Submit 1 Copy To Appropriate District Office
District I – (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II – (575) 748-1283
811 S. First St., Artesia, NM 88210
District III – (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV – (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

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

Form C-103
Revised July 18, 2013

WELL API NO.
30-045-25419

5. Indicate Type of Lease
STATE ☒ FEE ☐

6. State Oil & Gas Lease No.
B-10405-89

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
STATE N

8. Well Number
1M

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

2. Name of Operator
HILCORP ENERGY COMPANY

9. OGRID Number
372171

3. Address of Operator
382 Road 3100, Aztec, NM 87410

10. Pool name or Wildcat
BLANCO MV/BASIN DK

4. Well Location
Unit Letter D : 1230 feet from the North line and 635 feet from the West line
Section 32 Township 29N Range 9W NMPM County

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
5779 GR

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☒	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	P AND A	☐
PULL OR ALTER CASING	☐	MULTIPLE COMPL	☐	CASING/CEMENT JOB	☐		
DOWNHOLE COMMINGLE	☐						
CLOSED-LOOP SYSTEM	☐						
OTHER:	☐			OTHER:			☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Hilcorp Energy has performed a remedial workover on the subject well per the attached summary, wellbore diagram and verbal approvals.

Spud Date: Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Tammy Jones TITLE Operations/Regulatory Technician – Sr. DATE 10/17/2023

Type or print name Tammy Jones E-mail address: tajones@hilcorp.com PHONE: (505) 324-5185

For State Use Only

APPROVED BY: TITLE DATE
Conditions of Approval (if any):

9/22/2023 – MIRU. CK PRESSURES. SITP = 140 PSI, SICP = 140 PSI, SIBHP = 100 PSI. B/D WELL. ND WH. NU BOP, TEST & FUNCTION - GOOD. PULL HANGER AND P/U TBG, TAG FILL @ 6583'. RU PREMIER NDT, TOOH SCANNING TBG. SIW. SDFWN.

9/25/2023 – CK PRESSURES. SICP = 77 PSI, SIBHP = 100 PSI. B/D WELL. TIH W/6-1/4" SCRAPER & BIT TO 3978'. TOOH L/D BIT. TIH W/7" RBP & SET @ 3925'. LOAD HOLE W/FRESH TREATED WATER. CIRC CLEAN. TOOH L/D SETTING TOOL. RUN CBL FROM 3925' TO SURFACE. TOOH. SIW. SDFN.

9/26/2023 – **NOTIFIED MONICA KUEHLING, NMOCD OF CBL RESULTS.** CK PRESSURES. SICP = 0 PSI, SIBHP = 60 PSI. **WAIT ON ORDERS & NMOCD APPROVAL.** ORDER LOGS. RU W/L. P/U TEMP TOOL & TIH LOGGING TO 1300'. POOH. BD BH. LET WELL SIT. TIH LOGGING TO 1300'. POOH. L/D TEMP LOG. LOG SHOWS TEMP DEVIATION @ 420'. P/U ACOUSTIC TOOL. RIH, TOOL STOPPED WORKING @ 30'. TOOH & L/D TOOL. **NOTIFIED MONICA KUEHLING, NMOCD & GOT APPROVAL TO RUN RBL.** P/U RBL & TIH TO 1300'. POOH LOGGING. L/D RBL. RD W/L. SIW. SDFN.

9/27/2023 – CK PRESSURES. SICP = 0 PSI, SIBHP = 40 PSI. **NOTIFIED MONICA KUEHLING, NMOCD OF LOG RESULTS. WAIT ON ORDERS & NMOCD APPROVAL.** SIW. SDFN.

9/28/2023 – CK PRESSURES. SICP = 0 PSI, SIBHP = 40 PSI. RU W/L. P/U NOISE LOG. RIH TO 1300'. POOH LOGGING. TIH TO 1300'. BD BH. LET WELL STABLIZE. POOH LOGGING. RD W/L. **WAIT ON ORDERS & NMOCD APPROVAL.** SIW. SDFN.

9/29/2023 – CK PRESSURES. SICP = 0 PSI, SIBHP = 30 PSI. LOAD HOLE & PT CSG, LOOSE 10 PSI/MIN FOR 30 MINS. P/U 7" PKR, TIH LOOKING FOR LEAK. ISOLATE LEAK WITHIN MV FORMATION AT DV TOOL FROM 3841-3788'. PT CSG FROM 3788' TO SURFACE TO 560 PSI, HELD. TOOH LD PKR. **WAIT ON ORDERS & NMOCD APPROVAL MOVE RBP TO 3600' AND RE-RUN LOGS.** SIW. SDFN.

10/2/2023 – **RECEIVED NMOCD APPROVAL TO USE BOTTOM DV TOOL LEAKS AS PERF WITHIN MV FORMATION, ALSO APPROVAL TO MOVE RBP TO 3600' AND RE-RUN LOGS.**

10/3/2023 – CK PRESSURES. SICP = 0 PSI, SIBHP = 49 PSI. P/U RETRIEVING HEAD FOR RBP. TIH W/ TBG TO 2523'. R/U AIR. UNLOAD WELL. TIH W/ TBG TO 3590'. UNLOAD WELL. TIH W/ TBG TO 3925. LATCH 7" RBP. RELEASE RBP. TOOH W/RBP TO 3600' & SET RBP @ 3600'. LOAD CASING. CIRC OUT ALL GAS. W/O WATER TRUCK TO FINISH LOADING CSG. PT CSG TO 550 PSI (GOOD). TOOH. L/D RETRIEVING HEAD. TOP OFF CASING. LET WELL STAND FULL TO STABLIZE. RU W/L. P/U NOISE LOG. RIH TO 1300'. POOH LOGGING (CLOSED PASS). RIH TO 1300'. OPEN BRADENHEAD AND LET WELL STABILIZE 15 MIN. POOH LOGGING (OPEN PASS). SEND LOG TO ENGINEER. R/D WL. SIW. SDFN.

10/4/2023 – **NOTIFIED MONICA KUEHLING, NMOCD OF LOG RESULTS. WAIT ON ORDERS & NMOCD APPROVAL.** CK PRESSURES. SICP = 0 PSI, SIBHP = 12 PSI. TIH W/TBG TO 3200'. UNLOAD WELL. **NMOCD REQUESTED ADDITIONAL LOGS.** LOAD CASING. TOOH & TOP OFF CSG. SIW. SDFN.

10/5/2023 – CK PRESSURES. SICP = 0 PSI, SIBHP = 30 PSI. RU W/L. P/U RBL. RIH TO 3600'. POOH LOGGING. L/D RBL. P/U NOISE LOG. RIH TO 2000', TOOL BROKE. COULDN'T GET IT WORKING. POOH. L/D NOISE LOG. RD W/L. SIW. SDFN. **NOTIFIED MONICA KUEHLING, NMOCD OF LOG RESULTS. NMOCD REQUESTED ADDITIONAL LOGS & MEETING ON 10/10/23.**

10/9/2023 – CK PRESSURES. SICP = 0 PSI, SIBHP = 35 PSI. RU W/L. RUN ACOUSTIC LOG FROM 3600' TO SURFACE. RAN 1ST PASS W/ BH CLOSED, RAN 2ND PASS W/ BH OPEN. RD W/L. SIW. SDFN.

STATE N 1M 30.045.25419 BRADENHEAD REPAIR

10/10/2023 – MEETING W/BRANDON POWELL & MONICA KUEHLING, NMOCD. REVIEWED LOG RESULTS & RECEIVED VERBAL APPROVAL TO RETURN WELL TO PRODUCTION WITH A FOLLOW-UP MEETING IN 30 DAYS TO DISCUSS PLAN FORWARD.

10/11/2023 – CK PRESSURES. SICP = 0 PSI, SIBHP = 15 PSI. TIH W/TBG & RETRIEVING HEAD TO 2500'. UNLOAD WELL. ENGAGE & RELEASE RBP @ 3600'. TOOH W/RBP. TIH W/208 JTS 2-3/8" 4.7# J-55 TBG SET @ 6545', SN @ 6543'. ND BOP. NU WH. PUMP 5 BBLS CUSHION, DROP BALL. PT TBG TO 500# - GOOD. PRESSURE UP TO 1150#, BUMP CHECK. UNLOAD WELL, PURGED UP TBG. RD. RIG RELEASED.

APPROVAL RECIEVED FROM BRANDON POWELL & MONICA KUEHLING, NMOCD TO RETURN WELL TO PRODUCTION, FOLLOW-UP MEETING REQURIED IN 30 DAYS TO DISCUSS PLAN FORWARD.

Hilcorp Energy Company

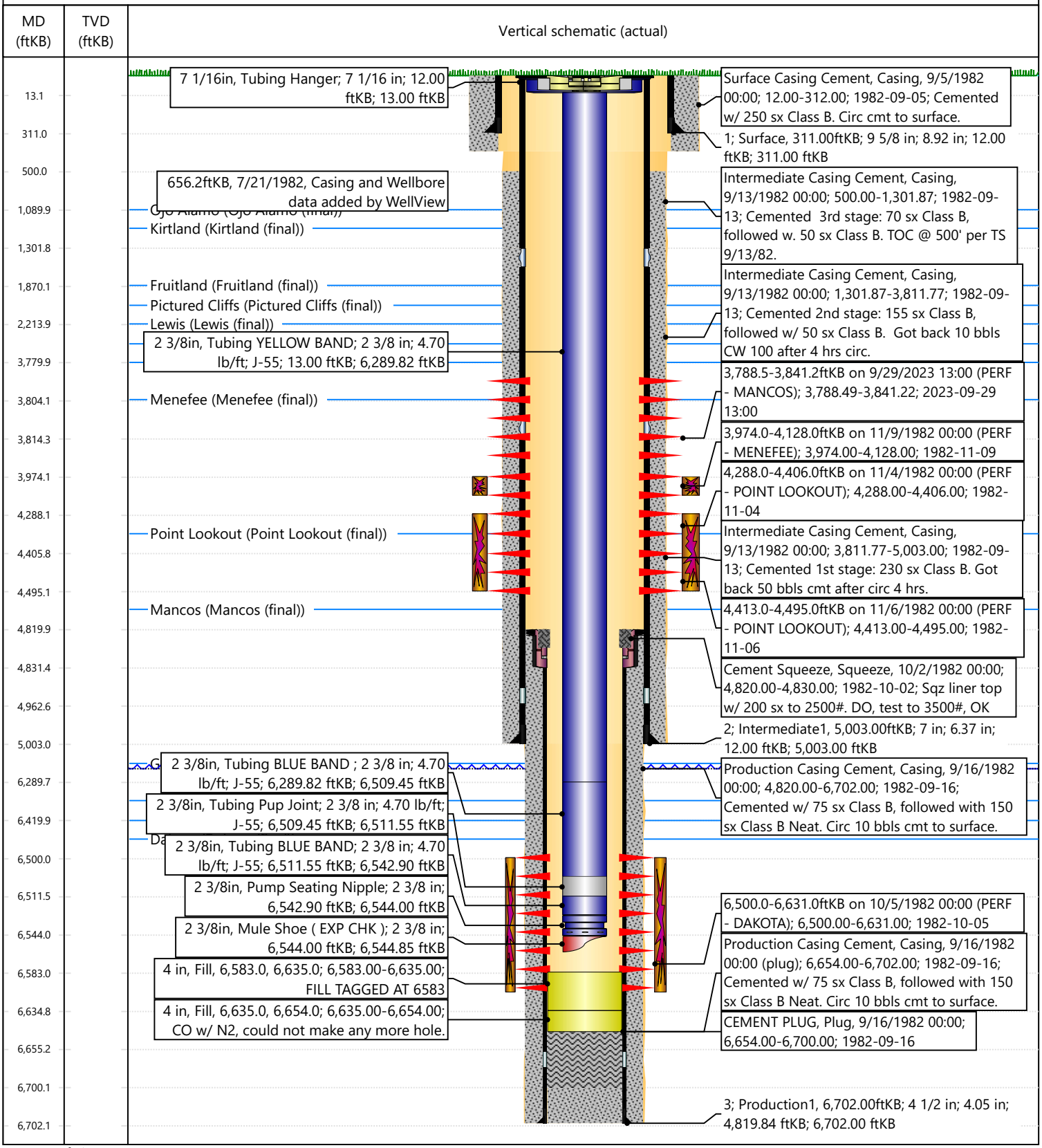
Current Schematic - Version 3

Well Name: STATE N 1M

API / UWI	Surface Legal Location	Field Name	Route	State/Province	Well Configuration Type
3004525419	032-029N-009W-D	MV/DK COM	0807	NEW MEXICO	Vertical

Ground Elevation (ft)	Original KB/RT Elevation (ft)	RKB to GL (ft)	KB-Casing Flange Distance (ft)	KB-Tubing Hanger Distance (ft)
5,779.00	5,791.00	12.00		

Original Hole [Vertical]



Tammy Jones

From: Daniel Hurd
Sent: Tuesday, October 10, 2023 2:27 PM
To: Jose Morales; Trey Misuraca; Jackson Lancaster; Tammy Jones; Cheryl Weston
Cc: John Brown
Subject: RE: State N 1M_Meeting_1010_2023

Jose Texted Brandon.
He gave approval to return the well to production pending a 30 day follow-up meeting to discuss offset Farmington Sand production and possible wellbore remediation for the subject well.

We will pull the RBP, run production tubing.

Tammy/Cheryl – can you help us coordinate adding the lower DV tool as a completion interval in the Mesa Verde?

Thanks,

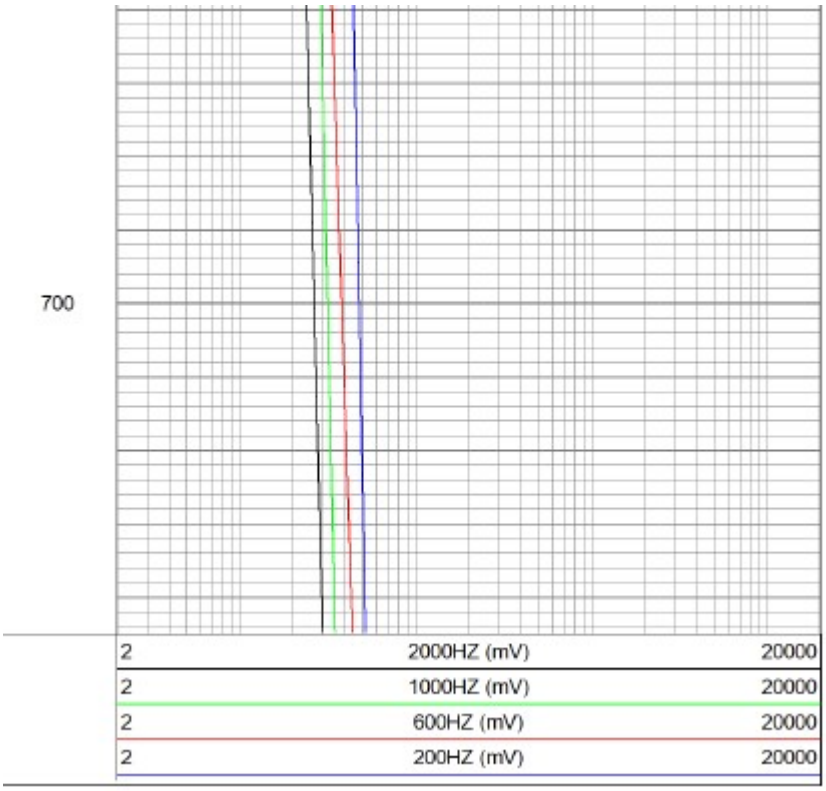
Dan

Tammy Jones

From: Powell, Brandon, EMNRD <Brandon.Powell@emnrd.nm.gov>
Sent: Thursday, October 5, 2023 4:23 PM
To: Daniel Hurd; Kuehling, Monica, EMNRD; Farmington Regulatory Techs
Cc: Jose Morales; Trey Misuraca; Issac Overright - (C); Jackson Lancaster; Sikandar Khan; John Brown; Wrinkle, Justin, EMNRD; Bryan Richards; Griffin Selby
Subject: RE: [EXTERNAL] State N #1M 30-045-25419

Good afternoon Dan,

I'm not sure I agree with your assessment on the audio logs and no movement, there is variation between the two and there is peaks and valleys between them. As an example, below I provide a screenshot of an audio log with no movement which is in contrast to the one you show. Again, with the slow build up I don't think we are looking for a lot of movement. Also, between the logs I see considerably more potential channeling between them. The good bridge at 1110'-1130' is at the bottom of the Ojo which is known to be a water zone with higher natural permeability. I am out of the office after today until Tuesday. I would suggest continuing your review and we can discuss the path forward when I get back.



Thank You

Brandon Powell
(505) 320-0200

"He who wishes to gain knowledge is wiser than he who thinks he has knowledge (unknown)"

From: Daniel Hurd <dhurd@hilcorp.com>
Sent: Thursday, October 5, 2023 3:38 PM
To: Kuehling, Monica, EMNRD <monica.kuehling@emnrd.nm.gov>; Powell, Brandon, EMNRD <Brandon.Powell@emnrd.nm.gov>; Farmington Regulatory Techs <FarmingtonRegulatoryTechs@hilcorp.com>
Cc: Jose Morales <jomorales@hilcorp.com>; Trey Misuraca <Trey.Misuraca@hilcorp.com>; Issac Overright - (C) <Issac.Overright@hilcorp.com>; Jackson Lancaster <Jackson.Lancaster@hilcorp.com>; Sikandar Khan <Sikandar.Khan@hilcorp.com>; John Brown <jbrown@hilcorp.com>; Wrinkle, Justin, EMNRD <Justin.Wrinkle@emnrd.nm.gov>; Bryan Richards <brichards@hilcorp.com>; Griffin Selby <Griffin.Selby@hilcorp.com>
Subject: RE: [EXTERNAL] State N #1M 30-045-25419

Monica,

- Please find the attached radial bond logs that were run today.
  There is a slight difference between the pressure pass and the non-pressure pass. They are not materially different.

- We attempted to run a second acoustic log. The tool failed on the way running in the hole before we reached the bottom logging depth.
  In lieu of running a second acoustic log, we have overlayed the previous acoustic log runs depicting the log signature differences between the braden head "Open" and the braden head "Closed".
  We are looking for the source of the braden head gas movement. Vertical migration of the braden head gas ceases below 675' where the log response is the same on both logging passes.
  The interval at 1,200' does not indicate any vertical movement associated with the braden head gas flow. Based on the radial bond log it appears that there is bonded cement from 1,106' – 1,220'
- It appears that the source of gas is from the resistive interval from 670' – 744' on the 1982 open hole lateral log

It's Hilcorp's recommendation is to perf at 680' and squeeze cement behind pipe. (lack of cement bond above 685') WOC.
Monitor braden head while cementing and attempt to bleed down pressure on the braden head prior to drilling out.
If gas will not bleed to zero, peforate at 450' and squeeze cement behind pipe. WOC
Drill out cement, perform an MIT, and restore the well to production.

Thanks for your consideration.

Dan Hurd

From: Kuehling, Monica, EMNRD <monica.kuehling@emnrd.nm.gov>
Sent: Wednesday, October 4, 2023 11:28 AM
To: Daniel Hurd <dhurd@hilcorp.com>; Powell, Brandon, EMNRD <Brandon.Powell@emnrd.nm.gov>; Farmington Regulatory Techs <FarmingtonRegulatoryTechs@hilcorp.com>
Cc: Jose Morales <jomorales@hilcorp.com>; Trey Misuraca <Trey.Misuraca@hilcorp.com>; Issac Overright - (C) <Issac.Overright@hilcorp.com>; Jackson Lancaster <Jackson.Lancaster@hilcorp.com>; Sikandar Khan <Sikandar.Khan@hilcorp.com>; John Brown <jbrown@hilcorp.com>; Wrinkle, Justin, EMNRD <Justin.Wrinkle@emnrd.nm.gov>; Bryan Richards <brichards@hilcorp.com>; Griffin Selby <Griffin.Selby@hilcorp.com>
Subject: RE: [EXTERNAL] State N #1M 30-045-25419

Dan

Were gas samples taken from the Fruitland and PC wells to compare to the bradenhead gas?

Is there a reason for no mention of the noise change at 1200'. If the source is 300'-500' why don't you see it at the State Com C 5 with a TOC at 500'?

Monica

From: Daniel Hurd <dhurd@hilcorp.com>
Sent: Wednesday, October 4, 2023 9:44 AM
To: Kuehling, Monica, EMNRD <monica.kuehling@emnrd.nm.gov>; Powell, Brandon, EMNRD <Brandon.Powell@emnrd.nm.gov>; Farmington Regulatory Techs <FarmingtonRegulatoryTechs@hilcorp.com>
Cc: Jose Morales <jomorales@hilcorp.com>; Trey Misuraca <Trey.Misuraca@hilcorp.com>; Issac Overright - (C) <Issac.Overright@hilcorp.com>; Jackson Lancaster <Jackson.Lancaster@hilcorp.com>; Sikandar Khan <Sikandar.Khan@hilcorp.com>; John Brown <jbrown@hilcorp.com>; Wrinkle, Justin, EMNRD <Justin.Wrinkle@emnrd.nm.gov>; Bryan Richards <brichards@hilcorp.com>; Griffin Selby <Griffin.Selby@hilcorp.com>
Subject: RE: [EXTERNAL] State N #1M 30-045-25419

Thanks Monica,

- Hilcorp evaluated two nearby offset wells (reference map below):
  - State Com C 5 – Approx 460' from the subject well. Drilled in 1969, completed in the Pictured Cliffs. This well was completed with a 3-1/2" longstring. TOC at 500'. Surface casing at 110'. No bradenhead pressure.
  - State Com 32 (Operated by West Largo Corp – Drilled in 2010, Completed in the Fruitland Coal. 4-1/2" production casing. Reported cement to surface on both production and surface shoe. Surface casing set at 284'. Reported braden head pressure since 2011.

- The audio log was run to 1300'. This is the depth of the DV/Stage tool set at 1,302'. The RBL indicates cement bond from 1,300' to 1,100 (amplified response across most of this interval). It's very unlikely to have vertical communication across this section of casing closest to the DV Tool.
- Historic bradenhead reports are attached.
- The primary source of gas in the subject well appears to be from 350' – 500'. The surface casing in this wellbore and the direct offsets were set above 350'. This essentially has left the zone from 350' – 500' exposed to hydrocarbon intervals. The time frame of the nearby offsets is 1969 – 2010.

From: Kuehling, Monica, EMNRD <monica.kuehling@emnrd.nm.gov>
Sent: Wednesday, October 4, 2023 8:54 AM
To: Daniel Hurd <dhurd@hilcorp.com>; Powell, Brandon, EMNRD <Brandon.Powell@emnrd.nm.gov>; Farmington Regulatory Techs <FarmingtonRegulatoryTechs@hilcorp.com>
Cc: Jose Morales <jomorales@hilcorp.com>; Trey Misuraca <Trey.Misuraca@hilcorp.com>; Issac Overright - (C) <Issac.Overright@hilcorp.com>; Jackson Lancaster <Jackson.Lancaster@hilcorp.com>; Sikandar Khan <Sikandar.Khan@hilcorp.com>; John Brown <jbrown@hilcorp.com>; Wrinkle, Justin, EMNRD <Justin.Wrinkle@emnrd.nm.gov>; Bryan Richards <brichards@hilcorp.com>; Griffin Selby <Griffin.Selby@hilcorp.com>
Subject: RE: [EXTERNAL] State N #1M 30-045-25419

Dan

After reviewing the information, we have a few comments, questions and requests prior to approving remediation.

- Has Hilcorp evaluated nearby wells that could be the historical source of communication in the strata?
- Is there a reason the audio log was only ran to 1250'?
  - There is a spike and an open/closed variation at 1200' so could there be flow from below and only a tight spot at 700'
- Can you please provide the historical bradenhead test so they can be included in the well file?
- Please note once a squeeze (if authorized) has been performed the gas in the water formation doesn't go away it just can no longer be observed.

Thank you

Monica Kuehling
Compliance Officer Supervisor
Deputy Oil and Gas Inspector
New Mexico Oil Conservation Division
North District
Office Phone: 505-334-6178 ext. 123
Cell Phone: 505-320-0243
Email - monica.kuehling@emnrd.nm.gov

From: Daniel Hurd <dhurd@hilcorp.com>
Sent: Tuesday, October 3, 2023 5:04 PM
To: Kuehling, Monica, EMNRD <monica.kuehling@emnrd.nm.gov>; Powell, Brandon, EMNRD <Brandon.Powell@emnrd.nm.gov>; Farmington Regulatory Techs <FarmingtonRegulatoryTechs@hilcorp.com>
Cc: Jose Morales <jomorales@hilcorp.com>; Trey Misuraca <Trey.Misuraca@hilcorp.com>; Issac Overright - (C) <Issac.Overright@hilcorp.com>; Jackson Lancaster <Jackson.Lancaster@hilcorp.com>; Sikandar Khan <Sikandar.Khan@hilcorp.com>; John Brown <jbrown@hilcorp.com>; Wrinkle, Justin, EMNRD <Justin.Wrinkle@emnrd.nm.gov>; Bryan Richards <brichards@hilcorp.com>; Griffin Selby <Griffin.Selby@hilcorp.com>
Subject: RE: [EXTERNAL] State N #1M 30-045-25419

Monica,
Attached for your review are the two noise log passes made today on the subject well.
Below is my interpretation of logging runs

- Log response on the open and closed logging runs is quiet below 700'. No indication of fluid movement.
- There is noise on both the Braden head Open and Closed logging runs around 700'. (Increased amplitude across all wavelengths)
- The Braden head Open run indicates fluid movement from 350' – 450' above the TOC seen on the recent bond logs

We would recommend remedial action by

- Perforating at 670'
- Squeeze cement into the perforated interval
- Drill out cement
- Perform MIT
- Return the well to production while monitoring an open Braden head to the pit tank

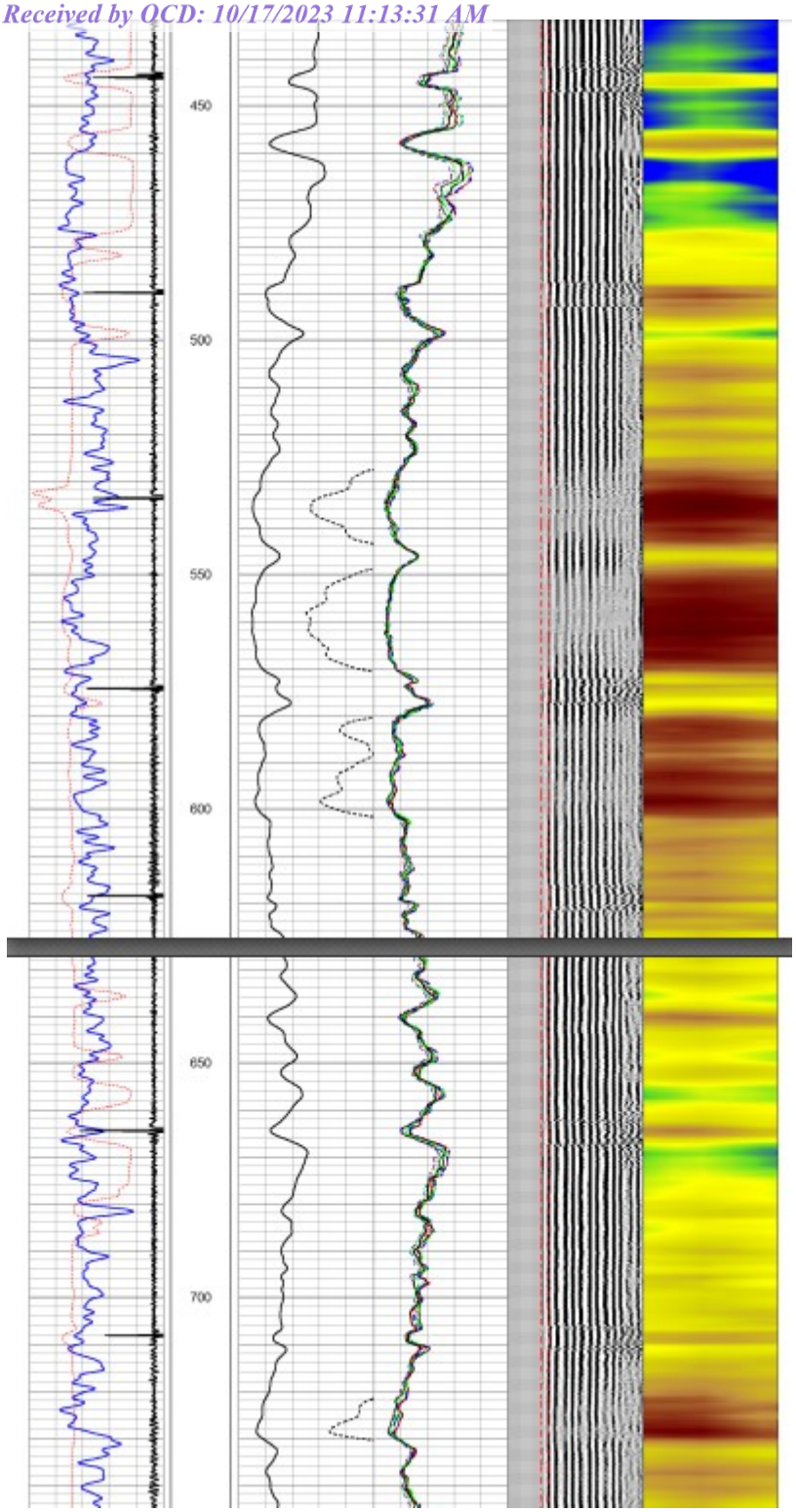
Supporting information:
Below are log excerpts from the radial bond log run last week and the original open hole Dual Induction log from 1982' (annotated by Tenneco – tops don't match NMOCD tops)

- 670' was chosen for the lack of cement quality on the RBL seen below
- DIL shows a zone with resistivity 720'-745' (this interval could be the source of the braden head gas)

I found hard copy braden head tests from the wellfiles:
6/1986 – 235 psi (closed) – Recovered dirty/fresh water, then gas, then steady water flow after 10 minutes
7/1987 – 15 psi – Gas and water
6/1992 – 62 psi – Gas, bleed to zero
3/2005 – 35 psi – Gas, bleed to zero
The zone at 460' above the TOC has been exposed to gas since the 1986 braden head test.
The test history indicates the mechanical condition of the wellbore hasn't recently changed. (Gas to surface and similar pressures reported for 37 years).

Thanks,

Dan Hurd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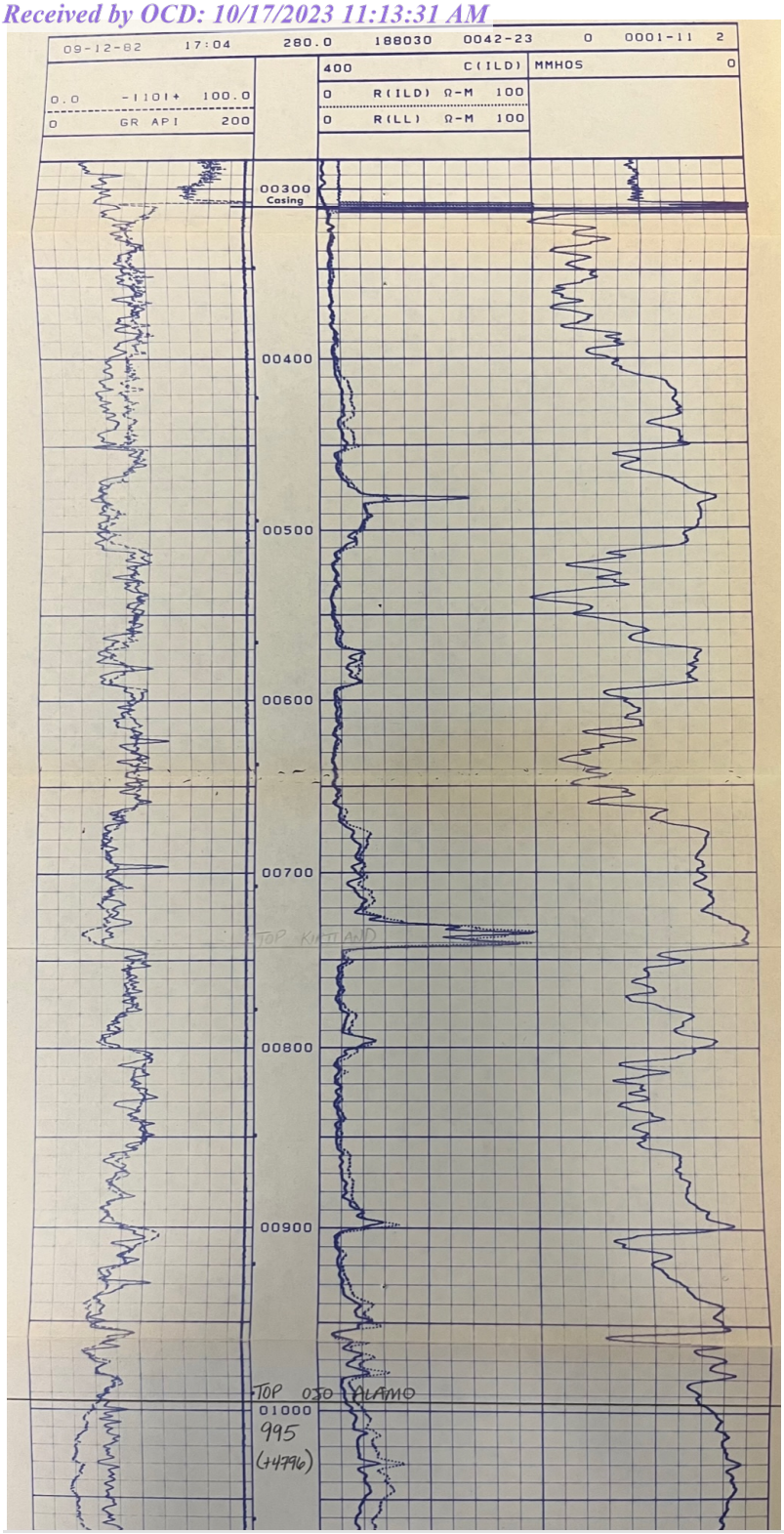


From: Kuehling, Monica, EMNRD monica.kuehling@emnrd.nm.gov
Sent: Monday, October 2, 2023 11:10 AM
To: Daniel Hurd <dhurd@hilcorp.com>; Powell, Brandon, EMNRD <Brandon.Powell@emnrd.nm.gov>; Farmington Regulatory Techs <FarmingtonRegulatoryTechs@hilcorp.com>
Cc: Jose Morales <jomorales@hilcorp.com>; Trey Misuraca <Trey.Misuraca@hilcorp.com>; Issac Overright - (C) <Issac.Overright@hilcorp.com>; Jackson Lancaster <Jackson.Lancaster@hilcorp.com>; Sikandar Khan <Sikandar.Khan@hilcorp.com>; John Brown <jbrown@hilcorp.com>; Wrinkle, Justin, EMNRD <Justin.Wrinkle@emnrd.nm.gov>; Bryan Richards <brichards@hilcorp.com>; Griffin Selby <Griffin.Selby@hilcorp.com>
Subject: RE: [EXTERNAL] State N #1M 30-045-25419

Dan

Approval is given to use bottom DV tool leak as a perforation in MV formation – Will need to submit sundry and updated well completion

Approval is given to move up hole to 3600 feet and run the acoustic log – we recommend running another radial log under pressure.

Thank you

Monica Kuehling
Compliance Officer Supervisor
Deputy Oil and Gas Inspector
New Mexico Oil Conservation Division
North District
Office Phone: 505-334-6178 ext. 123
Cell Phone: 505-320-0243
Email - monica.kuehling@emnrd.nm.gov

From: Daniel Hurd <dhurd@hilcorp.com>
Sent: Friday, September 29, 2023 3:00 PM
To: Powell, Brandon, EMNRD <Brandon.Powell@emnrd.nm.gov>; Farmington Regulatory Techs <FarmingtonRegulatoryTechs@hilcorp.com>; Kuehling, Monica, EMNRD <monica.kuehling@emnrd.nm.gov>
Cc: Jose Morales <jomorales@hilcorp.com>; Trey Misuraca <Trey.Misuraca@hilcorp.com>; Issac Overright - (C) <Issac.Overright@hilcorp.com>; Jackson Lancaster <Jackson.Lancaster@hilcorp.com>; Sikandar Khan <Sikandar.Khan@hilcorp.com>; John Brown <jbrown@hilcorp.com>; Wrinkle, Justin, EMNRD <Justin.Wrinkle@emnrd.nm.gov>; Bryan Richards <brichards@hilcorp.com>; Griffin Selby <Griffin.Selby@hilcorp.com>
Subject: RE: [EXTERNAL] State N #1M 30-045-25419

Brandon/Monica,
Below is a summary of diagnostic work performed on the subject well over the past two days.

9/28/23 – Ran a wireline noise log from 1,300' to surface making multiple passes with the bradenhead in the closed and open positions.

- The fluid level in the well was not at surface and needed to be topped off.
- We believe that fluid moving downhole has compromised the log information collected.

9/29/23 – Ran in with a packer to confirm that the RBP is set and holding pressure.

- Discovered an interval that leaked off between 3,788.5' and 3,842' (Note: there is a DV tool set at 3,812' and most likely the leak point)
- The top of the Mesa Verde Cliffhouse interval is 3,780'
- The leak interval appears to be within the Mesa Verde. We would not recommend squeezing this interval. We would propose that the C-104 be amended to include the Mesa Verde interval.
- The leak interval is above the perforated interval 3,974' – 4,495'
- Our interpretation is that the interval that would not hold pressure is not connected to any issue concerning the braden head gas. It did however, nullify the noise log results obtained on 9/28.
- We tested the casing from 3,788.5' to surface to 560 psi. The section of casing help pressure.

We are working under a directive to find the source of gas and/or fix by 10/1/23. I would like to request an extension of 30 days since we are working towards this goal.

With approval, we could move the RPB to 3,600' and re-run the acoustic log.
The information gathered with the temperature log and two cement bond logs indicate vertical cement isolation between 450' and 950'.
This isolation should not allow gas migration within this wellbore from the Kirtland to Nacimiento (above the TOC).

Thanks for your consideration.

Dan Hurd
O: 713-289-2802
C: 713-408-2461

From: Powell, Brandon, EMNRD <Brandon.Powell@emnrd.nm.gov>
Sent: Wednesday, September 27, 2023 5:57 PM
To: Laura Bohorquez <Laura.Bohorquez@hilcorp.com>; Farmington Regulatory Techs <FarmingtonRegulatoryTechs@hilcorp.com>; Kuehling, Monica, EMNRD <monica.kuehling@emnrd.nm.gov>
Cc: Jose Morales <jomorales@hilcorp.com>; Daniel Hurd <dhurd@hilcorp.com>; Trey Misuraca <Trey.Misuraca@hilcorp.com>; Issac Overright - (C) <Issac.Overright@hilcorp.com>; Jackson Lancaster <Jackson.Lancaster@hilcorp.com>; Eufracio Trujillo <etrujillo@hilcorp.com>; Sikandar Khan <Sikandar.Khan@hilcorp.com>; JP Knox <jknox@hilcorp.com>; Wrinkle, Justin, EMNRD <Justin.Wrinkle@emnrd.nm.gov>
Subject: FW: [EXTERNAL] State N #1M 30-045-25419

Greetings Hilcorp Team,

I have reviewed your email and will also provide our determinations however I will refrain from using Red text in my response. Your evaluations in part matched our evaluation as far as your statement that there appears to be gas from 311'-450' this interval is in the Nacimiento formation which is known in the basin to be a fresh water bearing formation and not a gas bearing zone.

Based on the current and historical bradenhead test information (provided below) this pressure has not been a constant which would indicate it is not coming from a constant gas bearing un-isolated zone. Both the 2020 and 2017 tests below show less than 15psi initial shut-in pressures which is considerably less than the 2023, 106psi. Also, the slow build as shown by the 2psi 5 min shut in shows the source of the gas is likely slow moving, restricted, or potential micro-annulus.

Based on these observations was our recommendation to consider perforating at the Kirtland top not Ojo Alamo top (which is also a freshwater formation) to try to ensure isolation of the producing formations in the case of a potential micro-annulus. Our other recommendation was to evaluate offset wells to look for other potential sources of the gas migration.

Because this well is operated by Hilcorp it is Hilcorp's responsibility to identify the source of the gas and ensure the formation as properly isolated and the gas is properly addressed. OCD is open to other suggestions on how Hilcorp intends to accomplish this process. I would also like to note I believe Hilcorp mentioned to Monica that the Farmington sand formation was the potential source of the gas, I would point out the Farmington Sands are part of the Kirtland formation group and below the Kirtland formation top.

2023 BHT

Initial Pressure

Tubing	Intermediate	Casing	Bradenhead
95		100	106

Test Information

Testing Time Minutes	Bradenhead BH	Bradenhead Int	Bradenhead Csg	Interm Int	Interm Csg
5	0		103		
10	0		104		
15	0		104		
20	0		105		
25	0		108		
30	0		108		
5 Min SI	2				

Flow Characteristics
Steady Flow
Surges
Down to Nothing
Nothing
Gas
Water
Gas and Water

2020 BHT

Initial Pressure

Tubing	Intermediate	Casing	Bradenhead
110		111	1

Test Information

Testing Time Minutes	Bradenhead BH	Bradenhead Int	Bradenhead Csg	Interm Int	Interm Csg
5	0		111		
10	0		111		
15	0		111		
20					
25					
30					
5 Min SI	0				

Flow Characteristic
Steady Flow
Surges
Down to Nothing
Nothing
Gas
Water
Gas and Water

2017 BHT

Initial Pressure

Tubing	Intermediate	Casing	Bradenhead
97		115	12

Test Information

Testing Time Minutes	Bradenhead BH	Bradenhead Int	Bradenhead Csg	Interm Int	Interm Csg
5	0		115		
10	0		115		
15	0		115		
20					
25					
30					
5 Min SI	0				

Flow Characteristics
Steady Flow
Surges
Down to Nothing
Nothing
Gas
Water
Gas and Water

Thank You

Brandon Powell
(505) 320-0200

"He who wishes to gain knowledge is wiser than he who thinks he has knowledge (unknown)"

From: Kuehling, Monica, EMNRD <monica.kuehling@emnrd.nm.gov>
Sent: Wednesday, September 27, 2023 10:11:20 AM
To: Powell, Brandon, EMNRD <Brandon.Powell@emnrd.nm.gov>
Subject: Fwd: [EXTERNAL] State N #1M 30-045-25419

Get Outlook for iOS

From: Laura Bohorquez <Laura.Bohorquez@hilcorp.com>
Sent: Wednesday, September 27, 2023 9:58:24 AM
To: Kuehling, Monica, EMNRD <monica.kuehling@emnrd.nm.gov>; Farmington Regulatory Techs <FarmingtonRegulatoryTechs@hilcorp.com>
Cc: Jose Morales <jomorales@hilcorp.com>; Daniel Hurd <dhurd@hilcorp.com>; Trey Misuraca <Trey.Misuraca@hilcorp.com>; Issac Overright - (C) <Issac.Overright@hilcorp.com>; Jackson Lancaster <Jackson.Lancaster@hilcorp.com>; Eufracio Trujillo <etrujillo@hilcorp.com>; Sikandar Khan <Sikandar.Khan@hilcorp.com>
Subject: RE: [EXTERNAL] State N #1M 30-045-25419

OCD Team,
Our logs and historical reports show the following:

CBL: adequate >80% cement bond to formation and production casing from DV tool at 1290' – 450'

RBL: shows more than adequate bond >80% isolating all formations below ~500'. Also indicates no channeling.

Temperature Survey: shows a deviation at ~422'. Wellbore has a gradient of 2deg/100', above 422' gradient is ~1deg/100'. This is indicative of gas flow.

Surface Casing: Shoe at 311'. Cemented to surface.

Initial Production Casing Cement Report: Circulated 10 BBL cement to surface. Circulated excess cement to surface, and cement intrusion into a depleted zone dropped adequate TOC to ~450'

- **Due to the results of the primary cement job, we think there is low probability of isolating the exposed formation 311'-450' through remedial cementing.**

Reservoir engineering analysis of Resistivity and SP Logs: indicates there is no freshwater zones in the depths of 311'-450'. Also indicates there could be a gas bearing permeable sand between 311'-450'.

All of the above information leads us to think that the BH gas and associated pressure is coming from a gas bearing stringer somewhere between 311'-450'.

Remediation Option:

- **Tie in BH to produce gas to pit, thus preventing gas intrusion/contamination into any possible fresh water zones within that exposed 311'-450' interval.**
  - **This would eliminate BH pressure/gas on exposed formation from 311'-450', better protecting any exposed freshwater zones.**

Could you please help us understand how perforating at 1090' at the Ojo Alamo Top and monitoring offset production casing pressures would give us a path forward to remediating this BH pressure and gas flow?

- We have log evidence of >80% cement bond at/above/below 1090'

Hilcorp Energy Company

Schematic - Current

Well Name: STATE N 1M

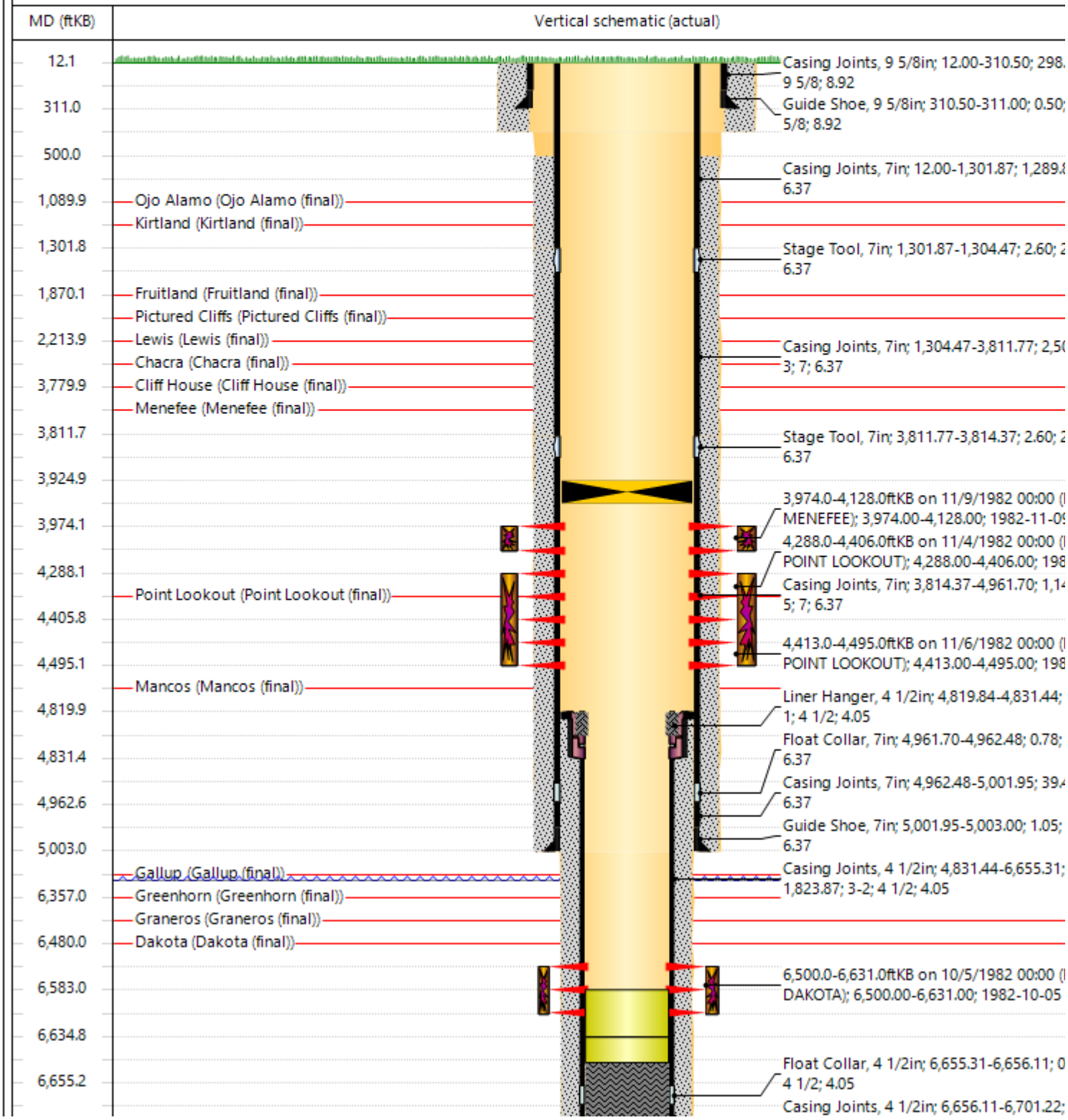
API / UWI	Surface Legal Location	Field Name	License No.	State/Province	Well Configuration Ty
3004525419	032-029N-009W-D	MV/DK COM		NEW MEXICO	Vertical
Original KB/RT Elevation (ft)	**RKB to GL (ft)**	**Original Spud Date**	**Rig Release Date**	**PBTD (All)**	**Total Depth All (TVD)**
5,791.00	12.00	9/5/1982 00:00			

Most Recent Job

Job Category	Primary Job Type	Secondary Job Type	Actual Start Date	End Date
Expense Workover	BRADENHEAD REPAIR		9/22/2023	

TD: 6,702.0

Original Hole [Vertical]



Thank you,

Laura Bohorquez
Operations Engineer | San Juan South
Hilcorp Energy Company | 1111 Travis Street | Houston, TX 77002
M: 832.512.3292
laura.bohorquez@hilcorp.com

From: Kuehling, Monica, EMNRD <monica.kuehling@emnrd.nm.gov>
Sent: Monday, September 18, 2023 11:19 AM
To: Laura Bohorquez <Laura.Bohorquez@hilcorp.com>; Farmington Regulatory Techs <FarmingtonRegulatoryTechs@hilcorp.com>
Cc: Jose Morales <jomorales@hilcorp.com>; Daniel Hurd <dhurd@hilcorp.com>; Trey Misuraca <Trey.Misuraca@hilcorp.com>; Issac Overright - (C) <Issac.Overright@hilcorp.com>; Jackson Lancaster <Jackson.Lancaster@hilcorp.com>; Eufracio Trujillo <etrujillo@hilcorp.com>
Subject: RE: [EXTERNAL] State N #1M 30-045-25419

CAUTION: External sender. DO NOT open links or attachments from UNKNOWN senders.

NMOCD approves below as long as Hilcorp is making the attempt to get to location.

Please keep NMOCD informed on progress.

Thank you

Monica Kuehling
Compliance Officer Supervisor
Deputy Oil and Gas Inspector
New Mexico Oil Conservation Division
North District
Office Phone: 505-334-6178 ext. 123
Cell Phone: 505-320-0243
Email - monica.kuehling@emnrd.nm.gov

From: Laura Bohorquez <Laura.Bohorquez@hilcorp.com>
Sent: Monday, September 18, 2023 10:09 AM
To: Kuehling, Monica, EMNRD <monica.kuehling@emnrd.nm.gov>; Farmington Regulatory Techs <FarmingtonRegulatoryTechs@hilcorp.com>
Cc: Jose Morales <jomorales@hilcorp.com>; Daniel Hurd <dhurd@hilcorp.com>; Trey Misuraca <Trey.Misuraca@hilcorp.com>; Issac Overright - (C) <Issac.Overright@hilcorp.com>; Jackson Lancaster <Jackson.Lancaster@hilcorp.com>; Eufracio Trujillo <etrujillo@hilcorp.com>
Subject: RE: [EXTERNAL] State N #1M 30-045-25419

Hi Monica, following up in writing to our phone call.

We are trying to RU on this BH repair ASAP to comply with the 90 day directive deadline of 10/1/2023. Unfortunately, in order to MIRU, there are some surface/road repairs needed that require a onecall.

Will we be OK if we RU just after the road repairs are complete?

Thanks,
Laura Bohorquez

Laura Bohorquez
Operations Engineer | San Juan South
Hilcorp Energy Company | 1111 Travis Street | Houston, TX 77002
M: 832.512.3292
laura.bohorquez@hilcorp.com

From: Kuehling, Monica, EMNRD <monica.kuehling@emnrd.nm.gov>
Sent: Monday, July 3, 2023 4:24 PM
To: Farmington Regulatory Techs <FarmingtonRegulatoryTechs@hilcorp.com>
Subject: [EXTERNAL] State N #1M 30-045-25419

Hello all

A bradenhead test was witnessed by Monica Kuehling on June 15, 2023.

Bradenhead = 106
Production Casing = 100
Tubing = 95

Wellbore schematic and gas analysis have been received. Gas does not appear to be the same. However, strings are close to equalization. Bradenhead blew entire 30 minute test with 5 minute shut in at 2.

Direct communication was not observed.

Previous tests show

BH – 2020 = 1
2017 = 12
2011 = 0
2008 = 136
2005 = 35

In order to comply with Rule 19.15.16.11, prevent waste and protect fresh water, Hilcorp Energy Company is directed to find source of gas and fix or plug within 90 days of the date of this email.

If you have any questions, please let me know.

Thank you

Monica Kuehling
Compliance Officer Supervisor
Deputy Oil and Gas Inspector
New Mexico Oil Conservation Division
North District
Office Phone: 505-334-6178 ext. 123
Cell Phone: 505-320-0243
Email - monica.kuehling@emnrd.nm.gov

Sante Fe Main Office
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Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

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

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 276444
	Action Type: [C-103] Sub. Workover (C-103R)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	approved for record only	5/12/2025