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STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

August 8, 1997

RECEIVED  
AUG 20 1997

OIL CON. DIV.  
DIST. 3

Burlington Resources Oil & Gas Company  
P. O. Box 4289  
Farmington, New Mexico 87499-4289  
Attention: Peggy Bradfield

Administrative Order NSL-3846

Dear Ms. Bradfield:

Reference is made to your application dated July 24, 1997 for an unorthodox "infill" gas well location for both the Blanco-Mesaverde and Basin-Dakota Pools for the proposed San Juan "28-6" Unit Well No. 98-M to be drilled 450 feet from the North line and 990 feet from the West line (Lot 4/Unit D) of Section 3, Township 27 North, Range 6 West, NMPM, Rio Arriba County, New Mexico.

Production from the Basin-Dakota Pool is to be included in an existing standard 321.12-acre gas spacing and proration unit comprising Lots 1 through 4 and the S/2 N/2 (N/2 equivalent) of said Section 3 which is currently dedicated to your San Juan "28-6" Unit Well No. 98-Y (API No. 30-039-20611), located at a standard gas well location 1150 feet from the North line and 800 feet from the East line (Lot 1/Unit A) of said Section 3 and production from the Blanco-Mesaverde Pool is to be included in an existing standard 320.84-acre gas spacing and proration unit comprising Lots 3 and 4, the S/2 NW/4, and the SW/4 (W/2 equivalent) of said Section 3 which is currently dedicated to Burlington's San Juan "28-6" Unit Well No. 75 (API No. 30-039-07153), located 750 feet from the South line and 1850 feet from the West line (Unit N) of said Section 3.

By the authority granted me under the provisions of Rule 2(d) of the "General Rules for the Prorated Gas Pools of New Mexico/Special Rules and Regulations for the Blanco-Mesaverde Pool/Special Rules and Regulations for the Basin-Dakota Pool", as promulgated by Division Order No. R-8170, as amended, the above-described unorthodox "infill" gas well location for the San Juan "28-6" Unit Well No. 98-M is hereby approved.

Sincerely,

William J. LeMay  
Director

WJL/MES/kv

cc: Oil Conservation Division - Aztec  
U. S. Bureau of Land Management - Farmington

# BURLINGTON RESOURCES

SAN JUAN DIVISION

July 24, 1997

Sent Federal Express

Mr. William LeMay  
New Mexico Oil Conservation Division  
2040 South Pacheco  
Santa Fe, New Mexico 87505

RECEIVED  
JUL 25 1997

OIL CON. DIV.  
DIST. 3

Re: San Juan 28-6 Unit #98M  
450'FNL, 990'FWL Section 3, T-27-N, R-6-W, Rio Arriba County, New Mexico  
API # 30-039-(not yet assigned)

Dear Mr. LeMay:

Burlington Resources is applying for administrative approval of a non-standard location for the above location in both the Mesa Verde and Dakota formations. This application for the referenced location is due to terrain, the presence of archaeology and at the request of the Bureau of Land Management.

The following attachments are for your review:

1. Application for Permit to Drill.
2. Completed C-102 at referenced location.
3. Offset operators/owners plat - Burlington is the offset operator
4. 7.5 minute topographic map showing the orthodox windows, and enlargement of the map to define topographic features.

We appreciate your earliest consideration of this application.

Sincerely,




Peggy Bradfield  
Regulatory/Compliance Administrator

xc: Bureau of Land Management  
NMOCD - Aztec District Office

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work DRILL	5. Lease Number SF-079051 Unit Reporting Number 891001051B - Dk 8910010510 - MV	
1b. Type of Well GAS	6. If Indian, All. or Tribe	
2. Operator <b>BURLINGTON RESOURCES</b> Oil & Gas Company	7. Unit Agreement Name San Juan 28-6 Unit	
3. Address & Phone No. of Operator PO Box 4289, Farmington, NM 87499  (505) 326-9700	8. Farm or Lease Name San Juan 28-6 Unit 9. Well Number 98M	
4. Location of Well 450' FNL, 990' FWL  Latitude 36° 36.6, Longitude 107° 27.6	10. Field, Pool, Wildcat Blanco Mesa Verde/ Basin Dakota 11. Sec., Twn, Rge, Mer. (NMPM) Sec 3, T-27-N, R-6-W API # 30-039-	
14. Distance in Miles from Nearest Town 7 miles to Gobernador	12. County Rio Arriba	13. State NM
15. Distance from Proposed Location to Nearest Property or Lease Line 450'	17. Acres Assigned to Well 320.84 W/2; 321.12 N/2	
16. Acres in Lease	18. Distance from Proposed Location to Nearest Well, Drig, Compl, or Applied for on this Lease 1300'	
18. Distance from Proposed Location to Nearest Well, Drig, Compl, or Applied for on this Lease 1300'	19. Proposed Depth 7910'	20. Rotary or Cable Tools Rotary
21. Elevations (DF, FT, GR, Etc.) 6693' GR	22. Approx. Date Work will Start	
23. Proposed Casing and Cementing Program See Operations Plan attached		
24. Authorized by:  Regulatory/Compliance Administrator	Date <u>7-11-97</u>	

PERMIT NO. \_\_\_\_\_ APPROVAL DATE \_\_\_\_\_  
APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

Archaeological Report to be submitted by Arboles Contract Archaeology  
Threatened and Endangered Species Report to be submitted  
NOTE: This format is issued in lieu of U.S. BLM Form 3160-3

District I  
 PO Box 1980, Hobbs, NM 88241-1980  
 District II  
 PO Drawer 00, Arcoma, NM 88211-0719  
 District III  
 1000 Rio Bravo Rd., Aztec, NM 87410  
 District IV  
 PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico  
 Energy, Minerals & Natural Resources Department

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

Revised February  
 Instructor  
 Submit to Appropriate Dist  
 State Lease  
 Fee Lease

AMENDED

WELL LOCATION AND ACREAGE DEDICATION PLAT

APN Number 30-039-	Well Code 72313/71599	Well Name Blanco Mesaverde/Basin Dakota
Property Code 7462	Property Name San Juan 28-6 Unit	Well No. 98M
OGRID No. 14538	Operator Name BURLINGTON RESOURCES OIL & GAS COMPANY	Blk No. 669

10 Surface Location

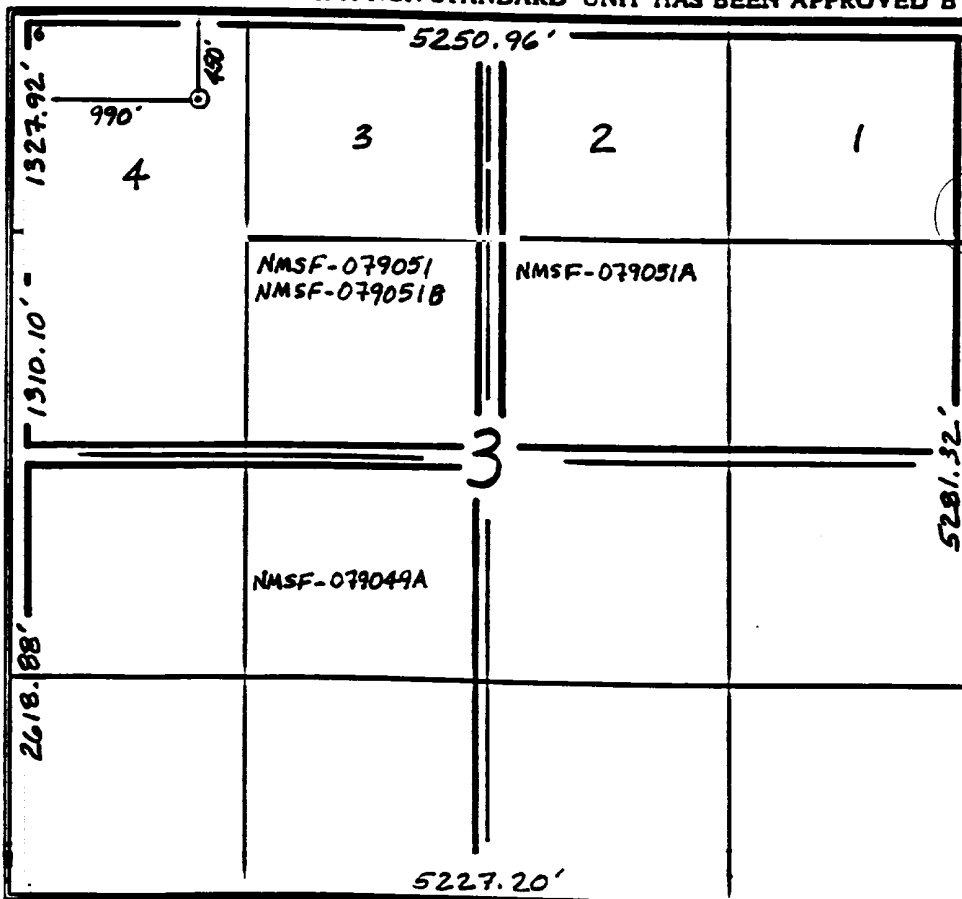
UL or lot no.	Section	Township	Range	Lot Idn	Feet from use	North/South line	Feet from use	East/West line	Comp
D	3	27-N	6-W		450	North	990	West	R..

11 Bottom Hole Location if Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from use	North/South line	Feet from use	East/West line	Comp

12 Dedication Acres 13 Joint or Infill 14 Commutation Code 15 Order No.  
 MV-W 320.84  
 DK-N 321.12

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 CERTIFIC

I hereby certify that the information contained hereon is true and complete to the best of my knowledge

*Peggy Bradfield*  
 Signature  
 Peggy Bradfield  
 Printed Name  
 Regulatory Administ.  
 Title  
 7-11-97  
 Date

18 SURVEYOR CERTIFIC

I hereby certify that the well location shown hereon was plotted from field notes of control surveys or under my supervision, and that the same are correct to the best of my belief.

6/13/97  
 Date of Survey  
 Signature and Seal of Professional Surveyor  
 NEALE C. EDWARDS  
 NEW MEXICO  
 6857  
 6857  
 Certificate Number

OPERATIONS PLAN

**Well Name:** San Juan 28-6 Unit #98M  
**Location:** 450' FNL, 990' FWL Sec 3, T-27-N, R-6-W  
 Rio Arriba County, NM  
 Latitude 36° 36.6, Longitude 107° 27.6  
**Formation:** Blanco Mesa Verde/Basin Dakota  
**Elevation:** 6693' GL

<u>Formation Tops:</u>	<u>Top</u>	<u>Bottom</u>	<u>Contents</u>
Surface	San Jose	2704'	
Ojo Alamo	2704'	3070'	aquifer
Fruitland	3070'	2455'	gas
Pictured Cliffs	3455'	3585'	gas
Lewis	3585'	3813'	gas
<b>Intermediate TD</b>	<b>3685'</b>		
Mesa Verde	3813'	4377'	gas
Chacra	4377'	5083'	
Massive Cliff House	5083'	5195'	gas
Menefee	5195'	5615'	gas
Massive Point Lookout	5615'	6823'	gas
Gallup	6823'	7555'	gas
Greenhorn	7555'	7660'	gas
Graneros	7660'	7772'	gas
Dakota	7772'		gas
<b>TD (4 1/2" liner)</b>	<b>7910'</b>		

Logging Program:

Cased hole - CBL - TD to 200' above TOC, GR/CNL across MV/Dk

Mud Program:

<u>Interval</u>	<u>Type</u>	<u>Weight</u>	<u>Vis.</u>	<u>Fluid Loss</u>
0- 200'	Spud	8.4-9.0	40-50	no control
200-3685'	LSND	8.4-9.0	30-60	no control
3685-7910'	Gas	n/a	n/a	n/a

Pit levels will be visually monitored to detect gain or loss of fluid control.

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

<u>Hole Size</u>	<u>Depth Interval</u>	<u>Csq. Size</u>	<u>Wt.</u>	<u>Grade</u>
12 1/4"	0' - 200'	9 5/8"	32.3#	WC-50
8 3/4"	0' - 3685'	7"	20.0#	J-55
6 1/4"	3585' - 6855'	4 1/2"	10.5#	J-55
6 1/4"	6855' - 7910'	4 1/2"	11.6#	J-55

Tubing Program:

0' - 7910'	2 3/8"	4.70#	EUE
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**BOP Specifications, Wellhead and Tests:****Surface to Intermediate TD -**

11" 2000 psi minimum double gate BOP stack (Reference Figure #1).  
After nipple-up prior to drilling out surface casing, rams and casing will be tested to 600 psi for 30 minutes.

**Intermediate TD to Total Depth -**

11" 2000 psi minimum double gate BOP stack (Reference Figure #1).  
After nipple-up prior to drilling out intermediate casing, rams and casing will be tested to 1500 psi for 30 minutes.

**Surface to Total Depth -**

2" nominal, 2000 psi minimum choke manifold (Reference Figure #3).

**Completion Operations -**

7 1/16" 2000 psi double gate BOP stack (Reference Figure #2).  
After nipple-up prior to completion, pipe rams, casing and liner top will be tested to 2000 psi for 15 minutes.

**Wellhead -**

9 5/8" x 7" x 2 3/8" x 3000 psi tree assembly.

**General -**

- Pipe rams will be actuated once each day and blind rams will be actuated once each trip to test proper functioning.
- An upper kelly cock valve with handle available and drill string valves to fit each drill string will be available on the rig floors at all times.
- BOP pit level drill will be conducted weekly for each drilling crew.
- All BOP tests and drills will be recorded in daily drilling reports.
- Blind and pipe rams will be equipped with extension hand wheels.

**Cementing:**

9 5/8" surface casing - cement with 163 sx Class "B" cement with 1/4# flocele/sx and 2% calcium chloride (188 cu.ft. of slurry, 200% excess to circulate to surface). WOC 12 hrs. Test casing to 600 psi for 30 minutes.

Saw tooth guide shoe on bottom. Bowspring centralizers will be run in accordance with Onshore Order #2.

**7" intermediate casing -**

Lead w/298 sx Class "B" w/3% medisilicate, 10# gilsonite/sx and 1/2# flocele/sx. Tail w/90 sx 50/50 Class "B" Poz w/2% calcium chloride, 2% gel, 1/2# flocele/sx and 10# gilsonite/sx (969 cu.ft. of slurry, 75% excess to circulate to surface.) WOC minimum of 12 hours before drilling out intermediate casing. If cement does not circulate to surface, a CBL will be run during completion operations to determine TOC. Test casing to 1500 psi for 30 minutes.

Cement nose guide shoe on bottom with float collar spaced on top of shoe joint. Bowspring centralizers spaced every other joint off bottom, to the base of the Ojo Alamo at 3070'. Two turbolating centralizers at the base of the Ojo Alamo at 3070'. Bowspring centralizers spaced every fourth joint from the base of the Ojo Alamo to the base of the surface casing.

- -  
4 1/2" Production Liner -

Cement to cover minimum of 100' of 4 1/2" x 7" overlap. Lead with 105 sx 65/35 Class "B" poz with 6% gel, 5# gilsonite/sx and 1/4# flocele/sx. Tail with 305 sx 50/50 Class "B" Poz with 2% gel, 1/4# flocele/sx, 5# gilsonite/sx, and 0.4% fluid loss additive (599 cu.ft., 35% excess to cement 4 1/2" x 7" overlap). WOC a minimum of 18 hrs prior to completing.

Cement float shoe on bottom with float collar spaced on top of shoe joint.

Note: To facilitate higher hydraulic stimulation completion work, no liner hanger will be used. In its place, a long string of 4 1/2" casing will be run and cemented with a minimum of 100' of cement overlap between the 4 1/2" x 7" casing strings. After completion of the well, a 4 1/2" retrievable bridge plug will be set below the top of cement in the 4 1/2" x 7" overlap. The 4 1/2" casing will then be backed off above the top of cement in the 4 1/2" x 7" overlap and laid down. The liner top can then be pressure tested to ensure a seal between the liner top and the 7" casing has been achieved. The test pressure shall be the maximum anticipated pressure to which the seal will be exposed (700 psi for the Mesa Verde and 2500 psi for the Dakota). The 4 1/2" bridge plug will then be retrieved and the production tubing will be run to produce the well.

- If hole conditions permit, an adequate water spacer will be pumped ahead of each cement job to prevent cement/ mud contamination or cement hydration.
- The pipe will be rotated and/or reciprocated, if hole conditions permit.

**Special Drilling Operations (Gas/Mist Drilling):**

The following equipment will be operational while gas/mist drilling:

- An anchored blooie line will be utilized to discharge all cuttings and circulating medium to the blow pit a minimum of 100' from the wellhead.
- The blooie line will be equipped with an automatic igniter or pilot light.
- Compressors will be located a minimum of 100' from the wellhead in the opposite direction from the blooie line.
- Engines will have spark arresters or water cooled exhaust.
- Deduster equipment will be utilized.
- The rotating head will be properly lubricated and maintained.
- A float valve will be utilized above the bit.
- Mud circulating equipment, water, and mud materials will be sufficient to maintain control of the well.

Additional Information:

- The Dakota and Mesa Verde formations will be completed and commingled.
- No abnormal temperatures or hazards are anticipated.
- Anticipated pore pressures are as follows:

Fruitland Coal	800 psi
Pictured Cliffs	800 psi
Mesa Verde	700 psi
Dakota	2500 psi
- Sufficient LCM will be added to the mud system to maintain well control, if lost circulation is encountered.
- The west half is dedicated to the Mesa Verde and the north half is dedicated to the Dakota in this well.
- This gas is dedicated.

San Voets  
Drilling Engineer

7/14/97  
Date



# **BURLINGTON RESOURCES**

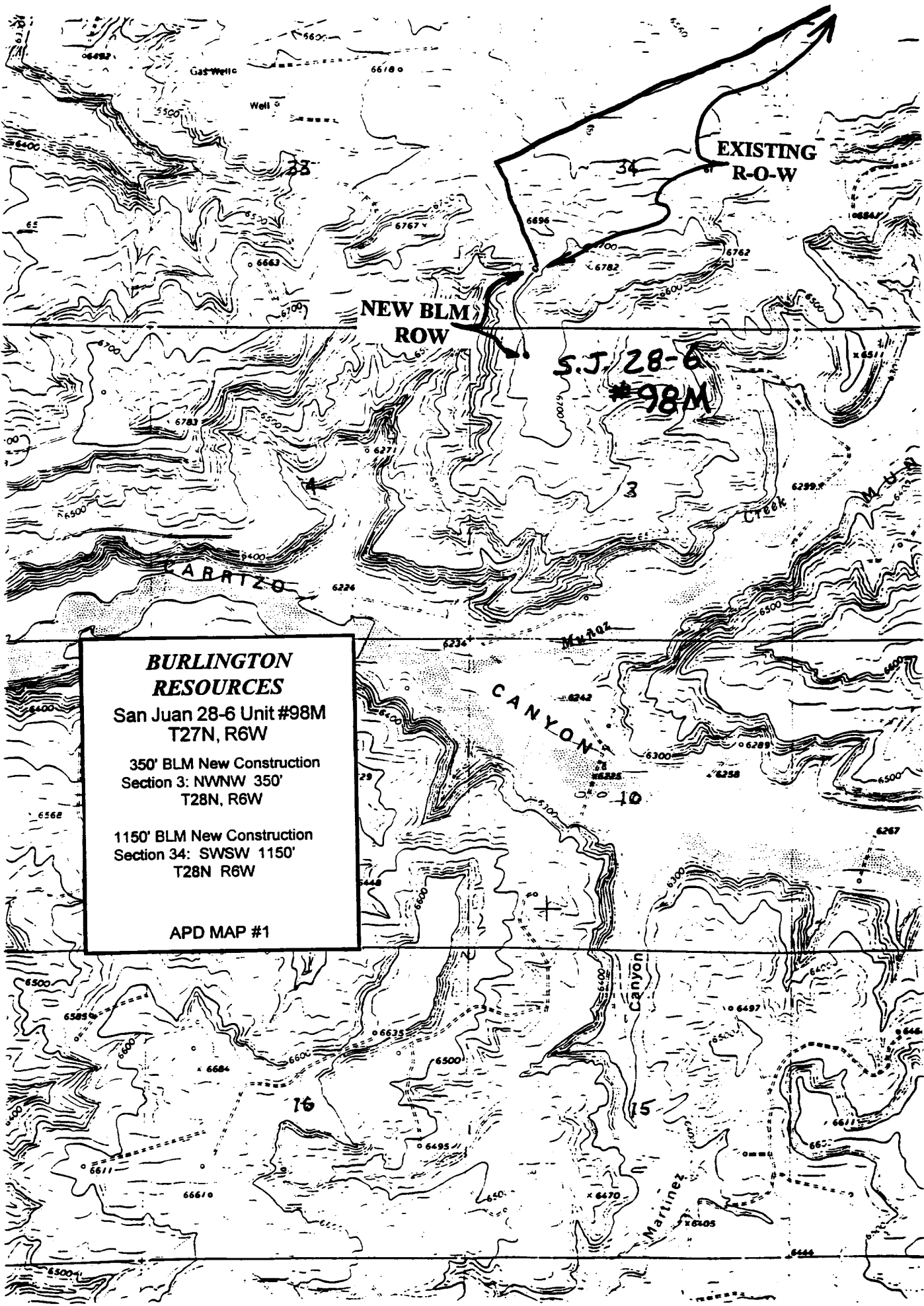
San Juan 28-6 Unit #98M  
Multi-Point Surface Use Plan

1. Existing Roads - Refer to Map No. 1. Existing roads used to access the proposed location will be properly maintained for the duration of the project. Bureau of Land Management right-of-way has been applied for as shown on Map No. 1.
2. Planned Access Road - Refer to Map No. 1. The required new access road is shown on Map No. 1. The gradient, shoulder, crowning and other design elements will meet or exceed those specified by the responsible government agency. The new access road surface will not exceed twenty feet (20') in width. No additional turnarounds or turnouts will be required. Upon completion of the project, the access road will be adequately drained to control soil erosion. Approximately 1500' of access road will be constructed. Pipelines are indicated on Map No. 1A.
3. Location of Existing Wells - Refer to Map No. 1A.
4. Location of Existing and/or Proposed Facilities if Well is Productive -
  - a. On the Well Pad - Refer to Plat No. 1, anticipated production facilities plat.
  - b. Off the Well Pad - Anticipated pipeline facilities as shown on the attached plat from El Paso Field Service.
5. Location and Type of Water Supply - Water will be hauled by truck for the proposed project and will be obtained San Juan 28-6 Water Well located SW/4 Section 23, T-28-N, R-6-W, New Mexico.
6. Source of Construction Materials - If construction materials are required for the proposed project, such materials will be obtained from a commercial quarry.
7. Methods of Handling Waste Materials - All garbage and trash materials will be removed from the site for proper disposal. A portable toilet will be provided for human waste and serviced in a proper manner. If liquids are left in the reserve pit after completion of the project, the pit will be fenced until the liquids have had adequate time to dry. The location clean-up will not take place until such time as the reserve pit can be properly covered over to prevent run-off from carrying waste materials into the watershed. Reserve pits will be lined as needed with either 12 mil bio-degradable plastic liner or a bentonite liner. All earthen pits will be so constructed as to prevent leakage from occurring; no earthen pit will be located on natural drainage. Generation of hazardous waste is not anticipated. Federal regulations will be adhered to regarding handling and disposal of such waste if so generated.
8. Ancillary Facilities - None anticipated.
9. Wellsite Layout - Refer to the location diagram and to the wellsite cut and fill diagram (Figure No. 4). The blow pit will be constructed with a 2'/160' grade to allow positive drainage to the reserve pit and prevent standing liquids in the blow pit.

10. Plans for Restoration of the Surface - After completion of the proposed project, the location will be cleaned and leveled. The location will be left in such a condition that will enable reseeding operations to be carried out. Seed mixture as designated by the responsible government agency will be used. The reseeding operations will be performed during the time period set forth by the responsible government agency. The permanent location facilities will be painted as designated by the responsible government agency.
11. Surface Ownership - Bureau of Land Management
12. Other Information - Environmental stipulations as outlined by the responsible government agency will be adhered to. Refer to the archaeological report for a description of the topography, flora, fauna, soil characteristics, dwellings, historical and cultural sites.
13. Operator's Representative and Certification - Burlington Resources Oil & Gas Company Regional Drilling Manager, Post Office Box 4289, Farmington, NM 87499, telephone (505) 326-9700. I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan, are to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Burlington Resources Oil and Gas Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

  
Regulatory/Compliance Administrator Date

pb



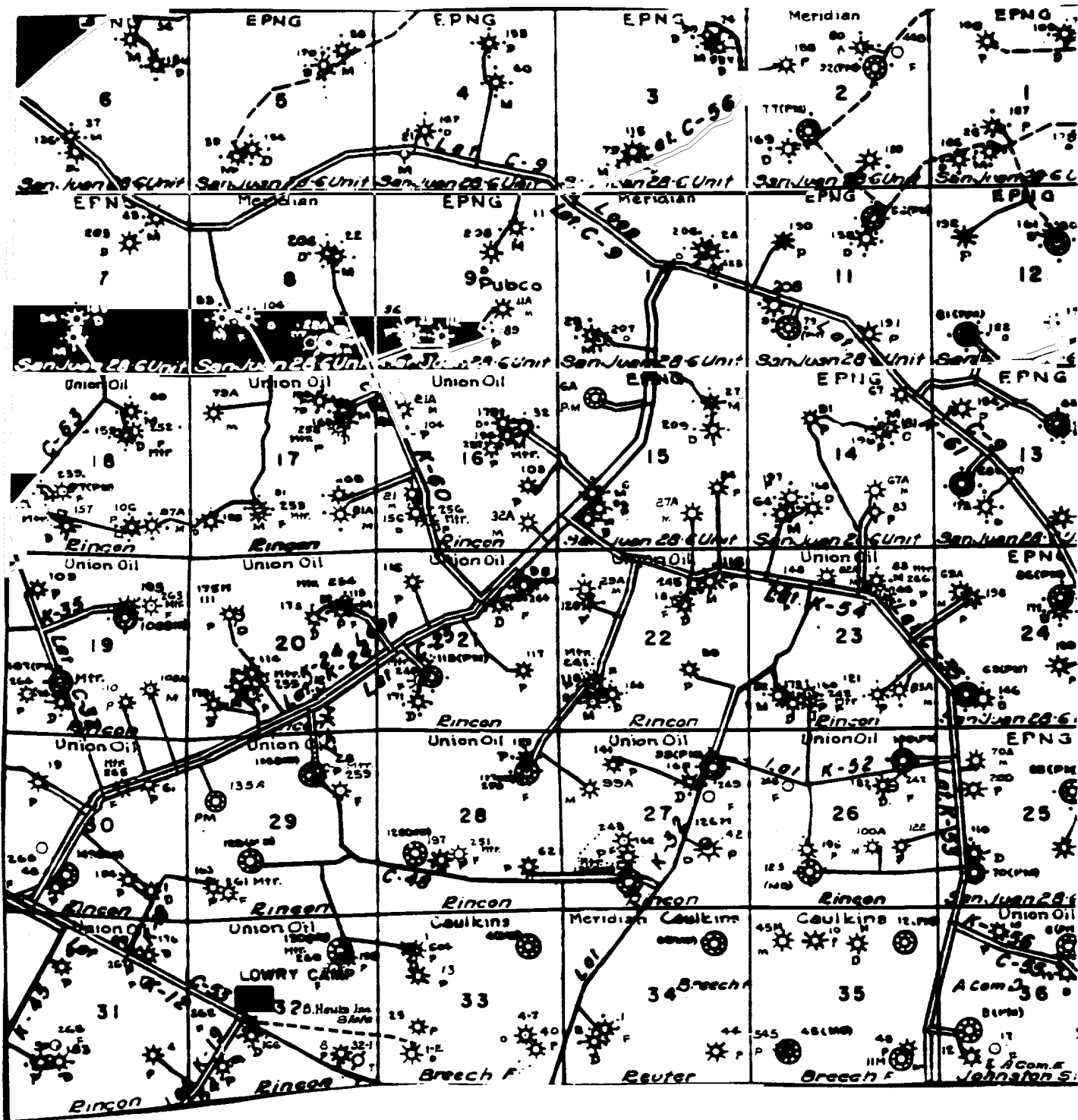
**BURLINGTON  
RESOURCES**

San Juan 28-6 Unit #98M  
T27N, R6W

350' BLM New Construction  
Section 3: NWNW 350'  
T28N, R6W

1150' BLM New Construction  
Section 34: SWSW 1150'  
T28N R6W

APD MAP #1

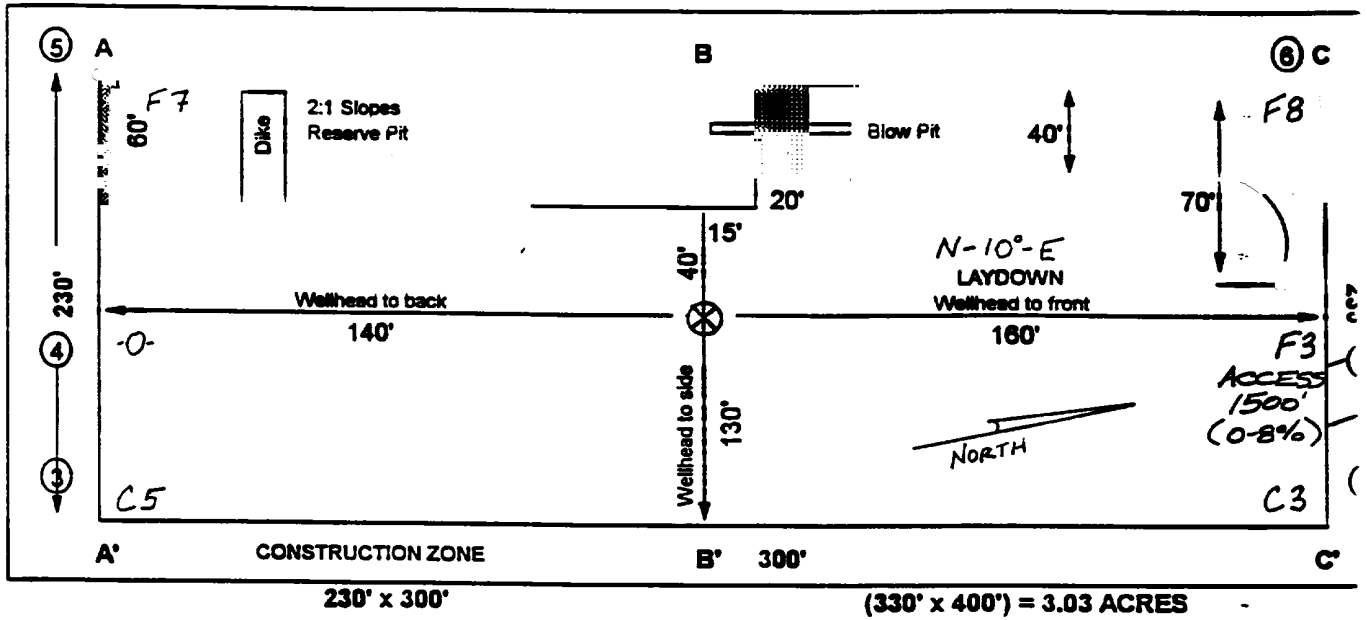


MERIDIAN OIL INC.  
 Pipeline Map  
 T-27-N, R-06-W  
 Rio Arriba County, New Mexico  
 San Juan 28-6 Unit #98M  
 Map 1A

# BURLINGTON RESOURCES

## PLAT #1

NAME: San Juan 28-6 Unit #98M  
 FOOTAGE: 450' FNL, 990' FWL,  
 SEC 3 TWN 27 N.R. 6 W NMPM  
 CO: Rio Arriba ST: New Mexico  
 ELEVATION: 6693' DATE: 6-13-97



Reserve Pit Dike: to be 6" above Deep side (overflow - 3' wide and 1' above shallow side).  
 Blow Pit: overflow pipe halfway between top and bottom and to extend over plastic liner and into blow pit.

**A - A' C/L**

6703'				
6693'	[Cross-section diagram showing wellhead and dike]			
6683'				

**B - B' C/L**

6703'				
6693'	[Cross-section diagram showing wellhead and blow pit]			
6683'				

**C - C' C/L**

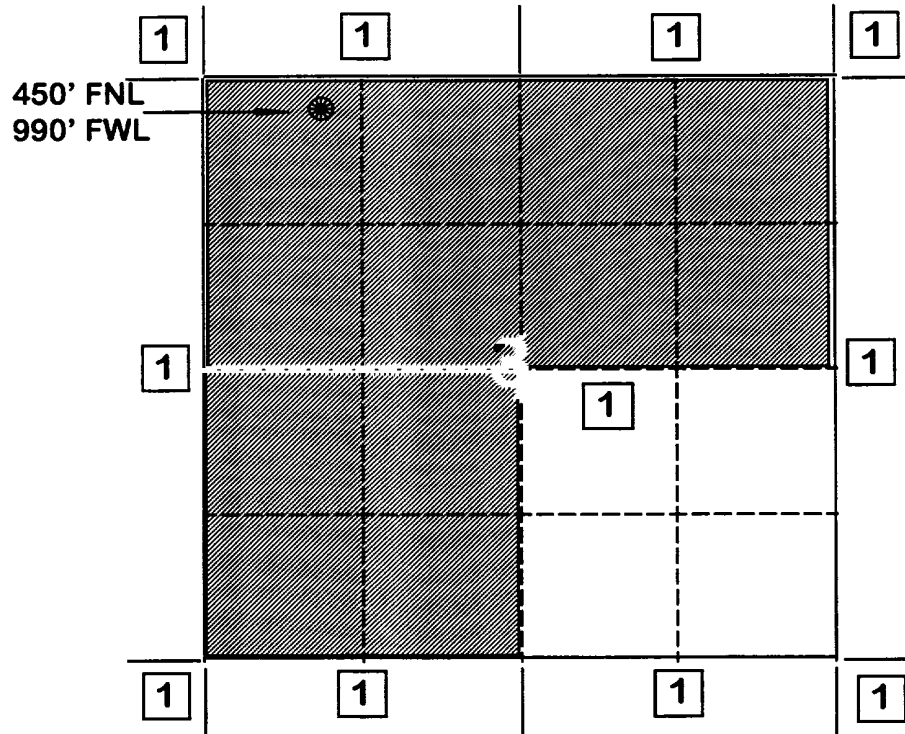
6703'				
6693'	[Cross-section diagram showing wellhead and access road]			
6683'				

Note: Contractor should call One-Call for location of any marked or unmarked buried pipelines or ca on well pad and/or access road at least two (2) working days prior to construction.

***BURLINGTON RESOURCES OIL AND GAS COMPANY***

**San Juan 28-6 Unit #98M  
OFFSET OPERATOR \ OWNER PLAT  
Nonstandard Location  
Mesaverde (W/2)/Dakota (N/2) Formations Well**

**Township 27 North, Range 6 West**



**1) Burlington Resources Oil and Gas Company**

