

REENTRY

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED  
BLM

94 SEP 20 AM 10:23

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

070 FARMINGTON, NM

1a. Type of Work DRILL	5. Lease Number SF-078580	
1b. Type of Well GAS	6. If Indian, All. or Tribe	
2. Operator <b>MERIDIAN OIL</b> 14538	7. Unit Agreement Name	
3. Address & Phone No. of Operator PO Box 4289, Farmington, NM 87499  (505) 326-9700	8. Farm or Lease Name 7119 Howell A 9. Well Number 4E	
4. Location of Well 720' FSL, 1200' FWL  API # 30-045-26512	10. Field, Pool, Wildcat 71599 Basin Dakota 11. Sec., Twn, Rge, Mer. M Sec 4, T-30-N, R-8-W NMPM	
14. Distance in Miles from Nearest Town	12. County San Juan	13. State NM
15. Distance from Proposed Location to Nearest Property or Lease Line 720'	API: 30-045-26512	
16. Acres in Lease	17. Acres Assigned to Well W/ 320.50	
18. Distance from Proposed Location to Nearest Well, Drlg, Compl, or Applied for on this Lease		
19. Proposed Depth 7702'	20. Rotary or Cable Tools Rotary	
21. Elevations (DF, FT, GR, Etc.) 6223' GR	22. Approx. Date Work will Start	
23. Proposed Casing and Cementing Program This well was drilled and completed as a Basin Dakota. It was plugged & abandoned Sept. 1991. It is intended to re-open this well by drilling out the cmt plugs, and perforating and fracture stimulating the well per the attached procedure and wellbore diagram.		
24. Authorized by:	<i>[Signature]</i> Regulatory Representative	9-20-94 Date

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

NOTE: This format is issued in lieu of U.S. BLM Form 3160-3

APPROVED  
AS AMENDED

*[Signature]* NSL 2115  
(2)

NMOCD

SEP 23, 1994  
*[Signature]*  
DISTRICT MANAGER

NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102  
Supersedes C-128  
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

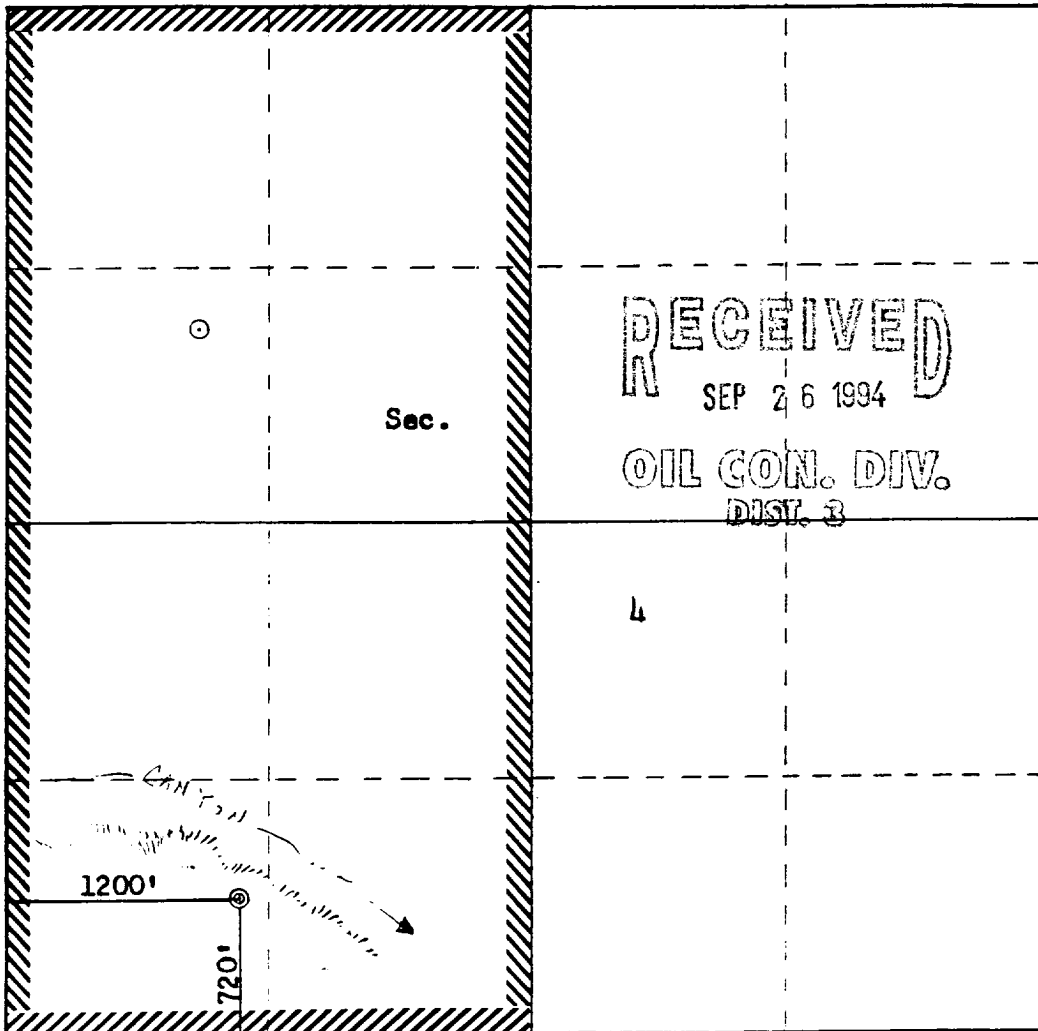
Operator <b>Meridian Oil Inc.</b>		Lease <b>HOWELL "A"</b> (SF <b>07858020</b> AM <b>10:23</b> LE)		Well No. <b>4E</b>
Unit Letter <b>M</b>	Section <b>4</b>	Township <b>30N</b>	Range <b>8W</b>	County <b>SAN JUAN</b>
Actual Footage Location of Well: <b>720</b> feet from the <b>South</b> line and <b>1200</b> feet from the <b>West</b> line				
Ground Level Elev. <b>6223</b>	Producing Formation <b>Dakota</b>	Pool <b>Basin</b>	Dedicated Acreage: <b>320.50</b> Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation \_\_\_\_\_

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



Scale: 1"=1000'

CERTIFICATION

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

*Peggy Bradfield*

Name  
**Peggy Bradfield**

Position  
**Regulatory Representative**

Company  
**Meridian Oil Inc**

Date  
**9-20-94**

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed  
**July 2, 1985**

Registered Professional Engineer and Land Surveyor

*Fred B. Kerr Jr.*  
**Fred B. Kerr Jr.**

Certificate No.  
**3950**

HOWELL A #4E  
Section 4, T30N, R08W  
San Juan Basin, NM  
Dakota Pay Add  
(Convert P&A'd DK Well to DK Producer)

☎ **Contact BLM and NMOCD prior to performing work on this well** ☎  
**Comply with all BLM, NMOCD, and MOI rules and regulations.**

**One week prior to moving on, visit location and Test location rig anchors and repair if necessary.  
Weld on 7" casing stub and 9-5/8" casing stub and spools and test.**

1. MIRU NU BOP, blooie line, and relief line. **Call for 500' of 2-3/8", 4.7# workstring/fracstring and 7800' of 2-7/8" slimhole workstring/fracstring.**
2. Install 2 X 400 bbl tanks and fill with filtered 2% KCL water (heat prior to stimulation if winter) for fracture stimulation. Add 5 #'s biocide/tank before filling. Place fire and safety equipment in strategic locations.
3. Pressure test BOP for 15 minutes. Call for Bowen 3.5 Power Swivel and 4-3/4" collars (at least 1 pony collar will be required). PU 6-1/4" bit/mill, collars, and DP and drill out cement plugs to 4-1/2" casing stub @ 2840' (note: 9 ppg mud between cmt. plugs). Pressure test casing to 2000 psi. TOOH.
4. PU 3-7/8" bit/mill, collars and drill 100' cmt. inside 4-1/2" csg. stub. TOOH. PU 7" by 4-1/2" wash pipe and TIH. Wash cement from 4-1/2" by 7" annulus down approximately 10'. TOOH.
5. PU dress mill and dress off 4-1/2" casing. TOOH. PU approximately 2840' of 4-1/2" 10.5#, J-55 csg. and casing patch. Tie into 4-1/2" csg. Pressure test patch to 2000 psi. ND BOP. Cut off 4-1/2" csg. and set slips. NU 4-1/2" spool and test. NU BOP.
6. PU 3-7/8" bit/mill and drill out and wash cmt to cmt. ret. @7321'. Drill retainer and Float Collar @ 7681'. Drill cmt. to 7688' (1 foot above shoe). TOOH.
7. PU 3-7/8" bit and 4-1/2" 11.6# csg. scraper and TIH. Clean out to bottom, and circulate hole clean w/ 2% KCL. Pressure test csg to 2000 psi. TOOH.
8. RU wireline. Run TDT log from PBTD to 7300'. Run and set 4-1/2" WAPP (modified RBP) with slow burn setting tool @ 7682'. Place 1-10,000 psi pressure bomb (1 Amarada-96 hour gauge) in RBP below Encinal Canyon.
9. RU full lubricator and Perforate the following Encinal Canyon interval with a 3-1/8" HSC, @ 4 SPF, (0.50" holes @ 90 degree phasing).  
**Note: Underbalanced Perforating may result in a surface pressure of 3500 psi. Take necessary precautions to insure a safe job.**  

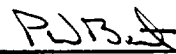
7664', 7667', 7674', 7677', 7680'

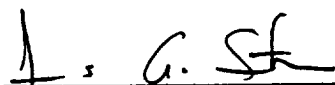
5 intervals, 20 holes
10. Load hole if needed to kill. PU 4-1/2" pkr, F-Nipple on top of packer, 500' of 2-3/8" tbg and the rest of the 2-7/8" fracstring. Set pkr. @ 7650'. Set blanking plug in F-Nipple and load tbg. with 2% KCL. Test tbg to 5000 psi. Release pressure to 500 psi and leave well SI for 24 hours. After 24 hours retrieve blanking plug. Prepare to fracture stimulate Encinal zone.
11. RU stimulation company. Hold safety meeting. Pressure test surface lines to 6000 psi (1000 psi over maximum allowable treating pressure but no greater than working pressure of surface lines). Maximum treating pressure is 5000 psi. Fracture stimulate well according to Stimulation Company Procedure. Sand will be tagged w/ Ir-92. Shut down during Pad and note ISIP.

12. Shut-in well for 6 hours. Slowly flow back well until returns diminish. Obtain pitot gauge. Release packer and TOOH.
13. RU wireline. Make wireline dummy run to tag sand top. Set normal RBP @7658'. RU full lubricator and perforate Upper Dakota interval with a 3-1/8" HSC, @ 2 SPF, (0.50" holes @ 90 degree phasing).  
7435', 7438', 7440', 7446', 7450', 7502', 7505', 7508', 7511', 7527', 7530', 7552', 7556', 7560', 7566', 7572', 7575', 7605', 7608', 7618', 7623', 7628', 7633', 7635', 7641', 7645'

Total 26 intervals, 52 holes

14. Load hole if needed to kill. PU 4-1/2" pkr, F-Nipple, 90' of 2-3/8" tbg and the rest of the 2-7/8" fracstring. TIH and set packer @7650'. Pressure RBP to 3800 psi. Release packer and reset @ 7400'. Run blanking plug and test tbg to 5000 psi. Retrieve plug. Prepare to foam fracture stimulate Dakota interval.
15. RU stimulation company. Hold safety meeting. Pressure test surface lines to 6000 psi (1000 psi over maximum allowable treating pressure but no greater than working pressure of surface lines). Maximum treating pressure is 5000 psi. Fracture stimulate well according to Stimulation Company Procedure. Shut down during Pad and note ISIP. Flush well @ 90% based on Pad ISIP.
16. Shut-in well for 6 hours. Slowly flow back well until returns diminish. Obtain pitot gauge. Release packer and TOOH and LD fracstring.
17. TIH with retrieving head or notched collar on 2-3/8" workstring and clean out to bridge plug @ 7658'. Obtain pitot gauge. When sand production drops, retrieve BP. TOOH.
18. TIH with retrieving head or notched collar on 2-3/8" workstring and clean out to bridge plug @ 7682'. Obtain pitot gauge. When sand production drops, retrieve BP and gauge. TOOH.
19. TIH with notched collar on 2-3/8" workstring and clean out to new PBD @ 7688'. Obtain final pitot gauge. When sand production becomes negligible, TOOH.
20. TIH with 2-3/8" production tubing and SN one joint off bottom of string. Land tbg @ 7672'. Obtain final pitot gauge.
21. ND BOP. NU new wellhead. RDMO.
22. Run After Frac Gamma.

  
Pat Bent, Drilling Superintendent

  
Jimmy Smith, Production Engineer

**Vendors:**

Packer Rental & RBP's:  
Wireline Services:  
Stimulation:  
Pressure Bombs:

Baker  
Schlumberger  
BJ  
Teffteller

**Pertinent Data Sheet - Howell A #4E**

**Location:** 720' FSL, 1200' FWL, Section 04, T-30-N R-08-W, San Juan County, NM

**Field:** Basin Dakota

**Elevation:** 6223' GL

**TD:** 7702'  
**PBTD:** 7681'

**GWI:** 100.0000%

**NRI:** 85.50000%

**Completed:**10-16-85

**DP Number:** 54269A

**Initial Potential:** 10/16/85 NO FLOW

**Casing Record:**

<u>Hole Size</u>	<u>Casing Size</u>	<u>Weight &amp; Grade</u>	<u>Depth Set</u>	<u>Cement</u>	<u>Top/Cement</u>
12-1/4"	9-5/8"	32.3# H-40	349'	220 sx	Surface
8-3/4"	7"	20# K-55	3400'	285 sx	1150'
6-1/4"	4-1/2"	10.5# N-80	7690'	350 sx	3100'
		11.6# J-55			

FLOAT COLLAR @7681'

**Tubing Record:**

<u>Tubing Size</u>	<u>Weight &amp; Grade</u>	<u>Depth Set</u>
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**Liner Record:**

<u>Hole Size</u>	<u>Liner Size</u>	<u>Weight &amp; Grade</u>	<u>Depth Set</u>	<u>Cement</u>	<u>Top/Cement</u>
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<b><u>Formation Tops:</u></b>	Ojo Alamo	1829'	Chacra	3936'	Mancos	5776'
	Kirtland	2009'	Mesaverde	4600'	Gallup	6449'
	Fruitland	2678'	Menefee	4950'	Greenhorn	7308'
	Pictured Cliffs	3052'	Point Lookout	5276'	Graneros	7358'
				Dakota		7498'

**Logging Record:** Compensated Density Dual Spaced Neutron Log; Temp. Survey, Compensated Density Sidewall Neutron Log; Compensated Analyzed Log Systems; Ind. Log

**Stimulation:** Perforated @ 7436', 7439', 7442', 7445', 7448', 7451', 7503', 7506', 7509', 7512', 7528', 7531', 7553', 7556', 7559', 7565', 7568', 7571', 7574', 7577', 7604', 7607', 7621', 7624', 7627', 7639', 7633', 7636', 7643', 7646' with 1 SPZ.  
Fractured with 176,000# 20/40 sand and 136,024 gals. water.

**Workover History:**

11/87 Pulled tubing. Could not maintain full circulation when attempted to circulate hole with water. TIH with packer and isolated casing failure between 4809'-5056'. TIH and set packer @ 7619'. Nipped down BOP and nipped up wellhead.

9/91 Pulled 1-1/2" tubing. Set CMT retainer @ 7321'. Cmt with 170 sx cmt., displace 60 sx below retainer, spot 110 sx on top of retainer. Plug set from 7321'-5872'. Pull up to 5804'. Spot 142 sx cmt 5804'-3932'. Pull up to 3443'. Spot 12 sx cmt 3443'-3285'. Pull up to 3100'. Load annulus with water. Cut off casing and ran spear. Couldn't pull. Cut off 4-1/2" casing. Pulled 70 jts. 4-1/2" casing. Run 1-1/2" tubing to 3100'. Spot 140 sx cmt 3100'-2373'. Pull tubing to 2063'. Spot 110 sx cmt 2063'-1497'. Pull tubing out of hole. Perf 2 holes @ 400'. Cmt 170 sx, circulate out bradenhead. Install dry hole marker. Well is currently P & A.

**Production History:**

Initial Deliverability:	MCFD	N/A	BOPD
Latest Deliverability:	N/A	MCFD	N/A

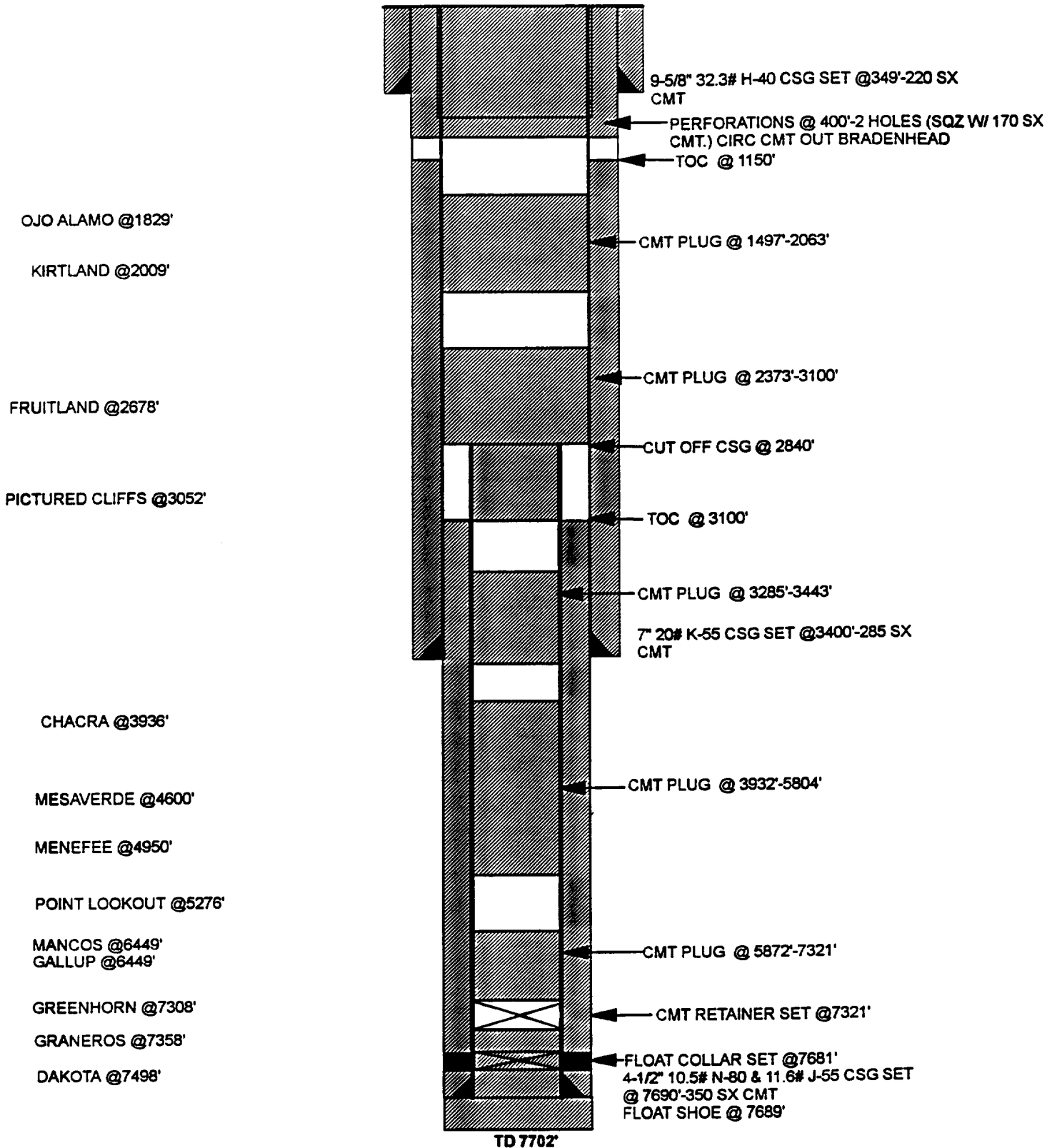
**Transporter:**

# HOWELL A #4E

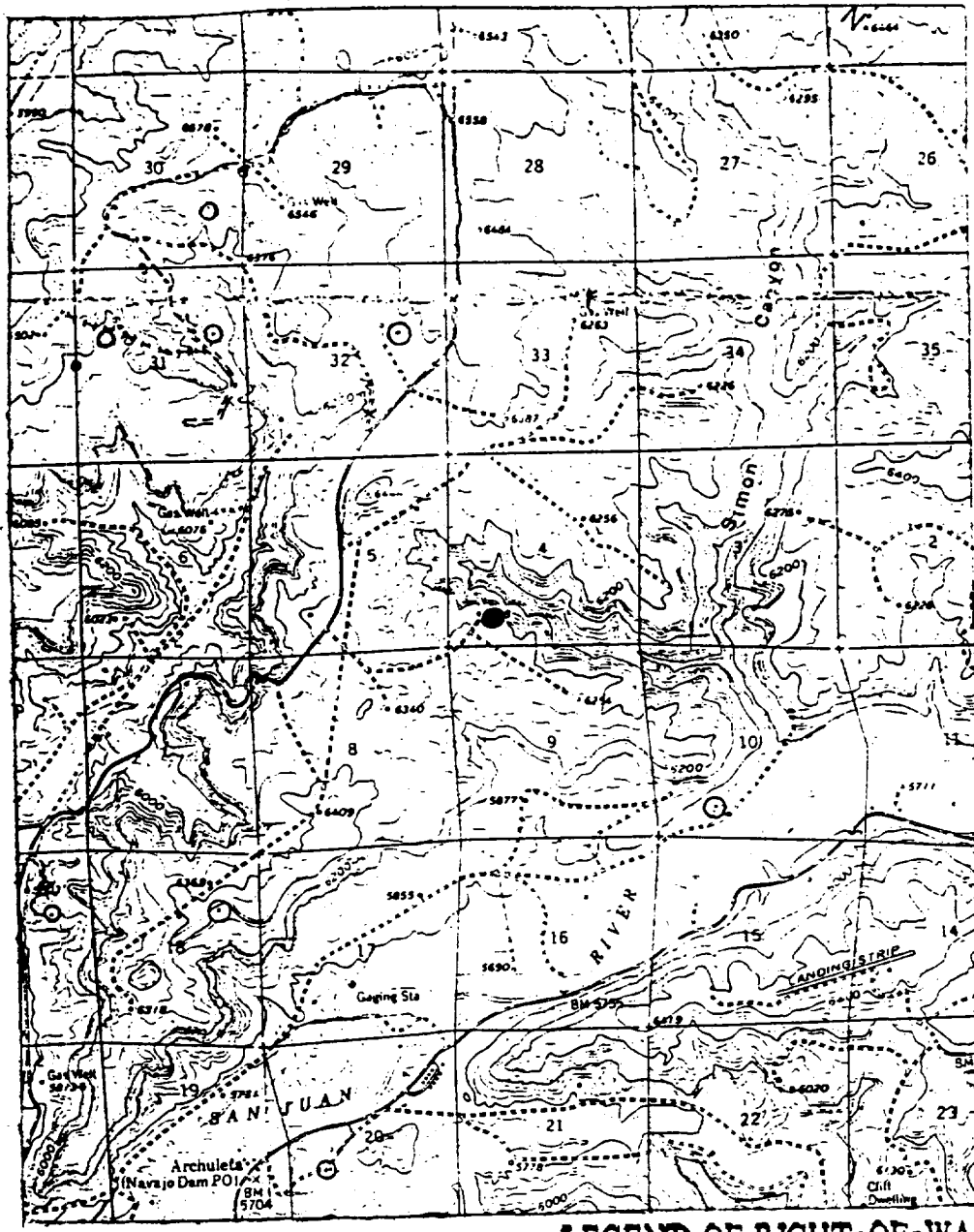
## CURRENT

BASIN DAKOTA

UNIT M, SECTION 04, T30N, R8W, SAN JUAN COUNTY, NM



Howell A #4E  
SW 4-30-8 (DK)



Map #1

LEGEND OF RIGHT-OF-WAYS

- EXISTING ROADS —————
- EXISTING PIPELINES + + +
- EXISTING ROAD & PIPELINE + + + +
- PROPOSED ROADS —————
- PROPOSED PIPELINES + + +
- PROPOSED ROAD & PIPELINE + + + +