

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

Farmington Field Office
Bureau of Land Management

5. Lease Serial No.

NMSF0078996

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.

1. Type of Well

☐ Oil Well

☒ Gas Well

☐ Other

2. Name of Operator

Hilcorp Energy Company

3a. Address

382 Road 3100, Aztec, NM 87410

3b. Phone No. (include area code)

505-599-3400

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

8. Well Name and No.

San Juan 32-7 Unit 232H

9. API Well No.

30-045-35896

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Surf Unit D (NW/NW) 1251' FNL & 1270' FWL, Sec.08, T31N, R07W
BH Lat Unit K (NE/SW) 2113' FSL & 824' FWL, Sec. 06, T31N, R07W

10. Field and Pool or Exploratory Area

Basin Fruitland Coal

11. Country or Parish, State

San Juan, 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

☐ Subsequent Report

☐ Final Abandonment Notice

☐ Acidize

☐ Alter Casing

☐ Casing Repair

☐ Change Plans

☐ Convert to Injection

☐ Deepen

☐ Fracture Treat

☐ New Construction

☐ Plug and Abandon

☐ Plug Back

☐ Production (Start/Resume)

☐ Reclamation

☐ Recomplete

☐ Temporarily Abandon

☐ Water Disposal

☐ Water Shut-Off

☐ Well Integrity

☒ Other Revised

C102 & Drilling Plans

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 recompleat 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 recompleat 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 would like to change the drilling plans for the subject well. The well will no longer have a pilot hole and it will be a single lateral. The revised C102 and drilling plans are attached.

NMOCD

JUN 13 2019

DISTRICT III

ADHERE TO PREVIOUS NMOCD
CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Priscilla Shorty

Title Operations/Regulatory Technician - Sr.

Signature

Priscilla Shorty

Date 4/26/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

[Signature]

Petroleum Engr

Title

5 Jun 2018

Date

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

F-F-O

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

20

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First Street, 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 Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-35896	² Pool Code 71629	³ Pool Name BASIN FRUITLAND COAL
⁴ Property Code 318434	⁵ Property Name SAN JUAN 32-7 UNIT	⁶ Well Number 232H
⁷ GRID No. 372171	⁸ Operator Name HILCORP ENERGY COMPANY	⁹ Elevation 6638'

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
D	8	31N	7W		1251	NORTH	1270	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
K	6	31N	7W		2113	SOUTH	824	WEST	SAN JUAN

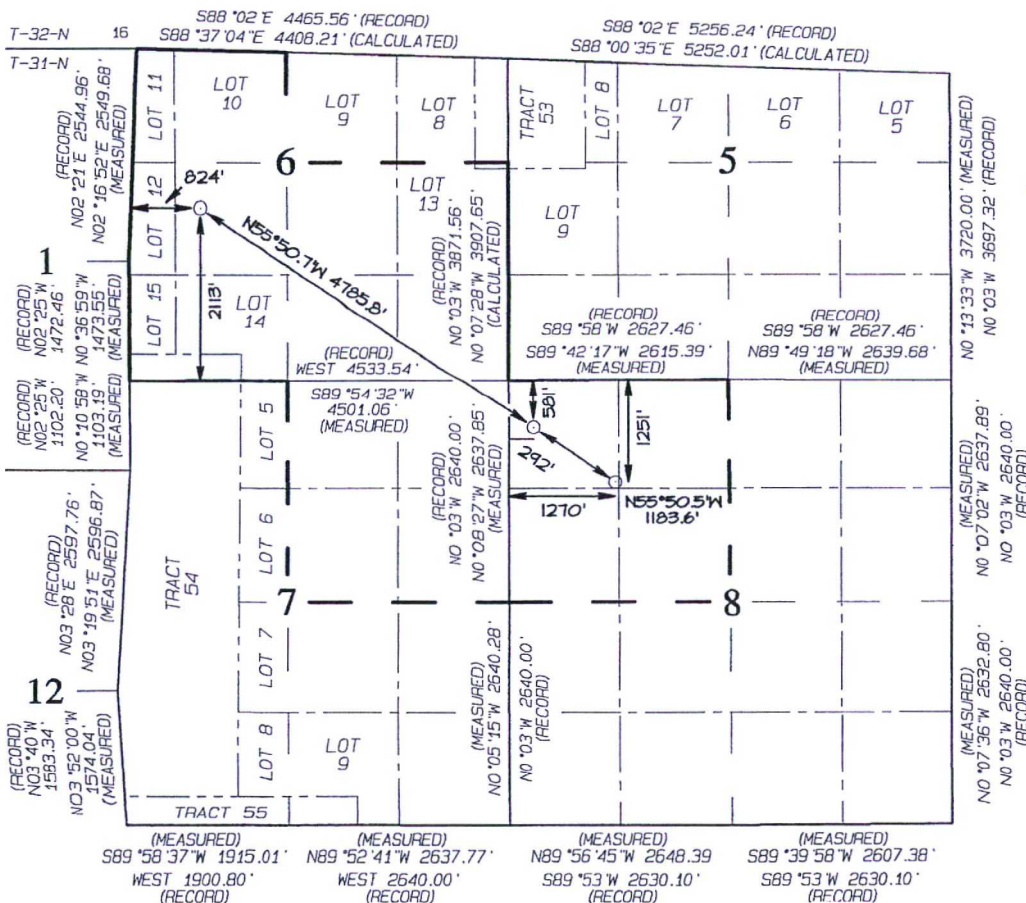
¹² Dedicated Acres 652.43 1083.15	W/2 & SE/4 - Section 6 NE/4 - Section 7 NW/4 - Section 8	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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BOTTOM-HOLE LOCATION
2113' FSL 824' FWL
SEC 6, T31N, R7W
LAT: 36.927083°N
LONG: 107.615287°W
DATUM: NAD1927
LAT: 36.927088°N
LONG: 107.615898°W
DATUM: NAD1983

FIRST TAKE POINT
581' FNL 292' FWL
SEC 8, T31N, R7W
LAT: 36.919677°N
LONG: 107.601760°W
DATUM: NAD1927
LAT: 36.919682°N
LONG: 107.602370°W
DATUM: NAD1983

SURFACE LOCATION
1251' FNL 1270' FWL
SEC 8, T31N, R7W
LAT: 36.917845°N
LONG: 107.598415°W
DATUM: NAD1927
LAT: 36.917850°N
LONG: 107.599026°W
DATUM: NAD1983

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: *Priscilla Shorty* Date: 4/24/19
Printed Name: Priscilla Shorty
E-mail Address: pshorty@hilcorp.com

¹⁸ 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.

Date Revised: APRIL 9, 2019
Date of Survey: JUNE 22, 2018

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269



Hilcorp Energy Company

Technical Plan

1. Location

SAN JUAN 32-7 UNIT 232H

SHL: 1251' FNL, 1270' FWL – Sec 8, T31N, R7W

Lat 1 BHL: 2113' FSL, 824' FWL – Sec 6, T31N, R7W

GL: 6638'

2. Geological Markers

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

Formation	Depth (TVD)	Remarks
Ojo Alamo	2392'	Wet
Kirtland	2494'	Wet
Fruitland	3126'	Possible Gas/Water
Pictured Cliffs	3434'	Wet

Formation Top Selection: Used NMOC D tops from ALBINO CANYON 003 to correlate to San Juan 32-7 Un 218 (near Surface location of prospect).

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 the minimum 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	12-1/4"	9-5/8"	32.3# H-40	0' - 500' (MD)
Intermediate	8-3/4"	7"	23# L-80	0' – 3,912.36' (MD)
Prod Liner (predrilled)	6-1/4"	4-1/2"	11.6# J-55/L-80	3,912.36' – 8,699.23' (MD)



Hilcorp Energy Company

San Juan 32-7 Unit 232H

The intermediate hole section will be drilled to target depth, then fully cased and cemented with 7" casing.

First Take Point is:

Lat1 – 3,912.36' MD / 3,323' TVD.

If the 6-1/4" hole is not drilled to total MD, the production liner setting depth and length will be adjusted accordingly.

The 7" casing shoe will be set inside the setback boundary line.

B) The proposed cement program is shown below:

Cement Program						
Interval	Depth (MD)	Sacks	Slurry	Excess	Volume	Planned Cement Top
Surface	500'	265	Lead Cmt: 2% Calcium Chloride, pellet 0.1250 lbm/sk Poly-E-Flake 1.18 ft ³ / sk - 5.24 gal/sk 15.8 ppg	100%	313 ft ³	Surface
Intermediate	3,912.36'	418	Lead Cmt: Varicem Cement 0.3% Super CBL 0.3 % FE-2 5 lbm/sk Kol-Seal 0.125 lbm/sk Poly-E-Flake 2.11 ft ³ / sk – 11.25 gal/sk 12.9 ppg	50%	882 ft ³	Surface
Production		N/A	N/A – Open hole with pre-drilled liner	N/A	N/A	N/A

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	10' above shoe joint with collar clamp On top of 2nd, 4th, 6th, 8th, 10th joints 1 every 4th joint to Ojo Alamo 1 every joint through Ojo Alamo 1 Turbolizer will be placed mid-way into Ojo Alamo 1 every 4th joint from top of Ojo Alamo to surface shoe 1 inside surface casing
Production	N/A

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)
Surface	Air / Water Gel System	Air 8.3 - 9.2	NC
Intermediate	LSND / Gel System	8.4 - 9.5	6 - 16
Production	LSND Brine (if needed)*	8.5 - 10	4 - 14

In the production hole, Brine will be utilized only if a weighting agent is needed to raise MW (for either well control or wellbore stability purposes).

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.



Hilcorp Energy Company

San Juan 32-7 Unit 232H

6. Abnormal Pressures & Hazards

- No over-pressured intervals expected.
- Estimated Reservoir Pressure = 1500 psi.
- Maximum anticipated surface pressure = 1,300 psi
- 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

Testing, Logging, Coring Procedure		
Evaluation Method	Start Depth	End depth
Mud Logs	Fruitland Coal Top	TD
MWD Directional Surveys	KOP	TD
LWD GR	7" window	TD
Temp Survey	If needed on intermediate casing	

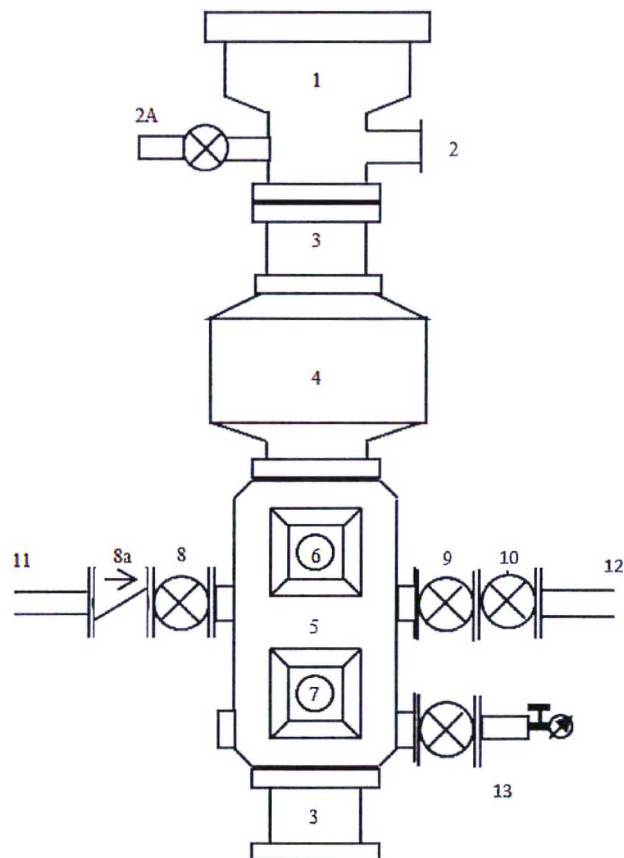
8. Directional Plan

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.

BOPE Schematic – Aztec 777

1. Rotating Head
2. Flow line
- 2A. Fill up line and valve
3. Spacer Spools (as needed)
4. 11" 3M Annular Preventer
5. 11" 3M Double Ram Preventer
6. Blind Rams
7. Pipe Rams
8. 3M Gate Valve (2")
- 8a. Check valve
9. 3M Manual Gate Valve (3")
10. 3M Manual Gate Valve (3")
11. Kill Line Connection, 2" hard line
12. Choke Line (3" Co-Flex)
13. Secondary outlet with valve, bull plug, needle valve, and pressure gauge





Hilcorp Energy Company

Hilcorp Energy Company

San Juan County, NM (NAD27)

T31N - R07W SEC 08

San Juan 32-7 Unit 232H

Original Hole

Plan: Rev 3

Standard Planning Report - Geographic

28 March, 2019

KOLTEK
ENERGY SERVICES

Well: San Juan 32-7 Unit 232H	Field: San Juan County, NM (NAD27)	Site: T31N - R07W SEC 08	Rig: TBD	Plan: Rev 3
Borehole: Original Hole VSec: 304.16deg	Plan Date: 03-28-2019 Grid Conv: 0.14	Datum: US State Plane 1927 Zone: New Mexico West 3003	KB: 6653ft GL: 6638.00ft	Latitude: 36.917845 Northing: 2153445.07
			Longitude: -107.598415 Easting: 568673.52	Model: IGRF2015 DIP: 63.49°
				Date: 28-Mar-19 FS: 49963
				DEC: 9.04° North Ref: Grid

Critical Points

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1912.36	0.00	0.00	1912.36	0.00	0.00	0.00	0.00	0.00	KOP; Build 4"/100 DLS
3	3912.36	80.00	304.16	3323.00	664.56	-979.50	4.00	304.16	1183.66	7" Csg / Build 4.58"/100 DLS
4	4130.69	90.00	304.16	3342.00	786.52	-1159.24	4.58	0.02	1400.88	Landing Tgt
5	4230.69	90.00	304.16	3342.00	842.67	-1241.99	0.00	0.00	1500.88	Build 2"/100 DLS
6	4235.18	90.09	304.16	3342.00	845.20	-1245.71	2.00	-2.84	1505.38	EOB, Hold
7	8699.23	90.09	304.16	3335.00	3351.50	-4939.78	0.00	0.00	5969.42	PBHL/TD

Target Details

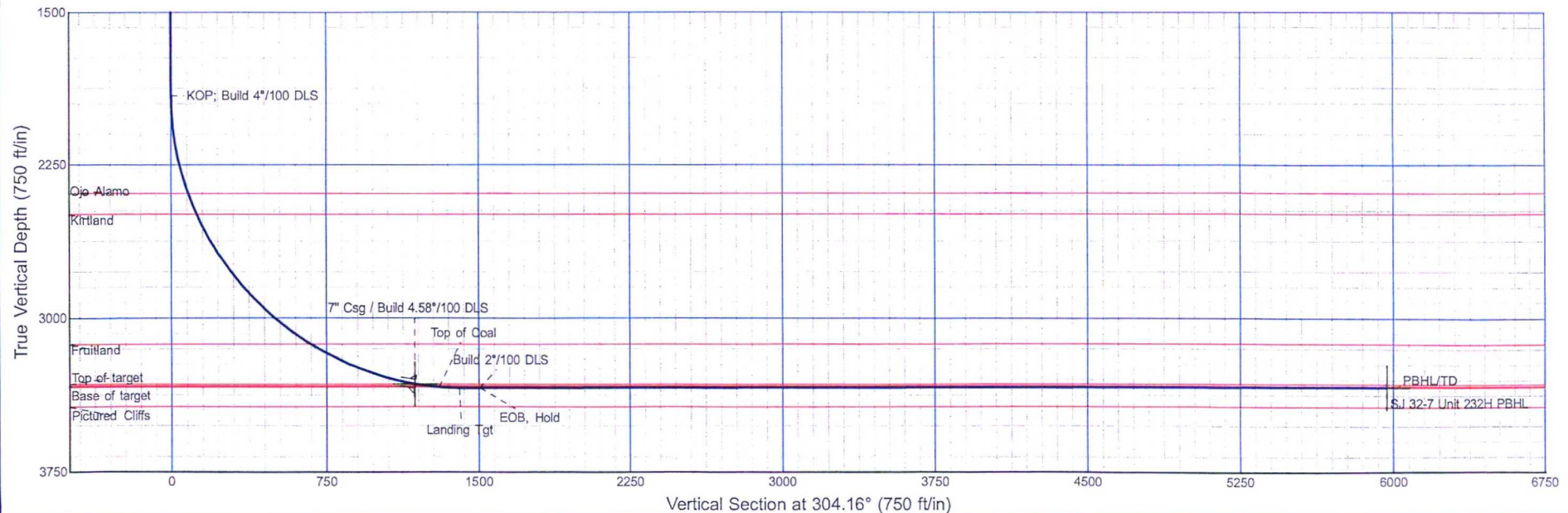
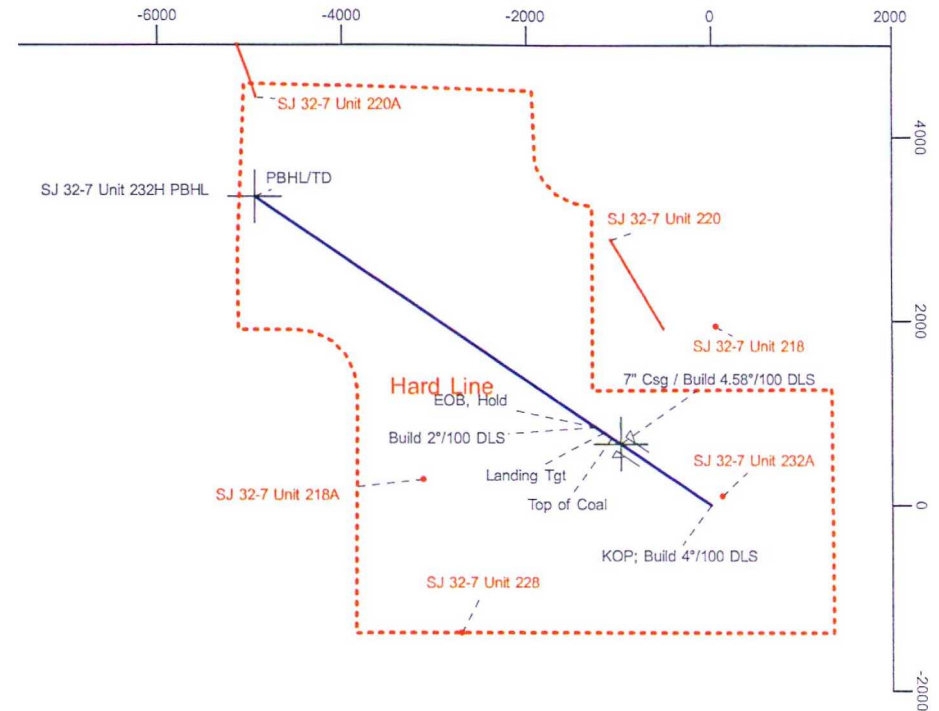
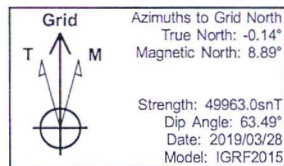
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SJ 32-7 Unit 232H ICP	3323.00	664.56	-979.50	2154109.63	567694.02	36.919677	-107.601760
SJ 32-7 Unit 232H PBHL	3335.00	3351.50	-4939.78	2156796.56	563733.75	36.927083	-107.615287

Casing Details

TVD	MD	Name	Size
3323.00	3912.39	7" Csg	7.000

Formation Top Details

TVDPath	MDPath	Formation
2392.00	2401.45	Ojo Alamo
2494.00	2511.30	Kirtland
3126.00	3360.29	Fruitland
3323.00	3912.39	Top of target
3333.00	3980.54	Base of target
3338.00	4030.62	Top of Coal





Koltek Energy Services

Planning Report - Geographic



Database: EDM 5000.1 Single User Db
Company: Hilcorp Energy Company
Project: San Juan County, NM (NAD27)
Site: T31N - R07W SEC 08
Well: San Juan 32-7 Unit 232H
Wellbore: Original Hole
Design: Rev 3

Local Co-ordinate Reference: Well San Juan 32-7 Unit 232H
TVD Reference: KB 15 ft @ 6653.00ft (TBD)
MD Reference: KB 15 ft @ 6653.00ft (TBD)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project San Juan County, 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 T31N - R07W SEC 08

Site Position: Northing: 2,153,445.07 usft **Latitude:** 36.917845
From: Map **Easting:** 568,673.52 usft **Longitude:** -107.598415
Position Uncertainty: 0.00 ft **Slot Radius:** 13.200 in **Grid Convergence:** 0.14 °

Well San Juan 32-7 Unit 232H

Well Position +N/-S 0.00 ft **Northing:** 2,153,445.07 usft **Latitude:** 36.917845
 +E/-W 0.00 ft **Easting:** 568,673.52 usft **Longitude:** -107.598415
Position Uncertainty 0.00 ft **Wellhead Elevation:** 0.00 ft **Ground Level:** 6,638.00 ft

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2019/03/28	9.04	63.49	49,963

Design Rev 3

Audit Notes:

Version: Phase: PLAN **Tie On Depth:** 0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	304.16

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,912.36	0.00	0.00	1,912.36	0.00	0.00	0.00	0.00	0.00	0.00	
3,912.36	80.00	304.16	3,323.00	664.56	-979.50	4.00	4.00	0.00	304.16	SJ 32-7 Unit 232H PE
4,130.69	90.00	304.16	3,342.00	786.52	-1,159.24	4.58	4.58	0.00	0.02	
4,230.69	90.00	304.16	3,342.00	842.67	-1,241.99	0.00	0.00	0.00	0.00	
4,235.18	90.09	304.16	3,342.00	845.20	-1,245.71	2.00	2.00	-0.10	-2.84	
8,699.23	90.09	304.16	3,335.00	3,351.50	-4,939.78	0.00	0.00	0.00	0.00	SJ 32-7 Unit 232H PE



Koltek Energy Services
Planning Report - Geographic



Database: EDM 5000.1 Single User Db
Company: Hilcorp Energy Company
Project: San Juan County, NM (NAD27)
Site: T31N - R07W SEC 08
Well: San Juan 32-7 Unit 232H
Wellbore: Original Hole
Design: Rev 3

Local Co-ordinate Reference: Well San Juan 32-7 Unit 232H
TVD Reference: KB 15 ft @ 6653.00ft (TBD)
MD Reference: KB 15 ft @ 6653.00ft (TBD)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
100.00	0.00	0.00	100.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
200.00	0.00	0.00	200.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
300.00	0.00	0.00	300.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
400.00	0.00	0.00	400.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
500.00	0.00	0.00	500.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
600.00	0.00	0.00	600.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
700.00	0.00	0.00	700.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
800.00	0.00	0.00	800.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
900.00	0.00	0.00	900.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
1,000.00	0.00	0.00	1,000.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
1,100.00	0.00	0.00	1,100.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
1,200.00	0.00	0.00	1,200.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
1,300.00	0.00	0.00	1,300.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
1,400.00	0.00	0.00	1,400.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
1,500.00	0.00	0.00	1,500.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
1,600.00	0.00	0.00	1,600.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
1,700.00	0.00	0.00	1,700.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
1,800.00	0.00	0.00	1,800.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
1,900.00	0.00	0.00	1,900.00	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
1,912.36	0.00	0.00	1,912.36	0.00	0.00	2,153,445.07	568,673.52	36.917845	-107.598415
KOP; Build 4"/100 DLS									
2,000.00	3.51	304.16	1,999.95	1.50	-2.22	2,153,446.58	568,671.30	36.917849	-107.598423
2,100.00	7.51	304.16	2,099.46	6.89	-10.16	2,153,451.96	568,663.36	36.917864	-107.598450
2,200.00	11.51	304.16	2,198.07	16.16	-23.82	2,153,461.23	568,649.70	36.917890	-107.598497
2,300.00	15.51	304.16	2,295.29	29.27	-43.14	2,153,474.34	568,630.38	36.917926	-107.598563
2,400.00	19.51	304.16	2,390.64	46.15	-68.03	2,153,491.23	568,605.49	36.917972	-107.598648
2,401.45	19.56	304.16	2,392.00	46.43	-68.43	2,153,491.50	568,605.09	36.917973	-107.598649
Ojo Alamo									
2,500.00	23.51	304.16	2,483.65	66.73	-98.36	2,153,511.80	568,575.16	36.918029	-107.598751
2,511.30	23.96	304.16	2,494.00	69.29	-102.12	2,153,514.36	568,571.40	36.918036	-107.598764
Kirtland									
2,600.00	27.51	304.16	2,573.89	90.90	-133.98	2,153,535.97	568,539.54	36.918096	-107.598873
2,700.00	31.51	304.16	2,660.90	118.55	-174.73	2,153,563.62	568,498.79	36.918172	-107.599012
2,800.00	35.51	304.16	2,744.27	149.54	-220.40	2,153,594.61	568,453.12	36.918257	-107.599168
2,900.00	39.51	304.16	2,823.58	183.71	-270.77	2,153,628.78	568,402.75	36.918352	-107.599340
3,000.00	43.51	304.16	2,898.46	220.91	-325.60	2,153,665.98	568,347.92	36.918454	-107.599527
3,100.00	47.51	304.16	2,968.53	260.95	-384.62	2,153,706.02	568,288.91	36.918564	-107.599729
3,200.00	51.51	304.16	3,033.45	303.64	-447.53	2,153,748.71	568,225.99	36.918682	-107.599944
3,300.00	55.51	304.16	3,092.91	348.76	-514.05	2,153,793.84	568,159.48	36.918807	-107.600171
3,360.29	57.92	304.16	3,126.00	377.06	-555.74	2,153,822.13	568,117.78	36.918885	-107.600313
Fruitland									
3,400.00	59.51	304.16	3,146.62	396.11	-583.83	2,153,841.18	568,089.69	36.918937	-107.600409
3,500.00	63.51	304.16	3,194.32	445.44	-656.54	2,153,890.51	568,016.98	36.919073	-107.600657
3,600.00	67.51	304.16	3,235.77	496.52	-731.83	2,153,941.59	567,941.69	36.919214	-107.600915
3,700.00	71.51	304.16	3,270.78	549.10	-809.33	2,153,994.17	567,864.20	36.919359	-107.601179
3,800.00	75.51	304.16	3,299.17	602.93	-888.66	2,154,048.00	567,784.87	36.919507	-107.601450
3,900.00	79.51	304.16	3,320.80	657.73	-969.43	2,154,102.80	567,704.09	36.919658	-107.601726
3,912.36	80.00	304.16	3,323.00	664.56	-979.50	2,154,109.63	567,694.02	36.919677	-107.601760
7" Csg / Build 4.58"/100 DLS - SJ 32-7 Unit 232H ICP									
3,912.39	80.00	304.16	3,323.00	664.57	-979.52	2,154,109.64	567,694.00	36.919677	-107.601760
Top of target - 7" Csg									
3,980.54	83.12	304.16	3,333.00	702.42	-1,035.30	2,154,147.49	567,638.22	36.919781	-107.601951
Base of target									

Database: EDM 5000.1 Single User Db
Company: Hilcorp Energy Company
Project: San Juan County, NM (NAD27)
Site: T31N - R07W SEC 08
Well: San Juan 32-7 Unit 232H
Wellbore: Original Hole
Design: Rev 3

Local Co-ordinate Reference: Well San Juan 32-7 Unit 232H
TVD Reference: KB 15 ft @ 6653.00ft (TBD)
MD Reference: KB 15 ft @ 6653.00ft (TBD)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,000.00	84.01	304.16	3,335.18	713.28	-1,051.30	2,154,158.35	567,622.22	36.919811	-107.602006
4,030.62	85.42	304.16	3,338.00	730.40	-1,076.53	2,154,175.47	567,596.99	36.919859	-107.602092
Top of Coal - Top of Coal									
4,100.00	88.59	304.16	3,341.62	769.29	-1,133.85	2,154,214.36	567,539.67	36.919966	-107.602288
4,130.69	90.00	304.16	3,342.00	786.52	-1,159.24	2,154,231.59	567,514.28	36.920013	-107.602374
Landing Tgt									
4,200.00	90.00	304.16	3,342.00	825.44	-1,216.60	2,154,270.51	567,456.92	36.920121	-107.602570
4,230.69	90.00	304.16	3,342.00	842.67	-1,241.99	2,154,287.74	567,431.53	36.920168	-107.602657
Build 2°/100 DLS									
4,235.18	90.09	304.16	3,342.00	845.20	-1,245.71	2,154,290.27	567,427.81	36.920175	-107.602670
EOB, Hold									
4,300.00	90.09	304.16	3,341.89	881.59	-1,299.35	2,154,326.66	567,374.17	36.920275	-107.602853
4,400.00	90.09	304.16	3,341.74	937.73	-1,382.10	2,154,382.80	567,291.42	36.920430	-107.603135
4,500.00	90.09	304.16	3,341.58	993.88	-1,464.85	2,154,438.95	567,208.67	36.920585	-107.603418
4,600.00	90.09	304.16	3,341.42	1,050.02	-1,547.60	2,154,495.09	567,125.92	36.920740	-107.603701
4,700.00	90.09	304.16	3,341.27	1,106.17	-1,630.36	2,154,551.23	567,043.17	36.920894	-107.603983
4,800.00	90.09	304.16	3,341.11	1,162.31	-1,713.11	2,154,607.38	566,960.42	36.921049	-107.604266
4,900.00	90.09	304.16	3,340.95	1,218.45	-1,795.86	2,154,663.52	566,877.67	36.921204	-107.604548
5,000.00	90.09	304.16	3,340.80	1,274.60	-1,878.61	2,154,719.67	566,794.91	36.921359	-107.604831
5,100.00	90.09	304.16	3,340.64	1,330.74	-1,961.36	2,154,775.81	566,712.16	36.921513	-107.605114
5,200.00	90.09	304.16	3,340.48	1,386.89	-2,044.11	2,154,831.95	566,629.41	36.921668	-107.605396
5,300.00	90.09	304.16	3,340.33	1,443.03	-2,126.86	2,154,888.10	566,546.66	36.921823	-107.605679
5,400.00	90.09	304.16	3,340.17	1,499.17	-2,209.62	2,154,944.24	566,463.91	36.921978	-107.605962
5,500.00	90.09	304.16	3,340.01	1,555.32	-2,292.37	2,155,000.39	566,381.16	36.922133	-107.606244
5,600.00	90.09	304.16	3,339.86	1,611.46	-2,375.12	2,155,056.53	566,298.41	36.922287	-107.606527
5,700.00	90.09	304.16	3,339.70	1,667.61	-2,457.87	2,155,112.67	566,215.66	36.922442	-107.606810
5,800.00	90.09	304.16	3,339.54	1,723.75	-2,540.62	2,155,168.82	566,132.90	36.922597	-107.607092
5,900.00	90.09	304.16	3,339.39	1,779.89	-2,623.37	2,155,224.96	566,050.15	36.922752	-107.607375
6,000.00	90.09	304.16	3,339.23	1,836.04	-2,706.13	2,155,281.11	565,967.40	36.922906	-107.607657
6,100.00	90.09	304.16	3,339.07	1,892.18	-2,788.88	2,155,337.25	565,884.65	36.923061	-107.607940
6,200.00	90.09	304.16	3,338.92	1,948.33	-2,871.63	2,155,393.39	565,801.90	36.923216	-107.608223
6,300.00	90.09	304.16	3,338.76	2,004.47	-2,954.38	2,155,449.54	565,719.15	36.923371	-107.608505
6,400.00	90.09	304.16	3,338.60	2,060.61	-3,037.13	2,155,505.68	565,636.40	36.923525	-107.608788
6,500.00	90.09	304.16	3,338.45	2,116.76	-3,119.88	2,155,561.83	565,553.64	36.923680	-107.609071
6,600.00	90.09	304.16	3,338.29	2,172.90	-3,202.63	2,155,617.97	565,470.89	36.923835	-107.609353
6,700.00	90.09	304.16	3,338.13	2,229.05	-3,285.39	2,155,674.11	565,388.14	36.923990	-107.609636
6,800.00	90.09	304.16	3,337.98	2,285.19	-3,368.14	2,155,730.26	565,305.39	36.924144	-107.609919
6,900.00	90.09	304.16	3,337.82	2,341.34	-3,450.89	2,155,786.40	565,222.64	36.924299	-107.610201
7,000.00	90.09	304.16	3,337.66	2,397.48	-3,533.64	2,155,842.55	565,139.89	36.924454	-107.610484
7,100.00	90.09	304.16	3,337.51	2,453.62	-3,616.39	2,155,898.69	565,057.14	36.924609	-107.610767
7,200.00	90.09	304.16	3,337.35	2,509.77	-3,699.14	2,155,954.83	564,974.38	36.924763	-107.611049
7,300.00	90.09	304.16	3,337.19	2,565.91	-3,781.90	2,156,010.98	564,891.63	36.924918	-107.611332
7,400.00	90.09	304.16	3,337.04	2,622.06	-3,864.65	2,156,067.12	564,808.88	36.925073	-107.611614
7,500.00	90.09	304.16	3,336.88	2,678.20	-3,947.40	2,156,123.27	564,726.13	36.925228	-107.611897
7,600.00	90.09	304.16	3,336.72	2,734.34	-4,030.15	2,156,179.41	564,643.38	36.925382	-107.612180
7,700.00	90.09	304.16	3,336.57	2,790.49	-4,112.90	2,156,235.55	564,560.63	36.925537	-107.612462
7,800.00	90.09	304.16	3,336.41	2,846.63	-4,195.65	2,156,291.70	564,477.88	36.925692	-107.612745
7,900.00	90.09	304.16	3,336.25	2,902.78	-4,278.40	2,156,347.84	564,395.12	36.925847	-107.613028
8,000.00	90.09	304.16	3,336.10	2,958.92	-4,361.16	2,156,403.99	564,312.37	36.926001	-107.613310
8,100.00	90.09	304.16	3,335.94	3,015.06	-4,443.91	2,156,460.13	564,229.62	36.926156	-107.613593
8,200.00	90.09	304.16	3,335.78	3,071.21	-4,526.66	2,156,516.27	564,146.87	36.926311	-107.613876
8,300.00	90.09	304.16	3,335.63	3,127.35	-4,609.41	2,156,572.42	564,064.12	36.926465	-107.614158
8,400.00	90.09	304.16	3,335.47	3,183.50	-4,692.16	2,156,628.56	563,981.37	36.926620	-107.614441
8,500.00	90.09	304.16	3,335.31	3,239.64	-4,774.91	2,156,684.71	563,898.62	36.926775	-107.614724

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 232H
Company:	Hilcorp Energy Company	TVD Reference:	KB 15 ft @ 6653.00ft (TBD)
Project:	San Juan County, NM (NAD27)	MD Reference:	KB 15 ft @ 6653.00ft (TBD)
Site:	T31N - R07W SEC 08	North Reference:	Grid
Well:	San Juan 32-7 Unit 232H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Rev 3		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,600.00	90.09	304.16	3,335.16	3,295.78	-4,857.67	2,156,740.85	563,815.87	36.926930	-107.615006
8,699.23	90.09	304.16	3,335.00	3,351.50	-4,939.78	2,156,796.56	563,733.75	36.927083	-107.615287
PBHL/TD - SJ 32-7 Unit 232H PBHL									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SJ 32-7 Unit 232H ICP - plan hits target center - Point	0.00	0.00	3,323.00	664.56	-979.50	2,154,109.63	567,694.02	36.919677	-107.601760
SJ 32-7 Unit 232H PBHL - plan hits target center - Point	0.00	0.00	3,335.00	3,351.50	-4,939.78	2,156,796.56	563,733.75	36.927083	-107.615287

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
3,912.39	3,323.00	7" Csg	7.000	8.750

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,401.45	2,392.00	Ojo Alamo			
2,511.30	2,494.00	Kirtland			
3,360.29	3,126.00	Fruitland			
3,912.39	3,323.00	Top of target			
3,980.54	3,333.00	Base of target			
4,030.62	3,338.00	Top of Coal		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,912.36	1,912.36	0.00	0.00	KOP; Build 4"/100 DLS
3,912.36	3,323.00	664.56	-979.50	7" Csg / Build 4.58"/100 DLS
4,030.62	3,338.00	730.40	-1,076.53	Top of Coal
4,130.69	3,342.00	786.52	-1,159.24	Landing Tgt
4,230.69	3,342.00	842.67	-1,241.99	Build 2"/100 DLS
4,235.18	3,342.00	845.20	-1,245.71	EOB, Hold
8,699.23	3,335.00	3,351.50	-4,939.78	PBHL/TD



Hilcorp Energy Company

Hilcorp Energy Company

San Juan County, NM (NAD27)

T31N - R07W SEC 08

San Juan 32-7 Unit 232H

Original Hole

Rev 3

Anticollision Summary Report

28 March, 2019

KOLTEK
ENERGY SERVICES



Koltek Energy Services

Anticollision Summary Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 232H
Project:	San Juan County, NM (NAD27)	TVD Reference:	KB 15 ft @ 6653.00ft (TBD)
Reference Site:	T31N - R07W SEC 08	MD Reference:	KB 15 ft @ 6653.00ft (TBD)
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 232H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Hole	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev 3	Offset TVD Reference:	Reference Datum

Reference	Rev 3		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 10.00ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 750.00 ft	Error Surface:	Combined Covariances
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Added to Error Values

Survey Tool Program	Date	2019/03/28		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,699.23	Rev 3 (Original Hole)	MWD	MWD - Standard

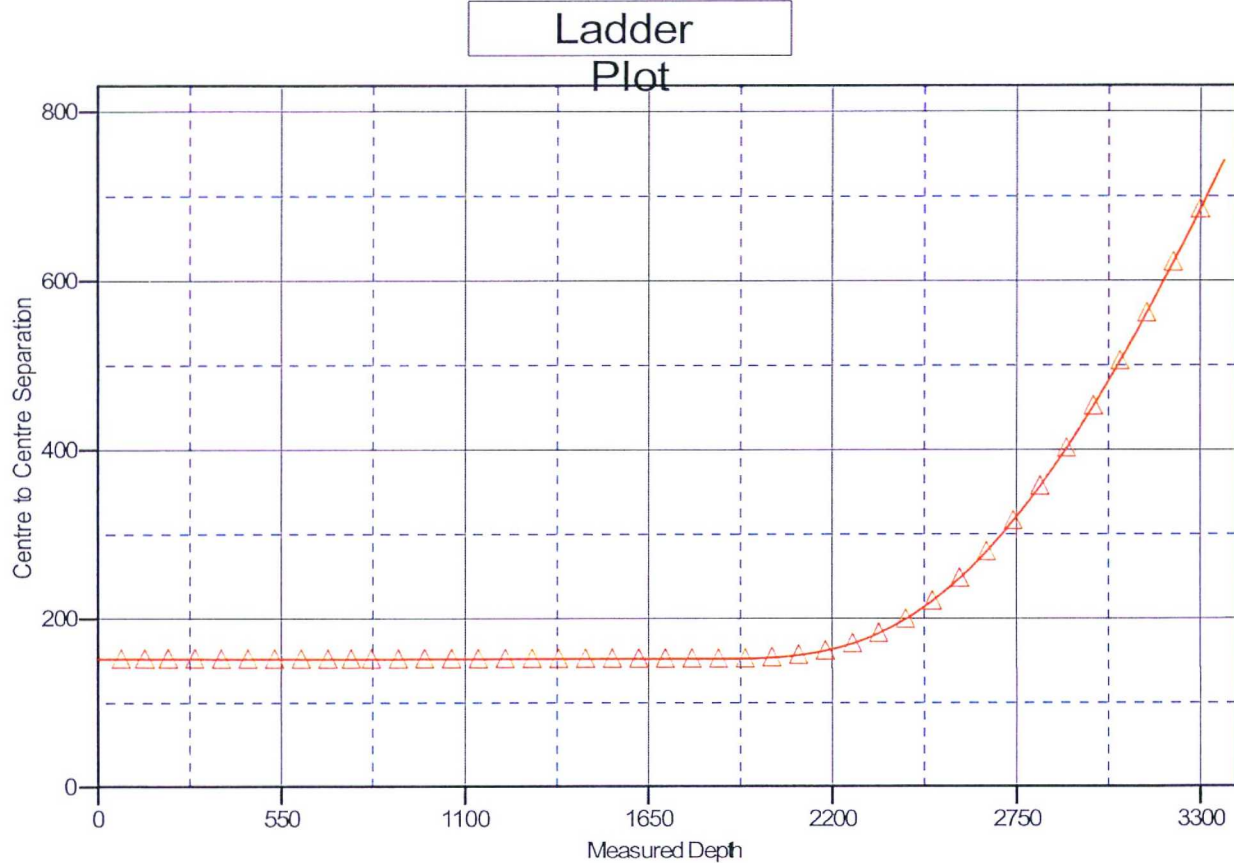
Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
T31N - R07W SEC 05						
San Juan 32-7 Unit 218 - Original Hole - Original Hole						Out of range
San Juan 32-7 Unit 220 - Original Hole - Original Hole						Out of range
T31N - R07W SEC 07						
San Juan 32-7 Unit 218A - Original Hole - Original Hole						Out of range
San Juan 32-7 Unit 228 - Original Hole - Original Hole						Out of range
T31N - R07W SEC 08						
San Juan 32-7 Unit 232A - Original Hole - Original Hole	756.48	745.52	151.97	136.36	9.737	CC
San Juan 32-7 Unit 232A - Original Hole - Original Hole	2,020.00	2,008.98	153.65	106.07	3.229	Warning, ES
San Juan 32-7 Unit 232A - Original Hole - Original Hole	2,180.00	2,167.54	161.96	110.17	3.127	Warning, SF
T32N - R07W SEC 08						
San Juan 32-7 Unit 036 - Original Hole - Original Hole						Out of range
San Juan 32-7 Unit 036A - Original Hole - Original Hole						Out of range
San Juan 32-7 Unit 036F - Original Hole - Original Hole						Out of range
San Juan 32-7 Unit 037A - Original Hole - Original Hole						Out of range
San Juan 32-7 Unit 037M - Original Hole - Original Hole						Out of range
San Juan 32-7 Unit 249A - Original Hole - Original Hole						Out of range
T32N - R07W SEC 31						
San Juan 32-7 Unit 220A - Original Hole - Original Hole						Out of range

Company: Hilcorp Energy Company
Project: San Juan County, NM (NAD27)
Reference Site: T31N - R07W SEC 08
Site Error: 0.00 ft
Reference Well: San Juan 32-7 Unit 232H
Well Error: 0.00 ft
Reference Wellbore: Original Hole
Reference Design: Rev 3

Local Co-ordinate Reference: Well San Juan 32-7 Unit 232H
TVD Reference: KB 15 ft @ 6653.00ft (TBD)
MD Reference: KB 15 ft @ 6653.00ft (TBD)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Reference Datum

Reference Depths are relative to KB 15 ft @ 6653.00ft (TBD)
Offset Depths are relative to Offset Datum
Central Meridian is -107.833334

Coordinates are relative to: San Juan 32-7 Unit 232H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30
Grid Convergence at Surface is: 0.14°



LEGEND

San Juan 32-7 Unit 232A, Original Hole, Original Hole V0



Koltek Energy Services

Anticollision Summary Report

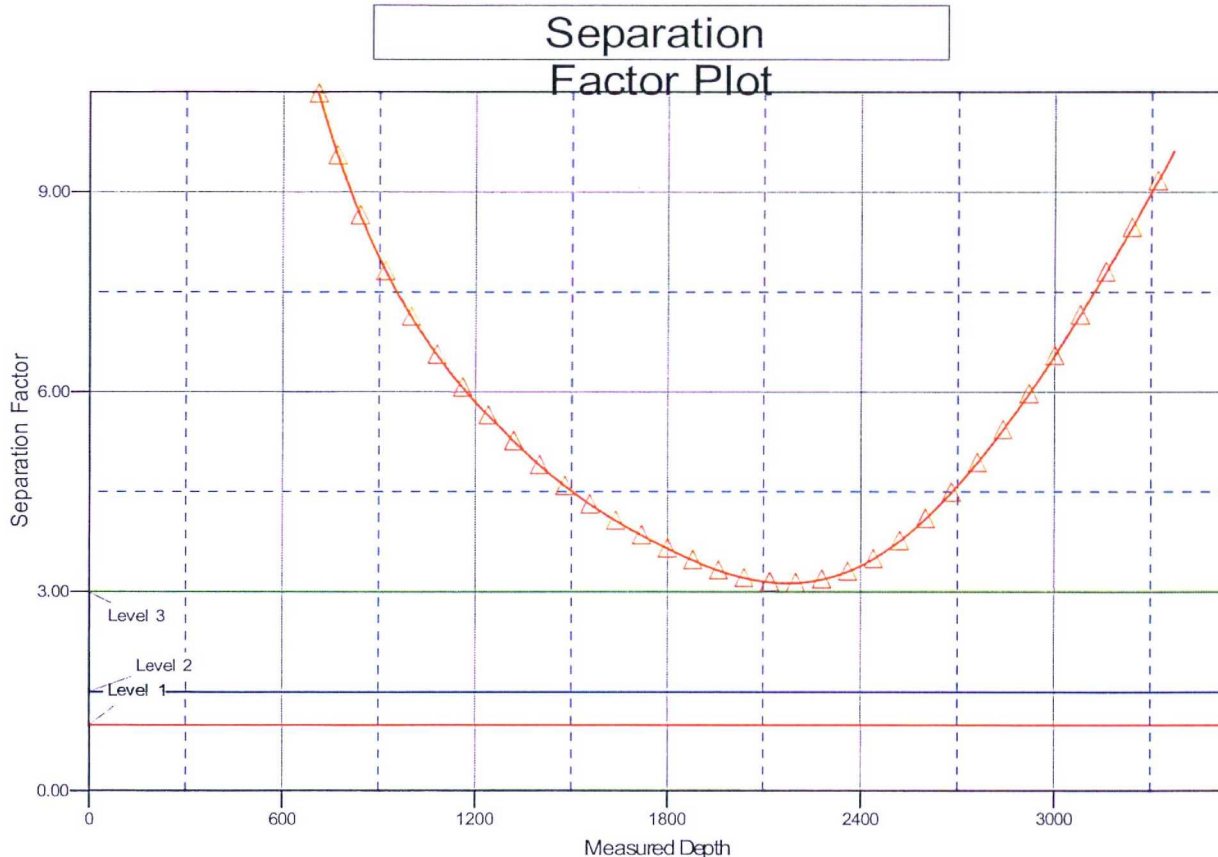


Company: Hilcorp Energy Company
Project: San Juan County, NM (NAD27)
Reference Site: T31N - R07W SEC 08
Site Error: 0.00 ft
Reference Well: San Juan 32-7 Unit 232H
Well Error: 0.00 ft
Reference Wellbore: Original Hole
Reference Design: Rev 3

Local Co-ordinate Reference: Well San Juan 32-7 Unit 232H
TVD Reference: KB 15 ft @ 6653.00ft (TBD)
MD Reference: KB 15 ft @ 6653.00ft (TBD)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Reference Datum

Reference Depths are relative to KB 15 ft @ 6653.00ft (TBD)
Offset Depths are relative to Offset Datum
Central Meridian is -107.833334

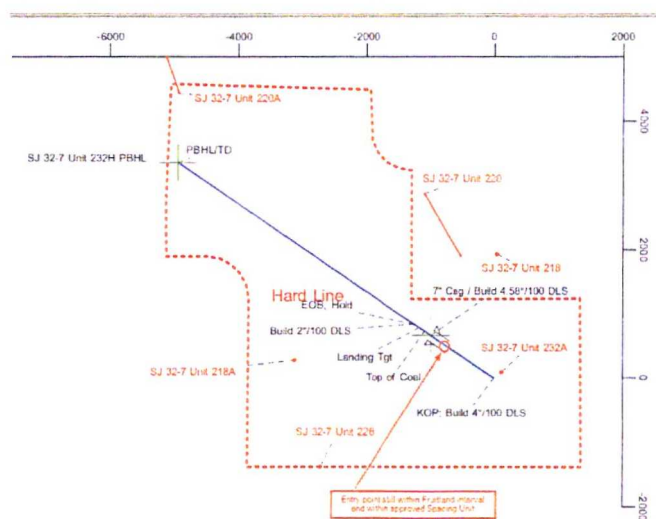
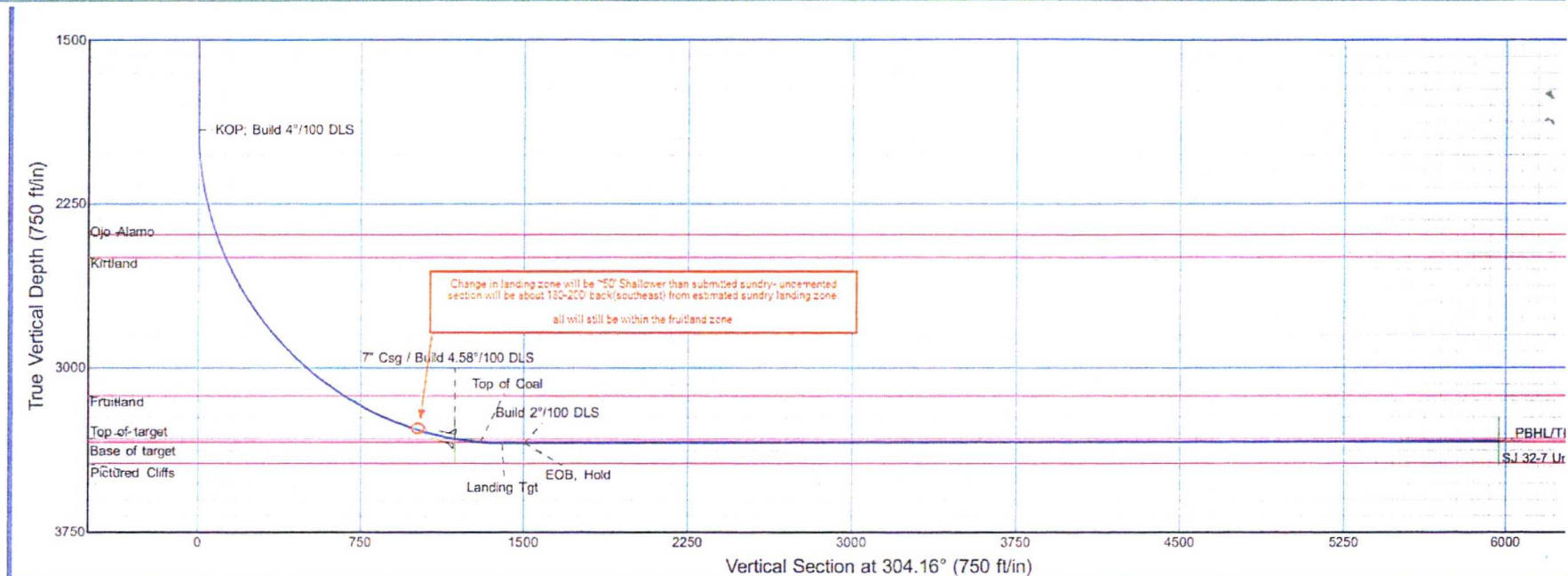
Coordinates are relative to: San Juan 32-7 Unit 232H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30
Grid Convergence at Surface is: 0.14°



LEGEND

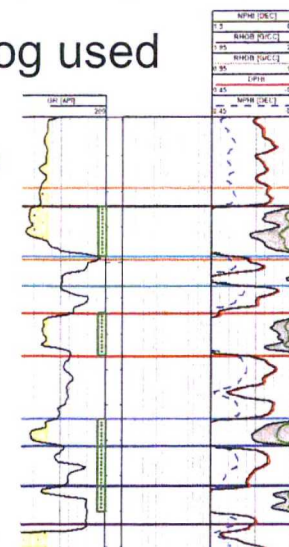
San Juan 32-7 Unit 232A, Original Hole, Original Hole V0

San Juan 32-7 Unit 232H



Offset log used

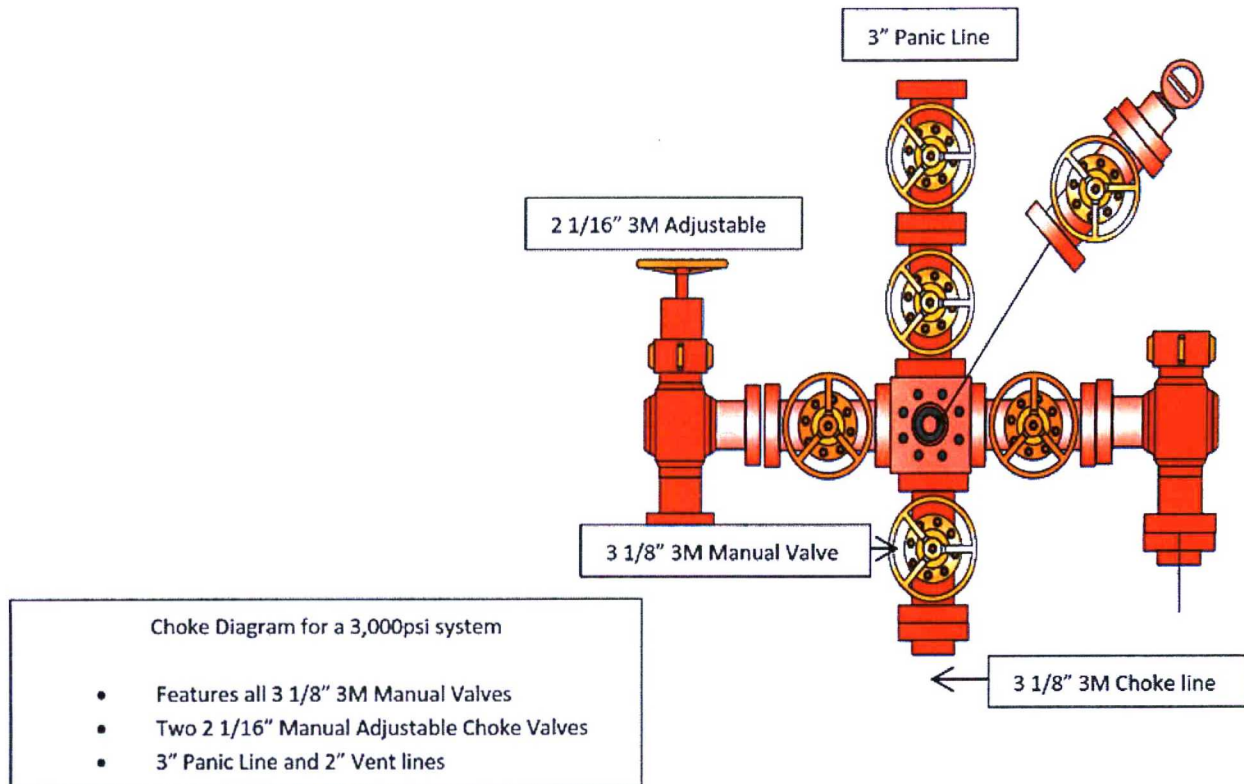
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ELEV AB 880
11/29/1990
20050
218
HILCORP ENERGY COMPANY
SAN JUAN 32-7 UNIT
T31N R7W S5
SAN JUAN 32-7 UN 218



New landing Depth: 3273

Sundry submitted landing Depth: 3323

Choke Manifold Schematic – Aztec 777



Directions from the Intersection of State Hwy 172 & State Hwy 151

in Ignacio, CO to Hilcorp Energy Company San Juan 32-7 Unit #232H

1251' FNL & 1270' FWL, Section 8, T31N, R7W, N.M.P.M., San Juan County, NM

Latitude: 36.917850°N Longitude: 107.599026°W Datum: NAD1983

From the intersection of State Hwy 172 & State Hwy 151 in Ignacio, CO, travel Easterly on State Hwy 151 for 9.7 miles to County Road #328;

Go Right (Southerly) on County Road #328, crossing borderline then proceeding on County Road #4010 for 4.3 miles to fork in roadway;

Go Left (South-easterly) remaining on County Road #4010 for 0.6 miles to fork in roadway;

Go Left (Southerly) which is straight remaining on County Road #4010 for 0.3 miles to fork in roadway;

Go Right (South-westerly) remaining on County Road #4010 for 1.8 miles to T-intersection;

Go Left (Southerly) exiting County Road #4010 onto County Road #4000 for 1.2 miles to fork in roadway;

Go Right (Westerly) exiting County Road #4000 onto existing roadway for 1.0 mile to fork in roadway;

Go Left (Southerly) on existing roadway for 1.7 miles to fork in roadway;

Go Right (Westerly) on existing roadway for 0.5 miles to fork in roadway;

Go Left (Southerly) which is straight for 0.3 miles to existing Hilcorp San Juan 32-7 #232A location, with the Hilcorp San Juan 32-7 Unit #232H staked offset #232A wellhead.