

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary-Designate

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

Jami Bailey, 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 3160-4 or 3160-5 form.

Operator Signature Date: August 15, 2013

Well information:
EnerVest Operating
Jicarilla Apache 102 #14M
30-039-31193
Section 9, T26N, R4W

Conditions of Approval:

Notify NMOCD 24hrs prior to beginning operations.
Hold C104 for NSL for Dakota & Directional survey & "As drilled" plat

A handwritten signature in black ink, appearing to read "Jami Bailey".

NMOCD Approved by Signature

AUG 29 2013

Date

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

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

AUG 16 2013

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to abandon a well. Use Form 3160-3 (APD) for such proposals.

5. Lease Serial No.
Jicarilla Contract 102
6. If Indian, Allottee or Tribe Name
Jicarilla Apache Tribe

SUBMIT IN TRIPLICATE – Other instructions on page 2.

1. Type of Well
 Oil Well Gas Well Other

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

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

8. Well Name and No.
Jicarilla Apache 102 #14M

9. API Well No.
30-039-31193

3a. Address
1001 Fannin St., Suite 800
Houston, TX 77002

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

10. Field and Pool or Exploratory Area
Blanco Mesaverde/Basin Dakota

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1310' FSL & 1482' FWL (UL N)
Sec. 9 T26N R04W
BHL: 660' FSL & 1980' FWL

11. County or Parish, State
Rio Arriba, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other <u>Correction</u>
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

The purpose of this sundry is to correct inconsistencies between form 3160-3 (dated 7/02/2013), the proposed drilling program, and the directional plan originally submitted.

Attached are the proposed drilling program and a revised directional plan, as well as a proposed wellbore diagram. The GL elevation, estimated formation tops, TD, and casing points are all consistent between the drilling program and directional plan.

RCVD AUG 22 '13
OIL CONS. DIV.
DIST. 3

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Bart Trevino

Title Regulatory Analyst

Signature



Date 08/15/2013

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

William Tambekou

Title

Petroleum Engineer

Date

8/20/2013

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

FFD

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)

NMOC D

EnerVest Operating, LLC

Jicarilla Apache 102 # 14M

Surface: 1310' FSL, 1482' FWL Unit N, Sec. 9, T26N R04W
Bottom Hole: 660' FSL, 1980' FWL Unit N, Sec 9, T26N, R04W
Rio Arriba County, NM
GL Elev: 7112'

Revised Drilling Plan (7-15-2013)

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	3095'	Sandstone	Possible Gas, Water
Kirtland	3599'	Shale	
Fruitland	3645'	Coal, Shale, Sandstone	Possible Lost Circ, Gas, Water
Pictured Cliffs	3835'	Sandstone	Possible Lost Circ, Gas, water
Lewis	4082'	Shale	Sloughing Shale
Mesa Verde (Cliffhouse)	5510'	Sandstone	Possible Lost Circ, Gas, Water
Mesa Verde (Menefee)	5616'	Coal, Sandstone, Shale	Possible Lost Circ, Gas, Water
Mesa Verde (Point Lookout)	5950'	Sandstone	Possible Lost Circ, Gas, Water
Mancos	6087'	Shale	Sloughing Shale
Greenhorn	7935'	Limestone	Gas, Oil
Graneros	7970'	Shale	Gas, Oil, Water
Dakota	7988'	Sandstone	Gas, Oil, Water
Proposed Total Depth	8283'		

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 MD. The well will be directionally drilled at a 142.54 degree azimuth to a point 818 ft south east of the surface location and at an estimated MD of +/-4500 ft. The well will be drilled vertically from that point to the estimated TD.

EnerVest Operating, LLC

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Rio Arriba County, NM
GL Elev: 7112'

4.3 PRESSURE CONTROL:

Maximum expected pressure is ~1822 (.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. The 4 ½" 11.6# N-80 production casing will be tested to 6000 psi at the commencement of completion operations.

EnerVest Operating, LLC

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Rio Arriba County, NM
GL Elev: 7112'

4.4 PROPOSED CASING PROGRAM :

The casings program is designed as follows:

Casing Design								
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 MD	7 7/8"	4 1/2"	11.6	N-80	New	LT&C	500'	8383'
FVD							500'	8283'

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.

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.

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.

EnerVest Operating, LLC

Jicarilla Apache 102 # 14M

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Rio Arriba County, NM
GL Elev: 7112'

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 50% OH excess cement for stage 1, 2 and 3.

Stage 1 cement; mix and pump 577 sacks (1159 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 +/- 5000 ft. MD

Stage 2 Lead cement; mix and pump 192 sacks (408 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.

DV tool at +/- 3600 ft. MD

Stage 3 Lead cement; mix and pump 540 sacks (1151 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 (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 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.

EnerVest Operating, LLC

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Rio Arriba County, NM
GL Elev: 7112'

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

4.6 MUD PROGRAM

Depth (MD)	Type	Wt / pp	Visc	Fluid Loss
0-500'	FW gel/Lime Spud Mud	8.4-9.0	30-40	N/C
500'-8383'	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 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:

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)

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.

EnerVest Operating, LLC

Jicarilla Apache 102 # 14M

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Rio Arriba County, NM
GL Elev: 7112'

4.8 ANTICIPATED PRESSURES AND TEMPERATURES:

- a. Expected bottom hole pressure: < 1822 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 2014. 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.

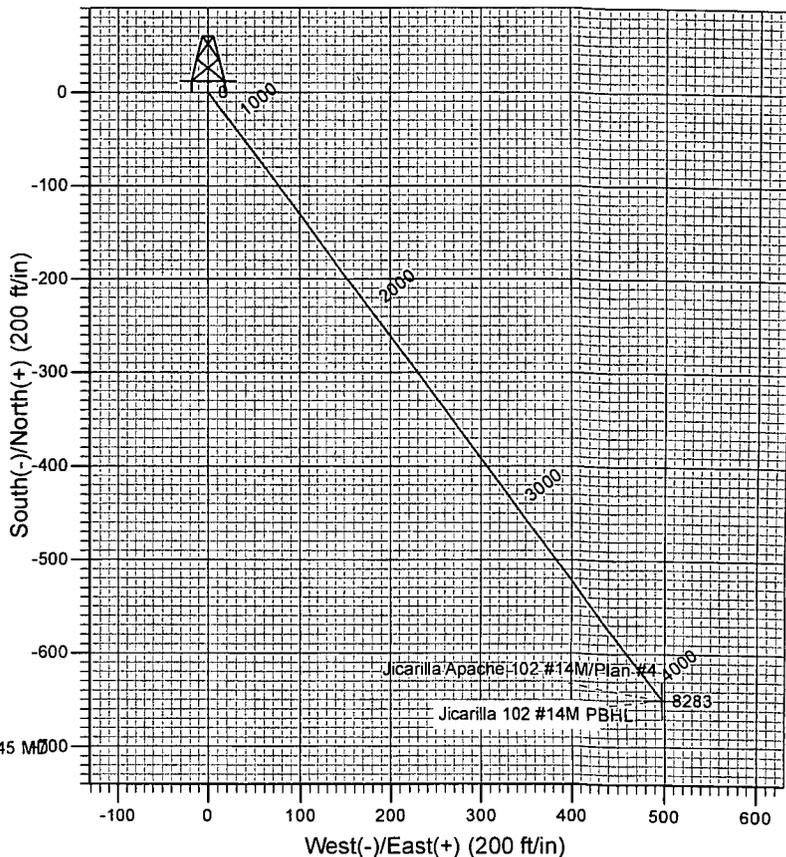
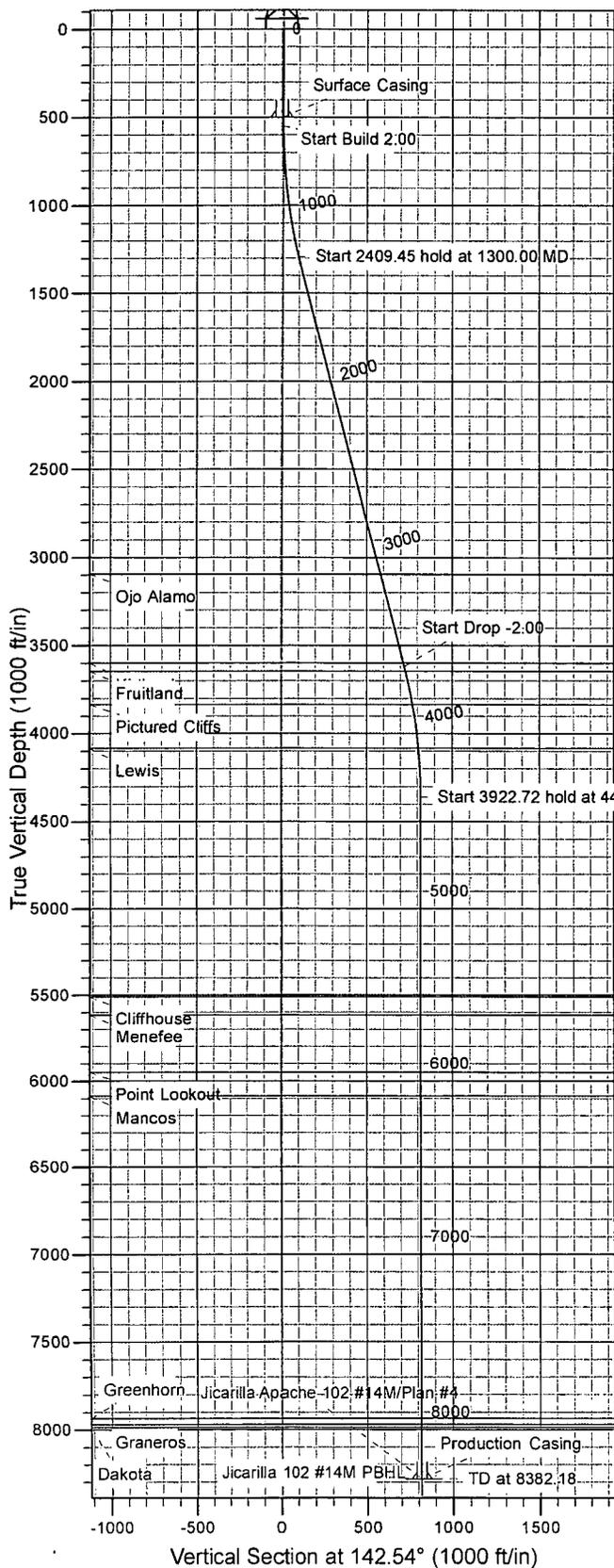
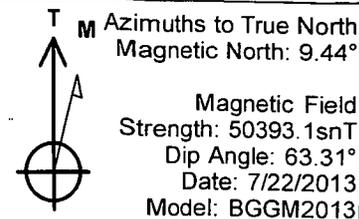
Completion will start about one to four weeks after the finish of the drilling operations. A completion rig will be moved in for the completion phase. The completion phase of the well is expected to +/- two weeks. The completion phase will include; perforating, acidizing, fracture stimulation and well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

Well Details: Jicarilla Apache 102 #14M

TVD Reference: WELL @ 7112.00ft (Original Well Elev)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	2001848.13	1343377.65	36° 29' 50.280 N	107° 15' 38.218 W	



FORMATION TOP DETAILS

TVDPPath	MDPath	Formation
3095.00	3167.16	Ojo Alamo
3599.00	3688.94	Kirtland
3645.00	3736.53	Fruitland
3835.00	3931.19	Pictured Cliffs
4082.00	4180.74	Lewis
5510.00	5609.18	Cliffhouse
5618.00	5715.18	Menefee
5950.00	6049.18	Point Lookout
6087.00	6185.18	Mancos
7935.00	8034.18	Greenhorn
7970.00	8069.18	Graneros
7988.00	8087.18	Dakota

Plan: Plan #4

10:18, August 15 2013
 Created By: Janie Collins

PROJECT 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	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	550.00	0.00	0.00	550.00	0.00	0.00	0.00	0.00	0.00	
3	1300.00	15.00	142.54	1291.46	-77.49	59.37	2.00	142.54	97.62	
4	3709.45	15.00	142.54	3618.82	-572.51	438.63	0.00	0.00	721.23	
5	4459.45	0.00	0.00	4360.28	-500.00	498.00	2.00	180.00	818.84	
6	8382.18	0.00	0.00	8283.00	-650.00	498.00	0.00	0.00	818.84	Jicarilla 102 #14M PBHL

EnerVest Operating LLC

Rio Arriba County, NM (NAD83)

Jicarilla

Jicarilla Apache 102 #14M

OH

Plan: Plan #4

Standard Planning Report

15 August, 2013



www.scientificdrilling.com

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Jicarilla Apache 102 #14M
Company:	EnerVest Operating LLC	TVD Reference:	WELL @ 7112.00ft (Original Well Elev)
Project:	Rio Arriba County, NM (NAD83)	MD Reference:	WELL @ 7112.00ft (Original Well Elev)
Site:	Jicarilla	North Reference:	True
Well:	Jicarilla Apache 102 #14M	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4		

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 Apache 102 #14M					
Well Position	+N-S	460,410,665.20 ft	Northing:	2,001,848.14 usft	Latitude:	36° 29' 50.280 N
	+E-W	40,096,780.92 ft	Easting:	1,343,377.65 usft	Longitude:	107° 15' 38.218 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	7,112.00 ft

Wellbore:	OH		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	7/22/2013	9.44	63.31	50,393

Design:	Plan #4		
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Audit Notes:	
Version:	Phase: PLAN Tie On Depth: 0.00

Vertical Section	Depth From (TVD) (ft)	+N-S (ft)	+E-W (ft)	Direction (°)
	0.00	0.00	0.00	142.54

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	
550.00	0.00	0.00	550.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.00	15.00	142.54	1,291.46	-77.49	59.37	2.00	2.00	0.00	142.54	
3,709.45	15.00	142.54	3,618.82	-572.51	438.63	0.00	0.00	0.00	0.00	
4,459.45	0.00	0.00	4,360.28	-650.00	498.00	2.00	-2.00	0.00	180.00	
8,382.18	0.00	0.00	8,283.00	<u>-650.00</u>	<u>498.00</u>	0.00	0.00	0.00	0.00	Jicarilla 102 #14M PB

PBHL } $y \rightarrow (1310 - 650)_{ft} = 660 ft/s$
 $x \rightarrow (1482 + 498)_{ft} = 1980 ft/w$

William Tambekou
8/20/2013



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Jicarilla Apache 102 #14M
Company:	EnerVest Operating LLC	TVD Reference:	WELL @ 7112.00ft (Original Well Elev)
Project:	Rio Arriba County, NM (NAD83)	MD Reference:	WELL @ 7112.00ft (Original Well Elev)
Site:	Jicarilla	North Reference:	True
Well:	Jicarilla Apache 102 #14M	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4		

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)	
8,000.00	0.00	0.00	7,900.82	-650.00	498.00	818.84	0.00	0.00	0.00	
8,034.18	0.00	0.00	7,935.00	-650.00	498.00	818.84	0.00	0.00	0.00	
Greenhorn										
8,069.18	0.00	0.00	7,970.00	-650.00	498.00	818.84	0.00	0.00	0.00	
Graneros										
8,087.18	0.00	0.00	7,988.00	-650.00	498.00	818.84	0.00	0.00	0.00	
Dakota										
8,100.00	0.00	0.00	8,000.82	-650.00	498.00	818.84	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,100.82	-650.00	498.00	818.84	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,200.82	-650.00	498.00	818.84	0.00	0.00	0.00	
8,382.18	0.00	0.00	8,283.00	-650.00	498.00	818.84	0.00	0.00	0.00	
TD at 8382.18 - Jicarilla 102 #14M PBHL										

Design Targets										
Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Jicarilla 102 #14M PBHL		0.00	0.00	8,283.00	-650.00	498.00	2,001,192.95	1,343,868.80	36° 29' 43.853 N	107° 15' 32.119 W
- plan hits target center										
- Point										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
500.00	500.00	Surface Casing	9.625	12.250	
8,382.18	8,283.00	Production Casing	4.500	7.875	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,167.16	3,095.00	Ojo Alamo		0.00		
3,688.94	3,599.00	Kirtland		0.00		
3,736.53	3,645.00	Fruitland		0.00		
3,931.19	3,835.00	Pictured Cliffs		0.00		
4,180.74	4,082.00	Lewis		0.00		
5,609.18	5,510.00	Cliffhouse		0.00		
5,715.18	5,616.00	Menefee		0.00		
6,049.18	5,950.00	Point Lookout		0.00		
6,186.18	6,087.00	Mancos		0.00		
8,034.18	7,935.00	Greenhorn		0.00		
8,069.18	7,970.00	Graneros		0.00		
8,087.18	7,988.00	Dakota		0.00		



Database: Grand Junction District
Company: EnerVest Operating LLC
Project: Rio Arriba County, NM (NAD83)
Site: Jicarilla
Well: Jicarilla Apache 102 #14M
Wellbore: OH
Design: Plan #4

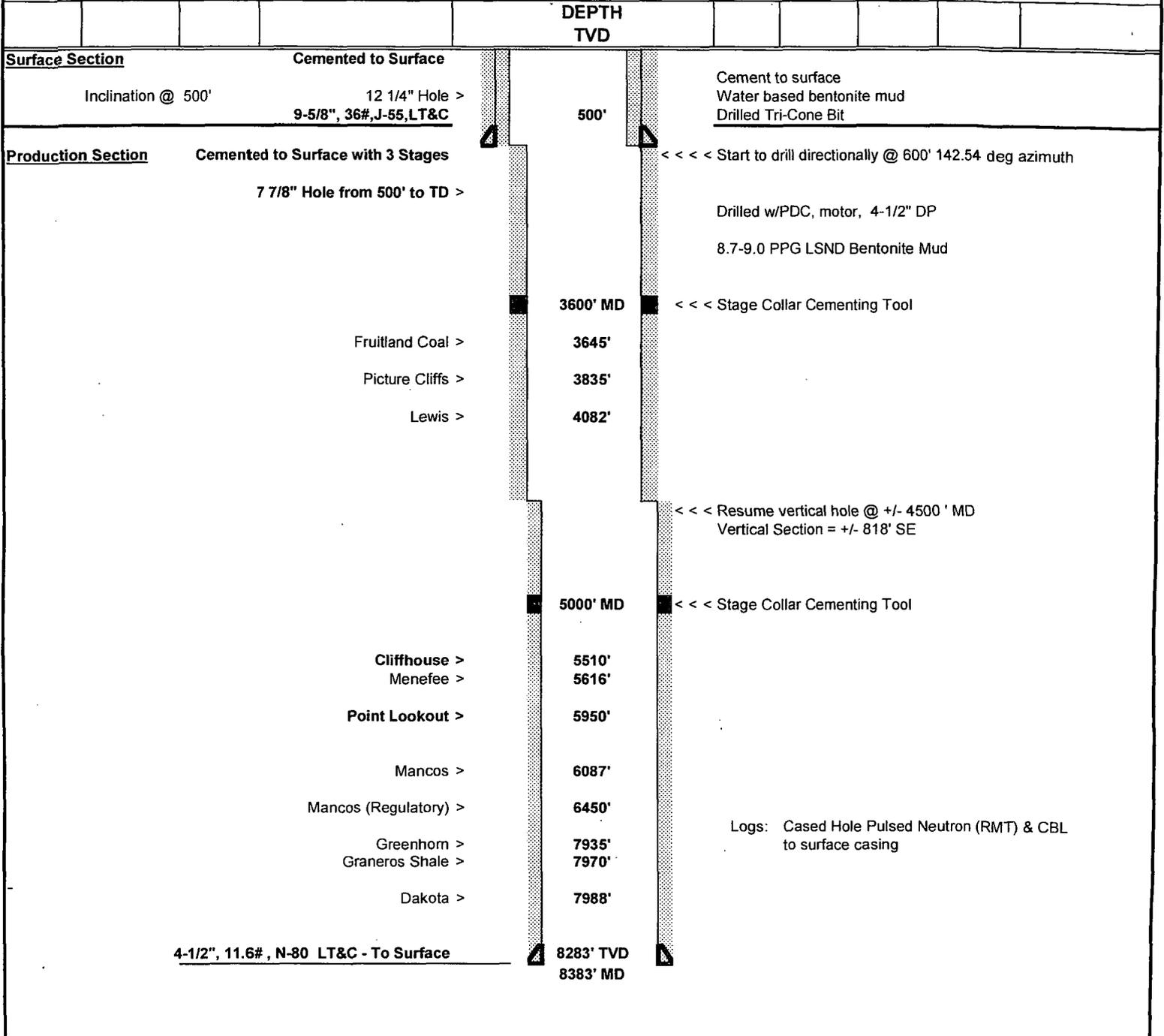
Local Co-ordinate Reference: Well Jicarilla Apache 102 #14M
TVD Reference: WELL @ 7112.00ft (Original Well Elev)
MD Reference: WELL @ 7112.00ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/ S (ft)	+E/ W (ft)	
550.00	550.00	0.00	0.00	Start Build 2.00
1,300.00	1,291.46	-77.49	59.37	Start 2409.45 hold at 1300.00 MD
3,709.45	3,618.82	-572.51	438.63	Start Drop -2.00
4,459.45	4,360.28	-650.00	498.00	Start 3922.72 hold at 4459.45 MD
8,382.18	8,283.00	-650.00	498.00	TD at 8382.18

ENERVEST

Jicarilla Apache 102 # 14M (2 Casing Strings)

TYPE	Dakota/MV	RIG	TBD	DATE	15-Jul-2013
FIELD	Tapacito	COUNTY	Rio Arriba	ELEVATION	7112'
GAS/OIL	Gas/Oil	MUD	LSND	BHT/BHP	175 deg / 1822 psi
LOCATION	SHL = 1310' FSL & 1482' FWL BHL = 660' FSL & 1980' FWL Unit N, Sec 9, T26N, R4W			SHL = Lat: 36.49730, Long: 107.26061	
COMMENTS:	OBJECTIVE FORMATION: Dakota and Mesa Verde			BHL = Lat: 36.49550, Long: 107.25901	
NOTES:	This well will be drilled as an "S" shaped well				



AFE #	REGULATORY	B Trevino	713-495-5355
EV #	ENGINEER	R Trueheart / L Diede	713-495-1561 / 505-334-8867
API #	GEOLOGIST	G Kowalczyk	713-495-6590