

10/18/2018

OCD Permitting

Form C-101
August 1, 2011

Permit 258816

District I1625 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 Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170**District IV**1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural
Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

NMOCD**OCT 19 2018****DISTRICT III****APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

1. Operator Name and Address HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002		2. OGRID Number 372171
4. Property Code 322774		3. API Number 30-045-35902
5. Property Name STATE COM 601		6. Well No. 002H

7. Surface Location

UL - Lot G	Section 36	Township 32N	Range 13W	Lot Idn	Feet From 1845	N/S Line N	Feet From 2217	E/W Line E	County SAN JUAN
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8. Proposed Bottom Hole Location

UL - Lot I	Section 31	Township 32N	Range 12W	Lot Idn I	Feet From 1934	N/S Line S	Feet From 283	E/W Line E	County San Juan
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9. Pool Information

BASIN MANCOS	97232
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Additional Well Information

11. Work Type New Well	12. Well Type GAS	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 5819
16. Multiple N	17. Proposed Depth 13067' MD / 6099' TVD	18. Formation Mancos Formation	19. Contractor	20. Spud Date
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ 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
Surf	17.5	13.375	54.5	340	432	0
Int1	12.25	9.625	40	5006	1167	0
Liner1	8.5	5.5	20	13067	1780	

Casing/Cement Program: Additional Comments

Setting depths are in TMDs.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	3000	3000	SCHAFFER

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
 I further certify I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☐, if applicable.

Signature: *Amanda Walker*
 Printed Name: Amanda Walker
 Title: Operations / Regulatory Tech Sr.
 Email Address: mwalker@hilcorp.com
 Date: 10/18/2018

Phone: 505-324-5122

OIL CONSERVATION DIVISION

Approved By:

Title: SUPERVISOR DISTRICT #3

Approved Date: 10-30-18

Expiration Date: 10-30-2020

Conditions of Approval Attached

SEE ATTACHED NMOCD
CONDITIONS OF APPROVAL

Hilcorp Energy Company

Technical Plan

1. Location

STATE COM 601 2H
SHL: 1845' FNL, 2217' FEL -- T 32N, R 13W, Sec 36
BHL: 1934' FSL, 283' FEL -- T 32N, R 12W, Sec 31
GL: 5819'

2. Geological Markers

Anticipated formation tops with comments of any possible water, gas, or oil shows are indicated below:

Formation	Depth (TVD)	Remarks
San Jose	Surface	Wet
Ojo Alamo	725'	Wet
Kirtland	860'	Wet
Fruitland	1298'	Possible Gas/Water
Pictured Cliffs	2055'	Wet
Lewis Shale	2088'	
Massive Cliffhouse	3669'	Possible Gas/Water
Menefee	3931'	Possible Gas/Water
Point Lookout	4509'	Possible Gas/Water
Mancos	4973'	Oil/Gas
Mancos Lateral Target	6065'	Oil/Gas

See attached directional plan for anticipated formation tops in measured depth.

3. Pressure Control Equipment

See Attached BOPE & Choke Manifold Schematic for a diagram of pressure control equipment.

- BOPE will be nipped up on top of wellhead after surface casing is set and cemented.
- Pressure control configuration will be designed to meet and exceed 5M standards.
- All equipment will have 5M pressure ratings.
- A rotating head will be rigged up on top of annular as seen in attached diagram.

4. Casing & Cement Program

A) The proposed casing program is outlined below:

Proposed Casing				
Casing	Hole Size	Casing Size	Weight/Grade	Depth
Surface	17-1/2"	13-3/8"	54.5#, J-55, BTC, New	0' - 340' (MD)
Intermediate	12-1/4"	9-5/8"	40.0#, P-110 IC, LTC, New	0' - 5006' (MD)
Production	8-1/2"	5-1/2"	20.0#, P-110, BTC, New	0' - 13067' (MD)

The production casing will be run from total MD to surface. If the 8-1/2" hole is not drilled to total MD, the production casing setting depth and length will be adjusted accordingly. A toe initiation sliding sleeve will be installed at the toe of the production casing.

B) The proposed cement program is shown below:

Cement Program						
Interval	Depth (MD)	Sacks	Slurry	Excess	Volume	Planned Cement Top
Surface	340'	432	Lead Cmt: Premium Cement 2% CaCl, 0.125 lb/sk Poley E flake 1.175 ft ³ /sk -- 5.14 gal/sk, 15.8 ppg	100%	507 ft ³	Surface
Intermediate	4000'	839	Lead Cmt: Halcem Sytem 0.3% HR-5, 0.125 lb/sk Poly E flake, 1.974 ft ³ /sk -- 10.28 gal/sk, 12.3 ppg	30%	1656 ft ³	Surface
	5006'	328	Tail Cmt: Varicem Cement 0.1% HR-5, 0.125 lb/sk Poly E flake, 1.295 ft ³ /sk -- 5.69 gal/sk, 13.5 ppg	30%	328 ft ³	4000'
Production	13067'	1780	Tail Cmt: Bondcem 0.3% Super CBL, 0.1% HR -601, 6.08 gal/sk FW. 13.3 ppg, 1.36 ft ³ /sk	10%	2430 ft ³	4000 Per MD 5000'

Actual cement volumes will be determined and may be adjusted onsite based on well conditions. For the intermediate hole, a 2-stage cement job may be performed if hole conditions indicate during operations. Stage tool will be placed appropriately as conditions indicate.

C) The proposed centralizer program is shown below:

Centralizer Program	
Interval	Centralizers
Surface	1 per joint on bottom 3 joints
Intermediate	1 above intermediate shoe joint with collar clamp 1 every 3 rd joint to surface
Production	1 per joint in horizontal section of production interval 1 every 3 rd joint in vertical section of production interval

To allow adequate time for cement to achieve a minimum of 500 psi compressive strength, a minimum of 8 hours wait on cement time for each hole section will be observed. The wellhead will not be installed, casing will not be tested, and the prior casing shoe will not be drilled out until adequate wait on cement time is achieved.

5. Drilling Fluids

A) The proposed drilling fluid program is outlined below:

Mud Program					
Interval	Mud Type	Weight (ppg)	Fluid Loss (cc)	Invert Ratio (Diesel/Brine)	Depth (MD)
Surface	Water / Gel System	8.3 - 9.2	NC		0-400'
Intermediate	LSND / Gel system	8.4 - 9	<6		400 – 5006'
Production	Oil Based Mud	10 - 12	6-8	70/30 – 75/25	5006 – TD'

Oil based mud will be an Invert Mud. Base fluid will be diesel. Brine fluid will be CaCl or KCl.

LCM may be added to the mud system if hole conditions indicate.

- ✓ B) Closed loop equipment will be utilized for solids control. Cuttings from surface, intermediate, and production hole will be hauled to an approved disposal site.

6. Abnormal Pressures & Hazards

- No over-pressured intervals expected.
- Estimated Reservoir Pressure = 1575 psi. (Based on a pore pressure gradient of 0.26 psi/ft from layer pressure tests of Mancos formation in offset well)
- There is some offset Fruitland Coal, Mesa Verde, and Picture Cliffs production within the area which could result in these respective formations being under pressured.
- No hydrogen sulfide gas is expected based on nearby well production.

7. Testing, Logging, Coring

- Mud Logs: Mud loggers will be rigged up from KOP to production hole TD.
- MWD: Directional tools from KOP to production hole TD.
- LWD: Gamma Ray will be utilized in production hole for well placement.
- Cased Hole Logs: A Temp Survey or CBL will be ran on the intermediate hole if cement is not circulated to surface during intermediate cement job.

8. Directional Plan

The planned wellbore directional plan and plot is attached.

The planned directional plan is built off geological targets from offset wells. The production hole will be landed and drilled within target formation horizontally utilizing LWD equipment to help steer the wellbore. On site adjustments will be made to the directional plan as formation and hole indicates.

9. Completion

a) Pressure Test

- Pressure test 5-1/2" production casing to allowable frac pressure. Hold test for 30 minutes. Cycle pressure to activate toe sleeve

b) Stimulation

- Stimulate with approximately 10,000,000 pounds of proppant in 200,000 bbls of water; the number of stages and amount of proppant will be adjusted based on real-time pumping conditions during the stimulation
- Stages will be perforated using wireline and isolated using frac plugs
- Plugs will be drilled out and stimulation fluid will be flowed back

c) Running Tubing

- Production tubing will be run and landed at the top of the horizontal section of the well



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Site: State Com 601 Pad
Well: State Com 601 2H
Wellbore: OH
Design: Plan #1

PROJECT DETAILS: San Juan, NM NAD27

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico West 3003
System Datum: Mean Sea Level
Local North: True



Scientific Drilling

WELL DETAILS: State Com 601 2H

GL 5819' & RKB 16.5' @ 5835.50usft (PD 829)
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 2163543.33 406668.89 36.9453860 -108.1527150 B03

Plan: Plan #1 (State Com 601 2H/OH)

Created By: Janie Collins Date: 10:28, October 17 2018



Azimuths to True North
Magnetic North: 9.00°

Magnetic Field
Strength: 49887.9snT
Dip Angle: 63.40°
Date: 9/6/2018
Model: HDGM

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
State Com 601-2H LP	6065.00	-1550.54	850.00	2161989.95	407513.69	36.9411270	-108.1498065
State Com 601-2H BHL	6099.00	-1823.03	7229.00	2161696.08	413891.74	36.9403759	-108.1279790

SECTION DETAILS

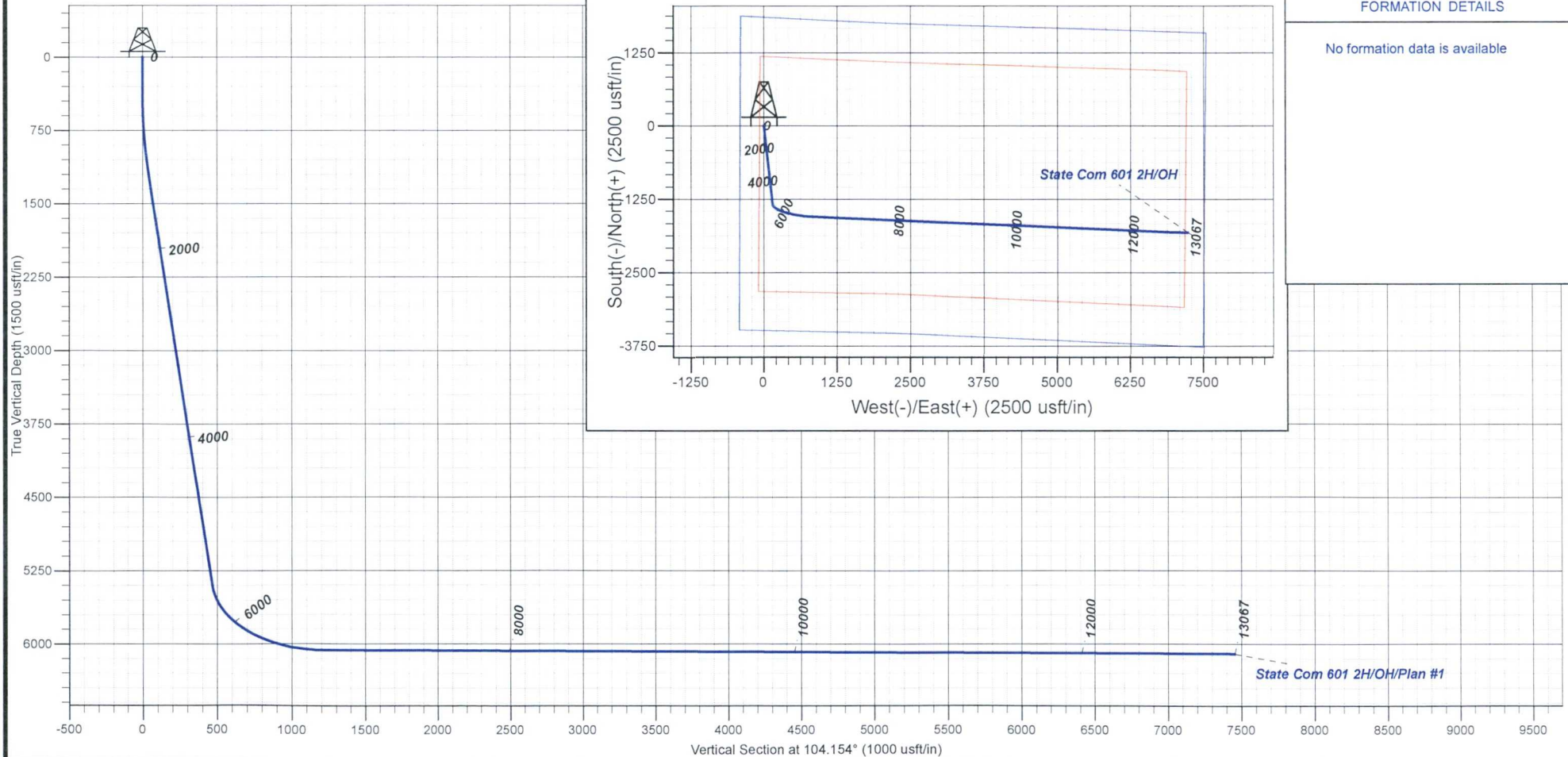
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	
1212.33	16.25	173.707	1201.49	-113.71	12.54	2.00	173.71	39.96	
5591.48	16.25	173.707	5405.76	-1331.49	146.82	0.00	0.00	467.95	
6682.37	89.69	92.446	6065.00	-1550.54	850.00	8.00	-81.69	1203.34	State Com 601-2H LP
13067.27	89.69	92.446	6099.00	-1823.03	7229.00	0.00	0.00	7455.33	State Com 601-2H BHL

CASING DETAILS

No casing data is available

FORMATION DETAILS

No formation data is available





Hilcorp Energy Corp.

San Juan, NM NAD27

State Com 601 Pad

State Com 601 2H - Slot B03

OH

Plan: Plan #1

Standard Planning Report

17 October, 2018



www.scientificdrilling.com



Scientific Drilling, Intl
Planning Report



Database:	Grand Junction District	Local Co-ordinate Reference:	Well State Com 601 2H - Slot B03
Company:	Hilcorp Energy Corp.	TVD Reference:	GL 5819' & RKB 16.5' @ 5835.50usft (PD 829)
Project:	San Juan, NM NAD27	MD Reference:	GL 5819' & RKB 16.5' @ 5835.50usft (PD 829)
Site:	State Com 601 Pad	North Reference:	True
Well:	State Com 601 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	San Juan, NM NAD27		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		

Site		State Com 601 Pad			
Site Position:		Northing:	2,163,499.73 usft	Latitude:	36.9452660
From:	Lat/Long	Easting:	406,641.28 usft	Longitude:	-108.1528090
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-0.19 °

Well	State Com 601 2H - Slot B03					
Well Position	+N/-S	43.69 usft	Northing:	2,163,543.33 usft	Latitude:	36.9453860
	+E/-W	27.47 usft	Easting:	406,668.89 usft	Longitude:	-108.1527150
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,819.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/6/2018	9.00	63.40	49,888

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	104.154

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
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,212.33	16.25	173.707	1,201.49	-113.71	12.54	2.00	2.00	0.00	173.71	
5,591.48	16.25	173.707	5,405.76	-1,331.49	146.82	0.00	0.00	0.00	0.00	
6,682.37	89.69	92.446	6,065.00	-1,550.54	850.00	8.00	6.73	-7.45	-81.69	State Com 601-2H LF
13,067.27	89.69	92.446	6,099.00	-1,823.04	7,229.00	0.00	0.00	0.00	0.00	State Com 601-2H Bf



Scientific Drilling, Intl

Planning Report



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Company:	Hilcorp Energy Corp.	TVD Reference:	GL 5819' & RKB 16.5' @ 5835.50usft (PD 829)
Project:	San Juan, NM NAD27	MD Reference:	GL 5819' & RKB 16.5' @ 5835.50usft (PD 829)
Site:	State Com 601 Pad	North Reference:	True
Well:	State Com 601 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
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)
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	2.00	173.707	499.98	-1.73	0.19	0.61	2.00	2.00	0.00
600.00	4.00	173.707	599.84	-6.94	0.76	2.44	2.00	2.00	0.00
700.00	6.00	173.707	699.45	-15.60	1.72	5.48	2.00	2.00	0.00
800.00	8.00	173.707	798.70	-27.71	3.06	9.74	2.00	2.00	0.00
900.00	10.00	173.707	897.47	-43.26	4.77	15.20	2.00	2.00	0.00
1,000.00	12.00	173.707	995.62	-62.23	6.86	21.87	2.00	2.00	0.00
1,100.00	14.00	173.707	1,093.06	-84.58	9.33	29.73	2.00	2.00	0.00
1,200.00	16.00	173.707	1,189.64	-110.31	12.16	38.77	2.00	2.00	0.00
1,212.33	16.25	173.707	1,201.49	-113.71	12.54	39.96	2.00	2.00	0.00
1,300.00	16.25	173.707	1,285.66	-138.09	15.23	48.53	0.00	0.00	0.00
1,400.00	16.25	173.707	1,381.66	-165.90	18.29	58.31	0.00	0.00	0.00
1,500.00	16.25	173.707	1,477.67	-193.71	21.36	68.08	0.00	0.00	0.00
1,600.00	16.25	173.707	1,573.68	-221.52	24.43	77.85	0.00	0.00	0.00
1,700.00	16.25	173.707	1,669.68	-249.33	27.49	87.63	0.00	0.00	0.00
1,800.00	16.25	173.707	1,765.69	-277.13	30.56	97.40	0.00	0.00	0.00
1,900.00	16.25	173.707	1,861.70	-304.94	33.63	107.17	0.00	0.00	0.00
2,000.00	16.25	173.707	1,957.70	-332.75	36.69	116.95	0.00	0.00	0.00
2,100.00	16.25	173.707	2,053.71	-360.56	39.76	126.72	0.00	0.00	0.00
2,200.00	16.25	173.707	2,149.72	-388.37	42.83	136.49	0.00	0.00	0.00
2,300.00	16.25	173.707	2,245.72	-416.18	45.89	146.27	0.00	0.00	0.00
2,400.00	16.25	173.707	2,341.73	-443.99	48.96	156.04	0.00	0.00	0.00
2,500.00	16.25	173.707	2,437.74	-471.80	52.02	165.81	0.00	0.00	0.00
2,600.00	16.25	173.707	2,533.74	-499.60	55.09	175.59	0.00	0.00	0.00
2,700.00	16.25	173.707	2,629.75	-527.41	58.16	185.36	0.00	0.00	0.00
2,800.00	16.25	173.707	2,725.76	-555.22	61.22	195.13	0.00	0.00	0.00
2,900.00	16.25	173.707	2,821.76	-583.03	64.29	204.91	0.00	0.00	0.00
3,000.00	16.25	173.707	2,917.77	-610.84	67.36	214.68	0.00	0.00	0.00
3,100.00	16.25	173.707	3,013.78	-638.65	70.42	224.45	0.00	0.00	0.00
3,200.00	16.25	173.707	3,109.78	-666.46	73.49	234.23	0.00	0.00	0.00
3,300.00	16.25	173.707	3,205.79	-694.26	76.56	244.00	0.00	0.00	0.00
3,400.00	16.25	173.707	3,301.80	-722.07	79.62	253.77	0.00	0.00	0.00
3,500.00	16.25	173.707	3,397.80	-749.88	82.69	263.55	0.00	0.00	0.00
3,600.00	16.25	173.707	3,493.81	-777.69	85.76	273.32	0.00	0.00	0.00
3,700.00	16.25	173.707	3,589.82	-805.50	88.82	283.09	0.00	0.00	0.00
3,800.00	16.25	173.707	3,685.82	-833.31	91.89	292.87	0.00	0.00	0.00
3,900.00	16.25	173.707	3,781.83	-861.12	94.95	302.64	0.00	0.00	0.00
4,000.00	16.25	173.707	3,877.84	-888.93	98.02	312.41	0.00	0.00	0.00
4,100.00	16.25	173.707	3,973.84	-916.73	101.09	322.19	0.00	0.00	0.00
4,200.00	16.25	173.707	4,069.85	-944.54	104.15	331.96	0.00	0.00	0.00
4,300.00	16.25	173.707	4,165.86	-972.35	107.22	341.73	0.00	0.00	0.00
4,400.00	16.25	173.707	4,261.86	-1,000.16	110.29	351.51	0.00	0.00	0.00
4,500.00	16.25	173.707	4,357.87	-1,027.97	113.35	361.28	0.00	0.00	0.00
4,600.00	16.25	173.707	4,453.88	-1,055.78	116.42	371.05	0.00	0.00	0.00
4,700.00	16.25	173.707	4,549.88	-1,083.59	119.49	380.83	0.00	0.00	0.00
4,800.00	16.25	173.707	4,645.89	-1,111.39	122.55	390.60	0.00	0.00	0.00
4,900.00	16.25	173.707	4,741.90	-1,139.20	125.62	400.37	0.00	0.00	0.00
5,000.00	16.25	173.707	4,837.90	-1,167.01	128.69	410.15	0.00	0.00	0.00



Scientific Drilling, Intl

Planning Report



Database:	Grand Junction District	Local Co-ordinate Reference:	Well State Com 601 2H - Slot B03
Company:	Hilcorp Energy Corp.	TVD Reference:	GL 5819' & RKB 16.5' @ 5835.50usft (PD 829)
Project:	San Juan, NM NAD27	MD Reference:	GL 5819' & RKB 16.5' @ 5835.50usft (PD 829)
Site:	State Com 601 Pad	North Reference:	True
Well:	State Com 601 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
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)
5,100.00	16.25	173.707	4,933.91	-1,194.82	131.75	419.92	0.00	0.00	0.00
5,200.00	16.25	173.707	5,029.92	-1,222.63	134.82	429.69	0.00	0.00	0.00
5,300.00	16.25	173.707	5,125.92	-1,250.44	137.89	439.47	0.00	0.00	0.00
5,400.00	16.25	173.707	5,221.93	-1,278.25	140.95	449.24	0.00	0.00	0.00
5,500.00	16.25	173.707	5,317.94	-1,306.05	144.02	459.01	0.00	0.00	0.00
5,591.48	16.25	173.707	5,405.76	-1,331.49	146.82	467.95	0.00	0.00	0.00
5,600.00	16.36	171.313	5,413.94	-1,333.86	147.14	468.84	8.00	1.32	-28.11
5,700.00	19.44	147.050	5,509.22	-1,361.80	158.33	486.52	8.00	3.09	-24.26
5,800.00	24.76	131.009	5,601.92	-1,389.55	183.23	517.45	8.00	5.32	-16.04
5,900.00	31.19	120.778	5,690.24	-1,416.59	221.34	561.02	8.00	6.43	-10.23
6,000.00	38.16	113.862	5,772.46	-1,442.38	271.92	616.37	8.00	6.98	-6.92
6,100.00	45.44	108.842	5,846.98	-1,466.42	334.00	682.44	8.00	7.27	-5.02
6,200.00	52.88	104.953	5,912.35	-1,488.25	406.35	757.93	8.00	7.44	-3.89
6,300.00	60.42	101.768	5,967.29	-1,507.44	487.57	841.37	8.00	7.55	-3.18
6,400.00	68.04	99.030	6,010.74	-1,523.61	576.08	931.15	8.00	7.61	-2.74
6,500.00	75.69	96.573	6,041.85	-1,536.45	670.16	1,025.52	8.00	7.65	-2.46
6,600.00	83.36	94.279	6,060.02	-1,545.72	767.97	1,122.63	8.00	7.68	-2.29
6,682.37	89.69	92.446	6,065.00	-1,550.54	850.00	1,203.34	8.00	7.69	-2.23
6,700.00	89.69	92.446	6,065.09	-1,551.29	867.62	1,220.61	0.00	0.00	0.00
6,800.00	89.69	92.446	6,065.63	-1,555.56	967.53	1,318.53	0.00	0.00	0.00
6,900.00	89.69	92.446	6,066.16	-1,559.82	1,067.43	1,416.45	0.00	0.00	0.00
7,000.00	89.69	92.446	6,066.69	-1,564.09	1,167.34	1,514.37	0.00	0.00	0.00
7,100.00	89.69	92.446	6,067.22	-1,568.36	1,267.25	1,612.28	0.00	0.00	0.00
7,200.00	89.69	92.446	6,067.76	-1,572.63	1,367.16	1,710.20	0.00	0.00	0.00
7,300.00	89.69	92.446	6,068.29	-1,576.89	1,467.06	1,808.12	0.00	0.00	0.00
7,400.00	89.69	92.446	6,068.82	-1,581.16	1,566.97	1,906.04	0.00	0.00	0.00
7,500.00	89.69	92.446	6,069.35	-1,585.43	1,666.88	2,003.96	0.00	0.00	0.00
7,600.00	89.69	92.446	6,069.89	-1,589.70	1,766.79	2,101.88	0.00	0.00	0.00
7,700.00	89.69	92.446	6,070.42	-1,593.97	1,866.69	2,199.79	0.00	0.00	0.00
7,800.00	89.69	92.446	6,070.95	-1,598.23	1,966.60	2,297.71	0.00	0.00	0.00
7,900.00	89.69	92.446	6,071.48	-1,602.50	2,066.51	2,395.63	0.00	0.00	0.00
8,000.00	89.69	92.446	6,072.02	-1,606.77	2,166.42	2,493.55	0.00	0.00	0.00
8,100.00	89.69	92.446	6,072.55	-1,611.04	2,266.32	2,591.47	0.00	0.00	0.00
8,200.00	89.69	92.446	6,073.08	-1,615.31	2,366.23	2,689.38	0.00	0.00	0.00
8,300.00	89.69	92.446	6,073.61	-1,619.57	2,466.14	2,787.30	0.00	0.00	0.00
8,400.00	89.69	92.446	6,074.15	-1,623.84	2,566.05	2,885.22	0.00	0.00	0.00
8,500.00	89.69	92.446	6,074.68	-1,628.11	2,665.95	2,983.14	0.00	0.00	0.00
8,600.00	89.69	92.446	6,075.21	-1,632.38	2,765.86	3,081.06	0.00	0.00	0.00
8,700.00	89.69	92.446	6,075.74	-1,636.65	2,865.77	3,178.97	0.00	0.00	0.00
8,800.00	89.69	92.446	6,076.28	-1,640.91	2,965.68	3,276.89	0.00	0.00	0.00
8,900.00	89.69	92.446	6,076.81	-1,645.18	3,065.58	3,374.81	0.00	0.00	0.00
9,000.00	89.69	92.446	6,077.34	-1,649.45	3,165.49	3,472.73	0.00	0.00	0.00
9,100.00	89.69	92.446	6,077.87	-1,653.72	3,265.40	3,570.65	0.00	0.00	0.00
9,200.00	89.69	92.446	6,078.41	-1,657.98	3,365.30	3,668.57	0.00	0.00	0.00
9,300.00	89.69	92.446	6,078.94	-1,662.25	3,465.21	3,766.48	0.00	0.00	0.00
9,400.00	89.69	92.446	6,079.47	-1,666.52	3,565.12	3,864.40	0.00	0.00	0.00
9,500.00	89.69	92.446	6,080.00	-1,670.79	3,665.03	3,962.32	0.00	0.00	0.00
9,600.00	89.69	92.446	6,080.54	-1,675.06	3,764.93	4,060.24	0.00	0.00	0.00
9,700.00	89.69	92.446	6,081.07	-1,679.32	3,864.84	4,158.16	0.00	0.00	0.00
9,800.00	89.69	92.446	6,081.60	-1,683.59	3,964.75	4,256.07	0.00	0.00	0.00
9,900.00	89.69	92.446	6,082.13	-1,687.86	4,064.66	4,353.99	0.00	0.00	0.00
10,000.00	89.69	92.446	6,082.67	-1,692.13	4,164.56	4,451.91	0.00	0.00	0.00



Scientific Drilling, Intl
Planning Report



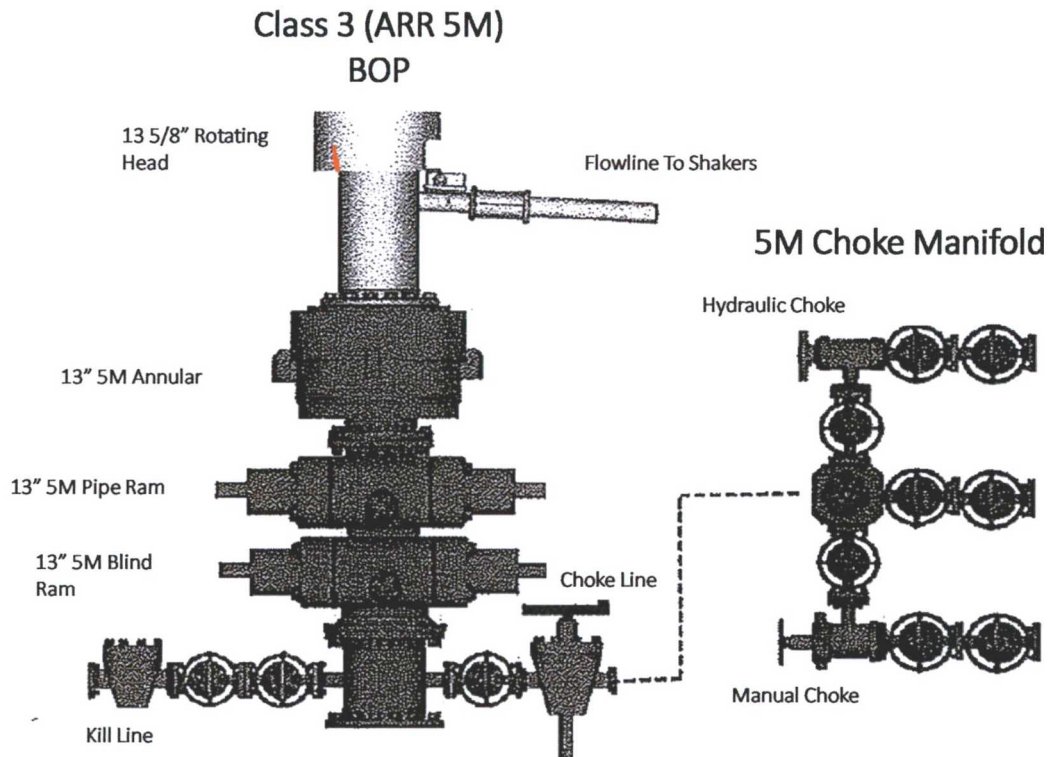
Database:	Grand Junction District	Local Co-ordinate Reference:	Well State Com 601 2H - Slot B03
Company:	Hilcorp Energy Corp.	TVD Reference:	GL 5819' & RKB 16.5' @ 5835.50usft (PD 829)
Project:	San Juan, NM NAD27	MD Reference:	GL 5819' & RKB 16.5' @ 5835.50usft (PD 829)
Site:	State Com 601 Pad	North Reference:	True
Well:	State Com 601 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
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)
10,100.00	89.69	92.446	6,083.20	-1,696.40	4,264.47	4,549.83	0.00	0.00	0.00
10,200.00	89.69	92.446	6,083.73	-1,700.66	4,364.38	4,647.75	0.00	0.00	0.00
10,300.00	89.69	92.446	6,084.26	-1,704.93	4,464.29	4,745.66	0.00	0.00	0.00
10,400.00	89.69	92.446	6,084.80	-1,709.20	4,564.19	4,843.58	0.00	0.00	0.00
10,500.00	89.69	92.446	6,085.33	-1,713.47	4,664.10	4,941.50	0.00	0.00	0.00
10,600.00	89.69	92.446	6,085.86	-1,717.73	4,764.01	5,039.42	0.00	0.00	0.00
10,700.00	89.69	92.446	6,086.39	-1,722.00	4,863.92	5,137.34	0.00	0.00	0.00
10,800.00	89.69	92.446	6,086.93	-1,726.27	4,963.82	5,235.26	0.00	0.00	0.00
10,900.00	89.69	92.446	6,087.46	-1,730.54	5,063.73	5,333.17	0.00	0.00	0.00
11,000.00	89.69	92.446	6,087.99	-1,734.81	5,163.64	5,431.09	0.00	0.00	0.00
11,100.00	89.69	92.446	6,088.52	-1,739.07	5,263.55	5,529.01	0.00	0.00	0.00
11,200.00	89.69	92.446	6,089.06	-1,743.34	5,363.45	5,626.93	0.00	0.00	0.00
11,300.00	89.69	92.446	6,089.59	-1,747.61	5,463.36	5,724.85	0.00	0.00	0.00
11,400.00	89.69	92.446	6,090.12	-1,751.88	5,563.27	5,822.76	0.00	0.00	0.00
11,500.00	89.69	92.446	6,090.65	-1,756.15	5,663.18	5,920.68	0.00	0.00	0.00
11,600.00	89.69	92.446	6,091.19	-1,760.41	5,763.08	6,018.60	0.00	0.00	0.00
11,700.00	89.69	92.446	6,091.72	-1,764.68	5,862.99	6,116.52	0.00	0.00	0.00
11,800.00	89.69	92.446	6,092.25	-1,768.95	5,962.90	6,214.44	0.00	0.00	0.00
11,900.00	89.69	92.446	6,092.78	-1,773.22	6,062.81	6,312.35	0.00	0.00	0.00
12,000.00	89.69	92.446	6,093.32	-1,777.49	6,162.71	6,410.27	0.00	0.00	0.00
12,100.00	89.69	92.446	6,093.85	-1,781.75	6,262.62	6,508.19	0.00	0.00	0.00
12,200.00	89.69	92.446	6,094.38	-1,786.02	6,362.53	6,606.11	0.00	0.00	0.00
12,300.00	89.69	92.446	6,094.91	-1,790.29	6,462.44	6,704.03	0.00	0.00	0.00
12,400.00	89.69	92.446	6,095.45	-1,794.56	6,562.34	6,801.95	0.00	0.00	0.00
12,500.00	89.69	92.446	6,095.98	-1,798.82	6,662.25	6,899.86	0.00	0.00	0.00
12,600.00	89.69	92.446	6,096.51	-1,803.09	6,762.16	6,997.78	0.00	0.00	0.00
12,700.00	89.69	92.446	6,097.04	-1,807.36	6,862.07	7,095.70	0.00	0.00	0.00
12,800.00	89.69	92.446	6,097.58	-1,811.63	6,961.97	7,193.62	0.00	0.00	0.00
12,900.00	89.69	92.446	6,098.11	-1,815.90	7,061.88	7,291.54	0.00	0.00	0.00
13,000.00	89.69	92.446	6,098.64	-1,820.16	7,161.79	7,389.45	0.00	0.00	0.00
13,067.27	89.69	92.446	6,099.00	-1,823.04	7,229.00	7,455.33	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
- hit/miss target									
- Shape									
State Com 601-2H LP	0.00	0.000	6,065.00	-1,550.54	850.00	2,161,989.95	407,513.69	36.9411269	-108.1498065
- plan hits target center									
- Point									
State Com 601-2H BHL	0.00	0.000	6,099.00	-1,823.04	7,229.00	2,161,696.08	413,891.74	36.9403759	-108.1279790
- plan hits target center									
- Point									

BOPE & Choke Manifold Schematic

13-5/8" BOPE



Directions from the Intersection of State Hwy 516 & State Hwy 574
in Aztec, NM to Hilcorp Energy Company State Com 601 #2H Wellpad & Frac Pad
1845' FNL & 2217' FEL, Section 36, T32N, R13W, N.M.P.M., San Juan County, NM

Latitude: 36.945387°N Longitude: 108.153346°W Datum: NAD1983

From the intersection of State Hwy 516 & State Hwy 574 in Aztec, NM, travel northerly on State Hwy 574 for 11.6 miles to Mile Marker 2.4;

Go Right (Northerly) exiting State Hwy 574 onto existing roadway for 0.3 mile to fork in roadway;

Go Right (Northerly) which is straight on existing roadway for 0.2 mile to fork in roadway;

Go Left (Northerly) which is straight on existing roadway for 0.7 mile to fork in roadway;

Go Left (Westerly) on existing roadway for 255' to fork in roadway;

Go Right (Northerly) on existing roadway for 0.2 mile to gate on fence-line proceed through gate for an additional 50' to staked Hilcorp State Com 601 #2H Wellpad & Frac Pad.

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Ken McQueen
Cabinet Secretary

Matthias Sayer
Deputy Cabinet Secretary

Heather Riley, Division Director
Oil Conservation Division



New Mexico Oil Conservation Division Conditions of Approval
C-101 Application for Permit to Drill

Operator Signature Date: 10/18/15

Well information;

Operator Hilcorp, Well Name and Number State Com 6012+1

API# 30-045-35902, Section 36, Township 32 N, Range 13 E W

Conditions of Approval: (See the below checked and handwritten conditions)

- ☒ 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
 - ☐ Submit Gas Capture Plan form prior to spudding or initiating recompletion operations
- ☒ 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.