



Anadarko Petroleum Corp.
Evans Office
4000 Burlington Avenue
Evans, CO 80620
970-330-0614

Workover Authorization

Prognosis Writer: Daniel Notary

Prognosis Date: 10/27/2014

MAYER 21-15

STIP:

START:

END:

Crop (Not Hay)

API #: 05-123-24502

RAPTOR Nest

2/15/2013 7/31/2013

WINS ID: 92740

AREA N N23 Location: SENW Section 15 Township: 3N Range: 67

Workover Type:

BRADENHEAD

SubActivity Type:

ANNULAR FILL

Estimated Cost:

\$85,000.00

Estimated BOE increase:

13.3

Payout (months):

5 MONTHS

Latest YE NPV @ 10%:

\$371,981

Current LOE:

\$230

Incremental LOE:

\$0

Workorder Number:

88638432

State Form:

FORM 4

Approved:

APC223 Approved:

Working interest:

NB-CD

100.000000%

Comments:

Well has Bradenhead pressure and needs remediation. Single annular cement placement from 1500' to 761'. No upcoming HZs. NBCD completion, 2008 vintage, surf csg 861', 4.5", 11.6#, I-80 prod csg. FM17 (6/25/13) had 6 psi inst, produced 95 gal water.

Approved

Date

10/27/14

Area Engineer

Approved

Date

10.28.2014

Engineering Manager

Approved

Date

Production Supervisor

Monday, October 27, 2014

Mayer 21-15 – Bradenhead

- 1 Well already has directional survey.
- 2 Call Wattenberg IOC (970-506-5980) at least 24 hrs prior to rig move. If not already completed, request that they catch and remove plunger, isolate production equipment and remove any automation equipment prior to the rig showing up. Install perimeter fence as needed.
- 3 If unable to catch plunger, MIRU SL. Fish plunger and tag PBMD (should be 7350'). Otherwise, use rig to tag fill with tbg. Inform engineer of tag depth.
- 4 Prepare location for base beam rig.
- 5 Spot 25 jts of 2-3/8" 4.7# J-55 8RD EUE tbg.
- 6 Spot 1800' of 1-1/4" 2.33# J-55 10rd IJ tbg.
- 7 MIRU WO rig. Kill well with fresh water and biocide. ND WH, NU BOP.
- 8 PU tbg to break any possible sand bridges. Do not exceed 80% of tubing tensile strength, or 57,384 lb. LD landing jt.
- 9 Unseat tbg hanger. Install rubber wiper in stripping head.
- 10 MIRU EMI equipment. TOOH with 2-3/8" tbg. EMI tbg while TOOH. Lay down jts with wall loss or penetrations >35%. Replace jts as necessary. Keep yellow and blue band tbg. Note jt number and depth of tubing leak(s) on production equipment failure report in OpenWells. Clearly mark all junk (red band) tbg sent to yard.
- 11 PU and TIH with 217 jts of 2-3/8" tbg with 4.5" RBP (4.5" 11.6# I-80). Set RBP at +/- 6840' (Collars at 6818' and 6858'). Spot 2 sx sand on top of RBP. TOOH. Stand back tbg.
- 12 Pressure test RBP to 1000 psi for 15 minutes. If pressure test passes, proceed.
- 13 ND BOP, ND tbg head. Unland 4-1/2" 11.6# I-80 csg (Do not exceed 130,000-lb pull weight). NU double entry flange, NU BOP.
- 14 PU and TIH with 1700' of 1-1/4" tbg outside 4-1/2" csg (should be +/- 57 jts).
- 15 Circulate and condition hole with ~110 bbls of water with rig pump (1.5x annular volume from 1700'), or until well is completely dead. Spot 40 bbls of 10 ppg drilling mud.
- 16 TOOH with 7 jts 1-1/4" tbg to 1500'.
- 17 MIRU cement company. Commence pumping cement job consisting 10 bbl fresh water followed with 160 sx of Type III cement with 1/4 lb/sk cello-flake mixed at 14.8 ppg and 1.33 cf/sk blended for a 3 hr pump time (cement from 1500' to 761'. Assuming 8" hole from SHSX caliper, adding 20% excess).
- 18 TOOH with 30 jts of 1-1/4" tbg to +/- 600' and circulate with drilling mud to clean up.
- 19 TOOH with remaining 1-1/4" tbg and LD.
- 20 RMDO cement company.
- 21 ND BOP, ND double entry flange, re-land 4-1/2" csg. NU BOP.
- 22 Leave well SI for minimum of 24 hours.

Raptor Nest 2/15-7/31
Crop (not hay)
NPV \$371M
Bradenhead
Surf Casing Shoe: 861'

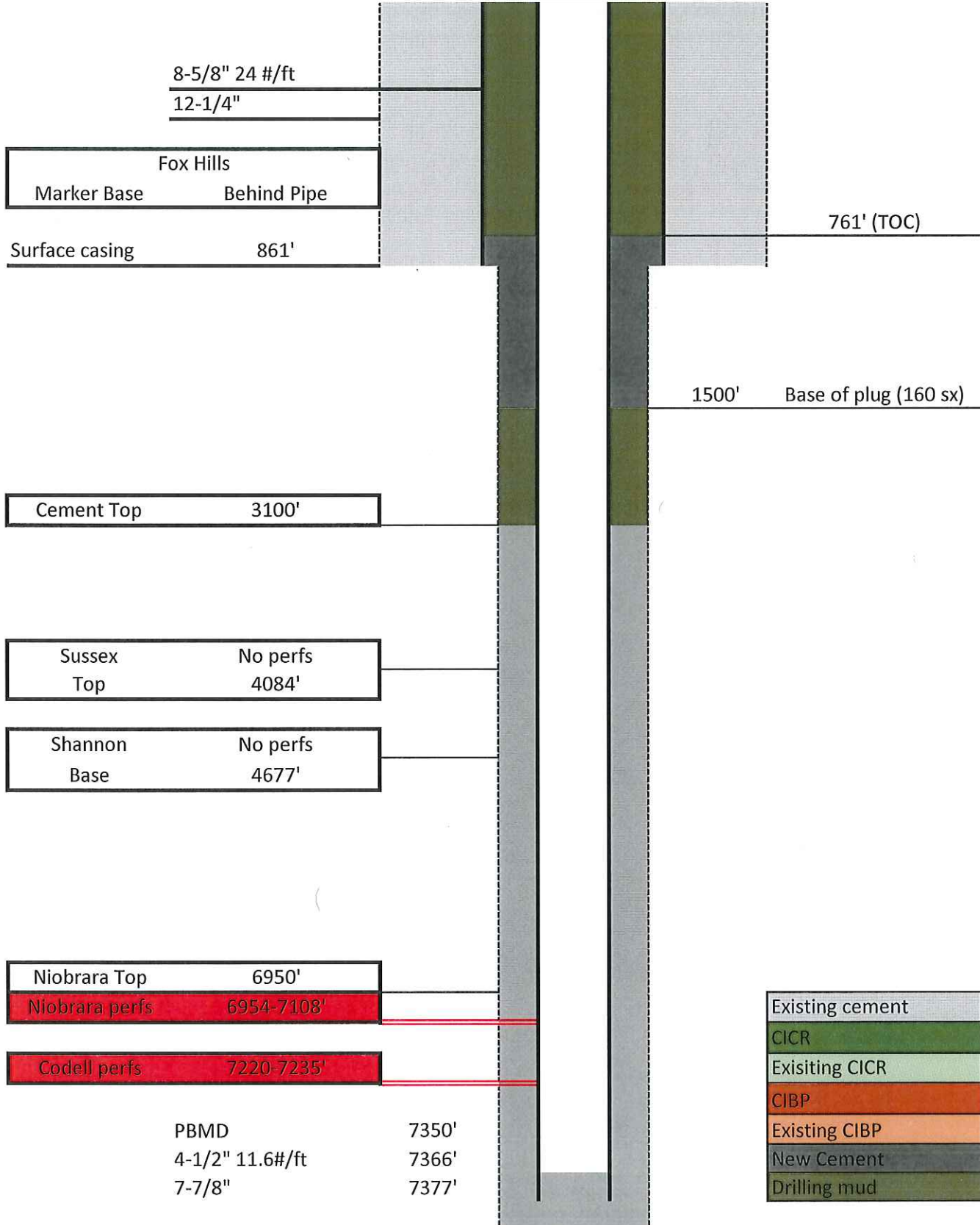
- 23 MIRU WL and run CCL-GR-CBL-VDL from 1700' to surface (cement should be from +/- 1500' to 761'). If Fox Hills plug is not above 761', contact engineering for further instructions. Email logs to engineering and DJVendors@anadarko.com. RDMO WL.
- 24 If tbg head is not as described, ND BOP. Install new GE 5000 psi 4-1/2" bottom threaded tbg head with 7-1/16" flanged top, 7-1/16" flanged 5000 psi tbg head adaptor with 2-1/16" studded top, 2-1/16" flanged 5000 psi master valve, flanged 5000 psi 2-3/8" plunger lubricator (side outlets threaded). All valves, fittings, plugs on well head need to be rated for 5000 psi. NU BOP.
- 25 Pressure test csg to 5000 psi for 15 mins. If pressure test does not hold, call engineering.
- 26 TIH with 2-3/8" tbg and retrieving head to tag sand above RBP at +/- 6840'. Circulate sand off RBP, latch onto RBP and TOOH. SB tbg, LD RBP.
- 27 PU and TIH with 2-3/8" NC, 2-3/8" XN, and 227 jts 2-3/8" tbg. If necessary, drop down with extra jts and circulate to cleanout sand. Land end of tbg at +/- 7177' (1 jt above top Codell perf).
- 28 ND BOP, NU WH.
- 29 GE should pressure test tbg head through test port on side of tbg head adaptor flange to 5000 psi for 15 mins.
- 30 RDMO WO rig. Return well to production team.
- 31 Clean location and swab well back to production. Notify field foreman/field coordinator of finished work and turn well back over to production team.

Raptor Nest 2/15-7/31
Crop (not hay)
NPV \$371M
Bradenhead
Surf Casing Shoe: 861'

Existing

KB=15'

Proposed

Mayer 21-15API: 05-123-24502

KERR-MCGEE OIL AND GAS ONSHORE LP
MAYER 21-15
SE NW 15 3N 67W 1,987' FNL 2,003' FWL
WELD, COLORADO
10/27/2014

AREA: N2 ROUTE: N23 Spud: 01/30/2008 WINS No.: 92740 AFE/WO#: 2052522 API#: 0512324502

GL: 4795 KB: 4809 MTD: 7377 TVD: 10852 LOG MD: 7371 PBMD: 7350 PBTVD: 7235

Directions: WCR 34 & WCR 19, S 4/10, E 3/10, N 1/10 INTO



HOLE SECTIONS		Size	Top	Btm	TD Date	
SURFACE		12.25	15	870	01/31/2008	
PRODUCTION		7.88	861	7377	02/04/2008	

TUBULARS	Tool Type	Joints	Size	Weight	Grade	Thread	Top D	Bottom D
SURFACE CASING	Casing	18	8.63	24.00	J-55	ST&C	15	817
	Baffle	1	8.63		J-55		817	817
	Casing	1	8.63	24.00	J-55	ST&C	817	860
	Casing Guide Shoe	1	8.63		J-55		860	861
PRODUCTION CASING	Casing	175	4.50	11.60	I-80	LT&C	15	7350
	Latch Down Baffle	1	4.50		I-80		7350	7350
	Casing	1	4.50	11.60	I-80	LT&C	7350	7364
	Casing Float Shoe	1	4.50		0		7364	7366
PRODUCTION TUBING	Tubing	227	2.38	4.70	J-55	8RD EUE	0	7175
	Seating Nipple	1					7175	7176
	Notched Collar	1					7176	7177

CEMENT JOBS	Stage	Sacks	Cement Jobs		Top D	Btm D	cbl
SURFACE CASING	PRIM CMT 1ST STAGE	370	LEAD	PREMIUM LITE	15	861	No
PRODUCTION CASING	PRIM CMT 1ST STAGE	220	LEAD	PREMIUM LITE	3100	4520	Yes
	PRIM CMT 1ST STAGE	135	MIDDLE	PREMIUM LITE	4520	6475	Yes
	PRIM CMT 1ST STAGE	145	TAIL	50/50 POZ-MIX	6475	7366	Yes

PERFORATIONS		Formation	Zone	Top	Btm	Date	Reason	Comments
		NIOBRARA	A	6954	6960	02/16/2012	PRODUCTION	
		NIOBRARA	B	7010	7016	02/16/2012	PRODUCTION	
		NIOBRARA	C	7096	7108	02/16/2012	PRODUCTION	
		CODELL		7220	7235	03/01/2008	PRODUCTION	4 SPF

Comments:

State of Colorado

Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303) 894-2100 Fax: (303) 894-2109



FOR OGCC USE ONLY

BRADENHEAD TEST REPORT

- Step 1. Record all tubing and casing pressures as found.
 Step 2. Sample now, if intermediate or surface casing pressure > 25 psi. In sensitive areas, 1 psi.
 Step 3. Conduct Bradenhead test.
 Step 4. Conduct intermediate casing test.
 Step 5. Send report to BLM within 30 days and to OGCC within 10 days. Include wellbore diagram if not previously submitted or if wellbore configuration has changed since prior program. Attach gas and liquid analysis if sampled.

1. OGCC Operator Number: 47120

2. Name of Operator: Kerr-McGee Oil and Gas Onshore LP

3. BLM Lease No: _____

4. API Number: 0512324502

5. Multiple Completion? ☐ Yes ☐ No

6. Well Name: MAYER 21-15

Number: _____

7. Location (QtrQtr, Sec, Twp, Rng, Meridian): NENW 15 3N 67W

8. County: Weld

9. Field Name: WATTENBERG

10. Minerals: ☐ Fee ☐ State ☐ Federal ☐ Indian

11. Date of Test: 06/25/2013

 12. Well Status: ☐ Flowing ☐ Shut In
☐ Gas Lift ☐ Pumping ☐ Injection
☐ Clock/Intermitter
☒ Plunger Lift

13. Number of Casing Strings:

☐ Two ☐ Three ☐ Liner?

14. STEP 1: EXISTING PRESSURES

Record all pressures as found	Tubing: 501 Fm: _____	Tubing: _____ Fm: _____	Prod. Casing: 563 Fm: _____	Intermediate Csg: _____	Surface Casing: 23
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15.

STEP 2: See instructions above.

16. STEP 3: BRADENHEAD TEST

Buried Valve? ☐ Yes ☒ No Confirmed Open? ☒ Yes ☐ No

With gauges monitoring production, intermediate casing and tubing pressures, open surface casing (bradenhead) valve (if no intermediate casing, monitor only the production casing and tubing pressures.) Record pressures at five minute intervals. Define characteristics of flow in "Bradenhead Flow" column using letter designations below:

0 = No Flow; C = Continuous; D = Down to 0; V = Vapor
 H = Water H2O; M = Mud; W = Whisper; S = Surge; G = Gas

BRADENHEAD SAMPLE TAKEN?

☐ Yes ☒ No ☐ Gas ☐ LiquidCharacter of Bradenhead fluid: ☐ Clear ☐ Fresh☐ Sulfur ☐ Salty ☐ Black☐ Other (describe): _____

Sample cylinder number: _____

Elapsed Time (Min:Sec)	Fm: _____ Tubing:	Fm: _____ Tubing:	Production Casing PSIG	Intermediate Casing PSIG	Bradenhead Flow:
00:	501		563		23,H
05:	504		566		9,H
10:	507		569		6,H
15:	510		571		6,H
20:	513		574		4,H
25:	515		577		4,H
30:	518		579		6,H

Note instantaneous Bradenhead PSIG at end of test: > 6

17. STEP 4: INTERMEDIATE CASING TEST

Buried Valve? ☐ Yes ☐ No Confirmed Open? ☐ Yes ☐ No

With gauges monitoring production, intermediate casing and tubing pressures, open the intermediate casing valve. Record pressures at five minute intervals. Characterize flow in "Intermediate Flow" column using letter designations below:

0 = No Flow; C = Continuous; D = Down to 0; V = Vapor
 H = Water H2O; M = Mud; W = Whisper; S = Surge; G = Gas

INTERMEDIATE SAMPLE TAKEN?

☐ Yes ☐ No ☐ Gas ☐ LiquidCharacter of Intermediate fluid: ☐ Clear ☐ Fresh☐ Sulfur ☐ Salty ☐ Black☐ Other (describe): _____

Sample cylinder number: _____

Elapsed Time (Min:Sec)	Fm: _____ Tubing:	Fm: _____ Tubing:	Production Casing PSIG	Intermediate Casing PSIG	Bradenhead Flow:
00:					
05:					
10:					
15:					
20:					
25:					
30:					

Note instantaneous Intermediate Casing PSIG at end of test: >

18. Comments: Surface casing produced 95 gallons of water in 5.5 hours while blowing down for replumb.

19. STEP 5: See instructions above.

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Test Performed By: Jessica Coakley

Title: Operator I

Phone: 9705808946

Signed: _____

Title: Operator I

Date: 06/25/2013

WITNESSED BY: _____

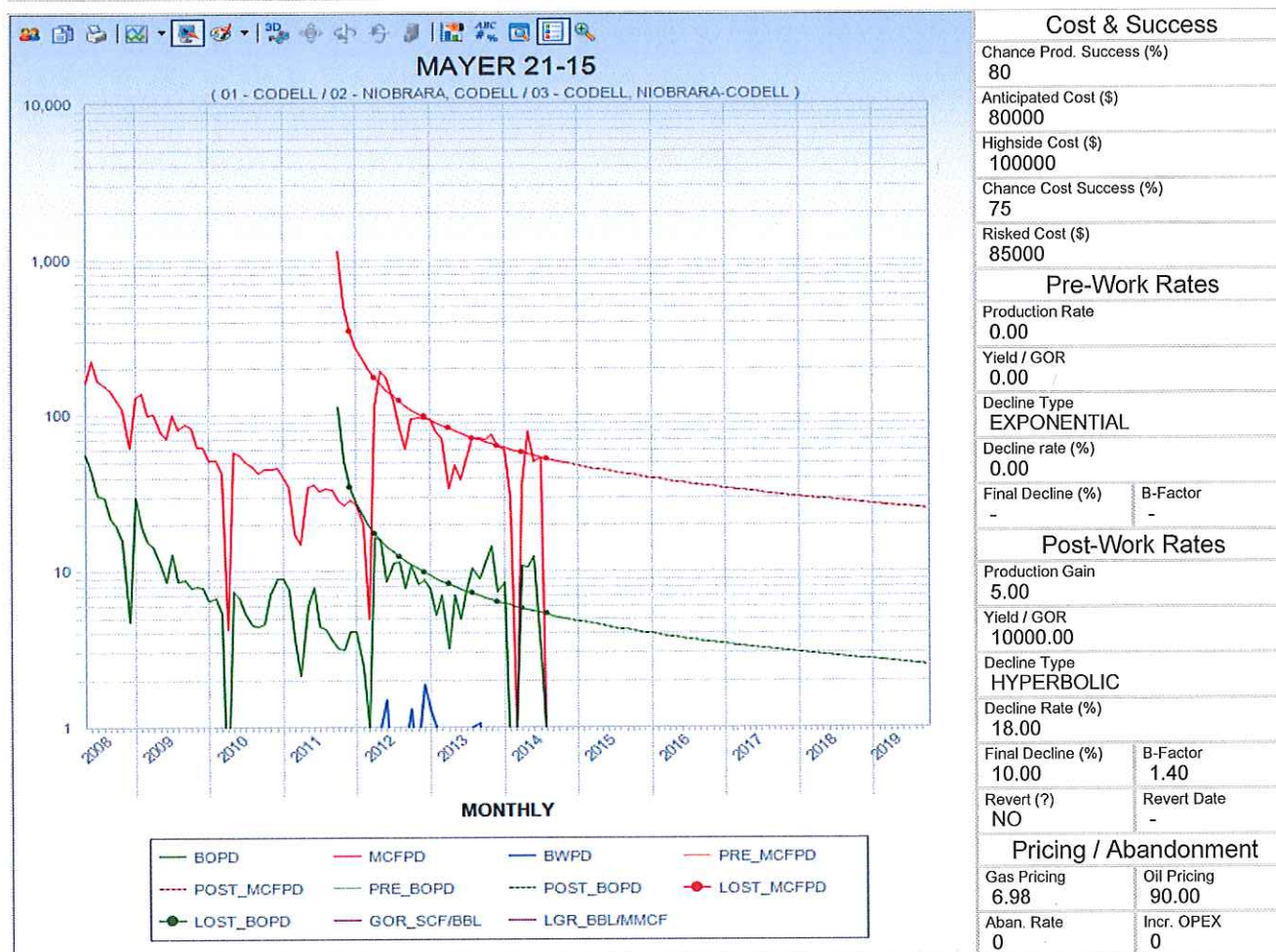
Title: _____

Agency: _____



Well Screening Estimate - MAYER 21-15 (Case #126308)

Workover Status EVALUATION	Screen Level WELL	Well Number 92740	Workorder # / AFE # -
Foreman STACY LOUCKS	Operator RYAN ZIMMERMAN	Well Status ACTIVE	OIL / GAS Well OIL
Working Interest (%) 100.00	Net Revenue Interest (%) 93.75	Royalty Burden (%) 6.25	Start Date 10/27/2014
Created By DANIEL NOTARY - 10/27/2014 12:00:00 AM	Last Modified By DANIEL NOTARY - 10/27/2014 12:00:00 AM		
Primary Work BRADENHEAD	Brief Description Well has Bradenhead pressure and needs remediation. Single annular cement placement from 1500' to 761'. No upcoming HZs. NBCE completion, 2008 vintage, surf csg 861', 4.5", 11.6#, I-80 prod csg. FM17 (6/25/13) had 6 psi inst, produced 95 gal water.		
Secondary Work -			
Tertiary Work -			



Screening Metrics	Pseudo F&D (\$/boe)	Prod. Impact (mmcf)	Prod. Impact (mboe)	Payout (months)	PV10 (M\$)	Profit/Invst. (\$/)	12 Mo. Opex (\$/boe)
	2.84	179.45	29.91	5	856.00	10.07	25.56
Screening Metrics	Pseudo F&D (\$/boe)	Prod. Impact (mmcf)	Prod. Impact (mboe)	Payout (months)	PV10 (M\$)	Profit/Invst. (\$/)	12 Mo. Opex (\$/boe)
	2.84	179.45	29.91	5	856.00	10.07	25.56
Gross Viable Price	6 months	Gas (\$/mcf)	Oil (\$/bbl)	12 months	Gas (\$/mcf)	Oil (\$/bbl)	
		5.80	74.70		3.15	40.50	

NOTES:

1 General

1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

1.2 Well Information

Well	MAYER 21-15	Wellbore No.	00
Well Name	MAYER 21-15	Common Name	MAYER 21-15
Project	COLORADO-WELD-NAD83-UTM13	Site	MAYER 6-15 PAD
Vertical Section Azimuth	49.04 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	1/30/2008	UWI	0/3/N/67/W/15/0/SE/W/6/PM/N/1,987.00/W/0/2, 003.00/0/0
Active Datum	KB @4,809.00usft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Surface surveys

Survey Name	Surface surveys	Company	RIG
Started	1/30/2008	Ended	
Tool Name	TOT	Engineer	Driller

2.1.1 Tie On Point

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	N/S (usft)	E/W (usft)
0.00	0.00	0.00	0.00	0.00	0.00

2.1.2 Survey Stations

Date	Type	MD (usft)	Inc (°)	Azi (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	TFace (°)
1/30/2008	Tie On	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/30/2008	NORMAL	235.00	0.50	0.00	235.00	1.03	0.00	0.67	0.21	0.21	0.00	0.00
	NORMAL	503.00	1.00		502.97	4.53	0.00	2.97	0.19	0.19	0.00	0.00
1/31/2008	NORMAL	860.00	0.50		859.94	9.21	0.00	6.04	0.14	-0.14	0.00	180.00

2.2 Survey Name: Production surveys

Survey Name	Production surveys	Company	BAKER HUGHES INCORPORATED
Started	2/1/2008	Ended	
Tool Name	MWD	Engineer	Justin Stone

2.2.1 Tie On Point

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	N/S (usft)	E/W (usft)
4,809.00	0.00	0.00	8,310.26	452.91	530.37

2.2.2 Survey Stations

Date	Type	MD (usft)	Inc (°)	Azi (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	TFace (°)
2/1/2008	Tie On	4,809.00	0.00	0.00	8,310.26	452.91	530.37	697.41	0.00	0.00	0.00	0.00
2/1/2008	Tie On	1,214.00	0.70	242.50	4,809.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NORMAL	1,305.00	0.40	239.30	4,900.00	-0.42	-0.77	-0.85	0.33	-0.33	-3.52	-175.75
	NORMAL	1,395.00	0.40	208.70	4,989.99	-0.85	-1.19	-1.46	0.23	0.00	-34.00	-105.30
	NORMAL	1,486.00	0.60	195.70	5,080.99	-1.59	-1.47	-2.15	0.25	0.22	-14.29	-36.17
	NORMAL	1,577.00	0.50	344.10	5,171.99	-1.67	-1.71	-2.38	1.16	-0.11	163.08	165.67
	NORMAL	1,668.00	1.20	9.40	5,262.98	-0.35	-1.66	-1.48	0.85	0.77	27.80	41.24
	NORMAL	1,758.00	1.70	34.00	5,352.95	1.69	-0.76	0.53	0.88	0.56	27.33	63.96
	NORMAL	1,849.00	2.60	35.80	5,443.89	4.48	1.20	3.85	0.99	0.99	1.98	5.19
	NORMAL	1,939.00	4.00	38.20	5,533.73	8.61	4.34	8.92	1.56	1.56	2.67	6.83
	NORMAL	2,030.00	4.30	38.60	5,624.49	13.77	8.43	15.39	0.33	0.33	0.44	5.71
	NORMAL	2,121.00	5.10	40.70	5,715.19	19.50	13.20	22.75	0.90	0.88	2.31	13.19
	NORMAL	2,211.00	5.70	40.00	5,804.79	25.96	18.68	31.12	0.67	0.67	-0.78	-6.61
	NORMAL	2,302.00	6.60	43.50	5,895.26	33.21	25.18	40.79	1.07	0.99	3.85	24.36
	NORMAL	2,393.00	9.20	49.50	5,985.39	41.73	34.32	53.27	2.99	2.86	6.59	20.59
	NORMAL	2,483.00	10.90	52.30	6,074.01	51.61	46.52	68.96	1.96	1.89	3.11	17.42
	NORMAL	2,574.00	12.30	53.70	6,163.15	62.61	61.14	87.21	1.57	1.54	1.54	12.06
	Tie On	4,809.00	1.10	232.60	8,310.26	452.91	530.37	697.41	35.45	-31.94	-272.74	-179.44
	Tie On	4,809.00	0.60	206.30	8,310.26	452.91	530.37	697.41	0.00	0.00	0.00	0.00
	Tie On	4,809.00	0.70	214.70	8,310.26	452.91	530.37	697.41	0.00	0.00	0.00	214.70
	Tie On	4,809.00	1.20	224.60	8,310.26	452.91	530.37	697.41	0.00	0.00	0.00	0.00
2/2/2008	NORMAL	2,574.00	12.30	53.70	6,163.15	62.61	61.14	87.21	0.00	0.00	0.00	0.00
	NORMAL	2,664.00	13.90	54.50	6,250.80	74.56	77.67	107.53	1.79	1.78	0.89	6.86
	NORMAL	2,755.00	14.20	54.70	6,339.08	87.36	95.68	129.52	0.33	0.33	0.22	9.29
	NORMAL	2,846.00	16.10	55.40	6,426.92	100.97	115.17	153.17	2.10	2.09	0.77	5.84
	NORMAL	2,936.00	17.20	54.00	6,513.14	115.88	136.21	178.83	1.30	1.22	-1.56	-20.71
	NORMAL	3,026.00	16.20	52.30	6,599.34	131.38	156.91	204.62	1.24	-1.11	-1.89	-154.78
	NORMAL	3,117.00	15.40	49.10	6,686.91	147.06	176.09	229.38	1.30	-0.88	-3.52	-134.09
	NORMAL	3,207.00	14.20	48.10	6,773.92	162.25	193.34	252.36	1.36	-1.33	-1.11	-168.47
	NORMAL	3,298.00	14.40	52.30	6,862.10	176.63	210.60	274.82	1.16	0.22	4.62	81.13
	NORMAL	3,388.00	12.50	56.10	6,949.63	188.90	227.54	295.66	2.33	-2.11	4.22	156.89
	NORMAL	3,479.00	12.20	58.30	7,038.53	199.45	243.89	314.93	0.61	-0.33	2.42	123.59
	NORMAL	3,569.00	13.80	56.10	7,126.22	210.43	260.90	334.97	1.86	1.78	-2.44	-18.26
	NORMAL	3,660.00	14.10	55.10	7,214.53	222.83	279.00	356.76	0.42	0.33	-1.10	-39.27
	NORMAL	3,751.00	15.70	54.40	7,302.47	236.34	298.10	380.04	1.77	1.76	-0.77	-6.76
	NORMAL	3,841.00	17.60	48.80	7,388.70	252.39	318.24	405.78	2.76	2.11	-6.22	-42.89
	NORMAL	3,931.00	17.60	47.40	7,474.49	270.57	338.49	432.98	0.47	0.00	-1.56	-90.67
	NORMAL	4,022.00	15.70	50.90	7,561.67	287.65	358.18	459.04	2.36	-2.09	3.85	153.84
	NORMAL	4,113.00	16.40	52.30	7,649.12	303.27	377.90	484.18	0.88	0.77	1.54	29.61
	NORMAL	4,203.00	18.80	48.80	7,734.91	320.59	398.87	511.37	2.91	2.67	-3.89	-25.47
	NORMAL	4,294.00	19.00	49.10	7,821.00	339.95	421.10	540.84	0.24	0.22	0.33	26.06
	NORMAL	4,385.00	18.40	43.10	7,907.20	360.14	442.11	569.95	2.21	-0.66	-6.59	-110.15
	NORMAL	4,475.00	17.40	45.30	7,992.85	379.97	461.38	597.50	1.34	-1.11	2.44	146.98
	NORMAL	4,566.00	19.20	44.20	8,079.24	400.27	481.48	625.99	2.01	1.98	-1.21	-11.39
	NORMAL	4,656.00	19.50	43.50	8,164.16	421.78	502.14	655.69	0.42	0.33	-0.78	-38.04
	NORMAL	4,747.00	20.90	41.70	8,249.56	444.92	523.40	686.91	0.00	0.00	0.00	0.00
2/3/2008	NORMAL	4,747.00	20.90	41.70	8,249.56	444.92	523.40	686.91	1.68	1.54	-1.98	-24.79
	NORMAL	4,837.00	20.00	41.70	8,337.73	456.32	533.38	701.92	75.71	67.14	632.50	177.26
	NORMAL	4,928.00	18.60	42.10	8,423.61	478.71	553.46	731.76	1.55	-1.54	0.44	174.79
	NORMAL	5,018.00	16.40	44.20	8,509.44	498.47	571.94	758.67	2.54	-2.44	2.33	164.98
	NORMAL	5,109.00	15.90	46.00	8,596.85	516.34	589.87	783.92	0.78	-0.55	1.98	135.82
	NORMAL	5,199.00	14.00	45.30	8,683.80	532.56	606.48	807.10	2.12	-2.11	-0.78	-174.91
	NORMAL	5,290.00	12.70	46.70	8,772.34	547.16	621.58	828.08	1.47	-1.43	1.54	166.72
	NORMAL	5,381.00	12.00	48.10	8,861.23	560.34	635.90	847.53	0.84	-0.77	1.54	157.52
	NORMAL	5,471.00	10.70	50.90	8,949.47	571.86	649.35	865.24	1.57	-1.44	3.11	158.40

2.2.2 Survey Stations (Continued)

Date	Type	MD (usft)	Inc (°)	Azi (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	TFace (°)
2/3/2008	NORMAL	5,562.00	9.10	55.80	9,039.12	581.23	661.86	880.83	1.99	-1.76	5.38	154.63
	NORMAL	5,652.00	7.00	59.00	9,128.22	588.06	672.45	893.30	2.38	-2.33	3.56	169.54
	NORMAL	5,743.00	5.70	60.00	9,218.66	593.17	681.11	903.20	1.43	-1.43	1.10	175.63
	NORMAL	5,834.00	4.30	62.10	9,309.32	597.03	688.04	910.96	1.55	-1.54	2.31	173.60
	NORMAL	5,924.00	3.60	57.20	9,399.10	600.14	693.40	917.04	0.86	-0.78	-5.44	-156.69
	NORMAL	6,015.00	2.10	58.60	9,489.99	602.55	697.23	921.52	1.65	-1.65	1.54	178.04
	NORMAL	6,105.00	0.80	42.40	9,579.96	603.88	699.06	923.77	1.50	-1.44	-18.00	-170.49
	NORMAL	6,196.00	0.80	52.60	9,670.95	604.73	699.99	925.03	0.16	0.00	11.21	95.10
	NORMAL	6,286.00	1.10	56.90	9,760.93	605.59	701.21	926.51	0.34	0.33	4.78	15.52
	NORMAL	6,376.00	0.40	160.90	9,850.93	605.76	702.04	927.25	1.40	-0.78	115.56	162.03
	NORMAL	6,467.00	0.40	76.20	9,941.93	605.54	702.45	927.42	0.59	0.00	-93.08	-132.35
	NORMAL	6,557.00	0.40	90.30	10,031.92	605.61	703.07	927.93	0.11	0.00	15.67	97.05
	NORMAL	6,648.00	0.60	73.30	10,122.92	605.75	703.84	928.61	0.27	0.22	-18.68	-45.27
	NORMAL	6,738.00	0.80	76.60	10,212.91	606.03	704.91	929.59	0.23	0.22	3.67	13.05
	NORMAL	6,829.00	1.20	85.70	10,303.90	606.24	706.48	930.92	0.47	0.44	10.00	26.25
	NORMAL	6,919.00	1.40	73.00	10,393.88	606.64	708.47	932.68	0.39	0.22	-14.11	-61.69
	NORMAL	7,009.00	1.40	84.60	10,483.85	607.06	710.61	934.58	0.31	0.00	12.89	95.80
	NORMAL	7,099.00	1.20	74.10	10,573.83	607.42	712.61	936.33	0.34	-0.22	-11.67	-135.19
	NORMAL	7,190.00	1.80	72.30	10,664.80	608.12	714.89	938.50	0.66	0.66	-1.98	-5.39
	NORMAL	7,281.00	1.70	62.80	10,755.75	609.17	717.45	941.13	0.34	-0.11	-10.44	-113.73
	NORMAL	7,329.00	1.50	66.30	10,803.74	609.75	718.66	942.42	0.46	-0.42	7.29	155.70
	NORMAL	7,377.00	1.50	66.30	10,851.72	610.25	719.81	943.62	0.00	0.00	0.00	0.00

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Wins No.: 92740

MAYER 21-15

Well Operations Summary Long

Operator KERR-MCGEE OIL AND GAS ONSHORE LP		FIELD NAME WATTENBERG	SPUD DATE 1/30/08		GL 4,795	KB 4809	ROUTE N23
API 0512324502		STATE COLORADO	COUNTY WELD		DIVISION US ROCKIES REGION		
Long/Lat.: 40.22741 / -104.87905		Q-Q/Sect/Town/Range: SENW / 15 / 3N / 67W		Footages: 1,987.00' FNL 2,003.00' FWL			
DIRECTIONS: WCR 34 & WCR 19, S 4/10, E 3/10, N 1/10 INTO							

Wellbore: MAYER 21-15

MTD	7,377	TVD	10,852	PBMD	7,350	PBTVD	7,235	
EVENT INFORMATION:		EVENT ACTIVITY: DRILLING		START DATE: 1/15/2008		AFE NO.: 2003391		
		OBJECTIVE: DEVELOPMENT		END DATE: 2/15/2008				
		OBJECTIVE 2: DIRECTIONAL WELL		DATE WELL STARTED PROD.: 1/30/2008				
		REASON: CD DIRECTIONAL		EVENT END STATUS: COMPLETE				
RIG OPERATIONS:		Begin Mobilization	Rig On Location	Rig Charges	Rig Operation Start	Finish Drilling	Rig Release	Rig Off Location
XTC 11 / 11		01/29/2008	01/30/2008	01/29/2008	01/30/2008	02/04/2008	02/05/2008	02/06/2008
Date	Time Start-End	Duration (hr)	Phase	Code	Subco de	P/U	Operation	
1/29/2008	SUPERVISOR: DUAINE BELL 20:45 - 0:00	3.25	MIRU	01	A	P	DWC: \$83,949.57 CWC: \$83,949.57	MD: 3 PREPARE TO & BEGIN SLIDING RIG
1/30/2008	SUPERVISOR: KEVIN cHALLMAN 0:00 - 5:00	5.00	MIRU	01	A	P	DWC: \$26,335.00 CWC: \$110,284.57	MD: 236 SLIDE RIG AHEAD 64'
	5:00 - 10:00	5.00	MIRU	01	B	P	PREPARE TO SPUD	
	10:00 - 16:00	6.00	PRPSPD	08	B	Z	Repair iron roughneck, topdrive, etc.	
	16:00 - 18:00	2.00	PRPSPD	09	A	P	Slip and cut drillline	
	18:00 - 18:30	0.50	PRPSPD	07	A	P	Rig service. Lubricate	
	18:30 - 23:45	5.25	DRLSUR	02	A	P	Spud surface and drill ahead	
	23:45 - 0:00	0.25	DRLSUR	10	A	P	Run rig surveys accumulated	
1/31/2008	SUPERVISOR: KEVIN cHALLMAN 0:00 - 6:00	6.00	DRLSUR	02	A	P	DWC: \$50,508.60 CWC: \$160,793.17	MD: 870 Drilled ahead 12 1/4 hole to 620 ft.
	6:00 - 9:00	3.00	DRLSUR	02	A	P	Drill to 870 ft. Surface TD	
	9:00 - 10:30	1.50	DRLSUR	05	F	P	Circulate clean and pump high Vis pill	
	10:30 - 13:00	2.50	DRLSUR	06	D	P	POOH with BHA to run casing	
	13:00 - 17:30	4.50	DRLSUR	12	C	P	Rig to and run 8 5/8 casing	
	17:30 - 18:45	1.25	DRLSUR	05	D	P	Circ and condition to cement.	
	18:45 - 19:45	1.00	DRLSUR	12	E	P	Cement surface	
	19:45 - 20:00	0.25	DRLSUR	12	E	P	Rig off cementers	
	20:00 - 0:00	4.00	DRLSUR	13	A	P	WOC and rig up to drill production	
2/1/2008	SUPERVISOR: KEVIN CHALLMAN 0:00 - 2:30	2.50	DRLPRO	14	A	P	DWC: \$40,750.00 CWC: \$201,543.17	MD: 2,674 NUBOP'S
	2:30 - 5:00	2.50	DRLPRO	15	A	P	Pressure test BOP's and equipment	
	5:00 - 8:00	3.00	DRLPRO	06	J	P	Pick up and make up directional BHA	
	8:00 - 10:00	2.00	DRLPRO	06	A	P	RIH to drill out	
	10:00 - 16:15	6.25	DRLPRO	02	C	P	Drill to 1810 ft	
	16:15 - 16:45	0.50	DRLPRO	07	A	P	Rig service	
	16:45 - 0:00	7.25	DRLPRO	02	C	P	Drilled ahead to 2674 ft	
2/2/2008	SUPERVISOR: KEVIN CHALLMAN 0:00 - 17:00	17.00	DRLPRO	02	C	P	DWC: \$35,710.00 CWC: \$237,253.17	MD: 4,848 Drilled ahead to 4301 ft.
	17:00 - 17:30	0.50	DRLPRO	07	A	P	Lubricate rig and service	
	17:30 - 20:15	2.75	DRLPRO	02	C	P	Drill ahead to 4573 ft	
	20:15 - 20:45	0.50	DRLPRO	07	A	P	Rig service and change saver sub on top drive	
	20:45 - 0:00	3.25	DRLPRO	02	C	P	Drilled ahead to 4848 ft.	
2/3/2008	SUPERVISOR: KEVIN CHALLMAN 0:00 - 0:45	0.75	DRLPRO	02	C	P	DWC: \$37,690.00 CWC: \$274,943.17	MD: 7,113 Drill from 4848 ft

Wins No.: 92740		MAYER 21-15						API No.: 0512324502	
	0:45 - 1:30	0.75	DRLPRO	07	C	P	Install new rotating head & fix saver sub clamp		
	1:30 - 17:00	15.50	DRLPRO	02	C	P	Drill ahead to 6522 ft		
	17:00 - 17:30	0.50	DRLPRO	07	A	P	Lubricate rig & service equip.		
	17:30 - 0:00	6.50	DRLPRO	02	C	P	Drilled ahead to 7113 ft.		
2/4/2008	SUPERVISOR: KEVIN CHALLMAN			DWC: \$103,392.16		CWC: \$378,335.33		MD: 7,377	
	0:00 - 3:15	3.25	DRLPRO	02	C	P	Drill to TD at 7377 ft.		
	3:15 - 4:45	1.50	DRLPRO	05	C	P	Circ and condition mud and hole		
	4:45 - 16:00	11.25	DRLPRO	06	B	P	POOH to log well		
	16:00 - 17:00	1.00	DRLPRO	06	B	P	Lay down directional tools		
	17:00 - 21:00	4.00	DRLPRO	11	G	P	Wireline logs with PSI		
	21:00 - 0:00	3.00	DRLPRO	12	C	P	Run 4 1/2 production casing		
2/5/2008	SUPERVISOR: KEVIN CHALLMAN			DWC: \$38,268.00		CWC: \$416,603.33		MD: 7,377	
	0:00 - 2:00	2.00	DRLPRO	12	C	P	Run 178 jts of 4 1/2 casing to 7365 ft.		
	2:00 - 4:00	2.00	DRLPRO	05	D	P	Circulate & condition mud for cement		
	4:00 - 6:00	2.00	DRLPRO	12	E	P	Cement 4 1/2 casing, plug down 0600		
	6:00 - 9:00	3.00	DRLPRO	01	E	P	Rig down to move, rig release 0900 hrs		
EVENT INFORMATION:		EVENT ACTIVITY: COMPLETION				START DATE: 1/29/2008		AFE NO.: 2003391	
		OBJECTIVE: DEVELOPMENT				END DATE: 11/15/2008			
		OBJECTIVE 2: COMPLETION				DATE WELL STARTED PROD.: 1/30/2008			
		REASON: CD FRAC				EVENT END STATUS: COMPLETE			
RIG OPERATIONS:		Begin Mobilization	Rig On Location	Rig Charges	Rig Operation Start	Finish Drilling	Rig Release	Rig Off Location	
Date	Time Start-End	Duration (hr)	Phase	Code	Subcode	P/U	Operation		
2/29/2008	SUPERVISOR: LEWIS CAMP			DWC: \$5,175.00		CWC: \$5,175.00		MD:	
	10:00 - 17:00	7.00	COMP	37		P	Log		
3/1/2008	SUPERVISOR: LEWIS CAMP			DWC: \$4,300.00		CWC: \$9,475.00		MD:	
	8:00 - 10:00	2.00	COMP	37		P	Perf Codell		
3/3/2008	SUPERVISOR: NATHAN NAILL			DWC:		CWC: \$109,131.50		MD:	
	10:15 - 11:15	1.00	COMP	33	A	P	1900# made 122 bbl		
	11:15 - 12:15	1.00	COMP	33	A	P	2200# made 119 bbl		
	12:15 - 13:15	1.00	COMP	33	A	P	1300# made 99 bbl		
3/3/2008	SUPERVISOR: ZANE GORDON			DWC: \$99,656.50		CWC: \$109,131.50		MD:	
	6:30 - 9:40	3.17	COMP	36	B	P	Safety meeting and frac Codell		
4/16/2008	SUPERVISOR: KEITH LEBSACK			DWC: \$104,000.00		CWC: \$213,131.50		MD:	
	12:00 - 13:00	1.00	PROD	50		P	New well completion downline up casing.		
10/23/2008	SUPERVISOR: KELLEY REINHARDT			DWC: \$32,575.00		CWC: \$245,706.50		MD:	
	6:00 - 7:00	1.00					Start rig etc.		
	7:00 - 9:00	2.00					MIRU		
	9:00 - 12:00	3.00					Control well.		
	12:00 - 13:00	1.00					NDFV NUBOP.		
	13:00 - 17:00	4.00					PU TIH tag.		
	17:00 - 18:00	1.00					TOOH SDFN.		
	18:00 - 18:00	0.00							
10/24/2008	SUPERVISOR: KELLEY REINHARDT			DWC: \$4,175.00		CWC: \$249,881.50		MD:	
	6:00 - 7:00	1.00					Start rig etc.		
	7:00 - 8:00	1.00					Control well.		
	8:00 - 11:00	3.00					Clean out TO PB.		
	11:00 - 13:00	2.00					Land and broach TBG.		
	13:00 - 14:00	1.00					NDBOP NUWH.		
	14:00 - 15:00	1.00					RDMO.		
11/13/2008	SUPERVISOR: JOE STRALEY			DWC: \$0.00		CWC: \$249,881.50		MD:	
	10:00 - 10:00	0.00	PROD	50		P	DWNLN up TBG. CODL.		

Wins No.: 92740		MAYER 21-15				API No.: 0512324502	
EVENT INFORMATION:		EVENT ACTIVITY: MIGRATED DATA				START DATE: 1/30/2008	
		OBJECTIVE: DEVELOPMENT				END DATE:	
		OBJECTIVE 2:				DATE WELL STARTED PROD.: 1/30/2008	
		REASON: SLICKLINE WORK				EVENT END STATUS:	
RIG OPERATIONS:		Begin Mobilization	Rig On Location	Rig Charges	Rig Operation Start	Finish Drilling	Rig Release Rig Off Location
Date	Time Start-End	Duration (hr)	Phase	Code	Subco de	P/U	Operation
EVENT INFORMATION:		EVENT ACTIVITY: WELL WORK EXPEN				START DATE: 4/8/2010	
		OBJECTIVE: DEVELOPMENT				END DATE: 4/8/2010	
		OBJECTIVE 2:				DATE WELL STARTED PROD.: 1/30/2008	
		REASON: SLICKLINE WORK				EVENT END STATUS: COMPLETE	
RIG OPERATIONS:		Begin Mobilization	Rig On Location	Rig Charges	Rig Operation Start	Finish Drilling	Rig Release Rig Off Location
Date	Time Start-End	Duration (hr)	Phase	Code	Subco de	P/U	Operation
4/8/2010	<u>SUPERVISOR:</u> JOE STRALEY					<u>DWC:</u> \$550.00	<u>CWC:</u> \$550.00 <u>MD:</u>
	1:00 - 3:00	2.00		35			

Wins No.: 92740		MAYER 21-15						API No.: 0512324502							
EVENT INFORMATION:		EVENT ACTIVITY: RECOMPL/RESERE						START DATE: 1/12/2012		AFE NO.: 2052522					
		OBJECTIVE: DEVELOPMENT						END DATE: 3/19/2012							
		OBJECTIVE 2: RECOMPLETE						DATE WELL STARTED PROD.: 1/30/2008							
		REASON: CDRF-NBREC						EVENT END STATUS: COMPLETE							
RIG OPERATIONS:		Begin Mobilization		Rig On Location		Rig Charges		Rig Operation Start		Finish Drilling		Rig Release		Rig Off Location	
BASIC 1509 / 1509		01/19/2012		01/19/2012		01/19/2012		01/19/2012				01/23/2012		01/23/2012	
Date	Time Start-End	Duration (hr)	Phase	Code	Subcode	P/U	Operation								
1/19/2012	<u>SUPERVISOR:</u> LARRY WEBB				<u>DWC:</u> \$4,900.00		<u>CWC:</u> \$4,900.00		<u>MD:</u>						
	10:00 - 13:00	3.00	COMP	30	A	P	MIRU								
	13:00 - 14:00	1.00	COMP	30	E	P	Kill well								
	14:00 - 14:30	0.50	COMP	30	F	P	ND NU								
	14:30 - 17:00	2.50	COMP	31	I	P	TOOH								
1/20/2012	<u>SUPERVISOR:</u> LARRY WEBB				<u>DWC:</u> \$6,100.00		<u>CWC:</u> \$11,000.00		<u>MD:</u>						
	7:00 - 8:00	1.00	COMP	31	I	P	TOOH								
	8:00 - 9:00	1.00	COMP	31	I	P	PU scraper & TIH								
	9:00 - 11:30	2.50	COMP	31	I	P	TOOH								
	11:30 - 13:00	1.50	COMP	31	I	P	PU RBP & TIH								
	13:00 - 13:30	0.50	COMP	30	F	P	ND NU								
	13:30 - 14:00	0.50	COMP	31	H	P	Circ gas from well								
	14:00 - 14:30	0.50	COMP	33	C	P	Test csg								
	14:30 - 15:00	0.50	COMP	30	F	P	ND NU								
1/23/2012	<u>SUPERVISOR:</u> LARRY WEBB				<u>DWC:</u> \$3,900.00		<u>CWC:</u> \$14,900.00		<u>MD:</u>						
	7:00 - 11:00	4.00	COMP	31	I	P	LD & EMI tbg								
	11:00 - 11:30	0.50	COMP	30	F	P	ND NU								
	11:30 - 12:00	0.50	COMP	30	C	P	RDMO								
2/2/2012	<u>SUPERVISOR:</u> LARRY WEBB				<u>DWC:</u> \$1,800.62		<u>CWC:</u> \$16,700.62		<u>MD:</u>						
	-														
2/16/2012	<u>SUPERVISOR:</u> DAN EISENHAEUER				<u>DWC:</u> \$79,789.20		<u>CWC:</u> \$201,193.72		<u>MD:</u>						
	10:16 - 10:16	0.00	COMP	52	B	P	26 psi								
	12:26	2.17		36			CD-11-SW								
	10:16	0.00		52			26 psi								
	12:26	2.17		36			CD-11-SW								
	12:26 - 12:26	0.00	COMP	52	C	P	16 psi								
2/16/2012	<u>SUPERVISOR:</u> DAN EISENHAEUER				<u>DWC:</u> \$11,013.46		<u>CWC:</u> \$201,193.72		<u>MD:</u>						
	12:25 - 14:15	1.83	COMP	37		P	Set composite flo thu frac plug & Perf Nbiobara								
2/16/2012	<u>SUPERVISOR:</u> DAN EISENHAEUER				<u>DWC:</u> \$86,755.35		<u>CWC:</u> \$201,193.72		<u>MD:</u>						
	14:40 - 16:38	1.97	COMP	36	B	P	NB-13-SW								
	14:40	0.00		52			20 psi								

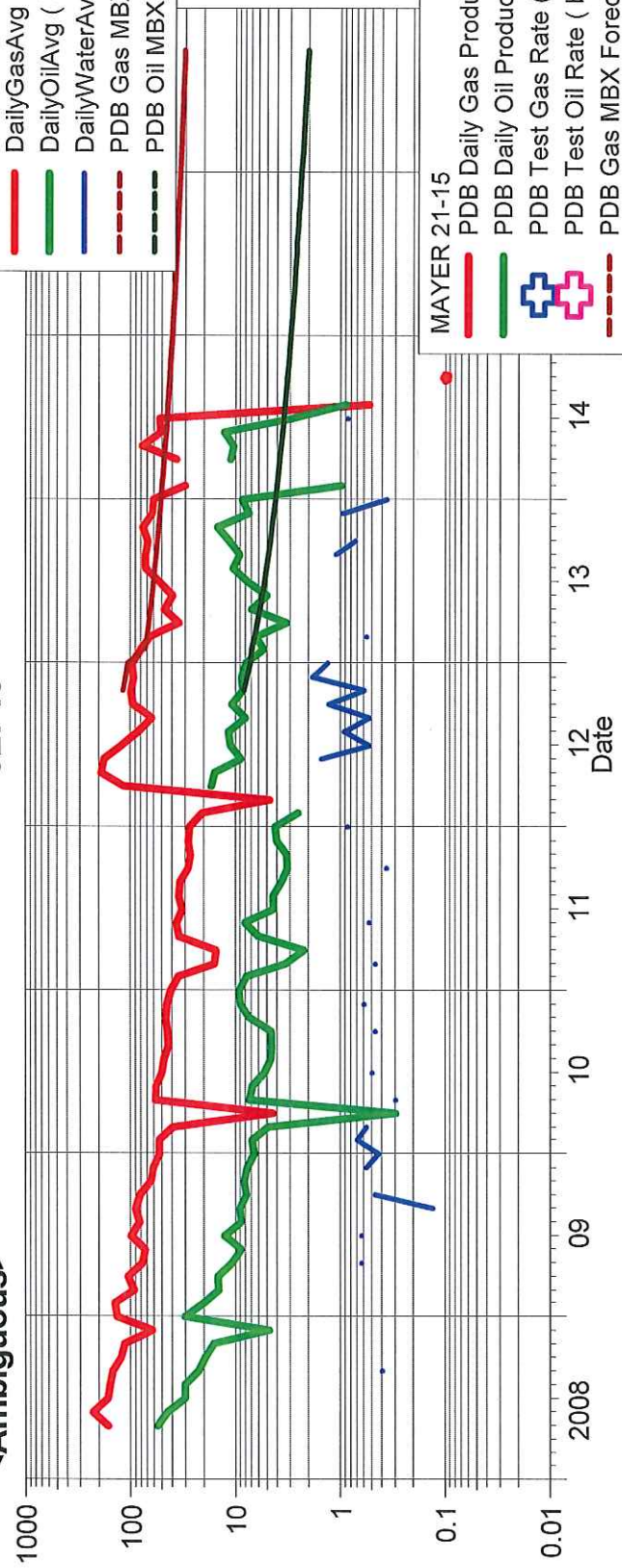
Wins No.: 92740		MAYER 21-15						API No.: 0512324502	
	14:40 - 16:38	1.97	COMP	36	B	P	NB-13-SW		
	14:40	0.00		52			20 psi		
	16:38 - 16:38	0.00	COMP	52	C	P	10 psi		
2/16/2012	<u>SUPERVISOR:</u> DAN EISENHAUER				<u>DWC:</u> \$6,935.09	<u>CWC:</u> \$201,193.72	<u>MD:</u>		
	17:40 - 18:40	1.00	COMP	33	A	P	1st Hour 3100# made 158 bbls		
	18:40 - 19:40	1.00	COMP	33	A	P	2nd Hour 3000# made 141 bbls		
	19:40 - 20:40	1.00	COMP	33	A	P	3rd Hour 2800# made 138 bbls		
2/20/2012	<u>SUPERVISOR:</u> DAN EISENHAUER				<u>DWC:</u> \$11,415.72	<u>CWC:</u> \$212,609.44	<u>MD:</u>		
	-								
2/23/2012	<u>SUPERVISOR:</u> BRIAN WALLS				<u>DWC:</u> \$0.00	<u>CWC:</u> \$212,609.44	<u>MD:</u>		
	9:45 - 9:45	0.00	PROD	50	B	P	RWTP UP CSG AFTER CD RF NB REC. NB/CD		
				52	D		5 WH2O		
				50	B		RWTP UP CSG AFTER CD RF NB REC. NB/CD		
				52	D		5 WH2O		
2/25/2012	<u>SUPERVISOR:</u> BRIAN WALLS				<u>DWC:</u> \$722.36	<u>CWC:</u> \$213,331.80	<u>MD:</u>		
	-								
3/9/2012	<u>SUPERVISOR:</u> Luke Hierichs				<u>DWC:</u> \$6,900.00	<u>CWC:</u> \$220,231.80	<u>MD:</u>		
	6:00 - 8:00	2.00		30	A		MIRU		
	8:00 - 12:00	4.00		30	E		Controll well		
	12:00 - 13:00	1.00		30	F		NDFV, NUBOP		
	13:00 - 16:30	3.50		31	I		PU & TIH		
	16:30 - 17:30	1.00		30	G		SDFN		
	17:30 - 17:30	0.00		52	G		SCP = 0		
3/12/2012	<u>SUPERVISOR:</u> Luke Hierichs				<u>DWC:</u> \$7,300.00	<u>CWC:</u> \$227,531.80	<u>MD:</u>		
	6:00 - 7:00	1.00	COMP	30	G	P	Crew Travel / Safety Meeting		
	7:00 - 10:30	3.50	COMP	31	I	P	Finished TIH W/ 3 7/8 Rock Bit Tag @ 7044 W/ 224 JTS		
	10:30 - 13:00	2.50	COMP	31	H	P	Drill / Clean To 7350' W/ 233 JTS. Circulate Clean.		
	13:00 - 14:00	1.00	COMP	31	I	P	TOOH W/ 3 7/8" Rock Bit		
	14:00 - 15:00	1.00	COMP	31	I	P	TIH W/ SN, NC		
	15:00 - 16:00	1.00	COMP	42	B	P	Make Broach Run		
	16:00 - 17:00	1.00	COMP	30	C	P	Land Well @ 7175' W/ 227 JTS. RDMOL		
	17:00 - 18:00	1.00	COMP	30	G		Crew Travel		
3/19/2012	<u>SUPERVISOR:</u> BRIAN WALLS				<u>DWC:</u> \$0.00	<u>CWC:</u> \$227,531.80	<u>MD:</u>		
	9:40 - 9:40	0.00	PROD	52	D	P	10 PSI WH2O		
				50	A		RWTP UP TBG AFTER CD RF NB REC. NB/CD		
				52	D		10 PSI WH2O		

Wins No.: 92740	MAYER 21-15						API No.: 0512324502
9:40	-	9:40	0.00	PROD	50	A P	RWTP UP TBG AFTER CD RF NB REC. NB/CD

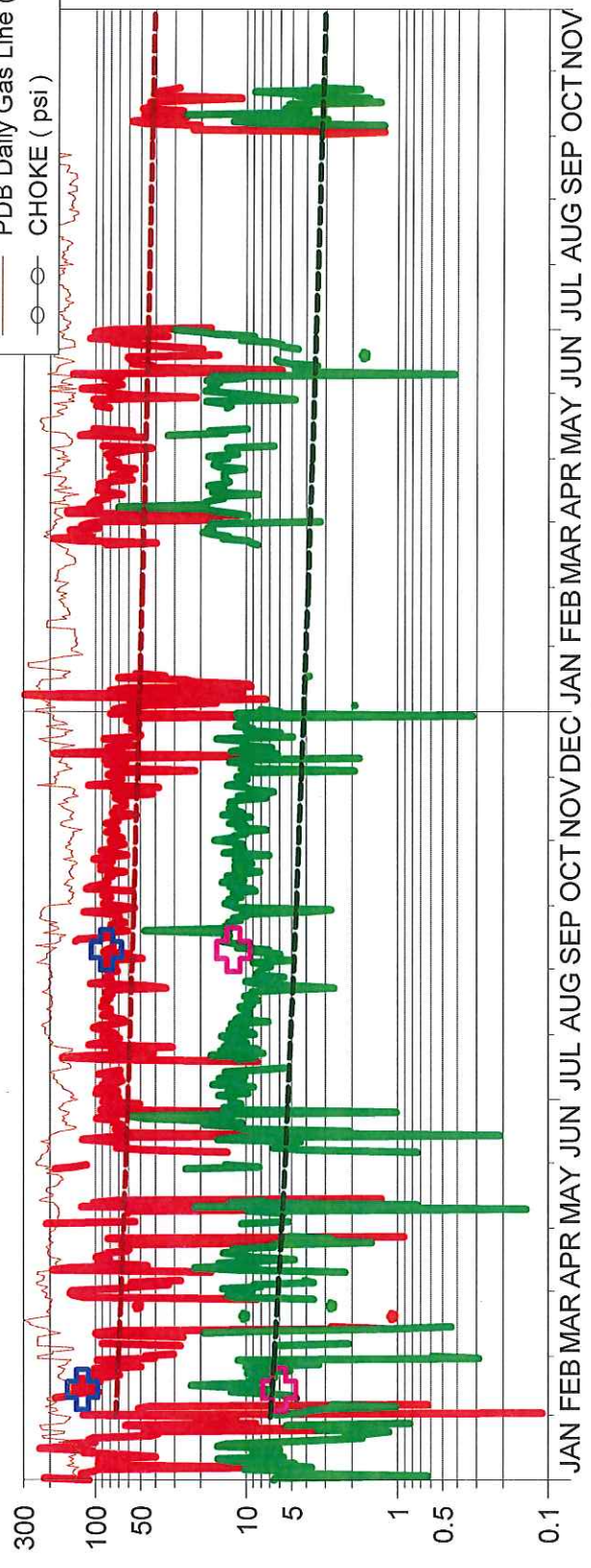
WELL_NAME: MAYER 21-15

0512324502
<Ambiguous>

- MAYER 21-15
- DailyGasAvg (Mcf/d)
- DailyOilAvg (bbl/d)
- DailyWaterAvg (bbl)
- PDB Gas MBX Forecast Daily
- PDB Oil MBX Forecast Daily F



- MAYER 21-15
- PDB Daily Gas Production (Mcf/d)
- PDB Daily Oil Production (bbl/d)
- PDB Test Gas Rate (Mcf/d)
- PDB Test Oil Rate (bbl/d)
- PDB Gas MBX Forecast Daily Rate (
- PDB Oil MBX Forecast Daily Rate (bl
- PDB Daily Gas Line (psi)
- CHOKE (psi)



2013

2014

Date