



ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

2040 S. PACHECO SANTA FE, NEW MEXICO 87505 (505) 827-7131

March 17, 1997

Burlington Resources 3535 East 30th Street Farmington, New Mexico 87499-4289

Attention: Peggy Bradfield

Administrative Order TX-265

Dear Mr. Prichard:

Reference is made to your request for an exception to the tubing setting requirements as contained in Division Rule 107 (j) for the below-named wells.

Pursuant to the authority granted me by Rule 107 (d) (4), you are hereby authorized to make tubingless completions in the following wells:

Well Name and Number:

Angel Peak B #14R	Fulcher Kutz Pictured Cliffs	NE 13-28-11	30-045-not assigned
Brookhaven Com C #4R	S. Blanco Pictured Cliffs	SW 36-27-08	30-045-29430
Feasel #1R	Fulcher Kutz Pictured Cliffs	SW 02-27-10	30-045-not assigned
Frost #1R	Fulcher Kutz Pictured Cliffs	NE 26-27-10	30-045-not assigned
Huerfanito Unit #45R	S. Blanco Pictured Cliffs	SW 24-27-09	30-045-not assigned
Huerfanito Unit #70R	Ballard Pictured Cliffs	NE 10-26-09	30-045-29436
Huerfanito Unit #6R	Fulcher Pictured Cliffs	SW 31-27-10	30-045-not assigned
McManus #4R	Ballard Pictured Cliffs	SE 19-26-08	30-045-not assigned

The Division reserves the right to rescind this authority in the event that waste appears to be resulting therefrom.

Sincerely,

William J. Lending Director

WJL/RJ/kv

cc: Oil Conservation Division - Aztec

P.VZV2005729816

BURLINGTON RESOURCES

SAN JUAN DIVISION

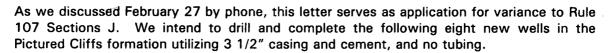
March 3, 1997

New Mexico Oil Conservation Division 2040 South Pacheco Street Santa Fe, New Mexico 87505

Att:

Mr. Roy Johnson

Dear Roy:





These tubingless completions are desirable as they allow Burlington to economically produce reserves from the tight, low pressure Pictured Cliffs formation. Significant cost savings are realized in both drilling and completion using this method. The 3 1/2" casing string will allow the wells to produce at a higher rate than can be realized through smaller tubulars, and also carry less risk during any subsequent workover operations.

All the listed wells meet the following criteria:

- are in proven fields
- are less than 5000' total depth
- do not have corrosive or pressure problems
- are not dual completions
- will not produce any liquids or condensate (dry gas only)

Attached is a copy of the C102 well location plat, operations plan, and wellbore schematic for each well. Please let me know if you require any further information for these wells.

3535 East 30th St., 87402-8891, P.O. Box 4289, Farmington, New Mexico 87499-4289, Telephone 505-326-9700, Fax 505-326-9833

Sincerely,

Peggy Bradfield

Regulatory/Compliance Administrator

xc:

NMOCD Aztec District Office

adhued

Per E. Bush
Ok w/csq esement

Ok w/csq esement

CONSERVATION DIVISION

District I PO Box 1980, Hobbs, NM 88241-1980 Distance II PO Drawer DD. Artesia, NM 88211-0719 1000 Kie Brazes Rd., Aziec. NM 87410 District IV

State of New Mexico

OIL CONSERVATION DIVISION PO Box 2088 Santa Fe, NM 87504-2088

Form C-102 Revised February 21, 1994

instructions on pack

Submit to Appropriate District Office State Lease - - Contes Fee Lease - 3 Copies

PO Box 2088. Santa Fe. NM 87504-2088 AMENDED REPORT WELL LOCATION AND ACREAGE DEDICATION PLAT API Number 30-045-77200 Fulcher Kutz Pictured Cliffs Property Code ' Property Name Well Names 6788 Angel Peak B 14R OGRID No. Operator Name BURLINGTON RESOURCES OIL & GAS COMPANY 58181 14538 10 Surface Location UL or lot se. Range Lot Ida North/South line Feet from the East West tipe Feet from the Casast G 13 28-N 11-W 1830 1850 North East S.J. 11 Bottom Hole Location If Different From Surface L'L or lot no. Section Rance Lot Ida Feet from the North/South line Feet from the East West tipe Conery 13 Dedicates Acres " Joint or Infill | 14 Consendation Code | " Order No. NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION 17 OPERATOR CERTIFICATION *5*281.98 I havely certify that the information co line and complete to the best of my true Signature Peggy Bradfield Regulatory Administrator 1830 Tile 5280.00 SF-047017-B Date "SURVEYOR CERTIFICATION ہ اُن جمعہ اللہ اس ہ correct to the best of my belief. 11/25/96 Date of Survey

5282.64

Well Name: Angel Peak B #14R

Location: 1850'FNL, 1830'FEL Section 13, T-28-N, R-11-W

San Juan County, New Mexico

Latitude 36° 39.87, Longitude 107° 51.7

Formation: Fulcher Kutz Pictured Cliffs

Elevation: 5818'GL

Formation:	Top	Bottom	Contents
Surface	Nacimiento	754 ′	
Ojo Alamo	754 ′	885 ′	aquifer
Kirtland	885'	1570'	•
Fruitland	1570'	1868'	gas
Fruitland Coal	1711'	1877 ′	gas
Pictured Cliffs	1868'		gas
Total Depth	2200'	,	•

Logging Program: Hi Res Ind, Den/Neut, MRL/GR to Total Depth.

Mud Program:

<u>Interval</u>	Type	Weight	Vis.	Fluid Loss
0- 120'	Spud		40-5 0	no control
120-2200'	LSND	8.4-9.0	40-60	no control

Casing Program (as listed, equivalent, or better):

Hole Size	Depth Interval	Csg.Size	Wt.	Grade
12 1/4"	0 - 120*	8 5/8"	23.0#	M-50
6 1/4"	0 - 2200'	3 1/2"	7.7#	WC-70

Tubing Program: - none

Float Equipment: 8 5/8" surface casing - saw tooth guide shoe. Centralizers will be run in accordance with Onshore Order #2.

3 1/2" production casing - float shoe on bottom. Three centralizers run every other joint above shoe. Four centralizers run every 3rd joint to the base of the Ojo Alamo @ 885'. Two turbolizing type centralizers - one below and one into the base of the Ojo Alamo @ 885'. Standard centralizers thereafter every fourth joint up to the base of the surface pipe.

Wellhead Equipment: 8 5/8" x 3 1/2" x 11" 2000 psi screw on independent wellhead.

Cementing:

8 5/8" surface casing - cement with 129 sx Class "B" cement with 1/4# flocele/sx and 3% calcium chloride (149 cu.ft. of slurry, 200% excess to circulate to surface). WOC 12 hrs. Test casing to 600 psi for 30 minutes.

3 1/2" production casing - Lead w/244 sx of 65/35 Class "B" Poz w/6% gel, 2% calcium chloride, and 1/4# flocele/sx. Tail w/100 sx Class "B" w/2% calcium chloride (549 cu.ft. of slurry, 75% excess to circulate to surface). WOC 12 hrs. If cement does not circulate to surface, a CBL will be run during completion to determine TOC.

BOP and tests:

Surface to TD - 11" 2000 psi (minimum double gate BOP stack (Reference Figure #1 and #2). Prior to drilling out surface casing, test rams to 600 psi/30 min.

Completion - 6" 2000 psi (minimum) double gate BOP stack (Reference Figure #2). Prior to completion operations, test rams and casing to 2000 psi/15 min.

From surface to TD - choke manifold (Reference Figure #3).

Pipe rams will be actuated to least once each day and blind rams actuated once each trip to test proper functioning. An upper kelly cock valve with handle and drill string safety valves to fit each drill string will be maintained and available on the rig floor.

Additional information:

- * The Pictured Cliffs formation will be completed.
- * Anticipated pore pressure for the Pictured Cliffs is 300 psi.
- * This gas is dedicated.
- \star The northeast quarter of the section is dedicated to the Pictured Cliffs.
- * New casing will be utilized.
- * Pipe movement (either rotation or reciprocation) will be done if hole conditions permit/

Drilling Enginee

Date

Angel Peak B #14R

Section 13G, T-28-N, R-11-W San Juan County, NM

FULCHER KUTZ PICTURED CLIFFS WELLBORE SCHEMATIC

PROPOSED

ELEVATION: 5810' GL 5820' KB



8-5/8" 23# M-50
Casing
Set @ 120'
Cmt to surface w/ 129 sx
(see operation plan
for cement details)

TOP OF OJO ALAMO @ 754'

TOP OF KIRTLAND @ 885'

TOP OF FRUITLAND@ 1570'

TOP OF PICTURED CLIFFS @ 1868'

3-1/2" 7.7# WC-70 Casing Set @ 2200' Cmt to Surface w/344 sx (see operation plan for detail).



PBTD @ 2196' TD @ 2200'

DD. Artesia, NM 88211-0719 Kio Brazos Rd., Aztec, NM 87410 PO Box 2088, Santa Fe. NM 87504-2088

2777.94

State of New Mexico

OIL CONSERVATION DIVISION PO Box 2088 Santa Fe, NM 87504-2088

Form C-102 Revised February 21, 1994 instructions on back

Submit to Appropriate District Office State Lease - 4 Contes

Fee Lesse - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT API Number 30-045- 2Ad 20 72439 South Blanco Pictured Cliffs Property Code Property Name · Well Number 20142 Brookhaven Com C 4R OGRID No. Operator Name · Elevation BURLINGTON RESOURCES OIL & GAS COMPANY 6229' 14538 10 Surface Location UL or lot Bo. عال عما Feet from the North/South line Feet from the East/West time Range County 36 27-N 1650 910 West S.J. L 8-W South 11 Bottom Hole Location If Different From Surface North/South line East West tipe UL or lot no. Townsip Range Lot Ida Feet from the County 13 Dedicated Acres 13 Joint or Infill | 14 Consetidation Code | 15 Order No. NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION 17 OPERATOR CERTIFICATION 2581.92° Z750.88 I hereby certify that the informarue and complete to the best of my translates and belief Malhield 则是为 Liver Peggy Bradfield Printed Name 0 337 Regulatory Administrator OIL COM. DIV. 1-9-97 = 36 18SURVEYOR CERTIFICATION B- /// 25-50 910' correct to the best of my belief. 12/16/96 Date of Survey 3148-20 685/

2619.54

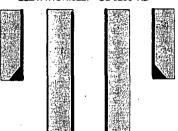
Brookhaven Com C #4R

Section 36L, T-27-N, R-08-W San Juan County, NM

SOUTH BLANCO PICTURED CLIFFS WELLBORE SCHEMATIC

PROPOSED

ELEVATION:6227' GL 6235' KB



8-5/8" 23# M-50
Casing
Set @ 120'
Cmt to surface w/ 129 sx
(see operation plan
for cement details)

TOP OF OJO ALAMO @ 1420'

TOP OF KIRTLAND @ 1619'

TOP OF FRUITLAND@ 2000'

TOP OF PICTURED CLIFFS @ 2309'

3-1/2" 7.7# WC-70 Casing Set @ 2500' Cmt to Surface w/395 sx (see operation plan for detail). Perf & Foam Frac 2309' - 2496' w/ 85,000# 20/40 sand

PBTD @ 2496' TD @ 2500'

Well Name: Brookhaven Com C #4R

Location: 1650'FSL, 910'FWL Section 36, T-27-N, R-8-W

San Juan County, New Mexico

Latitude 36° 36′ 02″, Longitude 107° 52′ 12″

Formation: South Blanco Pictured Cliffs

Elevation: 6229'GL

Formation:	Тор	Bottom	Contents
Surface	Nacimiento	1420'	
Ojo Alamo	1420'	1619'	aquifer
Kirtland	1619'	2000'	•
Fruitland	2000'	2309'	gas
Fruitland Coal	2150'	2285'	gas
Pictured Cliffs	2309'		gas
Total Depth	2500'		•

Logging Program: Mud log 2000-to TD

Hi Res Ind, Den/Neut, MRL/GR to Total Depth.

Coring Program: none

Mud Program:

<u>Interval</u>	Type	<u>Weight</u>	<u>Vis.</u>	Fluid Loss
0- 120'	Spud	8.4-9.0	40-50	no control
120-2500'	LSND	8.4-9.0	40-60	no control

Casing Program (as listed, equivalent, or better):

<u> Hole Size</u>	Depth Interval	<u>Csq.Size</u>	Wt.	<u>Grade</u>
12 1/4"	0 - 120'	8 5/8"	23.0#	M-50
6 1/4"	0 - 2500'	3 1/2"	7.7#	WC-70

Tubing Program: - none

Float Equipment: 8 5/8" surface casing - saw tooth guide shoe. Centralizers will be run in accordance with Onshore Order #2.

3 1/2" production casing - float shoe on bottom. Three centralizers run every other joint above shoe. Four centralizers run every 3rd joint to the base of the Ojo Alamo @ 1619'. Two turbolizing type centralizers - one below and one into the base of the Ojo Alamo @ 1619'. Standard centralizers thereafter every fourth joint up to the base of the surface pipe.

Wellhead Equipment: 8 5/8" x 3 1/2" x 11" 2000 psi screw on independent wellhead.

Brookhaven Com C #4R

Cementing:

8 5/8" surface casing - cement with 129 sx Class "B" cement with 1/4# flocele/sx and 3% calcium chloride (149 cu.ft. of slurry, 200% excess to circulate to surface). WOC 12 hrs. Test casing to 600 psi for 30 minutes.

3 1/2" production casing - Lead w/295 sx of 65/35 Class "B" Poz w/6% gel, 2% calcium chloride, and 1/4# flocele/sx. Tail w/100 sx Class "B" w/2% calcium chloride (640 cu.ft. of slurry, 75% excess to circulate to surface). WOC 12 hrs. If cement does not circulate to surface, a CBL will be run during completion to determine TOC.

BOP and tests:

Surface to TD - 11" 2000 psi (minimum double gate BOP stack (Reference Figure #1 and #2). Prior to drilling out surface casing, test rams to 600 psi/30 min.

Completion - 6" 2000 psi (minimum) double gate BOP stack (Reference Figure #2). Prior to completion operations, test rams and casing to 2000 psi/15 min.

From surface to TD - choke manifold (Reference Figure #3).

Pipe rams will be actuated to least once each day and blind rams actuated once each trip to test proper functioning. An upper kelly cock valve with handle and drill string safety valves to fit each drill string will be maintained and available on the rig floor.

Additional information:

- * The Pictured Cliffs formation will be completed.
- * Anticipated pore pressure for the Pictured Cliffs is 300 psi.
- * This gas is dedicated.
- * The southwest quarter of the section is dedicated to the Pictured Cliffs.
- New casing will be utilized.
- * Pipe movement (either rotation or reciprocation) will be done if hole conditions permit.

Then 2/2 3/4/97
Drilling Engineer Date

District i PO Box 1980, Hobbs, NM 88241-1980 District (I PO Drawer DD. Artesia, NM 88211-0719 District III 1000 Rio Brazos Rd., Aztec. NM 87410

District IV

State of New Mexico

OIL CONSERVATION DIVISION PO Box 2088 Santa Fe. NM 87504-2088

Form C-102 Revised February 21, 1994

Instructions on back Submit to Appropriate District Office

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AMENDED REPORT

PO Box 2088, Santa Fe, NM 87504-2088 WELL LOCATION AND ACREAGE DEDICATION PLAT API Number 30-045-77200 Fulcher Kutz Pictured Cliffs Property Code ' Property Name Well Number Feasel 1 R 6997 OGRID No. Operator Name 6150 BURLINGTON RESOURCES OIL & GAS COMPANY 14538 10 Surface Location Section UL or tot co. Range Lot Ide Feet from the North/South line Feet from the East/West tipe Conner 2 27-N 10-W 1160 South 1180 М West S.J. 11 Bottom Hole Location If Different From Surface UL or tot po. Townseip Lot Ida Feet from the North/South line Feet from the Rence East West tine Conner U Dedicated Acres 13 Joint or Infill | 14 Conseidation Code | 15 Order No. 160 NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION 17 OPERATOR CERTIFICATION I hereby certify that the information cal 1 2 Regulatory Administrator ġ, 303. 8 SF- 046563 2/04/97 Date of Survey 1/80' 0 9

5274.06'

Well Name: Feasel #1R

Location: 1160'FSL, 1180'FWL Section 2, T-27-N, R-10-W

San Juan County, New Mexico

Latitude 36° 36′ 02″, Longitude 107° 52′ 12″

Formation: Fulcher Kutz Pictured Cliffs

Elevation: 6150'GL

Formation:	Top	Bottom	Contents
Surface	Nacimiento	1120'	
Ojo Alamo	1120'	1246'	aquifer
Kirtland	1246'	1846'	•
Fruitland	1846'	2073'	gas
Fruitland Coal	1935 ′	2070 '	gas
Pictured Cliffs	2073'		gas
Total Depth	2300'		,

Logging Program: Mud log 1850-to TD

Hi Res Ind, Den/Neut, MRL/GR to Total Depth.

Coring Program: three (3) 30' cores 2073-2163' in Pictured Cliffs

Mud Program:

Interval	Type	Weight	Vis.	Fluid Loss
0- 120'	Spud		40-50	no control
120-2300'	LSND	8.4-9.0	40-60	no control

Casing Program (as listed, equivalent, or better):

Hole Size	Depth Interval	Csg.Size	Wt.	<u>Grade</u>
12 1/4"	0 - 120'	8 5/8 "	23.0#	M-50
6 1/4"	0 - 2300'	3 1/2"	7.7#	WC-70

Tubing Program: - none

Float Equipment: 8 5/8" surface casing - saw tooth guide shoe. Centralizers will be run in accordance with Onshore Order #2.

3 1/2" production casing - float shoe on bottom. Three centralizers run every other joint above shoe. Four centralizers run every 3rd joint to the base of the Ojo Alamo @ 1246'. Two turbolizing type centralizers - one below and one into the base of the Ojo Alamo @ 1246'. Standard centralizers thereafter every fourth joint up to the base of the surface pipe.

Wellhead Equipment: $8\ 5/8$ " x $3\ 1/2$ " x 11" 2000 psi screw on independent wellhead.

Cementing:

8 5/8" surface casing - cement with 129 sx Class "B" cement with 1/4# flocele/sx and 3% calcium chloride (149 cu.ft. of slurry, 200% excess to circulate to surface). WOC 12 hrs. Test casing to 600 psi for 30 minutes.

3 1/2" production casing - Lead w/266 sx of 65/35 Class "B" Poz w/6% gel, 2% calcium chloride, and 1/4# flocele/sx. Tail w/100 sx Class "B" w/2% calcium chloride (589 cu.ft. of slurry, 75% excess to circulate to

surface). WOC 12 hrs. If cement does not circulate to surface, a CBL will be run during completion to determine TOC.

Feasel #1R

BOP and tests:

Surface to TD - 11" 2000 psi (minimum double gate BOP stack (Reference Figure #1 and #2). Prior to drilling out surface casing, test rams to 600 psi/30 min.

Completion - 6" 2000 psi (minimum) double gate BOP stack (Reference Figure #2). Prior to completion operations, test rams and casing to 2000 psi/15 min.

From surface to TD - choke manifold (Reference Figure #3).

Pipe rams will be actuated to least once each day and blind rams actuated once each trip to test proper functioning. An upper kelly cock valve with handle and drill string safety valves to fit each drill string will be maintained and available on the rig floor.

Additional information:

- * The Pictured Cliffs formation will be completed.
- * Anticipated pore pressure for the Pictured Cliffs is 300 psi.
- This gas is dedicated.
- * The southwest quarter of the section is dedicated to the Pictured Cliffs.
- * New casing will be utilized.
- * Pipe movement (either rotation or reciprocation) will be done if hole conditions permit.

Drilling Engineer

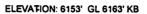
Date

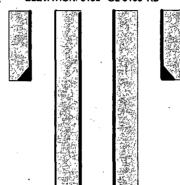
Feasel #1R

Section 2M, T-27-N, R-10-W San Juan County, NM

FULCHER KUTZ PICTURED CLIFFS WELLBORE SCHEMATIC

PROPOSED





8-5/8" 23# M-50
Casing
Set @ 120'
Cmt to surface w/ 129 sx
(see operation plan
for cement details)

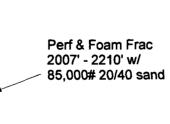
TOP OF OJO ALAMO @ 1120'

TOP OF KIRTLAND @ 1246'

TOP OF FRUITLAND@ 1846'

TOP OF PICTURED CLIFFS @ 2073'

3-1/2" 7.7# WC-70 Casing Set @ 2300' Cmt to Surface w/366 sx (see operation plan for detail).



PBTD @ 2296' TD @ 2300' District 4 PO Box 1980, Hobbs, NM \$8241-1980 PO Drawer OD. Artesia. NM 88211-0719 District III 1000 Rio Brazos Rd., Aziec, NM 87410 District IV

PO Box 2088. Santa Fe. NM 87504-2088

State of New Mexico Energy, Minerais & Natural Resources Department

OIL CONSERVATION DIVISION PO Box 2088 Santa Fe, NM 87504-2088

Form C-102 Revised February 21, 1994

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AMENDED REPORT

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Well Name: Frost #1R

Location: 1510'FNL, 255'FEL Section 26, T-27-N, R-10-W

San Juan County, New Mexico

Latitude 36° 32.97, Longitude 107° 51.37

Formation: Fulcher Kutz Pictured Cliffs

Elevation: 6661'GL

Formation:	Top	Bottom	Contents
Surface	Nacimiento	1485'	
Ojo Alamo	1485'	1650'	aquifer
Kirtland	1650'	2150'	
Fruitland	2150'	2463'	gas
Fruitland Coal	2325'	2461'	gas-
Pictured Cliffs	2463'	•	gas
Total Depth	2700'	•	

Logging Program: Hi Res Ind, Den/Neut, MRL/GR to Total Depth.

Mud Program:

<u>Interval</u>	<u>Type</u>	<u>Weight</u>	<u>Vis.</u>	Fluid Loss
0- 120'	Spud	8.4-9.0	40-50	no control
120-2700'	LSND	8.4-9.0	40-60	no control

Casing Program (as listed, equivalent, or better):

<u> Hole Size</u>	Depth Interval	<u>Csq.Size</u>	Wt.	<u>Grade</u>
12 1/4"	ð - 120'	8 5/8"	23.0#	M-50
6 1/4"	0 - 2700'	3 1/2"	7.7#	WC-70

Tubing Program: - none

Float Equipment: 8 5/8" surface casing - saw tooth guide shoe. Centralizers will be run in accordance with Onshore Order #2.

3 1/2" production casing - float shoe on bottom. Three centralizers run every other joint above shoe. Four centralizers run every 3rd joint to the base of the Ojo Alamo @ 1650'. Two turbolizing type centralizers - one below and one into the base of the Ojo Alamo @ 1650'. Standard centralizers thereafter every fourth joint up to the base of the surface pipe.

Wellhead Equipment: 8 5/8" x 3 1/2" x 11" 2000 psi screw on independent wellhead.

Cementing:

8 5/8" surface casing - cement with 129 sx Class "B" cement with 1/4# flocele/sx and 3% calcium chloride (149 cu.ft. of slurry, 200% excess to circulate to surface). WOC 12 hrs. Test casing to 600 psi for 30 minutes.

3 1/2" production casing - Lead w/324 sx of 65/35 Class "B" Poz w/6% gel, 2% calcium chloride, and 1/4# flocele/sx. Tail w/100 sx Class "B" w/2% calcium chloride (691 cu.ft. of slurry, 75% excess to circulate to surface). WOC 12 hrs. If cement does not circulate to surface, a CBL will be run during completion to determine TOC.

Frost #1R

BOP and tests:

Surface to TD - 11" 2000 psi (minimum double gate BOP stack (Reference Figure #1 and #2). Prior to drilling out surface casing, test rams to 600 psi/30 min.

Completion - 6" 2000 psi (minimum) double gate BOP stack (Reference Figure #2). Prior to completion operations, test rams and casing to 2000 psi/15 min.

From surface to TD - choke manifold (Reference Figure #3).

Pipe rams will be actuated to least once each day and blind rams actuated once each trip to test proper functioning. An upper kelly cock valve with handle and drill string safety valves to fit each drill string will be maintained and available on the rig floor.

Additional information:

- * The Pictured Cliffs formation will be completed.
- * Anticipated pore pressure for the Pictured Cliffs is 300 psi.
- * This gas is dedicated.
- * The northeast quarter of the section is dedicated to the Pictured Cliffs.
- * New casing will be utilized.
- * Pipe movement (either rotation or reciprocation) will be done if hole conditions permit.

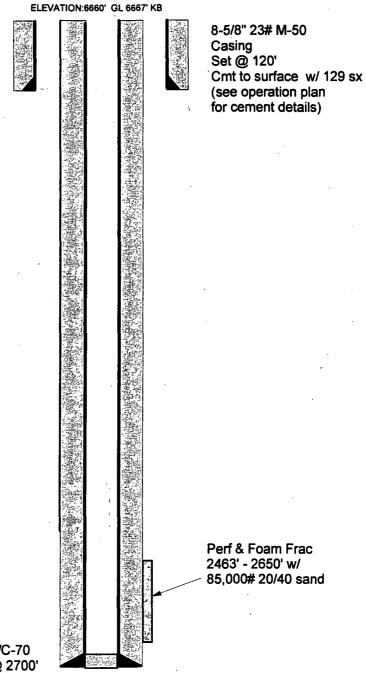
Drilling Engineer	Date

Frost #1R

Section 26H, T-27-N, R-10-W San Juan County, NM

FULCHER KUTZ PICTURED CLIFFS WELLBORE SCHEMATIC

PROPOSED



TOP OF OJO ALAMO @ 1485'

TOP OF KIRTLAND @ 1650'

TOP OF FRUITLAND@ 2150'

TOP OF PICTURED CLIFFS @ 2463'

3-1/2" 7.7# WC-70 Casing Set @ 2700' Cmt to Surface w/424 sx (see operation plan for detail).

PBTD @ 2696' TD @ 2700'

District I PO Bus 1980, Hubbs, NM 88241-1980 District II PO Drawer OD, Artena, NM 88211-0719 District III 1000 Kio Brazos Rd., Azes, NM 87410

PO Box 2008. Santa Fe. NM 87504-2088

District IV

State of New Mexico Energy, Mineran & Natural Renources Department

OIL CONSERVATION DIVISION PO Box 2088 Santa Fe, NM 87504-2088

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N Printed Nature
Regulatory Administrator.
Title

Date

18 SURVEYOR CERTIFICATION
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correct to the best of my belief.

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Well Name: Huerfanito Unit #45R

Location: 1140'FSL, 1180'FWL Section 24, T-27-N, R-9-W

San Juan County, New Mexico

Latitude 36° 33.38, Longitude 107° 44.67

Formation: So.Blanco Pictured Cliffs

Elevation: 6159'GL

Formation:	Top	Bottom	Contents	
Surface	Nacimiento	1239′		
Ojo Alamo	1239'	1370′	aquifer	
Kirtland	1370'	1870'		
Fruitland	1870'	2110'	gas	
Fruitland Coal	2060'	2102'	gas	
Pictured Cliffs	2110'		gas	
Total Depth	2400'			

Logging Program: Hi Res Ind, Den/Neut, MRL/GR to Total Depth.

Mud Program:

<u>Interval</u>	<u>Type</u>	<u>Weight</u>	<u>Vis.</u>	Fluid Loss
0- 120'	Spud	8.4-9.0	40-50	no control
120-2400'	LSND	8.4-9.0	40-60	no control

Casing Program (as listed, equivalent, or better):

<u>Hole Size</u>	Depth Interval	Csq.Size	Wt.	<u>Grade</u>
12 1/4"	0 - 120'	8 5/8"	23.0#	M-50
6 1/4"	0 - 2400'	3 1/2"	7.7#	WC-70

Tubing Program: - none

Float Equipment: 8 5/8" surface casing - saw tooth guide shoe. Centralizers will be run in accordance with Onshore Order #2.

3 1/2" production casing - float shoe on bottom. Three centralizers run every other joint above shoe. Four centralizers run every 3rd joint to the base of the Ojo Alamo @ 1370'. Two turbolizing type centralizers - one below and one into the base of the Ojo Alamo @ 1370'. Standard centralizers thereafter every fourth joint up to the base of the surface pipe.

Wellhead Equipment: 8 5/8" x 3 1/2" x 11" 2000 psi screw on independent wellhead.

Cementing:

8 5/8" surface casing - cement with 129 sx Class "B" cement with 1/4# flocele/sx and 3% calcium chloride (149 cu.ft. of slurry, 200% excess to circulate to surface). WOC 12 hrs. Test casing to 600 psi for 30 minutes.

3 1/2" production casing - Lead w/280 sx of 65/35 Class "B" Poz w/6% gel, 2% calcium chloride, and 1/4# flocele/sx. Tail w/100 sx Class "B" w/2% calcium chloride (614 cu.ft. of slurry, 75% excess to circulate to surface). WOC 12 hrs. If cement does not circulate to surface, a CBL will be run during completion to determine TOC.

Huerfanito Unit #45R

BOP and tests:

Surface to TD - 11" 2000 psi (minimum double gate BOP stack (Reference Figure #1 and #2). Prior to drilling out surface casing, test rams to 600 psi/30 min.

Completion - 6" 2000 psi (minimum) double gate BOP stack (Reference Figure #2). Prior to completion operations, test rams and casing to 2000 psi/15 min.

From surface to TD - choke manifold (Reference Figure #3).

Pipe rams will be actuated to least once each day and blind rams actuated once each trip to test proper functioning. An upper kelly cock valve with handle and drill string safety valves to fit each drill string will be maintained and available on the rig floor.

Additional information:

- * The Pictured Cliffs formation will be completed.
- * Anticipated pore pressure for the Pictured Cliffs is 300 psi.
- * This gas is dedicated.
- * The southwest quarter of the section is dedicated to the Pictured Cliffs.
- New casing will be utilized.
- * Pipe movement (either rotation or reciprocation) will be done if hole conditions permit.

Drilling	Engineer	Date

Huerfanito Unit #45R

Section 24M, T-27-N, R-9-W San Juan County, NM

SOUTH BLANCO PICTURED CLIFFS WELLBORE SCHEMATIC

PROPOSED

ELEVATION:6179' GL 6191' KB

8-5/8" 23# M-50
Casing
Set @ 120'
Cmt to surface w/ 129 sx
(see operation plan
for cement details)

TOP OF OJO ALAMO @ 1239'

TOP OF KIRTLAND @ 1370'

TOP OF FRUITLAND@ 1870'

TOP OF PICTURED CLIFFS @ 2110'

3-1/2" 7.7# WC-70 Casing Set @ 2400' Cmt to Surface w/380 sx (see operation plan for detail). Perf & Foam Frac 2110' - 2320' w/ 85,000# 20/40 sand

PBTD @ 2396' TD @ 2400'

PO Box 1980. Hobbs. NM 88241-1980 PO Drawer OD, Artena, NM 88211-0719 1000 Rio Brazos Rd., Ages, NM 27410 District IV

State of New Mexico Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION PO Box 2088 Santa Fe. NM 87504-2088

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PO Box 2008, Santa Fe. NM 87504-2009. AMENDED REPORT WELL LOCATION AND ACREAGE DEDICATION PLAT API Number Pool Code 30-045-71439 Ballard Pictured Cliffs Property Code Property Name Well Names 7138 Huerfanito Unit 70R OGRID No. Operator Name · Elemen BURLINGTON RESOURCES OIL & GAS COMPANY 14538 6293' 10 Surface Location UL or tot so. Lot Ida Foot from the North/South line Feet from the East West time Сопаст G 10 26-N 9-W 1610 North 1645 East S.J. 11 Bottom Hole Location If Different From Surface UL or tot po. Range Lot Ide Fort from the North/South tine Conner 13 Decicates Acres 13 Joint or Infill | 14 Consendation Code | 15 Order No. NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION 5198.16' OPERATOR CERTIFICATION I hereby certify that the informati are to the best of my taxe Signature 1645' Peggy Bradfield Printed Name Regulatory Administrator SF-078135 Date 18 SURVEYOR CERTIFICATION correct to the best of my belief. 11/27/96 5204.76

Well Name: Huerfanito Unit #70R

1610'FNL, 1645'FEL Section 10, T-26-N, R-9-W Location:

San Juan County, New Mexico Latitude 36° 30.33, Longitude 107° 46.30

Ballard Pictured Cliffs

Elevation: 6293'GL

Formation:	Top	Bottom	Contents		
Surface	Nacimiento	1170'	-		
Ojo Alamo	1170'	1279'	aquifer		
Kirtland	1279'	1727'	•		
Fruitland	1727'	2007'	gas		
Fruitland Coal	1934'	1997'	gas .		
Pictured Cliffs	2007'		gas		
Total Depth	2250'		-		

Logging Program: Hi Res Ind, Den/Neut, MRL/GR to Total Depth.

Mud Program:

Interval	Type	Weight	Vis.	Flui	id Loss
0- 120'	Spud	8.4-9.0	40-50	no	control
120-2250'	LSND	8.4-9.0	40-60	no	control

Casing Program (as listed, equivalent, or better):

Hole Size	Depth Interval	Csg.Size	Wt.	Grade	
12 1/4"	0 - 120	8 5/8"	23.0#	M-50	
6 1/4"	0 - 2250'	3 1/2"	7.7#	WC-70	

Tubing Program: -none

Float Equipment: 8 5/8" surface casing - saw tooth guide shoe. Centralizers will be run in accordance with Onshore Order #2.

3 1/2" production casing - float shoe on bottom. Three centralizers run every other joint above shoe. Four centralizers run every 3rd joint to the base of the Ojo Alamo @ 1279'. Two turbolizing type centralizers one below and one into the base of the Ojo Alamo @ 1279'. Standard centralizers thereafter every fourth joint up to the base of the surface pipe.

Wellhead Equipment: 8 5/8" x 3 1/2" x 11" 2000 psi screw on independent wellhead.

Cementing:

8 5/8" surface casing - cement with 129 sx Class "B" cement with 1/4# flocele/sx and 3% calcium chloride (149 cu.ft. of slurry, 200% excess to circulate to surface). WOC 12 hrs. Test casing to 600 psi for 30 minutes.

3 1/2" production casing - Lead w/259 sx of 65/35 Class "B" Poz w/6% gel, 2% calcium chloride, and 1/4# flocele/sx. Tail w/100 sx Class "B" w/2% calcium chloride (576 cu.ft. of slurry, 75% excess to circulate to surface). WOC 12 hrs. If cement does not circulate to surface, a CBL will be run during completion to determine TOC.

BOP and tests:

Surface to TD - 11" 2000 psi (minimum double gate BOP stack (Reference Figure #1 and #2). Prior to drilling out surface casing, test rams to 600 psi/30 min.

Completion - 6" 2000 psi (minimum) double gate BOP stack (Reference Figure #2). Prior to completion operations, test rams and casing to 2000 psi/15 min.

From surface to TD - choke manifold (Reference Figure #3).

Pipe rams will be actuated to least once each day and blind rams actuated once each trip to test proper functioning. An upper kelly cock valve with handle and drill string safety valves to fit each drill string will be maintained and available on the rig floor.

Additional information:

- * The Pictured Cliffs formation will be completed.
- * Anticipated pore pressure for the Pictured Cliffs is 300 psi.
- * This gas is dedicated.
- * The northeast quarter of the section is dedicated to the Pictured Cliffs.
- * New casing will be utilized.
- * Pipe movement (either rotation or reciprocation) will be done if hole conditions permit.

Drilling Engineer

Date

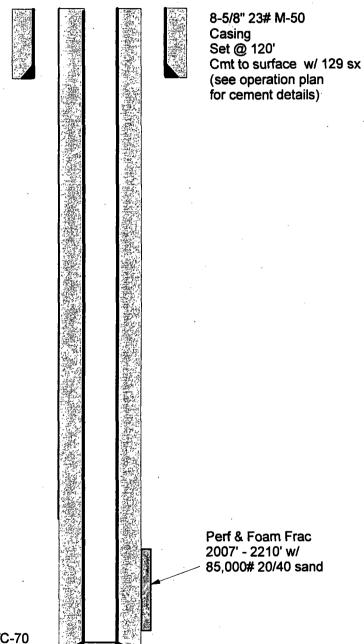
Huerfanito unit #70R

Section 10G, T-26-N, R-9-W San Juan County, NM

BALLARD PICTURED CLIFFS WELLBORE SCHEMATIC

PROPOSED

ELEVATION: 6274' GL 6281' KB



TOP OF OJO ALAMO @ 1170'

TOP OF KIRTLAND @ 1279'

TOP OF FRUITLAND@ 1727

TOP OF PICTURED CLIFFS @ 2007'

3-1/2" 7.7# WC-70 Casing Set @ 2250' Cmt to Surface w/359 sx (see operation plan for detail).

PBTD @ 2246'

TD @ 2250'

District i PO Box 1980, Hobbs, NM 88241-1980 District iii PO Drawer OD, Artesia, NM 88211-0719 District iii 1000 Rio Brazos Rd., Aziec, NM 87410 District iV PO Box 2088, Santa Fc, NM 87504-2088

State of New Mexico Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION PO Box 2088 Santa Fe. NM 87504-2088

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AMENDED REPORT

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Well Name: Huerfano Unit #6R

Location: 790'FSL, 1290'FWL Section 31, T-27-N, R-10-W

San Juan County, New Mexico

Latitude 36° 31.62, Longitude 107° 56.47

Formation: Fulcher Kutz Pictured Cliffs

Elevation: 6519'GL

Formation:	Тор	Bottom	Contents
Surface	Nacimiento	1052'	
Ojo Alamo	1052'	1185′	aquifer
Kirtland	1185'	1857'	_
Fruitland	1857'	2080'	gas
Fruitland Coal	1890′	2073′	gas
Pictured Cliffs	2080'	_	gas
Total Depth	2400'		•

Logging Program: Hi Res Ind, Den/Neut, MRL/GR to Total Depth.

Mud Program:

<u>Interval</u>	<u>Type</u>	<u>Weight</u>	<u>Vis.</u>	Fluid Loss
0- 120'	Spud	8.4-9.0	40-50	no control
120-2400'	LSND	8.4-9.0	40-60	no control

Casing Program (as 'listed, equivalent, or better):

<u> Hole Size</u>	Depth Interval	<u>Csg.Size</u>	Wt.	<u>Grade</u>
12 1/4"	0 - 120'	8 5/8"	23.0#	M-50
6 1/4"	0 - 2400'	3 1/2"	7.7#	WC-70

Tubing Program: -none

Float Equipment: 8 5/8" surface casing - saw tooth guide shoe. Centralizers will be run in accordance with Onshore Order #2.

3 1/2" production casing - float shoe on bottom. Three centralizers run every other joint above shoe. Four centralizers run every 3rd joint to the base of the Ojo Alamo @ 1185'. Two turbolizing type centralizers - one below and one into the base of the Ojo Alamo @ 1185'. Standard centralizers thereafter every fourth joint up to the base of the surface pipe.

Wellhead Equipment: 8 5/8" x 3 1/2" x 11" 2000 psi screw on independent wellhead.

Cementing:

8 5/8" surface casing - cement with 129 sx Class "B" cement with 1/4# flocele/sx and 3% calcium chloride (149 cu.ft. of slurry, 200% excess to circulate to surface). WOC 12 hrs. Test casing to 600 psi for 30 minutes.

3 1/2" production casing - Lead w/280 sx of 65/35 Class "B" Poz w/6% gel, 2% calcium chloride, and 1/4# flocele/sx. Tail w/100 sx Class "B" w/2% calcium chloride (614 cu.ft. of slurry, 75% excess to circulate to surface). WOC 12 hrs. If cement does not circulate to surface, a CBL will be run during completion to determine TOC.

Huerfano Unit #6R

BOP and tests:

Surface to TD - 11" 2000 psi (minimum double gate BOP stack (Reference Figure #1 and #2). Prior to drilling out surface casing, test rams to 600 psi/30 min.

Completion - 6" 2000 psi (minimum) double gate BOP stack (Reference Figure #2). Prior to completion operations, test rams and casing to 2000 psi/15 min.

From surface to TD - choke manifold (Reference Figure #3).

Pipe rams will be actuated to least once each day and blind rams actuated once each trip to test proper functioning. An upper kelly cock valve with handle and drill string safety valves to fit each drill string will be maintained and available on the rig floor.

Additional information:

- * The Pictured Cliffs formation will be completed.
- * Anticipated pore pressure for the Pictured Cliffs is 300 psi.
- * This gas is dedicated.
- * The southwest quarter of the section is dedicated to the Pictured Cliffs.
- * New casing will be utilized.
- * Pipe movement (either rotation or reciprocation) will be done if hole conditions permit.

Drilling	Engineer	Date	÷

Huerfano #6R

Section 31K, T-27-N, R-10-W San Juan County, NM

WEST KUTZ PICTURED CLIFFS WELLBORE SCHEMATIC

PROPOSED

ELEVATION:6506' GL 6516' KB



8-5/8" 23# M-50
Casing
Set @ 120'
Cmt to surface w/ 129 sx
(see operation plan
for cement details)

TOP OF OJO ALAMO @ 1052

TOP OF KIRTLAND @ 1185'

TOP OF FRUITLAND@ 1857'

TOP OF PICTURED CLIFFS @ 2080'

3-1/2" 7.7# WC-70 Casing Set @ 2400' Cmt to Surface w/380 sx (see operation plan for detail). Perf & Foam Frac 2080' - 2320' w/ 85,000# 20/40 sand

PBTD @ 2396' TD @ 2400'

Well Name: McManus #4R

Location: 1130'FSL, 1530'FEL Section 19, T-26-N, R-8-W

San Juan County, New Mexico

Latitude 36° 28.16, Longitude 107° 43.12

Formation: Ballard Pictured Cliffs

Elevation: 6359'GL

· · · · · · · · · · · · · · · · · · ·				
Top	Bottom	Contents		
Nacimiento	1291'	• •		
1291'	1397 '	aquifer		
1397'	1782			
1782'	2059'	gas		
1928'	2058'	gas		
2059'		gas		
2300!	• ,	-		
	Nacimiento 1291' 1397' 1782' 1928' 2059'	Nacimiento 1291' 1291' 1397' 1397' 1782' 1782' 2059' 1928' 2058' 2059'		

Logging Program: Hi Res Ind, Den/Neut, MRL/GR to Total Depth.

Mud Program:

Interval	Type	• •	Weight	<u>Vis.</u>	Fluid Loss
0- 120'	Spud		8.4-9.0	40-50	no control
120-2300'	LSND		8.4-9.0	40-60	no control

Casing Program (as listed, equivalent, or better):

Hole Size	Depth Interval	Csg.Size	Wt.	<u>Grade</u>
12 1/4"	0 - 120'	8 5/8 "	23.0#	M-50
6 1/4"	0 - 2300'	3 1/2 "	7.7#	WC-70

Tubing Program: - none

Float Equipment: 8 5/8" surface casing - saw tooth guide shoe. Centralizers will be run in accordance with Onshore Order #2.

3 1/2" production casing - float shoe on bottom. Three centralizers run every other joint above shoe. Four centralizers run every 3rd joint to the base of the Ojo Alamo @ 1397'. Two turbolizing type centralizers - one below and one into the base of the Ojo Alamo @ 1397'. Standard centralizers thereafter every fourth joint up to the base of the surface pipe.

Wellhead Equipment: 8 5/8" x 3 1/2" x 11" 2000 psi screw on independent wellhead.

Cementing:

8 5/8" surface casing - cement with 129 sx Class "B" cement with 1/4 # flocele/sx and 3% calcium chloride (149 cu.ft. of slurry, 200% excess to circulate to surface). WOC 12 hrs. Test casing to 600 psi for 30 minutes.

3 1/2" production casing - Lead w/266 sx of 65/35 Class "B" Poz w/6% gel, 2% calcium chloride, and 1/4# flocele/sx. Tail w/100 sx Class "B" w/2% calcium chloride (589 cu.ft. of slurry, 75% excess to circulate to surface). WOC 12 hrs. If cement does not circulate to surface, a CBL will be run during completion to determine TOC.

BOP and tests:

Surface to TD - 11" 2000 psi (minimum double gate BOP stack (Reference Figure #1 and #2). Prior to drilling out surface casing, test rams to 600 psi/30 min.

Completion - 6" 2000 psi (minimum) double gate BOP stack (Reference Figure #2). Prior to completion operations, test rams and casing to 2000 psi/15 min.

From surface to TD - choke manifold (Reference Figure #3).

Pipe rams will be actuated to least once each day and blind rams actuated once each trip to test proper functioning. An upper kelly cock valve with handle and drill string safety valves to fit each drill string will be maintained and available on the rig floor.

Additional information:

- * The Pictured Cliffs formation will be completed.
 - Anticipated pore pressure for the Pictured Cliffs is 300 psi.
- This gas is dedicated.
- * The southeast quarter of the section is dedicated to the Pictured Cliffs.
- * New casing will be utilized.
- * Pipe movement (either rotation or reciprocation) will be done if hole conditions permit.

Drilling Engineer

Data

PO Box 1980. Hobbs. NM 88241-1980 District il PO Drawer OD. Artesia. NM 88211-0719 District ill 1000 Kie Brazes Rd., Aztes, NM 87410 District iV

State of New Mexico

OIL CONSERVATION DIVISION PO Box 2088 Santa Fe, NM 87504-2088

Form C-102 Revised February 21, 1994

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AMENDED REPORT

PO Box 2088. Santa Fe. NM 87504-2088 WELL LOCATION AND ACREAGE DEDICATION PLAT API Number 30-045-71439 Ballard Pictured Cliffs Property Code Property Name Well Number 7309 McManus 4R OGRID No. Operator Nume · Eleveno BURLINGTON RESOURCES OIL & GAS COMPANY 6359' 14538 10 Surface Location UL or lot co. Section Toweseip Range Lot ide Feet from the North/South line Feet from the East West tipe 0 19 26-N 8-W 1130 South 1530 East S.J. 11 Bottom Hole Location If Different From Surface UL er tot no. i Section Towester Lot Ida Feet from the North/South line East/West upe County 18 Dedicates Acres " Joint or fafill | " Consendation Code | " Order No. NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION 16 1294.26' 1300.86 17 OPERATOR CERTIFICATION 2601.06' true and complete to the best of my im Signature Peggy Bradfield Printed Name Regulatory Administrato Date "SURVEYOR CERTIFICATION correct to the best of my belief. 11/26/96 NM-04226 Date or Survey 1530 2628.1Z°

McManus #4R

Section 190, T-26-N, R-8-W San Juan County, NM

BALLARD PICTURED CLIFFS WELLBORE SCHEMATIC

PROPOSED

ELEVATION:6359' GL 6366' KB

8-5/8" 23# M-50
Casing
Set @ 120'
Cmt to surface w/ 129 sx
(see operation plan
for cement details)

TOP OF OJO ALAMO @ 1291'

TOP OF KIRTLAND @ 1397

TOP OF FRUITLAND@ 1782'

TOP OF PICTURED CLIFFS @ 2059'

3-1/2" 7.7# WC-70 Casing Set @ 2300' Cmt to Surface w/366 sx (see operation plan for detail). Perf & Foam Frac 2059' - 2256' w/ 85,000# 20/40 sand

PBTD @ 2296' TD @ 2300'