Form 3160-3
(June 2015)

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER**

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

1a. Type of work: ☐ DRILL ☐ REENTER	5. Lease Serial No.
1b. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Other	6. If Indian, Allotee or Tribe Name
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. **30-005-64406**
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.

(Continued on page 2)

APPROVED WITH CONDITIONS

*(Instructions on page 2)

Approval Date: 03/31/2025

C-102	State of New Mexico	Revised July 9, 2024
Submit Electronically Via OCD Permitting	Energy, Minerals & Natural Resources Department **OIL CONSERVATION DIVISION**	Submittal Type: ☑ Initial Submittal ☐ Amended Report ☐ As Drilled

WELL LOCATION INFORMATION

API Number 30-005-64406	Pool Code 52770	Pool Name Round Tank; San Andres	
Property Code 337278	Property Name SUMMERSIDE FEDERAL COM		Well Number 2H
OGRID No. 13837	Operator Name MACK ENERGY CORPORATION		Ground Level Elevation 4049.1

Surface Owner: ☑State ☐Fee ☐Tribal ☐Federal   Mineral Owner: ☐State ☐Fee ☐Tribal ☑Federal

Surface Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
L	16	15 S	30 E		1650 SOUTH	707 WEST	33.0132191°N	103.9364433°W	CHAVES

Bottom Hole Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
	18	15 S	30 E	3	1650 SOUTH	1 WEST	33.0132437°N	103.9733321°W	CHAVES

Dedicated Acres 320	Infill or Defining Well	Defining Well API	Overlapping Spacing Unit (Y/N)	Consolidation Code
Order Numbers.			Well setbacks are under Common Ownership: ☐ Yes ☐No	

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
L	16	15 S	30 E		1650 SOUTH	707 WEST	33.0132191°N	103.9364433°W	CHAVES

First Take Point (FTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
I	17	15 S	30 E		1650 SOUTH	100 EAST	33.0132403°N	103.9390754°W	CHAVES

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
	18	15 S	30 E	3	1650 SOUTH	100 WEST	33.0132444°N	103.9730092°W	CHAVES

Unitized Area or Area of Uniform Interest	Spacing Unit Type ☑Horizontal ☐Vertical	Ground Floor Elevation:

OPERATOR CERTIFICATIONS

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, 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 a working interest run leased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order here to fore entered by the division.

If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.

Deana Weaver   11/4/2024

Signature   Date

Deana Weaver

Printed Name

dweaver@mec.com

Email Address

SURVEYOR CERTIFICATIONS

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.

Signature and Seal of Professional Surveyor
FILIMON F. JARAMILLO

CertificateNumber PLS 12797	Dateof Survey MARCH 6, 2024

SURVEY NO. 10051

Note: 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.

ACREAGE DEDICATION PLATS

This grid represents a standard section. You may superimpose a non-standard section, or larger area, over this grid. Operators must outline the dedicated acreage in a red box, clearly show the well surface location and bottom hole location, if it is directionally drilled, with the dimensions from the section lines in the cardinal directions. If this is a horizontal wellbore show on this plat the location of the First Take Point and Last Take Point, and the point within the Completed interval (other than the First Take Point or Last Take Point) that is closest to any outer boundary of the tract.

Surveyors shall use the latest United States government survey or dependent resurvey. Well locations will be in reference to the New Mexico Principal Meridian. If the land is not surveyed, contact the OCD Engineering Bureau. Independent subdivision surveys will not be acceptable.

SUMMERSIDE FEDERAL COM 2H
EL. = 4049.1

GEODETIC COORDINATES
NAD 83 NMSP EAST
SURFACE LOCATION
N.= 732575.51
E.= 662996.92
LAT. = 33.0132191°N
LONG. = 103.9364433°W

LAST TAKE POINT
1650' FSL, 100' FWL
N.= 732544.34
E.= 651788.21
LAT. = 33.0132444°N
LONG. = 103.9730092°W

KICK OFF POINT
1650' FSL, 707' FWL
N.= 732575.51
E.= 662996.92
LAT. = 33.0132191°N
LONG. = 103.9364433°W

BOTTOM OF HOLE
1650' FSL, 1' FWL
N.= 732543.74
E.= 651689.23
LAT. = 33.0132437°N
LONG. = 103.9733321°W

FIRST TAKE POINT (PPP 1)
1650' FSL, 100' FEL
N.= 732580.17
E.= 662190.08
LAT. = 33.0132403°N
LONG. = 103.9390754°W

PPP 2
1636' FSL, 0' FWL
N.= 732562.34
E.= 657011.89
LAT. = 33.0132435°N
LONG. = 103.9559681°W

CORNER COORDINATES TABLE
NAD 83 NMSP EAST

	N.=	E.=
A	736204.45	651733.81
B	736204.03	654360.07
C	736208.21	656999.86
D	736212.34	659640.23
E	736216.48	662280.61
F	736202.55	664926.74
G	736188.61	667572.89
H	733541.59	667589.32
I	730894.59	667605.76
J	730912.64	664948.34
K	730930.68	662290.92
L	730928.65	659654.10
M	730926.62	657017.28
N	730910.60	654388.64
O	730894.01	651667.99
P	733548.09	651700.55
Q	733567.42	657008.57
R	733574.33	662289.53

LEGEND
— ·· — ·· — ·· — SECTION LINE
— — — — — — QUARTER LINE
———————— LEASE LINE
— — — — — — — WELL PATH

Plat grid showing Sections 18, 17, 16 with well path.

Top boundary bearings/distances:
S89°59'27"E 2626.94 FT (A–B); N89°54'34"E 2640.48 FT (B–C); N89°54'37"E 2641.06 FT (C–D); N89°54'37"E 2641.06 FT (D–E); S89°41'54"E 2646.86 FT (E–F); S89°41'54"E 2646.86 FT (F–G)

Bottom boundary bearings/distances:
S89°39'02"W 2721.41 FT; S89°39'02"W 2629.37 FT (N); S89°57'21"W 2637.50 FT (M); S89°57'21"W 2637.50 FT (L); N89°36'39"W 2658.17 FT (K); N89°36'39"W 2658.17 FT (J)

Labels: NMNM 138841 SEC. 18; NMNM 138842 SEC. 17; NO LEASE INFO SEC. 16; BOTTOM OF HOLE — LTP — 1'; PPP 2; FTP — 707'; SURFACE LOCATION; 1650'

SECTION 16, TOWNSHIP 15 SOUTH, RANGE 30 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
SITE MAP

EL. 4054.2   *600'*   EL. 4047.0

175' NORTH
OFFSET
EL. 4049.9

EL. 4053.3 S89°58'44"E   360.24 FT EL. 4047.8

PROPOSED PAD
2.895± ACRES

350.13 FT

600'

175'

S00°00'43"W

TOP SOIL AREA

SUMMERSIDE
FEDERAL COM 2H

210' WEST
OFFSET
EL. 4053.7

210'   150' 150' EAST
OFFSET
EL. 4047.7

ELEV. = 4049.1
LAT. = 33.0132191°N (NAD83)
LONG. = 103.9364433°W
NMSP EAST (FT)
N = 732575.51
E = 662996.92

N00°00'30"E

349.99 FT

BERM

175'

EL. 4050.7 S89°59'51"W   360.22 FT EL. 4047.5

175' SOUTH
OFFSET
EL. 4048.9

PROPOSED 970 L.F.
ACCESS ROAD FROM
SUMMERSIDE FED COM 1H

EL. 4051.6   *600'*   EL. 4049.9

600'

0 10   50   100   200

SCALE 1" = 100'

DIRECTIONS TO LOCATION
FROM THE INTERSECTION OF ST. HWY. 249 & CO. RD. 217
(HAGERMAN CUTOFF) GO EAST ON ST. HWY. 249 APPROX. 2.3 MILES,
TURN RIGHT (SOUTH) ON 20' CALICHE ROAD AND GO SOUTH APPROX.
2.3 MILES, TURN LEFT (EAST) ON 2-TRACK ROAD AND GO EAST
APPROX. 0.55 MILES TO BEGIN ROAD SURVEY, FOLLOW ROAD SURVEY
NORTHEAST APPROX. 384' TO THE NORTHWEST PAD CORNER FOR
OXBOW FEDERAL 1H, CONTINUE NORTH APPROX. 640' TO THE
SOUTHWEST PAD CORNER FOR SUMMERSIDE FEDERAL COM 1H, FROM
THE NORTHWEST PAD CORNER CONTINUE NORTH APPROX. 970' TO
THE SOUTHWEST 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 PLAT IS TRUE AND CORRECT TO THE BEST OF MY
KNOWLEDGE AND THAT THIS SURVEY MEETS OR EXCEEDS THE MINIMUM
STANDARDS FOR SURVEYS IN NEW MEXICO.

FILIMON F. JARAMILLO, P.L.S. 7910

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

MACK ENERGY CORPORATION
SUMMERSIDE FEDERAL COM 2H
LOCATED 1650 FT. FROM THE SOUTH LINE
AND 707 FT. FROM THE WEST LINE OF
SECTION 16, TOWNSHIP 15 SOUTH,
RANGE 30 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

MARCH 6, 2024

SURVEY NO. 10051

SECTION 16, TOWNSHIP 15 SOUTH, RANGE 30 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
INTERIM SITE RECLAMATION

DENOTES RECLAMATION AREA

0.658± ACRES RECLAMATION AREA

55'

360'

120'

120'

30'

295'

TOP SOIL AREA

SUMMERSIDE FEDERAL COM 2H

PROPOSED 970 L.F. ACCESS ROAD FROM SUMMERSIDE FED COM 1H

010   50   100   200

SCALE 1" = 100'

MACK ENERGY CORPORATION
SUMMERSIDE FEDERAL COM 2H
LOCATED 1650 FT. FROM THE SOUTH LINE
AND 707 FT. FROM THE WEST LINE OF
SECTION 16, TOWNSHIP 15 SOUTH,
RANGE 30 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

MARCH 6, 2024

SURVEY NO. 10051

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

SECTION 16, TOWNSHIP 15 SOUTH, RANGE 30 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP

SUMMERSIDE FEDERAL COM 2H

PROPOSED 970 L.F. ACCESS ROAD

SUMMERSIDE FEDERAL COM 1H

OXBOW FEDERAL 1H

USGS QUAD MAP:
CEDAR POINT

NOT TO SCALE

MACK ENERGY CORPORATION
SUMMERSIDE FEDERAL COM 2H
LOCATED 1650 FT. FROM THE SOUTH LINE
AND 707 FT. FROM THE WEST LINE OF
SECTION 16, TOWNSHIP 15 SOUTH,
RANGE 30 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

MARCH 6, 2024

SURVEY NO. 10051

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

SECTION 16, TOWNSHIP 15 SOUTH, RANGE 30 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
VICINITY MAP

ST. HWY. 249
CO. RD. 217
(HAGERMAN CUTOFF)

2.3 MILES

2.3 MILES

0.55 MILES

SUMMERSIDE FEDERAL COM 2H

970'
SUMMERSIDE
FEDERAL COM 1H
640'
OXBOW
FEDERAL 1H
384'

DISTANCES IN MILES   NOT TO SCALE

DIRECTIONS TO LOCATION
FROM THE INTERSECTION OF ST. HWY. 249 & CO. RD. 217
(HAGERMAN CUTOFF) GO EAST ON ST. HWY. 249 APPROX. 2.3 MILES,
TURN RIGHT (SOUTH) ON 20' CALICHE ROAD AND GO SOUTH APPROX.
2.3 MILES, TURN LEFT (EAST) ON 2-TRACK ROAD AND GO EAST
APPROX. 0.55 MILES TO BEGIN ROAD SURVEY, FOLLOW ROAD SURVEY
NORTHEAST APPROX. 384' TO THE NORTHWEST PAD CORNER FOR
OXBOW FEDERAL 1H, CONTINUE NORTH APPROX 640' TO THE
SOUTHWEST PAD CORNER FOR SUMMERSIDE FEDERAL COM 1H, FROM
THE NORTHWEST PAD CORNER CONTINUE NORTH APPROX. 970' TO
THE SOUTHWEST PAD CORNER FOR THIS LOCATION.

MACK ENERGY CORPORATION
SUMMERSIDE FEDERAL COM 2H
*LOCATED 1650 FT. FROM THE SOUTH LINE
AND 707 FT. FROM THE WEST LINE OF
SECTION 16, TOWNSHIP 15 SOUTH,
RANGE 30 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO*

MARCH 6, 2024

SURVEY NO. 10051

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

SECTION 16, TOWNSHIP 15 SOUTH, RANGE 30 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO
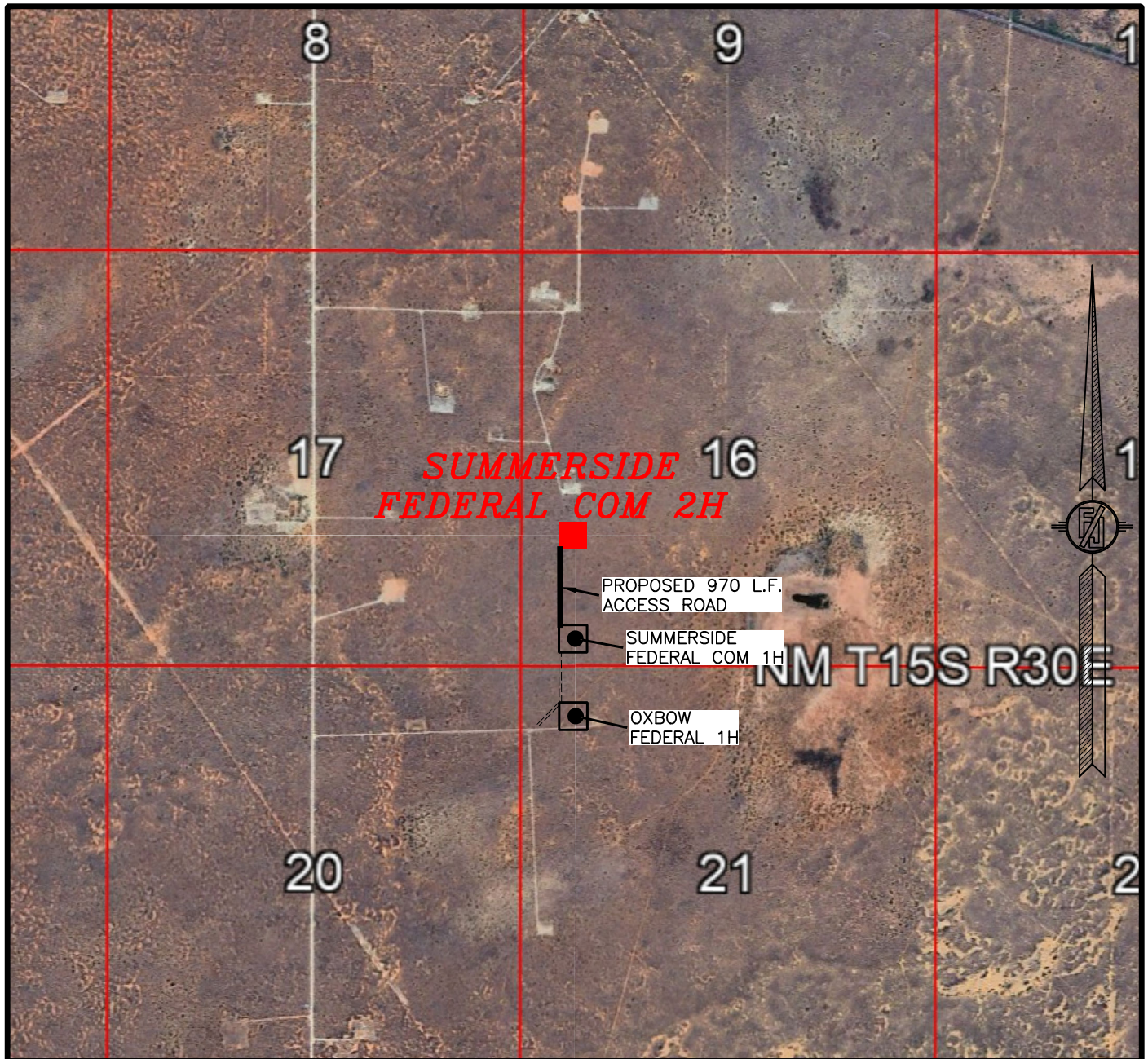
8   9   1

17   **SUMMERSIDE FEDERAL COM 2H**   16   1

PROPOSED 970 L.F. ACCESS ROAD

SUMMERSIDE FEDERAL COM 1H

OXBOW FEDERAL 1H

NM T15S R30E

20   21   2

NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
JUNE 2023

MACK ENERGY CORPORATION
SUMMERSIDE FEDERAL COM 2H
LOCATED 1650 FT. FROM THE SOUTH LINE
AND 707 FT. FROM THE WEST LINE OF
SECTION 16, TOWNSHIP 15 SOUTH,
RANGE 30 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

MARCH 6, 2024

SURVEY NO. 10051

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

SECTION 16, TOWNSHIP 15 SOUTH, RANGE 30 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP
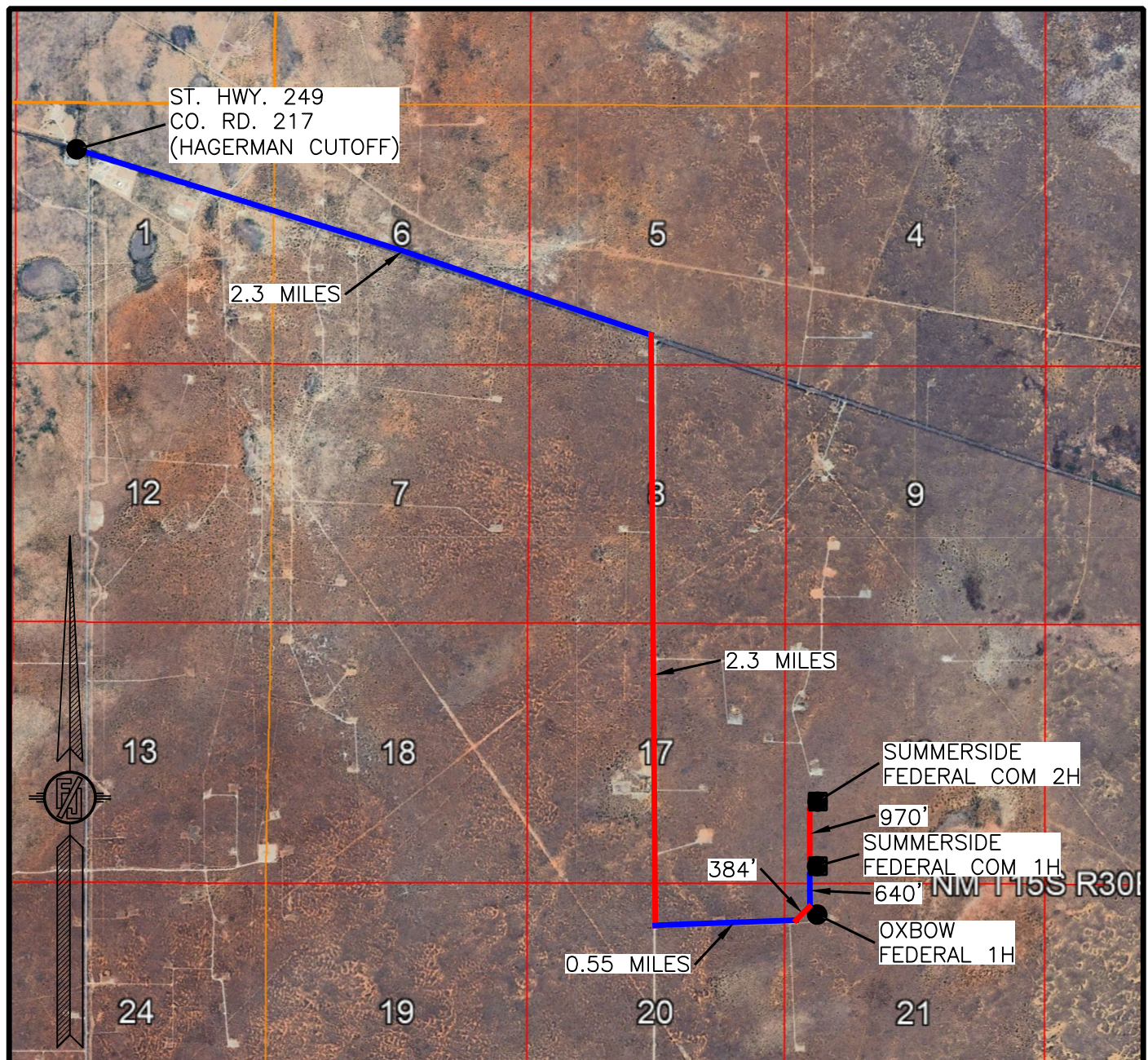
ST. HWY. 249
CO. RD. 217
(HAGERMAN CUTOFF)

2.3 MILES

2.3 MILES

SUMMERSIDE FEDERAL COM 2H

970'

SUMMERSIDE FEDERAL COM 1H

384'

640'

OXBOW FEDERAL 1H

0.55 MILES

NM T15S R30E

NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
JUNE 2023

MACK ENERGY CORPORATION
SUMMERSIDE FEDERAL COM 2H
LOCATED 1650 FT. FROM THE SOUTH LINE
AND 707 FT. FROM THE WEST LINE OF
SECTION 16, TOWNSHIP 15 SOUTH,
RANGE 30 EAST, N.M.P.M.
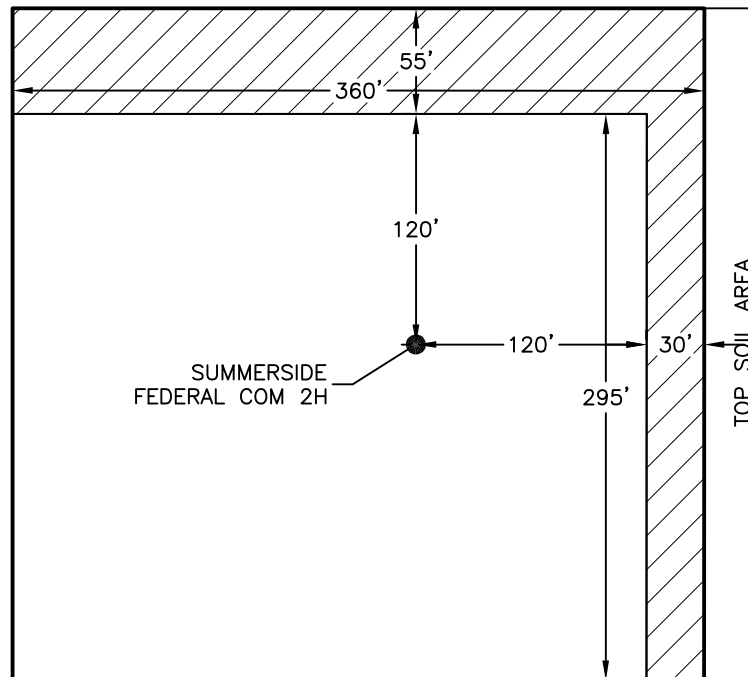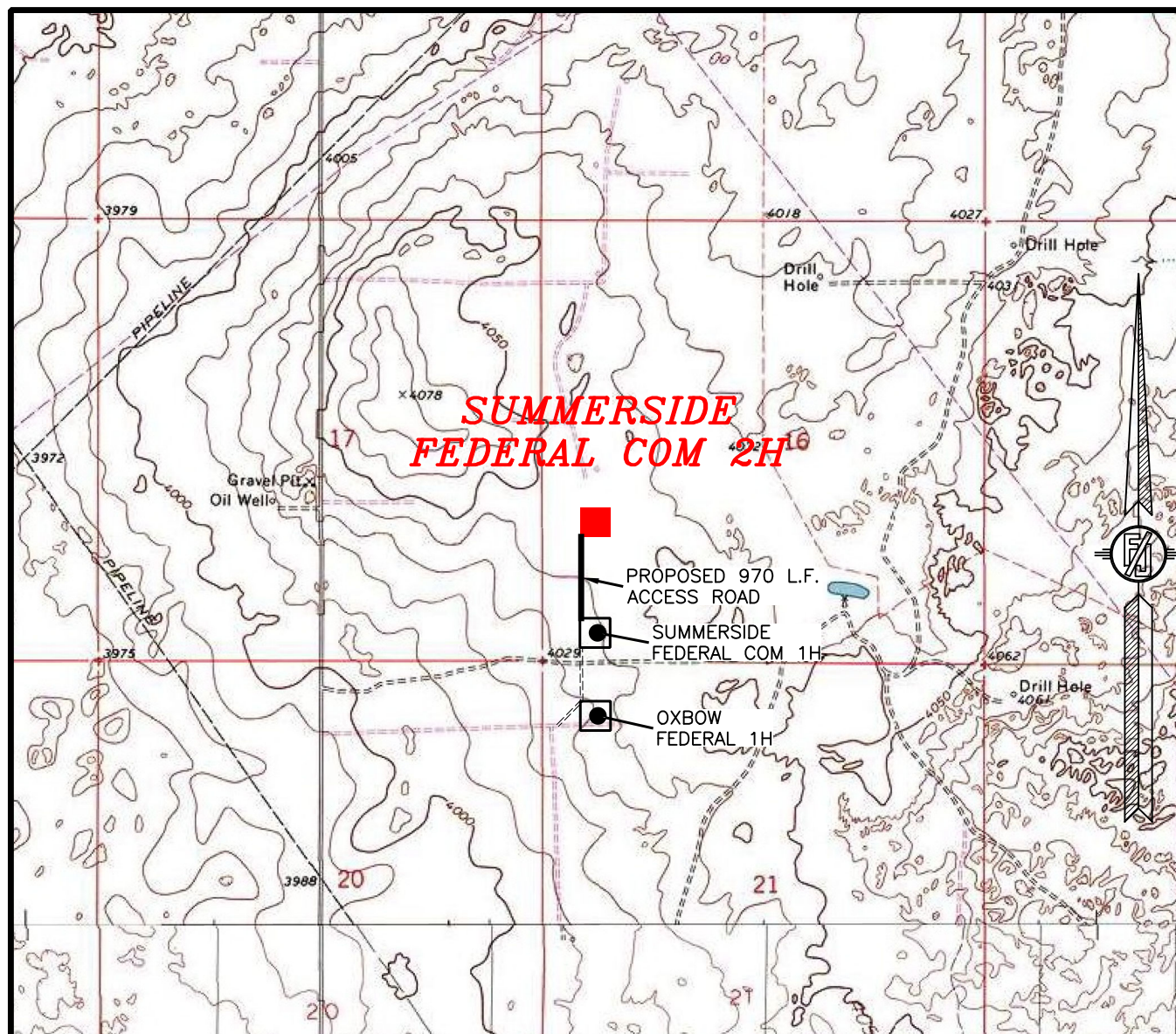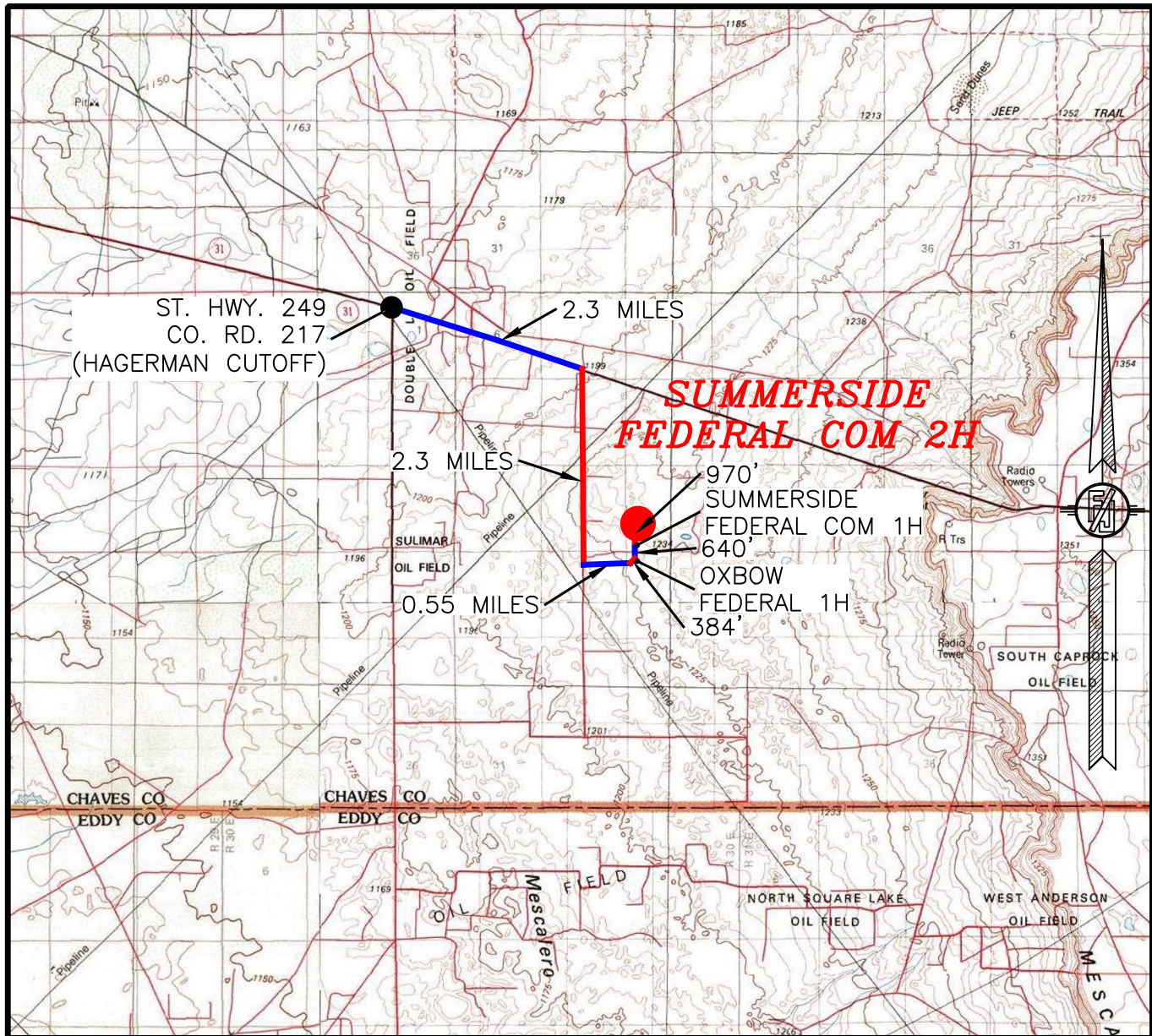CHAVES COUNTY, STATE OF NEW MEXICO

MARCH 6, 2024

SURVEY NO. 10051

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

ACCESS ROAD PLAT
ACCESS ROAD FOR SUMMERSIDE FEDERAL COM 2H

MACK ENERGY CORPORATION
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 16, TOWNSHIP 15 SOUTH, RANGE 30 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
MARCH 6, 2024

BC 1916   8 | 9   S89°41'54"E   2646.86 FT   S89°41'54"E   2646.87 FT   9 | 10 COMPUTED

17 | 16   16 | 15

2642.84 FT   N00°11'37"W   2647.75 FT   S00°21'21"E

BC 1916

SEC 16
T.15S., R.30E.
STATE

(TIE) N23°34'56"W 1281.13 FT

2644.33 FT

SUMMERSIDE FEDERAL COM 2H

STA 9+69.9 E.O.R.

2647.74 FT   S00°21'21"E

N00°01'48"W

N00°02'19"W 969.94 FT

STA 0+00.0 B.O.R.

(TIE) S45°39'15"W 715.68 FT

SUMMERSIDE FEDERAL COM 1H

BC 1916   17 | 16   N89°36'39"W   2658.17 FT   N89°36'39"W   2658.17 FT   16 | 15   BC 1916

20 | 21   21 | 22
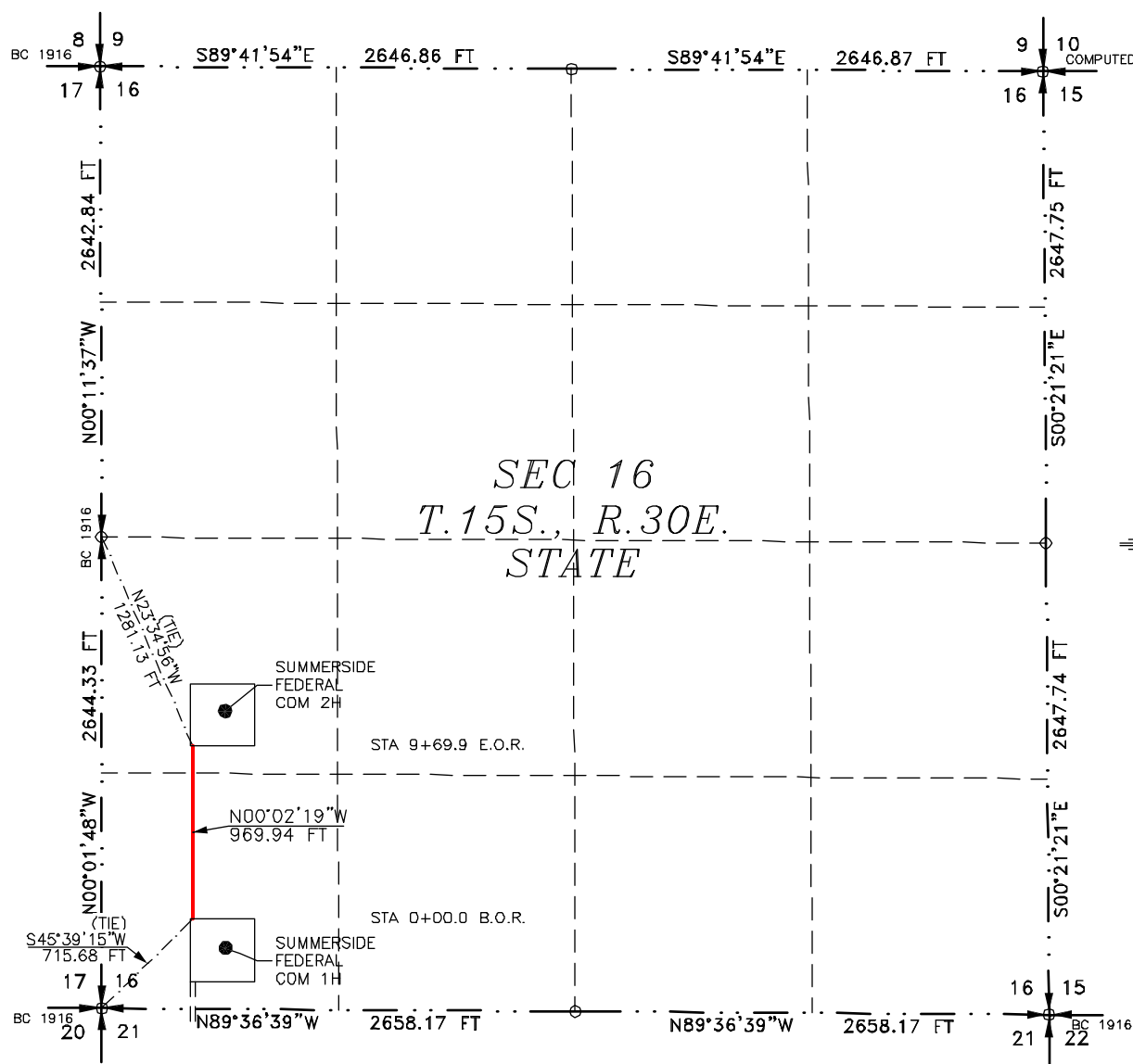
SEE NEXT SHEET (2-2) FOR DESCRIPTION

1000   0   1000
Scale: 1" = 1000'

GENERAL NOTES
1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS _____ DAY OF MAY 2024

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3327

FILIMON F. JARAMILLO PLS 12797

SHEET: 1-2   **SURVEY NO. 10051**

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

301 SOUTH CANAL
(575) 234-3327

ACCESS ROAD PLAT
ACCESS ROAD FOR SUMMERSIDE FEDERAL COM 2H

MACK ENERGY CORPORATION
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 16, TOWNSHIP 15 SOUTH, RANGE 30 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
MARCH 6, 2024

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING STATE OF NEW MEXICO LAND IN SECTION 16, TOWNSHIP 15 SOUTH, RANGE 30 EAST, N.M.P.M., CHAVES COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SW/4 SW/4 OF SAID SECTION 16, TOWNSHIP 15 SOUTH, RANGE 30 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 16, TOWNSHIP 15 SOUTH, RANGE 30 EAST, N.M.P.M. BEARS S45°39'15"W, A DISTANCE OF 715.68 FEET;
THENCE N00°02'19"W A DISTANCE OF 969.94 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE WEST QUARTER CORNER OF SAID SECTION 16, TOWNSHIP 15 SOUTH, RANGE 30 EAST, N.M.P.M. BEARS N23°34'56"W, A DISTANCE OF 1281.13 FEET;

SAID STRIP OF LAND BEING 969.94 FEET OR 58.78 RODS IN LENGTH, CONTAINING 0.668 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SW/4	818.59 L.F.	49.61 RODS	0.564 ACRES
NW/4 SW/4	151.35 L.F.	9.17 RODS	0.104 ACRES

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS ___ DAY OF MAY 2024

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3327

FILIMON F. JARAMILLO PLS 12797

GENERAL NOTES
1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 2-2   **SURVEY NO. 10051**

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

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:** 5 / 8 / 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
Summerside Federal Com #2H		Unit L Sec 16 T15S R30E	1650 FSL 707 FWL	100	100	1,000

IV. Central Delivery Point Name: DCP Midstream Linam Ranch Proscessing Plant / Durango Midstream   [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
Summerside Federal Com #2H		12/1/2024	12/20/2024	02/28/2025	02/28/2025	3/1/2025

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.

Page **2** of **4**

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:	*Deana Weaver*
Printed Name:	Deana Weaver
Title:	Regulatory Technician II
E-mail Address:	dweaver@mec.com
Date:	5/16/2024
Phone:	575-748-1288

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

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

Page **4** of **4**

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.
   o 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 o 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.
   o 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.
   o 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 o All tanks and separation equipment are designed for maximum throughput and pressure to minimize waste.
   o 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.
   o 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.

HZ PADDOCK 1 MILE
4167
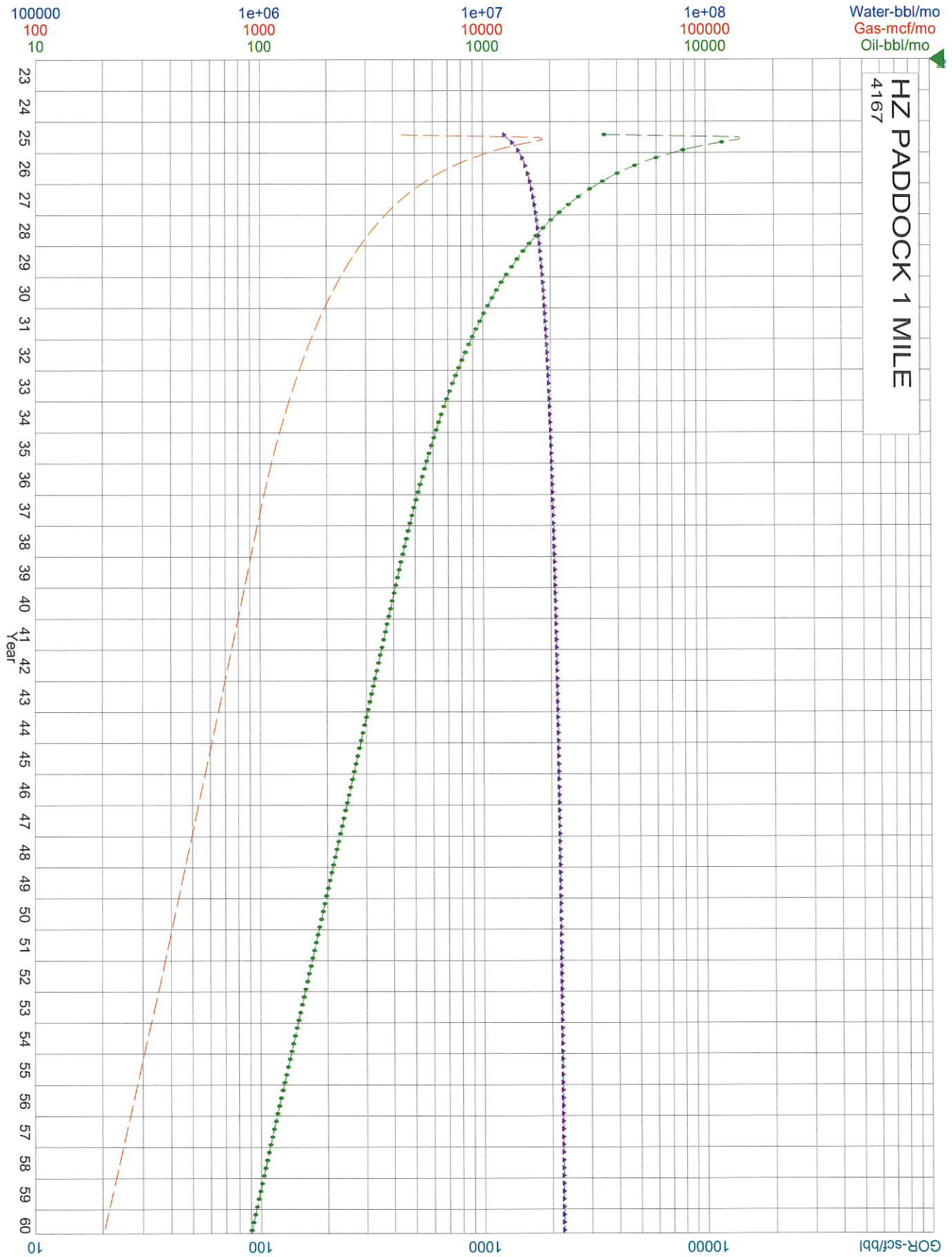
Month	Oil (BBL)	Gas (MCF)
1	7623.743	9617.177
2	14150	18313.726
3	12930.1	17261.991
4	10975.531	15047.588
5	9534.983	13366.994
6	8429.055	12044.559
7	7553.197	10974.749
8	6842.333	10090.153
9	6253.83	9345.605
10	5758.584	8709.657
11	5336.046	8159.707
12	4971.294	7679.081
13	4653.23	7255.193
14	4373.426	6878.361
15	4125.369	6541.008
16	3903.945	6237.117
17	3705.082	5961.847
18	3525.499	5711.255
19	3362.521	5482.102
20	3213.947	5271.693
21	3077.947	5077.773
22	2952.991	4898.44
23	2837.785	4732.074
24	2731.23	4577.291
25	2632.388	4432.896
26	2540.451	4297.858
27	2454.718	4171.278
28	2374.584	4052.37
29	2299.515	3940.442
30	2229.048	3834.885
31	2162.771	3735.161
32	2100.321	3640.788
33	2041.376	3551.339
34	1985.65	3466.431
35	1932.885	3385.719
36	1882.851	3308.894
37	1835.343	3235.677
38	1790.173	3165.813
39	1747.172	3099.074
40	1706.189	3035.25
41	1667.084	2974.15
42	1629.732	2915.6
43	1594.017	2859.441
44	1559.833	2805.527
45	1527.085	2753.722
46	1495.683	2703.903
47	1465.547	2655.956
48	1436.601	2609.775
49	1408.776	2565.262
50	1382.009	2522.327
51	1356.24	2480.886
52	1331.414	2440.861
53	1307.48	2402.178
54	1284.392	2364.771
55	1262.105	2328.575

56	1240.578	2293.532
57	1219.773	2259.587
58	1199.655	2226.688
59	1180.189	2194.785
60	1161.345	2163.835
61	1143.093	2133.793
62	1125.406	2104.62
63	1108.257	2076.278
64	1091.624	2048.731
65	1075.482	2021.946
66	1059.811	1995.89
67	1044.59	1970.534
68	1029.8	1945.85
69	1015.423	1921.81
70	1001.441	1898.389
71	987.84	1875.564
72	974.603	1853.31
73	961.716	1831.608
74	949.165	1810.435
75	936.938	1789.773
76	925.021	1769.603
77	913.404	1749.907
78	902.075	1730.668
79	891.024	1711.871
80	880.24	1693.5
81	869.714	1675.54
82	859.437	1657.978
83	849.4	1640.799
84	839.594	1623.993
85	830.012	1607.545
86	820.647	1591.446
87	811.49	1575.683
88	802.536	1560.246
89	793.777	1545.125
90	785.207	1530.309
91	776.82	1515.791
92	768.61	1501.56
93	760.572	1487.608
94	752.701	1473.927
95	744.991	1460.508
96	737.437	1447.345
97	730.034	1434.429
98	722.779	1421.754
99	715.667	1409.314
100	708.693	1397.1
101	701.854	1385.108
102	695.145	1373.331
103	688.564	1361.763
104	682.106	1350.398
105	675.768	1339.232
106	669.546	1328.258
107	663.438	1317.473
108	657.441	1306.87
109	651.551	1296.446
110	645.766	1286.196
111	640.082	1276.114

112	634.498	1266.198
113	629.01	1256.443
114	623.616	1246.846
115	618.314	1237.401
116	613.101	1228.106
117	607.976	1218.956
118	602.935	1209.95
119	597.978	1201.082
120	593.101	1192.35
121	588.303	1183.751
122	583.582	1175.282
123	578.937	1166.939
124	574.364	1158.72
125	569.864	1150.622
126	565.433	1142.642
127	561.071	1134.778
128	556.775	1127.027
129	552.545	1119.387
130	548.378	1111.855
131	544.274	1104.429
132	540.231	1097.107
133	536.247	1089.886
134	532.322	1082.764
135	528.454	1075.74
136	524.642	1068.811
137	520.884	1061.976
138	517.18	1055.232
139	513.527	1048.577
140	509.927	1042.01
141	506.376	1035.529
142	502.874	1029.133
143	499.421	1022.819
144	496.015	1016.586
145	492.654	1010.432
146	489.339	1004.357
147	486.069	998.357
148	482.841	992.433
149	479.657	986.582
150	476.514	980.803
151	473.412	975.095
152	470.35	969.457
153	467.327	963.887
154	464.343	958.383
155	461.397	952.946
156	458.488	947.573
157	455.615	942.263
158	452.779	937.015
159	449.977	931.829
160	447.21	926.702
161	444.476	921.635
162	441.776	916.625
163	439.108	911.671
164	436.46	906.75
165	433.829	901.851
166	431.213	896.975
167	428.613	892.122

168	426.029	887.291
169	423.46	882.483
170	420.907	877.697
171	418.369	872.934
172	415.847	868.193
173	413.34	863.474
174	410.848	858.778
175	408.37	854.104
176	405.908	849.452
177	403.461	844.822
178	401.028	840.214
179	398.61	835.628
180	396.207	831.064
181	393.818	826.521
182	391.444	822.001
183	389.084	817.502
184	386.738	813.024
185	384.406	808.569
186	382.088	804.135
187	379.785	799.722
188	377.495	795.33
189	375.219	790.96
190	372.956	786.611
191	370.708	782.284
192	368.473	777.977
193	366.251	773.691
194	364.043	769.427
195	361.848	765.183
196	359.666	760.96
197	357.498	756.758
198	355.342	752.577
199	353.2	748.416
200	351.07	744.276
201	348.953	740.156
202	346.849	736.057
203	344.758	731.978
204	342.679	727.919
205	340.613	723.881
206	338.56	719.862
207	336.518	715.864
208	334.489	711.886
209	332.473	707.927
210	330.468	703.989
211	328.476	700.07
212	326.495	696.171
213	324.527	692.292
214	322.57	688.432
215	320.625	684.592
216	318.692	680.771
217	316.77	676.969
218	314.861	673.187
219	312.962	669.424
220	311.075	665.68
221	309.2	661.955
222	307.335	658.249
223	305.482	654.562

224	303.64	650.894
225	301.81	647.245
226	299.99	643.614
227	298.181	640.002
228	296.383	636.409
229	294.596	632.834
230	292.82	629.277
231	291.055	625.739
232	289.3	622.219
233	287.556	618.717
234	285.822	615.233
235	284.099	611.768
236	282.386	608.32
237	280.683	604.89
238	278.991	601.478
239	277.309	598.084
240	275.637	594.707
241	273.975	591.348
242	272.323	588.007
243	270.681	584.683
244	269.049	581.376
245	267.427	578.087
246	265.814	574.815
247	264.212	571.56
248	262.619	568.322
249	261.035	565.101
250	259.461	561.897
251	257.897	558.71
252	256.342	555.54
253	254.797	552.387
254	253.26	549.25
255	251.733	546.13
256	250.215	543.026
257	248.707	539.939
258	247.207	536.868
259	245.717	533.813
260	244.235	530.775
261	242.763	527.753
262	241.299	524.747
263	239.844	521.756
264	238.398	518.782
265	236.961	515.824
266	235.532	512.881
267	234.112	509.955
268	232.7	507.043
269	231.297	504.148
270	229.903	501.268
271	228.517	498.403
272	227.139	495.554
273	225.769	492.72
274	224.408	489.901
275	223.055	487.098
276	221.71	484.309
277	220.373	481.536
278	219.045	478.778
279	217.724	476.034

280	216.411	473.305
281	215.107	470.591
282	213.81	467.892
283	212.521	465.208
284	211.239	462.537
285	209.966	459.882
286	208.7	457.241
287	207.441	454.614
288	206.191	452.001
289	204.947	449.403
290	203.712	446.818
291	202.483	444.248
292	201.263	441.692
293	200.049	439.15
294	198.843	436.621
295	197.644	434.107
296	196.452	431.606
297	195.268	429.119
298	194.091	426.645
299	192.92	424.185
300	191.757	421.739
301	190.601	419.306
302	189.452	416.886
303	188.31	414.48
304	187.174	412.086
305	186.046	409.706
306	184.924	407.339
307	183.809	404.985
308	182.701	402.644
309	181.599	400.316
310	180.504	398.001
311	179.416	395.699
312	178.334	393.409
313	177.259	391.132
314	176.19	388.867
315	175.128	386.615
316	174.072	384.376
317	173.022	382.149
318	171.979	379.934
319	170.942	377.732
320	169.912	375.541
321	168.887	373.363
322	167.869	371.197
323	166.857	369.043
324	165.851	366.901
325	164.851	364.771
326	163.857	362.653
327	162.869	360.546
328	161.887	358.452
329	160.911	356.369
330	159.941	354.297
331	158.976	352.237
332	158.018	350.189
333	157.065	348.152
334	156.118	346.127
335	155.177	344.112

336	154.241	342.11
337	153.311	340.118
338	152.387	338.137
339	151.468	336.168
340	150.555	334.209
341	149.647	332.262
342	148.745	330.326
343	147.848	328.4
344	146.957	326.485
345	146.071	324.581
346	145.19	322.688
347	144.314	320.805
348	143.444	318.933
349	142.579	317.071
350	141.72	315.22
351	140.865	313.38
352	140.016	311.549
353	139.172	309.73
354	138.333	307.92
355	137.499	306.12
356	136.67	304.331
357	135.846	302.552
358	135.027	300.783
359	134.212	299.024
360	133.403	297.275
361	132.599	295.535
362	131.799	293.806
363	131.005	292.086
364	130.215	290.376
365	129.43	288.676
366	128.649	286.986
367	127.874	285.305
368	127.103	283.633
369	126.336	281.971
370	125.575	280.319
371	124.818	278.676
372	124.065	277.042
373	123.317	275.418
374	122.573	273.803
375	121.834	272.196
376	121.1	270.6
377	120.37	269.012
378	119.644	267.433
379	118.923	265.863
380	118.206	264.303
381	117.493	262.751
382	116.784	261.208
383	116.08	259.674
384	115.38	258.148
385	114.685	256.631
386	113.993	255.123
387	113.306	253.624
388	112.623	252.133
389	111.944	250.651
390	111.269	249.177
391	110.598	247.711

392	109.931	246.254
393	109.268	244.806
394	108.61	243.365
395	107.955	241.933
396	107.304	240.509
397	106.657	239.093
398	106.014	237.686
399	105.375	236.286
400	104.739	234.895
401	104.108	233.511
402	103.48	232.136
403	102.856	230.768
404	102.236	229.408
405	101.62	228.056
406	101.007	226.712
407	100.398	225.376
408	99.793	224.047
409	99.191	222.726
410	98.593	221.412
411	97.998	220.106
412	97.408	218.808
413	96.82	217.517
414	96.236	216.233
415	95.656	214.957
416	95.079	213.688
417	94.506	212.427
418	93.936	211.173
419	93.37	209.926
420	92.807	208.686
421	92.248	207.454
422	91.691	206.228
423	91.139	205.01
424	90.589	203.799
425	90.043	202.594
426	89.5	201.397
427	88.96	200.207
428	88.424	199.023
429	87.891	197.847
430	87.361	196.677
431	86.834	195.514
432	86.311	194.357
433	85.79	193.208
434	85.273	192.065
435	84.759	190.928
436	84.248	189.799
437	83.74	188.676
438	83.235	187.559
439	82.733	186.449
440	82.234	185.345
441	81.738	184.248
442	81.246	183.157
443	80.756	182.072
444	80.269	180.994
445	79.785	179.922
446	79.304	178.856
447	78.826	177.796

448	78.35	176.743
449	77.878	175.696
450	77.408	174.654
451	76.942	173.619
452	76.478	172.59
453	76.017	171.567
454	75.558	170.55
455	75.103	169.538
456	74.65	168.533
457	74.2	167.534
458	73.753	166.54
459	73.308	165.552
460	72.866	164.57
461	72.427	163.593
462	71.99	162.623
463	71.556	161.658
464	71.124	160.698
465	70.696	159.744
466	70.269	158.796
467	69.846	157.854
468	69.425	156.916
469	69.006	155.985
470	68.59	155.058
471	68.176	154.138
472	67.765	153.222
473	67.357	152.312
474	66.951	151.407
475	66.547	150.508
476	66.146	149.613
477	65.747	148.724
478	65.35	147.841
479	64.956	146.962
480	64.565	146.088
481	64.176	145.22
482	63.789	144.357
483	63.404	143.499
484	63.022	142.645
485	62.642	141.797
486	62.264	140.954
487	61.889	140.116
488	61.515	139.282
489	61.145	138.454
490	60.776	137.63
491	60.41	136.811
492	60.045	135.997
493	59.683	135.188
494	59.323	134.384
495	58.966	133.584
496	58.61	132.789
497	58.257	131.999
498	57.906	131.213
499	57.556	130.432
500	57.209	129.655
501	56.864	128.883
502	56.522	128.116
503	56.181	127.353

504	55.842	126.594
505	55.505	125.84
506	55.171	125.091
507	54.838	124.346
508	54.507	123.605
509	54.179	122.869
510	53.852	122.137
511	53.527	121.409
512	53.205	120.685
513	52.884	119.966
514	52.565	119.251
515	52.248	118.54
516	51.933	117.834
517	51.62	117.131
518	51.309	116.433
519	50.999	115.739
520	50.692	115.049
521	50.386	114.363
522	50.083	113.681
523	49.781	113.003
524	49.48	112.329
525	49.182	111.659
526	48.886	110.993
527	48.591	110.331
528	48.298	109.673
529	48.007	109.019
530	47.717	108.368
531	47.429	107.722
532	47.144	107.079
533	46.859	106.44
534	46.577	105.805
535	46.296	105.173
536	46.017	104.545
537	45.739	103.921
538	45.464	103.301
539	45.189	102.684
540	44.917	102.071
541	44.646	101.462
542	44.377	100.856
543	44.109	100.254
544	43.843	99.655
545	43.579	99.06
546	43.316	98.469
547	43.055	97.881
548	42.796	97.296
549	42.538	96.715
550	42.281	96.137
551	42.026	95.563
552	41.773	94.992
553	41.521	94.424
554	41.271	93.86
555	41.022	93.299
556	40.774	92.742
557	40.529	92.188
558	40.284	91.637
559	40.041	91.089

560	39.8	90.545
561	39.56	90.003
562	39.321	89.465
563	39.084	88.931
564	38.849	88.399
565	38.614	87.87
566	38.382	87.345
567	38.15	86.823
568	37.92	86.304
569	37.692	85.788
570	37.464	85.275
571	37.238	84.765
572	37.014	84.258
573	36.791	83.754
574	36.569	83.253
575	36.348	82.755
576	36.129	82.26
577	35.911	81.768
578	35.695	81.279
579	35.48	80.792
580	35.266	80.309
581	35.053	79.829
582	34.842	79.351
583	34.632	78.876
584	34.423	78.404
585	34.215	77.935
586	34.009	77.469
587	33.804	77.005
588	33.6	76.544
589	33.398	76.086
590	33.196	75.63
591	32.996	75.178
592	32.797	74.728
593	32.599	74.28
594	32.403	73.836
595	32.208	73.394
596	32.013	72.954
597	31.82	72.517
598	31.628	72.083
599	31.438	71.652
600	31.248	71.223
601	31.06	70.796
602	30.873	70.372
603	30.686	69.951
604	30.501	69.532
605	30.317	69.115
606	30.135	68.701
607	29.953	68.29
608	29.772	67.881
609	29.593	67.474
610	29.414	67.07
611	29.237	66.668
612	29.061	66.269
613	28.886	65.872
614	28.711	65.477
615	28.538	65.085

616	28.366	64.695
617	28.195	64.307
618	28.025	63.922
619	27.856	63.539
620	27.688	63.158
621	27.521	62.779
622	27.355	62.403
623	27.191	62.029
624	27.027	61.657
625	26.864	61.288
626	26.702	60.92
627	26.541	60.555
628	26.381	60.192
629	26.222	59.831
630	26.064	59.473
631	25.906	59.116
632	25.75	58.762
633	25.595	58.409
634	25.441	58.059
635	25.287	57.711
636	25.135	57.365
637	24.983	57.021
638	24.833	56.679
639	24.683	56.339
640	24.534	56.001
641	24.386	55.665
642	24.239	55.331
643	24.093	55
644	23.948	54.67
645	23.803	54.342
646	23.66	54.016
647	23.517	53.692
648	23.375	53.37
649	23.234	53.05
650	23.094	52.731
651	22.955	52.415
652	22.817	52.101
653	22.679	51.788
654	22.542	51.477
655	22.406	51.168
656	22.271	50.861
657	22.137	50.556
658	22.004	50.253
659	21.871	49.951
660	21.739	49.652
661	21.608	49.354
662	21.478	49.057
663	21.348	48.763
664	21.219	48.47
665	21.092	48.18
666	20.964	47.89
667	20.838	47.603
668	20.712	47.317
669	20.587	47.033
670	20.463	46.751
671	20.34	46.47

672	20.217	46.191
673	20.095	45.914
674	19.974	45.638
675	19.854	45.364
676	19.734	45.092
677	19.615	44.821
678	19.497	44.552
679	19.379	44.285
680	19.262	44.019
681	19.146	43.755
682	19.031	43.492
683	18.916	43.231
684	18.802	42.971
685	18.689	42.713
686	18.576	42.457
687	18.464	42.202
688	18.353	41.948
689	18.242	41.696
690	18.132	41.446
691	18.023	41.197
692	17.914	40.95
693	17.806	40.704
694	17.699	40.459
695	17.592	40.216
696	17.486	39.975
697	17.381	39.735
698	17.276	39.496
699	17.172	39.259
700	17.068	39.023
701	16.965	38.788
702	16.863	38.555
703	16.761	38.324
704	16.66	38.094
705	16.56	37.865
706	16.46	37.637
707	16.361	37.411
708	16.262	37.186
709	16.164	36.963
710	16.066	36.741
711	15.97	36.52
712	15.873	36.301
713	15.778	36.083
714	15.682	35.866
715	15.588	35.65
716	15.494	35.436
717	15.4	35.223
718	15.308	35.011
719	15.215	34.801
720	15.124	34.592
721	15.032	34.384
722	14.942	34.177
723	14.852	33.972
724	14.762	33.768
725	14.673	33.565
726	14.585	33.363
727	14.497	33.163

728	14.409	32.963
729	14.322	32.765
730	14.236	32.568
731	14.15	32.372
732	14.065	32.178
733	13.98	31.984
734	13.896	31.792
735	13.812	31.601
736	13.729	31.411
737	13.646	31.222
738	13.564	31.035
739	13.482	30.848
740	13.401	30.663
741	13.32	30.478
742	13.24	30.295
743	13.16	30.113
744	13.08	29.932
745	13.002	29.752
746	12.923	29.573
747	12.845	29.395
748	12.768	29.218
749	12.691	29.043
750	12.614	28.868
751	12.538	28.695
752	12.463	28.522
753	12.387	28.35
754	12.313	28.18
755	12.239	28.011
756	12.165	27.842
757	12.091	27.675
758	12.019	27.508
759	11.946	27.343
760	11.874	27.178
761	11.802	27.015
762	11.731	26.853
763	11.661	26.691
764	11.59	26.53
765	11.52	26.371
766	11.451	26.212
767	11.382	26.055
768	11.313	25.898
769	11.245	25.742
770	11.177	25.587
771	11.11	25.433
772	11.043	25.28
773	10.976	25.128
774	10.91	24.977
775	10.844	24.827
776	10.779	24.678
777	10.714	24.529
778	10.649	24.382
779	10.585	24.235
780	10.521	24.089
781	10.458	23.944
782	10.395	23.8
783	10.332	23.657

784	10.27	23.515
785	10.208	23.373
786	10.146	23.233
787	10.085	23.093
788	10.024	22.954
789	9.964	22.816
790	9.904	22.679
791	9.844	22.542
792	9.785	22.407
793	9.726	22.272
794	9.667	22.138
795	9.609	22.005
796	9.551	21.872
797	9.493	21.741
798	9.436	21.61
799	9.379	21.48
800	9.323	21.351
801	9.266	21.222
802	9.211	21.094
803	9.155	20.967
804	9.1	20.841
805	9.045	20.716
806	8.99	20.591
807	8.936	20.467
808	8.882	20.344
809	8.829	20.222
810	8.776	20.1
811	8.723	19.979
812	8.67	19.859
813	8.618	19.739
814	8.566	19.62
815	8.514	19.502
816	8.463	19.385
817	8.412	19.268
818	8.361	19.152
819	8.311	19.037
820	8.261	18.923
821	8.211	18.809
822	8.161	18.695
823	8.112	18.583
824	8.063	18.471
825	8.015	18.36
826	7.966	18.249
827	7.918	18.14
828	7.87	18.03
829	7.823	17.922
830	7.776	17.814
831	7.729	17.707
832	7.682	17.6
833	7.636	17.494
834	7.59	17.389
835	7.544	17.284
836	7.499	17.18
837	7.454	17.077
838	7.409	16.974
839	7.364	16.872

| 840 | 7.32 | 16.77 |
| 841 | 7.275 | 16.669 |

AFMSS

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

Drilling Plan Data Report
03/31/2025

APD ID: 10400098540

Operator Name: MACK ENERGY CORPORATION

Well Name: SUMMERSIDE FEDERAL COM

Well Type: OIL WELL

Submission Date: 07/02/2024

Well Number: 2H

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
15317058	RUSTLER	4049	600	600	ALLUVIUM	NONE	N
15317059	TOP OF SALT	3299	750	750	SALT	NONE	N
15317060	BASE OF SALT	2689	1360	1360	SALT	NONE	N
15317061	YATES	2539	1510	1510	ANHYDRITE, SILTSTONE	NATURAL GAS, OIL	N
15317062	SEVEN RIVERS	2299	1750	1750	ANHYDRITE, SILTSTONE	NATURAL GAS, OIL	N
15317063	QUEEN	1804	2245	2245	ANHYDRITE, SILTSTONE	NATURAL GAS, OIL	N
15317064	GRAYBURG	1419	2630	2630	ANHYDRITE, DOLOMITE, SILTSTONE	NATURAL GAS, OIL	N
15317065	SAN ANDRES	1099	2950	2952	ANHYDRITE, DOLOMITE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M   **Rating Depth:** 14706

Equipment: Rotating Head, Mud Gas Separator

Requesting Variance? NO

Variance request:

Testing Procedure: The BOP/BOPE test shall include a low pressure test from 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 is 1710 psig (0.052*3574'*9.2) less than 2900 bottom hole pressure.

Choke Diagram Attachment:

>   NEW_Choke_Manifold_3M_20240517085909.pdf

BOP Diagram Attachment:

>   NEW_BOP_3M_20240517085923.pdf

Operator Name: MACK ENERGY CORPORATION

Well Name: SUMMERSIDE FEDERAL COM   **Well Number:** 2H

NEW_Choke_Manifold_3M_20240517085909.pdf

NEW_BOP_3M_20240517085923.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	625	0	625	4049	3424	625	J-55	48	ST&C	2.372	4.62	BUOY	16.918	BUOY	4.74
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	1500	0	1500	4049	2549	1500	J-55	36	ST&C	2.564	7.152	BUOY	8.63	BUOY	7.04
3	PRODUCTION	8.75	7.0	NEW	API	N	0	3850	0	3647	4049	402	3850	HCP-110	17	BUTT	3.64	3.317	BUOY	3.538	BUOY	3.317
4	PRODUCTION	8.75	5.5	NEW	API	N	0	14706	0	3574	4049	475	14706	HCP-110	17	BUTT	4.424	3.547	BUOY	3.634	BUOY	3.547

Casing Attachments

Casing ID: 1   **String**   SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Surface_Csg_20240517091050.pdf

Operator Name: MACK ENERGY CORPORATION

Well Name: SUMMERSIDE FEDERAL COM   **Well Number:** 2H

Casing Attachments

Casing ID: 2   **String**   INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

       Interm_csg_20240517091322.pdf

Casing ID: 3   **String**   PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

       Production_Csg_20240517091609.pdf

Casing ID: 4   **String**   PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Section 4 - Cement

Operator Name: MACK ENERGY CORPORATION

Well Name: SUMMERSIDE FEDERAL COM   **Well Number:** 2H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	625	325	2.31	13.5	435	100	RFC+12%PF53+2%PF1+5PPS PF42+.125PPS PF29	20BBLS GELLED WATER 50SX OF 11# SCAVENGER CEMENT
SURFACE	Tail		0	625	200	1.32	14.8	435	100	CLASS C + 1%PF1	20BBLS GELLED WATER 50SX OF 11# SCAVENGER CEMENT
INTERMEDIATE	Lead		0	1500	300	1.73	14.8	470	50	CLASS C+4%PF20+.4PPS PF44+.125PPS PF29	20BBLS GELLED WATER 50SX OF 11# SCAVENGER CEMENT
INTERMEDIATE	Tail		0	1500	200	1.34	14.8	470	100	CLASS C+1%PF 1	20BBLS GELLED WATER 50SX OF 11# SCAVENGER CEMENT
PRODUCTION	Lead		0	14706	350	2.82	11.5	3322	35	50/50 POZ/C+10% PF 20+5%PF 44+.5% PF79+3PPS PF42+.4PPS PF45+.125 PPS	20BBLS GELLED WATER 20BBLS CHEMICAL WASH 50SX OF 11#SCAVENGER CEMENT
PRODUCTION	Tail		0	14706	2950	1.34	14.2	3322	35	50/50 POZ/C 5%PF 44+.2%PF20+.2%PF 13+.2% PF 65+.2%PF 606+.4PPS PF 45	20BBLS GELLED WATER 20BBLS CHEMICAL WASH 50SX OF 11# SCAVENGER CEMENT

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 43 CFR 3172:

Diagram of the equipment for the circulating system in accordance with 43 CFR 3172:

Describe what will be on location to control well or mitigate other conditions: BOPE Brine Water

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

Circulating Medium Table

Operator Name: MACK ENERGY CORPORATION

Well Name: SUMMERSIDE FEDERAL COM   **Well Number:** 2H

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	1500	LSND/GEL	8.3	9.2	74.8	0.1	11		160000	15	
0	14706	LSND/GEL	8.3	9.2	74.8	0.1	11		160000	15	The estimated bottom hole at TD is 120 degrees and estimated maximum bottom hole pressure is 1710psig less than 2900 bottom hole pressure
0	625	SPUD MUD	9.6	10	74.8	0.1	11		160000	15	

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:

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

Coring operation description for the well:

None

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 1710   **Anticipated Surface Pressure:** 889

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: SUMMERSIDE FEDERAL COM   **Well Number:** 2H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Escape_Route_20240517122024.pdf

Summerside_Federal_Com__2H_Preliminary_Horizontal_Well_Plan_1_20240517122056.pdf

H2S_Contingency_Plan_20240529122621.pdf

Natural_Gas_Management_Plan_20250227081824.pdf

drill_plan_20250306074623.pdf

H2S_Plan_20250306074816.pdf

Other proposed operations facets description:

Perforations 4,183-14,600 MD
Mack Energy Corporation request the option to run a DV Tool @ 1400+/- if an air pocket is encountered.
Cmt Stage1 - 2050sx 50/50 POZ/C +5% (BWOW) PF44+2%PF20+0.2%PF13+0.2% PF606+0.1%PF
153+0.4pps PF45, yld 1.34, density 14.2, mix H2O gals/sx 6.085, 50% excess, slurry top 1150' Cmt Stage 2 -
200sx C + 2% PF 1, yld 1.34, density 14.8, 0% excess, Slurry Top Surface. 2,205.1 Cu/Ft. per Line/Ft

Other proposed operations facets attachment:

Other Variance attachment:

Variance_request_20240517122116.pdf

Cactus_Wellhead_installation_Procedure_20240517122211.pdf
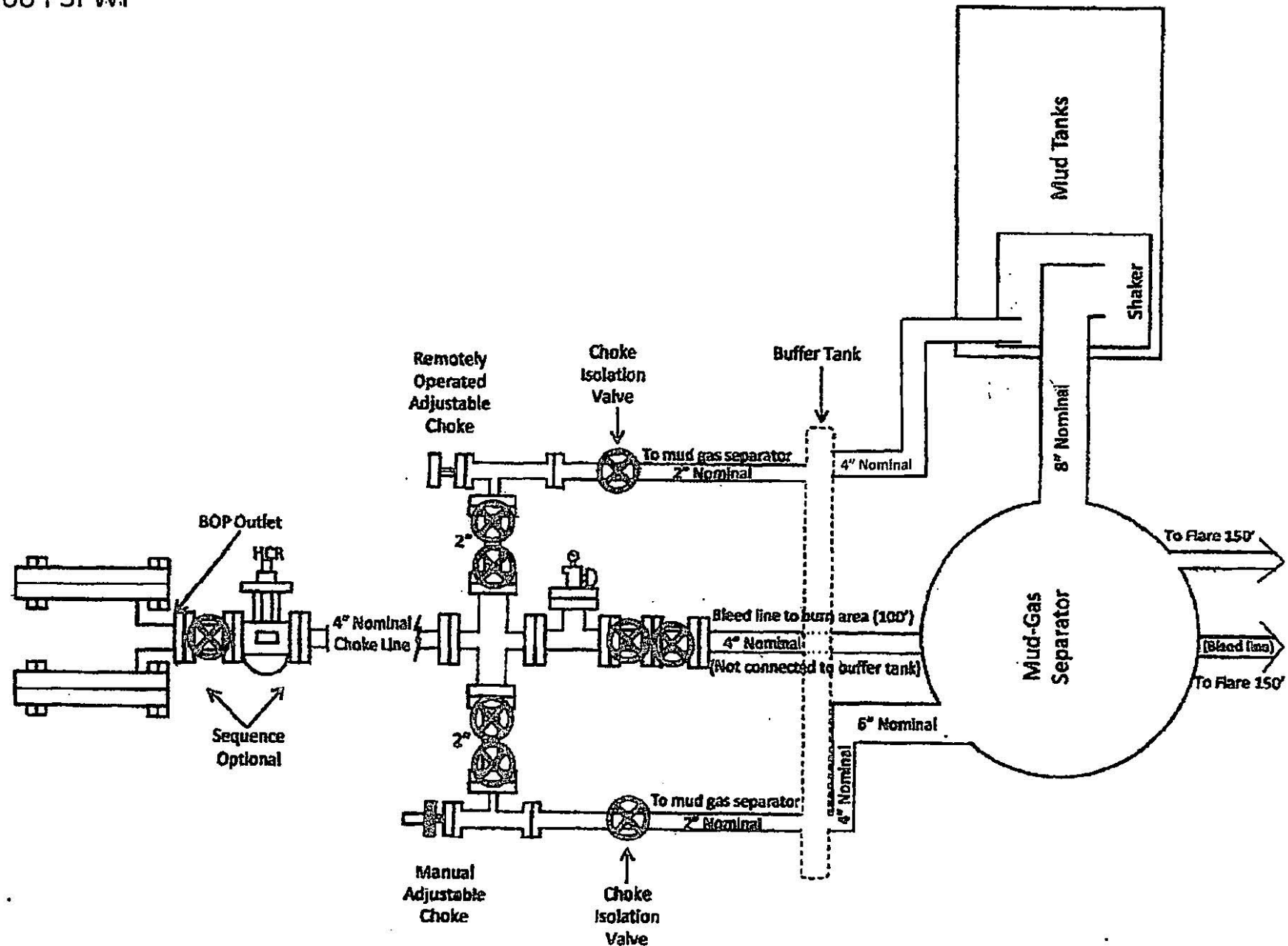
Hose_Certs_Reliance_20241107104201.pdf

hose_cert_rig_3_20241212110314.pdf

Choke Manifold

3000 PSI WP

BOP Diagram

Dual Ram BOP
3000 PSI WP

Fill Line →   → Flow Line

Annular
3000 PSI

Pipe Rams   3000 PSI

Blind Rams   3000 PSI

Kill Line

Choke Manifold
4"

8-5/8" 3k Flange – LAF
8-5/8" x 5-1/2" Flag 92
Adapter

Drilling Spool
8-5/8" 3K x 8-5/8" 3K

8-5/8" Casing
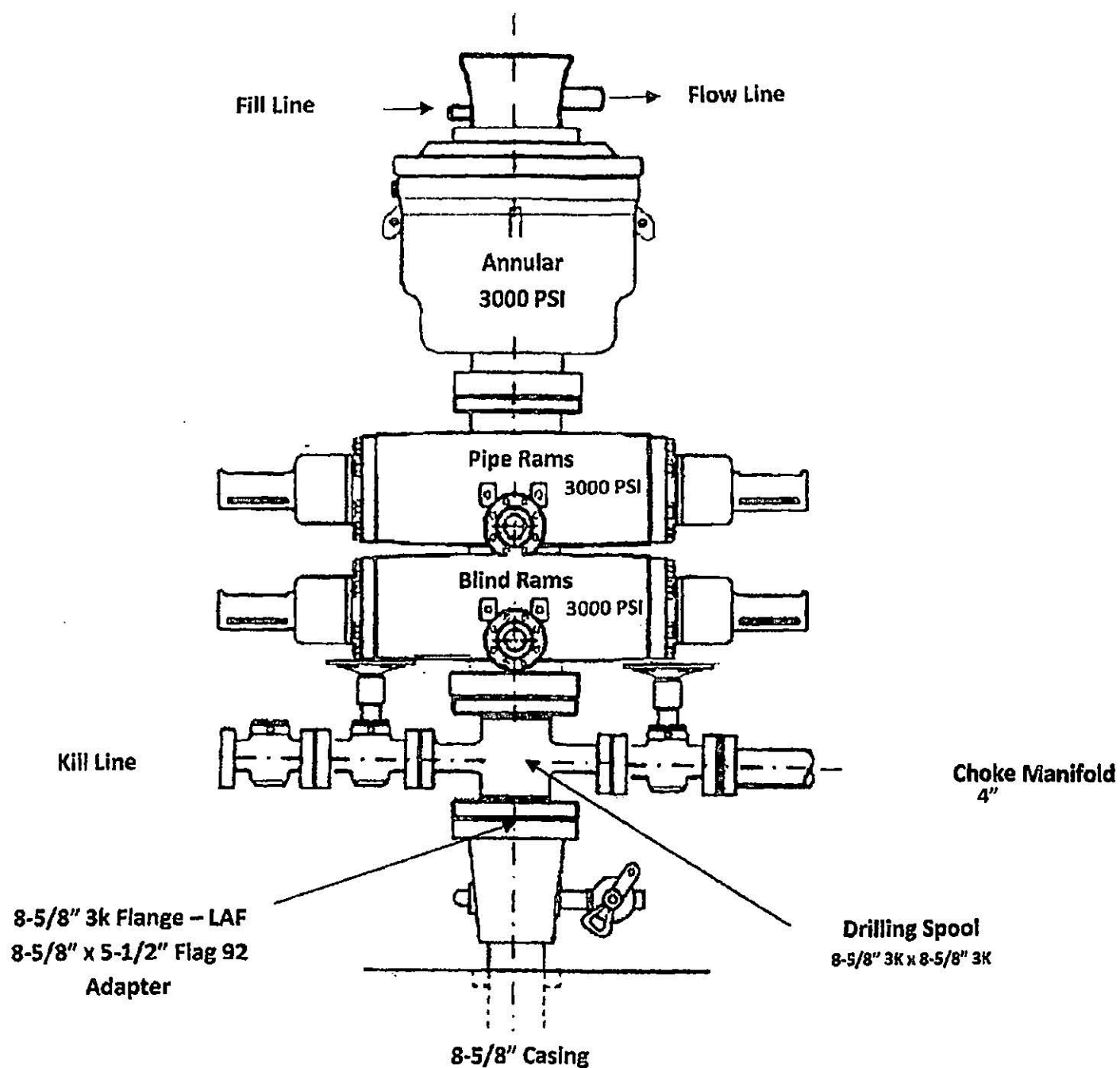
Casing Design   **Well:**   Sumerside Federal Com #2H

String Size & Function: 13 3/8 in   surface   x   intermediate

Total Depth: 625 ft

Pressure Gradient for Calculations   **(While drilling)**

Mud weight, <u>collapse</u>:   9.6 #/gal   Safety Factor Collapse: 1.125

Mud weight, <u>burst</u>:   9.6 #/gal   Safety Factor Burst: 1.25

Mud weight for joint strength: 9.6 #/gal   Safety Factor Joint Strength   1.8

BHP @ TD for: collapse: 312 psi   Burst: 312 psi,   joint strength: 312 psi

Partially evacuated hole?   Pressure gradient remaining: 10 #/gal

Max. Shut in surface pressure: 500 psi

1st segment   625 ft   to   0 ft   Make up Torque ft-lbs   Total ft =   625

O.D.	Weight	Grade	Threads	opt.	min.	mx.
13.375 inches	**48** #/ft	**J-55**	**ST&C**	**3,220**	**2,420**	**4,030**

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
740	**2,370** psi	**433** ,000 #	**744** ,000 #	**12.559**

2nd segment   0 ft   to   0 ft   Make up Torque ft-lbs   Total ft =   0

O.D.	Weight	Grade	Threads	opt.	min.	mx.
inches	#/ft					

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
psi	psi	,000 #	,000 #	

3rd segment   0 ft   to   0 ft   Make up Torque ft-lbs   Total ft =   0

O.D.	Weight	Grade	Threads	opt.	min.	mx.
inches	#/ft					

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
psi	psi	,000 #	,000 #	

4th segment   0 ft   to   0 ft   Make up Torque ft-lbs   Total ft =   0

O.D.	Weight	Grade	Threads	opt.	min.	mx.
inches	#/ft					

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
psi	psi	,000 #	,000 #	

5th segment   0 ft   to   0 ft   Make up Torque ft-lbs   Total ft =   0

O.D.	Weight	Grade	Threads	opt.	min.	mx.
inches	#/ft					

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
psi	psi	,000 #	,000 #	

6th segment   0 ft   to   0 ft   Make up Torque ft-lbs   Total ft =   0

O.D.	Weight	Grade	Threads	opt.	min.	mx.
inches	#/ft					

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
psi	psi	,000 #	,000 #	

Select	1st segment bottom		625	**S.F.**	Actual		Desire
				collapse	2.371795	>=	1.125
625 ft to 0 ft				burst-b	4.619883	>=	1.25
13.375 0 J-55 ST&C				burst-t	4.74		
	Top of segment 1 (ft)		0	**S.F.**	Actual		Desire
Select	2nd segment from bottom			collapse	#DIV/0!	>=	1.125
				burst-b	0	>=	1.25
0 ft to 0 ft				burst-t	0		
0 0 0 0				jnt strngth	16.91829	>=	1.8

	Top of segment 2 (ft)			**S.F.**	Actual		Desire
Select	3rd segment from bottom			collapse	#DIV/0!	>=	1.125
				burst-b	0	>=	1.25
	0 ft	to	0 ft	burst-t	0		
	0	0	0	0	jnt strngth	0	>=	1.8

	Top of segment 3 (ft)			**S.F.**	Actual		Desire
Select	4th segment from bottom			collapse	#DIV/0!	>=	1.125
				burst-b	0	>=	1.25
	0 ft	to	0 ft	burst-t	0		
	0	0	0	0	jnt strngth	0	>=	1.8

	Top of segment 4 (ft)			**S.F.**	Actual		Desire
Select	5th segment from bottom			collapse	#DIV/0!	>=	1.125
				burst-b	0	>=	1.25
	0 ft	to	ft	burst-t	0		
	0	0	0	0	jnt strngth	0	>=	1.8

	Top of segment 5 (ft)			**S.F.**	Actual		Desire
Select	6th segment from bottom			collapse	#DIV/0!	>=	1.125
				burst-b	0	>=	1.25
	0 ft	to	ft	burst-t	0		
	0	0	0	0	jnt strngth	0	>=	1.8
	Top of segment 6 (ft)			jnt strngth		>=	1.8

use in colapse calculations across different pressured formations

Three gradient pressure function

Depth of evaluation:	1,200 ft			516 psi @	1,200 ft
Top of salt:	2,400 ft	fx #1	516		
Base of salt:	3,700 ft	fx #2	900		
TD of intermediate:	4,600 ft	fx #3	540		

Pressure gradient to be used above each top to be used as a function of depth. ex. psi/ft

fx #1	fx #2	fx #3
0.43	0.75	0.45

1) Calculate neutral point for buckling with temperature affects computed also
2) Surface burst calculations & kick tolerance in surface pressure for burst
3) Do a comparison test to determine which value is lower joint strength or body yield to use in tensile strength calculations
4) Raise joint strength safety factor up to next level on page #2
5) Sour service what pipe can be used with proper degrading of strength factors and as function of temp

Adjust for best combination of safety factors

	Secondary
S.F. Collapse bottom of segment:	
S.F. Collapse top of segment:	#DIV/0!
S.F. Burst bottom of segment:	
S.F. Burst top of segment	
S.F. Joint strength bottom of segment:	214.782
S.F. Joint strength top of segment:	
S.F. Body yield strength bottom of segment:	369.048
S.F. Body yield strength top of segment:	29.0698

Collapse calculations for 1st segment - casing evacuated

Buoyancy factor collapse:	0.85312	
calculations for bottom of segment @	625 ft	
hydrostatic pressure collapse - backside:	312 psi	
Axial load @ bottom of section	0 lbs	previous segments
Axial load factor:	0	load/(pipe body yield strength)
Collapse strength reduction factor:	1	Messrs, Westcott, Dunlop, Kemler,1940
Adjusted collapse rating of segment:	740 psi	
Actual safety factor	2.37179	adjusted casing rating / actual pressure

calculations for top of segment @   0 ft
hydrostatic pressure collapse - backside: 0 psi
Axial load @ top of section   25593.6 lbs   previous segments + (this segment x BF)
Axial load factor: 0.0344   load/(pipe body yield strength)
Collapse strength reduction factor: 0.9905   Messrs, Westcott, Dunlop, Kemler,1940
Adjusted collapse rating of segment: 732.973 psi
Actual safety factor   #DIV/0!   adjusted casing rating / actual pressure

Burst calculations for 1st segment - Completion fracture treatment

calculations for bottom of segment @   625 ft
Differential burst pressure   513 psi   (frac. pres.-mud pres.) + max. surf. pres.
Burst rating of segment   2370 psi
Actual safety factor   4.61988   casing rating / differential burst pressure

calculations for top of segment @   0 ft
Differential burst pressure   500 psi   (frac. pres.-mud pres.) + max. surf. pres.
Burst rating of segment   2370 psi
Actual safety factor   4.74   casing rating / differential burst pressure

Joint strength calculations for 1st segment

Buoyancy factor for joint strength calc.:   0.85312

calculations for bottom of segment @   625 ft
Axial load @ bottom of section   2016 lbs   weight of previous segments
Joint Strength of segment   433000 lbs
Body Yield Strength of segment   744000 lbs
Actual safety factor joint strength   214.782   csg joint strength / axial load
Actual safety factor body yield   369.048   csg body yield strength / axial load

calculations for top of segment @   0 ft
Axial load @ top of section   25593.6 lbs   weight of previous segments + (this segment x BF)
Joint Strength of segment   433000 lbs
Body Yield Strength of segment   744000 lbs
Actual safety factor joint strength   16.9183   csg joint strength / axial load
Actual safety factor body yield   29.0698   csg body yield strength / axial load

Adjust for best combination of safety factors
                                                Secondary

S.F. Collapse bottom of segment:
S.F. Collapse top of segment: #DIV/0!

S.F. Burst bottom of segment:
S.F. Burst top of segment

S.F. Joint strength bottom of segment: 0
S.F. Joint strength top of segment:
S.F. Body yield strength bottom of segment: 0
S.F. Body yield strength top of segment: 0

Collapse calculations for 2nd segment - casing evacuated

Buoyancy factor collapse: 0.85312

calculations for bottom of segment @   0 ft
hydrostatic pressure collapse - backside: 0 psi
Axial load @ bottom of section   25593.6 lbs   load @ top of last segment
Axial load factor: #DIV/0!   load/(pipe body yield strength)
Collapse strength reduction factor: #DIV/0!   Messrs, Westcott, Dunlop, Kemler,1940
Adjusted collapse rating of segment: #DIV/0! psi
Actual safety factor   #DIV/0!   adjusted casing rating / actual pressure

calculations for top of segment @   0 ft
hydrostatic pressure collapse - backside: 0 psi
Axial load @ top of section   25593.6 lbs   previous segments + (this segment x BF)
Axial load factor: #DIV/0!   load/(pipe body yield strength)
Collapse strength reduction factor: #DIV/0!   Messrs, Westcott, Dunlop, Kemler,1940
Adjusted collapse rating of segment: #DIV/0! psi
Actual safety factor   #DIV/0!   adjusted casing rating / actual pressure

Burst calculations for 2nd segment - Completion fracture treatment

calculations for bottom of segment @   0 ft
Differential burst pressure   500 psi   (frac. pres.-mud pres.) + max. surf. pres.
Burst rating of segment   0 psi
Actual safety factor   0   casing rating / differential burst pressure

calculations for top of segment @   0 ft

Differential burst pressure	500 psi	(frac. pres.-mud pres.) + max. surf. pres.
Burst rating of segment	0 psi	
Actual safety factor	0	casing rating / differential burst pressure

Joint strength calculations for 2nd segment

Buoyancy factor for joint strength calc.:   0.85312

calculations for bottom of segment @	0 ft	
Axial load @ bottom of section	25593.6 lbs	weight of previous segments
Joint Strength of segment	0 lbs	
Body Yield Strength of segment	0 lbs	
Actual safety factor joint strength	0	csg joint strength / axial load
Actual safety factor body yield	0	csg body yield strength / axial load

calculations for top of segment @	0 ft	
Axial load @ top of section	25593.6 lbs	weight of previous segments + (this segment x BF)
Joint Strength of segment	0 lbs	
Body Yield Strength of segment	0 lbs	
Actual safety factor joint strength	0	csg joint strength / axial load
Actual safety factor body yield	0	csg body yield strength / axial load

Adjust for best combination of safety factors

	Secondary
S.F. Collapse bottom of segment:	
S.F. Collapse top of segment:	#DIV/0!
S.F. Burst bottom of segment:	
S.F. Burst top of segment	
S.F. Joint strength bottom of segment:	0
S.F. Joint strength top of segment:	
S.F. Body yield strength bottom of segment:	0
S.F. Body yield strength top of segment:	0

Collapse calculations for 3rd segment - casing evacuated

Buoyancy factor collapse: 0.85312

calculations for bottom of segment @	0 ft	
hydrostatic pressure collapse - backside:	0 psi	
Axial load @ bottom of section	25593.6 lbs	load @ top of last segment
Axial load factor:	#DIV/0!	load/(pipe body yield strength)
Collapse strength reduction factor:	#DIV/0!	Messrs, Westcott, Dunlop, Kemler,1940
Adjusted collapse rating of segment:	#DIV/0! psi	
Actual safety factor	#DIV/0!	adjusted casing rating / actual pressure

calculations for top of segment @	0 ft	
hydrostatic pressure collapse - backside:	0 psi	
Axial load @ top of section	25593.6 lbs	previous segments + (this segment x BF)
Axial load factor:	#DIV/0!	load/(pipe body yield strength)
Collapse strength reduction factor:	#DIV/0!	Messrs, Westcott, Dunlop, Kemler,1940
Adjusted collapse rating of segment:	#DIV/0! psi	
Actual safety factor	#DIV/0!	adjusted casing rating / actual pressure

Burst calculations for 3rd segment - Completion fracture treatment

calculations for bottom of segment @	0 ft	
Differential burst pressure	500 psi	(frac. pres.-mud pres.) + max. surf. pres.
Burst rating of segment	0 psi	
Actual safety factor	0	casing rating / differential burst pressure

calculations for top of segment @	0 ft	
Differential burst pressure	500 psi	(frac. pres.-mud pres.) + max. surf. pres.
Burst rating of segment	0 psi	
Actual safety factor	0	casing rating / differential burst pressure

Joint strength calculations for 3rd segment

Buoyancy factor for joint strength calc.:

calculations for bottom of segment @	0 ft	
Axial load @ bottom of section	25593.6 lbs	load @ top of last segment
Joint Strength of segment	0 lbs	
Body Yield Strength of segment	0 lbs	
Actual safety factor joint strength	0	csg joint strength / axial load
Actual safety factor body yield	0	csg body yield strength / axial load

calculations for top of segment @	0 ft	
Axial load @ top of section	25593.6 lbs	weight of previous segments + (this segment x BF)

Joint Strength of segment	0 lbs	
Body Yield Strength of segment	0 lbs	
Actual safety factor joint strength	0	csg joint strength / axial load
Actual safety factor body yield	0	csg body yield strength / axial load

Adjust for best combination of safety factors

Secondary

S.F. Collapse bottom of segment:	
S.F. Collapse top of segment:	#DIV/0!
S.F. Burst bottom of segment:	
S.F. Burst top of segment	
S.F. Joint strength bottom of segment:	0
S.F. Joint strength top of segment:	
S.F. Body yield strength bottom of segment:	0
S.F. Body yield strength top of segment:	0

Collapse calculations for 4th segment - casing evacuated

Buoyancy factor collapse: 0.85312

calculations for bottom of segment @   0 ft
hydrostatic pressure collapse - backside:	0 psi	
Axial load @ bottom of section	25593.6 lbs	load @ top of last segment
Axial load factor:	#DIV/0!	load/(pipe body yield strength)
Collapse strength reduction factor:	#DIV/0!	Messrs, Westcott, Dunlop, Kemler,1940
Adjusted collapse rating of segment:	#DIV/0! psi	
Actual safety factor	#DIV/0!	adjusted casing rating / actual pressure

calculations for top of segment @   0 ft
hydrostatic pressure collapse - backside:	0 psi	
Axial load @ top of section	25593.6 lbs	previous segments + (this segment x BF)
Axial load factor:	#DIV/0!	load/(pipe body yield strength)
Collapse strength reduction factor:	#DIV/0!	Messrs, Westcott, Dunlop, Kemler,1940
Adjusted collapse rating of segment:	#DIV/0! psi	
Actual safety factor	#DIV/0!	adjusted casing rating / actual pressure

Burst calculations for 4th segment - Completion fracture treatment

calculations for bottom of segment @   0 ft
Differential burst pressure	500 psi	(frac. pres.-mud pres.) + max. surf. pres.
Burst rating of segment	0 psi	
Actual safety factor	0	casing rating / differential burst pressure

calculations for top of segment @   0 ft
Differential burst pressure	500 psi	(frac. pres.-mud pres.) + max. surf. pres.
Burst rating of segment	0 psi	
Actual safety factor	0	casing rating / differential burst pressure

Joint strength calculations for 4th segment

Buoyancy factor for joint strength calc.:   0.85312

calculations for bottom of segment @   0 ft
Axial load @ bottom of section	25593.6 lbs	load @ top of last segment
Joint Strength of segment	0 lbs	
Body Yield Strength of segment	0 lbs	
Actual safety factor joint strength	0	csg joint strength / axial load
Actual safety factor body yield	0	csg body yield strength / axial load

calculations for top of segment @   0 ft
Axial load @ top of section	25593.6 lbs	weight of previous segments + (this segment x BF)
Joint Strength of segment	0 lbs	
Body Yield Strength of segment	0 lbs	
Actual safety factor joint strength	0	csg joint strength / axial load
Actual safety factor body yield	0	csg body yield strength / axial load

Adjust for best combination of safety factors

Secondary

S.F. Collapse bottom of segment:	
S.F. Collapse top of segment:	#DIV/0!
S.F. Burst bottom of segment:	
S.F. Burst top of segment	
S.F. Joint strength bottom of segment:	0
S.F. Joint strength top of segment:	
S.F. Body yield strength bottom of segment:	0
S.F. Body yield strength top of segment:	0

Collapse calculations for 5th segment - casing evacuated

Buoyancy factor collapse: 0.85312

calculations for bottom of segment @   0 ft
hydrostatic pressure collapse - backside: 0 psi
Axial load @ bottom of section   25593.6 lbs   load @ top of last segment
Axial load factor: #DIV/0!   load/(pipe body yield strength)
Collapse strength reduction factor: #DIV/0!   Messrs, Westcott, Dunlop, Kemler,1940
Adjusted collapse rating of segment: #DIV/0!   psi
Actual safety factor   #DIV/0!   adjusted casing rating / actual pressure

calculations for top of segment @   0 ft
hydrostatic pressure collapse - backside: 0 psi
Axial load @ top of section   25593.6 lbs   previous segments + (this segment x BF)
Axial load factor: #DIV/0!   load/(pipe body yield strength)
Collapse strength reduction factor: #DIV/0!   Messrs, Westcott, Dunlop, Kemler,1940
Adjusted collapse rating of segment: #DIV/0!   psi
Actual safety factor   #DIV/0!   adjusted casing rating / actual pressure

Burst calculations for 5th segment - Completion fracture treatment

calculations for bottom of segment @   0 ft
Differential burst pressure   500 psi   (frac. pres.-mud pres.) + max. surf. pres.
Burst rating of segment   0 psi
Actual safety factor   0   casing rating / differential burst pressure

calculations for top of segment @   0 ft
Differential burst pressure   500 psi   (frac. pres.-mud pres.) + max. surf. pres.
Burst rating of segment   0 psi
Actual safety factor   0   casing rating / differential burst pressure

Joint strength calculations for 5th segment

Buoyancy factor for joint strength calc.:   0.85312

calculations for bottom of segment @   0 ft
Axial load @ bottom of section   25593.6 lbs   load @ top of last segment
Joint Strength of segment   0 lbs
Body Yield Strength of segment   0 lbs
Actual safety factor joint strength   0   csg joint strength / axial load
Actual safety factor body yield   0   csg body yield strength / axial load

calculations for top of segment @   0 ft
Axial load @ top of section   25593.6 lbs   weight of previous segments + (this segment x BF)
Joint Strength of segment   0 lbs
Body Yield Strength of segment   0 lbs
Actual safety factor joint strength   0   csg joint strength / axial load
Actual safety factor body yield   0   csg body yield strength / axial load

Adjust for best combination of safety factors
                                                           Secondary

S.F. Collapse bottom of segment:
S.F. Collapse top of segment: #DIV/0!

S.F. Burst bottom of segment:
S.F. Burst top of segment

S.F. Joint strength bottom of segment: 0
S.F. Joint strength top of segment:
S.F. Body yield strength bottom of segment: 0
S.F. Body yield strength top of segment: 0

Collapse calculations for 6th segment - casing evacuated

Buoyancy factor collapse:	0.85312

calculations for bottom of segment @   0 ft
hydrostatic pressure collapse - backside: 0 psi
Axial load @ bottom of section   25593.6 lbs   load @ top of last segment
Axial load factor: #DIV/0!   load/(pipe body yield strength)
Collapse strength reduction factor: #DIV/0!   Messrs, Westcott, Dunlop, Kemler,1940
Adjusted collapse rating of segment: #DIV/0!   psi
Actual safety factor   #DIV/0!   adjusted casing rating / actual pressure

calculations for top of segment @   0 ft
hydrostatic pressure collapse - backside: 0 psi
Axial load @ top of section   25593.6 lbs   previous segments + (this segment x BF)
Axial load factor: #DIV/0!   load/(pipe body yield strength)
Collapse strength reduction factor: #DIV/0!   Messrs, Westcott, Dunlop, Kemler,1940
Adjusted collapse rating of segment: #DIV/0!   psi
Actual safety factor   #DIV/0!   adjusted casing rating / actual pressure

Burst calculations for 6th segment - Completion fracture treatment

calculations for bottom of segment @   0 ft
Differential burst pressure   500 psi   (frac. pres.-mud pres.) + max. surf. pres.
Burst rating of segment   0 psi
Actual safety factor   0   casing rating / differential burst pressure

calculations for top of segment @   0 ft
Differential burst pressure   500 psi   (frac. pres.-mud pres.) + max. surf. pres.
Burst rating of segment   0 psi
Actual safety factor   0   casing rating / differential burst pressure

Joint strength calculations for 6th segment

Buoyancy factor for joint strength calc.:	0.85312

calculations for bottom of segment @   0 ft
Axial load @ bottom of section   25593.6 lbs   load @ top of last segment
Joint Strength of segment   0 lbs
Body Yield Strength of segment   0 lbs
Actual safety factor joint strength   0   csg joint strength / axial load
Actual safety factor body yield   0   csg body yield strength / axial load

calculations for top of segment @   0 ft
Axial load @ top of section   25593.6 lbs   weight of previous segments + (this segment x BF)
Joint Strength of segment   0 lbs
Body Yield Strength of segment   0 lbs
Actual safety factor joint strength   0   csg joint strength / axial load
Actual safety factor body yield   0   csg body yield strength / axial load

Casing Design   **Well:**   Summerside Federal Com #2H

String Size & Function: 7 x 5.5   in   Production x

Total Depth: 14706 ft   **TVD:**   3730 ft

Pressure Gradient for Calculations   **(While drilling)**

Mud weight, <u>collapse</u>:   10 #/gal   Safety Factor Collapse: 1.125

Mud weight, <u>burst</u>:   10 #/gal   Safety Factor Burst: 1.25

Mud weight for joint strength: 10 #/gal   Safety Factor Joint Strength   1.8

BHP @ TD for: collapse: 1939.6 psi   Burst: 1939.6 psi,   joint strength: 1939.6 psi

Partially evacuated hole?   Pressure gradient remaining: 10 #/gal

Max. Shut in surface pressure: 3000 psi

1st segment   14706 ft   to   3850 ft   Make up Torque ft-lbs   Total ft =   10856

O.D.	Weight	Grade	Threads	opt.	min.	mx.
5.5 inches	17 #/ft	HCP-110	Buttress	4,620	3,470	5,780

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
8,580 psi	10,640 psi-lrcr	568 ,000 #	546 ,000 #	4.767

2nd segment   3850 ft   to   0 ft   Make up Torque ft-lbs   Total ft =   3850

O.D.	Weight	Grade	Threads	opt.	min.	mx.
7 inches	26 #/ft	HCP-110	Buttress	6,930	5,200	8,660

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
7,800 psi	9,950 psi-lrcr	853 ,000 #	830 ,000 #	6.151

3rd segment   0 ft   to   0 ft   Make up Torque ft-lbs   Total ft =   0

O.D.	Weight	Grade	Threads	opt.	min.	mx.
inches	#/ft					

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
psi	psi	,000 #	,000 #	

4th segment   0 ft   to   0 ft   Make up Torque ft-lbs   Total ft =   0

O.D.	Weight	Grade	Threads	opt.	min.	mx.
inches	#/ft					

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
psi	psi	,000 #	,000 #	

5th segment   0 ft   to   0 ft   Make up Torque ft-lbs   Total ft =   0

O.D.	Weight	Grade	Threads	opt.	min.	mx.
inches	#/ft					

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
psi	psi	,000 #	,000 #	

6th segment   0 ft   to   0 ft   Make up Torque ft-lbs   Total ft =   0

O.D.	Weight	Grade	Threads	opt.	min.	mx.
inches	#/ft					

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
psi	psi	,000 #	,000 #	

Select   1st segment bottom   14770

	S.F.	Actual		Desire
	collapse	4.423592	>=	1.125
14706 ft to 3850 ft	burst-b	3.546667	>=	1.25
5.5 17 HCP-110 Buttress	burst-t	3.546667		

Top of segment 1 (ft)   3850

Select   2nd segment from bottom

	S.F.	Actual		Desire
	collapse	3.64036	>=	1.125
	burst-b	3.316667	>=	1.25
3850 ft to 0 ft	burst-t	3.316667		
7 26 HCP-110 Buttress	jnt strngth	3.633676	>=	1.8

	Top of segment 2 (ft)	0	S.F.	Actual		Desire
Select	3rd segment from bottom		collapse	#DIV/0!	>=	1.125
			burst-b	0	>=	1.25
0 ft to 0 ft			burst-t	0		
0　　0　　0　　0			jnt strngth	3.537947	>=	1.8
	Top of segment 3 (ft)		S.F.	Actual		Desire
Select	4th segment from bottom		collapse	#DIV/0!	>=	1.125
			burst-b	0	>=	1.25
0 ft to 0 ft			burst-t	0		
0　　0　　0　　0			jnt strngth	0	>=	1.8
	Top of segment 4 (ft)		S.F.	Actual		Desire
Select	5th segment from bottom		collapse	#DIV/0!	>=	1.125
			burst-b	0	>=	1.25
0 ft to ft			burst-t	0		
0　　0　　0　　0			jnt strngth	0	>=	1.8
	Top of segment 5 (ft)		S.F.	Actual		Desire
Select	6th segment from bottom		collapse	#DIV/0!	>=	1.125
			burst-b	0	>=	1.25
0 ft to ft			burst-t	0		
0　　0　　0　　0			jnt strngth	0	>=	1.8
	Top of segment 6 (ft)		jnt strngth		>=	1.8

use in colapse calculations across different pressured formations

Three gradient pressure function

Depth of evaluation:	1,200 ft		516 psi @	1,200 ft
Top of salt:	2,400 ft	fx #1	516	
Base of salt:	3,700 ft	fx #2	900	
TD of intermediate:	4,600 ft	fx #3	540	

Pressure gradient to be used above each top to be used as a function of depth. ex. psi/ft

fx #1	fx #2	fx #3
0.43	0.75	0.45

1) Calculate neutral point for buckling with temperature affects computed also
2) Surface burst calculations & kick tolerance in surface pressure for burst
3) Do a comparison test to determine which value is lower joint strength or body yield to use in tensile strength calculations
4) Raise joint strength safety factor up to next level on page #2
5) Sour service what pipe can be used with proper degrading of strength factors and as function of temp

Adjust for best combination of safety factors

	Secondary
S.F. Collapse bottom of segment:	
S.F. Collapse top of segment:	3.79969
S.F. Burst bottom of segment:	
S.F. Burst top of segment	
S.F. Joint strength bottom of segment:	795.518
S.F. Joint strength top of segment:	
S.F. Body yield strength bottom of segment:	764.706
S.F. Body yield strength top of segment:	3.49293

Collapse calculations for 1st segment - casing evacuated

Buoyancy factor collapse:	0.847	
calculations for bottom of segment @	3730 ft	
hydrostatic pressure collapse - backside:	1939.6 psi	
Axial load @ bottom of section	0 lbs	previous segments
Axial load factor:	0	load/(pipe body yield strength)
Collapse strength reduction factor:	1	Messrs, Westcott, Dunlop, Kemler,1940
Adjusted collapse rating of segment:	8580 psi	
Actual safety factor	4.42359	adjusted casing rating / actual pressure

Casing Design　　**Well:**　　Summerside Federal Com #2H

String Size & Function:　　9 5/8 in　　surface　　　　intermediate x

Total Depth:　　1500 ft　　　　**TVD:**　　1500 ft

Pressure Gradient for Calculations　　　　**(While drilling)**

Mud weight, <u>collapse</u>:　　10.1 #/gal　　　　Safety Factor Collapse:　　1.125

Mud weight, <u>burst</u>:　　10.1 #/gal　　　　Safety Factor Burst:　　1.25

Mud weight for joint strength:　　10.1 #/gal　　　　Safety Factor Joint Strength　　1.8

BHP @ TD for:　　collapse:　　787.8 psi　　　Burst:　　787.8 psi,　　joint strength:　　787.8 psi

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Partially evacuated hole?　　Pressure gradient remaining:　　10 #/gal

Max. Shut in surface pressure:　　500 psi

1st segment　　1500 ft　to　0 ft　　Make up Torque ft-lbs　　Total ft = 1500

O.D.	Weight	Grade	Threads	opt.	min.	mx.
9.625 inches	36 #/ft	J-55	ST&C	3,940	2,960	4,930

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
2,020 psi	3,520 psi	394 ,000 #	564 ,000 #	8.765

2nd segment　　ft　to　ft　　Make up Torque ft-lbs　　Total ft = 0

O.D.	Weight	Grade	Threads	opt.	min.	mx.
inches	#/ft					

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
psi	psi	,000 #	,000 #	

3rd segment　　0 ft　to　0 ft　　Make up Torque ft-lbs　　Total ft = 0

O.D.	Weight	Grade	Threads	opt.	min.	mx.
inches	#/ft					

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
psi	psi	,000 #	,000 #	

4th segment　　0 ft　to　0 ft　　Make up Torque ft-lbs　　Total ft = 0

O.D.	Weight	Grade	Threads	opt.	min.	mx.
inches	#/ft					

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
psi	psi	,000 #	,000 #	

5th segment　　0 ft　to　0 ft　　Make up Torque ft-lbs　　Total ft = 0

O.D.	Weight	Grade	Threads	opt.	min.	mx.
inches	#/ft					

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
psi	psi	,000 #	,000 #	

6th segment　　0 ft　to　0 ft　　Make up Torque ft-lbs　　Total ft = 0

O.D.	Weight	Grade	Threads	opt.	min.	mx.
inches	#/ft					

Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift
psi	psi	,000 #	,000 #	

Select	1st segment bottom		1500		**S.F.**	Actual		Desire
					collapse	2.564103	>=	1.125
1500 ft	to	0 ft			burst-b	7.151564	>=	1.25
9.625	0 J-55	ST&C			burst-t	7.04		
	Top of segment 1 (ft)				**S.F.**	Actual		Desire
Select	2nd segment from bottom				collapse	#DIV/0!	>=	1.125
					burst-b	0	>=	1.25
0 ft	to	0 ft			burst-t	0		
0	0	0	0		jnt strngth	8.62987	>=	1.8
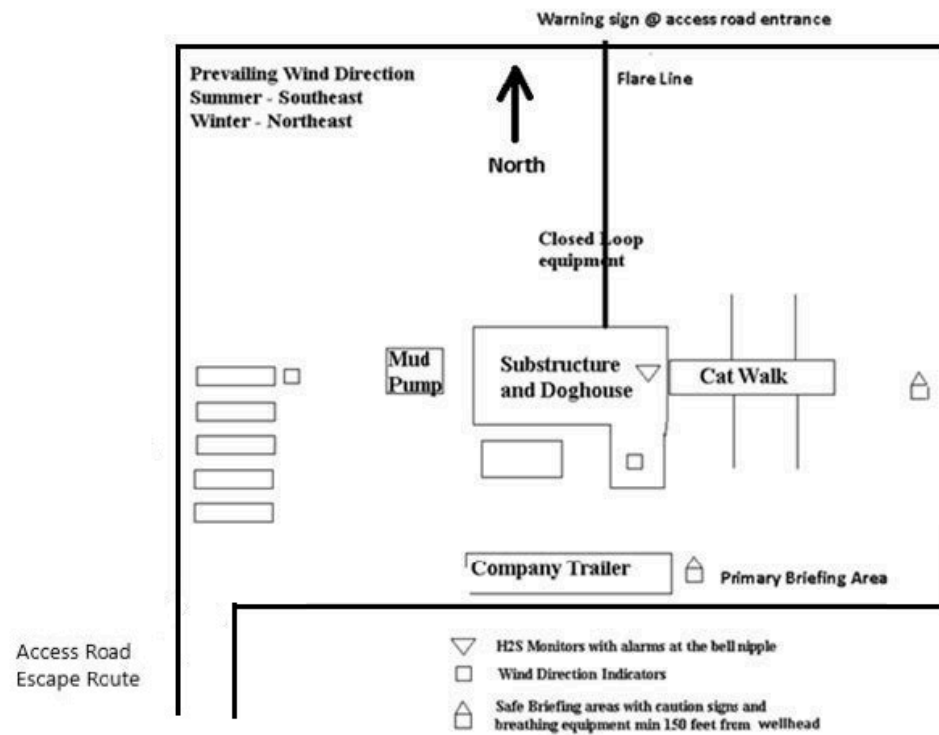
Warning sign @ access road entrance

Prevailing Wind Direction
Summer - Southeast
Winter - Northeast

↑

North

Flare Line

Closed Loop equipment

| Mud Pump |

| Substructure and Doghouse | ▽ | Cat Walk |

| Company Trailer | ⌂ | Primary Briefing Area |

Access Road
Escape Route

▽   H2S Monitors with alarms at the bell nipple

☐   Wind Direction Indicators

⌂   Safe Briefing areas with caution signs and
breathing equipment min 150 feet from wellhead

DRILLING PROGRAM

1. **Geologic Name of Surface Formation**

   Quaternary

2. **Estimated Tops of Important Geologic Markers:**

Rustler	600'
Top Salt	750'
Base of Salt	1,360'
Yates	1,510'
Seven Rivers	1,750'
Queen	2,245'
Grayburg	2,630'
San Andres	2,952'

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

Water Sand	150'	Fresh Water
Yates	1,510'	Oil/Gas
Seven Rivers	1,750'	Oil/Gas
Queen	2,245'	Oil/Gas
Grayburg	2,630'	Oil/Gas
San Andres	2,952'	Oil/Gas

   No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 625' 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"	0-625'	13 3/8"	48#, J-55, ST&C, New, 2.371795/4.6198863/4.74
12 ¼"	0-1,500'	9 5/8"	36#, J-55, ST&C, New, 2.564103/7.151564/7.04
8 ¾"	0-3,850'	7"	26#, HCP-110, Buttress, New, 3.640034/3.316667/3.316667
8 ¾"	3,850-14,706'	5 ½"	17#, HCP-110 Buttress, New, 4.423592/3.546667/3.546667

   Variance request: A variance is requested to ise a Multi Bowl System and Flex Hose as the choke like from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test will be kept on the rig.

5. **Cement Program:**

Attached to Form 3160-3
Mack Energy Corporation
Summerside Federal Com #2H NMNM-138842
SHL : 1650 FSL & 707 FWL, NWSW, Sec. 16 T15S R30E
BHL : 1650 FSL & 1 FWL, Lot 3, Sec. 18 T15S R30E
Chaves County, NM

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13 3/8" Surface Casing: Lead 325sx, RFC+12%PF53+2%PF1+5ppsPF42+.125ppsPF29, yld 2.31, wt 13.5 ppg, 7.357gals/sx, excess 100%. Tail: 200sx, Class C+1% PF1, yld 1.32, wt 14.8 ppg, 6.323 gals/sx, excess 100%

9 5/8" Intermediate Casing: Lead 300sx Class C + 4% PF20+.4ppsPF44+.125pps PF29, yld 1.73, wt 13.5 ppg, 6.323gal/sx, excess 50%, Slurry Top Surface. Tail 200sx Class C+1%PF1, yld 1.34, wt 14.8 ppg, 6.323gal/sx, excess 100%, Slurry Top 1000'

7" & 5 ½" Production Casing: Lead 350sx 50/50 Poz/C +10% PF20+5% PF44+.5% PF79+3pps PF42+.4pps PF 45+.125pps PF 29, yld 2.82, wt 11.5 ppg, 16.421gals/sx, excess 35%, Slurry Top Surface. Tail 2,950sx, 50/50 Poz/C 5% PF44+2%PF20+.2%PF13+.2%PF65+.2%PF606+.4pps PF45, yld 1.34, wt 14.2, 6.091gals/sx, 35% excess, Slurry top 2,800'.

Perforations – 4,171'-14,600' MD

Option #2 With Packer Stage Tool- Run a DV tool @ 1400+/- if an air pocket is encountered. Cmt Stage 1- 2050sx 50/50 POZ/C + 5% (BWOW) PF44 + 2% PF20 + 0.2%PF13 + 0.2% PF606 + 0.1% PF 153 + 0.4 PF45, yld 1.34, density 14.2, density 14.2, mix H2O gals/sx 6.085, 50% excess, Slurry Top 1400'. Cmt Stage 2- 200sx C + 2% PF1, yld 1.34, density 14.8, 0% excess, Slurry Top Surface. 2,205.1 Cu/Ft per line/Ft

6. **Minimum Specifications for Pressure Control:**

The blowout preventer equipment (BOP) shown in Exhibit #10 will consist of a double ram-type (3000 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 nippled up on the 8 5/8" surface casing and tested by a 3rd party to 2000 psi used continuously until TD is reached. All BOP's and accessory equipment will be tested to 2000 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 3000 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
0-625'	Fresh Water	8.5	28	N.C.
625-1500'	Cut Brine	9.1	29	N.C.
1500'-TD'	Cut Brine	9.1	29	N.C.

Attached to Form 3160-3
Mack Energy Corporation
Summerside Federal Com #2H NMNM-138842
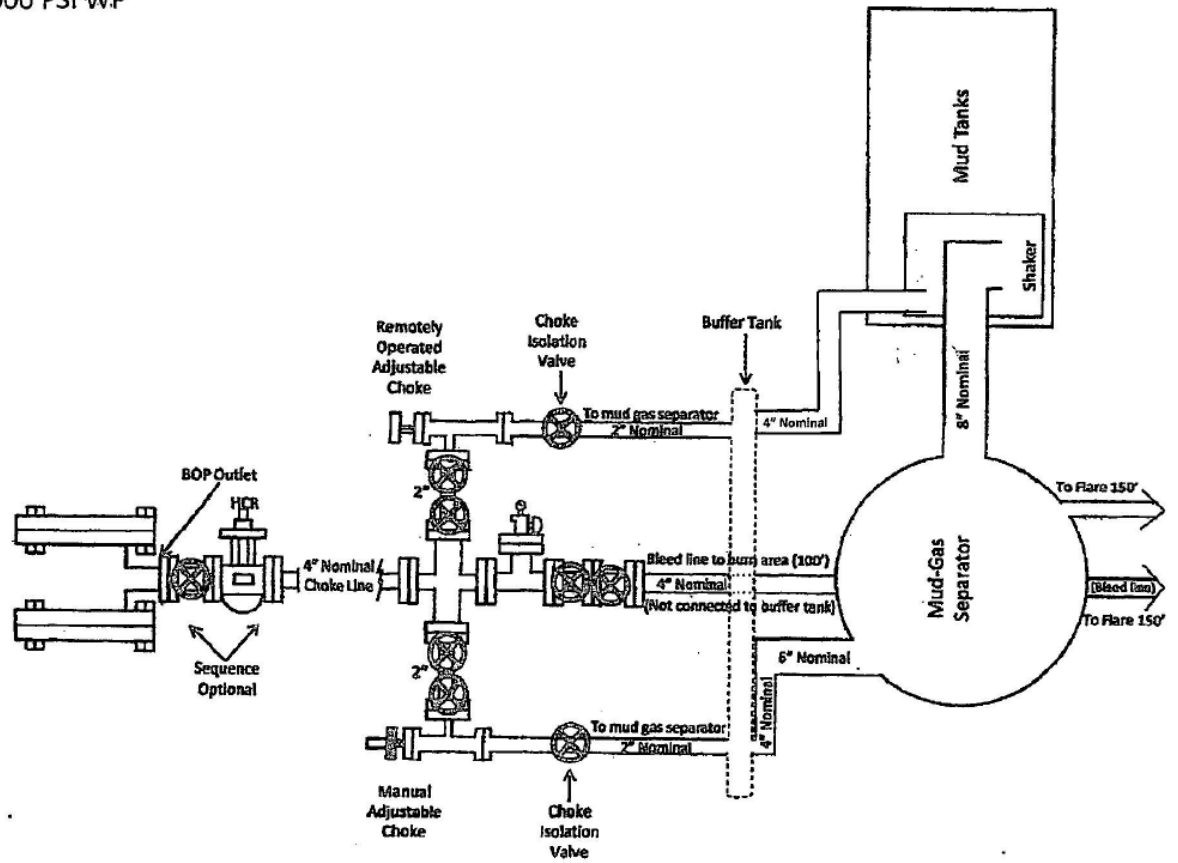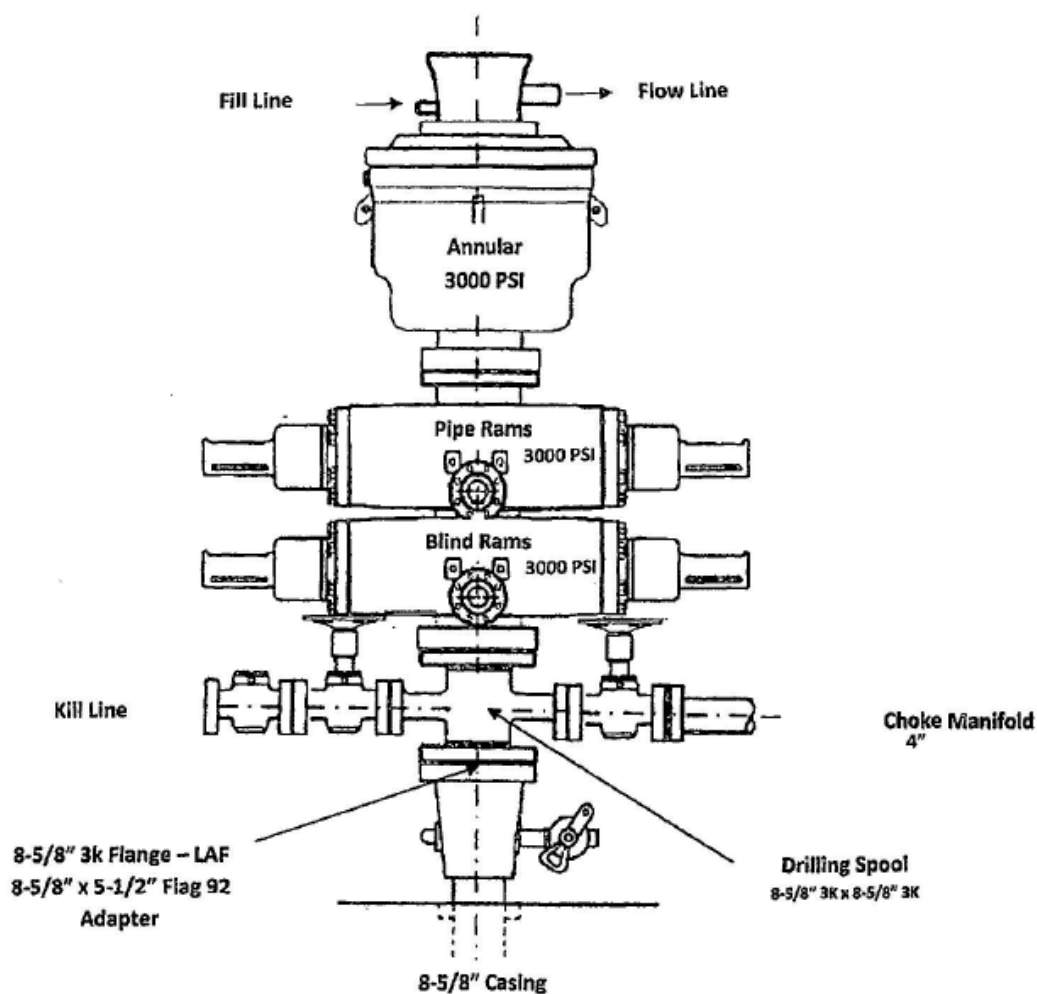**SHL : 1650 FSL & 707 FWL, NWSW, Sec. 16 T15S R30E**
BHL : 1650 FSL & 1 FWL, Lot 3, Sec. 18 T15S R30E
Chaves County, NM

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 1710 psig (0.052*3,574'TVD*9.2). 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 December 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.

<div align="center">

Attachment to Exhibit #10
NOTES REGARDING THE BLOWOUT PREVENTERS
Summerside Federal Com #2H
Chaves County, New Mexico

</div>

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, 2000 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 2000 psi WP minimum.

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

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.

Choke Manifold

3000 PSI WP

BOP Diagram

Dual Ram BOP
3000 PSI WP

Summerside Federal Com #2H, Plan 1

Operator Mack Energy Corp	**Units** feet, °/100ft	09:05 Thursday, May 9, 2024 Page 1 of 7
Field	**County** Chaves	**Vertical Section Azimuth** 269.8
Well Name Summerside Federal Com #2H	**State** New Mexico	**Survey Calculation Method** Minimum Curvature
Plan 1	**Country** USA	**Database** Access

Location SL: 1650 FSL & 707 FWL Sec 16-T15S-R30E BHL: 1650 FSL & 1 FWL Sec 18-T15S-R30E	**Map Zone** UTM	**Lat Long Ref**
Site	**Surface X** 1966491.7	**Surface Long**
Slot Name **UWI**	**Surface Y** 11985065.4	**Surface Lat**
Well Number 2H **API**	**Surface Z** 4066.6	**Global Z Ref** KB
Project **MD/TVD Ref** KB	**Ground Level** 4049.1	**Local North Ref** Grid

DIRECTIONAL WELL PLAN

MD* ft	INC* deg	AZI* deg	TVD* ft	N* ft	E* ft	DLS* °/100ft	V. S.* ft	MapE* ft	MapN* ft	SysTVD* ft
*** TIE (at MD = 2825.00)										
2825.00	0.00	0.0	2825.00	0.00	0.00		0.00	1966491.70	11985065.40	1241.60
2850.00	0.00	0.0	2850.00	0.00	0.00	0.00	0.00	1966491.70	11985065.40	1216.60
2900.00	0.00	0.0	2900.00	0.00	0.00	0.00	0.00	1966491.70	11985065.40	1166.60
*** KOP 8 DEGREE (at MD = 2925.00)										
2925.00	0.00	0.0	2925.00	0.00	0.00	0.00	0.00	1966491.70	11985065.40	1141.60
2950.00	2.00	269.8	2949.99	0.00	-0.44	8.00	0.44	1966491.26	11985065.40	1116.61
3000.00	6.00	269.8	2999.86	-0.01	-3.92	8.00	3.92	1966487.78	11985065.39	1066.74
3050.00	10.00	269.8	3049.37	-0.04	-10.88	8.00	10.88	1966480.82	11985065.36	1017.23
3100.00	14.00	269.8	3098.26	-0.07	-21.27	8.00	21.27	1966470.43	11985065.33	968.34
3150.00	18.00	269.8	3146.32	-0.12	-35.05	8.00	35.05	1966456.65	11985065.28	920.28
3200.00	22.00	269.8	3193.29	-0.18	-52.15	8.00	52.15	1966439.55	11985065.22	873.31
3250.00	26.00	269.8	3238.96	-0.25	-72.48	8.00	72.48	1966419.22	11985065.15	827.64
3300.00	30.00	269.8	3283.10	-0.33	-95.95	8.00	95.95	1966395.75	11985065.07	783.50
3350.00	34.00	269.8	3325.49	-0.43	-122.44	8.00	122.44	1966369.26	11985064.97	741.11
3400.00	38.00	269.8	3365.94	-0.53	-151.83	8.00	151.83	1966339.87	11985064.87	700.66
3450.00	42.00	269.8	3404.23	-0.64	-183.96	8.00	183.96	1966307.74	11985064.76	662.37
3500.00	46.00	269.8	3440.19	-0.76	-218.68	8.00	218.68	1966273.02	11985064.64	626.41
3550.00	50.00	269.8	3473.64	-0.89	-255.83	8.00	255.83	1966235.87	11985064.51	592.96
3600.00	54.00	269.8	3504.42	-1.03	-295.23	8.00	295.23	1966196.47	11985064.37	562.18
*** 55 DEGREE TANGENT (at MD = 3612.50)										
3612.50	55.00	269.8	3511.67	-1.07	-305.40	8.00	305.40	1966186.30	11985064.33	554.93
3650.00	55.00	269.8	3533.18	-1.17	-336.12	0.00	336.12	1966155.58	11985064.23	533.42
3700.00	55.00	269.8	3561.86	-1.32	-377.08	0.00	377.08	1966114.62	11985064.08	504.74
3750.00	55.00	269.8	3590.54	-1.46	-418.03	0.00	418.04	1966073.67	11985063.94	476.06
3800.00	55.00	269.8	3619.22	-1.60	-458.99	0.00	458.99	1966032.71	11985063.80	447.38
*** 10 DEGREE BUILD (at MD = 3812.50)										
3812.50	55.00	269.8	3626.39	-1.64	-469.23	0.00	469.23	1966022.47	11985063.76	440.21
3850.00	58.75	269.8	3646.88	-1.74	-500.63	10.00	500.63	1965991.07	11985063.66	419.72
3900.00	63.75	269.9	3670.92	-1.86	-544.45	10.00	544.46	1965947.25	11985063.54	395.68
3950.00	68.75	269.9	3691.05	-1.96	-590.20	10.00	590.21	1965901.50	11985063.44	375.55
4000.00	73.75	269.9	3707.12	-2.04	-637.54	10.00	637.54	1965854.16	11985063.36	359.48
4050.00	78.75	269.9	3719.00	-2.11	-686.09	10.00	686.09	1965805.61	11985063.29	347.60
4100.00	83.75	270.0	3726.60	-2.15	-735.49	10.00	735.49	1965756.21	11985063.25	340.00
4150.00	88.75	270.0	3729.87	-2.17	-785.37	10.00	785.37	1965706.33	11985063.23	336.73
*** LANDING POINT (at MD = 4171.00)										
4171.00	90.85	270.0	3729.95	-2.17	-806.37	10.00	806.37	1965685.33	11985063.23	336.65
4200.00	90.85	270.0	3729.52	-2.17	-835.36	0.00	835.36	1965656.34	11985063.23	337.08
4250.00	90.85	270.0	3728.77	-2.17	-885.36	0.00	885.36	1965606.34	11985063.23	337.83

Page 1 of 7 SES v5.79 www.makinhole.com

Summerside Federal Com #2H, Plan 1

Operator Mack Energy Corp	**Units** feet, °/100ft		09:05 Thursday, May 9, 2024 Page 2 of 7
Field	**County** Chaves		**Vertical Section Azimuth** 269.8
Well Name Summerside Federal Com #2H	**State** New Mexico		**Survey Calculation Method** Minimum Curvature
Plan 1	**Country** USA		**Database** Access

Location SL: 1650 FSL & 707 FWL Sec 16-T15S-R30E BHL: 1650 FSL & 1 FWL Sec 18-T15S-R30E	**Map Zone** UTM		**Lat Long Ref**
Site	**Surface X** 1966491.7		**Surface Long**
Slot Name　　　　**UWI**	**Surface Y** 11985065.4		**Surface Lat**
Well Number 2H　　　**API**	**Surface Z** 4066.6		**Global Z Ref** KB
Project　　　**MD/TVD Ref** KB	**Ground Level** 4049.1		**Local North Ref** Grid

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
4300.00	90.85	270.0	3728.03	-2.17	-935.35	0.00	935.35	1965556.35	11985063.23	338.57
4350.00	90.85	270.0	3727.29	-2.17	-985.35	0.00	985.35	1965506.35	11985063.23	339.31
4400.00	90.85	270.0	3726.55	-2.17	-1035.34	0.00	1035.34	1965456.36	11985063.23	340.05
4450.00	90.85	270.0	3725.81	-2.17	-1085.33	0.00	1085.34	1965406.37	11985063.23	340.79
4500.00	90.85	270.0	3725.07	-2.17	-1135.33	0.00	1135.33	1965356.37	11985063.23	341.53
4550.00	90.85	270.0	3724.32	-2.17	-1185.32	0.00	1185.32	1965306.38	11985063.23	342.28
4600.00	90.85	270.0	3723.58	-2.17	-1235.32	0.00	1235.32	1965256.38	11985063.23	343.02
4650.00	90.85	270.0	3722.84	-2.17	-1285.31	0.00	1285.31	1965206.39	11985063.23	343.76
4700.00	90.85	270.0	3722.10	-2.17	-1335.31	0.00	1335.31	1965156.39	11985063.23	344.50
4750.00	90.85	270.0	3721.36	-2.17	-1385.30	0.00	1385.30	1965106.40	11985063.23	345.24
4800.00	90.85	270.0	3720.62	-2.17	-1435.30	0.00	1435.29	1965056.40	11985063.23	345.98
4850.00	90.85	270.0	3719.87	-2.17	-1485.29	0.00	1485.29	1965006.41	11985063.23	346.73
4900.00	90.85	270.0	3719.13	-2.17	-1535.28	0.00	1535.28	1964956.42	11985063.23	347.47
4950.00	90.85	270.0	3718.39	-2.17	-1585.28	0.00	1585.28	1964906.42	11985063.23	348.21
5000.00	90.85	270.0	3717.65	-2.17	-1635.27	0.00	1635.27	1964856.43	11985063.23	348.95
5050.00	90.85	270.0	3716.91	-2.17	-1685.27	0.00	1685.27	1964806.43	11985063.23	349.69
5100.00	90.85	270.0	3716.17	-2.17	-1735.26	0.00	1735.26	1964756.44	11985063.23	350.44
5150.00	90.85	270.0	3715.42	-2.17	-1785.26	0.00	1785.25	1964706.44	11985063.23	351.18
5200.00	90.85	270.0	3714.68	-2.17	-1835.25	0.00	1835.25	1964656.45	11985063.23	351.92
5250.00	90.85	270.0	3713.94	-2.17	-1885.25	0.00	1885.24	1964606.45	11985063.23	352.66
5300.00	90.85	270.0	3713.20	-2.17	-1935.24	0.00	1935.24	1964556.46	11985063.23	353.40
5350.00	90.85	270.0	3712.46	-2.17	-1985.24	0.00	1985.23	1964506.46	11985063.23	354.14
5400.00	90.85	270.0	3711.71	-2.17	-2035.23	0.00	2035.22	1964456.47	11985063.23	354.89
5450.00	90.85	270.0	3710.97	-2.17	-2085.22	0.00	2085.22	1964406.48	11985063.23	355.63
5500.00	90.85	270.0	3710.23	-2.17	-2135.22	0.00	2135.21	1964356.48	11985063.23	356.37
5550.00	90.85	270.0	3709.49	-2.17	-2185.21	0.00	2185.21	1964306.49	11985063.23	357.11
5600.00	90.85	270.0	3708.75	-2.17	-2235.21	0.00	2235.20	1964256.49	11985063.23	357.85
5650.00	90.85	270.0	3708.01	-2.17	-2285.20	0.00	2285.20	1964206.50	11985063.23	358.59
5700.00	90.85	270.0	3707.26	-2.17	-2335.20	0.00	2335.19	1964156.50	11985063.23	359.34
5750.00	90.85	270.0	3706.52	-2.17	-2385.19	0.00	2385.18	1964106.51	11985063.23	360.08
5800.00	90.85	270.0	3705.78	-2.17	-2435.19	0.00	2435.18	1964056.51	11985063.23	360.82
5850.00	90.85	270.0	3705.04	-2.17	-2485.18	0.00	2485.17	1964006.52	11985063.23	361.56
5900.00	90.85	270.0	3704.30	-2.17	-2535.17	0.00	2535.17	1963956.53	11985063.23	362.30
5950.00	90.85	270.0	3703.56	-2.17	-2585.17	0.00	2585.16	1963906.53	11985063.23	363.04
6000.00	90.85	270.0	3702.81	-2.17	-2635.16	0.00	2635.16	1963856.54	11985063.23	363.79
6050.00	90.85	270.0	3702.07	-2.17	-2685.16	0.00	2685.15	1963806.54	11985063.23	364.53
6100.00	90.85	270.0	3701.33	-2.17	-2735.15	0.00	2735.14	1963756.55	11985063.23	365.27

Summerside Federal Com #2H, Plan 1

Operator Mack Energy Corp	**Units** feet, °/100ft		09:05 Thursday, May 9, 2024 Page 3 of 7
Field	**County** Chaves		**Vertical Section Azimuth** 269.8
Well Name Summerside Federal Com #2H	**State** New Mexico		**Survey Calculation Method** Minimum Curvature
Plan 1	**Country** USA		**Database** Access

Location SL: 1650 FSL & 707 FWL Sec 16-T15S-R30E BHL: 1650 FSL & 1 FWL Sec 18-T15S-R30E	**Map Zone** UTM	**Lat Long Ref**
Site	**Surface X** 1966491.7	**Surface Long**
Slot Name **UWI**	**Surface Y** 11985065.4	**Surface Lat**
Well Number 2H **API**	**Surface Z** 4066.6	**Global Z Ref** KB
Project **MD/TVD Ref** KB	**Ground Level** 4049.1	**Local North Ref** Grid

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
6150.00	90.85	270.0	3700.59	-2.17	-2785.15	0.00	2785.14	1963706.55	11985063.23	366.01
6200.00	90.85	270.0	3699.85	-2.17	-2835.14	0.00	2835.13	1963656.56	11985063.23	366.75
6250.00	90.85	270.0	3699.11	-2.17	-2885.14	0.00	2885.13	1963606.56	11985063.23	367.50
6300.00	90.85	270.0	3698.36	-2.17	-2935.13	0.00	2935.12	1963556.57	11985063.23	368.24
6350.00	90.85	270.0	3697.62	-2.17	-2985.13	0.00	2985.11	1963506.58	11985063.23	368.98
6400.00	90.85	270.0	3696.88	-2.17	-3035.12	0.00	3035.11	1963456.58	11985063.23	369.72
6450.00	90.85	270.0	3696.14	-2.17	-3085.11	0.00	3085.10	1963406.59	11985063.23	370.46
6500.00	90.85	270.0	3695.40	-2.17	-3135.11	0.00	3135.10	1963356.59	11985063.23	371.20
6550.00	90.85	270.0	3694.65	-2.17	-3185.10	0.00	3185.09	1963306.60	11985063.23	371.95
6600.00	90.85	270.0	3693.91	-2.17	-3235.10	0.00	3235.09	1963256.60	11985063.23	372.69
6650.00	90.85	270.0	3693.17	-2.17	-3285.09	0.00	3285.08	1963206.61	11985063.23	373.43
6700.00	90.85	270.0	3692.43	-2.17	-3335.09	0.00	3335.07	1963156.61	11985063.23	374.17
6750.00	90.85	270.0	3691.69	-2.17	-3385.08	0.00	3385.07	1963106.62	11985063.23	374.91
6800.00	90.85	270.0	3690.95	-2.17	-3435.08	0.00	3435.06	1963056.62	11985063.23	375.65
6850.00	90.85	270.0	3690.20	-2.17	-3485.07	0.00	3485.06	1963006.63	11985063.23	376.40
6900.00	90.85	270.0	3689.46	-2.17	-3535.06	0.00	3535.05	1962956.64	11985063.23	377.14
6950.00	90.85	270.0	3688.72	-2.17	-3585.06	0.00	3585.04	1962906.64	11985063.23	377.88
7000.00	90.85	270.0	3687.98	-2.17	-3635.05	0.00	3635.04	1962856.65	11985063.23	378.62
7050.00	90.85	270.0	3687.24	-2.17	-3685.05	0.00	3685.03	1962806.65	11985063.23	379.36
7100.00	90.85	270.0	3686.50	-2.17	-3735.04	0.00	3735.03	1962756.66	11985063.23	380.10
7150.00	90.85	270.0	3685.75	-2.17	-3785.04	0.00	3785.02	1962706.66	11985063.23	380.85
7200.00	90.85	270.0	3685.01	-2.17	-3835.03	0.00	3835.02	1962656.67	11985063.23	381.59
7250.00	90.85	270.0	3684.27	-2.17	-3885.03	0.00	3885.01	1962606.67	11985063.23	382.33
7300.00	90.85	270.0	3683.53	-2.17	-3935.02	0.00	3935.00	1962556.68	11985063.23	383.07
7350.00	90.85	270.0	3682.79	-2.17	-3985.02	0.00	3985.00	1962506.69	11985063.23	383.81
7400.00	90.85	270.0	3682.05	-2.17	-4035.01	0.00	4034.99	1962456.69	11985063.23	384.55
7450.00	90.85	270.0	3681.30	-2.17	-4085.00	0.00	4084.99	1962406.70	11985063.23	385.30
7500.00	90.85	270.0	3680.56	-2.17	-4135.00	0.00	4134.98	1962356.70	11985063.23	386.04
7550.00	90.85	270.0	3679.82	-2.17	-4184.99	0.00	4184.98	1962306.71	11985063.23	386.78
7600.00	90.85	270.0	3679.08	-2.17	-4234.99	0.00	4234.97	1962256.71	11985063.23	387.52
7650.00	90.85	270.0	3678.34	-2.17	-4284.98	0.00	4284.96	1962206.72	11985063.23	388.26
7700.00	90.85	270.0	3677.59	-2.17	-4334.98	0.00	4334.96	1962156.72	11985063.23	389.01
7750.00	90.85	270.0	3676.85	-2.17	-4384.97	0.00	4384.95	1962106.73	11985063.23	389.75
7800.00	90.85	270.0	3676.11	-2.17	-4434.97	0.00	4434.95	1962056.73	11985063.23	390.49
7850.00	90.85	270.0	3675.37	-2.17	-4484.96	0.00	4484.94	1962006.74	11985063.23	391.23
7900.00	90.85	270.0	3674.63	-2.17	-4534.95	0.00	4534.93	1961956.75	11985063.23	391.97
7950.00	90.85	270.0	3673.89	-2.17	-4584.95	0.00	4584.93	1961906.75	11985063.23	392.71

Summerside Federal Com #2H, Plan 1

Operator Mack Energy Corp	**Units** feet, °/100ft	09:05 Thursday, May 9, 2024 Page 4 of 7
Field	**County** Chaves	**Vertical Section Azimuth** 269.8
Well Name Summerside Federal Com #2H	**State** New Mexico	**Survey Calculation Method** Minimum Curvature
Plan 1	**Country** USA	**Database** Access

Location SL: 1650 FSL & 707 FWL Sec 16-T15S-R30E BHL: 1650 FSL & 1 FWL Sec 18-T15S-R30E	**Map Zone** UTM	**Lat Long Ref**
Site	**Surface X** 1966491.7	**Surface Long**
Slot Name **UWI**	**Surface Y** 11985065.4	**Surface Lat**
Well Number 2H **API**	**Surface Z** 4066.6	**Global Z Ref** KB
Project **MD/TVD Ref** KB	**Ground Level** 4049.1	**Local North Ref** Grid

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
8000.00	90.85	270.0	3673.14	-2.17	-4634.94	0.00	4634.92	1961856.76	11985063.23	393.46
8050.00	90.85	270.0	3672.40	-2.17	-4684.94	0.00	4684.92	1961806.76	11985063.23	394.20
8100.00	90.85	270.0	3671.66	-2.17	-4734.93	0.00	4734.91	1961756.77	11985063.23	394.94
8150.00	90.85	270.0	3670.92	-2.17	-4784.93	0.00	4784.91	1961706.77	11985063.23	395.68
8200.00	90.85	270.0	3670.18	-2.17	-4834.92	0.00	4834.90	1961656.78	11985063.23	396.42
8250.00	90.85	270.0	3669.44	-2.17	-4884.92	0.00	4884.89	1961606.78	11985063.23	397.16
8300.00	90.85	270.0	3668.69	-2.17	-4934.91	0.00	4934.89	1961556.79	11985063.23	397.91
8350.00	90.85	270.0	3667.95	-2.17	-4984.90	0.00	4984.88	1961506.80	11985063.23	398.65
8400.00	90.85	270.0	3667.21	-2.17	-5034.90	0.00	5034.88	1961456.80	11985063.23	399.39
8450.00	90.85	270.0	3666.47	-2.17	-5084.89	0.00	5084.87	1961406.81	11985063.23	400.13
8500.00	90.85	270.0	3665.73	-2.17	-5134.89	0.00	5134.86	1961356.81	11985063.23	400.87
8550.00	90.85	270.0	3664.99	-2.17	-5184.88	0.00	5184.86	1961306.82	11985063.23	401.61
8600.00	90.85	270.0	3664.24	-2.17	-5234.88	0.00	5234.85	1961256.82	11985063.23	402.36
8650.00	90.85	270.0	3663.50	-2.17	-5284.87	0.00	5284.85	1961206.83	11985063.23	403.10
8700.00	90.85	270.0	3662.76	-2.17	-5334.87	0.00	5334.84	1961156.83	11985063.23	403.84
8750.00	90.85	270.0	3662.02	-2.17	-5384.86	0.00	5384.84	1961106.84	11985063.23	404.58
8800.00	90.85	270.0	3661.28	-2.17	-5434.86	0.00	5434.83	1961056.84	11985063.23	405.32
8850.00	90.85	270.0	3660.53	-2.17	-5484.85	0.00	5484.82	1961006.85	11985063.23	406.07
8900.00	90.85	270.0	3659.79	-2.17	-5534.84	0.00	5534.82	1960956.86	11985063.23	406.81
8950.00	90.85	270.0	3659.05	-2.17	-5584.84	0.00	5584.81	1960906.86	11985063.23	407.55
9000.00	90.85	270.0	3658.31	-2.17	-5634.83	0.00	5634.81	1960856.87	11985063.23	408.29
9050.00	90.85	270.0	3657.57	-2.17	-5684.83	0.00	5684.80	1960806.87	11985063.23	409.03
9100.00	90.85	270.0	3656.83	-2.17	-5734.82	0.00	5734.80	1960756.88	11985063.23	409.77
9150.00	90.85	270.0	3656.08	-2.17	-5784.82	0.00	5784.79	1960706.88	11985063.23	410.52
9200.00	90.85	270.0	3655.34	-2.17	-5834.81	0.00	5834.78	1960656.89	11985063.23	411.26
9250.00	90.85	270.0	3654.60	-2.17	-5884.81	0.00	5884.78	1960606.89	11985063.23	412.00
9300.00	90.85	270.0	3653.86	-2.17	-5934.80	0.00	5934.77	1960556.90	11985063.23	412.74
9350.00	90.85	270.0	3653.12	-2.17	-5984.79	0.00	5984.77	1960506.91	11985063.23	413.48
9400.00	90.85	270.0	3652.38	-2.17	-6034.79	0.00	6034.76	1960456.91	11985063.23	414.22
9450.00	90.85	270.0	3651.63	-2.17	-6084.78	0.00	6084.75	1960406.92	11985063.23	414.97
9500.00	90.85	270.0	3650.89	-2.17	-6134.78	0.00	6134.75	1960356.92	11985063.23	415.71
9550.00	90.85	270.0	3650.15	-2.17	-6184.77	0.00	6184.74	1960306.93	11985063.23	416.45
9600.00	90.85	270.0	3649.41	-2.17	-6234.77	0.00	6234.74	1960256.93	11985063.23	417.19
9650.00	90.85	270.0	3648.67	-2.17	-6284.76	0.00	6284.73	1960206.94	11985063.23	417.93
9700.00	90.85	270.0	3647.93	-2.17	-6334.76	0.00	6334.73	1960156.94	11985063.23	418.67
9750.00	90.85	270.0	3647.18	-2.17	-6384.75	0.00	6384.72	1960106.95	11985063.23	419.42
9800.00	90.85	270.0	3646.44	-2.17	-6434.75	0.00	6434.71	1960056.95	11985063.23	420.16

Summerside Federal Com #2H, Plan 1

Operator Mack Energy Corp	**Units** feet, °/100ft		09:05 Thursday, May 9, 2024 Page 5 of 7
Field	**County** Chaves		**Vertical Section Azimuth** 269.8
Well Name Summerside Federal Com #2H	**State** New Mexico		**Survey Calculation Method** Minimum Curvature
Plan 1	**Country** USA		**Database** Access

Location SL: 1650 FSL & 707 FWL Sec 16-T15S-R30E BHL: 1650 FSL & 1 FWL Sec 18-T15S-R30E	**Map Zone** UTM	**Lat Long Ref**
Site	**Surface X** 1966491.7	**Surface Long**
Slot Name **UWI**	**Surface Y** 11985065.4	**Surface Lat**
Well Number 2H **API**	**Surface Z** 4066.6	**Global Z Ref** KB
Project **MD/TVD Ref** KB	**Ground Level** 4049.1	**Local North Ref** Grid

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
9850.00	90.85	270.0	3645.70	-2.17	-6484.74	0.00	6484.71	1960006.96	11985063.23	420.90
9900.00	90.85	270.0	3644.96	-2.17	-6534.73	0.00	6534.70	1959956.97	11985063.23	421.64
9950.00	90.85	270.0	3644.22	-2.17	-6584.73	0.00	6584.70	1959906.97	11985063.23	422.38
10000.00	90.85	270.0	3643.47	-2.17	-6634.72	0.00	6634.69	1959856.98	11985063.23	423.13
10050.00	90.85	270.0	3642.73	-2.17	-6684.72	0.00	6684.68	1959806.98	11985063.23	423.87
10100.00	90.85	270.0	3641.99	-2.17	-6734.71	0.00	6734.68	1959756.99	11985063.23	424.61
10150.00	90.85	270.0	3641.25	-2.17	-6784.71	0.00	6784.67	1959706.99	11985063.23	425.35
10200.00	90.85	270.0	3640.51	-2.17	-6834.70	0.00	6834.67	1959657.00	11985063.23	426.09
10250.00	90.85	270.0	3639.77	-2.17	-6884.70	0.00	6884.66	1959607.00	11985063.23	426.83
10300.00	90.85	270.0	3639.02	-2.17	-6934.69	0.00	6934.66	1959557.01	11985063.23	427.58
10350.00	90.85	270.0	3638.28	-2.17	-6984.68	0.00	6984.65	1959507.02	11985063.23	428.32
10400.00	90.85	270.0	3637.54	-2.17	-7034.68	0.00	7034.64	1959457.02	11985063.23	429.06
10450.00	90.85	270.0	3636.80	-2.17	-7084.67	0.00	7084.64	1959407.03	11985063.23	429.80
10500.00	90.85	270.0	3636.06	-2.17	-7134.67	0.00	7134.63	1959357.03	11985063.23	430.54
10550.00	90.85	270.0	3635.32	-2.17	-7184.66	0.00	7184.63	1959307.04	11985063.23	431.28
10600.00	90.85	270.0	3634.57	-2.17	-7234.66	0.00	7234.62	1959257.04	11985063.23	432.03
10650.00	90.85	270.0	3633.83	-2.17	-7284.65	0.00	7284.62	1959207.05	11985063.23	432.77
10700.00	90.85	270.0	3633.09	-2.17	-7334.65	0.00	7334.61	1959157.05	11985063.23	433.51
10750.00	90.85	270.0	3632.35	-2.17	-7384.64	0.00	7384.60	1959107.06	11985063.23	434.25
10800.00	90.85	270.0	3631.61	-2.17	-7434.64	0.00	7434.60	1959057.06	11985063.23	434.99
10850.00	90.85	270.0	3630.87	-2.17	-7484.63	0.00	7484.59	1959007.07	11985063.23	435.73
10900.00	90.85	270.0	3630.12	-2.17	-7534.62	0.00	7534.59	1958957.08	11985063.23	436.48
10950.00	90.85	270.0	3629.38	-2.17	-7584.62	0.00	7584.58	1958907.08	11985063.23	437.22
11000.00	90.85	270.0	3628.64	-2.17	-7634.61	0.00	7634.57	1958857.09	11985063.23	437.96
11050.00	90.85	270.0	3627.90	-2.17	-7684.61	0.00	7684.57	1958807.09	11985063.23	438.70
11100.00	90.85	270.0	3627.16	-2.17	-7734.60	0.00	7734.56	1958757.10	11985063.23	439.44
11150.00	90.85	270.0	3626.41	-2.17	-7784.60	0.00	7784.56	1958707.10	11985063.23	440.19
11200.00	90.85	270.0	3625.67	-2.17	-7834.59	0.00	7834.55	1958657.11	11985063.23	440.93
11250.00	90.85	270.0	3624.93	-2.17	-7884.59	0.00	7884.55	1958607.11	11985063.23	441.67
11300.00	90.85	270.0	3624.19	-2.17	-7934.58	0.00	7934.54	1958557.12	11985063.23	442.41
11350.00	90.85	270.0	3623.45	-2.17	-7984.57	0.00	7984.53	1958507.13	11985063.23	443.15
11400.00	90.85	270.0	3622.71	-2.17	-8034.57	0.00	8034.53	1958457.13	11985063.23	443.89
11450.00	90.85	270.0	3621.96	-2.17	-8084.56	0.00	8084.52	1958407.14	11985063.23	444.64
11500.00	90.85	270.0	3621.22	-2.17	-8134.56	0.00	8134.52	1958357.14	11985063.23	445.38
11550.00	90.85	270.0	3620.48	-2.17	-8184.55	0.00	8184.51	1958307.15	11985063.23	446.12
11600.00	90.85	270.0	3619.74	-2.17	-8234.55	0.00	8234.50	1958257.15	11985063.23	446.86
11650.00	90.85	270.0	3619.00	-2.17	-8284.54	0.00	8284.50	1958207.16	11985063.23	447.60

Summerside Federal Com #2H, Plan 1

Operator Mack Energy Corp	**Units** feet, °/100ft	09:05 Thursday, May 9, 2024 Page 6 of 7
Field	**County** Chaves	**Vertical Section Azimuth** 269.8
Well Name Summerside Federal Com #2H	**State** New Mexico	**Survey Calculation Method** Minimum Curvature
Plan 1	**Country** USA	**Database** Access

Location SL: 1650 FSL & 707 FWL Sec 16-T15S-R30E BHL: 1650 FSL & 1 FWL Sec 18-T15S-R30E	**Map Zone** UTM	**Lat Long Ref**
Site	**Surface X** 1966491.7	**Surface Long**
Slot Name　　　　**UWI**	**Surface Y** 11985065.4	**Surface Lat**
Well Number 2H　　　**API**	**Surface Z** 4066.6	**Global Z Ref** KB
Project　　　**MD/TVD Ref** KB	**Ground Level** 4049.1	**Local North Ref** Grid

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
11700.00	90.85	270.0	3618.26	-2.17	-8334.54	0.00	8334.49	1958157.16	11985063.23	448.34
11750.00	90.85	270.0	3617.51	-2.17	-8384.53	0.00	8384.49	1958107.17	11985063.23	449.09
11800.00	90.85	270.0	3616.77	-2.17	-8434.53	0.00	8434.48	1958057.17	11985063.23	449.83
11850.00	90.85	270.0	3616.03	-2.17	-8484.52	0.00	8484.48	1958007.18	11985063.23	450.57
11900.00	90.85	270.0	3615.29	-2.17	-8534.51	0.00	8534.47	1957957.19	11985063.23	451.31
11950.00	90.85	270.0	3614.55	-2.17	-8584.51	0.00	8584.46	1957907.19	11985063.23	452.05
12000.00	90.85	270.0	3613.81	-2.17	-8634.50	0.00	8634.46	1957857.20	11985063.23	452.79
12050.00	90.85	270.0	3613.06	-2.17	-8684.50	0.00	8684.45	1957807.20	11985063.23	453.54
12100.00	90.85	270.0	3612.32	-2.17	-8734.49	0.00	8734.45	1957757.21	11985063.23	454.28
12150.00	90.85	270.0	3611.58	-2.17	-8784.49	0.00	8784.44	1957707.21	11985063.23	455.02
12200.00	90.85	270.0	3610.84	-2.17	-8834.48	0.00	8834.44	1957657.22	11985063.23	455.76
12250.00	90.85	270.0	3610.10	-2.17	-8884.48	0.00	8884.43	1957607.22	11985063.23	456.50
12300.00	90.85	270.0	3609.35	-2.17	-8934.47	0.00	8934.42	1957557.23	11985063.23	457.25
12350.00	90.85	270.0	3608.61	-2.17	-8984.46	0.00	8984.42	1957507.24	11985063.23	457.99
12400.00	90.85	270.0	3607.87	-2.17	-9034.46	0.00	9034.41	1957457.24	11985063.23	458.73
12450.00	90.85	270.0	3607.13	-2.17	-9084.45	0.00	9084.41	1957407.25	11985063.23	459.47
12500.00	90.85	270.0	3606.39	-2.17	-9134.45	0.00	9134.40	1957357.25	11985063.23	460.21
12550.00	90.85	270.0	3605.65	-2.17	-9184.44	0.00	9184.39	1957307.26	11985063.23	460.95
12600.00	90.85	270.0	3604.90	-2.17	-9234.44	0.00	9234.39	1957257.26	11985063.23	461.70
12650.00	90.85	270.0	3604.16	-2.17	-9284.43	0.00	9284.38	1957207.27	11985063.23	462.44
12700.00	90.85	270.0	3603.42	-2.17	-9334.43	0.00	9334.38	1957157.27	11985063.23	463.18
12750.00	90.85	270.0	3602.68	-2.17	-9384.42	0.00	9384.37	1957107.28	11985063.23	463.92
12800.00	90.85	270.0	3601.94	-2.17	-9434.42	0.00	9434.37	1957057.28	11985063.23	464.66
12850.00	90.85	270.0	3601.20	-2.17	-9484.41	0.00	9484.36	1957007.29	11985063.23	465.40
12900.00	90.85	270.0	3600.45	-2.17	-9534.40	0.00	9534.35	1956957.30	11985063.23	466.15
12950.00	90.85	270.0	3599.71	-2.17	-9584.40	0.00	9584.35	1956907.30	11985063.23	466.89
13000.00	90.85	270.0	3598.97	-2.17	-9634.39	0.00	9634.34	1956857.31	11985063.23	467.63
13050.00	90.85	270.0	3598.23	-2.17	-9684.39	0.00	9684.34	1956807.31	11985063.23	468.37
13100.00	90.85	270.0	3597.49	-2.17	-9734.38	0.00	9734.33	1956757.32	11985063.23	469.11
13150.00	90.85	270.0	3596.75	-2.17	-9784.38	0.00	9784.32	1956707.32	11985063.23	469.85
13200.00	90.85	270.0	3596.00	-2.17	-9834.37	0.00	9834.32	1956657.33	11985063.23	470.60
13250.00	90.85	270.0	3595.26	-2.17	-9884.37	0.00	9884.31	1956607.33	11985063.23	471.34
13300.00	90.85	270.0	3594.52	-2.17	-9934.36	0.00	9934.31	1956557.34	11985063.23	472.08
13350.00	90.85	270.0	3593.78	-2.17	-9984.35	0.00	9984.30	1956507.35	11985063.23	472.82
13400.00	90.85	270.0	3593.04	-2.17	-10034.35	0.00	10034.30	1956457.35	11985063.23	473.56
13450.00	90.85	270.0	3592.29	-2.17	-10084.34	0.00	10084.29	1956407.36	11985063.23	474.31
13500.00	90.85	270.0	3591.55	-2.17	-10134.34	0.00	10134.28	1956357.36	11985063.23	475.05

Summerside Federal Com #2H, Plan 1

Operator Mack Energy Corp	**Units** feet, °/100ft		09:05 Thursday, May 9, 2024 Page 7 of 7
Field	**County** Chaves		**Vertical Section Azimuth** 269.8
Well Name Summerside Federal Com #2H	**State** New Mexico		**Survey Calculation Method** Minimum Curvature
Plan 1	**Country** USA		**Database** Access

Location SL: 1650 FSL & 707 FWL Sec 16-T15S-R30E BHL: 1650 FSL & 1 FWL Sec 18-T15S-R30E	**Map Zone** UTM	**Lat Long Ref**	
Site	**Surface X** 1966491.7	**Surface Long**	
Slot Name	**UWI**	**Surface Y** 11985065.4	**Surface Lat**
Well Number 2H	**API**	**Surface Z** 4066.6	**Global Z Ref** KB
Project	**MD/TVD Ref** KB	**Ground Level** 4049.1	**Local North Ref** Grid

DIRECTIONAL WELL PLAN

MD* ft	INC* deg	AZI* deg	TVD* ft	N* ft	E* ft	DLS* °/100ft	V. S.* ft	MapE* ft	MapN* ft	SysTVD* ft
13550.00	90.85	270.0	3590.81	-2.17	-10184.33	0.00	10184.28	1956307.37	11985063.23	475.79
13600.00	90.85	270.0	3590.07	-2.17	-10234.33	0.00	10234.27	1956257.37	11985063.23	476.53
13650.00	90.85	270.0	3589.33	-2.17	-10284.32	0.00	10284.27	1956207.38	11985063.23	477.27
13700.00	90.85	270.0	3588.59	-2.17	-10334.32	0.00	10334.26	1956157.38	11985063.23	478.01
13750.00	90.85	270.0	3587.84	-2.17	-10384.31	0.00	10384.26	1956107.39	11985063.23	478.76
13800.00	90.85	270.0	3587.10	-2.17	-10434.31	0.00	10434.25	1956057.39	11985063.23	479.50
13850.00	90.85	270.0	3586.36	-2.17	-10484.30	0.00	10484.24	1956007.40	11985063.23	480.24
13900.00	90.85	270.0	3585.62	-2.17	-10534.29	0.00	10534.24	1955957.41	11985063.23	480.98
13950.00	90.85	270.0	3584.88	-2.17	-10584.29	0.00	10584.23	1955907.41	11985063.23	481.72
14000.00	90.85	270.0	3584.14	-2.17	-10634.28	0.00	10634.23	1955857.42	11985063.23	482.46
14050.00	90.85	270.0	3583.39	-2.17	-10684.28	0.00	10684.22	1955807.42	11985063.23	483.21
14100.00	90.85	270.0	3582.65	-2.17	-10734.27	0.00	10734.21	1955757.43	11985063.23	483.95
14150.00	90.85	270.0	3581.91	-2.17	-10784.27	0.00	10784.21	1955707.43	11985063.23	484.69
14200.00	90.85	270.0	3581.17	-2.17	-10834.26	0.00	10834.20	1955657.44	11985063.23	485.43
14250.00	90.85	270.0	3580.43	-2.17	-10884.26	0.00	10884.20	1955607.44	11985063.23	486.17
14300.00	90.85	270.0	3579.69	-2.17	-10934.25	0.00	10934.19	1955557.45	11985063.23	486.91
14350.00	90.85	270.0	3578.94	-2.17	-10984.24	0.00	10984.19	1955507.46	11985063.23	487.66
14400.00	90.85	270.0	3578.20	-2.17	-11034.24	0.00	11034.18	1955457.46	11985063.23	488.40
14450.00	90.85	270.0	3577.46	-2.17	-11084.23	0.00	11084.17	1955407.47	11985063.23	489.14
14500.00	90.85	270.0	3576.72	-2.17	-11134.23	0.00	11134.17	1955357.47	11985063.23	489.88
14550.00	90.85	270.0	3575.98	-2.17	-11184.22	0.00	11184.16	1955307.48	11985063.23	490.62
14600.00	90.85	270.0	3575.23	-2.17	-11234.22	0.00	11234.16	1955257.48	11985063.23	491.37
14650.00	90.85	270.0	3574.49	-2.17	-11284.21	0.00	11284.15	1955207.49	11985063.23	492.11
14700.00	90.85	270.0	3573.75	-2.17	-11334.21	0.00	11334.14	1955157.49	11985063.23	492.85
*** TD (at MD = 14706.00)										
14706.00	90.85	270.0	3573.66	-2.17	-11340.21	0.00	11340.15	1955151.49	11985063.23	492.94

PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Mack Energy Corporation
LEASE NO.:	NMNM-138842
WELL NAME & NO.:	Summerside Federal Com 2H
SURFACE HOLE FOOTAGE:	1650' FSL & 0707' FWL
BOTTOM HOLE FOOTAGE	1650' FSL & 0001' FWL Sec. 18, T. 15 S., R 30 E.
LOCATION:	Section 16, T. 15 S., R 30 E., NMPM
COUNTY:	Chaves County, New Mexico

Communitization Agreement

· The operator will submit a Communitization Agreement to the Roswell Field Office, 2909 West 2nd Street Roswell, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

· If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.

· In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

The Gamma Ray and Neutron well logs must be run from total depth to surface and e-mailed to McKitric Wier at mwier@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. **Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, 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.

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 <u>8 hours</u>. 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.

Low 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 **625** 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 **8-5/8** inch intermediate casing, shall be set at approximately **1570** feet, 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 X 5-1/2** inch production casing is:

Option #1:

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

Option #2:

Operator has proposed DV tool at depth of 1400', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

    a. First stage to DV tool:

    ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

    b. Second stage above DV tool:

    ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Excess calculates to 17% - Additional cement maybe required.**

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.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

2. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi (testing to 2,000 psi).**

    a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
    b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
    c. **Manufacturer representative shall install the test plug for the initial BOP test.**
    d. **Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.**
    e. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

3. 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. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

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 03072025

<div align="center">

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

</div>

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.

Attached to Form 3160-3
Mack Energy Corporation
Summerside Federal Com #2H NMNM-138842
SHL : 1650 FSL & 707 FWL, NWSW, Sec. 16 T15S R30E
BHL : 1650 FSL & 1 FWL, Lot 3, Sec. 18 T15S R30E
Chaves County, NM

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.

B.   There will be no drill stem testing.

EXHIBIT #7
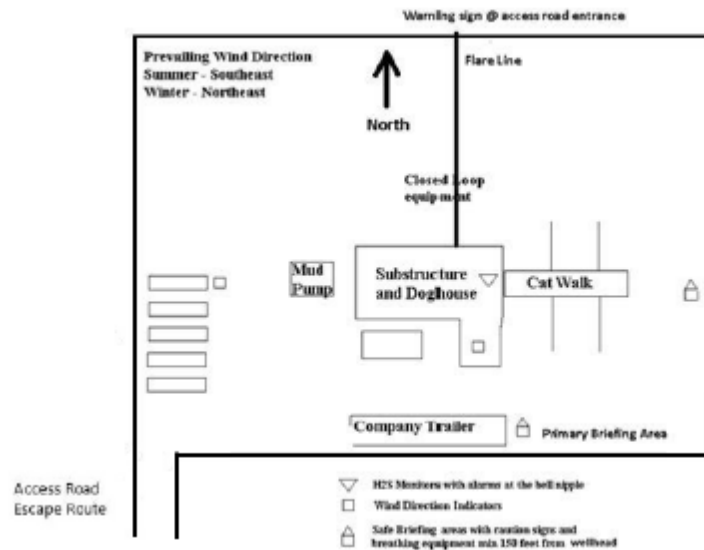
DRILLING LOCATION H2S SAFTY EQUIPMENT
Exhibit # 8

Location Layout

Catwalk

Closing Unit

Top Doghouse

Change Rooms

Substructure

Closed Loop System

Pit

Pit

Generator House

Water Tank

Water Tank

Fuel Tank

Partshouse

Mudhouse

150'

175'

150' from front of location to hole

175' from left of location to hole

50' from hole to back of location (without closed loop)

150' from hole to back of location (with closed loop)

Location size *without* Closed Loop System
200' Deep X 325' Wide

Location size *with* Closed Loop System
300' Deep X 325' Wide

200' Deep
without Closed Loop

Closed Loop
100'

Silver Oak Drilling ~ 10 Bilco Road, Artesia, NM 88210 ~ 575.746.4405
info@silveroakdrilling.com ~ www.silveroakdrilling.com

SILVER OAK DRILLING

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

C-102	State of New Mexico	Revised July 9, 2024
	Energy, Minerals & Natural Resources Department	
	OIL CONSERVATION DIVISION	

Submit Electronically
Via OCD Permitting

Submittal Type:	☑ Initial Submittal
	☐ Amended Report
	☐ As Drilled

WELL LOCATION INFORMATION

API Number	Pool Code 52770	Pool Name Round Tank; San Andres

Property Code	Property Name SUMMERSIDE FEDERAL COM	Well Number 2H

OGRID No. 13837	Operator Name MACK ENERGY CORPORATION	Ground Level Elevation 4049.1

Surface Owner: ☑State ☐Fee ☐Tribal ☐Federal   Mineral Owner: ☐State ☐Fee ☐Tribal ☑Federal

Surface Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
L	16	15 S	30 E		1650 SOUTH	707 WEST	33.0132191°N	103.9364433°W	CHAVES

Bottom Hole Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
	18	15 S	30 E	3	1650 SOUTH	1 WEST	33.0132437°N	103.9733321°W	CHAVES

Dedicated Acres 320	Infill or Defining Well	Defining Well API	Overlapping Spacing Unit (Y/N)	Consolidation Code
Order Numbers.			Well setbacks are under Common Ownership: ☐ Yes ☐No	

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
L	16	15 S	30 E		1650 SOUTH	707 WEST	33.0132191°N	103.9364433°W	CHAVES

First Take Point (FTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
I	17	15 S	30 E		1650 SOUTH	100 EAST	33.0132403°N	103.9390754°W	CHAVES

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
	18	15 S	30 E	3	1650 SOUTH	100 WEST	33.0132444°N	103.9730092°W	CHAVES

Unitized Area or Area of Uniform Interest	Spacing Unit Type ☑Horizontal ☐Vertical	Ground Floor Elevation:

OPERATOR CERTIFICATIONS

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, 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 a working interest run leased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order here to fore entered by the division.

If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.

Deana Weaver   11/4/2024
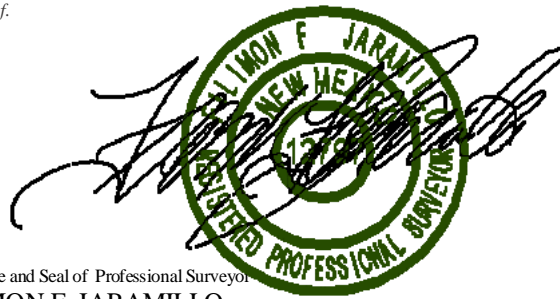
Signature   Date

Deana Weaver

Printed Name

dweaver@mec.com

Email Address

SURVEYOR CERTIFICATIONS

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.

Signature and Seal of Professional Surveyor
FILIMON F. JARAMILLO

CertificateNumber PLS 12797	Dateof Survey MARCH 6, 2024

SURVEY NO. 10051

Note: 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.

AFMSS

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

Drilling Plan Data Report
03/31/2025

APD ID: 10400098540

Operator Name: MACK ENERGY CORPORATION

Well Name: SUMMERSIDE FEDERAL COM

Well Type: OIL WELL

Submission Date: 07/02/2024

Well Number: 2H

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
15317058	RUSTLER	4049	600	600	ALLUVIUM	NONE	N
15317059	TOP OF SALT	3299	750	750	SALT	NONE	N
15317060	BASE OF SALT	2689	1360	1360	SALT	NONE	N
15317061	YATES	2539	1510	1510	ANHYDRITE, SILTSTONE	NATURAL GAS, OIL	N
15317062	SEVEN RIVERS	2299	1750	1750	ANHYDRITE, SILTSTONE	NATURAL GAS, OIL	N
15317063	QUEEN	1804	2245	2245	ANHYDRITE, SILTSTONE	NATURAL GAS, OIL	N
15317064	GRAYBURG	1419	2630	2630	ANHYDRITE, DOLOMITE, SILTSTONE	NATURAL GAS, OIL	N
15317065	SAN ANDRES	1099	2950	2952	ANHYDRITE, DOLOMITE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M   **Rating Depth:** 14706

Equipment: Rotating Head, Mud Gas Separator

Requesting Variance? NO

Variance request:

Testing Procedure: The BOP/BOPE test shall include a low pressure test from 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 is 1710 psig (0.052*3574'*9.2) less than 2900 bottom hole pressure.
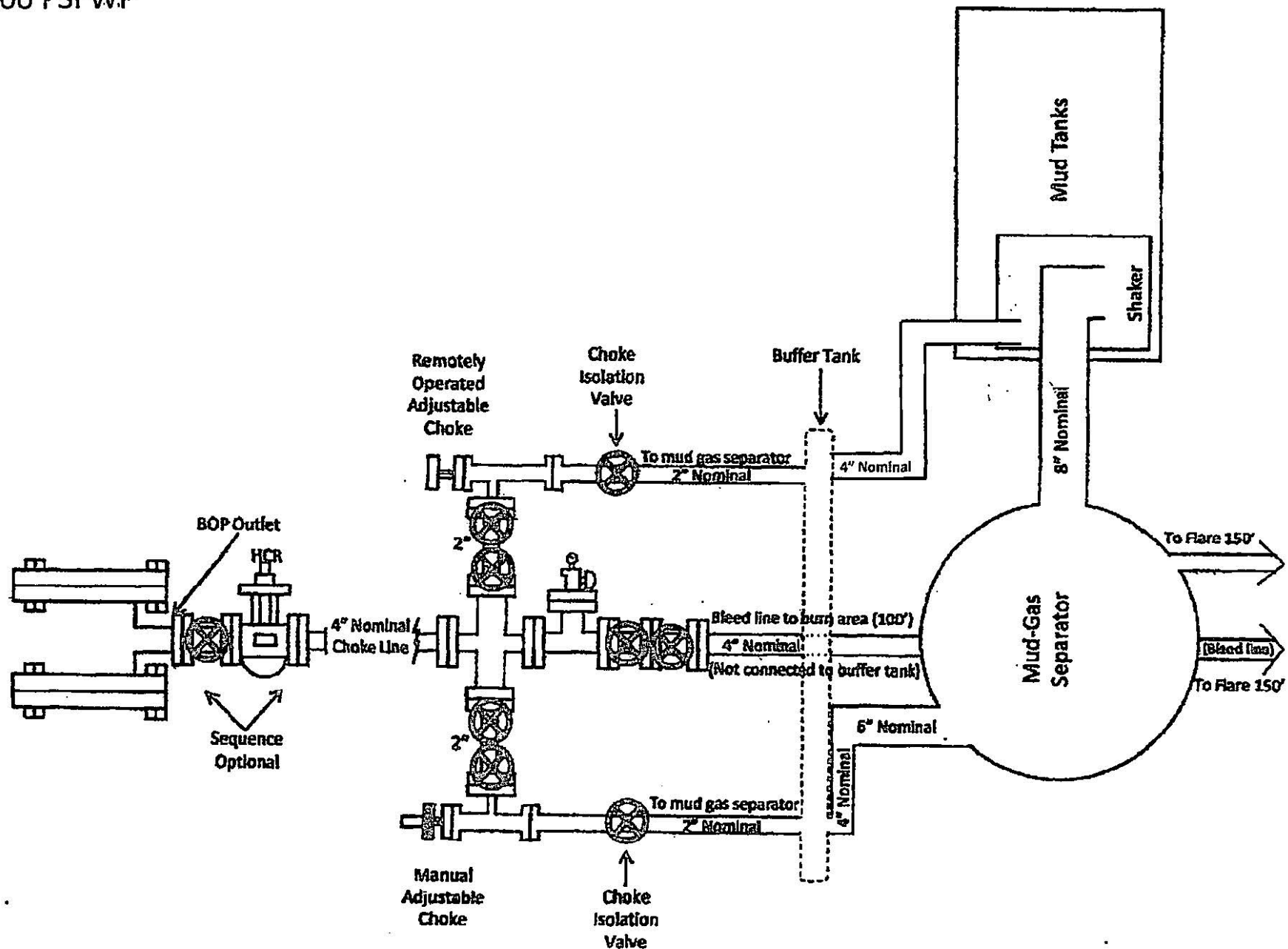
Choke Diagram Attachment:

NEW_Choke_Manifold_3M_20240517085909.pdf
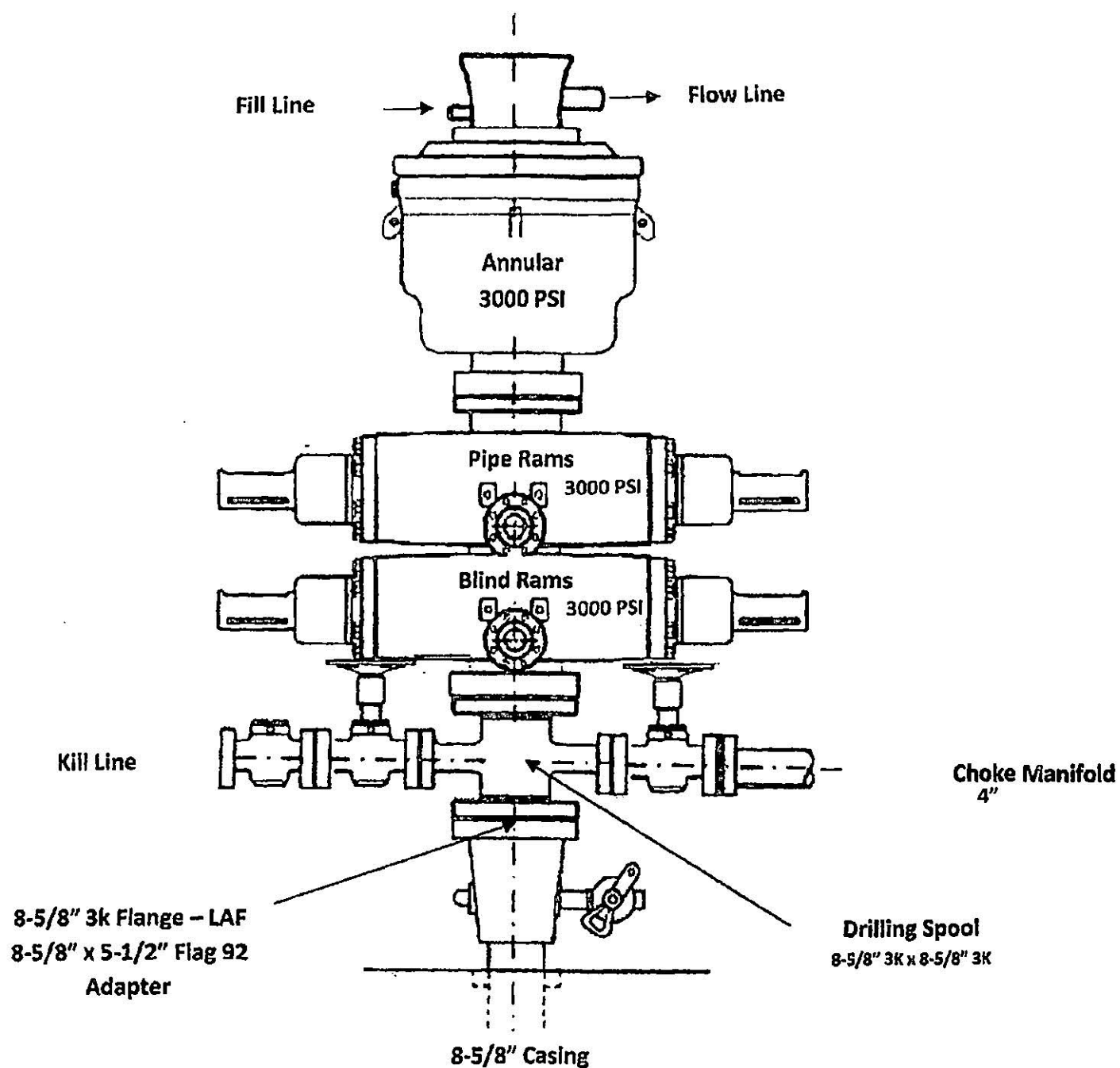
BOP Diagram Attachment:

NEW_BOP_3M_20240517085923.pdf

Choke Manifold

3000 PSI WP

Remotely Operated Adjustable Choke

Choke Isolation Valve

Buffer Tank

Mud Tanks

Shaker

BOP Outlet

HCR

To mud gas separator
2" Nominal

4" Nominal

8" Nominal

2"

4" Nominal Choke Line

Bleed line to burn area (100')

4" Nominal

(Not connected to buffer tank)

Mud-Gas Separator

To Flare 150'

(Bleed line)

To Flare 150'

Sequence Optional

2"

6" Nominal

4" Nominal

Manual Adjustable Choke

Choke Isolation Valve

To mud gas separator
2" Nominal

BOP Diagram

Dual Ram BOP
3000 PSI WP

Fill Line → Flow Line

Annular
3000 PSI

Pipe Rams
3000 PSI

Blind Rams
3000 PSI

Kill Line

Choke Manifold
4"

8-5/8" 3k Flange – LAF
8-5/8" x 5-1/2" Flag 92
Adapter

Drilling Spool
8-5/8" 3K x 8-5/8" 3K

8-5/8" Casing

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

CONDITIONS

Action 447615

CONDITIONS

Operator:	OGRID:
MACK ENERGY CORP	13837
P.O. Box 960	**Action Number:**
Artesia, NM 882110960	447615
	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.	4/1/2025
dweaver	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.	4/1/2025
ward.rikala	Notify the OCD 24 hours prior to casing & cement.	5/16/2025
ward.rikala	File As Drilled C-102 and a directional Survey with C-104 completion packet.	5/16/2025
ward.rikala	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string.	5/16/2025
ward.rikala	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.	5/16/2025