Percussion Petroleum Operating, LLC
Sleepy SWD Well No.1
Section 31, Twp 18-S, Rng 26-E
Eddy County, New Mexico

Well Re-entry Program

Objective: Re-enter the existing wellbore by drilling out plugs, clean out to new PBTD of 10,800', install new 5-1/2" casing, acidize and run new tubulars to configure for salt water disposal.

1. **Geologic Information** - The Devonian and Silurian consist of carbonates including light colored dolomite and chert intervals interspersed with some tight limestone intervals. Several thick sections of porous dolomite capable of taking water are present within the subject formations in the area. Depth control data was inferred from deep wells to the north, south and east. If the base of Devonian and top of Silurian rocks come in as expected the well will only be drilled deep enough for adequate logging rathole, approximately 10,800'.

Fresh water in the area is generally available from the Pecos Valley complex of Quaternary alluvial sand and gravel deposits. State Engineer's records show water wells in the area with an average depth to groundwater 50 feet.

Formation Tops

San Andres	850
Glorieta	2257
Abo	4391
Wolfcamp	5738
Strawn	8270
Atoka	8716
Morrow	9008
Mississippian Lm	9200
Devonian	9600
Silurian-TD	10800

2. **Completion Procedure**

a) Clear and level location; recondition as necessary.
b) MIRU WSU, reverse unit and associated equipment.
c) Install 8-5/8" x 11" 5M wellhead and B.O.P. RIH with bit and collars to drill out plugs.
d) D/O & C/O plugs to apprx. 9600'.
e) Run new 5.5" casing – set @ 9600' and cement w/ 1500 sx. 2 Stg w/ DV apprx. 5500'.
f) Drill 4.5" hole to approximately 10800'
g) Optional: Acidize w/ ~7,500 gals HCl per 1000'. Swab and/or circulate hole clean.
h) RIH with nickel plated 5.5" or equiv. VFE retrievable packer or equivalent on 2.875" or 3.5" FJ IPC or equiv. tubing w/ PKR @ 9500'+, pump clean fresh water containing corrosion inhibitor, biocide and oxygen scavenger down annulus, set packer. *Prepare to run MIT test and notify OCD to witness 24 hours in advance.*
h) Build injection facility and start water disposal.

Per SWD-[pending]; limit injection pressure to 1920 psi.

3. **Tubular program** - The well casing is set as described above. (See attached Proposed Well Schematic) 2.875" (3.5" FJ optional) internally coated tubing will be run and set in a packer located at approximately 9500' (within 100' of the uppermost injection – casing shoe at 9600').

Well Re-entry Program (cont.)

4. **Cementing Program** - Existing Surface and Intermediate casing strings were all circulated to surface during the original well drilling and completion operations as follows:

STRING	SIZE	WEIGHT	HOLE SZ	DEPTH	CEMENT	TOC
Surface	8.625"	24.0#	11.0" hole	1200'	420 sx 'C'	Circ to Surf
NEW Production	5.5"	17.0#	7.875" hole	9600'	1500 sx 'H'	Calc. to Circ.
Openhole	-	-	4.5" hole	10800'	-	-

5. **Pressure Control** - BOP diagram is attached to this application. All BOP and related equipment shall comply with well control requirements as described NMOCD rules and regulations. Minimum working pressure of the BOP and related equipment required for the drillout shall be 5000 psi. OCD will be notified a minimum of 4 hours prior to BOP pressure tests. The test shall be performed by an independent service company utilizing a test plug (no cup or J-packer). The results of the test shall be recorded on a calibrated test chart submitted to the OCD Artesia district office. The BOP test(s) will be conducted at:

a) Installation;
b) after equipment or configuration changes;
c) at 30 days from any previous test, and;
d) anytime operations warrant, such as well conditions

6. **Mud Circulation System** - the plugs will be drilled with 8.4 lb/gal fresh water looped through the reverse unit with all cutting recovered for disposal. Visual inspection will be made by personnel while reverse unit is in operation so cement plug cuttings and potential losses are witnessed and acted upon.

7. **Auxiliary Well Control and Monitoring** - Not Applicable

8. **H_2S Safety** - There is a low risk of H_2S in this area. The operator will comply with the provisions of company H_2S contingency plan as applicable. All personnel will wear monitoring devices and a wind direction sock will be placed on location.

9. **Logging, Coring and Testing** – Percussion Petroleum Operating will run cement bond logs and new porosity logs from TD to 7000'. No corings or drill tests will be conducted. (The well may potentially be step rate tested in the future if additional injection pressures are required.)

10. **Potential Hazards** - No abnormal pressures or temperatures are expected. No loss of circulation is expected to occur. All personnel will be familiar with the safe operation of the equipment being used to drillout and reenter this well. The maximum anticipated bottom hole pressure is 5000 psi and the maximum anticipated bottom hole temperature is 135° F.

11. **Waste Management** - All drill cuttings and other wastes associated with the re-entry and drill out operations will be transported to a commercial surface waste disposal facility permitted by the Environmental Bureau of the New Mexico Oil Conservation Division.

12. **Anticipated Start Date** – Completion of the well operations will take two to three weeks. Installation of the tank battery, berms, plumbing and other and associated equipment would be occurring during the same interval. In any event, it is not expected for the construction phase of the project to last more than 60 days, depending on availability of contractors and equipment. At the time of this submittal, the anticipated start date is:

September 15, 2018.

Well Re-entry Program (cont.)

13. **Configure for Salt Water Disposal** – SWD Permit No. SWD-[pending]. Prior to commencing any work, an NOI sundry(ies) will be submitted to configure the well for SWD and will detail the following tasks: drillout and workover including all work otherwise described above, any change to the procedure noted herein and to perform mechanical integrity pressure test per OCD test procedures. (Notify NMOCD 24 hours prior.) The casing/tubing annulus will be monitored for communication with injection fluid or loss of casing integrity. Anticipated daily volume is ~5,000 bpd at a maximum surface injection pressure of 1920 psi.

WELL SCHEMATIC - PROPOSED
Sleepy SWD Well No.1

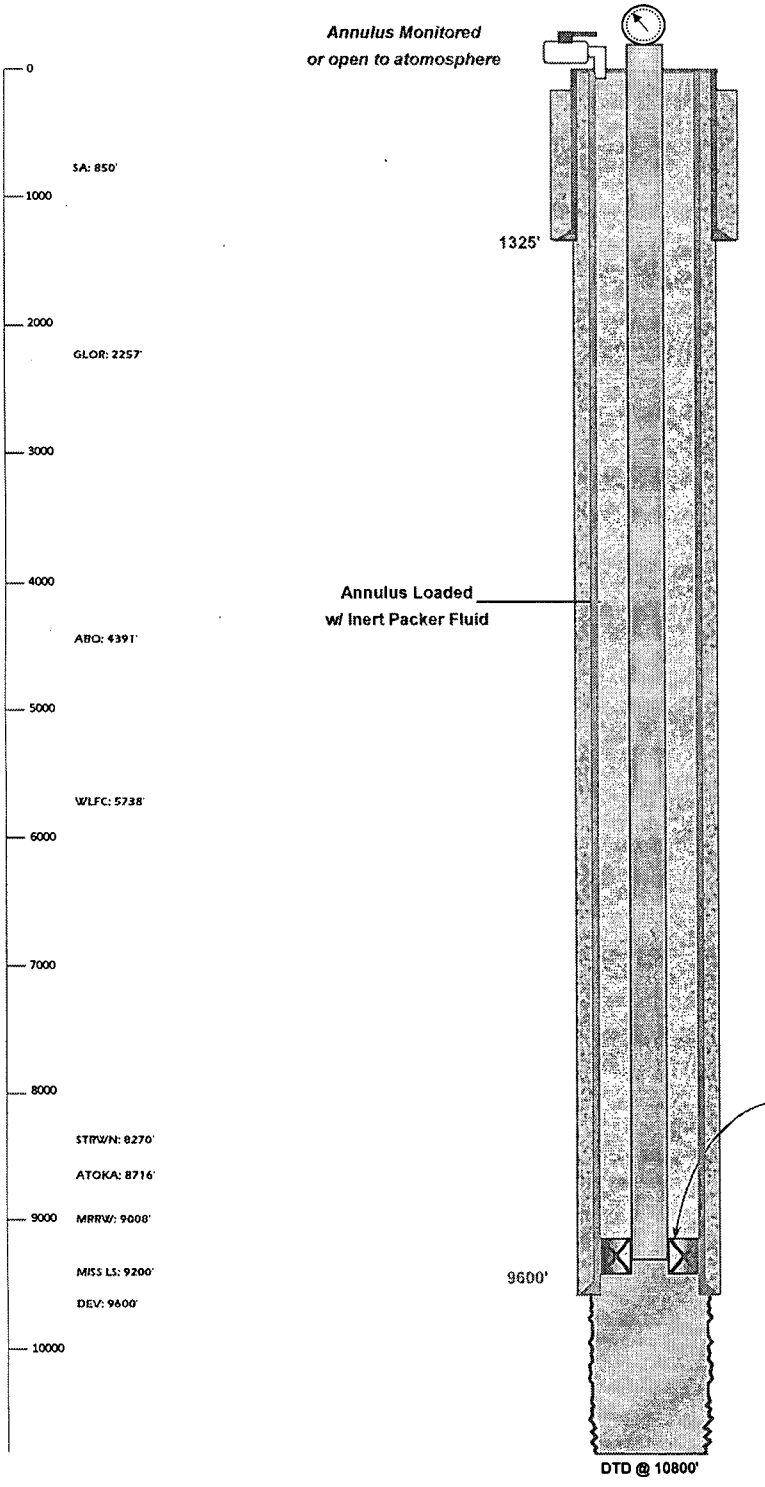
PERCUSSION PETROLEUM LLC

SWD; Devonian-Silurian (97869)

API 30-015-25996

1980' FNL & 1513' FWL, SEC. 31-T18S-R26E
EDDY COUNTY, NEW MEXICO

Spud Date: 10/28/1988
Config SWD Dt (Est): ~9/15/2



Annulus Monitored or open to atomosphere

Injection Pressure Regulated and Volumes Reported 1920 psi Max. Surface (0.2 psi/ft)

Annulus Loaded w/ Inert Packer Fluid

Surface Casing
8.625", 24.0# J-55 STC Csg. (12.25" Hole) @ 1200'
420 sx - Circ not reported.

Percussion Petroleum

Convert to SWD: D/O & C/O Existing Plugs to 9600'.
Install NEW 5.5" Casing from 0' to 9600'.
Drill 4.5" Openhole Interval to 10,800'
Run PC Tubing and PKR - Conduct MIT.
Commence Disposal Operations.

3.5" FJ/ IC Tubing (or smaller)
PKR ~9500'+
Note: PRK Set 100' Above Final Uppermost OH Interval.

NEW Production Casing
5.5", 17.0# N-80/ K-55 Csg. (8.75" Hole) @ 9600'
1500 sx - 2 stage DV @ ~5800' - Circ. to Surface

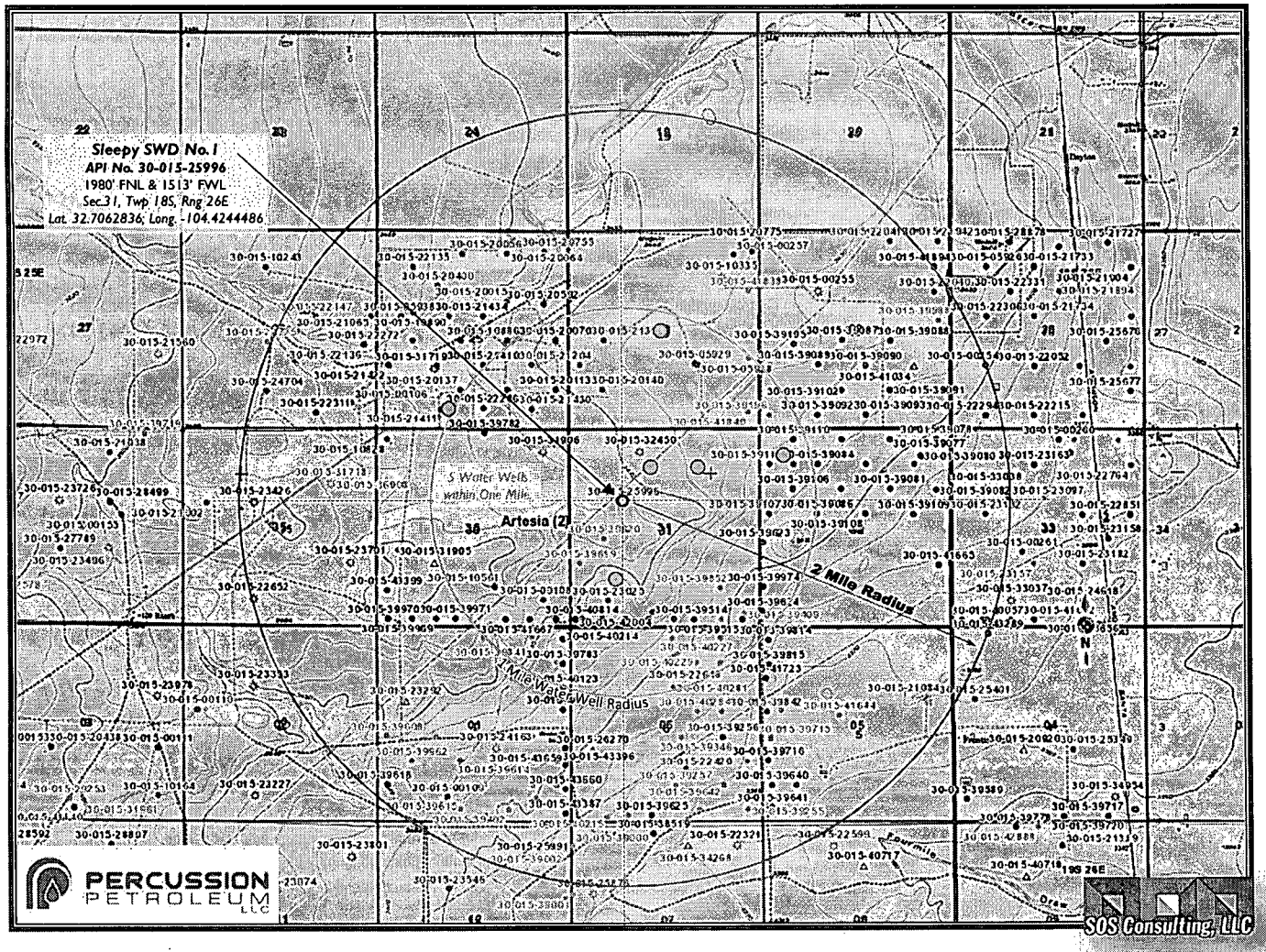
Openhole Injection 9600'-10,800'

Drawn by: Ben Stone, 7/18/2018

SOS Consulting, LLC

Sleepy SWD No.1 - Area of Review / 2 Miles

(Attachment to NMOCD Form C-108 - Item V)



Standard Operating Procedure & Site Setup - Re-entry/ Plug Back

ALL OPERATIONS CONDUCTED WITHIN EXISTING PAD SITE
NOT EXCEEDING SURVEYED SITE. ORIENTATION PER BEST FIT.

1. Set up H2S wind direction indicators; brief all personnel on Emergency Evacuation Routes.

2. All contractors conduct safety meeting prior to current task at Briefing Area.

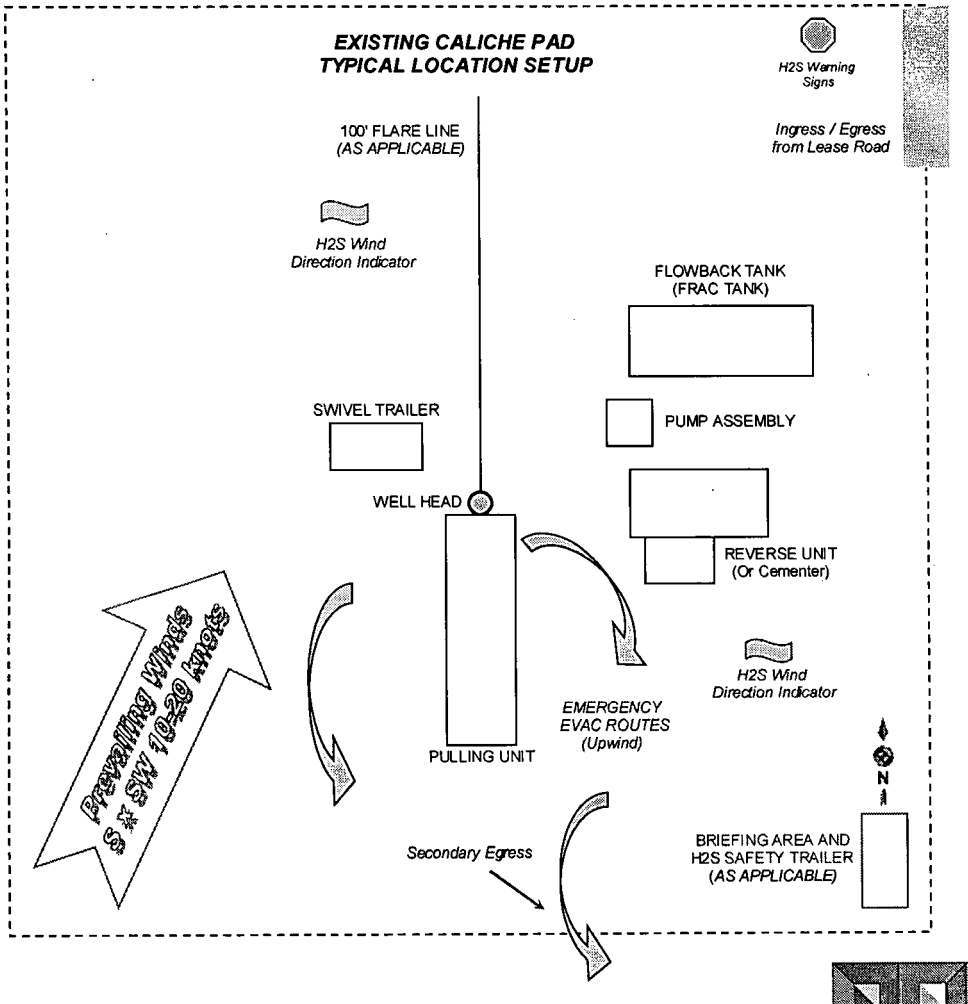
3. If H2S levels >10ppm detected, implement H2S Plan *accordingly*. (E.g., cease operations, shut in well, employ H2S safety trailer & personnel safety devices, install flare line, etc. - Refer to Plan.)

4. All equipment inspected daily. Repair / replace as required.

5. Visual on returns (losses) and/or spent cement / acid; cuttings & waste hauled to specified facility.

6. Spills contained & cleaned up immediately. Repair or otherwise correct the situation within 48 hours before resuming operations. Notify OCD and BLM within 24 hours. Remediation started ASAP if required. Operator shall comply with 19.15.29 NMAC and 19.15.30 NMAC, as appropriate.

7. Subsequent sundry / forms filed as needed – MIT (OCD Witness) SWD operations commence.



SOS Consulting, LLC