

NOS: N/A
 Form 3160-3 APDP: /A
 (April 2004) MP: /A
 SMA: Tribal
 BOND: RLB0007886
 CA/PA: N/A

UNITED STATES
 DEPARTMENT OF THE INTERIOR
 BUREAU OF LAND MANAGEMENT

RECEIVED

FORM APPROVED
 OMB NO. 1004-0137
 Expires: March 31, 2007

JAN 18 2013

APPLICATION FOR PERMIT TO DRILL OR REENTER Farmington
 Bureau of Land Management

5. Lease Serial No. Jicarilla Contract 109
 6. If Indian, Allottee or Tribe Name Jicarilla Apache
 7. If Unit of CA Agreement, Name and No.
 8. Lease Name and Well No. Jicarilla B #3R
 9. API Well No. 30-039-31170
 10. Field and Pool, or Exploratory Blanco Mesa Verde/Basin Dakota
 11. Sec., T., R., M., or Blk. And Survey or Area
 RCVD MAR 7 '13
 OIL CONS. DIV.
 Sec. 15 T26N R05W DIST. 3
 12. County or Parish Rio Arriba
 13. State NM

1a. Type of Work: DRILL REENTER
 1b. Type of Well: Oil Well Gas Well Other Single Zone Multiple Zone

2. Name of Operator
 EnerVest Operating, L.L.C.

3a. Address 1001 Fannin St. Suite 800, Houston, Tx 77034
 3b. Phone No. (include area code) 713-495-5355

4. Location of well (Report location clearly and in accordance with any State requirements. *)
 At surface 1930' FSL, 2300' FEL (Unit J)
 Sec 15 T26N R05W
 At proposed prod. zone 1930' FSL, 2000' FEL (Unit J)
 Sec 15 T26N R05W

14. Distance in miles and direction from the nearest town or post office*
 30 miles from Lindrith, NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line, if any) 1930'
 16. No. of acres in lease 2560
 17. Spacing Unit dedicated to this well MV - S/320 DK - S/320

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1463'
 19. Proposed Depth 7639'
 20. BLM/ BIA Bond No. on file RLB30007886 RLB0007886

21. Elevations (Show whether DF, RT, GR, etc.) 6610' GL
 22. Approximate date work will start* 4/1/2013
 23. Estimated duration 5 weeks

24. Attachments

- The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1 shall be attached to this form:
- Well plat certified by a registered surveyor.
 - A Drilling Plan.
 - A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
 - Bond to cover the operations unless covered by existing bond on file (see item 20 above).
 - Operator certification.
 - Such other site specific information and/ or plans as may be required by the a authorized officer.

25. Signature Name (Printed/ Typed) Bart Trevino Date 1/16/2013

Title Regulatory Analyst
 Approved By (Signature) Name (Printed/ Typed) Mamberler Date 2/28/13
 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.

*(Instructions on page 2)

This action is subject to technical and procedural review pursuant to 43 CFR 161.4 and appeal pursuant to 43 CFR 3182.4

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

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

Hold C104 for Directional Survey and "As Drilled" plat

NOTIFY AZTEC OCD 24 HRS. PRIOR TO CASING & CEMENT!

MAR 08 2013 ea

NMOCD PV

RECEIVED

JAN 18 2013

Form C-102

Revised August 1, 2011

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

Armington Field Office
Bureau of Land Management

Submit one copy to appropriate District Office

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 Bronco 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

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-31170	² Pool Code 72319/71599	³ Pool Name Blanco Mesaverde/Basin Dakota
⁴ Property Code 306753	⁵ Property Name JICARILLA B	
⁷ OORID No. 143199	⁸ Operator Name ENERVEST OPERATING, LLC.	⁶ Well Number 3R ⁹ Elevation 6610'

¹⁰ Surface Location

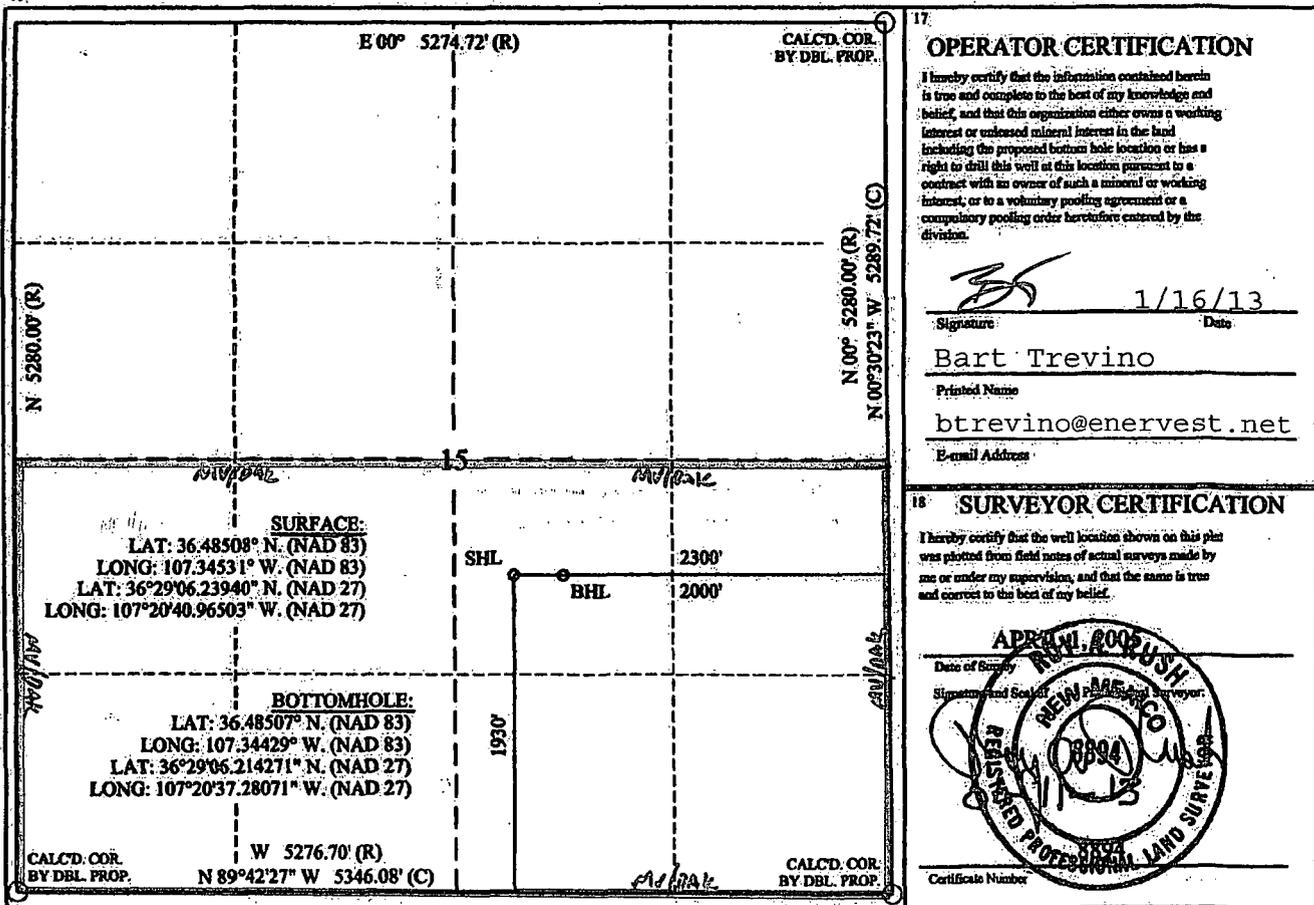
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	15	26-N	5-W		1930	SOUTH	2300	EAST	RIO ARRIBA

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
J	15	26-N	5-W		1930	SOUTH	2000	EAST	RIO ARRIBA

¹² Dedicated Acres MV - S/320 DK - S/320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.



EnerVest Operating, LLC

Jicarilla B # 3R

Surface: 1930' FSL, 2300' FEL Unit J, Sec. 15, T26N R05W
Bottom Hole: 1930' FSL, 2000' FEL Unit J, Sec 15, T26N, R05W
Rio Arriba County, NM
GL Elev: 6610'

Drilling Plan

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.

4.1, 4.2 ESTIMATED (TVD) FORMATION TOPS (KB) and NOTABLE ZONES:

The following are estimates of formation and proposed casing depths.

<u>Formation Name</u>	<u>Depth (TVD)</u>	<u>Rock Type</u>	<u>Comments</u>
San Jose	Surface	Sandstone	
Ojo Alamo	2269'	Sandstone	Possible Gas, Water
Kirtland	2691'	Shale	
Fruitland	2910'	Coal, Shale, Sandstone	Possible Lost Circ, Gas, Water
Pictured Cliffs	3124'	Sandstone	Possible Lost Circ, Gas, water
Lewis	3203'	Shale	Sloughing Shale
Mesa Verde	4455'	Sandstone / shale	
Mesa Verde (Cliffhouse)	4821'	Sandstone	Possible Lost Circ, Gas, Water
Mesa Verde (Menefee)	4899''	Coal, Sandstone, Shale	Possible Lost Circ, Gas, Water
Mesa Verde (Point Lookout)	5337'	Sandstone	Possible Lost Circ, Gas, Water
Mancos	5509'	Shale	Sloughing Shale
Gallup	6499'	Siltstone, Shale	Gas, Oil
Greenhorn	7255'	Limestone	Gas, Oil
Graneros	7317'	Shale	Gas, Oil, Water
Dakota	7349'	Sandstone	Gas, Oil, Water
Proposed Total Depth	7639'		

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.

This well is to be drilled as a directionally drilled "S-shaped" well. The well is to be drilled vertically from surface to a kick off point at +/- 600 ft. The well will be directionally drilled at a 90 degree azimuth to a point 300 ft east of the surface location and at an estimated MD of +/- 2600 ft. The well will be drilled vertically from that point to the estimated TD.

EnerVest Operating, LLC

Jicarilla B # 3R

Surface: 1930' FSL, 2300' FEL Unit J, Sec. 15, T26N R05W
Bottom Hole: 1930' FSL, 2000' FEL Unit J, Sec 15, T26N, R05W
Rio Arriba County, NM
GL Elev: 6610'

4.3 PRESSURE CONTROL:

Maximum expected pressure is ~1681 (.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. Intermediate casing tested to 1500 psi prior to drilling out the shoe. **(If intermediate casing is used.)**
- c. Production casing will be tested to 6000 psi (either 4 ½" 11.6# N-80 or 5 ½" 17# N-80) at the commencement of completion operations.

EnerVest Operating, LLC

Jicarilla B # 3R

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 Bottom Hole: 1930' FSL, 2000' FEL Unit J, Sec 15, T26N, R05W
 Rio Arriba County, NM
 GL Elev: 6610'

4.4 PROPOSED CASING PROGRAM (S):

The casings program is designed to use **Option A** below. If while drilling the hole conditions indicate that an intermediate casing may be needed then **Option B** will be used.

Casing Option A

Hole/Casing Description	Hole Size	Casing OD	Weight lb/ft	Grade	Age	Connection	Top	Bottom
Surface	12 1/4"	9 5/8"	36	J-55	New	ST&C	0	500'
Prod Csg(1)MD TVD	8 3/4"	5 1/2"	17	N-80	New	LT&C	0	3320' 3293'
Prod Csg(2)MD TVD	7 7/8"	5 1/2"	17	N-80	New	LT&C	3320' 3293'	7666' 7639'

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.

Casing Option B

Hole/Casing Description	Hole Size	Casing OD	Weight lb/ft	Grade	Age	Connection	Top MD	Bottom MD
Surface	12 1/4"	9 5/8"	36	J-55	New	ST&C	0	500'
Inter MD TVD	8 3/4"	7"	23	J-55	New	LT&C	0	3320' 3293'
Prod CsgMD TVD	6 1/4"	4 1/2"	11.6	N-80	New	LT&C	0	7666' 7639'

Surface and Intermediate casings are to be cemented to surface, production casing is intended to be cemented with a 200' overlap into the intermediate casing.

4.5 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 be designed to meet the BLM Onshore Order #2 and NMOCD requirements.

EnerVest Operating, LLC

Jicarilla B # 3R

Surface: 1930' FSL, 2300' FEL Unit J, Sec. 15, T26N R05W
Bottom Hole: 1930' FSL, 2000' FEL Unit J, Sec 15, T26N, R05W
Rio Arriba County, NM
GL Elev: 6610'

Surface casing will be cemented to the surface.

Cement and properties; Mix and pump 225 sacks (313 cu ft) 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 (for Casing Option A only) 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 50% OH excess cement for stage 1 and 45% for stages 2 and 3.

Stage 1 Lead cement; mix and pump 136 sacks (290 cu ft) premium lite slurry with CaCl₂, cello flake and gilsonite. Estimated slurry density is to be 12.1 (yield = 2.13 cu ft/sx).

Stage 1 Tail cement; mix and pump 418 sacks (840 cu ft) premium lite high strength cement with CaCl₂, cellophane, gilsonite and fluid loss agent. Slurry density is to be 12.5 (yield = 2.01 cu ft/sx).

DV tool at +/- 3320 ft. MD

Stage 2 Lead cement; mix and pump 91 sacks (194 cu ft) 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 (69 cu ft) 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 +/- 2601 ft. MD

Stage 3 Lead cement; mix and pump 392 sacks (835 cu ft) 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 (69 cu ft) 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.

EnerVest Operating, LLC

Jicarilla B # 3R

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Rio Arriba County, NM
GL Elev: 6610'

Intermediate casing (for Casing Option B only) will be cemented to surface in 2 stages, stage tool to be set at +/- 2601' MD. Cement will be designed to circulate to surface. Volumes will be based on 45% excess in OH.

Stage 1 Lead cement; mix and pump 32 sacks (69 cu ft) premium lite slurry with CaCl₂, cello flake and gilsonite. Estimated slurry density is to be 12.1 (yield = 2.13 cu ft/sx).

Stage 1 Tail cement; mix and pump 63 sacks (88 cu ft) Type III cement (or equivalent) cement. Slurry density is to be 14.6 (yield = 1.39 cu ft/sx). or equivalent cement.

DV tool @ +/- 2601ft. MD

Stage 2 Lead cement; mix and pump 206 sacks (438 cu ft) 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 (70 cu ft) 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 other joint for 14 joints and then one centralizer on every third joint thereafter.

The Intermediate casing will be pressure tested to 1500 psi prior to drilling out the shoe.

Production casing (for Casing Option B only) will be cemented into the intermediate casing with a minimum of 200 ft overlap. Volumes based on 45% excess in OH.

Lead cement; mix and pump 91 sacks (194 cu ft) premium lite slurry with CaCl₂, cello flake and gilsonite. Estimated slurry density is to be 12.1 (yield = 2.13 cu ft/sx).

Tail cement; mix and pump 241 sacks (484 cu ft) premium lite high strength cement with CaCl₂, cellophane, gilsonite and fluid loss agent. Slurry density is to be 12.5 (yield = 2.01 cu ft/sx).

Two centralizers will be run on the shoe joint, one centralizer on every other joint into the intermediate casing, then every 3rd joint to surface.

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.

EnerVest Operating, LLC

Jicarilla B # 3R

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Bottom Hole: 1930' FSL, 2000' FEL Unit J, Sec 15, T26N, R05W
Rio Arriba County, NM
GL Elev: 6610'

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

4.6 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'-3320'	LSND/Gel sweeps, LCM as needed	8.5-9.4	40-60	20-40 cc
3320'- 7666'	LSND/Gel sweeps, LCM as needed	8.5-9.4	20-40	6-10 cc

The well will be drilled utilizing a closed loop mud handling 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.

4.7 CORING, TESTING, & LOGGING

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

Casing Option A

500' to TD; GR/ Cement Bond Log, at the commencement of completion operations.

1000' to TD; GR/Induction/Density Neutron. (Cased hole GR/Neutron will be run if the hole conditions do not allow the use of the open hole logs)

Casing Option B

500' to 3320'; GR/ Cement Bond Log, if cement is not circulated to surface in intermediate casing.

3320' to TD; GR/Induction/Density Neutron. (Cased hole GR/Neutron will be run if the hole conditions do not allow the use of the open hole logs)

EnerVest Operating, LLC

Jicarilla B # 3R

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Bottom Hole: 1930' FSL, 2000' FEL Unit J, Sec 15, T26N, R05W
Rio Arriba County, NM
GL Elev: 6610'

This well will be directionally drilled and a record of the deviation will be run while drilling. A deviation survey will be submitted at the conclusion of the well completion.

4.8 ANTICIPATED PRESSURES AND TEMPERATURES:

- a. Expected bottom hole pressure: < 1681 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.

4.9 OTHER INFORMATION:

The anticipated spud date is spring 2013. The spud date will be dependent on the weather conditions, road conditions and the Conditions of Approval.

The dirt work for road and well pad construction will commence upon approval of the APD and will be dependent on weather conditions.

The well will be spud after well pad construction is complete and a suitable rig becomes available. The duration of drilling operations is expected to be from two to three weeks. The drilling rig and associated equipment will be removed and preparations will be made for the completion of the well.

Completion will start about one to four weeks after the finish of the drilling operations. A completion rig will be moved in for the completion phase. The completion phase of the well is expected to +/- two weeks. The completion phase will include; perforating, acidizing, fracture stimulation and well testing.

Some events/situations may arise that could potentially change the starting date or project duration that are out of EnerVest's control. If such events/situations arise, the proper officials will be promptly notified.

Scientific Drilling International
Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Jicarilla B #3R
Company:	EnerVest Operating LLC	TVD Reference:	WELL @ 6611.00ft (Original Well Elev)
Project:	Rio Arriba County, NM (NAD83)	MD Reference:	WELL @ 6611.00ft (Original Well Elev)
Site:	Jicarilla	North Reference:	True
Well:	Jicarilla B #3R	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Rio Arriba County, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site	Jicarilla				
Site Position:	Northing:	-274,017,644.35 usft	Latitude:	7° 5' 24.101 S	
From:	Lat/Long	Easting:	372,015,898.75 usft	Longitude:	42° 3' 21.841 E
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.00 °

Well	Jicarilla B #3R					
Well Position	+N/-S	460,992,710.13 ft	Northing:	3,090,059.08 usft	Latitude:	39° 29' 5.964 N
	+E/-W	41,016,333.93 ft	Easting:	1,331,285.70 usft	Longitude:	107° 20' 43.116 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	6,611.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	11/02/12	9.88	65.81	52,183

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	90.00

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,100.00	12.00	90.00	1,095.62	0.00	62.60	2.00	2.00	0.00	90.00	
1,940.72	12.00	90.00	1,917.97	0.00	237.40	0.00	0.00	0.00	0.00	
2,540.72	0.00	0.00	2,513.59	0.00	300.00	2.00	-2.00	0.00	180.00	
7,787.13	0.00	0.00	7,710.00	0.00	300.00	0.00	0.00	0.00	0.00	Jicarilla B #3R PBHL

7666

7639

PER B. Trevino
L. Driede

Scientific Drilling International
Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Jicarilla B #3R
Company:	EnerVest Operating LLC	TVD Reference:	WELL @ 6611.00ft (Original Well Elev)
Project:	Rio Arriba County, NM (NAD83)	MD Reference:	WELL @ 6611.00ft (Original Well Elev)
Site:	Jicarilla	North Reference:	True
Well:	Jicarilla B #3R	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
600.00	2.00	90.00	599.98	0.00	1.75	1.75	2.00	2.00	0.00
700.00	4.00	90.00	699.84	0.00	6.98	6.98	2.00	2.00	0.00
800.00	6.00	90.00	799.45	0.00	15.69	15.69	2.00	2.00	0.00
900.00	8.00	90.00	898.70	0.00	27.88	27.88	2.00	2.00	0.00
1,000.00	10.00	90.00	997.47	0.00	43.52	43.52	2.00	2.00	0.00
1,100.00	12.00	90.00	1,095.62	0.00	62.60	62.60	2.00	2.00	0.00
Start 12.00° Hold At 1100.00 MD									
1,200.00	12.00	90.00	1,193.44	0.00	83.39	83.39	0.00	0.00	0.00
1,300.00	12.00	90.00	1,291.25	0.00	104.18	104.18	0.00	0.00	0.00
1,400.00	12.00	90.00	1,389.07	0.00	124.98	124.98	0.00	0.00	0.00
1,500.00	12.00	90.00	1,486.88	0.00	145.77	145.77	0.00	0.00	0.00
1,600.00	12.00	90.00	1,584.70	0.00	166.56	166.56	0.00	0.00	0.00
1,700.00	12.00	90.00	1,682.51	0.00	187.35	187.35	0.00	0.00	0.00
1,800.00	12.00	90.00	1,780.33	0.00	208.14	208.14	0.00	0.00	0.00
1,900.00	12.00	90.00	1,878.14	0.00	228.93	228.93	0.00	0.00	0.00
1,940.72	12.00	90.00	1,917.97	0.00	237.40	237.40	0.00	0.00	0.00
Start Drop -2.00									
2,000.00	10.81	90.00	1,976.08	0.00	249.12	249.12	2.00	-2.00	0.00
2,100.00	8.81	90.00	2,074.61	0.00	266.17	266.17	2.00	-2.00	0.00
2,200.00	6.81	90.00	2,173.68	0.00	279.76	279.76	2.00	-2.00	0.00
2,300.00	4.81	90.00	2,273.16	0.00	289.89	289.89	2.00	-2.00	0.00
2,400.00	2.81	90.00	2,372.93	0.00	296.54	296.54	2.00	-2.00	0.00
2,500.00	0.81	90.00	2,472.88	0.00	299.71	299.71	2.00	-2.00	0.00
2,540.72	0.00	0.00	2,513.59	0.00	300.00	300.00	2.00	-2.00	0.00
Start 0.00° Hold At 2540.72 MD									
2,600.00	0.00	0.00	2,572.87	0.00	300.00	300.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,672.87	0.00	300.00	300.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,772.87	0.00	300.00	300.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,872.87	0.00	300.00	300.00	0.00	0.00	0.00
3,000.00	0.00	0.00	2,972.87	0.00	300.00	300.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,072.87	0.00	300.00	300.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,172.87	0.00	300.00	300.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,272.87	0.00	300.00	300.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,372.87	0.00	300.00	300.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,472.87	0.00	300.00	300.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,572.87	0.00	300.00	300.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,672.87	0.00	300.00	300.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,772.87	0.00	300.00	300.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,872.87	0.00	300.00	300.00	0.00	0.00	0.00
4,000.00	0.00	0.00	3,972.87	0.00	300.00	300.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,072.87	0.00	300.00	300.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,172.87	0.00	300.00	300.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,272.87	0.00	300.00	300.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,372.87	0.00	300.00	300.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,472.87	0.00	300.00	300.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,572.87	0.00	300.00	300.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,672.87	0.00	300.00	300.00	0.00	0.00	0.00

Scientific Drilling International

Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Jicarilla B #3R
Company:	EnerVest Operating LLC	TVD Reference:	WELL @ 6611.00ft (Original Well Elev)
Project:	Rio Arriba County, NM (NAD83)	MD Reference:	WELL @ 6611.00ft (Original Well Elev)
Site:	Jicarilla	North Reference:	True
Well:	Jicarilla B #3R	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,800.00	0.00	0.00	4,772.87	0.00	300.00	300.00	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,872.87	0.00	300.00	300.00	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,972.87	0.00	300.00	300.00	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,072.87	0.00	300.00	300.00	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,172.87	0.00	300.00	300.00	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,272.87	0.00	300.00	300.00	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,372.87	0.00	300.00	300.00	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,472.87	0.00	300.00	300.00	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,572.87	0.00	300.00	300.00	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,672.87	0.00	300.00	300.00	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,772.87	0.00	300.00	300.00	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,872.87	0.00	300.00	300.00	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,972.87	0.00	300.00	300.00	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,072.87	0.00	300.00	300.00	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,172.87	0.00	300.00	300.00	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,272.87	0.00	300.00	300.00	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,372.87	0.00	300.00	300.00	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,472.87	0.00	300.00	300.00	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,572.87	0.00	300.00	300.00	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,672.87	0.00	300.00	300.00	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,772.87	0.00	300.00	300.00	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,872.87	0.00	300.00	300.00	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,972.87	0.00	300.00	300.00	0.00	0.00	0.00	
7,100.00	0.00	0.00	7,072.87	0.00	300.00	300.00	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,172.87	0.00	300.00	300.00	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,272.87	0.00	300.00	300.00	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,372.87	0.00	300.00	300.00	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,472.87	0.00	300.00	300.00	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,572.87	0.00	300.00	300.00	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,672.87	0.00	300.00	300.00	0.00	0.00	0.00	
7,737.13	0.00	0.00	7,710.00	0.00	300.00	300.00	0.00	0.00	0.00	
TD at 7737.13 MD - Jicarilla B #3R PBHL										

7639

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Jicarilla B #3R PBHL	0.00	0.00	7,710.00	0.00	300.00	3,090,055.43	1,331,585.68	39° 29' 5.964 N	107° 20' 39.290 W
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
500.00	500.00	0.00	0.00	Start Build 2.00	
1,100.00	1,095.62	0.00	62.60	Start 12.00° Hold At 1100.00 MD	
1,940.72	1,917.97	0.00	237.40	Start Drop -2.00	
2,540.72	2,513.59	0.00	300.00	Start 0.00° Hold At 2540.72 MD	
7,737.13	7,710.00	0.00	300.00	TD at 7737.13 MD	

7639



Company: EnerVest Operating LLC
 Project: Rio Arriba County, NM (NAD83)
 Site: Jicarilla

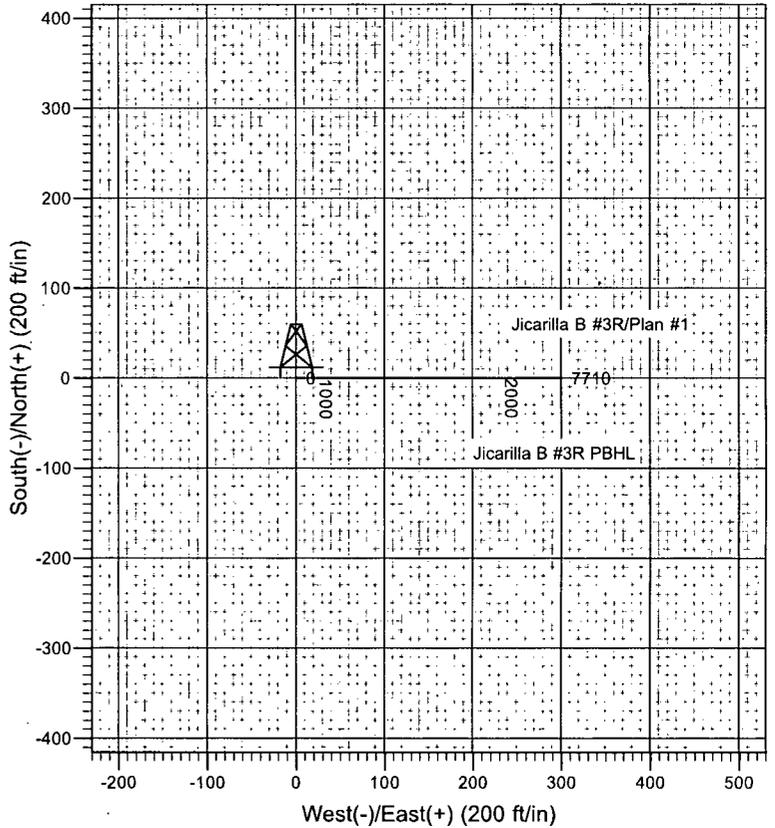
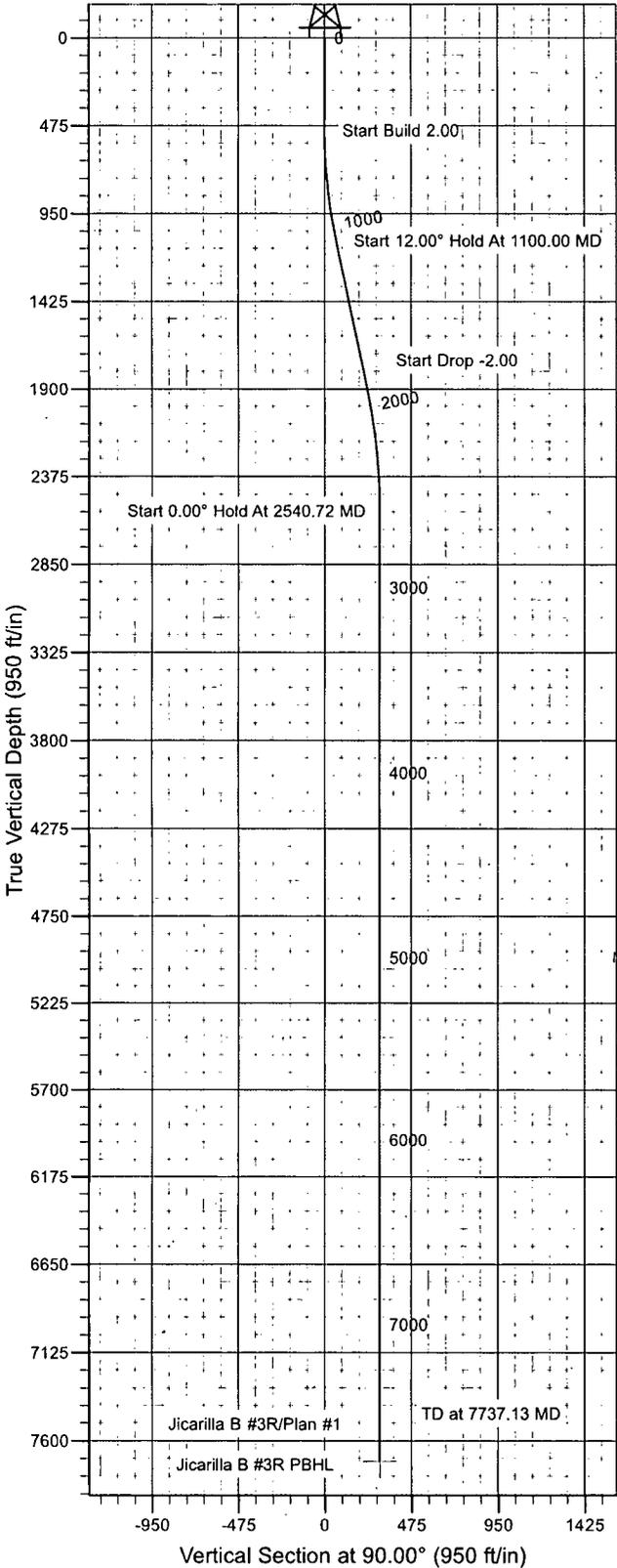
Well Details: Jicarilla B #3R

T M Azimuths to True North
 Magnetic North: 9.87°

Magnetic Field
 Strength: 52182.7snT
 Dip Angle: 65.81°
 Date: 11/02/2012
 Model: IGRF2010

TVD Reference: WELL @ 6611.00ft (Original Well Elev) Ground Level: 6611.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	3090059.08	1331285.70	39° 29' 5.964 N	107° 20' 43.116 W	



FORMATION TOP DETAILS

No formation data is available

Plan: Plan #1

9:45, November 02 2012
 Created By: Janie Collins

OBJECT DETAILS: Rio Arriba County, NM (NAD83)

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Central Zone

System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
3	1100.00	12.00	90.00	1095.62	0.00	62.60	2.00	90.00	62.60	
4	1940.72	12.00	90.00	1917.97	0.00	237.40	0.00	0.00	237.40	
5	2540.72	0.00	0.00	2513.59	0.00	300.00	2.00	180.00	300.00	
6	7737.13	0.00	0.00	7737.13	0.00	300.00	0.00	0.00	300.00	Jicarilla B #3R PBHL

709

EnerVest Operating, LLC

Jicarilla B #3R

SHL: 1930' FSL, 2300' FEL, Unit N Sec 15, T26N, R05W

BHL: 1930' FSL, 2000' FEL, Unit N Sec 15, T26N, R05W

Rio Arriba, NM

Surface Use Plan

1. DIRECTIONS & EXISTING ROADS (See attached Vicinity map)

The location is approximately 36 miles NW of the intersection of US Hwy 550 and NM Hwy 537

Latitude: N 36.48508

Latitude: W 107.34531

From Intersection of US Hwy 550 and NM State Hwy 537: Turn north on Hwy 537 for 28 miles, turn left on J-6, go 8.0 mi, turn right on J-63, go 1.7 mi, turn right, go 1.3 mi, turn right, go 0.2 mi to location.

2. ROAD TO BE BUILT OR UPGRADED

- A. Drilling of this well will not require the construction of any new access road as this well is to be drilled on a well location of a P&Aed well. The access is shown on the Access Plat and Vicinity map. After the well is completed as a commercial producer, the need for a pipeline is ascertained, the existing pipeline from the P&Aed well is to be used. If any road construction is to be done it will be constructed as follows.
- B. Width: 20 ft running surface; 40 ft total ROW with is applied for to accommodate access and drainage installation along the road.
- C. Maximum grade: 0-1%.
- D. Turnouts: No turnouts are planned for this access road.
- E. Drainage design: The drainage design for the proposed new access road will be in conformance with Jicarilla Apache Tribal and BIA standards – with the agreement of the of the Jicarilla Apache Tribe. It is proposed to build a drainage holding and diversion pond near location if needed to prevent location erosion and divert drainage around the location. Any area used in this fashion will have been reviewed and given clearance for the possible archaeological and environmental impact.
- F. Location and size of culverts: None are required.
- G. Surface Materials: No gates, cattle guards or fences to be installed along the access road or the location. Road base material may be used as necessary during the drilling and completion phases of this project.

3. SURFACE OWNERSHIP

The surface ownership of the well site location and access roads are all on Jicarilla Apache Nation land.

4. EXISTING WELLS (See the Vicinity map)

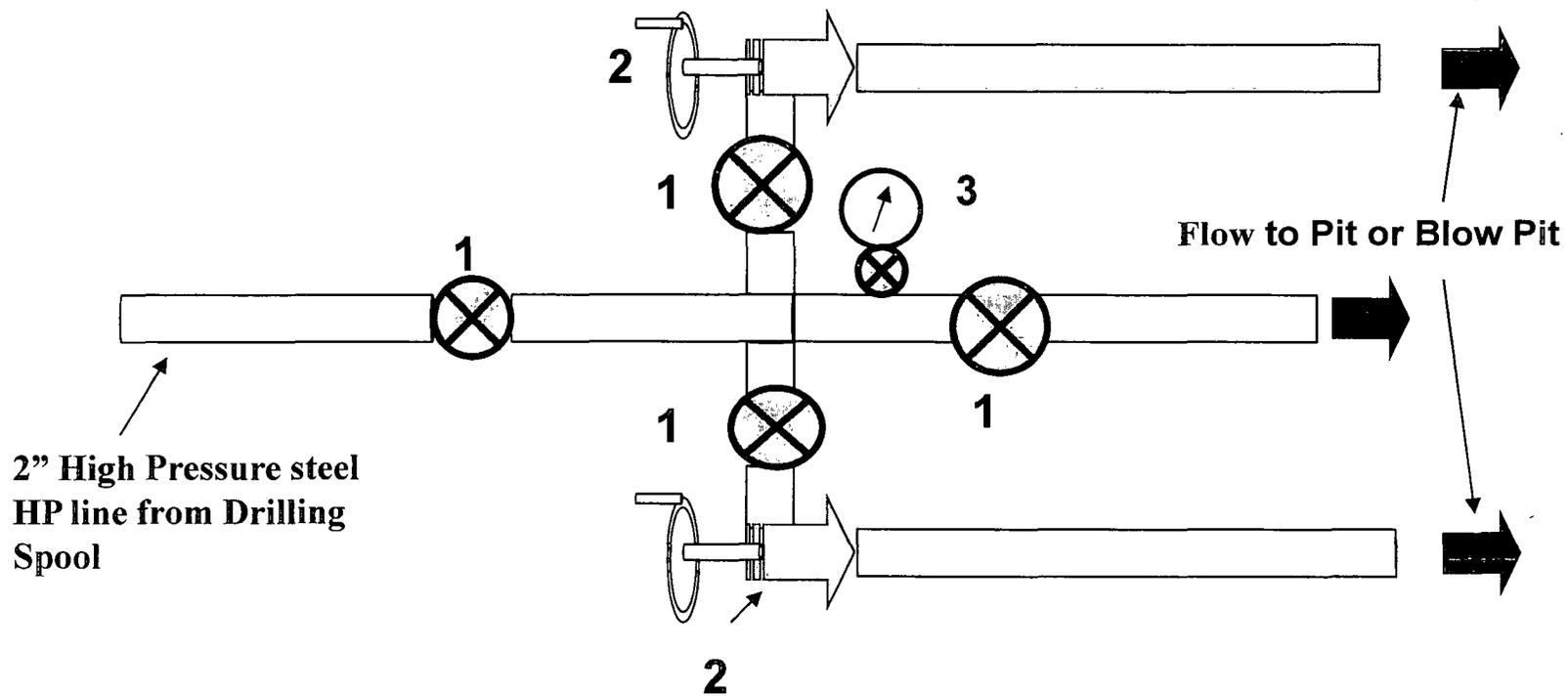
This is a development location. There are twenty-six existing wells within a one-mile radius of the proposed location as shown on the Vicinity map.

Exhibit B

**EnerVest
Jicarilla 2013 Drilling
Program
2000 psi Choke Manifold**

Components

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



**EnerVest
Jicarilla 2013
Drilling Program
Blowout Preventer
2000 psi**

Exhibit A

- Components**
1. Wellhead 9 5/8"
 2. Drilling Spool
 3. Pipe Rams
 4. Blind Rams
 5. Spool
 6. 2" Check Valve
 7. 2" Manual Valves

