

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

OIL CONS. DIV DIST. 3

State of New Mexico

Form C-101
Revised July 18, 2013

APR 06 2015

Energy Minerals and Natural Resources

Oil Conservation Division

1220 South St. Francis Dr.

Santa Fe, NM 87505

☐ AMENDED REPORT

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

1. Operator Name and Address Encana Oil & Gas (USA) Inc. 370 17th Street, Suite 1700 Denver, CO 80202		2. OGRID Number 282327
		3. API Number 30-045-35667
4. Property Code 314742	5. Property Name Lybrook E15-2208	6. Well No. 02H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
E	15	22N	8W		1935'	North	405'	West	San Juan

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
E	16	22N	8W		2120'	North	330'	West	San Juan

9. Pool Information

SEE ATTACHED NMOCD CONDITIONS OF APPROVAL	Pool Name Basin Manos Gas Pool	Pool Code 97232
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Additional Well Information

11. Work Type N	12. Well Type G	13. Cable/Rotary R	14. Lease Type S	15. Ground Level Elevation 6658.6
16. Multiple N/A	17. Proposed Depth 4342' TVD, 9419' MD	18. Formation Gallup	19. Contractor Aztec	20. Spud Date 09/25/2015
Depth to Ground water Unknown		Distance from nearest fresh water well Over 3455'		Distance to nearest surface water Over 7,495'

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Conductor	26"	16	42.09#	60'	100	Surface
Surface	12 1/4"	9 5/8"	36#	500'	276	Surface
Intermediate	8 3/4"	7"	26#	4347'	1013	Surface
Production Liner	6 1/8"	4 1/2"	11.6#	4247'-9419'	293	4247'

Casing/Cement Program: Additional Comments

N/A

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	3,000	1,500	TBD
Double RAM	3,000	3,000	TBD
Rotating Head	3,000	1,500	TBD

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:

Printed name: Katie Wegner

Title: Regulatory Analyst

E-mail Address: Kathryn.Wegner@encana.com

Date: 04/02/2015

Phone: 720-876-3533

OIL CONSERVATION DIVISION

Approved By:

Title: SUPERVISOR DISTRICT #3

Approved Date: 4-9-2015 Expiration Date:

Conditions of Approval Attached *

DISTRICT I
1626 N. French Dr., Hobbs, N.M. 88240
Phone: (505) 393-6161 Fax: (505) 393-0720

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (505) 748-1283 Fax: (505) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Artesia, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87506
Phone: (505) 476-3460 Fax: (505) 476-3468

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

Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-35667		*Pool Code 97232	*Pool Name BASIN MANCOS
*Property Code 314742	*Property Name LYBROOK E15-2208		*Well Number 02H
*GRID No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.		*Elevation 6658.6'

¹⁰ Surface Location

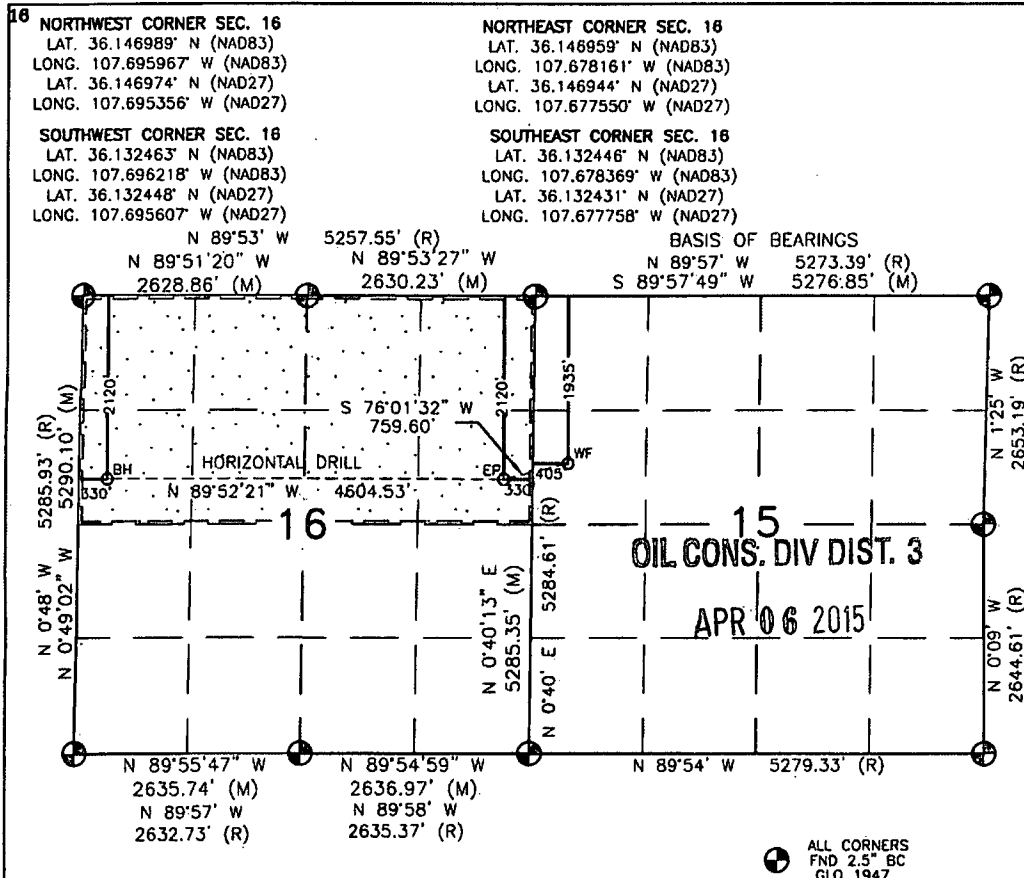
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	15	22N	8W		1935'	NORTH	405'	WEST	SAN JUAN

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
E	16	22N	8W		2120'	NORTH	330'	WEST	SAN JUAN

¹² Dedicated Acres 320.00 ACRES N/2 SEC. 16	PROJECT AREA	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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



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 *Katie Wegner* Date 4/2/15

Printed Name Katie Wegner

E-mail Address *Katie.wegner@encana.com*

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 belief.

MARCH 18, 2014

Date of Survey

Signature and Seal of Professional Surveyor *David H. Russell*

DAVID H. RUSSELL
NEW MEXICO
REGISTERED
LAND SURVEYOR
10201

Certificate Number 10201

BOTTOM HOLE
LAT. 36.141166' N (NAD83)
LONG. 107.694950' W (NAD83)
LAT. 36.141151' N (NAD27)
LONG. 107.694339' W (NAD27)

ENTRY POINT
LAT. 36.141140' N (NAD83)
LONG. 107.679362' W (NAD83)
LAT. 36.141125' N (NAD27)
LONG. 107.678751' W (NAD27)

WELL FLAG
LAT. 36.141643' N (NAD83)
LONG. 107.676866' W (NAD83)
LAT. 36.141628' N (NAD27)
LONG. 107.676255' W (NAD27)

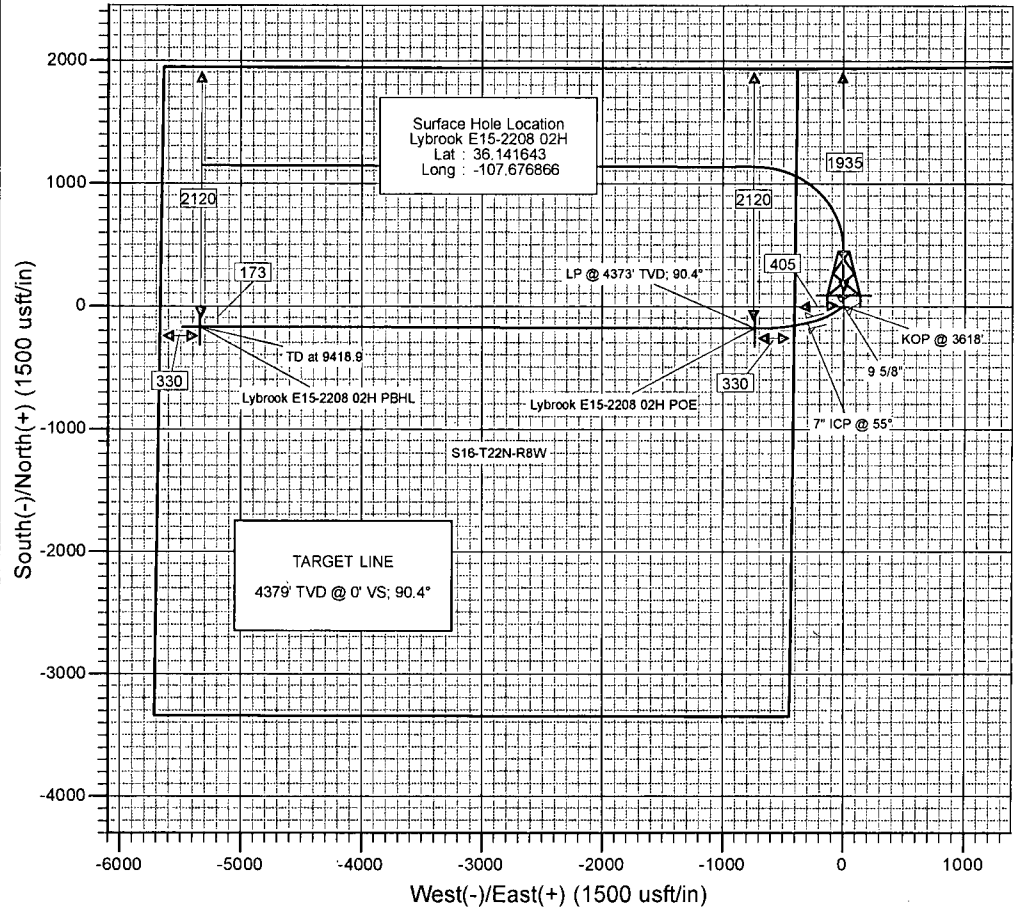
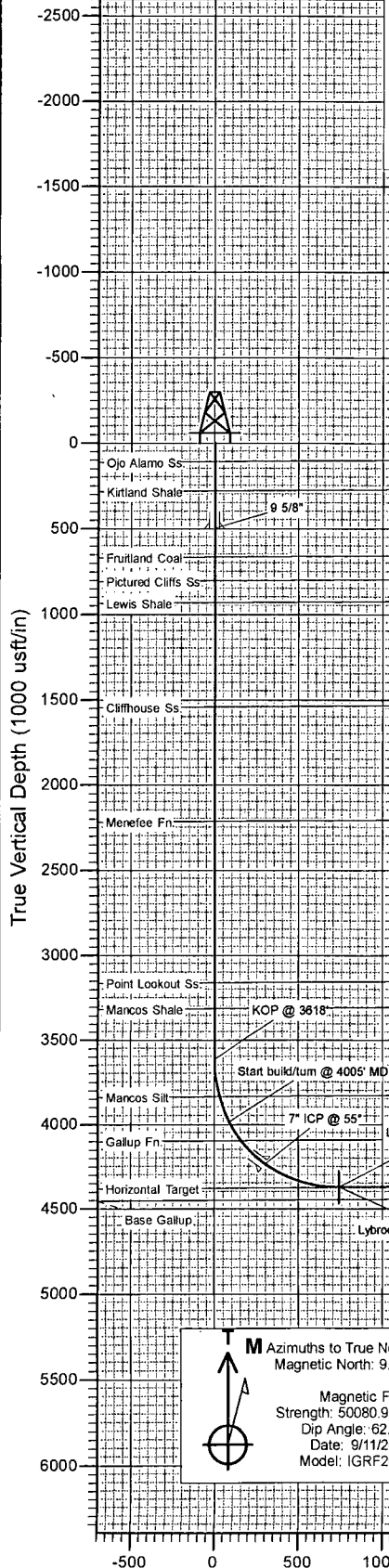
encana

Project: San Juan County, NM
Site: S15-T22N-R8W
Well: Lybrook E15-2208 02H
Wellbore: HZ
Design: Plan #1



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	3618.0	0.00	0.00	3618.0	0.0	0.0	0.00	0.00	0.0	
3	4005.4	30.99	236.85	3986.8	-55.9	-85.6	8.00	236.85	85.5	
4	4816.3	90.40	270.12	4373.8	-183.1	-737.0	8.00	37.30	736.6	Lybrook E15-2208 02H POE
5	9418.9	90.40	270.12	4341.7	-173.1	-5339.5	0.00	0.00	5339.1	Lybrook E15-2208 02H PBHL



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Lybrook E15-2208 02H PBHL	-173.1	-5339.5	1870709.91	2763950.65	36.141166	-107.694950
Lybrook E15-2208 02H POE	-183.1	-737.0	1870707.37	2768553.17	36.141140	-107.679362

CASING DETAILS

TVD	MD	Name
500.0	500.0	9 5/8"
4235.8	4346.9	7" ICP @ 55°

Plan #1
Lybrook E15-2208 02H
14xxx: LR

16' KB @ 6675.0usft
Ground Elevation @ 6659.0
North American Datum 1983
Well Lybrook E15-2208 02H, True North

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
110.0	110.0	Ojo Alamo Ss.
282.0	282.0	Kirtland Shale
665.0	665.0	Fruitland Coal
805.0	805.0	Pictured Cliffs Ss.
934.0	934.0	Lewis Shale
1542.0	1542.0	Cliffhouse Ss.
2215.0	2215.0	Menefee Fn.
3161.0	3161.0	Point Lookout Ss.
3311.0	3311.0	Mancos Shale
3836.8	3840.4	Mancos Silt
4095.9	4139.5	Gallup Fn.



M Azimuths to True North
Magnetic North: 9.39°
Magnetic Field
Strength: 50080.9nT
Dip Angle: 62.89°
Date: 9/11/2014
Model: IGRF2010

Vertical Section at 270.12° (1000 usft/in)

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook E15-2208 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	16' KB @ 6675.0usft
Project:	San Juan County, NM	MD Reference:	16' KB @ 6675.0usft
Site:	S15-T22N-R8W	North Reference:	True
Well:	Lybrook E15-2208 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Project	San Juan 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	S15-T22N-R8W				
Site Position:		Northing:	1,870,921.49 usft	Latitude:	36.141725
From:	Lat/Long	Easting:	2,769,286.25 usft	Longitude:	-107.676878
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.09 °

Well	Lybrook E15-2208 02H					
Well Position	+N/-S	0.0 usft	Northing:	1,870,891.65 usft	Latitude:	36.141643
	+E/-W	0.0 usft	Easting:	2,769,289.84 usft	Longitude:	-107.676866
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	6,659.0 usft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	9/11/2014	9.39	62.89	50,081

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	270.12	

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	
3,618.0	0.00	0.00	3,618.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,005.4	30.99	236.85	3,986.8	-55.9	-85.6	8.00	8.00	0.00	236.85	
4,816.3	90.40	270.12	4,373.8	-183.1	-737.0	8.00	7.33	4.10	37.30	Lybrook E15-2208 02
9,418.9	90.40	270.12	4,341.7	-173.1	-5,339.5	0.00	0.00	0.00	0.00	Lybrook E15-2208 02

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook E15-2208 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	16' KB @ 6675.0usft
Project:	San Juan County, NM	MD Reference:	16' KB @ 6675.0usft
Site:	S15-T22N-R8W	North Reference:	True
Well:	Lybrook E15-2208 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
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 (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
110.0	0.00	0.00	110.0	0.0	0.0	0.0	0.00	0.00	Ojo Alamo Ss.
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
282.0	0.00	0.00	282.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	9 5/8"
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
665.0	0.00	0.00	665.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
805.0	0.00	0.00	805.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
934.0	0.00	0.00	934.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,542.0	0.00	0.00	1,542.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse Ss.
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	
2,215.0	0.00	0.00	2,215.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn.
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	
3,161.0	0.00	0.00	3,161.0	0.0	0.0	0.0	0.00	0.00	Point Lookout Ss.
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	
3,311.0	0.00	0.00	3,311.0	0.0	0.0	0.0	0.00	0.00	Mancos Shale
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	
3,618.0	0.00	0.00	3,618.0	0.0	0.0	0.0	0.00	0.00	KOP @ 3618'
3,700.0	6.56	236.85	3,699.8	-2.6	-3.9	3.9	8.00	8.00	
3,800.0	14.56	236.85	3,798.0	-12.6	-19.3	19.2	8.00	8.00	
3,840.4	17.79	236.85	3,836.8	-18.7	-28.7	28.6	8.00	8.00	Mancos Silt
3,900.0	22.56	236.85	3,892.8	-30.0	-45.9	45.8	8.00	8.00	
4,000.0	30.56	236.85	3,982.1	-54.4	-83.3	83.2	8.00	8.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook E15-2208 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	16' KB @ 6675.0usft
Project:	San Juan County, NM	MD Reference:	16' KB @ 6675.0usft
Site:	S15-T22N-R8W	North Reference:	True
Well:	Lybrook E15-2208 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
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 (°/100u)	Comments / Formations
4,005.4	30.99	236.85	3,986.8	-55.9	-85.6	85.5	8.00	8.00	Start build/turn @ 4005' MD
4,100.0	37.27	244.42	4,065.1	-81.6	-131.9	131.7	8.00	6.63	
4,139.5	40.00	246.96	4,095.9	-91.8	-154.4	154.2	8.00	6.93	Gallup Fn.
4,200.0	44.29	250.32	4,140.8	-106.5	-192.2	191.9	8.00	7.08	
4,300.0	51.54	254.87	4,207.8	-128.5	-263.0	262.7	8.00	7.26	
4,346.9	55.00	256.70	4,235.8	-137.7	-299.4	299.1	8.00	7.37	7" ICP @ 55°
4,400.0	58.94	258.59	4,264.8	-147.2	-342.9	342.6	8.00	7.43	
4,500.0	66.43	261.76	4,310.6	-162.3	-430.4	430.0	8.00	7.49	
4,600.0	73.98	264.58	4,344.5	-173.4	-523.7	523.3	8.00	7.55	
4,700.0	81.56	267.20	4,365.6	-180.4	-621.1	620.7	8.00	7.58	
4,800.0	89.16	269.72	4,373.7	-183.1	-720.7	720.3	8.00	7.60	
4,816.3	90.40	270.12	4,373.8	-183.1	-737.0	736.6	8.00	7.60	LP @ 4373' TVD; 90.4° - Lybrook E15-2208 02H
4,900.0	90.40	270.12	4,373.2	-182.9	-820.7	820.3	0.00	0.00	
5,000.0	90.40	270.12	4,372.5	-182.7	-920.6	920.3	0.00	0.00	
5,100.0	90.40	270.12	4,371.8	-182.5	-1,020.6	1,020.3	0.00	0.00	
5,200.0	90.40	270.12	4,371.1	-182.3	-1,120.6	1,120.3	0.00	0.00	
5,300.0	90.40	270.12	4,370.4	-182.0	-1,220.6	1,220.3	0.00	0.00	
5,400.0	90.40	270.12	4,369.7	-181.8	-1,320.6	1,320.3	0.00	0.00	
5,500.0	90.40	270.12	4,369.0	-181.6	-1,420.6	1,420.3	0.00	0.00	
5,600.0	90.40	270.12	4,368.3	-181.4	-1,520.6	1,520.2	0.00	0.00	
5,700.0	90.40	270.12	4,367.6	-181.2	-1,620.6	1,620.2	0.00	0.00	
5,800.0	90.40	270.12	4,366.9	-181.0	-1,720.6	1,720.2	0.00	0.00	
5,900.0	90.40	270.12	4,366.2	-180.7	-1,820.6	1,820.2	0.00	0.00	
6,000.0	90.40	270.12	4,365.5	-180.5	-1,920.6	1,920.2	0.00	0.00	
6,100.0	90.40	270.12	4,364.8	-180.3	-2,020.6	2,020.2	0.00	0.00	
6,200.0	90.40	270.12	4,364.1	-180.1	-2,120.6	2,120.2	0.00	0.00	
6,300.0	90.40	270.12	4,363.5	-179.9	-2,220.6	2,220.2	0.00	0.00	
6,400.0	90.40	270.12	4,362.8	-179.7	-2,320.6	2,320.2	0.00	0.00	
6,500.0	90.40	270.12	4,362.1	-179.5	-2,420.6	2,420.2	0.00	0.00	
6,600.0	90.40	270.12	4,361.4	-179.2	-2,520.6	2,520.2	0.00	0.00	
6,700.0	90.40	270.12	4,360.7	-179.0	-2,620.6	2,620.2	0.00	0.00	
6,800.0	90.40	270.12	4,360.0	-178.8	-2,720.6	2,720.2	0.00	0.00	
6,900.0	90.40	270.12	4,359.3	-178.6	-2,820.6	2,820.2	0.00	0.00	
7,000.0	90.40	270.12	4,358.6	-178.4	-2,920.6	2,920.2	0.00	0.00	
7,100.0	90.40	270.12	4,357.9	-178.2	-3,020.6	3,020.2	0.00	0.00	
7,200.0	90.40	270.12	4,357.2	-177.9	-3,120.6	3,120.2	0.00	0.00	
7,300.0	90.40	270.12	4,356.5	-177.7	-3,220.6	3,220.2	0.00	0.00	
7,400.0	90.40	270.12	4,355.8	-177.5	-3,320.6	3,320.2	0.00	0.00	
7,500.0	90.40	270.12	4,355.1	-177.3	-3,420.6	3,420.2	0.00	0.00	
7,600.0	90.40	270.12	4,354.4	-177.1	-3,520.6	3,520.2	0.00	0.00	
7,700.0	90.40	270.12	4,353.7	-176.9	-3,620.6	3,620.2	0.00	0.00	
7,800.0	90.40	270.12	4,353.0	-176.6	-3,720.6	3,720.2	0.00	0.00	
7,900.0	90.40	270.12	4,352.3	-176.4	-3,820.6	3,820.2	0.00	0.00	
8,000.0	90.40	270.12	4,351.6	-176.2	-3,920.6	3,920.2	0.00	0.00	
8,100.0	90.40	270.12	4,350.9	-176.0	-4,020.6	4,020.2	0.00	0.00	
8,200.0	90.40	270.12	4,350.2	-175.8	-4,120.6	4,120.2	0.00	0.00	
8,300.0	90.40	270.12	4,349.5	-175.6	-4,220.6	4,220.2	0.00	0.00	
8,400.0	90.40	270.12	4,348.8	-175.3	-4,320.6	4,320.2	0.00	0.00	
8,500.0	90.40	270.12	4,348.1	-175.1	-4,420.5	4,420.2	0.00	0.00	
8,600.0	90.40	270.12	4,347.4	-174.9	-4,520.5	4,520.2	0.00	0.00	
8,700.0	90.40	270.12	4,346.7	-174.7	-4,620.5	4,620.2	0.00	0.00	
8,800.0	90.40	270.12	4,346.0	-174.5	-4,720.5	4,720.2	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook E15-2208 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	16' KB @ 6675.0usft
Project:	San Juan County, NM	MD Reference:	16' KB @ 6675.0usft
Site:	S15-T22N-R8W	North Reference:	True
Well:	Lybrook E15-2208 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
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 (°/100u)	Comments / Formations
8,900.0	90.40	270.12	4,345.3	-174.3	-4,820.5	4,820.2	0.00	0.00	
9,000.0	90.40	270.12	4,344.6	-174.0	-4,920.5	4,920.2	0.00	0.00	
9,100.0	90.40	270.12	4,343.9	-173.8	-5,020.5	5,020.2	0.00	0.00	
9,200.0	90.40	270.12	4,343.2	-173.6	-5,120.5	5,120.2	0.00	0.00	
9,300.0	90.40	270.12	4,342.5	-173.4	-5,220.5	5,220.2	0.00	0.00	
9,400.0	90.40	270.12	4,341.8	-173.2	-5,320.5	5,320.1	0.00	0.00	
9,418.9	90.40	270.12	4,341.7	-173.1	-5,339.5	5,339.1	0.00	0.00	TD at 9418.9 - Lybrook E15-2208 02H PBHL

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Lybrook E15-2208 02H f - plan hits target center - Point	0.00	0.00	4,373.8	-183.1	-737.0	1,870,707.37	2,768,553.17	36.141140	-107.679362
Lybrook E15-2208 02H f - plan hits target center - Point	0.00	0.00	4,341.7	-173.1	-5,339.5	1,870,709.91	2,763,950.65	36.141166	-107.694950

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
4,346.9	4,235.8	7" ICP @ 55°	0	0
500.0	500.0	9 5/8"	0	0

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
110.0	110.0	Ojo Alamo Ss.		-0.40	270.12
282.0	282.0	Kirtland Shale		-0.40	270.12
665.0	665.0	Fruitland Coal		-0.40	270.12
805.0	805.0	Pictured Cliffs Ss.		-0.40	270.12
934.0	934.0	Lewis Shale		-0.40	270.12
1,542.0	1,542.0	Cliffhouse Ss.		-0.40	270.12
2,215.0	2,215.0	Menefee Fn.		-0.40	270.12
3,161.0	3,161.0	Point Lookout Ss.		-0.40	270.12
3,311.0	3,311.0	Mancos Shale		-0.40	270.12
3,840.4	3,837.0	Mancos Silt		-0.40	270.12
4,139.5	4,097.0	Gallup Fn.		-0.40	270.12

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook E15-2208 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	16' KB @ 6675.0usft
Project:	San Juan County, NM	MD Reference:	16' KB @ 6675.0usft
Site:	S15-T22N-R8W	North Reference:	True
Well:	Lybrook E15-2208 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,618.0	3,618.0	0.0	0.0	KOP @ 3618'
4,005.4	3,986.8	-55.9	-85.6	Start build/turn @ 4005' MD
4,816.3	4,373.8	-183.1	-737.0	LP @ 4373' TVD; 90.4°
9,418.9	4,341.7	-173.1	-5,339.5	TD at 9418.9

LOC: 1935' FNL, 405' FWL Sec 15 22N 08W County: San Juan WELL: Lybrook E15-2208 02H			Encana Natural Gas WELL SUMMARY			ENG: Michael Sanch RIG: Unassigned GLE: 6658.6 RKBE: 6674.6			4/1/15
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH			HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION
			TVD	MD					
			60	60'		26	16" 42.09# 100sx Type I Neat 16.0ppg cmt	Fresh wtr 8.3-9.2	
Multi-Well pad take survey every stand and run anti- collision report prior to spud	None	San Jose Fn.	0			12 1/4	9 5/8" 36ppf J55 STC TOC Surface with 100% OH Excess: 276 sks Type III Cement + 1% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.2% bwoc FL-52A + 58.9% Fresh Water.	Fresh wtr 8.3-10	Vertical <1°
Survey Every 60'-120', updating anticollision report after surveys. Stop operations and contact drilling engineer if separation factor approaches 1.5	No OH logs	Nacimiento Fn. 9 5/8" Csg	surface 500	500.00		8 3/4	7" 26ppf J55 LTC TOC @ surface (100% OH excess - 70% Lead 30% Tail) Stage 1 Total: 1013sks Stage 1 Lead: 568 sks Premium Lite FM + 3% CaCl2 + 0.25/sk Cello Flake + 5#/sk LCM-1 + 8% Bentonite + 0.4% FL-52A + 0.4% Sodium Metasilicate. Mixed at 12.1 ppg. Yield 2.13 cuft/sk. Stage 1 Tail: 445 sks Type III Cement + 1% CaCl2 + 0.25#/sk Cello Flake + 0.2% FL-52A. Mixed at 14.6 ppg. Yield 1.38 cuft/sk.	Fresh Wtr 8.3-10	Vertical <1°
Surveys every 30' through the curve	Mud logger onsite	Ojo Alamo Ss. Kirtland Shale Fruitland Coal Pictured Cliffs Ss. Lewis Shale Cliffhouse Ss. Menefee Fn. Point Lookout Ss. Mancos Shale KOP Mancos Silt Gallup Fn. 7" Csg	110 282 665 805 934 1,542 2,215 3,161 3,311 3,618 3,837 4,097 4,236						
Surveys every stand to TD unless directed otherwise by Geologist	No OH Logs	Horizontal Target TD Base Gallup	4,379 4,342 4,452	9,419		6 1/8	100' overlap at liner top 5072' Drilled Lateral		Horz Inc/TVD 90.4deg/4378.6ft TD = 9418.9 MD
MWD Gamma Directional							4 1/2" 11.6ppf SB80 LTC TOC @ hanger (50% OH excess) Stage 1 Total: 293sks Stage 1 Blend: 293 sks Premium Lite High Strength FM + 0.7% bwoc R-3 + 3% bwoc Potassium Chloride + 0.25lbs/sack Cello Flake + 0.5% bwoc CD-32 + 1.15% bwoc FL- 52A + 60 lbs/sack Calcium Carbonate + 124.4% Fresh Water. Yield 2.63 cuft/sk.	WBM 8.3-10	

NOTES:

- 1) Drill with 26" bit to 60', set 16" 42.09ppf conductor pipe
- 2) Drill surface to 500', R&C 9 5/8" casing
- 3) N/U BOP and surface equipment
- 4) Drill to KOP of 3618', 8 3/4 inch holesize
- 5) Start curve at 10deg/100' build rate
- 6) Drill to csg point of 4347' MD
- 7) R&C 7" csg, circ cmt to surface
- 8) Land at ~90 deg, drill lateral to 9419' run 4 1/2 inch cemented liner

ENCANA OIL & GAS (USA) INC.

LYBROOK E15-2208 #02H

1935' FNL & 405' FWL

LOCATED IN THE SW/4 NW/4 OF SECTION 15,

T22N, R8W, N.M.P.M.,

SAN JUAN COUNTY, NEW MEXICO

DIRECTIONS

- 1) FROM THE INTERSECTION OF HWY 64 & HWY 550 IN BLOOMFIELD, GO SOUTH ON HWY 550, 39.0 MILES TO INDIAN ROUTE 7061 (M.P. 112.6).
- 2) TURN RIGHT AND GO 7.7 MILES TO WHERE ACCESS IS STAKED.

WELL FLAG LOCATED AT LAT. 36.141643° N, LONG. 107.676866° W (NAD 83).



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 Conditions of Approval
(C-101 Application for permit to drill)**

- ☒ Notify Aztec OCD 24hrs prior to casing & cement.
- ☒ Hold C-104 for directional survey & "As Drilled" Plat
- ☒ Hold C-104 for NSL, NSP, DHC
- ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- ☐ 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
- ☐ 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.