



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON

Governor
Betty Rivera
Cabinet Secretary

July 16, 2002

Lori Wrotenbery
Director
Oil Conservation Division

Merrion Oil & Gas
610 Reilly Avenue
Farmington, New Mexico 87401

Attn: Ms. Connie Dinning

**RE: Injection Pressure Increase, - 181
Flush No. 1 (API No. 30-045-30271)
San Juan County, New Mexico**

Reference is made to your request dated June 25, 2002 to increase the surface injection pressure on the above-referenced well. This request is based on a step rate test conducted on June 12, 2002. Based on this test, we feel an increase in injection pressure on this well is justified at this time.

As long as the injection tubing remains the same as during the June 12, 2002 step rate test, you are authorized to increase the surface injection pressure as follows:

<i>Well and Location</i>	<i>Maximum Injection Pressure</i>
Flush No. 1	870 PSIG
Located in Unit F, Section 2, Township 26 North, Range 13 West, NMPM, San Juan County, New Mexico.	

The Division Director may rescind this injection pressure increase if it becomes apparent that the injected water is not being confined to the injection zone or is endangering any fresh water aquifers.

Sincerely,

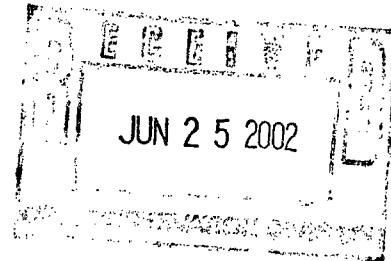
Lori Wrotenbery
Director

cc: Oil Conservation Division - Aztec
Files: SWD-781, IPI-2002

MERRION

Oil & Gas

June 24, 2002



David Catanach
Oil Conservation Division
1220 S. St. Francis Dr.
Santa Fe, NM 87505

RE: Administrative Order SWD-781, Flush No. 1, SE $\frac{1}{4}$ NW $\frac{1}{4}$, Section 2,
T26N, R13W, San Juan County, New Mexico (30-045-30271)

Dear Mr. Catanach

Merrion Oil and Gas has performed a third step rate test on the subject well. Results from the test and our analysis of the data are attached. We propose to raise the maximum injection pressure allowed in our existing order based on the results of this test. If you have any questions regarding any of the information I have provided or you require anything further please call me at 327-9801 ext. 126.

Sincerely

Connie Dinning
Production Engineer

Csd
Enclosures

Cc: Charlie Perrin
NMOCD
1000 Rio Brazos
Aztec, NM 87410

Jones, William V

Will:

I am working to get you the digital surface data. Both Connie Dinning and Mike McNeese of American Energy are on vacation this week. So it might be next week before we send it to you.

We may be able to email it and save some time.

I am attaching a wellbore schematic of the Flush 1. But you are correct, the tubing is 2-7/8" plastic lined, not 3-1/2".

I will be back in touch as soon as I get further info.

Steve

7/12/2002

Merrion Oil & Gas Corporation

Wellbore Schematic

Flush No. 1, SWD

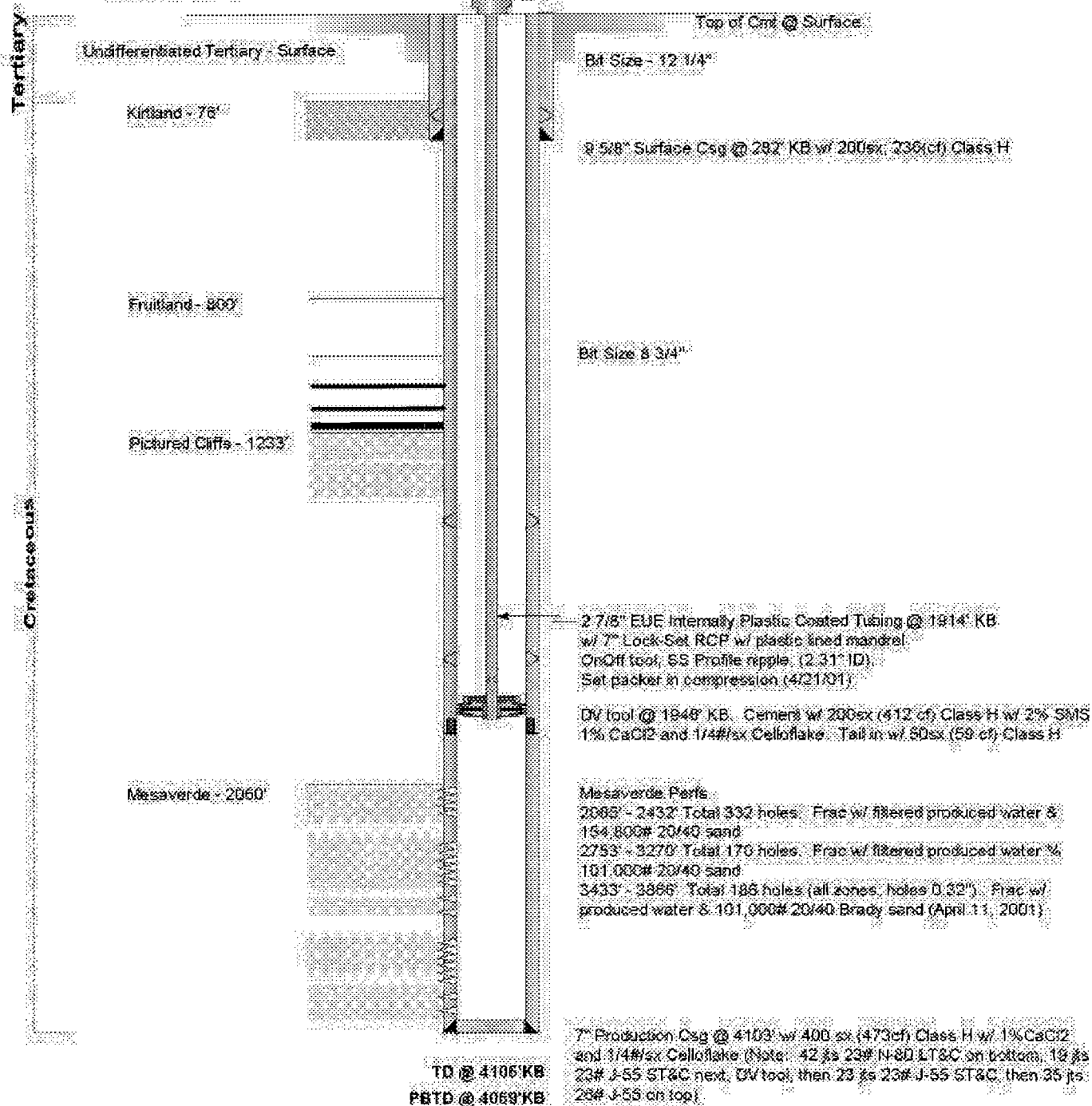
Current Wellbore Configuration

Location: 1910' Int & 1765' Int (se nw)
Sec 2, T28N, R13W
San Juan Co. New Mexico

January 28, 2002

Elevation: 8,047' GL
6,052' RKB

By: Connie Dinning



**Merrion Oil & Gas
Flush No. 1
Step Rate Test Results
June 12, 2002**

Based on the results of the step rate test for the Flush No. 1 conducted June 12, 2002, Merrion Oil and Gas requests the maximum allowable injection pressure be increased to **1320** psig.

The information listed below refers to the test data attached.

- 1) BHP vs. Time (Hours)** – Analysis of the data indicate that the straight line portion of the graph begins at a cumulative time of 6.62 hours (measured from the time the BHP tool was set on bottom). The linear regression fit of the straight line portion of the data yields an R^2 coefficient of 0.9968 with 1 representing a perfectly straight line.
- 2) BHP at Time = 6.62 hours** – The bottom hole pressure at the beginning of the straight line portion of the test was 1755 psi. The top perforation is at 2065 ft. The calculated frac gradient is 0.85. This is significantly less than the frac gradient of 1.043 calculated from the ISDP surface pressure of 1260 psi after the initial frac job (top zone).
- 3) Rate at Time = 6.62 hours** – The pump rate was 6.75 BPM at the beginning of the straight line portion of the test.
- 4) Surface Pressure at Time = 6.62 hours** – The average surface pressure during the 6.75 BPM rate step was 1320 psig.

This test clearly shows a breakover at 1755 psi bottom hole pressure with a corresponding 1320 psi surface pressure. This data is further supported by the frac gradient calculated using the ISDP information from the original frac job.

Maximum allowable injection pressures from other operators in the area indicate that the Mesaverde frac gradient increases in the basin toward the west. The Frontier A No. 1, the Pendragon SWD in the Chaco plant area, has a maximum allowable injection pressure of 900 psi. The Dugan SWD, the Stella Needs a Com 1E near Kirtland, has a maximum allowable injection pressure of 1400 psi. These pressures are consistent with the data from our test.

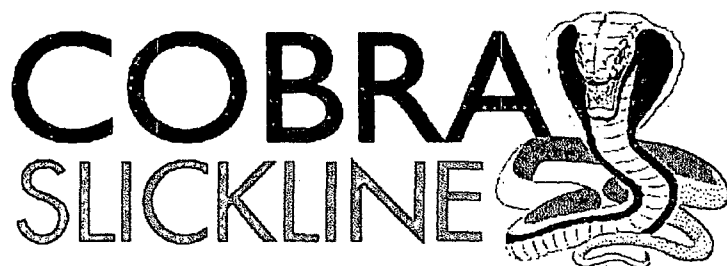
The previous step rate test on the Flush No. 1 did not include a sufficient number of steps to provide a clear straight line after breakover pressure. The previous test did show a change in the curve during the early time steps. The pressure increases were large with each rate step, but the pressure remained fairly constant during each step, indicating wellbore storage effect. As the wellbore storage effects were overcome by matrix injection, the curve smoothed and was less steep. Because there was not enough data to show the actual fracture pressure, this change in character was chosen as the breakover and used as the injection pressure limit.

It is clear from the frac data and from the long straight line portion of the curve in this test that the breakover pressure is actually the 1755 psi BHP.

218-106446

Flush 1... Step Rate Test





PRESSURE GAUGE DATA

Company: Merrion Oil & Gas Corp.

Well Name: Flush #1 (R68)

Date: June 12, 2002

Pressure Test Report

COMPANY INFORMATION

Company Name
Representative
Phone
Fax
Address

MERRION OIL & GAS CORP.
CARL MERILATT
505-327-9801

Steve Dunn

610 REILLY AVE.
FARMINGTON, NM 87401

E-Mail Address
Service Company

cobra@cyberport.com
COBRA SLICKLINE CORP.

WELL INFORMATION

Well Name
Well Location
Field and Pool
Status (Oil, Gas, Water, Injection)
Perforated Intervals
Mid-point of Perforated Intervals (MPP)
Drilling Rig Number
Elevations

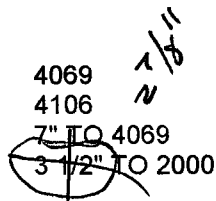
FLUSH 1
T26N, R13W, SEC. 2
MESAVERDE
INJECTION
2065-3866

Kelly Bushing (KB)
Casing Flange (CF)
KB-CF
Ground Level

5

Plug Back Total Depth
Total Depth
Production Casing
Production Tubing

4069
4106
7" TO 4069
3 1/2" TO 2000



TEST INFORMATION

Type of Test
Date(s) of Test
Dead-weight Gauge Tubing Pressure
Dead-weight Gauge Casing Pressure
Shut-in Date (Duration)
Date / Time on Bottom
Date / Time off Bottom

STEP RATE TEST
6/12/02

Probe Serial Number
Probe Offset from End of Tool String
Run Depth at Probe Pressure Port

R68
2065

PRESSURE TEST RESULTS

Maximum Recorded Probe Pressure
Maximum Recorded Probe Temperature
Final Buildup Pressure
Gradient Survey Information
Extrapolated Pressure to MPP
Final Gradient at Depth
Job Number

2000.7 psig
97.2 deg F



Company Name
Well Name
Type of Test
Date(s) of Test

MERRION OIL & GAS CORP.
FLUSH 1
STEP RATE TEST
6/12/02



PROBE INFORMATION

Probe Serial Number	R68
Model	Level II
Pressure	
Calibrated Pressure Range	0.0 - 3000.0 psig
Accuracy	0.05% FS
Resolution	0.0015% FS
Temperature	
Calibrated Temperature Range	-3.1 - 257.5 deg F
Accuracy	0.25% FS
Resolution	0.002% FS
Calibration File Used for Reports	R68AU10A.CAL

PROGRAMMING DETAILS

<u>Step</u>	<u>Sample Mode</u>	<u>Period</u>	<u>Duration</u>	<u>Comment</u>
0	Pause	5 seconds	25 seconds	Test mode
1	Pressure Trigger	2 minutes	indefinite	Trig @ 50 psi
2	Normal	5 seconds	12 hours	

Program Start Time	Jun 12/2002 @ 07:18:55
Program End Time	Jun 12/2002 @ 18:06:55
Total Samples Taken	7777
Usage for this Test	0.6950 Ah
Generic Data File Name	R68JN12A.GEN



Company Name MERRION OIL & GAS CORP.
Well Name FLUSH 1
Type of Test STEP RATE TEST
Date(s) of Test 6/12/02



COMMENTS

Reported By

COBRA SLICKLINE CORP.

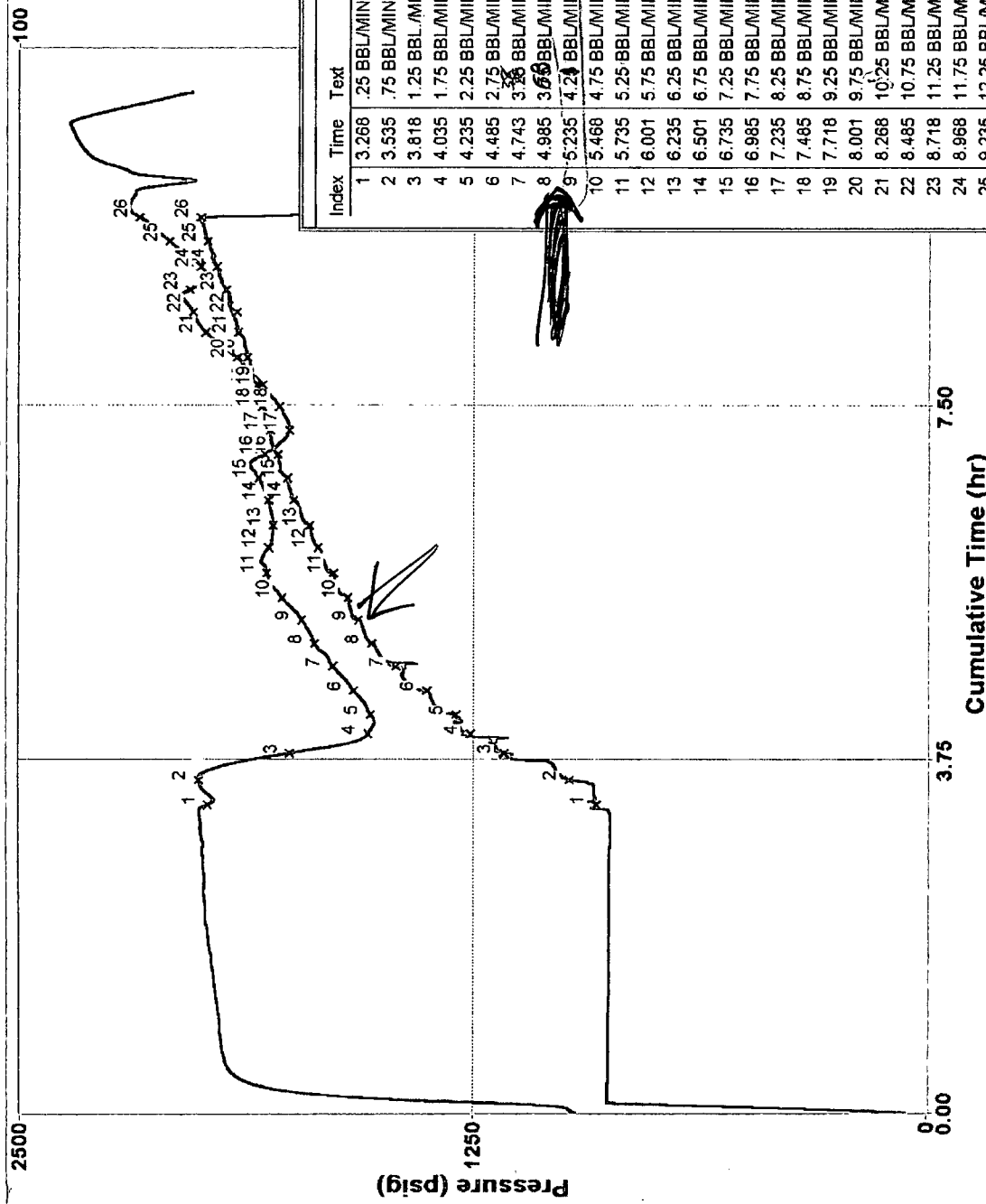
RU PUMPING TEE & LUBRICATOR-RAN TANDEM BHP GAUGES TO 2065'-MONITORED STEP RATE TEST.



Company Name
MERRION OIL & GAS CORP.
Well Name
FLUSH 1
Type of Test
STEP RATE TEST
Date(s) of Test
6/12/02



Flush #1 (R68)



Pres 1 (R68)
Temp 1 (R68)

Surface
Surface

Index	Time	Text	Pres 1 (R68)	Temp 1 (R68)
1	3.268	.25 BBL/MIN	909.74	89.60
2	3.535	.75 BBL/MIN	984.69	90.11
3	3.818	1.25 BBL/MIN	1165.22	85.09
4	4.035	1.75 BBL/MIN	1257.24	80.79
5	4.235	2.25 BBL/MIN	1296.96	80.64
6	4.485	2.75 BBL/MIN	1377.26	81.58
7	4.743	3.25 BBL/MIN	1462.43	82.74
8	4.985	3.75 BBL/MIN	1529.50	83.74
9	5.235	4.25 BBL/MIN	1565.71	84.45
10	5.468	4.75 BBL/MIN	1595.08	85.52
11	5.735	5.25 BBL/MIN	1634.76	86.36
12	6.001	5.75 BBL/MIN	1677.53	86.26
13	6.235	6.25 BBL/MIN	1700.89	86.00
14	6.501	6.75 BBL/MIN	1744.53	86.26
15	6.735	7.25 BBL/MIN	1761.54	86.81
16	6.985	7.75 BBL/MIN	1787.79	86.46
17	7.235	8.25 BBL/MIN	1808.67	85.11
18	7.485	8.75 BBL/MIN	1831.20	85.67
19	7.718	9.25 BBL/MIN	1843.04	86.62
20	8.001	9.75 BBL/MIN	1872.22	88.00
21	8.268	10.25 BBL/MIN	1896.27	89.74
22	8.485	10.75 BBL/MIN	1902.10	90.44
23	8.718	11.25 BBL/MIN	1930.53	90.63
24	8.968	11.75 BBL/MIN	1956.06	90.00
25	9.235	12.25 BBL/MIN	1981.31	91.72
26	9.489	STOPPED PUMPING	2000.72	93.38

STWS 920
Δ = 262 PSI

Surface

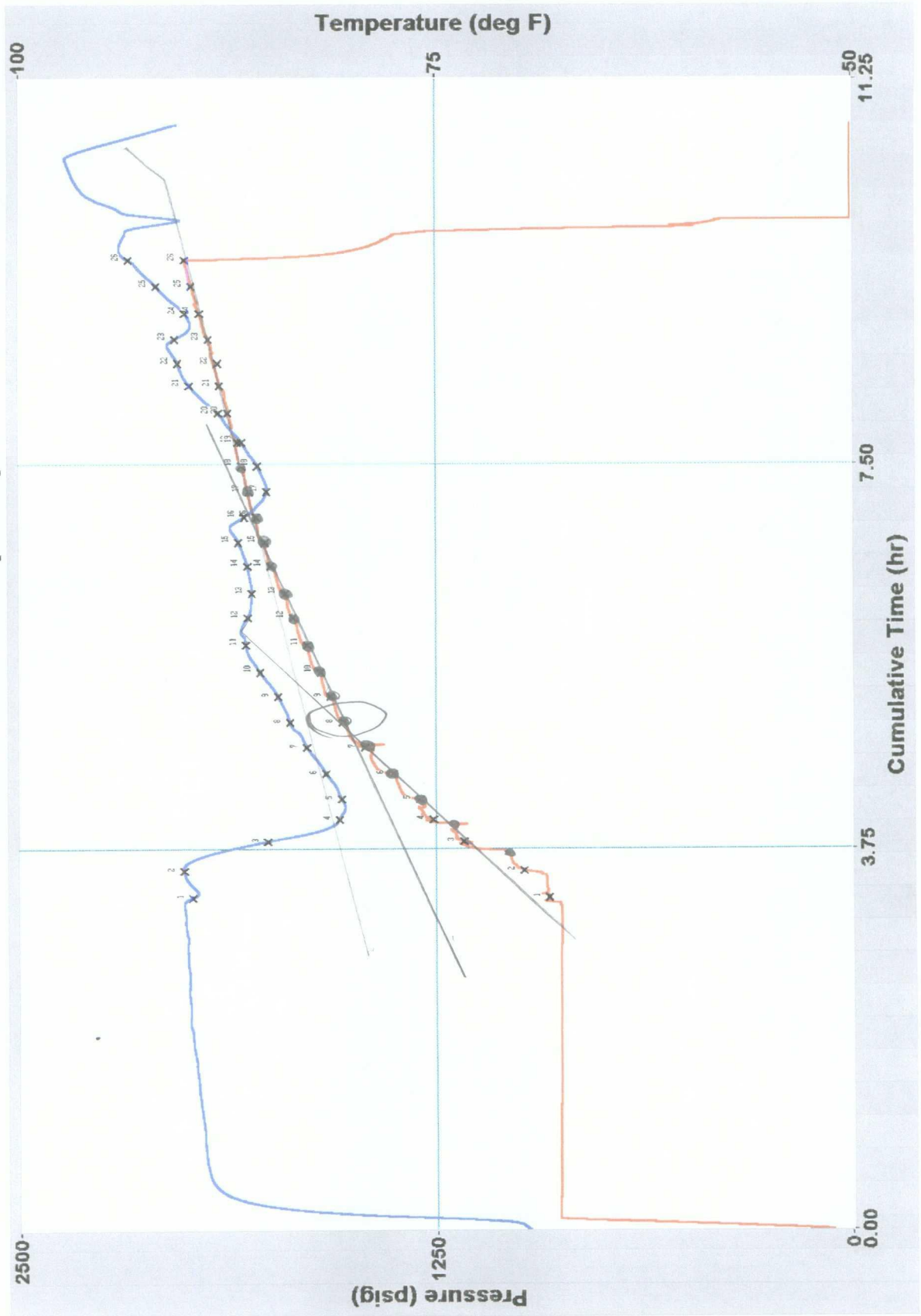
0.38 558
0.41 620
0.45 661
0.49 681



Company Name
MERRION OIL & GAS CORP.
Well Name
FLUSH 1
Type of Test
STEP RATE TEST
Date(s) of Test
6/12/02



Flush #1 Plain (R68)





Company Name MERRION OIL & GAS CORP.
Well Name FLUSH 1
Type of Test STEP RATE TEST
Date(s) of Test 6/12/02



Date	Time	Cum. T. 1 (R68)	Pres 1 (R68)	Temp 1 (R68)
		hr	psig	deg F
2002/06/12	07:18:55	0.0000	57.875	69.330
2002/06/12	07:20:55	0.0333	296.251	69.721
2002/06/12	07:22:55	0.0667	590.202	70.536
2002/06/12	07:24:55	0.1000	876.087	74.224
2002/06/12	07:26:55	0.1333	877.876	78.859
2002/06/12	07:28:55	0.1667	877.667	81.946
2002/06/12	07:30:55	0.2000	877.460	84.013
2002/06/12	07:32:55	0.2333	877.266	85.399
2002/06/12	07:34:55	0.2667	877.092	86.360
2002/06/12	07:36:55	0.3000	876.938	87.042
2002/06/12	07:38:55	0.3333	876.807	87.535
2002/06/12	07:40:55	0.3667	876.679	87.881
2002/06/12	07:42:55	0.4000	876.564	88.128
2002/06/12	07:44:55	0.4333	876.454	88.317
2002/06/12	07:46:55	0.4667	876.352	88.462
2002/06/12	07:48:55	0.5000	876.328	88.556
2002/06/12	07:50:55	0.5333	876.328	88.615
2002/06/12	07:52:55	0.5667	876.275	88.657
2002/06/12	07:54:55	0.6000	876.264	88.705
2002/06/12	07:56:55	0.6333	876.125	88.763
2002/06/12	07:58:55	0.6667	876.015	88.797
2002/06/12	08:00:55	0.7000	875.908	88.808
2002/06/12	08:02:55	0.7333	875.802	88.819
2002/06/12	08:04:55	0.7667	875.709	88.851
2002/06/12	08:06:55	0.8000	875.618	88.889
2002/06/12	08:08:55	0.8333	875.522	88.903
2002/06/12	08:10:55	0.8667	875.433	88.903
2002/06/12	08:12:55	0.9000	875.343	88.907
2002/06/12	08:14:55	0.9333	875.269	88.914
2002/06/12	08:16:55	0.9667	875.193	88.934
2002/06/12	08:18:55	1.0000	875.109	88.961
2002/06/12	08:20:55	1.0333	875.033	88.984
2002/06/12	08:22:55	1.0667	874.963	89.015
2002/06/12	08:24:55	1.1000	874.889	89.040
2002/06/12	08:26:55	1.1333	874.816	89.064
2002/06/12	08:28:55	1.1667	874.756	89.083
2002/06/12	08:30:55	1.2000	874.687	89.121
2002/06/12	08:32:55	1.2333	874.612	89.152
2002/06/12	08:34:55	1.2667	874.544	89.163
2002/06/12	08:36:55	1.3000	874.485	89.193
2002/06/12	08:38:55	1.3333	874.419	89.206
2002/06/12	08:40:55	1.3667	874.365	89.217
2002/06/12	08:42:55	1.4000	874.304	89.240
2002/06/12	08:44:55	1.4333	874.248	89.258
2002/06/12	08:46:55	1.4667	874.200	89.274
2002/06/12	08:48:55	1.5000	874.139	89.312
2002/06/12	08:50:55	1.5333	874.085	89.353
2002/06/12	08:52:55	1.5667	874.033	89.377
2002/06/12	08:54:55	1.6000	873.985	89.389
2002/06/12	08:56:55	1.6333	873.923	89.380

Date	Time	Cum. T. 1 (R68)	Pres 1 (R68)	Temp 1 (R68)
		hr	psig	deg F
2002/06/12	08:58:55	1.6667	873.874	89.415
2002/06/12	09:00:55	1.7000	873.818	89.465
2002/06/12	09:02:55	1.7333	873.765	89.481
2002/06/12	09:04:55	1.7667	873.717	89.526
2002/06/12	09:06:55	1.8000	873.671	89.546
2002/06/12	09:08:55	1.8333	873.624	89.553
2002/06/12	09:10:55	1.8667	873.577	89.577
2002/06/12	09:12:55	1.9000	873.534	89.575
2002/06/12	09:14:55	1.9333	873.484	89.602
2002/06/12	09:16:55	1.9667	873.439	89.656
2002/06/12	09:18:55	2.0000	873.398	89.710
2002/06/12	09:20:55	2.0333	873.350	89.717
2002/06/12	09:22:55	2.0667	873.302	89.721
2002/06/12	09:24:55	2.1000	873.259	89.728
2002/06/12	09:26:55	2.1333	873.217	89.721
2002/06/12	09:28:55	2.1667	873.175	89.717
2002/06/12	09:30:55	2.2000	873.137	89.724
2002/06/12	09:32:55	2.2333	873.095	89.751
2002/06/12	09:34:55	2.2667	873.048	89.767
2002/06/12	09:36:55	2.3000	873.008	89.798
2002/06/12	09:38:55	2.3333	872.978	89.820
2002/06/12	09:40:55	2.3667	872.933	89.796
2002/06/12	09:42:55	2.4000	872.895	89.785
2002/06/12	09:44:55	2.4333	872.850	89.785
2002/06/12	09:46:55	2.4667	872.818	89.789
2002/06/12	09:48:55	2.5000	872.777	89.782
2002/06/12	09:50:55	2.5333	872.740	89.793
2002/06/12	09:52:55	2.5667	872.701	89.827
2002/06/12	09:54:55	2.6000	872.663	89.850
2002/06/12	09:56:55	2.6333	872.625	89.850
2002/06/12	09:58:55	2.6667	872.593	89.857
2002/06/12	10:00:55	2.7000	872.552	89.866
2002/06/12	10:02:55	2.7333	872.515	89.888
2002/06/12	10:04:55	2.7667	872.482	89.911
2002/06/12	10:06:55	2.8000	872.444	89.892
2002/06/12	10:08:55	2.8333	872.402	89.870
2002/06/12	10:10:55	2.8667	872.381	89.870
2002/06/12	10:12:55	2.9000	872.348	89.935
2002/06/12	10:14:55	2.9333	872.305	89.958
2002/06/12	10:16:55	2.9667	872.273	89.987
2002/06/12	10:18:55	3.0000	872.245	90.010
2002/06/12	10:20:55	3.0333	872.200	90.010
2002/06/12	10:22:55	3.0667	872.173	89.992
2002/06/12	10:24:55	3.1000	872.145	90.010
2002/06/12	10:26:55	3.1333	872.107	90.041
2002/06/12	10:28:55	3.1667	872.074	90.068
2002/06/12	10:30:55	3.2000	874.860	90.068
2002/06/12	10:32:55	3.2333	921.715	90.030
2002/06/12	10:34:55	3.2667	909.837	89.620
.25 BBL/MIN				



Company Name MERRION OIL & GAS CORP.
Well Name FLUSH 1
Type of Test STEP RATE TEST
Date(s) of Test 6/12/02



Date	Time	Cum. T. 1 (R68)	Pres 1 (R68)	Temp 1 (R68)
		hr	psig	deg F
2002/06/12	10:35:00	3.2681	909.742	89.600
2002/06/12	10:36:55	3.3000	929.903	89.281
2002/06/12	10:38:55	3.3333	912.473	89.303
2002/06/12	10:40:55	3.3667	915.195	89.501
2002/06/12	10:42:55	3.4000	915.697	89.715
2002/06/12	10:44:55	3.4333	916.320	89.884
2002/06/12	10:46:55	3.4667	915.579	90.003
2002/06/12	10:48:55	3.5000	932.282	90.068
2002/06/12	10:50:55	3.5333	984.096	90.102
.75 BBL/MIN				
2002/06/12	10:51:00	3.5347	984.688	90.106
2002/06/12	10:52:55	3.5667	1005.495	90.117
2002/06/12	10:54:55	3.6000	1017.310	89.964
2002/06/12	10:56:55	3.6333	1021.654	89.586
2002/06/12	10:58:55	3.6667	1024.117	89.089
2002/06/12	11:00:55	3.7000	1029.492	88.437
2002/06/12	11:02:55	3.7333	1052.177	87.616
2002/06/12	11:04:55	3.7667	1153.825	86.693
2002/06/12	11:06:55	3.8000	1144.045	85.656
1.25 BBL/MIN				
2002/06/12	11:08:00	3.8181	1165.220	85.089
2002/06/12	11:08:55	3.8333	1182.807	84.605
2002/06/12	11:10:55	3.8667	1188.327	83.484
2002/06/12	11:12:55	3.9000	1190.481	82.470
2002/06/12	11:14:55	3.9333	1203.144	81.720
2002/06/12	11:16:55	3.9667	1195.283	81.219
2002/06/12	11:18:55	4.0000	1240.848	80.947
2002/06/12	11:20:55	4.0333	1258.761	80.789
1.75 BBL/MIN				
2002/06/12	11:21:00	4.0347	1257.237	80.785
2002/06/12	11:22:55	4.0667	1284.102	80.686
2002/06/12	11:24:55	4.1000	1287.453	80.551
2002/06/12	11:26:55	4.1333	1295.190	80.449
2002/06/12	11:28:55	4.1667	1281.293	80.445
2002/06/12	11:30:55	4.2000	1295.331	80.521
2002/06/12	11:32:55	4.2333	1299.027	80.636
2.25 BBL/MIN				
2002/06/12	11:33:00	4.2347	1296.961	80.643
2002/06/12	11:34:55	4.2667	1342.830	80.758
2002/06/12	11:36:55	4.3000	1351.347	80.850
2002/06/12	11:38:55	4.3333	1356.949	80.920
2002/06/12	11:40:55	4.3667	1361.099	81.023
2002/06/12	11:42:55	4.4000	1364.766	81.180
2002/06/12	11:44:55	4.4333	1367.916	81.349
2002/06/12	11:46:55	4.4667	1371.155	81.502
2.75 BBL/MIN				
2002/06/12	11:48:00	4.4847	1377.262	81.579
2002/06/12	11:48:55	4.5000	1409.203	81.646
2002/06/12	11:50:55	4.5333	1425.731	81.777
2002/06/12	11:52:55	4.5667	1432.987	81.901

Date	Time	Cum. T. 1 (R68)	Pres 1 (R68)	Temp 1 (R68)
		hr	psig	deg F
2002/06/12	11:54:55	4.6000	1438.774	82.051
2002/06/12	11:56:55	4.6333	1443.728	82.231
2002/06/12	11:58:55	4.6667	1443.042	82.404
2002/06/12	12:00:55	4.7000	1442.078	82.557
2002/06/12	12:02:55	4.7333	1441.902	82.697
3.25 BBL/MIN				
2002/06/12	12:03:30	4.7431	1462.432	82.737
2002/06/12	12:04:55	4.7667	1427.005	82.814
2002/06/12	12:06:55	4.8000	1493.261	82.909
2002/06/12	12:08:55	4.8333	1503.115	82.998
2002/06/12	12:10:55	4.8667	1508.206	83.122
2002/06/12	12:12:55	4.9000	1513.056	83.372
2002/06/12	12:14:55	4.9333	1516.914	83.588
2002/06/12	12:16:55	4.9667	1520.057	83.698
3.75 BBL/MIN				
2002/06/12	12:18:00	4.9847	1529.504	83.739
2002/06/12	12:18:55	5.0000	1535.107	83.766
2002/06/12	12:20:55	5.0333	1542.282	83.826
2002/06/12	12:22:55	5.0667	1546.238	83.905
2002/06/12	12:24:55	5.1000	1549.156	84.007
2002/06/12	12:26:55	5.1333	1552.184	84.117
2002/06/12	12:28:55	5.1667	1554.521	84.229
2002/06/12	12:30:55	5.2000	1557.169	84.335
2002/06/12	12:32:55	5.2333	1568.670	84.448
4.25 BBL/MIN				
2002/06/12	12:33:00	5.2347	1565.706	84.452
2002/06/12	12:34:55	5.2667	1581.956	84.562
2002/06/12	12:36:55	5.3000	1584.279	84.686
2002/06/12	12:38:55	5.3333	1586.481	84.850
2002/06/12	12:40:55	5.3667	1589.191	85.030
2002/06/12	12:42:55	5.4000	1591.332	85.203
2002/06/12	12:44:55	5.4333	1593.466	85.366
2002/06/12	12:46:55	5.4667	1595.035	85.519
4.75 BBL/MIN				
2002/06/12	12:47:00	5.4681	1595.083	85.525
2002/06/12	12:48:55	5.5000	1611.883	85.653
2002/06/12	12:50:55	5.5333	1619.597	85.786
2002/06/12	12:52:55	5.5667	1623.059	85.930
2002/06/12	12:54:55	5.6000	1626.077	86.076
2002/06/12	12:56:55	5.6333	1628.178	86.182
2002/06/12	12:58:55	5.6667	1630.456	86.261
2002/06/12	13:00:55	5.7000	1632.551	86.326
2002/06/12	13:02:55	5.7333	1634.712	86.360
5.25 BBL/MIN				
2002/06/12	13:03:00	5.7347	1634.756	86.364
2002/06/12	13:04:55	5.7667	1652.173	86.387
2002/06/12	13:06:55	5.8000	1655.991	86.425
2002/06/12	13:08:55	5.8333	1658.807	86.614
2002/06/12	13:10:55	5.8667	1661.748	86.659
2002/06/12	13:12:55	5.9000	1664.485	86.594



Company Name MERRION OIL & GAS CORP.
Well Name FLUSH 1
Type of Test STEP RATE TEST
Date(s) of Test 6/12/02



Date	Time	Cum. T. 1 (R68)	Pres 1 (R68)	Temp 1 (R68)
		hr	psig	deg F
2002/06/12	13:14:55	5.9333	1666.854	86.490
2002/06/12	13:16:55	5.9667	1668.230	86.380
2002/06/12	13:18:55	6.0000	1677.168	86.263
5.75 BBL/MIN				
2002/06/12	13:19:00	6.0014	1677.534	86.259
2002/06/12	13:20:55	6.0333	1685.310	86.162
2002/06/12	13:22:55	6.0667	1689.034	86.090
2002/06/12	13:24:55	6.1000	1692.526	86.056
2002/06/12	13:26:55	6.1333	1694.611	86.041
2002/06/12	13:28:55	6.1667	1696.210	86.027
2002/06/12	13:30:55	6.2000	1698.853	86.014
2002/06/12	13:32:55	6.2333	1700.875	86.007
6.25 BBL/MIN				
2002/06/12	13:33:00	6.2347	1700.887	86.004
2002/06/12	13:34:55	6.2667	1714.068	86.004
2002/06/12	13:36:55	6.3000	1719.589	86.016
2002/06/12	13:38:55	6.3333	1722.813	86.061
2002/06/12	13:40:55	6.3667	1724.821	86.106
2002/06/12	13:42:55	6.4000	1728.297	86.148
2002/06/12	13:44:55	6.4333	1730.339	86.185
2002/06/12	13:46:55	6.4667	1732.790	86.223
2002/06/12	13:48:55	6.5000	1743.739	86.257
6.75 BBL/MIN				
2002/06/12	13:49:00	6.5014	1744.527	86.261
2002/06/12	13:50:55	6.5333	1747.617	86.311
2002/06/12	13:52:55	6.5667	1751.228	86.387
2002/06/12	13:54:55	6.6000	1752.896	86.470
2002/06/12	13:56:55	6.6333	1755.477	86.545
2002/06/12	13:58:55	6.6667	1758.484	86.617
2002/06/12	14:00:55	6.7000	1760.406	86.731
2002/06/12	14:02:55	6.7333	1761.169	86.814
7.25 BBL/MIN				
2002/06/12	14:03:00	6.7347	1761.545	86.814
2002/06/12	14:04:55	6.7667	1773.393	86.900
2002/06/12	14:06:55	6.8000	1780.160	87.051
2002/06/12	14:08:55	6.8333	1780.076	87.199
2002/06/12	14:10:55	6.8667	1780.741	87.312
2002/06/12	14:12:55	6.9000	1783.982	87.255
2002/06/12	14:14:55	6.9333	1785.579	86.983
2002/06/12	14:16:55	6.9667	1788.992	86.644
7.75 BBL/MIN				
2002/06/12	14:18:00	6.9847	1787.793	86.463
2002/06/12	14:18:55	7.0000	1794.040	86.319
2002/06/12	14:20:55	7.0333	1797.237	86.043
2002/06/12	14:22:55	7.0667	1800.957	85.836
2002/06/12	14:24:55	7.1000	1803.491	85.636
2002/06/12	14:26:55	7.1333	1805.379	85.431
2002/06/12	14:28:55	7.1667	1807.483	85.276
2002/06/12	14:30:55	7.2000	1809.923	85.176
2002/06/12	14:32:55	7.2333	1807.399	85.114

Date	Time	Cum. T. 1 (R68)	Pres 1 (R68)	Temp 1 (R68)
		hr	psig	deg F
8.25 BBL/MIN				
2002/06/12	14:33:00	7.2347	1808.672	85.111
2002/06/12	14:34:55	7.2667	1812.640	85.096
2002/06/12	14:36:55	7.3000	1815.903	85.141
2002/06/12	14:38:55	7.3333	1817.550	85.228
2002/06/12	14:40:55	7.3667	1821.419	85.323
2002/06/12	14:42:55	7.4000	1822.286	85.420
2002/06/12	14:44:55	7.4333	1824.365	85.514
2002/06/12	14:46:55	7.4667	1827.329	85.617
8.75 BBL/MIN				
2002/06/12	14:48:00	7.4847	1831.203	85.669
2002/06/12	14:48:55	7.5000	1831.486	85.723
2002/06/12	14:50:55	7.5333	1837.254	85.854
2002/06/12	14:52:55	7.5667	1841.548	86.013
2002/06/12	14:54:55	7.6000	1843.020	86.164
2002/06/12	14:56:55	7.6333	1845.177	86.290
2002/06/12	14:58:55	7.6667	1847.479	86.414
2002/06/12	15:00:55	7.7000	1842.060	86.549
9.25 BBL/MIN				
2002/06/12	15:02:00	7.7181	1843.036	86.625
2002/06/12	15:02:55	7.7333	1844.871	86.693
2002/06/12	15:04:55	7.7667	1853.712	86.851
2002/06/12	15:06:55	7.8000	1856.944	87.040
2002/06/12	15:08:55	7.8333	1860.724	87.229
2002/06/12	15:10:55	7.8667	1859.392	87.408
2002/06/12	15:12:55	7.9000	1861.686	87.562
2002/06/12	15:14:55	7.9333	1864.100	87.687
2002/06/12	15:16:55	7.9667	1865.332	87.831
2002/06/12	15:18:55	8.0000	1872.208	87.996
9.75 BBL/MIN				
2002/06/12	15:19:00	8.0014	1872.223	88.003
2002/06/12	15:20:55	8.0333	1870.551	88.227
2002/06/12	15:22:55	8.0667	1873.478	88.495
2002/06/12	15:24:55	8.1000	1877.384	88.732
2002/06/12	15:26:55	8.1333	1880.110	88.959
2002/06/12	15:28:55	8.1667	1878.258	89.172
2002/06/12	15:30:55	8.2000	1882.013	89.371
2002/06/12	15:32:55	8.2333	1887.525	89.557
2002/06/12	15:34:55	8.2667	1895.981	89.735
10.25 BBL/MIN				
2002/06/12	15:35:00	8.2681	1896.271	89.742
2002/06/12	15:36:55	8.3000	1896.566	89.890
2002/06/12	15:38:55	8.3333	1900.210	90.036
2002/06/12	15:40:55	8.3667	1901.795	90.144
2002/06/12	15:42:55	8.4000	1905.668	90.235
2002/06/12	15:44:55	8.4333	1908.806	90.325
2002/06/12	15:46:55	8.4667	1913.128	90.401
10.75 BBL/MIN				
2002/06/12	15:48:00	8.4847	1902.101	90.441
2002/06/12	15:48:55	8.5000	1915.026	90.475



Company Name MERRION OIL & GAS CORP.
Well Name FLUSH 1
Type of Test STEP RATE TEST
Date(s) of Test 6/12/02



Date	Time	Cum. T. 1 (R68)	Pres 1 (R68)	Temp 1 (R68)
		hr	psig	deg F
2002/06/12	15:50:55	8.5333	1918.771	90.586
2002/06/12	15:52:55	8.5667	1922.992	90.750
2002/06/12	15:54:55	8.6000	1918.235	90.889
2002/06/12	15:56:55	8.6333	1918.697	91.022
2002/06/12	15:58:55	8.6667	1925.028	91.058
2002/06/12	16:00:55	8.7000	1928.773	90.822
11.25 BBL/MIN				
2002/06/12	16:02:00	8.7181	1930.529	90.626
2002/06/12	16:02:55	8.7333	1931.658	90.450
2002/06/12	16:04:55	8.7667	1939.220	90.055
2002/06/12	16:06:55	8.8000	1944.064	89.802
2002/06/12	16:08:55	8.8333	1944.065	89.683
2002/06/12	16:10:55	8.8667	1948.526	89.674
2002/06/12	16:12:55	8.9000	1948.358	89.748
2002/06/12	16:14:55	8.9333	1952.971	89.852
2002/06/12	16:16:55	8.9667	1955.851	89.994
11.75 BBL/MIN				
2002/06/12	16:17:00	8.9681	1956.063	90.003
2002/06/12	16:18:55	9.0000	1960.250	90.169
2002/06/12	16:20:55	9.0333	1964.629	90.388
2002/06/12	16:22:55	9.0667	1968.977	90.658
2002/06/12	16:24:55	9.1000	1967.459	90.912
2002/06/12	16:26:55	9.1333	1970.799	91.125
2002/06/12	16:28:55	9.1667	1973.828	91.330
2002/06/12	16:30:55	9.2000	1976.445	91.533
2002/06/12	16:32:55	9.2333	1978.175	91.715
12.25 BBL/MIN				
2002/06/12	16:33:00	9.2347	1981.312	91.724
2002/06/12	16:34:55	9.2667	1983.843	91.913
2002/06/12	16:36:55	9.3000	1986.766	92.156
2002/06/12	16:38:55	9.3333	1989.752	92.399
2002/06/12	16:40:55	9.3667	1991.755	92.606
2002/06/12	16:42:55	9.4000	1993.234	92.791
2002/06/12	16:44:55	9.4333	1996.794	92.962
2002/06/12	16:46:55	9.4667	1999.449	93.155
STOPPED PUMPING				
2002/06/12	16:48:15	9.4889	2000.718	93.384
2002/06/12	16:48:55	9.5000	1835.552	93.506
2002/06/12	16:50:55	9.5333	1607.788	93.783
2002/06/12	16:52:55	9.5667	1524.043	93.913
2002/06/12	16:54:55	9.6000	1473.435	93.940
2002/06/12	16:56:55	9.6333	1439.346	93.898
2002/06/12	16:58:55	9.6667	1413.168	93.826
2002/06/12	17:00:55	9.7000	1392.169	93.722
2002/06/12	17:02:55	9.7333	1374.155	93.598
2002/06/12	17:04:55	9.7667	1272.358	93.547
2002/06/12	17:06:55	9.8000	768.724	93.043
2002/06/12	17:08:55	9.8333	476.096	91.702
2002/06/12	17:10:55	9.8667	409.505	90.498
2002/06/12	17:12:55	9.9000	0.000	91.297

Date	Time	Cum. T. 1 (R68)	Pres 1 (R68)	Temp 1 (R68)
		hr	psig	deg F
2002/06/12	17:14:55	9.9333	0.000	93.250
2002/06/12	17:16:55	9.9667	0.000	93.924
2002/06/12	17:18:55	10.0000	0.000	94.240
2002/06/12	17:20:55	10.0333	0.000	94.838
2002/06/12	17:22:55	10.0667	0.000	95.401
2002/06/12	17:24:55	10.1000	0.000	95.761
2002/06/12	17:26:55	10.1333	0.000	96.084
2002/06/12	17:28:55	10.1667	0.000	96.278
2002/06/12	17:30:55	10.2000	0.000	96.435
2002/06/12	17:32:55	10.2333	0.000	96.566
2002/06/12	17:34:55	10.2667	0.000	96.681
2002/06/12	17:36:55	10.3000	0.000	96.780
2002/06/12	17:38:55	10.3333	0.000	96.872
2002/06/12	17:40:55	10.3667	0.000	96.957
2002/06/12	17:42:55	10.4000	0.000	97.038
2002/06/12	17:44:55	10.4333	0.000	97.124
2002/06/12	17:46:55	10.4667	0.000	97.212
2002/06/12	17:48:55	10.5000	0.000	97.093
2002/06/12	17:50:55	10.5333	0.000	96.624
2002/06/12	17:52:55	10.5667	0.000	95.992
2002/06/12	17:54:55	10.6000	0.000	95.263
2002/06/12	17:56:55	10.6333	0.000	94.496
2002/06/12	17:58:55	10.6667	0.000	93.709
2002/06/12	18:00:55	10.7000	0.000	92.928
2002/06/12	18:02:55	10.7333	0.000	92.169
2002/06/12	18:04:55	10.7667	0.000	91.418

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :1 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

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ELAPSED Calc A SLURRY Braden
TIME BH Pressure PUMP Head
 Press TREATING RATE .
 psi PSI BPM PSI
=====

0.500	1246	50.00000	0.20000	62.00000
1.014	1246	50.00000	0.25000	62.00000
1.514	1246	50.00000	0.22000	63.00000
2.014	1246	50.00000	0.21000	62.00000
2.514	1246	50.00000	0.21000	63.00000
3.014	1254	60.00000	0.59000	63.00000
3.532	1256	60.00000	0.18000	63.00000
4.047	1247	50.00000	0.19000	63.00000
4.548	1246	50.00000	0.21000	63.00000
5.064	1246	50.00000	0.18000	63.00000
5.579	1246	50.00000	0.20000	64.00000
6.079	1246	50.00000	0.26000	64.00000
6.580	1246	50.00000	0.21000	64.00000
7.080	1246	50.00000	0.21000	64.00000
7.597	1246	50.00000	0.23000	64.00000
8.097	1246	50.00000	0.22000	64.00000
8.612	1246	50.00000	0.21000	65.00000
9.112	1246	50.00000	0.21000	65.00000
9.612	1246	50.00000	0.21000	65.00000
10.113	1246	50.00000	0.20000	65.00000
10.629	1246	50.00000	0.21000	65.00000
11.145	1246	50.00000	0.20000	65.00000
11.645	1246	50.00000	0.19000	66.00000
12.145	1246	50.00000	0.19000	66.00000
12.646	1246	50.00000	0.18000	66.00000
13.161	1246	50.00000	0.18000	66.00000
13.662	1246	50.00000	0.22000	67.00000
14.162	1246	50.00000	0.21000	67.00000
14.677	1256	60.00000	0.32000	67.00000
15.177	1261	60.00000	0.33000	68.00000
15.677	1265	70.00000	0.34000	67.00000
16.194	1277	90.00000	0.54000	67.00000
16.694	1292	100.00000	0.59000	68.00000
17.210	1313	120.00000	0.67000	68.00000
17.710	1318	130.00000	0.63000	68.00000
18.210	1327	130.00000	0.73000	68.00000
18.727	1333	140.00000	0.68000	68.00000
19.243	1338	150.00000	0.69000	68.00000
19.759	1338	150.00000	0.71000	69.00000
20.259	1340	150.00000	0.68000	69.00000

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :2 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

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ELAPSED Calc A SLURRY Braden
TIME BH Pressure PUMP Head
 Press TREATING RATE .
 min. psi PSI BPM PSI
=====

20.760	1345	160.00000	0.72000	69.00000
21.267	1352	160.00000	0.72000	69.00000
21.775	1351	160.00000	0.71000	69.00000
22.275	1352	160.00000	0.73000	69.00000
22.775	1354	160.00000	0.70000	69.00000

23.276	1354	160.00000	0.70000	70.00000
23.783	1358	170.00000	0.70000	70.00000
24.283	1353	160.00000	0.70000	70.00000
24.791	1360	170.00000	0.70000	70.00000
25.300	1354	160.00000	0.70000	70.00000

25.816	1358	170.00000	0.67000	71.00000
26.316	1360	170.00000	0.67000	71.00000
26.832	1362	170.00000	0.68000	71.00000
27.332	1362	170.00000	0.69000	71.00000
27.832	1362	170.00000	0.67000	71.00000

28.332	1368	180.00000	0.76000	71.00000
28.849	1373	180.00000	0.76000	71.00000
29.381	1383	200.00000	0.79000	71.00000
29.882	1447	270.00000	1.30000	71.00000
30.382	1471	290.00000	1.33000	71.00000

30.882	1482	310.00000	1.34000	71.00000
31.397	1491	310.00000	1.33000	72.00000
31.898	1498	320.00000	1.35000	72.00000
32.414	1498	310.00000	1.37000	72.00000
32.914	1503	330.00000	1.39000	72.00000

33.414	1485	300.00000	0.94000	72.00000
33.914	1490	320.00000	1.27000	72.00000
34.414	1498	320.00000	1.32000	72.00000
34.930	1508	330.00000	1.38000	72.00000
35.430	1516	330.00000	1.41000	73.00000

35.947	1518	340.00000	1.43000	73.00000
36.463	1523	350.00000	1.37000	73.00000
36.963	1519	340.00000	1.33000	73.00000
37.463	1524	350.00000	1.38000	73.00000
37.963	1521	350.00000	1.32000	73.00000

38.480	1521	340.00000	1.30000	74.00000
38.995	1521	340.00000	1.31000	74.00000
39.495	1523	340.00000	1.35000	74.00000
39.995	1528	350.00000	1.37000	74.00000
40.496	1530	350.00000	1.38000	74.00000

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :3 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

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ELAPSED Calc A SLURRY Braden
TIME BH Pressure PUMP Head
 Press TREATING RATE .
 min. psi PSI BPM PSI
=====

41.011	1537	370.00000	1.39000	74.00000
41.512	1530	350.00000	1.23000	74.00000
42.012	1524	340.00000	1.25000	75.00000
42.528	1527	350.00000	1.28000	75.00000
43.028	1528	360.00000	1.29000	75.00000

43.545	1531	360.00000	1.35000	75.00000
44.061	1534	360.00000	1.35000	75.00000
44.577	1498	320.00000	0.66000	76.00000
45.095	1544	410.00000	1.81000	76.00000
45.611	1583	460.00000	1.91000	76.00000

46.126	1600	460.00000	1.75000	76.00000
46.626	1597	460.00000	1.91000	77.00000
47.126	1606	440.00000	1.53000	76.00000
47.626	1594	440.00000	1.74000	76.00000
48.126	1599	440.00000	1.84000	76.00000

48.643	1603	440.00000	1.87000	77.00000
49.143	1612	460.00000	1.91000	77.00000
49.643	1607	450.00000	1.79000	77.00000
50.159	1615	480.00000	1.87000	77.00000
50.659	1622	480.00000	1.85000	77.00000

51.175	1613	440.00000	1.82000	77.00000
51.675	1616	450.00000	1.82000	77.00000
52.175	1614	460.00000	1.82000	77.00000
52.692	1617	470.00000	1.86000	78.00000
53.208	1619	450.00000	1.86000	78.00000

53.708	1622	460.00000	1.85000	78.00000
54.208	1613	440.00000	1.75000	78.00000
54.708	1613	440.00000	1.68000	78.00000
55.224	1605	440.00000	1.70000	78.00000
55.724	1609	440.00000	1.75000	78.00000

56.224	1612	440.00000	1.73000	78.00000
56.724	1621	460.00000	1.79000	78.00000
57.240	1623	470.00000	1.83000	79.00000
57.757	1628	480.00000	1.84000	79.00000
58.257	1629	470.00000	1.84000	79.00000

58.773	1630	460.00000	1.84000	79.00000
59.273	1634	470.00000	1.83000	79.00000
59.773	1668	530.00000	2.10000	79.00000
60.290	1646	520.00000	2.27000	79.00000
60.806	1640	510.00000	2.22000	79.00000

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :4 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

+++++
ELAPSED Calc A SLURRY Braden
TIME BH Pressure PUMP Head
 Press TREATING RATE
 psi PSI BPM PSI
=====

61.306	1700	570.00000	2.22000	79.00000
61.806	1639	510.00000	2.23000	80.00000
62.307	1682	550.00000	2.19000	80.00000
62.822	1665	540.00000	2.28000	80.00000
63.322	1650	520.00000	2.21000	80.00000

63.822	1684	560.00000	2.29000	80.00000
64.338	1650	520.00000	2.21000	80.00000
64.838	1706	580.00000	2.27000	81.00000
65.338	1650	520.00000	2.21000	81.00000
65.855	1694	570.00000	2.29000	81.00000

66.355	1660	530.00000	2.21000	81.00000
66.871	1684	560.00000	2.29000	81.00000
67.372	1660	530.00000	2.21000	81.00000
67.888	1684	560.00000	2.29000	81.00000
68.403	1692	560.00000	2.19000	81.00000

68.903	1669	540.00000	2.23000	82.00000
69.403	1712	580.00000	2.19000	81.00000
69.903	1660	530.00000	2.22000	81.00000
70.403	1720	590.00000	2.21000	82.00000
70.903	1650	520.00000	2.21000	81.00000

71.403	1729	600.00000	2.23000	82.00000
71.903	1650	520.00000	2.21000	82.00000
72.403	1715	590.00000	2.28000	82.00000
72.903	1671	540.00000	2.20000	82.00000
73.419	1686	560.00000	2.26000	81.00000

73.919	1713	580.00000	2.18000	81.00000
74.436	1676	560.00000	2.38000	82.00000
74.951	1699	610.00000	2.82000	82.00000
75.452	1727	640.00000	2.84000	82.00000
75.952	1719	630.00000	2.81000	81.00000

76.460	1729	640.00000	2.82000	82.00000
76.960	1739	650.00000	2.82000	81.00000
77.468	1739	650.00000	2.81000	82.00000
77.968	1739	650.00000	2.82000	81.00000
78.476	1739	650.00000	2.82000	82.00000

78.992	1739	650.00000	2.81000	82.00000
79.500	1747	660.00000	2.84000	81.00000
80.008	1739	650.00000	2.82000	81.00000
80.509	1748	660.00000	2.83000	81.00000
81.009	1748	660.00000	2.83000	81.00000

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :5 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

```
+++++
ELAPSED      Calc      A      SLURRY      Braden
TIME         BH      Pressure      PUMP      Head
            Press  TREATING      RATE      .
            min.   psi      PSI      BPM      PSI
=====
```

81.525	1747	660.00000	2.85000	81.00000
82.026	1737	650.00000	2.84000	82.00000
82.541	1737	650.00000	2.84000	82.00000
83.041	1737	650.00000	2.85000	81.00000
83.541	1757	670.00000	2.84000	82.00000
84.041	1758	670.00000	2.83000	82.00000
84.541	1757	670.00000	2.84000	82.00000
85.057	1751	660.00000	2.78000	82.00000
85.557	1752	660.00000	2.76000	82.00000
86.057	1755	660.00000	2.71000	82.00000
86.557	1773	680.00000	2.75000	82.00000
87.058	1761	660.00000	2.61000	82.00000
87.573	1866	770.00000	2.70000	82.00000
88.073	1778	680.00000	2.67000	82.00000
88.574	1742	650.00000	2.77000	81.00000
89.089	1738	640.00000	2.66000	82.00000
89.589	1738	640.00000	2.67000	81.00000
90.089	2062	1000.00000	3.23000	82.00000
90.589	2006	960.00000	3.47000	81.00000
91.089	1857	780.00000	3.00000	82.00000
91.606	1688	620.00000	3.14000	82.00000
92.122	1782	720.00000	3.24000	81.00000
92.622	1784	730.00000	3.35000	81.00000
93.122	1805	750.00000	3.34000	81.00000
93.639	1793	740.00000	3.36000	81.00000
94.154	1803	750.00000	3.37000	81.00000
94.655	1812	760.00000	3.38000	81.00000
95.172	1812	760.00000	3.38000	81.00000
95.672	1801	750.00000	3.39000	81.00000
96.187	1803	750.00000	3.37000	81.00000
96.687	1832	780.00000	3.38000	81.00000
97.188	1802	750.00000	3.38000	81.00000
97.703	1831	780.00000	3.39000	81.00000
98.203	1802	750.00000	3.38000	81.00000
98.703	1822	770.00000	3.38000	81.00000
99.204	1821	770.00000	3.39000	80.00000
99.710	1832	780.00000	3.38000	80.00000
100.220	1812	760.00000	3.38000	81.00000
100.720	1823	770.00000	3.37000	80.00000
101.220	1813	760.00000	3.37000	80.00000

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :6 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

+++++
ELAPSED Calc A SLURRY Braden
TIME BH Pressure PUMP Head
 Press TREATING RATE
 psi PSI BPM PSI
=====

101.720 1832 780.00000 3.38000 80.00000
102.236 1823 770.00000 3.37000 80.00000
102.752 1812 760.00000 3.38000 81.00000
103.252 1842 790.00000 3.38000 81.00000
103.769 1812 760.00000 3.37000 81.00000

104.269 1835 800.00000 3.62000 81.00000
104.785 1826 800.00000 3.75000 81.00000
105.285 1842 810.00000 3.67000 81.00000
105.785 1852 820.00000 3.67000 81.00000
106.301 1851 820.00000 3.68000 81.00000

106.801 1851 820.00000 3.68000 81.00000
107.301 1852 820.00000 3.67000 81.00000
107.817 1852 820.00000 3.67000 82.00000
108.317 1852 820.00000 3.66000 82.00000
108.817 1842 810.00000 3.66000 82.00000

109.317 1852 820.00000 3.67000 82.00000
109.817 1852 820.00000 3.66000 82.00000
110.318 1862 830.00000 3.66000 82.00000
110.833 1862 830.00000 3.67000 82.00000
111.333 1852 820.00000 3.66000 82.00000

111.833 1862 830.00000 3.67000 82.00000
112.333 1862 830.00000 3.66000 82.00000
112.849 1851 820.00000 3.68000 82.00000
113.349 1862 830.00000 3.67000 82.00000
113.849 1860 830.00000 3.69000 82.00000

114.366 1861 830.00000 3.68000 82.00000
114.866 1861 830.00000 3.68000 82.00000
115.382 1871 840.00000 3.68000 82.00000
115.883 1872 840.00000 3.67000 82.00000
116.399 1871 840.00000 3.68000 82.00000

116.915 1862 830.00000 3.67000 82.00000
117.415 1852 820.00000 3.67000 82.00000
117.931 1862 830.00000 3.67000 82.00000
118.432 1862 830.00000 3.67000 82.00000
118.932 1872 840.00000 3.67000 82.00000

119.432 1838 830.00000 3.98000 82.00000
119.948 1895 920.00000 4.40000 82.00000
120.464 1900 910.00000 4.22000 82.00000
120.980 1889 900.00000 4.23000 82.00000
121.480 1890 900.00000 4.22000 82.00000

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :7 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

+++++
ELAPSED Calc A SLURRY Braden
TIME BH Pressure PUMP Head
 Press TREATING RATE
 psi PSI BPM PSI
=====

121.980	1910	920.00000	4.22000	82.00000
122.480	1869	880.00000	4.23000	82.00000
122.980	1891	900.00000	4.21000	82.00000
123.480	1913	920.00000	4.18000	82.00000
123.980	1912	920.00000	4.19000	82.00000
124.496	1901	910.00000	4.21000	82.00000
124.996	1911	920.00000	4.21000	82.00000
125.496	1911	920.00000	4.21000	82.00000
125.996	1911	920.00000	4.21000	82.00000
126.512	1910	920.00000	4.22000	82.00000
127.012	1910	920.00000	4.22000	82.00000
127.529	1879	890.00000	4.23000	82.00000
128.029	1900	910.00000	4.22000	82.00000
128.529	1898	910.00000	4.24000	82.00000
129.029	1909	920.00000	4.23000	82.00000
129.544	1898	910.00000	4.24000	82.00000
130.044	1888	900.00000	4.24000	82.00000
130.544	1909	920.00000	4.23000	82.00000
131.044	1889	900.00000	4.23000	82.00000
131.544	1910	920.00000	4.22000	82.00000
132.044	1899	910.00000	4.23000	82.00000
132.552	1910	920.00000	4.22000	82.00000
133.060	1911	920.00000	4.21000	82.00000
133.560	1911	920.00000	4.21000	82.00000
134.085	1890	900.00000	4.22000	82.00000
134.585	1925	980.00000	4.77000	82.00000
135.085	1914	970.00000	4.78000	82.00000
135.585	1935	990.00000	4.76000	82.00000
136.085	1905	960.00000	4.76000	82.00000
136.601	1935	990.00000	4.76000	82.00000
137.118	1925	980.00000	4.77000	82.00000
137.635	1945	1000.00000	4.76000	82.00000
138.151	1925	980.00000	4.76000	82.00000
138.667	1925	980.00000	4.76000	82.00000
139.183	1945	1000.00000	4.76000	82.00000
139.684	1936	990.00000	4.75000	82.00000
140.200	1927	980.00000	4.74000	82.00000
140.700	1916	970.00000	4.75000	82.00000
141.200	1925	980.00000	4.77000	82.00000
141.700	1945	1000.00000	4.77000	82.00000

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :8 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

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+++++
ELAPSED      Calc      A      SLURRY      Braden
TIME         BH      Pressure      PUMP      Head
           Press  TREATING      RATE      .
           psi      PSI      BPM      PSI
=====

142.216      1945 1000.00000      4.77000      82.00000
142.716      1915 970.00000      4.77000      82.00000
143.233      1915 970.00000      4.77000      82.00000
143.748      1946 1000.00000      4.75000      82.00000
144.249      1945 1000.00000      4.76000      82.00000

144.749      1955 1010.00000      4.76000      82.00000
145.249      1927 980.00000      4.74000      82.00000
145.765      1916 970.00000      4.75000      82.00000
146.265      1946 1000.00000      4.75000      82.00000
146.765      1946 1000.00000      4.75000      82.00000

147.281      1955 1010.00000      4.76000      82.00000
147.781      1947 1000.00000      4.74000      81.00000
148.297      1956 1010.00000      4.75000      82.00000
148.798      1956 1010.00000      4.75000      81.00000
149.298      1926 980.00000      4.75000      81.00000

149.814      1963 1040.00000      5.02000      82.00000
150.315      1967 1070.00000      5.31000      81.00000
150.831      1981 1080.00000      5.26000      81.00000
151.346      1970 1070.00000      5.27000      81.00000
151.846      1942 1040.00000      5.25000      81.00000

152.346      1941 1040.00000      5.26000      81.00000
152.847      1950 1050.00000      5.28000      81.00000
153.364      1980 1080.00000      5.28000      81.00000
153.879      1980 1080.00000      5.27000      81.00000
154.379      1968 1070.00000      5.30000      81.00000

154.879      1978 1080.00000      5.30000      81.00000
155.379      1989 1090.00000      5.29000      81.00000
155.879      1997 1100.00000      5.31000      81.00000
156.395      1968 1070.00000      5.30000      80.00000
156.895      1958 1060.00000      5.30000      81.00000

157.412      1989 1090.00000      5.29000      81.00000
157.912      1988 1090.00000      5.30000      80.00000
158.429      1989 1090.00000      5.29000      80.00000
158.929      1959 1060.00000      5.29000      80.00000
159.444      1960 1060.00000      5.28000      80.00000

159.944      1981 1080.00000      5.26000      80.00000
160.444      1983 1080.00000      5.24000      80.00000
160.944      1971 1070.00000      5.26000      80.00000
161.461      1972 1070.00000      5.25000      80.00000
161.967      1972 1070.00000      5.25000      80.00000
```

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :9 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

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+++++
ELAPSED      Calc      A      SLURRY      Braden
TIME         BH   Pressure  PUMP      Head
            Press  TREATING  RATE      .
            min.   psi      PSI      BPM      PSI
=====

162.478      1951 1050.00000  5.26000  80.00000
162.993      2001 1100.00000  5.26000  79.00000
163.493      2000 1100.00000  5.28000  80.00000
163.994      1990 1090.00000  5.27000  80.00000
164.494      2020 1120.00000  5.27000  80.00000

165.015      1960 1110.00000  5.81000  80.00000
165.526      1976 1110.00000  5.64000  80.00000
166.026      1995 1130.00000  5.65000  80.00000
166.526      1997 1140.00000  5.73000  80.00000
167.026      1998 1140.00000  5.72000  80.00000

167.543      2007 1150.00000  5.73000  80.00000
168.043      1988 1130.00000  5.72000  80.00000
168.558      1998 1140.00000  5.72000  80.00000
169.058      2008 1150.00000  5.72000  80.00000
169.559      1988 1130.00000  5.72000  80.00000

170.075      2020 1160.00000  5.70000  81.00000
170.575      2006 1150.00000  5.74000  80.00000
171.075      2007 1150.00000  5.73000  81.00000
171.591      1997 1140.00000  5.73000  81.00000
172.091      2017 1160.00000  5.73000  81.00000

172.608      2017 1160.00000  5.73000  81.00000
173.108      1999 1140.00000  5.71000  81.00000
173.623      2000 1140.00000  5.70000  81.00000
174.123      2010 1150.00000  5.70000  81.00000
174.623      2017 1160.00000  5.73000  81.00000

175.123      2016 1160.00000  5.74000  81.00000
175.623      2001 1140.00000  5.69000  81.00000
176.123      2018 1160.00000  5.72000  81.00000
176.623      2017 1160.00000  5.73000  81.00000
177.124      2029 1170.00000  5.71000  81.00000

177.639      2018 1160.00000  5.72000  81.00000
178.139      1997 1140.00000  5.73000  81.00000
178.639      2017 1160.00000  5.73000  81.00000
179.139      2026 1170.00000  5.74000  81.00000
179.655      2026 1200.00000  6.05000  81.00000

180.156      2009 1200.00000  6.22000  81.00000
180.672      2029 1220.00000  6.22000  81.00000
181.172      2047 1240.00000  6.24000  81.00000
181.672      2036 1230.00000  6.25000  81.00000
182.188      2008 1200.00000  6.23000  81.00000
```

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :10 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

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+++++
ELAPSED      Calc      A      SLURRY      Braden
TIME         BH      Pressure  PUMP      Head
           Press  TREATING  RATE
           psi      PSI      BPM      PSI
=====

182.688      2008 1200.00000  6.23000  81.00000
183.188      2066 1260.00000  6.25000  82.00000
183.704      2036 1230.00000  6.25000  81.00000
184.204      2057 1250.00000  6.24000  82.00000
184.704      2037 1230.00000  6.24000  82.00000

185.221      2066 1260.00000  6.25000  82.00000
185.737      2040 1230.00000  6.21000  82.00000
186.238      2026 1220.00000  6.25000  82.00000
186.753      2058 1250.00000  6.23000  82.00000
187.253      2027 1220.00000  6.24000  82.00000

187.754      2047 1240.00000  6.24000  82.00000
188.261      2037 1230.00000  6.24000  83.00000
188.761      2077 1270.00000  6.24000  82.00000
189.269      2046 1240.00000  6.25000  82.00000
189.778      2037 1230.00000  6.24000  82.00000

190.295      2058 1250.00000  6.23000  82.00000
190.802      2036 1230.00000  6.25000  82.00000
191.311      2035 1230.00000  6.26000  82.00000
191.826      2035 1230.00000  6.26000  82.00000
192.326      2066 1260.00000  6.25000  82.00000

192.826      2045 1240.00000  6.26000  83.00000
193.326      2037 1230.00000  6.24000  83.00000
193.826      2084 1280.00000  6.27000  83.00000
194.326      2074 1290.00000  6.47000  82.00000
194.843      2084 1320.00000  6.66000  82.00000

195.360      2078 1340.00000  6.90000  83.00000
195.860      2039 1280.00000  6.70000  83.00000
196.400      2072 1310.00000  6.68000  83.00000
196.909      2076 1320.00000  6.73000  83.00000
197.409      2054 1300.00000  6.75000  83.00000

197.925      2047 1290.00000  6.72000  83.00000
198.426      2096 1340.00000  6.73000  83.00000
198.942      2075 1320.00000  6.74000  83.00000
199.458      2068 1310.00000  6.71000  83.00000
199.958      2068 1310.00000  6.71000  83.00000

200.458      2057 1300.00000  6.72000  83.00000
200.958      2099 1340.00000  6.70000  83.00000
201.474      2068 1310.00000  6.71000  83.00000
201.974      2071 1310.00000  6.69000  83.00000
202.474      2078 1320.00000  6.71000  83.00000
```

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :11 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

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+++++
ELAPSED      Calc      A      SLURRY      Braden
TIME         BH      Pressure  PUMP      Head
           Press  TREATING  RATE      .
           min.   psi      PSI      BPM      PSI
=====

202.990      2092 1330.00000  6.68000  83.00000
203.490      2079 1320.00000  6.70000  83.00000
203.990      2099 1340.00000  6.70000  83.00000
204.507      2089 1330.00000  6.70000  83.00000
205.007      2098 1340.00000  6.71000  83.00000

205.523      2083 1320.00000  6.67000  83.00000
206.023      2064 1300.00000  6.66000  83.00000
206.523      2092 1330.00000  6.68000  82.00000
207.039      2081 1320.00000  6.69000  83.00000
207.539      2102 1340.00000  6.68000  83.00000

208.055      2082 1320.00000  6.68000  82.00000
208.556      2091 1330.00000  6.69000  83.00000
209.072      2102 1340.00000  6.68000  82.00000
209.573      2119 1380.00000  6.89000  82.00000
210.088      2093 1380.00000  7.13000  83.00000

210.588      2092 1380.00000  7.14000  82.00000
211.088      2116 1420.00000  7.28000  82.00000
211.589      2054 1360.00000  7.30000  82.00000
212.105      2079 1360.00000  7.08000  83.00000
212.605      2111 1410.00000  7.24000  82.00000

213.121      2031 1320.00000  7.15000  82.00000
213.621      2161 1450.00000  7.15000  83.00000
214.121      2114 1420.00000  7.30000  83.00000
214.621      2159 1470.00000  7.35000  83.00000
215.137      2124 1440.00000  7.39000  83.00000

215.637      2107 1420.00000  7.36000  83.00000
216.137      2147 1460.00000  7.36000  83.00000
216.654      2146 1460.00000  7.37000  82.00000
217.169      2119 1430.00000  7.35000  83.00000
217.670      2130 1440.00000  7.34000  83.00000

218.187      2095 1410.00000  7.38000  84.00000
218.703      2117 1430.00000  7.36000  83.00000
219.219      2129 1440.00000  7.35000  83.00000
219.735      2109 1420.00000  7.35000  84.00000
220.236      2106 1420.00000  7.37000  84.00000

220.753      2151 1460.00000  7.33000  84.00000
221.269      2119 1430.00000  7.35000  84.00000
221.785      2087 1400.00000  7.36000  83.00000
222.301      2119 1430.00000  7.35000  84.00000
222.801      2119 1430.00000  7.35000  84.00000

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Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :12 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

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+++++
ELAPSED      Calc      A      SLURRY      Braden
TIME         BH   Pressure  PUMP      Head
           Press TREATING  RATE
           psi    PSI      BPM      PSI
=====

223.301      2136 1450.00000  7.37000  84.00000
223.801      2109 1420.00000  7.35000  83.00000
224.301      2119 1430.00000  7.35000  84.00000
224.801      2147 1510.00000  7.80000  84.00000
225.317      2147 1500.00000  7.71000  83.00000

225.818      2137 1490.00000  7.71000  83.00000
226.350      2129 1480.00000  7.70000  84.00000
226.850      2150 1500.00000  7.69000  83.00000
227.367      2171 1520.00000  7.68000  84.00000
227.867      2111 1460.00000  7.68000  84.00000

228.367      2161 1510.00000  7.68000  84.00000
228.883      2113 1460.00000  7.66000  84.00000
229.383      2162 1510.00000  7.67000  84.00000
229.899      2153 1500.00000  7.66000  84.00000
230.400      2153 1500.00000  7.66000  84.00000

230.916      2122 1470.00000  7.67000  84.00000
231.416      2153 1500.00000  7.66000  84.00000
231.916      2162 1510.00000  7.67000  84.00000
232.432      2153 1500.00000  7.66000  83.00000
232.933      2152 1500.00000  7.67000  83.00000

233.448      2163 1510.00000  7.66000  84.00000
233.948      2132 1480.00000  7.67000  83.00000
234.448      2143 1490.00000  7.66000  83.00000
234.964      2123 1470.00000  7.66000  83.00000
235.464      2152 1500.00000  7.67000  83.00000

235.964      2157 1500.00000  7.63000  83.00000
236.464      2164 1510.00000  7.65000  83.00000
236.964      2164 1510.00000  7.65000  82.00000
237.464      2144 1490.00000  7.65000  82.00000
237.964      2156 1500.00000  7.64000  82.00000

238.464      2182 1530.00000  7.67000  83.00000
238.980      2174 1520.00000  7.65000  82.00000
239.481      2175 1550.00000  7.90000  83.00000
239.984      2157 1540.00000  7.97000  83.00000
240.496      2190 1620.00000  8.36000  83.00000

240.997      2152 1560.00000  8.18000  83.00000
241.513      2173 1580.00000  8.17000  83.00000
242.013      2160 1580.00000  8.28000  82.00000
242.529      2181 1600.00000  8.27000  82.00000
243.037      2181 1600.00000  8.27000  82.00000
```

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :13 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

```

+++++
ELAPSED      Calc      A      SLURRY      Braden
TIME         BH   Pressure  PUMP      Head
            Press  TREATING  RATE
            min.   psi      PSI      BPM      PSI
=====

243.537      2180 1600.00000  8.28000  82.00000
244.037      2191 1610.00000  8.27000  82.00000
244.537      2182 1600.00000  8.26000  82.00000
245.053      2193 1610.00000  8.25000  82.00000
245.570      2180 1600.00000  8.28000  81.00000

246.071      2183 1600.00000  8.25000  81.00000
246.586      2171 1590.00000  8.27000  81.00000
247.086      2200 1620.00000  8.28000  80.00000
247.586      2170 1590.00000  8.28000  81.00000
248.087      2159 1580.00000  8.29000  81.00000

248.603      2190 1610.00000  8.28000  81.00000
249.118      2181 1600.00000  8.27000  81.00000
249.618      2171 1590.00000  8.27000  80.00000
250.118      2191 1610.00000  8.27000  80.00000
250.619      2180 1600.00000  8.28000  81.00000

251.119      2200 1620.00000  8.28000  80.00000
251.635      2172 1590.00000  8.26000  81.00000
252.135      2180 1600.00000  8.28000  81.00000
252.635      2161 1580.00000  8.27000  80.00000
253.151      2182 1600.00000  8.26000  81.00000

253.667      2201 1620.00000  8.27000  80.00000
254.168      2173 1590.00000  8.25000  80.00000
254.684      2183 1610.00000  8.34000  80.00000
255.184      2198 1650.00000  8.54000  80.00000
255.684      2213 1690.00000  8.74000  80.00000

256.200      2197 1680.00000  8.79000  80.00000
256.700      2178 1660.00000  8.78000  80.00000
257.200      2185 1670.00000  8.80000  80.00000
257.717      2158 1640.00000  8.78000  80.00000
258.233      2207 1690.00000  8.79000  80.00000

258.733      2197 1680.00000  8.79000  80.00000
259.233      2199 1680.00000  8.77000  80.00000
259.733      2179 1660.00000  8.77000  80.00000
260.250      2231 1710.00000  8.76000  80.00000
260.765      2179 1660.00000  8.77000  80.00000

261.266      2199 1680.00000  8.77000  80.00000
261.781      2208 1690.00000  8.78000  80.00000
262.281      2192 1670.00000  8.75000  80.00000
262.782      2199 1680.00000  8.77000  80.00000
263.282      2251 1730.00000  8.76000  80.00000

```

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :14 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

```
+++++
ELAPSED      Calc      A      SLURRY      Braden
TIME         BH   Pressure  PUMP      Head
           Press TREATING  RATE
           psi    PSI      BPM      PSI
=====

263.798      2222 1700.00000  8.75000  80.00000
264.298      2181 1660.00000  8.76000  80.00000
264.798      2212 1690.00000  8.75000  80.00000
265.298      2208 1690.00000  8.78000  80.00000
265.798      2211 1690.00000  8.76000  80.00000

266.298      2229 1710.00000  8.77000  80.00000
266.813      2208 1690.00000  8.78000  80.00000
267.313      2178 1660.00000  8.78000  80.00000
267.813      2247 1730.00000  8.79000  80.00000
268.313      2215 1700.00000  8.80000  80.00000

268.813      2197 1680.00000  8.79000  80.00000
269.330      2205 1690.00000  8.80000  79.00000
269.830      2211 1760.00000  9.30000  80.00000
270.346      2242 1790.00000  9.29000  80.00000
270.847      2220 1770.00000  9.31000  80.00000

271.362      2251 1800.00000  9.30000  81.00000
271.862      2232 1780.00000  9.29000  80.00000
272.362      2232 1780.00000  9.29000  80.00000
272.862      2252 1800.00000  9.29000  80.00000
273.362      2224 1770.00000  9.28000  80.00000

273.879      2215 1760.00000  9.27000  80.00000
274.395      2255 1800.00000  9.27000  79.00000
274.895      2234 1780.00000  9.28000  80.00000
275.395      2235 1780.00000  9.27000  79.00000
275.912      2215 1760.00000  9.27000  79.00000

276.427      2216 1760.00000  9.26000  79.00000
276.927      2265 1810.00000  9.27000  78.00000
277.428      2225 1770.00000  9.27000  79.00000
277.945      2256 1800.00000  9.26000  78.00000
278.460      2234 1780.00000  9.28000  77.00000

278.960      2224 1770.00000  9.28000  77.00000
279.461      2234 1780.00000  9.28000  77.00000
279.976      2234 1780.00000  9.28000  77.00000
280.476      2231 1780.00000  9.30000  76.00000
280.977      2202 1750.00000  9.29000  76.00000

281.477      2232 1780.00000  9.29000  76.00000
281.993      2204 1750.00000  9.28000  75.00000
282.493      2251 1800.00000  9.30000  75.00000
282.993      2251 1800.00000  9.30000  75.00000
283.509      2232 1780.00000  9.29000  74.00000
```

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :15 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

```

+++++
ELAPSED      Calc      A      SLURRY      Braden
TIME         BH   Pressure  PUMP      Head
            Press  TREATING  RATE
            min.   psi      PSI      BPM      PSI
=====

284.009      2231 1780.00000    9.30000    74.00000
284.509      2262 1910.00000   10.04000    74.00000
285.026      2246 1840.00000    9.64000    74.00000
285.541      2260 1890.00000    9.91000    73.00000
286.041      2229 1840.00000    9.77000    73.00000

286.541      2208 1810.00000    9.70000    73.00000
287.041      2252 1850.00000    9.67000    73.00000
287.541      2252 1850.00000    9.67000    72.00000
288.041      2261 1860.00000    9.68000    72.00000
288.541      2259 1860.00000    9.69000    72.00000

289.042      2255 1860.00000    9.72000    72.00000
289.557      2247 1850.00000    9.71000    72.00000
290.057      2271 1870.00000    9.68000    71.00000
290.557      2279 1880.00000    9.69000    72.00000
291.057      2243 1850.00000    9.74000    71.00000

291.557      2279 1880.00000    9.69000    71.00000
292.057      2251 1860.00000    9.75000    71.00000
292.572      2275 1880.00000    9.72000    70.00000
293.072      2277 1880.00000    9.71000    70.00000
293.573      2231 1840.00000    9.75000    70.00000

294.073      2239 1840.00000    9.69000    70.00000
294.573      2253 1850.00000    9.66000    70.00000
295.073      2265 1860.00000    9.65000    69.00000
295.589      2235 1840.00000    9.72000    69.00000
296.089      2245 1850.00000    9.72000    69.00000

296.606      2265 1870.00000    9.72000    69.00000
297.113      2231 1840.00000    9.75000    69.00000
297.613      2271 1880.00000    9.75000    69.00000
298.121      2273 1880.00000    9.74000    69.00000
298.621      2287 1890.00000    9.71000    68.00000

299.130      2288 1890.00000    9.70000    68.00000
299.646      2313 2010.00000   10.39000    68.00000
300.147      2303 1960.00000   10.10000    68.00000
300.654      2296 2000.00000   10.44000    68.00000
301.162      2297 1960.00000   10.15000    67.00000

301.662      2322 1990.00000   10.18000    67.00000
302.162      2320 2040.00000   10.55000    67.00000
302.679      2274 1950.00000   10.24000    67.00000
303.179      2281 1960.00000   10.26000    67.00000
303.696      2281 1960.00000   10.26000    67.00000

```

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :16 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

```
+++++
ELAPSED      Calc      A      SLURRY      Braden
TIME         BH   Pressure  PUMP      Head
           Press TREATING  RATE      .
           psi    PSI      BPM      PSI
=====

304.212      2294 1970.00000  10.24000  67.00000
304.727      2313 1990.00000  10.25000  67.00000
305.227      2303 1980.00000  10.25000  67.00000
305.727      2320 2000.00000  10.27000  67.00000
306.227      2310 1990.00000  10.27000  67.00000

306.727      2318 1990.00000  10.21000  67.00000
307.228      2287 1960.00000  10.22000  67.00000
307.744      2327 2000.00000  10.22000  67.00000
308.244      2254 1930.00000  10.24000  66.00000
308.760      2314 1990.00000  10.24000  66.00000

309.260      2321 2000.00000  10.26000  67.00000
309.760      2271 1950.00000  10.26000  66.00000
310.277      2264 1940.00000  10.24000  66.00000
310.777      2308 1990.00000  10.28000  66.00000
311.293      2301 1980.00000  10.26000  66.00000

311.793      2313 1990.00000  10.25000  66.00000
312.293      2325 2000.00000  10.23000  66.00000
312.809      2308 1980.00000  10.21000  66.00000
313.309      2262 1930.00000  10.18000  66.00000
313.809      2301 1970.00000  10.19000  66.00000

314.326      2231 1760.00000   9.15000  66.00000
314.841      2384 2160.00000  10.94000  66.00000
315.342      2339 2090.00000  10.77000  66.00000
315.842      2310 2050.00000  10.69000  67.00000
316.358      2349 2090.00000  10.70000  67.00000

316.858      2310 2050.00000  10.69000  67.00000
317.359      2313 2050.00000  10.67000  67.00000
317.874      2320 2050.00000  10.62000  67.00000
318.375      2333 2070.00000  10.67000  67.00000
318.891      2348 2080.00000  10.64000  67.00000

319.407      2358 2090.00000  10.64000  67.00000
319.907      2315 2050.00000  10.66000  67.00000
320.407      2326 2060.00000  10.65000  67.00000
320.908      2325 2060.00000  10.66000  67.00000
321.423      2305 2030.00000  10.59000  67.00000

321.923      2340 2070.00000  10.62000  68.00000
322.424      2329 2060.00000  10.63000  67.00000
322.940      2311 2090.00000  10.96000  68.00000
323.455      2315 2030.00000  10.52000  68.00000
323.956      2362 2080.00000  10.54000  68.00000
```

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :17 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

```
+++++
ELAPSED      Calc      A      SLURRY      Braden
TIME         BH      Pressure      PUMP      Head
            Press  TREATING      RATE      .
            min.   psi      PSI      BPM      PSI
=====

324.456      2349 2070.00000  10.56000  69.00000
324.957      2368 2100.00000  10.64000  68.00000
325.472      2342 2100.00000  10.82000  69.00000
325.973      2312 2070.00000  10.82000  69.00000
326.488      2347 2110.00000  10.85000  69.00000

326.988      2327 2090.00000  10.85000  69.00000
327.489      2339 2100.00000  10.84000  69.00000
328.004      2367 2130.00000  10.85000  69.00000
328.504      2367 2130.00000  10.85000  69.00000
329.005      2340 2100.00000  10.83000  69.00000

329.521      2370 2150.00000  10.97000  69.00000
330.021      2407 2240.00000  11.33000  68.00000
330.521      2332 2170.00000  11.36000  69.00000
331.037      2371 2210.00000  11.37000  69.00000
331.537      2377 2210.00000  11.33000  69.00000

332.037      2411 2240.00000  11.30000  69.00000
332.553      2340 2160.00000  11.24000  69.00000
333.053      2340 2160.00000  11.24000  69.00000
333.570      2361 2180.00000  11.23000  69.00000
334.070      2367 2190.00000  11.26000  69.00000

334.587      2396 2220.00000  11.27000  70.00000
335.087      2389 2210.00000  11.25000  70.00000
335.602      2400 2230.00000  11.31000  70.00000
336.102      2358 2190.00000  11.32000  70.00000
336.602      2407 2230.00000  11.26000  70.00000

337.102      2394 2220.00000  11.28000  70.00000
337.619      2400 2230.00000  11.31000  70.00000
338.119      2363 2190.00000  11.29000  71.00000
338.619      2414 2230.00000  11.21000  71.00000
339.119      2380 2200.00000  11.24000  70.00000

339.634      2414 2240.00000  11.28000  70.00000
340.134      2409 2230.00000  11.25000  71.00000
340.635      2344 2170.00000  11.28000  71.00000
341.135      2377 2200.00000  11.26000  71.00000
341.650      2396 2220.00000  11.27000  71.00000

342.150      2387 2210.00000  11.26000  71.00000
342.651      2387 2210.00000  11.26000  71.00000
343.151      2349 2170.00000  11.25000  71.00000
343.667      2411 2230.00000  11.23000  71.00000
344.167      2433 2250.00000  11.22000  71.00000
```

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :18 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

```
+++++
ELAPSED      Calc      A      SLURRY      Braden
TIME         BH      Pressure      PUMP      Head
            Press  TREATING      RATE      .
            min.   psi      PSI      BPM      PSI
=====

344.667      2369 2260.00000  11.71000  71.00000
345.183      2450 2350.00000  11.77000  71.00000
345.683      2407 2310.00000  11.79000  71.00000
346.183      2372 2280.00000  11.82000  71.00000
346.700      2385 2290.00000  11.80000  71.00000

347.216      2427 2330.00000  11.79000  71.00000
347.716      2415 2320.00000  11.80000  71.00000
348.216      2439 2340.00000  11.78000  71.00000
348.732      2420 2320.00000  11.77000  71.00000
349.233      3449 2360.00000   2.82000  71.00000

349.752      3285 2330.00000   4.65000  71.00000
350.264      2359 2280.00000  11.91000  70.00000
350.764      2417 2340.00000  11.92000  70.00000
351.264      2365 2290.00000  11.93000  71.00000
351.765      2409 2330.00000  11.91000  70.00000

352.265      2415 2340.00000  11.93000  71.00000
352.782      2419 2340.00000  11.91000  71.00000
353.289      2364 2290.00000  11.94000  71.00000
353.789      2402 2320.00000  11.89000  71.00000
354.297      2362 2290.00000  11.95000  71.00000

354.797      2402 2330.00000  11.95000  71.00000
355.305      2370 2290.00000  11.90000  71.00000
355.805      2417 2340.00000  11.92000  71.00000
356.322      2435 2360.00000  11.93000  71.00000
356.822      2372 2300.00000  11.95000  71.00000

357.338      2424 2350.00000  11.94000  71.00000
357.838      2411 2340.00000  11.96000  71.00000
358.350      2435 2360.00000  11.93000  71.00000
358.854      2418 2350.00000  11.98000  71.00000
359.354      2491 2420.00000  11.96000  71.00000

359.871      2390 2360.00000  12.22000  71.00000
360.387      2447 2390.00000  12.05000  71.00000
360.887      2426 2410.00000  12.31000  71.00000
361.387      2438 2420.00000  12.30000  71.00000
361.887      2453 2440.00000  12.33000  71.00000

362.403      2431 2420.00000  12.34000  71.00000
362.903      2446 2430.00000  12.31000  71.00000
363.403      2451 2440.00000  12.34000  71.00000
363.920      2451 2440.00000  12.34000  71.00000
364.436      2474 2460.00000  12.32000  71.00000
```

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :19 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

```

+++++
ELAPSED      Calc      A      SLURRY      Braden
TIME         BH      Pressure  PUMP      Head
            Press  TREATING  RATE      .
            min.   psi      PSI      BPM      PSI
=====

364.936      2463 2450.00000  12.33000  72.00000
365.436      2441 2430.00000  12.34000  71.00000
365.936      2453 2440.00000  12.33000  71.00000
366.452      2466 2450.00000  12.31000  71.00000
366.953      2441 2420.00000  12.28000  71.00000

367.468      2459 2440.00000  12.29000  71.00000
367.968      2489 2460.00000  12.23000  70.00000
368.469      2494 2470.00000  12.26000  70.00000
368.985      2472 2450.00000  12.27000  70.00000
369.485      2472 2450.00000  12.27000  70.00000

369.985      2499 2480.00000  12.29000  70.00000
370.502      2509 2490.00000  12.29000  70.00000
371.017      2471 2460.00000  12.34000  70.00000
371.517      2494 2480.00000  12.32000  70.00000
372.017      2488 2470.00000  12.30000  69.00000

372.517      2474 2460.00000  12.32000  70.00000
373.034      2509 2490.00000  12.29000  70.00000
373.534      2476 2460.00000  12.31000  69.00000
374.050      2482 2460.00000  12.27000  69.00000
374.550      2504 2480.00000  12.26000  69.00000

375.050      2195 960.00000   0.00000  69.00000
375.566      2115 910.00000   0.00000  69.00000
376.066      2049 850.00000   0.12000  69.00000
376.582      1991 790.00000   0.00000  69.00000
377.082      1949 750.00000   0.00000  69.00000

377.582      1916 720.00000   0.00000  69.00000
378.082      1896 700.00000   0.00000  69.00000
378.582      1876 680.00000   0.00000  69.00000
379.082      1856 660.00000   0.00000  69.00000
379.582      1846 650.00000   0.00000   0.00000

380.082      1826 630.00000   0.00000   0.00000
380.598      1816 620.00000   0.00000   0.00000
381.098      1806 610.00000   0.00000   0.00000
381.598      1796 600.00000   0.00000   0.00000
382.114      1786 590.00000   0.00000   0.00000

382.614      1776 580.00000   0.00000   0.00000
383.130      1766 570.00000   0.00000   0.00000
383.631      1766 570.00000   0.00000   0.00000
384.131      1756 560.00000   0.00000   0.00000
384.647      1746 550.00000   0.00000   0.00000

```

Description : Merrion Oil & Gas

Step Rate Test / Flush #1 / June 12, 2002

PAGE :20 Data every 0.50 min. Datafile C:\SMARTS\DATADIR\FLUSH1.DAT

```
+++++
ELAPSED      Calc      A      SLURRY      Braden
TIME         BH      Pressure      PUMP      Head
            Press  TREATING      RATE
            min.   psi      PSI      BPM      PSI
=====
```

385.147	1746	550.00000	0.00000	0.00000
385.663	1736	540.00000	0.00000	0.00000
386.163	1736	540.00000	0.00000	0.00000
386.663	1726	530.00000	0.00000	0.00000
387.163	1716	520.00000	0.00000	0.00000
387.679	1716	520.00000	0.00000	0.00000
388.179	1716	520.00000	0.00000	0.00000
388.679	1706	510.00000	0.00000	0.00000
389.179	1706	510.00000	0.00000	0.00000
389.679	1696	500.00000	0.00000	0.00000
390.179	1696	500.00000	0.00000	0.00000