

N.M. Oil Cons. Div-Dist 2
1301 W. Grand Avenue
Artesia, NM 88210

FORM APPROVED
OMB No. 1004-0136
Expires January 31, 2004

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM 025777106714	
1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator St. MARY EXPLORATION & LAND CO.		7. If Unit or CA Agreement, Name and No. E. SHUGART DELAWARE UNIT #23	
3a. Address 580 WESTLAKE PARK BLVD, ST 600, HOUSTON TX 77079		8. Lease Name and Well No.	
3b. Phone No. (include area code) (432) 684-8900		9. API Well No. 30-015-33843	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 2325' FNL & 275' FEL UL : H UNORTHODOX LOCATION At proposed prod. zone SAME SUBJECT TO LIKE APPROVAL BY STATE		10. Field and Pool, or Exploratory SHUGART DELAWARE EAST	
14. Distance in miles and direction from nearest town or post office* 14 MILES SE OF LOCO HILLS, NM		11. Sec., T., R., M., or Blk. and Survey or Area SEC. 24 - T18S - R31E	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 2000'		12. County or Parish EDDY	
16. No. of Acres in lease 604.12 AC UNIT		13. State NM	
17. Spacing Unit dedicated to this well 20		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 800' (ESDU #10)	
19. Proposed Depth 5550'		20. BLM/BIA Bond No. on file 6041872	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3703' GL		22. Approximate date work will start* OCTOBER 15, 2004	
23. Estimated duration 30 DAYS		RECEIVED NOV 08 2004 OCD-ARTESIA	

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature <i>Cary N. Billingsley</i>	Name (Printed/Typed) Cary N. Billingsley	Date 9-1-04
Title Operations Engineer / Agent		
Approved by (Signature) <i>ISL RUSSE SORENSEN</i>	Name (Printed/Typed) <i>ISL RUSSE SORENSEN</i>	Date 11-1-04
Title Acting FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the 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, are attached.

APPROVAL FOR 1 YEAR

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make 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.

*(Instructions on reverse)

Carlsbad Controlled Water Basin

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

If earthen pits are used in
association with the drilling of this
well, an OCD pit permit must be
obtained prior to pit construction.

DISTRICT I
1020 N. FRANCES DR., HOBBES, NM 88240

State of New Mexico
Energy, Minerals and Natural Resources Department

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. ST. FRANCES DR., SANTA FE, NM 87505

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

Form C-102
Revised JUNE 10, 2003
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
Property Code	Property Name E.S.D.U.	Well Number 23
OGRID No.	Operator Name ST. MARY LAND & EXPLORATION COMPANY	Elevation 3703'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	24	18-S	31-E		2325	NORTH	275	EAST	EDDY

Bottom Hole Location If Different From Surface

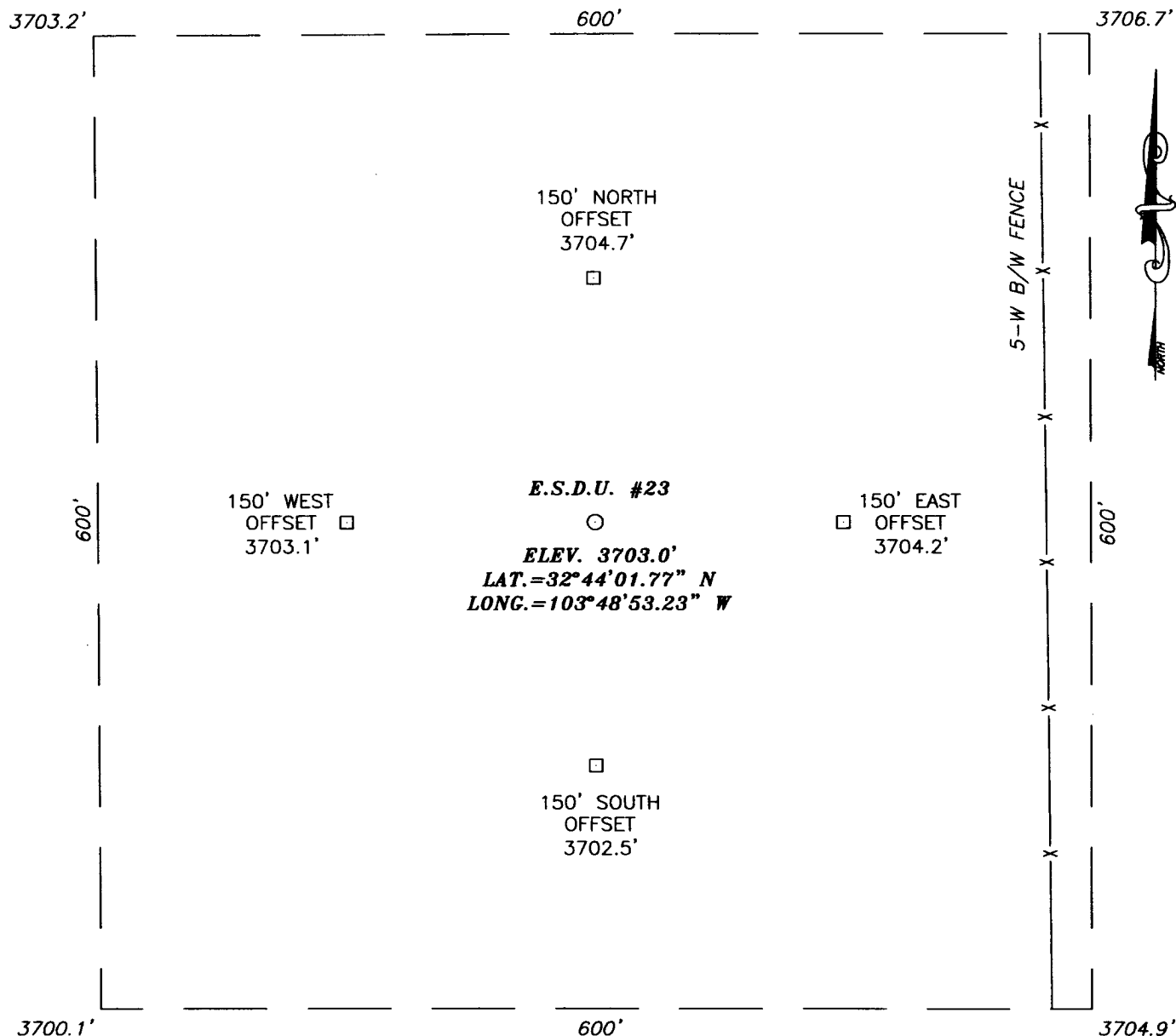
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
4c			

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

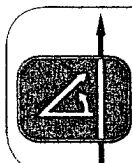
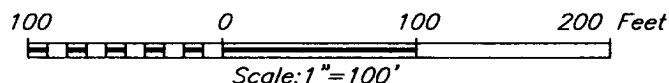
<p>DETAIL</p> <p>3703.2' 3706.7'</p> <p>600' 600'</p> <p>3700.1' 3704.9'</p> <p>2325'</p> <p>SEE DETAIL</p> <p>275'</p>				<p>OPERATOR CERTIFICATION</p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Cary N. Billingsley</i> Signature Cary N. Billingsley Printed Name Operations Engr/Agent Title 9/1/04 Date</p>	
<p>GEODETIC COORDINATES NAD 27 NME</p> <p>Y=631067.1 N X=659454.6 E</p> <p>LAT.=32°44'01.77" N LONG.=103°48'53.23" 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 10, 2004</p> <p>Date Surveyed Signature & Seal of Professional Surveyor GARY EIDSON 8/19/04 04.11.0717</p>	
				<p>Certificate No. GARY EIDSON 12841</p>	

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



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF CO. RD. #222 (SHUGART RD.) AND CO. RD. #249 (WESTALL RD.) GO SE ON CO. RD. #249 FOR APPROX. 2.8 MILES UNTIL CO. RD. #249 TURNS RIGHT (SOUTH). CONTINUE SE ON CALICHE ROAD APPROX. 1.3 MILES. TURN LEFT AND GO NE APPROX. 0.6 MILES TO A BEND IN THE ROAD. CONTINUE THRU BEND HEADING NORTH APPROX. 0.5 MILES TO A CALICHE ROAD ON THE RIGHT AND GO APPROX. 0.1 MILES TO A CALICHE ROAD ON THE RIGHT. TURN RIGHT AND GO APPROX. 0.2 MILES SE TO THE E.S.D.U. #14 LOCATION. PROPOSED LOCATION IS APPROX. 660' NE OF EXIST PAD.



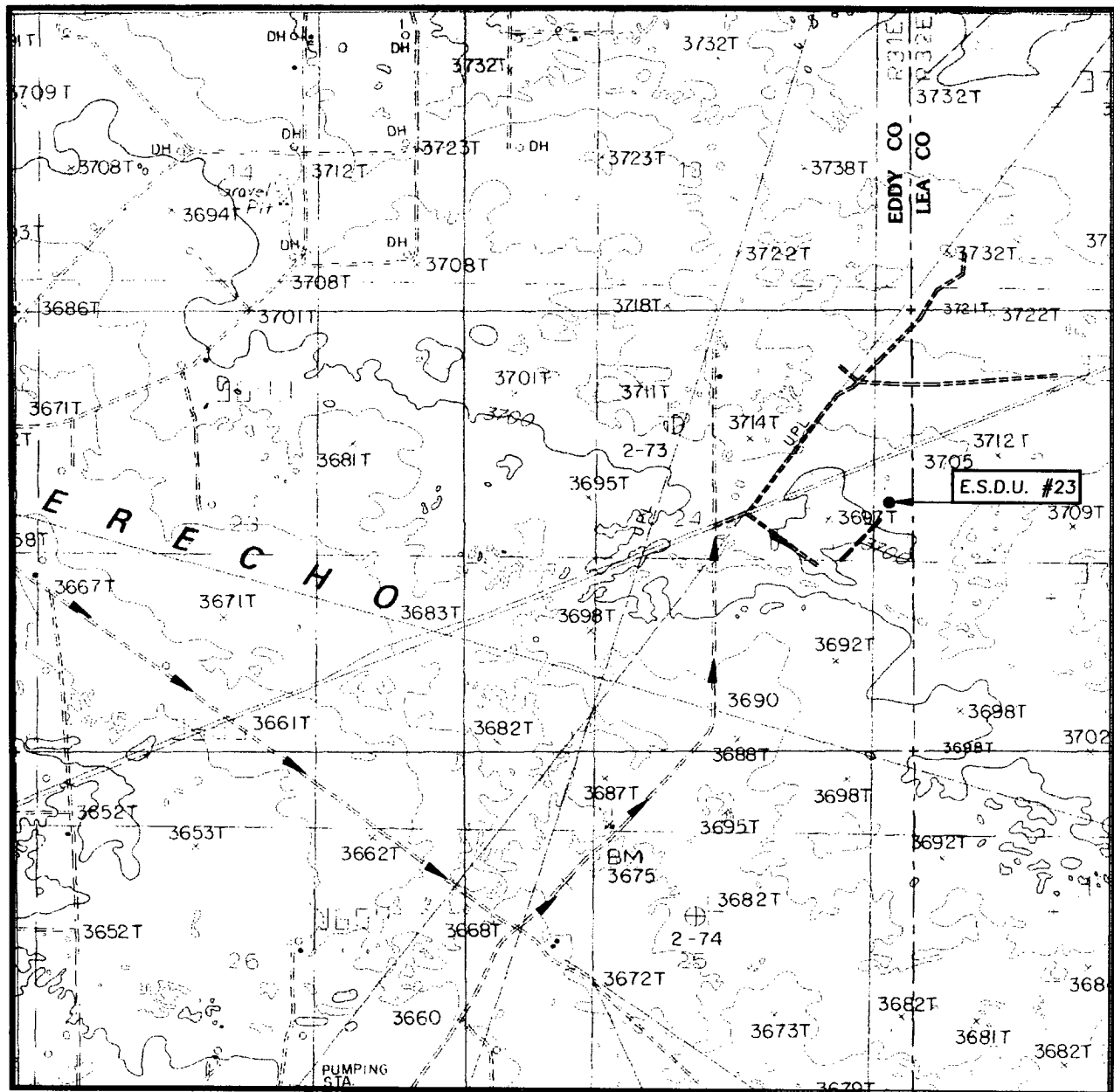
PROVIDING SURVEYING SERVICES
 SINCE 1948
JOHN WEST SURVEYING COMPANY
 412 N. DAL PASO
 HOBBS, N.M. 88240
 (505) 383-3117

ST. MARY LAND & DEVELOPMENT COMPANY

E.S.D.U. #23 WELL
 LOCATED 2325 FEET FROM THE NORTH LINE
 AND 275 FEET FROM THE EAST LINE OF SECTION 24,
 TOWNSHIP 18 SOUTH, RANGE 31 EAST, N.M.P.M.,
 EDDY COUNTY, NEW MEXICO.

Survey Date: 08/10/04	Sheet 1 of 1 Sheets
W.O. Number: 04.11.0717	Dr By: J.R.
Date: 08/13/04	Rev 1: N/A
Disk: CD#10	04110717
	Scale: 1"=100'

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 2325' FNL & 275' FEL

ELEVATION 3703'

OPERATOR ST. MARY LAND & EXPLORATION COMPANY

LEASE E.S.D.U.

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



PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBBS, N.M. 88240
(505) 383-3117

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

St. Mary Land and Exploration Co.

ESDU #23

2325' FNL, 275' FEL; Sec 24, T18S, R31E

East Shugart Delaware Unit - Property Code 25743

Shugart (Delaware) East Field

Eddy Co., NM

NM-025777

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 @ 850' + 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 @ 5550' +/-, and cementing back to surface.
4. **Specifically the casing strings 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: 525 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 mixed @ 11.9 ppg and having a yield of 2.45 cuft/sk
(b) 330 sx Super H cement w/2.5 lbm salt, 0.3% CFR-3, 0.3% Lap-1, 5 lbm Gilsonite mixed @ 13.2 ppg, and having a yield of 1.63 cu f/sk

The above are Halliburton 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 Halliburton 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 the 8.625" surface casing.
6. It is anticipated that this well will be drilled to TD utilizing the fluids shown below:
0-850' NewGelLime "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 10-10.1 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 Laterologs will be run at TD to evaluate porosity and saturations. A cased hole GR/CBL/CCL will be run during the completion for correlation and to evaluate cement quality.

9. The expected 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 that the company operates 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.

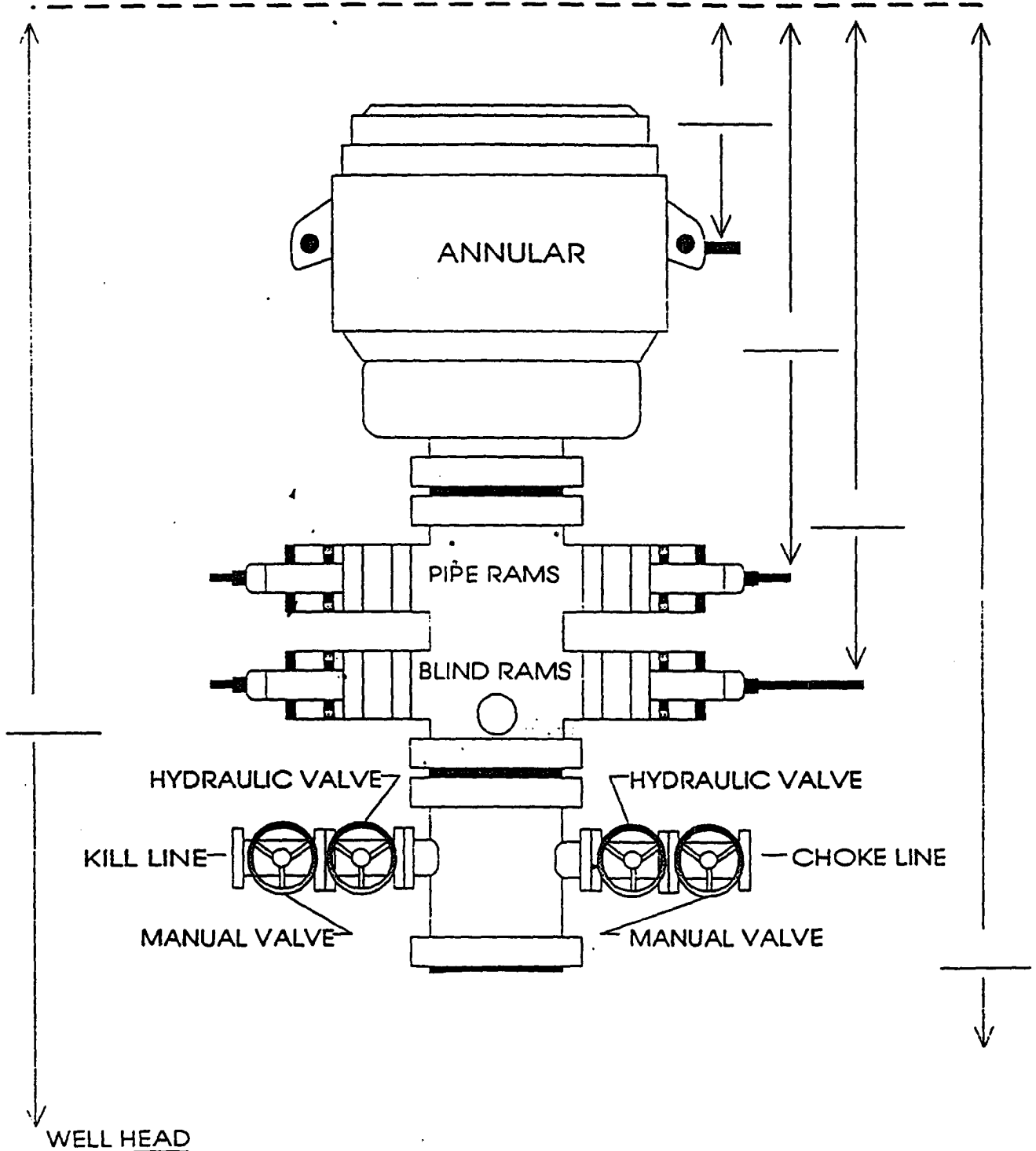
EXHIBIT A

B.O.P. STACK SPACING

SIZE: **11" 3000#**

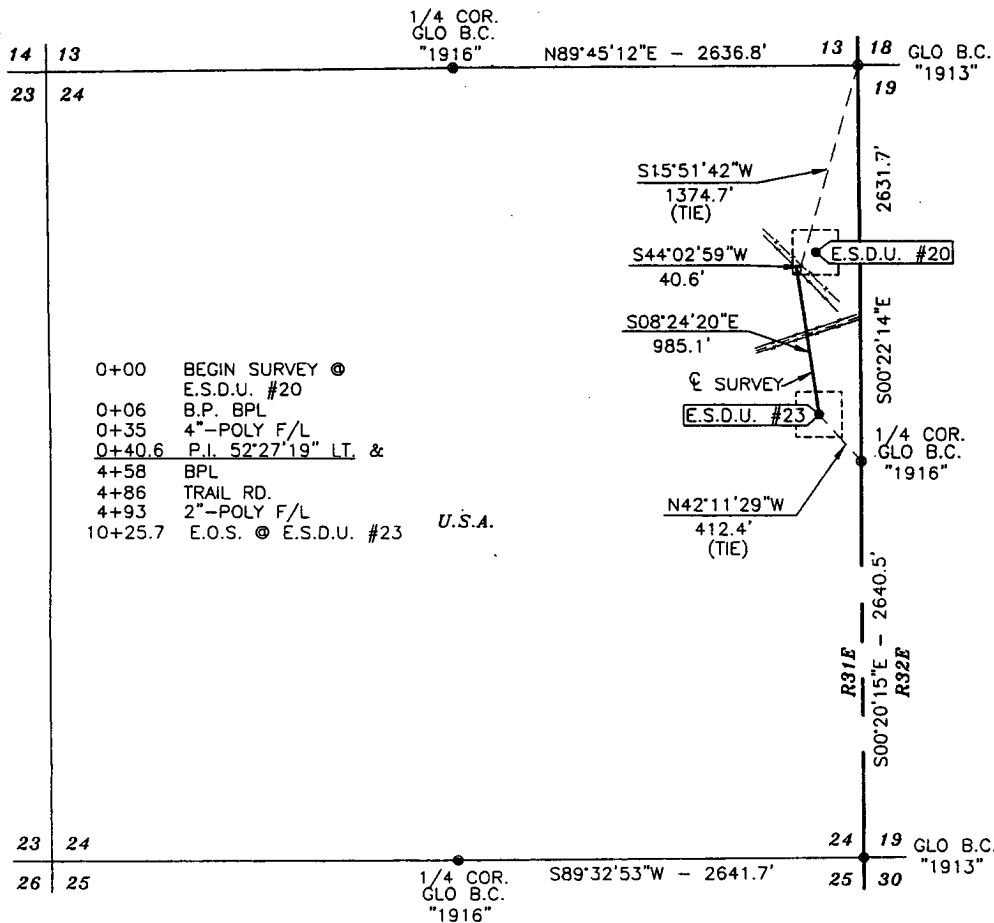
AHEP-3187

TOP OF ROTARY



WELL ESDU #23 CONTRACTOR TBD

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



DESCRIPTION

A STRIP OF LAND 50.0 FEET WIDE AND 1025.7 FEET OR 0.194 MILES IN LENGTH CROSSING USA LAND IN SECTION 24, TOWNSHIP 18 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO AND BEING 25.0 FEET LEFT AND 25.0 FEET RIGHT OF THE ABOVE CENTERLINE.

NOTE: BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I HEREBY CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

1000 0 1000 2000 FEET
Scale: 1"=1000'

ST. MARY LAND & EXPLORATION COMPANY

SURVEY AN INJECTION LINE CROSSING
SECTION 24, TOWNSHIP 18 SOUTH, RANGE 31 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 08/11/04	Sheet 1 of 1 Sheets
W.O. Number: 04.11.0717	Drawn By: J.R.
Date: 08/13/04	DISK:CD#10 04110717_PL

