submitted in lieu of Form 3160-5

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Sundry Notices and Reports on Wells

1. **Type of Well**
GAS

5. **Lease Number**
SF-079265

6. **If Indian, All. or Tribe Name**

7. **Unit Agreement Name**

2. **Name of Operator**
MERIDIAN OIL

8. **Well Name & Number**
Klein #28

3. **Address & Phone No. of Operator**
PO Box 4289, Farmington, NM 87499 (505) 326-9700

9. **API Well No.**

4. **Location of Well, Footage, Sec., T, R, M**
2170'FSL, 1840'FWL Sec.33, T-26-N, R-6-W, NMPM

10. **Field and Pool**
Blanco MV/Basin Dk

11. **County and State**
Rio Arriba Co, NM

12. **CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OTHER DATA**

Type of Submission	Type of Action		
_x_ Notice of Intent	___ Abandonment	___ Change of Plans	
	_x_ Recompletion	___ New Construction	
___ Subsequent Report	___ Plugging Back	___ Non-Routine Fracturing	
	___ Casing Repair	___ Water Shut off	
___ Final Abandonment	___ Altering Casing	___ Conversion to Injectio	
	___ Other -		

13. **Describe Proposed or Completed Operations**

It is planned to temporarily abandon this well in the Basin Dakota formation, recomplete in the Blanco Mesa Verde and put on production after 30 days± production. The well will be commingled in the Basin Dakota and Blanco Mesa Verde formations. Application is ongoing for an area commingle of the entire Klein/Vaughn leases. This application will be submitted by March 15, 1994, Due to previous commingle procedence in the area by Unocal and Caulkins Oil, Attached is a wellbore diagram and procedure for this work.

RECEIVED
FEB 24 1994
OIL CON. DIV.
DIST. 3

SEE ATTACHED FOR CONDITIONS OF APPROVAL

94 FEB 15 AM 11:21
070 FARMINGTON, NM

RECEIVED
BLM

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

Signed Peggy Bradfield (TEM) Title Regulatory Affairs Date 2/14/94

(This space for Federal or State Office use)
APPROVED BY _____ Title _____ Date _____
CONDITION OF APPROVAL, if any:

APPROVED
FEB 16 1994
DISTRICT MANAGER

Hold C-104 for NSL

NMOCD

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-102
Revised 10-1-

Mokat C-104 For NSL (E)

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

Operator	Lease	Well No.
Meridian Oil Inc.	KLEIN (SF-079265)	28

Unit Letter	Section	Township	Range	County
K	33	26N	6W	Rio Arriba

RECEIVED
BLM
94 FEB 15 AM 11:21
070 FARMINGTON, NM

Actual Footage Location of Well:
2170 feet from the South line and 1340 feet from the West line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
6743	DAKOTA/Mesa Verde	BASIN /Blanco	320.00/320 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

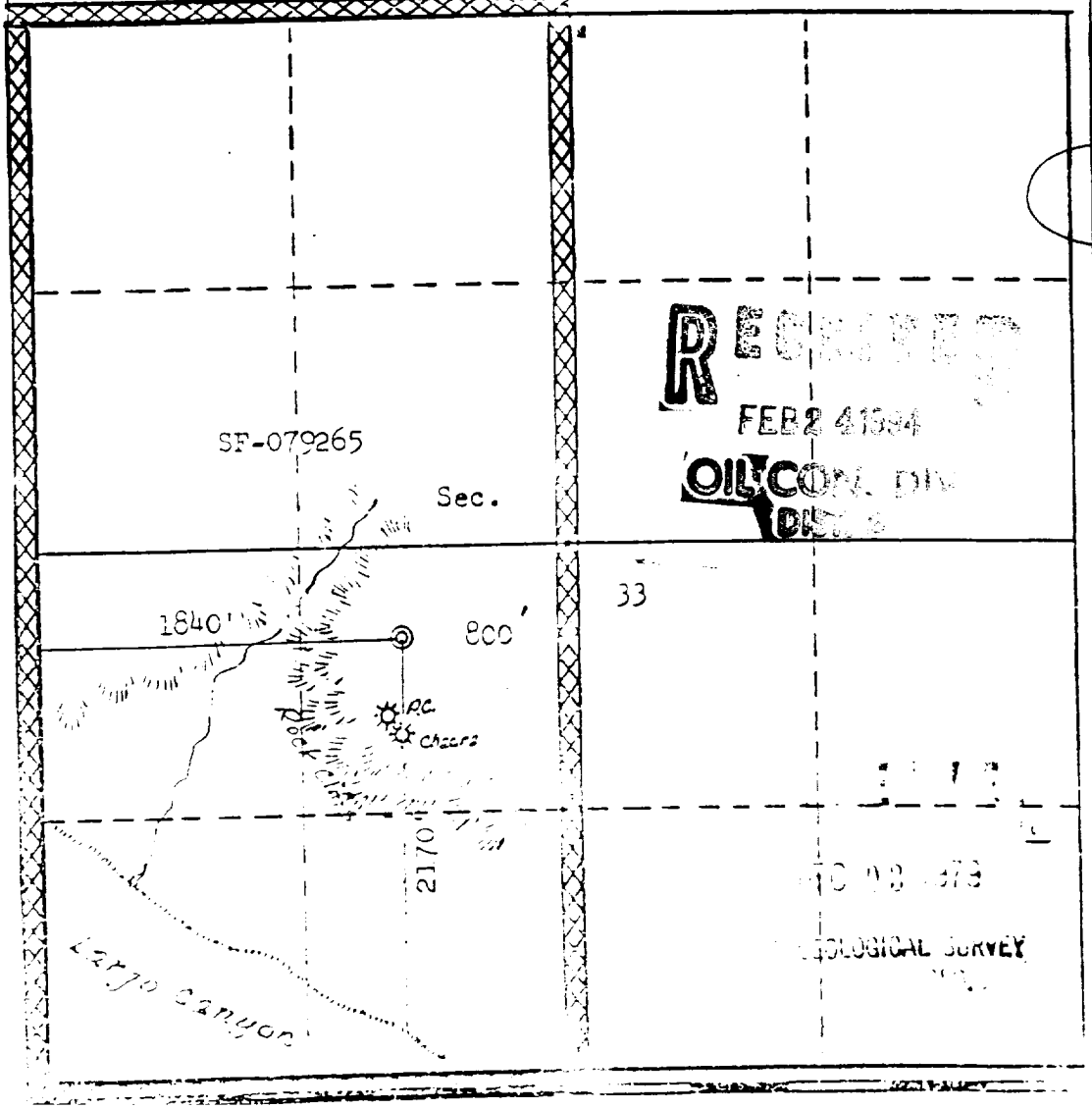
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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.



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: 2-14-94

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, 1979

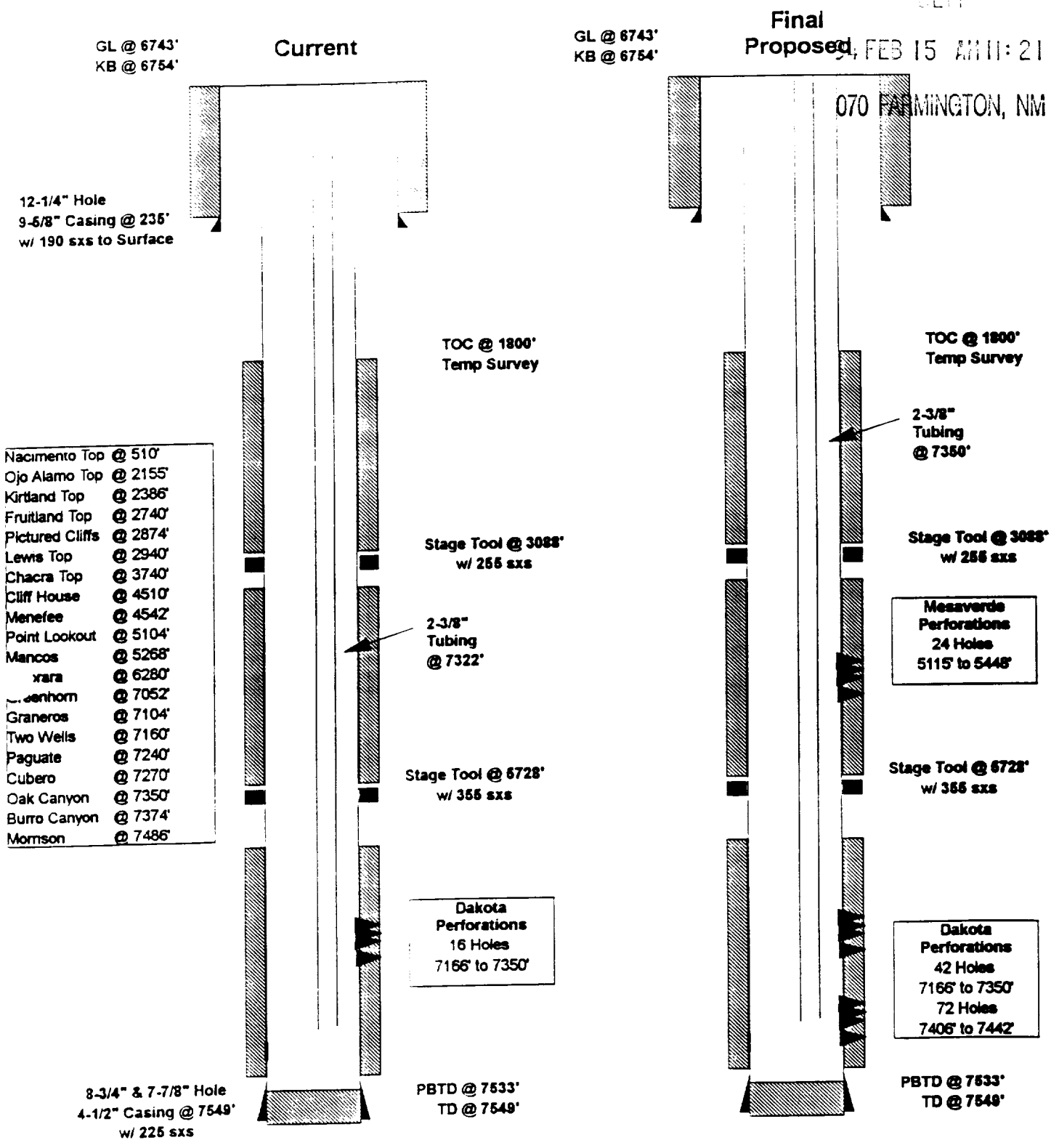
Registered Professional Engineer and/or Land Surveyor

Certificate No. [illegible]

Klein # 28

T26NR06W33k

Mesaverde & Lower
Dakota Work



This well will be commingled in the Mesaverde and Dakota. An allocation Formula wil be finalized after a 3 month online sales testing period. MOI will work with the NMOCD in developing this allocation formula. Prior to commingle, the Dakota will be Temporarily Abandoned under a Retreivable bridge plug, while the Mesaverde will be produced separately to help determine commingled production.

Meridian Oil Inc.
01-14-94/ TEM

Dakota & Mesaverde Workover Procedure
Klein # 28
T26NR06WSec33K
Basin Dakota Producer

Prior to Moving on Workover Rig, Inspect Location, Verify All Appropriate Equipment is on Hand. Dig work pit for water/cement recovery/flare pit, fence pits. Comply with all BLM, NMOCD, & MOI rules & regulations. **Always Hold Safety Meetings.**

- Ensure all approvals for Commingle work necessary have been approved.
- Utilize EPNG Drill Gas. Lay 2 lines if necessary to obtain volume.
- Spot and fill **Seven (7)-400 bbl tanks** with risers to pre-gel if necessary.
- Use Only True 1% KCl water, (No substitutes!) Filter Frac & Acid water to 25 microns.
- *Two-hundred-Sixty (260) joints 2-3/8" 4.7# EUE N-80 tubing on location.*
- Four (4) 3-1/2" Drill Collars on location.
- Will utilize trucked Nitrogen after intial work in place of drill gas.
- Will utilize Three (3) 4-1/2" RBP, 4-1/2" Fullbore PKR, & 4-1/2" Tension PKR.
- 900 series BOP, 7" blooie line, manifold, & 1/4", 1/2", & 3/4" chokes as appropriate.

1. Move in workover rig. Record and report SI pressures on tubing, casing, & bradenhead. Lay blowdown line. Blow down casing & tubing. Pump 30 bbls 1% KCl down tubing. ND WH, NU BOP & stripping head.

2. TOOH, rabbit, & strap 2-3/8" tubing (236 jts from 7322', SN @ 7289'). Flow well out blooie line. Visually inspect tubing. Note any scale in tubing. Stand production string back in derrick. Lay down approximately **2100'** of this pipe on a float that will remain on location if possible (Cover with tarp to protect.)

3. RU wireline. Run gage ring to PBTD @ 7533'. Run GR-CCL from PBTD to 7100'. (This will be utilized for correlation.) Run 4-1/2" CIBP on wireline. Set Plug @ 7100' +/- above current Dakota perfs.

4. PU tension set PKR & 2-3/8" N-80 workstring. Load hole from bottom with 1% KCl water approximately 100 bbls. Set PKR above CIBP. Test tubing & CIBP to 3500 psi. Test annulus to 500 psi maximum at this time. Release pressure & TOOH.

5. RU wireline. Run GR-CCL-CBL from 7100' to surface. No gaps. Run with 500-1000 psi over entire interval. Note and report all cement tops and quality of bond over Mesaverde Interval. Run GR-dual spaced neutron log across 6200' to 7000', 3700' to 5500', & 2800' to 3100'. Actual Perforations will be verified by Engineering prior to shooting!!

6. PU Fullbore PKR & one joint 2-3/8". Fill hole if during logging (19 bbls rough pipe displacement) fluid is not to surface. Set PKR and test Casing from surface to 3000 psi. Hold and record for 15 minutes on chart. If casing integrity is not sound, identify leaks, & Engineering will recommend squeeze procedure & modify stimulation work.

7. PU 3-7/8" bit, drill collars and stage in hole unloading. Drill CIBP with gas & clean out to PBTD of 7533'. Pull up and gauge well through manifold 1 hr. Check for fill. Spot 20 bbls 1% KCl water on bottom and TOOH.

8. RU wireline. Run RBP (Pressure Bomb below in sub, ensure pressure will communicate past plug from internal element removal). Set plug @ 7450' (Below all perforations!!). Spot 5 gallons sand on top of plug. Prepare to perforate under full lubricator UNDERBALANCED. Run one 3-1/8" HSC gun. Perforate following interval with 2 SPF (90 degree phasing 10 gr 0.38" holes, 36' gun, 72 holes).

Dynamic Underbalanced Technique (MUST BE ONE GUN RUN): **7406' to 7442'** (Immediately upon firing gun, come uphole to catch gun).

9. RU Frac Crew at this time. (All frac water must be filtered and at approximately 80 degrees Fahrenheit). PU tension set PKR, profile nipple, & TIH on 2-3/8" N-80 tubing string. Set PKR below Perfs and test frac sting to 6000 psi. Load/Kill Backside with 1% KCl water. Utilize full opening valve tested to minimum of 6000 psi. Hold and record pressure for 30 minutes. Pull up and reset PKR @ 7390'. PREPARE to HYDRAULICALLY FRACTURE DOWN 2-3/8" TUBING! **MAX PRESSURE 6000 PSI.** Frac w/ 50,000# 20/40 econoprop in 35# delayed borate crosslink gel on the fly. (See attached schedule).

10. SI well for minimum of 6 hrs for fracture to close. Flow well back on 1/4" choke. Minimize liquid returns to 20 BPH. When possible, Release PKR & TOOH with tubing.

11. PU notched collar, Two (2) string floats, & TIH and clean well out to PBTD with gas. When zone has cleaned up (24 hrs), TOOH.

12. RU wireline and Full Lubricator. Run AFTER FRAC GAMMA RAY # 1. Run standard RBP. Set RBP @ 7380'. Kill well from surface with 30 bbls 1% KCL once RBP has been set. w/ dump bailer place 2 sxs on top of RBP. Prepare to Perforate additional holes in traditional Dakota interval. Perforate following interval with 2 SPF (90 degree phasing Owen-302 10 gr charge 0.38" holes,13 settings, 26 holes) in one gun run: Bottom-up.

7341', 7338', 7333', 7327', 7324', 7320', 7292', 7282', 7276', 7255', 7251', 7248', 7166'

13. RU acid & nitrogen crew. PU tension set PKR, profile nipple, & TIH on 2-3/8" N-80 tubing. Pump 30 bbls 1% KCl down tubing. Set PKR below perfs and test tubing to 4000 psi with 1% KCl water. Test all surface lines to 5000 psi. Pull up and reset PKR @ 7050', load annulus and hold 500 psi on annulus throughout acid job. MAX PRESSURE 4000 PSI. Pump Acid & Nitrogen per attached recommendation. Total open holes are 16 old + 26 New = 42 holes.

14. SI well. RU to flow well back through choke manifold. Flow well back through manifold limiting fluid to 10 BPH for first 2 hours, then on 1/2" choke. When possible release PKR & TOOH.

15. PU notched collar, float, & TIH cleaning well and unloading spent acid with gas. Gauge well through manifold on choke for minimum 1 hour and TOOH.

16. RU wireline. Run standard 4-1/2" RBP & set RBP @ 5500'. w/ dump bailer place 2 sxs sand on top of RBP prior to testing.

17. Perforate Mesaverde Interval with 3-1/8" HSC gun select fire 180 degree phasing 1 SPF Owen-306 12 gr charge 0.30" holes as follows: (24 holes)

5448', 5424', 5380', 5318', 5291', 5268', 5257', 5249', 5242', 5214', 5209', 5205',
5202', 5199', 5196', 5182', 5148', 5145', 5142', 5141', 5138', 5135', 5119', 5115'

18. PU 4-1/2" SAP/SPIT tool (2' spacing & No isolation flapper!) on 2-3/8" N-80 tubing. Strap pipe in hole verififying previous tally. TIH below perfs on clean pipe and test RBP and SAP tool to 3500 psi. MAX PRESSURE 4000 PSI. Will utilize **2500 gallons acid**. Pull up and treat each perforation with 100 gallons 10 % HCl acid w/ 1 gal/1000 clay stabilizer, 2 gal/1000 inhibitor, & 2 gal/1000 iron control. Ensure each perforation is open. Use excess acid on last 2 settings (Previous workovers have not broken down these perforations). TOOH when complete.

19. RU Frac Crew. PU fullbore PKR & one joint 2-7/8" N-80 tubing. Install 5000 psi working pressure full opening surface valve. MAXIMUM SURFACE TREATING PRESSURE WILL BE **3000 PSI**. Stimulate Mesaverde per attached schedule w/ 200,000# 20/40 brady in 30# X-Link Gel.

20. SI well for 4 hrs. Flow well back through choke manifold limiting fluid production to 20 BLPH. When possible. TIH w/ notched collar and clean well out to RBP with gas. Clean well approximately 48 hrs and TOOH laying down 2-3/8" N-80 workstring.

21. RU wireline. Run AFTER FRAC GAMMA RAY # 2.

22. Prepare to run production tubing string as follows for Mesaverde: expendable check, one joint 2-3/8" tubing, 'F' nipple, and remaining tubing. Land tubing @ 5200'. ND BOP, NU WH. Pump off expendable check and flow well up tubing obtain Mesaverde production gauge. RD & Release Rig to next location.

23. Operations will remanifold wellhead, and produce well for 30 days into EPNG pipeline. At end of 30 days, Run pressure bomb in SN and SI well. Leave well SI 7 days. Pull Bomb, and return Mesaverde to production until workover rig returns.

24. Move In, RU workover rig. Lay all lines and manifolds. Record flowing casing & tubing pressures. Blow casing and tubing down. Kill tubing with 20 bbls 1% KCl water. ND WH, NU BOP. TOOH with 2-3/8". TIH w/ retreiving head, float, & clean well out with Nitrogen. Spot 15 bbls fluid on top of RBP. Engage & release RBP. TOOH & LD RBP.

25. TIH w/ same and retreive RBP above Lower Dakota. Spot 25 bbls 1% KCl on top of RBP. Engage & release RBP. TOOH & LD RBP.

26. TIH w/ same and retreive RBP w/ pressure bomb on beneath. Engage & release RBP. TOOH with RBP and bombs.

27. TIH with final production tubing string for commingled production as follows: expendable check, one joint 2-3/8", F nipple, and remaining 2-3/8" tubing, PU from float. Land tubing @ 7350'. ND BOP, NU WH. Pump off check w/ water & Nitrogen. Flow well up tubing verifying check pumped. RD release rig to next location.

28. Notify Marketing & government agencies that commingled production will occur in order to finalize allocation formula. At end of 90 days, the allocation formula will be submitted to NMOCD for approval, production will commence prior to actual allocation approval.

Approved: _____
Drilling Superintendent

JES 2/7
TDS

Recommended Vendors:

Stimulation(Acid,Fracturing,Nitrogen)	BJ Services 327-6288
Radioactive Tagging	Protechnics, Intl 326-7133
Cased Hole Services (Perforating, Logging)	Schlumberger 325-5006
Bridge Plugs, Packers	Schlumberger 325-5006
Pressure Bombs	Tefteller 325-1731
2-3/8" N-80 (NEW PIPE!!) workstring	District Tools 326-9853
Engineering	T. E. Mullins 326-9546-W 325-9361-H