

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

ROW/APD

FORM APPROVED
Budget Bureau No 1004-0136
Expires: February 28, 1995

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. Type of Work

DRILL ☒DEEPEN ☐

b. Type of Well

Oil Well ☐ Gas Well ☒ Other ☐Single Well ☒Multiple Zone ☐

2. Name of Operator

Merrion Oil & Gas Corporation

3. Address and Telephone No.

610 Reilly Ave Farmington NM 87401
ph: (505) 327-9301

4. Location of Well (Footages)

At Surface 1710' fnl & 2370' fwl (se nw)

At proposed prod. zone Same

14. Distance in Miles and Directions from Nearest Town or Post Office

22 miles south of Farmington NM, near Chaco Plant

15. Distance from Proposed (Also to nearest drlg. unit line, if any)
Location to Nearest

Property or Lease Line, Ft 930'

16. No. of Acres in Lease

400 acres

17. No. of Acres Assigned to This Well

160 acres NW/4

18. Distance from Proposed Location
to Nearest Well Drilling, Completed,
or Applied for, on this Lease, FT

~1590'

19. Proposed Depth

~1400'

20. Rotary or Cable Tools

Rotary

21. Elevations (Show whether DF, RT, GR, etc)

6150' GR, 6155' RKB

22. Approximate Date Work will Start

As soon as permitted

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE & GRADE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
8-3/4"	7" J55	23 ppf	~120' KB	~30 sx (35 cuft)
6-1/4"	4-1/2" J55	10.5 ppf	~1400' KB	~108 sx (168 cuft)

Merrion proposes to drill 8-3/4" hole with native mud to approx 120' and set 7" 23# J55 surface casing, cement to surface with ~30 sx 'B' w/ 2% CaCl₂ (35 cuft). Will drill 6-1/4" hole to TD @ approx 1400' KB with low solids non-dispersed mud system. Run open hole surveys. Will set 4-1/2" 10.5 ppf J55 production casing from TD to surface. Will cement with 47 sx 'B' w/ 2% SMS (97 cuft) and tail in with 61 sx 'B' (72 cuft) cement to fill from total depth to surface. Top of Cement should circulate to surface (will adjust volumes based upon caliper log).

A ~5 bbl water spacer will be pumped ahead of the lead slurry to prevent mud contamination of the cement. If cement does not reach surface, a temperature log or cement bond log will be run to determine top of cement.

Will test Pictured Cliffs through perforated casing. Will fracture stimulate and put on for production test. Drilling operations below surface casing will be conducted with a Bag type BOP in place, minimum working pressure 1000 psig. Additional drilling technical details attached.

A pipeline route approval is also proposed as part of this APD as per the enclosed topographic map.

production zone, present and proposed, and approval pursuant to 43 CFR 3105.4

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal to deepen, give present productive zone and proposed new productive zone

COPIES: BLM+5, WELL FILE+1

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

Signed

Connie S. Dinning

Title Production Engineer

Date October 16, 2001

(This space for Federal or State office use)

Permit No.

Approval Date

Application approval does not warrant or certify that applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any:

APPROVED BY:

/s/ David J. Mankiewicz

TITLE

NEM

DATE

4/5/02

District I
1625 N. French Dr., Hobbs, NM 88240

District II
811 South First, Artesia, NM 88210

District III
1000 Rio Brazos Rd., Artec, NM 87410

District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-102
Revised March 17, 1994

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045 30881		² Pool Code	³ Pool Name WAW Fruitland Pictured Cliffs
⁴ Property Code 7841	⁵ Property Name Serendipity		⁶ Well Number # 5
⁷ OGRID No. 014634	⁸ Operator Name MERRION OIL & GAS		⁹ Elevation 6150'

¹⁰ Surface Location

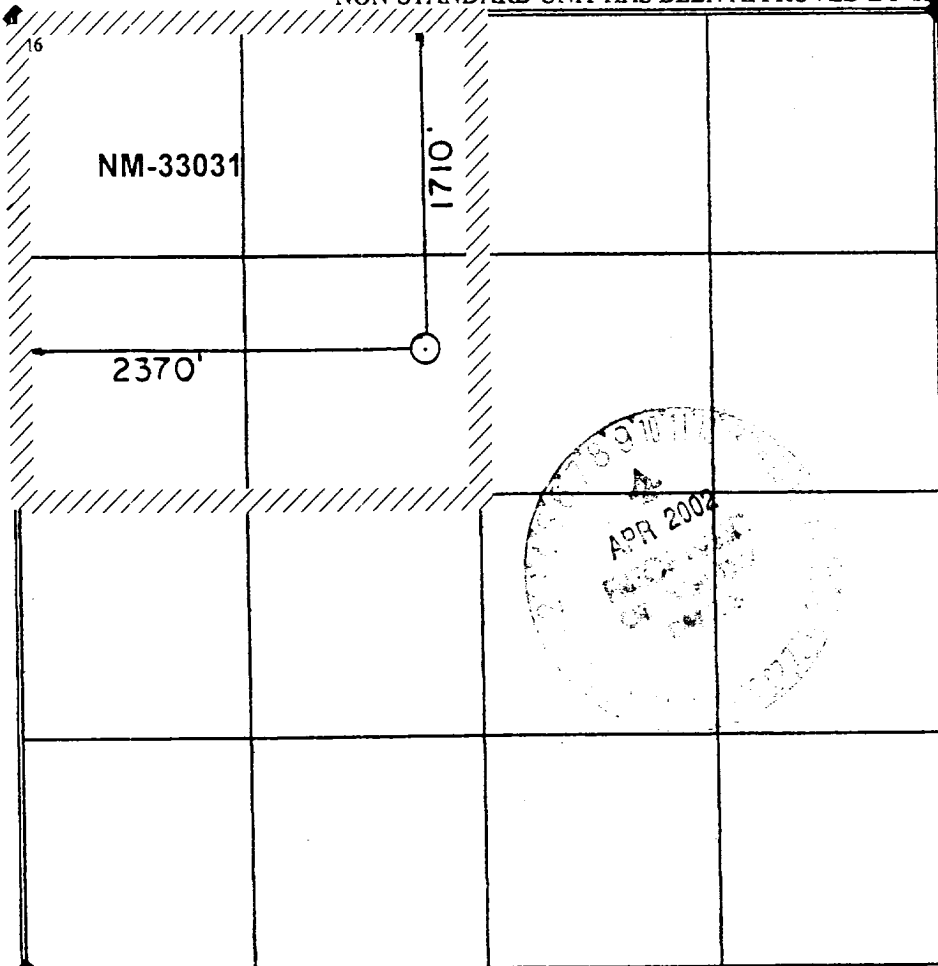

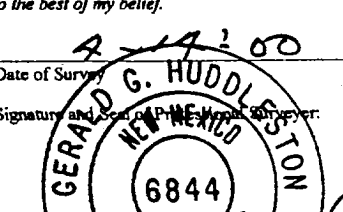
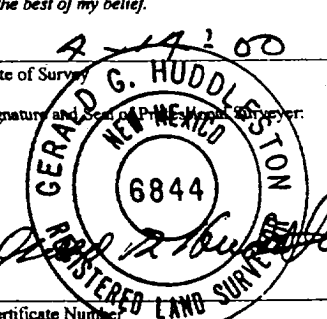
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	26	26 N	13 W	se/nw	1710'	North	2370'	West	San Juan

¹¹ Bottom Hole Location If Different From Surface

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

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.

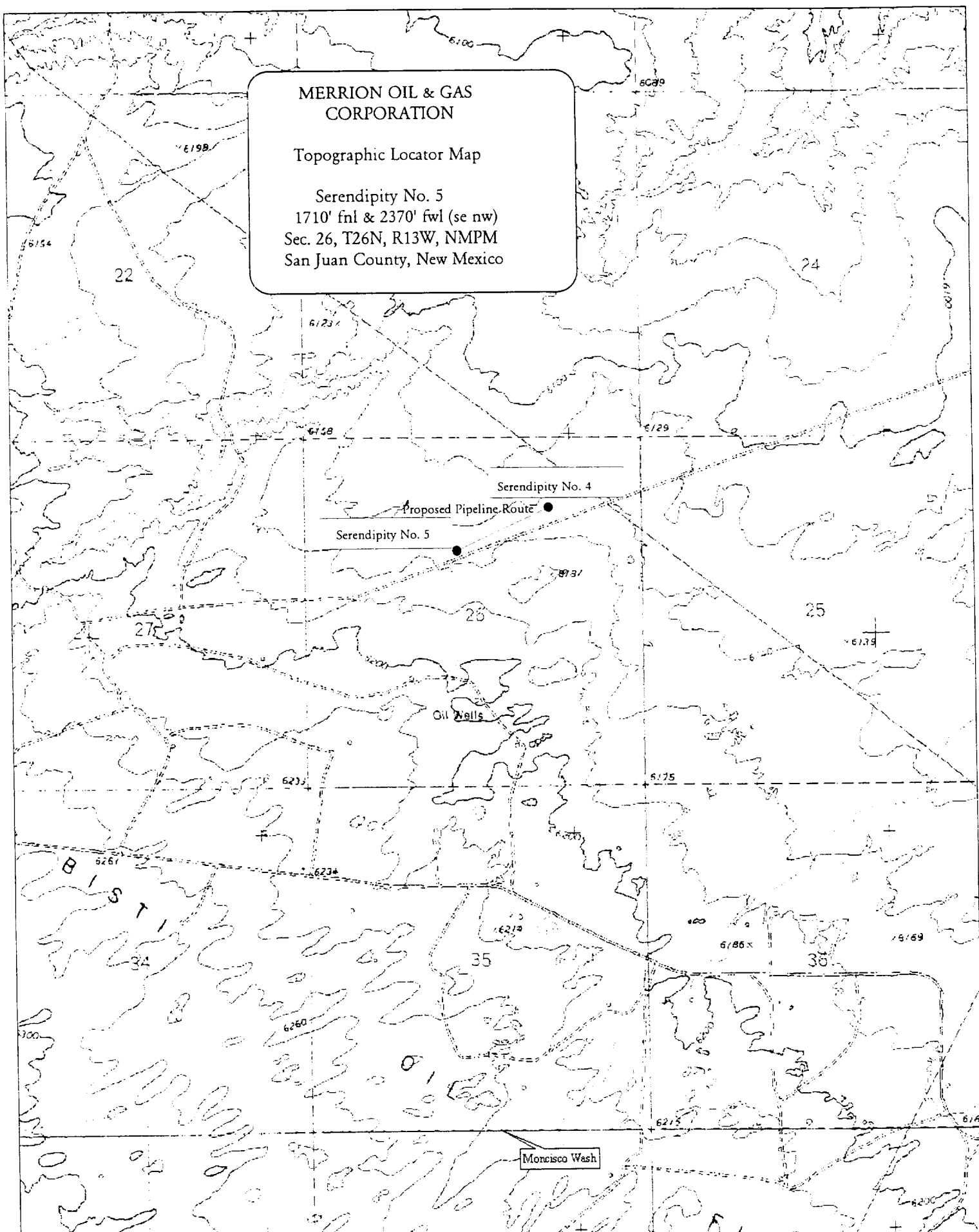
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	<p>¹⁷ OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</p> <p> Signature Connie S. Dinning</p> <p>Printed Name Production Engineer</p> <p>Title October 12, 2001</p> <p>Date</p>
	<p>¹⁸ SURVEYOR CERTIFICATION</p> <p>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 belief.</p> <p> Date of Survey Signature and Seal of Professional Surveyor</p> <p> Certificate Number</p>

MERRION OIL & GAS
CORPORATION

Topographic Locator Map

Serendipity No. 5
1710' fnl & 2370' fwl (se nw)
Sec. 26, T26N, R13W, NMPM
San Juan County, New Mexico



MERRION OIL & GAS CORPORATION

DRILLING TECHNICAL PROGRAM

(Attachment to Form 3160-3)

Serendipity No. 5

1710' fnl & 2370' fwl (nw ne)
Section 26, T26N, R13W, NMPM
San Juan County, New Mexico

1. **ESTIMATED FORMATION TOPS:**

<u>FORMATION</u>	<u>DEPTH KB</u>	<u>EST PSI</u>
Undif. Tertiary	Surface	
Kirtland Shale	190'	
Fruitland	801'	
Main Fruitland Coal	1206'	314 psi
Pictured Cliffs	1250'	325 psi
Total Depth	1400'	

2. **WELL CONTROL SYSTEM**

- A. Proposed blowout preventer system (schematic drawings attached) is a BAG type preventer, and will be used in 1000 psi service. Merrion requests a waiver from O&G Order No. 2 requirements for 2M service.
- B. Minimum required working pressure rating for BOP stack is 1000 psi. Anticipated bottomhole pressure = 364 psi. Well Control Anticipated Surface Pressure (ASP) = $364 \text{ psi} - (0.22 * 1400') = 56 \text{ psi}$, assuming a partially gas cut column.
- C. BOP pressure testing will be conducted at time of installation and prior to drillout of surface casing shoe. BAG type preventer will be tested to 250 psi. The BOPs will be activated on each trip for a bit and recorded in the driller's log. A choke manifold will be installed (Refer to schematic drawing). Working pressure for choke manifold is greater than 1000 psi. In addition, a kill line from the mud pump will be hooked to the bradenhead as depicted in the schematic.
- D. Stabbing valves for drill pipe and drill collars will be available on the rig floor. No kelly cock valve will be installed.

3. **DRILLING MUD PROGRAM**

- A. A 8-3/4" surface hole will be drilled with fresh water system, lime and gel added to provide viscosity as needed.
- B. A 6-1/4" hole will be drilled to total depth utilizing a native mud system. Additives such as starch, cmc, and others will be used to control mud characteristics as necessary. No materials of a hazardous nature will be added to the drilling fluid in hazardous quantities.

Lost circulation materials will not be stored on location.

Mud weighting materials will not be stored on location.

<u>INTERVAL</u>	<u>MUD SYSTEM</u>	<u>WEIGHT #/GAL</u>	<u>VISCOSITY SEC/QT</u>	<u>WATER LOSS CC</u>
0 - 120'	Native	< 9.0	35-55	NA
120' - 1400'±	Native	8.6-9.0	28-45	NA

Maximum anticipated mud weight is 9.0 lb./gal (0.47 psi/ft).

C. Mud trip monitoring will be done visually.

4. **HAZARDS**

- A. Abnormal Pressure is not expected to be a problem in this area.
- B. Lost circulation is not expected to be a major problem in this area.
- C. No H₂S is expected. However, should H₂S be found during drilling, detection and warning equipment will be installed.
- D. Unintentional hole deviation is not expected to be a problem. Single shot surveys giving hole inclination will be run a minimum of every 500 feet on the vertical well.

5. **LOGGING AND TESTING**

- A. An Induction, Density Log will be run from TD to surface.
- B. Drill stem tests will not be run.
- C. No coring is anticipated.
- D. No mud logging unit will be used during drilling.

6. **CASING PROGRAM**

A.

	Description	Top	Bottom
1	7" 23# J55	Surface	120' ft ±
2	4-1/2" 10.5# J55	Surface	1400' ft ±

B. A wellbore schematic is attached.