State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

David R. Catanach Division Director
Oil Conservation Division

New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 1-20-15
Well information;
Operator Enervest, Well Name and Number Jicarilla B #2F

API# 30-039-31300, Section 16, Township 26 N/S, Range 5 E/W

Conditions of Approval:
(See the below checked and handwritten conditions)

- X Notify Aztec OCD 24hrs prior to casing & cement.
- o Hold C-104 for directional survey & "As Drilled" Plat
- o Hold C-104 for NSL, NSP, DHC
- o Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- X Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
  - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
  - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
  - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- o Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ✓ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ✓ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- ✓ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.

Charlie Perrin
NMOCD Approved by Signature

6-22-2015
Date KC

1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3460 • Fax (505) 476-3462 • www.emnrd.state.nm.us/ocd

OIL CONS. DIV DIST. 3

JUN 15 2015

RECEIVED

JAN 22 2015

Farmington Field Office
Bureau of Land Management

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.
Jicarilla Apache Tribal Contract 109

6. If Indian, Allotee or Tribe Name
Jicarilla Apache

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

8. Lease Name and Well No.
Jicarilla B #2F

2. Name of Operator Enervest Operating, LLC

9. API Well No.
30-039-31310

3a. Address 1001 Fannin St., Suite 800
Houston, Texas 77002-6707

3b. Phone No. *(include area code)*
713-659-3500

10. Field and Pool, or Exploratory
Blanco MesaVerde/Basin Dakota

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 2047' FSL, 1690' FWL (UL K)
At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area
Sec.16, T26N, R 05W

14. Distance in miles and direction from nearest town or post office*
30 miles NW of Lindrith

12. County or Parish
Rio Arriba

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
1690'	2,560	MV - S1/2; DK - S1/2, 325 +/- AC
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**
	7,567'	RLB0007886
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
6556' GL	04/01/2015	5 weeks

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
Michelle Doescher	Michelle Doescher	01/20/2015
Title: Regulatory Consultant		
Approved by *(Signature)*	Name *(Printed/Typed)*	Date
David Mankiewicz		6/10/15
Title: AFM	Office: FFO	

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)

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

NMOCD

*(Instructions on page 2)

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS"

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

RECEIVED
JAN 22 2015
Farmington Field Office
Bureau of Land Management

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-039-31300	72319/71599	BLANCO MESAVERDE/BASIN DAKOTA

4 Property Code	5 Property Name	6 Well Number
306753	JICARILLA B	#2F

7 OGRID No.	8 Operator Name	9 Elevation
143199	ENERVEST OPERATING, LLC	6556'

10 Surface Location

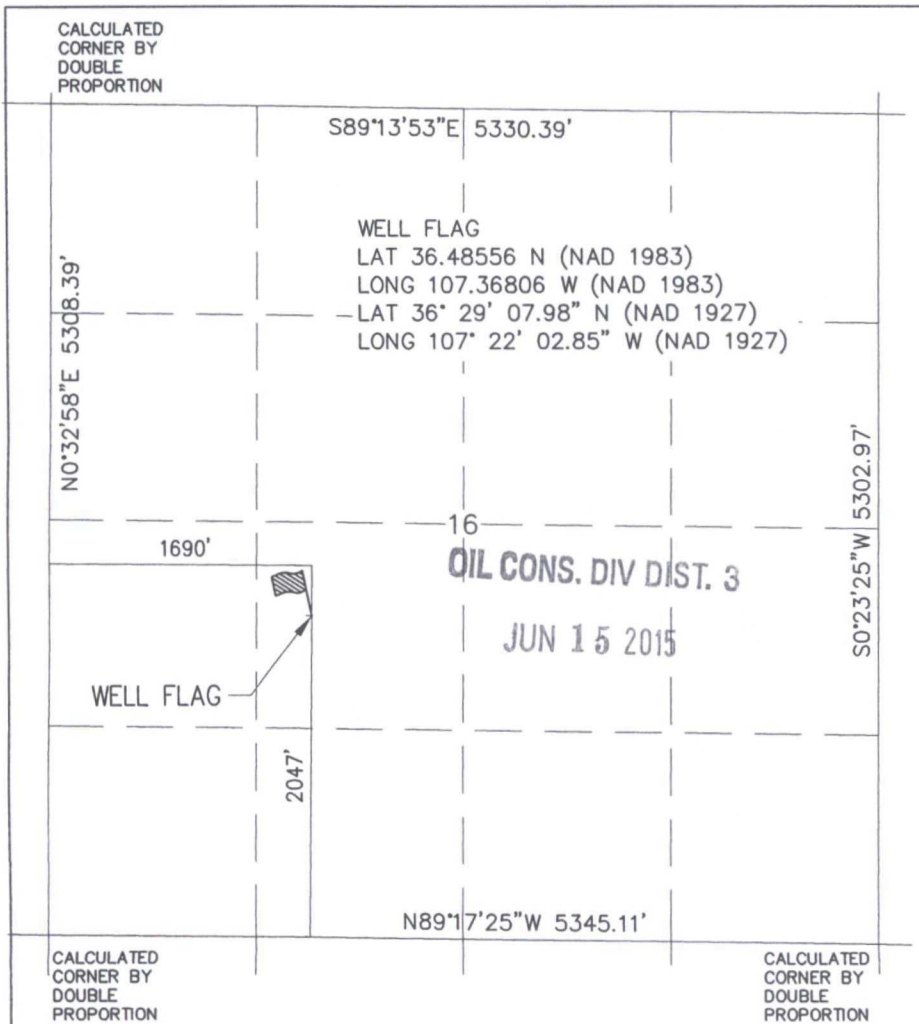
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	16	26N	5W		2047'	SOUTH	1690'	WEST	RIO ARRIBA

11 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

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
MV-S1/2 ; DK-S1/2 , ~~325~~ 320 +/- ACRES			NSL 7207

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.



OIL CONS. DIV DIST. 3
JUN 15 2015

17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature 4/20/15 Date

Michelle Doescher
Printed Name

~~Shelly~~ sdoescher@enervest.net
E-mail Address

18 SURVEYOR CERTIFICATION

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 behalf.

Survey Date: OCT. 31, 2014

Signature and Seal of Professional Surveyor

Kurt B. Shepherd
NEW MEXICO 11643 PROFESSIONAL SURVEYOR
10-31-14

Certificate Number 11643

EnerVest Operating, LLC
Jicarrilla B #2F
2047' FSL, 1690' FWL
Lat: 36.48555 N Long: 107.367458 W (NAD 1927) Unit K
Sec. 16, T26N R05W Rio Arriba County, NM
GL Elev: 6556'

Drilling Plan (11-17-2014)

All Lease and /or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations, BLM Onshore orders and EnerVest's approved Further Development Project Plan. The operator is fully responsible for the actions of its subcontractors. A copy of the APD and Conditions of Approval will be available to the field representatives to ensure compliance.

I. & II. ESTIMATED FORMATION TOPS (KB) and NOTABLE ZONES:

The following formation depths and proposed casing depths are estimates only and may be modified as determined by well conditions while drilling.

Formation Name	Depth	Rock Type	Comments
San Jose	Surface	Sandstone	
Ojo Alamo	2307'	Sandstone	Possible Gas, Water
Kirtland	2653'	Shale	
Fruitland	2918'	Coal, Shale, Sandstone	Possible Lost Circ, Gas, Water
Pictured Cliffs	3037'	Sandstone	Possible Lost Circ, Gas, water
Lewis	3140'	Shale	Sloughing Shale
Mesa Verde (Cliffhouse)	4753'	Sandstone	Possible Lost Circ, Gas, Water
Mesa Verde (Menefee)	4777'	Coal, Sandstone, Shale	Possible Lost Circ, Gas, Water
Mesa Verde (Point Lookout)	5272'	Sandstone	Possible Lost Circ, Gas, Water
Mancos	5418'	Shale	Sloughing Shale
Gallup	6426'	Siltstone, Shale	Gas, Oil
Greenhorn	7182'	Limestone	Gas, Oil
Graneros	7236'	Shale	Gas, Oil, Water
Dakota	7267'	Sandstone	Gas, Oil, Water
Proposed Total Depth	7567'		

Fresh water zones will be adequately protected by setting and cementing the surface casing. All zones containing commercial quantities of oil or gas will be cased and cemented.

EnerVest Operating, LLC
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GL Elev: 6556'

III. PRESSURE CONTROL:

Maximum expected pressure is ~1665 (0.22 pressure gradient) psi. The drilling contract has not yet been awarded, thus the exact BOP and Choke Manifold model to be used is not yet known. A typical 11" 2000 psi model is pictured in Exhibits A & B.
A remote accumulator will be used, the pressures, capacities location of the remote and manual controls will be identified at the time of the BLM supervised BOP test.

BOP equipment, accumulator, choke manifold and all accessories will meet or exceed BLM requirements as listed in Onshore Order #2 for the 2M systems. The pressure control equipment considerations include but will not be limited to:

1. BOP will be a double gate ram preventer with a set of blind rams and a set of properly-sized pipe rams.
2. Accumulator will have sufficient capacity to close the BOP rams and retain 200 psi above pre charge.
3. Accumulator fluid volume is to be maintained at manufacturer's recommendations.
4. BOP will also have manual closing handles available.
5. 2" minimum kill line and kill line valves (2).
6. Choke manifold (2" lines) with 2 adjustable chokes with valves and gauge.
7. Manually operated Kelly cocks available.
8. Safety valve and sub(s) with adequate opening for all drill strings used.
9. Fill line and flow line above the upper-most BOP rams.

BOPs will be pressure tested; after initial installation, before drilling out from under all set and cemented casing strings and any time a seal is broken. The BOPs will also be pressure tested a minimum of once every 21 days by a 3rd party. Additionally, the BOPs will be operationally checked every 24 hours.
All tests and pressure tests will be recorded on IADC log.

Ram type preventors, choke manifold and related pressure control equipment will be pressure tested to the rated working pressure of 2000 psi (high) and 250 psi (low).

The casing strings will be pressure tested per BLM Onshore Order #2 for 30 min as follows:

a. Surface casing tested to 600 psi prior to drilling out the shoe.
b. Production casing will be tested to 6000 psi at the commencement of completion operations.

EnerVest Operating, LLC
Jicarrilla B #2F
2047' FSL, 1690' FWL
Lat: 36.48555 N Long: 107.367458 W (NAD 1927) Unit K
Sec. 16, T26N R05W Rio Arriba County, NM
GL Elev: 6556'

IV. PROPOSED CASING PROGRAM :

Casing Design

Hole/Casing Description	Hole Size	Casing OD	Weight lb/ft	Grade	Age	Connection	Top MD	Bottom MD
Surface	12 1/4"	8 5/8"	24	J-55	New	ST&C	0	500'
Prod Casing	7 7/8"	4 ½"	11.6	N-80	New	LT&C	0	7567'

Surface casing is to be cemented to surface. The production casing is to be cemented in 3 stages covering all zones of production potential and the 3rd stage is intended to circulate cement to surface.

V. CASING CEMENT:

A prototypical cementing program is listed as follows, site-specific cement designs will be produced for each well as the hole conditions warrant. The cement program will designed to meet the BLM Onshore Order #2 and NMOCD requirements.

Surface casing will be cemented to the surface.
Cement and properties; Mix and pump 310 sacks Type III cement (or equivalent) cement. Slurry density is to be 14.6 (yield = 1.39 cu ft/sx). Volume will include 100% excess. Cement is to be displaced using a top plug.

Two centralizers will be run on the shoe joint, one centralizer each on the next two joints and then one centralizer on every third joint thereafter.
The surface casing will be pressure tested to 600 psi prior to drilling out the shoe.

Production casing will be cemented in 3 stages covering all zones of production potential and the 3rd stage is intended to circulate cement to surface. Volumes based on 45% - 50% excess over OH gauge volume.

Stage 1 cement; mix and pump 490 sacks premium lite slurry with CaCl2, cello flake and gilsonite. Estimated slurry density is to be 12.1 (yield = 2.13 cu ft/sx).

DV tool at +/- 4413 ft.

Stage 2 Lead cement; mix and pump 265 sacks premium lite slurry with CaCl2, cello flake and gilsonite. Estimated slurry density is to be 12.1 (yield = 2.13 cu ft/sx).

Stage 2 Tail cement; mix and pump 50 sacks Type III cement (or equivalent) cement. Slurry density is to be 14.6 (yield = 1.39 cu ft/sx). or equivalent cement.

DV tool at +/- 2487 ft.

Stage 3 Lead cement; mix and pump 355 sacks premium lite slurry with CaCl2, cello flake and gilsonite. Estimated slurry density is to be 12.1 (yield = 2.13 cu ft/sx).

Stage 3 Tail cement; mix and pump 50 sacks Type III cement (or equivalent) cement. Slurry density is to be 14.6 (yield = 1.39 cu ft/sx). or equivalent cement.

Two centralizers will be run on the shoe joint, one centralizer on every third joint into the surface casing.

The production casing will be pressure tested for 30 minutes at the commencement of completion operations as outlined above

Where cement has not been circulated to surface (or to planned depth) a CBL or temperature survey will be run to determine the TOC for that casing string. A CBL log will be run in the production casing prior to the commencement of completion operations.

Cement specifications may vary slightly due to cement type and cement contractor availability.

VI. MUD PROGRAM

Depth	Type	Wt / pp	Visc	Fluid Loss
0-500'	FW gel/Lime Spud Mud	8.4-9.0	30-40	N/C
500'- 7520'	LSND/Gel sweeps, LCM as needed	8.7-9.0	20-32	4-6 cc

The well will be drilled utilizing a closed loop mud and solids control system. The closed loop system will comply with the NMOCD pit rules pertaining to the use of the system and disposal of the drill cuttings and waste. Drilling mud will be moved for re-use to drill subsequent wells whenever possible.
Viscosity, mud weight and other physical and chemical characteristics of the drilling mud will be varied as required to keep the hole clean, circulate drill cuttings, prevent caving, prevent lost circulation and maximize penetration rate.

Sufficient mud and materials will be kept on site to maintain mud properties and meet lost circulation or mud weight requirements at all times.
Mud design may change depending on well conditions, LCM, fluid loss and viscosity will be determined by the EnerVest representative and the mud engineer on site.

VII. CORING, TESTING, & LOGGING

No cores or drill stem tests are planned. Well logs to be run are:

Surface to TD; GR/ Cement Bond Log, at the commencement of completion operations.
2500' to TD; GR/Cased hole Neutron.

Deviation surveys will be run at 500 ft intervals and at the base of each hole section prior to setting casing.

VIII. ANTICIPATED PRESSURES AND TEMPERATURES:

a.	Expected bottom hole pressure:	< 1665 psi
b.	Anticipated abnormal pressure:	None
c.	Anticipated abnormal temperatures:	None
d.	Anticipated hazardous gas (H2S):	None

If any of the foregoing conditions are unexpectedly encountered, suitable steps will be taken to mitigate according to accepted industry best practices.

ENERVEST OPERATING, LLC

Jicarilla B #2F (Proposed)

TYPE	Dakota/MV	RIG	TBD	DATE	17-Nov-2014
FIELD	Tapicito	COUNTY	Rio Arriba	ELEVATION	6578' GL; 6591' KB
GAS/OIL	Gas/Oil	MUD	LSND	BHT/BHP	160 deg- <1665 psi
LOCATION			SHL: Lat: 36.48555 N Long: 107.367458 W (NAD 1927		
	BHL: Same as SHL		BHL: same as SHL		

COMMENTS: OBJECTIVE FORMATION: Dakota and Mesa Verde

NOTES:

	DEPTH TVD	
Surface Section		
12 1/4" Hole >		Cement to surface
8-5/8", 24#,J-55, ST&C	**500'**	Water based bentonite mud Drill w/PDC and 4 1/2" DP
Production Section		
7 7/8" Hole to TD >		Drill w/PDC or Tri-Cone, motor, 4-1/2" DP
		8.7- 9.0 PPG Bentonite Mud
Ojo Alamo >	**2,307'**	
	2,487'	Stage Collar Cementing Tool
Kirtland >	**2,653'**	
Fruitland Coal >	**2,918'**	
Pictured Cliffs >	**3,037'**	
Lewis Shale >	**3,140'**	
	4,413'	Stage Collar Cementing Tool
Cliffhouse >	**4,753'**	Drill w/PDC bit, motor, 4-1/2" DP 8.7-9.0 PPG Bentonite Mud
Menefee >	**4,777'**	
Point Lookout >	**5,272'**	
Mancos >	**5,418'**	
(Regulatory MancoS) >		
Gallup >	**6,426'**	
Greenhorn >	**7,182'**	Logs: As Directed By Geologist
Graneros Shale >	**7,236'**	Cased-hole GR / Neutron after casing
Dakota >	**7,267'**	
FC >>>>	7,527'	
4-1/2", 11.6#, N-80 LT&C - To Surface >>>>	**7,567'**	Cement to surface in 3 stages.
TD >>>>	**7,567'**	

AFE #	REGULATORY		
EV #	ENGINEER	Brett Munkres	(713) 495 6566
API #	GEOLOGIST	G Kowalczyk	(713) 495 6590

5. WELL SITE LAYOUT

The attached figure (Fig A) shows the proposed well location layout while drilling this well. The drilling contractor has not been chosen and the layout of the may vary with the particular drilling contractor's rig requirements. A construction zone will be built as needed around the perimeter of the location as shown on the attached survey plats. The area will be reclaimed as per item # 11 below upon the completion of the well.

6. PROPOSED PRODUCTION FACILITIES

The actual equipment used and the configuration will be determined after the well is completed. At a minimum, the facilities will include a meter run, a separator, a produced water storage tank and a condensate/oil storage tank. All surface equipment will be painted with a non-reflective paint color as per specifications as specified by the Conditions of Approval.

7. WATER SUPPLY

Drilling and completion water will come from sources as agreed with the Jicarilla Apache Tribe. Fresh water will be trucked from several sources; local ponds, or wells from the area. No water wells are to be drilled for this location.

8. CONSTRUCTION MATERIALS & METHODS

NM One Call (811), US Forest Service and BLM will be notified before construction starts. The top 6" of soil from the location will be saved and will be piled at near the location to be used for reclamation at a later date. Any road base, gravel or other fill material will be hauled from a source as agreed upon by the Jicarilla Apache Tribe or as specified in the Conditions of Approval.

9. WASTE DISPOSAL

✓ A. The drill cuttings will be handled with a closed loop system and stored in steel rig tanks. These will then be hauled to a properly-permitted site for disposal. The drilling fluid will be processed for re-use, any drilling fluid that cannot be re-used will be hauled to a properly-permitted facility for disposal. The closed loop system will be closed and removed as per NMOCD.

B. Drilling mud that cannot be re-used will be disposed of at a properly permitted facility.

C. Produced water will be collected and disposed of a properly permitted facility.

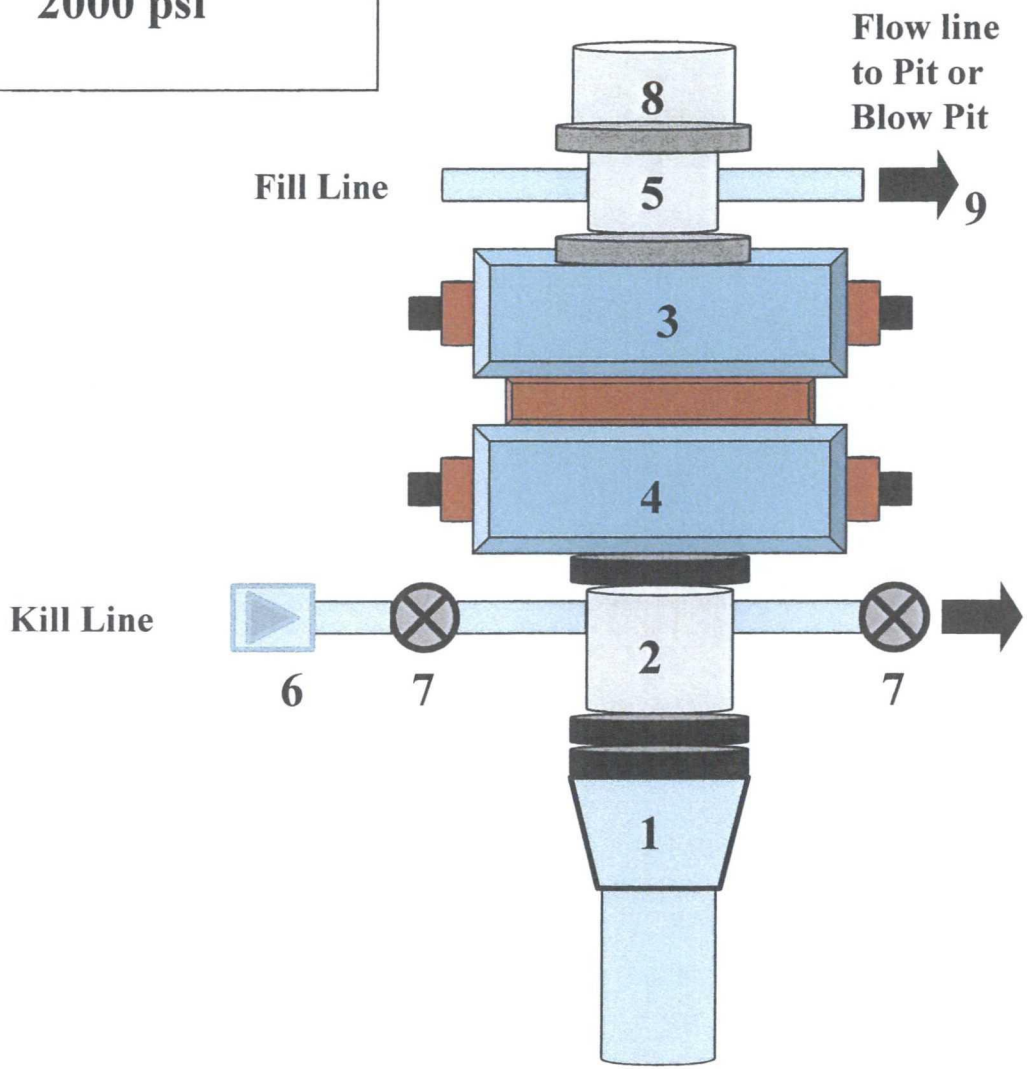
D. Any sewage will be collected by the portable toilet provider for disposal.

E. All garbage and general trash will be collected in a portable trash cage and will be removed from the site and disposed of in a properly permitted disposal facility. There will be no burning of trash.

F. Drilling crews under the supervision of the contractor or operator will control and dispose of garbage and waste materials during the drilling operations.

EnerVest
Jicarilla 2015
Drilling Program
Blowout Preventer
2000 psi

Exhibit A



Components

1. Wellhead 8 5/8”
2. Drilling Spool
3. Pipe Rams
4. Blind Rams
5. Bell Nipple
6. 2” Check Valve
7. 2” Manual Valves
8. Rotating Head, when needed if air drilling
9. Blooie Line will be used if air drilling

Exhibit B

EnerVest
Jicarilla 2015 Drilling Program
2000 psi Choke Manifold

Components

1. 2" Valves (2M)
2. Adjustable Chokes
3. Gauge