



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

## Drilling Plan Data Report

02/27/2018

APD ID: 10400021910

Submission Date: 09/09/2017

Highlighted data  
reflects the most  
recent changes

Operator Name: PERCUSSION PETROLEUM OPERATING LLC

Well Name: HUBER FEDERAL

Well Number: 17H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

### Section 1 - Geologic Formations

| Formation ID | Formation Name | Elevation | True Vertical Depth | Measured Depth | Lithologies                | Mineral Resources   | Producing Formation |
|--------------|----------------|-----------|---------------------|----------------|----------------------------|---------------------|---------------------|
| 1            | ---            | 3516      | 0                   | 0              | OTHER : Quaternary caliche | USEABLE WATER       | No                  |
| 2            | GRAYBURG       | 2856      | 660                 | 660            | DOLOMITE                   | NATURAL GAS,CO2,OIL | No                  |
| 3            | SAN ANDRES     | 2671      | 845                 | 845            | DOLOMITE                   | NATURAL GAS,CO2,OIL | No                  |
| 4            | GLORIETA       | 1111      | 2405                | 2407           | DOLOMITE                   | NATURAL GAS,CO2,OIL | No                  |
| 5            | YESO           | 956       | 2560                | 2575           | DOLOMITE                   | NATURAL GAS,CO2,OIL | Yes                 |

### Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M

Rating Depth: 5000

**Equipment:** A 3000-psi 5000' rated BOP stack consisting of annular preventer and double (blind and pipe) ram will be used below surface casing to TD. See attached BOP and choke manifold diagrams.

**Requesting Variance?** NO

**Variance request:**

**Testing Procedure:** A 3000-psi 5000' rated BOP stack consisting of annular preventer and double (blind and pipe) ram will be used below surface casing to TD. See attached BOP and choke manifold diagrams. Pressure tests will be conducted before drilling out from under all casing strings. Third party test crews will conduct all tests. All tests will be recorded for 10-minutes on low pressure (500 psi) and 10-minutes on high pressure (3000-psi). After BOP testing is complete, test casing (without test plug) to 2000-psi for 30 minutes. All tests will be charted on a plot. BOPs will be function tested every day.

**Choke Diagram Attachment:**

Huber\_17H\_BOP\_Choke\_20171013112743.pdf

**BOP Diagram Attachment:**

Huber\_17H\_BOP\_Choke\_20170908125437.pdf

**Operator Name:** PERCUSSION PETROLEUM OPERATING LLC

**Well Name:** HUBER FEDERAL

**Well Number:** 17H

### Section 3 - Casing

| Casing ID | String Type | Hole Size | Csg Size | Condition | Standard | Tapered String | Top Set MD | Bottom Set MD | Top Set TVD | Bottom Set TVD | Top Set MSL | Bottom Set MSL | Calculated casing length MD | Grade | Weight | Joint Type  | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|-----------|-------------|-----------|----------|-----------|----------|----------------|------------|---------------|-------------|----------------|-------------|----------------|-----------------------------|-------|--------|-------------|-------------|----------|---------------|----------|--------------|---------|
| 1         | SURFACE     | 12.25     | 9.625    | NEW       | API      | N              | 0          | 1295          | 0           | 1295           | 3516        |                | 1295                        | J-55  | 36     | STC         | 1.125       | 1.125    | DRY           | 1.8      | DRY          | 1.8     |
| 2         | PRODUCTION  | 8.75      | 5.5      | NEW       | API      | N              | 0          | 8324          | 0           | 2853           | 3516        |                | 8324                        | L-80  | 17     | OTHER - BTC | 1.125       | 1.125    | DRY           | 1.8      | DRY          | 1.8     |

#### Casing Attachments

**Casing ID:** 1      **String Type:** SURFACE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Huber\_17H\_Casing\_Design\_Assumptions\_20170908125548.pdf

**Casing ID:** 2      **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Huber\_17H\_Casing\_Design\_Assumptions\_20170908125854.pdf

**Operator Name:** PERCUSSION PETROLEUM OPERATING LLC

**Well Name:** HUBER FEDERAL

**Well Number:** 17H

#### Section 4 - Cement

| String Type | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives                             |
|-------------|-----------|------------------|--------|-----------|--------------|-------|---------|-------|---------|-------------|---------------------------------------|
| SURFACE     | Lead      |                  | 0      | 1274      | 644          | 1.32  | 14.8    | 850   | 100     | Class C     | 2% CaCl + ¼ pound per sack celloflake |

|            |      |  |   |      |      |      |      |      |    |                 |                                                             |
|------------|------|--|---|------|------|------|------|------|----|-----------------|-------------------------------------------------------------|
| PRODUCTION | Lead |  | 0 | 8324 | 495  | 1.97 | 12.6 | 975  | 50 | 65/65/6 Class C | 6% gel + 5% salt + ¼ pound per sack celloflake + 0.2% C41-P |
| PRODUCTION | Tail |  | 0 | 8324 | 1686 | 1.32 | 14.8 | 2225 | 50 | Class C         | 2% CaCl + ¼ pound per sack celloflake                       |

#### Section 5 - Circulating Medium

**Mud System Type:** Closed

**Will an air or gas system be Used?** NO

**Description of the equipment for the circulating system in accordance with Onshore Order #2:**

**Diagram of the equipment for the circulating system in accordance with Onshore Order #2:**

**Describe what will be on location to control well or mitigate other conditions:** All necessary mud products (LCM) will be on site to handle any abnormal hole condition that may be encountered while drilling this well. A closed loop system will be used.

**Describe the mud monitoring system utilized:** An electronic/mechanical mud monitor with a minimum pit volume totalizer, stroke counter, and flow sensor will be used.

#### Circulating Medium Table

| Top Depth | Bottom Depth | Mud Type                      | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|-----------|--------------|-------------------------------|----------------------|----------------------|---------------------|-----------------------------|----|----------------|----------------|-----------------|----------------------------|
| 0         | 1295         | OTHER : Fresh water/gel       | 8.4                  | 9.2                  |                     |                             |    |                |                |                 |                            |
| 1295      | 2300         | OTHER : Fresh water/cut brine | 8.3                  | 9.2                  |                     |                             |    |                |                |                 |                            |
| 2300      | 8324         | OTHER : Cut brine             | 8.6                  | 9.2                  |                     |                             |    |                |                |                 |                            |

**Operator Name:** PERCUSSION PETROLEUM OPERATING LLC

**Well Name:** HUBER FEDERAL

**Well Number:** 17H

## **Section 6 - Test, Logging, Coring**

**List of production tests including testing procedures, equipment and safety measures:**

A mud logger will be used from GL to TD. Samples will be collected every 10' in the lateral pay zone.  
No electric logs are planned at this time.

**List of open and cased hole logs run in the well:**

DS

**Coring operation description for the well:**

No core or drill stem test is planned.

## **Section 7 - Pressure**

**Anticipated Bottom Hole Pressure:** 1224

**Anticipated Surface Pressure:** 596.34

**Anticipated Bottom Hole Temperature(F):** 113

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO

**Describe:**

**Contingency Plans geohazards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

Huber\_17H\_H2S\_Plan\_20171009131506.pdf

## **Section 8 - Other Information**

**Proposed horizontal/directional/multi-lateral plan submission:**

Huber\_17H\_Horizontal\_Drill\_Plan\_20170909113014.pdf

**Other proposed operations facets description:**

Deficiency letter dated 11/21/17 indicates there are no deficiencies! See Bottom Hole Footage attachment since this was an issue with other Huber wells.

**Other proposed operations facets attachment:**

Huber\_17H\_General\_Drill\_Plan\_20171127080650.pdf

Huber\_17H\_Casing\_Design\_Contingency\_Plan.rev2\_20171127080709.pdf

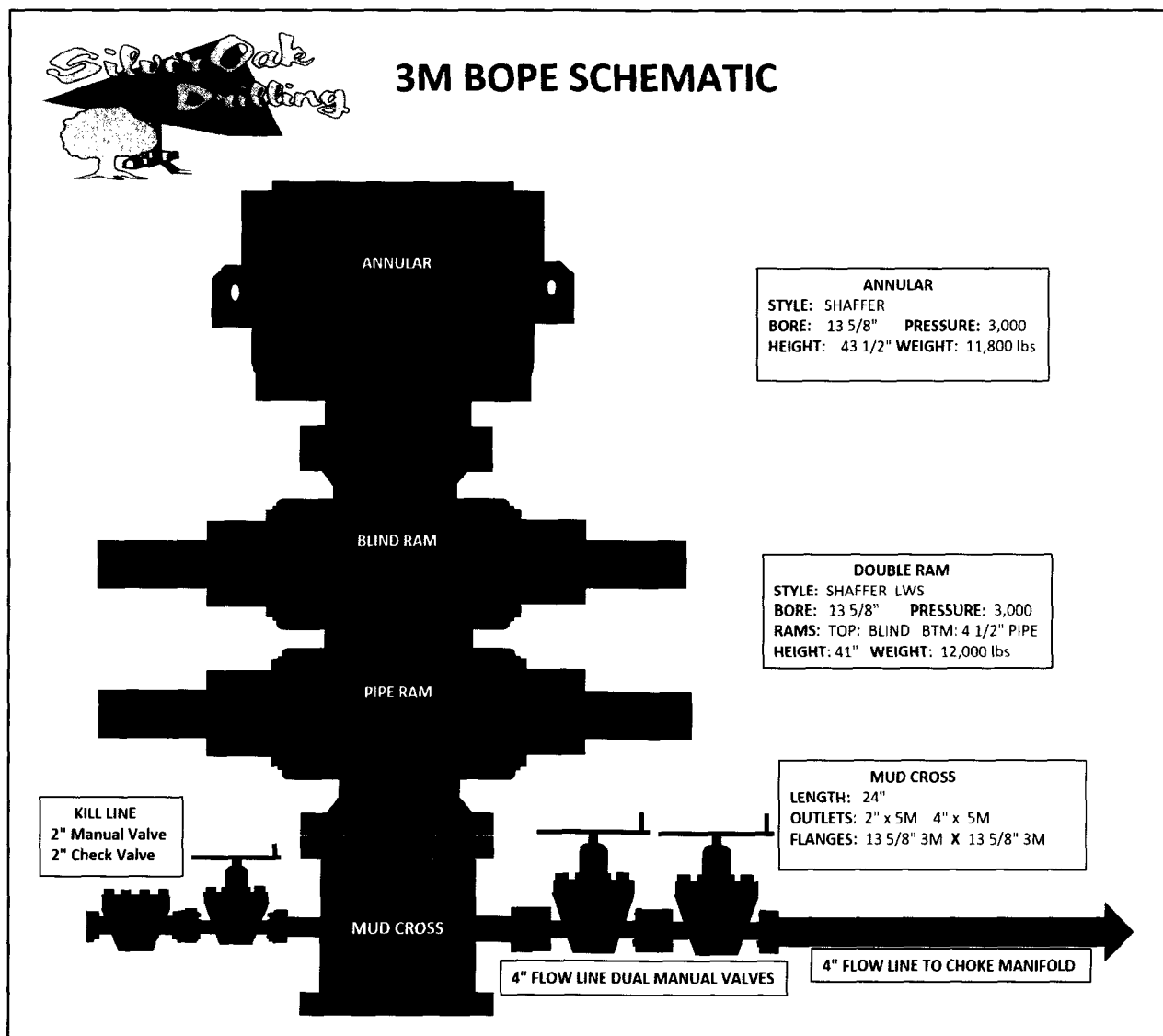
Huber\_17H\_Bottom\_Hole\_Footage\_20171127080804.pdf

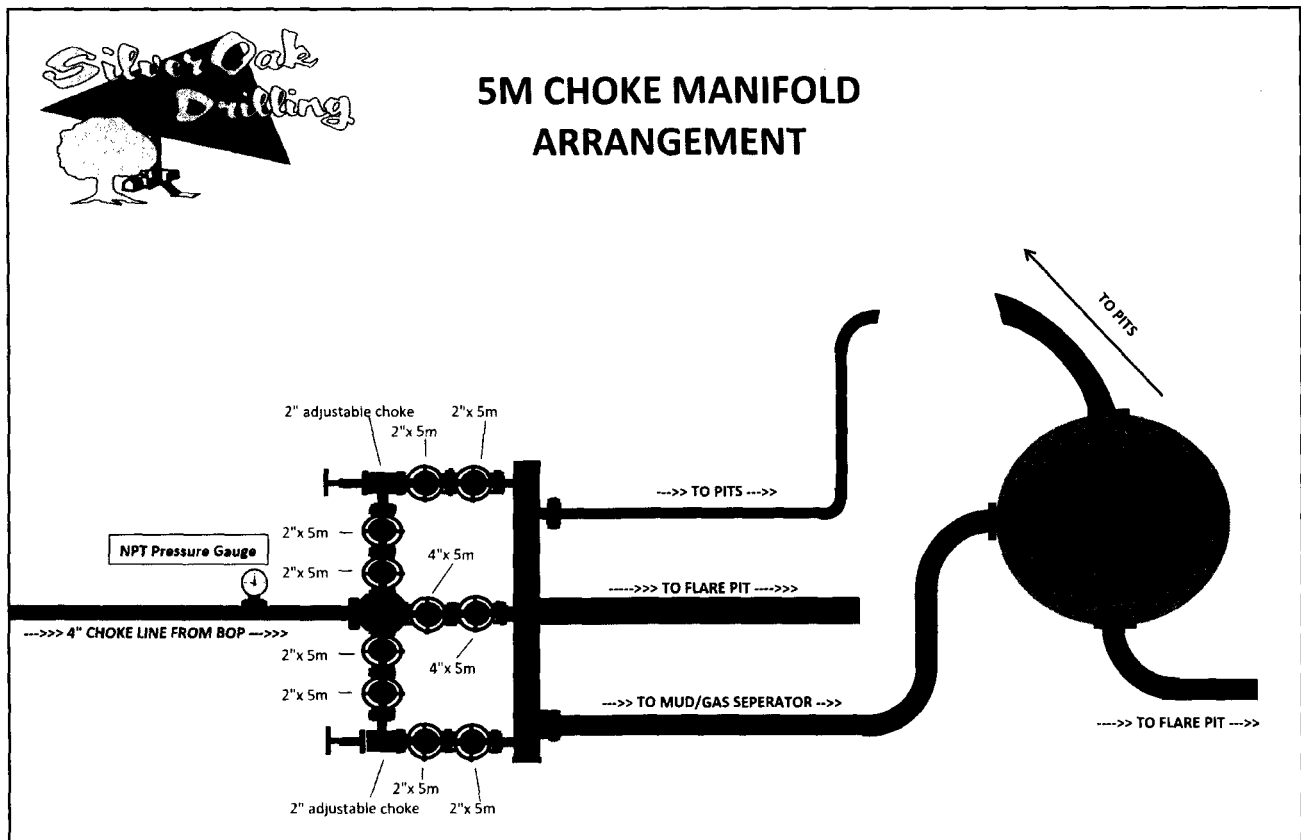
**Other Variance attachment:**



## Nipple-Up

- Raise stack and center over the wellhead
- Install DSA and ring gaskets
- Lower stack onto DSA
- Torque DSA flange bolts in a star pattern to the specified torque
- Verify BOP is centered to the rotary table
- Install rotating head
- Install hydraulic lines to BOP
- Verify manifold line-up
- Test BOP & manifold





## Pressure Testing

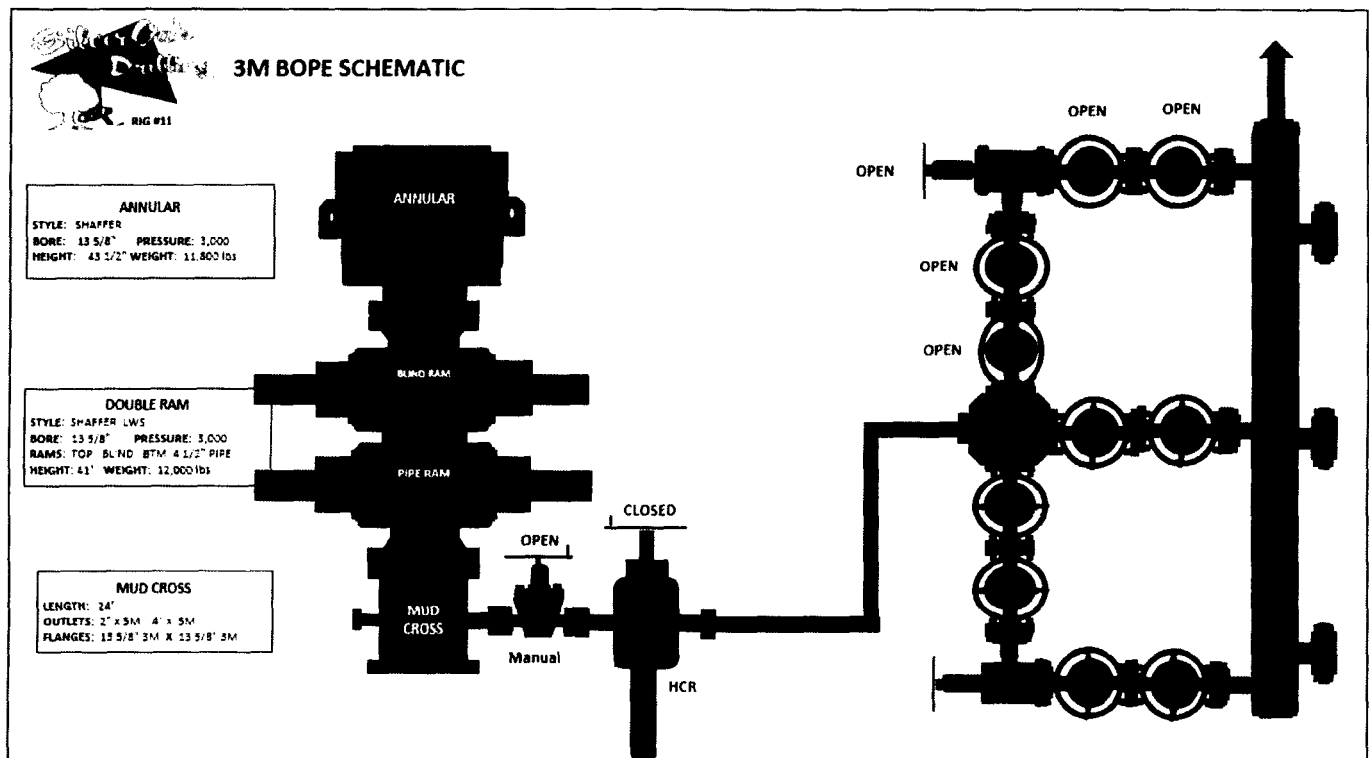
- a. All testing to be done with 3<sup>rd</sup> party testing crews
- b. All tests should be done for each BOP/Valve/Choke Manifold:
  1. Recorded for 10 minutes on low pressure (500 psi)
  2. Recorded for 10 minutes on high pressure (3000 psi)
  3. All BOP testing will be completed with a test plug in place in wellhead
- c. After BOP testing is complete, test casing (without test plug) to 2000 psi for 30 minutes
- d. Company representative to email all copies of all plots to Drilling Engineer as well as save in the well file.
- e. **BOP's shall be function tested every day.**

## Gas Buster Operation

- a. Flow should be directed to pits unless choke is needed to control gas
- b. Adjustable choke to adjusted only by Percussion Rep on location
- c. Flare should remain burning (pilot lit) anytime fluid is going through gas buster
- d. Choke needs to be monitored to not overrun gas buster

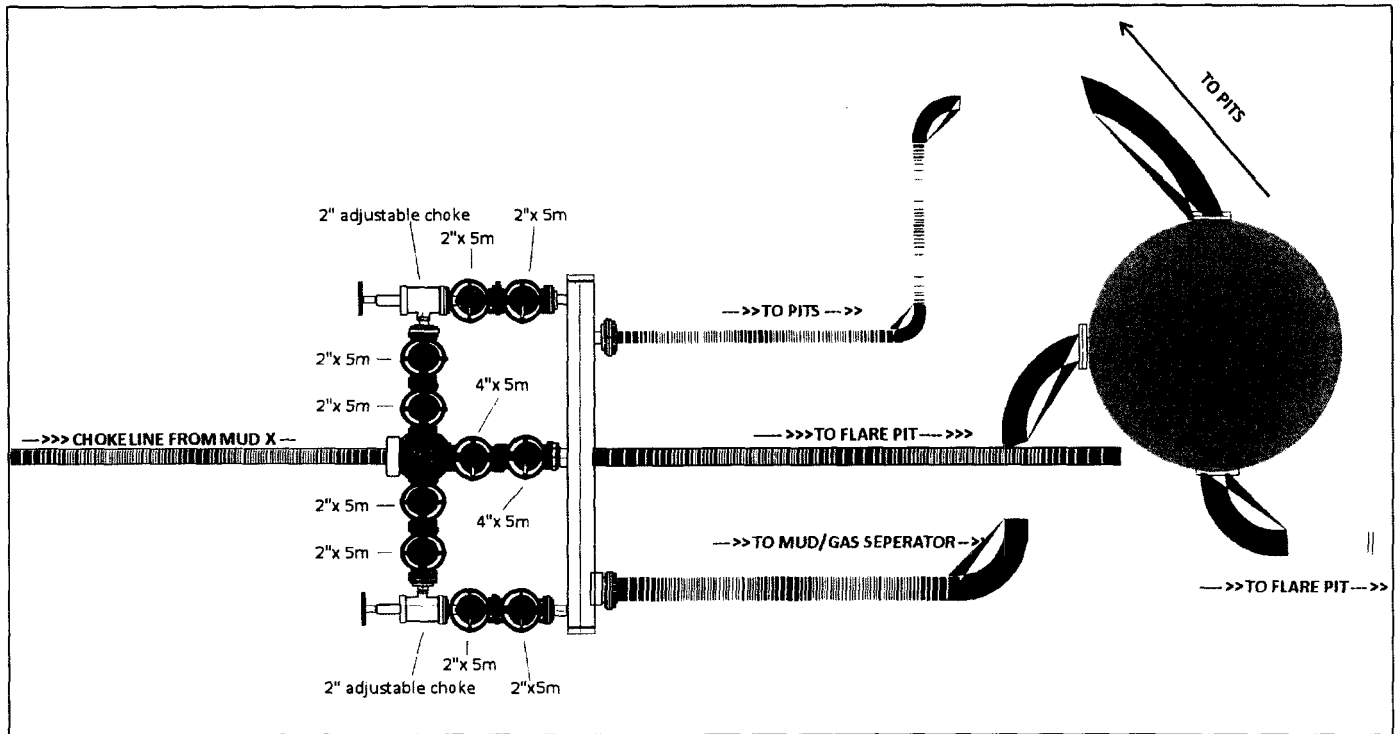
## Nipple-Up

- Raise stack and center over the wellhead
- Install DSA and ring gaskets
- Lower stack onto DSA
- Torque DSA flange bolts in a star pattern to the specified torque
- Verify BOP is centered to the rotary table
- Install rotating head
- Install hydraulic lines to BOP
- Verify manifold line-up
- Test BOP & manifold



## Pressure Testing

- a. All testing to be done with 3<sup>rd</sup> party testing crews
- b. All tests should be recorded for 5 minutes on low pressure (500 psi) and 5 minutes on high pressure (3,000 psi) and charted on a plot
- c. Company representative to email all copies of all plots to Drilling Engineer as well as save in the well file.
- d. **BOP's shall be function tested every day.**



## Gas Buster Operation

- Flow should be directed to pits unless choke is needed to control gas
- Adjustable choke to adjusted only by Percussion Rep on location
- Flare should remain burning (pilot lit) anytime fluid is going through gas buster
- Choke needs to be monitored to not overrun gas buster

## Casing Design Criteria and Load Case Assumptions

### Percussion Petroleum Operating, LLC. – Huber 3 Federal Area Wells

1. Collapse:  $DF_c=1.125$ 
  - a. Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
  - b. Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and minimum mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft)
2. Burst:  $DF_b=1.125$ 
  - a. Pressure Test: psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
  - b. Injection Down Casing: psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
3. Tensile:  $DF_T=1.8$ 
  - a. Overpull: An overpull force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.5 ppg).

| Surface Casing Program |              |             |                   |                                   |            |                        |             |                     |                   |
|------------------------|--------------|-------------|-------------------|-----------------------------------|------------|------------------------|-------------|---------------------|-------------------|
| Casing Size (in)       | Weight (ppf) | Grade       | Connection        | ID                                | ID (drift) | Collapse (psi)         | Burst (psi) | Tension (1,000 lbs) | Capacity (bbl/ft) |
| 9-5/8"                 | 36           | J-55        | STC               | 8.921                             | 8.765      | 2,020                  | 3,520       | 394                 | 0.0773            |
| Safety Factors         |              |             |                   |                                   |            |                        |             |                     |                   |
|                        | API Rec. SF  | ACTUAL SF   | Case              | External Fluids                   |            | Internal Fluids        |             |                     |                   |
| Collapse               | 1.125        | <b>3.30</b> | Lost Circulation  | Mud                               |            | None                   |             |                     |                   |
| Burst                  | 1.125        | <b>1.46</b> | Plug Bump         | Green Cement + 2ksi surf pressure |            | Displacement Fluid/Mud |             |                     |                   |
| Tension                | 1.8          | <b>2.80</b> | 100 klbs Overpull | Mud                               |            | Mud                    |             |                     |                   |

**Buoyed Casing Weight: 40,798 lbs (assuming 8.4 ppg fluid and 1,300' casing-worst case scenario)**

| Production Casing Program |              |             |                   |                                   |            |                        |             |                     |                   |
|---------------------------|--------------|-------------|-------------------|-----------------------------------|------------|------------------------|-------------|---------------------|-------------------|
| Casing Size (in)          | Weight (ppf) | Grade       | Connection        | ID                                | ID (drift) | Collapse (psi)         | Burst (psi) | Tension (1,000 lbs) | Capacity (bbl/ft) |
| 5-1/2"                    | 17           | L-80        | BTC               | 4.892                             | 4.767      | 6,280                  | 7,740       | 348                 | 0.0232            |
| Safety Factors            |              |             |                   |                                   |            |                        |             |                     |                   |
|                           | API Rec. SF  | ACTUAL SF   | Case              | External Fluids                   |            | Internal Fluids        |             |                     |                   |
| Collapse                  | 1.125        | <b>3.75</b> | Lost Circulation  | Mud                               |            | None                   |             |                     |                   |
| Burst                     | 1.125        | <b>2.47</b> | Plug Bump         | Green Cement + 2ksi surf pressure |            | Displacement Fluid/Mud |             |                     |                   |
| Tension                   | 1.8          | <b>2.29</b> | 100 klbs Overpull | Mud                               |            | Mud                    |             |                     |                   |

**Buoyed Casing Weight: 51,869 lbs (assuming 8.4 ppg fluid and 3,500' TVD-worst case scenario)**

## Casing Design Criteria and Load Case Assumptions

### Percussion Petroleum Operating, LLC. – Huber 3 Federal Area Wells

1. Collapse:  $DF_c=1.125$ 
  - a. Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
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| Surface Casing Program |              |             |                   |                                   |            |                        |             |                     |                   |
|------------------------|--------------|-------------|-------------------|-----------------------------------|------------|------------------------|-------------|---------------------|-------------------|
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| Safety Factors         |              |             |                   |                                   |            |                        |             |                     |                   |
|                        | API Rec. SF  | ACTUAL SF   | Case              | External Fluids                   |            | Internal Fluids        |             |                     |                   |
| Collapse               | 1.125        | <b>3.30</b> | Lost Circulation  | Mud                               |            | None                   |             |                     |                   |
| Burst                  | 1.125        | <b>1.46</b> | Plug Bump         | Green Cement + 2ksi surf pressure |            | Displacement Fluid/Mud |             |                     |                   |
| Tension                | 1.8          | <b>2.80</b> | 100 klbs Overpull | Mud                               |            | Mud                    |             |                     |                   |

*Buoyed Casing Weight: 40,798 lbs (assuming 8.4 ppg fluid and 1,300' casing-worst case scenario)*

| Production Casing Program |              |             |                   |                                   |            |                        |             |                     |                   |
|---------------------------|--------------|-------------|-------------------|-----------------------------------|------------|------------------------|-------------|---------------------|-------------------|
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| 5-1/2"                    | 17           | L-80        | BTC               | 4.892                             | 4.767      | 6,280                  | 7,740       | 348                 | 0.0232            |
| Safety Factors            |              |             |                   |                                   |            |                        |             |                     |                   |
|                           | API Rec. SF  | ACTUAL SF   | Case              | External Fluids                   |            | Internal Fluids        |             |                     |                   |
| Collapse                  | 1.125        | <b>3.75</b> | Lost Circulation  | Mud                               |            | None                   |             |                     |                   |
| Burst                     | 1.125        | <b>2.47</b> | Plug Bump         | Green Cement + 2ksi surf pressure |            | Displacement Fluid/Mud |             |                     |                   |
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*Buoyed Casing Weight: 51,869 lbs (assuming 8.4 ppg fluid and 3,500' TVD-worst case scenario)*

## Hydrogen Sulfide Drilling Operations Plan

Percussion Petroleum Operating, LLC.

1. H<sub>2</sub>S Safety Instructions to the following:
  - Characteristics of H<sub>2</sub>S.
  - Physical effects and hazards.
  - Principal and operation of H<sub>2</sub>S detectors, warning system and briefing areas.
  - Evacuation procedures, routes and First Aid.
  - Proper use of safety equipment and life support systems.
  - Essential personnel meeting medical evaluation criteria will receive additional training on the proper use of 30 min pressure demand air packs.
2. H<sub>2</sub>S Detection & Alarm Systems:
  - H<sub>2</sub>S sensor/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud returns pits by the shale shaker. Additional H<sub>2</sub>S monitors may be placed as deemed necessary.
  - An audio alarm system will be installed on the derrick, the floor, and in the doghouse.
3. Windssocks and Wind Streamers:
  - Windssocks at mud pit area should be high enough to be visible.
  - Windssock on the rig floor/top of doghouse should be high enough to be visible.
4. Condition Flags & Signs:
  - Warning sign on access road to location
  - Flags to be displayed on sign at entrance to location
    - i. Green Flag – Normal Safe Operation Condition
    - ii. Yellow Flag – Potential Pressure and Danger
    - iii. Red Flag – Danger (H<sub>2</sub>S present in dangerous concentrations) Only H<sub>2</sub>S trained personnel admitted on location
5. Well Control Equipment:
  - See attached APD
6. Communications:
  - While working under masks, chalkboards will be used for communications
  - Hand signals will be used where chalk board is inappropriate
  - Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at drilling foreman's trailer or living quarters.
7. Drilling Stem Testing:
  - No Drill Stem Tests or hole coring is planned at this time.
8. Drilling contractor supervisor will be required to be familiar with the effects H<sub>2</sub>S has on tubular goods and other mechanical equipment.
9. If H<sub>2</sub>S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H<sub>2</sub>S scavenger chemicals if necessary.
10. Emergency Contacts:

| Emergency Contact Information - H2S Contingency Plan |                              |              |              |                               |
|------------------------------------------------------|------------------------------|--------------|--------------|-------------------------------|
| Percussion Petroleum Operating, LLC                  | 713-518-1331                 |              |              |                               |
| Key Parties at Percussion Petroleum                  |                              | Office       | Mobile       | Email                         |
| Lelan J Anders                                       | Vice President of Operations | 713-429-1291 | 281-908-1752 | Lelan@PercussionPetroleum.com |
| Lupe Carrillo                                        | Chief Operating Officer      | 713-589-9509 | 832-776-1869 | Lupe@PercussionPetroleum.com  |
| John H. Campbell III                                 | Chief Executive Officer      | 713-589-4683 | 936-718-6488 | John@PercussionPetroleum.com  |

**Artesia, New Mexico:**

|                                      |              |
|--------------------------------------|--------------|
| Ambulance                            | 911          |
| State Police                         | 575-746-2703 |
| City Police                          | 575-746-2703 |
| Sheriff's Office                     | 575-746-9888 |
| Fire Department                      | 575-746-2701 |
| Local Emergency Planning Committee   | 575-746-2122 |
| New Mexico Oil Conservation Division | 575-748-1283 |

**Carlsbad, New Mexico:**

|                                      |              |
|--------------------------------------|--------------|
| Ambulance                            | 911          |
| State Police                         | 575-885-3137 |
| City Police                          | 575-885-2111 |
| Sheriff's Office                     | 575-887-7551 |
| Fire Department                      | 575-887-3798 |
| Local Emergency Planning Committee   | 575-887-6544 |
| New Mexico Oil Conservation Division | 575-887-6544 |

**Santa Fe, New Mexico:**

|                                                  |              |
|--------------------------------------------------|--------------|
| New Mexico Emergency Response Commission         | 505-476-9600 |
| New Mexico Emergency Response Commission (24 hr) | 505-827-9126 |
| New Mexico State Emergency Operations Center     | 505-476-9635 |

**Federal Contacts:**

|                                                     |              |
|-----------------------------------------------------|--------------|
| Carlsbad BLM Office                                 | 575-234-5972 |
| National Emergency Response Center (Washington, DC) | 800-424-8802 |

**Medical:**

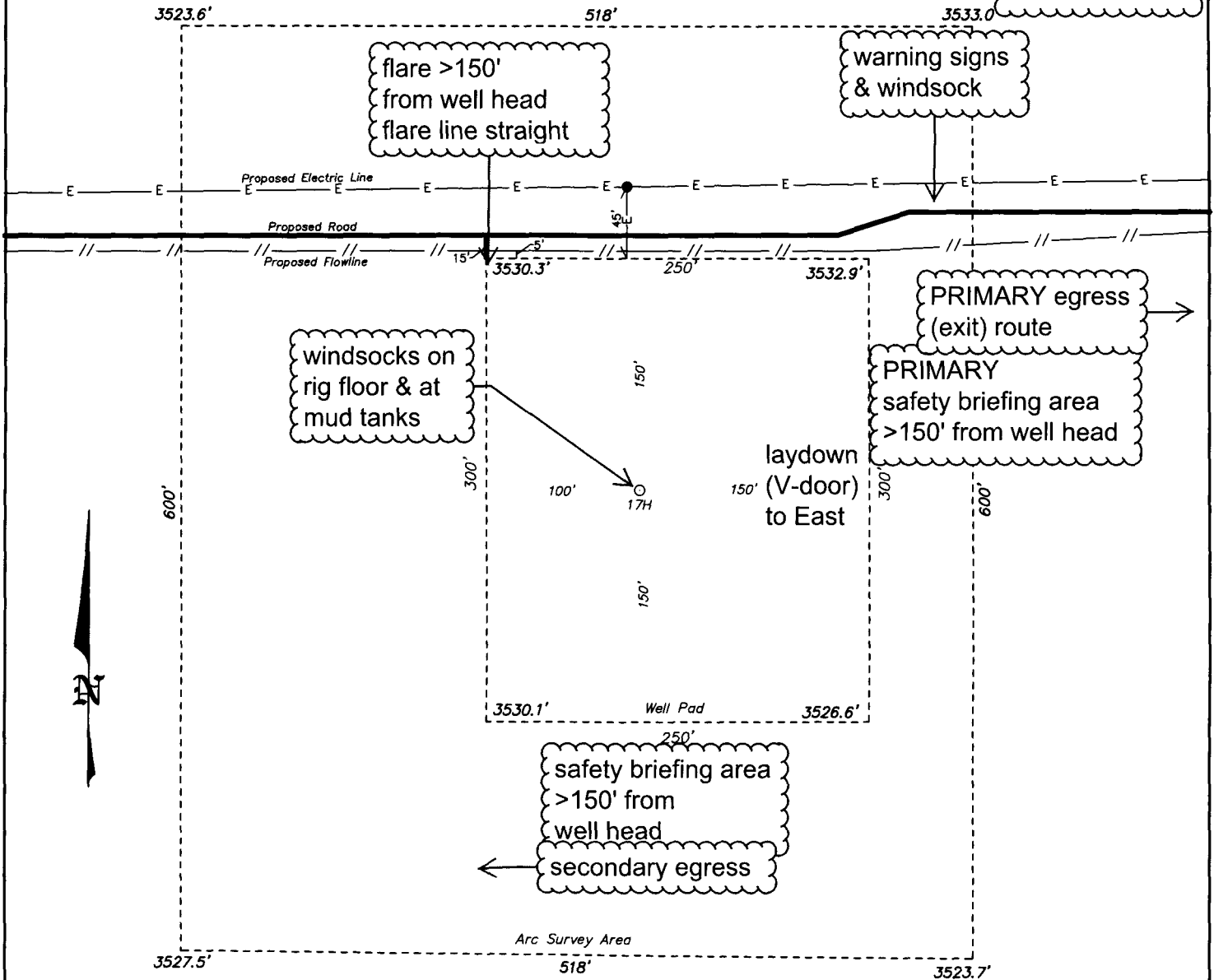
|                                            |              |
|--------------------------------------------|--------------|
| Flight for Life - Lubbock, TX              | 806-743-9911 |
| AeroCare - Lubbock, TX                     | 806-747-8923 |
| Med Flight Air Ambulance - Albuquerque, NM | 505-842-4433 |
| SB Air Med Service - Albuquerque, NM       | 505-842-4949 |

**Well Control/Other:**

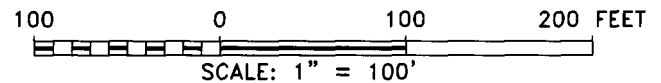
|                   |              |
|-------------------|--------------|
| Wild Well Control | 281-784-4700 |
| Boots & Coots IWC | 800-256-9688 |
| B.J. Services     | 575-746-3569 |
| Halliburton       | 575-746-2757 |

**SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.**

highest ground  
to the northeast



prevailing wind  
blows from  
S or SSE



**PERCUSSION PETROLEUM OPERATING, LLC**

REF: HUBER FEDERAL #17H / WELL PAD TOPO

THE HUBER FEDERAL #17H LOCATED 479' FROM  
THE SOUTH LINE AND 1005' FROM THE WEST LINE OF  
SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

**basin  
surveys**  
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in the oilfield

P.O. Box 1786 (575) 383-7316 - Office  
1120 N. West County Rd. (575) 392-2206 - Fax  
Hobbs, New Mexico 88241 basinsurveys.com

W.O. Number: 32878

Drawn By: K GOAD

Date: 05-05-2017

Survey Date: 04-20-2017

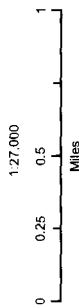
Sheet 1 of 1 Sheets

# **Percussion Petroleum Operating LLC**

Huber Federal #17H  
H<sub>2</sub>S Contingency Plan:  
2 Mile Radius Map

Section 34, Township 19S, Range 25E  
Eddy County, New Mexico

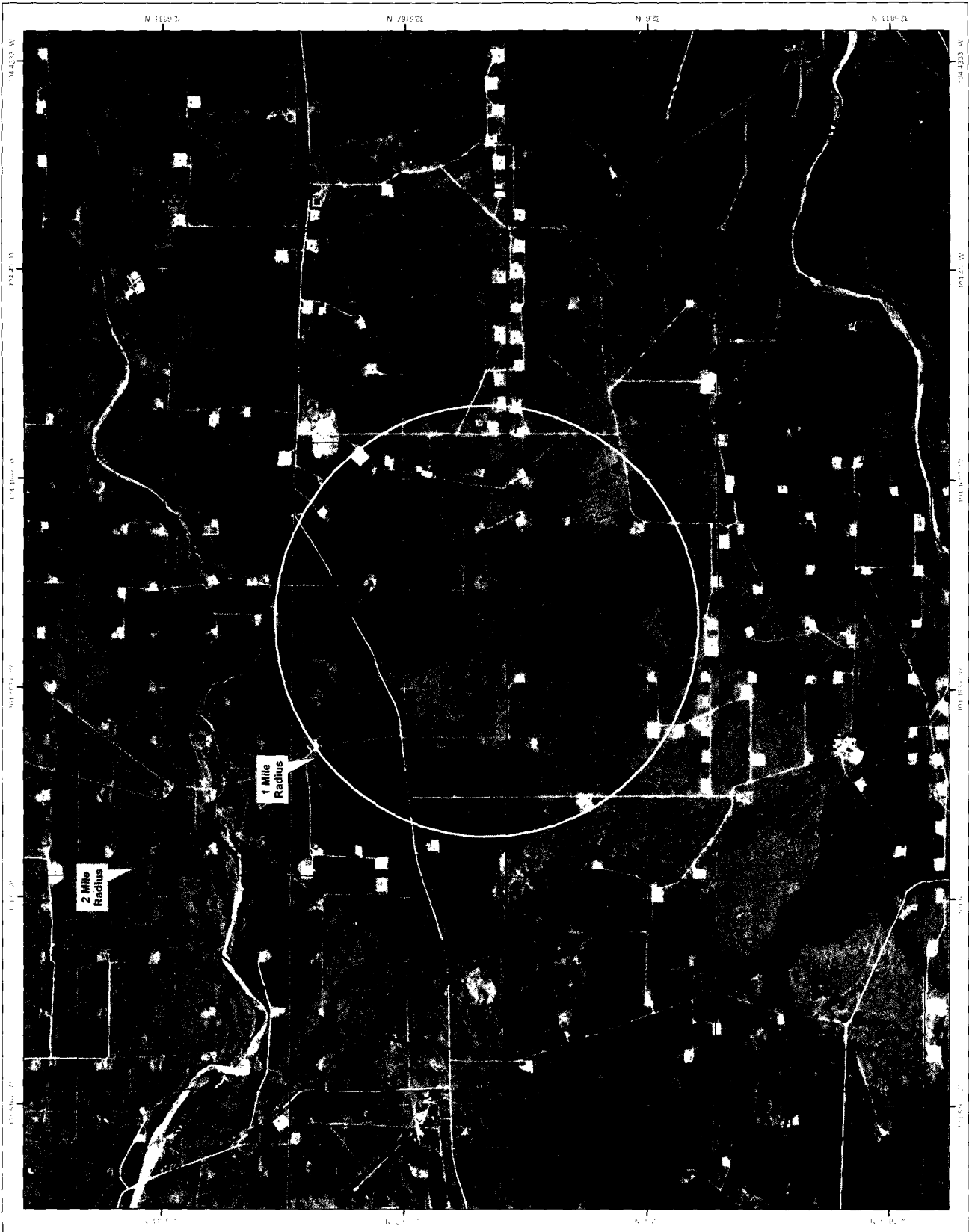
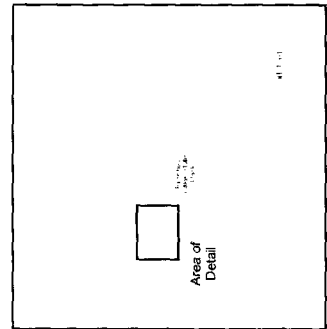
⊙ Surface Hole Location

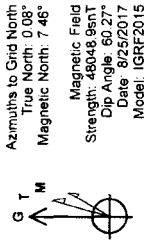


NAD 1983 New Mexico State Plane East  
FIPS 3001 Feet



Prepared by Permits West, Inc., September 11, 2017  
for Percussion Petroleum Operating LLC



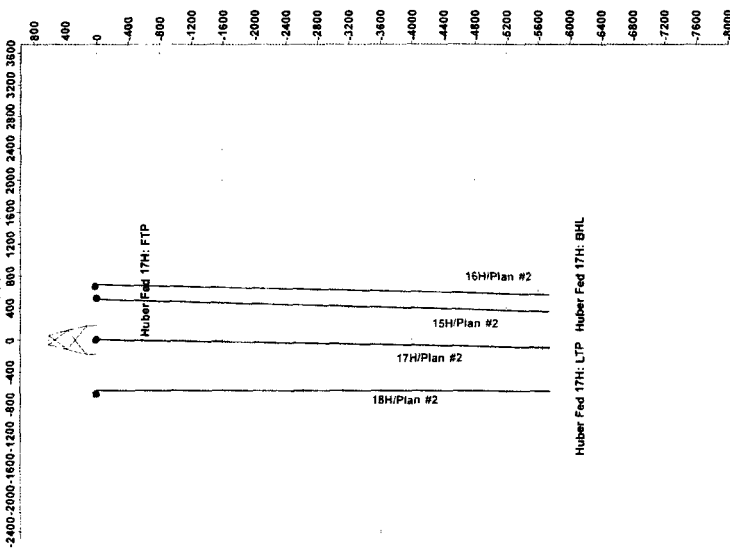


**TOTAL CORRECTION**  
Magnetic North is 7.46° East of Grid North (Magnetic Convergence)

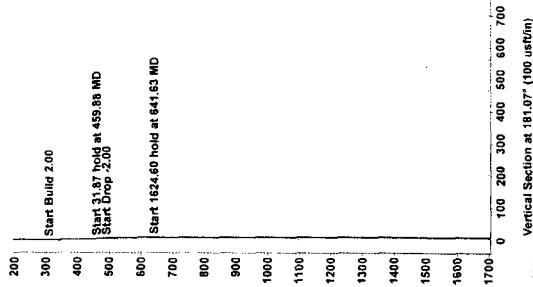
Company: Percussion Petroleum, LLC  
Project: Eddy County, NM  
Site: Huber Fed  
Well: 17H  
Wellbore: OH  
Rig: NA  
Design: Plan #2 / 10:46, August 23 2017



West/East (+) (400 usft/in)



True Vertical Depth (100 usft/in)



Vertical Section at 181.07° (100 usft/in)

**SECTION DETAILS**

| Sec | MD      | Inc   | Azi    | TVD     | +N/S   | +E/W  | Deg  | Vsect |
|-----|---------|-------|--------|---------|--------|-------|------|-------|
| 1   | 0.00    | 0.00  | 0.00   | 0.00    | 0.00   | 0.00  | 0.00 | 0.00  |
| 2   | 310.00  | 0.00  | 360.00 | 310.00  | 0.00   | 0.00  | 0.00 | 0.00  |
| 3   | 459.88  | 3.00  | 145.59 | 459.81  | -3.23  | 2.21  | 2.00 | 3.19  |
| 4   | 641.75  | 3.00  | 145.59 | 641.64  | -4.61  | 3.16  | 0.00 | 4.55  |
| 5   | 824.03  | 0.00  | 360.00 | 824.03  | -7.84  | 5.37  | 2.00 | 7.74  |
| 6   | 1006.23 | 0.00  | 360.00 | 1006.23 | -7.84  | 5.37  | 0.00 | 7.74  |
| 7   | 1188.43 | 88.55 | 181.07 | 1188.43 | -10.30 | 10.00 | 0.00 | 57.20 |
| 8   | 1370.63 | 88.55 | 181.07 | 1370.63 | -10.30 | 10.00 | 0.00 | 57.20 |

**WELLBORE TARGET DETAILS (MAP CO-ORDINATES)**

| Name               | TVD     | +N/S    | +E/W  | Northing  | Easting   | Shape |
|--------------------|---------|---------|-------|-----------|-----------|-------|
| Huber Fed 17H: FTP | 2839.00 | -579.20 | -5.30 | 585483.90 | 496794.70 | Point |
| Huber Fed 17H: BHL | 2839.00 | -579.20 | -5.30 | 585483.90 | 496794.70 | Point |
| Huber Fed 17H: LTP | 2839.00 | -579.20 | -5.30 | 585483.90 | 496794.70 | Point |

**PROJECT DETAILS: Eddy County, NM**

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

**Disclaimer:**  
All data are based on the best available information and are not guaranteed to be accurate. The user assumes all liability for any use of this information.

Start 5199.31 hold at 3164.72 MD

Huber Fed 17H: FTP

Vertical Section at 181.07° (100 usft/in)

17H/Plan #2  
Huber Fed 17H: LTP  
TD at 8324.03

Huber Fed 17H: BHL  
Plan: Plan #2 (17H/Plan #2)  
NA

Created By: Daniel Benn Date: 10:46, August 23 2017

**Database:** WBDS\_SQL\_2  
**Company:** Percussion Petroleum, LLC  
**Project:** Eddy County, NM  
**Site:** Huber Fed  
**Well:** 17H  
**Wellbore:** OH  
**Design:** Plan #2

**Local Co-ordinate Reference:** Well 17H  
**TVD Reference:** RKB=25' @ 3555.00usft (NA)  
**MD Reference:** RKB=25' @ 3555.00usft (NA)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

|                    |                           |                      |                |
|--------------------|---------------------------|----------------------|----------------|
| <b>Project</b>     | Eddy County, NM           |                      |                |
| <b>Map System:</b> | US State Plane 1983       | <b>System Datum:</b> | Mean Sea Level |
| <b>Geo Datum:</b>  | North American Datum 1983 |                      |                |
| <b>Map Zone:</b>   | New Mexico Eastern Zone   |                      |                |

|                       |           |              |                 |                   |             |
|-----------------------|-----------|--------------|-----------------|-------------------|-------------|
| Site                  | Huber Fed |              |                 |                   |             |
| Site Position:        |           | Northing:    | 586,082.90 usft | Latitude:         | 32.611121   |
| From:                 | Map       | Easting:     | 499,887.10 usft | Longitude:        | -104.467950 |
| Position Uncertainty: | 0.00 usft | Slot Radius: | 13.200 in       | Grid Convergence: | -0.07 °     |

|                      |           |                |                     |                 |               |               |
|----------------------|-----------|----------------|---------------------|-----------------|---------------|---------------|
| Well                 | 17H       |                |                     |                 |               |               |
| Well Position        | +N/-S     | -19.80 usft    | Northing:           | 586,063.10 usft | Latitude:     | 32.611056     |
|                      | +E/-W     | -3,087.10 usft | Easting:            | 496,800.00 usft | Longitude:    | -104.477976   |
| Position Uncertainty | 0.00 usft |                | Wellhead Elevation: |                 | Ground Level: | 3,530.00 usft |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | OH                |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF2015          | 8/25/2017          | 7.38                   | 60.27                | 48,048.90259718            |

|                          |                                |                     |                     |                      |      |
|--------------------------|--------------------------------|---------------------|---------------------|----------------------|------|
| <b>Design</b>            | Plan #2                        |                     |                     |                      |      |
| <b>Audit Notes:</b>      |                                |                     |                     |                      |      |
| <b>Version:</b>          |                                | <b>Phase:</b>       | PLAN                | <b>Tie On Depth:</b> | 0.00 |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b> | <b>Direction (°)</b> |      |
|                          | 0.00                           | 0.00                | 0.00                | 181.07               |      |

|                                 |                        |                          |                       |                |  |
|---------------------------------|------------------------|--------------------------|-----------------------|----------------|--|
| <b>Plan Survey Tool Program</b> | <b>Date</b> 8/23/2017  |                          |                       |                |  |
| <b>Depth From (usft)</b>        | <b>Depth To (usft)</b> | <b>Survey (Wellbore)</b> | <b>Tool Name</b>      | <b>Remarks</b> |  |
| 1                               | 0.00                   | 8,323.88 Plan #2 (OH)    | MWD+IGRF              |                |  |
|                                 |                        |                          | OWSG MWD + IGRF or WI |                |  |

|                              |                        |                    |                              |                     |                     |                              |                             |                            |                |                   |
|------------------------------|------------------------|--------------------|------------------------------|---------------------|---------------------|------------------------------|-----------------------------|----------------------------|----------------|-------------------|
| <b>Plan Sections</b>         |                        |                    |                              |                     |                     |                              |                             |                            |                |                   |
| <b>Measured Depth (usft)</b> | <b>Inclination (°)</b> | <b>Azimuth (°)</b> | <b>Vertical Depth (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b> | <b>Dogleg Rate (°/100ft)</b> | <b>Build Rate (°/100ft)</b> | <b>Turn Rate (°/100ft)</b> | <b>TFO (°)</b> | <b>Target</b>     |
| 0.00                         | 0.00                   | 0.00               | 0.00                         | 0.00                | 0.00                | 0.00                         | 0.00                        | 0.00                       | 0.00           |                   |
| 310.00                       | 0.00                   | 360.00             | 310.00                       | 0.00                | 0.00                | 0.00                         | 0.00                        | 0.00                       | 360.00         |                   |
| 459.88                       | 3.00                   | 145.59             | 459.81                       | -3.23               | 2.21                | 2.00                         | 2.00                        | 0.00                       | 145.59         |                   |
| 491.75                       | 3.00                   | 145.59             | 491.64                       | -4.61               | 3.16                | 0.00                         | 0.00                        | 0.00                       | 0.00           |                   |
| 641.63                       | 0.00                   | 360.00             | 641.45                       | -7.84               | 5.37                | 2.00                         | -2.00                       | 0.00                       | 180.00         |                   |
| 2,266.23                     | 0.00                   | 360.00             | 2,266.05                     | -7.84               | 5.37                | 0.00                         | 0.00                        | 0.00                       | 0.00           |                   |
| 3,164.72                     | 89.85                  | 181.07             | 2,839.00                     | -579.20             | -5.30               | 10.00                        | 10.00                       | 0.00                       | 0.00           | Huber Fed 17H: FT |
| 8,324.03                     | 89.85                  | 181.07             | 2,852.51                     | -5,737.59           | -101.64             | 0.00                         | 0.00                        | 0.00                       | 0.00           | Huber Fed 17H: BF |

Database: WBDS\_SQL\_2  
Company: Percussion Petroleum, LLC  
Project: Eddy County, NM  
Site: Huber Fed  
Well: 17H  
Wellbore: OH  
Design: Plan #2

Local Co-ordinate Reference: Well 17H  
TVD Reference: RKB=25' @ 3555.00usft (NA)  
MD Reference: RKB=25' @ 3555.00usft (NA)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-----------------------|----------------------|---------------------|
| 0.00                  | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                  | 0.00                 | 0.00                |
| 100.00                | 0.00            | 0.00        | 100.00                | 0.00         | 0.00         | 0.00                    | 0.00                  | 0.00                 | 0.00                |
| 200.00                | 0.00            | 0.00        | 200.00                | 0.00         | 0.00         | 0.00                    | 0.00                  | 0.00                 | 0.00                |
| 300.00                | 0.00            | 0.00        | 300.00                | 0.00         | 0.00         | 0.00                    | 0.00                  | 0.00                 | 0.00                |
| 310.00                | 0.00            | 360.00      | 310.00                | 0.00         | 0.00         | 0.00                    | 0.00                  | 0.00                 | 0.00                |
| 400.00                | 1.80            | 145.59      | 399.99                | -1.17        | 0.80         | 1.15                    | 2.00                  | 2.00                 | 0.00                |
| 459.88                | 3.00            | 145.59      | 459.81                | -3.23        | 2.21         | 3.19                    | 2.00                  | 2.00                 | 0.00                |
| 491.75                | 3.00            | 145.59      | 491.64                | -4.61        | 3.16         | 4.55                    | 0.00                  | 0.00                 | 0.00                |
| 500.00                | 2.83            | 145.59      | 499.88                | -4.96        | 3.39         | 4.89                    | 2.00                  | -2.00                | 0.00                |
| 600.00                | 0.83            | 145.59      | 599.82                | -7.59        | 5.20         | 7.50                    | 2.00                  | -2.00                | 0.00                |
| 641.63                | 0.00            | 360.00      | 641.45                | -7.84        | 5.37         | 7.74                    | 2.00                  | -2.00                | 0.00                |
| 700.00                | 0.00            | 0.00        | 699.82                | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 800.00                | 0.00            | 0.00        | 799.82                | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 900.00                | 0.00            | 0.00        | 899.82                | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 1,000.00              | 0.00            | 0.00        | 999.82                | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 1,100.00              | 0.00            | 0.00        | 1,099.82              | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 1,200.00              | 0.00            | 0.00        | 1,199.82              | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 1,300.00              | 0.00            | 0.00        | 1,299.82              | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 1,400.00              | 0.00            | 0.00        | 1,399.82              | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 1,500.00              | 0.00            | 0.00        | 1,499.82              | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 1,600.00              | 0.00            | 0.00        | 1,599.82              | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 1,700.00              | 0.00            | 0.00        | 1,699.82              | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 1,800.00              | 0.00            | 0.00        | 1,799.82              | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 1,900.00              | 0.00            | 0.00        | 1,899.82              | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 2,000.00              | 0.00            | 0.00        | 1,999.82              | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 2,100.00              | 0.00            | 0.00        | 2,099.82              | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 2,200.00              | 0.00            | 0.00        | 2,199.82              | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 2,266.23              | 0.00            | 360.00      | 2,266.05              | -7.84        | 5.37         | 7.74                    | 0.00                  | 0.00                 | 0.00                |
| 2,300.00              | 3.38            | 181.07      | 2,299.80              | -8.84        | 5.35         | 8.74                    | 10.00                 | 10.00                | 0.00                |
| 2,350.00              | 8.38            | 181.07      | 2,349.52              | -13.96       | 5.26         | 13.85                   | 10.00                 | 10.00                | 0.00                |
| 2,400.00              | 13.38           | 181.07      | 2,398.61              | -23.39       | 5.08         | 23.29                   | 10.00                 | 10.00                | 0.00                |
| 2,450.00              | 18.38           | 181.07      | 2,446.68              | -37.06       | 4.83         | 36.96                   | 10.00                 | 10.00                | 0.00                |
| 2,500.00              | 23.38           | 181.07      | 2,493.39              | -54.87       | 4.49         | 54.77                   | 10.00                 | 10.00                | 0.00                |
| 2,550.00              | 28.38           | 181.07      | 2,538.36              | -76.68       | 4.09         | 76.59                   | 10.00                 | 10.00                | 0.00                |
| 2,600.00              | 33.38           | 181.07      | 2,581.26              | -102.33      | 3.61         | 102.24                  | 10.00                 | 10.00                | 0.00                |
| 2,650.00              | 38.38           | 181.07      | 2,621.76              | -131.62      | 3.06         | 131.54                  | 10.00                 | 10.00                | 0.00                |
| 2,700.00              | 43.38           | 181.07      | 2,659.55              | -164.32      | 2.45         | 164.25                  | 10.00                 | 10.00                | 0.00                |
| 2,750.00              | 48.38           | 181.07      | 2,694.35              | -200.20      | 1.78         | 200.13                  | 10.00                 | 10.00                | 0.00                |
| 2,800.00              | 53.38           | 181.07      | 2,725.89              | -238.97      | 1.05         | 238.91                  | 10.00                 | 10.00                | 0.00                |
| 2,850.00              | 58.38           | 181.07      | 2,753.93              | -280.34      | 0.28         | 280.29                  | 10.00                 | 10.00                | 0.00                |
| 2,900.00              | 63.38           | 181.07      | 2,778.26              | -324.00      | -0.53        | 323.95                  | 10.00                 | 10.00                | 0.00                |
| 2,950.00              | 68.38           | 181.07      | 2,798.68              | -369.61      | -1.39        | 369.57                  | 10.00                 | 10.00                | 0.00                |
| 3,000.00              | 73.38           | 181.07      | 2,815.06              | -416.83      | -2.27        | 416.80                  | 10.00                 | 10.00                | 0.00                |
| 3,050.00              | 78.38           | 181.07      | 2,827.25              | -465.29      | -3.17        | 465.27                  | 10.00                 | 10.00                | 0.00                |
| 3,100.00              | 83.38           | 181.07      | 2,835.18              | -514.63      | -4.09        | 514.62                  | 10.00                 | 10.00                | 0.00                |
| 3,150.00              | 88.38           | 181.07      | 2,838.77              | -564.48      | -5.03        | 564.48                  | 10.00                 | 10.00                | 0.00                |
| 3,164.72              | 89.85           | 181.07      | 2,839.00              | -579.20      | -5.30        | 579.20                  | 10.00                 | 10.00                | 0.00                |
| 3,200.00              | 89.85           | 181.07      | 2,839.09              | -614.47      | -5.96        | 614.47                  | 0.00                  | 0.00                 | 0.00                |
| 3,300.00              | 89.85           | 181.07      | 2,839.35              | -714.45      | -7.83        | 714.47                  | 0.00                  | 0.00                 | 0.00                |
| 3,400.00              | 89.85           | 181.07      | 2,839.62              | -814.43      | -9.69        | 814.47                  | 0.00                  | 0.00                 | 0.00                |
| 3,500.00              | 89.85           | 181.07      | 2,839.88              | -914.42      | -11.56       | 914.47                  | 0.00                  | 0.00                 | 0.00                |
| 3,600.00              | 89.85           | 181.07      | 2,840.14              | -1,014.40    | -13.43       | 1,014.47                | 0.00                  | 0.00                 | 0.00                |
| 3,700.00              | 89.85           | 181.07      | 2,840.40              | -1,114.38    | -15.30       | 1,114.47                | 0.00                  | 0.00                 | 0.00                |
| 3,800.00              | 89.85           | 181.07      | 2,840.66              | -1,214.36    | -17.16       | 1,214.47                | 0.00                  | 0.00                 | 0.00                |

**Database:** WBDS\_SQL\_2  
**Company:** Percussion Petroleum, LLC  
**Project:** Eddy County, NM  
**Site:** Huber Fed  
**Well:** 17H  
**Wellbore:** OH  
**Design:** Plan #2

**Local Co-ordinate Reference:** Well 17H  
**TVD Reference:** RKB=25' @ 3555.00usft (NA)  
**MD Reference:** RKB=25' @ 3555.00usft (NA)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

**Planned Survey**

| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Vertical<br>Section<br>(usft) | Dogleg<br>Rate<br>(°/100ft) | Build<br>Rate<br>(°/100ft) | Turn<br>Rate<br>(°/100ft) |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-----------------------------|----------------------------|---------------------------|
| 3,900.00                    | 89.85              | 181.07         | 2,840.93                    | -1,314.35       | -19.03          | 1,314.47                      | 0.00                        | 0.00                       | 0.00                      |
| 4,000.00                    | 89.85              | 181.07         | 2,841.19                    | -1,414.33       | -20.90          | 1,414.47                      | 0.00                        | 0.00                       | 0.00                      |
| 4,100.00                    | 89.85              | 181.07         | 2,841.45                    | -1,514.31       | -22.77          | 1,514.47                      | 0.00                        | 0.00                       | 0.00                      |
| 4,200.00                    | 89.85              | 181.07         | 2,841.71                    | -1,614.29       | -24.63          | 1,614.47                      | 0.00                        | 0.00                       | 0.00                      |
| 4,300.00                    | 89.85              | 181.07         | 2,841.97                    | -1,714.27       | -26.50          | 1,714.47                      | 0.00                        | 0.00                       | 0.00                      |
| 4,400.00                    | 89.85              | 181.07         | 2,842.23                    | -1,814.26       | -28.37          | 1,814.47                      | 0.00                        | 0.00                       | 0.00                      |
| 4,500.00                    | 89.85              | 181.07         | 2,842.50                    | -1,914.24       | -30.23          | 1,914.47                      | 0.00                        | 0.00                       | 0.00                      |
| 4,600.00                    | 89.85              | 181.07         | 2,842.76                    | -2,014.22       | -32.10          | 2,014.47                      | 0.00                        | 0.00                       | 0.00                      |
| 4,700.00                    | 89.85              | 181.07         | 2,843.02                    | -2,114.20       | -33.97          | 2,114.47                      | 0.00                        | 0.00                       | 0.00                      |
| 4,800.00                    | 89.85              | 181.07         | 2,843.28                    | -2,214.19       | -35.84          | 2,214.47                      | 0.00                        | 0.00                       | 0.00                      |
| 4,900.00                    | 89.85              | 181.07         | 2,843.54                    | -2,314.17       | -37.70          | 2,314.47                      | 0.00                        | 0.00                       | 0.00                      |
| 5,000.00                    | 89.85              | 181.07         | 2,843.80                    | -2,414.15       | -39.57          | 2,414.47                      | 0.00                        | 0.00                       | 0.00                      |
| 5,100.00                    | 89.85              | 181.07         | 2,844.07                    | -2,514.13       | -41.44          | 2,514.47                      | 0.00                        | 0.00                       | 0.00                      |
| 5,200.00                    | 89.85              | 181.07         | 2,844.33                    | -2,614.11       | -43.31          | 2,614.47                      | 0.00                        | 0.00                       | 0.00                      |
| 5,300.00                    | 89.85              | 181.07         | 2,844.59                    | -2,714.10       | -45.17          | 2,714.47                      | 0.00                        | 0.00                       | 0.00                      |
| 5,400.00                    | 89.85              | 181.07         | 2,844.85                    | -2,814.08       | -47.04          | 2,814.47                      | 0.00                        | 0.00                       | 0.00                      |
| 5,500.00                    | 89.85              | 181.07         | 2,845.11                    | -2,914.06       | -48.91          | 2,914.47                      | 0.00                        | 0.00                       | 0.00                      |
| 5,600.00                    | 89.85              | 181.07         | 2,845.38                    | -3,014.04       | -50.78          | 3,014.47                      | 0.00                        | 0.00                       | 0.00                      |
| 5,700.00                    | 89.85              | 181.07         | 2,845.64                    | -3,114.03       | -52.64          | 3,114.47                      | 0.00                        | 0.00                       | 0.00                      |
| 5,800.00                    | 89.85              | 181.07         | 2,845.90                    | -3,214.01       | -54.51          | 3,214.47                      | 0.00                        | 0.00                       | 0.00                      |
| 5,900.00                    | 89.85              | 181.07         | 2,846.16                    | -3,313.99       | -56.38          | 3,314.46                      | 0.00                        | 0.00                       | 0.00                      |
| 6,000.00                    | 89.85              | 181.07         | 2,846.42                    | -3,413.97       | -58.25          | 3,414.46                      | 0.00                        | 0.00                       | 0.00                      |
| 6,100.00                    | 89.85              | 181.07         | 2,846.68                    | -3,513.95       | -60.11          | 3,514.46                      | 0.00                        | 0.00                       | 0.00                      |
| 6,200.00                    | 89.85              | 181.07         | 2,846.95                    | -3,613.94       | -61.98          | 3,614.46                      | 0.00                        | 0.00                       | 0.00                      |
| 6,300.00                    | 89.85              | 181.07         | 2,847.21                    | -3,713.92       | -63.85          | 3,714.46                      | 0.00                        | 0.00                       | 0.00                      |
| 6,400.00                    | 89.85              | 181.07         | 2,847.47                    | -3,813.90       | -65.72          | 3,814.46                      | 0.00                        | 0.00                       | 0.00                      |
| 6,500.00                    | 89.85              | 181.07         | 2,847.73                    | -3,913.88       | -67.58          | 3,914.46                      | 0.00                        | 0.00                       | 0.00                      |
| 6,600.00                    | 89.85              | 181.07         | 2,847.99                    | -4,013.87       | -69.45          | 4,014.46                      | 0.00                        | 0.00                       | 0.00                      |
| 6,700.00                    | 89.85              | 181.07         | 2,848.26                    | -4,113.85       | -71.32          | 4,114.46                      | 0.00                        | 0.00                       | 0.00                      |
| 6,800.00                    | 89.85              | 181.07         | 2,848.52                    | -4,213.83       | -73.18          | 4,214.46                      | 0.00                        | 0.00                       | 0.00                      |
| 6,900.00                    | 89.85              | 181.07         | 2,848.78                    | -4,313.81       | -75.05          | 4,314.46                      | 0.00                        | 0.00                       | 0.00                      |
| 7,000.00                    | 89.85              | 181.07         | 2,849.04                    | -4,413.79       | -76.92          | 4,414.46                      | 0.00                        | 0.00                       | 0.00                      |
| 7,100.00                    | 89.85              | 181.07         | 2,849.30                    | -4,513.78       | -78.79          | 4,514.46                      | 0.00                        | 0.00                       | 0.00                      |
| 7,200.00                    | 89.85              | 181.07         | 2,849.56                    | -4,613.76       | -80.65          | 4,614.46                      | 0.00                        | 0.00                       | 0.00                      |
| 7,300.00                    | 89.85              | 181.07         | 2,849.83                    | -4,713.74       | -82.52          | 4,714.46                      | 0.00                        | 0.00                       | 0.00                      |
| 7,400.00                    | 89.85              | 181.07         | 2,850.09                    | -4,813.72       | -84.39          | 4,814.46                      | 0.00                        | 0.00                       | 0.00                      |
| 7,500.00                    | 89.85              | 181.07         | 2,850.35                    | -4,913.71       | -86.26          | 4,914.46                      | 0.00                        | 0.00                       | 0.00                      |
| 7,600.00                    | 89.85              | 181.07         | 2,850.61                    | -5,013.69       | -88.12          | 5,014.46                      | 0.00                        | 0.00                       | 0.00                      |
| 7,700.00                    | 89.85              | 181.07         | 2,850.87                    | -5,113.67       | -89.99          | 5,114.46                      | 0.00                        | 0.00                       | 0.00                      |
| 7,800.00                    | 89.85              | 181.07         | 2,851.14                    | -5,213.65       | -91.86          | 5,214.46                      | 0.00                        | 0.00                       | 0.00                      |
| 7,900.00                    | 89.85              | 181.07         | 2,851.40                    | -5,313.63       | -93.73          | 5,314.46                      | 0.00                        | 0.00                       | 0.00                      |
| 8,000.00                    | 89.85              | 181.07         | 2,851.66                    | -5,413.62       | -95.59          | 5,414.46                      | 0.00                        | 0.00                       | 0.00                      |
| 8,100.00                    | 89.85              | 181.07         | 2,851.92                    | -5,513.60       | -97.46          | 5,514.46                      | 0.00                        | 0.00                       | 0.00                      |
| 8,200.00                    | 89.85              | 181.07         | 2,852.18                    | -5,613.58       | -99.33          | 5,614.46                      | 0.00                        | 0.00                       | 0.00                      |
| 8,300.00                    | 89.85              | 181.07         | 2,852.44                    | -5,713.56       | -101.20         | 5,714.46                      | 0.00                        | 0.00                       | 0.00                      |
| 8,324.03                    | 89.85              | 181.07         | 2,852.51                    | -5,737.59       | -101.64         | 5,738.49                      | 0.00                        | 0.00                       | 0.00                      |



# Wellbenders Planning Report



Database: WBDS\_SQL\_2  
Company: Percussion Petroleum, LLC  
Project: Eddy County, NM  
Site: Huber Fed  
Well: 17H  
Wellbore: OH  
Design: Plan #2

Local Co-ordinate Reference: Well 17H  
TVD Reference: RKB=25' @ 3555.00usft (NA)  
MD Reference: RKB=25' @ 3555.00usft (NA)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature

## Design Targets

| Target Name                                                                                    | Dip Angle | Dip Dir. | TVD      | +N/-S     | +E/-W   | Northing   | Easting    | Latitude  | Longitude   |
|------------------------------------------------------------------------------------------------|-----------|----------|----------|-----------|---------|------------|------------|-----------|-------------|
| - hit/miss target                                                                              | (°)       | (°)      | (usft)   | (usft)    | (usft)  | (usft)     | (usft)     |           |             |
| - Shape                                                                                        |           |          |          |           |         |            |            |           |             |
| Huber Fed 17H: FTP                                                                             | 0.00      | 360.00   | 2,839.00 | -579.20   | -5.30   | 585,483.90 | 496,794.70 | 32.609464 | -104.477991 |
| - plan hits target center                                                                      |           |          |          |           |         |            |            |           |             |
| - Point                                                                                        |           |          |          |           |         |            |            |           |             |
| Huber Fed 17H: LTP                                                                             | 0.00      | 360.00   | 2,852.00 | -5,657.60 | -100.00 | 580,405.50 | 496,700.00 | 32.595504 | -104.478276 |
| - plan misses target center by 0.33usft at 8244.02usft MD (2852.30 TVD, -5657.60 N, -100.15 E) |           |          |          |           |         |            |            |           |             |
| - Point                                                                                        |           |          |          |           |         |            |            |           |             |
| Huber Fed 17H: BHL                                                                             | 0.00      | 0.00     | 2,852.00 | -5,737.60 | -101.10 | 580,325.50 | 496,698.90 | 32.595284 | -104.478279 |
| - plan misses target center by 0.74usft at 8324.03usft MD (2852.51 TVD, -5737.59 N, -101.64 E) |           |          |          |           |         |            |            |           |             |
| - Point                                                                                        |           |          |          |           |         |            |            |           |             |



**PERCUSSION**  
PETROLEUM  
LLC

WATER OIL CONSERVATION

ARTESIA DISTRICT

MAR 05 2018

RECEIVED

## **Percussion Petroleum, LLC**

Eddy County, NM

Huber Fed

17H

OH

Plan #2

## **Anticollision Report**

23 August, 2017





# Wellbenders Anticollision Report



Company: Percussion Petroleum, LLC  
Project: Eddy County, NM  
Reference Site: Huber Fed  
Site Error: 0.00 usft  
Reference Well: 17H  
Well Error: 0.00 usft  
Reference Wellbore: OH  
Reference Design: Plan #2

Local Co-ordinate Reference: Well 17H  
TVD Reference: RKB=25' @ 3555.00usft (NA)  
MD Reference: RKB=25' @ 3555.00usft (NA)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Output errors are at: 2.00 sigma  
Database: WBDS\_SQL\_2  
Offset TVD Reference: Reference Datum

|                              |                                                                     |
|------------------------------|---------------------------------------------------------------------|
| Reference                    | Plan #2                                                             |
| Filter type:                 | NO GLOBAL FILTER: Using user defined selection & filtering criteria |
| Interpolation Method:        | MD Interval 25.00usft                                               |
| Depth Range:                 | 0.00 to 8,324.03usft                                                |
| Results Limited by:          | Maximum separation factor of 50.00                                  |
| Warning Levels Evaluated at: | 2.00 Sigma                                                          |
| Error Model:                 | ISCWSA                                                              |
| Scan Method:                 | Closest Approach 3D                                                 |
| Error Surface:               | Pedal Curve                                                         |
| Casing Method:               | Not applied                                                         |

Survey Tool Program Date 8/23/2017

| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description            |
|-------------|-----------|-------------------|-----------|------------------------|
| 0.00        | 8,323.88  | Plan #2 (OH)      | MWD+IGRF  | OWSG MWD + IGRF or WMM |

## Summary

| Site Name                       | Reference Measured Depth (usft) | Offset Measured Depth (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Separation Factor | Warning    |
|---------------------------------|---------------------------------|------------------------------|---------------------------------|----------------------------------|-------------------|------------|
| Offset Well - Wellbore - Design |                                 |                              |                                 |                                  |                   |            |
| Huber Fed                       |                                 |                              |                                 |                                  |                   |            |
| 15H - OH - Plan #2              | 2,100.87                        | 2,092.73                     | 501.04                          | 487.26                           | 36.362            | CC         |
| 15H - OH - Plan #2              | 8,300.00                        | 8,023.46                     | 526.51                          | 333.96                           | 2.734             | ES, SF     |
| 16H - OH - Plan #2              | 8,300.00                        | 8,323.94                     | 660.48                          | 440.91                           | 3.008             | CC, ES, SF |
| 18H - OH - Plan #2              | 8,300.00                        | 7,989.54                     | 613.06                          | 415.46                           | 3.103             | CC, ES, SF |

| Offset Design Huber Fed - 15H - OH - Plan #2 |                       |                       |                       |                  |               |                       |                                     |              |                        |                         |                           | Offset Site Error: 0.00 usft |                   |
|----------------------------------------------|-----------------------|-----------------------|-----------------------|------------------|---------------|-----------------------|-------------------------------------|--------------|------------------------|-------------------------|---------------------------|------------------------------|-------------------|
| Survey Program: 0-MWD+IGRF                   |                       |                       |                       |                  |               |                       |                                     |              |                        |                         |                           | Offset Well Error: 0.00 usft |                   |
| Reference                                    |                       | Offset                |                       | Semi Major Axis  |               | Distance              |                                     |              |                        |                         |                           | Warning                      |                   |
| Measured Depth (usft)                        | Vertical Depth (usft) | Measured Depth (usft) | Vertical Depth (usft) | Reference (usft) | Offset (usft) | Highside Toolface (") | Offset Wellbore Centre +N/-S (usft) | +E/-W (usft) | Between Centres (usft) | Between Ellipses (usft) | Minimum Separation (usft) |                              | Separation Factor |
| 1.575 00                                     | 1,574.82              | 1,566.08              | 1,574.82              | 5.04             | 5.02          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 491.13                  | 10.04                     | 49.897                       |                   |
| 1.600 00                                     | 1,599.82              | 1,608.92              | 1,599.82              | 5.13             | 5.17          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 490.89                  | 10.29                     | 48.723                       |                   |
| 1.625 00                                     | 1,624.82              | 1,616.08              | 1,624.82              | 5.22             | 5.19          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 490.77                  | 10.40                     | 48.185                       |                   |
| 1.650 00                                     | 1,649.82              | 1,641.08              | 1,649.82              | 5.31             | 5.28          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 490.59                  | 10.58                     | 47.372                       |                   |
| 1.675 00                                     | 1,674.82              | 1,666.08              | 1,674.82              | 5.39             | 5.37          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 490.42                  | 10.76                     | 46.586                       |                   |
| 1.700 00                                     | 1,699.82              | 1,708.92              | 1,699.82              | 5.48             | 5.53          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 490.17                  | 11.00                     | 45.560                       |                   |
| 1.725 00                                     | 1,724.82              | 1,716.08              | 1,724.82              | 5.57             | 5.55          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 490.06                  | 11.12                     | 45.089                       |                   |
| 1.750 00                                     | 1,749.82              | 1,741.08              | 1,749.82              | 5.66             | 5.64          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 489.88                  | 11.29                     | 44.376                       |                   |
| 1.775 00                                     | 1,774.82              | 1,766.08              | 1,774.82              | 5.75             | 5.73          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 489.70                  | 11.47                     | 43.685                       |                   |
| 1.800 00                                     | 1,799.82              | 1,808.92              | 1,799.82              | 5.84             | 5.88          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 489.46                  | 11.71                     | 42.781                       |                   |
| 1.825 00                                     | 1,824.82              | 1,816.08              | 1,824.82              | 5.93             | 5.91          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 489.34                  | 11.83                     | 42.366                       |                   |
| 1.850 00                                     | 1,849.82              | 1,841.08              | 1,849.82              | 6.02             | 6.00          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 489.17                  | 12.01                     | 41.735                       |                   |
| 1.875 00                                     | 1,874.82              | 1,866.08              | 1,874.82              | 6.11             | 6.09          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 488.99                  | 12.19                     | 41.123                       |                   |
| 1.900 00                                     | 1,899.82              | 1,891.08              | 1,899.82              | 6.20             | 6.18          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 488.81                  | 12.37                     | 40.529                       |                   |
| 1.925 00                                     | 1,924.82              | 1,916.08              | 1,924.82              | 6.29             | 6.26          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 488.63                  | 12.54                     | 39.952                       |                   |
| 1.950 00                                     | 1,949.82              | 1,941.08              | 1,949.82              | 6.38             | 6.35          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 488.45                  | 12.72                     | 39.390                       |                   |
| 1.975 00                                     | 1,974.82              | 1,966.08              | 1,974.82              | 6.47             | 6.44          | 90.27                 | -10.16                              | 506.54       | 501.17                 | 488.27                  | 12.90                     | 38.845                       |                   |
| 2.000 00                                     | 1,999.82              | 1,991.36              | 2,000.10              | 6.56             | 6.53          | 90.28                 | -10.34                              | 506.53       | 501.17                 | 488.09                  | 13.08                     | 38.316                       |                   |
| 2.025 00                                     | 2,024.82              | 2,016.82              | 2,025.53              | 6.65             | 6.62          | 90.42                 | -11.52                              | 506.50       | 501.14                 | 487.89                  | 13.25                     | 37.809                       |                   |
| 2.050 00                                     | 2,049.82              | 2,042.12              | 2,050.72              | 6.74             | 6.70          | 90.68                 | -13.82                              | 506.44       | 501.10                 | 487.68                  | 13.43                     | 37.319                       |                   |
| 2.075 00                                     | 2,074.82              | 2,067.17              | 2,075.54              | 6.82             | 6.79          | 91.07                 | -17.19                              | 506.34       | 501.06                 | 487.46                  | 13.60                     | 36.840                       |                   |
| 2.100 00                                     | 2,099.82              | 2,091.88              | 2,099.85              | 6.91             | 6.88          | 91.57                 | -21.58                              | 506.22       | 501.04                 | 487.27                  | 13.77                     | 36.377                       |                   |
| 2.100.87                                     | 2,100.69              | 2,092.73              | 2,100.69              | 6.92             | 6.88          | 91.59                 | -21.75                              | 506.22       | 501.04                 | 487.26                  | 13.78                     | 36.362 CC                    |                   |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Company:** Percussion Petroleum, LLC  
**Project:** Eddy County, NM  
**Reference Site:** Huber Fed  
**Site Error:** 0.00 usft  
**Reference Well:** 17H  
**Well Error:** 0.00 usft  
**Reference Wellbore:** OH  
**Reference Design:** Plan #2

**Local Co-ordinate Reference:** Well 17H  
**TVD Reference:** RKB=25' @ 3555.00usft (NA)  
**MD Reference:** RKB=25' @ 3555.00usft (NA)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** WBDS\_SQL\_2  
**Offset TVD Reference:** Reference Datum

| Offset Design Huber Fed - 15H - OH - Plan #2 |                             |                             |                             |                     |                  |                             |                |                |                              |                               |                                 |                      | Offset Site Error: 0.00 usft |
|----------------------------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|----------------|----------------|------------------------------|-------------------------------|---------------------------------|----------------------|------------------------------|
| Survey Program: 0-MWD+IGRF                   |                             |                             |                             |                     |                  |                             |                |                |                              |                               |                                 |                      | Offset Well Error: 0.00 usft |
| Reference                                    |                             | Offset                      |                             | Semi Major Axis     |                  | Highside<br>Toolface<br>(°) | Distance       |                | Between<br>Centres<br>(usft) | Between<br>Ellipses<br>(usft) | Minimum<br>Separation<br>(usft) | Separation<br>Factor | Warning                      |
| Measured<br>Depth<br>(usft)                  | Vertical<br>Depth<br>(usft) | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) |                             | +N-S<br>(usft) | +E-W<br>(usft) |                              |                               |                                 |                      |                              |
| 2.125 00                                     | 2.124 82                    | 2.116 16                    | 2.123 54                    | 7.00                | 6.96             | 92.18                       | -26.90         | 506.08         | 501.07                       | 487.12                        | 13.95                           | 35.928               |                              |
| 2.150 00                                     | 2.149 82                    | 2.139 95                    | 2.146 51                    | 7.09                | 7.04             | 92.89                       | -33.08         | 505.90         | 501.18                       | 487.06                        | 14.12                           | 35.497               |                              |
| 2.175 00                                     | 2.174 82                    | 2.163 17                    | 2.168 67                    | 7.18                | 7.13             | 93.68                       | -40.03         | 505.71         | 501.41                       | 487.12                        | 14.29                           | 35.092               |                              |
| 2.200 00                                     | 2.199 82                    | 2.185 78                    | 2.189 95                    | 7.27                | 7.21             | 94.55                       | -47.66         | 505.50         | 501.81                       | 487.34                        | 14.47                           | 34.890               |                              |
| 2.225 00                                     | 2.224 82                    | 2.207 73                    | 2.210 31                    | 7.36                | 7.29             | 95.49                       | -55.86         | 505.27         | 502.41                       | 487.77                        | 14.64                           | 34.323               |                              |
| 2.250 00                                     | 2.249 82                    | 2.228 99                    | 2.229 71                    | 7.45                | 7.38             | 96.47                       | -64.53         | 505.03         | 503.27                       | 488.46                        | 14.81                           | 33.979               |                              |
| 2.275 00                                     | 2.274 82                    | 2.249 55                    | 2.248 16                    | 7.54                | 7.46             | -83.53                      | -73.61         | 504.78         | 504.42                       | 489.44                        | 14.98                           | 33.578               |                              |
| 2.300 00                                     | 2.299 80                    | 2.269 75                    | 2.265 96                    | 7.63                | 7.56             | -82.39                      | -83.16         | 504.51         | 505.80                       | 490.65                        | 15.15                           | 33.390               |                              |
| 2.325 00                                     | 2.324 72                    | 2.289 70                    | 2.283 19                    | 7.71                | 7.65             | -81.26                      | -93.20         | 504.23         | 507.37                       | 492.06                        | 15.31                           | 33.138               |                              |
| 2.350 00                                     | 2.349 52                    | 2.309 40                    | 2.299 85                    | 7.79                | 7.75             | -80.16                      | -103.70        | 503.94         | 509.13                       | 493.65                        | 15.47                           | 32.900               |                              |
| 2.375 00                                     | 2.374 17                    | 2.328 88                    | 2.315 97                    | 7.88                | 7.85             | -79.07                      | -114.64        | 503.64         | 511.04                       | 495.40                        | 15.64                           | 32.673               |                              |
| 2.400 00                                     | 2.398 61                    | 2.348 15                    | 2.331 53                    | 7.97                | 7.96             | -78.00                      | -126.00        | 503.32         | 513.10                       | 497.30                        | 15.80                           | 32.472               |                              |
| 2.425 00                                     | 2.422 80                    | 2.367 22                    | 2.346 55                    | 8.05                | 8.08             | -76.96                      | -137.74        | 503.00         | 515.29                       | 499.32                        | 15.97                           | 32.260               |                              |
| 2.450 00                                     | 2.446 68                    | 2.386 11                    | 2.361 03                    | 8.14                | 8.20             | -75.94                      | -149.86        | 502.66         | 517.59                       | 501.45                        | 16.14                           | 32.071               |                              |
| 2.475 00                                     | 2.470 23                    | 2.404 83                    | 2.374 98                    | 8.23                | 8.32             | -74.94                      | -162.34        | 502.32         | 519.99                       | 503.68                        | 16.31                           | 31.884               |                              |
| 2.500 00                                     | 2.493 39                    | 2.423 39                    | 2.388 40                    | 8.32                | 8.46             | -73.97                      | -175.15        | 501.96         | 522.46                       | 505.97                        | 16.48                           | 31.695               |                              |
| 2.525 00                                     | 2.516 11                    | 2.441 79                    | 2.401 30                    | 8.42                | 8.59             | -73.03                      | -188.28        | 501.60         | 524.99                       | 508.33                        | 16.66                           | 31.509               |                              |
| 2.550 00                                     | 2.538 36                    | 2.460 06                    | 2.413 67                    | 8.53                | 8.74             | -72.12                      | -201.71        | 501.22         | 527.57                       | 510.72                        | 16.84                           | 31.324               |                              |
| 2.575 00                                     | 2.560 09                    | 2.478 20                    | 2.425 53                    | 8.64                | 8.89             | -71.24                      | -215.43        | 500.84         | 530.17                       | 513.13                        | 17.04                           | 31.119               |                              |
| 2.600 00                                     | 2.581 26                    | 2.496 21                    | 2.436 87                    | 8.76                | 9.04             | -70.39                      | -229.42        | 500.45         | 532.78                       | 515.56                        | 17.22                           | 30.932               |                              |
| 2.625 00                                     | 2.601 83                    | 2.514.11                    | 2.447 69                    | 8.89                | 9.21             | -69.58                      | -243.67        | 500.06         | 535.40                       | 517.96                        | 17.44                           | 30.706               |                              |
| 2.650 00                                     | 2.621 76                    | 2.531 90                    | 2.458 00                    | 9.03                | 9.38             | -68.79                      | -258.16        | 499.66         | 537.99                       | 520.35                        | 17.65                           | 30.488               |                              |
| 2.675 00                                     | 2.641 01                    | 2.550 00                    | 2.468 03                    | 9.18                | 9.55             | -68.03                      | -273.22        | 499.24         | 540.56                       | 522.68                        | 17.87                           | 30.241               |                              |
| 2.700 00                                     | 2.659 55                    | 2.567 19                    | 2.477 11                    | 9.34                | 9.74             | -67.33                      | -287.82        | 498.83         | 543.08                       | 524.97                        | 18.10                           | 29.996               |                              |
| 2.725 00                                     | 2.677 34                    | 2.584 71                    | 2.485 90                    | 9.51                | 9.92             | -66.64                      | -302.96        | 498.41         | 545.54                       | 527.18                        | 18.36                           | 29.718               |                              |
| 2.750 00                                     | 2.694 35                    | 2.600 00                    | 2.493 20                    | 9.69                | 10.09            | -66.05                      | -316.39        | 498.04         | 547.94                       | 529.37                        | 18.58                           | 29.498               |                              |
| 2.775 00                                     | 2.710 54                    | 2.619 49                    | 2.501 97                    | 9.89                | 10.31            | -65.39                      | -333.79        | 497.56         | 550.25                       | 531.36                        | 18.89                           | 29.124               |                              |
| 2.800 00                                     | 2.725 89                    | 2.636 78                    | 2.509 25                    | 10.10               | 10.52            | -64.81                      | -349.47        | 497.12         | 552.47                       | 533.29                        | 19.18                           | 28.810               |                              |
| 2.825 00                                     | 2.740 36                    | 2.654 01                    | 2.516 04                    | 10.33               | 10.72            | -64.27                      | -365.29        | 496.68         | 554.59                       | 535.11                        | 19.48                           | 28.464               |                              |
| 2.850 00                                     | 2.753 93                    | 2.671 17                    | 2.522 32                    | 10.56               | 10.94            | -63.77                      | -381.26        | 496.24         | 556.60                       | 536.80                        | 19.80                           | 28.108               |                              |
| 2.875 00                                     | 2.766 57                    | 2.688 28                    | 2.528 11                    | 10.81               | 11.16            | -63.30                      | -397.36        | 495.79         | 558.49                       | 538.34                        | 20.14                           | 27.725               |                              |
| 2.900 00                                     | 2.778 26                    | 2.705 35                    | 2.533 39                    | 11.07               | 11.38            | -62.87                      | -413.57        | 495.34         | 560.25                       | 539.76                        | 20.49                           | 27.343               |                              |
| 2.925 00                                     | 2.788 97                    | 2.722 36                    | 2.538 18                    | 11.35               | 11.61            | -62.48                      | -429.89        | 494.89         | 561.87                       | 541.00                        | 20.87                           | 26.926               |                              |
| 2.950 00                                     | 2.798 68                    | 2.739 34                    | 2.542 47                    | 11.63               | 11.84            | -62.12                      | -446.31        | 494.43         | 563.35                       | 542.10                        | 21.25                           | 26.514               |                              |
| 2.975 00                                     | 2.807 39                    | 2.756 28                    | 2.546 27                    | 11.93               | 12.07            | -61.80                      | -462.82        | 493.98         | 564.68                       | 543.03                        | 21.65                           | 26.077               |                              |
| 3.000 00                                     | 2.815 06                    | 2.773 19                    | 2.549 57                    | 12.24               | 12.31            | -61.51                      | -479.39        | 493.51         | 565.86                       | 543.79                        | 22.07                           | 25.638               |                              |
| 3.025 00                                     | 2.821 69                    | 2.790 07                    | 2.552 37                    | 12.56               | 12.55            | -61.26                      | -496.03        | 493.05         | 566.88                       | 544.37                        | 22.51                           | 25.183               |                              |
| 3.050 00                                     | 2.827 25                    | 2.806 92                    | 2.554 69                    | 12.89               | 12.80            | -61.05                      | -512.72        | 492.59         | 567.74                       | 544.78                        | 22.96                           | 24.730               |                              |
| 3.075 00                                     | 2.831 76                    | 2.823 76                    | 2.556 50                    | 13.23               | 13.04            | -60.88                      | -529.45        | 492.13         | 568.42                       | 544.99                        | 23.43                           | 24.261               |                              |
| 3.100 00                                     | 2.835 18                    | 2.840 58                    | 2.557 83                    | 13.57               | 13.29            | -60.74                      | -546.21        | 491.66         | 568.94                       | 545.03                        | 23.91                           | 23.798               |                              |
| 3.125 00                                     | 2.837 52                    | 2.857 38                    | 2.558 66                    | 13.93               | 13.54            | -60.63                      | -562.99        | 491.19         | 569.29                       | 544.88                        | 24.41                           | 23.326               |                              |
| 3.150 00                                     | 2.838 77                    | 2.876 74                    | 2.558 99                    | 14.28               | 13.83            | -60.57                      | -579.27        | 490.74         | 569.46                       | 544.51                        | 24.95                           | 22.826               |                              |
| 3.175 00                                     | 2.839 03                    | 2.901 33                    | 2.559 09                    | 14.64               | 14.21            | -60.55                      | -604.26        | 490.05         | 569.34                       | 543.74                        | 25.60                           | 22.240               |                              |
| 3.200 00                                     | 2.839 09                    | 2.923 67                    | 2.559 18                    | 15.01               | 14.56            | -60.54                      | -629.24        | 489.36         | 569.13                       | 542.89                        | 26.24                           | 21.689               |                              |
| 3.225 00                                     | 2.839 16                    | 2.946 67                    | 2.559 27                    | 15.39               | 14.96            | -60.53                      | -654.23        | 488.66         | 568.92                       | 541.98                        | 26.93                           | 21.123               |                              |
| 3.250 00                                     | 2.839 22                    | 2.973 67                    | 2.559 36                    | 15.78               | 15.36            | -60.52                      | -679.22        | 487.97         | 568.71                       | 541.08                        | 27.63                           | 20.585               |                              |
| 3.275 00                                     | 2.839 29                    | 3.001 33                    | 2.559 45                    | 16.16               | 15.80            | -60.51                      | -704.21        | 487.27         | 568.50                       | 540.14                        | 28.36                           | 20.047               |                              |
| 3.300 00                                     | 2.839 35                    | 3.023 67                    | 2.559 54                    | 16.55               | 16.16            | -60.50                      | -729.20        | 486.58         | 568.29                       | 539.26                        | 29.03                           | 19.578               |                              |
| 3.325 00                                     | 2.839 42                    | 3.048 67                    | 2.559 64                    | 16.95               | 16.58            | -60.49                      | -754.19        | 485.89         | 568.08                       | 538.33                        | 29.75                           | 19.095               |                              |
| 3.350 00                                     | 2.839 49                    | 3.073 67                    | 2.559 73                    | 17.35               | 16.99            | -60.48                      | -779.18        | 485.19         | 567.87                       | 537.39                        | 30.47                           | 18.634               |                              |
| 3.375 00                                     | 2.839 55                    | 3.101 33                    | 2.559 82                    | 17.75               | 17.45            | -60.47                      | -804.17        | 484.50         | 567.66                       | 536.42                        | 31.24                           | 18.172               |                              |
| 3.400 00                                     | 2.839 62                    | 3.123 66                    | 2.559 91                    | 18.15               | 17.82            | -60.46                      | -829.16        | 483.81         | 567.44                       | 535.51                        | 31.93                           | 17.771               |                              |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Wellbenders Anticollision Report



Company: Percussion Petroleum, LLC  
Project: Eddy County, NM  
Reference Site: Huber Fed  
Site Error: 0.00 usft  
Reference Well: 17H  
Well Error: 0.00 usft  
Reference Wellbore: OH  
Reference Design: Plan #2

Local Co-ordinate Reference: Well 17H  
TVD Reference: RKB=25' @ 3555.00usft (NA)  
MD Reference: RKB=25' @ 3555.00usft (NA)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Output errors are at: 2.00 sigma  
Database: WBDS\_SQL\_2  
Offset TVD Reference: Reference Datum

| Offset Design Huber Fed - 15H - OH - Plan #2 |                       |                       |                       |                  |               |                       |                                     |              |                        |                         |                           |                   | Offset Site Error: 0 00 usft |
|----------------------------------------------|-----------------------|-----------------------|-----------------------|------------------|---------------|-----------------------|-------------------------------------|--------------|------------------------|-------------------------|---------------------------|-------------------|------------------------------|
| Survey Program: 0-MWD+IGRF                   |                       |                       |                       |                  |               |                       |                                     |              |                        |                         |                           |                   | Offset Well Error: 0 00 usft |
| Reference                                    |                       | Offset                |                       | Semi Major Axis  |               | Distance              |                                     |              |                        |                         |                           |                   | Warning                      |
| Measured Depth (usft)                        | Vertical Depth (usft) | Measured Depth (usft) | Vertical Depth (usft) | Reference (usft) | Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | +E/-W (usft) | Between Centres (usft) | Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor |                              |
| 3,425.00                                     | 2,839.68              | 3,148.66              | 2,560.00              | 18.57            | 18.25         | -60.46                | -854.15                             | 483.11       | 567.23                 | 534.56                  | 32.68                     | 17.358            |                              |
| 3,450.00                                     | 2,839.75              | 3,173.66              | 2,560.09              | 18.98            | 18.67         | -60.45                | -879.14                             | 482.42       | 567.02                 | 533.60                  | 33.42                     | 16.964            |                              |
| 3,475.00                                     | 2,839.81              | 3,201.34              | 2,560.19              | 19.40            | 19.14         | -60.44                | -904.13                             | 481.73       | 566.81                 | 532.60                  | 34.21                     | 16.568            |                              |
| 3,500.00                                     | 2,839.88              | 3,223.66              | 2,560.28              | 19.81            | 19.53         | -60.43                | -929.11                             | 481.03       | 566.60                 | 531.68                  | 34.93                     | 16.223            |                              |
| 3,525.00                                     | 2,839.94              | 3,248.66              | 2,560.37              | 20.24            | 19.96         | -60.42                | -954.10                             | 480.34       | 566.39                 | 530.70                  | 35.69                     | 15.870            |                              |
| 3,550.00                                     | 2,840.01              | 3,273.66              | 2,560.46              | 20.66            | 20.40         | -60.41                | -979.09                             | 479.64       | 566.18                 | 529.73                  | 36.45                     | 15.532            |                              |
| 3,575.00                                     | 2,840.07              | 3,301.34              | 2,560.55              | 21.09            | 20.88         | -60.40                | -1,004.08                           | 478.95       | 565.97                 | 528.71                  | 37.26                     | 15.191            |                              |
| 3,600.00                                     | 2,840.14              | 3,323.66              | 2,560.64              | 21.52            | 21.27         | -60.39                | -1,029.07                           | 478.26       | 565.76                 | 527.78                  | 37.99                     | 14.894            |                              |
| 3,625.00                                     | 2,840.21              | 3,348.66              | 2,560.74              | 21.95            | 21.71         | -60.38                | -1,054.06                           | 477.56       | 565.55                 | 526.79                  | 38.76                     | 14.590            |                              |
| 3,650.00                                     | 2,840.27              | 3,373.65              | 2,560.83              | 22.38            | 22.15         | -60.37                | -1,079.05                           | 476.87       | 565.34                 | 525.80                  | 39.54                     | 14.298            |                              |
| 3,675.00                                     | 2,840.34              | 3,401.35              | 2,560.92              | 22.82            | 22.64         | -60.37                | -1,104.04                           | 476.18       | 565.13                 | 524.77                  | 40.36                     | 14.002            |                              |
| 3,700.00                                     | 2,840.40              | 3,423.65              | 2,561.01              | 23.25            | 23.04         | -60.36                | -1,129.03                           | 475.48       | 564.92                 | 523.82                  | 41.10                     | 13.746            |                              |
| 3,725.00                                     | 2,840.47              | 3,448.65              | 2,561.10              | 23.69            | 23.49         | -60.35                | -1,154.02                           | 474.79       | 564.71                 | 522.83                  | 41.89                     | 13.482            |                              |
| 3,750.00                                     | 2,840.53              | 3,473.65              | 2,561.19              | 24.13            | 23.93         | -60.34                | -1,179.01                           | 474.10       | 564.50                 | 521.83                  | 42.67                     | 13.229            |                              |
| 3,775.00                                     | 2,840.60              | 3,501.35              | 2,561.29              | 24.57            | 24.43         | -60.33                | -1,204.00                           | 473.40       | 564.29                 | 520.79                  | 43.50                     | 12.971            |                              |
| 3,800.00                                     | 2,840.66              | 3,523.65              | 2,561.38              | 25.01            | 24.83         | -60.32                | -1,228.98                           | 472.71       | 564.08                 | 519.83                  | 44.25                     | 12.747            |                              |
| 3,825.00                                     | 2,840.73              | 3,548.65              | 2,561.47              | 25.46            | 25.28         | -60.31                | -1,253.97                           | 472.01       | 563.87                 | 518.83                  | 45.05                     | 12.518            |                              |
| 3,850.00                                     | 2,840.79              | 3,573.65              | 2,561.56              | 25.90            | 25.73         | -60.30                | -1,278.96                           | 471.32       | 563.66                 | 517.82                  | 45.84                     | 12.296            |                              |
| 3,875.00                                     | 2,840.86              | 3,598.64              | 2,561.65              | 26.35            | 26.18         | -60.29                | -1,303.95                           | 470.63       | 563.45                 | 516.81                  | 46.64                     | 12.082            |                              |
| 3,900.00                                     | 2,840.93              | 3,623.64              | 2,561.74              | 26.79            | 26.63         | -60.28                | -1,328.94                           | 469.93       | 563.24                 | 515.81                  | 47.44                     | 11.874            |                              |
| 3,925.00                                     | 2,840.99              | 3,648.64              | 2,561.83              | 27.24            | 27.09         | -60.27                | -1,353.93                           | 469.24       | 563.03                 | 514.79                  | 48.24                     | 11.672            |                              |
| 3,950.00                                     | 2,841.06              | 3,673.64              | 2,561.93              | 27.69            | 27.54         | -60.27                | -1,378.92                           | 468.55       | 562.82                 | 513.78                  | 49.04                     | 11.477            |                              |
| 3,975.00                                     | 2,841.12              | 3,698.64              | 2,562.02              | 28.14            | 27.99         | -60.26                | -1,403.91                           | 467.85       | 562.61                 | 512.77                  | 49.84                     | 11.288            |                              |
| 4,000.00                                     | 2,841.19              | 3,723.64              | 2,562.11              | 28.59            | 28.45         | -60.25                | -1,428.90                           | 467.16       | 562.40                 | 511.76                  | 50.65                     | 11.105            |                              |
| 4,025.00                                     | 2,841.25              | 3,748.64              | 2,562.20              | 29.04            | 28.91         | -60.24                | -1,453.89                           | 466.46       | 562.19                 | 510.74                  | 51.45                     | 10.926            |                              |
| 4,050.00                                     | 2,841.32              | 3,773.64              | 2,562.29              | 29.49            | 29.36         | -60.23                | -1,478.88                           | 465.77       | 561.98                 | 509.72                  | 52.26                     | 10.754            |                              |
| 4,075.00                                     | 2,841.38              | 3,801.36              | 2,562.38              | 29.95            | 29.87         | -60.22                | -1,503.87                           | 465.08       | 561.77                 | 508.66                  | 53.11                     | 10.577            |                              |
| 4,100.00                                     | 2,841.45              | 3,823.64              | 2,562.48              | 30.40            | 30.28         | -60.21                | -1,528.85                           | 464.38       | 561.56                 | 507.69                  | 53.88                     | 10.423            |                              |
| 4,125.00                                     | 2,841.51              | 3,848.63              | 2,562.57              | 30.85            | 30.74         | -60.20                | -1,553.84                           | 463.69       | 561.35                 | 506.66                  | 54.69                     | 10.265            |                              |
| 4,150.00                                     | 2,841.58              | 3,873.63              | 2,562.66              | 31.31            | 31.20         | -60.19                | -1,578.83                           | 463.00       | 561.14                 | 505.64                  | 55.50                     | 10.111            |                              |
| 4,175.00                                     | 2,841.64              | 3,901.37              | 2,562.75              | 31.77            | 31.71         | -60.18                | -1,603.82                           | 462.30       | 560.93                 | 504.58                  | 56.36                     | 9.954             |                              |
| 4,200.00                                     | 2,841.71              | 3,923.63              | 2,562.84              | 32.22            | 32.12         | -60.17                | -1,628.81                           | 461.61       | 560.72                 | 503.60                  | 57.12                     | 9.816             |                              |
| 4,225.00                                     | 2,841.78              | 3,948.63              | 2,562.93              | 32.68            | 32.58         | -60.16                | -1,653.80                           | 460.92       | 560.51                 | 502.57                  | 57.94                     | 9.674             |                              |
| 4,250.00                                     | 2,841.84              | 3,973.63              | 2,563.03              | 33.14            | 33.04         | -60.15                | -1,678.79                           | 460.22       | 560.30                 | 501.55                  | 58.75                     | 9.537             |                              |
| 4,275.00                                     | 2,841.91              | 4,001.37              | 2,563.12              | 33.60            | 33.55         | -60.15                | -1,703.78                           | 459.53       | 560.09                 | 500.48                  | 59.61                     | 9.395             |                              |
| 4,300.00                                     | 2,841.97              | 4,023.63              | 2,563.21              | 34.05            | 33.97         | -60.14                | -1,728.77                           | 458.83       | 559.88                 | 499.50                  | 60.38                     | 9.272             |                              |
| 4,325.00                                     | 2,842.04              | 4,048.63              | 2,563.30              | 34.51            | 34.43         | -60.13                | -1,753.76                           | 458.14       | 559.67                 | 498.47                  | 61.20                     | 9.145             |                              |
| 4,350.00                                     | 2,842.10              | 4,073.62              | 2,563.39              | 34.97            | 34.89         | -60.12                | -1,778.75                           | 457.45       | 559.46                 | 497.44                  | 62.02                     | 9.021             |                              |
| 4,375.00                                     | 2,842.17              | 4,101.38              | 2,563.48              | 35.43            | 35.41         | -60.11                | -1,803.74                           | 456.75       | 559.25                 | 496.37                  | 62.88                     | 8.894             |                              |
| 4,400.00                                     | 2,842.23              | 4,123.62              | 2,563.58              | 35.89            | 35.82         | -60.10                | -1,828.72                           | 456.06       | 559.04                 | 495.39                  | 63.66                     | 8.782             |                              |
| 4,425.00                                     | 2,842.30              | 4,148.62              | 2,563.67              | 36.36            | 36.28         | -60.09                | -1,853.71                           | 455.37       | 558.83                 | 494.36                  | 64.48                     | 8.667             |                              |
| 4,450.00                                     | 2,842.36              | 4,173.62              | 2,563.76              | 36.82            | 36.75         | -60.08                | -1,878.70                           | 454.67       | 558.62                 | 493.33                  | 65.30                     | 8.555             |                              |
| 4,475.00                                     | 2,842.43              | 4,201.38              | 2,563.85              | 37.28            | 37.26         | -60.07                | -1,903.69                           | 453.98       | 558.41                 | 492.25                  | 66.16                     | 8.440             |                              |
| 4,500.00                                     | 2,842.50              | 4,223.62              | 2,563.94              | 37.74            | 37.68         | -60.06                | -1,928.68                           | 453.29       | 558.20                 | 491.27                  | 66.94                     | 8.339             |                              |
| 4,525.00                                     | 2,842.56              | 4,248.62              | 2,564.03              | 38.21            | 38.14         | -60.05                | -1,953.67                           | 452.59       | 558.00                 | 490.24                  | 67.76                     | 8.235             |                              |
| 4,550.00                                     | 2,842.63              | 4,273.62              | 2,564.13              | 38.67            | 38.61         | -60.04                | -1,978.66                           | 451.90       | 557.79                 | 489.20                  | 68.58                     | 8.133             |                              |
| 4,575.00                                     | 2,842.69              | 4,301.38              | 2,564.22              | 39.13            | 39.13         | -60.03                | -2,003.65                           | 451.20       | 557.58                 | 488.13                  | 69.45                     | 8.029             |                              |
| 4,600.00                                     | 2,842.76              | 4,323.61              | 2,564.31              | 39.60            | 39.54         | -60.03                | -2,028.64                           | 450.51       | 557.37                 | 487.14                  | 70.23                     | 7.937             |                              |
| 4,625.00                                     | 2,842.82              | 4,348.61              | 2,564.40              | 40.06            | 40.01         | -60.02                | -2,053.63                           | 449.82       | 557.16                 | 486.11                  | 71.05                     | 7.842             |                              |
| 4,650.00                                     | 2,842.89              | 4,373.61              | 2,564.49              | 40.52            | 40.47         | -60.01                | -2,078.62                           | 449.12       | 556.95                 | 485.07                  | 71.87                     | 7.749             |                              |
| 4,675.00                                     | 2,842.95              | 4,398.61              | 2,564.58              | 40.99            | 40.94         | -60.00                | -2,103.61                           | 448.43       | 556.74                 | 484.04                  | 72.70                     | 7.658             |                              |
| 4,700.00                                     | 2,843.02              | 4,423.61              | 2,564.68              | 41.45            | 41.41         | -59.99                | -2,128.59                           | 447.74       | 556.53                 | 483.01                  | 73.52                     | 7.570             |                              |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Wellbenders Anticollision Report



Company: Percussion Petroleum, LLC  
Project: Eddy County, NM  
Reference Site: Huber Fed  
Site Error: 0.00 usft  
Reference Well: 17H  
Well Error: 0.00 usft  
Reference Wellbore: OH  
Reference Design: Plan #2

Local Co-ordinate Reference: Well 17H  
TVD Reference: RKB=25' @ 3555.00usft (NA)  
MD Reference: RKB=25' @ 3555.00usft (NA)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Output errors are at: 2.00 sigma  
Database: WBDS\_SQL\_2  
Offset TVD Reference: Reference Datum

| Offset Design Huber Fed - 15H - OH - Plan #2 |                       |                       |                       |                  |               |                       |                                    |             |                        |                         |                           |                   | Offset Site Error: 0.00 usft |
|----------------------------------------------|-----------------------|-----------------------|-----------------------|------------------|---------------|-----------------------|------------------------------------|-------------|------------------------|-------------------------|---------------------------|-------------------|------------------------------|
| Survey Program: 0-MWD+IGRF                   |                       |                       |                       |                  |               |                       |                                    |             |                        |                         |                           |                   | Offset Well Error: 0.00 usft |
| Reference                                    |                       | Offset                |                       | Semi Major Axis  |               |                       | Distance                           |             |                        |                         |                           |                   |                              |
| Measured Depth (usft)                        | Vertical Depth (usft) | Measured Depth (usft) | Vertical Depth (usft) | Reference (usft) | Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N-S (usft) | +E-W (usft) | Between Centres (usft) | Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning                      |
| 4,725.00                                     | 2,843.08              | 4,448.61              | 2,564.77              | 41.92            | 41.88         | -59.98                | -2,153.58                          | 447.04      | 556.32                 | 481.97                  | 74.35                     | 7.483             |                              |
| 4,750.00                                     | 2,843.15              | 4,473.61              | 2,564.86              | 42.39            | 42.34         | -59.97                | -2,178.57                          | 446.35      | 556.11                 | 480.94                  | 75.17                     | 7.398             |                              |
| 4,775.00                                     | 2,843.22              | 4,501.39              | 2,564.95              | 42.85            | 42.86         | -59.96                | -2,203.56                          | 445.66      | 555.90                 | 479.86                  | 76.04                     | 7.310             |                              |
| 4,800.00                                     | 2,843.28              | 4,523.61              | 2,565.04              | 43.32            | 43.28         | -59.95                | -2,228.55                          | 444.96      | 555.69                 | 478.87                  | 76.82                     | 7.234             |                              |
| 4,825.00                                     | 2,843.35              | 4,546.61              | 2,565.13              | 43.78            | 43.75         | -59.94                | -2,253.54                          | 444.27      | 555.48                 | 477.83                  | 77.65                     | 7.154             |                              |
| 4,850.00                                     | 2,843.41              | 4,573.60              | 2,565.22              | 44.25            | 44.22         | -59.93                | -2,278.53                          | 443.57      | 555.27                 | 476.80                  | 78.47                     | 7.076             |                              |
| 4,875.00                                     | 2,843.48              | 4,601.40              | 2,565.32              | 44.72            | 44.74         | -59.92                | -2,303.52                          | 442.88      | 555.06                 | 475.72                  | 79.35                     | 6.996             |                              |
| 4,900.00                                     | 2,843.54              | 4,623.60              | 2,565.41              | 45.18            | 45.15         | -59.91                | -2,328.51                          | 442.19      | 554.85                 | 474.73                  | 80.12                     | 6.925             |                              |
| 4,925.00                                     | 2,843.61              | 4,648.60              | 2,565.50              | 45.65            | 45.62         | -59.90                | -2,353.50                          | 441.49      | 554.64                 | 473.69                  | 80.95                     | 6.852             |                              |
| 4,950.00                                     | 2,843.67              | 4,673.60              | 2,565.59              | 46.12            | 46.09         | -59.89                | -2,378.49                          | 440.80      | 554.43                 | 472.65                  | 81.78                     | 6.780             |                              |
| 4,975.00                                     | 2,843.74              | 4,701.40              | 2,565.68              | 46.59            | 46.61         | -59.88                | -2,403.48                          | 440.11      | 554.22                 | 471.57                  | 82.65                     | 6.705             |                              |
| 5,000.00                                     | 2,843.80              | 4,723.60              | 2,565.77              | 47.05            | 47.03         | -59.88                | -2,428.46                          | 439.41      | 554.01                 | 470.58                  | 83.43                     | 6.640             |                              |
| 5,025.00                                     | 2,843.87              | 4,748.60              | 2,565.87              | 47.52            | 47.50         | -59.87                | -2,453.45                          | 438.72      | 553.80                 | 469.54                  | 84.26                     | 6.573             |                              |
| 5,050.00                                     | 2,843.94              | 4,773.60              | 2,565.96              | 47.99            | 47.97         | -59.86                | -2,478.44                          | 438.03      | 553.60                 | 468.51                  | 85.09                     | 6.506             |                              |
| 5,075.00                                     | 2,844.00              | 4,801.41              | 2,566.05              | 48.46            | 48.49         | -59.85                | -2,503.43                          | 437.33      | 553.39                 | 467.42                  | 85.96                     | 6.438             |                              |
| 5,100.00                                     | 2,844.07              | 4,823.59              | 2,566.14              | 48.93            | 48.91         | -59.84                | -2,528.42                          | 436.64      | 553.18                 | 466.43                  | 86.74                     | 6.377             |                              |
| 5,125.00                                     | 2,844.13              | 4,848.59              | 2,566.23              | 49.40            | 49.38         | -59.83                | -2,553.41                          | 435.94      | 552.97                 | 465.40                  | 87.57                     | 6.314             |                              |
| 5,150.00                                     | 2,844.20              | 4,873.59              | 2,566.32              | 49.87            | 49.85         | -59.82                | -2,578.40                          | 435.25      | 552.76                 | 464.36                  | 88.40                     | 6.253             |                              |
| 5,175.00                                     | 2,844.26              | 4,901.41              | 2,566.42              | 50.34            | 50.37         | -59.81                | -2,603.39                          | 434.56      | 552.55                 | 463.27                  | 89.28                     | 6.189             |                              |
| 5,200.00                                     | 2,844.33              | 4,923.59              | 2,566.51              | 50.80            | 50.79         | -59.80                | -2,628.38                          | 433.86      | 552.34                 | 462.28                  | 90.06                     | 6.133             |                              |
| 5,225.00                                     | 2,844.39              | 4,948.59              | 2,566.60              | 51.27            | 51.26         | -59.79                | -2,653.37                          | 433.17      | 552.13                 | 461.25                  | 90.89                     | 6.075             |                              |
| 5,250.00                                     | 2,844.46              | 4,973.59              | 2,566.69              | 51.74            | 51.73         | -59.78                | -2,678.36                          | 432.48      | 551.92                 | 460.21                  | 91.71                     | 6.018             |                              |
| 5,275.00                                     | 2,844.52              | 5,001.41              | 2,566.78              | 52.21            | 52.26         | -59.77                | -2,703.35                          | 431.78      | 551.71                 | 459.12                  | 92.59                     | 5.959             |                              |
| 5,300.00                                     | 2,844.59              | 5,023.59              | 2,566.87              | 52.68            | 52.68         | -59.76                | -2,728.33                          | 431.09      | 551.50                 | 458.13                  | 93.37                     | 5.907             |                              |
| 5,325.00                                     | 2,844.66              | 5,048.58              | 2,566.97              | 53.15            | 53.15         | -59.75                | -2,753.32                          | 430.40      | 551.29                 | 457.09                  | 94.20                     | 5.852             |                              |
| 5,350.00                                     | 2,844.72              | 5,073.58              | 2,567.06              | 53.62            | 53.62         | -59.74                | -2,778.31                          | 429.70      | 551.08                 | 456.05                  | 95.03                     | 5.799             |                              |
| 5,375.00                                     | 2,844.79              | 5,098.58              | 2,567.15              | 54.09            | 54.09         | -59.73                | -2,803.30                          | 429.01      | 550.88                 | 455.02                  | 95.86                     | 5.747             |                              |
| 5,400.00                                     | 2,844.85              | 5,123.58              | 2,567.24              | 54.56            | 54.56         | -59.72                | -2,828.29                          | 428.31      | 550.67                 | 453.98                  | 96.69                     | 5.695             |                              |
| 5,425.00                                     | 2,844.92              | 5,148.58              | 2,567.33              | 55.03            | 55.03         | -59.71                | -2,853.28                          | 427.62      | 550.46                 | 452.94                  | 97.52                     | 5.645             |                              |
| 5,450.00                                     | 2,844.98              | 5,173.58              | 2,567.42              | 55.51            | 55.50         | -59.70                | -2,878.27                          | 426.93      | 550.25                 | 451.90                  | 98.35                     | 5.595             |                              |
| 5,475.00                                     | 2,845.05              | 5,201.42              | 2,567.52              | 55.98            | 56.03         | -59.69                | -2,903.26                          | 426.23      | 550.04                 | 450.82                  | 99.22                     | 5.543             |                              |
| 5,500.00                                     | 2,845.11              | 5,223.58              | 2,567.61              | 56.45            | 56.45         | -59.68                | -2,928.25                          | 425.54      | 549.83                 | 449.83                  | 100.00                    | 5.498             |                              |
| 5,525.00                                     | 2,845.18              | 5,248.58              | 2,567.70              | 56.92            | 56.92         | -59.68                | -2,953.24                          | 424.85      | 549.62                 | 448.79                  | 100.83                    | 5.451             |                              |
| 5,550.00                                     | 2,845.24              | 5,273.57              | 2,567.79              | 57.39            | 57.39         | -59.67                | -2,978.23                          | 424.15      | 549.41                 | 447.75                  | 101.66                    | 5.404             |                              |
| 5,575.00                                     | 2,845.31              | 5,301.43              | 2,567.88              | 57.86            | 57.92         | -59.66                | -3,003.22                          | 423.46      | 549.20                 | 446.66                  | 102.54                    | 5.356             |                              |
| 5,600.00                                     | 2,845.38              | 5,323.57              | 2,567.97              | 58.33            | 58.34         | -59.65                | -3,028.20                          | 422.77      | 548.99                 | 445.67                  | 103.32                    | 5.313             |                              |
| 5,625.00                                     | 2,845.44              | 5,348.57              | 2,568.07              | 58.80            | 58.81         | -59.64                | -3,053.19                          | 422.07      | 548.78                 | 444.63                  | 104.15                    | 5.269             |                              |
| 5,650.00                                     | 2,845.51              | 5,373.57              | 2,568.16              | 59.27            | 59.28         | -59.63                | -3,078.18                          | 421.38      | 548.58                 | 443.59                  | 104.98                    | 5.225             |                              |
| 5,675.00                                     | 2,845.57              | 5,401.43              | 2,568.25              | 59.75            | 59.81         | -59.62                | -3,103.17                          | 420.68      | 548.37                 | 442.51                  | 105.86                    | 5.180             |                              |
| 5,700.00                                     | 2,845.64              | 5,423.57              | 2,568.34              | 60.22            | 60.23         | -59.61                | -3,128.16                          | 419.99      | 548.16                 | 441.52                  | 106.64                    | 5.140             |                              |
| 5,725.00                                     | 2,845.70              | 5,448.57              | 2,568.43              | 60.69            | 60.70         | -59.60                | -3,153.15                          | 419.30      | 547.95                 | 440.48                  | 107.47                    | 5.099             |                              |
| 5,750.00                                     | 2,845.77              | 5,473.57              | 2,568.52              | 61.16            | 61.17         | -59.59                | -3,178.14                          | 418.60      | 547.74                 | 439.44                  | 108.30                    | 5.058             |                              |
| 5,775.00                                     | 2,845.83              | 5,501.43              | 2,568.62              | 61.63            | 61.70         | -59.58                | -3,203.13                          | 417.91      | 547.53                 | 438.35                  | 109.18                    | 5.015             |                              |
| 5,800.00                                     | 2,845.90              | 5,523.56              | 2,568.71              | 62.11            | 62.12         | -59.57                | -3,228.12                          | 417.22      | 547.32                 | 437.36                  | 109.96                    | 4.978             |                              |
| 5,825.00                                     | 2,845.96              | 5,548.56              | 2,568.80              | 62.58            | 62.59         | -59.56                | -3,253.11                          | 416.52      | 547.11                 | 436.32                  | 110.79                    | 4.938             |                              |
| 5,850.00                                     | 2,846.03              | 5,573.56              | 2,568.89              | 63.05            | 63.06         | -59.55                | -3,278.10                          | 415.83      | 546.90                 | 435.29                  | 111.62                    | 4.900             |                              |
| 5,875.00                                     | 2,846.10              | 5,601.44              | 2,568.98              | 63.52            | 63.59         | -59.54                | -3,303.09                          | 415.14      | 546.70                 | 434.20                  | 112.50                    | 4.860             |                              |
| 5,900.00                                     | 2,846.16              | 5,623.56              | 2,569.07              | 63.99            | 64.01         | -59.53                | -3,328.07                          | 414.44      | 546.49                 | 433.21                  | 113.28                    | 4.824             |                              |
| 5,925.00                                     | 2,846.23              | 5,648.56              | 2,569.16              | 64.47            | 64.48         | -59.52                | -3,353.06                          | 413.75      | 546.28                 | 432.17                  | 114.11                    | 4.787             |                              |
| 5,950.00                                     | 2,846.29              | 5,673.56              | 2,569.26              | 64.94            | 64.95         | -59.51                | -3,378.05                          | 413.05      | 546.07                 | 431.13                  | 114.94                    | 4.751             |                              |
| 5,975.00                                     | 2,846.36              | 5,701.44              | 2,569.35              | 65.41            | 65.48         | -59.50                | -3,403.04                          | 412.36      | 545.86                 | 430.05                  | 115.81                    | 4.713             |                              |
| 6,000.00                                     | 2,846.42              | 5,723.56              | 2,569.44              | 65.88            | 65.90         | -59.49                | -3,428.03                          | 411.67      | 545.65                 | 429.06                  | 116.59                    | 4.680             |                              |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Company:** Percussion Petroleum, LLC  
**Project:** Eddy County, NM  
**Reference Site:** Huber Fed  
**Site Error:** 0.00 usft  
**Reference Well:** 17H  
**Well Error:** 0.00 usft  
**Reference Wellbore:** OH  
**Reference Design:** Plan #2

**Local Co-ordinate Reference:** Well 17H  
**TVD Reference:** RKB=25' @ 3555.00usft (NA)  
**MD Reference:** RKB=25' @ 3555.00usft (NA)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** WBDS\_SQL\_2  
**Offset TVD Reference:** Reference Datum

| Offset Design Huber Fed - 15H - OH - Plan #2 |                             |                             |                             |                     |                  |                             |                                           |                 |                              |                               |                                 |                      | Offset Site Error: 0.00 usft |
|----------------------------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|-------------------------------------------|-----------------|------------------------------|-------------------------------|---------------------------------|----------------------|------------------------------|
| Survey Program: 0-MWD+IGRF                   |                             |                             |                             |                     |                  |                             |                                           |                 |                              |                               |                                 |                      | Offset Well Error: 0.00 usft |
| Measured<br>Depth<br>(usft)                  | Vertical<br>Depth<br>(usft) | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) | Highside<br>Toolface<br>(°) | Offset Wellbore Centre<br>+N/-S<br>(usft) | +E/-W<br>(usft) | Between<br>Centres<br>(usft) | Between<br>Ellipses<br>(usft) | Minimum<br>Separation<br>(usft) | Separation<br>Factor | Warning                      |
| 6.025.00                                     | 2.846.49                    | 5.748.55                    | 2.569.53                    | 66.36               | 66.37            | -59.48                      | -3.453.02                                 | 410.97          | 545.44                       | 428.02                        | 117.42                          | 4.645                |                              |
| 6.050.00                                     | 2.846.55                    | 5.773.55                    | 2.569.62                    | 66.83               | 66.85            | -59.47                      | -3.478.01                                 | 410.28          | 545.23                       | 426.98                        | 118.25                          | 4.611                |                              |
| 6.075.00                                     | 2.846.62                    | 5.801.45                    | 2.569.71                    | 67.30               | 67.38            | -59.46                      | -3.503.00                                 | 409.59          | 545.02                       | 425.89                        | 119.13                          | 4.575                |                              |
| 6.100.00                                     | 2.846.68                    | 5.823.55                    | 2.569.81                    | 67.78               | 67.79            | -59.45                      | -3.527.99                                 | 408.89          | 544.82                       | 424.90                        | 119.91                          | 4.543                |                              |
| 6.125.00                                     | 2.846.75                    | 5.848.55                    | 2.569.90                    | 68.25               | 68.27            | -59.44                      | -3.552.98                                 | 408.20          | 544.61                       | 423.87                        | 120.74                          | 4.511                |                              |
| 6.150.00                                     | 2.846.82                    | 5.873.55                    | 2.569.99                    | 68.72               | 68.74            | -59.43                      | -3.577.97                                 | 407.51          | 544.40                       | 422.83                        | 121.57                          | 4.478                |                              |
| 6.175.00                                     | 2.846.88                    | 5.901.45                    | 2.570.08                    | 69.20               | 69.27            | -59.42                      | -3.602.96                                 | 406.81          | 544.19                       | 421.74                        | 122.45                          | 4.444                |                              |
| 6.200.00                                     | 2.846.95                    | 5.923.55                    | 2.570.17                    | 69.67               | 69.69            | -59.41                      | -3.627.94                                 | 406.12          | 543.98                       | 420.75                        | 123.23                          | 4.414                |                              |
| 6.225.00                                     | 2.847.01                    | 5.948.55                    | 2.570.26                    | 70.14               | 70.16            | -59.40                      | -3.652.93                                 | 405.42          | 543.77                       | 419.71                        | 124.06                          | 4.383                |                              |
| 6.250.00                                     | 2.847.08                    | 5.973.55                    | 2.570.36                    | 70.62               | 70.64            | -59.39                      | -3.677.92                                 | 404.73          | 543.56                       | 418.68                        | 124.89                          | 4.352                |                              |
| 6.275.00                                     | 2.847.14                    | 6.001.46                    | 2.570.45                    | 71.09               | 71.16            | -59.38                      | -3.702.91                                 | 404.04          | 543.36                       | 417.59                        | 125.77                          | 4.320                |                              |
| 6.300.00                                     | 2.847.21                    | 6.023.54                    | 2.570.54                    | 71.56               | 71.58            | -59.37                      | -3.727.90                                 | 403.34          | 543.15                       | 416.60                        | 126.55                          | 4.292                |                              |
| 6.325.00                                     | 2.847.27                    | 6.048.54                    | 2.570.63                    | 72.04               | 72.06            | -59.36                      | -3.752.89                                 | 402.65          | 542.94                       | 415.56                        | 127.37                          | 4.263                |                              |
| 6.350.00                                     | 2.847.34                    | 6.073.54                    | 2.570.72                    | 72.51               | 72.53            | -59.35                      | -3.777.88                                 | 401.96          | 542.73                       | 414.53                        | 128.20                          | 4.233                |                              |
| 6.375.00                                     | 2.847.40                    | 6.101.46                    | 2.570.81                    | 72.98               | 73.06            | -59.35                      | -3.802.87                                 | 401.26          | 542.52                       | 413.44                        | 129.08                          | 4.203                |                              |
| 6.400.00                                     | 2.847.47                    | 6.123.54                    | 2.570.91                    | 73.46               | 73.48            | -59.34                      | -3.827.86                                 | 400.57          | 542.31                       | 412.45                        | 129.86                          | 4.176                |                              |
| 6.425.00                                     | 2.847.54                    | 6.148.54                    | 2.571.00                    | 73.93               | 73.95            | -59.33                      | -3.852.85                                 | 399.87          | 542.10                       | 411.42                        | 130.69                          | 4.148                |                              |
| 6.450.00                                     | 2.847.60                    | 6.173.54                    | 2.571.09                    | 74.40               | 74.43            | -59.32                      | -3.877.84                                 | 399.18          | 541.90                       | 410.38                        | 131.52                          | 4.120                |                              |
| 6.475.00                                     | 2.847.67                    | 6.201.46                    | 2.571.18                    | 74.88               | 74.96            | -59.31                      | -3.902.83                                 | 398.49          | 541.69                       | 409.29                        | 132.39                          | 4.091                |                              |
| 6.500.00                                     | 2.847.73                    | 6.223.54                    | 2.571.27                    | 75.35               | 75.38            | -59.30                      | -3.927.81                                 | 397.79          | 541.48                       | 408.30                        | 133.17                          | 4.066                |                              |
| 6.525.00                                     | 2.847.80                    | 6.248.53                    | 2.571.36                    | 75.83               | 75.85            | -59.29                      | -3.952.80                                 | 397.10          | 541.27                       | 407.27                        | 134.00                          | 4.039                |                              |
| 6.550.00                                     | 2.847.86                    | 6.273.53                    | 2.571.46                    | 76.30               | 76.32            | -59.28                      | -3.977.79                                 | 396.41          | 541.06                       | 406.23                        | 134.83                          | 4.013                |                              |
| 6.575.00                                     | 2.847.93                    | 6.301.47                    | 2.571.55                    | 76.77               | 76.85            | -59.27                      | -4.002.78                                 | 395.71          | 540.85                       | 405.15                        | 135.71                          | 3.985                |                              |
| 6.600.00                                     | 2.847.99                    | 6.323.53                    | 2.571.64                    | 77.25               | 77.27            | -59.26                      | -4.027.77                                 | 395.02          | 540.65                       | 404.16                        | 136.49                          | 3.961                |                              |
| 6.625.00                                     | 2.848.06                    | 6.348.53                    | 2.571.73                    | 77.72               | 77.75            | -59.25                      | -4.052.76                                 | 394.33          | 540.44                       | 403.12                        | 137.32                          | 3.936                |                              |
| 6.650.00                                     | 2.848.12                    | 6.373.53                    | 2.571.82                    | 78.20               | 78.22            | -59.24                      | -4.077.75                                 | 393.63          | 540.23                       | 402.09                        | 138.14                          | 3.911                |                              |
| 6.675.00                                     | 2.848.19                    | 6.401.47                    | 2.571.91                    | 78.67               | 78.75            | -59.23                      | -4.102.74                                 | 392.94          | 540.02                       | 401.00                        | 139.02                          | 3.884                |                              |
| 6.700.00                                     | 2.848.26                    | 6.423.53                    | 2.572.01                    | 79.14               | 79.17            | -59.22                      | -4.127.73                                 | 392.24          | 539.81                       | 400.01                        | 139.80                          | 3.861                |                              |
| 6.725.00                                     | 2.848.32                    | 6.448.53                    | 2.572.10                    | 79.62               | 79.64            | -59.21                      | -4.152.72                                 | 391.55          | 539.60                       | 398.98                        | 140.63                          | 3.837                |                              |
| 6.750.00                                     | 2.848.39                    | 6.473.52                    | 2.572.19                    | 80.09               | 80.12            | -59.20                      | -4.177.71                                 | 390.86          | 539.40                       | 397.94                        | 141.45                          | 3.813                |                              |
| 6.775.00                                     | 2.848.45                    | 6.501.48                    | 2.572.28                    | 80.57               | 80.65            | -59.19                      | -4.202.70                                 | 390.16          | 539.19                       | 396.86                        | 142.33                          | 3.788                |                              |
| 6.800.00                                     | 2.848.52                    | 6.523.52                    | 2.572.37                    | 81.04               | 81.07            | -59.18                      | -4.227.68                                 | 389.47          | 538.98                       | 395.87                        | 143.11                          | 3.766                |                              |
| 6.825.00                                     | 2.848.58                    | 6.548.52                    | 2.572.46                    | 81.52               | 81.54            | -59.17                      | -4.252.67                                 | 388.78          | 538.77                       | 394.83                        | 143.94                          | 3.743                |                              |
| 6.850.00                                     | 2.848.65                    | 6.573.52                    | 2.572.56                    | 81.99               | 82.02            | -59.16                      | -4.277.66                                 | 388.08          | 538.56                       | 393.80                        | 144.76                          | 3.720                |                              |
| 6.875.00                                     | 2.848.71                    | 6.601.48                    | 2.572.65                    | 82.46               | 82.55            | -59.15                      | -4.302.65                                 | 387.39          | 538.35                       | 392.71                        | 145.64                          | 3.696                |                              |
| 6.900.00                                     | 2.848.78                    | 6.623.52                    | 2.572.74                    | 82.94               | 82.97            | -59.14                      | -4.327.64                                 | 386.70          | 538.15                       | 391.73                        | 146.42                          | 3.675                |                              |
| 6.925.00                                     | 2.848.84                    | 6.648.52                    | 2.572.83                    | 83.41               | 83.44            | -59.13                      | -4.352.63                                 | 386.00          | 537.94                       | 390.69                        | 147.25                          | 3.653                |                              |
| 6.950.00                                     | 2.848.91                    | 6.673.52                    | 2.572.92                    | 83.89               | 83.92            | -59.12                      | -4.377.62                                 | 385.31          | 537.73                       | 389.66                        | 148.07                          | 3.632                |                              |
| 6.975.00                                     | 2.848.98                    | 6.701.48                    | 2.573.01                    | 84.36               | 84.45            | -59.11                      | -4.402.61                                 | 384.51          | 537.52                       | 388.57                        | 148.95                          | 3.609                |                              |
| 7.000.00                                     | 2.849.04                    | 6.723.51                    | 2.573.10                    | 84.84               | 84.87            | -59.10                      | -4.427.60                                 | 383.92          | 537.31                       | 387.59                        | 149.73                          | 3.589                |                              |
| 7.025.00                                     | 2.849.11                    | 6.748.51                    | 2.573.20                    | 85.31               | 85.34            | -59.09                      | -4.452.59                                 | 383.23          | 537.10                       | 386.55                        | 150.55                          | 3.568                |                              |
| 7.050.00                                     | 2.849.17                    | 6.773.51                    | 2.573.29                    | 85.79               | 85.82            | -59.08                      | -4.477.58                                 | 382.53          | 536.90                       | 385.52                        | 151.38                          | 3.547                |                              |
| 7.075.00                                     | 2.849.24                    | 6.801.49                    | 2.573.38                    | 86.26               | 86.35            | -59.07                      | -4.502.57                                 | 381.84          | 536.69                       | 384.43                        | 152.25                          | 3.525                |                              |
| 7.100.00                                     | 2.849.30                    | 6.823.51                    | 2.573.47                    | 86.74               | 86.77            | -59.06                      | -4.527.55                                 | 381.15          | 536.48                       | 383.45                        | 153.03                          | 3.506                |                              |
| 7.125.00                                     | 2.849.37                    | 6.848.51                    | 2.573.56                    | 87.21               | 87.24            | -59.05                      | -4.552.54                                 | 380.45          | 536.27                       | 382.42                        | 153.86                          | 3.486                |                              |
| 7.150.00                                     | 2.849.43                    | 6.873.51                    | 2.573.65                    | 87.69               | 87.72            | -59.04                      | -4.577.53                                 | 379.76          | 536.06                       | 381.38                        | 154.68                          | 3.466                |                              |
| 7.175.00                                     | 2.849.50                    | 6.898.51                    | 2.573.75                    | 88.16               | 88.19            | -59.03                      | -4.602.52                                 | 379.07          | 535.86                       | 380.35                        | 155.51                          | 3.446                |                              |
| 7.200.00                                     | 2.849.56                    | 6.923.51                    | 2.573.84                    | 88.64               | 88.67            | -59.02                      | -4.627.51                                 | 378.37          | 535.65                       | 379.31                        | 156.34                          | 3.426                |                              |
| 7.225.00                                     | 2.849.63                    | 6.948.50                    | 2.573.93                    | 89.11               | 89.14            | -59.01                      | -4.652.50                                 | 377.68          | 535.44                       | 378.28                        | 157.16                          | 3.407                |                              |
| 7.250.00                                     | 2.849.70                    | 6.973.50                    | 2.574.02                    | 89.59               | 89.62            | -59.00                      | -4.677.49                                 | 376.98          | 535.23                       | 377.25                        | 157.99                          | 3.388                |                              |
| 7.275.00                                     | 2.849.76                    | 7.001.50                    | 2.574.11                    | 90.06               | 90.15            | -58.99                      | -4.702.48                                 | 376.29          | 535.02                       | 376.16                        | 158.86                          | 3.368                |                              |
| 7.300.00                                     | 2.849.83                    | 7.023.50                    | 2.574.20                    | 90.54               | 90.57            | -58.98                      | -4.727.47                                 | 375.60          | 534.82                       | 375.18                        | 159.64                          | 3.350                |                              |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Company:** Percussion Petroleum, LLC  
**Project:** Eddy County, NM  
**Reference Site:** Huber Fed  
**Site Error:** 0.00 usft  
**Reference Well:** 17H  
**Well Error:** 0.00 usft  
**Reference Wellbore:** OH  
**Reference Design:** Plan #2

**Local Co-ordinate Reference:** Well 17H  
**TVD Reference:** RKB=25' @ 3555.00usft (NA)  
**MD Reference:** RKB=25' @ 3555.00usft (NA)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** WBDS\_SQL\_2  
**Offset TVD Reference:** Reference Datum

| Offset Design Huber Fed - 15H - OH - Plan #2 |                             |                             |                             |                     |                  |                             |                        |                 |                              |                               |                                 |                      | Offset Site Error: | 0.00 usft |
|----------------------------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|------------------------|-----------------|------------------------------|-------------------------------|---------------------------------|----------------------|--------------------|-----------|
| Survey Program: 0-MWD+IGRF                   |                             |                             |                             |                     |                  |                             |                        |                 |                              |                               |                                 |                      | Offset Well Error: | 0.00 usft |
| Reference                                    |                             | Offset                      |                             | Semi Major Axis     |                  | Highside<br>Toolface<br>(°) | Offset Wellbore Centre |                 | Distance                     |                               | Minimum<br>Separation<br>(usft) | Separation<br>Factor | Warning            |           |
| Measured<br>Depth<br>(usft)                  | Vertical<br>Depth<br>(usft) | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) |                             | +N/-S<br>(usft)        | +E/-W<br>(usft) | Between<br>Centres<br>(usft) | Between<br>Ellipses<br>(usft) |                                 |                      |                    |           |
| 7,325.00                                     | 2,849.89                    | 7,048.50                    | 2,574.30                    | 91.01               | 91.04            | -58.97                      | -4,752.46              | 374.90          | 534.61                       | 374.15                        | 160.46                          | 3.332                |                    |           |
| 7,350.00                                     | 2,849.96                    | 7,073.50                    | 2,574.39                    | 91.49               | 91.52            | -58.96                      | -4,777.45              | 374.21          | 534.40                       | 373.11                        | 161.29                          | 3.313                |                    |           |
| 7,375.00                                     | 2,850.02                    | 7,101.50                    | 2,574.48                    | 91.96               | 92.05            | -58.95                      | -4,802.44              | 373.52          | 534.19                       | 372.03                        | 162.16                          | 3.294                |                    |           |
| 7,400.00                                     | 2,850.09                    | 7,123.50                    | 2,574.57                    | 92.44               | 92.47            | -58.94                      | -4,827.42              | 372.82          | 533.99                       | 371.05                        | 162.94                          | 3.277                |                    |           |
| 7,425.00                                     | 2,850.15                    | 7,148.50                    | 2,574.66                    | 92.91               | 92.94            | -58.93                      | -4,852.41              | 372.13          | 533.78                       | 370.01                        | 163.76                          | 3.259                |                    |           |
| 7,450.00                                     | 2,850.22                    | 7,173.50                    | 2,574.75                    | 93.39               | 93.42            | -58.91                      | -4,877.40              | 371.44          | 533.57                       | 368.98                        | 164.59                          | 3.242                |                    |           |
| 7,475.00                                     | 2,850.28                    | 7,201.51                    | 2,574.85                    | 93.86               | 93.95            | -58.90                      | -4,902.39              | 370.74          | 533.36                       | 367.90                        | 165.46                          | 3.223                |                    |           |
| 7,500.00                                     | 2,850.35                    | 7,223.49                    | 2,574.94                    | 94.34               | 94.37            | -58.89                      | -4,927.38              | 370.05          | 533.15                       | 366.92                        | 166.24                          | 3.207                |                    |           |
| 7,525.00                                     | 2,850.42                    | 7,248.49                    | 2,575.03                    | 94.81               | 94.84            | -58.88                      | -4,952.37              | 369.35          | 532.95                       | 365.88                        | 167.06                          | 3.190                |                    |           |
| 7,550.00                                     | 2,850.48                    | 7,273.49                    | 2,575.12                    | 95.29               | 95.32            | -58.87                      | -4,977.36              | 368.66          | 532.74                       | 364.85                        | 167.89                          | 3.173                |                    |           |
| 7,575.00                                     | 2,850.55                    | 7,301.51                    | 2,575.21                    | 95.76               | 95.85            | -58.86                      | -5,002.35              | 367.97          | 532.53                       | 363.77                        | 168.76                          | 3.156                |                    |           |
| 7,600.00                                     | 2,850.61                    | 7,323.49                    | 2,575.30                    | 96.24               | 96.27            | -58.85                      | -5,027.34              | 367.27          | 532.32                       | 362.79                        | 169.53                          | 3.140                |                    |           |
| 7,625.00                                     | 2,850.68                    | 7,348.49                    | 2,575.40                    | 96.71               | 96.74            | -58.84                      | -5,052.33              | 366.58          | 532.12                       | 361.76                        | 170.36                          | 3.124                |                    |           |
| 7,650.00                                     | 2,850.74                    | 7,373.49                    | 2,575.49                    | 97.19               | 97.22            | -58.83                      | -5,077.32              | 365.89          | 531.91                       | 360.73                        | 171.18                          | 3.107                |                    |           |
| 7,675.00                                     | 2,850.81                    | 7,401.51                    | 2,575.58                    | 97.66               | 97.75            | -58.82                      | -5,102.31              | 365.19          | 531.70                       | 359.64                        | 172.06                          | 3.090                |                    |           |
| 7,700.00                                     | 2,850.87                    | 7,423.49                    | 2,575.67                    | 98.14               | 98.17            | -58.81                      | -5,127.29              | 364.50          | 531.49                       | 358.66                        | 172.83                          | 3.075                |                    |           |
| 7,725.00                                     | 2,850.94                    | 7,448.48                    | 2,575.76                    | 98.61               | 98.65            | -58.80                      | -5,152.28              | 363.81          | 531.28                       | 357.63                        | 173.65                          | 3.059                |                    |           |
| 7,750.00                                     | 2,851.00                    | 7,473.48                    | 2,575.85                    | 99.09               | 99.12            | -58.79                      | -5,177.27              | 363.11          | 531.08                       | 356.60                        | 174.48                          | 3.044                |                    |           |
| 7,775.00                                     | 2,851.07                    | 7,501.52                    | 2,575.95                    | 99.57               | 99.65            | -58.78                      | -5,202.26              | 362.42          | 530.87                       | 355.52                        | 175.35                          | 3.027                |                    |           |
| 7,800.00                                     | 2,851.14                    | 7,523.48                    | 2,576.04                    | 100.04              | 100.07           | -58.77                      | -5,227.25              | 361.72          | 530.66                       | 354.54                        | 176.12                          | 3.013                |                    |           |
| 7,825.00                                     | 2,851.20                    | 7,548.48                    | 2,576.13                    | 100.52              | 100.55           | -58.76                      | -5,252.24              | 361.03          | 530.45                       | 353.51                        | 176.95                          | 2.998                |                    |           |
| 7,850.00                                     | 2,851.27                    | 7,573.48                    | 2,576.22                    | 100.99              | 101.02           | -58.75                      | -5,277.23              | 360.34          | 530.25                       | 352.48                        | 177.77                          | 2.983                |                    |           |
| 7,875.00                                     | 2,851.33                    | 7,601.52                    | 2,576.31                    | 101.47              | 101.56           | -58.74                      | -5,302.22              | 359.64          | 530.04                       | 351.40                        | 178.64                          | 2.967                |                    |           |
| 7,900.00                                     | 2,851.40                    | 7,623.48                    | 2,576.40                    | 101.94              | 101.97           | -58.73                      | -5,327.21              | 358.95          | 529.83                       | 350.42                        | 179.41                          | 2.953                |                    |           |
| 7,925.00                                     | 2,851.46                    | 7,648.48                    | 2,576.49                    | 102.42              | 102.45           | -58.72                      | -5,352.20              | 358.26          | 529.62                       | 349.39                        | 180.24                          | 2.939                |                    |           |
| 7,950.00                                     | 2,851.53                    | 7,673.47                    | 2,576.59                    | 102.89              | 102.92           | -58.71                      | -5,377.19              | 357.56          | 529.42                       | 348.36                        | 181.06                          | 2.924                |                    |           |
| 7,975.00                                     | 2,851.59                    | 7,701.53                    | 2,576.68                    | 103.37              | 103.46           | -58.70                      | -5,402.18              | 356.87          | 529.21                       | 347.28                        | 181.93                          | 2.909                |                    |           |
| 8,000.00                                     | 2,851.66                    | 7,723.47                    | 2,576.77                    | 103.84              | 103.88           | -58.69                      | -5,427.16              | 356.18          | 529.00                       | 346.30                        | 182.70                          | 2.895                |                    |           |
| 8,025.00                                     | 2,851.72                    | 7,748.47                    | 2,576.86                    | 104.32              | 104.35           | -58.68                      | -5,452.15              | 355.48          | 528.79                       | 345.27                        | 183.52                          | 2.881                |                    |           |
| 8,050.00                                     | 2,851.79                    | 7,773.47                    | 2,576.95                    | 104.80              | 104.83           | -58.67                      | -5,477.14              | 354.79          | 528.59                       | 344.24                        | 184.35                          | 2.867                |                    |           |
| 8,075.00                                     | 2,851.86                    | 7,801.53                    | 2,577.04                    | 105.27              | 105.36           | -58.66                      | -5,502.13              | 354.09          | 528.38                       | 343.16                        | 185.22                          | 2.853                |                    |           |
| 8,100.00                                     | 2,851.92                    | 7,823.47                    | 2,577.14                    | 105.75              | 105.78           | -58.65                      | -5,527.12              | 353.40          | 528.17                       | 342.18                        | 185.99                          | 2.840                |                    |           |
| 8,125.00                                     | 2,851.99                    | 7,848.47                    | 2,577.23                    | 106.22              | 106.25           | -58.64                      | -5,552.11              | 352.71          | 527.96                       | 341.15                        | 186.81                          | 2.826                |                    |           |
| 8,150.00                                     | 2,852.05                    | 7,873.47                    | 2,577.32                    | 106.70              | 106.73           | -58.63                      | -5,577.10              | 352.01          | 527.76                       | 340.13                        | 187.63                          | 2.813                |                    |           |
| 8,175.00                                     | 2,852.12                    | 7,901.54                    | 2,577.41                    | 107.17              | 107.26           | -58.62                      | -5,602.09              | 351.32          | 527.55                       | 339.05                        | 188.50                          | 2.799                |                    |           |
| 8,200.00                                     | 2,852.18                    | 7,923.46                    | 2,577.50                    | 107.65              | 107.68           | -58.61                      | -5,627.08              | 350.63          | 527.34                       | 338.07                        | 189.27                          | 2.786                |                    |           |
| 8,225.00                                     | 2,852.25                    | 7,948.46                    | 2,577.59                    | 108.13              | 108.16           | -58.60                      | -5,652.07              | 349.93          | 527.13                       | 337.04                        | 190.09                          | 2.773                |                    |           |
| 8,250.00                                     | 2,852.31                    | 7,973.46                    | 2,577.69                    | 108.60              | 108.63           | -58.59                      | -5,677.06              | 349.24          | 526.93                       | 336.01                        | 190.92                          | 2.760                |                    |           |
| 8,275.00                                     | 2,852.38                    | 8,001.54                    | 2,577.78                    | 109.08              | 109.17           | -58.57                      | -5,702.05              | 348.55          | 526.72                       | 334.93                        | 191.79                          | 2.746                |                    |           |
| 8,300.00                                     | 2,852.44                    | 8,023.46                    | 2,577.87                    | 109.55              | 109.58           | -58.56                      | -5,727.03              | 347.85          | 526.51                       | 333.96                        | 192.56                          | 2.734 ES, SF         |                    |           |

**Company:** Percussion Petroleum, LLC  
**Project:** Eddy County, NM  
**Reference Site:** Huber Fed  
**Site Error:** 0.00 usft  
**Reference Well:** 17H  
**Well Error:** 0.00 usft  
**Reference Wellbore:** OH  
**Reference Design:** Plan #2

**Local Co-ordinate Reference:** Well 17H  
**TVD Reference:** RKB=25' @ 3555.00usft (NA)  
**MD Reference:** RKB=25' @ 3555.00usft (NA)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** WBDS\_SQL\_2  
**Offset TVD Reference:** Reference Datum

| Offset Design Huber Fed - 16H - OH - Plan #2 |                             |                             |                             |                     |                  |                             |          |        |                                           |                 |                              |                               |                                 | Offset Site Error:   | 0.00 usft |
|----------------------------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|----------|--------|-------------------------------------------|-----------------|------------------------------|-------------------------------|---------------------------------|----------------------|-----------|
| Survey Program: 0-MWD+IGRF                   |                             |                             |                             |                     |                  |                             |          |        |                                           |                 |                              |                               |                                 | Offset Well Error:   | 0.00 usft |
| Reference                                    |                             | Offset                      |                             | Semi Major Axis     |                  | Highside<br>Toolface<br>(°) | Distance |        | Offset Wellbore Centre<br>+N/-S<br>(usft) | +E/-W<br>(usft) | Between<br>Centres<br>(usft) | Between<br>Ellipses<br>(usft) | Minimum<br>Separation<br>(usft) | Separation<br>Factor | Warning   |
| Measured<br>Depth<br>(usft)                  | Vertical<br>Depth<br>(usft) | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) |                             |          |        |                                           |                 |                              |                               |                                 |                      |           |
| 2,100.00                                     | 2,099.82                    | 2,108.33                    | 2,099.82                    | 6.91                | 6.90             | 90.15                       | -9.60    | 693.11 | 687.74                                    | 673.94          | 13.80                        | 49.843                        |                                 |                      |           |
| 2,125.00                                     | 2,124.82                    | 2,116.67                    | 2,124.82                    | 7.00                | 6.93             | 90.15                       | -9.60    | 693.11 | 687.74                                    | 673.83          | 13.92                        | 49.417                        |                                 |                      |           |
| 2,150.00                                     | 2,149.82                    | 2,141.67                    | 2,149.82                    | 7.09                | 7.02             | 90.15                       | -9.60    | 693.11 | 687.74                                    | 673.65          | 14.09                        | 48.794                        |                                 |                      |           |
| 2,175.00                                     | 2,174.82                    | 2,166.67                    | 2,174.82                    | 7.18                | 7.11             | 90.15                       | -9.60    | 693.11 | 687.74                                    | 673.47          | 14.27                        | 48.187                        |                                 |                      |           |
| 2,200.00                                     | 2,199.82                    | 2,191.67                    | 2,199.82                    | 7.27                | 7.20             | 90.15                       | -9.60    | 693.11 | 687.74                                    | 673.29          | 14.45                        | 47.595                        |                                 |                      |           |
| 2,225.00                                     | 2,224.82                    | 2,216.67                    | 2,224.82                    | 7.36                | 7.29             | 90.15                       | -9.60    | 693.11 | 687.74                                    | 673.11          | 14.63                        | 47.016                        |                                 |                      |           |
| 2,250.00                                     | 2,249.82                    | 2,241.67                    | 2,249.82                    | 7.45                | 7.37             | 90.15                       | -9.60    | 693.11 | 687.74                                    | 672.94          | 14.81                        | 46.452                        |                                 |                      |           |
| 2,250.79                                     | 2,250.61                    | 2,242.46                    | 2,250.61                    | 7.45                | 7.38             | -90.92                      | -9.60    | 693.11 | 687.74                                    | 672.93          | 14.81                        | 46.434                        |                                 |                      |           |
| 2,275.00                                     | 2,274.82                    | 2,266.67                    | 2,274.82                    | 7.54                | 7.46             | -90.93                      | -9.60    | 693.11 | 687.74                                    | 672.76          | 14.98                        | 45.905                        |                                 |                      |           |
| 2,300.00                                     | 2,299.80                    | 2,292.08                    | 2,300.23                    | 7.63                | 7.55             | -90.99                      | -9.83    | 693.11 | 687.75                                    | 672.60          | 15.16                        | 45.376                        |                                 |                      |           |
| 2,325.00                                     | 2,324.72                    | 2,317.76                    | 2,325.88                    | 7.71                | 7.64             | -91.05                      | -11.13   | 693.08 | 687.76                                    | 672.43          | 15.33                        | 44.868                        |                                 |                      |           |
| 2,350.00                                     | 2,349.52                    | 2,343.48                    | 2,351.48                    | 7.79                | 7.73             | -91.11                      | -13.58   | 693.02 | 687.76                                    | 672.26          | 15.50                        | 44.370                        |                                 |                      |           |
| 2,375.00                                     | 2,374.17                    | 2,369.24                    | 2,376.97                    | 7.88                | 7.82             | -91.17                      | -17.19   | 692.93 | 687.76                                    | 672.08          | 15.68                        | 43.873                        |                                 |                      |           |
| 2,400.00                                     | 2,398.61                    | 2,395.02                    | 2,402.32                    | 7.97                | 7.92             | -91.23                      | -21.94   | 692.82 | 687.75                                    | 671.90          | 15.85                        | 43.384                        |                                 |                      |           |
| 2,425.00                                     | 2,422.80                    | 2,420.84                    | 2,427.45                    | 8.05                | 8.01             | -91.28                      | -27.83   | 692.68 | 687.74                                    | 671.70          | 16.04                        | 42.887                        |                                 |                      |           |
| 2,450.00                                     | 2,446.68                    | 2,446.68                    | 2,452.31                    | 8.14                | 8.11             | -91.34                      | -34.86   | 692.52 | 687.72                                    | 671.50          | 16.22                        | 42.398                        |                                 |                      |           |
| 2,475.00                                     | 2,470.23                    | 2,472.55                    | 2,476.87                    | 8.23                | 8.21             | -91.39                      | -43.01   | 692.33 | 687.70                                    | 671.28          | 16.42                        | 41.888                        |                                 |                      |           |
| 2,500.00                                     | 2,493.39                    | 2,498.45                    | 2,501.05                    | 8.32                | 8.32             | -91.43                      | -52.27   | 692.11 | 687.67                                    | 671.05          | 16.62                        | 41.387                        |                                 |                      |           |
| 2,525.00                                     | 2,516.11                    | 2,524.37                    | 2,524.81                    | 8.42                | 8.43             | -91.48                      | -62.63   | 691.87 | 687.63                                    | 670.80          | 16.83                        | 40.851                        |                                 |                      |           |
| 2,550.00                                     | 2,538.36                    | 2,550.31                    | 2,548.09                    | 8.53                | 8.54             | -91.52                      | -74.06   | 691.60 | 687.59                                    | 670.54          | 17.05                        | 40.326                        |                                 |                      |           |
| 2,575.00                                     | 2,560.09                    | 2,576.28                    | 2,570.86                    | 8.64                | 8.67             | -91.56                      | -86.53   | 691.31 | 687.54                                    | 670.25          | 17.30                        | 39.752                        |                                 |                      |           |
| 2,600.00                                     | 2,581.26                    | 2,602.26                    | 2,593.04                    | 8.76                | 8.80             | -91.59                      | -100.04  | 690.99 | 687.49                                    | 669.95          | 17.54                        | 39.193                        |                                 |                      |           |
| 2,625.00                                     | 2,601.83                    | 2,628.25                    | 2,614.61                    | 8.89                | 8.95             | -91.63                      | -114.55  | 690.65 | 687.43                                    | 669.61          | 17.82                        | 38.571                        |                                 |                      |           |
| 2,650.00                                     | 2,621.76                    | 2,654.27                    | 2,635.51                    | 9.03                | 9.09             | -91.65                      | -130.03  | 690.29 | 687.37                                    | 669.26          | 18.11                        | 37.964                        |                                 |                      |           |
| 2,675.00                                     | 2,641.01                    | 2,680.29                    | 2,655.69                    | 9.18                | 9.26             | -91.68                      | -146.45  | 689.90 | 687.30                                    | 668.87          | 18.43                        | 37.297                        |                                 |                      |           |
| 2,700.00                                     | 2,659.55                    | 2,706.32                    | 2,675.11                    | 9.34                | 9.43             | -91.70                      | -163.77  | 689.50 | 687.22                                    | 668.47          | 18.75                        | 36.643                        |                                 |                      |           |
| 2,725.00                                     | 2,677.34                    | 2,732.36                    | 2,693.73                    | 9.51                | 9.63             | -91.72                      | -181.97  | 689.07 | 687.14                                    | 668.02          | 19.12                        | 35.932                        |                                 |                      |           |
| 2,750.00                                     | 2,694.35                    | 2,758.40                    | 2,711.51                    | 9.69                | 9.82             | -91.74                      | -200.99  | 688.62 | 687.06                                    | 667.56          | 19.50                        | 35.233                        |                                 |                      |           |
| 2,775.00                                     | 2,710.54                    | 2,784.45                    | 2,728.40                    | 9.89                | 10.04            | -91.75                      | -220.80  | 688.16 | 686.97                                    | 667.05          | 19.92                        | 34.486                        |                                 |                      |           |
| 2,800.00                                     | 2,725.89                    | 2,810.49                    | 2,744.38                    | 10.10               | 10.27            | -91.76                      | -241.37  | 687.68 | 686.87                                    | 666.52          | 20.35                        | 33.752                        |                                 |                      |           |
| 2,825.00                                     | 2,740.36                    | 2,836.54                    | 2,759.41                    | 10.33               | 10.51            | -91.76                      | -262.63  | 687.18 | 686.77                                    | 666.05          | 20.82                        | 32.980                        |                                 |                      |           |
| 2,850.00                                     | 2,753.93                    | 2,862.58                    | 2,773.45                    | 10.56               | 10.77            | -91.76                      | -284.55  | 686.66 | 686.67                                    | 665.56          | 21.31                        | 32.223                        |                                 |                      |           |
| 2,875.00                                     | 2,766.57                    | 2,888.61                    | 2,786.48                    | 10.81               | 11.04            | -91.76                      | -307.08  | 686.13 | 686.56                                    | 664.73          | 21.84                        | 31.443                        |                                 |                      |           |
| 2,900.00                                     | 2,778.26                    | 2,914.64                    | 2,798.46                    | 11.07               | 11.33            | -91.76                      | -330.18  | 685.59 | 686.45                                    | 664.08          | 22.38                        | 30.679                        |                                 |                      |           |
| 2,925.00                                     | 2,788.97                    | 2,940.65                    | 2,809.39                    | 11.35               | 11.62            | -91.75                      | -353.78  | 685.04 | 686.34                                    | 663.38          | 22.95                        | 29.903                        |                                 |                      |           |
| 2,950.00                                     | 2,798.68                    | 2,966.66                    | 2,819.22                    | 11.63               | 11.93            | -91.73                      | -377.84  | 684.47 | 686.22                                    | 662.67          | 23.54                        | 29.147                        |                                 |                      |           |
| 2,975.00                                     | 2,807.39                    | 2,992.64                    | 2,827.95                    | 11.93               | 12.25            | -91.72                      | -402.31  | 683.90 | 686.09                                    | 661.93          | 24.17                        | 28.390                        |                                 |                      |           |
| 3,000.00                                     | 2,815.06                    | 3,018.61                    | 2,835.55                    | 12.24               | 12.59            | -91.70                      | -427.13  | 683.32 | 685.97                                    | 661.17          | 24.80                        | 27.655                        |                                 |                      |           |
| 3,025.00                                     | 2,821.69                    | 3,044.57                    | 2,842.02                    | 12.56               | 12.92            | -91.68                      | -452.26  | 682.73 | 685.84                                    | 660.37          | 25.47                        | 26.930                        |                                 |                      |           |
| 3,050.00                                     | 2,827.25                    | 3,070.50                    | 2,847.33                    | 12.89               | 13.28            | -91.65                      | -477.63  | 682.13 | 685.71                                    | 659.57          | 26.15                        | 26.227                        |                                 |                      |           |
| 3,075.00                                     | 2,831.76                    | 3,096.40                    | 2,851.50                    | 13.23               | 13.63            | -91.62                      | -503.19  | 681.53 | 685.58                                    | 658.74          | 26.84                        | 25.540                        |                                 |                      |           |
| 3,100.00                                     | 2,835.18                    | 3,122.29                    | 2,854.50                    | 13.57               | 14.00            | -91.59                      | -528.89  | 680.93 | 685.45                                    | 657.89          | 27.55                        | 24.878                        |                                 |                      |           |
| 3,125.00                                     | 2,837.52                    | 3,148.14                    | 2,856.33                    | 13.93               | 14.37            | -91.55                      | -554.67  | 680.33 | 685.31                                    | 657.03          | 28.28                        | 24.236                        |                                 |                      |           |
| 3,150.00                                     | 2,838.77                    | 3,173.97                    | 2,857.00                    | 14.28               | 14.75            | -91.52                      | -580.48  | 679.72 | 685.18                                    | 656.17          | 29.01                        | 23.621                        |                                 |                      |           |
| 3,175.00                                     | 2,839.03                    | 3,199.00                    | 2,857.04                    | 14.64               | 15.12            | -91.51                      | -605.50  | 679.13 | 685.05                                    | 655.31          | 29.74                        | 23.034                        |                                 |                      |           |
| 3,200.00                                     | 2,839.09                    | 3,224.00                    | 2,857.09                    | 15.01               | 15.50            | -91.50                      | -630.49  | 678.55 | 684.93                                    | 654.44          | 30.49                        | 22.463                        |                                 |                      |           |
| 3,225.00                                     | 2,839.16                    | 3,249.00                    | 2,857.13                    | 15.39               | 15.89            | -91.50                      | -655.49  | 677.96 | 684.81                                    | 653.55          | 31.26                        | 21.907                        |                                 |                      |           |
| 3,250.00                                     | 2,839.22                    | 3,274.00                    | 2,857.17                    | 15.78               | 16.27            | -91.50                      | -680.48  | 677.38 | 684.69                                    | 652.66          | 32.03                        | 21.377                        |                                 |                      |           |
| 3,275.00                                     | 2,839.29                    | 3,299.00                    | 2,857.22                    | 16.16               | 16.66            | -91.50                      | -705.47  | 676.79 | 684.57                                    | 651.77          | 32.80                        | 20.873                        |                                 |                      |           |
| 3,300.00                                     | 2,839.35                    | 3,324.00                    | 2,857.26                    | 16.55               | 17.06            | -91.50                      | -730.46  | 676.20 | 684.45                                    | 650.87          | 33.58                        | 20.381                        |                                 |                      |           |
| 3,325.00                                     | 2,839.42                    | 3,349.00                    | 2,857.30                    | 16.95               | 17.46            | -91.50                      | -755.46  | 675.62 | 684.33                                    | 649.94          | 34.39                        | 19.901                        |                                 |                      |           |
| 3,350.00                                     | 2,839.49                    | 3,374.00                    | 2,857.35                    | 17.35               | 17.86            | -91.50                      | -780.45  | 675.03 | 684.21                                    | 649.02          | 35.19                        | 19.443                        |                                 |                      |           |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Company:** Percussion Petroleum, LLC  
**Project:** Eddy County, NM  
**Reference Site:** Huber Fed  
**Site Error:** 0.00 usft  
**Reference Well:** 17H  
**Well Error:** 0.00 usft  
**Reference Wellbore:** OH  
**Reference Design:** Plan #2

**Local Co-ordinate Reference:** Well 17H  
**TVD Reference:** RKB=25' @ 3555.00usft (NA)  
**MD Reference:** RKB=25' @ 3555.00usft (NA)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at:** 2.00 sigma  
**Database:** WBDS\_SQL\_2  
**Offset TVD Reference:** Reference Datum

| Offset Design Huber Fed - 16H - OH - Plan #2 |                       |                       |                       |                  |               |                       |                                    |             |                        |                         |                           |                   | Offset Site Error: | 0 00 usft |
|----------------------------------------------|-----------------------|-----------------------|-----------------------|------------------|---------------|-----------------------|------------------------------------|-------------|------------------------|-------------------------|---------------------------|-------------------|--------------------|-----------|
| Survey Program: 0-MWD+IGRF                   |                       |                       |                       |                  |               |                       |                                    |             |                        |                         |                           |                   | Offset Well Error: | 0 00 usft |
| Reference                                    |                       | Offset                |                       | Semi Major Axis  |               |                       | Distance                           |             |                        |                         |                           |                   | Warning            |           |
| Measured Depth (usft)                        | Vertical Depth (usft) | Measured Depth (usft) | Vertical Depth (usft) | Reference (usft) | Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N-S (usft) | +E-W (usft) | Between Centres (usft) | Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor |                    |           |
| 3,375.00                                     | 2,839.55              | 3,401.01              | 2,857.39              | 17.75            | 18.30         | -91.49                | -805.44                            | 674.45      | 684.09                 | 648.06                  | 36.03                     | 18.988            |                    |           |
| 3,400.00                                     | 2,839.62              | 3,423.99              | 2,857.44              | 18.15            | 18.68         | -91.49                | -830.44                            | 673.86      | 683.97                 | 647.16                  | 36.81                     | 18.580            |                    |           |
| 3,425.00                                     | 2,839.68              | 3,448.99              | 2,857.48              | 18.57            | 19.10         | -91.49                | -855.43                            | 673.27      | 683.85                 | 646.21                  | 37.64                     | 18.167            |                    |           |
| 3,450.00                                     | 2,839.75              | 3,473.99              | 2,857.52              | 18.98            | 19.51         | -91.49                | -880.42                            | 672.69      | 683.73                 | 645.26                  | 38.47                     | 17.772            |                    |           |
| 3,475.00                                     | 2,839.81              | 3,501.01              | 2,857.57              | 19.40            | 19.96         | -91.49                | -905.41                            | 672.10      | 683.61                 | 644.27                  | 39.34                     | 17.378            |                    |           |
| 3,500.00                                     | 2,839.88              | 3,523.99              | 2,857.61              | 19.81            | 20.35         | -91.49                | -930.41                            | 671.51      | 683.49                 | 643.35                  | 40.14                     | 17.026            |                    |           |
| 3,525.00                                     | 2,839.94              | 3,548.99              | 2,857.65              | 20.24            | 20.78         | -91.48                | -955.40                            | 670.93      | 683.37                 | 642.38                  | 41.00                     | 16.670            |                    |           |
| 3,550.00                                     | 2,840.01              | 3,573.99              | 2,857.70              | 20.66            | 21.20         | -91.48                | -980.39                            | 670.34      | 683.25                 | 641.41                  | 41.85                     | 16.328            |                    |           |
| 3,575.00                                     | 2,840.07              | 3,601.01              | 2,857.74              | 21.09            | 21.66         | -91.48                | -1,005.39                          | 669.76      | 683.13                 | 640.40                  | 42.73                     | 15.986            |                    |           |
| 3,600.00                                     | 2,840.14              | 3,623.99              | 2,857.78              | 21.52            | 22.06         | -91.48                | -1,030.38                          | 669.17      | 683.01                 | 639.46                  | 43.56                     | 15.681            |                    |           |
| 3,625.00                                     | 2,840.21              | 3,648.99              | 2,857.83              | 21.95            | 22.50         | -91.48                | -1,055.37                          | 668.58      | 682.89                 | 638.47                  | 44.42                     | 15.372            |                    |           |
| 3,650.00                                     | 2,840.27              | 3,673.99              | 2,857.87              | 22.38            | 22.93         | -91.48                | -1,080.36                          | 668.00      | 682.77                 | 637.48                  | 45.29                     | 15.075            |                    |           |
| 3,675.00                                     | 2,840.34              | 3,701.01              | 2,857.92              | 22.82            | 23.40         | -91.47                | -1,105.36                          | 667.41      | 682.65                 | 636.46                  | 46.19                     | 14.778            |                    |           |
| 3,700.00                                     | 2,840.40              | 3,723.99              | 2,857.96              | 23.25            | 23.80         | -91.47                | -1,130.35                          | 666.82      | 682.53                 | 635.50                  | 47.03                     | 14.512            |                    |           |
| 3,725.00                                     | 2,840.47              | 3,748.99              | 2,858.00              | 23.69            | 24.24         | -91.47                | -1,155.34                          | 666.24      | 682.41                 | 634.50                  | 47.91                     | 14.243            |                    |           |
| 3,750.00                                     | 2,840.53              | 3,773.99              | 2,858.05              | 24.13            | 24.68         | -91.47                | -1,180.33                          | 665.65      | 682.29                 | 633.50                  | 48.79                     | 13.984            |                    |           |
| 3,775.00                                     | 2,840.60              | 3,801.01              | 2,858.09              | 24.57            | 25.16         | -91.47                | -1,205.33                          | 665.07      | 682.17                 | 632.47                  | 49.71                     | 13.724            |                    |           |
| 3,800.00                                     | 2,840.66              | 3,823.99              | 2,858.13              | 25.01            | 25.57         | -91.47                | -1,230.32                          | 664.48      | 682.05                 | 631.50                  | 50.56                     | 13.491            |                    |           |
| 3,825.00                                     | 2,840.73              | 3,848.99              | 2,858.18              | 25.46            | 26.01         | -91.47                | -1,255.31                          | 663.89      | 681.93                 | 630.49                  | 51.45                     | 13.255            |                    |           |
| 3,850.00                                     | 2,840.79              | 3,873.99              | 2,858.22              | 25.90            | 26.46         | -91.46                | -1,280.31                          | 663.31      | 681.81                 | 629.48                  | 52.34                     | 13.027            |                    |           |
| 3,875.00                                     | 2,840.86              | 3,901.01              | 2,858.27              | 26.35            | 26.94         | -91.46                | -1,305.30                          | 662.72      | 681.69                 | 628.43                  | 53.26                     | 12.799            |                    |           |
| 3,900.00                                     | 2,840.93              | 3,923.99              | 2,858.31              | 26.79            | 27.35         | -91.46                | -1,330.29                          | 662.13      | 681.57                 | 627.45                  | 54.12                     | 12.593            |                    |           |
| 3,925.00                                     | 2,840.99              | 3,948.99              | 2,858.35              | 27.24            | 27.80         | -91.46                | -1,355.28                          | 661.55      | 681.45                 | 626.43                  | 55.02                     | 12.386            |                    |           |
| 3,950.00                                     | 2,841.06              | 3,973.99              | 2,858.40              | 27.69            | 28.25         | -91.46                | -1,380.28                          | 660.96      | 681.33                 | 625.42                  | 55.92                     | 12.184            |                    |           |
| 3,975.00                                     | 2,841.12              | 4,001.01              | 2,858.44              | 28.14            | 28.74         | -91.46                | -1,405.27                          | 660.38      | 681.21                 | 624.36                  | 56.85                     | 11.982            |                    |           |
| 4,000.00                                     | 2,841.19              | 4,023.99              | 2,858.48              | 28.59            | 29.15         | -91.45                | -1,430.26                          | 659.79      | 681.09                 | 623.38                  | 57.72                     | 11.800            |                    |           |
| 4,025.00                                     | 2,841.25              | 4,048.99              | 2,858.53              | 29.04            | 29.61         | -91.45                | -1,455.26                          | 659.20      | 680.97                 | 622.35                  | 58.62                     | 11.616            |                    |           |
| 4,050.00                                     | 2,841.32              | 4,073.99              | 2,858.57              | 29.49            | 30.06         | -91.45                | -1,480.25                          | 658.62      | 680.85                 | 621.33                  | 59.53                     | 11.437            |                    |           |
| 4,075.00                                     | 2,841.38              | 4,101.01              | 2,858.61              | 29.95            | 30.55         | -91.45                | -1,505.24                          | 658.03      | 680.73                 | 620.26                  | 60.47                     | 11.257            |                    |           |
| 4,100.00                                     | 2,841.45              | 4,123.99              | 2,858.66              | 30.40            | 30.97         | -91.45                | -1,530.23                          | 657.45      | 680.61                 | 619.27                  | 61.34                     | 11.095            |                    |           |
| 4,125.00                                     | 2,841.51              | 4,148.99              | 2,858.70              | 30.85            | 31.42         | -91.45                | -1,555.23                          | 656.86      | 680.49                 | 618.24                  | 62.25                     | 10.931            |                    |           |
| 4,150.00                                     | 2,841.58              | 4,173.99              | 2,858.75              | 31.31            | 31.88         | -91.45                | -1,580.22                          | 656.27      | 680.37                 | 617.21                  | 63.16                     | 10.771            |                    |           |
| 4,175.00                                     | 2,841.64              | 4,201.01              | 2,858.79              | 31.77            | 32.37         | -91.44                | -1,605.21                          | 655.69      | 680.25                 | 616.14                  | 64.11                     | 10.610            |                    |           |
| 4,200.00                                     | 2,841.71              | 4,223.99              | 2,858.83              | 32.22            | 32.79         | -91.44                | -1,630.21                          | 655.10      | 680.13                 | 615.15                  | 64.99                     | 10.465            |                    |           |
| 4,225.00                                     | 2,841.78              | 4,248.99              | 2,858.88              | 32.68            | 33.25         | -91.44                | -1,655.20                          | 654.51      | 680.01                 | 614.11                  | 65.90                     | 10.318            |                    |           |
| 4,250.00                                     | 2,841.84              | 4,273.98              | 2,858.92              | 33.14            | 33.71         | -91.44                | -1,680.19                          | 653.93      | 679.89                 | 613.07                  | 66.82                     | 10.175            |                    |           |
| 4,275.00                                     | 2,841.91              | 4,301.02              | 2,858.96              | 33.60            | 34.20         | -91.44                | -1,705.18                          | 653.34      | 679.78                 | 612.00                  | 67.77                     | 10.030            |                    |           |
| 4,300.00                                     | 2,841.97              | 4,323.98              | 2,859.01              | 34.05            | 34.63         | -91.44                | -1,730.18                          | 652.76      | 679.66                 | 611.00                  | 68.65                     | 9.900             |                    |           |
| 4,325.00                                     | 2,842.04              | 4,348.98              | 2,859.05              | 34.51            | 35.09         | -91.43                | -1,755.17                          | 652.17      | 679.54                 | 609.96                  | 69.57                     | 9.767             |                    |           |
| 4,350.00                                     | 2,842.10              | 4,373.98              | 2,859.09              | 34.97            | 35.55         | -91.43                | -1,780.16                          | 651.58      | 679.42                 | 608.92                  | 70.49                     | 9.638             |                    |           |
| 4,375.00                                     | 2,842.17              | 4,401.02              | 2,859.14              | 35.43            | 36.04         | -91.43                | -1,805.15                          | 651.00      | 679.30                 | 607.84                  | 71.45                     | 9.507             |                    |           |
| 4,400.00                                     | 2,842.23              | 4,423.98              | 2,859.18              | 35.89            | 36.47         | -91.43                | -1,830.15                          | 650.41      | 679.18                 | 606.84                  | 72.34                     | 9.389             |                    |           |
| 4,425.00                                     | 2,842.30              | 4,448.98              | 2,859.23              | 36.36            | 36.93         | -91.43                | -1,855.14                          | 649.82      | 679.06                 | 605.80                  | 73.26                     | 9.269             |                    |           |
| 4,450.00                                     | 2,842.36              | 4,473.98              | 2,859.27              | 36.82            | 37.39         | -91.43                | -1,880.13                          | 649.24      | 678.94                 | 604.75                  | 74.18                     | 9.152             |                    |           |
| 4,475.00                                     | 2,842.43              | 4,501.02              | 2,859.31              | 37.28            | 37.89         | -91.42                | -1,905.13                          | 648.65      | 678.82                 | 603.67                  | 75.14                     | 9.034             |                    |           |
| 4,500.00                                     | 2,842.50              | 4,523.98              | 2,859.36              | 37.74            | 38.32         | -91.42                | -1,930.12                          | 648.07      | 678.70                 | 602.67                  | 76.03                     | 8.927             |                    |           |
| 4,525.00                                     | 2,842.56              | 4,548.98              | 2,859.40              | 38.21            | 38.78         | -91.42                | -1,955.11                          | 647.48      | 678.58                 | 601.62                  | 76.96                     | 8.818             |                    |           |
| 4,550.00                                     | 2,842.63              | 4,573.98              | 2,859.44              | 38.67            | 39.24         | -91.42                | -1,980.10                          | 646.89      | 678.46                 | 600.57                  | 77.88                     | 8.711             |                    |           |
| 4,575.00                                     | 2,842.69              | 4,601.02              | 2,859.49              | 39.13            | 39.74         | -91.42                | -2,005.10                          | 646.31      | 678.34                 | 599.49                  | 78.85                     | 8.603             |                    |           |
| 4,600.00                                     | 2,842.76              | 4,623.98              | 2,859.53              | 39.60            | 40.17         | -91.42                | -2,030.09                          | 645.72      | 678.22                 | 598.48                  | 79.74                     | 8.506             |                    |           |
| 4,625.00                                     | 2,842.82              | 4,648.98              | 2,859.58              | 40.06            | 40.63         | -91.41                | -2,055.08                          | 645.13      | 678.10                 | 597.43                  | 80.67                     | 8.406             |                    |           |
| 4,650.00                                     | 2,842.89              | 4,673.98              | 2,859.62              | 40.52            | 41.10         | -91.41                | -2,080.08                          | 644.55      | 677.98                 | 596.38                  | 81.59                     | 8.309             |                    |           |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Wellbenders Anticollision Report



Company: Percussion Petroleum, LLC  
Project: Eddy County, NM  
Reference Site: Huber Fed  
Site Error: 0.00 usft  
Reference Well: 17H  
Well Error: 0.00 usft  
Reference Wellbore: OH  
Reference Design: Plan #2

Local Co-ordinate Reference: Well 17H  
TVD Reference: RKB=25' @ 3555.00usft (NA)  
MD Reference: RKB=25' @ 3555.00usft (NA)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Output errors are at: 2.00 sigma  
Database: WBDS\_SQL\_2  
Offset TVD Reference: Reference Datum

| Offset Design Huber Fed - 16H - OH - Plan #2 |                             |                             |                             |                     |                  |                             |                                           |                 |                              |                               |                                 |                      | Offset Site Error: 0.00 usft |
|----------------------------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|-------------------------------------------|-----------------|------------------------------|-------------------------------|---------------------------------|----------------------|------------------------------|
| Survey Program: 0-MWD+IGRF                   |                             |                             |                             |                     |                  |                             |                                           |                 |                              |                               |                                 |                      | Offset Well Error: 0.00 usft |
| Reference                                    |                             | Offset                      |                             | Semi Major Axis     |                  | Highside<br>Toolface<br>(°) | Distance                                  |                 | Between<br>Centres<br>(usft) | Between<br>Ellipses<br>(usft) | Minimum<br>Separation<br>(usft) | Separation<br>Factor | Warning                      |
| Measured<br>Depth<br>(usft)                  | Vertical<br>Depth<br>(usft) | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) |                             | Offset Wellbore Centre<br>+N/-S<br>(usft) | +E/-W<br>(usft) |                              |                               |                                 |                      |                              |
| 4,675.00                                     | 2,842.95                    | 4,701.02                    | 2,859.66                    | 40.99               | 41.60            | -91.41                      | -2,105.07                                 | 643.96          | 677.86                       | 595.30                        | 82.56                           | 8.210                |                              |
| 4,700.00                                     | 2,843.02                    | 4,723.98                    | 2,859.71                    | 41.45               | 42.03            | -91.41                      | -2,130.06                                 | 643.38          | 677.74                       | 594.28                        | 83.45                           | 8.121                |                              |
| 4,725.00                                     | 2,843.08                    | 4,748.98                    | 2,859.75                    | 41.92               | 42.49            | -91.41                      | -2,155.05                                 | 642.79          | 677.62                       | 593.23                        | 84.38                           | 8.030                |                              |
| 4,750.00                                     | 2,843.15                    | 4,773.98                    | 2,859.79                    | 42.39               | 42.96            | -91.41                      | -2,180.05                                 | 642.20          | 677.50                       | 592.18                        | 85.32                           | 7.941                |                              |
| 4,775.00                                     | 2,843.22                    | 4,801.02                    | 2,859.84                    | 42.85               | 43.46            | -91.41                      | -2,205.04                                 | 641.62          | 677.38                       | 591.09                        | 86.28                           | 7.850                |                              |
| 4,800.00                                     | 2,843.28                    | 4,823.98                    | 2,859.88                    | 43.32               | 43.89            | -91.40                      | -2,230.03                                 | 641.03          | 677.26                       | 590.08                        | 87.18                           | 7.769                |                              |
| 4,825.00                                     | 2,843.35                    | 4,848.98                    | 2,859.92                    | 43.78               | 44.36            | -91.40                      | -2,255.03                                 | 640.45          | 677.14                       | 589.03                        | 88.11                           | 7.685                |                              |
| 4,850.00                                     | 2,843.41                    | 4,873.98                    | 2,859.97                    | 44.25               | 44.82            | -91.40                      | -2,280.02                                 | 639.86          | 677.02                       | 587.97                        | 89.04                           | 7.603                |                              |
| 4,875.00                                     | 2,843.48                    | 4,901.02                    | 2,860.01                    | 44.72               | 45.33            | -91.40                      | -2,305.01                                 | 639.27          | 676.90                       | 586.88                        | 90.02                           | 7.520                |                              |
| 4,900.00                                     | 2,843.54                    | 4,923.98                    | 2,860.06                    | 45.18               | 45.76            | -91.40                      | -2,330.00                                 | 638.69          | 676.78                       | 585.87                        | 90.91                           | 7.444                |                              |
| 4,925.00                                     | 2,843.61                    | 4,948.98                    | 2,860.10                    | 45.65               | 46.23            | -91.40                      | -2,355.00                                 | 638.10          | 676.66                       | 584.81                        | 91.85                           | 7.367                |                              |
| 4,950.00                                     | 2,843.67                    | 4,973.98                    | 2,860.14                    | 46.12               | 46.69            | -91.39                      | -2,379.99                                 | 637.51          | 676.54                       | 583.76                        | 92.78                           | 7.292                |                              |
| 4,975.00                                     | 2,843.74                    | 5,001.02                    | 2,860.19                    | 46.59               | 47.20            | -91.39                      | -2,404.98                                 | 636.93          | 676.42                       | 582.66                        | 93.75                           | 7.215                |                              |
| 5,000.00                                     | 2,843.80                    | 5,023.98                    | 2,860.23                    | 47.05               | 47.63            | -91.39                      | -2,429.97                                 | 636.34          | 676.30                       | 581.65                        | 94.65                           | 7.145                |                              |
| 5,025.00                                     | 2,843.87                    | 5,048.98                    | 2,860.27                    | 47.52               | 48.10            | -91.39                      | -2,454.97                                 | 635.76          | 676.18                       | 580.59                        | 95.59                           | 7.074                |                              |
| 5,050.00                                     | 2,843.94                    | 5,073.98                    | 2,860.32                    | 47.99               | 48.56            | -91.39                      | -2,479.96                                 | 635.17          | 676.06                       | 579.53                        | 96.52                           | 7.004                |                              |
| 5,075.00                                     | 2,844.00                    | 5,101.03                    | 2,860.36                    | 48.46               | 49.07            | -91.39                      | -2,504.95                                 | 634.58          | 675.94                       | 578.44                        | 97.50                           | 6.933                |                              |
| 5,100.00                                     | 2,844.07                    | 5,123.97                    | 2,860.41                    | 48.93               | 49.50            | -91.38                      | -2,529.95                                 | 634.00          | 675.82                       | 577.42                        | 98.40                           | 6.868                |                              |
| 5,125.00                                     | 2,844.13                    | 5,148.97                    | 2,860.45                    | 49.40               | 49.97            | -91.38                      | -2,554.94                                 | 633.41          | 675.70                       | 576.36                        | 99.34                           | 6.802                |                              |
| 5,150.00                                     | 2,844.20                    | 5,173.97                    | 2,860.49                    | 49.87               | 50.44            | -91.38                      | -2,579.93                                 | 632.82          | 675.58                       | 575.31                        | 100.27                          | 6.737                |                              |
| 5,175.00                                     | 2,844.26                    | 5,201.03                    | 2,860.54                    | 50.34               | 50.95            | -91.38                      | -2,604.92                                 | 632.24          | 675.46                       | 574.21                        | 101.25                          | 6.671                |                              |
| 5,200.00                                     | 2,844.33                    | 5,223.97                    | 2,860.58                    | 50.80               | 51.38            | -91.38                      | -2,629.92                                 | 631.65          | 675.34                       | 573.19                        | 102.15                          | 6.611                |                              |
| 5,225.00                                     | 2,844.39                    | 5,248.97                    | 2,860.62                    | 51.27               | 51.85            | -91.38                      | -2,654.91                                 | 631.07          | 675.22                       | 572.13                        | 103.08                          | 6.550                |                              |
| 5,250.00                                     | 2,844.46                    | 5,273.97                    | 2,860.67                    | 51.74               | 52.32            | -91.37                      | -2,679.90                                 | 630.48          | 675.10                       | 571.07                        | 104.03                          | 6.490                |                              |
| 5,275.00                                     | 2,844.52                    | 5,298.97                    | 2,860.71                    | 52.21               | 52.79            | -91.37                      | -2,704.90                                 | 629.89          | 674.98                       | 570.01                        | 104.97                          | 6.430                |                              |
| 5,300.00                                     | 2,844.59                    | 5,323.97                    | 2,860.75                    | 52.68               | 53.26            | -91.37                      | -2,729.89                                 | 629.31          | 674.86                       | 568.95                        | 105.91                          | 6.372                |                              |
| 5,325.00                                     | 2,844.66                    | 5,348.97                    | 2,860.80                    | 53.15               | 53.73            | -91.37                      | -2,754.88                                 | 628.72          | 674.74                       | 567.89                        | 106.85                          | 6.315                |                              |
| 5,350.00                                     | 2,844.72                    | 5,373.97                    | 2,860.84                    | 53.62               | 54.20            | -91.37                      | -2,779.87                                 | 628.13          | 674.62                       | 566.83                        | 107.79                          | 6.259                |                              |
| 5,375.00                                     | 2,844.79                    | 5,401.03                    | 2,860.89                    | 54.09               | 54.70            | -91.37                      | -2,804.87                                 | 627.55          | 674.50                       | 565.74                        | 108.77                          | 6.201                |                              |
| 5,400.00                                     | 2,844.85                    | 5,423.97                    | 2,860.93                    | 54.56               | 55.14            | -91.37                      | -2,829.86                                 | 626.96          | 674.38                       | 564.71                        | 109.67                          | 6.149                |                              |
| 5,425.00                                     | 2,844.92                    | 5,448.97                    | 2,860.97                    | 55.03               | 55.61            | -91.36                      | -2,854.85                                 | 626.38          | 674.26                       | 563.65                        | 110.61                          | 6.096                |                              |
| 5,450.00                                     | 2,844.98                    | 5,473.97                    | 2,861.02                    | 55.51               | 56.08            | -91.36                      | -2,879.84                                 | 625.79          | 674.14                       | 562.59                        | 111.55                          | 6.043                |                              |
| 5,475.00                                     | 2,845.05                    | 5,501.03                    | 2,861.06                    | 55.98               | 56.59            | -91.36                      | -2,904.84                                 | 625.20          | 674.02                       | 561.49                        | 112.53                          | 5.990                |                              |
| 5,500.00                                     | 2,845.11                    | 5,523.97                    | 2,861.10                    | 56.45               | 57.02            | -91.36                      | -2,929.83                                 | 624.62          | 673.90                       | 560.47                        | 113.43                          | 5.941                |                              |
| 5,525.00                                     | 2,845.18                    | 5,548.97                    | 2,861.15                    | 56.92               | 57.49            | -91.36                      | -2,954.82                                 | 624.03          | 673.78                       | 559.41                        | 114.37                          | 5.891                |                              |
| 5,550.00                                     | 2,845.24                    | 5,573.97                    | 2,861.19                    | 57.39               | 57.96            | -91.36                      | -2,979.82                                 | 623.45          | 673.66                       | 558.35                        | 115.32                          | 5.842                |                              |
| 5,575.00                                     | 2,845.31                    | 5,598.97                    | 2,861.23                    | 57.86               | 58.43            | -91.35                      | -3,004.81                                 | 622.86          | 673.54                       | 557.28                        | 116.26                          | 5.794                |                              |
| 5,600.00                                     | 2,845.38                    | 5,623.97                    | 2,861.28                    | 58.33               | 58.90            | -91.35                      | -3,029.80                                 | 622.27          | 673.42                       | 556.22                        | 117.20                          | 5.746                |                              |
| 5,625.00                                     | 2,845.44                    | 5,648.97                    | 2,861.32                    | 58.80               | 59.37            | -91.35                      | -3,054.79                                 | 621.69          | 673.30                       | 555.16                        | 118.14                          | 5.699                |                              |
| 5,650.00                                     | 2,845.51                    | 5,673.97                    | 2,861.37                    | 59.27               | 59.85            | -91.35                      | -3,079.79                                 | 621.10          | 673.18                       | 554.10                        | 119.09                          | 5.653                |                              |
| 5,675.00                                     | 2,845.57                    | 5,701.03                    | 2,861.41                    | 59.75               | 60.36            | -91.35                      | -3,104.78                                 | 620.51          | 673.06                       | 552.99                        | 120.07                          | 5.606                |                              |
| 5,700.00                                     | 2,845.64                    | 5,723.97                    | 2,861.45                    | 60.22               | 60.79            | -91.35                      | -3,129.77                                 | 619.93          | 672.94                       | 551.97                        | 120.97                          | 5.563                |                              |
| 5,725.00                                     | 2,845.70                    | 5,748.97                    | 2,861.50                    | 60.69               | 61.26            | -91.34                      | -3,154.77                                 | 619.34          | 672.82                       | 550.91                        | 121.91                          | 5.519                |                              |
| 5,750.00                                     | 2,845.77                    | 5,773.97                    | 2,861.54                    | 61.16               | 61.73            | -91.34                      | -3,179.76                                 | 618.76          | 672.70                       | 549.84                        | 122.86                          | 5.475                |                              |
| 5,775.00                                     | 2,845.83                    | 5,801.03                    | 2,861.58                    | 61.63               | 62.24            | -91.34                      | -3,204.75                                 | 618.17          | 672.58                       | 548.74                        | 123.84                          | 5.431                |                              |
| 5,800.00                                     | 2,845.90                    | 5,823.97                    | 2,861.63                    | 62.11               | 62.68            | -91.34                      | -3,229.74                                 | 617.58          | 672.46                       | 547.72                        | 124.75                          | 5.391                |                              |
| 5,825.00                                     | 2,845.96                    | 5,848.97                    | 2,861.67                    | 62.58               | 63.15            | -91.34                      | -3,254.74                                 | 617.00          | 672.34                       | 546.65                        | 125.69                          | 5.349                |                              |
| 5,850.00                                     | 2,846.03                    | 5,873.97                    | 2,861.72                    | 63.05               | 63.62            | -91.34                      | -3,279.73                                 | 616.41          | 672.22                       | 545.59                        | 126.63                          | 5.308                |                              |
| 5,875.00                                     | 2,846.10                    | 5,901.03                    | 2,861.76                    | 63.52               | 64.13            | -91.33                      | -3,304.72                                 | 615.82          | 672.10                       | 544.49                        | 127.62                          | 5.267                |                              |
| 5,900.00                                     | 2,846.16                    | 5,923.97                    | 2,861.80                    | 63.99               | 64.56            | -91.33                      | -3,329.72                                 | 615.24          | 671.98                       | 543.46                        | 128.52                          | 5.229                |                              |
| 5,925.00                                     | 2,846.23                    | 5,948.97                    | 2,861.85                    | 64.47               | 65.04            | -91.33                      | -3,354.71                                 | 614.65          | 671.86                       | 542.40                        | 129.47                          | 5.189                |                              |
| 5,950.00                                     | 2,846.29                    | 5,973.96                    | 2,861.89                    | 64.94               | 65.51            | -91.33                      | -3,379.70                                 | 614.07          | 671.74                       | 541.33                        | 130.41                          | 5.151                |                              |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Wellbenders Anticollision Report



Company: Percussion Petroleum, LLC  
Project: Eddy County, NM  
Reference Site: Huber Fed  
Site Error: 0.00 usft  
Reference Well: 17H  
Well Error: 0.00 usft  
Reference Wellbore: OH  
Reference Design: Plan #2

Local Co-ordinate Reference: Well 17H  
TVD Reference: RKB=25' @ 3555.00usft (NA)  
MD Reference: RKB=25' @ 3555.00usft (NA)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Output errors are at: 2.00 sigma  
Database: WBDS\_SQL\_2  
Offset TVD Reference: Reference Datum

| Offset Design Huber Fed - 16H - OH - Plan #2 |                             |                             |                             |                     |                  |                             |                                           |                 |                              |                               |                                 |                      | Offset Site Error: 0.00 usft |
|----------------------------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|-------------------------------------------|-----------------|------------------------------|-------------------------------|---------------------------------|----------------------|------------------------------|
| Survey Program: 0-MWD+IGRF                   |                             |                             |                             |                     |                  |                             |                                           |                 |                              |                               |                                 |                      | Offset Well Error: 0.00 usft |
| Reference                                    |                             | Offset                      |                             | Semi Major Axis     |                  | Highside<br>Toolface<br>(°) | Distance                                  |                 | Between<br>Centres<br>(usft) | Between<br>Ellipses<br>(usft) | Minimum<br>Separation<br>(usft) | Separation<br>Factor | Warning                      |
| Measured<br>Depth<br>(usft)                  | Vertical<br>Depth<br>(usft) | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) |                             | Offset Wellbore Centre<br>+N/-S<br>(usft) | +E/-W<br>(usft) |                              |                               |                                 |                      |                              |
| 5,975.00                                     | 2,846.36                    | 6,001.04                    | 2,861.93                    | 65.41               | 66.02            | -91.33                      | -3,404.69                                 | 613.48          | 671.62                       | 540.23                        | 131.40                          | 5.111                |                              |
| 6,000.00                                     | 2,846.42                    | 6,023.96                    | 2,861.98                    | 65.88               | 66.45            | -91.33                      | -3,429.69                                 | 612.89          | 671.50                       | 539.20                        | 132.30                          | 5.076                |                              |
| 6,025.00                                     | 2,846.49                    | 6,048.96                    | 2,862.02                    | 66.36               | 66.93            | -91.32                      | -3,454.68                                 | 612.31          | 671.38                       | 538.14                        | 133.25                          | 5.039                |                              |
| 6,050.00                                     | 2,846.55                    | 6,073.96                    | 2,862.06                    | 66.83               | 67.40            | -91.32                      | -3,479.67                                 | 611.72          | 671.26                       | 537.07                        | 134.19                          | 5.002                |                              |
| 6,075.00                                     | 2,846.62                    | 6,101.04                    | 2,862.11                    | 67.30               | 67.91            | -91.32                      | -3,504.66                                 | 611.14          | 671.14                       | 535.97                        | 135.18                          | 4.965                |                              |
| 6,100.00                                     | 2,846.68                    | 6,123.96                    | 2,862.15                    | 67.78               | 68.34            | -91.32                      | -3,529.66                                 | 610.55          | 671.02                       | 534.94                        | 136.08                          | 4.931                |                              |
| 6,125.00                                     | 2,846.75                    | 6,148.96                    | 2,862.20                    | 68.25               | 68.82            | -91.32                      | -3,554.65                                 | 609.96          | 670.90                       | 533.87                        | 137.03                          | 4.896                |                              |
| 6,150.00                                     | 2,846.82                    | 6,173.96                    | 2,862.24                    | 68.72               | 69.29            | -91.32                      | -3,579.64                                 | 609.38          | 670.78                       | 532.81                        | 137.98                          | 4.862                |                              |
| 6,175.00                                     | 2,846.88                    | 6,201.04                    | 2,862.28                    | 69.20               | 69.80            | -91.32                      | -3,604.64                                 | 608.79          | 670.66                       | 531.70                        | 138.96                          | 4.826                |                              |
| 6,200.00                                     | 2,846.95                    | 6,223.96                    | 2,862.33                    | 69.67               | 70.24            | -91.31                      | -3,629.63                                 | 608.20          | 670.54                       | 530.68                        | 139.87                          | 4.794                |                              |
| 6,225.00                                     | 2,847.01                    | 6,248.96                    | 2,862.37                    | 70.14               | 70.71            | -91.31                      | -3,654.62                                 | 607.62          | 670.42                       | 529.61                        | 140.81                          | 4.761                |                              |
| 6,250.00                                     | 2,847.08                    | 6,273.96                    | 2,862.41                    | 70.62               | 71.18            | -91.31                      | -3,679.61                                 | 607.03          | 670.30                       | 528.55                        | 141.76                          | 4.728                |                              |
| 6,275.00                                     | 2,847.14                    | 6,298.96                    | 2,862.46                    | 71.09               | 71.66            | -91.31                      | -3,704.61                                 | 606.45          | 670.18                       | 527.48                        | 142.71                          | 4.696                |                              |
| 6,300.00                                     | 2,847.21                    | 6,323.96                    | 2,862.50                    | 71.56               | 72.13            | -91.31                      | -3,729.60                                 | 605.86          | 670.07                       | 526.41                        | 143.65                          | 4.664                |                              |
| 6,325.00                                     | 2,847.27                    | 6,348.96                    | 2,862.55                    | 72.04               | 72.60            | -91.31                      | -3,754.59                                 | 605.27          | 669.95                       | 525.35                        | 144.60                          | 4.633                |                              |
| 6,350.00                                     | 2,847.34                    | 6,373.96                    | 2,862.59                    | 72.51               | 73.08            | -91.30                      | -3,779.59                                 | 604.69          | 669.83                       | 524.28                        | 145.55                          | 4.602                |                              |
| 6,375.00                                     | 2,847.40                    | 6,401.04                    | 2,862.63                    | 72.98               | 73.59            | -91.30                      | -3,804.58                                 | 604.10          | 669.71                       | 523.17                        | 146.53                          | 4.570                |                              |
| 6,400.00                                     | 2,847.47                    | 6,423.96                    | 2,862.68                    | 73.46               | 74.02            | -91.30                      | -3,829.57                                 | 603.51          | 669.59                       | 522.15                        | 147.44                          | 4.541                |                              |
| 6,425.00                                     | 2,847.54                    | 6,448.96                    | 2,862.72                    | 73.93               | 74.50            | -91.30                      | -3,854.56                                 | 602.93          | 669.47                       | 521.08                        | 148.39                          | 4.512                |                              |
| 6,450.00                                     | 2,847.60                    | 6,473.96                    | 2,862.76                    | 74.40               | 74.97            | -91.30                      | -3,879.56                                 | 602.34          | 669.35                       | 520.01                        | 149.33                          | 4.482                |                              |
| 6,475.00                                     | 2,847.67                    | 6,501.04                    | 2,862.81                    | 74.88               | 75.48            | -91.30                      | -3,904.55                                 | 601.76          | 669.23                       | 518.91                        | 150.32                          | 4.452                |                              |
| 6,500.00                                     | 2,847.73                    | 6,523.96                    | 2,862.85                    | 75.35               | 75.92            | -91.29                      | -3,929.54                                 | 601.17          | 669.11                       | 517.88                        | 151.23                          | 4.424                |                              |
| 6,525.00                                     | 2,847.80                    | 6,548.96                    | 2,862.89                    | 75.83               | 76.39            | -91.29                      | -3,954.54                                 | 600.58          | 668.99                       | 516.81                        | 152.18                          | 4.396                |                              |
| 6,550.00                                     | 2,847.86                    | 6,573.96                    | 2,862.94                    | 76.30               | 76.86            | -91.29                      | -3,979.53                                 | 600.00          | 668.87                       | 515.74                        | 153.12                          | 4.368                |                              |
| 6,575.00                                     | 2,847.93                    | 6,598.96                    | 2,862.98                    | 76.77               | 77.34            | -91.29                      | -4,004.52                                 | 599.41          | 668.75                       | 514.68                        | 154.07                          | 4.340                |                              |
| 6,600.00                                     | 2,847.99                    | 6,623.96                    | 2,863.03                    | 77.25               | 77.81            | -91.29                      | -4,029.51                                 | 598.82          | 668.63                       | 513.61                        | 155.02                          | 4.313                |                              |
| 6,625.00                                     | 2,848.06                    | 6,648.96                    | 2,863.07                    | 77.72               | 78.29            | -91.29                      | -4,054.51                                 | 598.24          | 668.51                       | 512.54                        | 155.97                          | 4.286                |                              |
| 6,650.00                                     | 2,848.12                    | 6,673.96                    | 2,863.11                    | 78.20               | 78.76            | -91.28                      | -4,079.50                                 | 597.65          | 668.39                       | 511.47                        | 156.91                          | 4.260                |                              |
| 6,675.00                                     | 2,848.19                    | 6,701.04                    | 2,863.16                    | 78.67               | 79.27            | -91.28                      | -4,104.49                                 | 597.07          | 668.27                       | 510.36                        | 157.90                          | 4.232                |                              |
| 6,700.00                                     | 2,848.26                    | 6,723.96                    | 2,863.20                    | 79.14               | 79.71            | -91.28                      | -4,129.48                                 | 596.48          | 668.15                       | 509.34                        | 158.81                          | 4.207                |                              |
| 6,725.00                                     | 2,848.32                    | 6,748.96                    | 2,863.24                    | 79.62               | 80.18            | -91.28                      | -4,154.48                                 | 595.89          | 668.03                       | 508.27                        | 159.76                          | 4.181                |                              |
| 6,750.00                                     | 2,848.39                    | 6,773.96                    | 2,863.29                    | 80.09               | 80.66            | -91.28                      | -4,179.47                                 | 595.31          | 667.91                       | 507.20                        | 160.71                          | 4.156                |                              |
| 6,775.00                                     | 2,848.45                    | 6,801.05                    | 2,863.33                    | 80.57               | 81.17            | -91.28                      | -4,204.46                                 | 594.72          | 667.79                       | 506.09                        | 161.70                          | 4.130                |                              |
| 6,800.00                                     | 2,848.52                    | 6,823.95                    | 2,863.37                    | 81.04               | 81.60            | -91.27                      | -4,229.46                                 | 594.14          | 667.67                       | 505.06                        | 162.60                          | 4.106                |                              |
| 6,825.00                                     | 2,848.58                    | 6,848.95                    | 2,863.42                    | 81.52               | 82.08            | -91.27                      | -4,254.45                                 | 593.55          | 667.55                       | 504.00                        | 163.55                          | 4.082                |                              |
| 6,850.00                                     | 2,848.65                    | 6,873.95                    | 2,863.46                    | 81.99               | 82.55            | -91.27                      | -4,279.44                                 | 592.96          | 667.43                       | 502.93                        | 164.50                          | 4.057                |                              |
| 6,875.00                                     | 2,848.71                    | 6,901.05                    | 2,863.51                    | 82.46               | 83.07            | -91.27                      | -4,304.43                                 | 592.38          | 667.31                       | 501.82                        | 165.49                          | 4.032                |                              |
| 6,900.00                                     | 2,848.78                    | 6,923.95                    | 2,863.55                    | 82.94               | 83.50            | -91.27                      | -4,329.43                                 | 591.79          | 667.19                       | 500.79                        | 166.40                          | 4.010                |                              |
| 6,925.00                                     | 2,848.84                    | 6,948.95                    | 2,863.59                    | 83.41               | 83.97            | -91.27                      | -4,354.42                                 | 591.20          | 667.07                       | 499.72                        | 167.35                          | 3.986                |                              |
| 6,950.00                                     | 2,848.91                    | 6,973.95                    | 2,863.64                    | 83.89               | 84.45            | -91.26                      | -4,379.41                                 | 590.62          | 666.95                       | 498.65                        | 168.30                          | 3.963                |                              |
| 6,975.00                                     | 2,848.98                    | 7,001.05                    | 2,863.68                    | 84.36               | 84.96            | -91.26                      | -4,404.41                                 | 590.03          | 666.83                       | 497.54                        | 169.28                          | 3.939                |                              |
| 7,000.00                                     | 2,849.04                    | 7,023.95                    | 2,863.72                    | 84.84               | 85.40            | -91.26                      | -4,429.40                                 | 589.45          | 666.71                       | 496.52                        | 170.19                          | 3.917                |                              |
| 7,025.00                                     | 2,849.11                    | 7,048.95                    | 2,863.77                    | 85.31               | 85.87            | -91.26                      | -4,454.39                                 | 588.86          | 666.59                       | 495.45                        | 171.14                          | 3.895                |                              |
| 7,050.00                                     | 2,849.17                    | 7,073.95                    | 2,863.81                    | 85.79               | 86.35            | -91.26                      | -4,479.38                                 | 588.27          | 666.47                       | 494.38                        | 172.09                          | 3.873                |                              |
| 7,075.00                                     | 2,849.24                    | 7,101.05                    | 2,863.86                    | 86.26               | 86.86            | -91.26                      | -4,504.38                                 | 587.69          | 666.35                       | 493.27                        | 173.08                          | 3.850                |                              |
| 7,100.00                                     | 2,849.30                    | 7,123.95                    | 2,863.90                    | 86.74               | 87.30            | -91.25                      | -4,529.37                                 | 587.10          | 666.23                       | 492.24                        | 173.99                          | 3.829                |                              |
| 7,125.00                                     | 2,849.37                    | 7,148.95                    | 2,863.94                    | 87.21               | 87.77            | -91.25                      | -4,554.36                                 | 586.51          | 666.11                       | 491.17                        | 174.94                          | 3.808                |                              |
| 7,150.00                                     | 2,849.43                    | 7,173.95                    | 2,863.99                    | 87.69               | 88.25            | -91.25                      | -4,579.35                                 | 585.93          | 665.99                       | 490.10                        | 175.89                          | 3.786                |                              |
| 7,175.00                                     | 2,849.50                    | 7,201.05                    | 2,864.03                    | 88.16               | 88.76            | -91.25                      | -4,604.35                                 | 585.34          | 665.87                       | 488.99                        | 176.88                          | 3.765                |                              |
| 7,200.00                                     | 2,849.56                    | 7,223.95                    | 2,864.07                    | 88.64               | 89.19            | -91.25                      | -4,629.34                                 | 584.76          | 665.75                       | 487.96                        | 177.79                          | 3.745                |                              |
| 7,225.00                                     | 2,849.63                    | 7,248.95                    | 2,864.12                    | 89.11               | 89.67            | -91.25                      | -4,654.33                                 | 584.17          | 665.63                       | 486.89                        | 178.74                          | 3.724                |                              |
| 7,250.00                                     | 2,849.70                    | 7,273.95                    | 2,864.16                    | 89.59               | 90.14            | -91.24                      | -4,679.33                                 | 583.58          | 665.51                       | 485.82                        | 179.69                          | 3.704                |                              |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Company:** Percussion Petroleum, LLC  
**Project:** Eddy County, NM  
**Reference Site:** Huber Fed  
**Site Error:** 0.00 usft  
**Reference Well:** 17H  
**Well Error:** 0.00 usft  
**Reference Wellbore:** OH  
**Reference Design:** Plan #2

**Local Co-ordinate Reference:** Well 17H  
**TVD Reference:** RKB=25' @ 3555.00usft (NA)  
**MD Reference:** RKB=25' @ 3555.00usft (NA)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at:** 2.00 sigma  
**Database:** WBDS\_SQL\_2  
**Offset TVD Reference:** Reference Datum

| Offset Design Huber Fed - 16H - OH - Plan #2 |                       |                       |                       |                  |               |                       |                                     |              |                        |                         |                           |                   | Offset Site Error: | 0.00 usft |
|----------------------------------------------|-----------------------|-----------------------|-----------------------|------------------|---------------|-----------------------|-------------------------------------|--------------|------------------------|-------------------------|---------------------------|-------------------|--------------------|-----------|
| Survey Program: 0-MWD+IGRF                   |                       |                       |                       |                  |               |                       |                                     |              |                        |                         |                           |                   | Offset Well Error: | 0.00 usft |
| Reference                                    | Offset                | Semi Major Axis       |                       | Distance         |               | Minimum Separation    |                                     | Warning      |                        |                         |                           |                   |                    |           |
| Measured Depth (usft)                        | Vertical Depth (usft) | Measured Depth (usft) | Vertical Depth (usft) | Reference (usft) | Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | +E/-W (usft) | Between Centres (usft) | Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor |                    |           |
| 7,275.00                                     | 2,849.76              | 7,301.05              | 2,864.20              | 90.06            | 90.66         | -91.24                | -4,704.32                           | 583.00       | 665.39                 | 484.71                  | 180.68                    | 3.683             |                    |           |
| 7,300.00                                     | 2,849.83              | 7,323.95              | 2,864.25              | 90.54            | 91.09         | -91.24                | -4,729.31                           | 582.41       | 665.27                 | 483.69                  | 181.59                    | 3.664             |                    |           |
| 7,325.00                                     | 2,849.89              | 7,348.95              | 2,864.29              | 91.01            | 91.57         | -91.24                | -4,754.30                           | 581.82       | 665.15                 | 482.62                  | 182.54                    | 3.644             |                    |           |
| 7,350.00                                     | 2,849.96              | 7,373.95              | 2,864.34              | 91.49            | 92.04         | -91.24                | -4,779.30                           | 581.24       | 665.03                 | 481.55                  | 183.49                    | 3.624             |                    |           |
| 7,375.00                                     | 2,850.02              | 7,401.05              | 2,864.38              | 91.96            | 92.56         | -91.24                | -4,804.29                           | 580.65       | 664.91                 | 480.44                  | 184.48                    | 3.604             |                    |           |
| 7,400.00                                     | 2,850.09              | 7,423.95              | 2,864.42              | 92.44            | 92.99         | -91.23                | -4,829.28                           | 580.07       | 664.79                 | 479.41                  | 185.39                    | 3.586             |                    |           |
| 7,425.00                                     | 2,850.15              | 7,448.95              | 2,864.47              | 92.91            | 93.47         | -91.23                | -4,854.28                           | 579.48       | 664.67                 | 478.34                  | 186.34                    | 3.567             |                    |           |
| 7,450.00                                     | 2,850.22              | 7,473.95              | 2,864.51              | 93.39            | 93.94         | -91.23                | -4,879.27                           | 578.89       | 664.55                 | 477.27                  | 187.29                    | 3.548             |                    |           |
| 7,475.00                                     | 2,850.28              | 7,501.05              | 2,864.55              | 93.86            | 94.46         | -91.23                | -4,904.26                           | 578.31       | 664.43                 | 476.16                  | 188.28                    | 3.529             |                    |           |
| 7,500.00                                     | 2,850.35              | 7,523.95              | 2,864.60              | 94.34            | 94.89         | -91.23                | -4,929.25                           | 577.72       | 664.31                 | 475.13                  | 189.19                    | 3.511             |                    |           |
| 7,525.00                                     | 2,850.42              | 7,548.95              | 2,864.64              | 94.81            | 95.37         | -91.23                | -4,954.25                           | 577.14       | 664.19                 | 474.06                  | 190.14                    | 3.493             |                    |           |
| 7,550.00                                     | 2,850.48              | 7,573.95              | 2,864.69              | 95.29            | 95.84         | -91.22                | -4,979.24                           | 576.55       | 664.07                 | 472.99                  | 191.09                    | 3.475             |                    |           |
| 7,575.00                                     | 2,850.55              | 7,601.05              | 2,864.73              | 95.76            | 96.36         | -91.22                | -5,004.23                           | 575.96       | 663.95                 | 471.88                  | 192.08                    | 3.457             |                    |           |
| 7,600.00                                     | 2,850.61              | 7,623.95              | 2,864.77              | 96.24            | 96.79         | -91.22                | -5,029.23                           | 575.38       | 663.83                 | 470.85                  | 192.99                    | 3.440             |                    |           |
| 7,625.00                                     | 2,850.68              | 7,648.95              | 2,864.82              | 96.71            | 97.27         | -91.22                | -5,054.22                           | 574.79       | 663.71                 | 469.78                  | 193.94                    | 3.422             |                    |           |
| 7,650.00                                     | 2,850.74              | 7,673.94              | 2,864.86              | 97.19            | 97.74         | -91.22                | -5,079.21                           | 574.20       | 663.59                 | 468.71                  | 194.89                    | 3.405             |                    |           |
| 7,675.00                                     | 2,850.81              | 7,701.06              | 2,864.90              | 97.66            | 98.26         | -91.22                | -5,104.20                           | 573.62       | 663.47                 | 467.60                  | 195.88                    | 3.387             |                    |           |
| 7,700.00                                     | 2,850.87              | 7,723.94              | 2,864.95              | 98.14            | 98.69         | -91.21                | -5,129.20                           | 573.03       | 663.35                 | 466.57                  | 196.79                    | 3.371             |                    |           |
| 7,725.00                                     | 2,850.94              | 7,748.94              | 2,864.99              | 98.61            | 99.17         | -91.21                | -5,154.19                           | 572.45       | 663.23                 | 465.50                  | 197.74                    | 3.354             |                    |           |
| 7,750.00                                     | 2,851.00              | 7,773.94              | 2,865.03              | 99.09            | 99.64         | -91.21                | -5,179.18                           | 571.86       | 663.11                 | 464.43                  | 198.69                    | 3.337             |                    |           |
| 7,775.00                                     | 2,851.07              | 7,801.06              | 2,865.08              | 99.57            | 100.16        | -91.21                | -5,204.17                           | 571.27       | 662.99                 | 463.31                  | 199.68                    | 3.320             |                    |           |
| 7,800.00                                     | 2,851.14              | 7,823.94              | 2,865.12              | 100.04           | 100.59        | -91.21                | -5,229.17                           | 570.69       | 662.87                 | 462.28                  | 200.59                    | 3.305             |                    |           |
| 7,825.00                                     | 2,851.20              | 7,848.94              | 2,865.17              | 100.52           | 101.07        | -91.21                | -5,254.16                           | 570.10       | 662.75                 | 461.21                  | 201.54                    | 3.288             |                    |           |
| 7,850.00                                     | 2,851.27              | 7,873.94              | 2,865.21              | 100.99           | 101.54        | -91.21                | -5,279.15                           | 569.51       | 662.64                 | 460.14                  | 202.49                    | 3.272             |                    |           |
| 7,875.00                                     | 2,851.33              | 7,901.06              | 2,865.25              | 101.47           | 102.06        | -91.20                | -5,304.15                           | 568.93       | 662.52                 | 459.03                  | 203.48                    | 3.256             |                    |           |
| 7,900.00                                     | 2,851.40              | 7,923.94              | 2,865.30              | 101.94           | 102.49        | -91.20                | -5,329.14                           | 568.34       | 662.40                 | 458.00                  | 204.39                    | 3.241             |                    |           |
| 7,925.00                                     | 2,851.46              | 7,948.94              | 2,865.34              | 102.42           | 102.97        | -91.20                | -5,354.13                           | 567.76       | 662.28                 | 456.93                  | 205.34                    | 3.225             |                    |           |
| 7,950.00                                     | 2,851.53              | 7,973.94              | 2,865.38              | 102.89           | 103.45        | -91.20                | -5,379.12                           | 567.17       | 662.16                 | 455.86                  | 206.29                    | 3.210             |                    |           |
| 7,975.00                                     | 2,851.59              | 8,001.06              | 2,865.43              | 103.37           | 103.96        | -91.20                | -5,404.12                           | 566.58       | 662.04                 | 454.75                  | 207.29                    | 3.194             |                    |           |
| 8,000.00                                     | 2,851.66              | 8,023.94              | 2,865.47              | 103.84           | 104.40        | -91.20                | -5,429.11                           | 566.00       | 661.92                 | 453.72                  | 208.20                    | 3.179             |                    |           |
| 8,025.00                                     | 2,851.72              | 8,048.94              | 2,865.51              | 104.32           | 104.87        | -91.19                | -5,454.10                           | 565.41       | 661.80                 | 452.65                  | 209.15                    | 3.164             |                    |           |
| 8,050.00                                     | 2,851.79              | 8,073.94              | 2,865.56              | 104.80           | 105.35        | -91.19                | -5,479.10                           | 564.82       | 661.68                 | 451.58                  | 210.10                    | 3.149             |                    |           |
| 8,075.00                                     | 2,851.86              | 8,101.06              | 2,865.60              | 105.27           | 105.86        | -91.19                | -5,504.09                           | 564.24       | 661.56                 | 450.47                  | 211.09                    | 3.134             |                    |           |
| 8,100.00                                     | 2,851.92              | 8,123.94              | 2,865.65              | 105.75           | 106.30        | -91.19                | -5,529.08                           | 563.65       | 661.44                 | 449.44                  | 212.00                    | 3.120             |                    |           |
| 8,125.00                                     | 2,851.99              | 8,148.94              | 2,865.69              | 106.22           | 106.77        | -91.19                | -5,554.07                           | 563.07       | 661.32                 | 448.37                  | 212.95                    | 3.105             |                    |           |
| 8,150.00                                     | 2,852.05              | 8,173.94              | 2,865.73              | 106.70           | 107.25        | -91.18                | -5,579.07                           | 562.48       | 661.20                 | 447.29                  | 213.90                    | 3.091             |                    |           |
| 8,175.00                                     | 2,852.12              | 8,201.06              | 2,865.78              | 107.17           | 107.76        | -91.18                | -5,604.06                           | 561.89       | 661.08                 | 446.18                  | 214.89                    | 3.076             |                    |           |
| 8,200.00                                     | 2,852.18              | 8,223.94              | 2,865.82              | 107.65           | 108.20        | -91.18                | -5,629.05                           | 561.31       | 660.96                 | 445.15                  | 215.81                    | 3.063             |                    |           |
| 8,225.00                                     | 2,852.25              | 8,248.94              | 2,865.86              | 108.13           | 108.68        | -91.18                | -5,654.05                           | 560.72       | 660.84                 | 444.08                  | 216.76                    | 3.049             |                    |           |
| 8,250.00                                     | 2,852.31              | 8,273.94              | 2,865.91              | 108.60           | 109.15        | -91.18                | -5,679.04                           | 560.14       | 660.72                 | 443.01                  | 217.71                    | 3.035             |                    |           |
| 8,275.00                                     | 2,852.38              | 8,301.06              | 2,865.95              | 109.08           | 109.67        | -91.18                | -5,704.03                           | 559.55       | 660.60                 | 441.90                  | 218.70                    | 3.021             |                    |           |
| 8,300.00                                     | 2,852.44              | 8,323.94              | 2,866.00              | 109.55           | 110.06        | -91.17                | -5,729.02                           | 558.96       | 660.48                 | 440.91                  | 219.57                    | 3.008 CC. ES. SF  |                    |           |

**Company:** Percussion Petroleum, LLC  
**Project:** Eddy County, NM  
**Reference Site:** Huber Fed  
**Site Error:** 0.00 usft  
**Reference Well:** 17H  
**Well Error:** 0.00 usft  
**Reference Wellbore:** OH  
**Reference Design:** Plan #2

**Local Co-ordinate Reference:** Well 17H  
**TVD Reference:** RKB=25' @ 3555.00usft (NA)  
**MD Reference:** RKB=25' @ 3555.00usft (NA)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at:** 2.00 sigma  
**Database:** WBDS\_SQL\_2  
**Offset TVD Reference:** Reference Datum

| Offset Design Huber Fed - 18H - OH - Plan #2 |                       |                       |                       |                  |               |                       |                                     |              |                        |                         |                           |                   |         | Offset Site Error: | 0.00 usft |
|----------------------------------------------|-----------------------|-----------------------|-----------------------|------------------|---------------|-----------------------|-------------------------------------|--------------|------------------------|-------------------------|---------------------------|-------------------|---------|--------------------|-----------|
| Survey Program: 0-MWD+IGRF                   |                       |                       |                       |                  |               |                       |                                     |              |                        |                         |                           |                   |         | Offset Well Error: | 0.00 usft |
| Reference                                    |                       | Offset                |                       | Semi Major Axis  |               | Distance              |                                     |              |                        |                         |                           |                   |         |                    |           |
| Measured Depth (usft)                        | Vertical Depth (usft) | Measured Depth (usft) | Vertical Depth (usft) | Reference (usft) | Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | +E/-W (usft) | Between Centres (usft) | Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |                    |           |
| 1,950.00                                     | 1,949.82              | 1,937.34              | 1,949.82              | 6.38             | 6.38          | -89.89                | -6.65                               | -627.91      | 633.28                 | 620.59                  | 12.69                     | 49.891            |         |                    |           |
| 1,963.79                                     | 1,963.60              | 1,951.13              | 1,963.60              | 6.43             | 6.43          | -89.89                | -6.65                               | -627.91      | 633.28                 | 620.49                  | 12.79                     | 49.509            |         |                    |           |
| 1,975.00                                     | 1,974.82              | 1,962.34              | 1,974.82              | 6.47             | 6.47          | -89.90                | -6.68                               | -627.91      | 633.28                 | 620.41                  | 12.87                     | 49.204            |         |                    |           |
| 2,000.00                                     | 1,999.82              | 1,987.29              | 1,999.75              | 6.56             | 6.56          | -89.97                | -7.52                               | -627.91      | 633.28                 | 620.23                  | 13.05                     | 48.543            |         |                    |           |
| 2,025.00                                     | 2,024.82              | 2,012.13              | 2,024.51              | 6.65             | 6.64          | -90.14                | -9.43                               | -627.91      | 633.29                 | 620.07                  | 13.22                     | 47.903            |         |                    |           |
| 2,050.00                                     | 2,049.82              | 2,036.75              | 2,048.95              | 6.74             | 6.73          | -90.41                | -12.39                              | -627.92      | 633.31                 | 619.92                  | 13.39                     | 47.287            |         |                    |           |
| 2,075.00                                     | 2,074.82              | 2,061.07              | 2,072.95              | 6.82             | 6.81          | -90.77                | -16.33                              | -627.93      | 633.36                 | 619.80                  | 13.57                     | 46.689            |         |                    |           |
| 2,100.00                                     | 2,099.82              | 2,085.02              | 2,096.39              | 6.91             | 6.90          | -91.21                | -21.20                              | -627.94      | 633.46                 | 619.73                  | 13.74                     | 46.110            |         |                    |           |
| 2,125.00                                     | 2,124.82              | 2,108.51              | 2,119.18              | 7.00             | 6.99          | -91.73                | -26.94                              | -627.96      | 633.64                 | 619.73                  | 13.91                     | 45.551            |         |                    |           |
| 2,150.00                                     | 2,149.82              | 2,131.49              | 2,141.21              | 7.09             | 7.07          | -92.31                | -33.44                              | -627.97      | 633.92                 | 619.83                  | 14.08                     | 45.010            |         |                    |           |
| 2,175.00                                     | 2,174.82              | 2,153.90              | 2,162.44              | 7.18             | 7.15          | -92.96                | -40.63                              | -627.99      | 634.33                 | 620.07                  | 14.26                     | 44.495            |         |                    |           |
| 2,200.00                                     | 2,199.82              | 2,175.69              | 2,182.79              | 7.27             | 7.24          | -93.66                | -48.41                              | -628.01      | 634.91                 | 620.47                  | 14.43                     | 43.995            |         |                    |           |
| 2,225.00                                     | 2,224.82              | 2,196.84              | 2,202.25              | 7.36             | 7.32          | -94.41                | -56.70                              | -628.03      | 635.68                 | 621.08                  | 14.60                     | 43.532            |         |                    |           |
| 2,250.00                                     | 2,249.82              | 2,217.31              | 2,220.77              | 7.45             | 7.41          | -95.19                | -65.39                              | -628.05      | 636.69                 | 621.91                  | 14.78                     | 43.084            |         |                    |           |
| 2,275.00                                     | 2,274.82              | 2,237.11              | 2,238.39              | 7.54             | 7.49          | -82.89                | -74.43                              | -628.07      | 637.97                 | 623.02                  | 14.95                     | 42.677            |         |                    |           |
| 2,300.00                                     | 2,299.80              | 2,256.57              | 2,255.39              | 7.63             | 7.58          | -81.95                | -83.90                              | -628.09      | 639.42                 | 624.31                  | 15.12                     | 42.298            |         |                    |           |
| 2,325.00                                     | 2,324.72              | 2,275.80              | 2,271.86              | 7.71             | 7.67          | -81.03                | -93.82                              | -628.12      | 641.03                 | 625.74                  | 15.29                     | 41.933            |         |                    |           |
| 2,350.00                                     | 2,349.52              | 2,294.81              | 2,287.81              | 7.79             | 7.77          | -80.13                | -104.17                             | -628.14      | 642.76                 | 627.31                  | 15.45                     | 41.598            |         |                    |           |
| 2,375.00                                     | 2,374.17              | 2,313.61              | 2,303.24              | 7.88             | 7.87          | -79.24                | -114.92                             | -628.17      | 644.62                 | 628.99                  | 15.62                     | 41.257            |         |                    |           |
| 2,400.00                                     | 2,398.61              | 2,332.23              | 2,318.16              | 7.97             | 7.98          | -78.36                | -126.06                             | -628.20      | 646.57                 | 630.78                  | 15.80                     | 40.932            |         |                    |           |
| 2,425.00                                     | 2,422.80              | 2,350.00              | 2,332.05              | 8.05             | 8.08          | -77.53                | -137.13                             | -628.22      | 648.62                 | 632.66                  | 15.96                     | 40.638            |         |                    |           |
| 2,450.00                                     | 2,446.68              | 2,368.95              | 2,346.49              | 8.14             | 8.21          | -76.68                | -149.41                             | -628.25      | 650.73                 | 634.58                  | 16.15                     | 40.296            |         |                    |           |
| 2,475.00                                     | 2,470.23              | 2,387.08              | 2,359.90              | 8.23             | 8.33          | -75.86                | -161.60                             | -628.28      | 652.91                 | 636.58                  | 16.33                     | 39.980            |         |                    |           |
| 2,500.00                                     | 2,493.39              | 2,405.06              | 2,372.83              | 8.32             | 8.46          | -75.07                | -174.10                             | -628.32      | 655.13                 | 638.62                  | 16.51                     | 39.674            |         |                    |           |
| 2,525.00                                     | 2,516.11              | 2,422.91              | 2,385.26              | 8.42             | 8.60          | -74.30                | -186.90                             | -628.35      | 657.38                 | 640.67                  | 16.71                     | 39.339            |         |                    |           |
| 2,550.00                                     | 2,538.36              | 2,440.63              | 2,397.21              | 8.53             | 8.74          | -73.56                | -199.99                             | -628.38      | 659.65                 | 642.75                  | 16.90                     | 39.025            |         |                    |           |
| 2,575.00                                     | 2,560.09              | 2,458.24              | 2,408.67              | 8.64             | 8.89          | -72.84                | -213.36                             | -628.41      | 661.93                 | 644.81                  | 17.11                     | 38.682            |         |                    |           |
| 2,600.00                                     | 2,581.26              | 2,475.73              | 2,419.64              | 8.76             | 9.05          | -72.14                | -226.98                             | -628.44      | 664.19                 | 646.86                  | 17.33                     | 38.337            |         |                    |           |
| 2,625.00                                     | 2,601.83              | 2,493.13              | 2,430.14              | 8.89             | 9.20          | -71.48                | -240.85                             | -628.48      | 666.43                 | 648.88                  | 17.55                     | 37.975            |         |                    |           |
| 2,650.00                                     | 2,621.76              | 2,510.43              | 2,440.15              | 9.03             | 9.37          | -70.83                | -254.95                             | -628.51      | 668.64                 | 650.86                  | 17.78                     | 37.607            |         |                    |           |
| 2,675.00                                     | 2,641.01              | 2,527.64              | 2,449.69              | 9.18             | 9.55          | -70.22                | -269.28                             | -628.55      | 670.80                 | 652.77                  | 18.03                     | 37.201            |         |                    |           |
| 2,700.00                                     | 2,659.55              | 2,544.77              | 2,458.75              | 9.34             | 9.72          | -69.64                | -283.82                             | -628.58      | 672.90                 | 654.63                  | 18.28                     | 36.812            |         |                    |           |
| 2,725.00                                     | 2,677.34              | 2,561.82              | 2,467.34              | 9.51             | 9.90          | -69.09                | -298.55                             | -628.62      | 674.94                 | 656.39                  | 18.56                     | 36.370            |         |                    |           |
| 2,750.00                                     | 2,694.35              | 2,578.80              | 2,475.45              | 9.69             | 10.10         | -68.56                | -313.47                             | -628.66      | 676.90                 | 658.07                  | 18.84                     | 35.934            |         |                    |           |
| 2,775.00                                     | 2,710.54              | 2,595.72              | 2,483.08              | 9.89             | 10.29         | -68.07                | -328.57                             | -628.69      | 678.78                 | 659.64                  | 19.14                     | 35.467            |         |                    |           |
| 2,800.00                                     | 2,725.89              | 2,612.58              | 2,490.25              | 10.10            | 10.49         | -67.60                | -343.83                             | -628.73      | 680.55                 | 661.10                  | 19.45                     | 34.993            |         |                    |           |
| 2,825.00                                     | 2,740.36              | 2,629.38              | 2,496.93              | 10.33            | 10.69         | -67.17                | -359.24                             | -628.77      | 682.23                 | 662.44                  | 19.78                     | 34.482            |         |                    |           |
| 2,850.00                                     | 2,753.93              | 2,650.00              | 2,504.52              | 10.56            | 10.95         | -66.71                | -378.41                             | -628.81      | 683.80                 | 663.62                  | 20.18                     | 33.886            |         |                    |           |
| 2,875.00                                     | 2,766.57              | 2,662.83              | 2,508.89              | 10.81            | 11.11         | -66.40                | -390.47                             | -628.84      | 685.23                 | 664.74                  | 20.49                     | 33.442            |         |                    |           |
| 2,900.00                                     | 2,778.26              | 2,679.49              | 2,514.16              | 11.07            | 11.33         | -66.06                | -406.28                             | -628.88      | 686.54                 | 665.68                  | 20.86                     | 32.907            |         |                    |           |
| 2,925.00                                     | 2,788.97              | 2,700.00              | 2,520.01              | 11.35            | 11.60         | -65.71                | -425.93                             | -628.93      | 687.74                 | 666.42                  | 21.32                     | 32.257            |         |                    |           |
| 2,950.00                                     | 2,798.68              | 2,712.70              | 2,523.29              | 11.63            | 11.78         | -65.48                | -438.21                             | -628.96      | 688.77                 | 667.10                  | 21.67                     | 31.790            |         |                    |           |
| 2,975.00                                     | 2,807.39              | 2,729.26              | 2,527.14              | 11.93            | 12.01         | -65.24                | -454.31                             | -629.00      | 689.67                 | 667.57                  | 22.10                     | 31.208            |         |                    |           |
| 3,000.00                                     | 2,815.06              | 2,750.00              | 2,531.31              | 12.24            | 12.30         | -65.00                | -474.63                             | -629.05      | 690.44                 | 667.84                  | 22.60                     | 30.549            |         |                    |           |
| 3,025.00                                     | 2,821.69              | 2,762.30              | 2,533.43              | 12.56            | 12.48         | -64.85                | -485.74                             | -629.08      | 691.03                 | 668.03                  | 23.00                     | 30.048            |         |                    |           |
| 3,050.00                                     | 2,827.25              | 2,778.79              | 2,535.87              | 12.89            | 12.72         | -64.71                | -503.05                             | -629.12      | 691.48                 | 668.01                  | 23.47                     | 29.466            |         |                    |           |
| 3,075.00                                     | 2,831.76              | 2,800.00              | 2,538.31              | 13.23            | 13.03         | -64.57                | -524.12                             | -629.17      | 691.79                 | 667.76                  | 24.03                     | 28.786            |         |                    |           |
| 3,100.00                                     | 2,835.18              | 2,811.72              | 2,539.33              | 13.57            | 13.21         | -64.52                | -535.79                             | -629.20      | 691.90                 | 667.45                  | 24.46                     | 28.293            |         |                    |           |
| 3,125.00                                     | 2,837.52              | 2,828.17              | 2,540.35              | 13.93            | 13.45         | -64.47                | -552.21                             | -629.24      | 691.88                 | 666.90                  | 24.97                     | 27.704            |         |                    |           |
| 3,150.00                                     | 2,838.77              | 2,844.62              | 2,540.90              | 14.28            | 13.70         | -64.46                | -568.65                             | -629.28      | 691.69                 | 666.19                  | 25.50                     | 27.127            |         |                    |           |
| 3,175.00                                     | 2,839.03              | 2,865.22              | 2,541.05              | 14.64            | 14.02         | -64.46                | -589.25                             | -629.33      | 691.35                 | 665.24                  | 26.11                     | 26.481            |         |                    |           |
| 3,200.00                                     | 2,839.09              | 2,909.78              | 2,541.16              | 15.01            | 14.71         | -64.45                | -614.25                             | -629.39      | 690.96                 | 663.88                  | 27.08                     | 25.516            |         |                    |           |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Company:** Percussion Petroleum, LLC  
**Project:** Eddy County, NM  
**Reference Site:** Huber Fed  
**Site Error:** 0.00 usft  
**Reference Well:** 17H  
**Well Error:** 0.00 usft  
**Reference Wellbore:** OH  
**Reference Design:** Plan #2

**Local Co-ordinate Reference:** Well 17H  
**TVD Reference:** RKB=25' @ 3555.00usft (NA)  
**MD Reference:** RKB=25' @ 3555.00usft (NA)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** WBDS\_SQL\_2  
**Offset TVD Reference:** Reference Datum

| Offset Design Huber Fed - 18H - OH - Plan #2 |                             |                             |                             |                     |                  |                             |                                           |                 |                              |                               |                                 | Offset Site Error:   | 0.00 usft |
|----------------------------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|-------------------------------------------|-----------------|------------------------------|-------------------------------|---------------------------------|----------------------|-----------|
| Survey Program: 0-MWD+IGRF                   |                             |                             |                             |                     |                  |                             |                                           |                 |                              |                               |                                 | Offset Well Error:   | 0.00 usft |
| Measured<br>Depth<br>(usft)                  | Vertical<br>Depth<br>(usft) | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) | Highside<br>Toolface<br>(°) | Offset Wellbore Centre<br>+N/-S<br>(usft) | +E/-W<br>(usft) | Between<br>Centres<br>(usft) | Between<br>Ellipses<br>(usft) | Minimum<br>Separation<br>(usft) | Separation<br>Factor | Warning   |
| 3,225.00                                     | 2,839.16                    | 2,915.22                    | 2,541.27                    | 15.39               | 14.80            | 64.44                       | -639.24                                   | -629.45         | 690.58                       | 663.07                        | 27.51                           | 25.103               |           |
| 3,250.00                                     | 2,839.22                    | 2,940.21                    | 2,541.38                    | 15.78               | 15.20            | 64.43                       | -664.24                                   | -629.51         | 690.19                       | 661.96                        | 28.23                           | 24.450               |           |
| 3,275.00                                     | 2,839.29                    | 2,965.21                    | 2,541.49                    | 16.16               | 15.60            | 64.42                       | -689.24                                   | -629.57         | 689.81                       | 660.86                        | 28.95                           | 23.829               |           |
| 3,300.00                                     | 2,839.35                    | 3,009.80                    | 2,541.60                    | 16.55               | 16.33            | 64.41                       | -714.23                                   | -629.64         | 689.42                       | 659.46                        | 29.96                           | 23.010               |           |
| 3,325.00                                     | 2,839.42                    | 3,015.20                    | 2,541.71                    | 16.95               | 16.42            | 64.40                       | -739.23                                   | -629.70         | 689.04                       | 658.63                        | 30.41                           | 22.658               |           |
| 3,350.00                                     | 2,839.49                    | 3,040.20                    | 2,541.82                    | 17.35               | 16.83            | 64.38                       | -764.22                                   | -629.76         | 688.65                       | 657.49                        | 31.16                           | 22.100               |           |
| 3,375.00                                     | 2,839.55                    | 3,065.20                    | 2,541.93                    | 17.75               | 17.25            | 64.37                       | -789.22                                   | -629.82         | 688.27                       | 656.36                        | 31.91                           | 21.569               |           |
| 3,400.00                                     | 2,839.62                    | 3,109.81                    | 2,542.03                    | 18.15               | 18.00            | 64.36                       | -814.22                                   | -629.88         | 687.88                       | 654.92                        | 32.96                           | 20.868               |           |
| 3,425.00                                     | 2,839.68                    | 3,115.19                    | 2,542.14                    | 18.57               | 18.09            | 64.35                       | -839.21                                   | -629.94         | 687.50                       | 654.07                        | 33.43                           | 20.568               |           |
| 3,450.00                                     | 2,839.75                    | 3,140.19                    | 2,542.25                    | 18.98               | 18.52            | 64.34                       | -864.21                                   | -630.00         | 687.12                       | 652.92                        | 34.20                           | 20.092               |           |
| 3,475.00                                     | 2,839.81                    | 3,165.18                    | 2,542.36                    | 19.40               | 18.95            | 64.33                       | -889.21                                   | -630.06         | 686.73                       | 651.76                        | 34.97                           | 19.538               |           |
| 3,500.00                                     | 2,839.88                    | 3,209.82                    | 2,542.47                    | 19.81               | 19.72            | 64.32                       | -914.20                                   | -630.12         | 686.35                       | 650.29                        | 36.05                           | 19.037               |           |
| 3,525.00                                     | 2,839.94                    | 3,215.18                    | 2,542.58                    | 20.24               | 19.81            | 64.30                       | -939.20                                   | -630.18         | 685.96                       | 649.43                        | 36.53                           | 18.779               |           |
| 3,550.00                                     | 2,840.01                    | 3,240.17                    | 2,542.69                    | 20.66               | 20.25            | 64.29                       | -964.20                                   | -630.25         | 685.58                       | 648.26                        | 37.32                           | 18.372               |           |
| 3,575.00                                     | 2,840.07                    | 3,265.17                    | 2,542.80                    | 21.09               | 20.68            | 64.28                       | -989.19                                   | -630.31         | 685.19                       | 647.09                        | 38.11                           | 17.982               |           |
| 3,600.00                                     | 2,840.14                    | 3,290.17                    | 2,542.91                    | 21.52               | 21.12            | 64.27                       | -1,014.19                                 | -630.37         | 684.81                       | 645.91                        | 38.89                           | 17.507               |           |
| 3,625.00                                     | 2,840.21                    | 3,315.16                    | 2,543.02                    | 21.95               | 21.56            | 64.26                       | -1,039.18                                 | -630.43         | 684.42                       | 644.73                        | 39.69                           | 17.243               |           |
| 3,650.00                                     | 2,840.27                    | 3,340.16                    | 2,543.13                    | 22.38               | 22.01            | 64.25                       | -1,064.18                                 | -630.49         | 684.04                       | 643.54                        | 40.50                           | 16.892               |           |
| 3,675.00                                     | 2,840.34                    | 3,365.16                    | 2,543.23                    | 22.82               | 22.45            | 64.24                       | -1,089.18                                 | -630.55         | 683.65                       | 642.36                        | 41.30                           | 16.555               |           |
| 3,700.00                                     | 2,840.40                    | 3,409.85                    | 2,543.34                    | 23.25               | 23.24            | 64.22                       | -1,114.17                                 | -630.61         | 683.27                       | 640.85                        | 42.42                           | 16.107               |           |
| 3,725.00                                     | 2,840.47                    | 3,415.15                    | 2,543.45                    | 23.69               | 23.34            | 64.21                       | -1,139.17                                 | -630.67         | 682.89                       | 639.98                        | 42.91                           | 15.915               |           |
| 3,750.00                                     | 2,840.53                    | 3,440.15                    | 2,543.56                    | 24.13               | 23.79            | 64.20                       | -1,164.17                                 | -630.73         | 682.50                       | 638.78                        | 43.72                           | 15.610               |           |
| 3,775.00                                     | 2,840.60                    | 3,465.14                    | 2,543.67                    | 24.57               | 24.24            | 64.19                       | -1,189.16                                 | -630.80         | 682.12                       | 637.58                        | 44.53                           | 15.317               |           |
| 3,800.00                                     | 2,840.66                    | 3,509.86                    | 2,543.78                    | 25.01               | 25.04            | 64.18                       | -1,214.16                                 | -630.86         | 681.73                       | 636.06                        | 45.67                           | 14.927               |           |
| 3,825.00                                     | 2,840.73                    | 3,515.14                    | 2,543.89                    | 25.46               | 25.14            | 64.17                       | -1,239.16                                 | -630.92         | 681.35                       | 635.19                        | 46.16                           | 14.760               |           |
| 3,850.00                                     | 2,840.79                    | 3,540.13                    | 2,544.00                    | 25.90               | 25.59            | 64.15                       | -1,264.15                                 | -630.98         | 680.96                       | 633.98                        | 46.98                           | 14.494               |           |
| 3,875.00                                     | 2,840.86                    | 3,565.13                    | 2,544.11                    | 26.35               | 26.04            | 64.14                       | -1,289.15                                 | -631.04         | 680.58                       | 632.78                        | 47.80                           | 14.237               |           |
| 3,900.00                                     | 2,840.93                    | 3,609.88                    | 2,544.22                    | 26.79               | 26.85            | 64.13                       | -1,314.14                                 | -631.10         | 680.20                       | 631.24                        | 48.95                           | 13.895               |           |
| 3,925.00                                     | 2,840.99                    | 3,615.12                    | 2,544.33                    | 27.24               | 26.95            | 64.12                       | -1,339.14                                 | -631.16         | 679.81                       | 630.36                        | 49.45                           | 13.748               |           |
| 3,950.00                                     | 2,841.06                    | 3,640.12                    | 2,544.43                    | 27.69               | 27.41            | 64.11                       | -1,364.14                                 | -631.22         | 679.43                       | 629.15                        | 50.27                           | 13.514               |           |
| 3,975.00                                     | 2,841.12                    | 3,665.12                    | 2,544.54                    | 28.14               | 27.86            | 64.10                       | -1,389.13                                 | -631.28         | 679.04                       | 627.94                        | 51.10                           | 13.288               |           |
| 4,000.00                                     | 2,841.19                    | 3,709.89                    | 2,544.65                    | 28.59               | 28.68            | 64.09                       | -1,414.13                                 | -631.35         | 678.66                       | 626.40                        | 52.26                           | 12.986               |           |
| 4,025.00                                     | 2,841.25                    | 3,715.11                    | 2,544.76                    | 29.04               | 28.78            | 64.07                       | -1,439.13                                 | -631.41         | 678.28                       | 625.52                        | 52.76                           | 12.856               |           |
| 4,050.00                                     | 2,841.32                    | 3,740.11                    | 2,544.87                    | 29.49               | 29.23            | 64.06                       | -1,464.12                                 | -631.47         | 677.89                       | 624.30                        | 53.59                           | 12.650               |           |
| 4,075.00                                     | 2,841.38                    | 3,765.10                    | 2,544.98                    | 29.95               | 29.69            | 64.05                       | -1,489.12                                 | -631.53         | 677.51                       | 623.09                        | 54.42                           | 12.449               |           |
| 4,100.00                                     | 2,841.45                    | 3,809.90                    | 2,545.09                    | 30.40               | 30.52            | 64.04                       | -1,514.12                                 | -631.59         | 677.12                       | 621.54                        | 55.59                           | 12.181               |           |
| 4,125.00                                     | 2,841.51                    | 3,815.10                    | 2,545.20                    | 30.85               | 30.61            | 64.03                       | -1,539.11                                 | -631.65         | 676.74                       | 620.65                        | 56.09                           | 12.066               |           |
| 4,150.00                                     | 2,841.58                    | 3,840.09                    | 2,545.31                    | 31.31               | 31.07            | 64.01                       | -1,564.11                                 | -631.71         | 676.36                       | 619.43                        | 56.92                           | 11.882               |           |
| 4,175.00                                     | 2,841.64                    | 3,865.09                    | 2,545.42                    | 31.77               | 31.53            | 64.00                       | -1,589.10                                 | -631.77         | 675.97                       | 618.21                        | 57.76                           | 11.703               |           |
| 4,200.00                                     | 2,841.71                    | 3,909.92                    | 2,545.52                    | 32.22               | 32.36            | 63.99                       | -1,614.10                                 | -631.83         | 675.59                       | 616.66                        | 58.93                           | 11.464               |           |
| 4,225.00                                     | 2,841.78                    | 3,915.08                    | 2,545.63                    | 32.68               | 32.46            | 63.98                       | -1,639.10                                 | -631.89         | 675.20                       | 615.77                        | 59.43                           | 11.361               |           |
| 4,250.00                                     | 2,841.84                    | 3,940.08                    | 2,545.74                    | 33.14               | 32.92            | 63.97                       | -1,664.09                                 | -631.96         | 674.82                       | 614.55                        | 60.27                           | 11.196               |           |
| 4,275.00                                     | 2,841.91                    | 3,965.08                    | 2,545.85                    | 33.60               | 33.38            | 63.96                       | -1,689.09                                 | -632.02         | 674.44                       | 613.33                        | 61.11                           | 11.036               |           |
| 4,300.00                                     | 2,841.97                    | 4,009.93                    | 2,545.96                    | 34.05               | 34.22            | 63.94                       | -1,714.09                                 | -632.08         | 674.05                       | 611.77                        | 62.29                           | 10.822               |           |
| 4,325.00                                     | 2,842.04                    | 4,015.07                    | 2,546.07                    | 34.51               | 34.31            | 63.93                       | -1,739.08                                 | -632.14         | 673.67                       | 610.88                        | 62.79                           | 10.729               |           |
| 4,350.00                                     | 2,842.10                    | 4,040.07                    | 2,546.18                    | 34.97               | 34.78            | 63.92                       | -1,764.08                                 | -632.20         | 673.29                       | 609.65                        | 63.63                           | 10.581               |           |
| 4,375.00                                     | 2,842.17                    | 4,065.06                    | 2,546.29                    | 35.43               | 35.24            | 63.91                       | -1,789.08                                 | -632.26         | 672.90                       | 608.43                        | 64.47                           | 10.437               |           |
| 4,400.00                                     | 2,842.23                    | 4,109.94                    | 2,546.40                    | 35.89               | 36.08            | 63.90                       | -1,814.07                                 | -632.32         | 672.52                       | 606.86                        | 65.66                           | 10.243               |           |
| 4,425.00                                     | 2,842.30                    | 4,115.06                    | 2,546.51                    | 36.36               | 36.17            | 63.89                       | -1,839.07                                 | -632.38         | 672.13                       | 605.97                        | 66.16                           | 10.159               |           |
| 4,450.00                                     | 2,842.36                    | 4,140.05                    | 2,546.62                    | 36.82               | 36.64            | 63.87                       | -1,864.06                                 | -632.44         | 671.75                       | 604.75                        | 67.00                           | 10.025               |           |
| 4,475.00                                     | 2,842.43                    | 4,165.05                    | 2,546.72                    | 37.28               | 37.10            | 63.86                       | -1,889.06                                 | -632.51         | 671.37                       | 603.52                        | 67.85                           | 9.895                |           |
| 4,500.00                                     | 2,842.50                    | 4,209.95                    | 2,546.83                    | 37.74               | 37.94            | 63.85                       | -1,914.06                                 | -632.57         | 670.98                       | 601.95                        | 69.03                           | 9.720                |           |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Company:** Percussion Petroleum, LLC  
**Project:** Eddy County, NM  
**Reference Site:** Huber Fed  
**Site Error:** 0.00 usft  
**Reference Well:** 17H  
**Well Error:** 0.00 usft  
**Reference Wellbore:** OH  
**Reference Design:** Plan #2

**Local Co-ordinate Reference:** Well 17H  
**TVD Reference:** RKB=25' @ 3555.00usft (NA)  
**MD Reference:** RKB=25' @ 3555.00usft (NA)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** WBDS\_SQL\_2  
**Offset TVD Reference:** Reference Datum

| Offset Design Huber Fed - 18H - OH - Plan #2 |                             |                             |                             |                     |                  |                             |                                          |                |                                 |                      |         | Offset Site Error: | 0.00 usft |
|----------------------------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|------------------------------------------|----------------|---------------------------------|----------------------|---------|--------------------|-----------|
| Survey Program: 0-MWD+IGRF                   |                             |                             |                             |                     |                  |                             |                                          |                |                                 |                      |         | Offset Well Error: | 0.00 usft |
| Reference                                    |                             | Offset                      |                             | Semi Major Axis     |                  | Highside<br>Toolface<br>(°) | Distance                                 |                | Minimum<br>Separation<br>(usft) | Separation<br>Factor | Warning |                    |           |
| Measured<br>Depth<br>(usft)                  | Vertical<br>Depth<br>(usft) | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) |                             | Offset Wellbore Centre<br>+N-S<br>(usft) | +E-W<br>(usft) |                                 |                      |         |                    |           |
| 4,525.00                                     | 2,842.56                    | 4,215.04                    | 2,546.94                    | 38.21               | 38.04            | 63.84                       | -1,939.05                                | -632.63        | 670.60                          | 601.06               | 69.54   | 9.644              |           |
| 4,550.00                                     | 2,842.63                    | 4,240.04                    | 2,547.05                    | 38.67               | 38.50            | 63.83                       | -1,964.05                                | -632.69        | 670.22                          | 599.83               | 70.38   | 9.522              |           |
| 4,575.00                                     | 2,842.69                    | 4,265.04                    | 2,547.16                    | 39.13               | 38.97            | 63.81                       | -1,989.05                                | -632.75        | 669.83                          | 598.60               | 71.23   | 9.404              |           |
| 4,600.00                                     | 2,842.76                    | 4,309.97                    | 2,547.27                    | 39.60               | 39.81            | 63.80                       | -2,014.04                                | -632.81        | 669.45                          | 597.03               | 72.42   | 9.244              |           |
| 4,625.00                                     | 2,842.82                    | 4,315.03                    | 2,547.38                    | 40.06               | 39.91            | 63.79                       | -2,039.04                                | -632.87        | 669.07                          | 596.14               | 72.92   | 9.175              |           |
| 4,650.00                                     | 2,842.89                    | 4,340.03                    | 2,547.49                    | 40.52               | 40.37            | 63.78                       | -2,064.04                                | -632.93        | 668.68                          | 594.91               | 73.77   | 9.064              |           |
| 4,675.00                                     | 2,842.95                    | 4,365.02                    | 2,547.60                    | 40.99               | 40.84            | 63.77                       | -2,089.03                                | -632.99        | 668.30                          | 593.68               | 74.62   | 8.956              |           |
| 4,700.00                                     | 2,843.02                    | 4,409.98                    | 2,547.71                    | 41.45               | 41.68            | 63.75                       | -2,114.03                                | -633.06        | 667.92                          | 592.11               | 75.81   | 8.811              |           |
| 4,725.00                                     | 2,843.08                    | 4,415.02                    | 2,547.82                    | 41.92               | 41.78            | 63.74                       | -2,139.02                                | -633.12        | 667.53                          | 591.22               | 76.31   | 8.747              |           |
| 4,750.00                                     | 2,843.15                    | 4,440.01                    | 2,547.92                    | 42.39               | 42.25            | 63.73                       | -2,164.02                                | -633.18        | 667.15                          | 589.99               | 77.16   | 8.646              |           |
| 4,775.00                                     | 2,843.22                    | 4,465.01                    | 2,548.03                    | 42.85               | 42.72            | 63.72                       | -2,189.02                                | -633.24        | 666.77                          | 588.76               | 78.01   | 8.547              |           |
| 4,800.00                                     | 2,843.28                    | 4,509.99                    | 2,548.14                    | 43.32               | 43.56            | 63.71                       | -2,214.01                                | -633.30        | 666.38                          | 587.18               | 79.20   | 8.414              |           |
| 4,825.00                                     | 2,843.35                    | 4,515.00                    | 2,548.25                    | 43.78               | 43.66            | 63.69                       | -2,239.01                                | -633.36        | 666.00                          | 586.29               | 79.71   | 8.355              |           |
| 4,850.00                                     | 2,843.41                    | 4,540.00                    | 2,548.36                    | 44.25               | 44.13            | 63.68                       | -2,264.01                                | -633.42        | 665.62                          | 585.06               | 80.56   | 8.263              |           |
| 4,875.00                                     | 2,843.48                    | 4,565.00                    | 2,548.47                    | 44.72               | 44.60            | 63.67                       | -2,289.00                                | -633.48        | 665.24                          | 583.83               | 81.41   | 8.172              |           |
| 4,900.00                                     | 2,843.54                    | 4,589.99                    | 2,548.58                    | 45.18               | 45.07            | 63.66                       | -2,314.00                                | -633.54        | 664.85                          | 582.60               | 82.26   | 8.083              |           |
| 4,925.00                                     | 2,843.61                    | 4,614.99                    | 2,548.69                    | 45.65               | 45.54            | 63.64                       | -2,339.00                                | -633.61        | 664.47                          | 581.36               | 83.11   | 7.995              |           |
| 4,950.00                                     | 2,843.67                    | 4,639.99                    | 2,548.80                    | 46.12               | 46.01            | 63.63                       | -2,363.99                                | -633.67        | 664.09                          | 580.13               | 83.96   | 7.910              |           |
| 4,975.00                                     | 2,843.74                    | 4,664.98                    | 2,548.91                    | 46.59               | 46.48            | 63.62                       | -2,388.99                                | -633.73        | 663.70                          | 578.89               | 84.81   | 7.826              |           |
| 5,000.00                                     | 2,843.80                    | 4,689.98                    | 2,549.02                    | 47.05               | 46.95            | 63.61                       | -2,413.98                                | -633.79        | 663.32                          | 577.66               | 85.66   | 7.744              |           |
| 5,025.00                                     | 2,843.87                    | 4,714.98                    | 2,549.12                    | 47.52               | 47.42            | 63.60                       | -2,438.98                                | -633.85        | 662.94                          | 576.43               | 86.51   | 7.663              |           |
| 5,050.00                                     | 2,843.94                    | 4,739.97                    | 2,549.23                    | 47.99               | 47.89            | 63.58                       | -2,463.98                                | -633.91        | 662.56                          | 575.19               | 87.36   | 7.584              |           |
| 5,075.00                                     | 2,844.00                    | 4,764.97                    | 2,549.34                    | 48.46               | 48.36            | 63.57                       | -2,488.97                                | -633.97        | 662.17                          | 573.96               | 88.21   | 7.507              |           |
| 5,100.00                                     | 2,844.07                    | 4,789.97                    | 2,549.45                    | 48.93               | 48.83            | 63.56                       | -2,513.97                                | -634.03        | 661.79                          | 572.73               | 89.06   | 7.431              |           |
| 5,125.00                                     | 2,844.13                    | 4,814.96                    | 2,549.56                    | 49.40               | 49.30            | 63.55                       | -2,538.97                                | -634.09        | 661.41                          | 571.49               | 89.91   | 7.356              |           |
| 5,150.00                                     | 2,844.20                    | 4,839.96                    | 2,549.67                    | 49.87               | 49.78            | 63.53                       | -2,563.96                                | -634.15        | 661.02                          | 570.26               | 90.77   | 7.283              |           |
| 5,175.00                                     | 2,844.26                    | 4,864.96                    | 2,549.78                    | 50.34               | 50.25            | 63.52                       | -2,588.96                                | -634.22        | 660.64                          | 569.02               | 91.62   | 7.211              |           |
| 5,200.00                                     | 2,844.33                    | 4,889.95                    | 2,549.89                    | 50.80               | 50.72            | 63.51                       | -2,613.95                                | -634.28        | 660.26                          | 567.79               | 92.47   | 7.140              |           |
| 5,225.00                                     | 2,844.39                    | 4,914.95                    | 2,550.00                    | 51.27               | 51.19            | 63.50                       | -2,638.95                                | -634.34        | 659.88                          | 566.55               | 93.32   | 7.071              |           |
| 5,250.00                                     | 2,844.46                    | 4,939.95                    | 2,550.11                    | 51.74               | 51.66            | 63.49                       | -2,663.95                                | -634.40        | 659.49                          | 565.32               | 94.17   | 7.003              |           |
| 5,275.00                                     | 2,844.52                    | 4,964.94                    | 2,550.21                    | 52.21               | 52.14            | 63.47                       | -2,688.94                                | -634.46        | 659.11                          | 564.09               | 95.02   | 6.936              |           |
| 5,300.00                                     | 2,844.59                    | 4,989.94                    | 2,550.32                    | 52.68               | 52.61            | 63.46                       | -2,713.94                                | -634.52        | 658.73                          | 562.85               | 95.88   | 6.871              |           |
| 5,325.00                                     | 2,844.66                    | 5,014.94                    | 2,550.43                    | 53.15               | 53.08            | 63.45                       | -2,738.94                                | -634.58        | 658.35                          | 561.62               | 96.73   | 6.806              |           |
| 5,350.00                                     | 2,844.72                    | 5,039.93                    | 2,550.54                    | 53.62               | 53.55            | 63.44                       | -2,763.93                                | -634.64        | 657.96                          | 560.38               | 97.58   | 6.743              |           |
| 5,375.00                                     | 2,844.79                    | 5,064.93                    | 2,550.65                    | 54.09               | 54.03            | 63.42                       | -2,788.93                                | -634.70        | 657.58                          | 559.15               | 98.43   | 6.680              |           |
| 5,400.00                                     | 2,844.85                    | 5,089.93                    | 2,550.76                    | 54.56               | 54.50            | 63.41                       | -2,813.93                                | -634.77        | 657.20                          | 557.91               | 99.29   | 6.619              |           |
| 5,425.00                                     | 2,844.92                    | 5,114.92                    | 2,550.87                    | 55.03               | 54.97            | 63.40                       | -2,838.92                                | -634.83        | 656.82                          | 556.68               | 100.14  | 6.559              |           |
| 5,450.00                                     | 2,844.98                    | 5,139.92                    | 2,550.98                    | 55.51               | 55.44            | 63.39                       | -2,863.92                                | -634.89        | 656.43                          | 555.44               | 100.99  | 6.500              |           |
| 5,475.00                                     | 2,845.05                    | 5,164.92                    | 2,551.09                    | 55.98               | 55.92            | 63.37                       | -2,888.91                                | -634.95        | 656.05                          | 554.21               | 101.84  | 6.442              |           |
| 5,500.00                                     | 2,845.11                    | 5,189.91                    | 2,551.20                    | 56.45               | 56.39            | 63.36                       | -2,913.91                                | -635.01        | 655.67                          | 552.98               | 102.69  | 6.385              |           |
| 5,525.00                                     | 2,845.18                    | 5,214.91                    | 2,551.31                    | 56.92               | 56.86            | 63.35                       | -2,938.91                                | -635.07        | 655.29                          | 551.74               | 103.55  | 6.328              |           |
| 5,550.00                                     | 2,845.24                    | 5,239.91                    | 2,551.41                    | 57.39               | 57.34            | 63.34                       | -2,963.90                                | -635.13        | 654.90                          | 550.51               | 104.40  | 6.273              |           |
| 5,575.00                                     | 2,845.31                    | 5,264.90                    | 2,551.52                    | 57.86               | 57.81            | 63.32                       | -2,988.90                                | -635.19        | 654.52                          | 549.27               | 105.25  | 6.219              |           |
| 5,600.00                                     | 2,845.38                    | 5,289.90                    | 2,551.63                    | 58.33               | 58.28            | 63.31                       | -3,013.90                                | -635.25        | 654.14                          | 548.04               | 106.10  | 6.165              |           |
| 5,625.00                                     | 2,845.44                    | 5,314.90                    | 2,551.74                    | 58.80               | 58.76            | 63.30                       | -3,038.89                                | -635.32        | 653.76                          | 546.80               | 106.96  | 6.112              |           |
| 5,650.00                                     | 2,845.51                    | 5,339.89                    | 2,551.85                    | 59.27               | 59.23            | 63.29                       | -3,063.89                                | -635.38        | 653.38                          | 545.57               | 107.81  | 6.061              |           |
| 5,675.00                                     | 2,845.57                    | 5,364.89                    | 2,551.96                    | 59.75               | 59.70            | 63.27                       | -3,088.89                                | -635.44        | 652.99                          | 544.33               | 108.66  | 6.009              |           |
| 5,700.00                                     | 2,845.64                    | 5,389.89                    | 2,552.07                    | 60.22               | 60.18            | 63.26                       | -3,113.88                                | -635.50        | 652.61                          | 543.10               | 109.51  | 5.959              |           |
| 5,725.00                                     | 2,845.70                    | 5,414.88                    | 2,552.18                    | 60.69               | 60.65            | 63.25                       | -3,138.88                                | -635.56        | 652.23                          | 541.86               | 110.37  | 5.910              |           |
| 5,750.00                                     | 2,845.77                    | 5,439.88                    | 2,552.29                    | 61.16               | 61.13            | 63.24                       | -3,163.87                                | -635.62        | 651.85                          | 540.63               | 111.22  | 5.861              |           |
| 5,775.00                                     | 2,845.83                    | 5,464.88                    | 2,552.40                    | 61.63               | 61.60            | 63.22                       | -3,188.87                                | -635.68        | 651.47                          | 539.40               | 112.07  | 5.813              |           |
| 5,800.00                                     | 2,845.90                    | 5,489.87                    | 2,552.51                    | 62.11               | 62.07            | 63.21                       | -3,213.87                                | -635.74        | 651.08                          | 538.16               | 112.92  | 5.766              |           |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Company:** Percussion Petroleum, LLC  
**Project:** Eddy County, NM  
**Reference Site:** Huber Fed  
**Site Error:** 0.00 usft  
**Reference Well:** 17H  
**Well Error:** 0.00 usft  
**Reference Wellbore:** OH  
**Reference Design:** Plan #2

**Local Co-ordinate Reference:** Well 17H  
**TVD Reference:** RKB=25' @ 3555.00usft (NA)  
**MD Reference:** RKB=25' @ 3555.00usft (NA)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** WBDS\_SQL\_2  
**Offset TVD Reference:** Reference Datum

| Offset Design Huber Fed - 18H - OH - Plan #2 |                             |                             |                             |                     |                  |                             |                        |                 |                              |                               |                                 |                      | Offset Site Error: |
|----------------------------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|------------------------|-----------------|------------------------------|-------------------------------|---------------------------------|----------------------|--------------------|
| Survey Program: 0-MWD+IGRF                   |                             |                             |                             |                     |                  |                             |                        |                 |                              |                               |                                 |                      | Offset Well Error: |
| Reference                                    |                             | Offset                      |                             | Semi Major Axis     |                  | Highside<br>Toolface<br>(°) | Offset Wellbore Centre |                 | Distance                     |                               |                                 |                      | Warning            |
| Measured<br>Depth<br>(usft)                  | Vertical<br>Depth<br>(usft) | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) |                             | +N/-S<br>(usft)        | +E/-W<br>(usft) | Between<br>Centres<br>(usft) | Between<br>Ellipses<br>(usft) | Minimum<br>Separation<br>(usft) | Separation<br>Factor |                    |
| 5,825.00                                     | 2,845.96                    | 5,514.87                    | 2,552.61                    | 62.58               | 62.55            | 63.20                       | -3,238.86              | -635.80         | 650.70                       | 536.93                        | 113.77                          | 5.719                |                    |
| 5,850.00                                     | 2,846.03                    | 5,539.87                    | 2,552.72                    | 63.05               | 63.02            | 63.18                       | -3,263.86              | -635.87         | 650.32                       | 535.89                        | 114.63                          | 5.673                |                    |
| 5,875.00                                     | 2,846.10                    | 5,564.86                    | 2,552.83                    | 63.52               | 63.50            | 63.17                       | -3,288.86              | -635.93         | 649.94                       | 534.46                        | 115.48                          | 5.628                |                    |
| 5,900.00                                     | 2,846.16                    | 5,589.86                    | 2,552.94                    | 63.99               | 63.97            | 63.16                       | -3,313.85              | -635.99         | 649.56                       | 533.23                        | 116.33                          | 5.584                |                    |
| 5,925.00                                     | 2,846.23                    | 5,614.86                    | 2,553.05                    | 64.47               | 64.45            | 63.15                       | -3,338.85              | -636.05         | 649.18                       | 531.99                        | 117.18                          | 5.540                |                    |
| 5,950.00                                     | 2,846.29                    | 5,639.85                    | 2,553.16                    | 64.94               | 64.92            | 63.13                       | -3,363.85              | -636.11         | 648.79                       | 530.76                        | 118.03                          | 5.497                |                    |
| 5,975.00                                     | 2,846.36                    | 5,664.85                    | 2,553.27                    | 65.41               | 65.39            | 63.12                       | -3,388.84              | -636.17         | 648.41                       | 529.53                        | 118.89                          | 5.454                |                    |
| 6,000.00                                     | 2,846.42                    | 5,689.85                    | 2,553.38                    | 65.88               | 65.87            | 63.11                       | -3,413.84              | -636.23         | 648.03                       | 528.29                        | 119.74                          | 5.412                |                    |
| 6,025.00                                     | 2,846.49                    | 5,714.84                    | 2,553.49                    | 66.36               | 66.34            | 63.10                       | -3,438.83              | -636.29         | 647.65                       | 527.06                        | 120.59                          | 5.371                |                    |
| 6,050.00                                     | 2,846.55                    | 5,739.84                    | 2,553.60                    | 66.83               | 66.82            | 63.08                       | -3,463.83              | -636.35         | 647.27                       | 525.83                        | 121.44                          | 5.330                |                    |
| 6,075.00                                     | 2,846.62                    | 5,764.84                    | 2,553.70                    | 67.30               | 67.29            | 63.07                       | -3,488.83              | -636.41         | 646.89                       | 524.59                        | 122.29                          | 5.290                |                    |
| 6,100.00                                     | 2,846.68                    | 5,789.83                    | 2,553.81                    | 67.78               | 67.77            | 63.06                       | -3,513.82              | -636.48         | 646.50                       | 523.36                        | 123.14                          | 5.250                |                    |
| 6,125.00                                     | 2,846.75                    | 5,814.83                    | 2,553.92                    | 68.25               | 68.24            | 63.04                       | -3,538.82              | -636.54         | 646.12                       | 522.13                        | 124.00                          | 5.211                |                    |
| 6,150.00                                     | 2,846.82                    | 5,839.83                    | 2,554.03                    | 68.72               | 68.72            | 63.03                       | -3,563.82              | -636.60         | 645.74                       | 520.89                        | 124.85                          | 5.172                |                    |
| 6,175.00                                     | 2,846.88                    | 5,864.82                    | 2,554.14                    | 69.20               | 69.19            | 63.02                       | -3,588.81              | -636.66         | 645.36                       | 519.66                        | 125.70                          | 5.134                |                    |
| 6,200.00                                     | 2,846.95                    | 5,889.82                    | 2,554.25                    | 69.67               | 69.67            | 63.01                       | -3,613.81              | -636.72         | 644.98                       | 518.43                        | 126.55                          | 5.097                |                    |
| 6,225.00                                     | 2,847.01                    | 5,914.82                    | 2,554.36                    | 70.14               | 70.14            | 62.99                       | -3,638.81              | -636.78         | 644.60                       | 517.20                        | 127.40                          | 5.060                |                    |
| 6,250.00                                     | 2,847.08                    | 5,939.81                    | 2,554.47                    | 70.62               | 70.62            | 62.98                       | -3,663.80              | -636.84         | 644.22                       | 515.96                        | 128.25                          | 5.023                |                    |
| 6,275.00                                     | 2,847.14                    | 5,964.81                    | 2,554.58                    | 71.09               | 71.09            | 62.97                       | -3,688.80              | -636.90         | 643.83                       | 514.73                        | 129.10                          | 4.987                |                    |
| 6,300.00                                     | 2,847.21                    | 5,989.81                    | 2,554.69                    | 71.56               | 71.57            | 62.95                       | -3,713.79              | -636.96         | 643.45                       | 513.50                        | 129.95                          | 4.951                |                    |
| 6,325.00                                     | 2,847.27                    | 6,014.80                    | 2,554.80                    | 72.04               | 72.04            | 62.94                       | -3,738.79              | -637.03         | 643.07                       | 512.27                        | 130.81                          | 4.916                |                    |
| 6,350.00                                     | 2,847.34                    | 6,039.80                    | 2,554.90                    | 72.51               | 72.52            | 62.93                       | -3,763.79              | -637.09         | 642.69                       | 511.03                        | 131.66                          | 4.882                |                    |
| 6,375.00                                     | 2,847.40                    | 6,064.80                    | 2,555.01                    | 72.98               | 72.99            | 62.91                       | -3,788.78              | -637.15         | 642.31                       | 509.80                        | 132.51                          | 4.847                |                    |
| 6,400.00                                     | 2,847.47                    | 6,089.79                    | 2,555.12                    | 73.46               | 73.47            | 62.90                       | -3,813.78              | -637.21         | 641.93                       | 508.57                        | 133.36                          | 4.814                |                    |
| 6,425.00                                     | 2,847.54                    | 6,114.79                    | 2,555.23                    | 73.93               | 73.94            | 62.89                       | -3,838.78              | -637.27         | 641.55                       | 507.34                        | 134.21                          | 4.780                |                    |
| 6,450.00                                     | 2,847.60                    | 6,139.79                    | 2,555.34                    | 74.40               | 74.42            | 62.88                       | -3,863.77              | -637.33         | 641.17                       | 506.11                        | 135.06                          | 4.747                |                    |
| 6,475.00                                     | 2,847.67                    | 6,164.78                    | 2,555.45                    | 74.88               | 74.90            | 62.86                       | -3,888.77              | -637.39         | 640.78                       | 504.88                        | 135.91                          | 4.715                |                    |
| 6,500.00                                     | 2,847.73                    | 6,189.78                    | 2,555.56                    | 75.35               | 75.37            | 62.85                       | -3,913.77              | -637.45         | 640.40                       | 503.65                        | 136.76                          | 4.683                |                    |
| 6,525.00                                     | 2,847.80                    | 6,214.78                    | 2,555.67                    | 75.83               | 75.85            | 62.84                       | -3,938.76              | -637.51         | 640.02                       | 502.41                        | 137.61                          | 4.651                |                    |
| 6,550.00                                     | 2,847.86                    | 6,239.77                    | 2,555.78                    | 76.30               | 76.32            | 62.82                       | -3,963.76              | -637.58         | 639.64                       | 501.18                        | 138.46                          | 4.620                |                    |
| 6,575.00                                     | 2,847.93                    | 6,264.77                    | 2,555.89                    | 76.77               | 76.80            | 62.81                       | -3,988.75              | -637.64         | 639.26                       | 499.95                        | 139.31                          | 4.589                |                    |
| 6,600.00                                     | 2,847.99                    | 6,289.77                    | 2,556.00                    | 77.25               | 77.27            | 62.80                       | -4,013.75              | -637.70         | 638.88                       | 498.72                        | 140.16                          | 4.558                |                    |
| 6,625.00                                     | 2,848.06                    | 6,314.76                    | 2,556.10                    | 77.72               | 77.75            | 62.78                       | -4,038.75              | -637.76         | 638.50                       | 497.49                        | 141.01                          | 4.528                |                    |
| 6,650.00                                     | 2,848.12                    | 6,339.76                    | 2,556.21                    | 78.20               | 78.22            | 62.77                       | -4,063.74              | -637.82         | 638.12                       | 496.26                        | 141.86                          | 4.498                |                    |
| 6,675.00                                     | 2,848.19                    | 6,364.76                    | 2,556.32                    | 78.67               | 78.70            | 62.76                       | -4,088.74              | -637.88         | 637.74                       | 495.03                        | 142.71                          | 4.469                |                    |
| 6,700.00                                     | 2,848.26                    | 6,389.75                    | 2,556.43                    | 79.14               | 79.18            | 62.74                       | -4,113.74              | -637.94         | 637.36                       | 493.80                        | 143.56                          | 4.440                |                    |
| 6,725.00                                     | 2,848.32                    | 6,414.75                    | 2,556.54                    | 79.62               | 79.65            | 62.73                       | -4,138.73              | -638.00         | 636.98                       | 492.57                        | 144.41                          | 4.411                |                    |
| 6,750.00                                     | 2,848.39                    | 6,439.75                    | 2,556.65                    | 80.09               | 80.13            | 62.72                       | -4,163.73              | -638.06         | 636.60                       | 491.34                        | 145.25                          | 4.383                |                    |
| 6,775.00                                     | 2,848.45                    | 6,464.74                    | 2,556.76                    | 80.57               | 80.60            | 62.70                       | -4,188.73              | -638.12         | 636.22                       | 490.11                        | 146.10                          | 4.355                |                    |
| 6,800.00                                     | 2,848.52                    | 6,489.74                    | 2,556.87                    | 81.04               | 81.08            | 62.69                       | -4,213.72              | -638.19         | 635.83                       | 488.88                        | 146.95                          | 4.327                |                    |
| 6,825.00                                     | 2,848.58                    | 6,514.74                    | 2,556.98                    | 81.52               | 81.55            | 62.68                       | -4,238.72              | -638.25         | 635.45                       | 487.65                        | 147.80                          | 4.299                |                    |
| 6,850.00                                     | 2,848.65                    | 6,539.73                    | 2,557.09                    | 81.99               | 82.03            | 62.66                       | -4,263.71              | -638.31         | 635.07                       | 486.42                        | 148.65                          | 4.272                |                    |
| 6,875.00                                     | 2,848.71                    | 6,564.73                    | 2,557.20                    | 82.46               | 82.51            | 62.65                       | -4,288.71              | -638.37         | 634.69                       | 485.20                        | 149.50                          | 4.246                |                    |
| 6,900.00                                     | 2,848.78                    | 6,589.73                    | 2,557.30                    | 82.94               | 82.98            | 62.64                       | -4,313.71              | -638.43         | 634.31                       | 483.97                        | 150.35                          | 4.219                |                    |
| 6,925.00                                     | 2,848.84                    | 6,614.72                    | 2,557.41                    | 83.41               | 83.46            | 62.62                       | -4,338.70              | -638.49         | 633.93                       | 482.74                        | 151.19                          | 4.193                |                    |
| 6,950.00                                     | 2,848.91                    | 6,639.72                    | 2,557.52                    | 83.89               | 83.93            | 62.61                       | -4,363.70              | -638.55         | 633.55                       | 481.51                        | 152.04                          | 4.167                |                    |
| 6,975.00                                     | 2,848.98                    | 6,664.72                    | 2,557.63                    | 84.36               | 84.41            | 62.60                       | -4,388.70              | -638.61         | 633.17                       | 480.28                        | 152.89                          | 4.141                |                    |
| 7,000.00                                     | 2,849.04                    | 6,689.71                    | 2,557.74                    | 84.84               | 84.89            | 62.58                       | -4,413.69              | -638.67         | 632.79                       | 479.05                        | 153.74                          | 4.116                |                    |
| 7,025.00                                     | 2,849.11                    | 6,714.71                    | 2,557.85                    | 85.31               | 85.36            | 62.57                       | -4,438.69              | -638.74         | 632.41                       | 477.83                        | 154.58                          | 4.091                |                    |
| 7,050.00                                     | 2,849.17                    | 6,739.71                    | 2,557.96                    | 85.79               | 85.84            | 62.56                       | -4,463.69              | -638.80         | 632.03                       | 476.60                        | 155.43                          | 4.066                |                    |
| 7,075.00                                     | 2,849.24                    | 6,764.70                    | 2,558.07                    | 86.26               | 86.32            | 62.54                       | -4,488.68              | -638.86         | 631.65                       | 475.37                        | 156.28                          | 4.042                |                    |
| 7,100.00                                     | 2,849.30                    | 6,789.70                    | 2,558.18                    | 86.74               | 86.79            | 62.53                       | -4,513.68              | -638.92         | 631.27                       | 474.14                        | 157.13                          | 4.018                |                    |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Company:** Percussion Petroleum, LLC  
**Project:** Eddy County, NM  
**Reference Site:** Huber Fed  
**Site Error:** 0.00 usft  
**Reference Well:** 17H  
**Well Error:** 0.00 usft  
**Reference Wellbore:** OH  
**Reference Design:** Plan #2

**Local Co-ordinate Reference:** Well 17H  
**TVD Reference:** RKB=25' @ 3555.00usft (NA)  
**MD Reference:** RKB=25' @ 3555.00usft (NA)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** WBDS\_SQL\_2  
**Offset TVD Reference:** Reference Datum

| Offset Design Huber Fed - 18H - OH - Plan #2 |                       |                       |                       |                  |               |                       |                                    |             |                        |                         |                           |                   | Offset Site Error: |
|----------------------------------------------|-----------------------|-----------------------|-----------------------|------------------|---------------|-----------------------|------------------------------------|-------------|------------------------|-------------------------|---------------------------|-------------------|--------------------|
| Survey Program: 0-MWD+IGRF                   |                       |                       |                       |                  |               |                       |                                    |             |                        |                         |                           |                   | Offset Well Error: |
| Reference                                    |                       | Offset                |                       | Semi Major Axis  |               | Distance              |                                    |             |                        |                         |                           |                   |                    |
| Measured Depth (usft)                        | Vertical Depth (usft) | Measured Depth (usft) | Vertical Depth (usft) | Reference (usft) | Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N-S (usft) | +E-W (usft) | Between Centres (usft) | Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning            |
| 7.125.00                                     | 2.849.37              | 6.814.70              | 2.558.29              | 87.21            | 87.27         | 62.52                 | -4.538.67                          | -638.98     | 630.89                 | 472.92                  | 157.97                    | 3.994             |                    |
| 7.150.00                                     | 2.849.43              | 6.839.69              | 2.558.39              | 87.69            | 87.74         | 62.50                 | -4.563.67                          | -639.04     | 630.51                 | 471.69                  | 158.82                    | 3.970             |                    |
| 7.175.00                                     | 2.849.50              | 6.864.69              | 2.558.50              | 88.16            | 88.22         | 62.49                 | -4.588.67                          | -639.10     | 630.13                 | 470.46                  | 159.67                    | 3.947             |                    |
| 7.200.00                                     | 2.849.56              | 6.889.69              | 2.558.61              | 88.64            | 88.70         | 62.48                 | -4.613.66                          | -639.16     | 629.75                 | 469.24                  | 160.51                    | 3.923             |                    |
| 7.225.00                                     | 2.849.63              | 6.914.68              | 2.558.72              | 89.11            | 89.17         | 62.46                 | -4.638.66                          | -639.22     | 629.37                 | 468.01                  | 161.36                    | 3.900             |                    |
| 7.250.00                                     | 2.849.70              | 6.939.68              | 2.558.83              | 89.59            | 89.65         | 62.45                 | -4.663.66                          | -639.29     | 628.99                 | 466.78                  | 162.21                    | 3.878             |                    |
| 7.275.00                                     | 2.849.76              | 6.964.68              | 2.558.94              | 90.06            | 90.13         | 62.44                 | -4.688.65                          | -639.35     | 628.61                 | 465.56                  | 163.05                    | 3.855             |                    |
| 7.300.00                                     | 2.849.83              | 6.989.67              | 2.559.05              | 90.54            | 90.60         | 62.42                 | -4.713.65                          | -639.41     | 628.23                 | 464.33                  | 163.90                    | 3.833             |                    |
| 7.325.00                                     | 2.849.89              | 7.014.67              | 2.559.16              | 91.01            | 91.08         | 62.41                 | -4.738.65                          | -639.47     | 627.85                 | 463.11                  | 164.74                    | 3.811             |                    |
| 7.350.00                                     | 2.849.96              | 7.039.67              | 2.559.27              | 91.49            | 91.55         | 62.40                 | -4.763.64                          | -639.53     | 627.47                 | 461.88                  | 165.59                    | 3.789             |                    |
| 7.375.00                                     | 2.850.02              | 7.064.66              | 2.559.38              | 91.96            | 92.03         | 62.38                 | -4.788.64                          | -639.59     | 627.09                 | 460.66                  | 166.44                    | 3.768             |                    |
| 7.400.00                                     | 2.850.09              | 7.089.66              | 2.559.49              | 92.44            | 92.51         | 62.37                 | -4.813.63                          | -639.65     | 626.71                 | 459.43                  | 167.28                    | 3.746             |                    |
| 7.425.00                                     | 2.850.15              | 7.114.66              | 2.559.59              | 92.91            | 92.98         | 62.35                 | -4.838.63                          | -639.71     | 626.33                 | 458.21                  | 168.13                    | 3.725             |                    |
| 7.450.00                                     | 2.850.22              | 7.139.65              | 2.559.70              | 93.39            | 93.46         | 62.34                 | -4.863.63                          | -639.77     | 625.95                 | 456.98                  | 168.97                    | 3.704             |                    |
| 7.475.00                                     | 2.850.28              | 7.164.65              | 2.559.81              | 93.86            | 93.94         | 62.33                 | -4.888.62                          | -639.84     | 625.57                 | 455.76                  | 169.82                    | 3.684             |                    |
| 7.500.00                                     | 2.850.35              | 7.189.65              | 2.559.92              | 94.34            | 94.41         | 62.31                 | -4.913.62                          | -639.90     | 625.19                 | 454.53                  | 170.66                    | 3.663             |                    |
| 7.525.00                                     | 2.850.42              | 7.214.64              | 2.560.03              | 94.81            | 94.89         | 62.30                 | -4.938.62                          | -639.96     | 624.81                 | 453.31                  | 171.51                    | 3.643             |                    |
| 7.550.00                                     | 2.850.48              | 7.239.64              | 2.560.14              | 95.29            | 95.37         | 62.29                 | -4.963.61                          | -640.02     | 624.43                 | 452.08                  | 172.35                    | 3.623             |                    |
| 7.575.00                                     | 2.850.55              | 7.264.64              | 2.560.25              | 95.76            | 95.84         | 62.27                 | -4.988.61                          | -640.08     | 624.05                 | 450.86                  | 173.19                    | 3.603             |                    |
| 7.600.00                                     | 2.850.61              | 7.289.63              | 2.560.36              | 96.24            | 96.32         | 62.26                 | -5.013.61                          | -640.14     | 623.67                 | 449.64                  | 174.04                    | 3.584             |                    |
| 7.625.00                                     | 2.850.68              | 7.314.63              | 2.560.47              | 96.71            | 96.80         | 62.24                 | -5.038.60                          | -640.20     | 623.29                 | 448.41                  | 174.88                    | 3.564             |                    |
| 7.650.00                                     | 2.850.74              | 7.339.63              | 2.560.58              | 97.19            | 97.27         | 62.23                 | -5.063.60                          | -640.26     | 622.92                 | 447.19                  | 175.73                    | 3.545             |                    |
| 7.675.00                                     | 2.850.81              | 7.364.62              | 2.560.69              | 97.66            | 97.75         | 62.22                 | -5.088.59                          | -640.32     | 622.54                 | 445.97                  | 176.57                    | 3.526             |                    |
| 7.700.00                                     | 2.850.87              | 7.389.62              | 2.560.79              | 98.14            | 98.23         | 62.20                 | -5.113.59                          | -640.38     | 622.16                 | 444.74                  | 177.41                    | 3.507             |                    |
| 7.725.00                                     | 2.850.94              | 7.414.62              | 2.560.90              | 98.61            | 98.70         | 62.19                 | -5.138.59                          | -640.45     | 621.78                 | 443.52                  | 178.26                    | 3.488             |                    |
| 7.750.00                                     | 2.851.00              | 7.439.61              | 2.561.01              | 99.09            | 99.18         | 62.18                 | -5.163.58                          | -640.51     | 621.40                 | 442.30                  | 179.10                    | 3.470             |                    |
| 7.775.00                                     | 2.851.07              | 7.464.61              | 2.561.12              | 99.57            | 99.66         | 62.16                 | -5.188.58                          | -640.57     | 621.02                 | 441.08                  | 179.94                    | 3.451             |                    |
| 7.800.00                                     | 2.851.14              | 7.489.61              | 2.561.23              | 100.04           | 100.13        | 62.15                 | -5.213.58                          | -640.63     | 620.64                 | 439.86                  | 180.78                    | 3.433             |                    |
| 7.825.00                                     | 2.851.20              | 7.514.60              | 2.561.34              | 100.52           | 100.61        | 62.13                 | -5.238.57                          | -640.69     | 620.26                 | 438.63                  | 181.63                    | 3.415             |                    |
| 7.850.00                                     | 2.851.27              | 7.539.60              | 2.561.45              | 100.99           | 101.09        | 62.12                 | -5.263.57                          | -640.75     | 619.88                 | 437.41                  | 182.47                    | 3.397             |                    |
| 7.875.00                                     | 2.851.33              | 7.564.60              | 2.561.56              | 101.47           | 101.56        | 62.11                 | -5.288.57                          | -640.81     | 619.50                 | 436.19                  | 183.31                    | 3.380             |                    |
| 7.900.00                                     | 2.851.40              | 7.589.59              | 2.561.67              | 101.94           | 102.04        | 62.09                 | -5.313.56                          | -640.87     | 619.12                 | 434.97                  | 184.15                    | 3.362             |                    |
| 7.925.00                                     | 2.851.46              | 7.614.59              | 2.561.78              | 102.42           | 102.52        | 62.08                 | -5.338.56                          | -640.93     | 618.74                 | 433.75                  | 184.99                    | 3.345             |                    |
| 7.950.00                                     | 2.851.53              | 7.639.59              | 2.561.89              | 102.89           | 102.99        | 62.06                 | -5.363.55                          | -641.00     | 618.37                 | 432.53                  | 185.84                    | 3.327             |                    |
| 7.975.00                                     | 2.851.59              | 7.664.58              | 2.561.99              | 103.37           | 103.47        | 62.05                 | -5.388.55                          | -641.06     | 617.99                 | 431.31                  | 186.68                    | 3.310             |                    |
| 8.000.00                                     | 2.851.66              | 7.689.58              | 2.562.10              | 103.84           | 103.95        | 62.04                 | -5.413.55                          | -641.12     | 617.61                 | 430.09                  | 187.52                    | 3.294             |                    |
| 8.025.00                                     | 2.851.72              | 7.714.58              | 2.562.21              | 104.32           | 104.42        | 62.02                 | -5.438.54                          | -641.18     | 617.23                 | 428.87                  | 188.36                    | 3.277             |                    |
| 8.050.00                                     | 2.851.79              | 7.739.57              | 2.562.32              | 104.80           | 104.90        | 62.01                 | -5.463.54                          | -641.24     | 616.85                 | 427.65                  | 189.20                    | 3.260             |                    |
| 8.075.00                                     | 2.851.86              | 7.764.57              | 2.562.43              | 105.27           | 105.38        | 61.99                 | -5.488.54                          | -641.30     | 616.47                 | 426.43                  | 190.04                    | 3.244             |                    |
| 8.100.00                                     | 2.851.92              | 7.789.57              | 2.562.54              | 105.75           | 105.86        | 61.98                 | -5.513.53                          | -641.36     | 616.09                 | 425.21                  | 190.88                    | 3.228             |                    |
| 8.125.00                                     | 2.851.99              | 7.814.56              | 2.562.65              | 106.22           | 106.33        | 61.96                 | -5.538.53                          | -641.42     | 615.71                 | 423.99                  | 191.72                    | 3.211             |                    |
| 8.150.00                                     | 2.852.05              | 7.839.56              | 2.562.76              | 106.70           | 106.81        | 61.95                 | -5.563.53                          | -641.48     | 615.34                 | 422.77                  | 192.56                    | 3.196             |                    |
| 8.175.00                                     | 2.852.12              | 7.864.56              | 2.562.87              | 107.17           | 107.29        | 61.94                 | -5.588.52                          | -641.55     | 614.96                 | 421.55                  | 193.40                    | 3.180             |                    |
| 8.200.00                                     | 2.852.18              | 7.889.55              | 2.562.98              | 107.65           | 107.76        | 61.92                 | -5.613.52                          | -641.61     | 614.58                 | 420.34                  | 194.24                    | 3.164             |                    |
| 8.225.00                                     | 2.852.25              | 7.914.55              | 2.563.08              | 108.13           | 108.24        | 61.91                 | -5.638.51                          | -641.67     | 614.20                 | 419.12                  | 195.08                    | 3.148             |                    |
| 8.250.00                                     | 2.852.31              | 7.939.55              | 2.563.19              | 108.60           | 108.72        | 61.89                 | -5.663.51                          | -641.73     | 613.82                 | 417.90                  | 195.92                    | 3.133             |                    |
| 8.275.00                                     | 2.852.38              | 7.964.54              | 2.563.30              | 109.08           | 109.19        | 61.88                 | -5.688.51                          | -641.79     | 613.44                 | 416.68                  | 196.76                    | 3.118             |                    |
| 8.300.00                                     | 2.852.44              | 7.989.54              | 2.563.41              | 109.55           | 109.67        | 61.87                 | -5.713.50                          | -641.85     | 613.06                 | 415.46                  | 197.60                    | 3.103 CC, ES, SF  |                    |

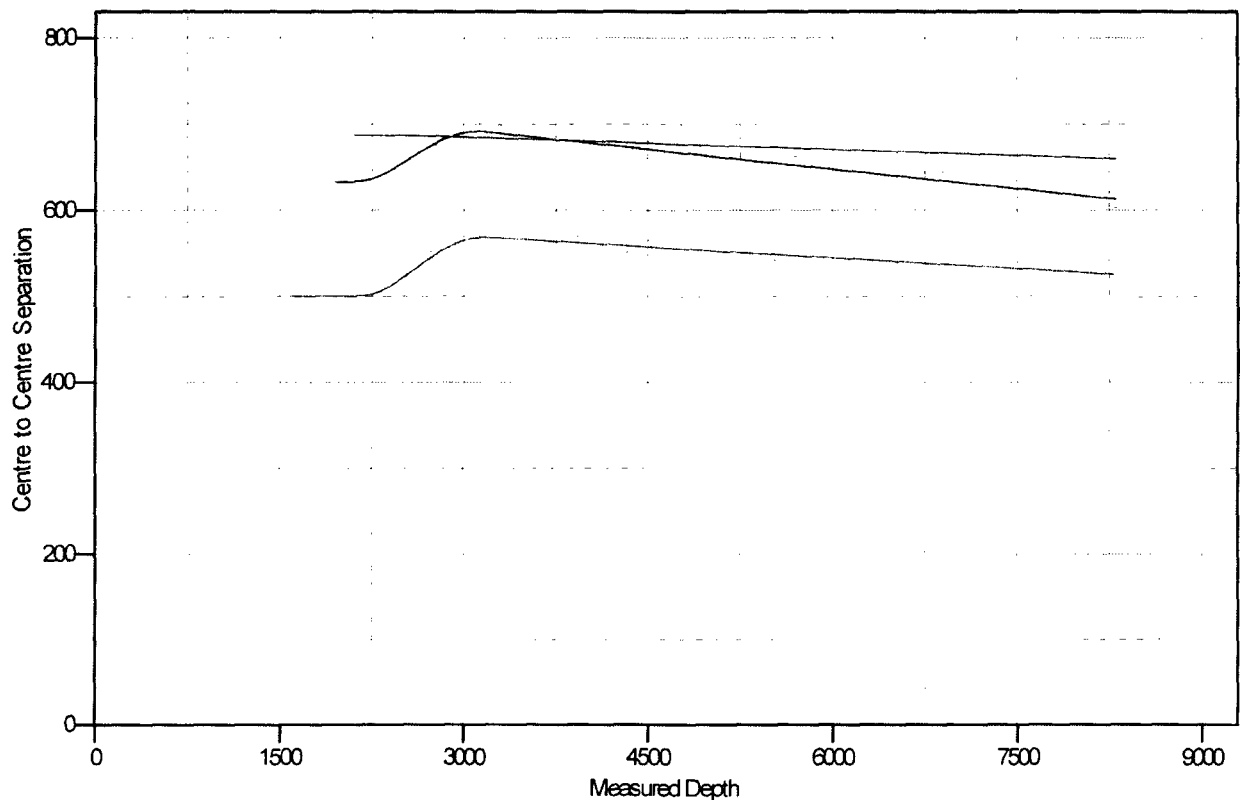
Company: Percussion Petroleum, LLC  
Project: Eddy County, NM  
Reference Site: Huber Fed  
Site Error: 0.00 usft  
Reference Well: 17H  
Well Error: 0.00 usft  
Reference Wellbore: OH  
Reference Design: Plan #2

Local Co-ordinate Reference: Well 17H  
TVD Reference: RKB=25' @ 3555.00usft (NA)  
MD Reference: RKB=25' @ 3555.00usft (NA)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Output errors are at: 2.00 sigma  
Database: WBDS\_SQL\_2  
Offset TVD Reference: Reference Datum

Reference Depths are relative to RKB=25' @ 3555.00usft (NA)  
Offset Depths are relative to Offset Datum  
Central Meridian is -104.333334

Coordinates are relative to: 17H  
Coordinate System is US State Plane 1983, New Mexico Eastern Zone  
Grid Convergence at Surface is: -0.08°

## Ladder Plot



### LEGEND

17H OH Plan#2 VO 17H OH Plan#2 VO 17H OH Plan#2 VO

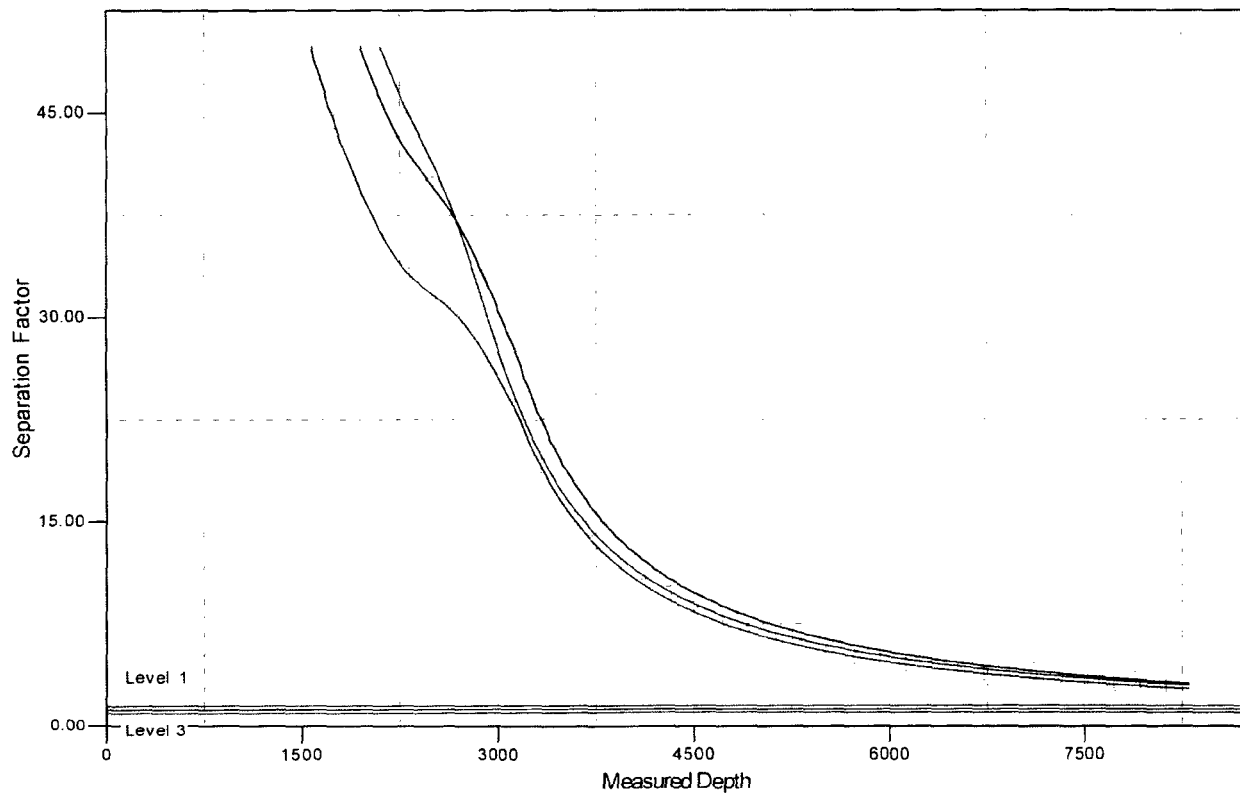
**Company:** Percussion Petroleum, LLC  
**Project:** Eddy County, NM  
**Reference Site:** Huber Fed  
**Site Error:** 0.00 usft  
**Reference Well:** 17H  
**Well Error:** 0.00 usft  
**Reference Wellbore:** OH  
**Reference Design:** Plan #2

**Local Co-ordinate Reference:** Well 17H  
**TVD Reference:** RKB=25' @ 3555.00usft (NA)  
**MD Reference:** RKB=25' @ 3555.00usft (NA)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at:** 2.00 sigma  
**Database:** WBDS\_SQL\_2  
**Offset TVD Reference:** Reference Datum

Reference Depths are relative to RKB=25' @ 3555.00usft (NA)  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -104.333334

Coordinates are relative to: 17H  
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone  
 Grid Convergence at Surface is: -0.08°

## Separation Factor Plot



### LEGEND

● 15H OH, Plan #2 VO    ■ 16H OH, Plan #2 VO    ▲ 17H OH, Plan #2 VO

Percussion Petroleum Operating, LLC  
Huber Federal 17H  
SHL 479' FSL & 1005' FWL 34-19S-25E  
BHL 20' FSL & 922' FWL 3-20S-25E  
Eddy County, NM

DRILL PLAN PAGE 1

Drilling Program

1. ESTIMATED TOPS

| Formation/Lithology     | TVD   | MD    | Contents            |
|-------------------------|-------|-------|---------------------|
| Quaternary caliche      | 000'  | 000'  | water               |
| Grayburg dolomite       | 660'  | 660'  | hydrocarbons        |
| San Andres dolomite     | 845'  | 845'  | hydrocarbons        |
| (KOP                    | 2300' | 2300' | hydrocarbons)       |
| Glorieta silty dolomite | 2405' | 2407' | hydrocarbons        |
| Yeso dolomite           | 2560' | 2575' | hydrocarbons & goal |
| TD                      | 2853' | 8324' | hydrocarbons        |

2. NOTABLE ZONES

Yeso is the goal. Closest water well (RA 02958) is  $\geq 2733'$  NE. Depth to water was not recorded in this 450' deep well.

3. PRESSURE CONTROL

A 3000-psi 5000' rated BOP stack consisting of annular preventer and double (blind and pipe) ram will be used below surface casing to TD. See attached BOP and choke manifold diagrams.

Pressure tests will be conducted before drilling out from under all casing strings. Third party test crews will conduct all tests. All tests will be recorded for 10-minutes on low pressure (500 psi) and 10-minutes on high pressure (3000-psi). After BOP testing is complete, test casing (without test plug) to 2000-psi for 30 minutes. All tests will be charted on a plot. BOPs will be function tested every day.

Percussion Petroleum Operating, LLC  
 Huber Federal 17H  
 SHL 479' FSL & 1005' FWL 34-19S-25E  
 BHL 20' FSL & 922' FWL 3-20S-25E  
 Eddy County, NM

DRILL PLAN PAGE 2

4. CASING & CEMENT

All casing will be API and new.

| Hole O. D. | Set MD     | Set TVD    | Casing O. D.   | Weight (lb/ft) | Grade | Joint | Collapse | Burst | Tension |
|------------|------------|------------|----------------|----------------|-------|-------|----------|-------|---------|
| 12.25"     | 0' - 1295' | 0' - 1295' | Surface 9.625" | 36             | J-55  | STC   | 1.125    | 1.125 | 1.8     |
| 8.75"      | 0' - 8324' | 0' - 2853' | Product. 5.5"  | 17             | L-80  | BTC   | 1.125    | 1.125 | 1.8     |

| Casing Name | Type | Sacks       | Yield | Cu. Ft. | Weight                                                                                                           | Blend                                                                 |
|-------------|------|-------------|-------|---------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Surface     | Lead | 644         | 1.32  | 850     | 14.8                                                                                                             | Class C + 2% CaCl + ¼ pound per sack celloflake                       |
| TOC = GL    |      | 100% Excess |       |         | centralizers per Onshore Order 2                                                                                 |                                                                       |
| Production  | Lead | 495         | 1.97  | 975     | 12.6                                                                                                             | 65/65/6 Class C + 6% gel + 5% salt + ¼ #/sack celloflake + 0.2% C41-P |
|             | Tail | 1686        | 1.32  | 2225    | 14.8                                                                                                             | Class C + 2% CaCl + ¼ pound per sack celloflake                       |
| TOC = GL    |      | 50% Excess  |       |         | 1 centralizer on 1 <sup>st</sup> collar and every 10 <sup>th</sup> collar to 1200' + 1 inside the surface casing |                                                                       |

5. MUD PROGRAM

An electronic/mechanical mud monitor with a minimum pit volume totalizer, stroke counter, and flow sensor will be used. All necessary mud products (LCM) will be on site to handle any abnormal hole condition that may be encountered while drilling this well. A closed loop system will be used.

| Type                  | Interval (MD) | lb/gal    | Viscosity | Fluid Loss | Plastic Viscosity | Yield Point |
|-----------------------|---------------|-----------|-----------|------------|-------------------|-------------|
| fresh water/gel       | 0' - 1295'    | 8.4 - 9.2 | 36-42     | NC         | 3-5               | 5-7         |
| fresh water/cut brine | 1295' - 2300' | 8.3 - 9.2 | 28-30     | NC         | 1                 | 1           |
| cut brine             | 2300' - 8324' | 8.6 - 9.2 | 29-32     | NC         | 4-5               | 6-10        |

Percussion Petroleum Operating, LLC  
Huber Federal 17H  
SHL 479' FSL & 1005' FWL 34-19S-25E  
BHL 20' FSL & 922' FWL 3-20S-25E  
Eddy County, NM

DRILL PLAN PAGE 3

#### 6. CORES, TESTS, & LOGS

No core or drill stem test is planned.

A mud logger will be used from GL to TD. Samples will be collected every 10' in the lateral pay zone.

No electric logs are planned at this time.

#### 7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is  $\approx 1224$  psi. Expected bottom hole temperature is  $\approx 113^{\circ}$  F.

A Hydrogen Sulfide Drilling Operation Plan is attached.

#### 8. OTHER INFORMATION

Anticipated spud date is upon approval. It is expected it will take  $\approx 1$  month to drill and complete the well.

St. Devote LLC has operating rights in NMNM-125603. St. Devote LLC is a subsidiary of Percussion.

## **Contingency Planning – Huber Federal Area Wells**

**Prepared by Lelan J. Anders, Percussion Petroleum Operating, LLC.**

### **INTRODUCTION:**

This document is designed to address the issues that could arise at any time drilling horizontal Yeso wells. Percussion Petroleum Operating (PPO) is going to follow regularly used practices and procedures in order to drill the wells to TD and still keep them economical to operate.

### **SCENARIO:**

If a complete loss of circulation occurs while drilling above 400 ft MD.

### **CORRECTIVE ACTIONS:**

1. Pump an LCM sweep and attempt to regain circulation – if unsuccessful go to step 2
2. Continue drilling at attempt to seal off lost circulation zone with drill cuttings
  1. Monitor torque and drag on drill string to determine if pipe is sticking
  2. Have contingency plan to 'drill dry' – have plenty of water on hand and well control in place
  3. Continue to 'dry drill' until torque and drag dictate a different plan
3. If 'dry drilling' is unsuccessful – Run contingency surface casing string
  1. Ream out 12-1/4" open hole to 17-1/2" open hole
  2. Run contingency 13-3/8" 48# H-40, STC casing to no more than 400' MD
  3. Cement 13-3/8" casing using Class C cement – Pump at minimum 100% excess cement
    - i. Top off cement from surface using 1" if necessary
    - ii. Insure that cement has cured for a minimum of 12 hours prior to drilling out
  4. Install 13-3/8" 3M wellhead and drill to surface casing depth with 12-1/4" OD bit
  5. Run and cement surface casing as planned

### **Percussion Huber Wells Bottom Footage Variance Request**

Percussion intentionally plans to drill this (& other wells) so Last Take Point is <330'. This means Percussion will need to file a NSL (Non Standard Location) application with NMOCD, which they plan to do.



APD ID: 10400021910

Submission Date: 09/09/2017

Highlighted data  
reflects the most  
recent changes

Operator Name: PERCUSSION PETROLEUM OPERATING LLC

Well Name: HUBER FEDERAL

Well Number: 17H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

## Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Huber\_17H\_Road\_Map\_20170909113131.pdf

Existing Road Purpose: ACCESS

Row(s) Exist? NO

### ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

## Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

Huber\_17H\_New\_Road\_Map\_20170909113204.pdf

New road type: RESOURCE

Length: 3331.5 Feet

Width (ft.): 30

Max slope (%): 0

Max grade (%): 4

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: Crowned and ditched

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

**Operator Name:** PERCUSSION PETROLEUM OPERATING LLC

**Well Name:** HUBER FEDERAL

**Well Number:** 17H

**Access surfacing type:** OTHER

**Access topsoil source:** ONSITE

**Access surfacing type description:** Caliche

**Access onsite topsoil source depth:** 6

**Offsite topsoil source description:**

**Onsite topsoil removal process:** Grader

**Access other construction information:** The 3331.5' of new road will be crowned and ditched, have a 14' wide driving surface, and be surfaced with caliche. Maximum disturbed width = 30'. Maximum grade = 4%. Maximum cut or fill = 3'.

**Access miscellaneous information:** Agave's underground gas pipeline will be padded. An arroyo just east of the 10H/12H pad will be a low water crossing with 4" rock. No culvert, cattle guard, or vehicle turn out is needed. Upgrading will consist of patching potholes with caliche.

**Number of access turnouts:**

**Access turnout map:**

### **Drainage Control**

**New road drainage crossing:** OTHER

**Drainage Control comments:** Crowned and ditched

**Road Drainage Control Structures (DCS) description:** None

**Road Drainage Control Structures (DCS) attachment:**

### **Access Additional Attachments**

**Additional Attachment(s):**

### **Section 3 - Location of Existing Wells**

**Existing Wells Map?** YES

**Attach Well map:**

Huber\_17H\_Well\_Map\_20170909113435.pdf

**Existing Wells description:**

### **Section 4 - Location of Existing and/or Proposed Production Facilities**

**Submit or defer a Proposed Production Facilities plan?** SUBMIT

**Production Facilities description:**

**Production Facilities map:**

Huber\_17H\_Production\_Diagram\_20170909113450.pdf

**Operator Name:** PERCUSSION PETROLEUM OPERATING LLC

**Well Name:** HUBER FEDERAL

**Well Number:** 17H

## Section 5 - Location and Types of Water Supply

### Water Source Table

**Water source use type:** DUST CONTROL,  
INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE  
CASING

**Describe type:**

**Water source type:** GW WELL

**Source longitude:**

**Source latitude:**

**Source datum:**

**Water source permit type:** PRIVATE CONTRACT

**Source land ownership:** PRIVATE

**Water source transport method:** PIPELINE

**Source transportation land ownership:** FEDERAL

**Water source volume (barrels):** 10000

**Source volume (acre-feet):** 1.288931

**Source volume (gal):** 420000

**Water source and transportation map:**

Huber\_17H\_Water\_Source\_Map\_20170909113613.pdf

**Water source comments:**

**New water well?** NO

### New Water Well Info

**Well latitude:**

**Well Longitude:**

**Well datum:**

**Well target aquifer:**

**Est. depth to top of aquifer(ft):**

**Est thickness of aquifer:**

**Aquifer comments:**

**Aquifer documentation:**

**Well depth (ft):**

**Well casing type:**

**Well casing outside diameter (in.):**

**Well casing inside diameter (in.):**

**New water well casing?**

**Used casing source:**

**Drilling method:**

**Drill material:**

**Grout material:**

**Grout depth:**

**Casing length (ft.):**

**Casing top depth (ft.):**

**Well Production type:**

**Completion Method:**

**Water well additional information:**

**State appropriation permit:**

**Operator Name:** PERCUSSION PETROLEUM OPERATING LLC

**Well Name:** HUBER FEDERAL

**Well Number:** 17H

**Additional information attachment:**

## **Section 6 - Construction Materials**

**Construction Materials description:** NM One Call (811) will be notified before construction starts. Top 6" of soil and brush will be stockpiled west of the pad. V-door will face east. Closed loop drilling system will be used. Caliche will be hauled from existing caliche pits on private land. Arkland caliche pit is in NWNE 23-19s-25e. Seven Rivers caliche pit is in SWSW 6-20s-26e. Griffin caliche pit is in NWNE 14-20s-25e.

**Construction Materials source location attachment:**

## **Section 7 - Methods for Handling Waste**

**Waste type:** DRILLING

**Waste content description:** Cuttings, mud, salts, and other chemicals

**Amount of waste:** 2000 barrels

**Waste disposal frequency :** Daily

**Safe containment description:** Steel tanks

**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

**Disposal type description:**

**Disposal location description:** R360's state approved (NM-01-0006) disposal site at Halfway, NM

## **Reserve Pit**

**Reserve Pit being used?** NO

**Temporary disposal of produced water into reserve pit?**

**Reserve pit length (ft.)** **Reserve pit width (ft.)**

**Reserve pit depth (ft.)** **Reserve pit volume (cu. yd.)**

**Is at least 50% of the reserve pit in cut?**

**Reserve pit liner**

**Reserve pit liner specifications and installation description**

## **Cuttings Area**

**Cuttings Area being used?** NO

**Are you storing cuttings on location?** YES

**Description of cuttings location** Top 6" of soil and brush will be stockpiled west of the pad. V-door will face east.

**Cuttings area length (ft.)** **Cuttings area width (ft.)**

**Operator Name:** PERCUSSION PETROLEUM OPERATING LLC

**Well Name:** HUBER FEDERAL

**Well Number:** 17H

**Cuttings area depth (ft.)**

**Cuttings area volume (cu. yd.)**

**Is at least 50% of the cuttings area in cut?**

**WCuttings area liner**

**Cuttings area liner specifications and installation description**

## Section 8 - Ancillary Facilities

**Are you requesting any Ancillary Facilities?:** NO

**Ancillary Facilities attachment:**

**Comments:**

## Section 9 - Well Site Layout

**Well Site Layout Diagram:**

Huber\_17H\_Well\_Site\_Layout\_20170909113910.pdf

**Comments:**

## Section 10 - Plans for Surface Reclamation

**Type of disturbance:** New Surface Disturbance

**Multiple Well Pad Name:**

**Multiple Well Pad Number:**

**Recontouring attachment:**

Huber\_17H\_Recontour\_Plat\_20170909113921.pdf

**Drainage/Erosion control construction:** Crowned and ditched

**Drainage/Erosion control reclamation:** Harrowed on the contour

**Wellpad long term disturbance (acres):** 1.12

**Wellpad short term disturbance (acres):** 1.72

**Access road long term disturbance (acres):** 2.29

**Access road short term disturbance (acres):** 2.29

**Pipeline long term disturbance (acres):** 0

**Pipeline short term disturbance (acres):** 0.9373278

**Other long term disturbance (acres):** 2.75

**Other short term disturbance (acres):** 12.31

**Total long term disturbance:** 6.16

**Total short term disturbance:** 17.257328

**Reconstruction method:** Interim reclamation will be completed within 6 months of completing the well. Interim reclamation will consist of shrinking the pad 35% (0.60 acre) by removing caliche and reclaiming 75' on the north side, 50' on the east side, 75' on the south side, and 25' on the west side. This will leave 1.12 acres for the anchors, pump jack, and tractor-trailer turn around. Disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over disturbed areas and harrowed on the contour. Disturbed areas will be seeded in accordance with the surface owner's requirements.

**Operator Name:** PERCUSSION PETROLEUM OPERATING LLC

**Well Name:** HUBER FEDERAL

**Well Number:** 17H

**Topsoil redistribution:** Enough stockpiled topsoil will be retained to cover the remainder of the pad when the well is plugged. Once the well is plugged, then the rest of the pad and new road will be similarly reclaimed within 6 months of plugging. Noxious weeds will be controlled

**Soil treatment:** None

**Existing Vegetation at the well pad:**

**Existing Vegetation at the well pad attachment:**

**Existing Vegetation Community at the road:**

**Existing Vegetation Community at the road attachment:**

**Existing Vegetation Community at the pipeline:**

**Existing Vegetation Community at the pipeline attachment:**

**Existing Vegetation Community at other disturbances:**

**Existing Vegetation Community at other disturbances attachment:**

**Non native seed used?** NO

**Non native seed description:**

**Seedling transplant description:**

**Will seedlings be transplanted for this project?** NO

**Seedling transplant description attachment:**

**Will seed be harvested for use in site reclamation?** NO

**Seed harvest description:**

**Seed harvest description attachment:**

## **Seed Management**

### **Seed Table**

**Seed type:**

**Seed source:**

**Seed name:**

**Source name:**

**Source address:**

**Source phone:**

**Seed cultivar:**

**Seed use location:**

**PLS pounds per acre:**

**Proposed seeding season:**

**Operator Name:** PERCUSSION PETROLEUM OPERATING LLC

**Well Name:** HUBER FEDERAL

**Well Number:** 17H

**Seed Summary**

**Total pounds/Acre:**

| <b>Seed Type</b> | <b>Pounds/Acre</b> |
|------------------|--------------------|
|------------------|--------------------|

**Seed reclamation attachment:**

**Operator Contact/Responsible Official Contact Info**

**First Name:**

**Last Name:**

**Phone:**

**Email:**

**Seedbed prep:**

**Seed BMP:**

**Seed method:**

**Existing invasive species?** NO

**Existing invasive species treatment description:**

**Existing invasive species treatment attachment:**

**Weed treatment plan description:** To BLM standards

**Weed treatment plan attachment:**

**Monitoring plan description:** To BLM standards

**Monitoring plan attachment:**

**Success standards:** To BLM satisfaction

**Pit closure description:** No pit

**Pit closure attachment:**

**Section 11 - Surface Ownership**

**Disturbance type:** WELL PAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Operator Name:** PERCUSSION PETROLEUM OPERATING LLC

**Well Name:** HUBER FEDERAL

**Well Number:** 17H

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Disturbance type:** NEW ACCESS ROAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Disturbance type:** EXISTING ACCESS ROAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**Operator Name:** PERCUSSION PETROLEUM OPERATING LLC

**Well Name:** HUBER FEDERAL

**Well Number:** 17H

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

## Section 12 - Other Information

**Right of Way needed?** NO

**Use APD as ROW?**

**ROW Type(s):**

## ROW Applications

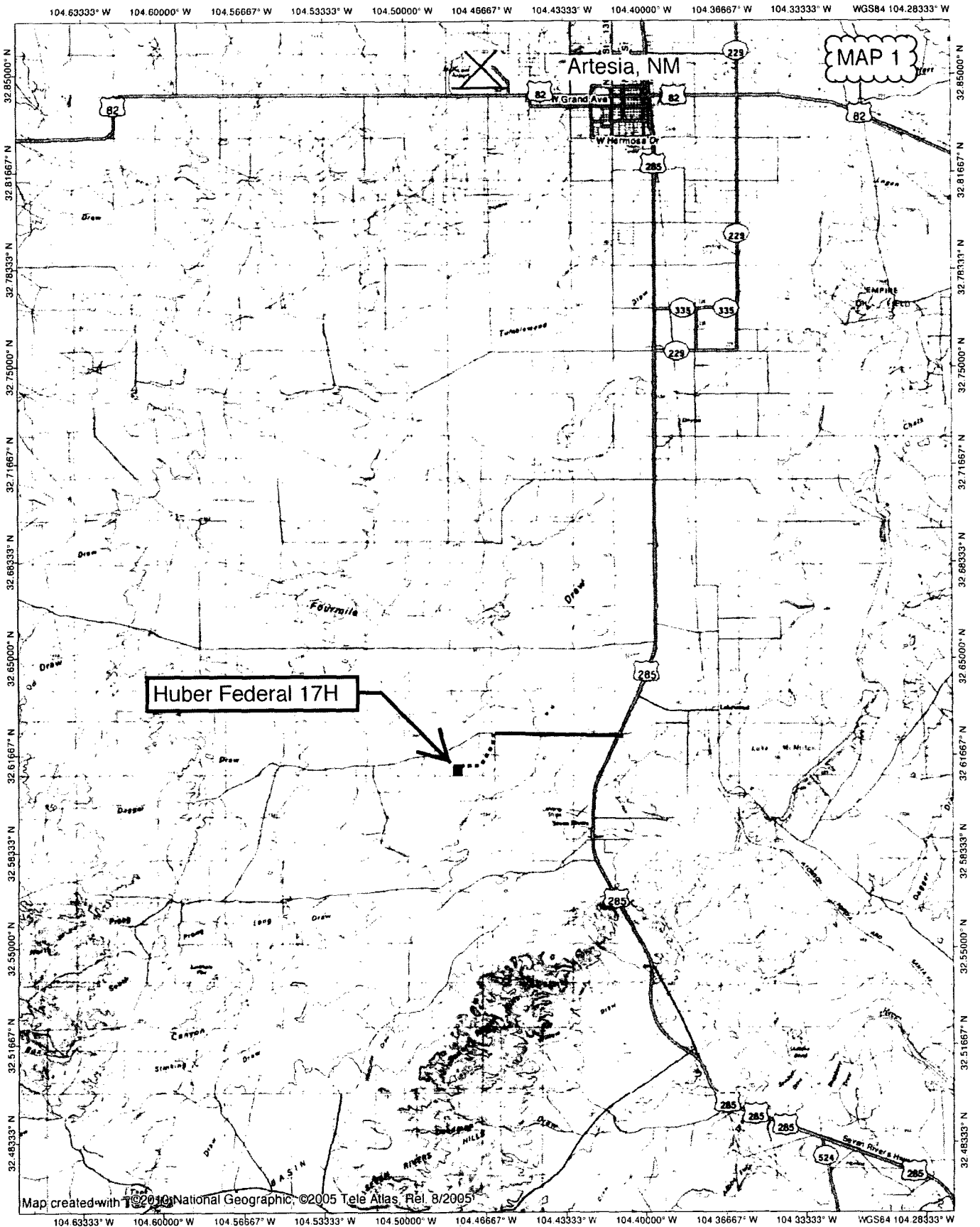
**SUPO Additional Information:**

**Use a previously conducted onsite?** YES

**Previous Onsite information:** On site inspection was held with Jim Goodbar and Jessie Bassett (both BLM) on July 18, 2017. Lone Mountain consulted (LMAS 2316) with BLM's Bruce Boeke on May 22, 2017 and August 9 (LMAS 2362). It was determined no archaeology survey was needed due to previous coverage.

## Other SUPO Attachment

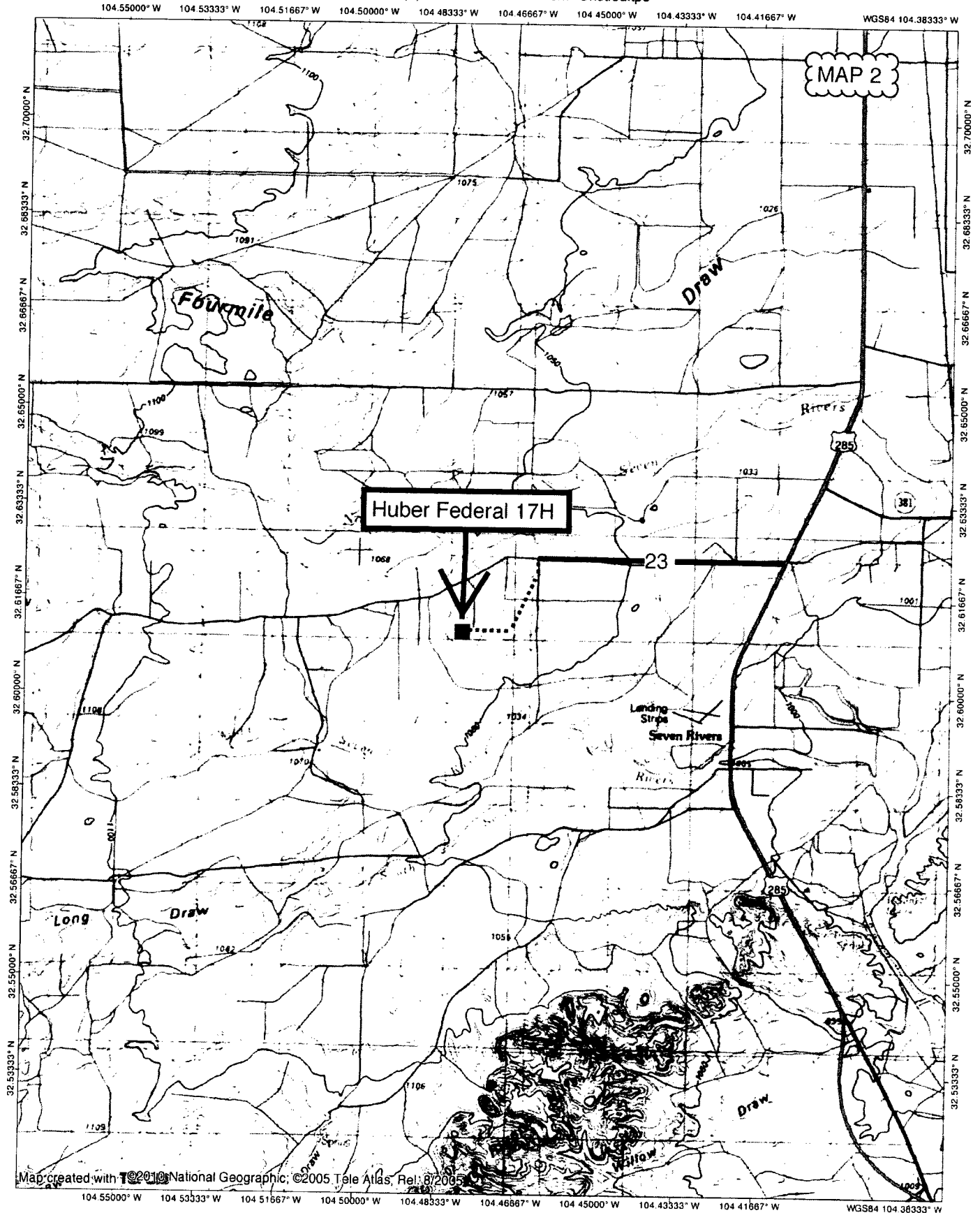
Huber\_17H\_General\_SUPO\_20170909114608.pdf



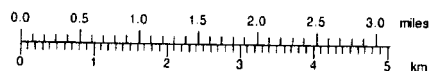
NATIONAL  
GEOGRAPHIC

0 1 2 3 4 5 6 miles  
0 2 4 6 8 10 km

TN #1MN  
7.5'  
07/28/17

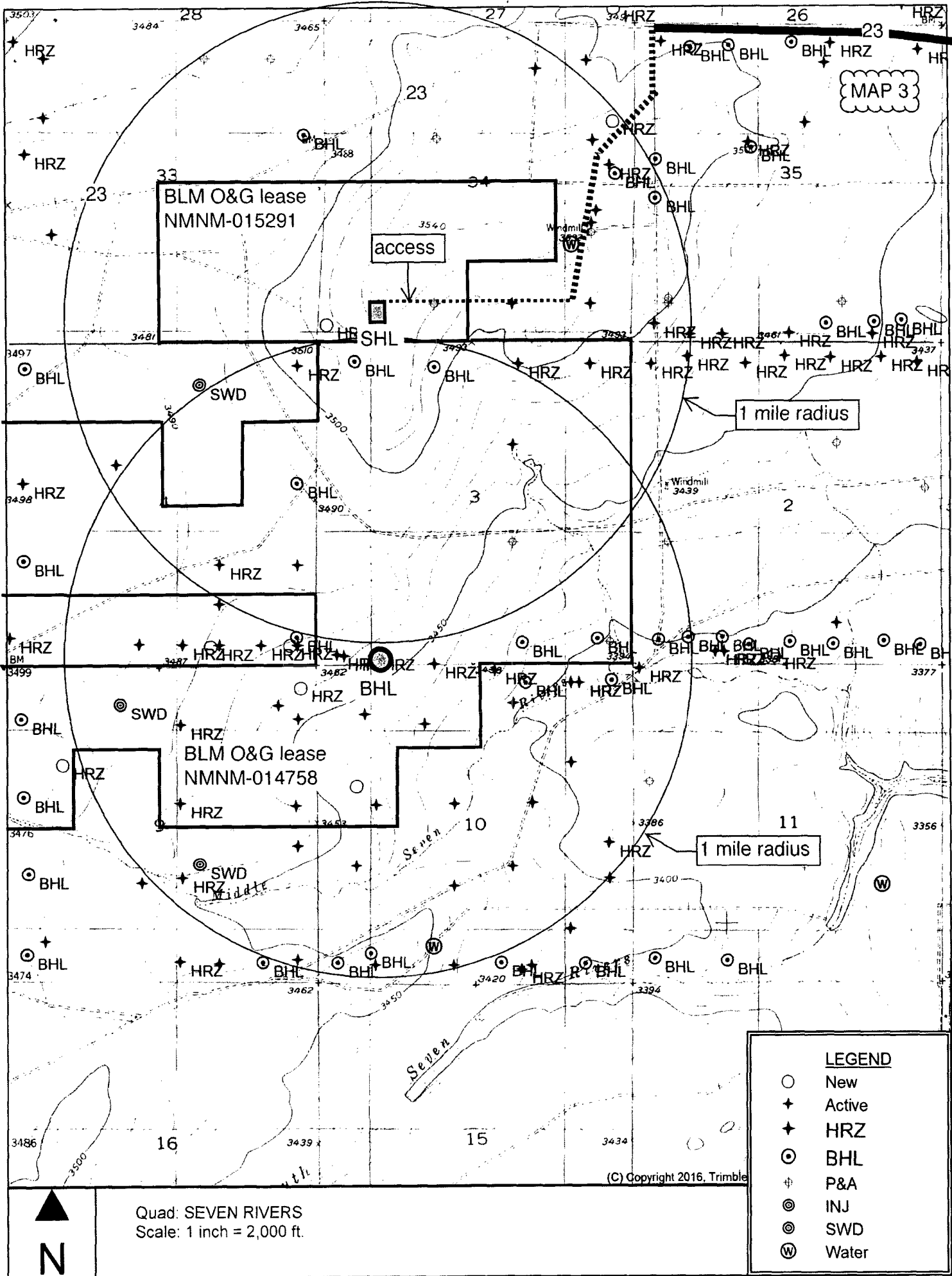


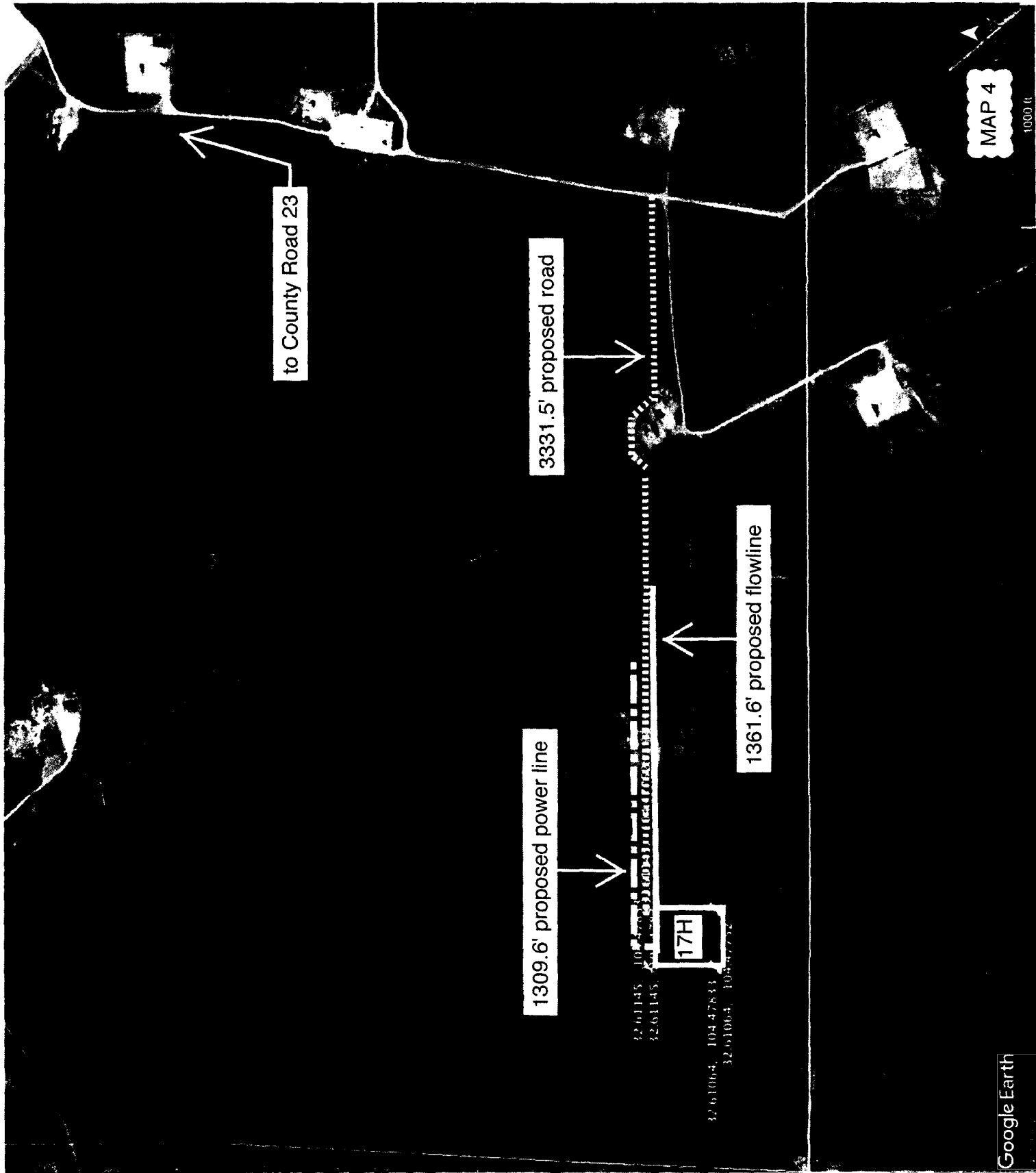
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GEOGRAPHIC



TN MN

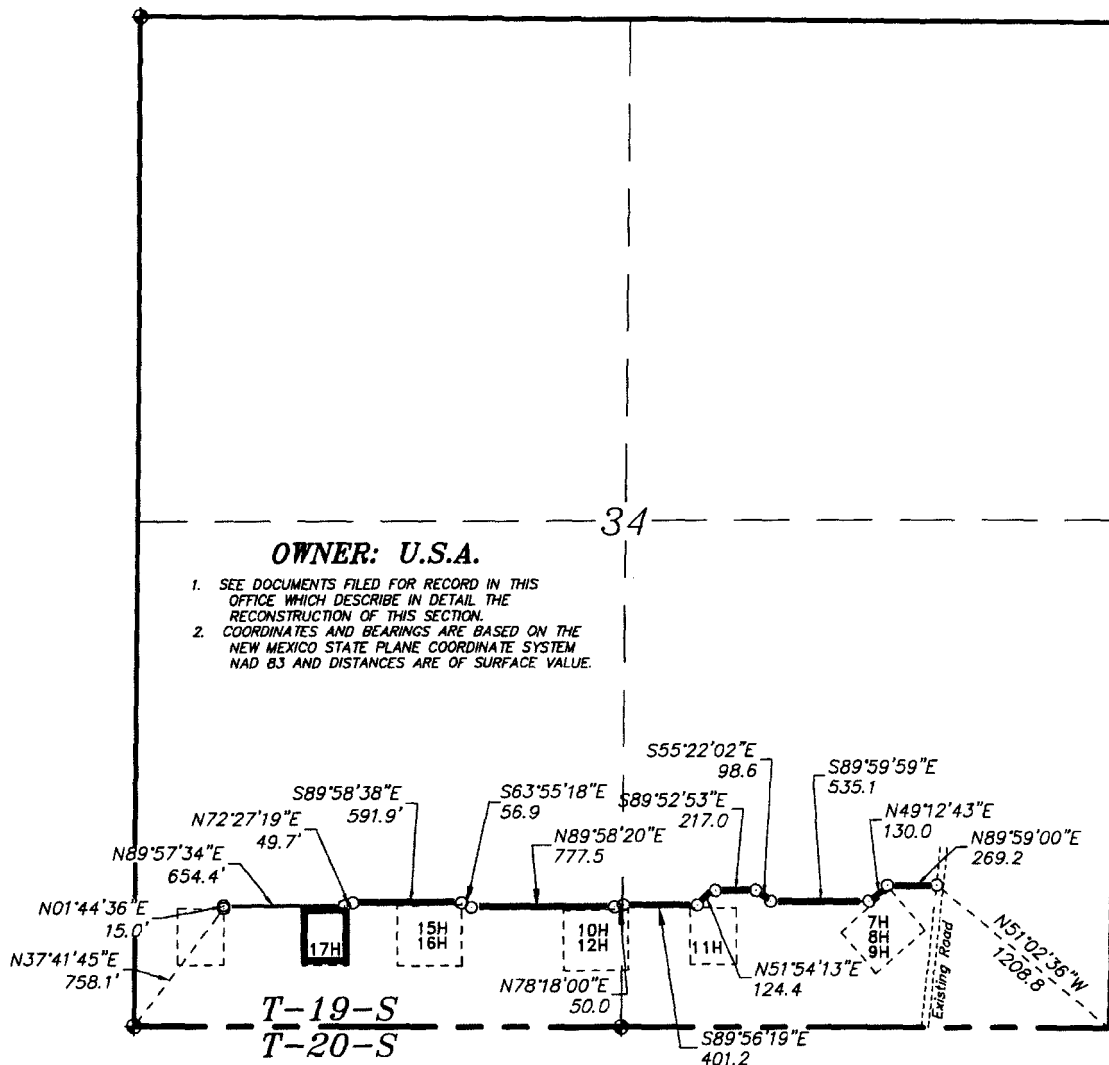
7.5°





SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST. N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.

MAP 5

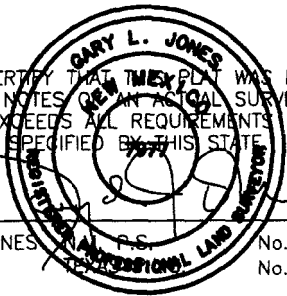


LEGAL DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE, LOCATED IN SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

SEC. 34 3970.9 FEET = 0.75 MILE = 240.66 RODS = 2.73 ACRES

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.



GARY L. JONES, P.S., No. 7977  
No. 5074

**basin surveys**

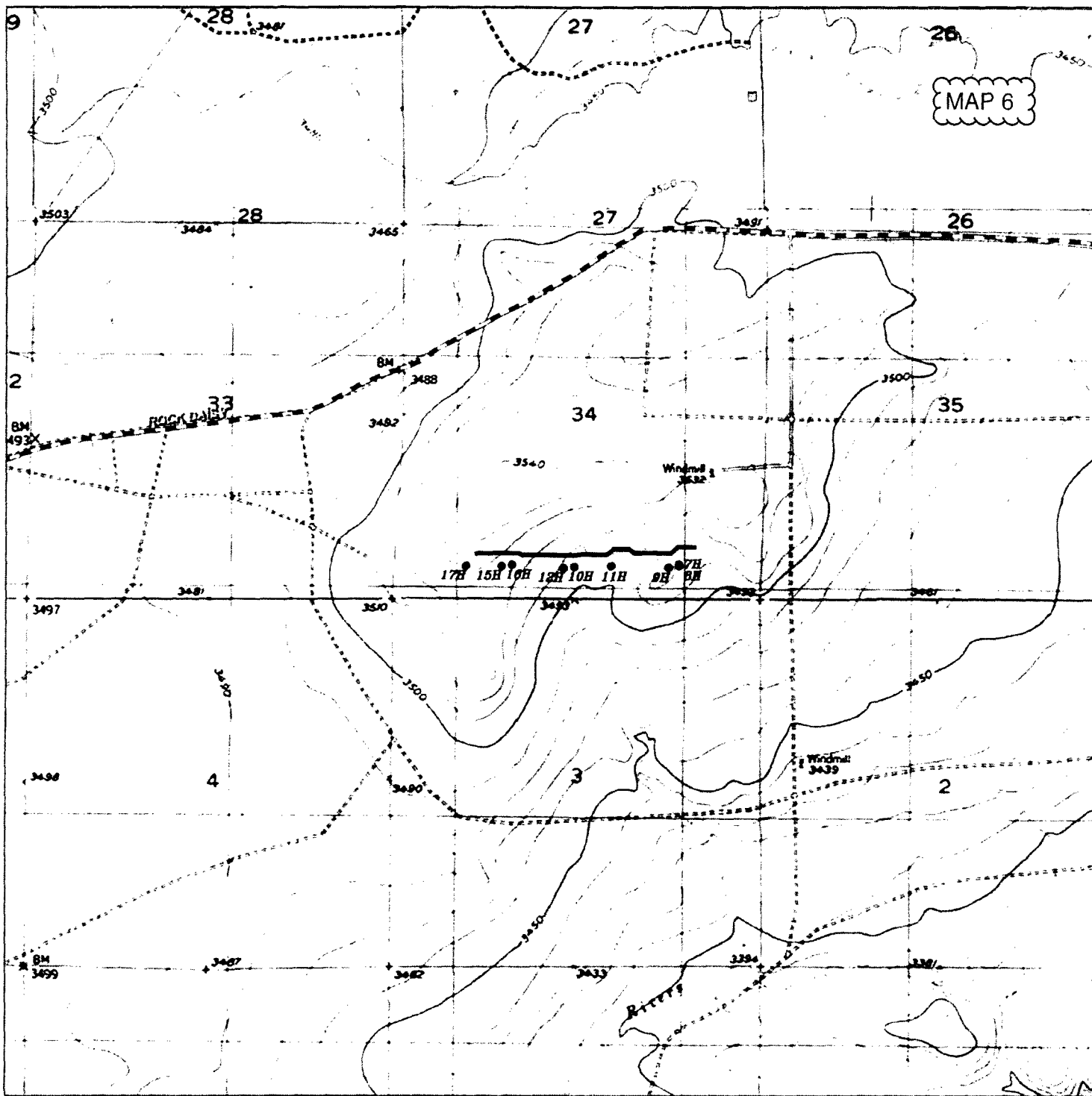
P.O. Box 1786 (575) 393-7316 - Office  
1120 N. West County Rd. (575) 392-2206 - Fax  
Hobbs, New Mexico 88241 [basinsurveys.com](http://basinsurveys.com)

1000 0 1000 2000 FEET

**PERCUSSION PETROLEUM OPERATING, LLC**

REF: PROPOSED HUBER FEDERAL LEASE ROAD

A LEASE ROAD CROSSING USA LAND IN  
SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST.  
N.M.P.M., EDDY COUNTY, NEW MEXICO.



PROPOSED HUBER FEDERAL LEASE ROAD  
 Section 34, Township 19 South, Range 25 East,  
 N.M.P.M., Eddy County, New Mexico.

**basin**  
**surveys**  
 focused on excellence  
 in the oilfield

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

0' 1000' 2000' 3000' 4000'

SCALE: 1" = 2000'

W.O. Number: KJG 33199

Survey Date: 07-28-2017

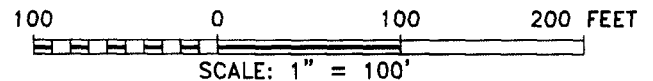
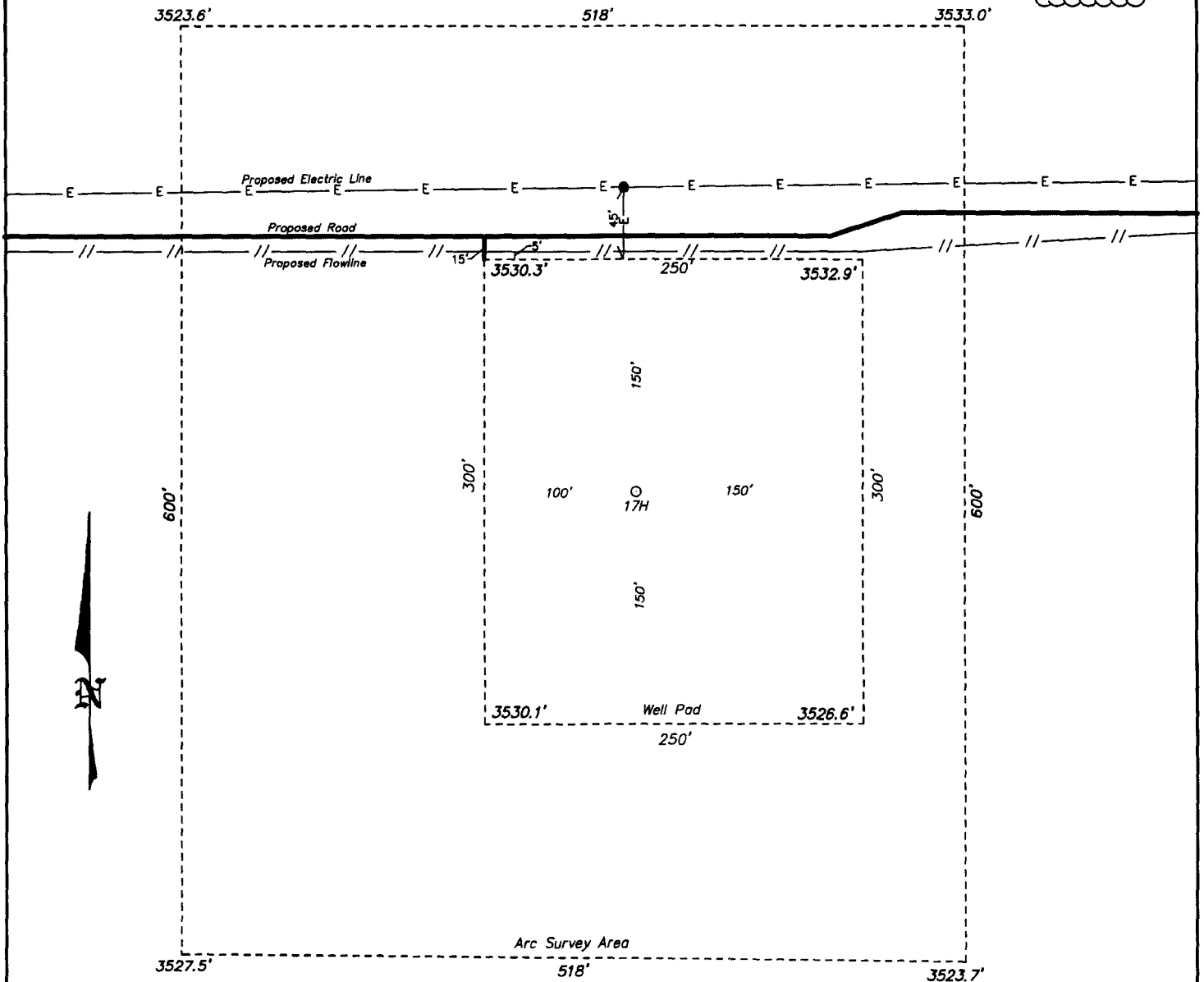
YELLOW TINT - USA LAND  
 BLUE TINT - STATE LAND  
 NATURAL COLOR - FEE LAND



**PERCUSSION  
 PETROLEUM  
 OPERATING, LLC**

SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.

MAP 7



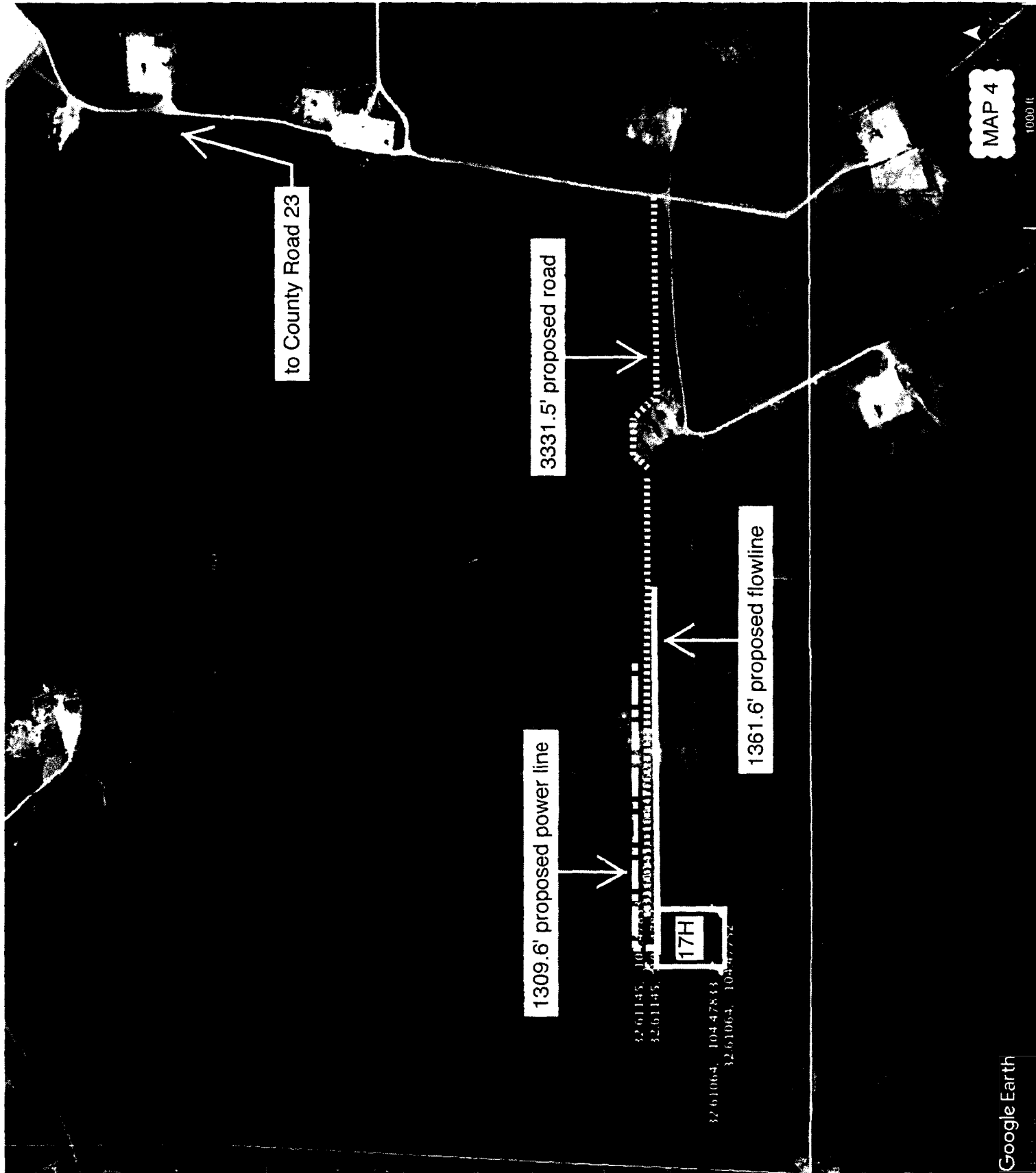
**PERCUSSION PETROLEUM OPERATING, LLC**

REF: HUBER FEDERAL #17H / WELL PAD TOPO

THE HUBER FEDERAL #17H LOCATED 479' FROM  
THE SOUTH LINE AND 1005' FROM THE WEST LINE OF  
SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

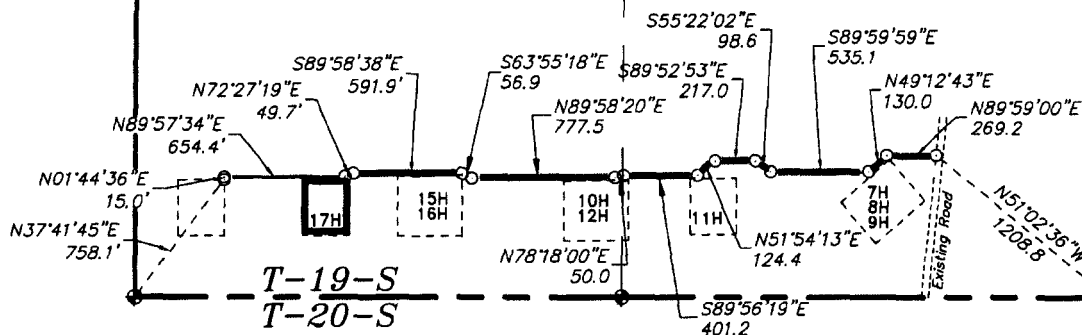
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P.O. Box 1786 (575) 393-7316 - Office  
1120 N. West County Rd. (575) 392-2206 - Fax  
Hobbs, New Mexico 88241 basin-surveys.com



**SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST. N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.**

MAP 5



**LEGAL DESCRIPTION**

A STRIP OF LAND 30.0 FEET WIDE, LOCATED IN SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

SEC. 34 3970.9 FEET = 0.75 MILE = 240.66 RODS = 2.73 ACRES

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES, P.S., No. 7977  
Professional Land Surveyor No. 5074

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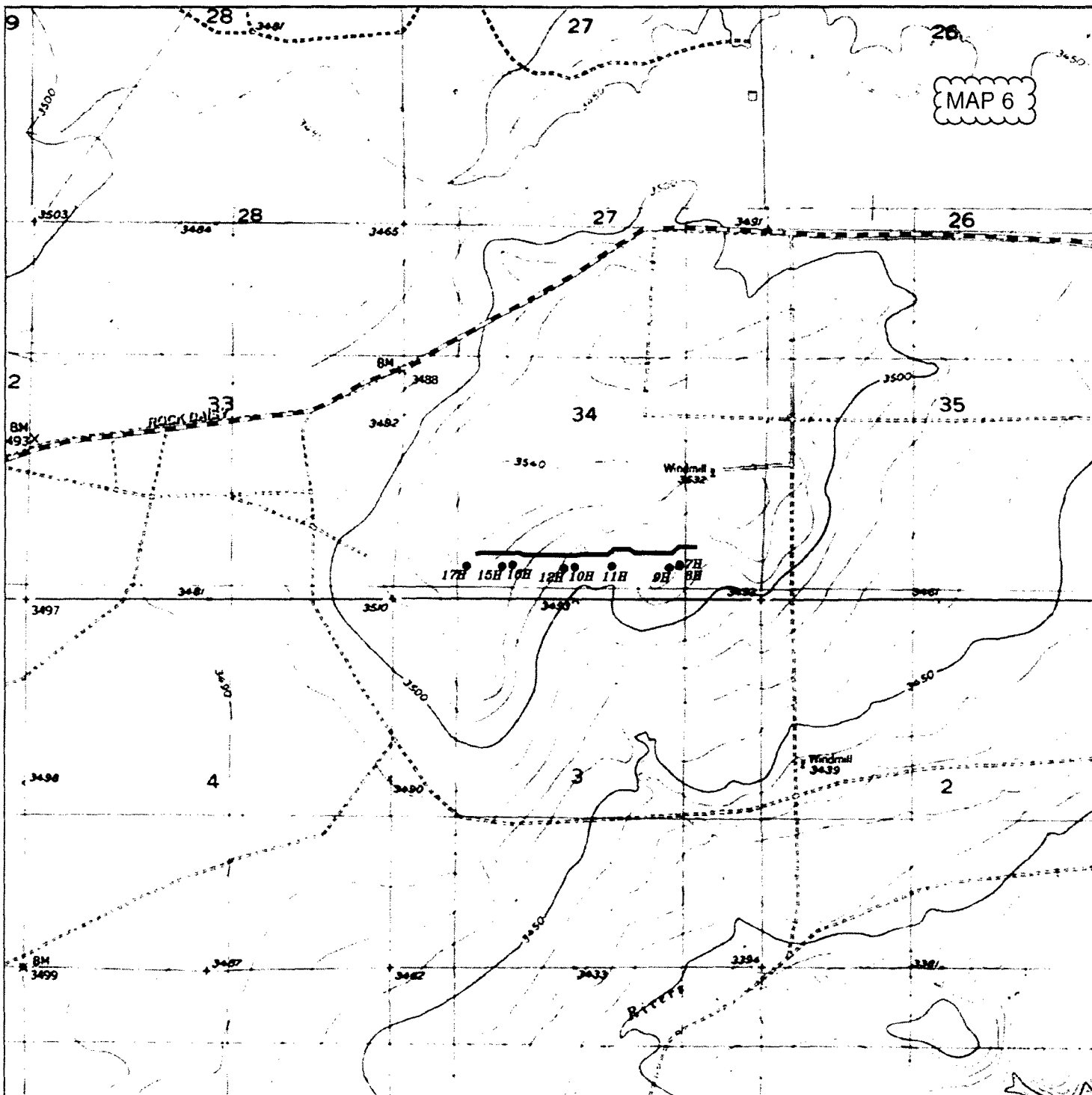
P.O. Box 1786 (575) 393-7316 - Office  
1120 N. West County Rd. (575) 392-2206 - Fax  
Hobbs, New Mexico 88241 basin-surveys.com

1000 0 1000 2000 FEET

**PERCUSSION PETROLEUM OPERATING, LLC**

REF: PROPOSED HUBER FEDERAL LEASE ROAD

A LEASE ROAD CROSSING USA LAND IN  
SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST.  
N.M.P.M., EDDY COUNTY, NEW MEXICO.



PROPOSED HUBER FEDERAL LEASE ROAD  
 Section 34, Township 19 South, Range 25 East,  
 N.M.P.M., Eddy County, New Mexico.

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 (575) 392-2206 - Fax  
 basin-surveys.com

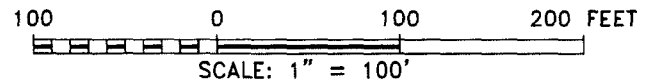
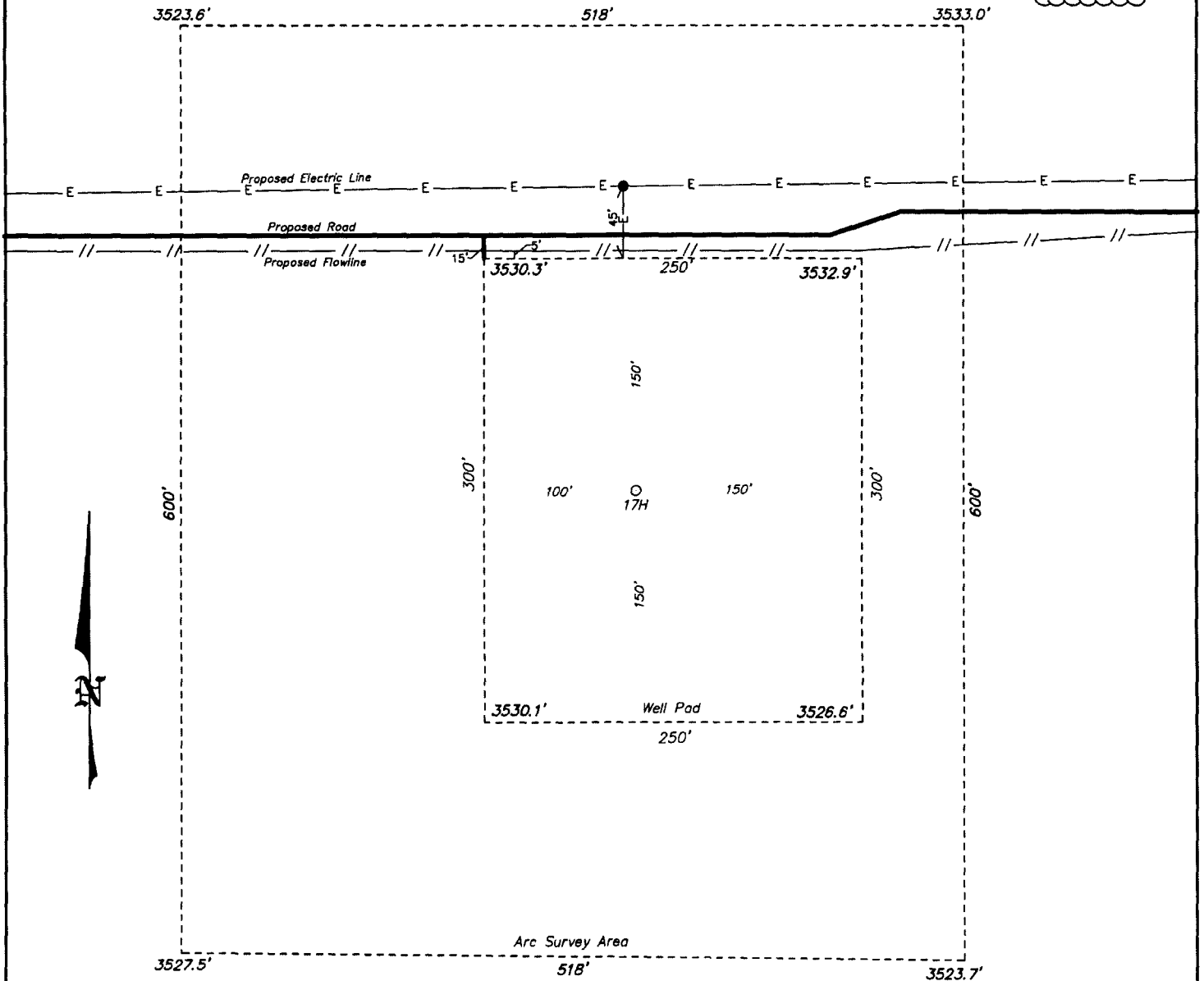
0' 1000' 2000' 3000' 4000'  
 SCALE: 1" = 2000'

W.O. Number: KJG 33199  
 Survey Date: 07-28-2017  
 YELLOW TINT - USA LAND  
 BLUE TINT - STATE LAND  
 NATURAL COLOR - FEE LAND

**PERCUSSION  
 PETROLEUM  
 OPERATING, LLC**

**SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.**

MAP 7



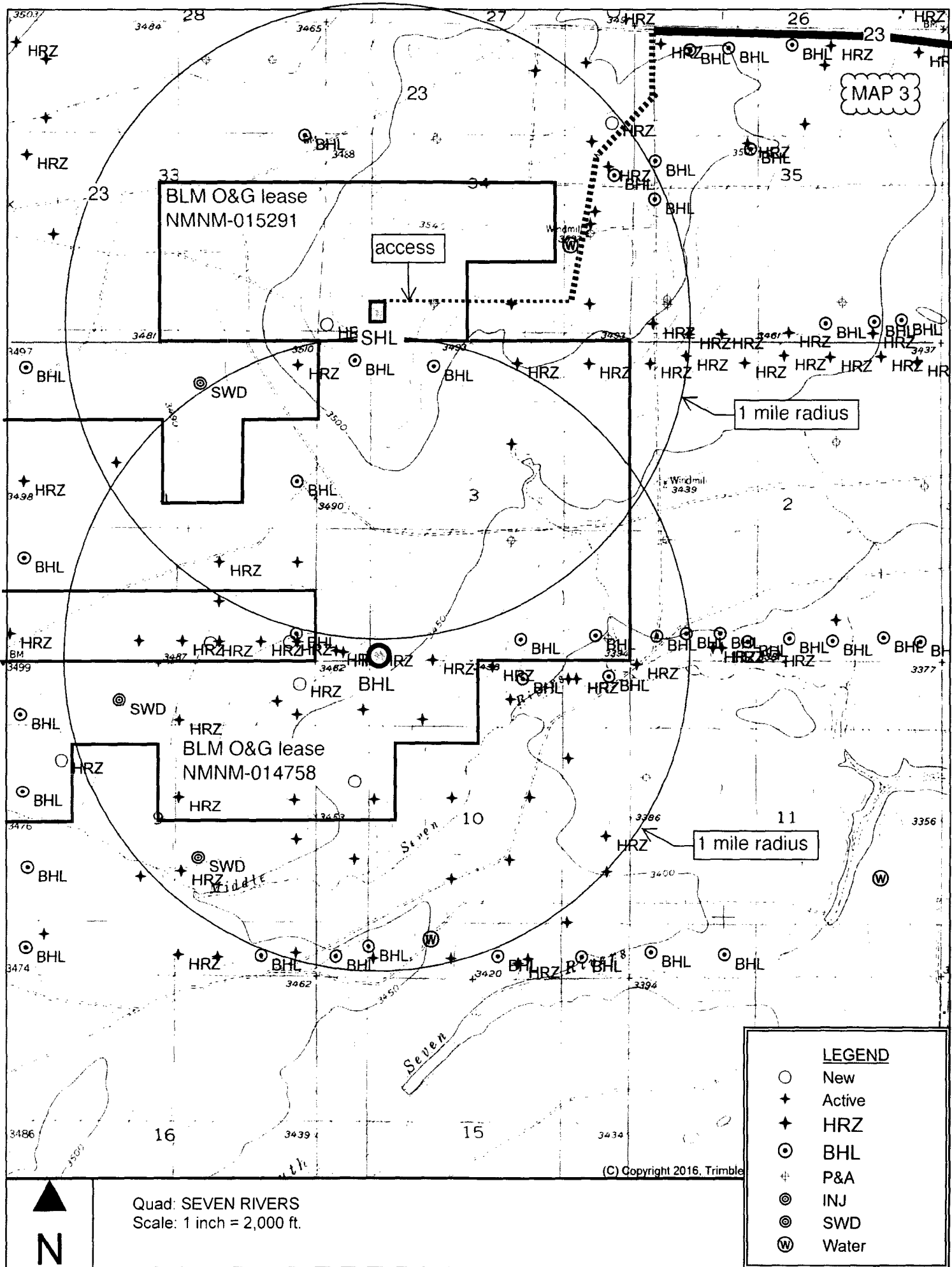
**PERCUSSION PETROLEUM OPERATING, LLC**

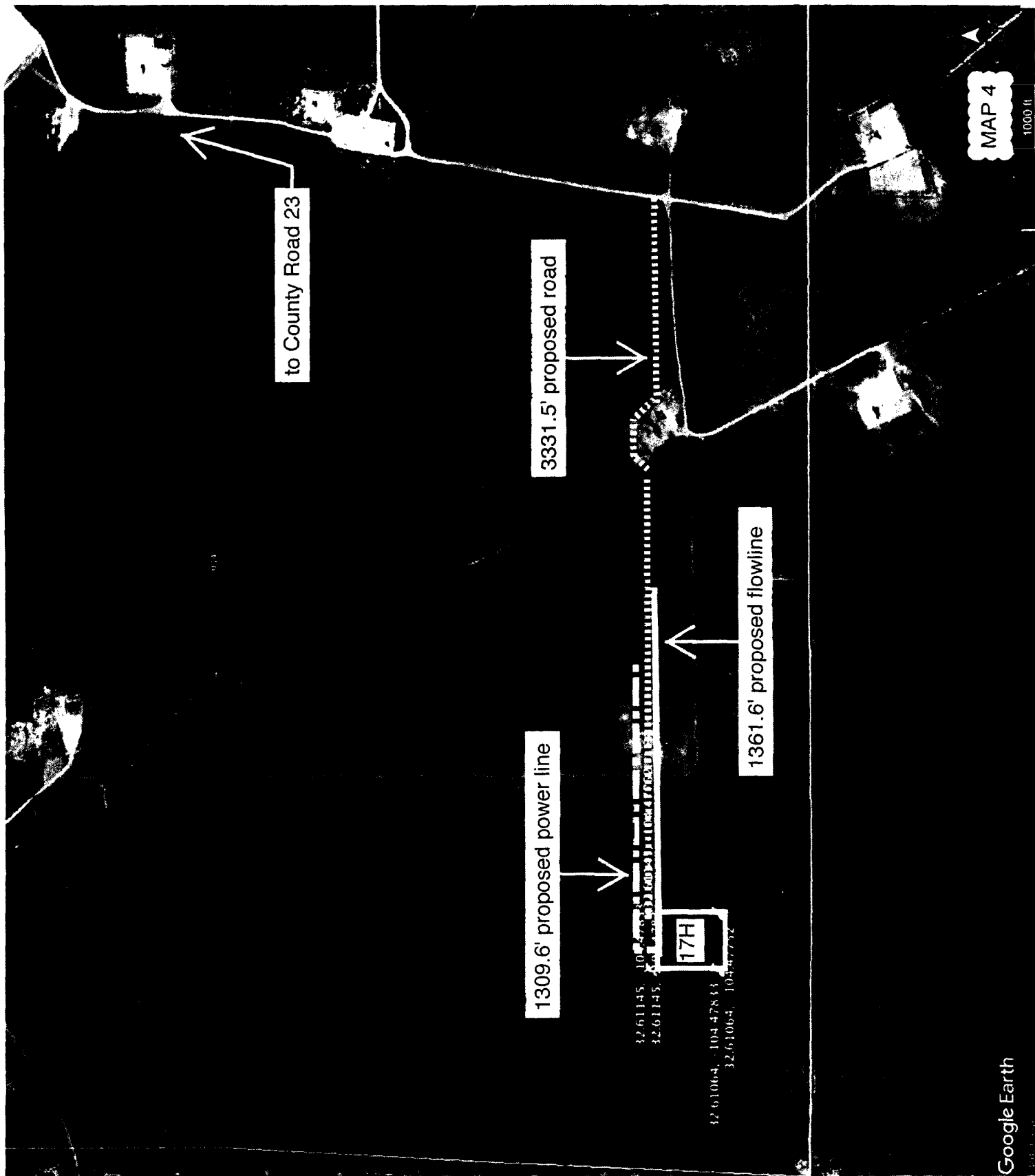
REF: HUBER FEDERAL #17H / WELL PAD TOPO

THE HUBER FEDERAL #17H LOCATED 479' FROM  
THE SOUTH LINE AND 1005' FROM THE WEST LINE OF  
SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

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to County Road 23

3331.5' proposed road

1309.6' proposed power line

1361.6' proposed flowline

17H

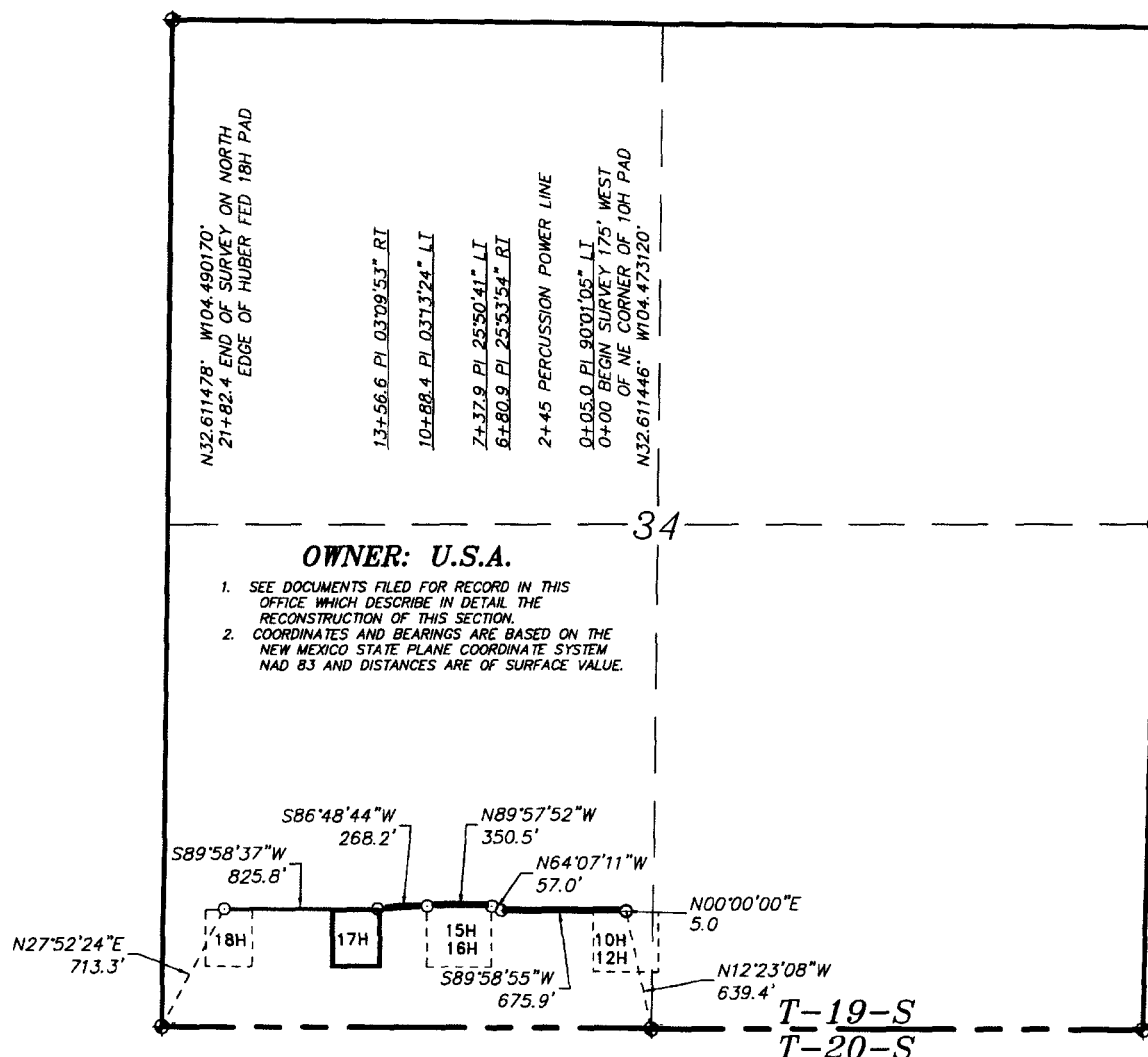
MAP 4

1000 ft

Google Earth

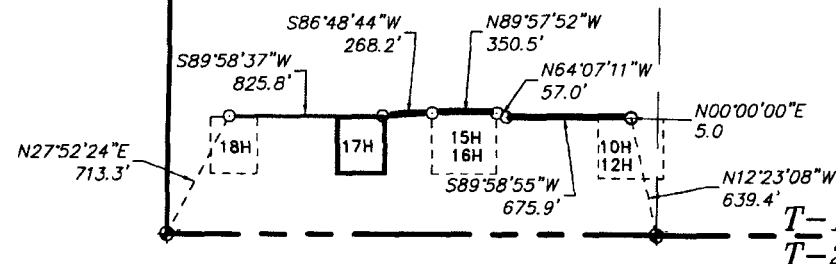
SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST. N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.

MAP 8



OWNER: U.S.A.

1. SEE DOCUMENTS FILED FOR RECORD IN THIS OFFICE WHICH DESCRIBE IN DETAIL THE RECONSTRUCTION OF THIS SECTION.
2. COORDINATES AND BEARINGS ARE BASED ON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM NAD 83 AND DISTANCES ARE OF SURFACE VALUE.



I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES, P.S.

No. 7977  
No. 5074

1000 0 1000 2000 FEET

PERCUSSION PETROLEUM, LLC

REF: PROPOSED HUBER FEDERAL 10H&12H FLOWLINE

A PIPELINE CROSSING USA LAND IN  
SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST.  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

**basin**  
surveys

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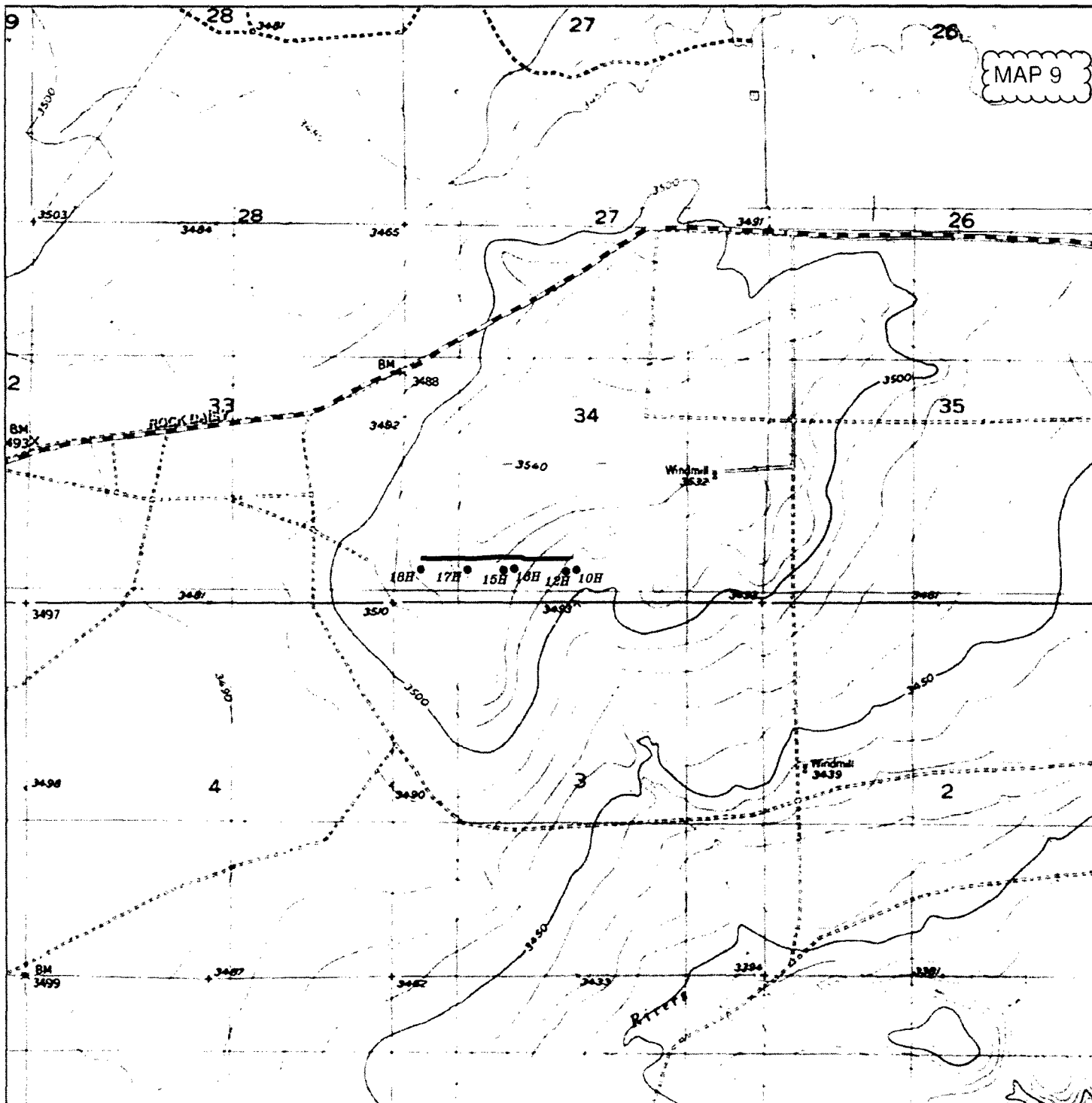
W.O. Number: 32961

Drawn By: K. GOAD

Date: 05-10-2017

Survey Date: 04-21-2017

Sheet 1 of 1 Sheets



**PROPOSED HUBER FEDERAL 10H&12H FLOWLINE**  
 Section 34, Township 19 South, Range 25 East,  
 N.M.P.M., Eddy County, New Mexico.

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 Hobbs, New Mexico 88241  
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 (575) 392-2206 - Fax  
 basinsurveys.com

0' 1000' 2000' 3000' 4000'

SCALE: 1" = 2000'

W.O. Number: KJG 32951

Survey Date: 04-21-2017

YELLOW TINT - USA LAND

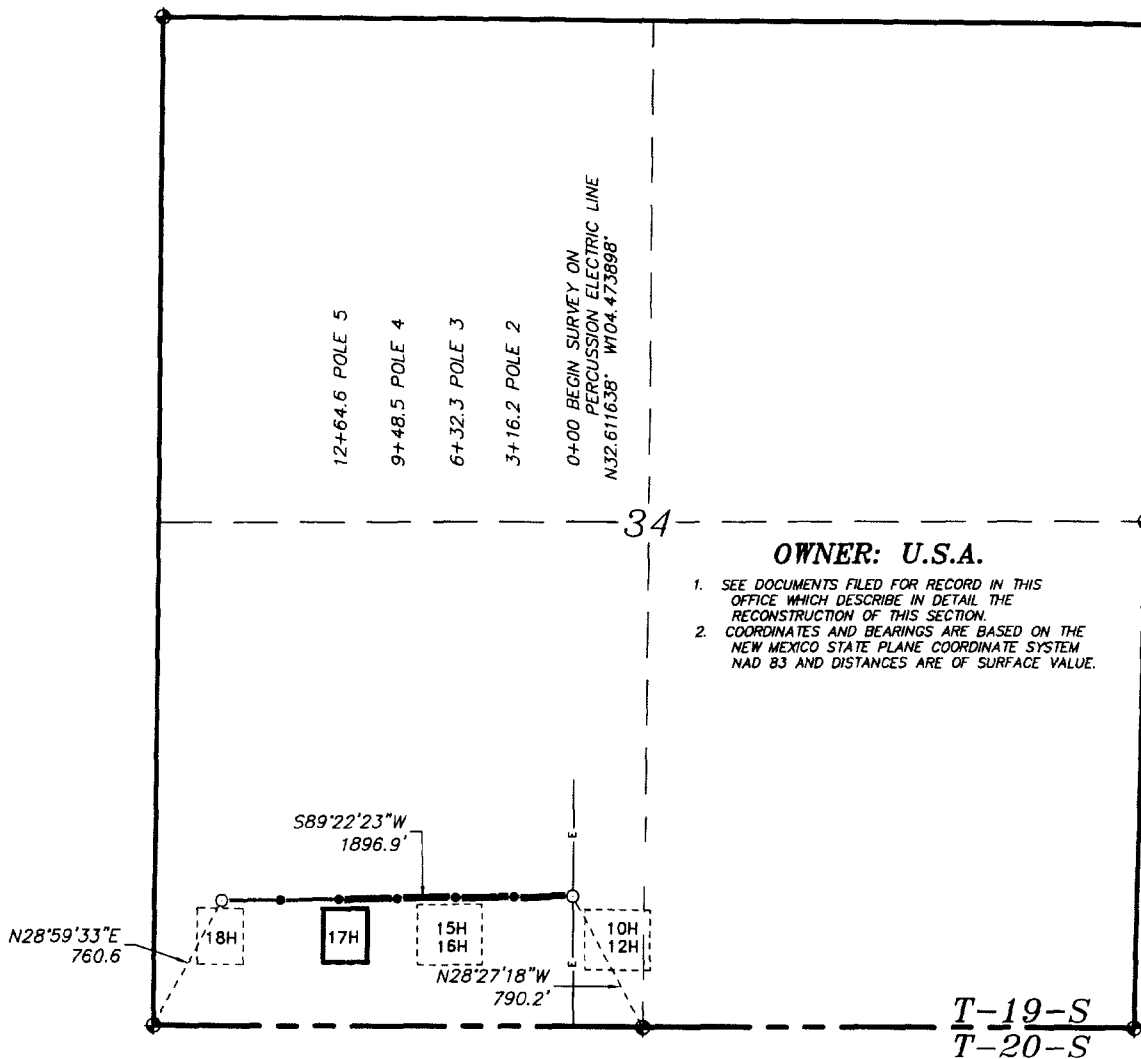
BLUE TINT - STATE LAND

NATURAL COLOR - FEE LAND

**PERCUSSION**  
**PETROLEUM,**  
**LLC**

SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST. N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.

MAP 10



OWNER: U.S.A.

1. SEE DOCUMENTS FILED FOR RECORD IN THIS OFFICE WHICH DESCRIBE IN DETAIL THE RECONSTRUCTION OF THIS SECTION.
2. COORDINATES AND BEARINGS ARE BASED ON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM NAD 83 AND DISTANCES ARE OF SURFACE VALUE.

LEGAL DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE, LOCATED IN SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES, P.E. No. 7977  
No. 5074

**basin**  
**surveys**

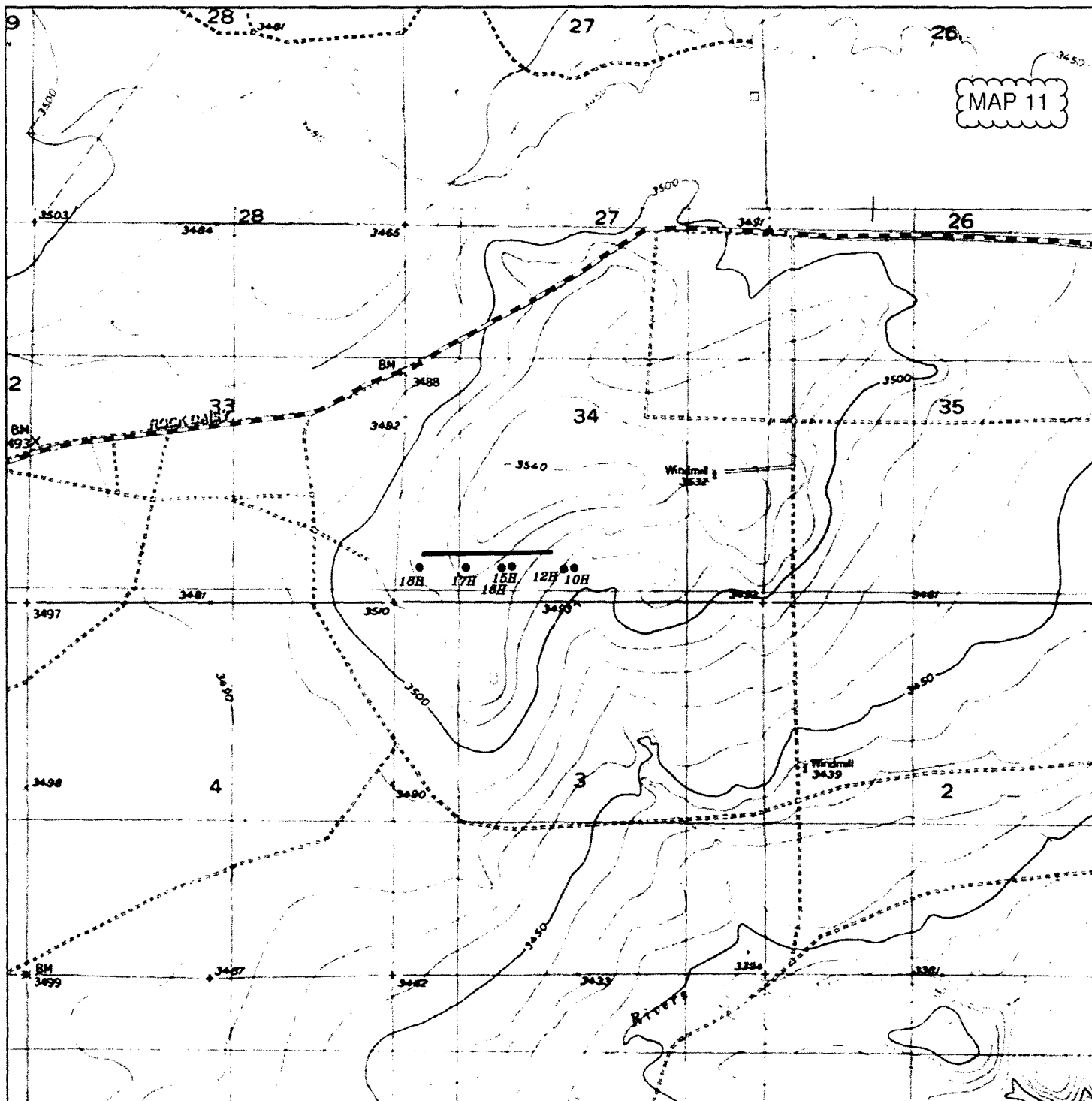
P.O. Box 1786 (575) 393-7316 - Office  
1120 N. West County Rd. (575) 392-2206 - Fax  
Hobbs, New Mexico 88241 [basinsurveys.com](http://basinsurveys.com)  
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1000 0 1000 2000 FEET

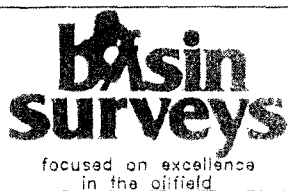
**PERCUSSION PETROLEUM, LLC**

REF: PROPOSED HUBER ELECTRIC LINE

AN ELECTRIC LINE CROSSING USA LAND IN  
SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST.  
N.M.P.M., EDDY COUNTY, NEW MEXICO.



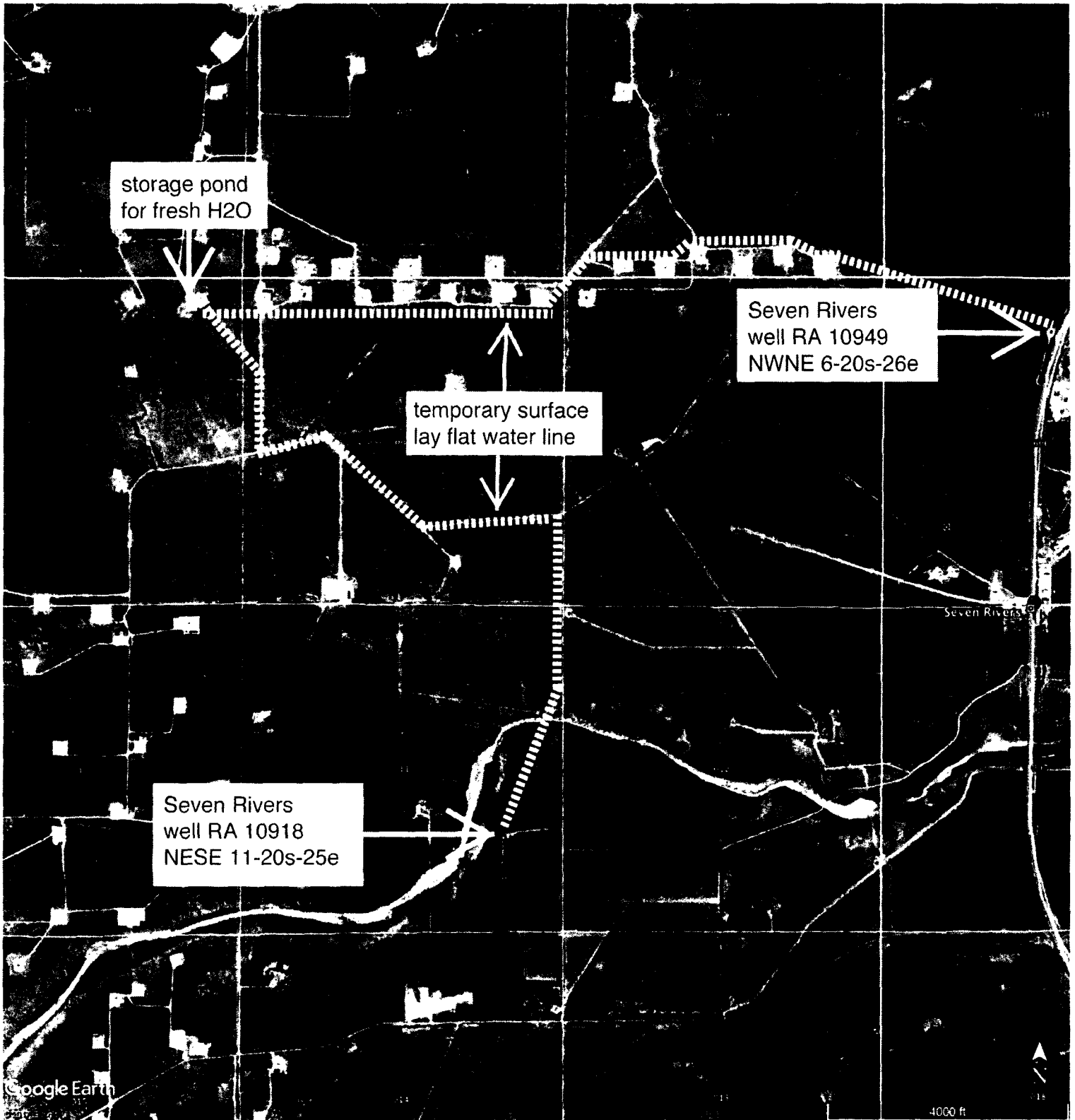
**PROPOSED HUBER ELECTRIC LINE**  
 Section 34, Township 19 South, Range 25 East,  
 N.M.P.M., Eddy County, New Mexico.



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 1120 N. West County Rd.  
 Hobbs, New Mexico 88241  
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 (575) 392-2206 - Fax  
 basin-surveys.com

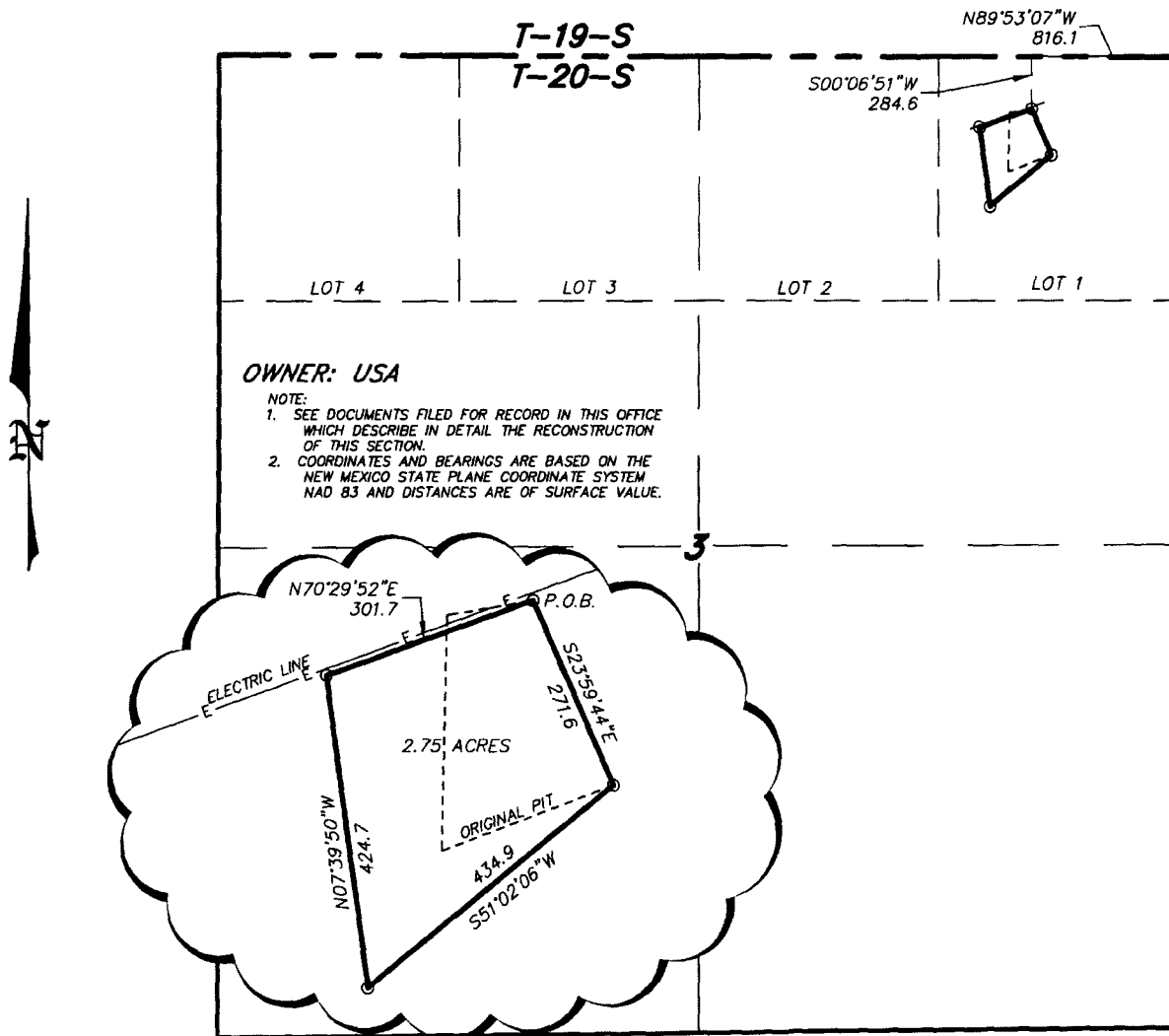
|                          |       |       |       |       |
|--------------------------|-------|-------|-------|-------|
| 0'                       | 1000' | 2000' | 3000' | 4000' |
| SCALE: 1" = 2000'        |       |       |       |       |
| W.O. Number: KJG 32957   |       |       |       |       |
| Survey Date: 04-21-2017  |       |       |       |       |
| YELLOW TINT - USA LAND   |       |       |       |       |
| BLUE TINT - STATE LAND   |       |       |       |       |
| NATURAL COLOR - FEE LAND |       |       |       |       |

**PERCUSSION  
 PETROLEUM,  
 LLC**



SECTION 3, TOWNSHIP 20 SOUTH, RANGE 25 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.

MAP 13

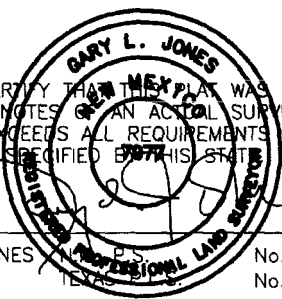


LEGAL DESCRIPTION

A TRACT OF LAND LOCATED IN SECTION 3, TOWNSHIP 20 SOUTH, RANGE 25 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT WHICH LIES N89°53'07\"W., 816.1 FEET AND S00°06'51\"W., 284.6 FEET FROM THE NORTHEAST CORNER OF SAID SECTION 3; THENCE S23°59'44\"E., 271.6 FEET; THENCE S51°02'06\"W., 434.9 FEET; THENCE N07°39'50\"W., 424.7 FEET; THENCE N70°29'52\"E., 301.7 FEET TO THE POINT OF BEGINNING. SAID TRACT OF LAND BEING 2.75 ACRES, MORE OR LESS.

I HEREBY CERTIFY THAT THIS MAP WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.



**basin surveys**

GARY L. JONES, P.L.S. No. 7977  
P.O. Box 1786 (575) 393-7316 - Office  
1120 N. West County Rd. (575) 392-2206 - Fax  
Hobbs, New Mexico 88241 basin-surveys.com

1000 0 1000 2000 FEET

**PERCUSSION PETROLEUM, LLC**

REF: HUBER WATER PIT EXPANSION

A TRACT OF LAND LOCATED ON USA LAND IN  
SECTION 3, TOWNSHIP 20 SOUTH, RANGE 25 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

3H

existing  
pond

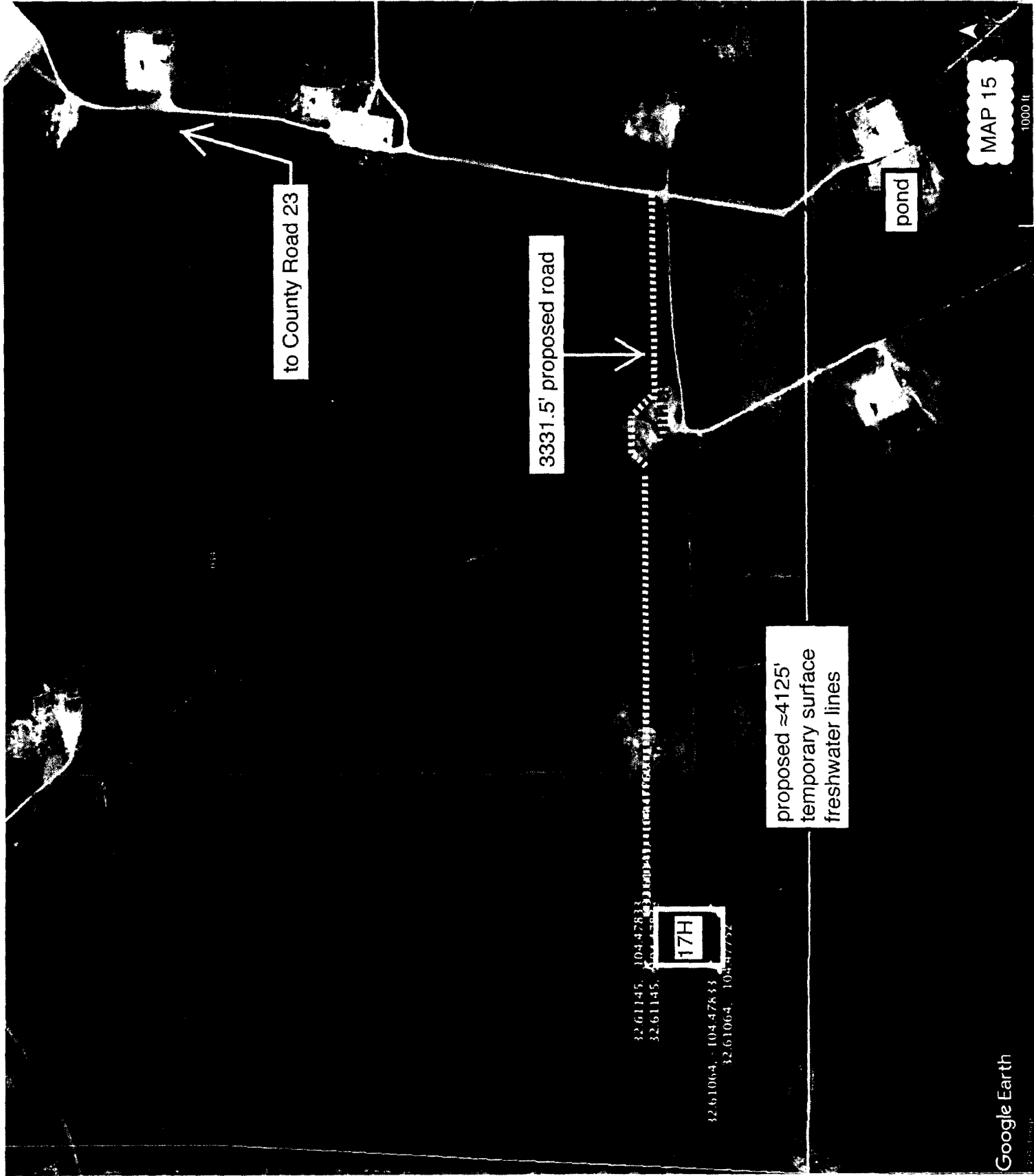
proposed  
pond  
expansion

104.46764

104.46742 104.46751

MAP 14

300 ft



to County Road 23

3331.5' proposed road

pond

proposed ~4125'  
temporary surface  
freshwater lines

17H

32.61145, 104.47833  
32.61145, 104.47833  
32.61064, 104.47833  
32.61064, 104.47752

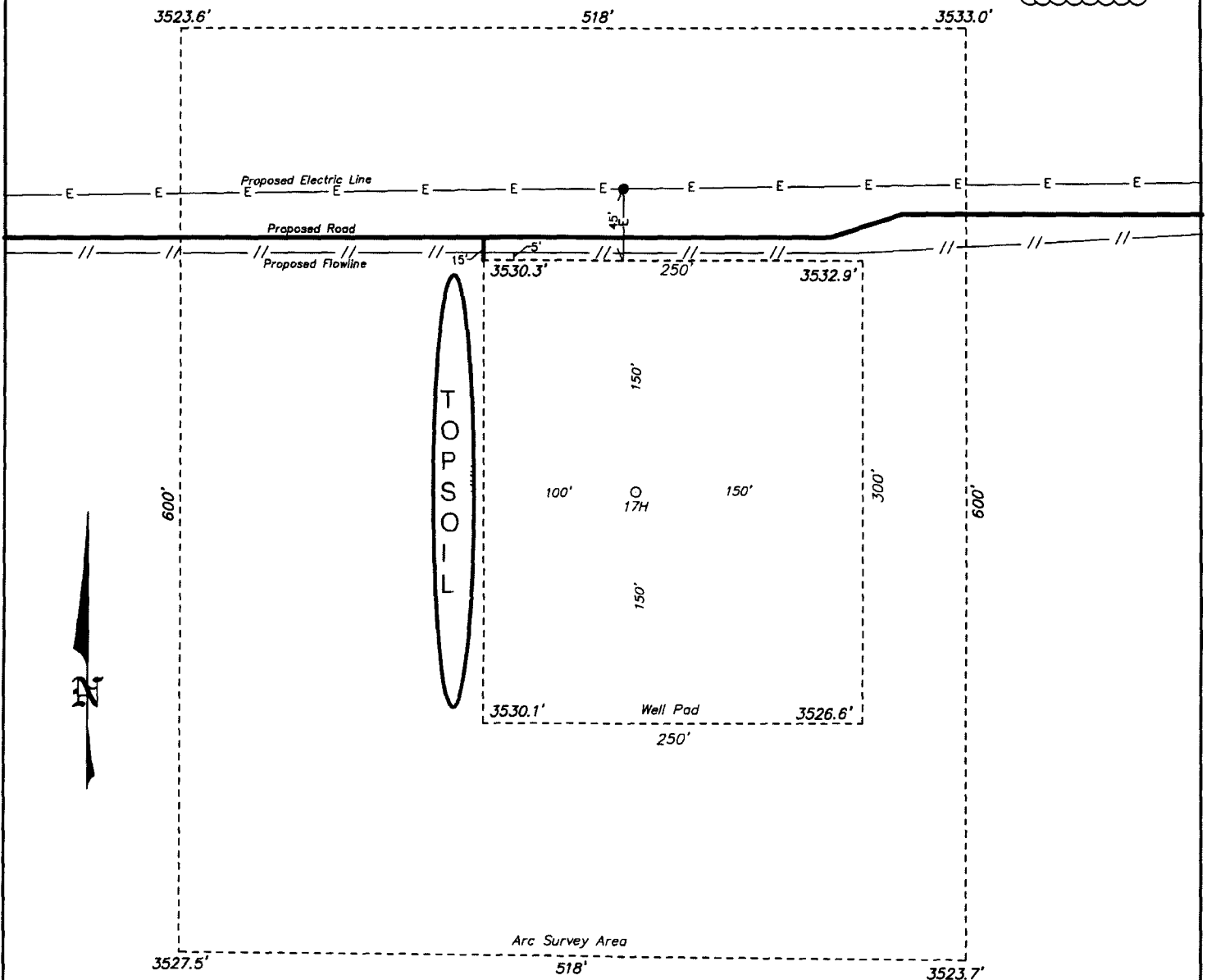
MAP 15

1000 ft

Google Earth

SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.

MAP 16



100 0 100 200 FEET  
SCALE: 1" = 100'

**PERCUSSION PETROLEUM OPERATING, LLC**

REF: HUBER FEDERAL #17H / WELL PAD TOPO

THE HUBER FEDERAL #17H LOCATED 479' FROM  
THE SOUTH LINE AND 1005' FROM THE WEST LINE OF  
SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

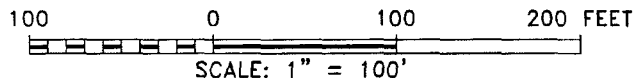
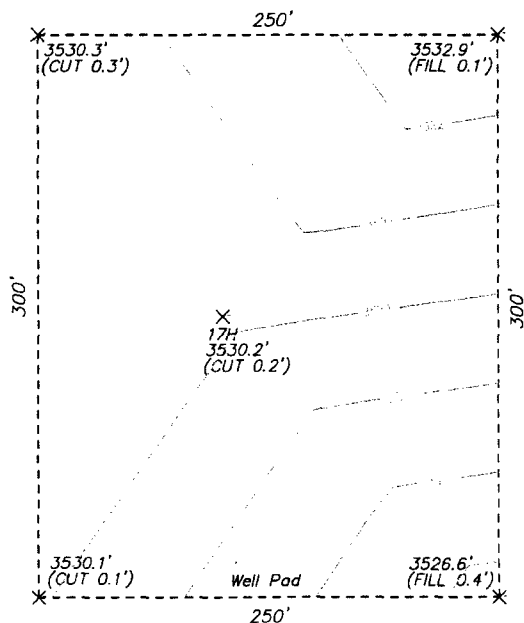
**basin**  
**surveys**

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1120 N. West County Rd. (575) 392-2206 - Fax  
Hobbs, New Mexico 88241 [basinsurveys.com](http://basinsurveys.com)

W.O. Number: 32878 Drawn By: K GOAD Date: 05-05-2017 Survey Date: 04-20-2017 Sheet 1 of 1 Sheets

**SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.**

MAP 17



**PERCUSSION PETROLEUM OPERATING, LLC**

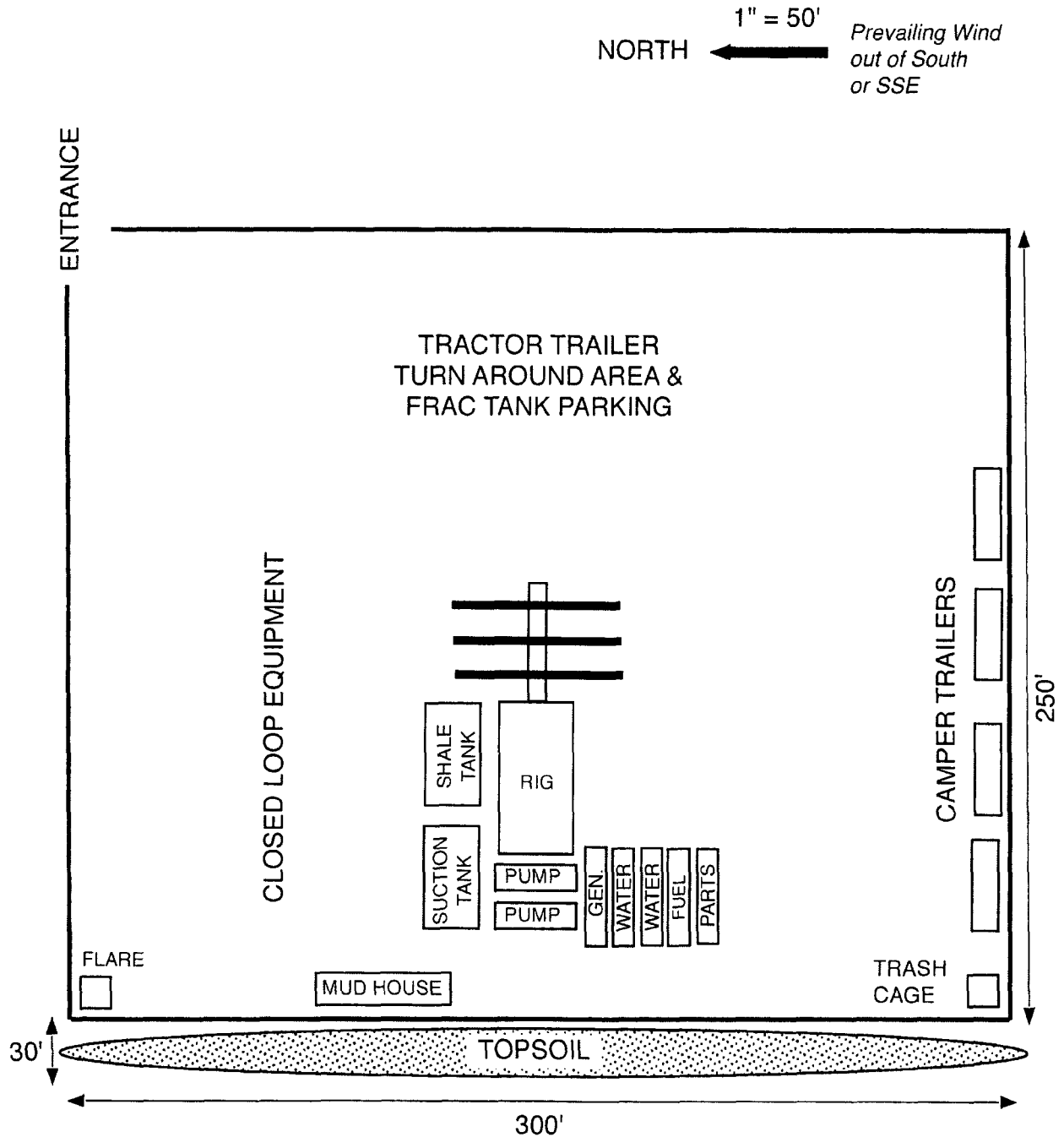
REF: HUBER FEDERAL #17H / WELL PAD CUT & FILL

THE WELL PAD LOCATED IN  
SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

**basin surveys**  
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in the oilfield

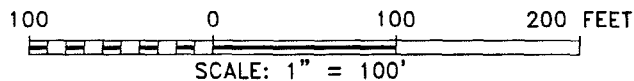
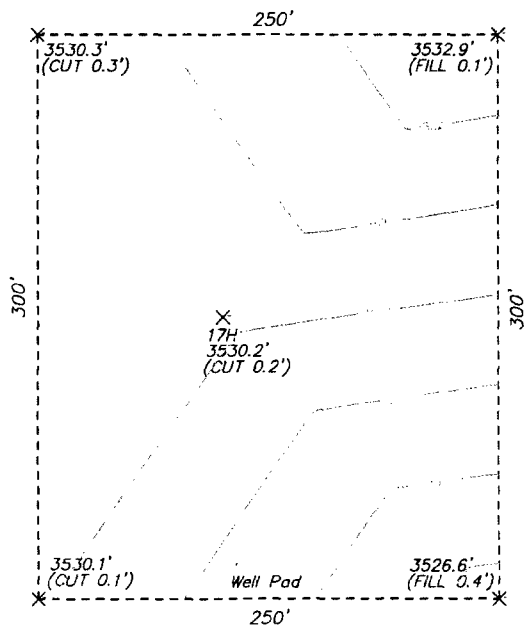
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1120 N. West County Rd. (575) 392-2206 - Fax  
Hobbs, New Mexico 88241 basin-surveys.com

Percussion's  
Huber Federal 17H  
rig diagram



SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.

MAP 17



**PERCUSSION PETROLEUM OPERATING, LLC**

REF: HUBER FEDERAL #17H / WELL PAD CUT & FILL

THE WELL PAD LOCATED IN  
SECTION 34, TOWNSHIP 19 SOUTH, RANGE 25 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

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1120 N. West County Rd. (575) 392-2206 - Fax  
Hobbs, New Mexico 88241 [basinsurveys.com](http://basinsurveys.com)

W.O. Number: 32878

Drawn By: K GOAD

Date: 05-05-2017

Survey Date: 04-20-2017

Sheet 1 of 1 Sheets

Percussion Petroleum Operating, LLC  
Huber Federal 17H  
SHL 479' FSL & 1005' FWL 34-19S-25E  
BHL 20' FSL & 922' FWL 3-20S-25E  
Eddy County, NM

SURFACE PLAN PAGE 1

### Surface Use Plan

#### 1. ROAD DIRECTIONS & DESCRIPTIONS (See MAPS 1 - 7)

From the junction of US 82 & US 285 in Artesia....  
Go South 15.6 miles on US 285 to the equivalent of Mile Post 53.6  
Then turn right and go West 3.05 miles on paved County Road 23 (Rock Daisy)  
Then turn left and go S 0.2 mile on a caliche road  
Then bear right and go SW 0.75 miles on a caliche road  
Then turn right and go West 3970.9' cross-country to the proposed pad

Non-county roads will be maintained as needed to Gold Book standards. This includes pulling ditches, preserving the crown, and cleaning culverts. This will be done at least once a year, and more often as needed.

#### 2. ROAD TO BE BUILT OR UPGRADED (See MAPS 4 - 7)

The 3331.5' of new road will be crowned and ditched, have a 14' wide driving surface, and be surfaced with caliche. Maximum disturbed width = 30'. Maximum grade = 4%. Maximum cut or fill = 3'.

Agave's underground gas pipeline will be padded. An arroyo just east of the 10H/12H pad will be a low water crossing with 4" rock. No culvert, cattle guard, or vehicle turn out is needed. Upgrading will consist of patching potholes with caliche.

#### 3. EXISTING WELLS (See MAP 3)

Existing oil, gas, disposal, water, and P & A wells are within a mile. No injection wells are within a mile radius.

Percussion Petroleum Operating, LLC  
Huber Federal 17H  
SHL 479' FSL & 1005' FWL 34-19S-25E  
BHL 20' FSL & 922' FWL 3-20S-25E  
Eddy County, NM

SURFACE PLAN PAGE 2

#### 4. PROPOSED PRODUCTION FACILITIES (See MAPS 4 & 8-11)

A 1309.6' long overhead raptor safe 3-phase power line will be built east to Percussion's existing power line. A 1361.6' long <6" O D. HDPE flow line will be laid on the surface to a proposed central tank battery on the proposed 10H pad. Equipment to be installed on that pad will be described in its APD.

#### 5. WATER SUPPLY (See MAPS 12-15)

Water will be piped via one temporary surface 12" Kevlar lay flat pipeline from one of two water wells to a fresh water pond at Percussion's Huber Federal 3H well. Pipeline routes will not be bladed or excavated. Existing unlined pond will be expanded to 2.75 acres and lined with geotextile fabric and 12-30 mil liner.

Primary source will be Seven Rivers' well RA 10949 in NWNE 6-20s-29e. That route is  $\approx 14,750'$  long. Route crosses  $\approx 2950'$  of private,  $\approx 5350'$  of State land, and  $\approx 6450'$  of BLM.

Secondary source will be Seven Rivers' well RA 10918 in NESE 11-20s-25e. That route is  $\approx 14,000'$  long. Route crosses  $\approx 6850'$  of private land and  $\approx 7150'$  of BLM land.

Two temporary surface 10" Kevlar lay flat pipelines will then be laid  $\approx 4125'$  along roads from pond to 17H. Pipeline route will not be bladed or excavated.

#### 6. CONSTRUCTION MATERIALS & METHODS (See MAPS 16-18)

NM One Call (811) will be notified before construction starts. Top  $\approx 6"$  of soil and brush will be stockpiled west of the pad. V-door will face east. Closed loop drilling system will be used. Caliche will be hauled from existing caliche pits on private land. Arkland caliche pit is in NWNE 23-19s-25e. Seven Rivers caliche pit is in SWSW 6-20s-26e. Griffin caliche pit is in NWNE 14-20s-25e.

Percussion Petroleum Operating, LLC  
Huber Federal 17H  
SHL 479' FSL & 1005' FWL 34-19S-25E  
BHL 20' FSL & 922' FWL 3-20S-25E  
Eddy County, NM

SURFACE PLAN PAGE 3

#### 7. WASTE DISPOSAL

All trash will be placed in a portable trash cage. It will be hauled to the Eddy County landfill. There will be no trash burning. Contents (drill cuttings, mud, salts, and other chemicals) of the mud tanks will be hauled to R360's state approved (NM-01-0006) disposal site at Halfway. Human waste will be disposed of in chemical toilets and hauled to the Artesia wastewater treatment plant.

#### 8. ANCILLARY FACILITIES

There will be no airstrip or camp. Camper trailers will be on location for the company man, tool pusher, and mud logger.

#### 9. WELL SITE LAYOUT (See MAPS 16 & 17)

Also see Rig Layout diagram for depictions of the well pad, trash cage, access onto the location, parking, living facilities, and rig orientation.

#### 10. RECLAMATION

Interim reclamation will be completed within 6 months of completing the well. Interim reclamation will consist of shrinking the pad  $\approx 35\%$  (0.60 acre) by removing caliche and reclaiming 75' on the north side, 50' on the east side, 75' on the south side, and 25' on the west side. This will leave 1.12 acres for the anchors, pump jack, and tractor-trailer turn around. Disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over disturbed areas and harrowed on the contour. Disturbed areas will be seeded in accordance with the surface owner's requirements.

Enough stockpiled topsoil will be retained to cover the remainder of the pad when the well is plugged. Once the well is plugged, then the rest of the pad and

Percussion Petroleum Operating, LLC  
Huber Federal 17H  
SHL 479' FSL & 1005' FWL 34-19S-25E  
BHL 20' FSL & 922' FWL 3-20S-25E  
Eddy County, NM

SURFACE PLAN PAGE 4

new road will be similarly reclaimed within 6 months of plugging. Noxious weeds will be controlled. Land use:

3331.5' x 30' road = 2.29 acres  
1361.6' x 30' flow line = 0.94 acres  
1309.6' x 30' power line = 0.90 acres  
20' x 14,750' water line to pond = 6.77 acres  
20' x 4125' water line from pond = 1.89 acres  
fresh water pond = 2.75 acres  
+ 250' x 300' pad = 1.72 acres  
17.26 acres short term  
- 0.94 acres flow line  
- 0.90 acres power line  
0.60 acre interim reclamation on pad  
20' x 14,750' water line to pond = 6.77 acres  
- 20' x 4125' water line from pond = 1.89 acres  
6.16 acres long term (2.75 ac. pond + 2.29 ac. road + 1.12 ac. pad)

11. SURFACE OWNER

All construction is on BLM land managed by the Carlsbad Field Office, 620 E. Greene St., Carlsbad NM 88220. Phone number is 575 234-5972.

12. OTHER INFORMATION

On site inspection was held with Jim Goodbar and Jessie Bassett (both BLM) on July 18, 2017.

Lone Mountain consulted (LMAS 2316) with BLM's Bruce Boeke on May 22, 2017 and August 9 (LMAS 2362). It was determined no archaeology survey was needed due to previous coverage.

Percussion Petroleum Operating, LLC  
Huber Federal 17H  
SHL 479' FSL & 1005' FWL 34-19S-25E  
BHL 20' FSL & 922' FWL 3-20S-25E  
Eddy County, NM

SURFACE PLAN PAGE 5

CERTIFICATION

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U. S. C. 1001 for the filing of false statements. Executed this 6th day of September, 2017.



-----  
Brian Wood, Consultant  
Permits West, Inc.

37 Verano Loop, Santa Fe, NM 87508

(505) 466-8120

FAX: (505) 466-9682

Cellular: (505) 699-2276

Field representative will be:

Lelan Anders, Operations Manager  
Percussion Petroleum Operating, LLC  
919 Milam, Suite 2475  
Houston TX 77002  
Office: (713) 429-1291  
Mobile: (281) 908-1752



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

## PWD Data Report

02/27/2018

### Section 1 - General

Would you like to address long-term produced water disposal? NO

### Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

### **Section 3 - Unlined Pits**

**Would you like to utilize Unlined Pit PWD options? NO**

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Unlined pit PWD on or off channel:**

**Unlined pit PWD discharge volume (bbl/day):**

**Unlined pit specifications:**

**Precipitated solids disposal:**

**Describe precipitated solids disposal:**

**Precipitated solids disposal permit:**

**Unlined pit precipitated solids disposal schedule:**

**Unlined pit precipitated solids disposal schedule attachment:**

**Unlined pit reclamation description:**

**Unlined pit reclamation attachment:**

**Unlined pit Monitor description:**

**Unlined pit Monitor attachment:**

**Do you propose to put the produced water to beneficial use?**

**Beneficial use user confirmation:**

**Estimated depth of the shallowest aquifer (feet):**

**Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?**

**TDS lab results:**

**Geologic and hydrologic evidence:**

**State authorization:**

**Unlined Produced Water Pit Estimated percolation:**

**Unlined pit: do you have a reclamation bond for the pit?**

**Is the reclamation bond a rider under the BLM bond?**

**Unlined pit bond number:**

**Unlined pit bond amount:**

**Additional bond information attachment:**

### **Section 4 - Injection**

**Would you like to utilize Injection PWD options? NO**

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Injection PWD discharge volume (bbl/day):**

**Injection well mineral owner:**

**Injection well type:**

**Injection well number:**

**Injection well name:**

**Assigned injection well API number?**

**Injection well API number:**

**Injection well new surface disturbance (acres):**

**Minerals protection information:**

**Mineral protection attachment:**

**Underground Injection Control (UIC) Permit?**

**UIC Permit attachment:**

## **Section 5 - Surface Discharge**

**Would you like to utilize Surface Discharge PWD options? NO**

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Surface discharge PWD discharge volume (bbl/day):**

**Surface Discharge NPDES Permit?**

**Surface Discharge NPDES Permit attachment:**

**Surface Discharge site facilities information:**

**Surface discharge site facilities map:**

## **Section 6 - Other**

**Would you like to utilize Other PWD options? NO**

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Other PWD discharge volume (bbl/day):**

**Other PWD type description:**

**Other PWD type attachment:**

**Have other regulatory requirements been met?**

**Other regulatory requirements attachment:**



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

## Bond Info Data Report

02/27/2018

### Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001424

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: