



FORM 31 Rev 6/99

State of Colorado Oil and Gas Conservation Commission

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



RECEIVED FOR COGCC USE ONLY MAR 05 2009 COGCC

UNDERGROUND INJECTION FORMATION PERMIT APPLICATION

- 1. Submit original and one copy of this form.
2. If data on this form is estimated, indicate as such.
3. Attachments - see checklist and explanation of attachments.
4. Aquifer exemption is required for all injection formations with water quality <10,000 TDS (Rule 322B).
5. Attach a copy of the certified receipt to each notice to surface and mineral owner(s) or submit a sample copy of the notice and an affidavit of mailing or delivery with names and addresses of those notified.

Complete the Attachment Checklist

Oper OGCC

Table with 2 columns: Attachment Name, Status (checkmark). Includes items like Form 31 Original & 1 Copy, Analysis to Injection Zone Water, etc.

Project Name: Yellow Creek Field Project Location: SW Sec 4, T1S, R98W
Project Type: [ ] Enhanced Recovery [x] Disposal [ ] Simultaneous Disposal
Single or Multiple Well Facility? [ ] Single [ ] Multiple
IF UNIT OPERATIONS, ATTACH PLAT SHOWING UNIT AREA
County: Rio Blanco Field Name and Number: Yellow Creek Unit

OGCC Operator Number: 101752
Name of Operator: BOPCO, L.P.
Address: 9949 S. Oswego St., Ste 200
City: Parker State: CO Zip: 80134

Contact Name and Telephone: Trent Green
No: 303.799.5080
Fax: 303.799.5081

Injection Fluid Type: [x] Produced Water [ ] Natural Gas [ ] CO2 [ ] Drilling Fluids
[ ] Exempt Gas Plant Waste [ ] Used Workover Fluids [ ] Other Fluids (describe):
Commercial Facility? [ ] Yes [x] No
If Yes, describe area of operation and types of fluids to be injected at this facility:

PROPOSED INJECTION FORMATIONS

FORMATION A (Name): Sego Porosity: 10%
Formation TDS: 10,800 mg/L Frac Gradient: 0.65 psi/ft Permeability: 1.4
Proposed Stimulation Program: [ ] Acid [ ] Frac Treatment [ ] None
FORMATION B (Name): No Other Porosity:
Formation TDS: Frac Gradient: psi/ft Permeability:

Anticipated Project Operating Conditions

Under normal operating conditions, estimated fluid injection rates and pressures:
FOR WATER: A minimum of 2,000 bbls/day @ 2,225 psi to a maximum of 7,500 bbls/day @ 2,225 psi.
FOR GAS: A minimum of mcf/day @ psi to a maximum of bbls/day @ psi.

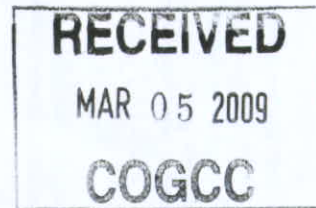
I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Trent Green Signed: Trent Green
Title: Division Manager Date: February 24, 2009

OGCC Approved: Denise M. Onyiah Title: UIC Program Supervisor Date: 8-28-09

Order No: UIC FACILITY NO: 159,278

CONDITIONS OF APPROVAL, IF ANY:



February 24, 2009

Colorado Oil and Gas Conservation Commission  
1120 Lincoln Street  
Suite 801  
Denver, Colorado 80203

RE: BOPCO L.P.  
UIC Permit Application – Yellow Creek Unit  
Yellow Creek Federal 4-16-1  
798' FSL & 689' FWL  
Sec 4, T1S, R98W  
Rio Blanco County, Colorado

To Whom It May Concern:

Attached is the permit application and supporting documents to convert a new well to an injection well for produced water. The injection well is the Yellow Creek Federal 4-16-1 in the Yellow Creek Unit.

Please contact me with any questions you may have.

Sincerely,  
BUYS & ASSOCIATES, INC.

A handwritten signature in cursive script, appearing to read "Martin W. Buys".

Martin W. Buys  
Agent for BOPCO L.P.

WE NEED A FORM 5 FOR WELL

30 DAY @ MAY 23, 09

**BOPCO L.P.  
YELLOW CREEK FEDERAL 4-16-1 INJECTION WELL  
SW SW SECTION 4 T1S R98W  
RIO BLANCO COUNTY, COLORADO  
SINGLE-WELL, NON-COMMERCIAL UNDERGROUND INJECTION PERMIT CHECKLIST**

- 1) Receipt & approval dates for Form 2 – Application for Permit to Drill (325.a.) EXISTING WELL
- 2) Receipt & approval dates for Form 21 – Mechanical Integrity Test (325.e.) NOTE DV TOOL AT 876575992 OK
  - i) Test used to check for vertical fluid movement in channels adjacent to well bore (326.a.(2)) \_\_\_\_\_
- 3) Receipt & approval dates for Form 26 – Source of Prod. Water for Disposal (325.c.(5)) RCVD 4/27/09
- 4) Receipt & approval dates for Form 31 – Underground Inj. Form. Permit Ap. (325.a.) RCVD 3/05/09
- 5) Receipt & approval dates for Form 33 – Injection Well Permit Application (325.a.)M RCVD 3/05/09
- 6) Hearing date, if approval withheld (325.b.) \_\_\_\_\_
- 7) Name, description, and depth of injection formation (325.c.(1)) SEGO 10,616' - 10,992'
- 8) Underground sources of drinking water (325.c.(1)) GREEN RIVER FORMATION
- 9) Hydrologic information request to Division of Water Resources RCVD 4/16/09 OK
- 10) Fracture gradient of the injection formation (325.c.(1)) .65 PSI/FT
- 11) Water analysis of injection formation, TDS (mg/l) (325.c.(1)) 10,800 MG/L
- ~~12) If TDS < 10,000 mg/l, is an aquifer exemption attached? (324B.) \_\_\_\_\_~~
  - ~~i) Was an aquifer exemption public notice published? (324B.b.) \_\_\_\_\_~~
  - ~~ii) Was a public hearing held? (324B.c.) \_\_\_\_\_~~
  - ~~iii) Was the aquifer exemption approved? (324B.d.) \_\_\_\_\_~~
  - ~~iv) Notice of approved aquifer exemption to Water Quality Control Commission \_\_\_\_\_~~
- 13) Base plat (¼-mile radius) with the following (325.c.(2)): YES
  - i) Location of disposal well YES
  - ii) location of all oil & gas wells YES
  - iii) location of water wells with depths NONE W/IN 1 MILE
  - iv) name and address of surface owners YES - N/A N/A IS MISSING CORRECTED ← OK
  - v) name and address of mineral owners YES - N/A N/A IS MISSING CORRECTED ← OK
- 14) Base plat (½-mile radius) with oil & gas wells producing from the disp. zone (325.c.(2)) 1 WELL - BOPCO
- 15) Base plat showing all surface and mineral owners of record if the well is part of a field-wide system (325.c.(2)) N/A
- 16) Remedial action plans for wells within ¼-mile of the disposal well (325.c.(2)) NONE REQUIRED
- 17) A resistivity log, description of stratigraphy and/or testing data (325.c.(3)) ON RECORDED W/ COAGC
- 18) A wellbore schematic showing casing, cement, bridge plugs, packers, perforations and any other relevant information (325.c.(4)) EXISTING ONLY - NEED PROPOSED SCHEMATIC. YES
- 19) A surface facilities diagram showing pipelines, tanks and any other relevant information for the injection system (325.c.(4)) YES

BOPCO L.P.  
YELLOW CREEK FEDERAL 4-16-1 INJECTION WELL  
SW SW SECTION 4 T1S R98W  
RIO BLANCO COUNTY, COLORADO

**SINGLE-WELL, NON-COMMERCIAL UNDERGROUND INJECTION PERMIT CHECKLIST**

- 20) Any proposed stimulation program (325.c.(6)) \_\_\_\_\_
- 21) Estimated daily minimum and maximum injection volume (325.c.(7)) 2000 - 7500 BW/POD
- 22) Maximum injection pressure, calculated by COGCC (325.c.(7)) 2300 PSI @ 0.65 PSI/FT 2000 per MIT test
- 23) Names and addresses of persons notified and copies of the notices (325.i) YES
- i) Surface and mineral owners within 1/4-mile YES
  - ii) Owners and operators of wells producing in the inj. zone within 1/2-mile BOPCO - 1 WELL
  - iii) Owners of cornering or contiguous units producing in the inj. zone, if greater than 1/2-mile N/A
- 24) Were the notices delivered by certified mail or personal delivery? (325.k.) ~~NEED~~ CERTIFIED MAIL ← OK
- 25) Do the notices include instructions on public hearing requests? (325.l.) ~~NEED~~ NEW NOTICES ← OK
- 26) Publish public notice with brief description of disposal application, including legal location, proposed injection zone, depth of injection and other relevant information (325.n.) pub. # 23-09 Rio Blanco Herald Times  
SENT APRIL 15, 2009
- 27) Any written requests for public hearing as a result of the notices? (325.m. or 325.n.) NONE
- 28) Was a surface owner agreement submitted? ~~NEED~~ received BLM Sunday 8-26-09
- 29) Was all information received by the 6-month deadline? (325.o.) YES
- 30) Was a 90-day extension granted? (325.o.) \_\_\_\_\_

## Onyskiw, Denise

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**From:** Iyamu, Charles [Ciyamu@BassPet.Com]  
**Sent:** Wednesday, August 26, 2009 2:39 PM  
**To:** Onyskiw, Denise  
**Subject:** BLM Approved SUA.  
**Attachments:** SUA Agreement.pdf

Denise,

Here is the BLM approved form per our discussion. Thank you.

Charles Iyamu  
BOPCO L.P  
9949 Oswego Street, Suite 200  
Parker, CO 80134  
(303) 799-5080 (Office)  
(303) 799-5081 (Fax)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB NO. 1004-0135  
Expires: July 31, 2010

**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*

5. Lease Serial No.  
COC59393

6. If Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

7. If Unit or CA/Agreement, Name and/or No.  
COC68957X

1. Type of Well  
 Oil Well  Gas Well  Other

8. Well Name and No.  
YELLOW CREEK FEDERAL 4-16-1

2. Name of Operator  
BOPCO, LP  
Contact: TRENT W GREEN  
E-Mail: twgreen@basspet.com

9. API Well No.  
05-103-10404-00-S1

3a. Address  
9949 OSWEGO ST. STE 200  
PARKER, CO 80134

3b. Phone No. (include area code)  
Ph: 303-799-5080

10. Field and Pool, or Exploratory  
WILDCAT

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
Sec 4 T1S R98W SWSW 798FSL 689FWL  
39.98791 N Lat, 108.40302 W Lon

11. County or Parish, and State  
RIO BLANCO COUNTY, CO

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input checked="" type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

BOPCO, L.P. respectfully submits this Notice of Intent to convert the Yellow Creek Federal 4-16-1 to a water injection well for produced water from the Yellow Creek Unit. A copy of the Underground Injection Control permit application, as submitted to the Colorado Oil and Gas Conservation Commission on February 24, 2009, is attached for your information.

14. I hereby certify that the foregoing is true and correct.

**Electronic Submission #67791 verified by the BLM Well Information System  
For BOPCO, LP, sent to the Meeker  
Committed to AFMSS for processing by JEANNE NEWMAN on 03/04/2009 (09JEN0615SE)**

Name (Printed/Typed) MARTY BUYS	Title PRESIDENT
Signature (Electronic Submission)	Date 03/04/2009

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved By <u>JAMES F. MOORE</u>	Title <u>ASSOCIATE FIELD MANAGER</u>	Date <u>08/26/2009</u>
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		Office <u>Meeker</u>

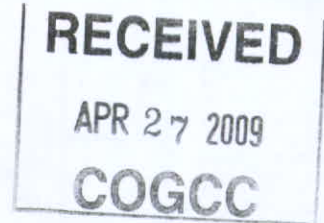
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.



300 E. Mineral Ave., Suite 10  
Littleton, Colorado 80122-2655  
303/781-8211 303/781-1167 Fax

April 24, 2009

Dave Dillon  
Colorado Oil and Gas Conservation Commission  
1120 Lincoln Street, Suite 801  
Denver, Colorado 80203



***Re: Submittal of Form 26 and Water Quality Analyses, Yellow Creek Federal 4-16-1, Rio Blanco County, Colorado***

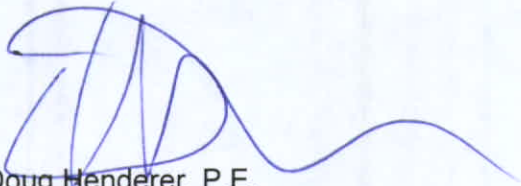
Mr. Dillon,

On behalf of BOPCO, L.P. (BOPCO), Buys and Associates, Inc. (B&A) respectfully submits the attached Form 26, Source of Produced Water for Disposal, and the associated water quality analytical reports for the Yellow Creek Federal (YCF) 4-16-1 disposal well. The produced water from eighteen wells, which are listed below, will be disposed of at the YCF 4-16-1.

- YCF 1-35-1, API No. 05-103-10341
- YCF XOM 2-35-1, API No. 05-103-11265
- YCF 2-42-1, API No. 05-103-11266
- YCF 3-11-1, API No. 05-103-10382
- YCF XOM 2-22-0246, API No. 05-103-11059
- YCF 5-32-1, API No. 05-103-11013
- YCF XOM 2-22-1, API No. 05-103-10975
- YCF 3-45-1, API No. 05-103-10401
- YCF 28-14-1, API No. 05-103-10602
- YCF 29-32-1, API No. 05-103-10551
- YCF 33-22-1, API No. 05-103-11040
- YCF 33-43-1, API No. 05-103-10403
- YCF 35-33-1, API No. 05-103-11105
- YCF 27-32-1, API No. 05-103-11104
- YCF 32-33-1, API No. 05-103-10974
- YCF 34-22-1, API No. 05-103-11070
- YCF 34-44-1, API No. 05-103-10405
- YCF 35-12-1, API No. 05-103-11106

Please do not hesitate to contact me at (303) 781-8211 or by email at [dhenderer@buysandassociates.com](mailto:dhenderer@buysandassociates.com) if you have any questions or concerns.

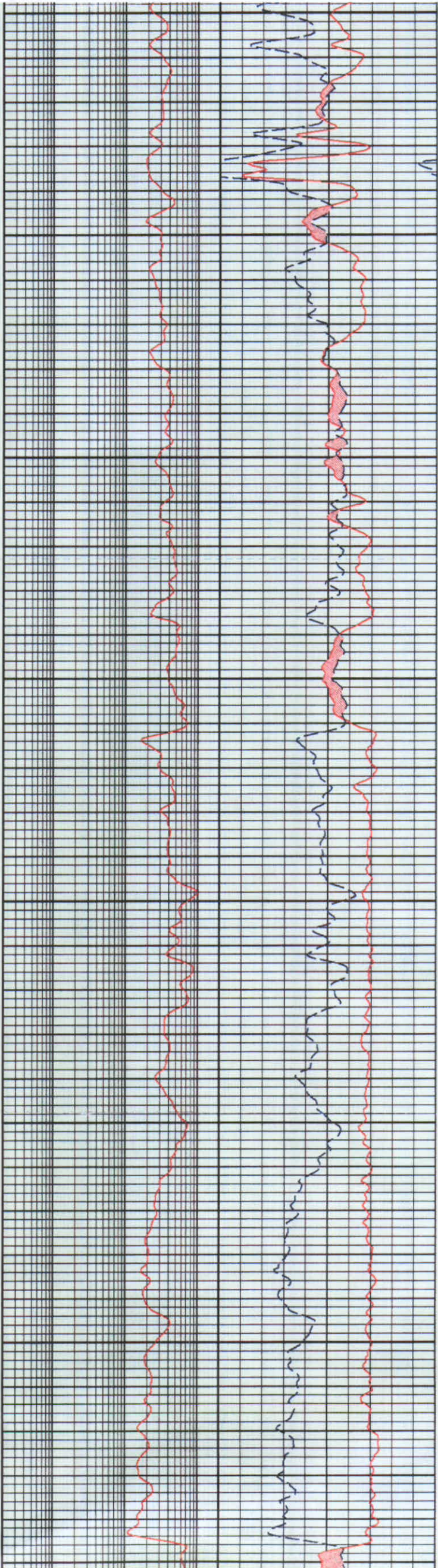
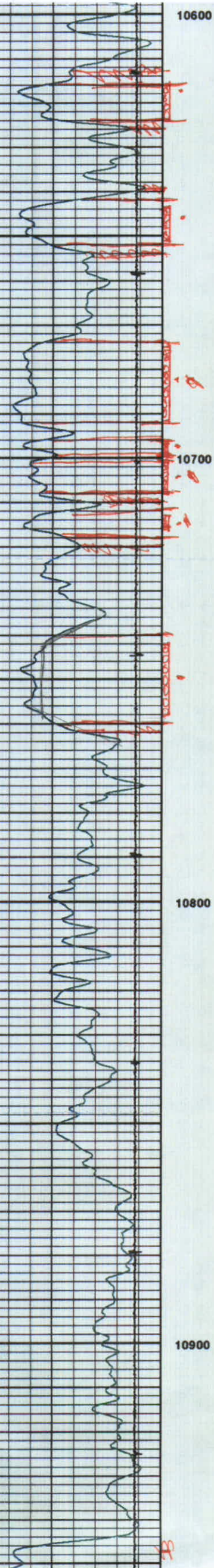
Sincerely,

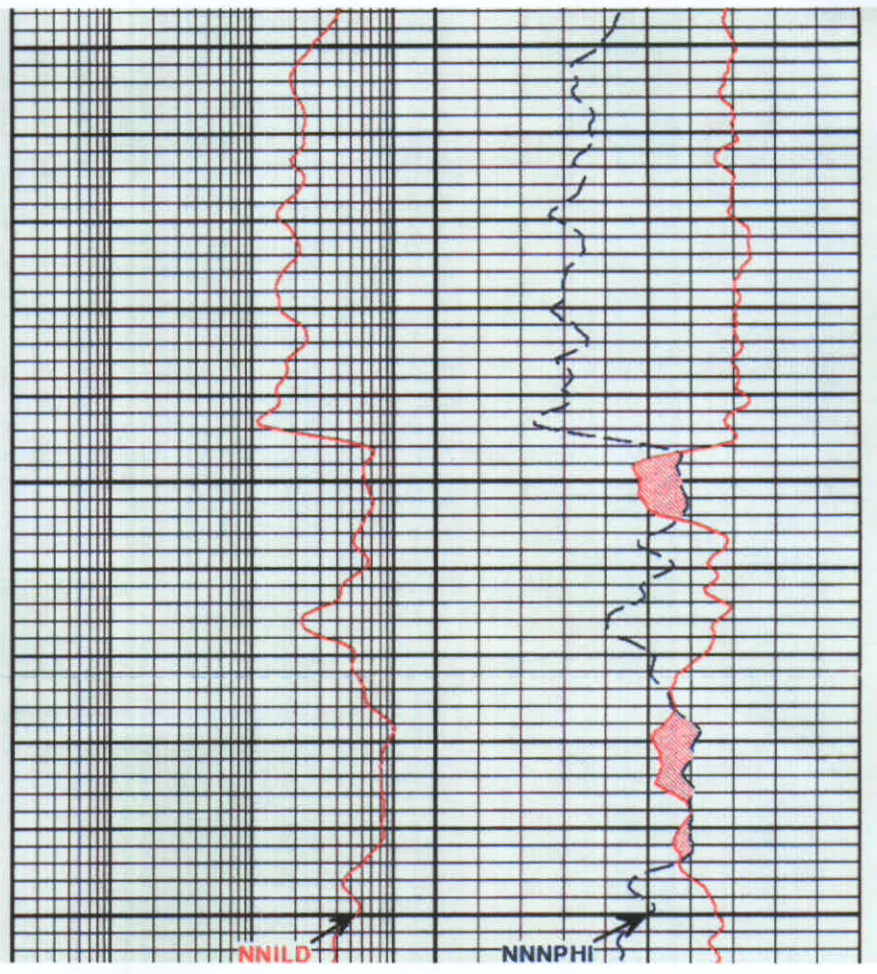
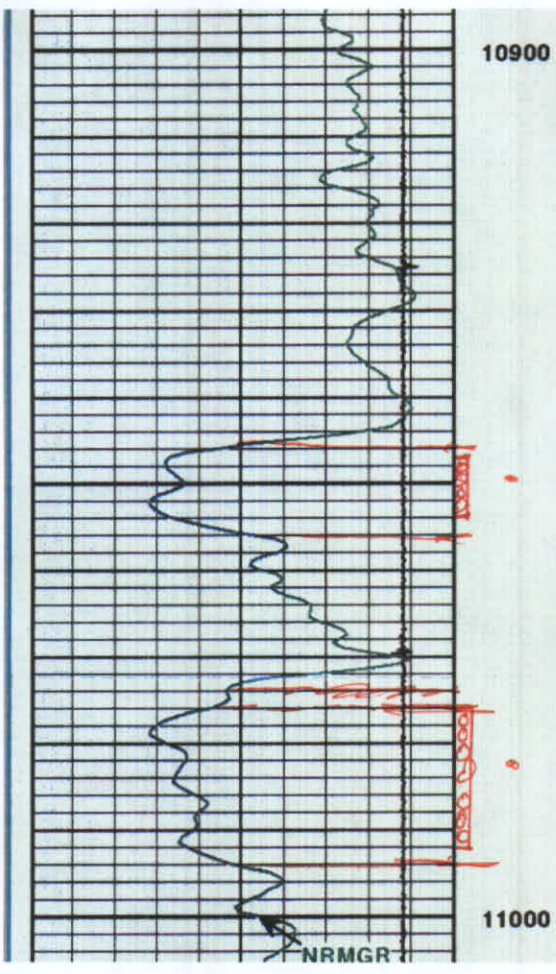
A handwritten signature in blue ink, appearing to read 'DHenderer', with a long, wavy horizontal line extending to the right.

Doug Henderer, P.E.  
Vice-President Regulatory Affairs and Engineering

Attachment

CC: Trent W. Green, BOPCO (Parker, CO)  
Gary Ohlman, BOPCO (Parker, CO)  
Harold Mayland, BOPCO (Meeker, CO)





DEPT	NNILD	NNNPHI	NNRHOB	NRMGR	NNDPHI	CCL	CCL_CBL
10616	35.9709	0.0978	2.5417	67.9996	0.0984	18266.85	0 0.04905
10616.5	35.0997	0.0919	2.5342	59.0235	0.1028	18260.12	0 0.048675
10617	33.6345	0.0894	2.5284	52.4932	0.1062	18306.51	0 0.0489
10617.5	32.3293	0.0934	2.5208	50.1341	0.1106	18200.35	0 0.051
10618	31.2883	0.0987	2.5161	51.9685	0.1134	18272.57	0 0.053025
10618.5	30.9055	0.1022	2.5146	55.9433	0.1143	18267.11	0 0.054125
10619	31.0849	0.1046	2.5149	61.4768	0.1141	18254.03	0 0.054675
10619.5	31.3301	0.1036	2.5189	65.7597	0.1117	18284.92	0 0.053825
10620	31.7557	0.1052	2.5169	68.9384	0.1129	18246.81	0 0.054525
10620.5	31.7923	0.1053	2.515	71.8619	0.114	18277.21	0 0.054825
10621	31.8631	0.109	2.509	72.933	0.1176	18285.51	0 0.05665
10621.5	31.742	0.1114	2.5015	71.5989	0.1219	18242.25	0 0.058325
10622	31.938	0.1132	2.4983	69.7045	0.1238	18222.86	0 0.05925
10622.5	32.3209	0.1118	2.4997	66.3287	0.123	18260.9	0 0.0587
10623	32.5808	0.1089	2.5032	66.293	0.121	18280.88	0 0.057475
10623.5	32.5639	0.1073	2.5101	69.6598	0.1169	18238.15	0 0.05605
10624	31.8598	0.1072	2.5206	78.9666	0.1108	18280.34	0 0.0545
10642	44.4758	0.1244	2.6113	89.4272	0.0577	18261.16	0 0.045525
10642.5	46.6249	0.1104	2.5928	78.6944	0.0685	18245.91	0 0.044725
10643	46.0557	0.1021	2.5664	68.1842	0.084	18251.3	0 0.046525
10643.5	42.8142	0.0934	2.5334	60.2921	0.1033	18231.42	0 0.049175
10644	37.7384	0.0948	2.5086	56.4669	0.1178	18226.19	0 0.05315
10644.5	32.6136	0.0988	2.4891	52.4126	0.1292	18289.13	0 0.057
10645	27.9297	0.102	2.4805	51.0869	0.1342	18255.49	0 0.05905
10645.5	24.1242	0.106	2.4759	51.4819	0.1369	18242.62	0 0.060725
10646	20.9923	0.1145	2.4693	54.3532	0.1407	18240.08	0 0.0638
10646.5	18.9878	0.1251	2.462	58.3001	0.145	18318.34	0 0.067525
10647	18.8769	0.1333	2.4562	61.357	0.1484	18266.66	0 0.070425
10647.5	20.4793	0.1318	2.4622	61.8713	0.1449	18271.92	0 0.069175
10648	23.5526	0.1257	2.4679	60.258	0.1416	18228.13	0 0.066825
10648.5	26.9582	0.1166	2.4747	56.981	0.1376	18311.82	0 0.06355
10649	29.57	0.1077	2.4814	55.8283	0.1337	18272.61	0 0.06035
10649.5	30.8545	0.1045	2.4838	56.186	0.1323	18246.21	0 0.0592
10650	30.5175	0.1036	2.4848	59.2145	0.1317	18210.79	0 0.058825
10650.5	29.8293	0.1043	2.4897	63.652	0.1288	18270.64	0 0.058275
10651	29.5156	0.1054	2.4984	67.5717	0.1237	18263.55	0 0.057275
10651.5	30.3219	0.1042	2.5173	69.7111	0.1127	18270.76	0 0.054225
10652	31.3873	0.1044	2.5433	72.533	0.0975	18248.56	0 0.050475
10674	32.3184	0.089	2.5749	67.5019	0.079	18219.45	0 0.042
10674.5	29.8057	0.0909	2.5613	63.464	0.0869	18299.14	0 0.04445
10675	26.3328	0.0955	2.547	60.9495	0.0953	18277.99	0 0.0477
10675.5	23.2206	0.1021	2.5319	58.578	0.1041	18260.24	0 0.05155
10676	21.4225	0.1048	2.5248	56.0912	0.1083	18236.72	0 0.053275
10676.5	21.2965	0.1058	2.5224	54.0834	0.1097	18258.95	0 0.053875
10677	21.9644	0.1066	2.5226	54.5027	0.1096	18256.7	0 0.05405
10677.5	22.7882	0.1089	2.5187	55.23	0.1119	18259.65	0 0.0552

10678	23.6724	0.1109	2.515	57.3721	0.114	18255.88	0	0.056225
10678.5	24.6228	0.1088	2.5157	57.8462	0.1136	18276.74	0	0.0556
10679	26.2861	0.1044	2.5232	57.1425	0.1092	18249.22	0	0.0534
10679.5	28.7885	0.0981	2.5366	56.2235	0.1014	18285.11	0	0.049875
10680	32.6066	0.0923	2.5499	57.2917	0.0936	18233.92	0	0.046475
10680.5	36.2505	0.0859	2.563	58.1264	0.086	18285.78	0	0.042975
10681	39.0711	0.0833	2.5644	59.6343	0.0851	18269.43	0	0.0421
10681.5	40.1095	0.0811	2.5624	58.9772	0.0863	18231.33	0	0.04185
10682	39.9119	0.0798	2.5581	58.0184	0.0888	18205.17	0	0.04215
10682.5	38.7014	0.0796	2.5525	57.6125	0.0921	18313.17	0	0.042925
10683	37.0662	0.079	2.5476	58.3141	0.095	18238.36	0	0.0435
10683.5	36.3806	0.08	2.5431	60.4232	0.0976	18253.6	0	0.0444
10684	36.8896	0.0777	2.5456	61.2067	0.0961	18238.56	0	0.04345
10684.5	38.7157	0.0752	2.5495	62.6383	0.0939	18275.95	0	0.042275
10685	40.6834	0.0723	2.5525	62.5033	0.0921	18253.9	0	0.0411
10685.5	42.5081	0.0684	2.557	63.4132	0.0895	18251.83	0	0.039475
10686	43.706	0.0668	2.5564	61.9029	0.0898	18275.56	0	0.03915
10686.5	44.2964	0.0659	2.555	59.2041	0.0906	18265.19	0	0.039125
10687	44.3323	0.0673	2.5517	54.1648	0.0926	18262.03	0	0.039975
10687.5	43.9902	0.0682	2.5501	50.0496	0.0935	18237.85	0	0.040425
10688	43.1945	0.0695	2.5505	47.0871	0.0933	18260.08	0	0.0407
10688.5	41.8163	0.0705	2.5511	47.4238	0.0929	18288.64	0	0.04085
10689	40.0142	0.074	2.5459	48.3938	0.096	18211.32	0	0.0425
10689.5	37.9908	0.0762	2.5434	50.5394	0.0974	18230.19	0	0.0434
10690	35.9936	0.0784	2.5409	52.3865	0.0989	18272.14	0	0.044325
10690.5	34.6928	0.0817	2.5385	52.9685	0.1003	18256.97	0	0.0455
10691	34.6613	0.0822	2.5395	52.9022	0.0997	18218.11	0	0.045475
10691.5	35.8936	0.0803	2.5415	52.4145	0.0985	18232.29	0	0.0447
10692	37.476	0.0792	2.5428	52.8853	0.0978	18283.6	0	0.04425
10696	42.7945	0.0713	2.5589	67.1725	0.0883	18262.03	0	0.0399
10696.5	43.439	0.0663	2.5417	59.1767	0.0984	18242.53	0	0.041175
10697	41.8565	0.0659	2.5304	54.3658	0.105	18258.84	0	0.042725
10697.5	38.0099	0.0694	2.5312	53.94	0.1045	18261.1	0	0.043475
10698	33.5654	0.0736	2.5468	59.3846	0.0954	18264.69	0	0.04225
10698.5	30.4157	0.0805	2.565	67.5825	0.0848	18227.13	0	0.041325
10699	28.9197	0.0856	2.5749	75.8204	0.079	18267.09	0	0.04115
10701	25.3463	0.0757	2.5262	59.3518	0.1075	18390.33	0	0.0458
10701.5	25.9869	0.0732	2.5271	58.7974	0.1069	18249.73	0	0.045025
10702	27.9741	0.0728	2.5358	60.7737	0.1019	18247.38	0	0.043675
10702.5	30.478	0.0723	2.5479	64.1314	0.0948	18282.99	0	0.041775
10703	33.1136	0.0723	2.5556	64.3769	0.0903	18276.8	0	0.04065
10703.5	35.4882	0.0729	2.5574	61.9077	0.0892	18259.52	0	0.040525
10704	37.2916	0.0723	2.5575	59.1946	0.0892	18244.71	0	0.040375
10704.5	38.2408	0.0729	2.5602	58.0914	0.0876	18277.73	0	0.040125
10705	38.8428	0.0749	2.5678	60.3934	0.0831	18253.5	0	0.0395
10705.5	39.3362	0.0747	2.5808	63.7089	0.0755	18250.56	0	0.03755
10706	40.2299	0.0742	2.5891	68.2063	0.0707	18245.69	0	0.036225

10706.5	40.9993	0.0703	2.594	70.5959	0.0679	18268.72	0	0.03455
10707	41.8647	0.0673	2.5935	70.6517	0.0681	18276.15	0	0.03385
10707.5	43.2397	0.0671	2.5927	68.4789	0.0686	18256.29	0	0.033925
10708	44.7111	0.066	2.6006	65.6198	0.064	18262.34	0	0.0325
10712	30.0373	0.0818	2.5675	81.227	0.0834	18270.54	0	0.0413
10712.5	29.9113	0.0803	2.5514	70.5818	0.0927	18200.44	0	0.04325
10713	29.3548	0.0831	2.5389	64.7216	0.1001	18257.47	0	0.0458
10713.5	29.0926	0.0852	2.5365	62.2299	0.1015	18281.66	0	0.046675
10714	31.001	0.0846	2.5413	60.8895	0.0987	18252.79	0	0.045825
10714.5	35.2605	0.0795	2.5567	58.8252	0.0897	18207.98	0	0.0423
10715	40.4788	0.0741	2.574	55.0518	0.0795	18249.71	0	0.0384
10715.5	43.8603	0.0736	2.5913	54.5361	0.0694	18268.19	0	0.03575
10716	43.2844	0.0784	2.6113	58.2033	0.0577	18252.79	0	0.034025
10716.5	39.9133	0.0871	2.6282	65.6879	0.0478	18240.46	0	0.033725
10717	36.6984	0.0954	2.6427	74.1314	0.0394	18268.19	0	0.0337
10717.5	36.3773	0.0984	2.6565	79.8753	0.0313	18269.46	0	0.032425
10718	38.4135	0.0964	2.6658	83.2082	0.0258	18255.87	0	0.03055
10740	51.6698	0.0778	2.5747	78.0357	0.0791	18270.37	0	0.039225
10740.5	54.0236	0.0738	2.5687	75.1583	0.0826	18258.01	0	0.0391
10741	55.4646	0.0719	2.5638	72.8846	0.0855	18260.06	0	0.03935
10741.5	55.0643	0.0735	2.5602	70.5741	0.0876	18273.46	0	0.040275
10742	52.9543	0.0761	2.5593	69.3727	0.0881	18257	0	0.04105
10742.5	50.8942	0.0776	2.5577	69.8649	0.0891	18281.74	0	0.041675
10743	49.9186	0.0755	2.5573	68.8715	0.0893	18247.72	0	0.0412
10743.5	50.0233	0.0719	2.5545	67.7005	0.0909	18286.55	0	0.0407
10744	50.031	0.0702	2.5486	65.0635	0.0944	18198.24	-73.12	0.04115
10744.5	49.2246	0.0721	2.5471	62.6929	0.0952	18718.22	23.13	0.041825
10745	47.5878	0.0757	2.5457	62.1078	0.0961	18250.82	0	0.04295
10745.5	44.9616	0.0791	2.5436	63.261	0.0973	18272.47	0	0.0441
10746	42.1588	0.0825	2.5357	63.2047	0.1019	18240.82	0	0.0461
10746.5	39.3833	0.0827	2.5287	61.0789	0.106	18275.88	0	0.047175
10747	37.7289	0.0851	2.5205	57.1514	0.1108	18260.12	0	0.048975
10747.5	36.8609	0.0869	2.5193	52.8412	0.1115	18232.09	0	0.0496
10748	37.3649	0.0888	2.5229	51.9217	0.1094	18202.15	0	0.04955
10748.5	38.421	0.0885	2.5302	55.4742	0.1051	18272.09	0	0.0484
10749	39.1341	0.0897	2.5309	59.0927	0.1048	18263.68	0	0.048625
10749.5	39.1003	0.092	2.5265	61.6302	0.1073	18249.85	0	0.049825
10750	38.567	0.093	2.5247	61.9582	0.1084	18225.28	0	0.05035
10750.5	39.3319	0.0907	2.524	61.9006	0.1088	18268.87	0	0.049875
10751	40.9799	0.084	2.5315	62.8116	0.1044	18253.48	0	0.0471
10751.5	43.4108	0.0799	2.5348	63.3634	0.1025	18254.03	0	0.0456
10752	45.3874	0.0755	2.5415	63.7096	0.0986	18251.07	0	0.043525
10752.5	46.6454	0.0742	2.5454	62.4164	0.0962	18253.98	0	0.0426
10753	47.2541	0.075	2.5452	61.2594	0.0964	18258.15	0	0.04285
10753.5	47.6755	0.0756	2.5456	61.5345	0.0962	18230.18	0	0.04295
10754	49.4751	0.075	2.5465	60.7774	0.0956	18307.82	0	0.04265
10754.5	53.1153	0.0719	2.5516	59.969	0.0927	18238.23	0	0.04115

10755	58.3463	0.0687	2.5569	57.3579	0.0895	18239.64	0	0.03955
10755.5	62.8976	0.066	2.561	55.4155	0.0871	18219.45	0	0.038275
10756	64.6514	0.0655	2.5605	56.1414	0.0874	18280.67	0	0.038225
10756.5	63.4185	0.0671	2.5567	58.516	0.0897	18184.08	0	0.0392
10757	60.5505	0.0688	2.5562	62.2791	0.0899	18250.29	0	0.039675
10757.5	58.1209	0.0712	2.5574	65.7253	0.0893	18263.43	0	0.040125
10758	57.8762	0.0737	2.5615	68.1067	0.0868	18269.31	0	0.040125
10758.5	60.1773	0.0734	2.5732	69.8134	0.08	18246.11	0	0.03835
10759	65.04	0.0713	2.5862	71.7826	0.0724	18252.21	0	0.035925
10759.5	69.2626	0.0685	2.6017	73.2372	0.0634	18278.19	0	0.032975
10760	71.0951	0.0681	2.6132	76.495	0.0566	18257.03	0	0.031175
10946	65.2942	0.0953	2.6477	67.282	0.0365	18256.58	0	0.03295
10946.5	73.3229	0.078	2.6146	55.9874	0.0558	18258.22	0	0.03345
10947	72.4909	0.0683	2.5766	49.7325	0.078	18232.15	0	0.036575
10947.5	67.2139	0.0693	2.5399	48.227	0.0995	18234.45	0	0.0422
10948	62.2185	0.072	2.5195	48.3544	0.1114	18271.27	0	0.04585
10948.5	60.4819	0.0736	2.5135	49.274	0.1149	18259.73	0	0.047125
10949	61.1221	0.0723	2.5173	51.3959	0.1127	18214.68	0	0.04625
10949.5	62.5702	0.0706	2.5211	53.4029	0.1105	18222.41	0	0.045275
10950	63.6447	0.0689	2.5265	55.6924	0.1073	18303.66	0	0.04405
10950.5	64.7693	0.0697	2.5233	53.6798	0.1092	18213.99	0	0.044725
10951	66.2595	0.0683	2.5241	49.6341	0.1087	18246.59	0	0.04425
10951.5	68.4922	0.0671	2.5223	44.5424	0.1097	18252.44	0	0.0442
10952	70.5	0.0646	2.5261	42.3345	0.1076	18257.35	0	0.04305
10952.5	71.4915	0.063	2.5318	42.5811	0.1042	18203.88	0	0.0418
10953	70.7589	0.0635	2.5364	44.1385	0.1015	18259.97	0	0.04125
10953.5	68.0979	0.0658	2.5429	46.3488	0.0977	18281.86	0	0.040875
10954	64.763	0.0684	2.5561	50.3461	0.09	18240.08	0	0.0396
10954.5	61.6757	0.0713	2.5833	55.211	0.0741	18248.22	0	0.03635
10955	59.3336	0.0763	2.6171	61.9309	0.0543	18245.39	0	0.03265
10955.5	57.3177	0.0814	2.6338	69.9247	0.0446	18268.65	0	0.0315
10956	54.5376	0.0914	2.6522	78.3527	0.0338	18242.89	0	0.0313
10976	68.1136	0.0779	2.5809	64.6647	0.0755	18269.46	0	0.03835
10976.5	74.2312	0.0748	2.5814	57.559	0.0752	18239	0	0.0375
10977	82.6133	0.0709	2.5771	52.1807	0.0777	18275	0	0.03715
10977.5	91.5095	0.0646	2.5726	47.3014	0.0804	18232.22	0	0.03625
10978	99.1027	0.058	2.5649	44.7472	0.0848	18242.92	0	0.0357
10978.5	102.3313	0.0522	2.5592	42.7964	0.0882	18254.86	0	0.0351
10979	100.8789	0.051	2.5515	42.6159	0.0927	18267.17	0	0.035925
10979.5	96.344	0.0528	2.5459	44.4698	0.0959	18229.17	0	0.037175
10980	91.4021	0.0555	2.547	47.4737	0.0953	18209.47	0	0.0377
10980.5	87.7717	0.0583	2.5506	52.0126	0.0932	18211.88	0	0.037875
10981	85.5431	0.0593	2.5539	54.8822	0.0913	18255.92	0	0.03765
10981.5	84.0877	0.0577	2.5584	55.6402	0.0887	18248.02	0	0.0366
10982	82.7463	0.0584	2.5587	55.5657	0.0885	18233.31	0	0.036725
10982.5	81.6801	0.0617	2.5592	53.8825	0.0882	18245.36	0	0.037475
10983	81.0622	0.0645	2.5622	53.1447	0.0864	18255.04	0	0.037725

10983.5	81.1549	0.0675	2.558	52.0814	0.0889	18253.03	0	0.0391
10984	81.3326	0.0672	2.5552	51.1733	0.0905	18226.24	0	0.039425
10984.5	81.1821	0.0642	2.5536	51.0074	0.0914	18279.94	0	0.0389
10985	81.5099	0.0616	2.5506	52.3111	0.0932	18225.4	0	0.0387
10985.5	81.8584	0.0573	2.5619	55.2345	0.0866	18262.88	0	0.035975
10986	83.0825	0.0569	2.5739	59.0257	0.0796	18261.07	0	0.034125
10986.5	83.56	0.0585	2.589	61.7634	0.0708	18227.98	0	0.032325
10987	84.3634	0.0612	2.5974	63.1312	0.0659	18261.87	0	0.031775
10987.5	84.9813	0.0622	2.6038	61.9753	0.0621	18245.97	0	0.031075
10988	85.3349	0.0606	2.6084	60.2346	0.0594	18266.09	0	0.03
10988.5	84.497	0.059	2.6082	58.4582	0.0595	18231.11	0	0.029625
10989	82.9591	0.059	2.6036	58.9593	0.0623	18266.64	0	0.030325
10989.5	82.1769	0.0604	2.5976	59.2476	0.0657	18246.96	0	0.031525
10990	83.2852	0.0623	2.5912	58.3095	0.0694	18267.28	0	0.032925
10990.5	85.2838	0.0621	2.5875	55.7124	0.0716	18236.38	0	0.033425
10991	85.742	0.0611	2.584	53.8599	0.0737	18247.72	0	0.0337
10991.5	82.9542	0.0596	2.5796	52.964	0.0763	18213.7	0	0.033975
10992	77.9275	0.0576	2.5797	55.6848	0.0762	18272.47	0	0.03345
10992.5	72.8207	0.0577	2.5832	59.0487	0.0741	18236.21	0	0.03295
10993	68.762	0.0588	2.5884	62.0388	0.0711	18257.36	0	0.032475
10993.5	64.9596	0.064	2.5921	66.762	0.069	18231.71	0	0.03325
10994	60.8765	0.0722	2.5879	71.8794	0.0714	18251.38	0	0.0359
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MAR 05 2009  
**COGCC**

**ATTACHMENT NO. 12**

**MIT PROCEDURE**

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**COGCC**

## **Mechanical Integrity Test Procedure**

Integrity testing can be accomplished by pressuring up the annulus between the casing and the tubing. Injection packer will be set approximately 100' above top of injection interval perforations (10,616' – 10,992'). The test will consist of pressuring the casing annulus to a minimum of 2225 psi (max requested surface injection pressure) and holding this pressure for 30 minutes (minimum of 15 minutes).

### Test Procedure Details:

1. The Director of COGCC will be notified in writing no less than 10-days prior to the scheduled testing date.
2. MIRU Service Unit
3. Bleed off pressure, if any, on production casing.
4. ND wellhead and NU BOP.
5. Fill the tubing/casing annulus with a non-corrosive liquid 24 hours prior to the test.
6. Pressure up casing; tubing annulus to 2225 (max requested surface injection pressure) psi for 30 minutes (minimum of 15 minutes).
7. A pressure chart will be used to record the pressures throughout the test and submitted to Form 21.
8. If pressure holds, ND BOP and NU wellhead.
9. Return to injection.