Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

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

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.

2. Name of Operator

9. API Well No.
30-005-64416

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date

Title

Approved by *(Signature)*	Name *(Printed/Typed)*	Date

Title	Office

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 05/30/2024

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-005-64416	96101	SWD; Devonian

[4] Property Code	[5] Property Name	[6] Well Number
337334	MANITOBA SWD	1

[7] OGRID No.	[8] Operator Name	[9] Elevation
13837	MACK ENERGY CORPORATION	3937.6

[10] Surface Location

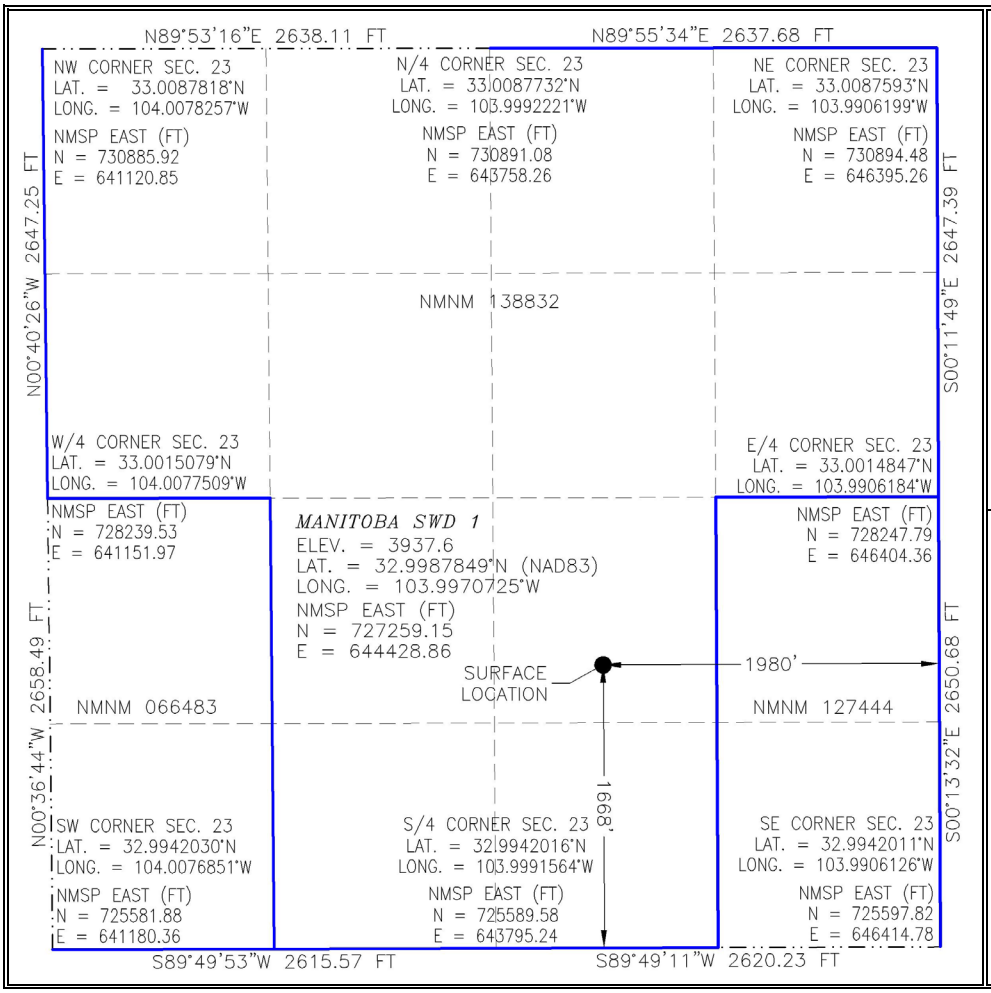
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	23	15 S	29 E		1668	SOUTH	1980	EAST	CHAVES

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
40			SWD-2610

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Deana Weaver 2/15/2024
Signature Date

Deana Weaver
Printed Name

dweaver@mec.com
E-mail Address

[18] SURVEYOR CERTIFICATION

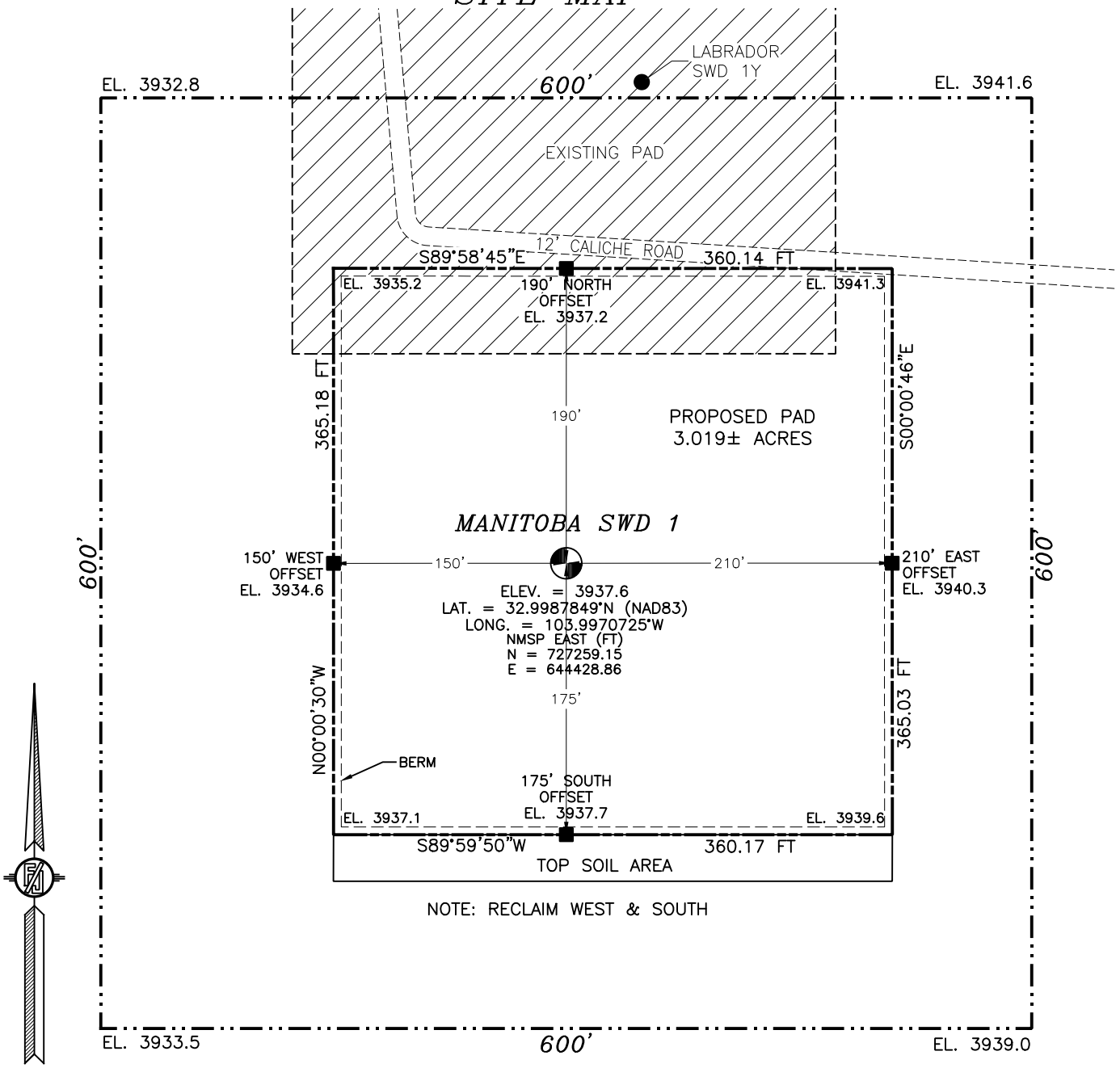
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

JANUARY 30, 2024
Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number: EDMUND F. JARAMILLO, PLS 12797
SURVEY NO. 9999

SECTION 23, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
SITE MAP



010 50 100 200
SCALE 1" = 100'

DIRECTIONS TO LOCATION
FROM THE INTERSECTION OF ST. HWY. 82 & CO. RD. 217 (HAGERMAN CUTOFF), GO NORTH ON CO. RD. 217 APPROX. 12 MILES, TURN LEFT (WEST) ON 12' CALICHE LEASE ROAD AND GO APPROX 0.6 OF A MILE TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

I, FILIMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THIS SURVEY WAS MADE TO MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

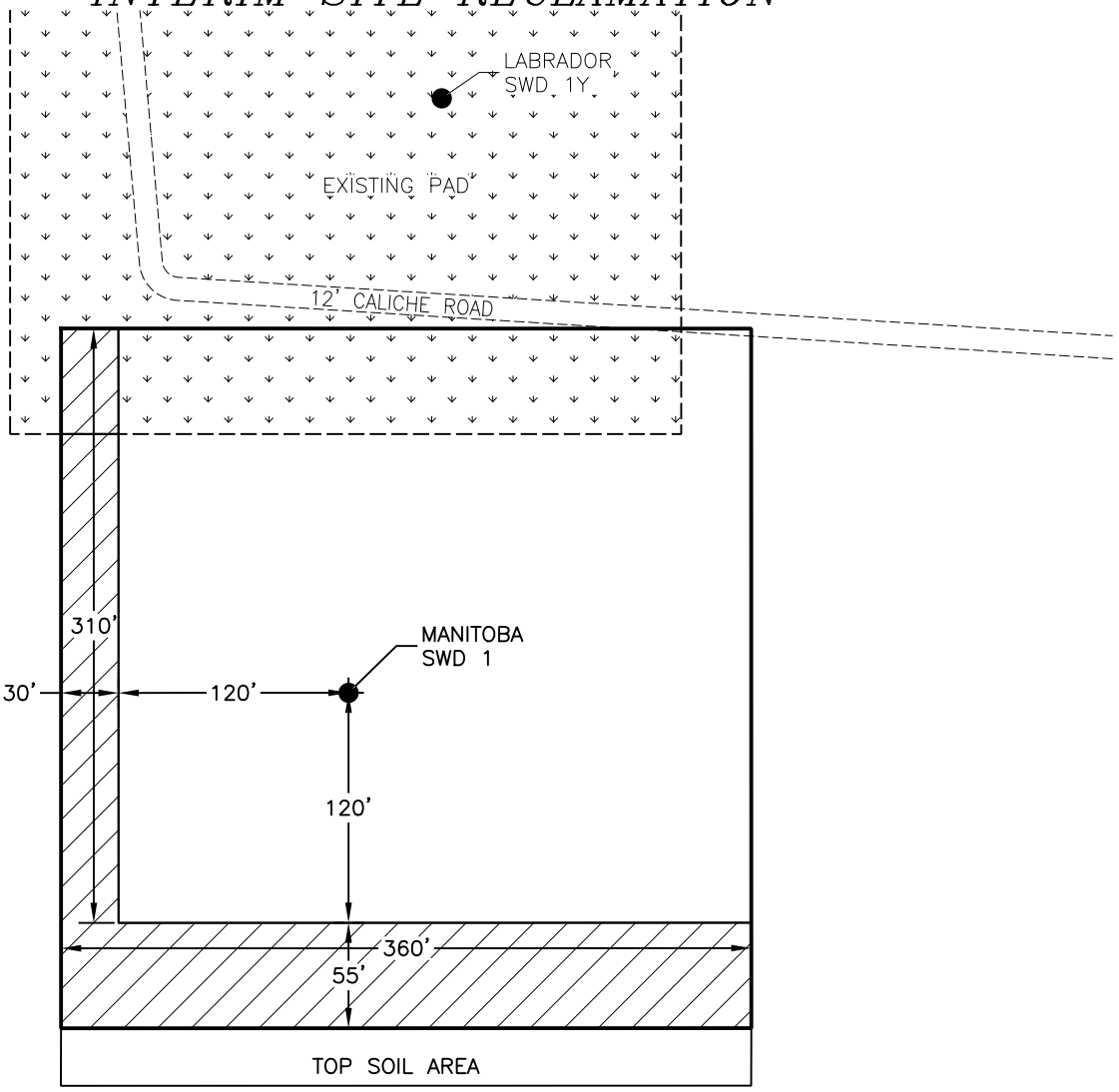
FILIMON F. JARAMILLO PLS 17078

MACK ENERGY CORPORATION
MANITOBA SWD 1
LOCATED 1668 FT. FROM THE SOUTH LINE AND 1980 FT. FROM THE EAST LINE OF SECTION 23, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M. CHAVES COUNTY, STATE OF NEW MEXICO

JANUARY 30, 2024
SURVEY NO. 9999

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 *CARLSBAD, NEW MEXICO*

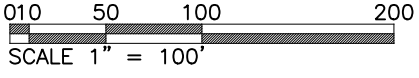
SECTION 23, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
INTERIM SITE RECLAMATION



NOTE: RECLAIM WEST & SOUTH

DENOTES RECLAMATION AREA

0.631± ACRES RECLAMATION AREA



MACK ENERGY CORPORATION

MANITOBA SWD 1

LOCATED 1668 FT. FROM THE SOUTH LINE AND 1980 FT. FROM THE EAST LINE OF SECTION 23, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M. CHAVES COUNTY, STATE OF NEW MEXICO

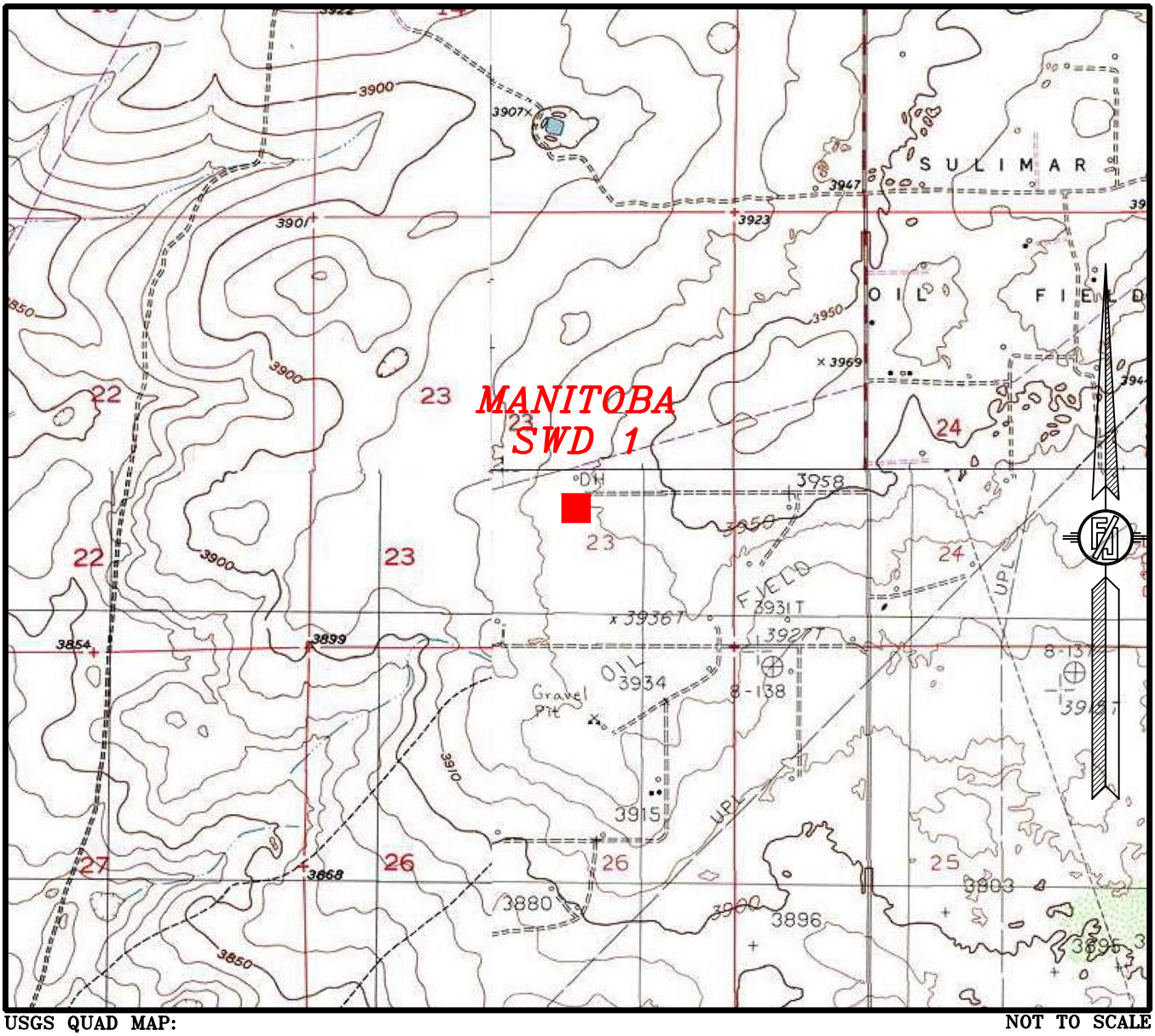
JANUARY 30, 2024

SURVEY NO. 9999

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 *CARLSBAD, NEW MEXICO*

SECTION 23, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

LOCATION VERIFICATION MAP



USGS QUAD MAP:
HENSHAW TANK
CEDAR POINT
KING CAMP
BASIN WELL

NOT TO SCALE

MACK ENERGY CORPORATION
MANITOBA SWD 1
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AND 1980 FT. FROM THE EAST LINE OF
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RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

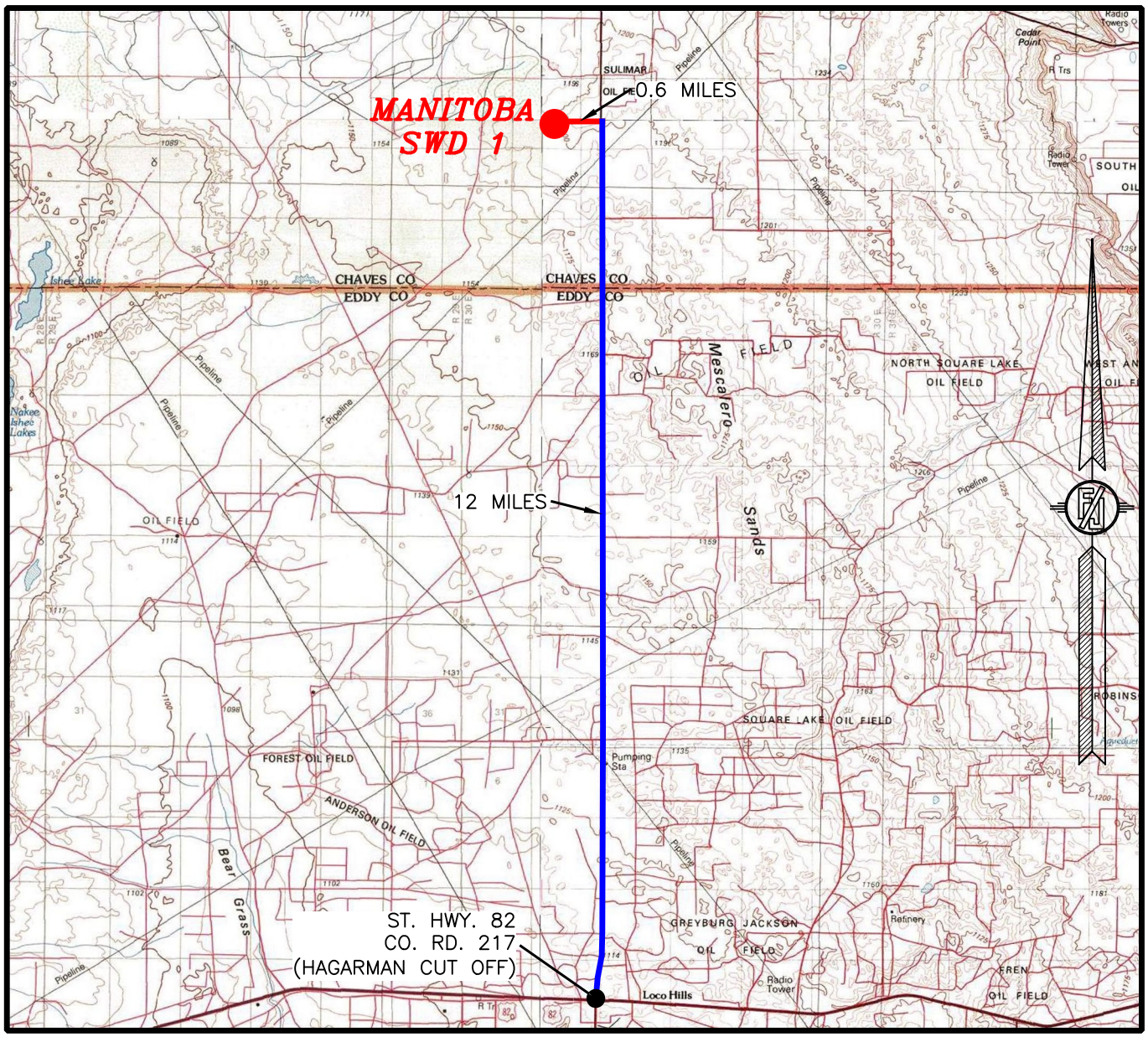
JANUARY 30, 2024

SURVEY NO. 9999

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 CARLSBAD, NEW MEXICO

SECTION 23, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION
FROM THE INTERSECTION OF ST. HWY. 82 & CO. RD. 217 (HAGERMAN CUTOFF), GO NORTH ON CO. RD. 217 APPROX. 12 MILES, TURN LEFT (WEST) ON 12' CALICHE LEASE ROAD AND GO APPROX 0.6 OF A MILE TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

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CHAVES COUNTY, STATE OF NEW MEXICO

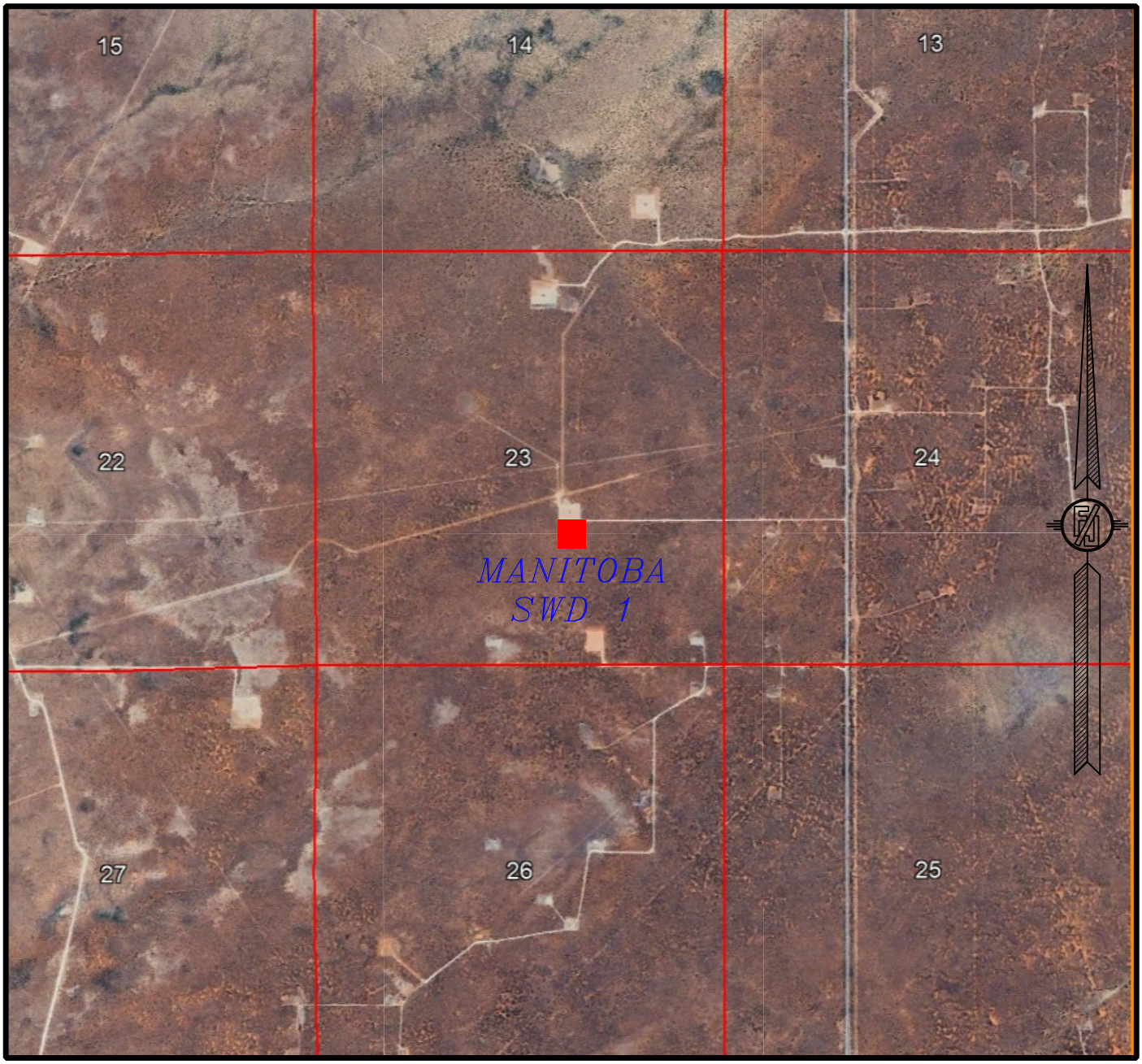
JANUARY 30, 2024

SURVEY NO. 9999

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 CARLSBAD, NEW MEXICO

SECTION 23, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
JUNE 2023

MACK ENERGY CORPORATION
MANITOBA SWD 1
LOCATED 1668 FT. FROM THE SOUTH LINE
AND 1980 FT. FROM THE EAST LINE OF
SECTION 23, TOWNSHIP 15 SOUTH,
RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

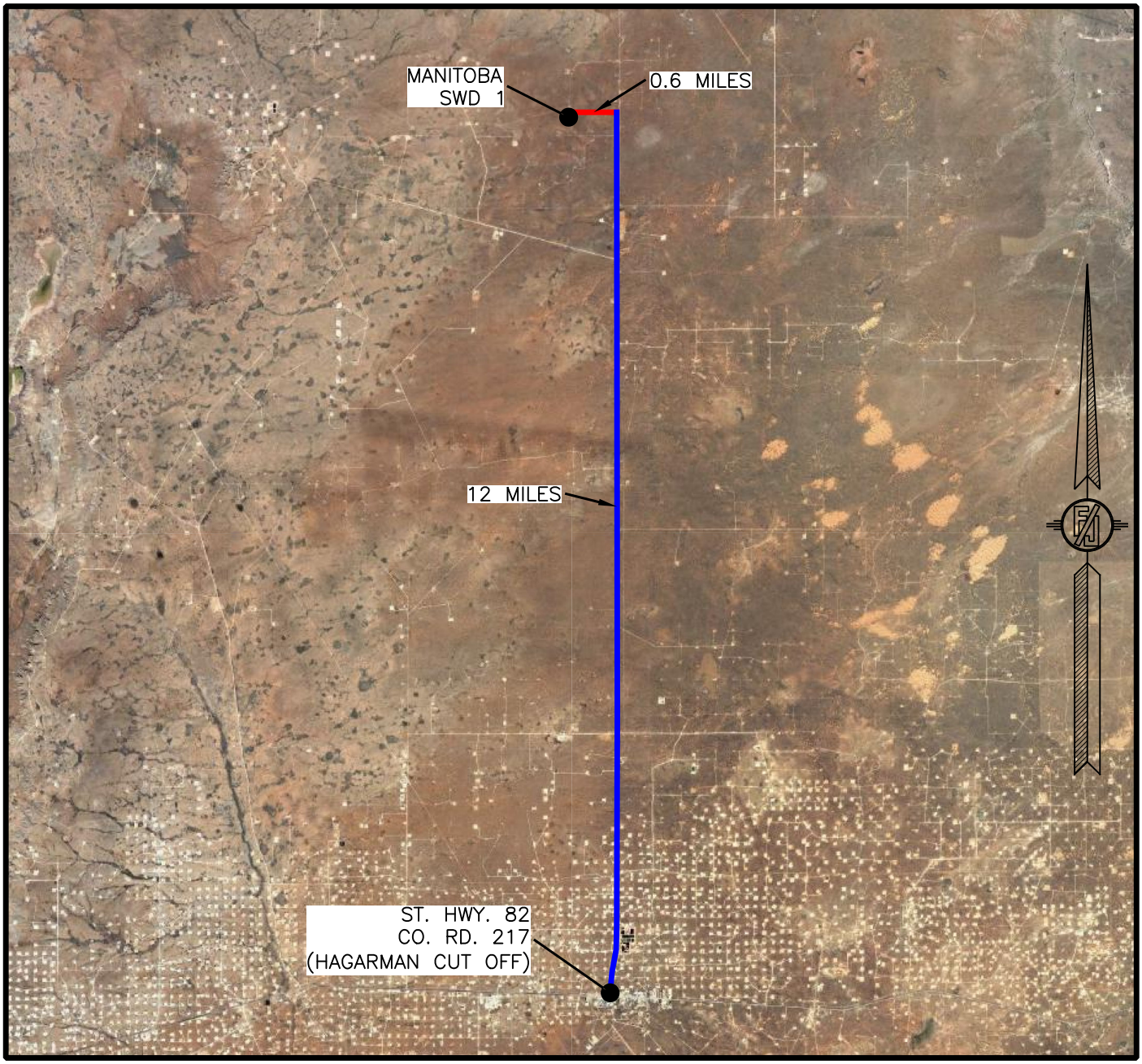
JANUARY 30, 2024

SURVEY NO. 9999

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 CARLSBAD, NEW MEXICO

SECTION 23, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
JUNE 2023

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MANITOBA SWD 1
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CHAVES COUNTY, STATE OF NEW MEXICO

JANUARY 30, 2024

SURVEY NO. 9999

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 CARLSBAD, NEW MEXICO

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

ORDER

GRANTING UIC PERMIT SWD-2610

Mack Energy Corporation ("Applicant") filed an Application for Authorization to Inject (Form C-108) ("Application") with the New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division ("OCD") to inject produced water at the Applicant's Manitoba SWD No. 1 ("Well"), as more fully described in Appendix A.

THE OCD FINDS THAT:

1. Applicant provided the information required by 19.15.26 NMAC and the Form C-108 for an application to inject produced water into a Class II Underground Injection Control ("UIC") well.

2. Applicant complied with the notice requirements of 19.15.26.8 NMAC.

3. No person filed a protest on the Application.

4. The Well will inject produced water into the Devonian formation(s).

5. The produced water injected into the Well will be confined by layers above and below the approved injection interval.

6. No other UIC wells which inject or that are authorized to inject produced water into the same approved injection interval have been permitted within a two-mile radius of the Well.

7. Applicant affirmed in a sworn statement by a qualified person that it examined the available geologic and engineering data and found no evidence of open faults or other hydrologic connections between the approved injection interval and any underground sources of drinking water.

8. Applicant is in compliance with 19.15.5.9 NMAC.

9. Applicant agrees to the Terms and Conditions in the attached Permit.

THE DIVISION CONCLUDES THAT:

1. OCD has authority under the Oil and Gas Act, NMSA 1978, §§70-2-1 *et seq.*, and its implementing regulations, 19.15.1 *et seq.* NMAC, and under the federal Safe Drinking Water Act, 42 U.S.C. 300f *et seq.*, and its implementing regulations, 40 CFR 144 *et seq.*, to issue this permit for a UIC Class II injection well. *See* 40 CFR 147.1600.

2. Based on the information and representations provided in the Application, the proposed injection, if conducted in accordance with the Application and the terms and conditions of the attached Permit, (a) will not result in waste of oil and gas; (b) will not adversely affect correlative rights; (c) will protect underground sources of drinking water; and (d) will protect the public health and environment.

3. Applicant is authorized to inject subject to the terms and conditions of the Permit.

IT IS THEREFORE ORDERED THAT:

The Applicant be granted UIC Permit SWD-2610 for the Manitoba SWD Well No. 1.

Date: 10/23/24

GERASIMOS RAZATOS
OCD DIRECTOR (Acting)
GR/th

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

UIC CLASS II PERMIT SWD-2610

APPENDIX A – AUTHORIZED INJECTION

Permittee: Mack Energy Corporation

OGRID No.: 13837

Well name: Manitoba SWD No. 1

Surface location: 1,668 feet from South line and 1,980 feet from East line (Unit Letter J), Section 23, Township 15 South, Range 29 East, NMPM, Chaves County
Latitude: 32.9987849°N; Longitude 103.9970725°W; NAD 1983.

Bottom hole location (if different): Same as surface location.

Type of completion: Open-hole

Type of injection: Produced Water from Permittee's production wells only

Injection fluid: Class II UIC (Produced Water)

Injection interval: Devonian-Silurian formations; 10,985 feet – 11,525 feet.

Injection interval thickness (feet): 540

Confining layer(s): Lower Mississippian formation (Upper); Montoya formation (Lower)

Prohibited injection interval(s): All formations above or below the permitted injection interval, including lost circulation zones.

Liner, tubing, and packer set: Internally-coated, 3.5-inch (or smaller diameter) tubing with the packer set within 100 feet of the top of open-hole completion; no liner used.

Maximum daily injection rate: 20,000 barrels of water per day.

Maximum surface injection pressure: 2,197 pounds per square inch.

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

UIC CLASS II PERMIT SWD-2610

Pursuant to the Oil and Gas Act, NMSA 1978, §§70-2-1 *et seq.*, ("Act") and its implementing regulations, 19.15.1 *et seq.* NMAC, ("Rules") and the federal Safe Drinking Water Act, 42 U.S.C. 300f *et seq.*, and its implementing regulations, 40 CFR 144 *et seq.*, the Oil Conservation Division ("OCD") issues this Permit to ("Permittee") to authorize Mack Energy Corporation the construction and operation of a well to inject produced water at the location and under the terms and conditions specified in this Permit and Appendix A.

I. GENERAL CONDITIONS

A. AUTHORIZATION

1. Scope of Permit. This Permit authorizes the injection of produced water into the well described on Appendix A ("Well"). Any injection not specifically authorized by this Permit is prohibited. Permittee shall be the "operator" of the Well as defined in 19.15.2.7(O)(5) NMAC.

a. Injection is limited to the approved injection interval described in Appendix A. Permittee shall not allow the movement of fluid containing any contaminant into an underground source of drinking water ("USDW") if the presence of that contaminant may cause a violation of a Primary Drinking Water Regulation adopted pursuant to 40 CFR Part 142 or that may adversely affect the health of any person. [40 CFR 144.12(a)]

b. The wellhead injection pressure for the Well shall not exceed the value identified in Appendix A.

c. Permittee shall not commence to drill, convert, or recomplete the Well until receiving this approval and until OCD approves a Form C-101 Application for Permit to Drill ("APD") pursuant to 19.15.14 NMAC or receives an approved federal Form 3160-3 APD for the Well. [40 CFR 144.11; 19.15.14.8 and 19.15.26.8 NMAC]

d. Permittee shall not commence injection into the Well until the Permittee complies with the conditions in Section I. C. of this Permit.

e. This Permit authorizes injection of any UIC Class II fluid or oil field waste defined in 19.15.2.7(E)(6) NMAC.

f. This Permit does not authorize injection for an enhanced oil recovery project as defined in 19.15.2.7(E)(2) NMAC.

2. Notice of Commencement. Permittee shall provide written notice on Form C-103 to OCD E-Permitting and notify OCD Engineering Bureau by email of the submittal no later than two (2) business days following the date on which injection commenced into the Well. [19.15.26.12(B) NMAC]

3. Termination. Unless terminated sooner, this Permit shall remain in effect for a term of twenty (20) years beginning on the date of issuance. Permittee may submit an application for a new permit prior to the expiration of this Permit. If Permittee submits an application for a new permit, then the terms and conditions of this Permit shall remain in effect until OCD denies the application or grants a new permit.

a. This Permit shall terminate one (1) year after the date of issuance if Permittee has not commenced injection into the Well, provided, however, that OCD may grant a single extension of no longer than one (1) year for good cause shown. Permittee shall submit a written request for an extension to OCD Engineering Bureau no later than thirty (30) days prior to the deadline for commencing injection.

b. One (1) year after the last date of reported injection into the Well, OCD shall consider the Well abandoned, the authority to inject pursuant to this Permit shall terminate automatically, and Permittee shall plug and abandon the Well as provided in Section I. E. of this Permit. Upon receipt of a written request by the Permittee no later than one year after the last date of reported injection into the Well, OCD may grant an extension for good cause. [19.15.26.12(C) NMAC]

B. DUTIES AND REQUIREMENTS

1. Duty to Comply with Permit. Permittee shall comply with the terms and conditions of this Permit. Any noncompliance with the terms and conditions of this Permit, or of any provision of the Act, Rules or an Order issued by OCD or the Oil Conservation Commission, shall constitute a violation of law and is grounds for an enforcement action, including revocation of this Permit and civil and criminal penalties. Compliance with this Permit does not relieve Permittee of the obligation to comply with any other applicable law, or to exercise due care for the protection of fresh water, public health and safety and the environment. The contents of the Application and Appendix A shall be enforceable terms and conditions of this Permit. [40 CFR 144.51(a); 19.15.5 NMAC]

2. Duty to Halt or Reduce Activity to Avoid Permit Violations. Permittee shall halt or reduce injection to avoid a violation of this Permit or other applicable law. It shall not be a defense in an enforcement action for Permittee to assert that it would have been necessary to halt or reduce injection in order to maintain compliance with this Permit. [40 CFR 144.51(c)]

3. Duty to Mitigate Adverse Effects. Permittee shall take all reasonable steps to minimize, mitigate and correct any waste or effect on correlative rights, public health, or the environment resulting from noncompliance with the terms and conditions of this Permit. [40 CFR 144.51(d)]

4. Duty to Operate and Maintain Well and Facilities. Permittee shall operate and maintain the Well and associated facilities in compliance with the terms and conditions of this Permit. [40 CFR 144.51(e)]

5. Duty to Provide Information. In addition to any other applicable requirement, Permittee shall provide to OCD by the date and on the terms specified by OCD any information which OCD requests for the purpose of determining whether Permittee is complying with the terms and conditions of this Permit. [40 CFR 144.51(h)]

6. Private Property. This Permit does not convey a property right or authorize an injury to any person or property, an invasion of private rights, or an infringement of state or local law or regulations. [40 CFR 144.51(g)]

7. Inspection and Entry. Permittee shall allow OCD's authorized representative(s) to enter upon the Permittee's premises where the Well is located and where records are kept for the purposes of this Permit at reasonable times and upon the presentation of credentials to:

a. Inspect the Well and associated facilities;

b. Have access to and copy any record required by this Permit;

c. Observe any action, test, practice, sampling, measurement or operation of the Well and associated facilities; and

d. Obtain a sample, measure, and monitor any fluid, material or parameter as necessary to determine compliance with the terms and conditions of this Permit. [40 CFR 144.51(i)]

8. Certification Requirement. Permittee shall sign and certify the truth and accuracy of all reports, records, and documents required by this Permit or requested by OCD. [40 CFR 144.51(k)]

9. Financial Assurance. Permittee shall provide and maintain financial assurance for the Well in the amount specified by OCD until the Well has been plugged and abandoned and the financial assurance has been released by OCD. [40 CFR 144.52; 19.15.8.12 NMAC]

C. PRIOR TO COMMENCING INJECTION

1. Construction Requirements.

a. Permittee shall construct the Well as described in the Application, Appendix A and as required by the Special Conditions.

b. Permittee shall construct and operate the Well in a manner that ensures the injected fluid enters only the approved injection interval and is not permitted to escape to other formations or onto the surface.

2. Tests and Reports. Permittee shall complete the following actions prior to commencing injection in the Well.

a. Permittee shall obtain and comply with the terms and conditions of an approved APD prior to commencing drilling of the Well, or other OCD approval, as applicable, prior to converting or recompleting the Well. If the APD is approved by the OCD, the Well shall be subject to the construction, testing, and reporting requirements of 19.15.16 NMAC.

b. Permittee shall circulate to surface the cement for all casing strings (surface, intermediate and production casings). If cement does not circulate on any casing string, Permittee shall run a cement bond log ("CBL") to determine the top of cement, then notify the OCD Engineering Bureau and the appropriate OCD Inspection Supervisor and submit the CBL prior to continuing with any further cementing on the Well. If the cement did not tie back into next higher casing shoe, Permittee shall perform remedial cement action to bring the cement to a minimum of two hundred (200) feet above the next higher casing shoe.

c. If a liner is approved for the construction of the Well, Permittee shall run and submit to OCD E-Permitting and notify the OCD Engineering Bureau by email, a CBL for the liner to demonstrate placement cement and the cement bond with the tie-in for the casing string.

d. Permittee shall submit the mudlog, geophysical logs, and a summary of depths (picks) for the contacts of the formations demonstrating that only the permitted formation is open for injection. OCD may amend this Permit to specify the depth of the approved injection interval within the stratigraphic interval requested in the application. If Permittee detects a hydrocarbon show during the drilling of the Well, it shall notify OCD Engineering Bureau by email and obtain written approval prior to commencing injection into the Well.

e. Permittee shall obtain and submit on a Form C-103 a calculated or measured static bottom-hole pressure measurement representative of the completion in the approved injection interval.

f. Permittee shall conduct an initial mechanical integrity test ("MIT") on the Well in compliance with the terms and conditions of this Permit and 19.15.26 NMAC, and shall not commence injection into the Well until the results of the initial MIT have been approved by the appropriate OCD Inspection Supervisor. [19.15.26.11(A) NMAC]

g. OCD retains authority to require a wireline verification of the completion and packer setting depths in this Well. [19.15.26.11(A) NMAC]

D. OPERATION

1. Operation and Maintenance.

a. Permittee shall equip, operate, monitor and maintain the Well to facilitate periodic testing, assure mechanical integrity, and prevent significant leaks in the tubular goods and packing materials used and significant fluid movements through vertical channels adjacent to the well bore. [19.15.26.10(A) NMAC]

b. Permittee shall operate and maintain the Well and associated facilities in a manner that confines the injected fluid to the approved injection interval and prevents surface damage and pollution by leaks, breaks and spills. [19.15.26.10(B) NMAC]

c. OCD may authorize an increase in the maximum surface injection pressure upon a showing by the Permittee that such higher pressure will not result in the migration of the disposed fluid from the approved injection interval or induced seismicity. Such proper showing shall be demonstrated by sufficient evidence, including an acceptable step-rate test.

d. If OCD has reason to believe that operation of the Well may have caused or determined to be contributing to seismic activity, Permittee shall, upon OCD's written request:

i. Take immediate corrective action, which could include testing and evaluating of the injection interval and confining layers; suspending or reducing of the rate of injection or maximum surface injection pressure, or both; and providing increased monitoring of the Well's operation; and

ii. Submit a remedial work plan or an application to modify the Permit to implement the corrective action, plug back the injection interval, or incorporate another modification required by OCD.

OCD may approve the remedial work plan, modify the Permit or issue an emergency order or temporary cessation order as it deems necessary.

2. Pressure Limiting Device.

a. The Well shall be equipped with a pressure limiting device, which is in workable condition and can be tested for proper calibration at the well site, that shall limit surface tubing pressure to the maximum surface injection pressure specified in Appendix A.

b. Permittee shall test the pressure limiting device and all gauges and other metering requirement to ensure their accuracy and proper function no less than every five (5) years.

3. Mechanical Integrity. Permittee shall conduct a MIT prior to commencing injection, at least every five (5) years after the date of the previous MIT, and whenever the tubing is removed or replaced, the packer is reset, mechanical integrity is lost, Permittee proposes to transfer the Well, or requested by OCD.

a. MITs shall be conducted in accordance with 19.15.26 NMAC.

b. Permittee shall submit a sundry notice on Form C-103 of intent to install or replace injection equipment or conduct a MIT no later than three (3) business days prior to the event.

c. Permittee shall report the result of a MIT no later than two (2) business days after the test.

d. Permittee shall cease injection and shut-in the Well no later than twenty-four (24) hours after discovery if:

i. The Well fails a MIT; or

ii. Permittee observes conditions at the Well that indicate the mechanical failure of tubing, casing, or packer.

e. Permittee shall take all necessary actions to address the effects resulting from the loss of mechanical integrity in accordance with 19.15.26.10 NMAC.

f. Permittee shall conduct a successful MIT pursuant to 19.15.26.11 NMAC, including written approval from OCD prior to recommencing injection and the requirements contained in Section I G.3.

4. Additional Tests. Permittee shall conduct any additional test requested by OCD, including but not limited to step-rate tests, tracer surveys, injection surveys, noise logs, temperature logs, and casing integrity logs [19.15.26.11(A)(3) NMAC]

5. Records.

a. Permittee shall retain a copy of each record required by this Permit for a period of at least five (5) years and shall furnish a copy to OCD upon request. [40 CFR 144.51(h)]

b. Permittee shall retain a record of each test, sample, measurement, and certification of accuracy and function collected for the Well, including:

i. Date, location, and time of sample, measurement or calibration;

ii. Person who conducted the sample event, measurement or calibration;

iii. Calibration of gauge or other equipment in accordance with the manufacturer's specifications;

iv. Description of method and procedures;

v. Description of handling and custody procedures; and

vi. Result of the analysis.

E. PLUGGING AND ABANDONMENT

1. Upon the termination of this Permit, Permittee shall plug and abandon the Well and restore and remediate the location in accordance with 19.15.25 NMAC.

2. If Permittee has received an extension pursuant to Section I. A. 3. b., Permittee shall apply for approved temporary abandonment pursuant to 19.15.25 NMAC.

3. If this Permit expires pursuant to 19.15.26.12 NMAC and OCD has not issued a new permit, then Permittee shall plug and abandon the Well and restore and remediate the location in accordance with 19.15.25 NMAC.

4. Permittee's temporary abandonment of the Well shall not toll the abandonment of injection in accordance with 19.15.26.12(C) NMAC.

F. REPORTING

1. Monthly Reports. Permittee shall submit a report using Form C-115 using the OCD's web-based online application on or before the 15th day of the second month following the month of injection, or if such day falls on a weekend or holiday, the first workday following the 15th, with the number of days of operation, injection volume, and injection pressure. [19.15.26.13 NMAC; 19.15.7.24 NMAC]

2. Corrections. Permittee shall promptly disclose to OCD any incorrect information in the Application or any record required by this Permit and submit corrected information. [40 CFR 144.51(h)(8)]

G. CORRECTIVE ACTION

1. Releases. Permittee shall report any unauthorized release of injection fluid at the Well or associated facilities in accordance with 19.15.29 and 19.15.30 NMAC.

2. Failures and Noncompliance. Permittee shall report the following incidents to appropriate OCD Inspection Supervisor and OCD Engineering Bureau verbally and by e-mail no later than 24 hours after such incident:

a. Any mechanical integrity failures identified in Section I. D. 3. d;

b. The migration of injection fluid from the injection interval [19.15.26.10 NMAC]; or

c. A malfunction of the Well or associated facilities that may cause waste or affect the public health or environment, including: (a) monitoring or other information which indicates that a contaminant may affect a USDW; or (b) noncompliance or malfunction which may cause the migration of injection fluid into or between USDWs. [40 CFR 144.51(l)(6)]

3. Corrective Action. Permittee shall submit a written report describing the incident in Sections I.G.1 or I.G.2, including a corrective active plan, no later than five (5) calendar days after discovery of the incident. [40 CFR 144.51(l)(6)] For an unauthorized release, Permittee also shall comply with the site assessment, characterization and remediation requirements of 19.15.29 and 19.15.30 NMAC.

4. Restriction or Shut-In. OCD may restrict the injected volume and pressure or shut-in the Well if OCD determines that the Well has failed or may fail to confine the injected fluid to the approved injection interval or has caused induced seismicity until OCD determines that Permittee has identified and corrected the failure. [19.15.26.10(E) NMAC]

H. PERMIT CHANGES

1. Transfer. This Permit shall not be transferred without the prior written approval of OCD. Permittee shall file Form C-145 for a proposed transfer of the Well. OCD may require, as a condition of approving the transfer, that this Permit be amended to ensure compliance and consistency with applicable law. If the Well has not been spud prior to the transfer, the OCD may require that the new operator reapply and submit to the OCD a new Form C-108 prior to constructing and injecting into the well. [19.15.26.15 NMAC; 19.15.9.9 NMAC]

2. Insolvency. Permittee shall notify OCD Engineering Bureau of the commencement of a voluntary or involuntary proceeding in bankruptcy which names Permittee or an entity which operates the Well on behalf of Permittee as a debtor no later than ten (10) business days after the commencement of the proceeding.

3. OCD Authority to Modify Permit and Issue Orders

a. The OCD may amend, suspend, or revoke this Permit after notice and an opportunity for hearing if it determines that:

i. The Permit contains a material mistake;

ii. Permittee made an incorrect statement on which OCD relied to establish a term or condition of the Permit or grant this Permit;

iii. this Permit must be amended to ensure compliance and consistency with applicable law, including a change to the financial assurance requirements;

iv. The Well's operation may affect the water quality of fresh water;

v. Injected fluid is escaping from the approved injection interval;

vi. Injection may be caused or contributed to seismic activity: or

vii. Injection may cause or contribute to the waste of oil, gas or potash resources or affect correlative rights, public health, or the environment.

b. OCD retains jurisdiction to enter such orders as it deems necessary to prevent waste and to protect correlative rights, protect public health, and the environment.

c. OCD retains jurisdiction to review this Permit as necessary and no less than once every five (5) years, and may determine whether this Permit should be modified, revoked and reissued, or terminated. [40 CFR 144.36(a)]

4. Permittee Request to Modify Permit. Permittee may apply to modify the terms of this Permit.

a. **Minor Modifications**. OCD may make a minor modification to this Permit without notice and an opportunity for hearing for:

i. Non-substantive changes such as correction of typographical errors;

ii. Requirements for more frequent monitoring or reporting;

iii. Changes to the Well construction requirements provided that any alteration shall comply with the conditions of the Permit and does not change the Area of Review considered in the application for the Permit;

iv. Amendments to the plugging and abandonment plan;

v. Changes in the types of fluids injected which are consistent with sources listed in the application for the Permit and do not change the classification of the Well;

vi. Corrections of the actual injection interval if within the approved formation; or

vii. Transfer of a Permit for a Well that has been spud. [40 CFR 144.41]

b. **Major Modifications.** OCD shall require notice and an opportunity for hearing for any modification that is not minor. For such modifications, Permittee shall submit Form C-108 and comply with the notice requirements of 19.15.26 NMAC.

II. SPECIAL CONDITIONS

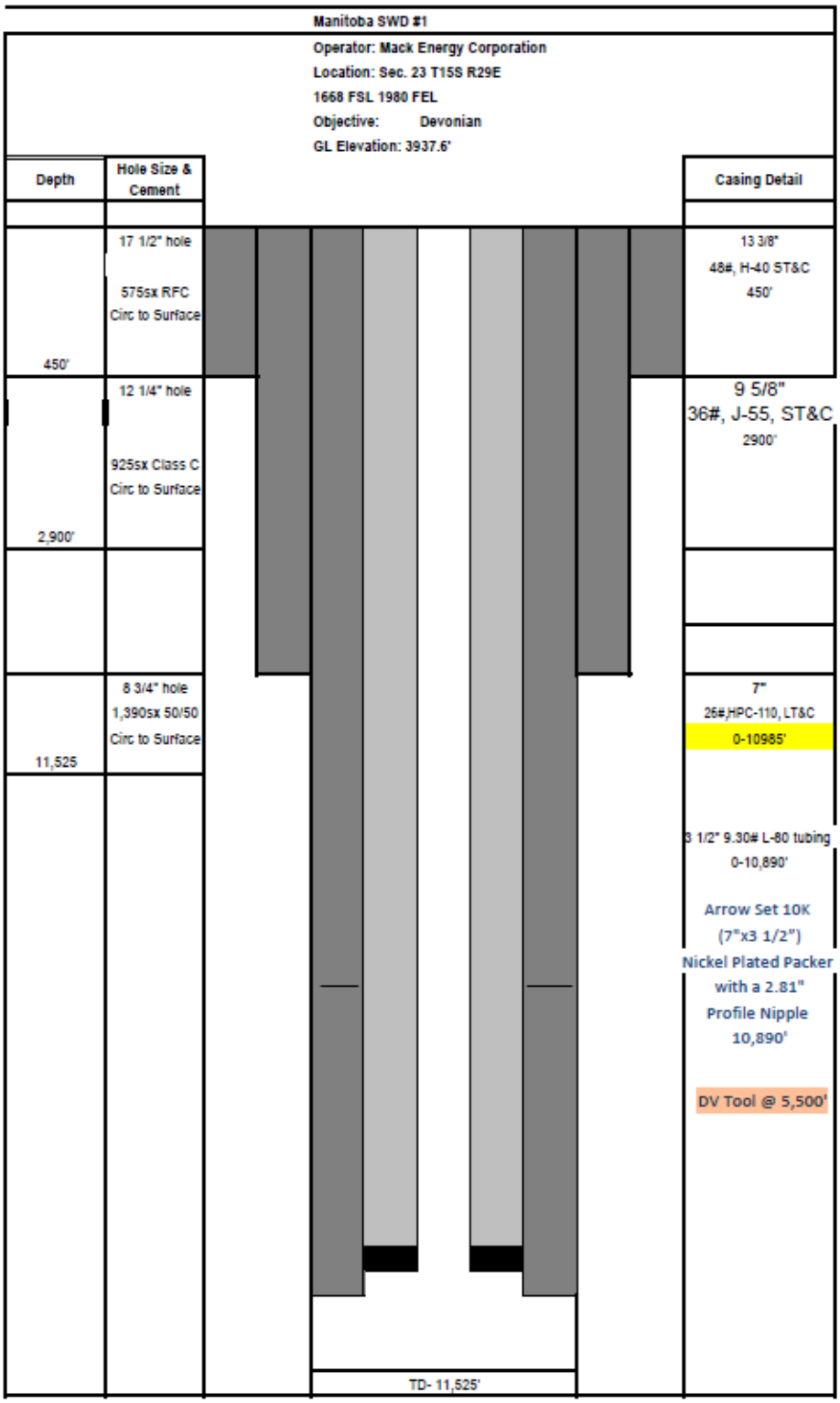
Permittee shall comply with the following special conditions:

1. The Permittee shall complete a Cement Bond Log (CBL) across the surface casing to validate cement integrity. The Permittee shall submit the CBL in a C-103 Subsequent Report with OCD within 10 days after completion of the log. If the CBL shows that cementing does not achieve a proper seal of the surface casing, the Permittee shall be required to submit a plan for remediation of the cement to achieve an acceptable seal.

2. The Permittee shall conduct a swab or production test of the approved injection interval and obtain a formation water sample for analysis of general water chemistry (including major cations, major anions, and Total Dissolved Solids ("TDS")). The Inspection Supervisor shall be noticed 24 hours prior to this test and given the opportunity to witness the test. Prior to commencing injection, the Permittee shall submit the results of the water sample [including the entire laboratory analytical report] to the OCD using a Form C-103 Subsequent Report (General; Form C-103Z) for approval. If the analysis of the sample is found to contain a TDS concentration of 10,000 milligrams per liter or less, the injection authority under this Permit shall be suspended *ipso facto*.

III. ATTACHMENT

Well Completion Diagram as Provided with the Additional Information request dated October 2, 2024.



District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Operator:	OGRID:
MACK ENERGY CORP P.O. Box 960 Artesia, NM 882110960	13837
	Action Number: 395076
	Action Type: [IM-SD] Admin Order Support Doc (ENG) (IM-AAO)

CONDITIONS

Created By	Condition	Condition Date
anthony.harris	None	10/23/2024

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description
Effective May 25, 2021

I. Operator: Mack Energy Corporation **OGRID:** 013837 **Date:** 2 / 21 / 2024

II. Type: ☑ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Manitoba SWD #1		J Sec. 23 T15S R29E	1668 FSL 1980 FEL	100	100	1,000

IV. Central Delivery Point Name: _____ [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Manitoba SWD #1		6/1/2024	6/20/2024	6/30/2024	6/30/2024	7/1/2024

VI. Separation Equipment: ☑ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☑ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☑ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan
EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☑ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☑ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.
If Operator checks this box, Operator will select one of the following:

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- **(a)** power generation on lease;
- **(b)** power generation for grid;
- **(c)** compression on lease;
- **(d)** liquids removal on lease;
- **(e)** reinjection for underground storage;
- **(f)** reinjection for temporary storage;
- **(g)** reinjection for enhanced oil recovery;
- **(h)** fuel cell production; and
- **(i)** other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	
Printed Name:	Deana Weaver
Title:	Regulatory Technician II
E-mail Address:	dweaver@mec.com
Date:	2/21/2024
Phone:	575-748-1288

OIL CONSERVATION DIVISION
(Only applicable when submitted as a standalone form)

Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	

VI. Separation Equipment:

Mack Energy Corporation(MEC) production facilities include separation equipment designed to efficiently separate gas from liquid phases to optimize gas capture based on projected and estimated volumes from the targeted pool of our completion project. MEC will utilize flowback separation equipment and production separation equipment designed and built to industry specifications after the completion to optimize gas capture and send gas to sales or flare based on analytical composition. MEC operates facilities that are typically multi-well facilities. Production separation equipment is upgraded prior to new wells being completed, if determined to be undersized or inadequate. This equipment is already on-site and tied into our sales gas lines prior to the new drill operations.

VII. Operational Practices:

1. Subsection (A) Venting and Flaring of Natural Gas. MEC understands the requirements of NMAC 19.15.27.8 which outlines that the venting and flaring of natural gas during drilling, completion or production operations that constitutes waste as defined in 19.15.2 are prohibited.
2. Subsection (B) Venting and Flaring during drilling operations. This gas capture plan isn't for a well being drilled.
3. Subsection (C) Venting and flaring during completion or recompletion. Flowlines will be routed for flowback fluids into a completion or storage tank and if feasible under well conditions, flare rather than vent and commence operation of a separator as soon as it is technically feasible for a separator to function.
    - At any point in the well life (completion, production, inactive) an audio, visual and olfactory inspection be performed at prescribed intervals (weekly or monthly) pursuant to Subsection D of 19.15.27.8 NMAC, to confirm that all production equipment is operating properly and there are no leaks or releases.
4. Subsection (D) Venting and flaring during production operations ○ At any point in the well life (completion, production, inactive) an audio, visual and olfactory inspection be performed at prescribed intervals (weekly or monthly) pursuant to Subsection D of 19.15.27.8 NMAC, to confirm that all production equipment is operating properly and there are no leaks or releases.
    - Monitor manual liquid unloading for wells on-site or in close proximity (<30 minutes' drive time), take reasonable actions to achieve a stabilized rate and pressure at the earliest practical time, and take reasonable actions to minimize venting to the maximum extent practicable.
    - MEC will not vent or flare except during the approved activities listed in NMAC 19.15.27.8 (D) 14.
5. Subsection (E) Performance standards ○ All tanks and separation equipment are designed for maximum throughput and pressure to minimize waste.
    - If a flare is utilized during production operations it will have a continuous pilot and is located more than 100 feet from any known well or storage tanks.
    - At any point in the well life (completion, production, inactive) an audio, visual and olfactory inspection be performed at prescribed intervals (weekly or monthly) pursuant to Subsection D of 19.15.27.8 NMAC, to confirm that all production equipment is operating properly and there are no leaks or releases.

6. Subsection (F) Measurement or estimation of vented and flared natural gas ○ Measurement equipment is installed to measure the volume of natural gas flared from process piping.
    - When measurement isn't practicable, estimation of vented and flared natural gas will be completed as noted in 19.15.27.8 (F) 5-6.

VIII. Best Management Practices:

1. MEC has adequate storage and takeaway capacity for wells it chooses to complete as the flowlines at the sites are already in place and tied into a gathering system.
2. MEC will flare rather than vent vessel blowdown gas when technically feasible during active and/or planned maintenance to equipment on-site.
3. MEC combusts natural gas that would otherwise be vented or flared, when technically feasible.
4. MEC will shut in wells in the event of a takeaway disruption, emergency situation, or other operations where venting or flaring may occur due to equipment failures.
5. MEC has a gas gathering system in place(CTB-887)a with multiple purchaser's to limit venting or flaring, due to purchaser shut downs.

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

Drilling Plan Data Report
05/30/2024

APD ID: 10400097244
Submission Date: 03/07/2024
Operator Name: MACK ENERGY CORPORATION
Well Name: MANITOBA SWD
Well Number: 1
Well Type: INJECTION - DISPOSAL
Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
13507794	QUATERNARY	3937	0	0	ALLUVIUM	NONE	N
13507795	TOP OF SALT	3475	462	462	SALT	NONE	N
13507802	BASE OF SALT	2914	1023	1023	SALT	NONE	N
13507790	YATES	2750	1187	1187	ANHYDRITE, SILTSTONE	NATURAL GAS, OIL	N
13507796	SAN ANDRES	1332	2605	2605	ANHYDRITE, DOLOMITE	NATURAL GAS, OIL	N
13507793	GLORIETA	-123	4060	4060	ANHYDRITE, DOLOMITE, SHALE	NATURAL GAS, OIL	N
13507803	TUBB	-1445	5382	5382	DOLOMITE, SHALE	NATURAL GAS, OIL	N
13507805	ABO	-2218	6155	6155	DOLOMITE, SHALE	NATURAL GAS, OIL	N
13507804	WOLFCAMP	-3558	7495	7495	LIMESTONE, SHALE	NATURAL GAS, OIL	N
13507797	ATOKA	-5752	9689	9689	LIMESTONE, SHALE	NATURAL GAS, OIL	N
13507791	MISSISSIPPIAN UPPER	-6263	10200	10200	LIMESTONE	NATURAL GAS, OIL	N
13507792	MISSISSIPPIAN LOWER	-6498	10435	10435	LIMESTONE	NATURAL GAS, OIL	N
13507799	DEVONIAN	-7048	10985	10985	LIMESTONE	NATURAL GAS, OIL	Y
13507800	MONTOYA	-7588	11525	11525	LIMESTONE	NATURAL GAS, OIL	N
13507801	SIMPSON	-7788	11725	11725	LIMESTONE	NATURAL GAS, OIL	N
13507798	ELLENBURGER	-8055	11992	11992	LIMESTONE	NATURAL GAS, OIL	N

Section 2 - Blowout Prevention

Operator Name: MACK ENERGY CORPORATION

Well Name: MANITOBA SWD **Well Number:** 1

Pressure Rating (PSI): 5M **Rating Depth:** 11525

Equipment: Rotating Head, Mud-Gas Separator

Requesting Variance? NO

Variance request:

Testing Procedure: The BOP/BOPE test shall include a low pressure test for 250 to 300psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. The estimated bottom hole at TD is 120 degrees and estimated maximum bottom hole pressure 5513psig (0.052*11525' TD*9.2). Will test to 5000 psi for 30 minutes.

Choke Diagram Attachment:

5m_Choke_Manifold_20240221145649.pdf

BOP Diagram Attachment:

5m_BOP_20240221145701.pdf

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	17.5	13.375	NEW	API	N	0	450	0	450	3937	3487	450	H-40	48	ST&C	3.294	3.396	BUOY	17.474	BUOY	3.46
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2900	0	2900	3937	1037	2900	J-55	36	ST&C	1.34	7.04	BUOY	4.456	BUOY	7.04
3	PRODUCTION	8.75	7.0	NEW	API	N	0	10985	0	10985	3937	-7048	10985	HCP-110	26	LT&C	1.422	3.082	BUOY	2.844	BUOY	3.317

Casing Attachments

Operator Name: MACK ENERGY CORPORATION

Well Name: MANITOBA SWD **Well Number:** 1

Casing Attachments

Casing ID: 1 **String** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Surface_Csg_20240221151907.pdf

Casing ID: 2 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Inter_Csg_20240221153017.pdf

Casing ID: 3 **String** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Production_Csg_20240222080355.pdf

Section 4 - Cement

Operator Name: MACK ENERGY CORPORATION

Well Name: MANITOBA SWD **Well Number:** 1

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	450	100	1.61	14.4	313		RFC+12% PF52+2%PF1+5pps PF42+.125pps PF29	20bbls Gelled Water 50sx of 11# Scavenger Cement
SURFACE	Tail		0	450	475	1.34	14.8	313	100	Class C+1%PF1	20bbls Gelled Water 50sx of 11# Scavenger Cement
INTERMEDIATE	Lead		0	2900	725	1.72	13.5	909	50	Class C+45PF20+.4pps PF45+.125 PF25	20bbls Gelled Water 50sx of 11# Scavenger Cement
INTERMEDIATE	Tail		0	2900	200	1.34	14.8	909	50	Class C+1%PF1	20bbls Gelled Water 50sx of 11# Scavenger Cement
PRODUCTION	Lead		0	10985	915	1.34	14.2	1652	35	50/50 POZ C+5% (BWOW) PF44+2%PF204+.2%PF606+.1%PF153+.4pps PF44	20bbls Gelled Water 20bbls Chemical Wash DV Tool Set at 5,500'
PRODUCTION	Tail		0	10985	475	2.82	13.5	1652	35	Lead- Class C4% Tail- 50/50POZ	DV Tool set at 5,500'

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: BOPE Brine Water

Describe the mud monitoring system utilized: Pason PVT with Pit Volume Recorder

Circulating Medium Table

Operator Name: MACK ENERGY CORPORATION

Well Name: MANITOBA SWD **Well Number:** 1

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	450	SPUD MUD	8.5	10	74.8	0.1	11		120	15	
450	2900	LSND/GEL	8.3	10	74.8	0.1	11		12000	15	
2900	10985	LSND/GEL	8.3	9.2	74.8	0.1	11		12000	15	The estimated bottom hole at TD is 120 degrees and estimated maximum bottom hole pressure is 5255psig (0.052*10,985' TD*9.2)

Section 6 - Test, Logging, Coring

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

NONE

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

COMPENSATED DENSILOG,CNL/FDC,GAMMA RAY LOG,DUAL LATERAL LOG/MICRO-SPHERICALLY FOCUSED,

Coring operation description for the well:

NONE

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5255 **Anticipated Surface Pressure:** 2719

Anticipated Bottom Hole Temperature(F): 95

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards

Hydrogen Sulfide drilling operations plan required? NO

Hydrogen sulfide drilling operations

Operator Name: MACK ENERGY CORPORATION

Well Name: MANITOBA SWD **Well Number:** 1

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Natural_Gas_Management_Plan_20240222083334.pdf
Escape_Route_20240222084440.pdf
H2S_Plan_20240307123807.pdf
Drilling_Program_20240314071529.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Other Variance attachment:

Attached to Form 3160-3
Mack Energy Corporation
Manitoba SWD #1 NMNM-138832
SHL : 1668 FSL & 1980 FEL, NWSE, Sec. 23 T15S R29E
Chaves County, NM

DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Yates	1187’
San Andres	2605’
Glorieta	4060’
Tubb	5382’
Abo	6155’
Wolfcamp	7495’
Atoka	9689’
U. Miss	10,200’
L. Miss	10,435’
Devonian	10,985’

3. Estimated Depths of Anticipated Fresh Water, Oil and Gas:

Water Sand	150’	Fresh Water
Yates	1187’	Oil/Gas
San Andres	2605’	Oil/Gas
Glorieta	4060’	Oil/Gas
Tubb	5382’	Oil/Gas
Abo	6155’	Oil/Gas
Wolfcamp	7495’	Oil/Gas
Atoka	9689’	Oil/Gas
U. Miss	10,200’	Oil/Gas
L. Miss	10,435’	Oil/Gas
Devonian	10,985’	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8” casing to 450’ and circulating cement back to surface will protect the surface fresh water sand. Salt section and shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them by cementing 5 ½” production casing, sufficient cement will be pumped to circulate back to surface.

4. Casing Program:

Hole Size	Interval	OD Casing	Wt, Grade, Jt, cond, collapse/burst/tension
17 1/2”	0-450’	13 3/8”	48#, H-40, ST&C, New, 3.29416/3.396419/3.46
12 1/4”	0-2900’	9 5/8”	36#, J-55,ST&C, New, 1.339523/7.04/7.04
8 ¾”	0-10,985’	7”	26#, HCP-110, LT&C, New, 1.422394/3.081938/3.316667

5. Cement Program:

13 3/8" Surface Casing: Lead 100sx RFC + 12% PF53+2%PF1+5pps PF42+.125pps PF29, yld 1.61, wt 14.4ppg, 7.357gals/sx, Tail 475sx, Class C+1%PF1, yld 1.34, wt 14.8ppg, 6.323gals/sx, 100% excess.

9 5/8" Intermediate Casing: 725sx Class C+45PF20+.4pps PF45+.125 PF29, yld 1.72, wt 13.5ppg, 9.102 gals/sx, excess 50%, Slurry Top- Surface. Tail 200sx Class C+1%PF1, yld 1.34, wt 14.8ppg, 6.323 gals/sx, excess 50%, Slurry Top- 1,900'.

5 ½" Production Casing: Stage 1- 915sx 50/50 POZ C+5% (BWOW) PF44+2%PF204+.2%PF606+.1% PF153+.4pps PF44, yld 1.34, wt 14.2ppg, 6.091 gals/sx excess 35%, Slurry Top-5,500'

Stage 2-Lead 375sx Class C 4% PF 20+4 pps PF45 +125pps PF29, yld 2.82, wt 13.5 ppg, 6.091gals/sx, excess 35%, Slurry Top-Surface Tail 100sx, 50/50 Poz C + 55 (BWOW) PF 44+.2%PF204+.2%PF606+.1%PF153+.4pps PF44, yld 1.34, wt 14.2, 6.091gals/sx, 35% excess, Slurry Top- 5,000'

6. Minimum Specifications for Pressure Control:

The blowout preventer equipment (BOP) shown in Exhibit #10 will consist of a double ram-type (5000 psi WP) minimum preventer. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on bottom. The 11" BOP will be nipped up on the 13 3/8" surface casing and tested by a 3rd party to 5000 psi used continuously until TD is reached. All BOP's and accessory equipment will be tested to 5000 psi before drilling out of intermediate casing. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment (Exhibit #10) will include a Kelly cock and floor safety valve and choke lines and choke manifold (Exhibit #11) with a minimum 5000 psi WP rating

7. Types and Characteristics of the Proposed Mud System:

The well will be drilled to TD with a combination of fresh and cut brine mud system. The applicable depths and properties of this system are as follows:

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-450'	Fresh Water	8.5	28	N.C.
450'-2,900'	Cut Brine	9.1	29	N.C.
2,900-TD	Cut Brine	9.1	29	N.C.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

8. Auxiliary Well Control and Monitoring Equipment:

A. Kelly cock will be kept in the drill string at all times.

B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

9. Logging, Testing and Coring Program:

A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log from T.D. to 8 5/8 casing shoe.
B. Drill Stem test is not anticipated.
C. No conventional coring is anticipated.
D. Further testing procedures will be determined at TD.

10. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 120 degrees and estimated maximum bottom hole pressure is 2030 psig. Low levels of Hydrogen sulfide have been monitors in producing wells in the area, so H2S may be present while drilling of the well; a plan is attached to the Drilling program. No major loss of circulation zones has been reported in offsetting wells.

11. Anticipated Starting Date and Duration of Operations:

Road and location work will not begin until approval has been received from the BLM. The anticipated spud date is June 1, 2024. Once commenced, the drilling operation should be finished in approximately 20 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.

Attachment to Exhibit #10
NOTES REGARDING THE BLOWOUT PREVENTERS
Manitoba SWD #1
Chaves County, New Mexico

1. Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D. equal to preventer bore.

2. Wear ring to be properly installed in head.

3. Blow out preventer and all fittings must be in good condition, 5000 psi WP minimum.

4. All fittings to be flanged.

5. Safety valve must be available on rig floor at all times with proper connections, valve to be full 5000 psi WP minimum.

6. All choke and fill lines to be securely anchored especially ends of choke lines.

Attached to Form 3160-3
Mack Energy Corporation
Manitoba SWD #1 NMNM-138832
SHL : 1668 FSL & 1980 FEL, NWSE, Sec. 23 T15S R29E
Chaves County, NM

7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.

8. Kelly cock on Kelly.

9. Extension wrenches and hands wheels to be properly installed.

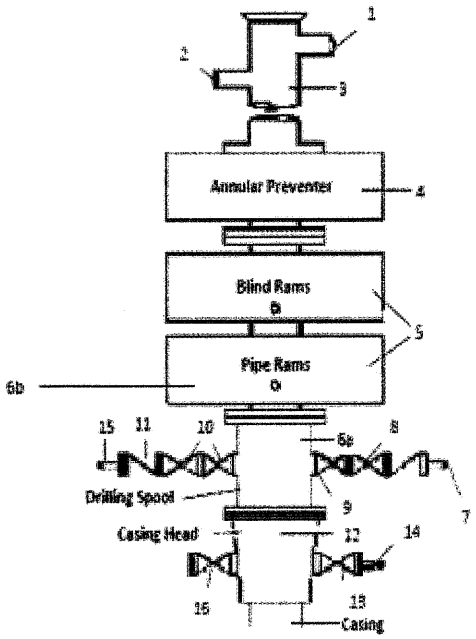
10. Blow out preventer control to be located as close to driller's position as feasible.

11. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation all API specifications.

Mack Energy Corporation
Minimum Blowout Preventer Requirements
5000 psi Working Pressure
13 5/8 inch- 5 MWP
11 Inch - 5 MWP
EXHIBIT #10

Stack Requirements

NO.	Items	Min. I.D.	Min. Nominal
1	Flowline		2"
2	Fill up line		2"
3	Drilling nipple		
4	Annular preventer		
5	Two single or one dual hydraulically operated rams		
6a	Drilling spool with 2" min. kill line and 3" min choke line outlets		2" Choke
6b	2" min. kill line and 3" min. choke line outlets in ram. (Alternate to 6a above)		
7	Valve Gate Plug	3 1/8	
8	Gate valve-power operated	3 1/8	
9	Line to choke manifold		3"
10	Valve Gate Plug	2 1/16	
11	Check valve	2 1/16	
12	Casing head		
13	Valve Gate Plug	1 13/16	
14	Pressure gauge with needle valve		
15	Kill line to rig mud pump manifold		2"



OPTIONAL

16	Flanged Valve	1 13/16	

CONTRACTOR'S OPTION TO
CONTRACTOR'S OPTION TO FURNISH:

1. All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 2000 psi minimum.
2. Automatic accumulator (80 gallons, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
3. BOP controls, to be located near drillers' position.
4. Kelly equipped with Kelly cock.
5. Inside blowout preventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
6. Kelly saver-sub equipped with rubber casing protector at all times.
7. Plug type blowout preventer tester.
8. Extra set pipe rams to fit drill pipe in use on location at all times.
9. Type RX ring gaskets in place of Type R.

MEC TO FURNISH:

1. Bradenhead or casing head and side valves.
2. Wear bushing. If required.

10.

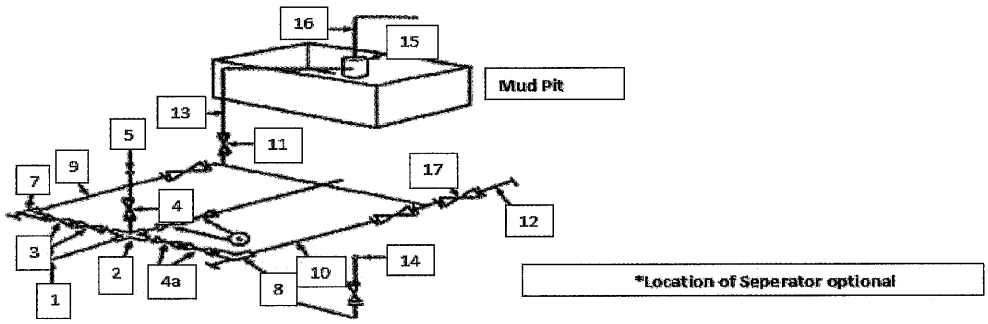
ME

GENERAL NOTES:

1. Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
2. All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through choke valves must be full opening and suitable for high pressure mud service.
3. Controls to be of standard design and each marked, showing opening and closing position
4. Chokes will be positioned so as not to hamper or delay changing of choke beans. Replaceable parts for adjustable choke, or bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.
5. All valves to be equipped with hand-wheels or handles ready for immediate use.
6. Choke lines must be suitably anchored.
7. Handwheels and extensions to be connected and ready for use.
8. Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
9. All seamless steel control piping (2000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
10. Casinghead connections shall not be used except in case of emergency.
11. Does not use kill line for routine fill up operations.

Mack Energy Corporation

Exhibit #11
MIMIMUM CHOKE MANIFOLD
3,000, 5,000, and 10,000 PSI Working Pressure
5M will be used
3 MWP - 5 MWP - 10 MWP



Below Substructure

Mimimum requirements

No.		3,000 MWP I.D.	Nominal	Rating	5,000 MWP I.D.	Nominal	Rating	10,000 MWP I.D.	Nominal	Rating
1	Line from drilling Spool		3"	3,000		3"	5,000		3"	10,000
2	Cross 3" x 3" x 3" x 2"			3,000			5,000			
2	Cross 3" x 3" x 3" x 2"									10,000
3	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
4	Valve Gate Plug	1 13/16		3,000	1 13/16		5,000	1 13/16		10,000
4a	Valves (1)	2 1/16		3,000	2 1/16		5,000	2 1/16		10,000
5	Pressure Gauge			3,000			5,000			10,000
6	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
7	Adjustable Choke (3)	2"		3,000	2"		5,000	2"		10,000
8	Adjustable Choke	1"		3,000	1"		5,000	2"		10,000
9	Line		3"	3,000		3"	5,000		3"	10,000
10	Line		2"	3,000		2"	5,000		2"	10,000
11	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
12	Line		3"	1,000		3"	1,000		3"	2,000
13	Line		3"	1,000		3"	1,000		3"	2,000
14	Remote reading compound Standpipe pressure quage			3,000			5,000			10,000
15	Gas Separator		2' x5'			2' x5'			2' x5'	
16	Line		4"	1,000		4"	1,000		4"	2,000
17	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000

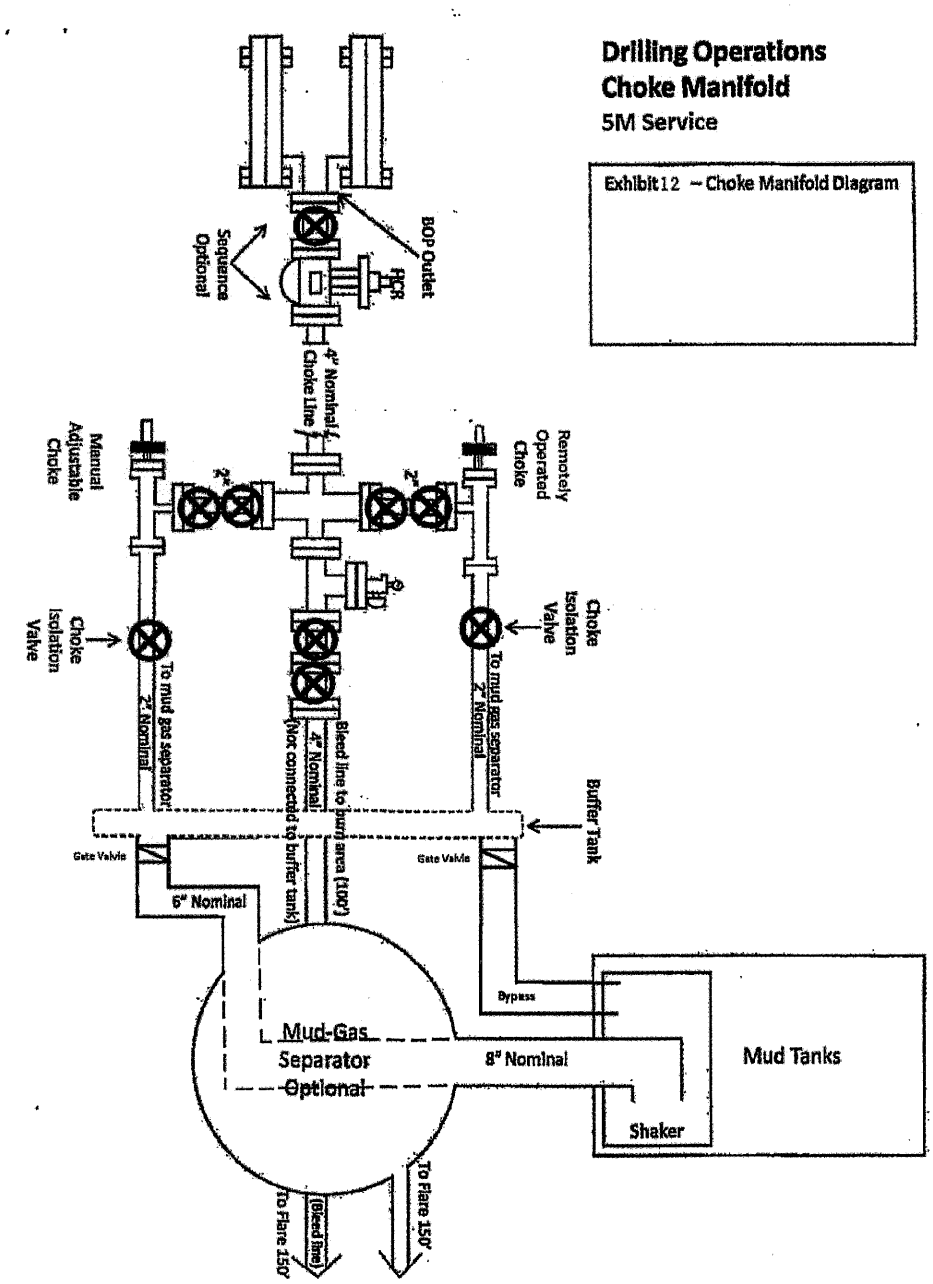
(1) Only one required in Class 3M
(2) Gate valves only shall be used for Class 10 M
(3) Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.

EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTION

1. All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
2. All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
3. All lines shall be securely anchored.
4. Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
5. alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge.
6. Line from drilling spool to choke manifold should bee as straight as possible. Lines downstream from chokes shall make turns by large bends or 90 degree bends using bull plugged tees

Mack Energy Corporation

MANIFOLD SCHEMATIC
Exhibit #12



PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Mack Energy Corporation**
LEASE NO.:	**NMNM-138832**
WELL NAME & NO.:	**Manitoba SWD 1**
SURFACE HOLE FOOTAGE:	**1668' FSL & 1980' FEL**
LOCATION:	**Section 23, T. 15 S., R 29 E., NMPM**
COUNTY:	**Chaves County, New Mexico**

The Gamma Ray and Neutron well logs must be run from total depth to surface and e-mailed to Chris Bolen at aknapowski@blm.gov or hard copy mailed to 2909 West Second Street Roswell, NM 88201 to his attention.

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ **Chaves and Roosevelt Counties**
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After hours cll (575) 627-0205.

A. Hydrogen Sulfide

1. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated AT SPUD. As a result, the Hydrogen Sulfide area must meet 43 CFR part 3170 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

Approval Date: 05/30/2024

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

Wait on cement (WOC) for Water Basin:
After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

High Cave/Karst
Possibility of water flows in the Rustler, Queen, Salado, and Artesia Group.
Possibility of lost circulation in the Rustler, Artesia Group, and San Andres.

1. The **13-3/8** inch surface casing shall be set at approximately **380** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

    ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

3. The minimum required fill of cement behind the **7** inch production casing is:

    ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

Approval Date: 05/30/2024

C. PRESSURE CONTROL

1. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

2. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

    c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

    d. The results of the test shall be reported to the appropriate BLM office.

    e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

    f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. WELL COMPLETION

A NOI sundry with the completion procedure for this well shall be submitted and approved prior to commencing completion work. The procedure will be reviewed to verify that the completion proposal will allow the operator to:

1. **Properly evaluate the injection zone utilizing open hole logs, swab testing and/or any other method to confirm that hydrocarbons cannot be produced in paying quantities. This evaluation shall be reviewed by the BLM prior to injection commencing.**
2. **Restrict the injection fluid to the approved formation.**

If off-lease water will be disposed in this well, the operator shall provide proof of right-of-way approval .

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

JAM 03262024

Approval Date: 05/30/2024

Attached to Form 3160-3
Mack Energy Corporation
Manitoba SWD #1 NMNM-138832
SHL : 1668 FSL & 1980 FEL, NWSE, Sec. 23 T15S R29E
Chaves County, NM

Mack Energy Corporation
Onshore Order #6
Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards an characteristics of hydrogen sulfide (H2S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H2S detectors alarms warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H2S on metal components. If high tensile tubular are to be used, personnel well be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operations Plan and the Public Protection Plan. **The concentrations of H2S of wells in this area from surface to TD are low enough that a contingency plan is not required.**

II. H2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H2S.

1. Well Control Equipment:

A. Flare line.
B. Choke manifold.
C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
D. Auxiliary equipment may include if applicable: annular preventer & rotating head.

2. Protective equipment for essential personnel:

A. Mark II Survive air 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

3. H2S detection and monitoring equipment:

A. 1 portable H2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 PPM are reached.

4. Visual warning systems:

A. Wind direction indicators as shown on well site diagram (Exhibit #8).
B. Caution/Danger signs (Exhibit #7) shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

5. Mud program:

A. The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight, safe drilling practices and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

6. Metallurgy:

A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.
B. All elastomers used for packing and seals shall be H2S trim.

7. Communication:

A. Radio communications in company vehicles including cellular telephone and 2-way radio.
B. Land line (telephone) communication at Office.

8. Well testing:

A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H2S environment will use the closed chamber method of testing.

Attached to Form 3160-3
Mack Energy Corporation
Manitoba SWD #1 NMNM-138832
SHL : 1668 FSL & 1980 FEL, NWSE, Sec. 23 T15S R29E
Chaves County, NM

B. There will be no drill stem testing.

EXHIBIT #7

WARNING

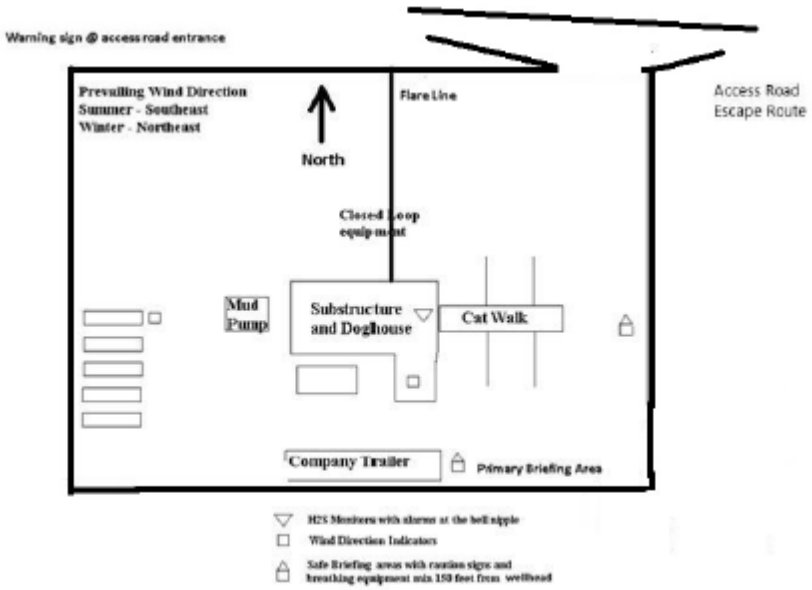
YOU ARE ENTERING AN H2S

AUTHORIZED PERSONNEL ONLY

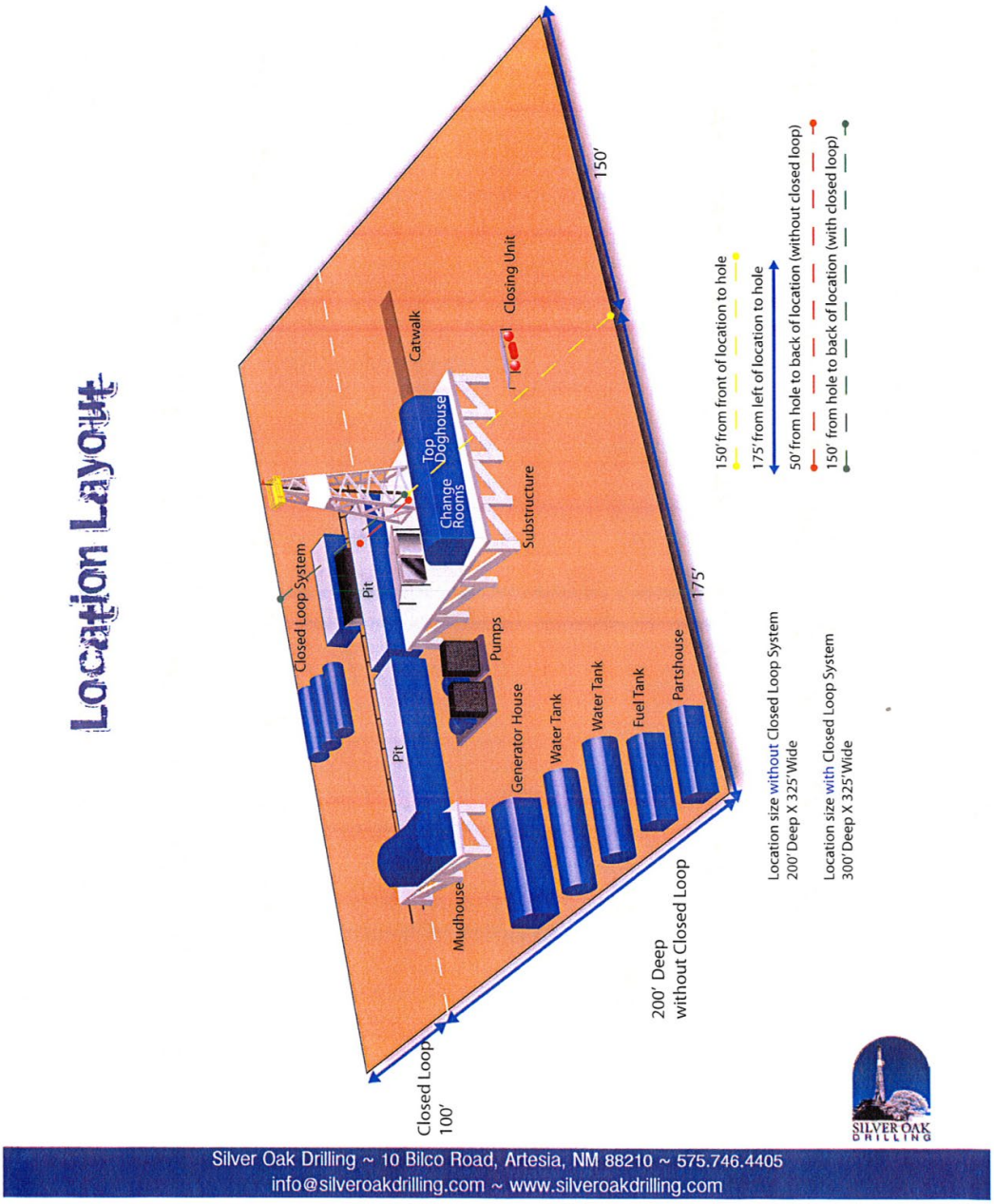
1. BEARDS OR CONTACT LENSES NOT ALLOWED
2. HARD HATS REQUIRED
3. SMOKING IN DESIGNATED AREAS ONLY
4. BE WIND CONSCIOUS AT ALL TIMES
5. CHECK WITH MACK ENERGY FOREMAN AT OFFICE

MACK ENERGY CORPORATION

1-575-748-1288



DRILLING LOCATION H2S SAFTY EQUIPMENT
Exhibit # 8



Mack Energy Corporation Call List, Chaves County

Artesia (575)	Cellular	Office
Jim Krogman	432-934-1596	748-1288
Emilio Martinez	432-934-7586	748-1288

Agency Call List (575)

Roswell

State Police……..622-7200
City Police……...624-6770
Sheriff's Office……624-7590
Ambulance……...624-7590
Fire Department……...624-7590
LEPC (Local Emergency Planning Committee……...624-6770
NMOCD……...748-1283
Bureau of Land Management……...627-0272

Emergency Services

Boots & Coots IWC……..…1-800-256-9688 or (281)931-8884
Cudd pressure Control…….(915)699-0139 or (915)563-3356
Halliburton……..746-2757
Par Five……..748-9539

Flight For Life-Lubbock, TX……..……(806)743-9911
Aerocare-Lubbock, TX……...(806)747-8923
Med Flight Air Amb-Albuquerque, NM…….(505)842-4433
Lifeguard Air Med Svc. Albuquerque, NM……(505)272-3115

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

Drilling Plan Data Report
05/30/2024

APD ID: 10400097244
Submission Date: 03/07/2024
Operator Name: MACK ENERGY CORPORATION
Well Name: MANITOBA SWD
Well Number: 1
Well Type: INJECTION - DISPOSAL
Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

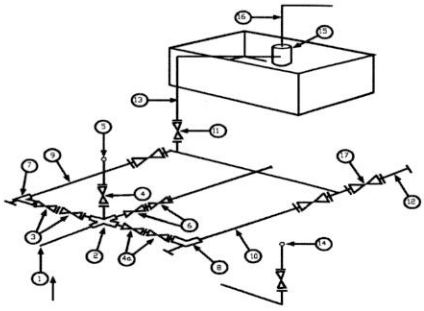
Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
13507794	QUATERNARY	3937	0	0	ALLUVIUM	NONE	N
13507795	TOP OF SALT	3475	462	462	SALT	NONE	N
13507802	BASE OF SALT	2914	1023	1023	SALT	NONE	N
13507790	YATES	2750	1187	1187	ANHYDRITE, SILTSTONE	NATURAL GAS, OIL	N
13507796	SAN ANDRES	1332	2605	2605	ANHYDRITE, DOLOMITE	NATURAL GAS, OIL	N
13507793	GLORIETA	-123	4060	4060	ANHYDRITE, DOLOMITE, SHALE	NATURAL GAS, OIL	N
13507803	TUBB	-1445	5382	5382	DOLOMITE, SHALE	NATURAL GAS, OIL	N
13507805	ABO	-2218	6155	6155	DOLOMITE, SHALE	NATURAL GAS, OIL	N
13507804	WOLFCAMP	-3558	7495	7495	LIMESTONE, SHALE	NATURAL GAS, OIL	N
13507797	ATOKA	-5752	9689	9689	LIMESTONE, SHALE	NATURAL GAS, OIL	N
13507791	MISSISSIPPIAN UPPER	-6263	10200	10200	LIMESTONE	NATURAL GAS, OIL	N
13507792	MISSISSIPPIAN LOWER	-6498	10435	10435	LIMESTONE	NATURAL GAS, OIL	N
13507799	DEVONIAN	-7048	10985	10985	LIMESTONE	NATURAL GAS, OIL	Y
13507800	MONTOYA	-7588	11525	11525	LIMESTONE	NATURAL GAS, OIL	N
13507801	SIMPSON	-7788	11725	11725	LIMESTONE	NATURAL GAS, OIL	N
13507798	ELLENBURGER	-8055	11992	11992	LIMESTONE	NATURAL GAS, OIL	N

Section 2 - Blowout Prevention

Mack Energy Corporation

Exhibit #11
MIMIMUM CHOKE MANIFOLD
3,000, 5,000, and 10,000 PSI Working Pressure
5M will be used
3 MWP - 5 MWP - 10 MWP



Mud Pit

Reserve Pit

*** Location of separator optional**

Below Substructure

Mimimum requirements

No.		3,000 MWP I.D.	Nominal	Rating	5,000 MWP I.D.	Nominal	Rating	10,000 MWP I.D.	Nominal	Rating
1	Line from drilling Spool		3"	3,000		3"	5,000		3"	10,000
2	Cross 3" x 3" x 3" x 2"			3,000			5,000			
2	Cross 3" x 3" x 3" x 2"									10,000
3	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
4	Valve Gate Plug	1 13/16		3,000	1 13/16		5,000	1 13/16		10,000
4a	Valves (1)	2 1/16		3,000	2 1/16		5,000	2 1/16		10,000
5	Pressure Gauge			3,000			5,000			10,000
6	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
7	Adjustable Choke (3)	2"		3,000	2"		5,000	2"		10,000
8	Adjustable Choke	1"		3,000	1"		5,000	2"		10,000
9	Line		3"	3,000		3"	5,000		3"	10,000
10	Line		2"	3,000		2"	5,000		2"	10,000
11	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
12	Line		3"	1,000		3"	1,000		3"	2,000
13	Line		3"	1,000		3"	1,000		3"	2,000
14	Remote reading compound Standpipe pressure quage			3,000			5,000			10,000
15	Gas Separator		2' x5'			2' x5'			2' x5'	
16	Line		4"	1,000		4"	1,000		4"	2,000
17	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000

(1) Only one required in Class 3M
(2) Gate valves only shall be used for Class 10 M
(3) Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.

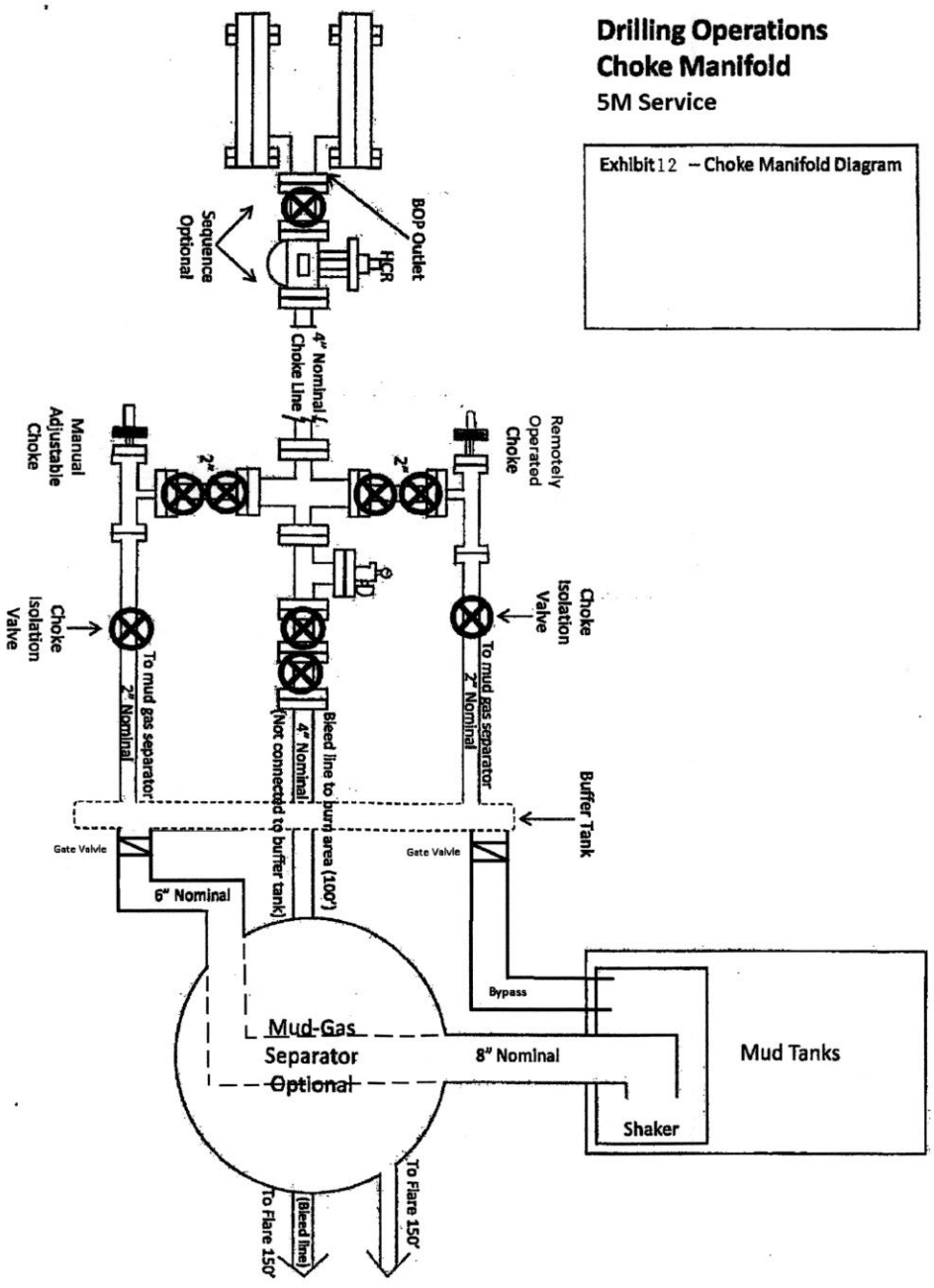
EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTION

1. All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
2. All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
3. All lines shall be securely anchored.
4. Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
5. alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge.
6. Line from drilling spool to choke manifold should bee as straight as possible. Lines downstream from chokes shall make turns by large bends or 90 degree bends using bull plugged tees

Mack Energy Corporation

MANIFOLD SCHEMATIC

Exhibit #12



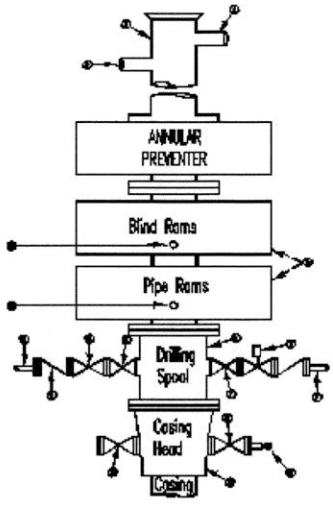
Mack Energy Corporation

Minimum Blowout Preventer Requirements

5000 psi Working Pressure
13 5/8 inch- 5 MWP
11 Inch - 5 MWP
EXHIBIT #10

Stack Requirements

NO.	Items	Min. I.D.	Min. Nominal
1	Flowline		2"
2	Fill up line		2"
3	Drilling nipple		
4	Annular preventer		
5	Two single or one dual hydraulically operated rams		
6a	Drilling spool with 2" min. kill line and 3" min choke line outlets		2" Choke
6b	2" min. kill line and 3" min. choke line outlets in ram. (Alternate to 6a above)		
7	Valve Gate Plug	3 1/8	
8	Gate valve-power operated	3 1/8	
9	Line to choke manifold		3"
10	Valve Gate Plug	2 1/16	
11	Check valve	2 1/16	
12	Casing head		
13	Valve Gate Plug	1 13/16	
14	Pressure gauge with needle valve		
15	Kill line to rig mud pump manifold		2"



OPTIONAL

16	Flanged Valve	1 13/16	

CONTRACTOR'S OPTION TO FURNISH:

1. All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 2000 psi minimum.
2. Automatic accumulator (80 gallons, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
3. BOP controls, to be located near drillers' position.
4. Kelly equipped with Kelly cock.
5. Inside blowout preventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
6. Kelly saver-sub equipped with rubber casing protector at all times.
7. Plug type blowout preventer tester.
8. Extra set pipe rams to fit drill pipe in use on location at all times.
9. Type RX ring gaskets in place of Type R.
10.

ME

MEC TO FURNISH:

1. Bradenhead or casing head and side valves.
2. Wear bushing. If required.

GENERAL NOTES:

1. Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
2. All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through choke valves must be full opening and suitable for high pressure mud service.
3. Controls to be of standard design and each marked, showing opening and closing position
4. Chokes will be positioned so as not to hamper or delay changing of choke beans. Replaceable parts for adjustable choke, or bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.
5. All valves to be equipped with hand-wheels or handles ready for immediate use.
6. Choke lines must be suitably anchored.
7. Handwheels and extensions to be connected and ready for use.
8. Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
9. All seamless steel control piping (2000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
10. Casinghead connections shall not be used except in case of emergency.
11. Does not use kill line for routine fill up operations.

Sante Fe Main Office
Phone: (505) 476-3441

General Information
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

Action 473034

CONDITIONS

Operator:	OGRID:
MACK ENERGY CORP P.O. Box 960 Artesia, NM 882110960	13837
	Action Number: 473034
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
dweaver	Cement is required to circulate on both surface and intermediate1 strings of casing.	6/11/2025
dweaver	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.	6/11/2025
ward.rikala	Notify the OCD 24 hours prior to casing & cement.	6/12/2025
ward.rikala	File As Drilled C-102 and a directional Survey with C-104 completion packet.	6/12/2025
ward.rikala	1. The Permittee shall complete a Cement Bond Log (CBL) across the surface casing to validate cement integrity. The Permittee shall submit the CBL in a C-103 Subsequent Report with OCD within 10 days after completion of the log. If the CBL shows that cementing does not achieve a proper seal of the surface casing, the Permittee shall be required to submit a plan for remediation of the cement to achieve an acceptable seal.	6/12/2025
ward.rikala	2. The Permittee shall conduct a swab or production test of the approved injection interval and obtain a formation water sample for analysis of general water chemistry (including major cations, major anions, and Total Dissolved Solids (“TDS”)). The Inspection Supervisor shall be noticed 24 hours prior to this test and given the opportunity to witness the test. Prior to commencing injection, the Permittee shall submit the results of the water sample [including the entire laboratory analytical report] to the OCD using a Form C-103 Subsequent Report (General; Form C-103Z) for approval. If the analysis of the sample is found to contain a TDS concentration of 10,000 milligrams per liter or less, the injection authority under this Permit shall be suspended ipso facto.	6/12/2025
ward.rikala	3. Permittee to update the Bottomhole static temperature estimate (currently listed as 120 degF @ 10,985 feet) prior to commencing cementing operations, and adjust cement design as applicable.	6/12/2025
ward.rikala	4. Further to Condition 3, the proposed Class C cement design is not suitable for the expected temperatures at 10,985 feet, and must be re-evaluated to ensure the proper class of cement (Class H or equivalent) is selected for that depth. If bottomhole static temperature exceeds 230F, the proponent shall modify the cement blend to include silica sand/flour (or equivalent) to mitigate strength retrogression.	6/12/2025
ward.rikala	Successful MIT witnessed by OCD. Injection can not be commenced until final approval from UIC is received.	6/12/2025