RECEIVED

MAY 17 2018

Farmington Field Office
Bureau of Land Management

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

5. Lease Serial No. **SF-078047**

6. If Indian, Allottee or Tribe Name

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2.

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

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No. **Palluche HZMC 1H**

2. Name of Operator **Hilcorp Energy Company**

9. API Well No. **30-039-31138**

3a. Address **382 Road 3100, Aztec NM 87410**

3b. Phone No. (include area code) **505-599-3400**

10. Field and Pool or Exploratory Area **Basin Mancos**

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
Surface Unit B (NWNE), 1042' FNL & 2088' FEL, Sec. 35, T26N, R7W
Bottomhole Unit E (SWNW), 1769' FNL & 660' FWL, Sec. 34, T26N, R7W

11. Country or Parish, State **Rio Arriba , New Mexico**

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other **Updated BH & Technical Plan**
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ 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 recomplete 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 recompletion 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.)

Hilcorp Energy Company is requesting to change the BH location and the technical plan for the subject well. Attached is updated C-102, Technical Plan, BOP/Choke Manifold diagram, Wellbore directional plan and plot.

NMOCD
MAY 25 2018
DISTRICT III

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*
Kandis Roland Title **Operations/Regulatory Technician - Sr.**

Signature Kandis Roland Date **5/17/2018**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by Title PE Date 5/24/18

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 FFO

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.

(Instruction on page 2)

NMOCD

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DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 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
Energy, Minerals & Natural Resources Department

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

Form C-102
Revised August 1, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-039-31138	97232	BASIN MANCOS

[4] Property Code	[5] Property Name	[6] Well Number
39559	PALLUCHE HZMC	1H

[7] OGRID No.	[8] Operator Name	[9] Elevation
372171	HILCORP ENERGY CORP	6925'

[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
B	35	26N	7W		1042'	NORTH	2088'	EAST	RIO ARRIBA

[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	34	26N	7W		1769'	NORTH	660'	WEST	RIO ARRIBA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
PROJECT AREA 640.00 ACRES SEC. 35 640.00 ACRES SEC. 34			R-13499

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

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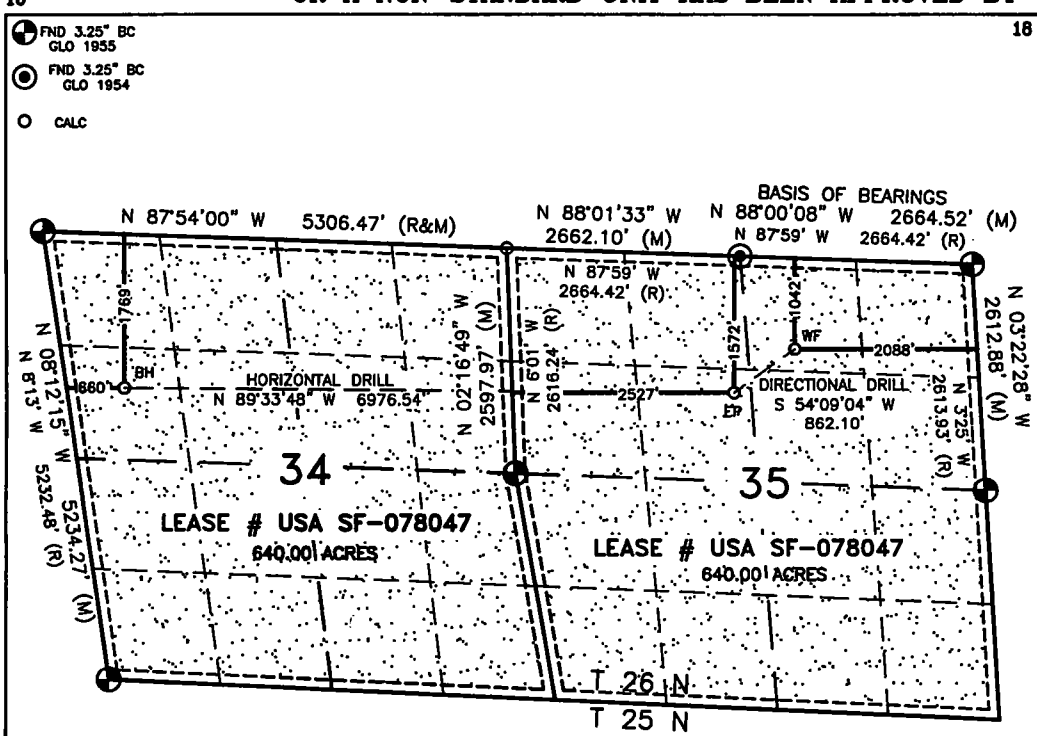

BOTTOM HOLE	ENTRY POINT	WELL FLAG
LAT. 36.446004° N (NAD83)	LAT. 36.445803° N (NAD83)	LAT. 36.447184° N (NAD83)
LONG. 107.569060° W (NAD83)	LONG. 107.545341° W (NAD83)	LONG. 107.542960° W (NAD83)
LAT. 36.445993° N (NAD27)	LAT. 36.445792° N (NAD27)	LAT. 36.447173° N (NAD27)
LONG. 107.568453° W (NAD27)	LONG. 107.544734° W (NAD27)	LONG. 107.542354° W (NAD27)

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[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.

Kandis Roland 5/17/18
Signature Date

Kandis Roland
Printed Name

kroland@hilcorp.com
E-mail Address

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.

MAY 8, 2018
Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number 11393

Hilcorp Energy Company

Technical Plan

1. Location

PALLUCHE HZMC 1H
SHL: 1042' FNL, 2088' FEL -- T 26N, R 7W, Sec 35
BHL: 1769' FNL, 660' FWL -- T 26N, R 7W, Sec 34
GL: 6925'

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	
Nacimiento	1670'	
Ojo Alamo	2278'	Possible Water
Kirtland	2389'	
Fruitland	2608'	Possible Gas
Pictured Cliffs	2986'	
Huerfano Bentonite	3364'	
Chacra	3822'	
Massive Cliffhouse	4560'	
Menefee	4639'	
Point Lookout	5271'	Gas
Mancos	5975'	
Mancos Lateral Target	6682'	Oil/Gas
Greenhorn – Pilot Hole	7156'	
TD of Pilot Hole	7300'	

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 nippled up on top of wellhead after surface casing is set and cemented.
- Pressure control configuration will be designed to meet and exceed 2M standards.
- All equipment will have 3M 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 /TVD
Intermediate	12-1/4"	9-5/8"	40.0#, P-110, BTC, New	0' – 6021 MD/ 6000 TVD
Production	8-3/4"	5-1/2"	20.0#, P-110, BTC, New	0 - 13950 MD / 6639 TVD

The production casing will be run from total MD to surface. If the 8-3/4" 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 (TVD)**	**Volume**	**Slurry**	**Planned Cement Top**
Surface	340'	223 ft^3	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	Surface
Intermediate	6022'	1886 ft^3	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 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	Surface
Production	13950'	N/A	Lead Cmt: Halcem System 0.1% HR-5 1.953 ft^3/sk -- 10.39 gal/sk, 12.3 ppg Tail Cmt: Premium Cement 0.1% Halad (R) 344 1.147 ft^3/sk -- 4.98 gal/sk, 15.8 ppg	5000'

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 3rd joint to surface
Production	1 per joint in horizontal section of production interval 1 every 3rd 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)**
Surface	Water / Gel System	8.3 - 9.2	NC	
Intermediate	LSND / Gel system	8.4 – 10	<6	
Pilot Hole	Oil Based Mud	9-11	6-8	70/30 – 75/25
Production	Oil Based Mud	10-12	6-8	70/30 – 75/25

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 approved disposal site.

6. Abnormal Pressures & Hazards

- No over-pressured intervals expected.
- Estimated Reservoir Pressure = 2360 psi. (Based on a pore pressure gradient of 0.35 psi/ft from layer pressure tests of Mancos formation in offset well)
- There is some offset Fruitland Coal and Picture Cliffs production within the area which could result in these respective formations being under pressured. Well is located outside of Mesa Verde production intervals; no losses expected within the Lewis or Mesa Verde formations.
- No hydrogen sulfide gas is expected based on nearby well production.

7. Pilot Hole

- Pilot Hole will be drilled through Mancos Section from intermediate casing at 6022' to planned TD of 7300'.
- Whole core, sidewall cores, and Openhole logs are planned in the pilot hole section.
- After coring and Openhole logging have been completed, three cement plugs with viscous gel spacers will be pumped and the top of cement will be at ~6000'. Will utilize cement plugs to kick off and begin drilling production interval.

8. 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.
- Core: Whole Core and Sidewall Cores planned in Pilot Hole section of well
- Logs: Triple Combo, Dipole Sonic, and image log planned in the Pilot Hole Section of well
- 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.

9. 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.

10. 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

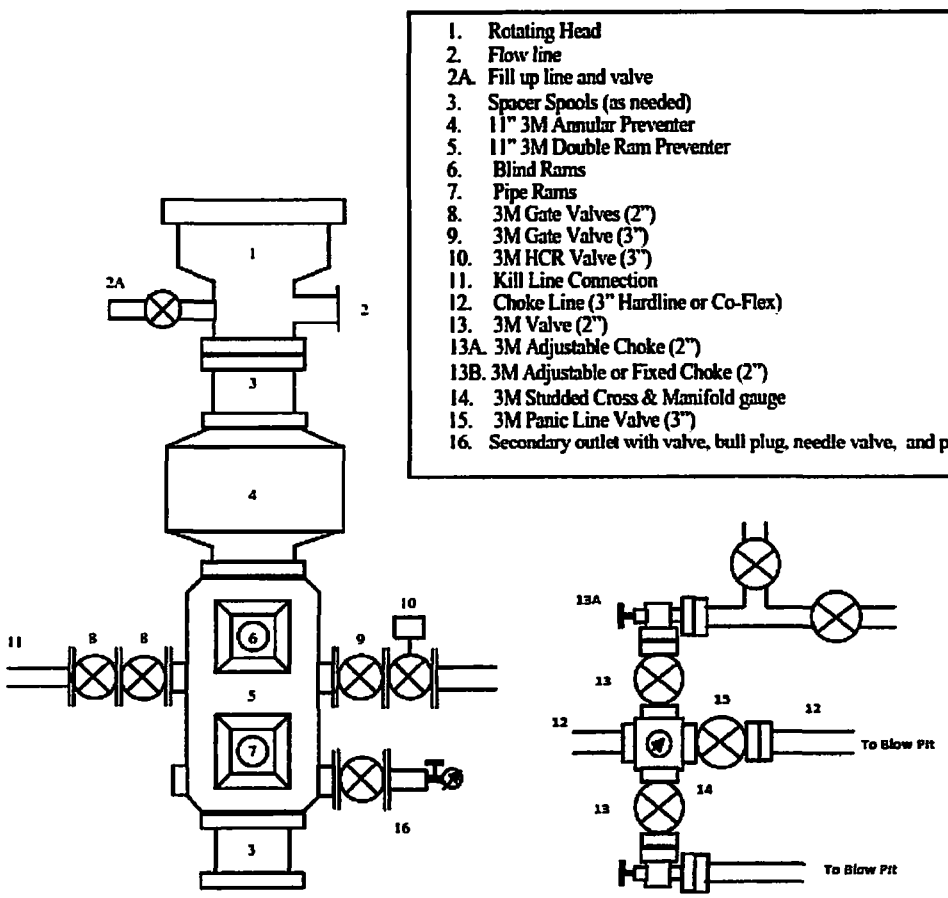
b) Stimulation

- Stimulate with approximately 11,250,000 pounds of proppant in 210,000 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

BOPE & Choke Manifold Schematic



Company: Hilcorp Energy Corp.
Project: Rio Arriba, NM NAD27
Site: Palluche
Well: Palluche HZMC 1H
Wellbore: OH
Design: Plan #6

PROJECT DETAILS: Rio Arriba, 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: Palluche HZMC 1H

GL 6925' @ 6925.00usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1982145.91	585581.66	36.4471730	-107.5423540

Plan: Plan #6 (Palluche HZMC 1H/OH)

Created By: Janie Collins Date: 9:23, May 15 2018

Azimuths to True North
Magnetic North: 8.87°

Magnetic Field
Strength: 49691.2snT
Dip Angle: 63.03°
Date: 4/10/2018
Model: HDGM

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Palluche 1H BHL	6639.00	-429.37	-7606.76	1981693.59	577976.23
Palluche 1H LP Rev	6682.00	-504.69	-698.79	1981639.11	584884.39

SECTION DETAILS

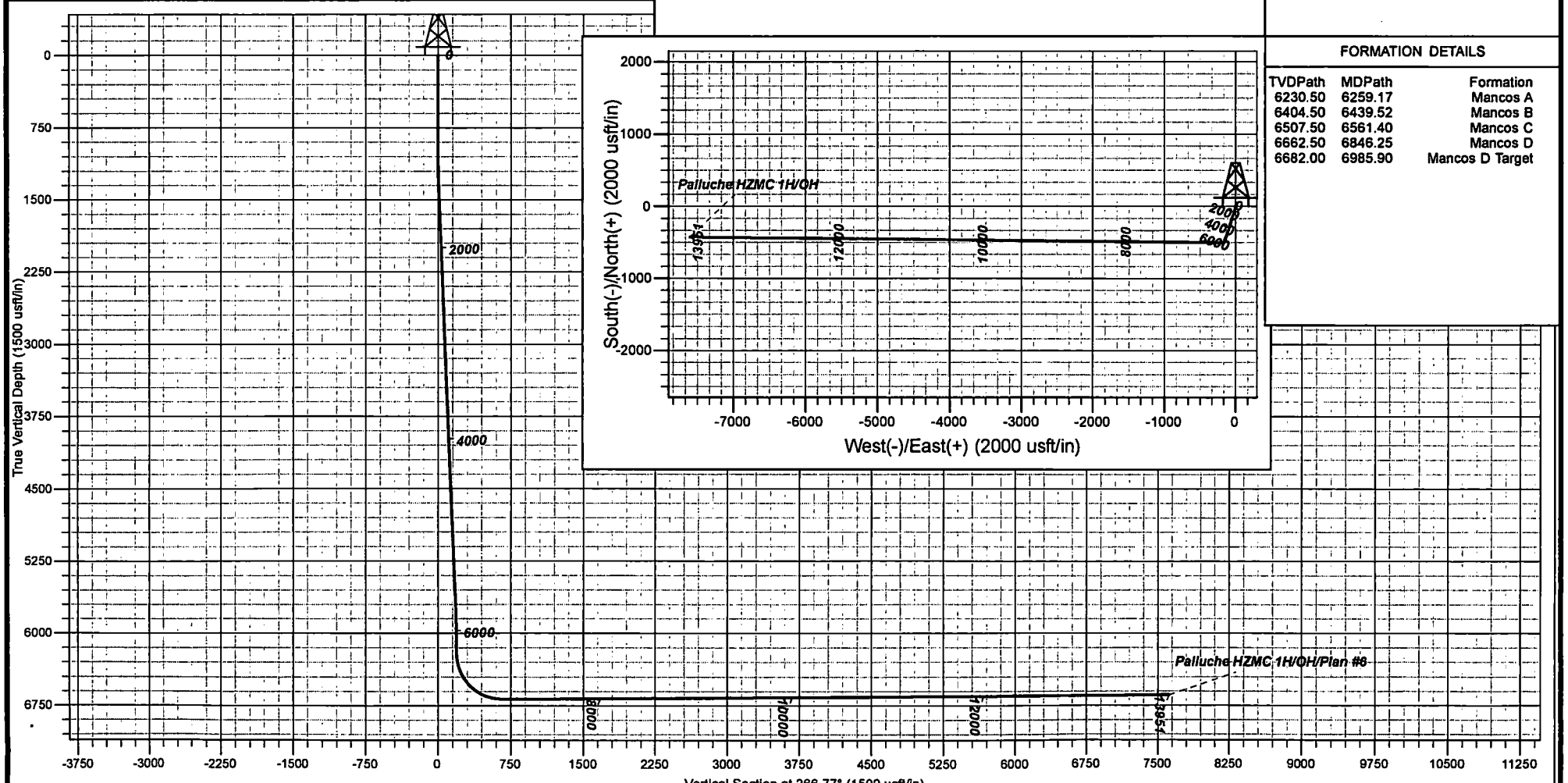
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
6233.20	0.00	0.00	6204.54	-504.00	-163.00	0.00	0.00	191.14	
6986.15	90.35	270.57	6682.00	-499.18	-643.39	12.00	270.57	670.49	
13950.00	90.35	270.57	6639.00	-429.37	-7606.76	0.00	0.00	7618.87	Palluche 1H BHL

CASING DETAILS

No casing data is available

FORMATION DETAILS

TVDPath	MDPath	Formation
6230.50	6259.17	Mancos A
6404.50	6439.52	Mancos B
6507.50	6561.40	Mancos C
6662.50	6846.25	Mancos D
6682.00	6985.90	Mancos D Target



Hilcorp Energy Corp.

Rio Arriba, NM NAD27
Palluche
Palluche HZMC 1H

OH

Plan: Plan #6

Standard Planning Report

15 May, 2018

Scientific Drilling

www.scientificdrilling.com

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Palluche HZMC 1H
Company:	Hilcorp Energy Corp.	**TVD Reference:**	GL 6925' @ 6925.00usft
Project:	Rio Arriba, NM NAD27	**MD Reference:**	GL 6925' @ 6925.00usft
Site:	Palluche	**North Reference:**	True
Well:	Palluche HZMC 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #6		

Project	Rio Arriba, 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	Palluche				
Site Position:		**Northing:**	1,982,145.91 usft	**Latitude:**	36.4471730
From:	Lat/Long	**Easting:**	585,581.66 usft	**Longitude:**	-107.5423540
Position Uncertainty:	0.00 usft	**Slot Radius:**	13.20 in	**Grid Convergence:**	0.17 °

Well	Palluche HZMC 1H					
Well Position	**+N/-S**	0.00 usft	**Northing:**	1,982,145.91 usft	**Latitude:**	36.4471730
	+E/-W	0.00 usft	**Easting:**	585,581.66 usft	**Longitude:**	-107.5423540
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	6,925.00 usft

Wellbore	OH				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	4/10/2018	8.87	63.03	49,691

Design	Plan #6				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	6,233.20
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.00	0.00	0.00	266.77	

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
6,233.20	0.00	0.00	6,204.54	-504.00	-163.00	0.00	0.00	0.00	0.00	
6,986.15	90.35	270.57	6,682.00	-499.18	-643.39	12.00	12.00	-11.88	270.57	
13,950.00	90.35	270.57	6,639.00	-429.37	-7,606.76	0.00	0.00	0.00	0.00	Palluche 1H BHL

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Palluche HZMC 1H
Company:	Hilcorp Energy Corp.	**TVD Reference:**	GL 6925' @ 6925.00usft
Project:	Rio Arriba, NM NAD27	**MD Reference:**	GL 6925' @ 6925.00usft
Site:	Palluche	**North Reference:**	True
Well:	Palluche HZMC 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #6		

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)
6,233.20	0.00	0.00	6,204.54	-504.00	-163.00	191.14	0.00	0.00	0.00
6,259.17	3.12	270.57	6,230.50	-503.99	-163.71	191.85	12.00	12.00	0.00
Mancos A									
6,300.00	8.02	270.57	6,271.13	-503.95	-167.66	195.80	12.00	12.00	0.00
6,400.00	20.02	270.57	6,367.97	-503.71	-191.84	219.92	12.00	12.00	0.00
6,439.52	24.76	270.57	6,404.50	-503.56	-206.88	234.93	12.00	12.00	0.00
Mancos B									
6,500.00	32.02	270.57	6,457.67	-503.27	-235.62	263.60	12.00	12.00	0.00
6,561.40	39.38	270.57	6,507.50	-502.91	-271.42	299.33	12.00	12.00	0.00
Mancos C - Palluche 1H LP									
6,600.00	44.02	270.57	6,536.31	-502.66	-297.09	324.94	12.00	12.00	0.00
6,700.00	56.02	270.57	6,600.45	-501.89	-373.57	401.26	12.00	12.00	0.00
6,800.00	68.02	270.57	6,647.29	-501.01	-461.71	489.21	12.00	12.00	0.00
6,846.25	73.57	270.57	6,662.50	-500.57	-505.36	532.77	12.00	12.00	0.00
Mancos D									
6,900.00	80.02	270.57	6,674.78	-500.04	-557.67	584.96	12.00	12.00	0.00
6,985.90	90.35	270.57	6,682.00	-499.19	-643.14	670.24	12.03	12.03	0.00
Mancos D Target									
6,986.15	90.35	270.57	6,682.00	-499.18	-643.39	670.49	0.00	0.00	0.00
7,000.00	90.35	270.57	6,681.91	-499.04	-657.24	684.32	0.00	0.00	0.00
7,041.49	90.35	270.57	6,681.66	-498.63	-698.73	725.72	0.00	0.00	0.00
Palluche 1H LP Rev									
7,100.00	90.35	270.57	6,681.30	-498.04	-757.23	784.09	0.00	0.00	0.00
7,200.00	90.35	270.57	6,680.68	-497.04	-857.23	883.87	0.00	0.00	0.00
7,300.00	90.35	270.57	6,680.06	-496.04	-957.22	983.65	0.00	0.00	0.00
7,400.00	90.35	270.57	6,679.44	-495.03	-1,057.21	1,083.43	0.00	0.00	0.00
7,500.00	90.35	270.57	6,678.83	-494.03	-1,157.21	1,183.20	0.00	0.00	0.00
7,600.00	90.35	270.57	6,678.21	-493.03	-1,257.20	1,282.98	0.00	0.00	0.00
7,700.00	90.35	270.57	6,677.59	-492.03	-1,357.19	1,382.76	0.00	0.00	0.00
7,800.00	90.35	270.57	6,676.97	-491.02	-1,457.18	1,482.54	0.00	0.00	0.00
7,900.00	90.35	270.57	6,676.36	-490.02	-1,557.18	1,582.32	0.00	0.00	0.00
8,000.00	90.35	270.57	6,675.74	-489.02	-1,657.17	1,682.09	0.00	0.00	0.00
8,100.00	90.35	270.57	6,675.12	-488.02	-1,757.16	1,781.87	0.00	0.00	0.00
8,200.00	90.35	270.57	6,674.50	-487.01	-1,857.16	1,881.65	0.00	0.00	0.00
8,300.00	90.35	270.57	6,673.89	-486.01	-1,957.15	1,981.43	0.00	0.00	0.00
8,400.00	90.35	270.57	6,673.27	-485.01	-2,057.14	2,081.20	0.00	0.00	0.00
8,500.00	90.35	270.57	6,672.65	-484.01	-2,157.14	2,180.98	0.00	0.00	0.00
8,600.00	90.35	270.57	6,672.03	-483.00	-2,257.13	2,280.76	0.00	0.00	0.00
8,700.00	90.35	270.57	6,671.42	-482.00	-2,357.12	2,380.54	0.00	0.00	0.00
8,800.00	90.35	270.57	6,670.80	-481.00	-2,457.11	2,480.31	0.00	0.00	0.00
8,900.00	90.35	270.57	6,670.18	-480.00	-2,557.11	2,580.09	0.00	0.00	0.00
9,000.00	90.35	270.57	6,669.56	-478.99	-2,657.10	2,679.87	0.00	0.00	0.00
9,100.00	90.35	270.57	6,668.95	-477.99	-2,757.09	2,779.65	0.00	0.00	0.00
9,200.00	90.35	270.57	6,668.33	-476.99	-2,857.09	2,879.43	0.00	0.00	0.00
9,300.00	90.35	270.57	6,667.71	-475.99	-2,957.08	2,979.20	0.00	0.00	0.00
9,400.00	90.35	270.57	6,667.09	-474.98	-3,057.07	3,078.98	0.00	0.00	0.00
9,500.00	90.35	270.57	6,666.48	-473.98	-3,157.07	3,178.76	0.00	0.00	0.00
9,600.00	90.35	270.57	6,665.86	-472.98	-3,257.06	3,278.54	0.00	0.00	0.00
9,700.00	90.35	270.57	6,665.24	-471.98	-3,357.05	3,378.31	0.00	0.00	0.00
9,800.00	90.35	270.57	6,664.62	-470.97	-3,457.05	3,478.09	0.00	0.00	0.00
9,900.00	90.35	270.57	6,664.01	-469.97	-3,557.04	3,577.87	0.00	0.00	0.00
10,000.00	90.35	270.57	6,663.39	-468.97	-3,657.03	3,677.65	0.00	0.00	0.00
10,100.00	90.35	270.57	6,662.77	-467.97	-3,757.02	3,777.42	0.00	0.00	0.00

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Palluche HZMC 1H
Company:	Hilcorp Energy Corp.	**TVD Reference:**	GL 6925' @ 6925.00usft
Project:	Rio Arriba, NM NAD27	**MD Reference:**	GL 6925' @ 6925.00usft
Site:	Palluche	**North Reference:**	True
Well:	Palluche HZMC 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #6		

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)
10,200.00	90.35	270.57	6,662.15	-466.96	-3,857.02	3,877.20	0.00	0.00	0.00
10,300.00	90.35	270.57	6,661.54	-465.96	-3,957.01	3,976.98	0.00	0.00	0.00
10,400.00	90.35	270.57	6,660.92	-464.96	-4,057.00	4,076.76	0.00	0.00	0.00
10,500.00	90.35	270.57	6,660.30	-463.96	-4,157.00	4,176.54	0.00	0.00	0.00
10,600.00	90.35	270.57	6,659.68	-462.95	-4,256.99	4,276.31	0.00	0.00	0.00
10,700.00	90.35	270.57	6,659.07	-461.95	-4,356.98	4,376.09	0.00	0.00	0.00
10,800.00	90.35	270.57	6,658.45	-460.95	-4,456.98	4,475.87	0.00	0.00	0.00
10,900.00	90.35	270.57	6,657.83	-459.95	-4,556.97	4,575.65	0.00	0.00	0.00
11,000.00	90.35	270.57	6,657.22	-458.94	-4,656.96	4,675.42	0.00	0.00	0.00
11,100.00	90.35	270.57	6,656.60	-457.94	-4,756.96	4,775.20	0.00	0.00	0.00
11,200.00	90.35	270.57	6,655.98	-456.94	-4,856.95	4,874.98	0.00	0.00	0.00
11,300.00	90.35	270.57	6,655.36	-455.94	-4,956.94	4,974.76	0.00	0.00	0.00
11,400.00	90.35	270.57	6,654.75	-454.93	-5,056.93	5,074.53	0.00	0.00	0.00
11,500.00	90.35	270.57	6,654.13	-453.93	-5,156.93	5,174.31	0.00	0.00	0.00
11,600.00	90.35	270.57	6,653.51	-452.93	-5,256.92	5,274.09	0.00	0.00	0.00
11,700.00	90.35	270.57	6,652.89	-451.92	-5,356.91	5,373.87	0.00	0.00	0.00
11,800.00	90.35	270.57	6,652.28	-450.92	-5,456.91	5,473.65	0.00	0.00	0.00
11,900.00	90.35	270.57	6,651.66	-449.92	-5,556.90	5,573.42	0.00	0.00	0.00
12,000.00	90.35	270.57	6,651.04	-448.92	-5,656.89	5,673.20	0.00	0.00	0.00
12,100.00	90.35	270.57	6,650.42	-447.91	-5,756.89	5,772.98	0.00	0.00	0.00
12,200.00	90.35	270.57	6,649.81	-446.91	-5,856.88	5,872.76	0.00	0.00	0.00
12,300.00	90.35	270.57	6,649.19	-445.91	-5,956.87	5,972.53	0.00	0.00	0.00
12,400.00	90.35	270.57	6,648.57	-444.91	-6,056.87	6,072.31	0.00	0.00	0.00
12,500.00	90.35	270.57	6,647.95	-443.90	-6,156.86	6,172.09	0.00	0.00	0.00
12,600.00	90.35	270.57	6,647.34	-442.90	-6,256.85	6,271.87	0.00	0.00	0.00
12,700.00	90.35	270.57	6,646.72	-441.90	-6,356.84	6,371.65	0.00	0.00	0.00
12,800.00	90.35	270.57	6,646.10	-440.90	-6,456.84	6,471.42	0.00	0.00	0.00
12,900.00	90.35	270.57	6,645.48	-439.89	-6,556.83	6,571.20	0.00	0.00	0.00
13,000.00	90.35	270.57	6,644.87	-438.89	-6,656.82	6,670.98	0.00	0.00	0.00
13,100.00	90.35	270.57	6,644.25	-437.89	-6,756.82	6,770.76	0.00	0.00	0.00
13,200.00	90.35	270.57	6,643.63	-436.89	-6,856.81	6,870.53	0.00	0.00	0.00
13,300.00	90.35	270.57	6,643.01	-435.88	-6,956.80	6,970.31	0.00	0.00	0.00
13,400.00	90.35	270.57	6,642.40	-434.88	-7,056.80	7,070.09	0.00	0.00	0.00
13,500.00	90.35	270.57	6,641.78	-433.88	-7,156.79	7,169.87	0.00	0.00	0.00
13,600.00	90.35	270.57	6,641.16	-432.88	-7,256.78	7,269.64	0.00	0.00	0.00
13,700.00	90.35	270.57	6,640.54	-431.87	-7,356.78	7,369.42	0.00	0.00	0.00
13,800.00	90.35	270.57	6,639.93	-430.87	-7,456.77	7,469.20	0.00	0.00	0.00
13,900.00	90.35	270.57	6,639.31	-429.87	-7,556.76	7,568.98	0.00	0.00	0.00
13,950.00	90.35	270.57	6,639.00	-429.37	-7,606.76	7,618.87	0.00	0.00	0.00
Palluche 1H BHL									

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Palluche HZMC 1H
Company:	Hilcorp Energy Corp.	**TVD Reference:**	GL 6925' @ 6925.00usft
Project:	Rio Arriba, NM NAD27	**MD Reference:**	GL 6925' @ 6925.00usft
Site:	Palluche	**North Reference:**	True
Well:	Palluche HZMC 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #6		

Design 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
Palluche 1H BHL - plan hits target center - Point	0.00	0.00	6,639.00	-429.37	-7,606.76	1,981,693.59	577,976.23	36.4459907	-107.5682166
Palluche 1H LP Rev - plan misses target center by 6.07usft at 7041.49usft MD (6681.66 TVD, -498.63 N, -698.73 E) - Point	0.00	0.00	6,682.00	-504.69	-698.79	1,981,639.12	584,884.39	36.4457865	-107.5447299

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,996.57	2,986.00	Pictured Cliffs		0.00	0.00
4,852.90	4,831.00	Cliffhouse		0.00	0.00
5,254.85	5,230.50	Menefee		0.00	0.00
5,295.60	5,271.00	Point Lookout		0.00	0.00
5,568.26	5,542.00	Base Menefee		0.00	0.00
6,003.56	5,975.00	Mancos		0.00	0.00
6,259.17	6,230.50	Mancos A		0.00	0.00
6,439.52	6,404.50	Mancos B		0.00	0.00
6,561.40	6,507.50	Mancos C		0.00	0.00
6,846.25	6,662.50	Mancos D		0.00	0.00
6,985.90	6,682.00	Mancos D Target		0.00	0.00