

RCVD SEP 7 '12
OIL CONS. DIV.
DIST. 3

EnerVest Operating LLC

Rio Arriba County, NM

Jicarilla

Jicarilla C #2M

API# 30-039-29927

OH

Design: OH

Standard Survey Report

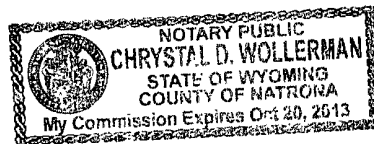
31 July, 2012

This survey is correct to the best of my knowledge and is supported by actual field data.

Notarized this date 31st of July, 2012.

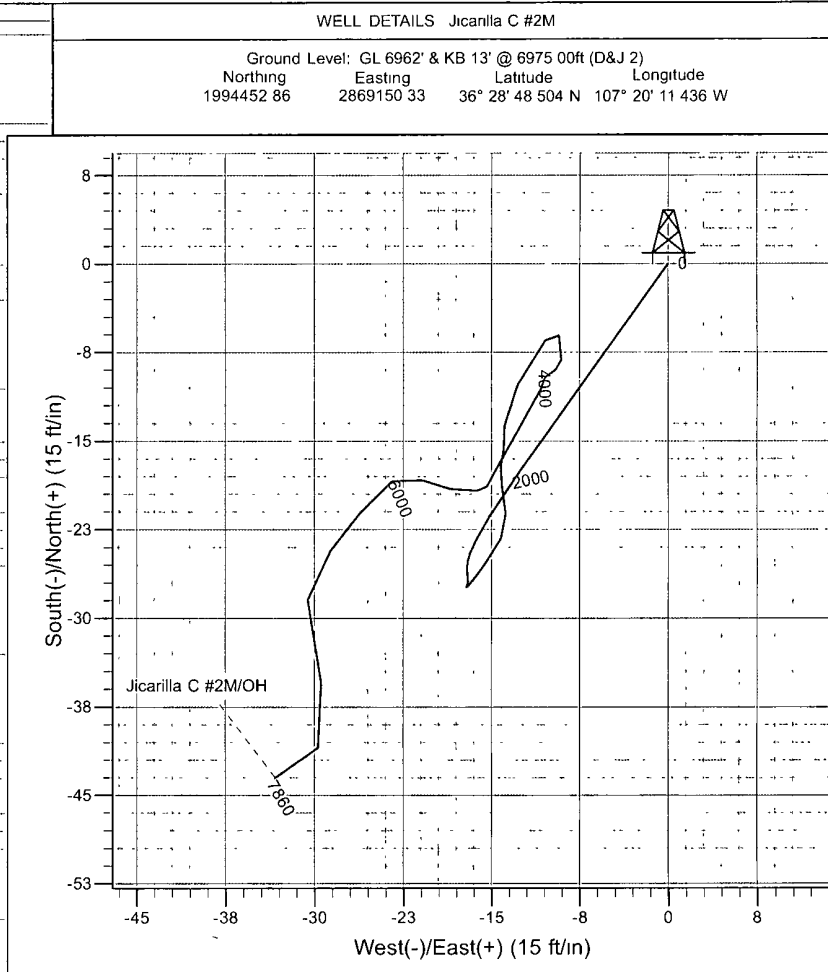
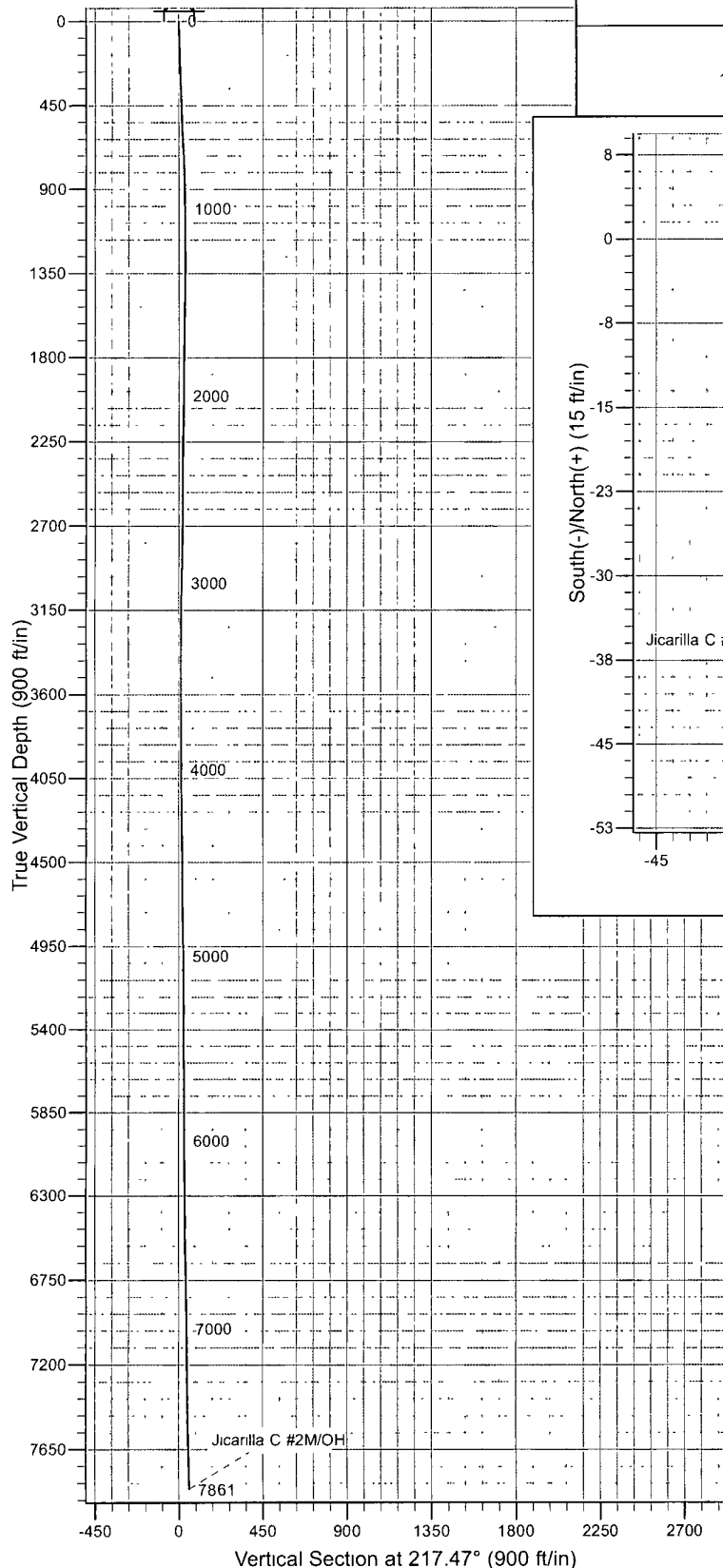
Chrystal D. Wollerman

Notary Signature
County of Natrona
State of Wyoming



EnerVest Operating LLC

Project: Rio Arriba County, NM
 Site: Jicarilla
 Well: Jicarilla C #2M
 Wellbore: OH
 Design: OH



REFERENCE INFORMATION

Co-ordinate (N/E) Reference	Well Jicarilla C #2M, True North
Vertical (TVD) Reference	GL 6962' & KB 13' @ 6975 00ft (D&J 2)
Section (VS) Reference	Slot - (0.00N, 0.00E)
Measured Depth Reference	GL 6962' & KB 13' @ 6975 00ft (D&J 2)
Calculation Method	Minimum Curvature
Local North	True
Location	

PROJECT DETAILS Rio Arriba County, NM

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

Design: OH (Jicarilla C #2M/OH)

Created By: Julie Cruise Date: 31 July 2012

Scientific Drilling

Survey Report



Company:	EnerVest Operating LLC	Local Co-ordinate Reference:	Well Jicarilla C #2M
Project:	Rio Arriba County, NM	TVD Reference:	GL 6962' & KB 13' @ 6975 00ft (D&J 2)
Site:	Jicarilla	MD Reference:	GL 6962' & KB 13' @ 6975 00ft (D&J 2)
Well:	Jicarilla C #2M	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

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

Site	Jicarilla		
Site Position:		Northing:	1,995,697 30 usft
From:	Lat/Long	Easting:	2,855,703.11 usft
Position Uncertainty:	0 00 ft	Slot Radius:	13.200 in
		Latitude:	36° 29' 1.464 N
		Longitude:	107° 22' 56.028 W
		Grid Convergence:	0 27 °

Well	Jicarilla C #2M, 150' FSL 275' FWL Sec 14 T26N R5W		
Well Position	+N/-S	0.00 ft	Northing: 1,994,452 86 usft
	+E/-W	0 00 ft	Easting: 2,869,150 33 usft
Position Uncertainty	0 00 ft	Wellhead Elevation:	ft
		Ground Level:	6,661 00 ft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	2012/07/10	(°)
			9.55
			63 29
			50,532

Design	OH		
Audit Notes:			
Version:	1 0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0 00	0 00
			217 47

Survey Program	Date	2012/07/31		
From	To	Survey (Wellbore)	Tool Name	Description
(ft)	(ft)			
576 00	3,557.00	Survey #1 (OH)	MWD SDI	MWD - Standard ver 1 0 1
3,816 00	7,861 00	Survey #2 (OH)	MWD SDI	MWD - Standard ver 1 0.1

Survey										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate	
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	
0.00	0.00	0.00	0 00	0 00	0 00	0 00	0 00	0.00	0.00	
576 00	3 51	215.62	575.64	-14.34	-10 27	17 63	0.61	0 61	0.00	
First SDI MWD Survey										
637 00	3 54	216.27	636.52	-17 37	-12.47	21.38	0.08	0.05	1 07	
729.00	2.63	211 01	728.39	-21.47	-15.24	26 31	1.03	-0.99	-5 72	
790.00	1.67	207.41	789 35	-23 46	-16 37	28.58	1 59	-1 57	-5.90	
884.00	0.63	186 59	883 33	-25.19	-17 06	30 37	1 17	-1.11	-22 15	
946.00	0.40	179.31	945 32	-25 75	-17 10	30.84	0.38	-0.37	-11 74	
1,041 00	0.41	175.38	1,040.32	-26 42	-17 07	31 35	0.03	0.01	-4.14	
1,133.00	0.24	175.57	1,132.32	-26 94	-17 03	31 74	0.18	-0 18	0.21	

Scientific Drilling

Survey Report



Company:	EnerVest Operating LLC	Local Co-ordinate Reference:	Well Jicanilla C #2M
Project:	Rio Arriba County, NM	TVD Reference:	GL 6962' & KB 13' @ 6975.00ft (D&J 2)
Site:	Jicanilla	MD Reference:	GL 6962' & KB 13' @ 6975.00ft (D&J 2)
Well:	Jicanilla C #2M	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

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)
1,227.00	0.34	213.63	1,226.32	-27.37	-17.16	32.16	0.22	0.11	40.49
1,321.00	0.71	40.76	1,320.32	-27.16	-16.94	31.86	1.12	0.39	-183.90
1,414.00	0.76	37.53	1,413.31	-26.23	-16.19	30.67	0.07	0.05	-3.47
1,508.00	0.99	33.97	1,507.30	-25.06	-15.35	29.23	0.25	0.24	-3.79
1,664.00	0.60	28.83	1,663.28	-23.23	-14.21	27.08	0.25	-0.25	-3.29
1,822.00	0.96	359.56	1,821.27	-21.18	-13.82	25.22	0.33	0.23	-18.53
1,974.00	0.78	344.00	1,973.25	-18.91	-14.11	23.60	0.19	-0.12	-10.24
2,128.00	0.63	11.01	2,127.24	-17.07	-14.24	22.21	0.23	-0.10	17.54
2,283.00	0.34	10.72	2,282.23	-15.79	-13.99	21.04	0.19	-0.19	-0.19
2,594.00	0.43	355.27	2,593.23	-13.72	-13.92	19.35	0.04	0.03	-4.97
2,905.00	0.96	28.21	2,904.20	-10.26	-12.78	15.92	0.21	0.17	10.59
3,217.00	0.67	37.30	3,216.17	-6.50	-10.44	11.51	0.10	-0.09	2.91
3,557.00	0.40	182.57	3,556.17	-6.11	-9.29	10.50	0.30	-0.08	42.73
Last Survey in 8 3/4" Hole									
3,816.00	0.52	167.45	3,815.16	-8.16	-9.07	11.99	0.07	0.05	-5.84
First Survey in 6 1/4" Hole									
4,000.00	0.42	268.17	3,999.15	-8.99	-9.57	12.96	0.39	-0.05	54.74
4,157.00	0.50	207.92	4,156.15	-9.62	-10.46	14.00	0.30	0.05	-38.38
4,283.00	0.50	189.71	4,282.15	-10.65	-10.81	15.03	0.13	0.00	-14.45
4,592.00	0.74	222.66	4,591.13	-13.44	-12.39	18.21	0.14	0.08	10.66
4,905.00	1.01	199.78	4,904.09	-17.52	-14.70	22.85	0.14	0.09	-7.31
5,123.00	0.47	277.65	5,122.08	-19.21	-16.23	25.12	0.47	-0.25	35.72
5,433.00	0.38	268.79	5,432.07	-19.07	-18.52	26.40	0.04	-0.03	-2.86
5,747.00	0.55	300.40	5,746.06	-18.33	-20.86	27.23	0.10	0.05	10.07
6,059.00	0.56	237.29	6,058.05	-18.39	-23.44	28.85	0.19	0.00	-20.23
6,367.00	0.88	217.83	6,366.02	-21.07	-26.15	32.63	0.13	0.10	-6.32
6,673.00	0.64	218.46	6,672.00	-24.27	-28.66	36.69	0.08	-0.08	0.21
6,981.00	1.10	196.91	6,979.96	-28.44	-30.59	41.18	0.18	0.15	-7.00
7,289.00	1.73	154.52	7,287.87	-35.47	-29.45	46.06	0.38	0.20	-13.76
7,569.00	1.08	231.54	7,567.81	-40.93	-29.69	50.55	0.65	-0.23	27.51
7,861.00	0.68	239.80	7,859.77	-43.51	-33.35	54.82	0.14	-0.14	2.83
Last SDI MWD Survey									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
576.00	575.64	-14.34	-10.27	First SDI MWD Survey	
3,557.00	3,556.17	-6.11	-9.29	Last Survey in 8 3/4" Hole	
3,816.00	3,815.16	-8.16	-9.07	First Survey in 6 1/4" Hole	
7,861.00	7,859.77	-43.51	-33.35	Last SDI MWD Survey	

Scientific Drilling

Survey Report



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Checked By: _____

Approved By: _____

Date: _____