Form 3160-3
(March 2012)

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
SWD R-13735 NM 110836

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☐ Oil Well ☐ Gas Well ☑ Other SWD ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
PADUCA SWD #3Y / 39498?

2. Name of Operator
MESQUITE SWD, INC 161968

9. API Well No.
30-025-42258

3a. Address
PO BOX 1479 CARLSBAD NM 88221

3b. Phone No. *(include area code)*
575-706-7288, (FOREMAN)

10. Field and Pool, or Exploratory
SWD, Delaware Bell, & Cherry Canyon 96802

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 310' FNL & 1760' FWL
At proposed prod. zone SAME

11. Sec., T. R. M. or Blk. and Survey or Area
Sec 23, T25S-R32E

14. Distance in miles and direction from nearest town or post office*
27 MILES WEST OF JAL, NM

12. County or Parish
LEA

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
310'	1,160	NA-SWD
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. on file**
2339'	7,250	NMB000612
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3429; GL	11/7/14	15 DAYS

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, must 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 must 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 BLM.

25. Signature	Name *(Printed/Typed)*	Date
Title: PRODUCTION FOREMAN	RILEY G NEATHERLIN	11/10/14

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/ Stephen Caffey		11/10/14
Title	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.

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.

(Continued on page 2)

*(Instructions on page 2)

NMOCD CONDITIONS OF APPROVAL
MAY DRILL WELL.
CANNOT DISPOSE UNTIL
SWD ORDER APPROVED
BY SANTA FE

KA
11/10/14

NOV 12 2014

Mesquite SWD, Inc.
DRILLING PROGRAM

Paduca Federal #3, 300' FNL & 1760' FWL
Sec. 23, T25S-R32E, Lea Co., NM

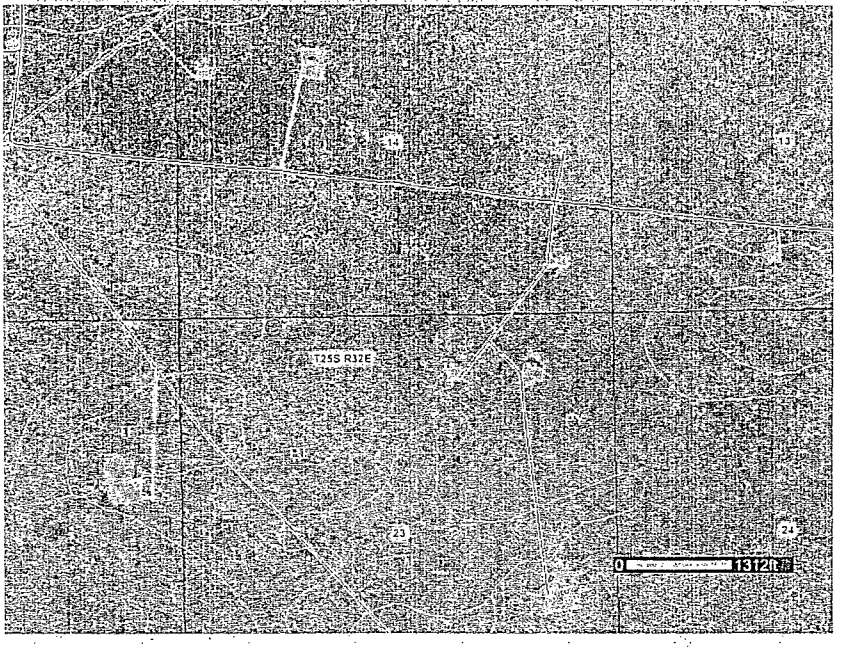
Supplemental to Form 3160-3, Application for Permit to drill the subject well, Mesquite SWD, Inc submits the following information as per Bureau of Land Management requirements.

1. Geologic Name of Surface Formation

Surface is Quaternary eolian and piedmont deposits (Qep) Holocene to middle Pleistocene. (New Mexico Bureau of Geology and Mineral Resources, 2003, Geologic Map of New Mexico, 1:500,000)

Soil map with legend. Source: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

PT	Pyote loamy fine sand
PY	Pyote soils and dune land
TF	Tonuco loamy fine sand



2. Formation Tops and Estimated Fresh Water:

The of geologic markers and estimated depths at which anticipated water, oil or gas formations are expected to be encountered as follows:

B/Alluvium	85'	Estimated potable water, if present, approx 80'.
Rustler	750'	
Top Salado	1,100'	
Main salt	2,320'	
Base salt	4,500'	
Lamar limestone	4,750'	
Bell Canyon	4,820'	No oil or gas expected below (Ramsey/Olds) 4,850'
Cherry Canyon	6,250'	
Brushy Canyon	7,360'	Estimated

3. **Estimated Depths of Anticipated Fresh Water, Oil or Gas.**

None of the formations above the Brushy Canyon have been found to be commercially productive of oil or gas east of the present Paduca field , or are depleted, in the disposal interval of this well. No fresh water wells are reported in the NM OCD 2-mile area of review, none would be expected beneath the Alluvium. Potential shallow water will be protected by 9-5/8" casing set at 865' and cement circulated to the surface.

4. **Casing:**

Design Parameter Factors:

Casing Size	Collapse Design Factor	Burst Design Factor	Tesnion Design Factor	Setting Depth
20"	5.55	22.5	7.46	20'
13-⅜" 48# H-40 STC	1.647	3.85	7.76	865'
9-⅝" 36# J-55 LTC	1.175	1.44	2.64	3000'
9-⅝" 40# J-55 LTC	1.194	1.16	8.67	4200'
9-⅝" 40# N-80 LTC	1.266	2.36	30.71	~~4550'~~ 4700'
7" 23# J-55 LTC	1.153	1.16	1.83	5200'
7" 26# J-55 LTC	1.147	1.32	2.12	7250'

See COA

Hole Size	Casing	Depth Set	Cement	Top Cement
26"	20" Conductor	20'	144 ft³	Surface
17-½"	13-⅜" 48# H-40	865'	840 sx	Circulated
12-¼"	9-⅝" 36/40# J-55/N-80	~~4,550'~~ 4700'	2138 sx	Circulated
8-⅝"	7" 23/26# J-55	7,250'	475 sx	~~~4,100'~~ See COA

All new or White Band (used certified to API standards).

4-A. **Auxiliary Well Control and Monitoring Equipment:**

~~a. A Kelly cock will be in the drill string at all times.~~

b. A full opening drill pipe stabbing valve having the appropriate connections weill be on the rig floor at all times.

c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 9⅝" casing shoe until the 7" casing is cemented. Breathing equipment will be on location upon drilling the 9⅝" shoe until total depth is reached.

See COA

If problems, please call Clay Wilson @ 575-706-1840

5. Cement Program:

16" Conductor pipe w/144 ft^3 Redi-Mix

13-⅜" Surface string. 0' - 865'

Lead: 535 sx Class " C plus additives: Density 13.50. Yield 1.75. MW 9.138 TF 13.065
Tail: 200 sx Class "C" w/PF001. Density 14.8. Yield 1.34. MW 6.321 TF 10.040

9-⅝" Intermediate string: 0' -4550' 4700

Lead: 1275 sx 35/65 Poz C plus additives: Density 12.90. Yield 1.92. MW 9.951 TF 14.390
Tail: 200 sx Class "C" plus additives: Density 14.80. Yield 1.33. MW 6.320 TF 9.926

7" Production string: 0' - 7250'

Stage 1. MD 7250.
125 sx PVL plus additives: Density 13.00. Yield 1.47. MW 7.548 TF 9.916
DV approx 6000'

See COA

Stage 2: MD approx 600'
125 sx PVL plus additives: Density 13.00. Yield 1.47. MW 7.548 TF 9.916
DV approx 4850'
Stage 3: MD 4850'
100 sx PVL plus additives: Density 13.00. Yield 1.47. MW 7.458 TF 11.032

Cement volumes calculated using 100% excess over open hole volume.

6. Proposed Mud Circulation System:

Drilling and returned circulation will be from and to a closed loop-like system w/surface tanks. No earthen mud or reserves pits will be constructed or used for this well. Drilling fluids and cuttings, if any, will be trucked to a certified disposal facility upon completion of drilling operations. Cement cuttings will be removed to a certified disposal facility.

Depth	Mud Wt.	Viscosity	Fluid Loss	Type Mud
0 - 865'	8.4 - 8.5	29	NC	Fresh water
865'-4,700'	9.9-10.0	29	NC	Brine
4,700'-7,250'	9.0	29	NC	Cut Brine/Fresh water

The necessary mud products for weight addition and fluid loss control will be on location at all times.

Manifold schematic with routing to closed loop system is illustrated in Exhibit 2, below.

Visual mud monitoring

7. Pressure Control Equipment:

BOP system, Exhibit 1 below, used to drill the intermediate hole will consist of a double ram-type (3M) preventer and annular preventer. Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. BOP will be tested in accordance with Onshore Oil & Gas order No. 2 as a 3M system prior to drilling out the surface casing shoe.

The BOP system used to drill the production hole will consist of a double ram-type (3M) preventer and annular preventer. BOP will be tested in accordance with Onshore Oil & Gas order No. 2 as a 3M system prior to drilling out the intermediate casing shoe.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily drillers log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

Vent line will extend to pad margin to provide sufficient distance, approximately 150' to flare boom, from any ignition source in the event natural gas should be encountered. No gas has been reported to this depth in the drilling of adjacent holes.

8. Estimated BHP:

At proposed TD 7,250' estimated BHP will be 3,295 psi.

9. Potential Hazards:

No abnormal pressures or temperatures were reported in the nearby drilling operations. H_2S detection equipment will be in operation during the drilling operation. H_2S is not considered a potential hazard because it was not reported in the surrounding area. See H_2S schematic Exhibit 3, below.

10. Anticipated Starting Date and Duration of Operations:

Road and location construction will begin as soon as the BLM approves this APD. Move in and drilling will follow as soon thereafter as rig and equipment are available. Drilling, well preparation for injection and lease clean-up are expected to require approximately 15 days.

11. Logging, Coring, and Testing Program:

No coring or formation testing is anticipated. A gamma-ray-neutron/density log will be run from TD to surface. A formation logger and gas detector may be employed.

Addendum: Non-productive zones

Wells up-dip (west), east of the drill site acreage and in the surrounding area have tested, completed in and/or depleted the upper Ramsey and the upper Olds of the Bell Canyon in the AOR. Numerous deeper wells have drilled, evaluated and/or tested the Ramsey/upper Olds. The lower Olds and the underlying Bell Canyon and Cherry Canyon in the greater area have not demonstrated production or commercial potential. This new-drill SWD will isolate the Ramsey/upper Olds and the underlying Brushy Canyon Formation where some hydrocarbon potential might present an exploration target for horizontal drilling.

Mesquite SWD, Inc.
Paduca Federal SWD #3
300' FNL & 1760' FWL
Sec. 23, T25S-R32E, Lea Co.

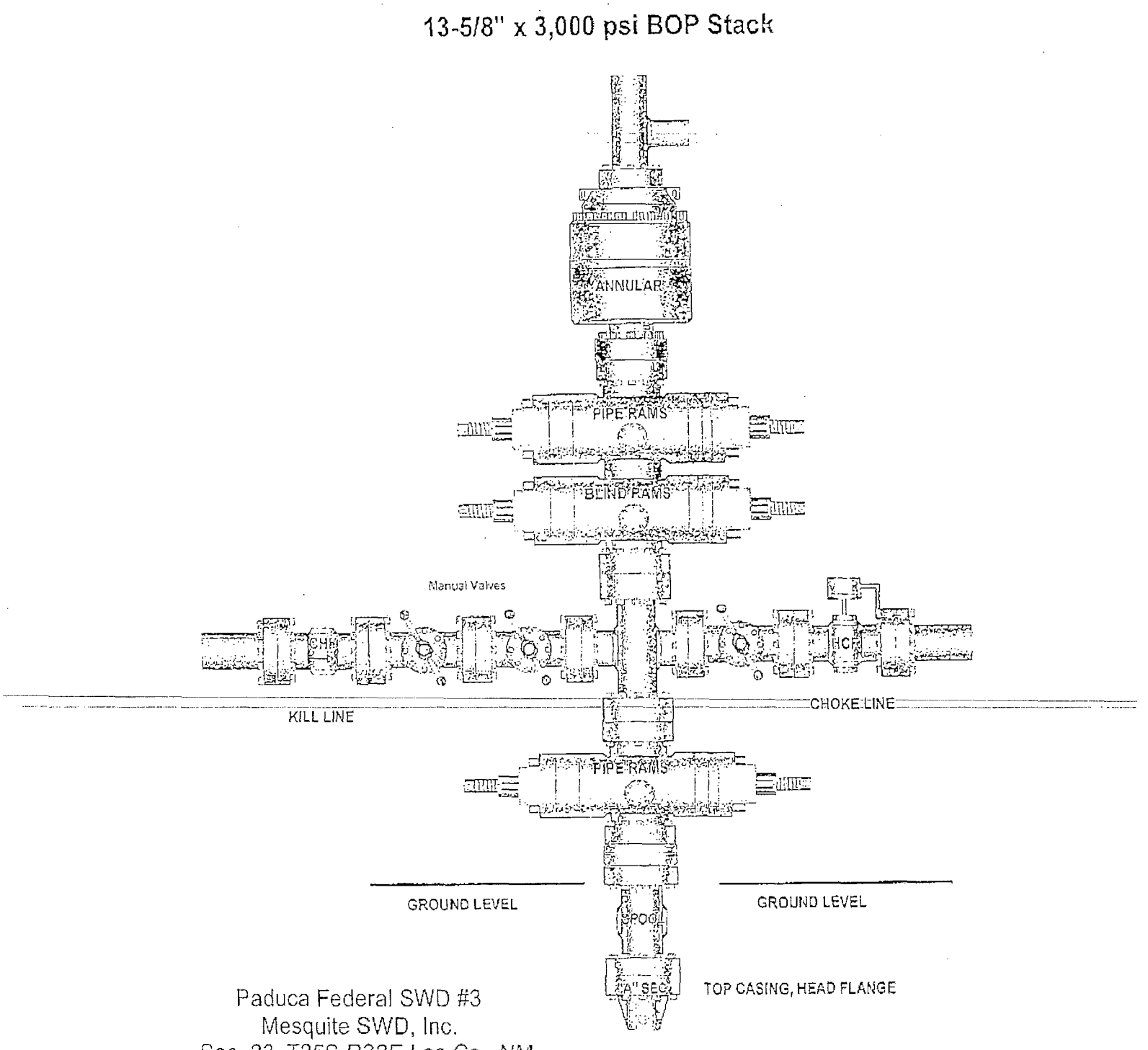
Addendum: Non-productive zones

See COA

Wells up-dip (west), east of the drill site acreage and in the surrounding area have tested, completed in and/or depleted the upper Ramsey and the upper Olds of the Bell Canyon in the AOR. Numerous deeper wells have drilled, evaluated and/or tested the Ramsey/upper Olds. The lower Olds and the underlying Bell Canyon and Cherry Canyon in the greater area have not demonstrated production or commercial potential. This new-drill SWD will isolate the Ramsey/upper Olds and the underlying Brushy Canyon Formation where some hydrocarbon potential might present an exploration target for horizontal drilling.

Mesquite SWD, Inc.
Paduca Federal SWD #3
300' FNL & 1760' FWL
Sec. 23, T25S-R32E, Lea Co.

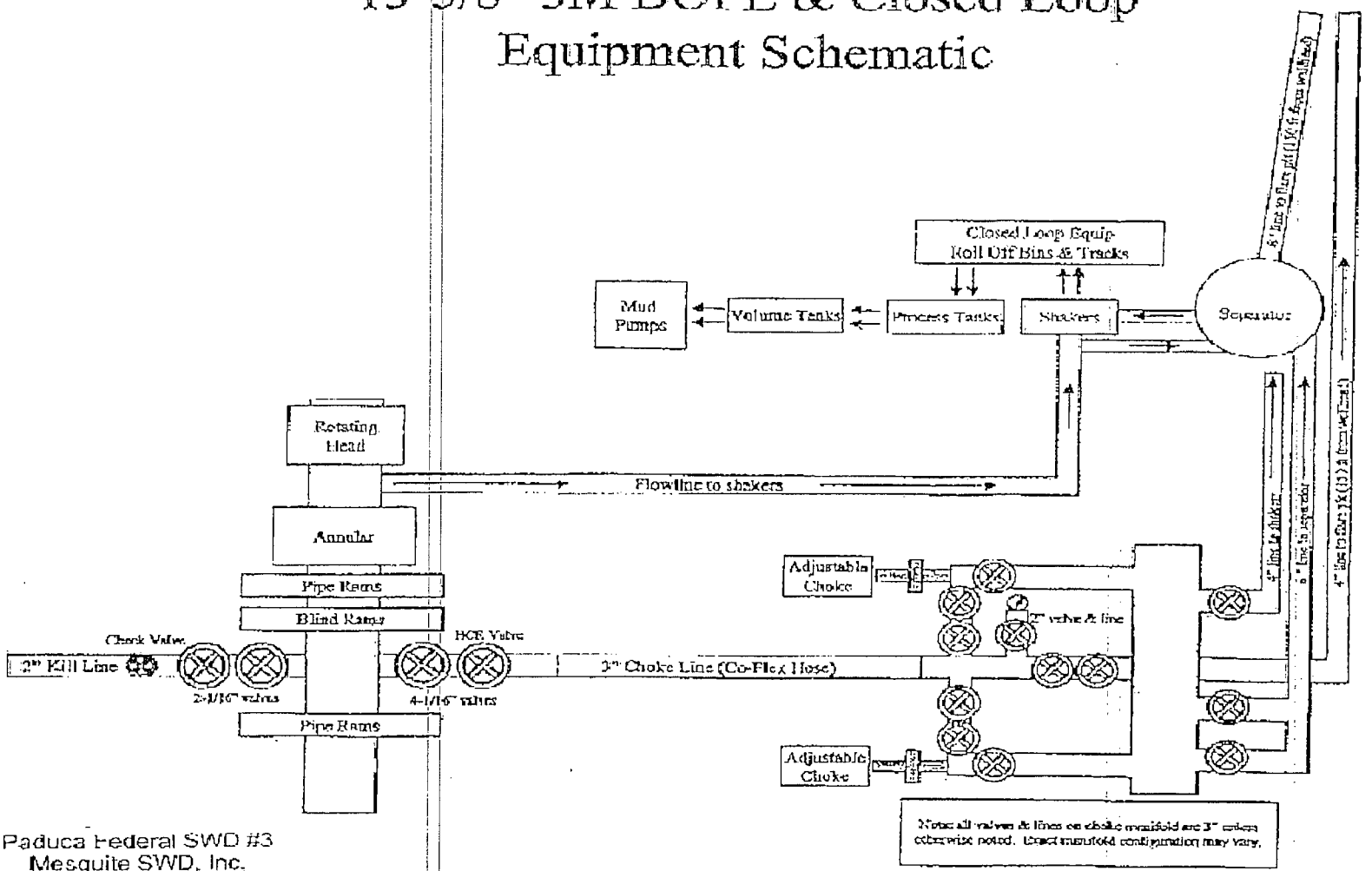
Exhibit 1



Mesquite SWD, Inc.
Paduca Federal SWD #3
300' FNL & 1760' FWL
Sec. 23, T25S-R32E, Lea Co.

Exhibit 2

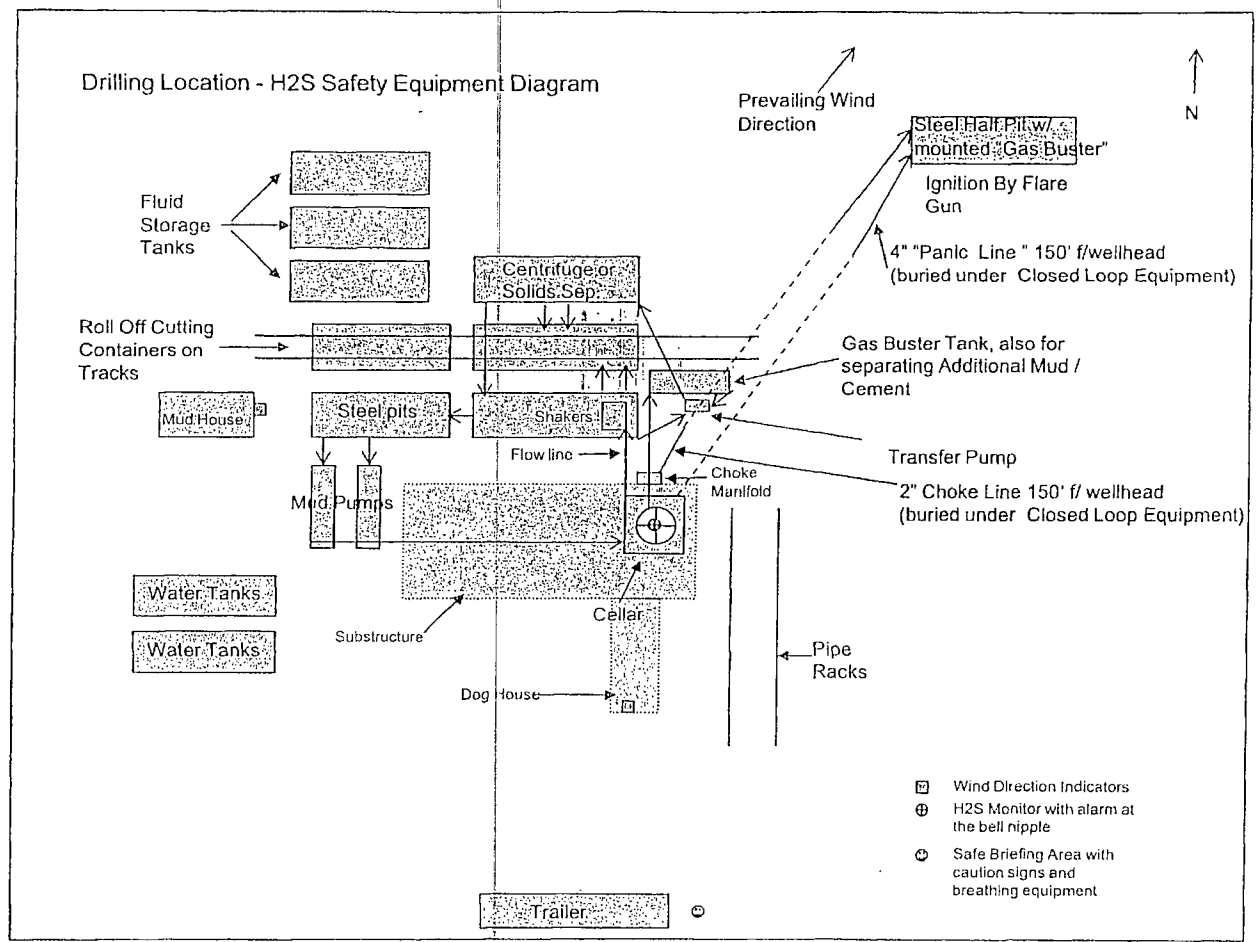
13-5/8" 3M BOPE & Closed Loop Equipment Schematic



Paduca Federal SWD #3
Mesquite SWD, Inc.
Sec. 23, T25S-R32E Lea Co., NM
Surf & BHL 330' FNL & 1760' FWL

Mesquite SWD, Inc.
Paduca Federal SWD #3
300' FNL & 1760' FWL
Sec. 23, T25S-R32E, Lea Co.

Exhibit 3 Generalized Pad Layout, Closed-Loop Routing and H_2S Safety Layout



Also see Exhibit 4, page 18 for detailed H_2S Location Layout