

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
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**District II**  
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**District IV**  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
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State of New Mexico

Form C-101  
Revised July 18, 2013

Energy Minerals and Natural Resources

Oil Conservation Division

1220 South St. Francis Dr.

Santa Fe, NM 87505

HOBBS OOD

APR 03 2017

RECEIVED

AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

<sup>1</sup> Operator Name and Address BC & D OPERATING, INC. P.O. BOX 302 HOBBS, NM 88240		<sup>2</sup> OGRID Number 25670
		<sup>3</sup> API Number 30-025-20857
<sup>4</sup> Property Code 30041 317613	<sup>5</sup> Property Name WEST JAL B	<sup>6</sup> Well No. 1

<sup>7</sup> Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
J	17	25S	36E		1980	S	1980	E	LEA

<sup>8</sup> Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
J	17	25S	36E		1980	S	1980	E	LEA

<sup>9</sup> Pool Information

Pool Name - SWD;DELAWARE	Pool Code - 96100
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Additional Well Information

<sup>11</sup> Work Type REENTRY	<sup>12</sup> Well Type SWD	<sup>13</sup> Cable/Rotary ROTARY	<sup>14</sup> Lease Type PRIVATE	<sup>15</sup> Ground Level Elevation 3118'
<sup>16</sup> Multiple	<sup>17</sup> Proposed Depth 6750'	<sup>18</sup> Formation PCC	<sup>19</sup> Contractor INTEGRITY	<sup>20</sup> Spud Date Prev.3/12/1964 / New 4/17/2017
Depth to Ground water 200'	Distance from nearest fresh water well 1.5 MILES	Distance to nearest surface water NONE		

☒ We will be using a closed-loop system in lieu of lined pits

<sup>21</sup> Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	17-1/2"	13-3/8"	48	348'	400	Surface
Interm.	12-1/4"	9-5/8"	36	5231'	3155	Surface
Long	8-3/4"	7"	26	6750'	715	Surface

☒ NEW PIPE Casing/Cement Program: Additional Comments

<sup>22</sup> Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
HYDRALIC - DOUBLE RAMS	5000	10000	Cameron

<sup>23</sup> I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☐, if applicable.

Signature:

*Donnie Hill*

Printed name: DONNIE HILL

Title: PRESIDENT

E-mail Address: dhill@wellconsultant.com

Date: 3/31/2017

Phone: 575-390-7626

OIL CONSERVATION DIVISION

Approved By:

*[Signature]*

Petroleum Engineer

Title:

Approved Date: 04/06/17

Expiration Date: 04/06/17

Conditions of Approval Attached

**BC & D Operating, Inc.**  
**WEST JAL B # 1**  
**30-025-20857**  
**UNIT "J", 1980' FSL, 1980' FEL, SEC. 17, T25S, R36E**

**Comments:**

Subject well was drilled by Skelly Oil Company in March 1964. The well was drilled and completed as follows:

- Spudded March 12, 1964,
- 17-1/2" hole drilled to 348' and 13-3/8" surface casing set @ 348' and cemented w/ 400 sxs cement with cement circulated to surface,
- 12-1/4" hole drilled to 5231' and 9-5/8" casing set @ 5231' and cemented w/ 3155 sxs cement with cement circulated to surface,
- 8-3/4" hole drilled to 11306' and 7" casing set @ 11306' and cemented w/ 370 sxs cement with TOC @ 6850',
- 6-1/8" hole drilled to 12275' w/ a 5" liner set @ 11065' – 12273' and cemented w/ 200 sxs cement,
- Perforated in the Wolfcamp @ 11361' – 12090' and tested 14 BOPD X 8 BWPD,
- Wolfcamp watered out and proved uneconomical, Well was SI,
- December 1980 cement squeezed 11361' – 12090' & set CIBP and capped w/ cement @ 8200' (Pbtd @ 8176'), Perforated Delaware @ 7881' – 7883' found to be wet & no production,
- Si until 1983,
- October 1983 well was plugged as follows: set CIBP inside 7" casing @ 7825' and capped with cement, cut 7" casing @ 6823' and pulled out of hole, spot 35 sxs cement @ 6910' – 6804', 50 sxs @ 5155' – 5305', tagged @ 5144' 50 sxs cement @ 3265' – 3365', 50 sxs cement @ 1350' – 1450', 10 sx surface plug, cut off well head, install P & A marker, well P & A.
- BC & D Operating has applied for and received Administrative Order SWD – 1601 to dispose of produced water into the Cherry Canyon @ 5340' – 6000'. A complete reentry and completion procedure has been attached as well as a wellbore diagram.

**BC&D OPERATING, INC.**

**WEST JAL B DEEP # 1**

**30-025-20857**

**UNIT "J", 1980' FSL, 1980' FEL, SEC. 17, T25S, R36E**

**Proposed Reentry Procedure**

**HOBBS OCD**  
**APR 03 2017**  
**RECEIVED**

**Well Data**

**Elevation: 3138' KB, 3118' GL**

**TD: 12275', PBTD: 6804'**

**Cement Plugs @**  
0' – 10'  
1350' - 1450'  
3265' - 3365'  
5155' - 5305'

**Open Hole @ 5305' – 6804'**

**Surface Csg: 13-3/8" 48# @ 348' w/ cement circ. to surface**

**Intermediate Csg: 9-5/8" 36# @ 5231' w/ cement circ. to surface**

**Objective:** Drill out 4 cement plugs as shown above, clean out open hole @ 5305' down to 6804', circ hole clean and prep to run 7" casing and cement to surface via two stage cement job. Drilling rig will drill out DV prior to rigging down and demob.

**Introduction:** This procedure presents the proposed steps for reentering BC & D Operating, Inc's West Jal "B" # 1. These steps are intended as a guideline, conditions encountered during the actual work will dictate the appropriate steps to be taken. Any significant deviation from the proposed program will require prior approval by Project Manager and BC & D Operating, Inc.

**Contact Info:** BC & D Operating, Inc.  
P.O. Box 302  
Hobbs, New Mexico 88241

**Donnie Hill – Project Manager**  
575.390.7626  
[dhill@wellconsultant.com](mailto:dhill@wellconsultant.com)

**Donnie Hill Jr. – Well-Site Supervisor**  
575.390.1207

**NMOCD – 575-393-6161**



# Our work is never so urgent or important that we cannot take the time to do it safely and environmentally friendly.

- a) Safe and environmentally friendly operations are of the utmost importance to all BC & D properties and facilities. To further this goal, the BC & D Supervisor at the location shall request tailgate safety meeting prior to initiation of work and also prior to any critical operations. All Company, contact, and service personnel then present at the location shall attend these tailgate safety meetings to review proposed upcoming steps, procedures, and potentially hazardous situations. Occurrence of these meetings shall be recorded in the Daily Reports. Prepare or review a Job Safety Analysis before each and every task. STOP WORK OBSERVATIONS are expected and encouraged.
- b) Keep Material Safety Data Sheets, (MSDS), on location, for all mud products and chemicals, available to all well-site personnel for review.
- c) Post Emergency Numbers near your telephone.
- d) All service company representatives working on a BC & D location are required to have a minimum training prior to beginning of work.
- e) HOLD OPERATIONAL AND SAFETY MEETING WITH ALL PERSONNEL ON LOCATION. Review the objective of the task at hand, the procedure, critical parameters.

## PROCEDURE:

- 1. Clean road and location of all debris,
- 2. Dig out cellar, install new well head,
- 3. Miru Integrity Drilling Rig, Nu & test BOP,
- 4. Pu and Tih w/ 8-3/4" Bit, BHA, Drill out cement plugs @ depths as indicated above, Clean out down to PBTD @ 6804',
- 5. Circulate hole clean, Pooh w/ drill pipe & BHA,
- 6. Pu and Tih w/ 7" 26 ppf casing w/ shoe track, 15 centralizers, DV Tool to be @ 5300',
- 7. Set 7" @ ~6800',
- 8. Miru OTEX cementing equipment, Pump 2 stage cement as recommended by OTEX,
- 9. WOC 6.5 hrs between stages, Nd BOP, Nu well head, Nu BOP,
- 10. Pu and Tih w/ 6-1/8" Bit, BHA & Drill pipe, Drill out DV @ ~5300', Tag FC @ ~6760', Test pipe @ 2000 Psig, Providing positive test, Pooh w/ Drill pipe & BHA,
- 11. Rd & Rls Integrity, Demob. WOC 72 hrs

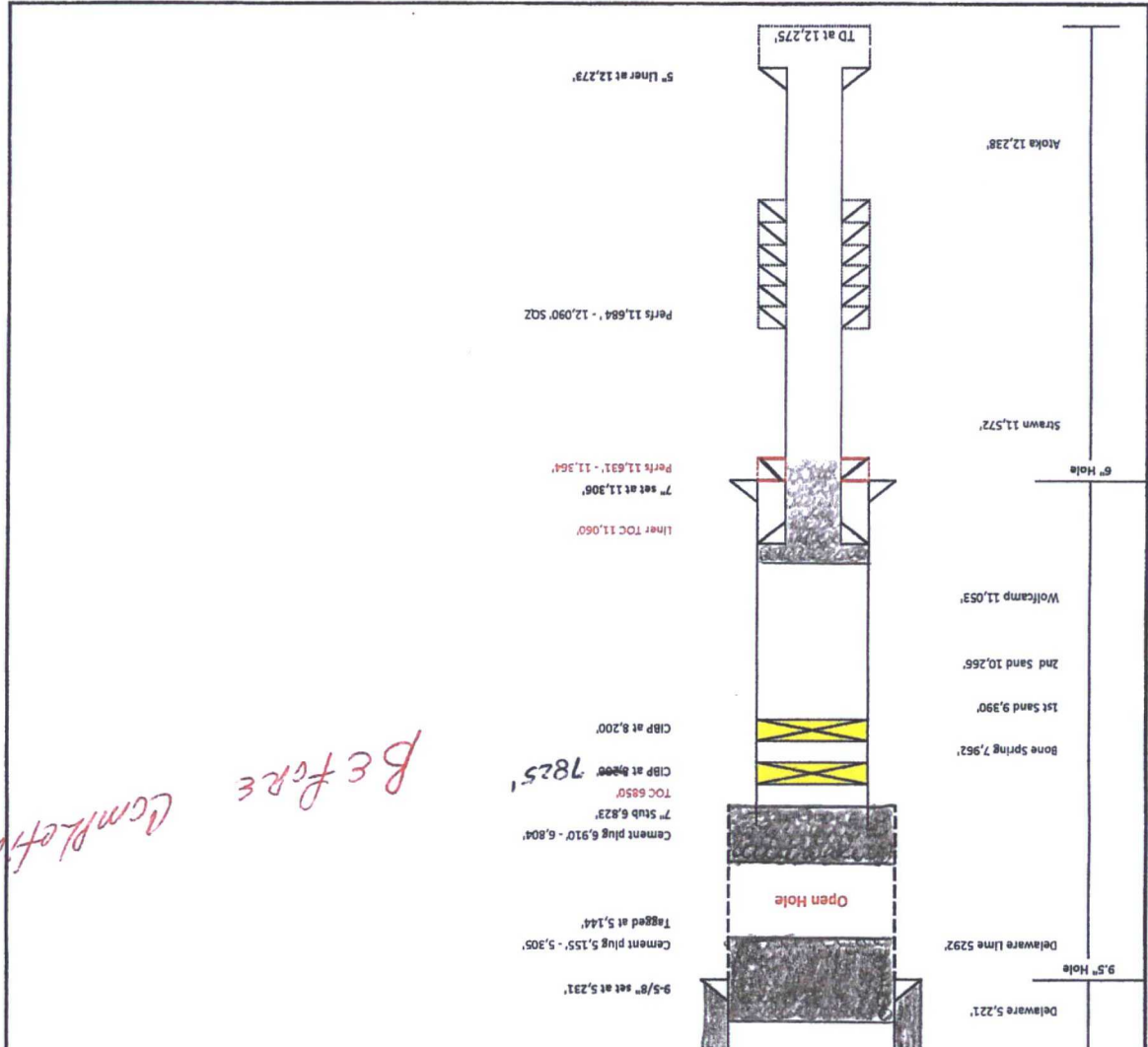
12. **MIRU Capitan Wire Line unit w/ Crane** and Tih w/ gauge ring/junk basket to 6760', Pooh, Pu and Tih w/ GR/CCL/CBL/CNL and log from ~6760' to TOC. Turn off CNL @ 9-5/8" Surface shoe, Set CIBP @ 6200' and cap with cement. Perfs to be picked off CNL from 5340' – 6000', 4 spf.
13. Report CBL results to NMOCD District 1 office along with a copy of the CBL.
14. **Miru Completion Rig**, Pu and Tih w/ 7" Arrow Set 1-X packer with profile nipple, on/off tool, and 4 ½" IPC 11.60 PPF L-80 tubing, set packer at ~5265', set pkr in tension, (10 pts), get off on/off tool, pump casing capacity with packer fluid, (~98 bbls) will have 200 bbls on location treated) latch back onto packer,
15. ND BOP, NU well head, conduct preliminary MIT, if successful notify NMOCD to witness test following morning. If MIT is not successful take action to identify and correct problem and retest.
16. Providing a successful MIT is established, Rd and Rls all contractors and rental equipment,
17. Clean location and prepare to place on injection.

Lease Name: West Jal B  
 Well No.: 1  
 Sec 17, T25S, R36E  
 SHL: 1,980' FSL 1,980' FEL  
 BHL: 1,980' FSL 1,980' FEL  
 MD: 12,275'  
 TVD: 12,275'

Operator: BCD Operating LLC  
 County: Lea  
 State: New Mexico  
 API: 30-025-20857  
 KB: 3,118'  
 Date: 4/24/2016

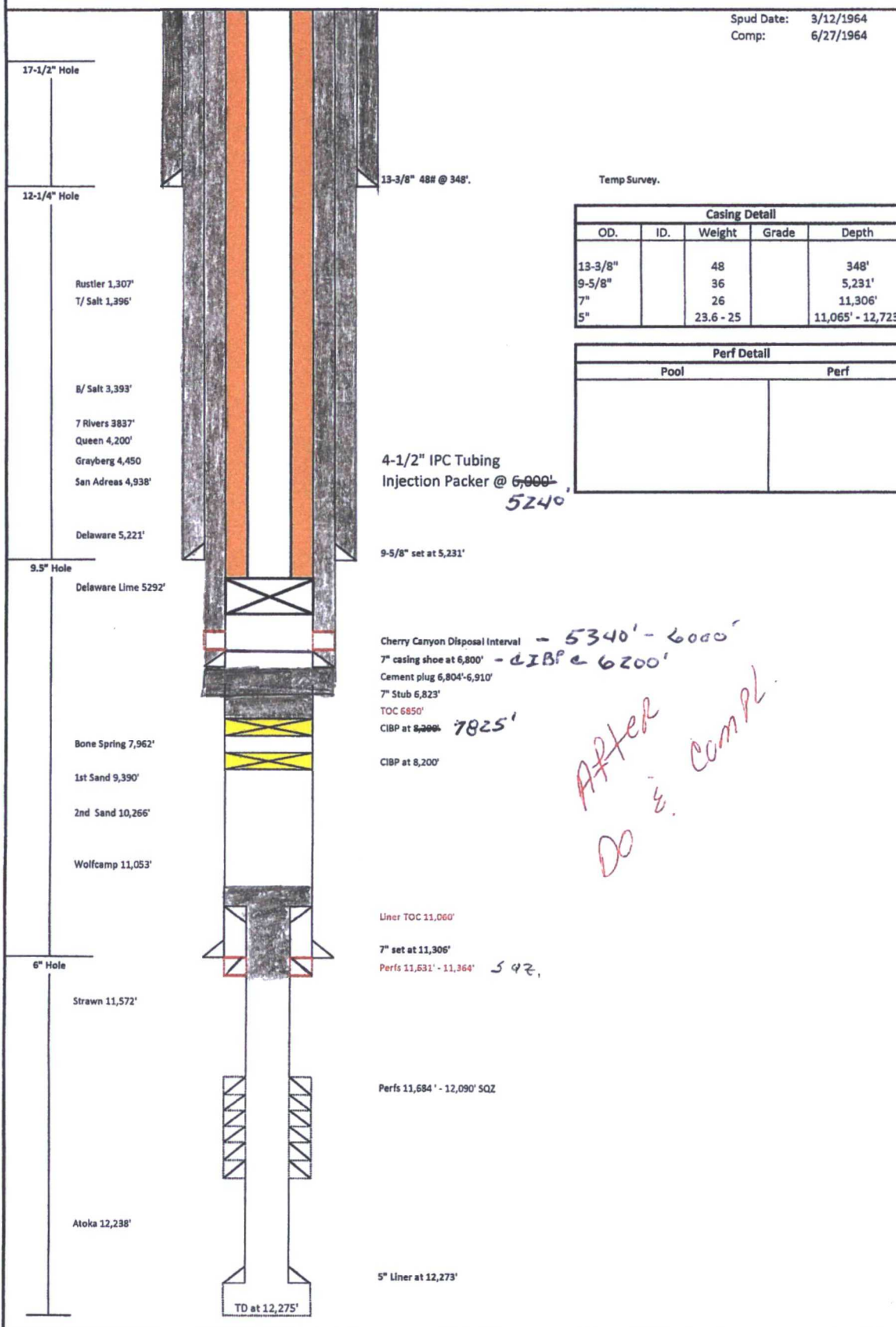
Spud Date: 3/12/1964  
 Comp: 6/27/1964  
 Temp Survey:

Casing Detail				
OD.	ID.	Weight	Grade	Depth
13-3/8"	48	36		348'
9-5/8"	36	26		5,231'
7"	26			11,306'
5"	23.6 - 25			11,065' - 12,273'
Perf Detail				
Pool				Perf



BEFORE  
 Completion

Lease Name:	West Jal B	Operator:	BC&D Operating LLC
Well No.:	1	State:	New Mexico
Legal:	Sec 17, T25S, R36E	County:	Lea
SHL:	1,980' FSL 1,980' FEL	API:	30-025-20857
BHL:	1,980' FSL 1,980' FEL	GL:	3,118'
MD:	12,275'	KB:	3,138' DF
TVD:	12,275'	Date:	4/24/2016





BC & D Operating, Inc.  
West Jal B # 1 (API 30-025-20857)  
Unit J, Sec. 17, T25S, R36E  
Lea County, NM

Well Program – Reentry

**Objective:** Reenter well & run 7" long string for commercial salt water disposal into the Cherry Canyon on Private Surface and Minerals.

**1. Geologic Information – Cherry Canyon portion.**

The Delaware Limestone provides sufficient vertical separation between the Capitan Reef and Delaware – Cherry Canyon to prevent upward migration of water into the Reef. The Delaware is composed predominately of sandstone and shales. All the Delaware members are interbedded, poorly consolidated, light gray sandstones and shales with occasional dense dolomite horizons. The lateral transmissivities of the sandstone beds are highly variable and often forms elective barriers to the movement of hydrocarbons while allowing down-gradient movement of water. The transmissivity variations are fundamentally due to the very-fine grained nature of the sands and the local bounding shale, dolomite and/or silty shale horizons. Downward vertical separation between the Cherry Canyon and Brush Canyon is sufficiently protected by dense dolomite, limestone, anhydrite and shale comprised of in excess of 1000' of above mentioned geology to prevent downward vertical migration from the Cherry Canyon to the Brushy Canyon.

**Estimated Formation Tops:**

Formation	Depth (ft.)		Production / Historical
T/Fresh Water	200		Fresh Water
T/Rustler	1252		
B/Salt	3320		
Delaware Lm	5290		
Bell Canyon			Eroded (Most Likely does not exist)
Cherry Canyon	5340		Some historical miles away - most converted to SWD
Brushy Canyon	7962		Few tried - now SWD
Wolf Camp	11053		Non-productive
Strawn	11572		Non-productive
Atoka	12238		Non-productive



## 2. Drilling / Reentry Procedure

- a) MIRU Completion Rig and associated equipment. Set up H2S wind direction indicators; brief all personnel on Emergency Evacuation Routes.
- b) All Contractors conduct safety meeting prior to task. All equipment inspected daily. Repair / replaced as required.
- c) Well spud / reentry operations commence; D/O & C/O all cement plugs in existing 9-5/8" casing.
- d) Reverse operator monitoring returns; cutting and waste hauled to specific facility. Sundance – Lea County
- e) If H2S levels >20ppm 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.)
- f) Spills contained and cleaned up immediately. Repair or otherwise correct the situation within 48 hrs before resuming operations. Notify NMOCD within 24 hrs. Remediation started ASAP if required. Operator shall comply with 19.15.29 NMAC and 19.15.30 NMAC, as appropriate.
- g) Sundry forms filed as needed – casing, cement, etc. – operations continue to completion.

## 3. Casing program – Casing designed as follows:

String	Hole Size	Depth	CSG. SZ	Cond.	WT/GRD	CLLPS/BURST	TENSION
Surface	17.5	0' - 348'	13.375"		IN WELL AT CURRENT TIME (Cmt Circ. To surface)		
INTM 1	12.25	0' - 5231'	9.625"		IN WELL AT CURRENT TIME (Cmt. Circ to surface)		
PROD	8.75	0' - 6750'	7"	New	26.0# J-55 LTC	1.125/1.125	1.4

### Notes:

- ✓ Well is PA&A'D – 9.625" CASING IS ALREADY IN HOLE AND SET @ 5231'. WILL DRILL OUT ALL CEMENT PLUGS TO A MAXIMUM DEPTH OF 6750'.
- ✓ WHILE RUNNING 7" CASING, THE PIPE WILL BE KEPT A MINIMUM OF 1/3 FULL AT ALL TIMES TO AVOID APPROACHING THE COLLAPSE PRESSURE OF CASING.

## 4. Cement Program:

**Surface** – Existing – 400 sxs – circulated to surface.

**Intermediate** – Existing – 3155 sxs – circulated to surface.

**Long String New** – 2 stage w/ DV tool at @ 5200'; Lead 400 sxs (11.8#; 2.65 cubic ft/sx.) Class H 50/50/10 Blend, Tail 400 sxs (13.0#; 1.7 cubic ft/sx.) Super H Blend; 2<sup>nd</sup> Lead 400 sxs / Tail w/ 300 sxs – 30% excess circulated to surface.

- ✓ Cement volumes may be revised based on caliper measurements.

**5. Pressure Control** – BOP diagram is attached to this application. All BOP and related equipment shall comply with well control requirements as described by NMOCD rules and regulations. Minimum working pressure of the BOP and related equipment required for drilling operations shall be 5000 psi. The NMOCD office shall be notified a minimum of 4 hours in advance for a representative to witness 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 NMOCD Hobbs office. The BOP test(s) will be conducted at:

- ✓ Installation;
- ✓ After equipment or configuration changes;
- ✓ At 30 days from any previous test, and;
- ✓ Anytime operations warrant, such as well conditions.

**6. Mud Program & Monitoring** – Mud will be balanced for all operations as follows:

DEPTH	MUD TYPE	WEIGHT	VISC.	Ph
0' - 6750'	FW/Gel	8.8 - 9.0	28 – 32	9.5 - 10.5

**Mud Program & Monitoring** – Mud and all cuttings monitored w/ cuttings recovered for disposal. Returns shall be visually and electronically monitored. In the event H<sub>2</sub>S, mud shall be adjusted appropriately by weight and H<sub>2</sub>S scavengers.

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

**8. H<sub>2</sub>S Safety** – There is low risk of H<sub>2</sub>S in this area. The operator will comply with the provisions of 19.15.11 NMAC. All personnel will wear monitoring devices and a wind direction sock will be placed on location.

**9. Logging, Coring and Testing** – BC&D Operating expects to utilize existing logs but may run a standard porosity log (CNL or better) from TD to approximately 5200'. A bond log (CBL or CET) may be run on the long string. No coring or drill string test 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 safe operations of the equipment being used to reenter this well.

The maximum anticipated bottom hole pressure is 3500 psi and the maximum anticipated bottom hole temperature is 140 degrees F.

11. **Waste Management** – All drill cuttings and other wastes associated with drilling operations will be transported to a facility permitted by the Environmental Bureau of the NMOCD.

12. **Completion Interval** – The Disposal interval will be isolated to the Cherry Canyon member of the Delaware thru perforations between 5340' – ~~6710'~~<sup>5000'</sup>. These selected perforations will provide isolation of the Capitan Reef and the Brushy Canyon with disposal fluids to be contained with-in the Cherry Canyon member only.

13. **Injection tubing / Packer configuration** - . Injection fluids will be pumped thru ~~3-1/2"~~<sup>4-1/2"</sup> injection string with a packer set with-in 50' of uppermost perforation of the Cherry Canyon.

14. **Configure for Salt Water Disposal** – Prior to commencing any work, an NOI sundry(s) will be submitted to configure the well for SWD and will detail the completion workover including all work otherwise described above, any changes to the procedure noted herein and to perform mechanical integrity test per NMOCD test procedures. (Notify NMOCD 24 hours prior). The casing/tubing annulus will be monitored for communications with injection fluids or loss of casing integrity. Anticipated daily maximum volume of 10,000 bpd at a maximum surface injection pressure of 1068 psi. If satisfactory disposal rates cannot be achieved at default pressure of .2 psi/ft., BC&D Operating will conduct a step-rate test and apply for an injection pressure increase 50 psi below parting pressure.

5240  
5240 } PKR.  
5300' DU

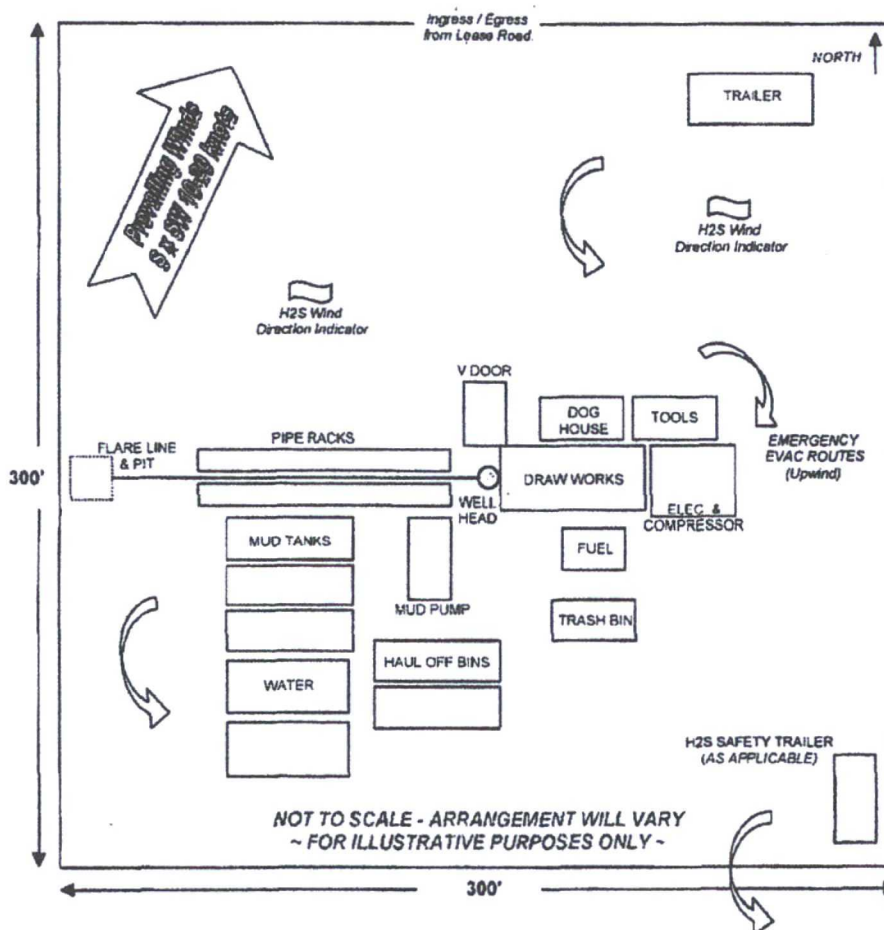


## Standard Drill - Operating Procedure & Site Setup

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

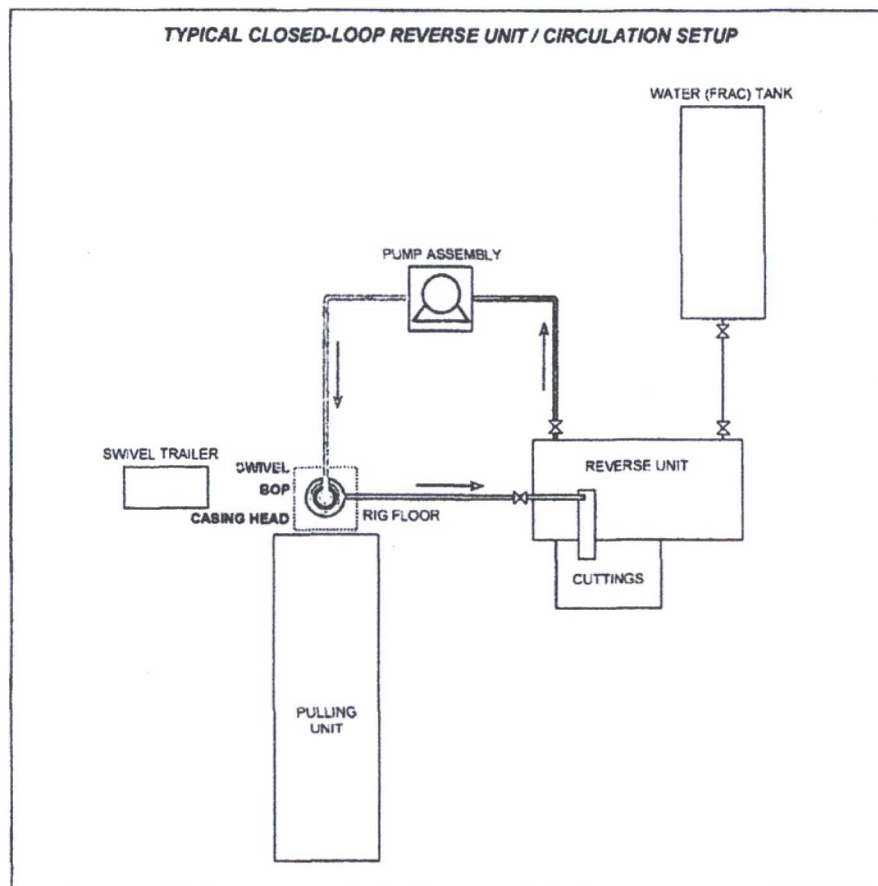
1. MIRU Drilling and drilling support contractors / equipment.
2. Set up H2S wind direction indicators; brief all personnel on Emergency Evacuation Routes.
3. All contractors conduct safety meeting prior to current task.
4. If H2S levels >20ppm detected, implement H2S Plan accordingly. (e.g., cease operations, shut in well, employ H2S safety trailer & personnel safety devices, install flare line, etc. - refer to plan.)
5. All equipment inspected daily. Repair / replace as required.
6. Mud logger monitoring returns; cuttings & waste hauled to specified facility. CRI - LEA COUNTY
7. Spills contained & cleaned up immediately. Repair or otherwise correct the situation within 48 hours before resuming operations. Notify OCD within 24 hours. Remediation started ASAP if required. Operator shall comply with 19.15.29 NMAC and 19.15.30 NMAC, as appropriate.
8. Sundry forms filed as needed - casing, cement, etc. - operations continue to completion

TYPICAL LOCATION SETUP (V Door North)

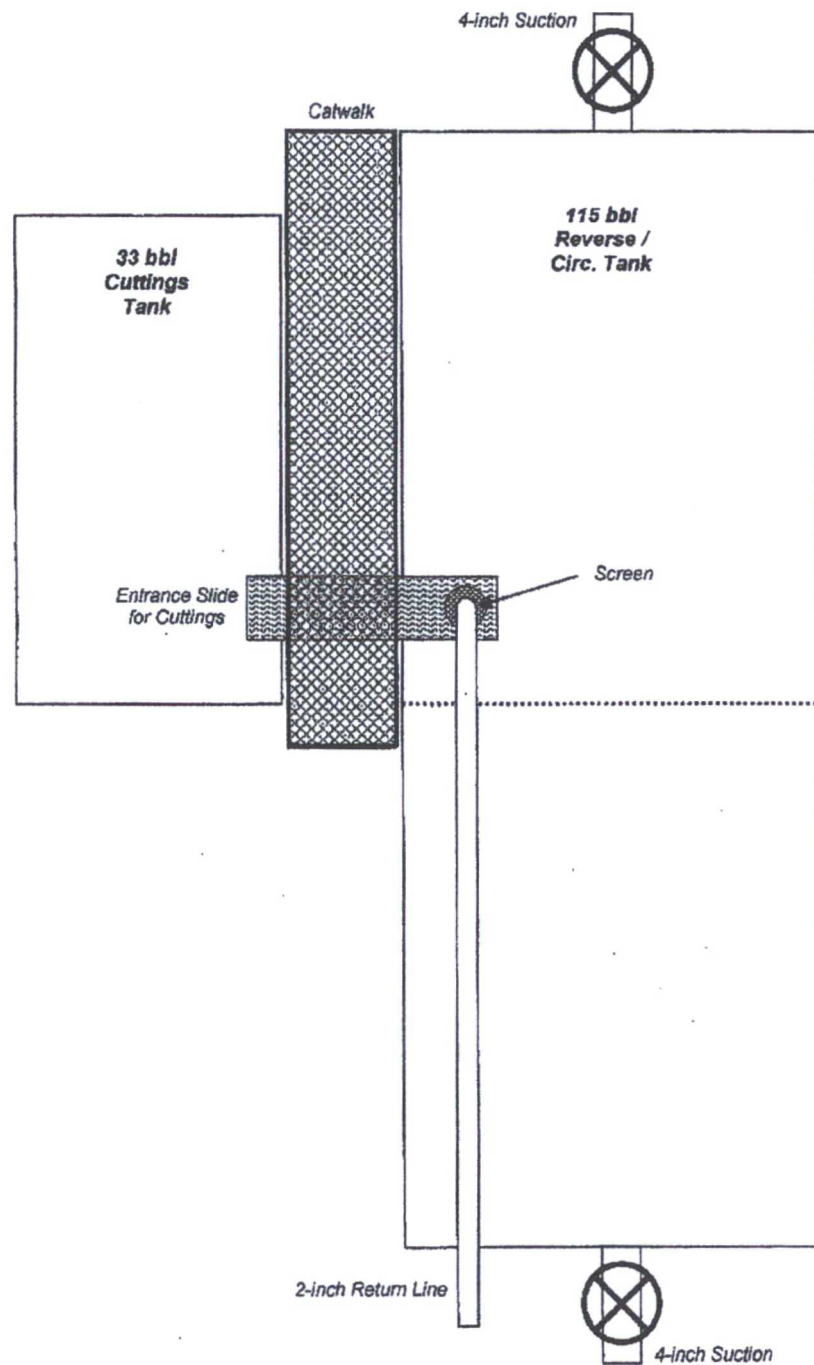


## Standard Operating Procedure - Re-entry Closed-Loop Reverse Unit Diagram

1. Blow Out Preventer tested prior to any operations. Notify OCD at least 4 hours prior.
2. Visual monitoring maintained on returns. Proceed with drillout operations accordingly.
3. Cuttings / waste hauled to specified facility. Sundance – Lea County
4. Spills contained & cleaned up immediately. Repair or otherwise correct the situation within 48 hours before resuming operations. Notify OCD within 24 hours. Remediation started ASAP if required. Operator shall comply with 19.15.29 NMAC and 19.15.30 NMAC, as appropriate.
5. Subsequent sundry / forms filed as needed - well returned to service.



## Reverse / Circulation Tank for Workovers & Drillouts





# Blow Out Preventer Diagram

<sup>5000</sup>  
~~3000~~ PSI WORKING PRESSURE

