

845 Barry N.M. Oil Cons. DIV-Dist. 2
1301 W. Grand Avenue
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Alameda, NM 88210I-05-41
FORM APPROVED
OMB NO. 1004-0136
Expires: February 28, 1995

5. LEASE DESIGNATION AND SERIAL NO.

NM 106714

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME 25743
East Shugart Delaware Unit

8. FARM OR LEASE NAME, WELL NO.

Well # 25

9. API WELL NO.

10. FIELD AND Pool, OR WILDCAT
30-015-34212

Shugart; Delaware East

11. SEC., T R OR BLK.
AND SURV-Y% AREA24
Sec. 19, T18S, R31E

12. COUNTY OR PARISH

Eddy

13. STATE

NM

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK

DRILL ☒DEEPEN ☐

b. TYPE OF WELL

OIL WELL ☒GAS WELL ☐

OTHER

SINGLE ZONE ☐

RECEIVED

2. NAME OF OPERATOR

St. Mary Land & Exploration Company

JUL 14 2005

3. ADDRESS AND TELEPHONE NO.

580 Westlake Park Blvd., Suite 600, Houston, TX 77079; 281 677-2800

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*

At surface

250' FNL & 1125' FWL, Lot # 1A

Non-Standard Location

At proposed prod. zone

SUBJECT TO LIKE APPROVAL BY STATE

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

8 miles South of Maljamar

15. DISTANCE FROM PROPOSED*

LOCATION TO NEAREST

PROPERTY OR LEASE LINE, FT.

(Also to nearest drlg. unit line, if any) 1125'

16. NO. OF ACRES IN LEASE

1280

17. NO. OF ACRES ASSIGNED
TO THIS WELL

20

18. DISTANCE FROM PROPOSED LOCATION*

TO NEAREST WELL, DRILLING COMPLETED,
OR APPLIED FOR, ON THIS LEASE, FT.

150'

19. PROPOSED DEPTH

5550'

20. ROTARY OR CABLE TOOLS

Rotary

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

3716'

22. APPROX. DATE WORK WILL START*

7-7-05

23.

PROPOSED CASING AND CEMENTING PROGRAM

Capitan Controlled Water Basin

SIZE OF HOLE	GRADE OF SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4"	8 5/8"	24#	850'	225+ sx PP (sufficient to circulate)
7 7/8"	5 1/2"	15.5#	5550'	695 sx CI C & H

Plan to drill to 850' and cement with approx 225 sx PP w/2% CaCl₂ .25#/sk celloflake mixed @ 14.8 ppg having a yield of 1.34 cu ft/sk. This is 100% excess and will be adjusted to actual setting depth using sufficient cement to circulate to surface.

Will drill to approximate total depth of 5550', run 5 1/2" casing to TD & cement with 365 sx Interfill C and 330 sx Super H cement. WOC. Prepare for completion.

Estimated duration for drilling & completion is 18 days.

This is a five spot waterflood unit. Bond # 6041872.

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

Pits for drilling will be in compliance with BLM and OCD rules and regulations. This is not an H2S area.

Form supplied by Carlsbad district office June 2005.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED

TITLE Alan D. Means, Operations Engineer

DATE 6-13-05

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

Application approval does not warrant or certify that the applicant holds legal or Nuitable 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/ Joe G. Lara

TITLE

FIELD MANAGER

DATE

JUL 12 2005

*See Instructions On Reverse Side

APPROVAL FOR 1 YEAR

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

1625 N. French Dr., I I obbs. NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87504-

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
June 1, 2004

For drilling and production facilities, submit to
appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe
office

Pit or Below-Grade Tank Registration or Closure

Is pit below-grade tank covered by a "general plan" Yes ☐ No ☒

Type of action: Registration of a pit or below-grade tank ☒ Closures of a pit or below-grade tank ☐

Operator: St Mary Land & Exploration Company Telephone: _____ e-mail address: _____

Address: 580 Westlake Park Blvd #600, Houston, TX 77079

Facility or well name: East Shugart Delaware Unit API # 4 pendings _____ U/L or Qtr/Qtr _____ See _____ T _____ R _____

County: EDDY Latitude _____ Longitude _____ NAD: 1927 ☐ 1983 ☐ Surface Owner Federal ☒ State ☐ Private ☐ Indian ☐
plats attached Sec 19, T18S, R32E, Wells #24,
#22, #18, #25

Pit
Type: Drilling ☒ Production ☐ Disposal ☐
Workover ☐ Emergency ☐
Lined ☒ Unlined ☐
Liner type: Synthetic ☒ Thickness 12 mm Clay ☐
Pit Volume 3500 bbl

Volume: _____ bbl Type of fluid: _____
Construction material: _____
Double-walled, with leak detection? Yes ☐ If not, explain why not.

RECEIVED

JUN 2 2 2005

OCU-ANTEO

Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.) <u>400'</u>	Less than 100 feet 100 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points) 0
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points) 0
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points) 0
Ranking Score (Total Points)		0 Points

Is this an off closure. (1) attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if you are burying in place) onsite: ☐ offsite ☐ If offsite, name of facility _____ (3) Attach a general description of remedial action taken including, remediation start date and end date (4) Groundwater encountered: No ☒ Yes ☐ If yes, show depth below ground surface _____ FL and attach sample results. (.)

Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments:

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines X a general permit, or as attached) alternative OGD-approved plan

Date: _____
Printed Name/Title: Alan D. Means, Operations Manager

Signature: [Signature]

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:

Printed Name/Title: Gail Rep ID

Signature: [Signature]

Date: _____

JUN 29 2005

DISTRICT I

1625 N. FRENCH DR., BOBBS, NM 86240

DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 86210

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV

1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico

Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-10

Revised JUNE 10, 200

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30		Pool Code 56419	Pool Name Shugart; Delaware East
Property Code	Property Name E.S.D.U.		Well Number 25
OGRID No.	Operator Name ST. MARY LAND & EXPLORATION COMPANY		Elevation 3716'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	24	18-S	31-E		250	NORTH	1125	EAST	EDDY

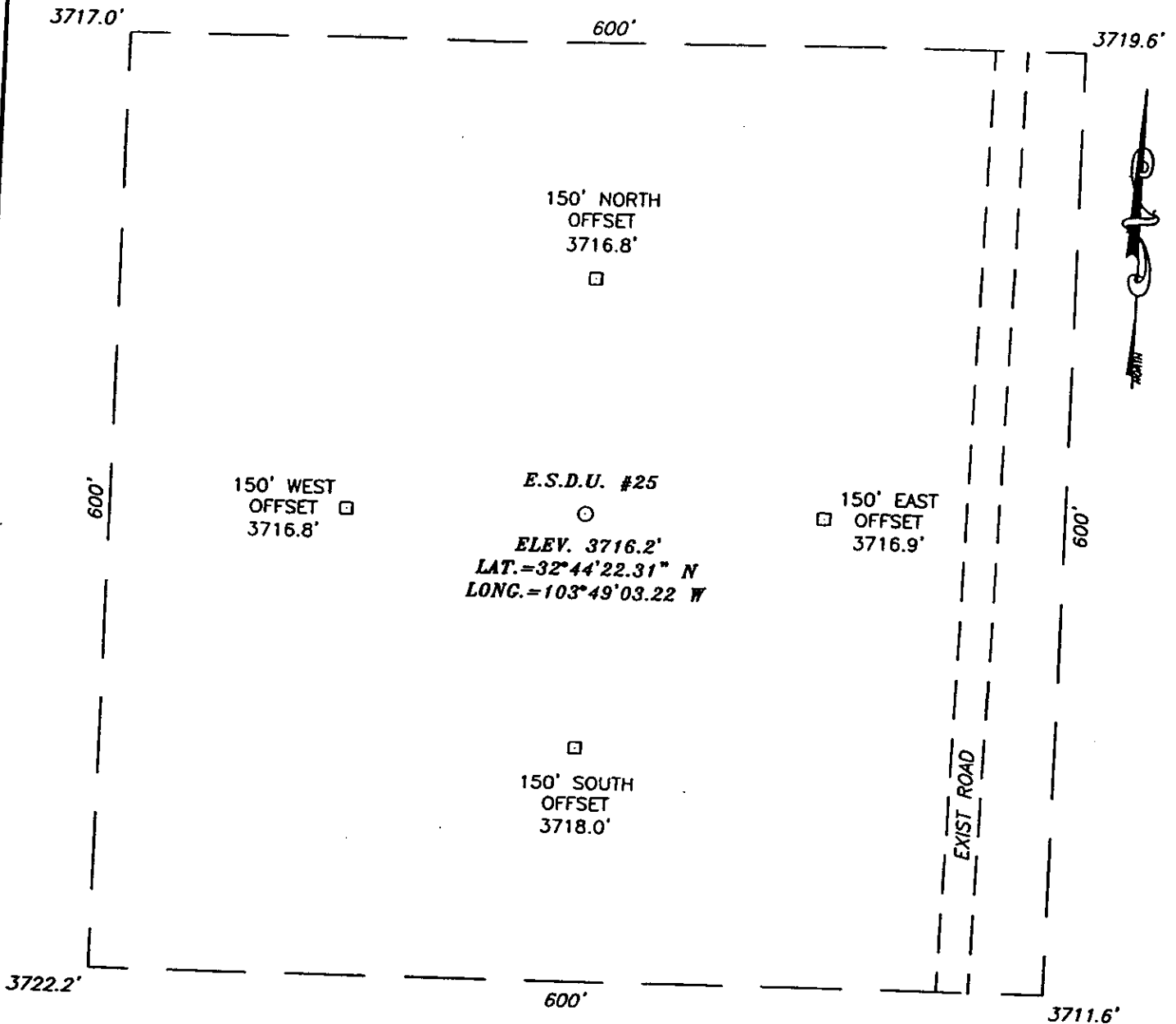
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 40		Joint or Infill	Consolidation Code	Order No. Waterflood Unit					

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

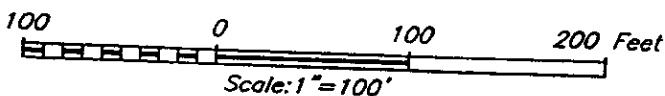
<p>DETAIL</p> <p>SEE DETAIL</p>		<p>OPERATOR CERTIFICATION</p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>[Signature]</i> Signature TIFFANY GRANT Printed Name REGULATORY TECH. AGENT Title 05-19-05 Date</p>
<p>GEODETIC COORDINATES NAD 27 NME</p> <p>Y=633137.7 N X=658591.3 E</p> <p>LAT.=32°44'22.31" N LONG.=103°49'03.22" W</p>		<p>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>AUGUST 5, 2004</p> <p>Date Surveyed Signature & Seal of Professional Surveyor <i>[Signature]</i> GARY EIDSON Professional Surveyor 04-11-0721 Certificate No. 12641 RONALD J. EIDSON 12641 3239</p>

SECTION 24, TOWNSHIP 18 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF ST. HWY #529 AND CO. RD. #126. GO SOUTH AND SOUTHWEST ON CO. RD. #126 FOR APPROX. 4.1 MILES TO YELLOW CATTLEGUARD. TURN WEST THRU CATTLEGUARD AND GO APPROX. 0.1 MILES ON CALICHE ROAD. THEN GO N/W APPROX. 0.3 MILES, THEN GO WEST APPROX. 0.6 MILES. THEN GO SOUTH APPROX. 0.2 MILES THEN S/W APPROX. 0.34 MILES. TURN LEFT (EAST) AND GO APPROX. 0.9 MILES TO A ROAD ON THE LEFT. TURN LEFT (NORTH) AND GO APPROX. 500'. PROPOSED LOCATION IS APPROX. 200' WEST.




PROVIDING SURVEYING SERVICES
 SINCE 1948
JOHN WEST SURVEYING COMPANY
 412 N. DAL PASO
 HOBBS, N.M. 88240
 (505) 393-3117

ST. MARY LAND & EXPLORATION COMPANY

E.S.D.U. #25 WELL
 LOCATED 250 FEET FROM THE NORTH LINE
 AND 1125 FEET FROM THE EAST LINE OF SECTION 24,
 TOWNSHIP 18 SOUTH, RANGE 31 EAST, N.M.P.M.,
 EDDY COUNTY, NEW MEXICO.

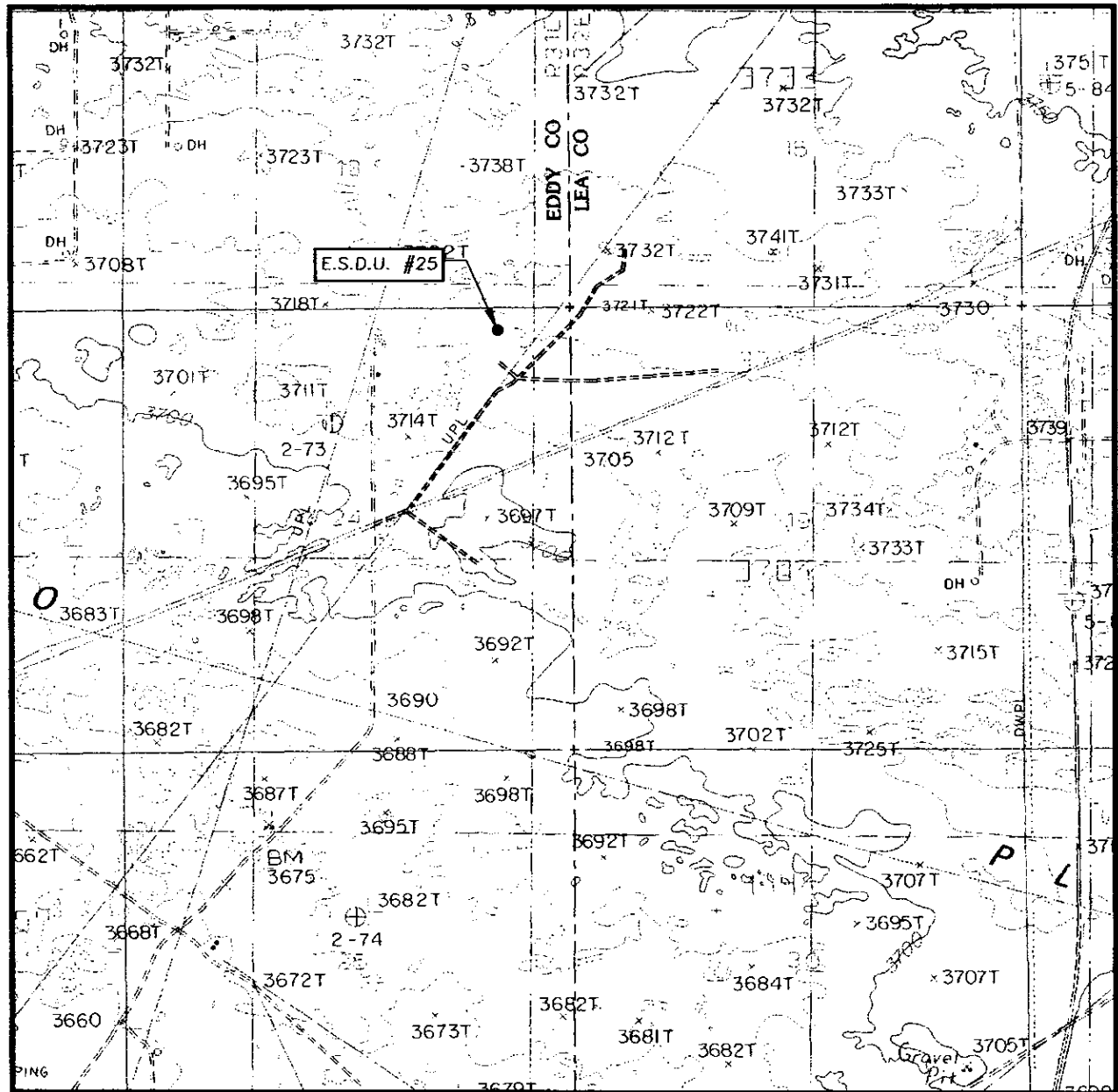
Survey Date: 08/05/04	Sheet 1 of 1 Sheets
W.O. Number: 04.11.0721	Dr By: J. RIVERO
Date: 08/06/04	Disk: CD#10
04110721	Scale: 1"=100'

The map displays a grid of 36 sections, with various labels and features. The grid is divided into four quadrants, each labeled with a section number (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36). The map includes several labels for roads and landmarks, such as 'T18S R31E', 'T19S R31E', 'T19S R37E', 'T17S R31E', 'CONOCO', 'ST. 529', 'MAL JAMAR', 'E.S.D.U. #25', 'SHUGAR CREEK', 'GRUBBS CR 25', 'LUSH PLANT 14 CR 249', 'BERMUDA', 'L126', 'H126', 'J.B.I.', 'DRY LAKE', and 'L125'. The map also shows a network of roads and a river.



PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
GREENWOOD LAKE, N.M. - 10'

SEC. 24 TWP. 18-S RGE. 31-E

SURVEY N.M.P.M.

COUNTY EDDY

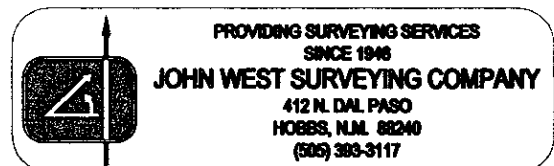
DESCRIPTION 250' FNL & 1125' FEL

ELEVATION 3716'

ST. MARY LAND &
OPERATOR EXPLORATION COMPANY

LEASE E.S.D.U.

U.S.G.S. TOPOGRAPHIC MAP
GREENWOOD LAKE, N.M.



Thirteen Point Plan for Surface Use
(Additional data for form 3160-3)

St. Mary Land and Exploration Company

E.S.D.U. # 25

250 FNL, 1125' FEL; Sec 24, T18S, R31E

East Shugart Delaware Unit – Property Code 25743

Shugart (Delaware) East Field

Eddy Co., NM

NM-106715

1. EXISTING ROADS - A "VICINITY MAP" and a "LOCATION VERIFICATION MAP" by John West Surveying are attached which show the location of existing roads and the area topography.
The road log to the location is as follows:
 - a) From the intersection of State Hwy #529 and County Road #126, go South and Southwest on County Road #126 for 4.1 miles to the yellow cattleguard.
 - b) Turn West through cattleguard and go 0.1 miles on caliche road, then go NW 0.3 miles then West 0.6 miles
 - c) Go South 0.2 miles then SW 0.34 miles. Turn left (East) and go 0.9 miles to the road on the left.
 - d) Turn left (North) and go 500 feet.
 - d) Proposed location is 200 feet to West.
2. PLANNED ACCESS ROAD —Access will be directly from existing road.
3. LOCATION OF EXISTING WELLS - EXHIBIT B shows the location of other wells within a mile radius of the proposed location.
4. LOCATION OF EXISTING OR PROPOSED FACILITIES – A fiberglass injection line will be laid to the well from ESDU #20 injection facility, which is located 1289 feet to the Northwest of the proposed location.
5. LOCATION AND TYPE OF WATER SUPPLY - All water (fresh or otherwise) needed for the drilling and completion of this well will be purchased from a commercial source and trucked to the location via the existing and proposed access road. No water source wells will be drilled, and no surface water will be utilized.
6. SOURCE OF CONSTRUCTION MATERIALS - Construction material (caliche) required for the preparation of the drill site is available from a local source 3 ½ miles

Nine Point Drilling Plan
(Supplement to BLM 3160-3)

St. Mary Land and Exploration Co.

ESDU #25

250 FNL, 1125' FEL; Sec 24, T18S, R31E

East Shugart Delaware Unit – Property Code 25743

Shugart (Delaware) East Field

Eddy Co., NM

NM-106715

1. The geologic surface formation is quaternary.
2. Name and estimated tops of geologic horizons

Yates	2400'
Queen	3500'
Grayburg	4020'
San Andres	4420'
Delaware	4575'

3. Protection of possible useable water will be achieved by setting 8.625" surface casing @ ~~350' +/-~~ and cementing it to surface. The Queen-Grayburg are oil and gas productive in this area in addition to the targeted Delaware-Brushy Canyon. Isolation will be achieved by setting 5.5" casing @ 5500' +/-, and cementing back to surface.
4. **Specifically the casing string referenced in #3 above will consist of the following:**
Surface: 8.625" OD, 24#/ft, J55, STC, new pipe @ 850' +/- in 12.25" hole.
Production: 5.50" OD, 15.5#/ft, J55, LTC, new pipe @ 5550' +/- in 7.875" hole

Cementing programs for the above casing strings are:

Surface: 225 sx Premium Plus w/ 2% CaC12, .25#/sk celloflake mixed at 14.8 ppg, and having a yield of 1.34 cu ft/sk

The above volume represents 100% excess over calculated hole volume, and will be adjusted to actual setting depth of casing. The slurries will be preceded by a fresh water spacer, and displaced with brine water.

Production: (a) 365 sx Interfill C cement mixes @ 11.9 ppg and having a yield of 2.45 cuft/sk

(b) 330 sx Super H cement w/2.5lbm salt, 0.3% CFR-3, 00.3% Lap-1, 5 lbm Gilsonite mixed at 13.2 ppg and having a yield of 1.63 cuft/sk

The above are Schlumberger products with 50% excess volume - actual volumes will be adjusted to the open hole caliper of this wellbore. The cement slurries will be preceded by 12 bbls cement wash for mud removal and displaced with fresh water. Equivalent products from another vendor may be substituted for Schlumberger depending on price/availability.

5. *The well control equipment to be employed during the drilling of this well is as illustrated on EXHIBIT A. This equipment includes a pipe and blind rams, an annular preventer and a choke manifold of comparable pressure rating. Equipment will be rated for a minimum of 3000 psi, and will be tested to 80% of that pressure rating prior to drilling out of the 8.625" surface casing.*

6. It is anticipated that this well will be drilled to TD utilizing the fluids shown below:

0-850': Gel/Lime "spud mud" 8.6-9.0 PPG. Utilize native solids to maintain sufficient viscosity to clean hole. Mix paper as required to control seepage loss.

850-5000': Brine 9.9 - 10.0 PPG. Circulate thru reserve pit for gravitational solids removal. Add paper as required to control seepage loss. Maintain pH using Lime.

5000-5550': Salt gel 10-10.01 PPG Confine circulation to steel pits. Discontinue Lime, and mix starch for filtration control. Maintain water loss @ 10-15 cc. Sweep hole with Loloss at TD to clean hole for logging operations.

7. Auxiliary equipment will include an upper kelly cock valve, safety valve to fit drill pipe and pressure gauges.

8. No drill stem testing is planned for this wellbore. Coring the Brushy Canyon is being considered and may be proposed if economically feasible.

A one-man mud logging unit will be utilized from 3000' to TD to record geological tops, collect samples, and monitor drilling fluids for hydrocarbons. GR/Caliper, Density Neutron and Dual Induction Laterologs will be run at TD to evaluate porosity and saturations. A cased hole GR/CB/CVL will be run during the completion for correlation and to evaluate cement quality.

9. The estimated BHP at TD is not expected to exceed 1500 psi, and a BHT of 105 F is anticipated. There is no H₂S present in the hydrocarbons being produced from the other wells in this section. Should such unexpected circumstances be encountered the operator and drilling contractor are prepared to take necessary steps to ensure safety of all personnel, and environment. Likewise, if a water flow is experienced while drilling through the Penrose-Grayburg (which has an active waterflood) the appropriate steps will be taken. Lost circulation is not expected to be a serious problem in this area, and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid.

It is estimated that this well will be drilled and cased in 10-11 days. Drilling will commence as soon after approval is received and services can be contracted.

EXHIBIT A

ESDU
Well: EDSU-25
Contractor: United Drilling

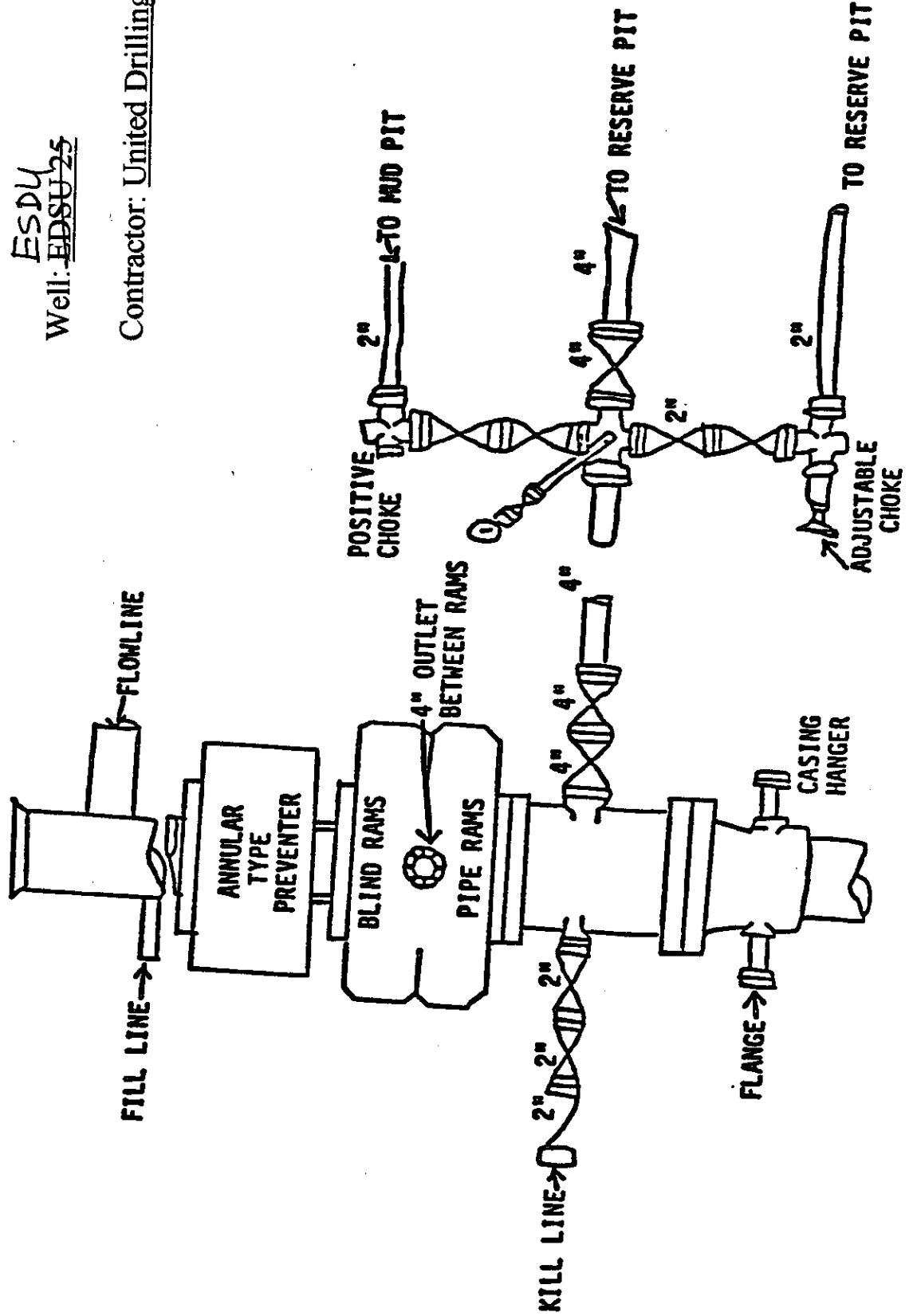
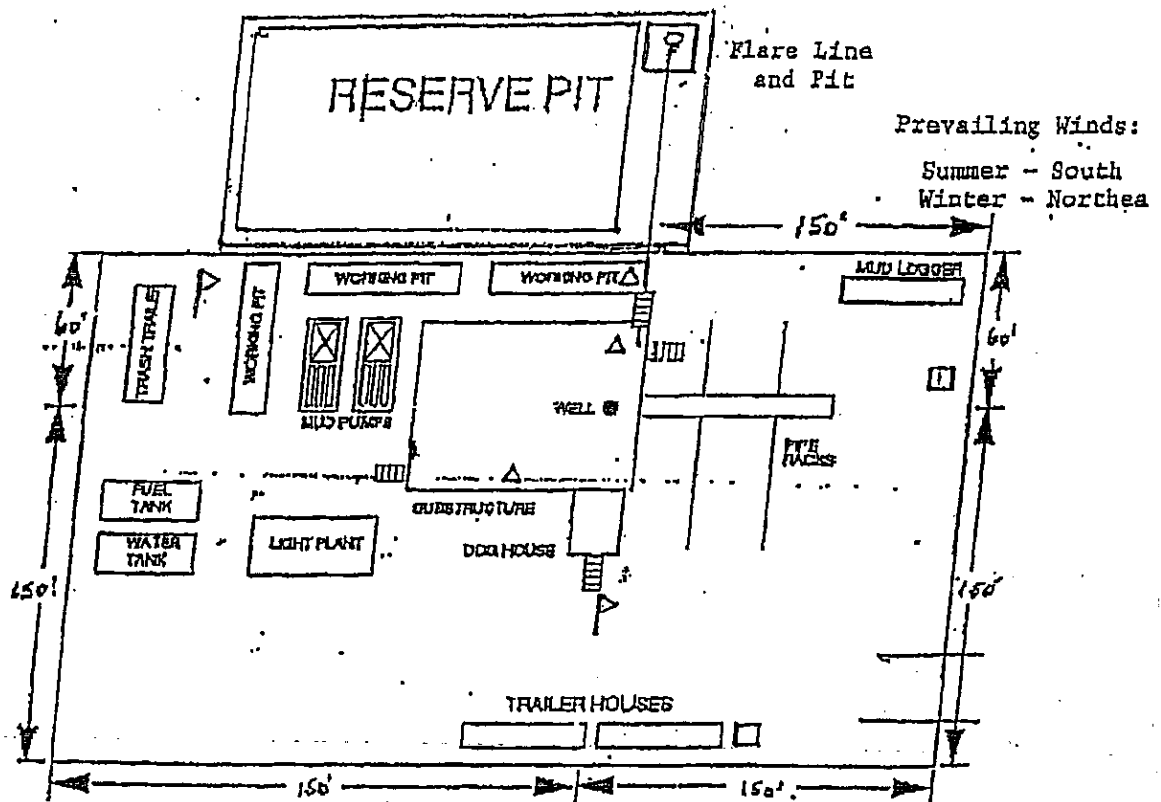


EXHIBIT C

Typical United Drilling Rig Layout

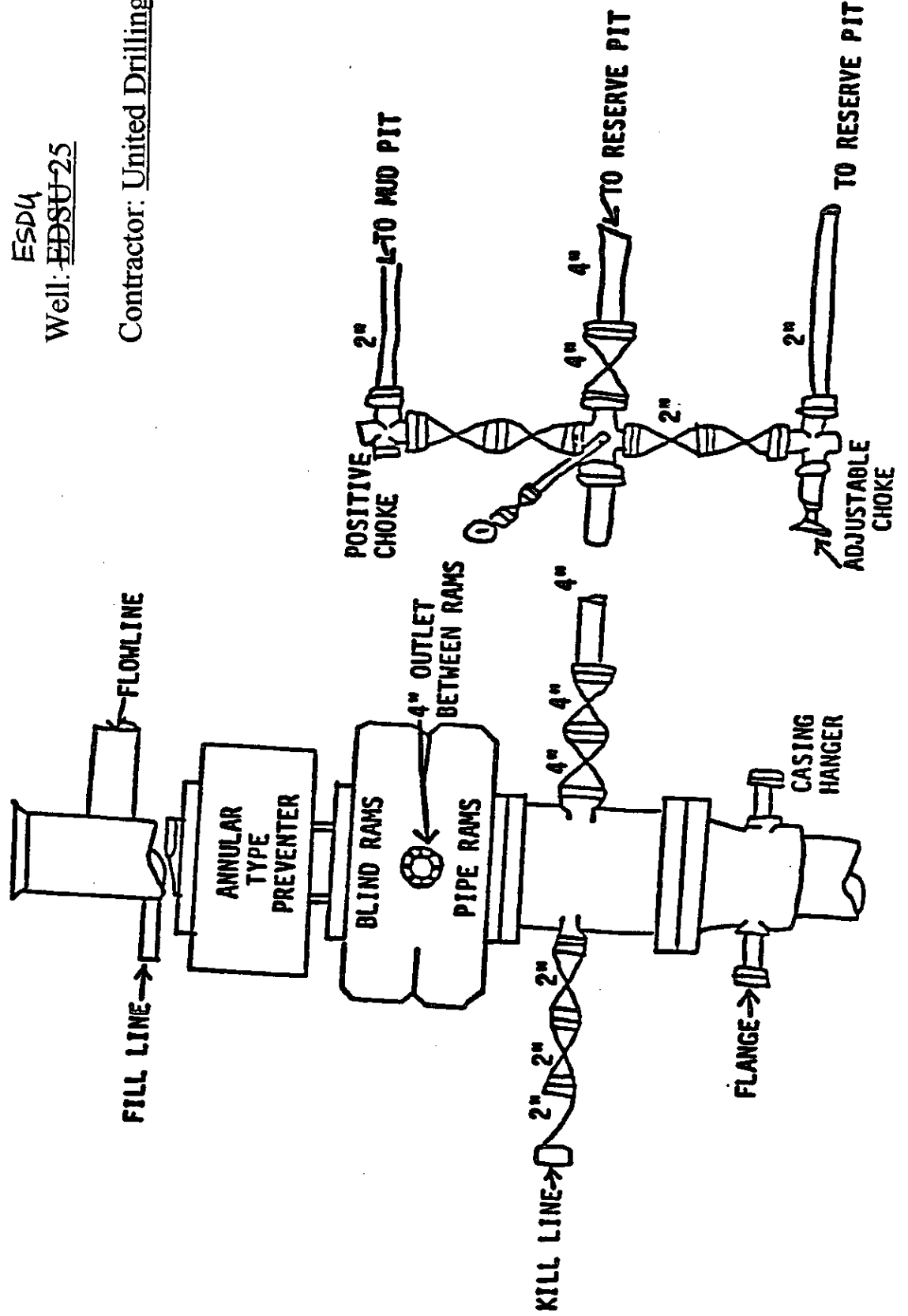


- △ - H2S Monitors with alarms at the bell nipple and shale shaker
- ▶ - Wind Direction Indicators
- - Safe Briefing areas with caution signs and protective breathing equipment. Minimum 150 feet from wellhead. 1 designates primary area.

EXHIBIT A

ESDU
Well: EDSU-25

Contractor: United Drilling



CONDITIONS OF APPROVAL - DRILLING

Operator's Name: St. Mary Exploration & Land Co.
Well Name & No. East Shugart Delaware Unit #25
Location: 250' FNL, 1125' FEL, Section 24, T. 18 S., R. 31 E., Lea County, New Mexico
Lease: NM-106714

I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 for wells in Eddy County in sufficient time for a representative to witness:

A. Well spud

B. Cementing casing: 8-5/8 inch 5-1/2 inch

C. BOP tests

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

3. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15-day time frame.

4. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

II. CASING:

1. The 8-5/8 inch surface casing shall be set at approximately 850 feet and cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

2. The minimum required fill of cement behind the 5-1/2 inch production casing is to reach at least 500 feet above the top of the uppermost hydrocarbon productive interval.

III. PRESSURE CONTROL:

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the 8-5/8 inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 2000 psi.

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.

- The tests shall be done by an independent service company.
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in a safe workman-like manner. Hard line connections shall be required.