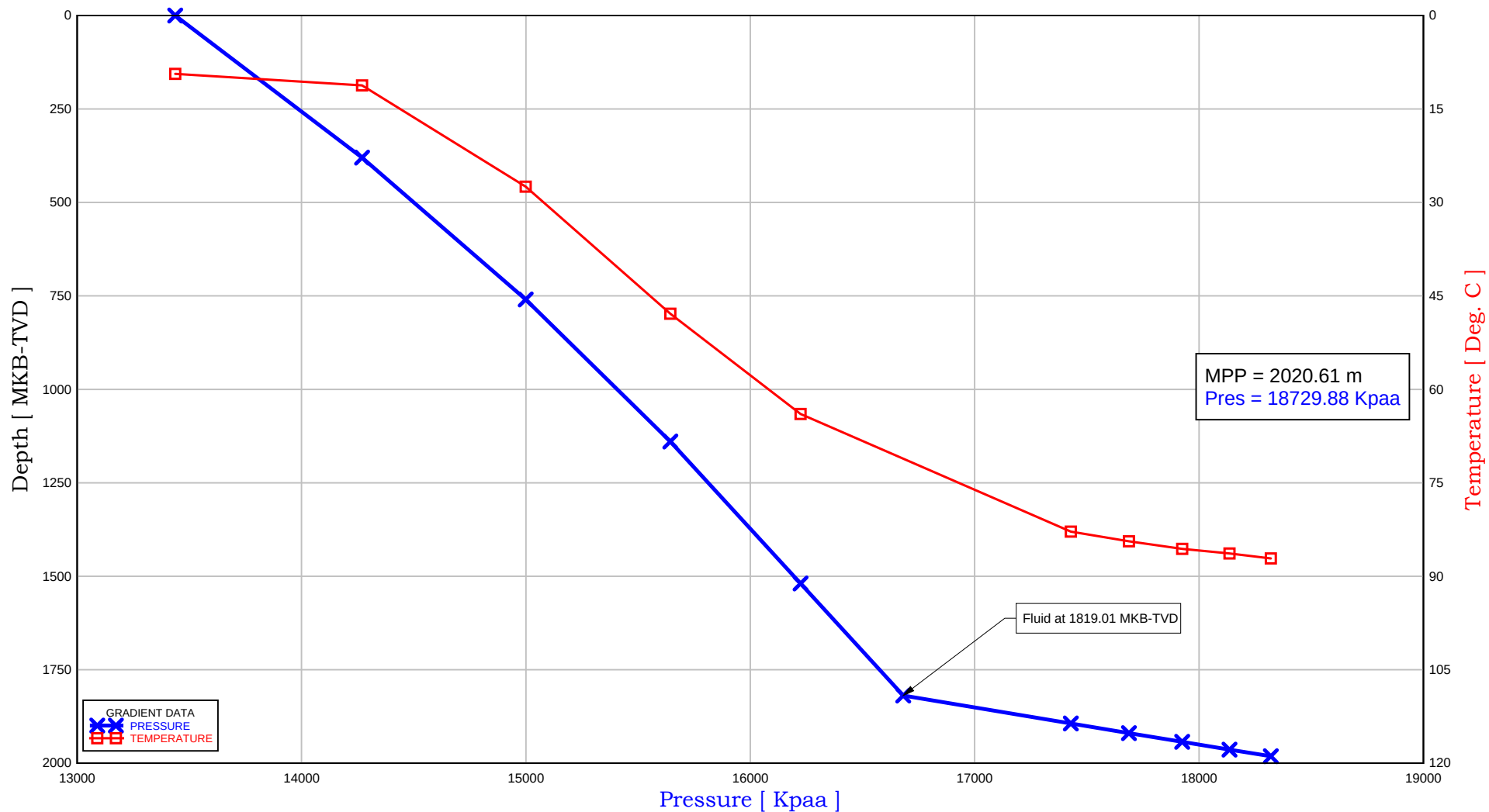
##	Real Time (yyyy mm dd hh:mm:ss)	Time (Hrs)	Pressure (Kpaa)	Temp (C)	Time (Hrs)	Pressure (Kpaa)	Temp (C)
391	2016 01 30 16:33:40	0.9897	16215.43	63.78	0.9897	16223.98	63.96
						1519.43 MKB-TVD -	
396	2016 01 30 16:34:30	1.0036	16216.02	63.80	1.0036	16224.38	63.98
408	2016 01 30 16:36:30	1.0369	16465.36	67.88	1.0369	16454.70	67.90
420	2016 01 30 16:38:30	1.0703	17029.84	77.49	1.0703	16931.84	77.49
432	2016 01 30 16:40:30	1.1036	17420.42	82.61	1.1036	17428.47	82.79
444	2016 01 30 16:42:30	1.1369	17419.09	82.72	1.1369	17428.86	82.83
456	2016 01 30 16:44:30	1.1703	17419.89	82.81	1.1703	17428.81	82.84
458	2016 01 30 16:44:50	1.1758	17419.92	82.82	1.1758	17428.84	82.84
						1893.79 MKB-TVD -	
468	2016 01 30 16:46:30	1.2036	17606.92	83.07	1.2036	17567.20	83.01
480	2016 01 30 16:48:30	1.2369	17679.39	84.28	1.2369	17687.92	84.33
492	2016 01 30 16:50:30	1.2703	17678.62	84.36	1.2703	17687.77	84.38
496	2016 01 30 16:51:10	1.2814	17678.53	84.37	1.2814	17687.84	84.39
						1919.71 MKB-TVD -	
504	2016 01 30 16:52:30	1.3036	17834.19	84.62	1.3036	17807.32	84.57
516	2016 01 30 16:54:30	1.3369	17916.51	85.54	1.3369	17925.25	85.57
528	2016 01 30 16:56:30	1.3703	17915.78	85.59	1.3703	17925.12	85.61
530	2016 01 30 16:56:50	1.3758	17915.77	85.59	1.3758	17925.10	85.61
						1942.94 MKB-TVD -	
540	2016 01 30 16:58:30	1.4036	18042.02	85.71	1.4036	18014.96	85.68
552	2016 01 30 17:00:30	1.4369	18127.06	86.30	1.4369	18136.07	86.32
564	2016 01 30 17:02:30	1.4703	18126.72	86.34	1.4703	18135.90	86.35
568	2016 01 30 17:03:10	1.4814	18126.77	86.34	1.4814	18135.89	86.35
						1963.78 MKB-TVD -	
576	2016 01 30 17:04:30	1.5036	18131.32	86.35	1.5036	18136.60	86.36
588	2016 01 30 17:06:30	1.5369	18312.24	87.00	1.5369	18319.90	87.02
597	2016 01 30 17:08:00	1.5619	18311.77	87.06	1.5619	18320.43	87.08
						On Bottom	
600	2016 01 30 17:08:30	1.5703	18311.65	87.07	1.5703	18320.41	87.08
612	2016 01 30 17:10:30	1.6036	18311.51	87.09	1.6036	18320.31	87.10
624	2016 01 30 17:12:30	1.6369	18311.47	87.11	1.6369	18320.30	87.10
636	2016 01 30 17:14:30	1.6703	18311.45	87.11	1.6703	18320.30	87.11
648	2016 01 30 17:16:30	1.7036	18311.44	87.12	1.7036	18320.24	87.11
660	2016 01 30 17:18:30	1.7369	18311.47	87.12	1.7369	18320.24	87.12
672	2016 01 30 17:20:30	1.7703	18311.50	87.12	1.7703	18320.22	87.12
684	2016 01 30 17:22:30	1.8036	18311.58	87.13	1.8036	18320.16	87.12
696	2016 01 30 17:24:30	1.8369	18311.64	87.13	1.8369	18320.16	87.13
708	2016 01 30 17:26:30	1.8703	18311.62	87.13	1.8703	18320.15	87.13
720	2016 01 30 17:28:30	1.9036	18311.66	87.14	1.9036	18320.18	87.13
732	2016 01 30 17:30:30	1.9369	18311.66	87.14	1.9369	18320.17	87.13
744	2016 01 30 17:32:30	1.9703	18311.66	87.14	1.9703	18320.17	87.13

##	Real Time (yyyy mm dd hh:mm:ss)	Time (Hrs)	Pressure (Kpaa)	Temp (C)	Time (Hrs)	Pressure (Kpaa)	Temp (C)
756	2016 01 30 17:34:30	2.0036	18311.72	87.14	2.0036	18320.16	87.14
					1981.41 MKB-TVD - Off Bottom		
768	2016 01 30 17:36:30	2.0369	18168.68	86.94	2.0369	18208.30	86.97
780	2016 01 30 17:38:30	2.0703	16911.33	82.78	2.0703	17022.64	82.97
792	2016 01 30 17:40:30	2.1036	16409.25	73.55	2.1036	16432.30	73.77
804	2016 01 30 17:42:30	2.1369	16099.42	64.94	2.1369	16128.14	65.06
816	2016 01 30 17:44:30	2.1703	15779.17	57.31	2.1703	15805.29	57.50
828	2016 01 30 17:46:30	2.2036	15436.93	47.18	2.2036	15466.18	47.43
840	2016 01 30 17:48:30	2.2369	15062.76	34.89	2.2369	15096.03	35.14
852	2016 01 30 17:50:30	2.2703	14657.09	24.33	2.2703	14695.06	24.51
864	2016 01 30 17:52:30	2.3036	14228.41	14.84	2.3036	14264.59	15.08
876	2016 01 30 17:54:30	2.3369	13772.19	4.96	2.3369	13803.66	5.08
888	2016 01 30 17:56:30	2.3703	13443.57	-0.45	2.3703	13447.18	-0.45
900	2016 01 30 17:58:30	2.4036	13423.57	1.11	2.4036	13422.32	1.00
901	2016 01 30 17:58:40	2.4064	13425.10	1.79	2.4064	13422.29	1.75
					0.00 MKB-TVD - Final Surface		
912	2016 01 30 18:00:30	2.4369	3213.60	3.64	2.4369	3865.05	4.28
924	2016 01 30 18:02:30	2.4703	98.76	2.52	2.4703	98.84	3.76
936	2016 01 30 18:04:30	2.5036	98.59	1.81	2.5036	98.59	3.22
948	2016 01 30 18:06:30	2.5369	98.60	-0.58	2.5369	98.59	0.06
960	2016 01 30 18:08:30	2.5703	98.62	-2.50	2.5703	98.60	-2.78

CONOCOPHILLIPS CANADA RESOURCES CORP.

COPRC MIRROR LAKE P-20 65-00 126-45 { 300/P20 65-00 126-45/0 }

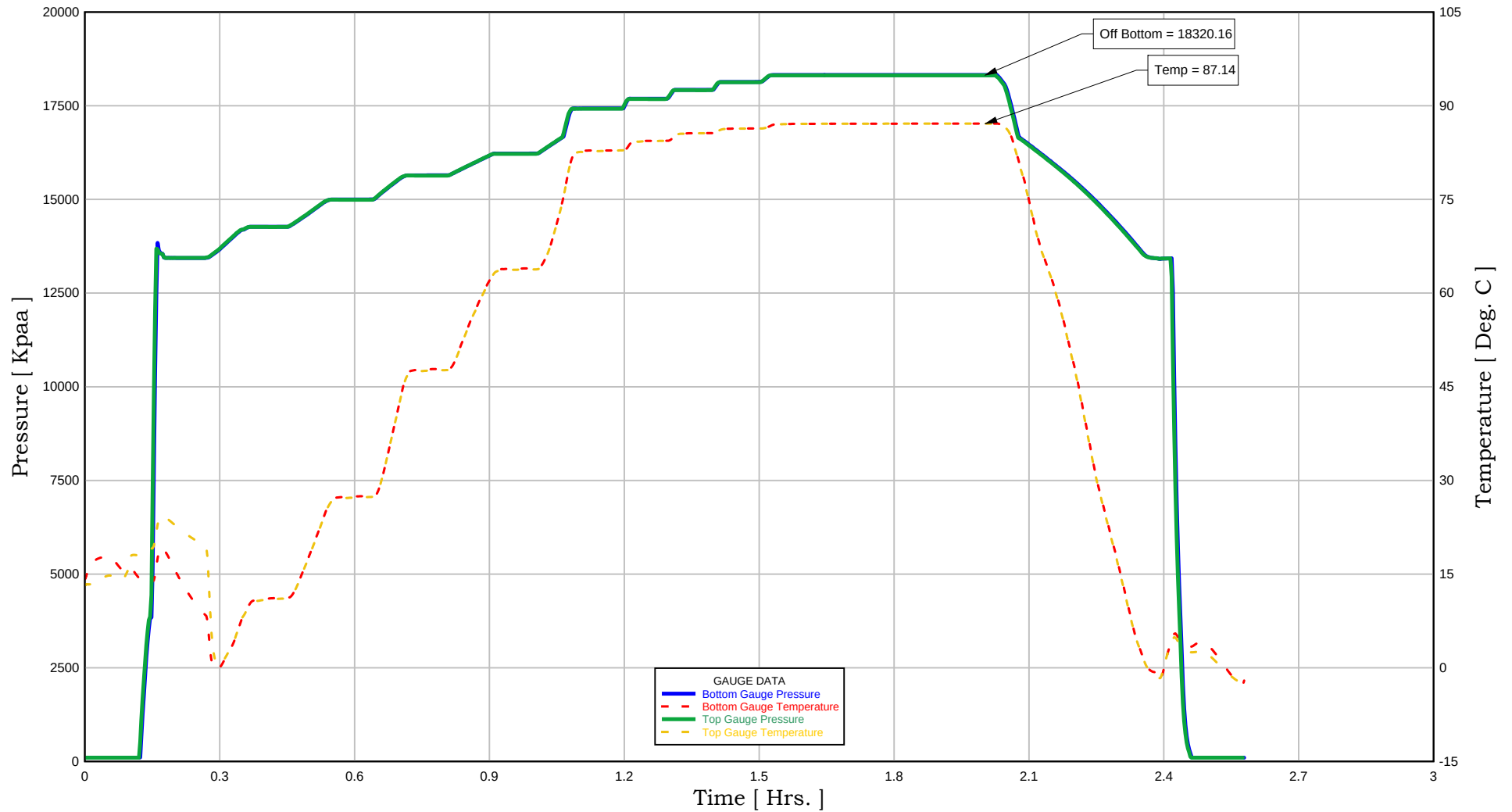
Jan 30 - 2016 { CANOL }



CONOCOPHILLIPS CANADA RESOURCES CORP.

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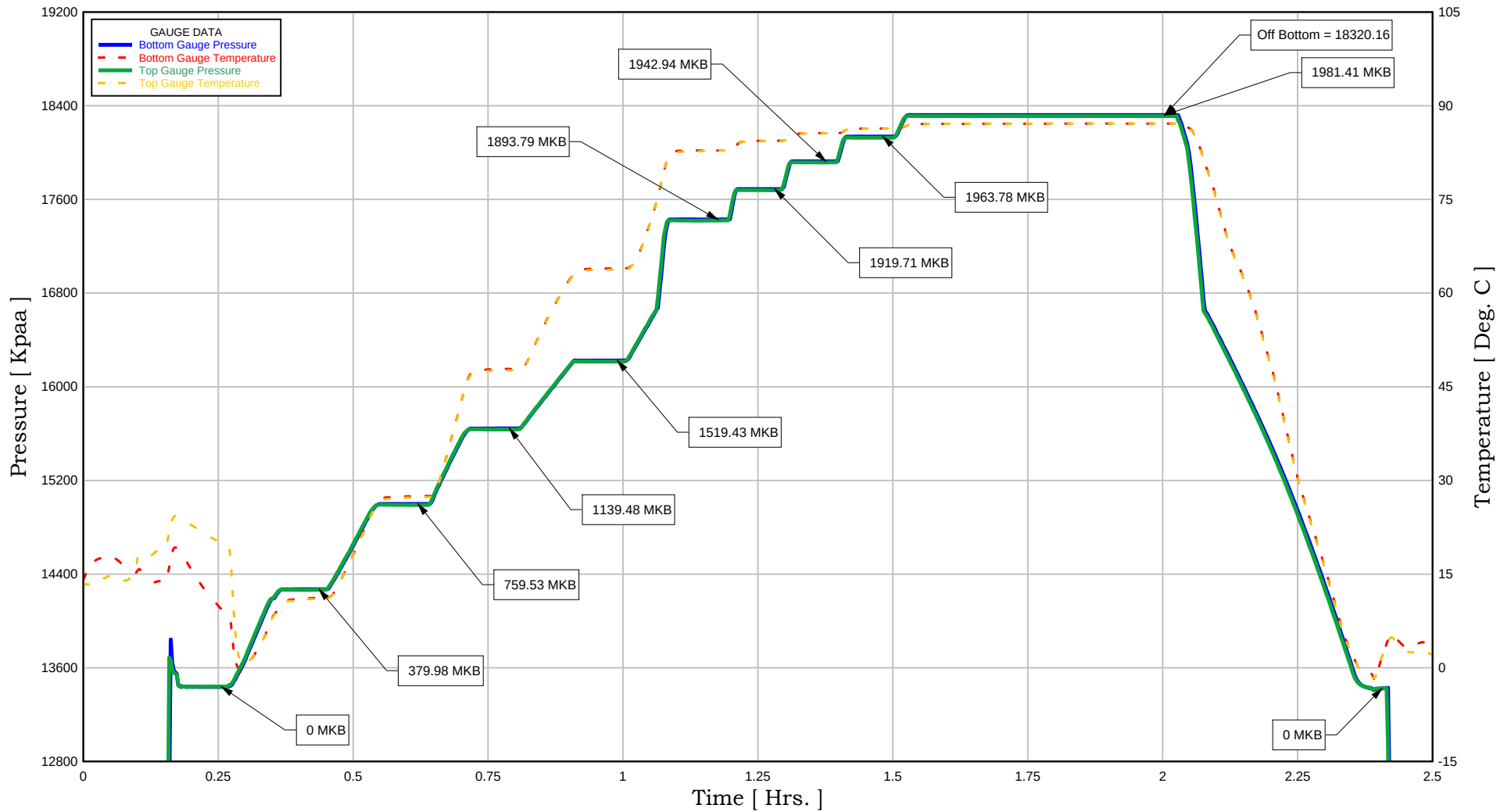
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CONOCOPHILLIPS CANADA RESOURCES CORP.

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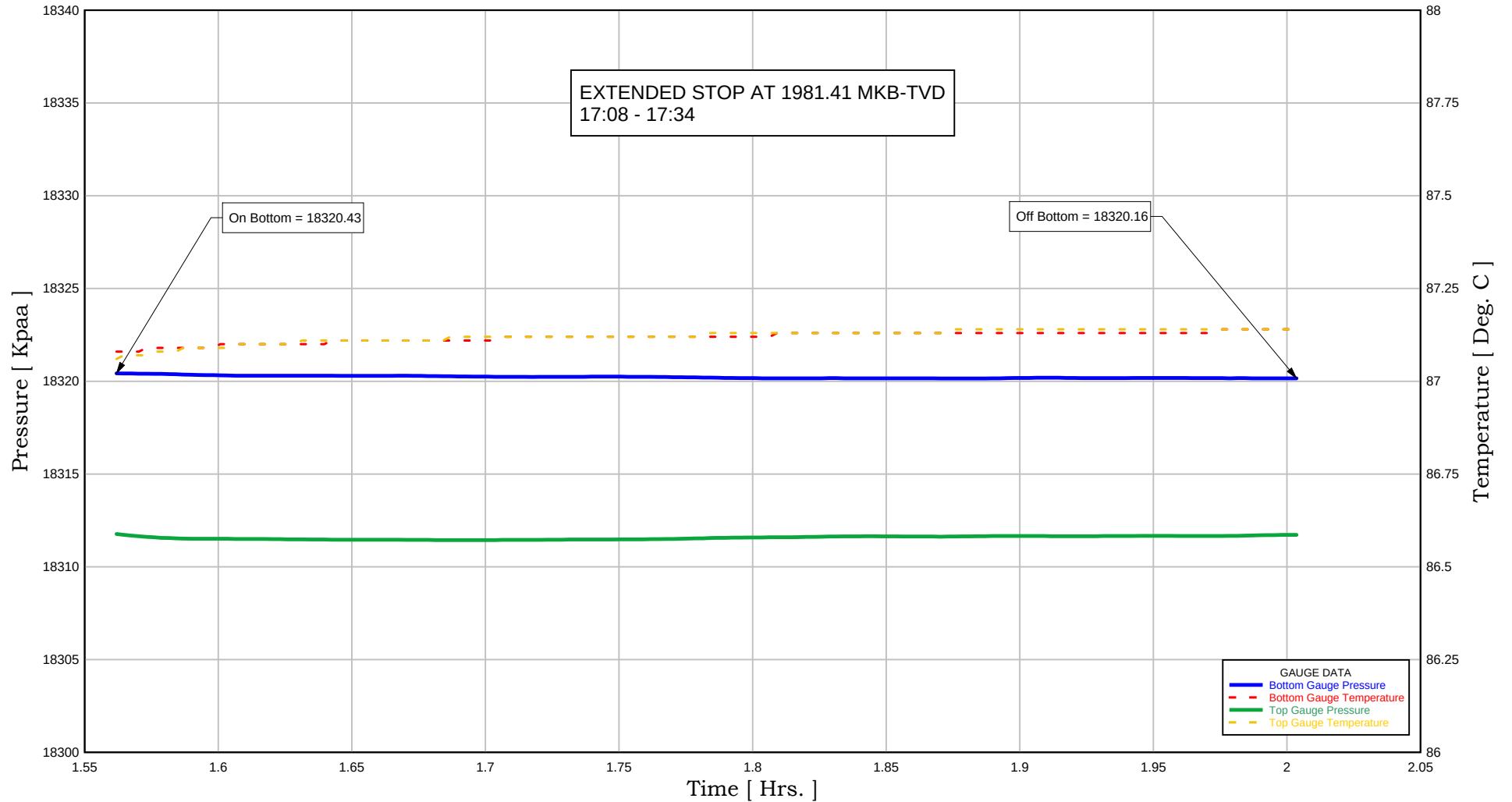
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CONOCOPHILLIPS CANADA RESOURCES CORP.

COPRC MIRROR LAKE P-20 65-00 126-45 { 300/P20 65-00 126-45/0 }

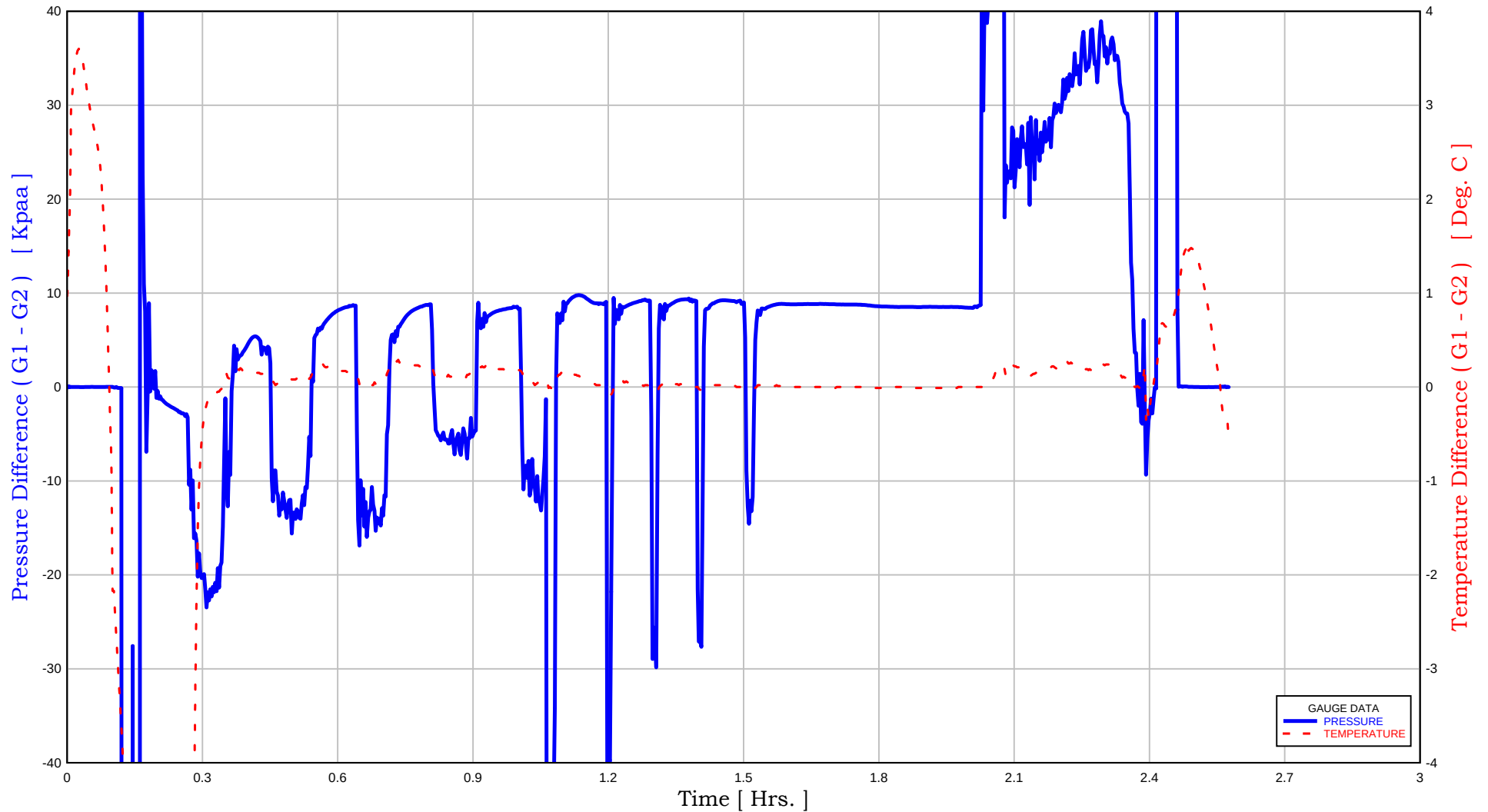
JAN 30, 2016 { CANOL }



CONOCOPHILLIPS CANADA RESOURCES CORP.

COPRC MIRROR LAKE P-20 65-00 126-45 { 300/P20 65-00 126-45/0 }

JAN 30, 2016 { CANOL }



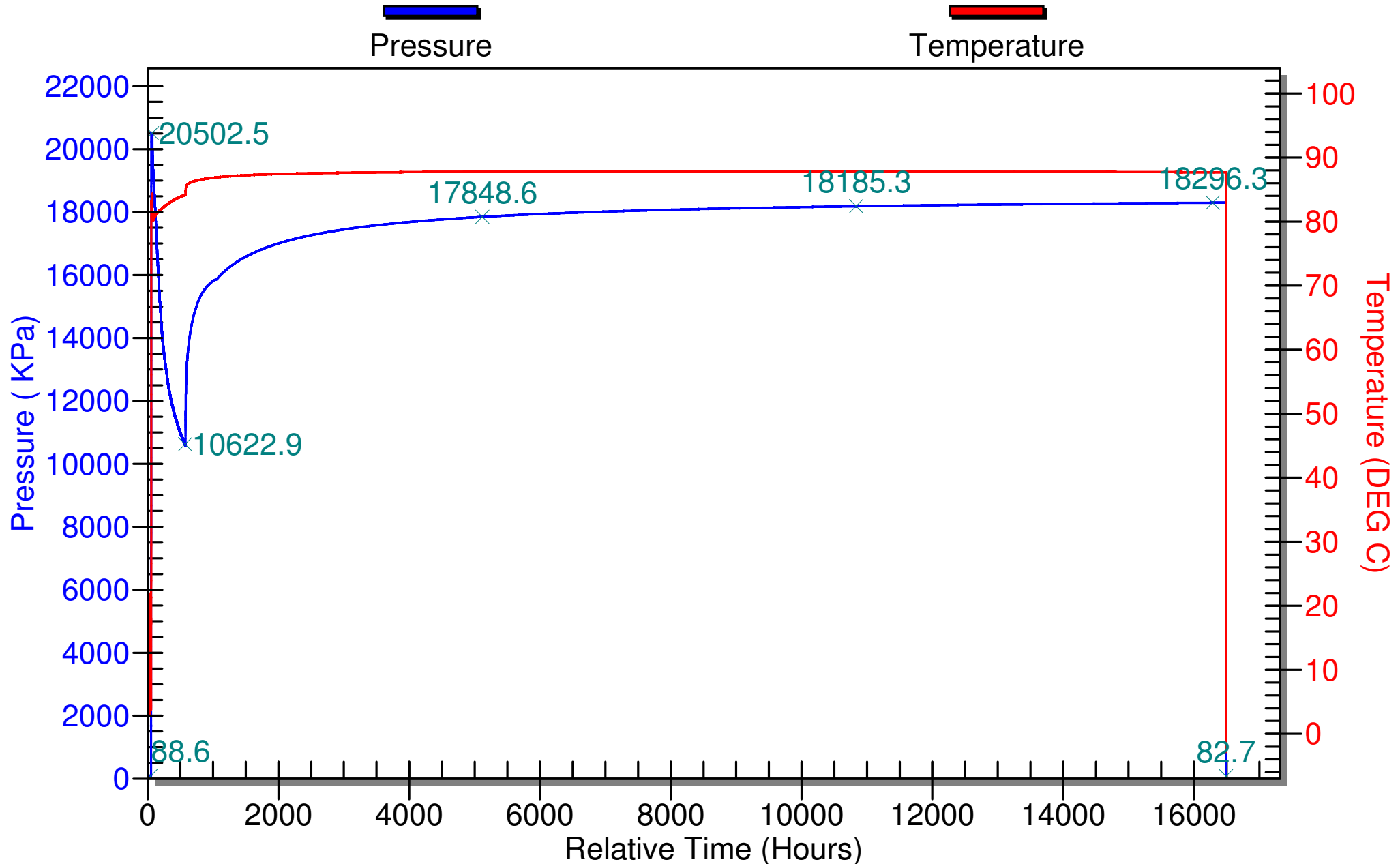
P&T Recorder #8954

Every 1 Points are Plotted.

Run ID: ConocoPhillips P20 top gauge 8954

Start Time: Fri Mar 14 11:55:52 2014

File: C:\WMG DATA 16\W-Edmonton 2-24-16\31441155.F1L1.954



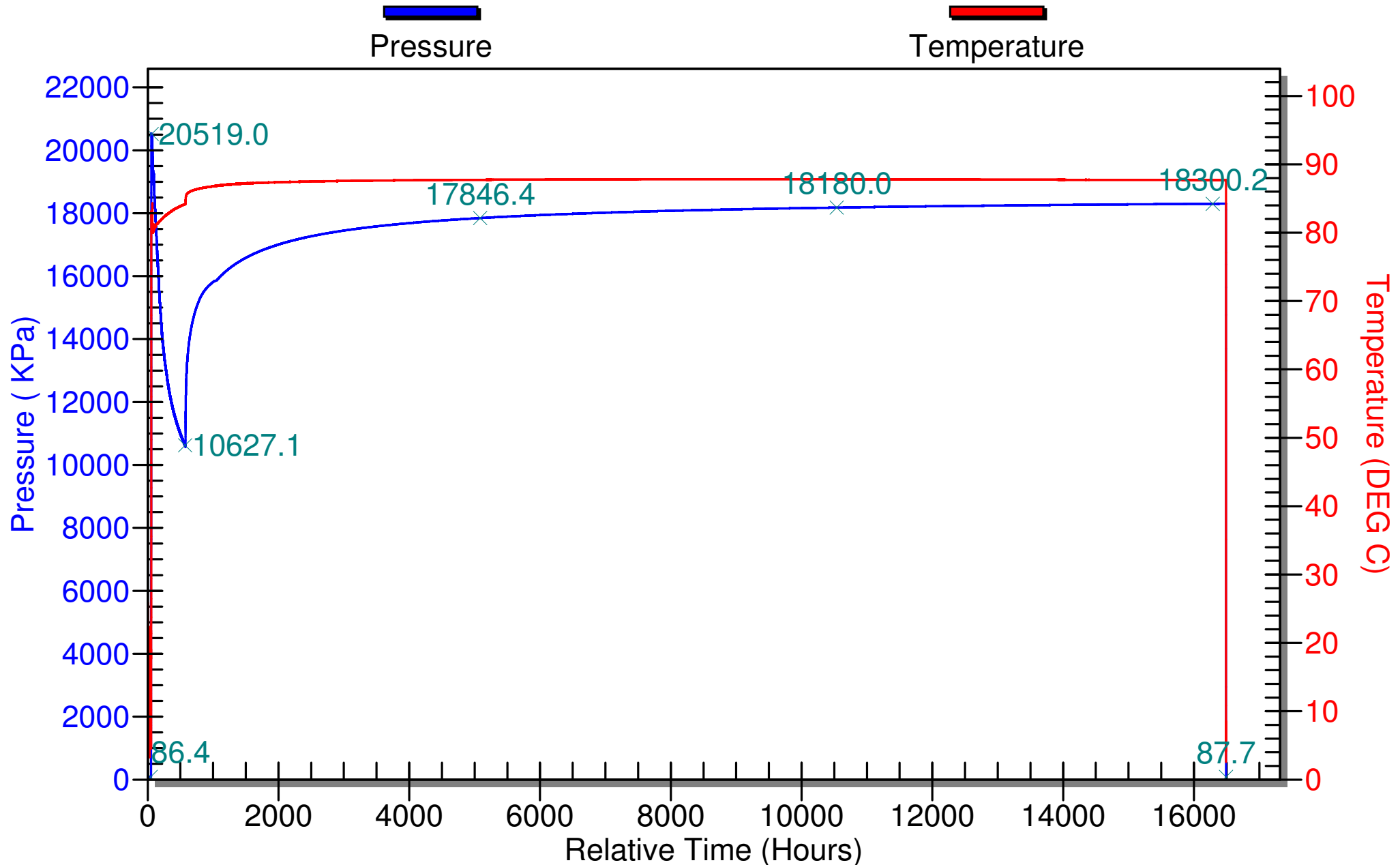
P&T Recorder #8955

Every 1 Points are Plotted.

Run ID: ConocoPhillips P20 bottom gauge 8955

Start Time: Fri Mar 14 12:00:18 2014

File: C:\WMG DATA 16\W-Edmonton 2-24-16\conoco31441200.F1L1.955



P&T Recorder #8954 and #8955

Every 1 Points are Plotted.

Run ID: ConocoPhillips P20 top gauge 8954

Run ID2: ConocoPhillips P20 bottom gauge 8955

Start Time: Fri Mar 14 11:55:52 2014

File: C:\WMG DATA 16\W-Edmonton 2-24-16\conoco31441155.F1L1.954

File2: conoco31441200.F1L1.955

