



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

Workover Authorization

Prognosis Writer: Robert Elliss

Prognosis Date: 10/27/2014

ROY 41-29

STIP:

START:

END:

Pasture

API #: 05-123-25846

WINS ID: 93180

AREA E E15 Location: NENE Section 29 Township: 3N Range: 65

Workover Type: BRADENHEAD

SubActivity Type: ANNULAR FILL

Estimated Cost: \$100,000.00

Estimated BOE increase:

Payout (months): 14 Months

Latest YE NPV @ 10%: \$275,523

Current LOE: \$115

Incremental LOE:

Workorder Number: 88638512

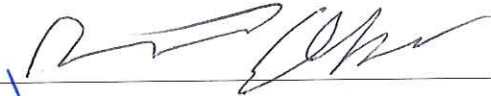

State Form: FORM 4 Approved:

APC223 Approved:

Working interest: JSND 91.342500%

Comments: NB-CD 100.000000%

JSND/CD/NB completion, 2008 vintage, 4.5", 11.6#, I-80 production casing. Annular cement placement will be used to add cement coverage near the FHM due to a Form 17 on 1/31/13 that showed a final instantaneous pressure of 8 psig. Design is for cement coverage from ~1500' to 694'. No offset HZ fracs in the near future.

| | | | | |
|----------|---|------|------------|-----------------------|
| Approved |  | Date | 10/28/14 | Area Engineer |
| Approved |  | Date | 10.28.2014 | Engineering Manager |
| Approved | | Date | | Production Supervisor |

Roy 41-29 Bradenhead Procedure

- 1 GYRO ran on 7/12/08.
- 2 Call Foreman or Lead Operator 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 MIRU slickline. Fish plunger from lubricator. RIH and pull the bumper spring and standing valve if necessary. RBIH with sinker bars and tag bottom. Report findings. PBMD should be at 8030'. RDMO slickline.
- 4 Prepare location for base beam rig.
- 5 Spot a minimum of 25 jts of 2-3/8", 4.7#, J-55, EUE tbg for replacement and 62 jts 1-1/4", 2.33#/ft, J-55, 10rd IJ for annular cement job.
- 6 MIRU WO rig and auxiliary equipment. Check pressures. Rig up 2" line from the casing head annulus to work tank. Kill well with fresh water. ND tree and adapter flange, NU BOP's.
- 7 PU 8-10' landing joint. TIW valve on top and screw into the tbg hanger. Back out the lock down pins and pull up on tbg string to break any possible sand bridges, unseat landing joint and lay down. Do not exceed 80% of tubing tensile strength, or **57,380-lb**. Clean out as necessary to 8030'.
- 8 MIRU EMI equipment. TOOH with 2-3/8" tbg. EMI tbg while TOOH. Lay down joints with wall loss or penetrations >35%. Replace joints as necessary. Note joint number and depth of tubing leak(s) on production equipment failure report in Open Wells. Clearly mark all junk (red band) tubing sent to yard.
- 9 TIH with 2-3/8" tbg and 4.5" RBP. Set RBP @ +/-7120', (collars are at 7100' and 7128'). Pressure test RBP to 1000 psi. Spot 2sx of sand on top of RBP and TOOH.
- 10 Bleed off pressure. ND BOP's, ND wellhead, Un-land 4 1/2" casing, NU dual entry flange, NU BOP.
- 11 PU 1-1/4" 2.3#/ft J-55 10rd IJ tubing, and TIH outside 4-1/2" casing in open hole to ~1900'. Circulate with the rig pump while TIH to clean up the annulus. Use two sweeps of Alcomer 74L while TIH and a final sweep at 1900'. Make sure no pressure is present on bradenhead before moving on to the next step. If gas is detected, contact engineering to discuss plan moving forward.
- 12 Contact Imperial mud (min of 24hrs. in advance) to bring out 40bbls of 10.0ppg mud. Pump 40bbls of mud at 1900'. Leave 1-1/4" tbg full of mud to avoid wet trip and PUH to 1500' to place cement in annulus.
- 13 MIRU cement services. Pump 10 bbl fresh water followed by **200sx (~47.4bbls)** of 14.8 ppg (1.33 cuft/sk) Type III w/ 1/4 lb/sk cello-flake. The cement is to be retarded for 80 °F and 3 hour pump time. Design is for coverage from ~1500' to ~694' using 8-1/2" hole size and 20% excess.
- 14 TOOH ~35 joints to ~400' and circulate 1.5 times the hole volume of water or until no cement returns are seen. TOOH with 1-1/4" tubing.
- 15 RDMO cementing company.
- 16 ND BOP. ND dual entry flange and crossover. Pick up and land 4-1/2" casing in slips.
- 17 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,

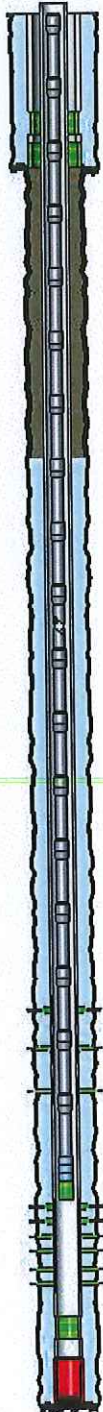
- plugs on well head need to be rated for 5000 psi. NU BOP.
- 18 Leave well shut in for ~24hrs.
 - 19 MIRU wireline and run CCL-GR-CBL-VDL from **3200' to surface**. If new top of cement is below 727' notify Engineering. In addition to normal handling of logs/job summaries, email copies of all cement job logs/job summaries and invoices to rscDJVendors@anadarko.com within 24 hours of the completion of the job.
 - 20 RDMO wireline.
 - 21 PU and TIH with 2-3/8" tbg and retrieving head. Circulate sand off RBP at @ +/-7120'. TOOH with RBP and SB tbg.
 - 22 TIH with 2-3/8" NC, 2-3/8" XN SN and 2-3/8" 4.7# J55 EUE tbg, circulate out fill if necessary to 8030'. Land tbg @ +/- 7826' (1 jt above top J Sand perf).
 - 23 Broach tubing to seating nipple. ND BOP's, NU master valve and tubing head adaptor.
 - 24 GE should pressure test tbg head through test port on side of tbg head adaptor flange to 5000 psi for 15 mins.
 - 25 RDMO WO rig.
 - 26 Clean location and swab well back to production. Notify Field Foreman/Field Coordinator of finished work and turn well back over to production team.

KERR-MCGEE OIL AND GAS ONSHORE LP
 ROY 41-29
 NE NE 29 3N 65W 1,110' FNL 1,296' FEL
 WELD, COLORADO
 10/27/2014

AREA: E1 ROUTE: E15 Spud: 07/11/2008 WINS No.: 93180 AFE/WO#: API#: 0512325846

GL: 4890 KB: 4906 MTD: 8080 TVD: 7900 LOG MD: 8082 PBMD: 8030 PBTVD: 7850

Directions: WCR 32 & WCR 39; S 8/10; E 8/10 INTO



| <u>HOLE SECTIONS</u> | <u>Size</u> | <u>Top</u> | <u>Btm</u> | <u>TD Date</u> | | | | |
|----------------------|-------------|------------|------------|----------------|--|--|--|--|
| SURFACE | 12.25 | 16 | 810 | 07/11/2008 | | | | |
| PRODUCTION | 7.88 | 810 | 8080 | 07/15/2008 | | | | |

| <u>TUBULARS</u> | <u>Tool Type</u> | <u>Joints</u> | <u>Size</u> | <u>Weight</u> | <u>Grade</u> | <u>Thread</u> | <u>Top D</u> | <u>Bottom D</u> |
|--------------------------|-------------------|---------------|-------------|---------------|--------------|---------------|--------------|-----------------|
| SURFACE CASING | | | | | | | | |
| | Casing | 17 | 8.63 | 24.00 | J-55 | ST&C | 16 | 747 |
| | Baffle | 1 | 8.10 | | | | 747 | 747 |
| | Casing | 1 | 8.63 | 24.00 | J-55 | ST&C | 747 | 791 |
| | Saw Tooth Shoe | 1 | 9.00 | | | | 791 | 792 |
| PRODUCTION CASING | | | | | | | | |
| | Casing | 184 | 4.50 | 11.60 | I-80 | 8RD LTC | 16 | 8030 |
| | Latch Down Baffle | 1 | 4.00 | | | | 8030 | 8030 |
| | Casing | 1 | 4.50 | 11.60 | I-80 | 8RD LTC | 8030 | 8058 |
| | Casing Float Shoe | 1 | 5.00 | | | | 8058 | 8060 |
| PRODUCTION TUBING | | | | | | | | |
| | Tubing | 255 | 2.38 | 4.70 | J-55 | External-Ups | 16 | 7853 |
| | Seating Nipple | 1 | | | | | 7853 | 7854 |
| | Notched Collar | 1 | | | | | 7854 | 7855 |

| <u>CEMENT JOBS</u> | <u>Stage</u> | <u>Sacks</u> | <u>Cement Jobs</u> | | <u>Top D</u> | <u>Btm D</u> | <u>cbf</u> |
|--------------------------|--------------------|--------------|--------------------|-----------------------|--------------|--------------|------------|
| SURFACE CASING | | | | | | | |
| | PRIM CMT 1ST STAGE | 361 | LEAD | TYPE 3 | 16 | 794 | No |
| PRODUCTION CASING | | | | | | | |
| | PRIM CMT 1ST STAGE | 235 | LEAD | PREMIUM LITE CEMENT | 3663 | 5006 | Yes |
| | PRIM CMT 1ST STAGE | 130 | MIDDLE | PREMIUM LITE | 5006 | 6748 | Yes |
| | PRIM CMT 1ST STAGE | 220 | TAIL | POZZOLAN W/ BENTONITE | 6748 | 8063 | Yes |

| <u>PERFORATIONS</u> | | | | | | | |
|---------------------|-------------|------------|------------|-------------|---------------|-----------------|--|
| <u>Formation</u> | <u>Zone</u> | <u>Top</u> | <u>Btm</u> | <u>Date</u> | <u>Reason</u> | <u>Comments</u> | |
| NIOBRARA | B | 7196 | 7206 | 08/18/2008 | PRODUCTION | | |
| NIOBRARA | C | 7300 | 7310 | 08/18/2008 | PRODUCTION | | |
| CODELL | | 7436 | 7450 | 08/15/2008 | PRODUCTION | | |
| J SAND | | 7856 | 7860 | 09/20/2010 | PRODUCTION | | |
| J SAND | | 7868 | 7880 | 09/20/2010 | PRODUCTION | | |
| J SAND | | 7901 | 7911 | 09/20/2010 | PRODUCTION | | |

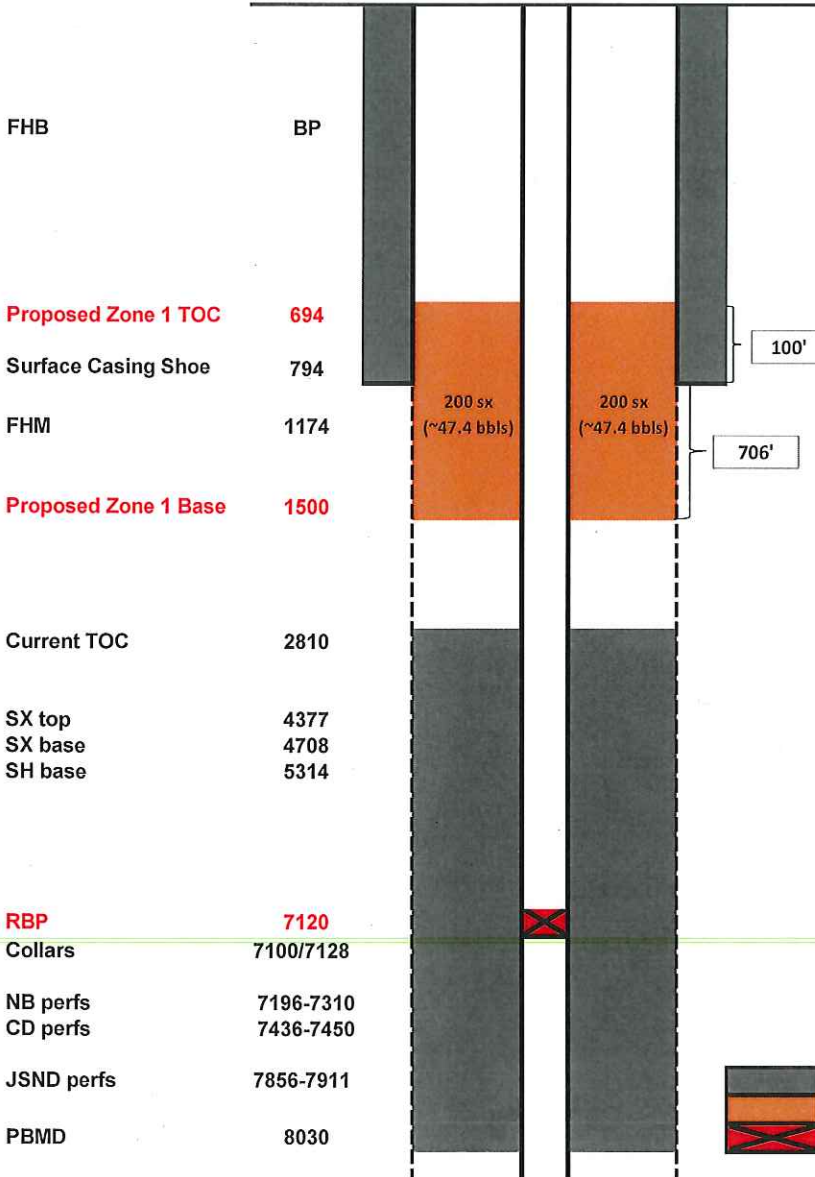
Comments:

Roy 41-29 05-123-25846 Proposed WBD (Bradenhead)

Wins: 93180

12-1/4" Surface Hole

7-7/8" Prod Hole



| | | |
|---|---------|---------------------|
| Between 8-5/8" Casing 24# and 4.5" casing | 0.24715 | ft ³ /ft |
| Between 8-5/8" Casing 24# and 4.5" casing | 0.04402 | bbbl/ft |
| 7 7/8" Open hole and 4.5" casing | 0.2278 | ft ³ /ft |
| 7 7/8" Open hole and 4.5" casing | 0.0406 | bbbl/ft |
| 8" Open hole and 4.5" casing | 0.2386 | ft ³ /ft |
| 8" Open hole and 4.5" casing | 0.0425 | bbbl/ft |
| 8.5" Open hole and 4.5" casing | 0.2836 | ft ³ /ft |
| 8.5" Open hole and 4.5" casing | 0.05051 | bbbl/ft |
| 9" Open hole and 4.5" casing | 0.3313 | ft ³ /ft |
| 9" Open hole and 4.5" casing | 0.059 | bbbl/ft |
| 9.5" Open hole and 4.5" casing | 0.3818 | ft ³ /ft |
| 9.5" Open hole and 4.5" casing | 0.068 | bbbl/ft |
| 10" Open hole and 4.5" casing | 0.435 | ft ³ /ft |
| 10" Open hole and 4.5" casing | 0.0775 | bbbl/ft |
| 11" Open hole and 4.5" casing | 0.5495 | ft ³ /ft |
| 11" Open hole and 4.5" casing | 0.0979 | bbbl/ft |
| 11.5" Open hole and 4.5" casing | 0.6108 | ft ³ /ft |
| 11.5" Open hole and 4.5" casing | 0.1088 | bbbl/ft |
| 12.5" Open hole and 4.5" casing | 0.7417 | ft ³ /ft |
| 12.5" Open hole and 4.5" casing | 0.1321 | bbbl/ft |
| Class Cement yield (SX/SH) 14.6ppg | 1.12 | ft ³ /sk |
| Class Cement yield (Fox Hills) 14.8ppg | 1.33 | ft ³ /sk |

*Caliper shows ~8-1/2" near FHM

0.2 excess

Zone 1 (Fox Hills)

$$(0.2836 * (1500 - 794)) / 1.33 * 1.2 = 180.7 \text{ sx}$$

$$(0.24715 * (794 - 694)) / 1.33 = 18.6 \text{ sx}$$

$$\text{Total } 199.3 \text{ sx} \sim 200 \text{ sx}$$

$$(0.05051 * (1500 - 794)) * 1.2 = 42.8 \text{ bbls}$$

$$(0.04402 * (794 - 694)) = 4.4 \text{ bbls}$$

$$\text{Total } 47.2 \text{ bbls} \sim 47.4 \text{ bbls}$$

| | |
|--|-----------------|
| | Existing Cement |
| | Proposed Cement |
| | RBP |

Wins No.: 93180

ROY 41-29

Well Operations Summary Short

| | | | | | | | |
|--|--|--|------------------------------------|---------------------------------------|------------------|-------------|------------------|
| Operator KERR-MCGEE OIL AND GAS ONSHORE LP | | FIELD NAME WATTENBERG | SPUD DATE 7/11/08 | | GL 4,890 | KB 4906 | ROUTE E15 |
| API 0512325846 | STATE COLORADO | COUNTY WELD | DIVISION US ROCKIES REGION | | | | |
| Long/Lat.: 40.20064 / -104.68254 | | Q-Q/Sect/Town/Range: NENE / 129 / 3N / 65W | | Footages: 1,110.00' FNL 1,296.00' FEL | | | |
| DIRECTIONS: WCR 32 & WCR 39; S 8/10; E 8/10 INTO | | | | | | | |
| Wellbore: ROY 41-29 | | | | | | | |
| MTD 8,080 | TVD 7,900 | PBMD 8,030 | PBTVD 7,850 | | | | |
| EVENT INFORMATION: | EVENT ACTIVITY: DRILLING | | START DATE: 7/10/2008 | | AFE NO.: 2007275 | | |
| | OBJECTIVE: DEVELOPMENT | | END DATE: 7/16/2008 | | | | |
| | OBJECTIVE 2: DIRECTIONAL WELL | | DATE WELL STARTED PROD.: 7/11/2008 | | | | |
| | REASON: J DIRECTIONAL | | EVENT END STATUS: COMPLETE | | | | |
| RIG OPERATIONS: | Begin Mobilization | Rig On Location | Rig Charges | Rig Operation Start | Finish Drilling | Rig Release | Rig Off Location |
| ENSGN 55 / 55 | 07/11/2008 | 07/11/2008 | 07/10/2008 | 07/11/2008 | 07/15/2008 | 07/16/2008 | 07/16/2008 |
| 7/10/2008 | <u>SUPERVISOR:</u> RUSTY TUCKER WOT | | <u>DWC:</u> | <u>CWC:</u> \$0.00 | <u>MD:</u> | | |
| 7/11/2008 | <u>SUPERVISOR:</u> RUSTY TUCKER Skid rig from the Wardell 27-29, Spud @ 12:45. Drill to TD of 810' @ 21:00. TOOH. | | <u>DWC:</u> \$256,858.00 | <u>CWC:</u> \$256,858.00 | <u>MD:</u> 810 | | |
| 7/12/2008 | <u>SUPERVISOR:</u> RUSTY TUCKER Ran & cemented surface csg, NUBOP & test, drill to 2720' | | <u>DWC:</u> \$34,779.64 | <u>CWC:</u> \$291,637.64 | <u>MD:</u> 2,720 | | |
| 7/13/2008 | <u>SUPERVISOR:</u> RUSTY TUCKER Drill to 5287', Mud motor failed, start TOOH. | | <u>DWC:</u> \$7,732.50 | <u>CWC:</u> \$299,370.14 | <u>MD:</u> 5,287 | | |
| 7/14/2008 | <u>SUPERVISOR:</u> RUSTY TUCKER TIH w/new motor. Drill to 7028'. Replaced clutch on mud pump. | | <u>DWC:</u> \$10,451.50 | <u>CWC:</u> \$309,821.64 | <u>MD:</u> 7,028 | | |
| 7/15/2008 | <u>SUPERVISOR:</u> RUSTY TUCKER Drill to TD of 8080', short trip to 7100', circulate & LDDA. | | <u>DWC:</u> \$5,374.00 | <u>CWC:</u> \$315,195.64 | <u>MD:</u> 8,080 | | |
| 7/16/2008 | <u>SUPERVISOR:</u> RUSTY TUCKER Logged well, ran 4 1/2" csg & cemented. RDMO | | <u>DWC:</u> \$102,824.36 | <u>CWC:</u> \$418,020.00 | <u>MD:</u> 8,080 | | |
| EVENT INFORMATION: | EVENT ACTIVITY: MIGRATED DATA | | START DATE: 7/11/2008 | | AFE NO.: | | |
| | OBJECTIVE: DEVELOPMENT | | END DATE: | | | | |
| | OBJECTIVE 2: RECOMPLETE | | DATE WELL STARTED PROD.: 7/11/2008 | | | | |
| | REASON: J RECOMPLETE | | EVENT END STATUS: | | | | |
| RIG OPERATIONS: | Begin Mobilization | Rig On Location | Rig Charges | Rig Operation Start | Finish Drilling | Rig Release | Rig Off Location |

| | | | | |
|---|-------------------------------------|---------------------------------|------------------------------------|---------------------|
| EVENT INFORMATION: | | EVENT ACTIVITY: COMPLETION | START DATE: 7/31/2008 | AFE NO.: 2007275 |
| | | OBJECTIVE: DEVELOPMENT | END DATE: 1/13/2009 | |
| | | OBJECTIVE 2: COMPLETION | DATE WELL STARTED PROD.: 7/11/2008 | |
| | | REASON: NB-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 | |
| 8/15/2008 | <u>SUPERVISOR:</u> LEWIS CAMP | <u>DWC:</u> \$7,658.00 | <u>CWC:</u> \$7,658.00 | <u>MD:</u> |
| MIRU JW wire line and RIH with the CBL Tools. Surface casing pressure 310 psi. Loggers TD=8011'. Log with good cement through the J-sand, Codell and Niobrara up to the top of cement at 3035'. The maximum recorded temperature is 236 Deg F. Test csg | | | | |
| 8/18/2008 | <u>SUPERVISOR:</u> LEWIS CAMP | <u>DWC:</u> \$73,393.91 | <u>CWC:</u> \$194,571.05 | <u>MD:</u> |
| MIRU BJS. Frac CD down 4-1/2" with 173K gals slickwater containing 119K lbs 40/70 sd & 4K LBS 20/40 resin tail. Break at 3991 psi & 6.6 bpm. ATP 5057 psi, ATR 56.9 bpm, MTP 5347 psi. Standby BJS. | | | | |
| 8/18/2008 | <u>SUPERVISOR:</u> LEWIS CAMP | <u>DWC:</u> \$13,827.87 | <u>CWC:</u> \$194,571.05 | <u>MD:</u> |
| MIRU JW Wireline. Set Weatherford composite flow-thru plug at 7390'. PUH and perforate the Nio C: 7300-7310 and Nio B: 7196-7206, both at 3 SPF, .42" EHD, 120 phasing, 60 total shots. RDMo JW Wireline. | | | | |
| 8/18/2008 | <u>SUPERVISOR:</u> LEWIS CAMP | <u>DWC:</u> \$99,691.27 | <u>CWC:</u> \$194,571.05 | <u>MD:</u> |
| Frac Nio B & C down 4-1/2" csg with 1000 gal 15% HCl, 70K gal clayfix pad, 103K gals x-linked Silverstim gel containing 253K lbs 20/40 sand & 4K lbs 20/40 resin tail. Break at 4544 psi & 6.3 bpm. ATP 4944 psi, ATR 56.3 bpm, MTP 5277 psi. RDMO BJS. | | | | |
| 10/24/2008 | <u>SUPERVISOR:</u> RON CLOUSE | <u>DWC:</u> \$30,900.00 | <u>CWC:</u> \$225,471.05 | <u>MD:</u> |
| MAVERICK CTU. MIRU. TIH W/ CT. TO FRAC PLUG & DRILL OUT. CIR. TO PBTD. CIR. HOLE CLEAN. TOOH W/ CT. ND CTU. RDMO | | | | |
| 11/4/2008 | <u>SUPERVISOR:</u> DOUG SAATHOFF | <u>DWC:</u> \$140,000.00 | <u>CWC:</u> \$365,471.05 | <u>MD:</u> |
| TIME ON: 10:30, ROUTE: N51, WMS: 93180, PROJECT TYPE: New well CMP, PROD. FORM.: NB/CD, TP: N/A, CP: 3200, CHOKE: 10, BATT. NO.: 161300, GATHERER: APC, STA. NO.: 045151, LINE NO.: 20-122-3, COMMENTS: DWNLN up CSG. | | | | |
| 1/5/2009 | <u>SUPERVISOR:</u> KELLEY REINHARDT | <u>DWC:</u> \$51,125.00 | <u>CWC:</u> \$416,596.05 | <u>MD:</u> |
| MIRU Key 229. Control well. NDFV NUBOP. PU 2 3/8" SN/NC TIH w/220 JNTs 2 3/8" TBG. SDFN | | | | |
| 1/6/2009 | <u>SUPERVISOR:</u> KELLEY REINHARDT | <u>DWC:</u> \$4,225.00 | <u>CWC:</u> \$420,821.05 | <u>MD:</u> |
| Control well. TIH tag @ 8020'. PU land w/ 241 JNTs of 2 3/8" @ 7414' KB. Broach TBG to SN. NDBOP NUWH. RDMO. | | | | |
| 1/13/2009 | <u>SUPERVISOR:</u> DOUG SAATHOFF | <u>DWC:</u> | <u>CWC:</u> \$420,821.05 | <u>MD:</u> |
| TIME ON: 11:25, ROUTE: N51, WMS: 93180, PROJECT TYPE: New Well CMP, PROD: NB/CD, TP: 780, CP: 1840, CHOKE: 12, BATT #: 161300, GATHERER: APC, STAT #: 045151, LINE #: 20-122-3, COMMENTS: DWNLN up TBG. | | | | |
| EVENT INFORMATION: | | EVENT ACTIVITY: WELL WORK EXPEI | START DATE: 1/22/2009 | AFE NO.: SLICK LINE |
| | | OBJECTIVE: DEVELOPMENT | END DATE: 1/22/2009 | |
| | | OBJECTIVE 2: SLICKLINE | DATE WELL STARTED PROD.: 7/11/2008 | |
| | | REASON: | EVENT END STATUS: COMPLETE | |
| RIG OPERATIONS: | Begin Mobilization | Rig On Location | Rig Charges | Rig Operation Start |
| | Finish Drilling | Rig Release | Rig Off Location | |
| 1/22/2009 | <u>SUPERVISOR:</u> DOUG SAATHOFF | <u>DWC:</u> \$640.00 | <u>CWC:</u> \$640.00 | <u>MD:</u> |
| MIRU, RIH FISH BYPASS PLUNGER @ 7377 FT, RDMO | | | | |

| | | | | | | | |
|---------------------------|--|---|--------------------------|---------------------|-----------------|-------------|------------------|
| EVENT INFORMATION: | EVENT ACTIVITY: RECOMPL/RESERE OBJECTIVE: DEVELOPMENT OBJECTIVE 2: RECOMPLETE REASON: J RECOMPLETE | START DATE: 8/31/2010 END DATE: 10/21/2010 DATE WELL STARTED PROD.: 7/11/2008 EVENT END STATUS: COMPLETE | AFE NO.: 2045582 | | | | |
| RIG OPERATIONS: | Begin Mobilization | Rig On Location | Rig Charges | Rig Operation Start | Finish Drilling | Rig Release | Rig Off Location |
| ENSIGN 315 / 315 | 09/17/2010 | 09/17/2010 | 09/17/2010 | 09/17/2010 | | 09/21/2010 | 09/21/2010 |
| 9/17/2010 | <u>SUPERVISOR:</u> KEN GILLILAND MIRU ENSIGN 315 RU CABLE FISH SV. TAG BTM. @ 8012' RD CABLE CONTROL WELL 30/BBLs CASING 20/BBLs TUBING ND WH. NU BOPS TOOH TO DERRICK TALLING SWI SDFN | <u>DWC:</u> \$5,891.25 | <u>CWC:</u> \$5,891.25 | <u>MD:</u> | | | |
| 9/20/2010 | <u>SUPERVISOR:</u> KEN GILLILAND SIWP 120 PSI CONTROL WELL PU 4 1/2 SCRAPER TIH TO 7800' TOOH. PU 4 1/2 RBP TIH SET PLUG @ 7060' ND BOPS FLANGE UP WH. ROLL HOLE PRESSURE TEST CASING TO 6000# GOOD TEST ND WH. NU BOPS RELEASE PLUG TOOH RU PSI WIRELINE GIH CORRULATE TO J-W CBL LOGS | <u>DWC:</u> \$10,358.25 | <u>CWC:</u> \$16,249.50 | <u>MD:</u> | | | |
| 9/21/2010 | <u>SUPERVISOR:</u> KEN GILLILAND SIWP 100 PSI CONTROL WELL PU 4 1/2 TREATING PACKER TIH SET PACKER 7808' KB RU SUPERIOR WELL SERV. PREFORM BREAK DOWN ON J-SAND (SEE REMARKS) RD SUPERIOR RELEASE PACKER RU PRS EMITUBING LAYING DOWN ALL TUBING TESTED GOOD RD PRS ND BOPS NU 4 1/2 FRAC VALVE | <u>DWC:</u> \$9,040.25 | <u>CWC:</u> \$25,289.75 | <u>MD:</u> | | | |
| 10/5/2010 | <u>SUPERVISOR:</u> RAMSEY KING MIRU BJS. Frac J-Sand down 4-1/2" Csg w/ 155,232 gal Slickwater w/ 115,340# 40/70 & 4,100# 20/40 SB Excel. Broke @ 1,768 psi @ 9.9 bpm. ATP=2,672 psi; MTP=3,543 psi; ATR=32.3 bpm; ISDP=2,264 psi; RDMO BJS. | <u>DWC:</u> \$50,626.77 | <u>CWC:</u> \$81,116.52 | <u>MD:</u> | | | |
| 10/5/2010 | <u>SUPERVISOR:</u> NATHAN NAILL Roy 41-29(N) Turned well on at 13:05 pm with 800# on an 18/64 choke, 21 bbls cleanup, watched until 5:00 am vac# made 209 bbls total. 1st hour 500# made 96 bbls, 2nd hour 150# made 52 bbls, 3rd hour blow# made 21 bbls. | <u>DWC:</u> \$5,200.00 | <u>CWC:</u> \$81,116.52 | <u>MD:</u> | | | |
| 10/12/2010 | <u>SUPERVISOR:</u> MARK HILL ECWS Rig #29, MIRU, JSA, 100 psi, 50 surf. Blow down well, kill, NU BOP, PU bailer, TIH to bottom, tag sand @ 7838', Could not break the crust of sand with bailer, worked for 2 hours, TOOH lay down bailer, SDFN | <u>DWC:</u> \$7,280.00 | <u>CWC:</u> \$88,396.52 | <u>MD:</u> | | | |
| 10/13/2010 | <u>SUPERVISOR:</u> MARK HILL ECWS Rig #29, JSA, 0 psi, 50 surf. PU blade bit, TIH to bottom, tag plug @ 7868' circulate and RU Power swive. drill on sand plug, for 2 hours, started getting back only metal, stopped drilling, circulated clean TOOH with bit, SDFN | <u>DWC:</u> \$6,010.00 | <u>CWC:</u> \$94,406.52 | <u>MD:</u> | | | |
| 10/14/2010 | <u>SUPERVISOR:</u> MARK HILL ECWS Rig #29, JSA, 0 psi, 50 psi on surf. PU NC, SN and TIH to tag @ 7868' worked hard spot for 2 hours, got break through circulated w/sand return to bottom @8010'. circulated clean hang off prod. tubing @ 7837' broach tubing, RDMO | <u>DWC:</u> \$4,560.00 | <u>CWC:</u> \$98,966.52 | <u>MD:</u> | | | |
| 10/15/2010 | <u>SUPERVISOR:</u> MARK HILL Road and location costs from SAP; entered by OWA207 1/27/2011; updated with costs from SAP 4/27/2011 | <u>DWC:</u> \$9,188.63 | <u>CWC:</u> \$108,155.15 | <u>MD:</u> | | | |
| 10/18/2010 | <u>SUPERVISOR:</u> NATHAN NAILL MIRU Ensign rig #809. TP 900 CP 200. Equalized well to TP 450 CP 450. Blew down and broached tubing. IFL 3000'. Swabbed 60 bbl, well kicked off and flowed 35 bbl water w/ signs of sand. SI. TP 200 CP 700 SDFN | <u>DWC:</u> \$2,135.00 | <u>CWC:</u> \$110,290.15 | <u>MD:</u> | | | |
| 10/19/2010 | <u>SUPERVISOR:</u> NATHAN NAILL Crew travel TP 850 CP 1050 IFL 2300'. Blew tubing down. Swabbed 5 bbl, well kicked off and flowed 95 bbl water w/ show of oil on a 20/64 choke. (RD Ensign rig #809 @ 11am, crew monitored flow while swabbing wardell 27-29) See comments | <u>DWC:</u> \$775.00 | <u>CWC:</u> \$111,065.15 | <u>MD:</u> | | | |
| 10/20/2010 | <u>SUPERVISOR:</u> DOUG SAATHOFF EQP COSTS FROM SAP AS OF 10/28/2010 ENTERED BY RRD697. Updated with costs from SAP 2/24/2011 by OWA207 | <u>DWC:</u> \$518.50 | <u>CWC:</u> \$111,583.65 | <u>MD:</u> 8,049 | | | |
| 10/21/2010 | <u>SUPERVISOR:</u> DOUG SAATHOFF TIME ON: 13:20, ROUTE: N56, WINS: 93180, PROJECT TYPE: REC, PROD: NB/CD/J, TP: 1200, CP: 1200, CHOKE: 16, BATT #: 34002531, GATHERER: KMG, STAT #: 045151, LINE #: 2-122-3, COMMENTS: RWTP up TBG after JSND REC. FLWLN tested. | <u>DWC:</u> \$0.00 | <u>CWC:</u> \$111,583.65 | <u>MD:</u> 8,049 | | | |
| EVENT INFORMATION: | EVENT ACTIVITY: CONST- CAP WELL OBJECTIVE: DEVELOPMENT OBJECTIVE 2: WELLHEAD CHECK REASON: WELLHEAD CHECK | START DATE: 5/15/2012 END DATE: 5/15/2012 DATE WELL STARTED PROD.: 7/11/2008 EVENT END STATUS: COMPLETE | AFE NO.: | | | | |
| RIG OPERATIONS: | Begin Mobilization | Rig On Location | Rig Charges | Rig Operation Start | Finish Drilling | Rig Release | Rig Off Location |

US ROCKIES REGION

COLORADO-WELD-NAD83-UTM13

WARDELL 17-29 PAD

ROY 41-29

ROY 41-29

Deviation Summary Report

Disclaimer: Although the information contained in this report is based on sound engineering practices, the copyright owner (s) does (do) not accept any responsibility whatsoever, in negligence or otherwise, for any loss or damage arising from the possession or use of the report whether in terms of correctness or otherwise. The application, therefore, by the user of this report or any part thereof, is solely at the user's own risk.

1 General

1.1 Customer Information

| | |
|----------------|-------------------|
| Company | US ROCKIES REGION |
| Representative | |
| Address | |

1.2 Well/Wellbore Information

| | | | |
|--------------------------|---|-----------------|---|
| Well | ROY 41-29 | Wellbore No. | 00 |
| Wellbore Legal Name | ROY 41-29 | Wellbore | ROY 41-29 |
| Project | COLORADO-WELD-NAD83-UTM13 | Site | WARDELL 17-29 PAD |
| Vertical Section Azimuth | 98.47 (°) | North Reference | True |
| Origin N/S | 0.0 (usft) | Origin E/W | 0.0 (usft) |
| Spud Date | 7/11/2008 | UWI | 0/3/N/65/W/29/0/NENE/6/PM/N/1,110.00/E/0/1,296.00/0/0 |
| Active Datum | KB @4,906.00usft (above Mean Sea Level) | | |

2 Survey Name

2.1 Survey Name: Surface

| | | | |
|-------------|-----------|----------|-----------------------------|
| Survey Name | Surface | Company | ENSIGN DIRECTIONAL DRILLING |
| Started | 7/11/2008 | Ended | 7/12/2008 |
| Tool Name | INC | Engineer | |

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 (°) |
|-----------|--------|-----------|---------|---------|------------|------------|------------|---------------|------------------|-------------------|------------------|-----------|
| 7/11/2008 | Tie On | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7/11/2008 | NORMAL | 226.00 | 0.17 | | 226.00 | 0.34 | 0.00 | -0.05 | 0.08 | 0.08 | 0.00 | 0.00 |
| | NORMAL | 436.00 | 0.34 | | 436.00 | 1.27 | 0.00 | -0.19 | 0.08 | 0.08 | 0.00 | 0.00 |
| | NORMAL | 619.00 | 0.23 | | 619.00 | 2.18 | 0.00 | -0.32 | 0.06 | -0.06 | 0.00 | 180.00 |
| | NORMAL | 810.00 | 0.21 | | 809.99 | 2.91 | 0.00 | -0.43 | 0.01 | -0.01 | 0.00 | 180.00 |

2.2 Survey Name: Production

| | | | |
|-------------|------------|----------|-----------------------------|
| Survey Name | Production | Company | ENSIGN DIRECTIONAL DRILLING |
| Started | 7/12/2008 | Ended | 7/16/2008 |
| Tool Name | MWD | Engineer | Tom Stoddard |

2.2.1 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 |

2.2.2 Survey Stations

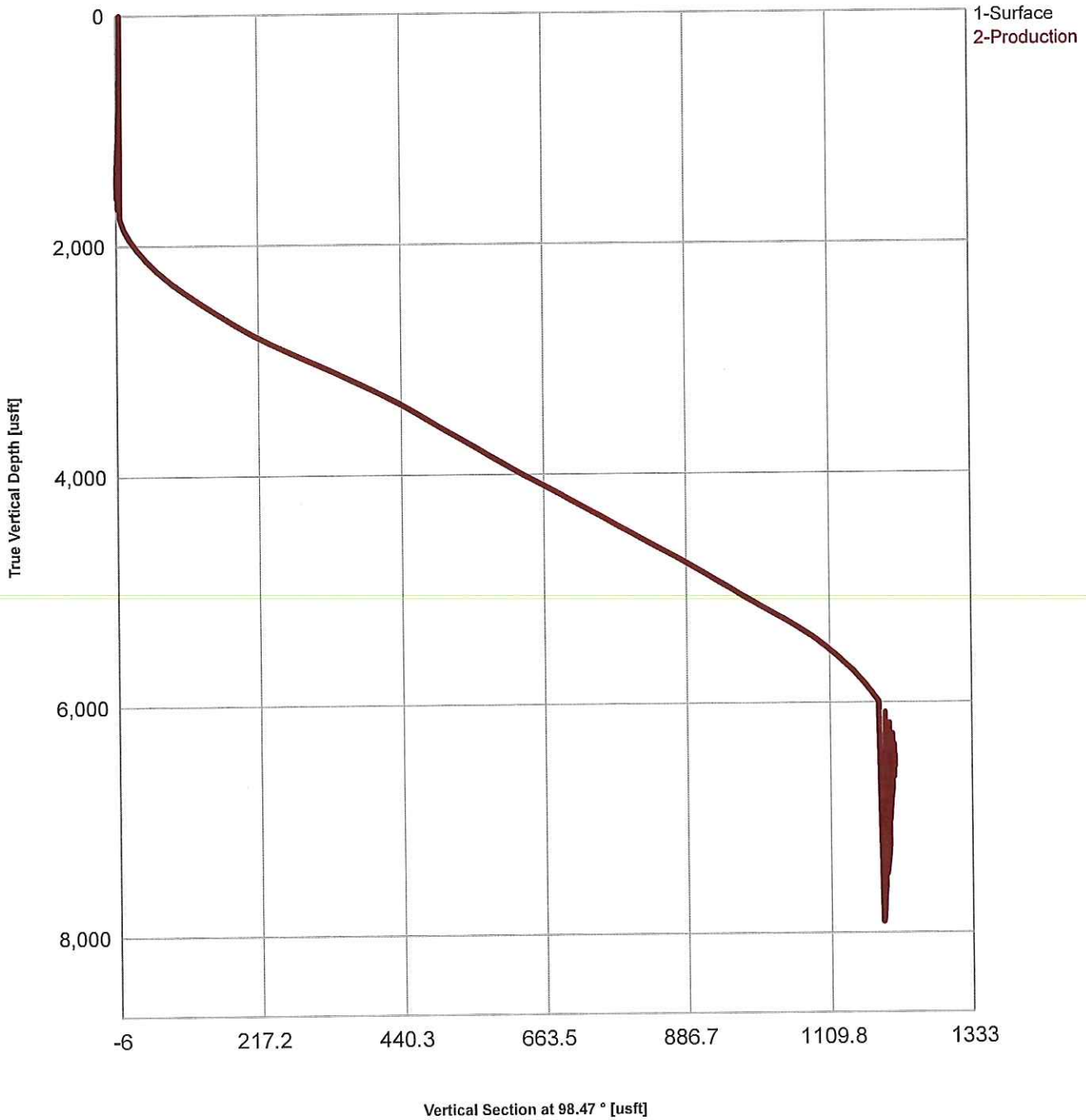
| Date | Type | MD (usft) | Inc (°) | Azi (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) | Build (°/100usft) | Turn (°/100usft) | TFace (°) |
|-----------|--------|-----------|---------|---------|------------|------------|------------|---------------|------------------|-------------------|------------------|-----------|
| 7/12/2008 | Tie On | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7/12/2008 | NORMAL | 831.00 | 0.70 | 208.50 | 830.98 | -4.46 | -2.42 | -1.74 | 0.08 | 0.08 | 0.00 | 208.50 |
| | NORMAL | 924.00 | 0.90 | 205.50 | 923.97 | -5.62 | -3.01 | -2.15 | 0.22 | 0.22 | -3.23 | -13.33 |
| | NORMAL | 1,018.00 | 0.80 | 211.20 | 1,017.96 | -6.85 | -3.67 | -2.62 | 0.14 | -0.11 | 6.06 | 142.61 |
| | NORMAL | 1,111.00 | 1.20 | 216.60 | 1,110.95 | -8.18 | -4.58 | -3.33 | 0.44 | 0.43 | 5.81 | 15.97 |
| | NORMAL | 1,205.00 | 1.00 | 217.90 | 1,204.93 | -9.62 | -5.67 | -4.19 | 0.21 | -0.21 | 1.38 | 173.54 |
| | NORMAL | 1,299.00 | 1.00 | 208.30 | 1,298.91 | -10.99 | -6.57 | -4.88 | 0.18 | 0.00 | -10.21 | -94.80 |
| | NORMAL | 1,392.00 | 0.90 | 200.90 | 1,391.90 | -12.39 | -7.21 | -5.31 | 0.17 | -0.11 | -7.96 | -132.84 |
| | NORMAL | 1,486.00 | 0.70 | 184.50 | 1,485.89 | -13.65 | -7.52 | -5.43 | 0.32 | -0.21 | -17.45 | -139.14 |
| | NORMAL | 1,579.00 | 1.40 | 161.30 | 1,578.88 | -15.29 | -7.20 | -4.87 | 0.87 | 0.75 | -24.95 | -43.22 |
| | NORMAL | 1,673.00 | 2.40 | 148.30 | 1,672.82 | -18.06 | -5.80 | -3.07 | 1.15 | 1.06 | -13.83 | -29.90 |
| | NORMAL | 1,766.00 | 3.90 | 142.80 | 1,765.68 | -22.23 | -2.86 | 0.44 | 1.64 | 1.61 | -5.91 | -14.15 |
| | NORMAL | 1,860.00 | 6.10 | 138.50 | 1,859.32 | -28.52 | 2.38 | 6.56 | 2.37 | 2.34 | -4.57 | -11.81 |
| | NORMAL | 1,953.00 | 8.50 | 134.10 | 1,951.56 | -37.00 | 10.59 | 15.93 | 2.65 | 2.58 | -4.73 | -15.30 |
| | NORMAL | 2,047.00 | 9.30 | 126.30 | 2,044.43 | -46.34 | 21.70 | 28.29 | 1.54 | 0.85 | -8.30 | -60.35 |
| | NORMAL | 2,140.00 | 10.50 | 119.20 | 2,136.05 | -54.92 | 35.16 | 42.86 | 1.84 | 1.29 | -7.63 | -49.02 |
| | NORMAL | 2,234.00 | 11.50 | 111.20 | 2,228.32 | -62.49 | 51.37 | 60.02 | 1.94 | 1.06 | -8.51 | -60.74 |
| | NORMAL | 2,328.00 | 13.40 | 108.70 | 2,320.11 | -69.37 | 70.43 | 79.88 | 2.10 | 2.02 | -2.66 | -17.06 |
| | NORMAL | 2,421.00 | 14.70 | 103.90 | 2,410.33 | -75.66 | 92.09 | 102.23 | 1.88 | 1.40 | -5.16 | -44.22 |
| | NORMAL | 2,515.00 | 15.40 | 98.90 | 2,501.11 | -80.45 | 116.00 | 126.59 | 1.57 | 0.74 | -5.32 | -64.10 |
| | NORMAL | 2,608.00 | 16.10 | 97.90 | 2,590.62 | -84.14 | 140.97 | 151.83 | 0.81 | 0.75 | -1.08 | -21.68 |
| | NORMAL | 2,702.00 | 16.20 | 98.30 | 2,680.91 | -87.82 | 166.86 | 177.97 | 0.16 | 0.11 | 0.43 | 48.24 |
| 7/13/2008 | NORMAL | 2,796.00 | 18.80 | 96.70 | 2,770.55 | -91.48 | 194.88 | 206.23 | 2.81 | 2.77 | -1.70 | -11.25 |
| | NORMAL | 2,890.00 | 21.30 | 98.60 | 2,858.84 | -95.80 | 226.81 | 238.45 | 2.75 | 2.66 | 2.02 | 15.50 |
| | NORMAL | 2,983.00 | 21.30 | 98.80 | 2,945.49 | -100.91 | 260.20 | 272.23 | 0.08 | 0.00 | 0.22 | 90.09 |
| | NORMAL | 3,077.00 | 22.50 | 97.90 | 3,032.71 | -106.00 | 294.89 | 307.29 | 1.33 | 1.28 | -0.96 | -16.05 |
| | NORMAL | 3,170.00 | 21.50 | 97.60 | 3,118.93 | -110.70 | 329.41 | 342.12 | 1.08 | -1.08 | -0.32 | -173.73 |
| | NORMAL | 3,264.00 | 20.40 | 93.60 | 3,206.72 | -114.00 | 362.84 | 375.67 | 1.92 | -1.17 | -4.26 | -129.42 |
| | NORMAL | 3,358.00 | 20.80 | 95.90 | 3,294.71 | -116.75 | 395.79 | 408.67 | 0.96 | 0.43 | 2.45 | 64.78 |
| | NORMAL | 3,451.00 | 18.20 | 100.90 | 3,382.38 | -121.19 | 426.49 | 439.69 | 3.32 | -2.80 | 5.38 | 149.64 |
| | NORMAL | 3,545.00 | 16.40 | 101.00 | 3,472.12 | -126.50 | 453.93 | 467.61 | 1.92 | -1.91 | 0.11 | 179.10 |
| | NORMAL | 3,638.00 | 16.70 | 100.50 | 3,561.27 | -131.44 | 479.96 | 494.08 | 0.36 | 0.32 | -0.54 | -25.64 |
| | NORMAL | 3,732.00 | 17.50 | 93.50 | 3,651.12 | -134.77 | 507.35 | 521.66 | 2.35 | 0.85 | -7.45 | -72.13 |
| | NORMAL | 3,825.00 | 17.50 | 93.00 | 3,739.82 | -136.35 | 535.27 | 549.51 | 0.16 | 0.00 | -0.54 | -90.24 |
| | NORMAL | 3,919.00 | 16.70 | 97.80 | 3,829.67 | -138.92 | 562.76 | 577.09 | 1.73 | -0.85 | 5.11 | 121.82 |
| | NORMAL | 4,013.00 | 17.50 | 99.30 | 3,919.51 | -143.04 | 590.09 | 604.73 | 0.97 | 0.85 | 1.60 | 29.59 |
| | NORMAL | 4,107.00 | 18.60 | 101.80 | 4,008.89 | -148.39 | 618.71 | 633.82 | 1.43 | 1.17 | 2.66 | 36.35 |
| | NORMAL | 4,201.00 | 19.30 | 100.80 | 4,097.79 | -154.37 | 648.65 | 664.31 | 0.82 | 0.74 | -1.06 | -25.36 |
| | NORMAL | 4,294.00 | 17.90 | 97.70 | 4,185.93 | -159.16 | 677.91 | 693.96 | 1.84 | -1.51 | -3.33 | -146.23 |
| | NORMAL | 4,388.00 | 18.20 | 97.60 | 4,275.31 | -163.04 | 706.78 | 723.08 | 0.32 | 0.32 | -0.11 | -5.94 |
| | NORMAL | 4,481.00 | 18.60 | 97.40 | 4,363.55 | -166.87 | 735.88 | 752.43 | 0.44 | 0.43 | -0.22 | -9.06 |
| | NORMAL | 4,575.00 | 17.10 | 100.20 | 4,453.03 | -171.25 | 764.35 | 781.24 | 1.84 | -1.60 | 2.98 | 151.55 |
| | NORMAL | 4,669.00 | 19.00 | 101.90 | 4,542.40 | -176.85 | 792.93 | 810.33 | 2.10 | 2.02 | 1.81 | 16.31 |
| | NORMAL | 4,762.00 | 18.40 | 97.10 | 4,630.49 | -181.79 | 822.31 | 840.12 | 1.78 | -0.65 | -5.16 | -113.56 |
| | NORMAL | 4,856.00 | 18.30 | 95.20 | 4,719.71 | -184.96 | 851.73 | 869.68 | 0.65 | -0.11 | -2.02 | -100.39 |
| | NORMAL | 4,949.00 | 17.50 | 93.50 | 4,808.21 | -187.14 | 880.23 | 898.19 | 1.03 | -0.86 | -1.83 | -147.66 |
| | NORMAL | 5,043.00 | 16.60 | 97.30 | 4,898.08 | -189.71 | 907.65 | 925.70 | 1.52 | -0.96 | 4.04 | 130.74 |
| | NORMAL | 5,136.00 | 16.50 | 96.70 | 4,987.23 | -192.94 | 933.95 | 952.18 | 0.21 | -0.11 | -0.65 | -120.62 |
| | NORMAL | 5,230.00 | 17.20 | 91.50 | 5,077.20 | -194.86 | 961.10 | 979.32 | 1.77 | 0.74 | -5.53 | -67.59 |
| 7/14/2008 | NORMAL | 5,323.00 | 17.50 | 94.20 | 5,165.97 | -196.24 | 988.79 | 1,006.91 | 0.92 | 0.32 | 2.90 | 70.86 |
| | NORMAL | 5,417.00 | 17.80 | 94.90 | 5,255.54 | -198.50 | 1,017.20 | 1,035.35 | 0.39 | 0.32 | 0.74 | 35.61 |
| | NORMAL | 5,510.00 | 16.30 | 100.30 | 5,344.46 | -202.05 | 1,044.21 | 1,062.58 | 2.34 | -1.61 | 5.81 | 136.01 |
| | NORMAL | 5,603.00 | 13.90 | 101.80 | 5,434.24 | -206.67 | 1,067.99 | 1,086.78 | 2.61 | -2.58 | 1.61 | 171.48 |
| | NORMAL | 5,697.00 | 12.20 | 98.80 | 5,525.81 | -210.50 | 1,088.86 | 1,107.99 | 1.95 | -1.81 | -3.19 | -159.73 |
| | NORMAL | 5,791.00 | 11.40 | 101.70 | 5,617.82 | -213.90 | 1,107.77 | 1,127.19 | 1.06 | -0.85 | 3.09 | 144.86 |
| | NORMAL | 5,885.00 | 10.60 | 107.60 | 5,710.10 | -218.40 | 1,125.11 | 1,145.01 | 1.47 | -0.85 | 6.28 | 128.27 |

2.2.2 Survey Stations (Continued)

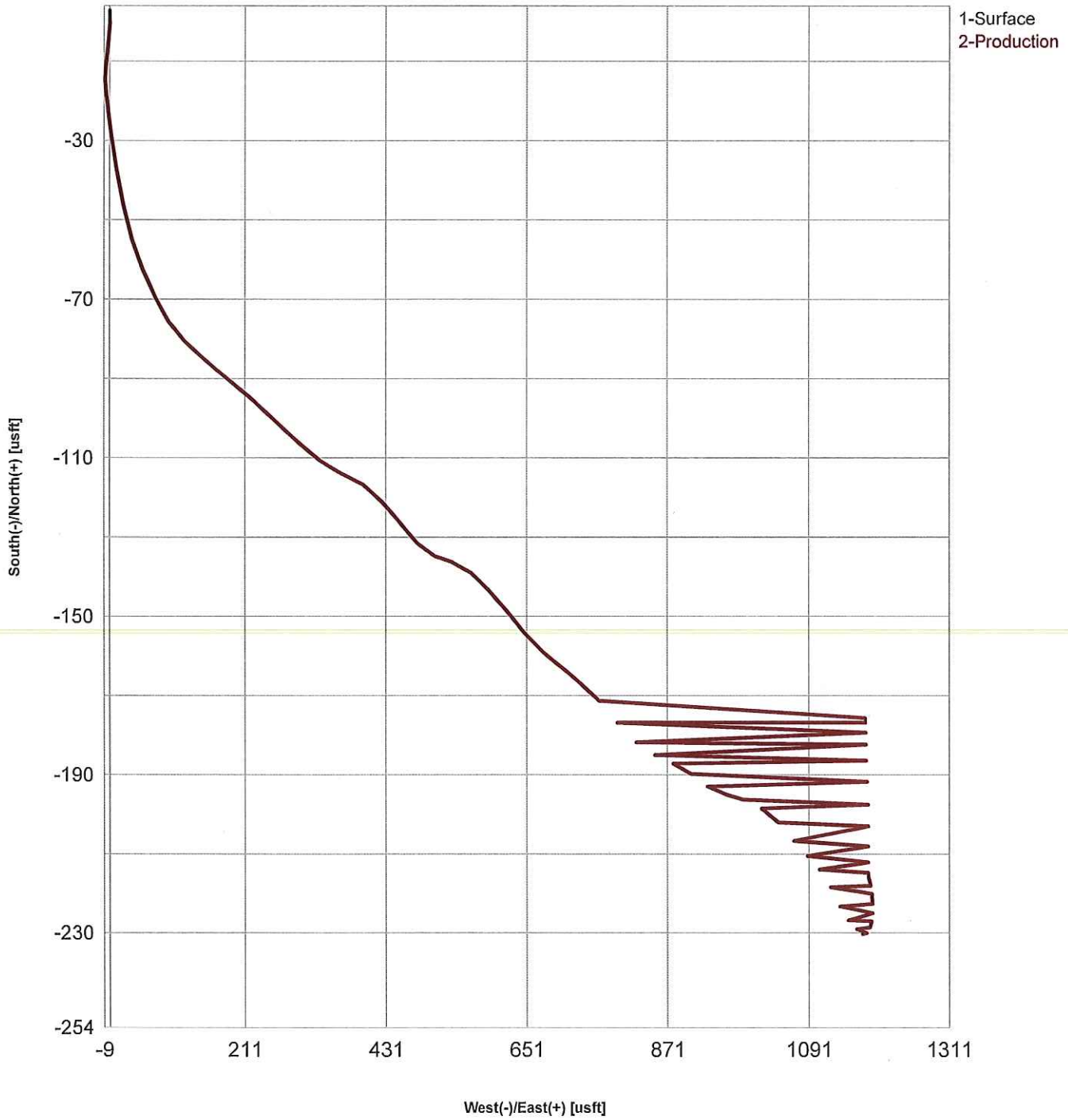
| Date | Type | MD (usft) | Inc (°) | Azi (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) | Build (°/100usft) | Turn (°/100usft) | TFace (°) | |
|-----------|-----------|-----------|----------|---------|------------|------------|------------|---------------|------------------|-------------------|------------------|-----------|--------|
| 7/14/2008 | NORMAL | 5,979.00 | 8.60 | 108.60 | 5,802.78 | -223.26 | 1,140.01 | 1,160.46 | 2.13 | -2.13 | 1.06 | 175.73 | |
| | NORMAL | 6,072.00 | 8.10 | 101.50 | 5,894.80 | -226.78 | 1,153.02 | 1,173.85 | 1.23 | -0.54 | -7.63 | -119.35 | |
| | NORMAL | 6,166.00 | 7.10 | 98.80 | 5,987.97 | -228.99 | 1,165.25 | 1,186.27 | 1.13 | -1.06 | -2.87 | -161.68 | |
| | NORMAL | 6,260.00 | 4.90 | 95.90 | 6,081.45 | -230.29 | 1,174.99 | 1,196.09 | 2.36 | -2.34 | -3.09 | -173.59 | |
| | NORMAL | 6,353.00 | 3.70 | 76.80 | 6,174.19 | -230.01 | 1,181.86 | 1,202.85 | 1.99 | -1.29 | -20.54 | -139.22 | |
| | NORMAL | 6,446.00 | 2.50 | 68.60 | 6,267.05 | -228.59 | 1,186.67 | 1,207.40 | 1.37 | -1.29 | -8.82 | -163.78 | |
| | NORMAL | 6,540.00 | 1.60 | 49.10 | 6,360.99 | -226.98 | 1,189.57 | 1,210.03 | 1.20 | -0.96 | -20.74 | -151.70 | |
| | NORMAL | 6,634.00 | 1.50 | 20.00 | 6,454.96 | -224.97 | 1,190.98 | 1,211.13 | 0.83 | -0.11 | -30.96 | -111.63 | |
| | NORMAL | 6,727.00 | 1.50 | 351.40 | 6,547.93 | -222.62 | 1,191.22 | 1,211.02 | 0.80 | 0.00 | -30.75 | -104.30 | |
| | NORMAL | 6,821.00 | 2.00 | 323.40 | 6,641.89 | -220.09 | 1,190.06 | 1,209.49 | 1.04 | 0.53 | -29.79 | -74.18 | |
| | NORMAL | 6,915.00 | 1.50 | 307.50 | 6,735.84 | -218.02 | 1,188.10 | 1,207.26 | 0.74 | -0.53 | -16.91 | -143.60 | |
| | NORMAL | 7,009.00 | 0.90 | 304.00 | 6,829.82 | -216.86 | 1,186.51 | 1,205.52 | 0.64 | -0.64 | -3.72 | -174.78 | |
| | 7/15/2008 | NORMAL | 7,102.00 | 0.90 | 303.70 | 6,922.81 | -216.04 | 1,185.30 | 1,204.20 | 0.01 | 0.00 | -0.32 | -90.15 |
| | | NORMAL | 7,196.00 | 1.10 | 350.10 | 7,016.80 | -214.75 | 1,184.53 | 1,203.24 | 0.86 | 0.21 | 49.36 | 100.06 |
| NORMAL | | 7,290.00 | 2.10 | 1.70 | 7,110.76 | -212.14 | 1,184.43 | 1,202.76 | 1.11 | 1.06 | 12.34 | 23.80 | |
| NORMAL | | 7,383.00 | 2.90 | 3.00 | 7,203.67 | -208.08 | 1,184.60 | 1,202.33 | 0.86 | 0.86 | 1.40 | 4.70 | |
| NORMAL | | 7,477.00 | 3.30 | 357.70 | 7,297.53 | -203.01 | 1,184.62 | 1,201.60 | 0.52 | 0.43 | -5.64 | -38.29 | |
| NORMAL | | 7,571.00 | 3.50 | 348.60 | 7,391.37 | -197.49 | 1,183.94 | 1,200.12 | 0.61 | 0.21 | -9.68 | -74.25 | |
| NORMAL | | 7,664.00 | 3.80 | 343.20 | 7,484.18 | -191.76 | 1,182.49 | 1,197.84 | 0.49 | 0.32 | -5.81 | -51.61 | |
| NORMAL | | 7,758.00 | 3.00 | 350.40 | 7,578.01 | -186.35 | 1,181.18 | 1,195.74 | 0.96 | -0.85 | 7.66 | 155.47 | |
| NORMAL | | 7,852.00 | 2.00 | 354.20 | 7,671.92 | -182.29 | 1,180.60 | 1,194.58 | 1.08 | -1.06 | 4.04 | 172.48 | |
| NORMAL | | 7,946.00 | 1.70 | 351.20 | 7,765.87 | -179.28 | 1,180.22 | 1,193.76 | 0.34 | -0.32 | -3.19 | -163.60 | |
| NORMAL | | 8,035.00 | 1.60 | 340.30 | 7,854.84 | -176.81 | 1,179.60 | 1,192.78 | 0.37 | -0.11 | -12.25 | -113.07 | |
| NORMAL | | 8,080.00 | 1.60 | 340.30 | 7,899.82 | -175.62 | 1,179.18 | 1,192.19 | 0.00 | 0.00 | 0.00 | 0.00 | |

3 Charts

3.1 Vertical Section View



3.2 Plan View



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: 0512325846 5. Multiple Completion? Yes No

6. Well Name: ROY 41-29 Number: _____

7. Location (QtrQtr, Sec, Twp, Rng, Meridian): NENE 29 3N 65W

8. County: Weld 9. Field Name: WATTENBERG

10. Minerals: Fee State Federal Indian

11. Date of Test: 01/31/2013

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: <u>600</u> Fm: _____ | Tubing: Fm: _____ | Prod. Casing: <u>630</u> Fm: _____ | Intermediate Csg: _____ | Surface Casing: <u>92</u> |
|-------------------------------|---------------------------------|----------------------|---------------------------------------|----------------------------|---------------------------|

15. **STEP 2: See instructions above.**

16. **STEP 3: BRADENHEAD TEST**

| | | | | | | |
|--|------------------------|----------------------------|----------------------------|------------------------|--------------------------|---|
| Buried Valve? <input type="radio"/> Yes <input checked="" type="radio"/> No Confirmed Open? <input checked="" type="radio"/> Yes <input type="radio"/> 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 | Elapsed Time (Min:Sec) | Fm: _____ Tubing: _____ | Fm: _____ Tubing: _____ | Production Casing PSIG | Intermediate Casing PSIG | Bradenhead Flow: |
| | 00: | 600 | | 630 | | 92,G |
| | 05: | 604 | | 634 | | 71, G |
| | 10: | 608 | | 640 | | 47,G |
| | 15: | 611 | | 647 | | 24,G |
| | 20: | 615 | | 651 | | 23,G |
| | 25: | 616 | | 656 | | 15,G |
| | 30: | 618 | | 661 | | 8,G |
| Sample cylinder number: _____ | | | | | | Note instantaneous Bradenhead PSIG at end of test: > <u>8</u> |

17. **STEP 4: INTERMEDIATE CASING TEST**

| | | | | | | |
|--|------------------------|----------------------------|----------------------------|------------------------|--------------------------|---|
| Buried Valve? <input type="radio"/> Yes <input type="radio"/> No Confirmed Open? <input type="radio"/> Yes <input type="radio"/> 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 | Elapsed Time (Min:Sec) | Fm: _____ Tubing: _____ | Fm: _____ Tubing: _____ | Production Casing PSIG | Intermediate Casing PSIG | Bradenhead Flow: |
| | 00: | | | | | |
| | 05: | | | | | |
| | 10: | | | | | |
| | 15: | | | | | |
| | 20: | | | | | |
| | 25: | | | | | |
| 30: | | | | | | |
| Sample cylinder number: _____ | | | | | | Note instantaneous Intermediate Casing PSIG at end of test: > _____ |

18. Comments: Surface Casing produced no fluid during the form 17 test

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: <u>Lane Blake</u> | Title: <u>Non-Employee Job</u> | Phone: <u>970-590-1316</u> |
| Signed: _____ | Title: <u>Non-Employee Job</u> | Date: <u>01/31/2013</u> |
| WITNESSED BY: _____ | Title: _____ | Agency: _____ |

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: 0512325846
 5. Multiple Completion? Yes No
 6. Well Name: ROY 41-29 Number: _____
 7. Location (QtrQtr, Sec, Twp, Rng, Meridian): NENE 29 3N 65W
 8. County: Weld
 9. Field Name: WATTENBERG
 10. Minerals: Fee State Federal Indian

11. Date of Test: 07/18/2012
 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: 316 Fm: _____ | Tubing: Fm: _____ | Prod. Casing: 330 Fm: _____ | Intermediate Csg: _____ | Surface Casing: 124 |
|-------------------------------|--------------------------|----------------------|--------------------------------|----------------------------|---------------------|

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

| Elapsed Time (Min:Sec) | Fm: _____ Tubing: _____ | Fm: _____ Tubing: _____ | Production Casing PSIG | Intermediate Casing PSIG | Bradenhead Flow: |
|------------------------|----------------------------|----------------------------|------------------------|--------------------------|------------------|
| 00: | 316 | | 330 | | 124,G |
| 05: | 318 | | 332 | | 100,G |
| 10: | 321 | | 337 | | 71,G |
| 15: | 325 | | 339 | | 58,G |
| 20: | 327 | | 342 | | 48,G |
| 25: | 329 | | 345 | | 42,G |
| 30: | 331 | | 347 | | 38,G |

BRADENHEAD SAMPLE TAKEN?
 Yes No Gas Liquid

Character of Bradenhead fluid: Clear Fresh
 Sulfur Salty Black
 Other (describe): _____

Sample cylinder number: _____

Note instantaneous Bradenhead PSIG at end of test: > 38

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

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

INTERMEDIATE SAMPLE TAKEN?
 Yes No Gas Liquid

Character of Intermediate fluid: Clear Fresh
 Sulfur Salty Black
 Other (describe): _____

Sample cylinder number: _____

Note instantaneous Intermediate Casing PSIG at end of test: >

18. Comments: No fluid was produced during form 17 test.

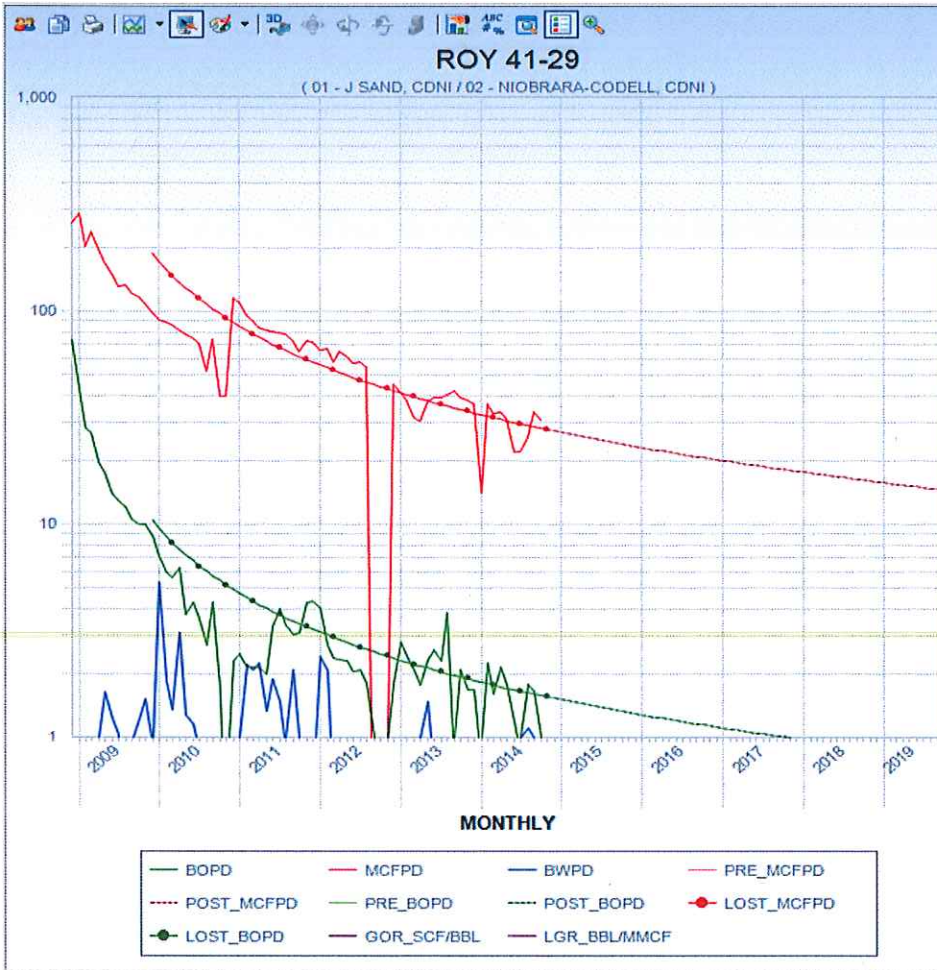
19. **STEP 5:** See instructions above. I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Test Performed By: Jessica Coakley Title: Non-Employee Job Phone: 970-580-8946
 Signed: _____ Title: Non-Employee Job Date: 07/18/2012
 WITNESSED BY: _____ Title: _____ Agency: _____



Well Screening Estimate - ROY 41-29 (Case #126314)

| | | | |
|---|--|--|---|
| Workover Status EVALUATION | Screen Level WELL | Well Number 93180 | Workorder # / AFE # 88638512 |
| Foreman BOB PITTS | Operator BROOK MUNCE | Well Status ACTIVE | OIL / GAS Well OIL |
| Working Interest (%) 91.34 | Net Revenue Interest (%) 84.61 | Royalty Burden (%) 7.37 | Start Date 10/27/2014 Est. Rig Days 5 |
| Created By ROBERT ELLISS - 10/27/2014 12:00:00 AM | | Last Modified By ROBERT ELLISS - 10/27/2014 12:00:00 AM | |
| Primary Work BRADENHEAD | | Brief Description Well has been identified as requiring bradenhead remediation. Annular cement placement will be used to add cement coverage near the FHM due to a Form 17 on 1/31/13 that showed a final instantaneous pressure of 8 psig. | |
| Secondary Work - | | | |
| Tertiary Work - | | | |

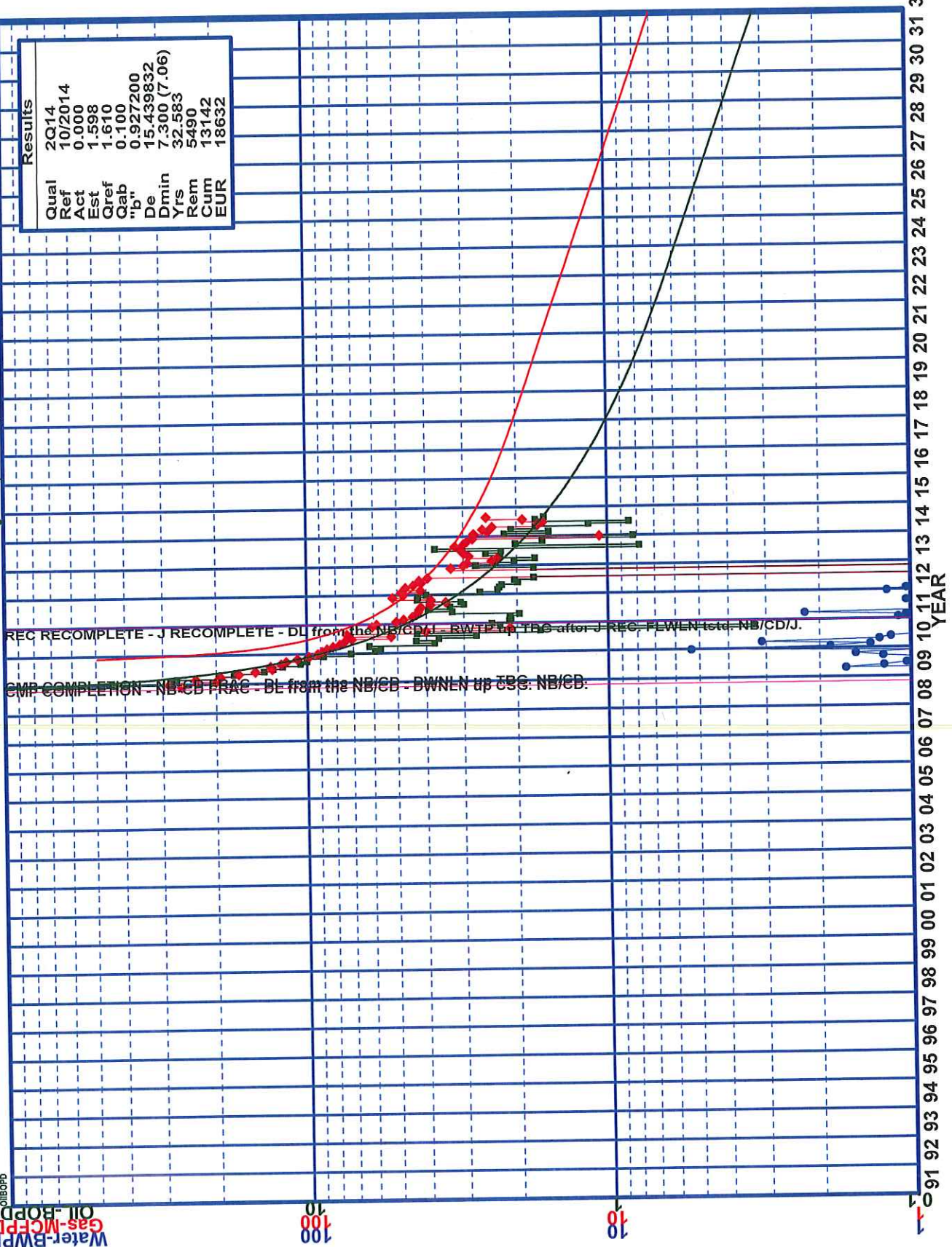


| | |
|------------------------------|-------------|
| Cost & Success | |
| Chance Prod. Success (%) | 90 |
| Anticipated Cost (\$) | 100000 |
| Highside Cost (\$) | 120000 |
| Chance Cost Success (%) | 90 |
| Risked Cost (\$) | 102000 |
| Pre-Work Rates | |
| Production Rate | 0.00 |
| Yield / GOR | 0.00 |
| Decline Type | EXPONENTIAL |
| Decline rate (%) | 0.00 |
| Final Decline (%) | B-Factor |
| - | - |
| Post-Work Rates | |
| Production Gain | 1.55 |
| Yield / GOR | 18000.00 |
| Decline Type | HYPERBOLIC |
| Decline Rate (%) | 15.44 |
| Final Decline (%) | B-Factor |
| 7.30 | 0.93 |
| Revert (?) | Revert Date |
| NO | - |
| Pricing / Abandonment | |
| Gas Pricing | Oil Pricing |
| 6.98 | 90.00 |
| Aban. Rate | Incr. OPEX |
| 0 | 0 |

| | | | | | | | |
|--------------------|---------------------|---------------------|---------------------|-----------------|--------------|-----------------------|----------------------|
| Screening Metrics | Pseudo F&D (\$/boe) | Prod. Impact (mmcf) | Prod. Impact (mboe) | Payout (months) | PV10 (M\$) | Profit/Invst. (\$/\$) | 12 Mo. Opex (\$/boe) |
| | 5.34 | 114.66 | 19.11 | 14 | 372.00 | 3.65 | 58.40 |
| | Pseudo F&D (\$/boe) | Prod. Impact (mmcf) | Prod. Impact (mboe) | Payout (months) | PV10 (M\$) | Profit/Invst. (\$/\$) | 12 Mo. Opex (\$/boe) |
| | 5.34 | 104.73 | 17.46 | 14 | 339.00 | 3.64 | 58.40 |
| Gross Viable Price | 6 months | Gas (\$/mcf) | Oil (\$/bbl) | 12 months | Gas (\$/mcf) | Oil (\$/bbl) | |
| | | 14.87 | 191.70 | | 7.96 | 102.60 | |

NOTES:

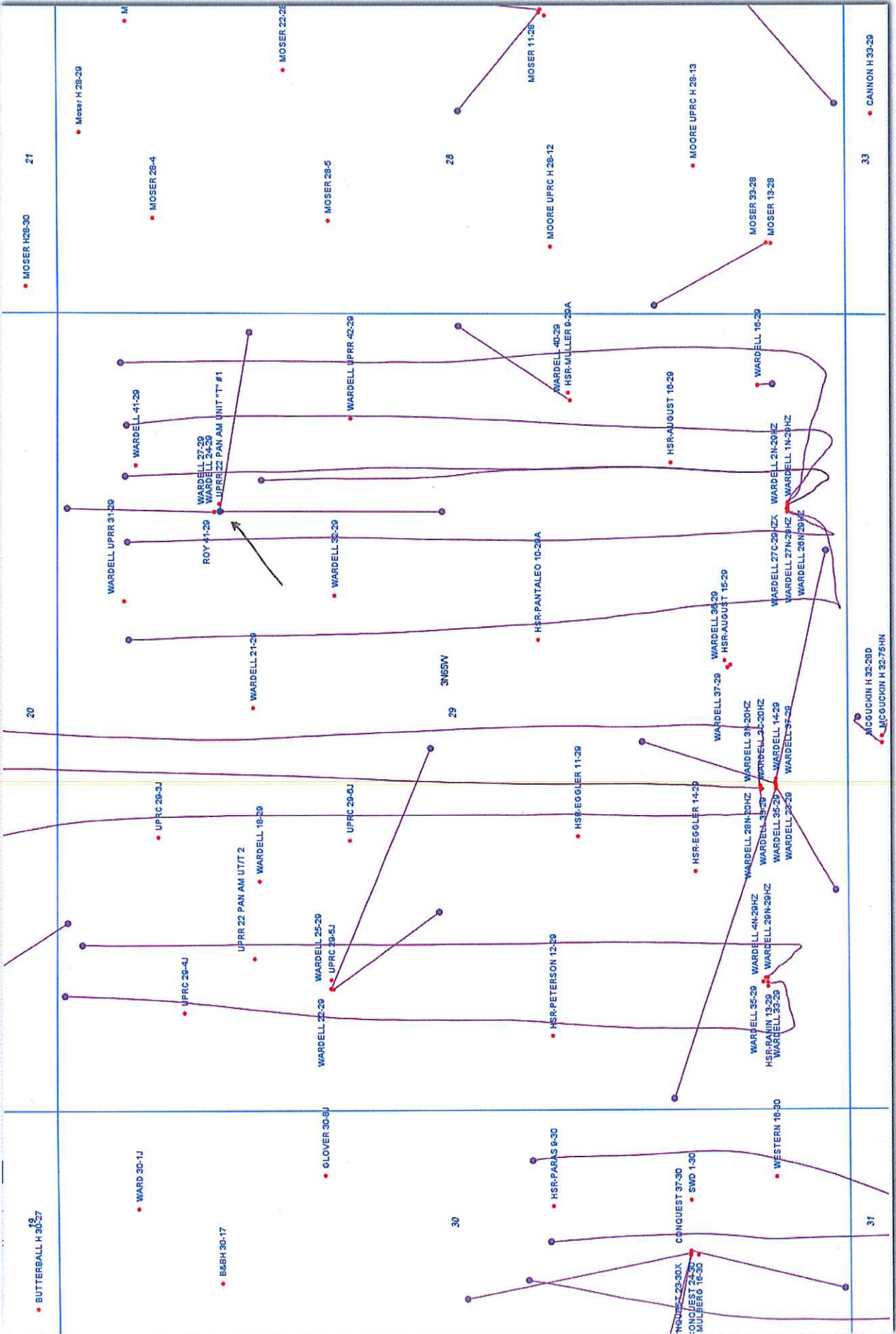
| Results | |
|---------|--------------|
| Qual | 2Q14 |
| Ref | 10/2014 |
| Act | 0.000 |
| Est | 1.598 |
| Qref | 1.610 |
| Qtab | 0.100 |
| "b" | 0.927200 |
| De | 15.439832 |
| Dmin | 7.300 (7.06) |
| Yrs | 32.583 |
| Rem | 5490 |
| Cum | 13142 |
| EUR | 18632 |



Water-BWPD
Gas-MCFD
Oil-BOPD

91 92 93 94 95 96 97 98 99 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

ROY 41-29



ROY
41-29



MOSE
41-29
NP-CD

MO-204
NP-CD

DINGSV2436IND

WARDDELL
B. T. NP-CD

WARDDELL
41-29
NP-CD

UPRC
29-31
NP-CD

UPRC
30-31
NP-CD

ROY 41-29
35ND

WARDDELL UPRR
41-29
NP-CD

WARDDELL
25-29
NP-CD

WARDDELL
18-29
NP-CD

WARDDELL
25-29
NP-CD

UPRC
29-31
NP-CD

WARDDELL
25-29
NP-CD

WARDDELL UPRR
42-29A
NP-CD

WARDDELL UPRR
42-29A
35ND

UPRC
29-31
NP-CD

100 m
300 ft
WGS84 (-104.67836905, 40.20512148)

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