

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

Form C-101
Revised November 14, 2012

Energy Minerals and Natural Resources

Oil Conservation Division

1220 South St. Francis Dr.

Santa Fe, NM 87505

AMENDED REPORT
RECEIVED
JUN 07 2013
NMOCD ARTESIA

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

¹ Operator Name and Address LEGEND NATURAL GAS III, LP 15021 KATY FREEWAY, SUITE 200 HOUSTON, TX 77094		² OGRID Number 258894
³ API Number 30-015- <i>41428</i>		
⁴ Property Code <i>39989</i>	⁵ Property Name STATE GQ	⁶ Well No. 5H

⁷ Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
B	7	25S	28E		200	NORTH	1775	EAST	EDDY

⁸ Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
P	7	25S	28E		330	SOUTH	1320	EAST	EDDY

⁹ Pool Information

Pool Name	Pool Code
HAY HOLLOW; BONE SPRING, NORTH	30216

Additional Well Information

¹¹ Work Type N	¹² Well Type O	¹³ Cable/Rotary R	¹⁴ Lease Type S	¹⁵ Ground Level Elevation 3054'GR
¹⁶ Multiple N	¹⁷ Proposed Depth 7900'TVD, 12700'MD	¹⁸ Formation BONE SPRING	¹⁹ Contractor	²⁰ Spud Date UPON ARRIVAL
Depth to Ground water <133'		Distance from nearest fresh water well 3196' E OF WINDMILL		Distance to nearest surface water 1180'S OF NAMELESS DRAW

²¹ Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
SURFACE	17.5	13.375	48	400'TVD	445	SURFACE
INTERMED.	12.25	9.625	36	2500'TVD	655	SURFACE
PROD.	7.785	5.5	17	7900TVD&12700MD	2380	SURFACE

Casing/Cement Program: Additional Comments

LEAD 740 SXS; TAIL 1640 SXS

²² Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer

²³ 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: <i>Jennifer Mosley</i> Printed name: JENNIFER MOSLEY Title: SR. REGULATORY ANALYST E-mail Address: jmosley@lng2.com Date:		OIL CONSERVATION DIVISION Approved By: <i>T.L. Shaperd</i> Title: <i>Chief Geologist</i> Approved Date: <i>6/7/2013</i> Expiration Date: <i>6/7/2015</i> Conditions of Approval Attached	
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Phone (505) 478-3460 Fax: (505) 478-3462

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-41428	Pool Code 30276	Pool Name Hay Hollow; Bone Spring, North
Property Code 39939	Property Name STATE GQ	Well Number 5H
UGRID No.	Operator Name LEGEND NATURAL GAS III, L.P.	Elevation 3054'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	7	25 S	28 E		200	NORTH	1775	EAST	EDDY

Bottom Hole Location If Different From Surface

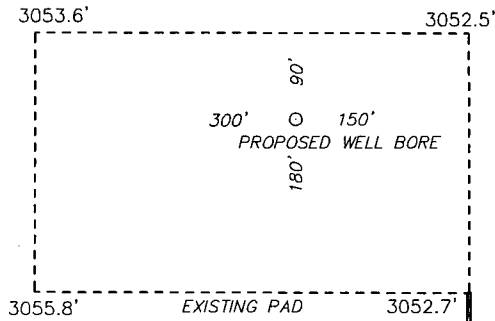
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	7	25 S	28 E		330	SOUTH	1320	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

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

N.: 419078.7 E.: 602558.3 SURFACE LOCATION Lat - N 32°09'04.83" Long - W 104°07'26.93" NMSPC- N 418856.0 E 606076.0 (NAD-83)	N.: 419061.1 E.: 605213.6 200' 3053.6' 3052.5' 1775' 3055.8' 3052.7'	N.: 419044.9 E.: 607848.3	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. <i>Jennifer Mosley</i> Signature Date 06/05/2013 Jennifer Mosley Printed Name jmosley@lng2.com Email Address
			N.: 416413.4 E.: 607883.1
N.: 413766.6 E.: 602589.3	PROPOSED BOTTOM HOLE LOCATION Lat - N 32°08'17.83" Long - W 104°07'21.03" NMSPC- N 414108.3 E 606592.7 (NAD-83)	N.: 413774.8 E.: 605255.9	N.: 413781.8 E.: 607917.0

SECTION 7, TOWNSHIP 25 SOUTH, RANGE 28 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.

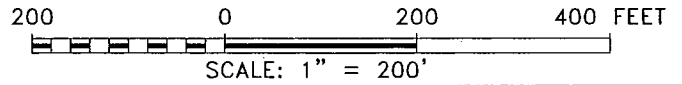


LEGEND NATURAL GAS III, L.P.
STATE GQ #5H
ELEV. - 3054'

Lat - N 32°09'04.83"
Long - W 104°07'26.93"
NMSPCE- N 418856.0
E 606076.0
(NAD-83)

PROPOSED LEASE ROAD
S00°53'53"W - 338.7'

EXISTING LEASE ROAD



LEGEND NATURAL GAS III, L.P.

REF: STATE GQ #5H / WELL PAD TOPO

THE STATE GQ #5H LOCATED 200'
FROM THE NORTH LINE AND 1775' FROM THE EAST LINE OF
SECTION 7, TOWNSHIP 25 SOUTH, RANGE 28 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 28663 Drawn By: J. GOAD

Date: 5-24-2013 Disk: JG - 28663

Survey Date: 5-19-2013 Sheet 1 of 1 Sheets



STATE GQ #5H

Located 200' FNL and 1775' FEL

Section 7, Township 25 South, Range 28 East,
N.M.P.M., Eddy County, New Mexico.

**basin
surveys**

focused on excellence
in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

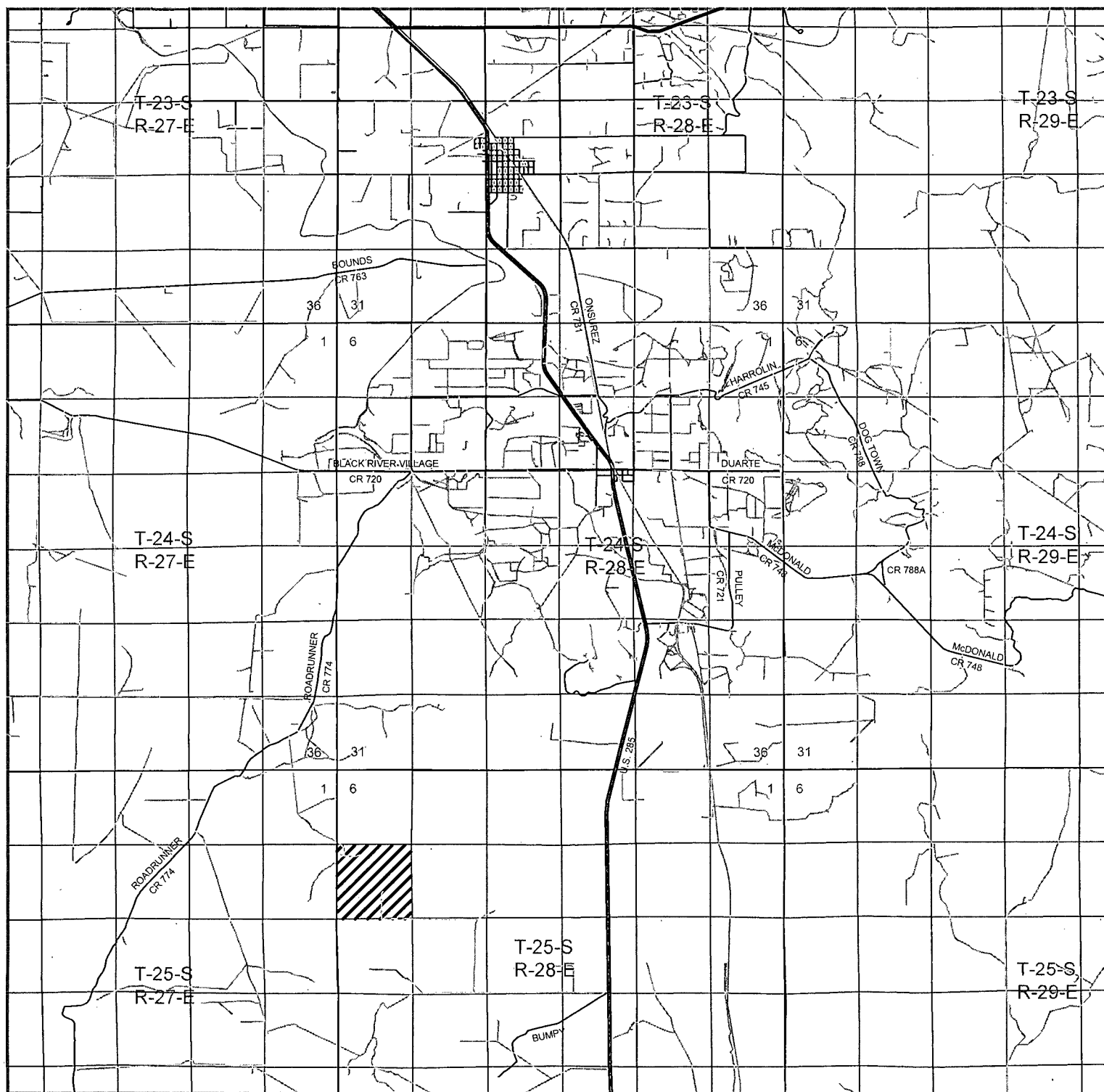
W.O. Number: JG - 28663

Survey Date: 5-19-2013

Scale: 1" = 2000'

Date: 5-24-2013

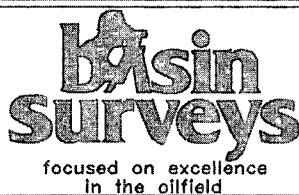
LEGEND
NATURAL GAS
III, L.P.



STATE GQ #5H

Located 200' FNL and 1775' FEL

Section 7, Township 25 South, Range 28 East,
N.M.P.M., Eddy County, New Mexico.



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W.O. Number: JG - 28663

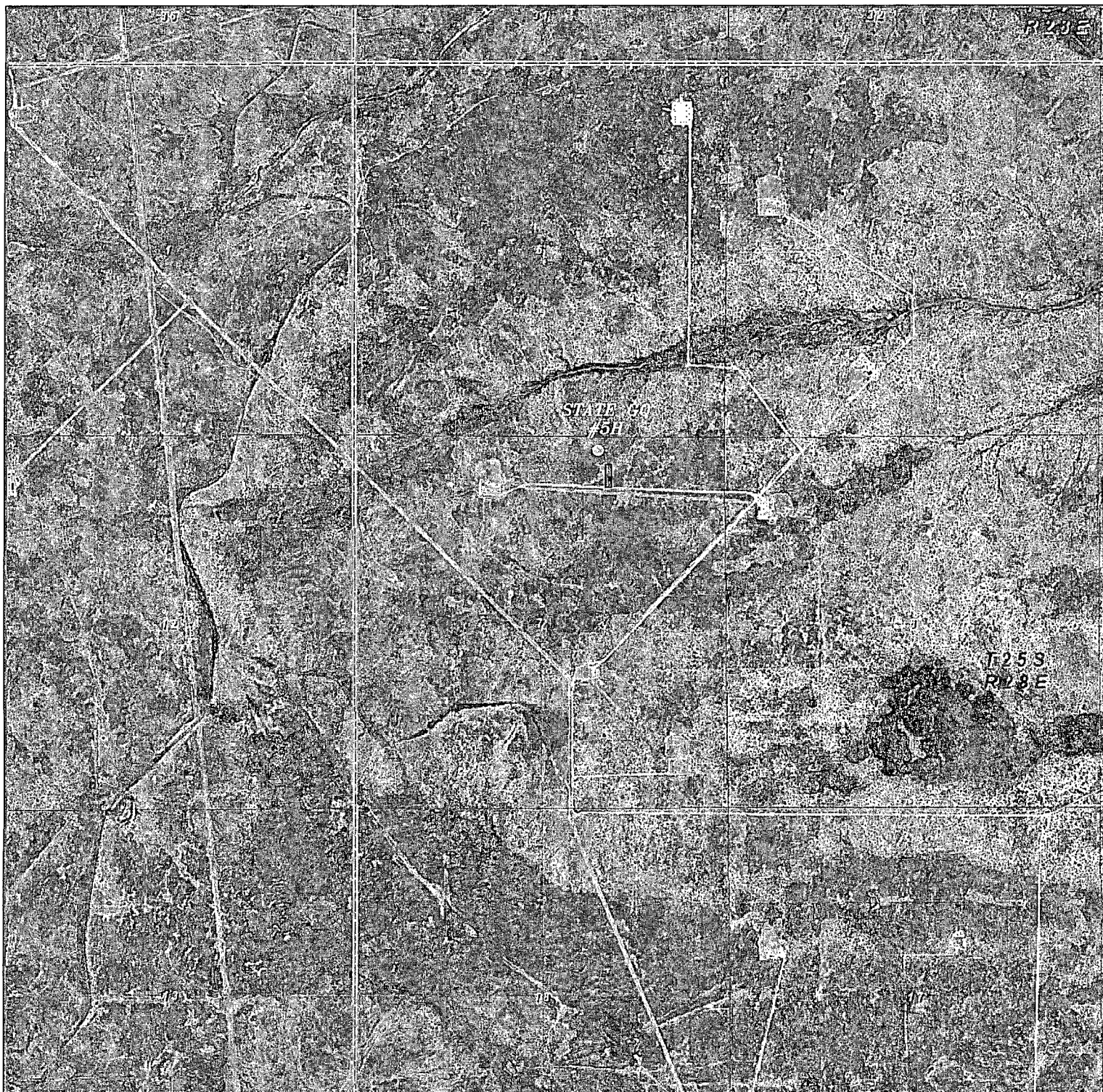
Survey Date: 5-19-2013

Scale: 1" = 2 Miles

Date: 5-24-2013



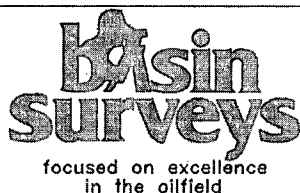
LEGEND
NATURAL GAS
III, L.P.



STATE GQ #5H

Located 200' FNL and 1775' FEL

Section 7, Township 25 South, Range 28 East,
N.M.P.M., Eddy County, New Mexico.



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basinsurveys.com

W.O. Number: JG - 28663

Scale: 1" = 2000'

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND

LEGEND
NATURAL GAS
III, L.P.



Scientific Drilling

30-015-41428

Legend Natural Gas

Eddy County, New Mexico

State GQ

State GQ 5H

Original Wellpath

Plan: Plan #1

RECEIVED

JUN 11 2013

NMOCD ARTESIA

Standard Planning Report

31 May, 2013



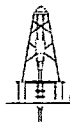
Scientific Drilling



Azimuths to Grid North
True North: -0.11°
Magnetic North: 7.48°

Magnetic Field
Strength: 48318.6snT
Dip Angle: 59.98°
Date: 5/31/2013
Model: IGRF2010

To convert a Magnetic Direction to a Grid Direction, Add 7.48°
To convert a True Direction to a Grid Direction, Subtract 0.11°



GL: 3054.0'

State GQ 5H
Eddy County, New Mexico
Northing: 418856.00
Easting: 606076.00
Plan #1

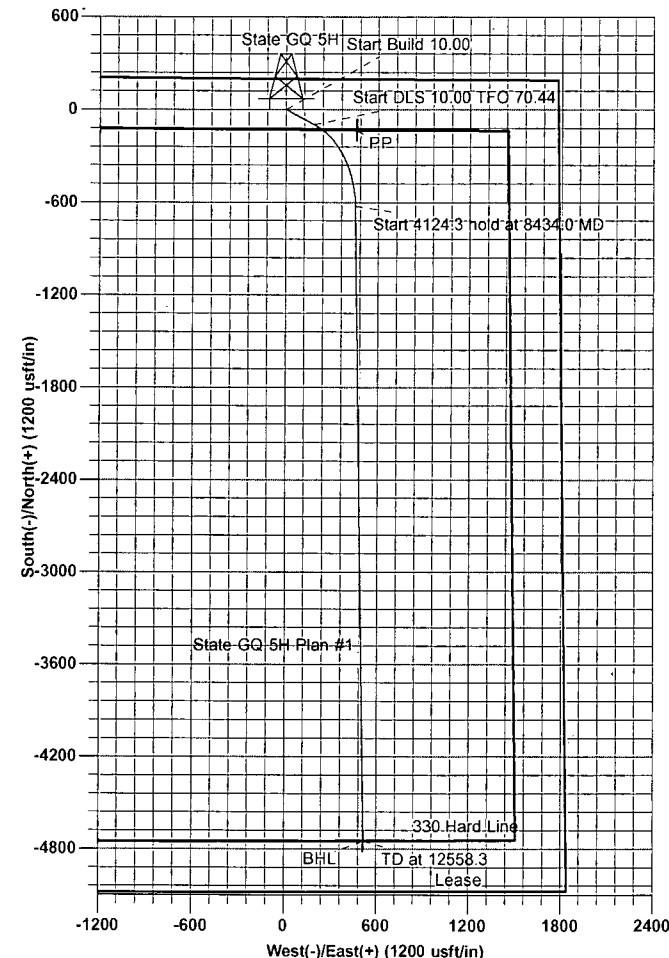
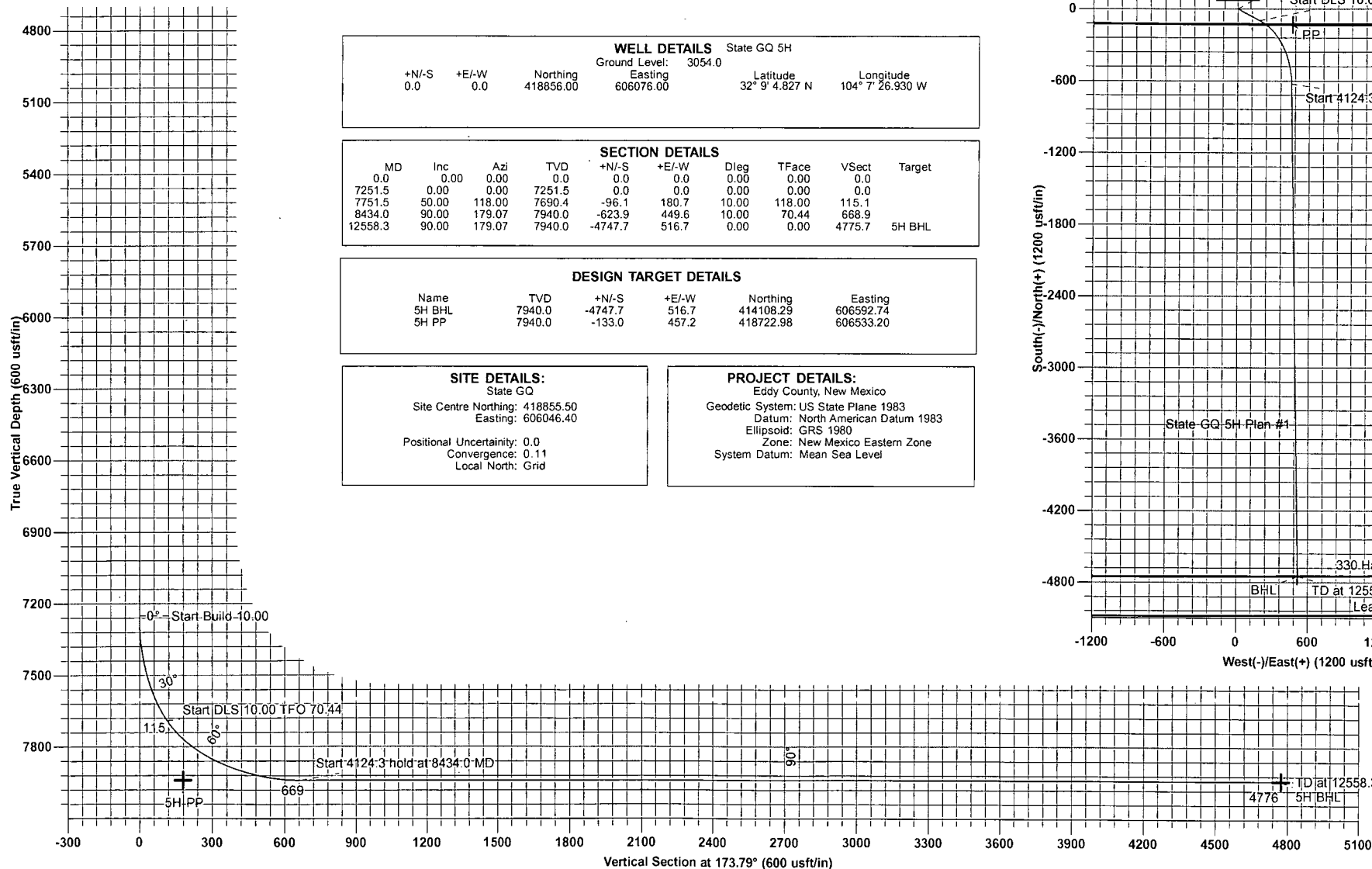
WELL DETAILS State GQ 5H					
		Ground Level:	3054.0		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	418856.00	606076.00	32° 9' 4.827 N	104° 7' 26.930 W

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
7251.5	0.00	0.00	7251.5	0.0	0.0	0.00	0.00	0.0	
7751.5	50.00	118.00	7690.4	-96.1	180.7	10.00	118.00	115.1	
8434.0	90.00	179.07	7940.0	-623.9	449.6	10.00	70.44	668.9	
12558.3	90.00	179.07	7940.0	-4747.7	516.7	0.00	0.00	4775.7	5H BHL

DESIGN TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
5H BHL	7940.0	-4747.7	516.7	414108.29	606592.74
5H PP	7940.0	-133.0	457.2	418722.98	606533.20

SITE DETAILS:	
State GQ	
Site Centre Northing:	418855.50
Easting:	606046.40
Positional Uncertainty:	0.0
Convergence:	0.11
Local North:	Grid

PROJECT DETAILS:	
Eddy County, New Mexico	
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico Eastern Zone
System Datum:	Mean Sea Level



Jody Barclay
13:54, May 31 2013

Scientific Drilling
2740 N. Highway 287
Decatur, TX 76234

Database:	CompassC	Local Co-ordinate Reference:	Well State GQ 5H
Company:	Legend Natural Gas	TVD Reference:	Gr: @ 3054.0usft (Ground)
Project:	Eddy County, New Mexico	MD Reference:	Gr: @ 3054.0usft (Ground)
Site:	State GQ	North Reference:	Grid
Well:	State GQ 5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellpath		
Design:	Plan #1		

Project	Eddy County, New Mexico		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	State GQ		
Site Position:	Northing:	418,855.50 usft	Latitude: 32° 9' 4.822 N
From: Map	Easting:	606,046.40 usft	Longitude: 104° 7' 27.275 W
Position Uncertainty:	0.0 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0.11 °

Well	State GQ 5H		
Well Position	+N/-S	0.5 usft	Latitude: 32° 9' 4.827 N
	+E/-W	29.6 usft	Longitude: 104° 7' 26.930 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	Ground Level: 3,054.0 usft

Wellbore	Original Wellpath				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/31/2013	7.59	59.98	48,319

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	173.79

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
7,251.5	0.00	0.00	7,251.5	0.0	0.0	0.00	0.00	0.00	0.00	
7,751.5	50.00	118.00	7,690.4	-96.1	180.7	10.00	10.00	0.00	118.00	
8,434.0	90.00	179.07	7,940.0	-623.9	449.6	10.00	5.86	8.95	70.44	
12,558.3	90.00	179.07	7,940.0	-4,747.7	516.7	0.00	0.00	0.00	0.00	5H BHL

Database:	CompassC	Local Co-ordinate Reference:	Well State GQ 5H
Company:	Legend Natural Gas	TVD Reference:	Gr: @ 3054.0usft (Ground)
Project:	Eddy County, New Mexico	MD Reference:	Gr: @ 3054.0usft (Ground)
Site:	State GQ	North Reference:	Grid
Well:	State GQ 5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellpath		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00

Database:	CompassC	Local Co-ordinate Reference:	Well State GQ 5H
Company:	Legend Natural Gas	TVD Reference:	Gr: @ 3054.0usft (Ground)
Project:	Eddy County, New Mexico	MD Reference:	Gr: @ 3054.0usft (Ground)
Site:	State GQ	North Reference:	Grid
Well:	State GQ 5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellpath		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00
7,251.5	0.00	0.00	7,251.5	0.0	0.0	0.0	0.00	0.00	0.00
7,300.0	4.85	118.00	7,299.9	-1.0	1.8	1.2	10.00	10.00	0.00
7,350.0	9.85	118.00	7,349.5	-4.0	7.5	4.7	10.00	10.00	0.00
7,400.0	14.85	118.00	7,398.3	-9.0	16.9	10.8	10.00	10.00	0.00
7,450.0	19.85	118.00	7,446.1	-16.0	30.1	19.1	10.00	10.00	0.00
7,500.0	24.85	118.00	7,492.3	-24.9	46.8	29.8	10.00	10.00	0.00
7,550.0	29.85	118.00	7,536.7	-35.7	67.1	42.7	10.00	10.00	0.00
7,600.0	34.85	118.00	7,578.9	-48.2	90.7	57.8	10.00	10.00	0.00
7,650.0	39.85	118.00	7,618.6	-62.5	117.5	74.8	10.00	10.00	0.00
7,700.0	44.85	118.00	7,655.6	-78.3	147.2	93.8	10.00	10.00	0.00
7,751.5	50.00	118.00	7,690.4	-96.1	180.7	115.1	10.00	10.00	0.00
7,800.0	51.77	123.82	7,721.0	-115.4	213.0	137.8	10.00	3.65	12.00
7,850.0	53.88	129.51	7,751.2	-139.2	244.9	164.9	10.00	4.22	11.38
7,900.0	56.25	134.89	7,779.9	-166.8	275.2	195.5	10.00	4.73	10.75
7,950.0	58.83	139.96	7,806.7	-197.8	303.7	229.5	10.00	5.17	10.15
8,000.0	61.61	144.75	7,831.6	-232.2	330.2	266.5	10.00	5.55	9.59
8,050.0	64.54	149.30	7,854.2	-269.6	354.4	306.3	10.00	5.87	9.09
8,100.0	67.61	153.62	7,874.5	-309.7	376.2	348.6	10.00	6.13	8.64
8,150.0	70.78	157.75	7,892.3	-352.3	395.5	393.0	10.00	6.35	8.26
8,200.0	74.05	161.72	7,907.4	-397.0	411.9	439.2	10.00	6.53	7.95
8,250.0	77.38	165.57	7,919.7	-443.5	425.6	486.9	10.00	6.67	7.69
8,300.0	80.77	169.31	7,929.2	-491.4	436.2	535.7	10.00	6.78	7.49
8,350.0	84.20	172.99	7,935.7	-540.3	443.8	585.2	10.00	6.85	7.35
8,400.0	87.65	176.61	7,939.3	-590.0	448.4	635.0	10.00	6.90	7.26
8,434.0	90.00	179.07	7,940.0	-623.9	449.6	668.9	10.00	6.92	7.22
8,500.0	90.00	179.07	7,940.0	-690.0	450.7	734.7	0.00	0.00	0.00
8,600.0	90.00	179.07	7,940.0	-789.9	452.3	834.2	0.00	0.00	0.00
8,700.0	90.00	179.07	7,940.0	-889.9	454.0	933.8	0.00	0.00	0.00
8,800.0	90.00	179.07	7,940.0	-989.9	455.6	1,033.4	0.00	0.00	0.00
8,900.0	90.00	179.07	7,940.0	-1,089.9	457.2	1,133.0	0.00	0.00	0.00
9,000.0	90.00	179.07	7,940.0	-1,189.9	458.9	1,232.6	0.00	0.00	0.00
9,100.0	90.00	179.07	7,940.0	-1,289.9	460.5	1,332.1	0.00	0.00	0.00
9,200.0	90.00	179.07	7,940.0	-1,389.9	462.1	1,431.7	0.00	0.00	0.00
9,300.0	90.00	179.07	7,940.0	-1,489.8	463.7	1,531.3	0.00	0.00	0.00
9,400.0	90.00	179.07	7,940.0	-1,589.8	465.4	1,630.9	0.00	0.00	0.00

Database:	CompassC	Local Co-ordinate Reference:	Well State GQ 5H
Company:	Legend Natural Gas	TVD Reference:	Gr: @ 3054.0usft (Ground)
Project:	Eddy County, New Mexico	MD Reference:	Gr: @ 3054.0usft (Ground)
Site:	State GQ	North Reference:	Grid
Well:	State GQ 5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellpath		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,500.0	90.00	179.07	7,940.0	-1,689.8	467.0	1,730.4	0.00	0.00	0.00
9,600.0	90.00	179.07	7,940.0	-1,789.8	468.6	1,830.0	0.00	0.00	0.00
9,700.0	90.00	179.07	7,940.0	-1,889.8	470.2	1,929.6	0.00	0.00	0.00
9,800.0	90.00	179.07	7,940.0	-1,989.8	471.9	2,029.2	0.00	0.00	0.00
9,900.0	90.00	179.07	7,940.0	-2,089.8	473.5	2,128.7	0.00	0.00	0.00
10,000.0	90.00	179.07	7,940.0	-2,189.8	475.1	2,228.3	0.00	0.00	0.00
10,100.0	90.00	179.07	7,940.0	-2,289.7	476.7	2,327.9	0.00	0.00	0.00
10,200.0	90.00	179.07	7,940.0	-2,389.7	478.4	2,427.5	0.00	0.00	0.00
10,300.0	90.00	179.07	7,940.0	-2,489.7	480.0	2,527.0	0.00	0.00	0.00
10,400.0	90.00	179.07	7,940.0	-2,589.7	481.6	2,626.6	0.00	0.00	0.00
10,500.0	90.00	179.07	7,940.0	-2,689.7	483.3	2,726.2	0.00	0.00	0.00
10,600.0	90.00	179.07	7,940.0	-2,789.7	484.9	2,825.8	0.00	0.00	0.00
10,700.0	90.00	179.07	7,940.0	-2,889.7	486.5	2,925.3	0.00	0.00	0.00
10,800.0	90.00	179.07	7,940.0	-2,989.6	488.1	3,024.9	0.00	0.00	0.00
10,900.0	90.00	179.07	7,940.0	-3,089.6	489.8	3,124.5	0.00	0.00	0.00
11,000.0	90.00	179.07	7,940.0	-3,189.6	491.4	3,224.1	0.00	0.00	0.00
11,100.0	90.00	179.07	7,940.0	-3,289.6	493.0	3,323.6	0.00	0.00	0.00
11,200.0	90.00	179.07	7,940.0	-3,389.6	494.6	3,423.2	0.00	0.00	0.00
11,300.0	90.00	179.07	7,940.0	-3,489.6	496.3	3,522.8	0.00	0.00	0.00
11,400.0	90.00	179.07	7,940.0	-3,589.6	497.9	3,622.4	0.00	0.00	0.00
11,500.0	90.00	179.07	7,940.0	-3,689.6	499.5	3,721.9	0.00	0.00	0.00
11,600.0	90.00	179.07	7,940.0	-3,789.5	501.2	3,821.5	0.00	0.00	0.00
11,700.0	90.00	179.07	7,940.0	-3,889.5	502.8	3,921.1	0.00	0.00	0.00
11,800.0	90.00	179.07	7,940.0	-3,989.5	504.4	4,020.7	0.00	0.00	0.00
11,900.0	90.00	179.07	7,940.0	-4,089.5	506.0	4,120.2	0.00	0.00	0.00
12,000.0	90.00	179.07	7,940.0	-4,189.5	507.7	4,219.8	0.00	0.00	0.00
12,100.0	90.00	179.07	7,940.0	-4,289.5	509.3	4,319.4	0.00	0.00	0.00
12,200.0	90.00	179.07	7,940.0	-4,389.5	510.9	4,419.0	0.00	0.00	0.00
12,300.0	90.00	179.07	7,940.0	-4,489.5	512.5	4,518.6	0.00	0.00	0.00
12,400.0	90.00	179.07	7,940.0	-4,589.4	514.2	4,618.1	0.00	0.00	0.00
12,500.0	90.00	179.07	7,940.0	-4,689.4	515.8	4,717.7	0.00	0.00	0.00
12,558.3	90.00	179.07	7,940.0	-4,747.7	516.7	4,775.7	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
5H BHL - hit/miss target - Shape - Point	0.00	0.00	7,940.0	-4,747.7	516.7	414,108.29	606,592.74	32° 8' 17.833 N	104° 7' 21.027 W
5H PP - plan hits target center by 190.3usft at 8036.5usft MD (7848.4 TVD, -259.2 N, 348.1 E) - Point	0.00	0.00	7,940.0	-133.0	457.2	418,722.98	606,533.20	32° 9' 3.501 N	104° 7' 21.615 W

Permit Conditions of Approval

API: 30-015-4142B

OCD Reviewer	Condition
CSHAPARD	1. 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

2. NSL approval required prior to placing well on production