Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NM OIL CONSERVATION
ARTESIA DISTRICT
OCT 24 2016
RECEIVED

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

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2.

5. Lease Serial No. NMNM-131580 NMOM-121949 SHL BHL (production)
6. If Indian, Allottee or Tribe Name
7. If Unit of CA/Agreement, Name and/or No.
1. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other
8. Well Name and No. Prince Rupert Federal 3H
2. Name of Operator: Mack Energy Corporation
9. API Well No. 30-005-64241
3a. Address: P.O. Box 960 Artesia, NM 88210-0960
3b. Phone No. *(include area code)*: (575) 748-1288
10. Field and Pool or Exploratory Area: Round Tank;San Andres
4. Location of Well *(Footage, Sec., T,R,M, or Survey Description)*: 330 FSL 2160 FEL, Sec. 17 T15S R29E BHL 340 FSL 2285 FEL Sec. 20 T15S R29E
11. Country or Parish, State: Chaves, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Name Change
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Drill Horizontal
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Mack Energy Corporation is proposing to change the name of the Whistler Federal 3 location to the Prince Rupert Federal 3H. This location is located in the SWSE Sec. 17 T15S R29E.

A pilot hole will be drilled at the SHL to a depth of 3500' and well will be logged. A kick off plug will be set from 3000-2400' with 340sx Class H cement.

The Prince Rupert Federal 3H will be drilled as a horizontal San Andres well. The total depth of this well is 8228', TVD is 3260'. SHL 330 FSL 2160 FEL Sec. 17 T15S R29E, First Take Point 330 FNL 2285 FEL Sec. 20 T15S R29E, BHL 340 FSL 2285 FEL Sec. 20 T15S R29E. Casing program: Surface Drill 14 3/4" hole to 225' run 9 5/8" J-55 36# ST&C New casing and cement w/300sx RFC & Class C+12% PF53, 2% PF1, 5pps PF42, .125pps PF29. Density14.8-Yield 1.34-H2O mix 6.323. C/B/T safety factors 17.984/6.974/7.04.
Production Drill 8 1/2" hole to 8228' run split string 5 1/2" L-80 17# Buttress New from 8228-2700', horizontal section set with Packer Plus System, DV tool @ +or- 2600'. C/B/T safety factors 3.654/2.655/2.604. 7" L-80 26# LT&C New casing from 2700-0'. C/B/T 3.618/2.436/2.413. cement w/375sx Class C. Density 14.8-Yield 1.32-H2O mix 6.304. production must circulate to surface.
Note: first Packer will be set at 330 FNL 2285 FEL(First Take Point).
Installing 3M BOP. testing to 3,000 psi.

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*
Jerry W. Sherrell
Title Production Clerk
Signature Jerry W. Sherrell
Date 10/11/16

SEE ATTACHED FOR CONDITIONS OF APPROVAL

RECEIVED
2016 OCT 18 A 9:38
BUREAU OF LAND MGMT.
ROSWELL OFFICE

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

APPROVED
OCT 18 2016
BUREAU OF LAND MANAGEMENT

Approved by
Title
Office

arrant or certify which would

for any person knowingly and willfully to make to any department or agency of the United States any false, jurisdiction.

well name change made effective 10-18-16
per J. Sherrell to ks 10-25-16

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-005-64241	52770	Round Tank; San Andres

4 Property Code	5 Property Name	6 Well Number
314080	PRINCE RUPERT FEDERAL	3H

7 OGRID No.	8 Operator Name	9 Elevation
13837	MACK ENERGY CORPORATION	3780.5

10 Surface Location

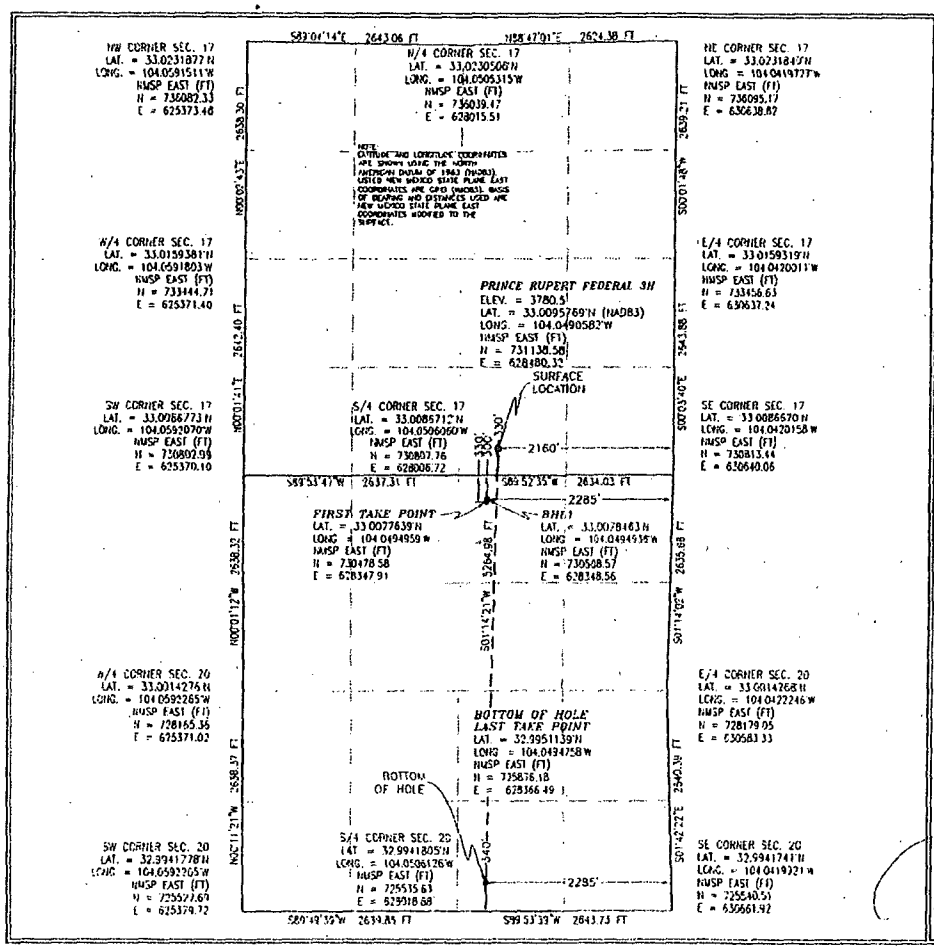
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	17	15 S	29 E		330	SOUTH	2160	EAST	CHAVES

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	20	15 S	29 E		340	SOUTH	2285	EAST	CHAVES

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
160			

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.



16 OPERATOR CERTIFICATION

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

Jerry W. Sherrell 10/11/2016
Signature Date

Jerry W. Sherrell
Printed Name

jerrys@mec.com
E-mail Address

17 SURVEYOR CERTIFICATION

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

SEPTEMBER 28, 2016
Date of Survey

FILIMON F. JARAMILLO
NEW MEXICO
12797
PROFESSIONAL SURVEYOR

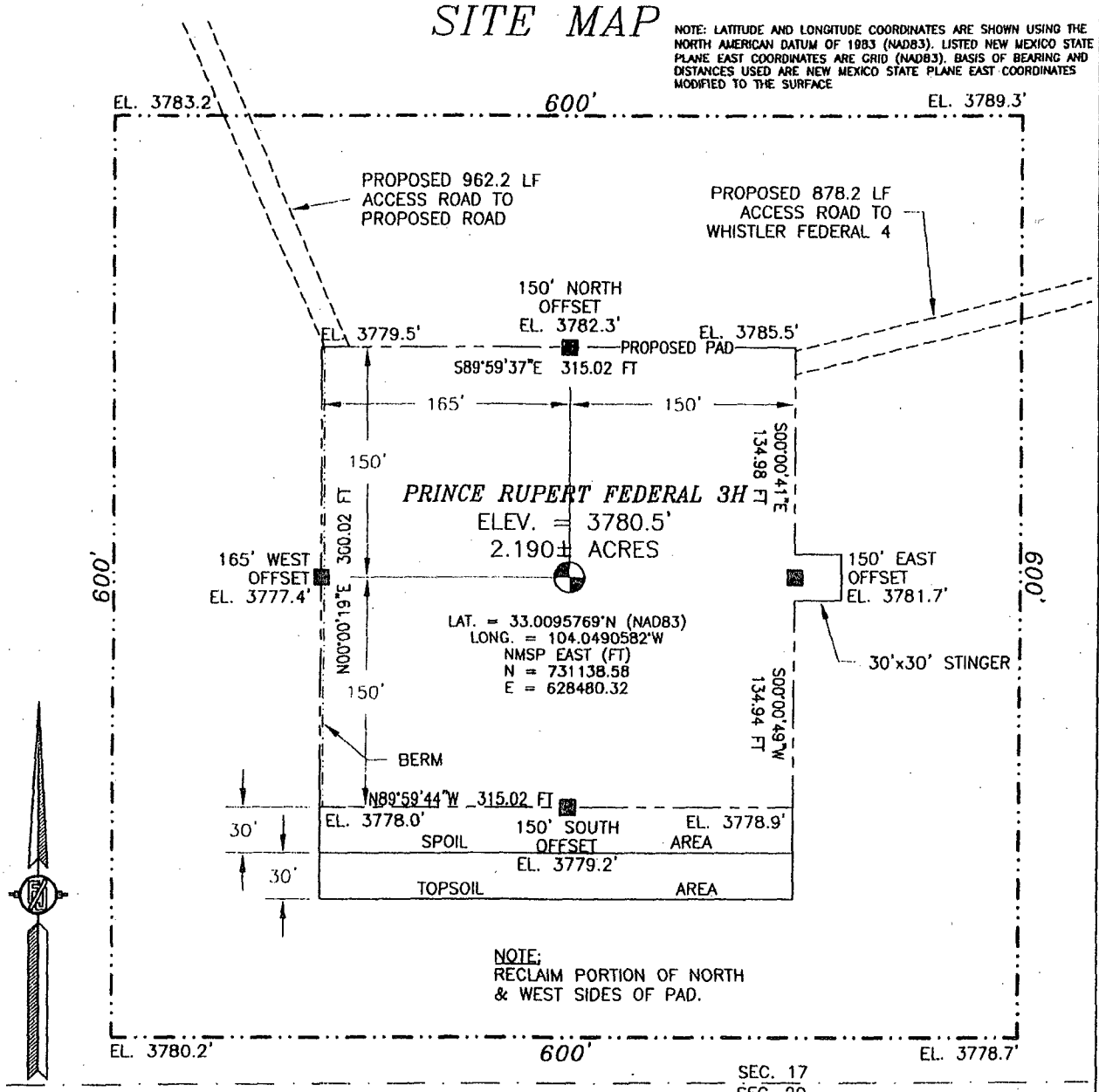
Signature and Seal of Professional Surveyor

Certificate Number FILIMON F. JARAMILLO, PLS 12797

SURVEY NO. 2868B

SECTION 17, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
SITE MAP

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE



NOTE:
RECLAIM PORTION OF NORTH & WEST SIDES OF PAD.

010 50 100 200
SCALE 1" = 100'

DIRECTIONS TO LOCATION
FROM THE INTERSECTION OF STATE HIGHWAY 249 AND CR 30 (JEMINA) GO NORTHWEST ON STATE HIGHWAY 249 FOR APPROX. 2.1 MILES. GO SOUTH ON 20' CALICHE LEASE ROAD FOR APPROX. 3.21 MILES TO WHISTLER FEDERAL 9. FROM THE NORTHEAST CORNER GO EAST 855.0' TO THE NORTHWEST CORNER OF WHISTLER FEDERAL 10. FROM THE SOUTHWEST CORNER GO SOUTHWEST 686.9' TO THE NORTHEAST CORNER OF WHISTLER FEDERAL 5. FROM THE SOUTHEAST CORNER GO SOUTH THEN SOUTHEAST 558.2' TO THE NORTHWEST CORNER OF WHISTLER FEDERAL 6. FROM THE SOUTHEAST CORNER GO EAST 771.4' THEN SOUTHEAST 962.2' TO THE NORTHWEST CORNER FOR THIS LOCATION.

MACK ENERGY CORPORATION
PRINCE RUPERT FEDERAL 3H
LOCATED 330 FT. FROM THE SOUTH LINE AND 2160 FT. FROM THE EAST LINE OF SECTION 17, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M. CHAVES COUNTY, STATE OF NEW MEXICO

SEPTEMBER 28, 2016

SURVEY NO. 2868B

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

Mack Energy
Project: Chavez County
Site: Sec.17, T15 S, R 29 E
Well: Prince Rupert Federal 3H
Wellbore: Wellbore #1
Plan: Plan #2 (Prince Rupert Federal 3H/Wellbore #1)

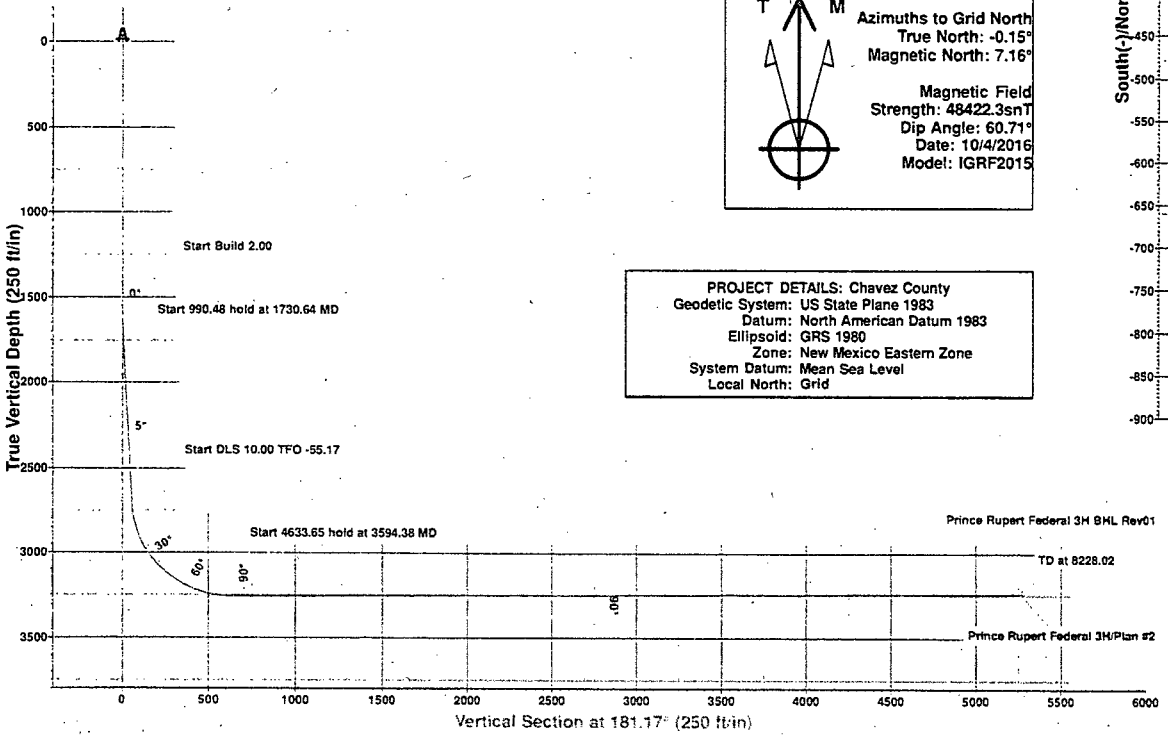
WELL DETAILS: Prince Rupert Federal 3H

Ground Elevation:: 3780.50
RKB Elevation: KB=17.5 @ 3798.00ft (UNK)
Rig Name: UNK

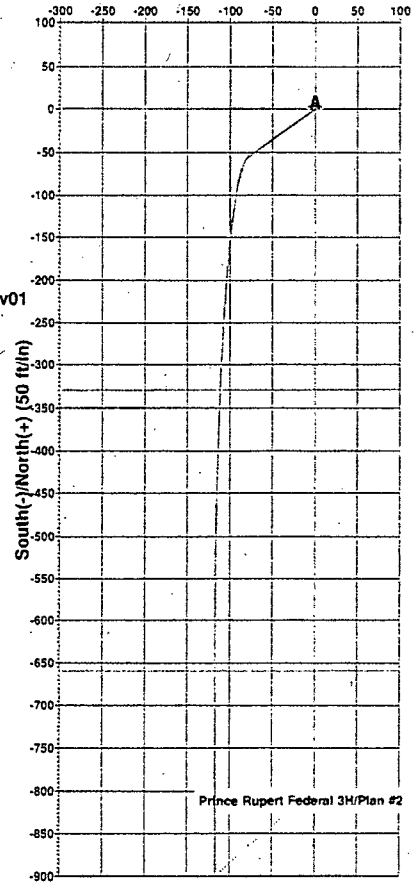
Northing	Easting	Latitude	Longitude
731138.58	628480.32	33.010°N	104.049°W

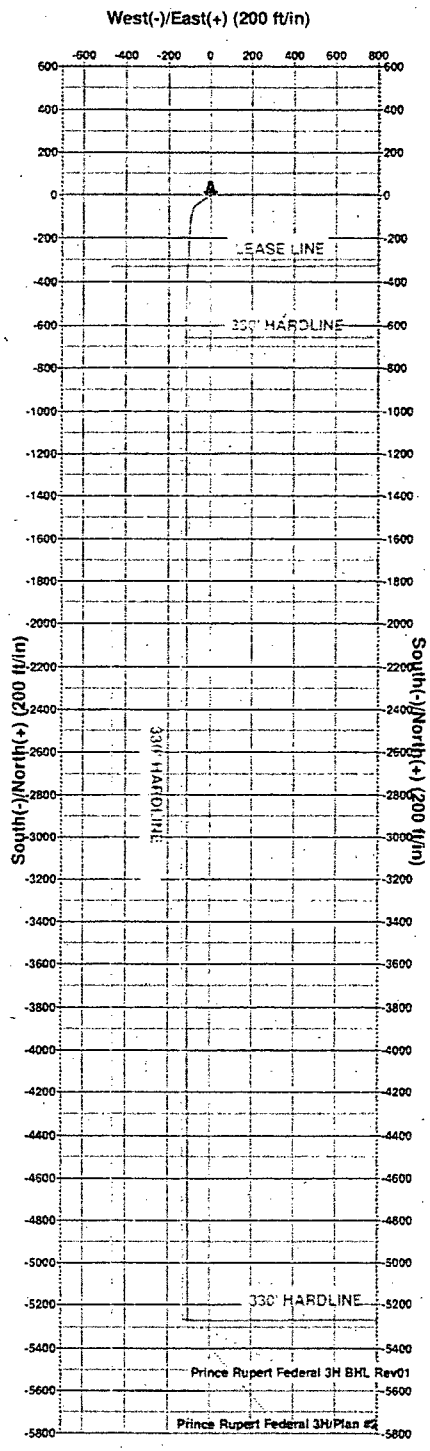
Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1480.64	0.00	0.00	1480.64	0.00	0.00	0.00	0.00	0.00	
3	1730.64	5.00	234.95	1730.32	-6.26	-8.92	2.00	234.95	6.44	
4	2721.12	5.00	234.95	2717.03	-55.83	-79.60	0.00	0.00	57.44	
5	3594.38	90.19	179.87	3260.00	-630.01	-117.42	10.00	-55.17	632.27	
6	8228.02	90.19	179.87	3245.00	-5263.62	-107.32	0.00	0.00	5264.71	Prince Rupert Federal 3H BHL Rev01



PROJECT DETAILS: Chavez County
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid





Integrity Directional Services, LLC

Survey Report

Company:	Mack Energy	**Local Co-ordinate Reference:**	Well Prince Rupert Federal 3H
Project:	Chavez County	**TVD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Site:	Sec.17, T15 S, R 29 E	**MD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Well:	Prince Rupert Federal 3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 5000.1 Multi User Db

Project Chavez County

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Sec.17, T15 S, R 29 E

Site Position:		**Northing:**	731,138.58 usft	**Latitude:**	33.010°N
From:	Map	**Easting:**	628,480.32 usft	**Longitude:**	104.049°W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.15 °

Well Prince Rupert Federal 3H

Well Position	**+N/-S**	0.00 ft	**Northing:**	731,138.58 usft	**Latitude:**	33.010°N
	+E/-W	0.00 ft	**Easting:**	628,480.32 usft	**Longitude:**	104.049°W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	0.00 ft	**Ground Level:**	3,780.50 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/4/2016	7.31	60.71	48,422

Design Plan #2

Audit Notes:

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

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	181.17

Survey Tool Program **Date** 10/5/2016

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,228.02	Plan #2 (Wellbore #1)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00

Integrity Directional Services, LLC

Survey Report

Company:	Mack Energy	**Local Co-ordinate Reference:**	Well Prince Rupert Federal 3H
Project:	Chavez County	**TVD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Site:	Sec.17, T15 S, R 29 E	**MD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Well:	Prince Rupert Federal 3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 5000.1 Multi User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,480.64	0.00	0.00	1,480.64	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,500.00	0.39	234.95	1,500.00	-0.04	-0.05	0.04	2.00	2.00	0.00
1,600.00	2.39	234.95	1,599.97	-1.43	-2.04	1.47	2.00	2.00	0.00
1,700.00	4.39	234.95	1,699.79	-4.82	-6.87	4.96	2.00	2.00	0.00
1,730.64	5.00	234.95	1,730.32	-6.26	-8.92	6.44	2.00	2.00	0.00
Start 990.48 hold at 1730.64 MD									
1,800.00	5.00	234.95	1,799.42	-9.73	-13.87	10.01	0.00	0.00	0.00
1,900.00	5.00	234.95	1,899.04	-14.74	-21.01	15.16	0.00	0.00	0.00
2,000.00	5.00	234.95	1,998.66	-19.74	-28.14	20.31	0.00	0.00	0.00
2,100.00	5.00	234.95	2,098.28	-24.74	-35.28	25.46	0.00	0.00	0.00
2,200.00	5.00	234.95	2,197.90	-29.75	-42.42	30.61	0.00	0.00	0.00
2,300.00	5.00	234.95	2,297.52	-34.75	-49.55	35.76	0.00	0.00	0.00
2,400.00	5.00	234.95	2,397.14	-39.76	-56.69	40.91	0.00	0.00	0.00
2,500.00	5.00	234.95	2,496.76	-44.76	-63.82	46.06	0.00	0.00	0.00
2,600.00	5.00	234.95	2,596.37	-49.77	-70.96	51.20	0.00	0.00	0.00
2,700.00	5.00	234.95	2,695.99	-54.77	-78.09	56.35	0.00	0.00	0.00
2,721.12	5.00	234.95	2,717.03	-55.83	-79.60	57.44	0.00	0.00	0.00
Start DLS 10.00 TFO -55.17									
2,800.00	11.50	200.54	2,795.10	-65.18	-85.18	66.90	10.00	8.24	-43.63
2,900.00	21.13	190.58	2,890.97	-92.30	-92.00	94.16	10.00	9.64	-9.96
3,000.00	30.99	186.75	2,980.70	-135.70	-98.36	137.68	10.00	9.86	-3.84
3,100.00	40.92	184.63	3,061.55	-194.06	-104.04	196.14	10.00	9.92	-2.11
3,200.00	50.87	183.23	3,131.06	-265.61	-108.89	267.77	10.00	9.95	-1.40
3,300.00	60.83	182.18	3,187.13	-348.17	-112.75	350.39	10.00	9.96	-1.05
3,400.00	70.80	181.32	3,228.05	-439.23	-115.50	441.50	10.00	9.97	-0.86
3,500.00	80.77	180.56	3,252.57	-536.04	-117.08	538.31	10.00	9.97	-0.76
3,594.38	90.19	179.88	3,260.00	-630.01	-117.42	632.27	10.00	9.97	-0.72
Start 4633.65 hold at 3594.38 MD									
3,600.00	90.19	179.88	3,259.98	-635.63	-117.41	637.90	0.00	0.00	0.00
3,700.00	90.19	179.88	3,259.66	-735.63	-117.19	737.87	0.00	0.00	0.00
3,800.00	90.19	179.88	3,259.33	-835.63	-116.98	837.84	0.00	0.00	0.00
3,900.00	90.19	179.88	3,259.01	-935.63	-116.76	937.82	0.00	0.00	0.00
4,000.00	90.19	179.88	3,258.69	-1,035.63	-116.54	1,037.79	0.00	0.00	0.00
4,100.00	90.19	179.88	3,258.36	-1,135.63	-116.32	1,137.77	0.00	0.00	0.00
4,200.00	90.19	179.88	3,258.04	-1,235.63	-116.10	1,237.74	0.00	0.00	0.00
4,300.00	90.19	179.88	3,257.72	-1,335.63	-115.89	1,337.71	0.00	0.00	0.00
4,400.00	90.19	179.88	3,257.39	-1,435.63	-115.67	1,437.69	0.00	0.00	0.00
4,500.00	90.19	179.88	3,257.07	-1,535.63	-115.45	1,537.66	0.00	0.00	0.00

Company:	Mack Energy	**Local Co-ordinate Reference:**	Well Prince Rupert Federal 3H
Project:	Chavez County	**TVD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Site:	Sec.17, T15 S, R 29 E	**MD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Well:	Prince Rupert Federal 3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 5000.1 Multi User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,600.00	90.19	179.88	3,256.74	-1,635.63	-115.23	1,637.64	0.00	0.00	0.00
4,700.00	90.19	179.88	3,256.42	-1,735.63	-115.01	1,737.61	0.00	0.00	0.00
4,800.00	90.19	179.88	3,256.10	-1,835.63	-114.79	1,837.58	0.00	0.00	0.00
4,900.00	90.19	179.88	3,255.77	-1,935.62	-114.58	1,937.56	0.00	0.00	0.00
5,000.00	90.19	179.88	3,255.45	-2,035.62	-114.36	2,037.53	0.00	0.00	0.00
5,100.00	90.19	179.88	3,255.13	-2,135.62	-114.14	2,137.51	0.00	0.00	0.00
5,200.00	90.19	179.88	3,254.80	-2,235.62	-113.92	2,237.48	0.00	0.00	0.00
5,300.00	90.19	179.88	3,254.48	-2,335.62	-113.70	2,337.45	0.00	0.00	0.00
5,400.00	90.19	179.88	3,254.15	-2,435.62	-113.49	2,437.43	0.00	0.00	0.00
5,500.00	90.19	179.88	3,253.83	-2,535.62	-113.27	2,537.40	0.00	0.00	0.00
5,600.00	90.19	179.88	3,253.51	-2,635.62	-113.05	2,637.38	0.00	0.00	0.00
5,700.00	90.19	179.88	3,253.18	-2,735.62	-112.83	2,737.35	0.00	0.00	0.00
5,800.00	90.19	179.88	3,252.86	-2,835.62	-112.61	2,837.32	0.00	0.00	0.00
5,900.00	90.19	179.88	3,252.54	-2,935.62	-112.39	2,937.30	0.00	0.00	0.00
6,000.00	90.19	179.88	3,252.21	-3,035.62	-112.18	3,037.27	0.00	0.00	0.00
6,100.00	90.19	179.88	3,251.89	-3,135.62	-111.96	3,137.25	0.00	0.00	0.00
6,200.00	90.19	179.88	3,251.56	-3,235.61	-111.74	3,237.22	0.00	0.00	0.00
6,300.00	90.19	179.88	3,251.24	-3,335.61	-111.52	3,337.19	0.00	0.00	0.00
6,400.00	90.19	179.88	3,250.92	-3,435.61	-111.30	3,437.17	0.00	0.00	0.00
6,500.00	90.19	179.88	3,250.59	-3,535.61	-111.09	3,537.14	0.00	0.00	0.00
6,600.00	90.19	179.88	3,250.27	-3,635.61	-110.87	3,637.12	0.00	0.00	0.00
6,700.00	90.19	179.88	3,249.95	-3,735.61	-110.65	3,737.09	0.00	0.00	0.00
6,800.00	90.19	179.88	3,249.62	-3,835.61	-110.43	3,837.06	0.00	0.00	0.00
6,900.00	90.19	179.88	3,249.30	-3,935.61	-110.21	3,937.04	0.00	0.00	0.00
7,000.00	90.19	179.88	3,248.97	-4,035.61	-109.99	4,037.01	0.00	0.00	0.00
7,100.00	90.19	179.88	3,248.65	-4,135.61	-109.78	4,136.99	0.00	0.00	0.00
7,200.00	90.19	179.88	3,248.33	-4,235.61	-109.56	4,236.96	0.00	0.00	0.00
7,300.00	90.19	179.88	3,248.00	-4,335.61	-109.34	4,336.93	0.00	0.00	0.00
7,400.00	90.19	179.88	3,247.68	-4,435.61	-109.12	4,436.91	0.00	0.00	0.00
7,500.00	90.19	179.88	3,247.36	-4,535.60	-108.90	4,536.88	0.00	0.00	0.00
7,600.00	90.19	179.88	3,247.03	-4,635.60	-108.69	4,636.86	0.00	0.00	0.00
7,700.00	90.19	179.88	3,246.71	-4,735.60	-108.47	4,736.83	0.00	0.00	0.00
7,800.00	90.19	179.88	3,246.38	-4,835.60	-108.25	4,836.80	0.00	0.00	0.00
7,900.00	90.19	179.88	3,246.06	-4,935.60	-108.03	4,936.78	0.00	0.00	0.00
8,000.00	90.19	179.88	3,245.74	-5,035.60	-107.81	5,036.75	0.00	0.00	0.00
8,100.00	90.19	179.88	3,245.41	-5,135.60	-107.60	5,136.73	0.00	0.00	0.00
8,200.00	90.19	179.88	3,245.09	-5,235.60	-107.38	5,236.70	0.00	0.00	0.00
8,228.02	90.19	179.88	3,245.00	-5,263.62	-107.32	5,264.71	0.00	0.00	0.00

TD at 8228.02

Integrity Directional Services, LLC

Survey Report

Company:	Mack Energy	**Local Co-ordinate Reference:**	Well Prince Rupert Federal 3H
Project:	Chavez County	**TVD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Site:	Sec.17, T15 S, R 29 E	**MD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Well:	Prince Rupert Federal 3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 5000.1 Multi User Db

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Prince Rupert Federa - plan hits target center - Point	0.00	0.00	3,245.00	-5,263.62	-107.32	725,874.97	628,373.00	32.995°N	104.049°W
Prince Rupert Federa - plan misses target center by 809.93ft at 2919.30ft MD (2908.85 TVD, -99.44 N, -93.27 E) - Point	0.00	0.00	3,260.00	630.01	-117.42	731,768.59	628,362.90	33.011°N	104.049°W

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1481	1481	0	0	Start Build 2.00
1731	1730	-6	-9	Start 990.48 hold at 1730.64 MD
2721	2717	-56	-80	Start DLS 10.00 TFO -55.17
3594	3260	-630	-117	Start 4633.65 hold at 3594.38 MD
8228				TD at 8228.02

Checked By: _____ Approved By: _____ Date: _____

Drilling Prognosis

Mack Energy Corporation

Prince Rupert Federal #3H (Horizontal)

San Andres

Chaves County, New Mexico

Mack Energy Corp AFE #: 3875.003 **API #**: 30-005-64241

Location: SHL 330' FSL and 2160' FEL in Sec 17-T15s-R29e / BHL 340' FSL and 2285' FEL in Sec 20-T15s-R29e

Chaves County, New Mexico.

Elevation: 3780.5' GR **TDMD:** 8,228.02' **TVD**: 3,245' **KB**: 17.5'

Rig Contractor: Silver Oak Rig #11 **Phone #**: 575-513-0712 **Tool Pushers:**

Pit System: Closed Loop

Directions: From the intersection of State Hwy #249 and CR #30 (Jemina road) Go Northwest on state hwy. #249 for 2.1 miles. Go south on lease road 3.21 miles to the Whistler Federal #9. From the northeast corner go east to the northwest corner of the Whistler Federal #10. From the southwest corner go southwest 687' to the northeast corner of the Whistler Federal #5. From the southeast corner go south then southeast to the northwest corner of the Whistler Federal #6. Then from the southeast corner go east 772' then south 962'to the northwest corner for this location.

Anticipated Formation Tops / Logging and Coring Program

Base of Salt:	810'	
Yates:	920'	KOP: 1,480'. Build rate 2 degrees/ 100'
Seven Rivers:	1,160'	End of build: MD 1,730.64' TVD 1,730.32' 5.28 degrees
Queen:	1,645'	Hold 5.00 degrees until MD 2,721.12' TVD 2.717.03'
Grayburg:	2,050'	Begin drop @ MD 2,721.12' 2 degrees/ 100'
San Andres:	2,340' (Objective)	Back to vertical at MD 2,971.12' TVD 2,966.71'
Pilot hole TD	3,504'	

Note: Set 40' of 16" new conductor pipe.

Note: Possible loss circulation in surface section and possible air pocket in production section.

Mud Logs: N/A **Logging Company**: Schlumberger Midland Texas 432-742-5558

E-Log Suite: Wire Line logs by Schlumberger

Chemicals

1) Run CAT 360 Corrosion/ Scale inhibitor 21 gallons per day starting on 1st joint of Drill pipe.
2) Run CAT 601 H2S Scavenger 21 gallons per day on 1st joint of Drill pipe.

Company: Catalyst **Contact:** Mike Jorren @ 575-513-0778

Drilling Prognosis

Section	Hole Size/ TD/ BHA	Drilling Fluids	Csg and Cement	Wellhead
Surface Possible Lost Circulation and air pockets	**14 3/4"** TD @ 205' to 225' Bit: Ulterra U616S or Equivalent **BHA:** Bit, Motor, SS, T-Drift w/ azm RMR, 3-8" DC's, X-O, 6" DC's Consider running both pumps to drill this section.	**Fresh Water** MW: 8.3-8.6 Visc. 28-32 PH- 10 See attached Rec.	**Casing** **9 5/8"- 36#-J-55 ST&C** **Cement** 50# PF-153 Gel Spacer. 50 sacks Scavenger Wt. 11# 100 sacks RFC Wt. 11#. Yld. 1.62 200 Sacks Class C + Additives. Wt. 14.8#. Yld. 1.33 TOC: Surface See Attached Rec.	8 5/8" X 11"x 5K
Production Possible H2S and Air Pocket	**8 1/2" Pilot hole TD** @ 3,504' **Bit:** Ulterra U616S or equivalent. **BHA:** Bit and directional Tools. **KOP** 1,480' 2 degrees/100'. Begin hold@1,730' 5 degrees Azimuth 234.95 until 2,721'. Begin drop. Vertical at 2,971' MDTD 3,504' See attached Pilot Hole Plan #1 Consider running both pumps to drill this section. Log well with Schlumberger. Determine Kick off Plug	**Brine Water** MW.: 10 Visc.: 28 Water Loss: 10cc at TD. See attached Rec.	**Kick Off Plug** **3,000' – 2,400'** 340 sacks Class "H" with .50% PF-065 Density: 17.50# Yield .94 cuft./sk. Mix Water 3.365 gal/sk. See attached Rec.	10K Tubing head

	Dress off cement kick off plug with 8 ½" bit to KOP. **KOP 2,721.12' MD** **8 1/2" MDTD @** 8,228.02' **Bit:** Ulterra U616S or equivalent. **BHA:** Bit and directional Tools to drill lateral. **KOP 2,721.12' MD** **Build Rate 10 degrees/100' until MD 3,594.38' TVD 3,260'** **Azimuth 179.88 degrees** **TDMD 8,228.02'** **TVD 3,245'** **Azimuth 179.88 degrees** **Vertical Section 5,264.71** See attached Wellbore Plan #2	**Brine** MW. 10 # Visc. 28-34 WL 10-20 cc PH: 11 **Pump weighted sweep to clean hole as needed** See attached Rec.	**Casing** **7"- 26#- L-80 LT&C from 0' to 2,700'** **Cross over to** **5 ½"- 17# - L-80 BTC** **From 2,700' to 8,228.02'** **Cement 7" casing** 50# PF-153 Gel Spacer. 20 Bbls. PF827 Mud Wash 50 sacks Scavenger Wt. 11# 375 sacks Class "C" neat Wt. 14.8# Yld. 1.32 **DV Tool Set at 2,600' to 2,700' on 7"casing** See attached Rec. Packers Plus Packer System. See attached Rec.	10K Tubing head

Drilling Fluids: Newpark Drilling Fluids **Contact:** Mike Davis. m.davis@newpark.com

Cell. # 432-557-8254

Cement Company: Par-Five Energy Services. **Contact**: Chris Deleon Office 575-748-8610 Cell 575-703-6723 or Kurt Crowe

18 Stage StackFrac: Packers Plus. **Contact**: Justin Moos Office 432-563-8024 Cell 432-202-9398

Keep location and lease roads clean (Don't Litter) if you see trash pick it up.

Casing

Size	From	To	Weight lbs/ft	Grade	Thread
9 5/8"	0'	225'	36#	J-55	ST&C
7"	0'	2,700'	26#	L-80	LT&C
5 ½"	2,700'	8,229'	17#	L-80	BTC

No Sandblasted pipe needed

Production casing Centralizer Program for 7" casing

2,700'- 100' 1 centralizer every 3rd joint = 23.

Total = 23 centralizers.

BOP/ BOPE Guidelines

Casing	Test Required	Rig Pump	Third Party	Test Pressure
8 5/8"	X		x	2000#
5 ½"				

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.

Mack Energy Corporation Drilling Guidelines

The Mack Energy Corporation representative on a job is responsible for notifying the NMOCD and BLM prior to Spud, Running Csg, Cementing, Testing Wellhead/BOP, and Testing the Csg.

Mack Energy Corporation will follow the BLM Onshore Oil and Gas Order No. 2 Drilling Operations guidelines as well as the NMOCD rules for drilling.

All pertinent information must be recorded on the daily reports and on the IADC Book. This is to include all test information as well as who was contacted at the appropriate government agency. This information needs to include a date and time. Record all BOP Drills and Slow Pump Rate and Pressures. BOP Drills will be performed daily by each tour and Blind Rams will be function tested on trips.

Mack Energy

Chavez County
Sec.17, T15 S, R 29 E
Prince Rupert Federal 3H

Wellbore #1

Plan: Pilot Hole Plan#1

Standard Survey Report

06 October, 2016

INTEGRITY
Directional Services

Integrity Directional Services, LLC

Survey Report

Company:	Mack Energy	**Local Co-ordinate Reference:**	Well Prince Rupert Federal 3H
Project:	Chavez County	**TVD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Site:	Sec.17, T15 S, R 29 E	**MD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Well:	Prince Rupert Federal 3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Pilot Hole Plan#1	**Database:**	EDM 5000.1 Multi User Db

Project Chavez County

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Sec.17, T15 S, R 29 E

Site Position:		**Northing:**	731,138.58 usft	**Latitude:**	33.010°N
From:	Map	**Easting:**	628,480.32 usft	**Longitude:**	104.049°W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.15 °

Well Prince Rupert Federal 3H

Well Position	**+N/-S**	0.00 ft	**Northing:**	731,138.58 usft	**Latitude:**	33.010°N
	+E/-W	0.00 ft	**Easting:**	628,480.32 usft	**Longitude:**	104.049°W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	0.00 ft	**Ground Level:**	3,780.50 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/6/2016	7.31	60.71	48,422

Design Pilot Hole Plan#1

Audit Notes:

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

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	234.95

Survey Tool Program **Date** 10/6/2016

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	3,504.40	Pilot Hole Plan#1 (Wellbore #1)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00

Company:	Mack Energy	**Local Co-ordinate Reference:**	Well Prince Rupert Federal 3H
Project:	Chavez County	**TVD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Site:	Sec.17, T15 S, R 29 E	**MD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Well:	Prince Rupert Federal 3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Pilot Hole Plan#1	**Database:**	EDM 5000.1 Multi User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,480.64	0.00	0.00	1,480.64	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,500.00	0.39	234.95	1,500.00	-0.04	-0.05	0.07	2.00	2.00	0.00
1,600.00	2.39	234.95	1,599.97	-1.43	-2.04	2.49	2.00	2.00	0.00
1,700.00	4.39	234.95	1,699.79	-4.82	-6.87	8.39	2.00	2.00	0.00
1,730.64	5.00	234.95	1,730.32	-6.26	-8.93	10.90	2.00	2.00	0.00
Start 990.48 hold at 1730.64 MD									
1,800.00	5.00	234.95	1,799.42	-9.73	-13.87	16.95	0.00	0.00	0.00
1,900.00	5.00	234.95	1,899.04	-14.74	-21.01	25.66	0.00	0.00	0.00
2,000.00	5.00	234.95	1,998.66	-19.74	-28.15	34.38	0.00	0.00	0.00
2,100.00	5.00	234.95	2,098.28	-24.75	-35.28	43.09	0.00	0.00	0.00
2,200.00	5.00	234.95	2,197.90	-29.75	-42.42	51.81	0.00	0.00	0.00
2,300.00	5.00	234.95	2,297.52	-34.75	-49.55	60.52	0.00	0.00	0.00
2,400.00	5.00	234.95	2,397.14	-39.76	-56.69	69.24	0.00	0.00	0.00
2,500.01	5.00	234.95	2,496.76	-44.76	-63.82	77.96	0.00	0.00	0.00
2,600.01	5.00	234.95	2,596.38	-49.77	-70.96	86.67	0.00	0.00	0.00
2,700.01	5.00	234.95	2,696.00	-54.77	-78.09	95.39	0.00	0.00	0.00
2,721.12	5.00	234.95	2,717.03	-55.83	-79.60	97.23	0.00	0.00	0.00
Start Drop -2.00									
2,800.01	3.42	234.95	2,795.70	-59.16	-84.34	103.02	2.00	-2.00	0.00
2,900.01	1.42	234.95	2,895.61	-61.58	-87.80	107.25	2.00	-2.00	0.00
2,971.12	0.00	0.00	2,966.71	-62.09	-88.53	108.13	2.00	-2.00	0.00
Start 533.29 hold at 2971.12 MD									
3,000.01	0.00	0.00	2,995.60	-62.09	-88.53	108.13	0.00	0.00	0.00
3,100.01	0.00	0.00	3,095.60	-62.09	-88.53	108.13	0.00	0.00	0.00
3,200.01	0.00	0.00	3,195.60	-62.09	-88.53	108.13	0.00	0.00	0.00
3,300.01	0.00	0.00	3,295.60	-62.09	-88.53	108.13	0.00	0.00	0.00
3,400.01	0.00	0.00	3,395.60	-62.09	-88.53	108.13	0.00	0.00	0.00
3,500.01	0.00	0.00	3,495.60	-62.09	-88.53	108.13	0.00	0.00	0.00
3,504.40	0.00	0.00	3,500.00	-62.09	-88.53	108.13	0.00	0.00	0.00
TD at 3504.40									

Company:	Mack Energy	**Local Co-ordinate Reference:**	Well Prince Rupert Federal 3H
Project:	Chavez County	**TVD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Site:	Sec.17, T15 S, R 29 E	**MD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Well:	Prince Rupert Federal 3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Pilot Hole Plan#1	**Database:**	EDM 5000.1 Multi User Db

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
1481	1481	0	0	Start Build 2.00
1731	1730	-6	-9	Start 990.48 hold at 1730.64 MD
2721	2717	-56	-80	Start Drop -2.00
2971	2967	-62	-89	Start 533.29 hold at 2971.12 MD
3504	3500	-62	-89	TD at 3504.40

Checked By: _____ Approved By: _____ Date: _____

Mack Energy
Project: Chavez County
Site: Sec.17, T15 S, R 29 E
Well: Prince Rupert Federal 3H
Wellbore: Wellbore #1
Plan: Pilot Hole Plan#1 (Prince Rupert Federal 3H/Wellbore #1)

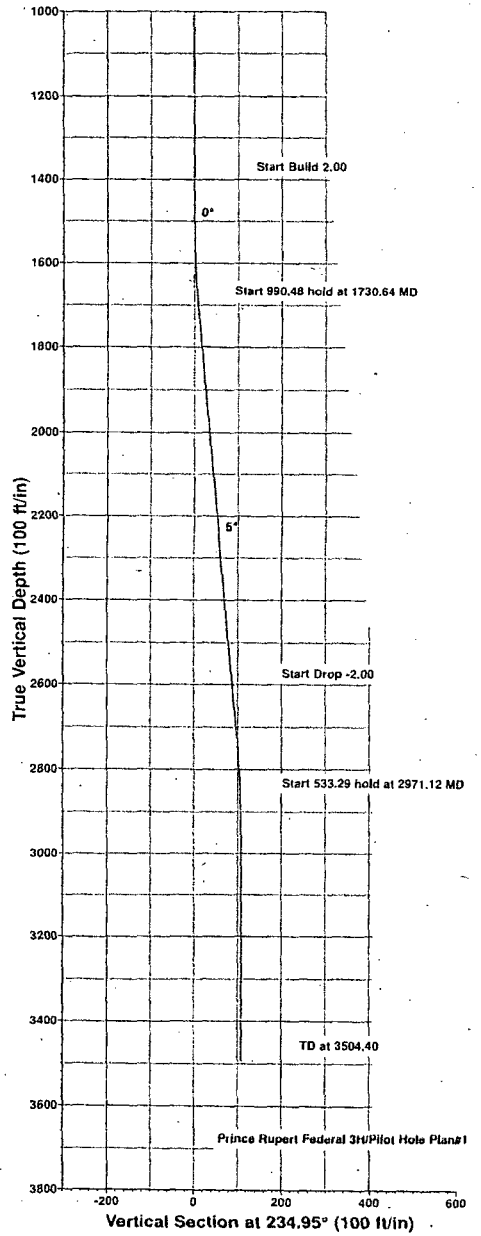
WELL DETAILS: Prince Rupert Federal 3H

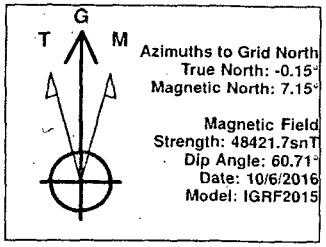
Ground Elevation:: 3780.50
RKB Elevation: KB=17.5 @ 3798.00ft (UNK)
Rig Name: UNK

Northing	Easting	Latitude	Longitude
731138.58	628480.32	33.010°N	104.049°W

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1480.64	0.00	0.00	1480.64	0.00	0.00	0.00	0.00	0.00	
3	1730.64	5.00	234.95	1730.32	-6.26	-8.93	2.00	234.95	10.90	
4	2721.12	5.00	234.95	2717.03	-55.83	-79.60	0.00	0.00	97.23	
5	2971.12	0.00	0.00	2966.71	-62.09	-88.53	2.00	180.00	108.13	
6	3504.40	0.00	0.00	3500.00	-62.09	-88.53	0.00	0.00	108.13	

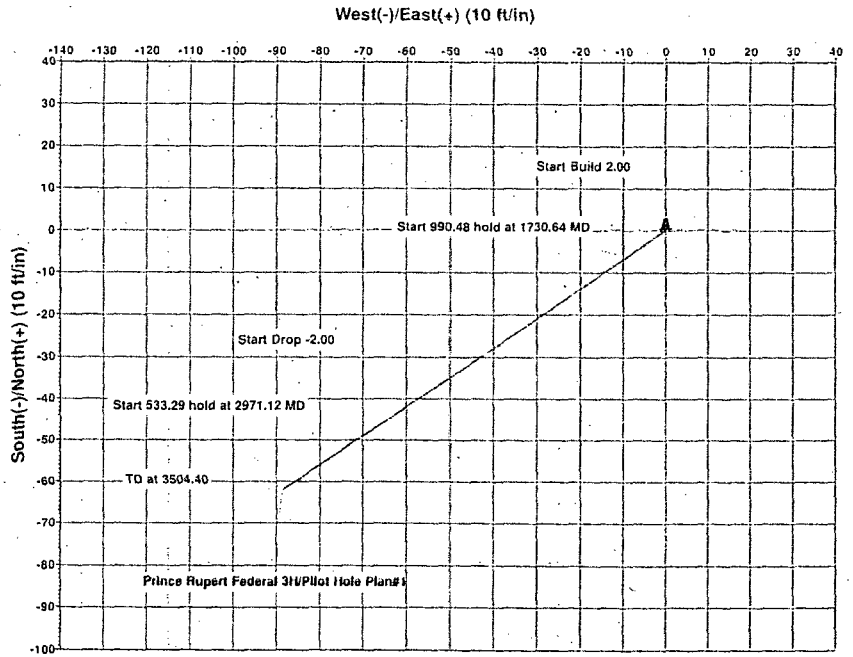




Azimuths to Grid North
True North: -0.15°
Magnetic North: 7.15°

Magnetic Field
Strength: 48421.7snT
Dip Angle: 60.71°
Date: 10/6/2016
Model: IGRF2015

PROJECT DETAILS: Chavez County
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid



Mack Energy

Chavez County
Sec.17, T15 S, R 29 E
Prince Rupert Federal 3H

Wellbore #1

Plan: Plan #2

Standard Survey Report

05 October, 2016

INTEGRITY
Directional Services

Integrity Directional Services, LLC

Survey Report

Company:	Mack Energy	**Local Co-ordinate Reference:**	Well Prince Rupert Federal 3H
Project:	Chavez County	**TVD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Site:	Sec.17, T15 S, R 29 E	**MD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Well:	Prince Rupert Federal 3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 5000.1 Multi User Db

Project Chavez County

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Sec.17, T15 S, R 29 E

Site Position:		**Northing:**	731,138.58 usft	**Latitude:**	33.010°N
From:	Map	**Easting:**	628,480.32 usft	**Longitude:**	104.049°W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.15 °

Well Prince Rupert Federal 3H

Well Position	**+N/-S**	0.00 ft	**Northing:**	731,138.58 usft	**Latitude:**	33.010°N
	+E/-W	0.00 ft	**Easting:**	628,480.32 usft	**Longitude:**	104.049°W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	0.00 ft	**Ground Level:**	3,780.50 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/4/2016	7.31	60.71	48,422

Design Plan #2

Audit Notes:

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

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	181.17

Survey Tool Program **Date** 10/5/2016

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,228.02	Plan #2 (Wellbore #1)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00

Company:	Mack Energy	**Local Co-ordinate Reference:**	Well Prince Rupert Federal 3H
Project:	Chavez County	**TVD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Site:	Sec.17, T15 S, R 29 E	**MD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Well:	Prince Rupert Federal 3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 5000.1 Multi User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,480.64	0.00	0.00	1,480.64	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,500.00	0.39	234.95	1,500.00	-0.04	-0.05	0.04	2.00	2.00	0.00
1,600.00	2.39	234.95	1,599.97	-1.43	-2.04	1.47	2.00	2.00	0.00
1,700.00	4.39	234.95	1,699.79	-4.82	-6.87	4.96	2.00	2.00	0.00
1,730.64	5.00	234.95	1,730.32	-6.26	-8.92	6.44	2.00	2.00	0.00
Start 990.48 hold at 1730.64 MD									
1,800.00	5.00	234.95	1,799.42	-9.73	-13.87	10.01	0.00	0.00	0.00
1,900.00	5.00	234.95	1,899.04	-14.74	-21.01	15.16	0.00	0.00	0.00
2,000.00	5.00	234.95	1,998.66	-19.74	-28.14	20.31	0.00	0.00	0.00
2,100.00	5.00	234.95	2,098.28	-24.74	-35.28	25.46	0.00	0.00	0.00
2,200.00	5.00	234.95	2,197.90	-29.75	-42.42	30.61	0.00	0.00	0.00
2,300.00	5.00	234.95	2,297.52	-34.75	-49.55	35.76	0.00	0.00	0.00
2,400.00	5.00	234.95	2,397.14	-39.76	-56.69	40.91	0.00	0.00	0.00
2,500.00	5.00	234.95	2,496.76	-44.76	-63.82	46.06	0.00	0.00	0.00
2,600.00	5.00	234.95	2,596.37	-49.77	-70.96	51.20	0.00	0.00	0.00
2,700.00	5.00	234.95	2,695.99	-54.77	-78.09	56.35	0.00	0.00	0.00
2,721.12	5.00	234.95	2,717.03	-55.83	-79.60	57.44	0.00	0.00	0.00
Start DLS 10.00 TFO -55.17									
2,800.00	11.50	200.54	2,795.10	-65.18	-85.18	66.90	10.00	8.24	-43.63
2,900.00	21.13	190.58	2,890.97	-92.30	-92.00	94.16	10.00	9.64	-9.96
3,000.00	30.99	186.75	2,980.70	-135.70	-98.36	137.68	10.00	9.86	-3.84
3,100.00	40.92	184.63	3,061.55	-194.06	-104.04	196.14	10.00	9.92	-2.11
3,200.00	50.87	183.23	3,131.06	-265.61	-108.89	267.77	10.00	9.95	-1.40
3,300.00	60.83	182.18	3,187.13	-348.17	-112.75	350.39	10.00	9.96	-1.05
3,400.00	70.80	181.32	3,228.05	-439.23	-115.50	441.50	10.00	9.97	-0.86
3,500.00	80.77	180.56	3,252.57	-536.04	-117.08	538.31	10.00	9.97	-0.76
3,594.38	90.19	179.88	3,260.00	-630.01	-117.42	632.27	10.00	9.97	-0.72
Start 4633.65 hold at 3594.38 MD									
3,600.00	90.19	179.88	3,259.98	-635.63	-117.41	637.90	0.00	0.00	0.00
3,700.00	90.19	179.88	3,259.66	-735.63	-117.19	737.87	0.00	0.00	0.00
3,800.00	90.19	179.88	3,259.33	-835.63	-116.98	837.84	0.00	0.00	0.00
3,900.00	90.19	179.88	3,259.01	-935.63	-116.76	937.82	0.00	0.00	0.00
4,000.00	90.19	179.88	3,258.69	-1,035.63	-116.54	1,037.79	0.00	0.00	0.00
4,100.00	90.19	179.88	3,258.36	-1,135.63	-116.32	1,137.77	0.00	0.00	0.00
4,200.00	90.19	179.88	3,258.04	-1,235.63	-116.10	1,237.74	0.00	0.00	0.00
4,300.00	90.19	179.88	3,257.72	-1,335.63	-115.89	1,337.71	0.00	0.00	0.00
4,400.00	90.19	179.88	3,257.39	-1,435.63	-115.67	1,437.69	0.00	0.00	0.00
4,500.00	90.19	179.88	3,257.07	-1,535.63	-115.45	1,537.66	0.00	0.00	0.00

Company:	Mack Energy	**Local Co-ordinate Reference:**	Well Prince Rupert Federal 3H
Project:	Chavez County	**TVD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Site:	Sec.17, T15 S, R 29 E	**MD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Well:	Prince Rupert Federal 3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 5000.1 Multi User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,600.00	90.19	179.88	3,256.74	-1,635.63	-115.23	1,637.64	0.00	0.00	0.00
4,700.00	90.19	179.88	3,256.42	-1,735.63	-115.01	1,737.61	0.00	0.00	0.00
4,800.00	90.19	179.88	3,256.10	-1,835.63	-114.79	1,837.58	0.00	0.00	0.00
4,900.00	90.19	179.88	3,255.77	-1,935.62	-114.58	1,937.56	0.00	0.00	0.00
5,000.00	90.19	179.88	3,255.45	-2,035.62	-114.36	2,037.53	0.00	0.00	0.00
5,100.00	90.19	179.88	3,255.13	-2,135.62	-114.14	2,137.51	0.00	0.00	0.00
5,200.00	90.19	179.88	3,254.80	-2,235.62	-113.92	2,237.48	0.00	0.00	0.00
5,300.00	90.19	179.88	3,254.48	-2,335.62	-113.70	2,337.45	0.00	0.00	0.00
5,400.00	90.19	179.88	3,254.15	-2,435.62	-113.49	2,437.43	0.00	0.00	0.00
5,500.00	90.19	179.88	3,253.83	-2,535.62	-113.27	2,537.40	0.00	0.00	0.00
5,600.00	90.19	179.88	3,253.51	-2,635.62	-113.05	2,637.38	0.00	0.00	0.00
5,700.00	90.19	179.88	3,253.18	-2,735.62	-112.83	2,737.35	0.00	0.00	0.00
5,800.00	90.19	179.88	3,252.86	-2,835.62	-112.61	2,837.32	0.00	0.00	0.00
5,900.00	90.19	179.88	3,252.54	-2,935.62	-112.39	2,937.30	0.00	0.00	0.00
6,000.00	90.19	179.88	3,252.21	-3,035.62	-112.18	3,037.27	0.00	0.00	0.00
6,100.00	90.19	179.88	3,251.89	-3,135.62	-111.96	3,137.25	0.00	0.00	0.00
6,200.00	90.19	179.88	3,251.56	-3,235.61	-111.74	3,237.22	0.00	0.00	0.00
6,300.00	90.19	179.88	3,251.24	-3,335.61	-111.52	3,337.19	0.00	0.00	0.00
6,400.00	90.19	179.88	3,250.92	-3,435.61	-111.30	3,437.17	0.00	0.00	0.00
6,500.00	90.19	179.88	3,250.59	-3,535.61	-111.09	3,537.14	0.00	0.00	0.00
6,600.00	90.19	179.88	3,250.27	-3,635.61	-110.87	3,637.12	0.00	0.00	0.00
6,700.00	90.19	179.88	3,249.95	-3,735.61	-110.65	3,737.09	0.00	0.00	0.00
6,800.00	90.19	179.88	3,249.62	-3,835.61	-110.43	3,837.06	0.00	0.00	0.00
6,900.00	90.19	179.88	3,249.30	-3,935.61	-110.21	3,937.04	0.00	0.00	0.00
7,000.00	90.19	179.88	3,248.97	-4,035.61	-109.99	4,037.01	0.00	0.00	0.00
7,100.00	90.19	179.88	3,248.65	-4,135.61	-109.78	4,136.99	0.00	0.00	0.00
7,200.00	90.19	179.88	3,248.33	-4,235.61	-109.56	4,236.96	0.00	0.00	0.00
7,300.00	90.19	179.88	3,248.00	-4,335.61	-109.34	4,336.93	0.00	0.00	0.00
7,400.00	90.19	179.88	3,247.68	-4,435.61	-109.12	4,436.91	0.00	0.00	0.00
7,500.00	90.19	179.88	3,247.36	-4,535.60	-108.90	4,536.88	0.00	0.00	0.00
7,600.00	90.19	179.88	3,247.03	-4,635.60	-108.69	4,636.86	0.00	0.00	0.00
7,700.00	90.19	179.88	3,246.71	-4,735.60	-108.47	4,736.83	0.00	0.00	0.00
7,800.00	90.19	179.88	3,246.38	-4,835.60	-108.25	4,836.80	0.00	0.00	0.00
7,900.00	90.19	179.88	3,246.06	-4,935.60	-108.03	4,936.78	0.00	0.00	0.00
8,000.00	90.19	179.88	3,245.74	-5,035.60	-107.81	5,036.75	0.00	0.00	0.00
8,100.00	90.19	179.88	3,245.41	-5,135.60	-107.60	5,136.73	0.00	0.00	0.00
8,200.00	90.19	179.88	3,245.09	-5,235.60	-107.38	5,236.70	0.00	0.00	0.00
8,228.02	90.19	179.88	3,245.00	-5,263.62	-107.32	5,264.71	0.00	0.00	0.00

TD at 8228.02

Company:	Mack Energy	**Local Co-ordinate Reference:**	Well Prince Rupert Federal 3H
Project:	Chavez County	**TVD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Site:	Sec.17, T15 S, R 29 E	**MD Reference:**	KB=17.5 @ 3798.00ft (UNK)
Well:	Prince Rupert Federal 3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 5000.1 Multi User Db

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Prince Rupert Federa - plan hits target center - Point	0.00	0.00	3,245.00	-5,263.62	-107.32	725,874.97	628,373.00	32.995°N	104.049°W
Prince Rupert Federa - plan misses target center by 809.93ft at 2919.30ft MD (2908.85 TVD, -99.44 N, -93.27 E) - Point	0.00	0.00	3,260.00	630.01	-117.42	731,768.59	628,362.90	33.011°N	104.049°W

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1481	1481	0	0	Start Build 2.00
1731	1730	-6	-9	Start 990.48 hold at 1730.64 MD
2721	2717	-56	-80	Start DLS 10.00 TFO -55.17
3594	3260	-630	-117	Start 4633.65 hold at 3594.38 MD
8228				TD at 8228.02

Checked By: _____ Approved By: _____ Date: _____

Mack Energy
Project: Chavez County
Site: Sec.17, T15 S, R 29 E
Well: Prince Rupert Federal 3H
Wellbore: Wellbore #1
Plan: Plan #2 (Prince Rupert Federal 3H/Wellbore #1)

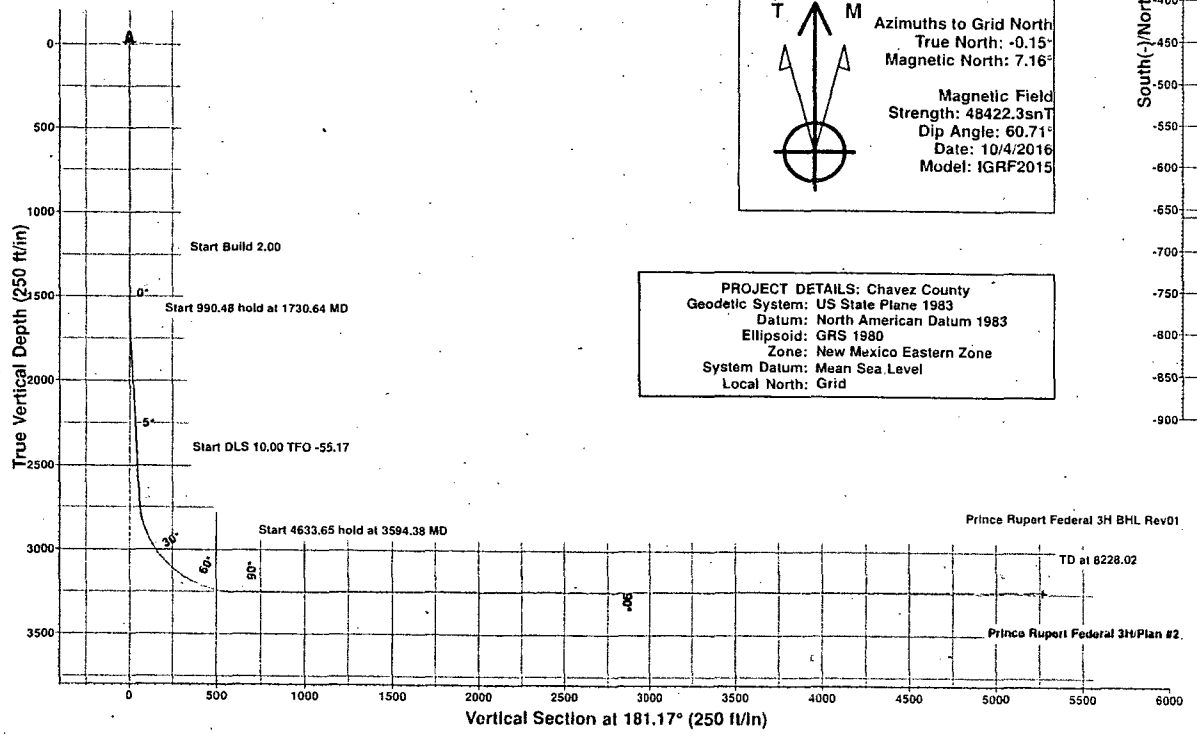
WELL DETAILS: Prince Rupert Federal 3H

Ground Elevation:: 3780.50
RKB Elevation: KB=17.5 @ 3798.00ft (UNK)
Rig Name: UNK

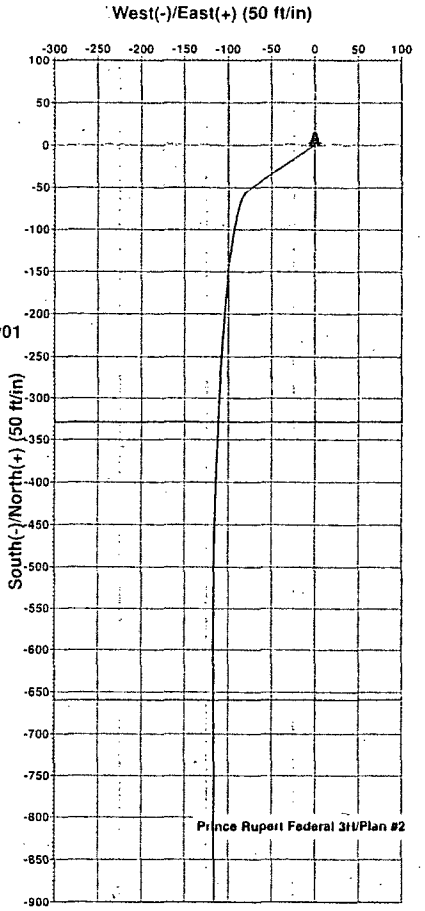
Northing	Easting	Latitude	Longitude
731138.58	628480.32	33.010°N	104.049°W

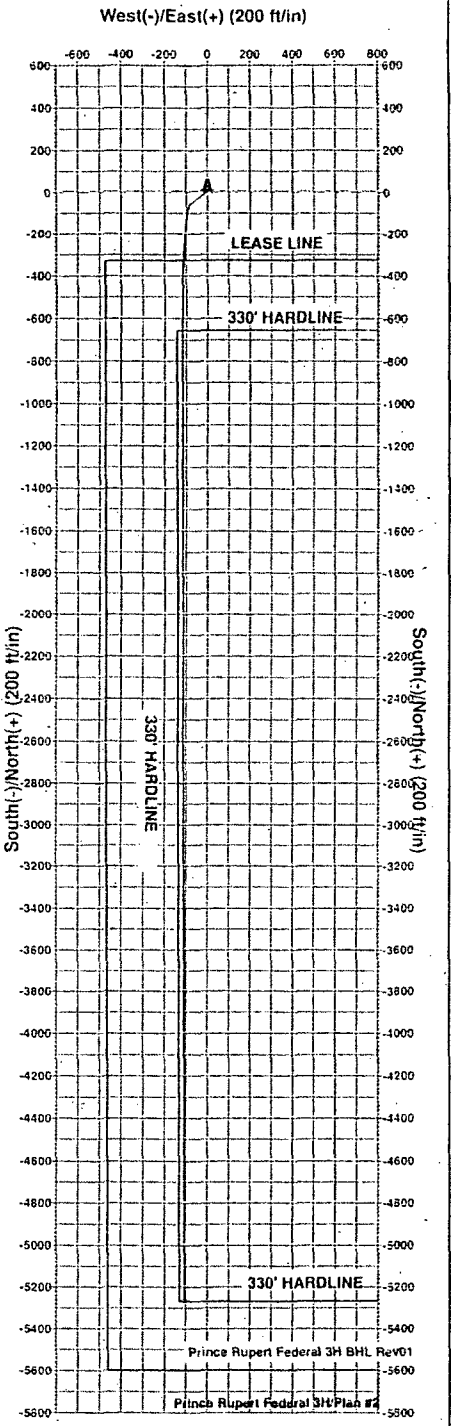
Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1480.64	0.00	0.00	1480.64	0.00	0.00	0.00	0.00	0.00	
3	1730.64	5.00	234.95	1730.32	-6.26	-8.92	2.00	234.95	6.44	
4	2721.12	5.00	234.95	2717.03	-55.83	-79.60	0.00	0.00	57.44	
5	3594.38	90.19	179.87	3260.00	-630.01	-117.42	10.00	-55.17	632.27	
6	8228.02	90.19	179.87	3245.00	-5263.62	-107.32	0.00	0.00	5264.71	Prince Rupert Federal 3H BHL Rev01



PROJECT DETAILS: Chavez County
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid





Proposal

Packers Plus

Do It Once
Do It Right

Mack Energy

Jim Krogman / Lee Livingston

11344 Lovington Hwy

Artesia, NM 88210

18 Stage StackFRAC® HD™

Prince Rupert Federal #3H

Chavez County, New Mexico

Prepared by

Justin Moos

+1 (432) 202-9398

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Service Center

Midland, TX

Blair Battenfelder

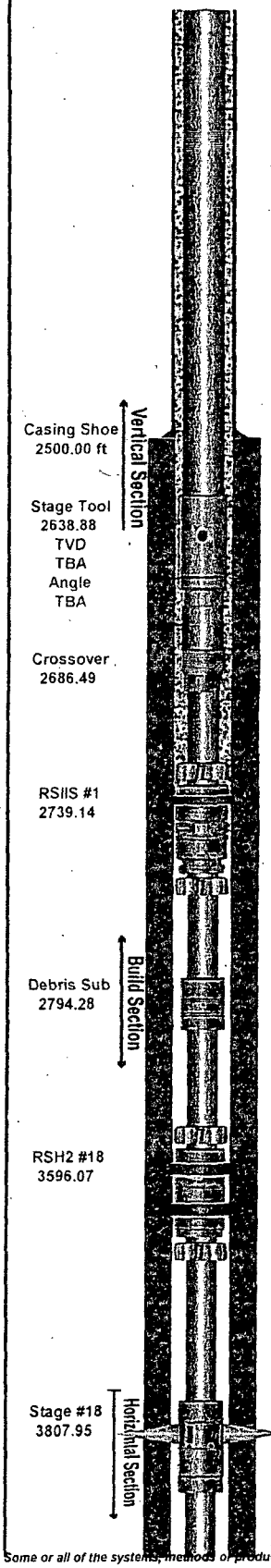
+1 (432) 238-6245

Blair.Battenfelder@packersplus.com

Packers Plus | Do It Once Do It Right | www.packersplus.com

18 Stage Completion Proposal

Prepared for:	Company:	Date:
Jim Krogman / Lee Livingston	Mack Energy	October 12, 2016
Well Name:	**Location:**	**Type of Installation:**
Prince Rupert Federal #3H	Location: Chavez County, New Mexico / API#: TBD	18 Stage StackFRAC® HD™



Depth	Description	OD (in)	ID (in)	Length (ft)
	MAXIMUM AND RECOMMENDED MILL OD: 4.640"			
	MILL OUT IS FOR PACKERS PLUS TOOLS ONLY			
	Please contact Packers Plus for recommended mill out procedures			
	Notes: Proposed MD of Well: 8228.00 ft Proposed End of Tool String: 8220.00 ft Proposed TVD of Well: 3260.00 ft Proposed KOP of Well: 2721.00 ft Proposed MD of Casing Shoe: 2500.00 ft Estimated Bottom Hole Pressure: TBA Estimated Bottom Hole Temperature: TBA Estimated H_2S: TBA Formation: Yeso (Paddock) Field: Cedar Lake			
	Well Profile			
	KB-THF: **xx,xxx lbs Compression:** **Tally Correction:** **Tubing Hanger:**			
	⇐ 9-5/8" x 36.0 lb/ft x J-55 x ST&C Intermediate Casing	9.625	8.921	
	⇐ 7" x 26.0 lb/ft x L-80 x LT&C Long String (59 Joints)	7.000	6.276	2665.06
Casing Shoe 2500.00 ft	⇐ MD of Casing Shoe: 2500.00 ft (TVD of Casing Shoe: 2500.00 ft / Angle of Casing Shoe: 0.0°)			
	⇐ 8 1/2" Open Hole Section			
Stage Tool 2638.88 TVD TBA Angle TBA	⇐ Third Party Stage Tool Provider: TBA. Size: 5-1/2" / Thread: LT&C / Metallurgy: L-80	TBD	TBD	2.25
	⇐ 7" x 26.0 lb/ft x L-80 x LT&C Liner (1 Joint)	7.000	6.276	45.36
Crossover 2686.49	⇐ Crossover: 7" 26.0 lb/ft LT&C Box x 5-1/2" 17.0 lb/ft BT&C Pin	7.656	4.892	2.20
	⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (1 Joint)	5.500	4.892	44.45
	⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
	⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSIIS #1 2739.14	⇐ Packers Plus®: Hydraulic Set RockSEAL® IIS Open Hole Anchor Packer Size: 9-5/8" x 5-1/2" (7.875" OD x 4.700" ID) Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80 **Setting Pressure: 5 Pins x 341 psi/pin = 1,705 psi (Differential)** Assembly Number: 136547 / Serial Number:	7.875	4.700	7.75
	⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
	⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
	⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (1 Joint)	5.500	4.892	44.39
Debris Sub 2794.28	⇐ Packers Plus®: Debris Sub Ball Seat: 1.750" / Actuation Ball: 2.000" SF-7 Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80 Assembly Number: 135895 / Serial Number:	7.000	1.750	0.00
	⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (18 Joints)	5.500	4.892	795.79
	⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
	⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #18 3596.07	⇐ Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID) Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80 **Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)** Assembly Number: 136664 / Serial Number:	7.750	4.683	4.32
	⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
	⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
	⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 20.00 ft Pup Joint	5.500	4.892	20.00
	⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (4 Joints)	5.500	4.892	178.56
	⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
Stage #18 3807.95	⇐ Packers Plus®: H2 Drillable FracPORT™ Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80 Ball Seat: 3.625" / Actuation Ball: 3.750" SF-7 **Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)** Assembly Number: 137855 / Serial Number:	7.000	3.625	2.83
	⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
	⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (2 Joints)	5.500	4.892	88.87

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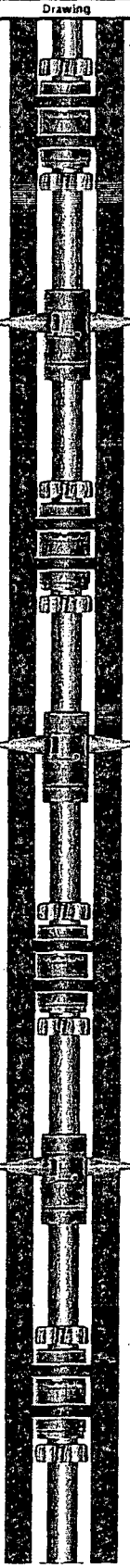
18 Stage Completion Proposal

Prepared for:	Company:	Date:
Jim Krogman / Lee Livingston	Mack Energy	October 12, 2016
Well Name:	**Location:**	**Type of Installation:**
Prince Rupert Federal #3H	Location: Chavez County, New Mexico / API#: TBD	18 Stage StackFRAC® HD™

Depth	Drawing	Description	OD (in)	ID (in)	Length (ft)
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #17		**Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer**	**7.750**	**4.683**	**4.32**
3908.65		Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID)			
		Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80			
		Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)			
		Assembly Number: 136664 / Serial Number:			
		Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	131.45
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
Stage #17		**Packers Plus®: H2 Drillable FracPORT™**	**7.000**	**3.500**	**2.83**
4053.42		Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80			
		Ball Seat: 3.500" / Actuation Ball: 3.625" SF-7			
		Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)			
		Assembly Number: 137855 / Serial Number:			
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	126.15
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #16		**Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer**	**7.750**	**4.683**	**4.32**
4191.40		Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID)			
		Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80			
		Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)			
		Assembly Number: 136664 / Serial Number:			
		Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (2 Joints)	5.500	4.892	87.08
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
Stage #16		**Packers Plus®: H2 Drillable FracPORT™**	**7.000**	**3.375**	**2.83**
4291.80		Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80			
		Ball Seat: 3.375" / Actuation Ball: 3.500" SF-7			
		Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)			
		Assembly Number: 137855 / Serial Number:			
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	128.05
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #15		**Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer**	**7.750**	**4.683**	**4.32**
4431.68		Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID)			
		Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80			
		Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)			
		Assembly Number: 136664 / Serial Number:			
		Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	134.32
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
Stage #15		**Packers Plus®: H2 Drillable FracPORT™**	**7.000**	**3.313**	**2.83**
4579.32		Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80			
		Ball Seat: 3.313" / Actuation Ball: 3.375" SF-7			
		Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)			
		Assembly Number: 137855 / Serial Number:			
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (2 Joints)	5.500	4.892	89.86
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #14		**Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer**	**7.750**	**4.683**	**4.32**
4681.01		Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID)			
		Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80			
		Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)			
		Assembly Number: 136664 / Serial Number:			
		Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	133.36
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00

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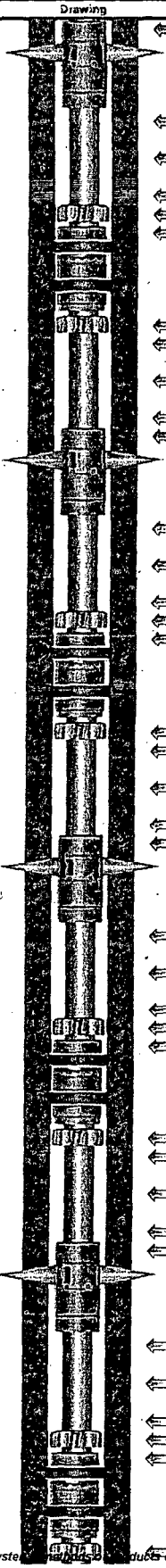
18 Stage Completion Proposal

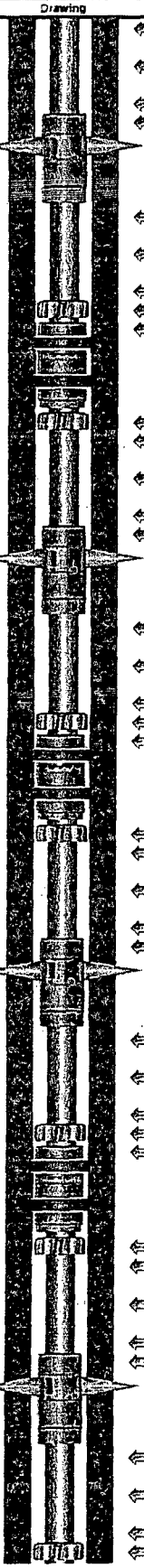
Prepared for:	Company:	Date:
Jim Krogman / Lee Livingston	Mack Energy	October 12, 2016
Well Name:	**Location:**	**Type of Installation:**
Prince Rupert Federal #3H	Location: Chavez County, New Mexico / API#: TBD	18 Stage StackFRAC® HD™

Depth	Drawing	Description	OD (in)	ID (in)	Length (ft)
Stage #14 4827.69		⇐ Packers Plus®: H2 Drillable FracPORT™	7.000	3.250	2.83
		Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80			
		Ball Seat: 3.250" / Actuation Ball: 3.313" SF-7			
		Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)			
		Assembly Number: 137855 / Serial Number:			
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (2 Joints)	5.500	4.892	88.79
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #13 4928.31		⇐ Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer	7.750	4.683	4.32
		Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID)			
		Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80			
		Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)			
		Assembly Number: 136664 / Serial Number:			
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	133.14
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
Stage #13 5074.77		⇐ Packers Plus®: H2 Drillable FracPORT™	7.000	3.188	2.83
		Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80			
		Ball Seat: 3.188" / Actuation Ball: 3.250" SF-7			
		Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)			
		Assembly Number: 137855 / Serial Number:			
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (2 Joints)	5.500	4.892	88.78
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #12 5175.38		⇐ Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer	7.750	4.683	4.32
		Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID)			
		Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80			
		Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)			
		Assembly Number: 136664 / Serial Number:			
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	134.20
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
Stage #12 5322.90		⇐ Packers Plus®: H2 Drillable FracPORT™	7.000	3.125	2.83
		Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80			
		Ball Seat: 3.125" / Actuation Ball: 3.188" SF-7			
		Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)			
		Assembly Number: 137855 / Serial Number:			
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (2 Joints)	5.500	4.892	89.06
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #11 5423.79		⇐ Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer	7.750	4.683	4.32
		Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID)			
		Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80			
		Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)			
		Assembly Number: 136664 / Serial Number:			
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	133.39
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
Stage #11 5570.50		⇐ Packers Plus®: H2 Drillable FracPORT™	7.000	3.063	2.83
		Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80			
		Ball Seat: 3.063" / Actuation Ball: 3.125" SF-7			
		Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)			
		Assembly Number: 137855 / Serial Number:			
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	133.40
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #10 5715.73		⇐ Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer	7.750	4.683	4.32
		Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID)			
		Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80			
		Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)			
		Assembly Number: 136664 / Serial Number:			
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A

Packers Plus® Do It Once Do It Right www.packersplus.com

18 Stage Completion Proposal

Prepared for:	Company:	Date:
Jim Krogman / Lee Livingston	Mack Energy	October 12, 2016
Well Name:	**Location:**	**Type of Installation:**
Prince Rupert Federal #3H	Location: Chavez County, New Mexico / API#: TBD	18 Stage StackFRAC® HD™

Depth	Drawing	Description	OD (in)	ID (in)	Length (ft)
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (2 Joints)	5.500	4.892	89.06
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
Stage #10 5818.11		⇐ **Packers Plus®: H2 Drillable FracPORT™** Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80 **Ball Seat: 3.000" / Actuation Ball: 3.063" SF-7** **Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)** Assembly Number: 137855 / Serial Number:	7.000	3.000	2.83
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	133.54
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #9 5963.48		⇐ **Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer** Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID) Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80 **Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)** Assembly Number: 136664 / Serial Number:	7.750	4.683	4.32
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (2 Joints)	5.500	4.892	89.02
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
Stage #9 6065.82		⇐ **Packers Plus®: H2 Drillable FracPORT™** Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80 **Ball Seat: 2.938" / Actuation Ball: 3.000" SF-7** **Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)** Assembly Number: 137855 / Serial Number:	7.000	2.938	2.83
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	133.50
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #8 6211.15		⇐ **Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer** Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID) Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80 **Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)** Assembly Number: 136664 / Serial Number:	7.750	4.683	4.32
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (2 Joints)	5.500	4.892	89.04
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
Stage #8 6313.51		⇐ **Packers Plus®: H2 Drillable FracPORT™** Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80 **Ball Seat: 2.875" / Actuation Ball: 2.938" SF-7** **Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)** Assembly Number: 137855 / Serial Number:	7.000	2.875	2.83
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	133.55
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #7 6458.89		⇐ **Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer** Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID) Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80 **Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)** Assembly Number: 136664 / Serial Number:	7.750	4.683	4.32
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (2 Joints)	5.500	4.892	89.03
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
Stage #7 6561.24		⇐ **Packers Plus®: H2 Drillable FracPORT™** Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80 **Ball Seat: 2.813" / Actuation Ball: 2.875" SF-7** **Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)** Assembly Number: 137855 / Serial Number:	7.000	2.813	2.83
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	133.55
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A

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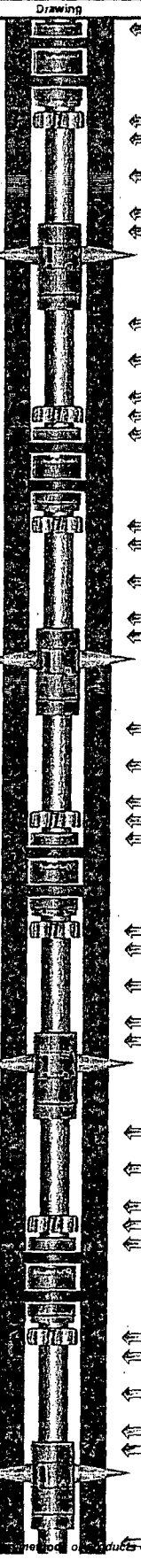
18 Stage Completion Proposal

Prepared for:	Company:	Date:
Jim Krogman / Lee Livingston	Mack Energy	October 12, 2016
Well Name:	**Location:**	**Type of Installation:**
Prince Rupert Federal #3H	Location: Chavez County, New Mexico / API#: TBD	18 Stage StackFRAC® HD™

Depth	Drawing	Description	OD (in)	ID (in)	Length (ft)
RSH2 #6 6706.62		⇐ Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID) Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80 **Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)** Assembly Number: 136664 / Serial Number:	7.750	4.683	4.32
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	131.64
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
Stage #6 6851.58		⇐ Packers Plus®: H2 Drillable FracPORT™ Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80 **Ball Seat: 2.750" / Actuation Ball: 2.813" SF-7** **Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)** Assembly Number: 137855 / Serial Number:	7.000	2.750	2.83
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (2 Joints)	5.500	4.892	89.05
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #5 6952.46		⇐ Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID) Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80 **Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)** Assembly Number: 136664 / Serial Number:	7.750	4.683	4.32
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	133.54
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
Stage #5 7099.32		⇐ Packers Plus®: H2 Drillable FracPORT™ Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80 **Ball Seat: 2.688" / Actuation Ball: 2.750" SF-7** **Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)** Assembly Number: 137855 / Serial Number:	7.000	2.688	2.83
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (2 Joints)	5.500	4.892	89.05
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #4 7200.20		⇐ Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID) Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80 **Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)** Assembly Number: 136664 / Serial Number:	7.750	4.683	4.32
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	131.35
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
Stage #4 7344.87		⇐ Packers Plus®: H2 Drillable FracPORT™ Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80 **Ball Seat: 2.625" / Actuation Ball: 2.688" SF-7** **Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)** Assembly Number: 137855 / Serial Number:	7.000	2.625	2.83
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	133.26
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #3 7489.96		⇐ Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID) Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80 **Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)** Assembly Number: 136664 / Serial Number:	7.750	4.683	4.32
		⇐ Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (2 Joints)	5.500	4.892	89.03
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
Stage #3 7592.31		⇐ Packers Plus®: H2 Drillable FracPORT™ Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80 Ball Seat: 2.563" / Actuation Ball: 2.625" SF-7 **Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)** Assembly Number: 137855 / Serial Number:	7.000	2.563	2.83
		⇐ 5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00

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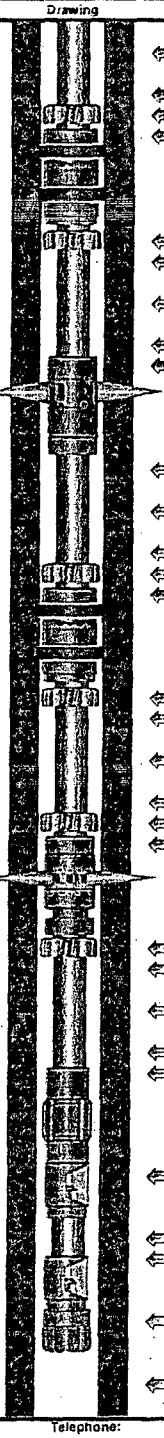
18 Stage Completion Proposal

Prepared for:	Company:	Date:
Jim Krogman / Lee Livingston	Mack Energy	October 12, 2016
Well Name:	**Location:**	**Type of Installation:**
Prince Rupert Federal #3H	Location: Chavez County, New Mexico / API#: TBD	18 Stage StackFRAC® HD™

Depth	Drawing	Description	OD (in)	ID (in)	Length (ft)
		5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	133.53
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #2 7737.67		**Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer** Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID) Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80 **Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)** Assembly Number: 136664 / Serial Number:	7.750	4.683	4.32
		Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (2 Joints)	5.500	4.892	89.04
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
Stage #2 7840.03		**Packers Plus®: H2 Drillable FracPORT™** Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80 **Ball Seat: 2.500" / Actuation Ball: 2.563" SF-7** **Actuation Pressure: 9 Pins x 193 psi/pin = 1,737 psi (Differential)** Assembly Number: 137855 / Serial Number:	7.000	2.500	2.83
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (3 Joints)	5.500	4.892	133.39
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
RSH2 #1 7985.25		**Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole Dual Element Packer** Size: 9-5/8" x 5-1/2" (7.750" OD x 4.683" ID) Thread: BT&C / Elastomers: HSN w/ Teflon Backups / Metallurgy: L-80 **Setting Pressure: 5 Pins x 402 psi/pin = 2,010 psi (Differential)** Assembly Number: 136664 / Serial Number:	7.750	4.683	4.32
		Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (2 Joints)	5.500	4.892	89.04
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
Stage #1 8087.61		**Packers Plus®: Dual External Hydraulic FracPORT™** Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80 **Upper Sleeve Actuation Pressure: 6 Pins x 723 psi/pin = 4,338 psi (Differential)** **Lower Sleeve Actuation Pressure: 10 Pins x 419 psi/pin = 4,190 psi (Differential)** Assembly Number: 105835 / Serial Number:	7.130	4.710	2.83
		Aluminium Centralizer - Size: 5-1/2" (8.250" OD)	8.250	N/A	N/A
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 3.00 ft Pup Joint	5.500	4.892	3.00
		5-1/2" x 17.0 lb/ft x L-80 x BT&C Liner (2 Joints)	5.500	4.892	89.01
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
TCS 8188.45		**Packers Plus®: Toe Circulating Sub** Ball Seat: 1.500" / Actuation Ball: 1.750" SF-7 Size: 5-1/2" / Thread: BT&C / Elastomers: HSN / Metallurgy: L-80 **Actuation Pressure: 3 Pins x 366 psi/pin = 1,098 psi (Differential)** Assembly Number: 104515 / Serial Number:	7.380	1.500	2.60
		Float Collar Size: 5-1/2" / Thread: BT&C Assembly Number: 104735	6.050	N/A	1.06
		5-1/2" x 17.0 lb/ft x L-80 x BT&C x 6.00 ft Pup Joint	5.500	4.892	6.00
		Float Collar Size: 5-1/2" / Thread: BT&C Assembly Number: 104735	6.050	N/A	1.06
End of Tool String: 8200.00		Packers Plus®: Bullet Nose Style Re-Entry Guide Size: 5-1/2" / Thread: BT&C Assembly Number: 104911	7.250	2.750	0.83
		Proposed MD of Well: 8228.00 ft (Proposed TVD of Well: 3260.00 ft)			

Service Center:	Telephone:	Sales Representative:	Service Center Manager:
Midland, TX	+1 (432) 238-6245	Justin Moos +1 (432) 202-9398	Blair Battenfelder

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Tool Placement Program V140

Company:	Mack Energy	County:	Chavez County
Company Representative:	0	Date:	
Packers Plus Representative 1:	0	Revision:	0
Packers Plus Representative 2:	0		

Comments	Tool Description	Length ft	Landed RKB MD	Accumulated ft	Ideal Depth ft	Off Ideal Depth ft	Comments
	MD of Well		8228.00		# of Joints	Total Length ft	
	End of Tool String		8200.00	0.00			
	Packers Plus®: Bullet Nose Style Re-Entry Guide	0.83	8199.17	0.83			
	Float Collar	1.06	8198.11	1.89			
	6.00 Pup Joint	6.00	8192.11	7.89			
	Float Collar	1.06	8191.05	8.95			
	Packers Plus®: Toe Circulating Sub	2.60	8188.45	11.55			
	6.00 Pup Joint	6.00	8182.45	17.55			
	1	44.50	8137.95	62.05	2 JTS	89.01 ft	
	2	44.51	8093.44	106.56			
	3.00 Pup Joint	3.00	8090.44	109.56			
	Stage #1 Packers Plus®: Dual External Hydraulic FracPORT	2.83	8087.61	112.39	8101.44	-13.83	
	6.00 Pup Joint	6.00	8081.61	118.39			
	3	44.53	8037.08	162.92	2 JTS	89.04 ft	
	4	44.51	7992.57	207.43			
	3.00 Pup Joint	3.00	7989.57	210.43			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	4.32	7985.25	214.75	7974.88	10.37	
	6.00 Pup Joint	6.00	7979.25	220.75			
	5	44.50	7934.75	265.25	3 JTS	133.39 ft	
	6	44.38	7890.37	309.63			
	7	44.51	7845.86	354.14			
	3.00 Pup Joint	3.00	7842.86	357.14			
	Stage #2 2.813" Packers Plus®: H2 Drillable FracPORT™	2.83	7840.03	359.97	7848.31	-8.28	
	6.00 Pup Joint	6.00	7834.03	365.97			
	8	44.52	7789.51	410.49	2 JTS	89.04 ft	
	9	44.52	7744.99	455.01			
	3.00 Pup Joint	3.00	7741.99	458.01			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	4.32	7737.67	462.33	7721.75	15.92	
	6.00 Pup Joint	6.00	7731.67	468.33			
	10	44.52	7687.15	512.85	3 JTS	133.53 ft	
	11	44.50	7642.65	557.35			
	12	44.51	7598.14	601.86			
	3.00 Pup Joint	3.00	7595.14	604.86			
	Stage #3 2.875 Packers Plus®: H2 Drillable FracPORT™	2.83	7592.31	607.69	7596.19	-2.68	
	6.00 Pup Joint	6.00	7586.31	613.69			
	13	44.51	7541.80	658.20	2 JTS	89.03 ft	
	14	44.52	7497.28	702.72			
	3.00 Pup Joint	3.00	7494.28	705.72			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	4.32	7489.96	710.04	7468.63	21.33	
	6.00 Pup Joint	6.00	7483.96	716.04			
	15	44.52	7439.44	760.56	3 JTS	133.26 ft	
	16	44.38	7395.06	804.94			
	17	44.36	7350.70	849.30			
	3.00 Pup Joint	3.00	7347.70	852.30			
	Stage #4 2.938" Packers Plus®: H2 Drillable FracPORT™	2.83	7344.87	855.13	7342.06	2.81	
	6.00 Pup Joint	6.00	7338.87	861.13			
	18	42.36	7296.51	903.49	3 JTS	131.35 ft	
	19	44.49	7252.02	947.98			
	20	44.50	7207.52	992.48			
	3.00 Pup Joint	3.00	7204.52	995.48			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	4.32	7200.20	999.80	7215.50	-15.30	
	6.00 Pup Joint	6.00	7194.20	1005.80			
	21	44.53	7149.67	1050.33	2 JTS	89.05 ft	
	22	44.52	7105.15	1094.85			
	3.00 Pup Joint	3.00	7102.15	1097.85			
	Stage #5 3.000" Packers Plus®: H2 Drillable FracPORT™	2.83	7099.32	1100.68	7088.94	10.38	
	6.00 Pup Joint	6.00	7093.32	1106.68			
	23	44.52	7048.80	1151.20	3 JTS	133.54 ft	
	24	44.51	7004.29	1195.71			
	25	44.51	6959.78	1240.22			
	3.00 Pup Joint	3.00	6956.78	1243.22			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	4.32	6952.46	1247.54	6962.38	-9.92	
	6.00 Pup Joint	6.00	6946.46	1253.54			
	26	44.53	6901.93	1298.07	2 JTS	89.05 ft	
	27	44.52	6857.41	1342.59			
	3.00 Pup Joint	3.00	6854.41	1345.59			
	Stage #6 3.063" Packers Plus®: H2 Drillable FracPORT™	2.83	6851.58	1348.42	6836.82	15.76	
	6.00 Pup Joint	6.00	6845.58	1354.42			
	28	44.53	6801.05	1398.95	3 JTS	131.64 ft	
	29	42.59	6758.46	1441.54			
	30	44.52	6713.94	1486.06			
	3.00 Pup Joint	3.00	6710.94	1489.06			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	4.32	6706.62	1493.38	6709.25	-2.63	
	6.00 Pup Joint	6.00	6700.62	1499.38			
	31	44.50	6656.12	1543.88	3 JTS	133.55 ft	
	32	44.52	6611.60	1588.40			
	33	44.53	6567.07	1632.93			
	3.00 Pup Joint	3.00	6564.07	1635.93			
	Stage #7 3.125" Packers Plus®: H2 Drillable FracPORT™	2.83	6561.24	1638.76	6582.69	-21.45	
	6.00 Pup Joint	6.00	6555.24	1644.76			
	34	44.51	6510.73	1689.27	2 JTS	89.03 ft	

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Tool Placement Program V140

	Company:	Mack Energy			County:	Chavez County	
	Company Representative:	0			Date:		
	Packers Plus Representative 1:	0			Revision:	0	
	Packers Plus Representative 2:	0					
Comments	Tool Description	Length ft	Landed RKB MD	Accumulated ft	Ideal Depth ft	Off Ideal Depth ft	Comments
	MD of Well		8228.00		# of Joints	Total Length ft	
	End of Tool String		8200.00	0.00			
	35	44.52	6466.21	1733.79			
	3.00 Pup Joint	3.00	6463.21	1736.79			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	4.32	6458.89	1741.11	6456.13	2.76	
	6.00 Pup Joint	6.00	6452.89	1747.11			
	36	44.51	6408.38	1791.62	3 JTS	133.55 ft	
	37	44.53	6363.85	1836.15			
	38	44.51	6319.34	1880.66			
	3.00 Pup Joint	3.00	6316.34	1883.66			
	Stage #8 3.188" Packers Plus®: H2 Drillable FracPORT™	2.83	6313.51	1886.49	6329.57	16.06	
	6.00 Pup Joint	6.00	6307.51	1892.49			
	39	44.53	6262.98	1937.02	2 JTS	89.04 ft	
	40	44.51	6218.47	1981.53			
	3.00 Pup Joint	3.00	6215.47	1984.53			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	4.32	6211.15	1988.85	6203.00	8.15	
	6.00 Pup Joint	6.00	6205.15	1994.85			
	41	44.49	6160.66	2039.34	3 JTS	133.50 ft	
	42	44.50	6116.16	2083.84			
	43	44.51	6071.65	2128.35			
	3.00 Pup Joint	3.00	6068.65	2131.35			
	Stage #9 3.250" Packers Plus®: H2 Drillable FracPORT™	2.83	6065.82	2134.18	6076.44	10.62	
	6.00 Pup Joint	6.00	6059.82	2140.18			
	44	44.51	6015.31	2184.69	2 JTS	89.02 ft	
	45	44.51	5970.80	2229.20			
	3.00 Pup Joint	3.00	5967.80	2232.20			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	4.32	5963.48	2236.52	5949.88	13.60	
	6.00 Pup Joint	6.00	5957.48	2242.52			
	46	44.51	5912.97	2287.03	3 JTS	133.54 ft	
	47	44.51	5868.46	2331.54			
	48	44.52	5823.94	2376.06			
	3.00 Pup Joint	3.00	5820.94	2379.06			
	Stage #10 3.313" Packers Plus®: H2 Drillable FracPORT™	2.83	5818.11	2381.89	5823.32	5.21	
	6.00 Pup Joint	6.00	5812.11	2387.89			
	49	44.53	5767.58	2432.42	2 JTS	89.06 ft	
	50	44.53	5723.05	2476.95			
	3.00 Pup Joint	3.00	5720.05	2479.95			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	4.32	5715.73	2484.27	5696.76	18.97	
	6.00 Pup Joint	6.00	5709.73	2490.27			
	51	44.52	5665.21	2534.79	3 JTS	133.40 ft	
	52	44.53	5620.68	2579.32			
	53	44.35	5576.33	2623.67			
	3.00 Pup Joint	3.00	5573.33	2626.67			
	Stage #11 3.375" Packers Plus®: H2 Drillable FracPORT™	2.83	5570.50	2629.50	5570.19	0.31	
	6.00 Pup Joint	6.00	5564.50	2635.50			
	54	44.39	5520.11	2679.89	3 JTS	133.39 ft	
	55	44.51	5475.60	2724.40			
	56	44.49	5431.11	2768.89			
	3.00 Pup Joint	3.00	5428.11	2771.89			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	4.32	5423.79	2776.21	5443.63	19.84	
	6.00 Pup Joint	6.00	5417.79	2782.21			
	57	44.53	5373.26	2826.74	2 JTS	89.06 ft	
	58	44.53	5328.73	2871.27			
	3.00 Pup Joint	3.00	5325.73	2874.27			
	Stage #12 3.500" Packers Plus®: H2 Drillable FracPORT™	2.83	5322.90	2877.10	5317.07	5.83	
	6.00 Pup Joint	6.00	5316.90	2883.10			
	59	45.45	5271.45	2928.55	3 JTS	134.20 ft	
	60	44.39	5227.06	2972.94			
	61	44.36	5182.70	3017.30			
	3.00 Pup Joint	3.00	5179.70	3020.30			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	4.32	5175.38	3024.62	5190.51	15.13	
	6.00 Pup Joint	6.00	5169.38	3030.62			
	62	44.38	5125.00	3075.00	2 JTS	88.78 ft	
	63	44.40	5080.60	3119.40			
	3.00 Pup Joint	3.00	5077.60	3122.40			
	Stage #13 3.625" Packers Plus®: H2 Drillable FracPORT™	2.83	5074.77	3125.23	5063.94	10.83	
	6.00 Pup Joint	6.00	5068.77	3131.23			
	64	44.37	5024.40	3175.60	3 JTS	133.14 ft	
	65	44.37	4980.03	3219.97			
	66	44.40	4935.63	3264.37			
	3.00 Pup Joint	3.00	4932.63	3267.37			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	4.32	4928.31	3271.69	4937.38	9.07	
	6.00 Pup Joint	6.00	4922.31	3277.69			
	67	44.42	4877.89	3322.11	2 JTS	88.79 ft	
	68	44.37	4833.52	3366.48			
	3.00 Pup Joint	3.00	4830.52	3369.48			
	Stage #14 3.625" Packers Plus®: H2 Drillable FracPORT™	2.83	4827.69	3372.31	4810.62	16.07	
	6.00 Pup Joint	6.00	4821.69	3378.31			
	69	44.38	4777.31	3422.69	3 JTS	133.36 ft	
	70	44.51	4732.80	3467.20			
	71	44.47	4688.33	3511.67			

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Tool Placement Program V1.4.0

	Company:	Mack Energy			County:	Chavez County	
	Company Representative:	0			Date:		
	Packers Plus Representative 1:	0			Revision:	0	
	Packers Plus Representative 2:	0					
Comments	Tool Description	Length ft	Landed RKB MD	Accumulated ft	Ideal Depth ft	Off Ideal Depth ft	Comments
	MD of Well		8228.00		# of Joints	Total Length ft	
	End of Tool String		8200.00	0.00			
	3.00 Pup Joint	3.00	4685.33	3514.67			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	**4.32**	**4681.01**	**3518.99**	**4684.25**	**-3.25**	
	6.00 Pup Joint	6.00	4675.01	3524.99			
	72	44.44	4630.57	3569.43	2 JTS	89.86 ft	
	73	45.42	4585.15	3614.85			
	3.00 Pup Joint	3.00	4582.15	3617.85			
	Stage #16 3.625" Packers Plus®: H2 Drillable FracPORT™	**2.83**	**4579.32**	**3620.68**	**4567.70**	**11.62**	
	6.00 Pup Joint	6.00	4573.32	3626.68			
	74	45.41	4527.91	3672.09	3 JTS	134.32 ft	
	75	44.47	4483.44	3716.56			
	76	44.44	4439.00	3761.00			
	3.00 Pup Joint	3.00	4436.00	3764.00			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	**4.32**	**4431.68**	**3768.32**	**4431.13**	**0.55**	
	6.00 Pup Joint	6.00	4425.68	3774.32			
	77	40.37	4385.31	3814.69	3 JTS	128.05 ft	
	78	43.29	4342.02	3857.98			
	79	44.39	4297.63	3902.37			
	3.00 Pup Joint	3.00	4294.63	3905.37			
	Stage #15 3.625" Packers Plus®: H2 Drillable FracPORT™	**2.83**	**4291.80**	**3908.20**	**4304.57**	**-12.77**	
	6.00 Pup Joint	6.00	4285.80	3914.20			
	80	42.68	4243.12	3956.88	2 JTS	87.08 ft	
	81	44.40	4198.72	4001.28			
	3.00 Pup Joint	3.00	4195.72	4004.28			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	**4.32**	**4191.40**	**4008.60**	**4178.01**	**13.39**	
	6.00 Pup Joint	6.00	4185.40	4014.60			
	82	44.46	4140.94	4059.06	3 JTS	126.15 ft	
	83	42.43	4098.51	4101.49			
	84	39.26	4059.25	4140.75			
	3.00 Pup Joint	3.00	4056.25	4143.75			
	Stage #14 3.625" Packers Plus®: H2 Drillable FracPORT™	**2.83**	**4053.42**	**4146.58**	**4051.45**	**1.97**	
	6.00 Pup Joint	6.00	4047.42	4152.58			
	85	42.58	4004.84	4195.16	3 JTS	131.45 ft	
	86	44.39	3960.45	4239.55			
	87	44.48	3915.97	4284.03			
	3.00 Pup Joint	3.00	3912.97	4287.03			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	**4.32**	**3908.65**	**4291.35**	**3924.88**	**-16.23**	
	6.00 Pup Joint	6.00	3902.65	4297.35			
	88	44.48	3858.17	4341.83	2 JTS	88.87 ft	
	89	44.39	3813.78	4386.22			
	3.00 Pup Joint	3.00	3810.78	4389.22			
	Stage #13 3.625" Packers Plus®: H2 Drillable FracPORT™	**2.83**	**3807.95**	**4392.05**	**3798.32**	**9.63**	
	6.00 Pup Joint	6.00	3801.95	4398.05			
	90	45.39	3756.56	4443.44	4 JTS	178.56 ft	
	91	44.33	3712.23	4487.77			
	92	44.39	3667.84	4532.16			
	93	44.45	3623.39	4576.61			
	20 ft Pup (5.50")	20.00	3603.39	4596.61			
	3.00 Pup Joint	3.00	3600.39	4599.61			
	Packers Plus®: Hydraulic Set RockSEAL® H2 Open Hole D	**4.32**	**3596.07**	**4603.93**	**3595.00**	**1.07**	
	6.00 Pup Joint	6.00	3590.07	4609.93			
	94	44.49	3545.58	4654.42	18 JTS	795.79 ft	
	95	44.33	3501.25	4698.75			
	96	44.42	3456.83	4743.17			
	97	44.45	3412.38	4787.62			
	98	44.41	3367.97	4832.03			
	99	45.42	3322.55	4877.45			
	100	45.42	3277.13	4922.87			
	101	44.50	3232.63	4967.37			
	102	42.54	3190.09	5009.91			
	103	44.38	3145.71	5054.29			
	104	42.46	3103.25	5096.75			
	105	44.49	3058.76	5141.24			
	106	44.33	3014.43	5185.57			
	107	44.42	2970.01	5229.99			
	108	44.45	2925.56	5274.44			
	109	44.41	2881.15	5318.85			
	110	42.54	2838.61	5361.39			
	111	44.33	2794.28	5405.72			
	Packers Plus®: Debris Sub	**0.00**	**2794.28**	**5405.72**	**2800.00**	**-5.72**	
	112	44.39	2749.89	5450.11	1 JTS	44.39 ft	
	3.00 Pup Joint	3.00	2746.89	5453.11			
	Packers Plus®: Hydraulic Set RockSEAL® IIS Open Hole Ar	**7.75**	**2739.14**	**5460.86**	**2750.00**	**-10.86**	
	6.00 Pup Joint	6.00	2733.14	5466.86			
	113	44.45	2688.69	5511.31	1 JTS	44.45 ft	
	Crossover: 7" 26.0 lb/ft LT&C Box x 5-1/2" 17.0 lb/ft BT&C Pin	2.20	2686.49	5513.51			
	LS-1	45.36	2641.13	5558.87	1 JTS	45.36 ft	
	Third Party Stage Tool	**2.25**	**2638.88**	**5561.12**	**2700.00**	**-61.12**	
	LS-2	44.97	2593.91	5606.09	59 JTS	2665.06 ft	
	LS-3	44.98	2548.93	5651.07			

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Tool Placement Program V14.0

Company:	Mack Energy	County:	Chavez County
Company Representative:	0	Date:	
Packers Plus Representative 1:	0	Revision:	0
Packers Plus Representative 2:	0		

Comments	Tool Description	Length ft	Landed ftKB MD	Accumulated ft	Ideal Depth ft	Off Ideal Depth ft	Comments
	MD of Well		8228.00		# of Joints	Total Length ft	
	End of Tool String		8200.00	0.00			
	LS-4	45.36	2503.57	5696.43			
	LS-5	45.36	2458.21	5741.79			
	LS-6	45.35	2412.86	5787.14			
	LS-7	44.97	2367.89	5832.11			
	LS-8	45.37	2322.52	5877.48			
	LS-9	45.35	2277.17	5922.83			
	LS-10	44.98	2232.19	5967.81			
	LS-11	45.36	2186.83	6013.17			
	LS-12	44.66	2142.17	6057.83			
	LS-13	44.98	2097.19	6102.81			
	LS-14	45.36	2051.83	6148.17			
	LS-15	45.36	2006.47	6193.53			
	LS-16	45.37	1961.10	6238.90			
	LS-17	45.00	1916.10	6283.90			
	LS-18	45.37	1870.73	6329.27			
	LS-19	45.39	1825.34	6374.66			
	LS-20	45.01	1780.33	6419.67			
	LS-21	45.08	1735.25	6464.75			
	LS-22	45.37	1689.88	6510.12			
	LS-23	45.34	1644.54	6555.46			
	LS-24	45.36	1599.18	6600.82			
	LS-25	45.37	1553.81	6646.19			
	LS-26	45.36	1508.45	6691.55			
	LS-27	45.35	1463.10	6736.90			
	LS-28	45.37	1417.73	6782.27			
	LS-29	45.35	1372.38	6827.62			
	LS-30	45.36	1327.02	6872.98			
	LS-31	45.36	1281.66	6918.34			
	LS-32	45.34	1236.32	6963.68			
	LS-33	45.37	1190.95	7009.05			
	LS-34	45.35	1145.60	7054.40			
	LS-35	44.64	1100.96	7099.04			
	LS-36	45.39	1055.57	7144.43			
	LS-37	45.37	1010.20	7189.80			
	LS-38	45.33	964.87	7235.13			
	LS-39	45.36	919.51	7280.49			
	LS-40	44.43	875.08	7324.92			
	LS-41	44.54	830.54	7369.46			
	LS-42	44.73	785.81	7414.19			
	LS-43	45.36	740.45	7459.55			
	LS-44	45.37	695.08	7504.92			
	LS-45	45.35	649.73	7550.27			
	LS-46	42.04	607.69	7592.31			
	LS-47	45.37	562.32	7637.68			
	LS-48	44.80	517.52	7682.48			
	LS-49	45.35	472.17	7727.83			
	LS-50	45.34	426.83	7773.17			
	LS-51	45.35	381.48	7818.52			
	LS-52	45.36	336.12	7863.88			
	LS-53	45.37	290.75	7909.25			
	LS-54	45.37	245.38	7954.62			
	LS-55	45.38	200.00	8000.00			
	LS-56	44.76	155.24	8044.76			
	LS-57	45.34	109.90	8090.10			
	LS-58	45.37	64.53	8135.47			
	LS-59	45.35	19.18	8180.82			
	LS-60	45.36	-26.18	8226.18			

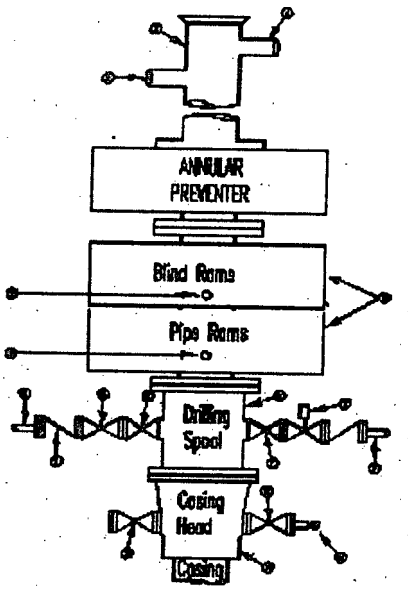
Mack Energy Corporation
Minimum Blowout Preventer Requirements
3000 psi Working Pressure
13 3/8 inch- 3 MWP
11 Inch - 3 MWP
EXHIBIT #10

Stack Requirements

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

OPTIONAL

16	Flanged Valve	1 13/16	



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

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

MEC TO FURNISH:

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

10.

ME

GENERAL NOTES:

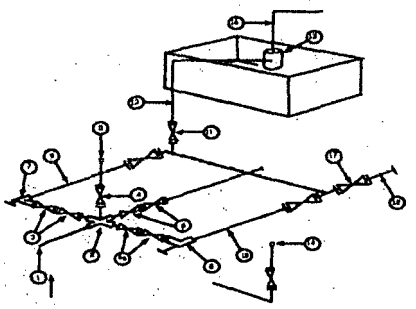
1. Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
2. All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through choke valves must be full opening and suitable for high pressure mud service.
3. Controls to be of standard design and each marked, showing opening and closing position
4. Chokes will be positioned so as not to hamper or delay changing of choke beans.

Replaceable parts for adjustable choke, or bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.

5. All valves to be equipped with hand-wheels or handles ready for immediate use.
6. Choke lines must be suitably anchored.
7. Handwheels and extensions to be connected and ready for use.
8. Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
9. All seamless steel control piping (2000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
10. Casinghead connections shall not be used except in case of emergency.
11. Does not use kill line for routine fill up operations.

Mack Energy Corporation

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



Mud Pit

Reserve Pit

*** Location of separator optional**

Below Substructure

Mimimum requirements

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

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

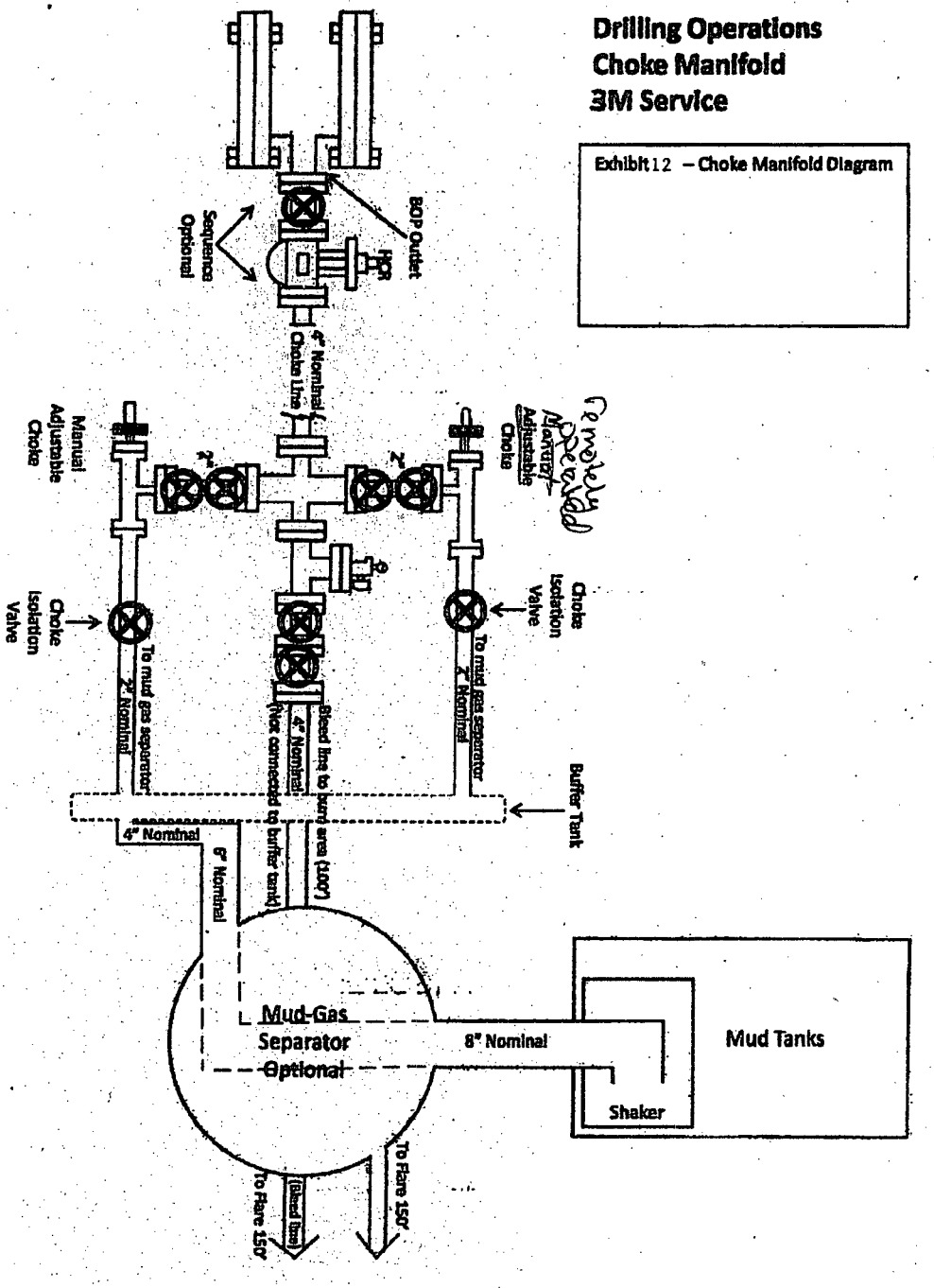
EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTION

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

Mack Energy Corporation

MANIFOLD SCHEMATIC

Exhibit #12



PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Mack Energy Coporation**
LEASE NO.:	**NMNM-121949 (SHL)**
WELL NAME & NO.:	**Prince Rupert Federal 3H**
SURFACE HOLE FOOTAGE:	**0330' FSL & 2160' FEL**
BOTTOM HOLE FOOTAGE	**0340' FSL & 2285' FEL Sec. 20, T. 15 S., R 29 E.**
LOCATION:	**Section 17, T. 15 S., R 29 E., NMPM**
COUNTY:	**Eddy County, New Mexico**

The original COAs still stand with the following drilling modifications:

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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 office hours call (575) 627-0205.

1. **Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. If Hydrogen Sulfide is encountered, report measured amounts 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.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

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

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

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

NOTE: Pre-ongard well #5 (30-005-00453) is in close proximity to the BHL and has a total depth of 2450'.

1. The **9-5/8** inch surface casing shall be set at approximately **205'-225'** feet 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.

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

The pilot hole plugging procedure is approved as written. Note plug top on Subsequent Report sundry of drilling activities.

2. The minimum required fill of cement behind the **7 X 5-1/2** inch production casing is:

Operator has proposed DV tool at depth of 2600', 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.

    a. Single stage DV tool (2600'-surface):

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

3. 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. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API 53.

2. 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.

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

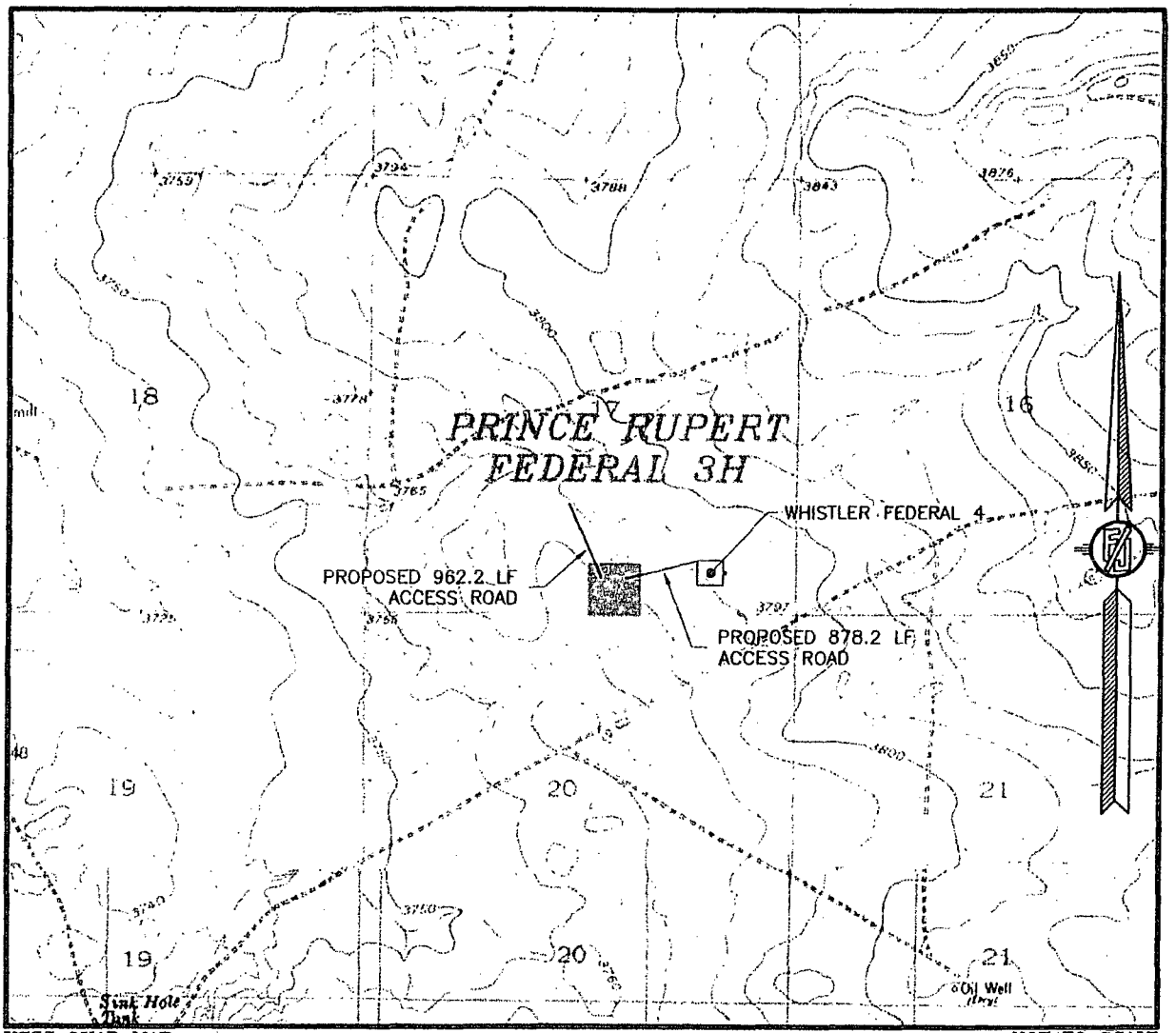
All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location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

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

JAM 101816

SECTION 17, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

LOCATION VERIFICATION MAP



USGS QUAD MAP:
KING CAMP

NOT TO SCALE

MACK ENERGY CORPORATION
PRINCE RUPERT FEDERAL 3H
LOCATED 330 FT. FROM THE SOUTH LINE
AND 2160 FT. FROM THE EAST LINE OF
SECTION 17, TOWNSHIP 15 SOUTH,
RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

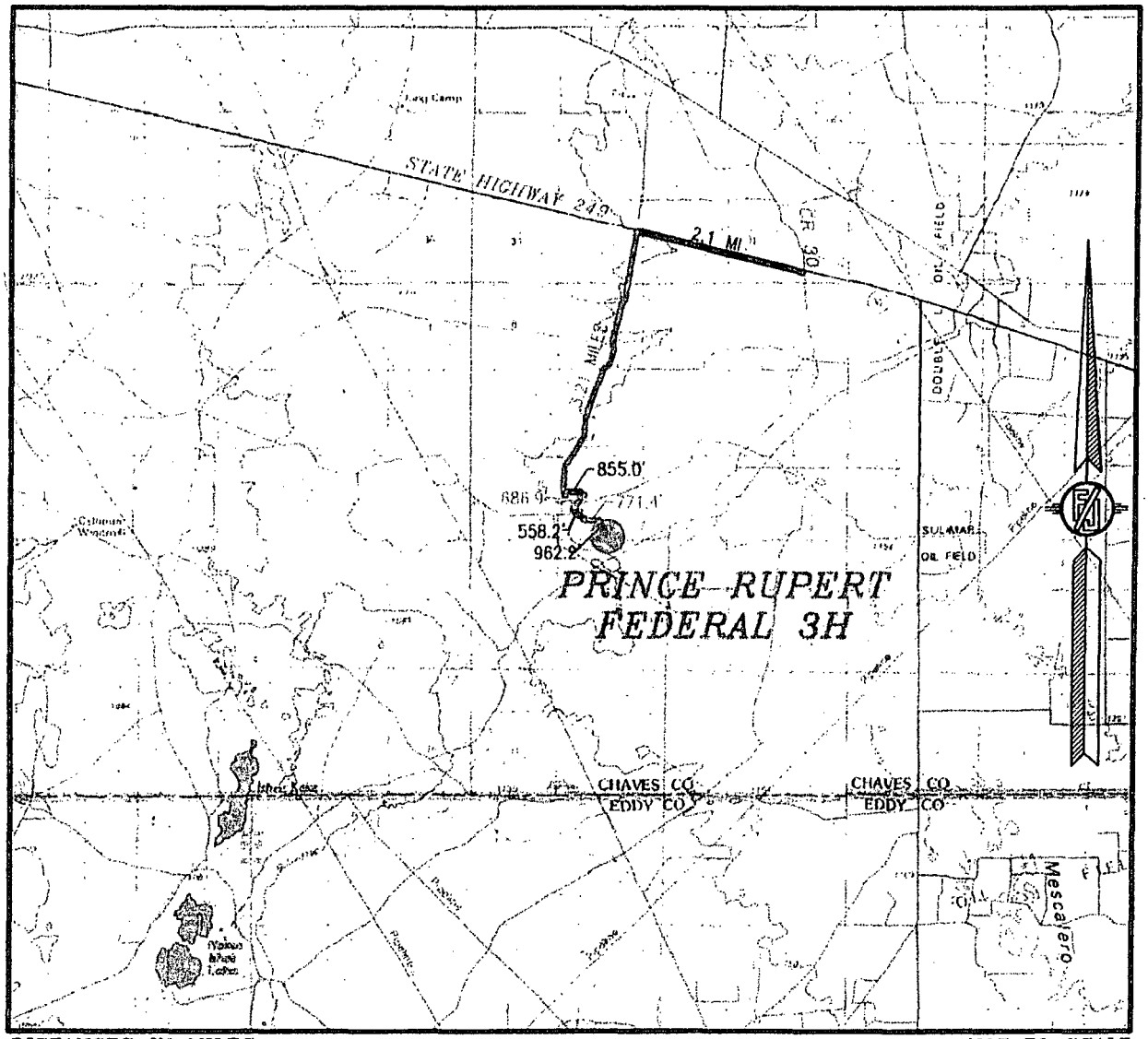
SEPTEMBER 28, 2016

SURVEY NO. 2868B

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 17, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION
FROM THE INTERSECTION OF STATE HIGHWAY 249 AND CR 30 (JEMINA) GO NORTHWEST ON STATE HIGHWAY 249 FOR APPROX. 2.1 MILES. GO SOUTH ON 20' CALICHE LEASE ROAD FOR APPROX. 3.21 MILES TO WHISTLER FEDERAL 9. FROM THE NORTHEAST CORNER GO EAST 855.0' TO THE NORTHWEST CORNER OF WHISTLER FEDERAL 10 . FROM THE SOUTHWEST CORNER GO SOUTHWEST 686.9' TO THE NORTHEAST CORNER OF WHISTLER FEDERAL 5. FROM THE SOUTHEAST CORNER GO SOUTH THEN SOUTHEAST 558.2' TO THE NORTHWEST CORNER OF WHISTLER FEDERAL 6. FROM THE SOUTHEAST CORNER GO EAST 771.4' THEN SOUTHEAST 962.2' TO THE NORTHWEST CORNER FOR THIS LOCATION.

MACK ENERGY CORPORATION
PRINCE RUPERT FEDERAL 3H
LOCATED 330 FT. FROM THE SOUTH LINE AND 2160 FT. FROM THE EAST LINE OF SECTION 17, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
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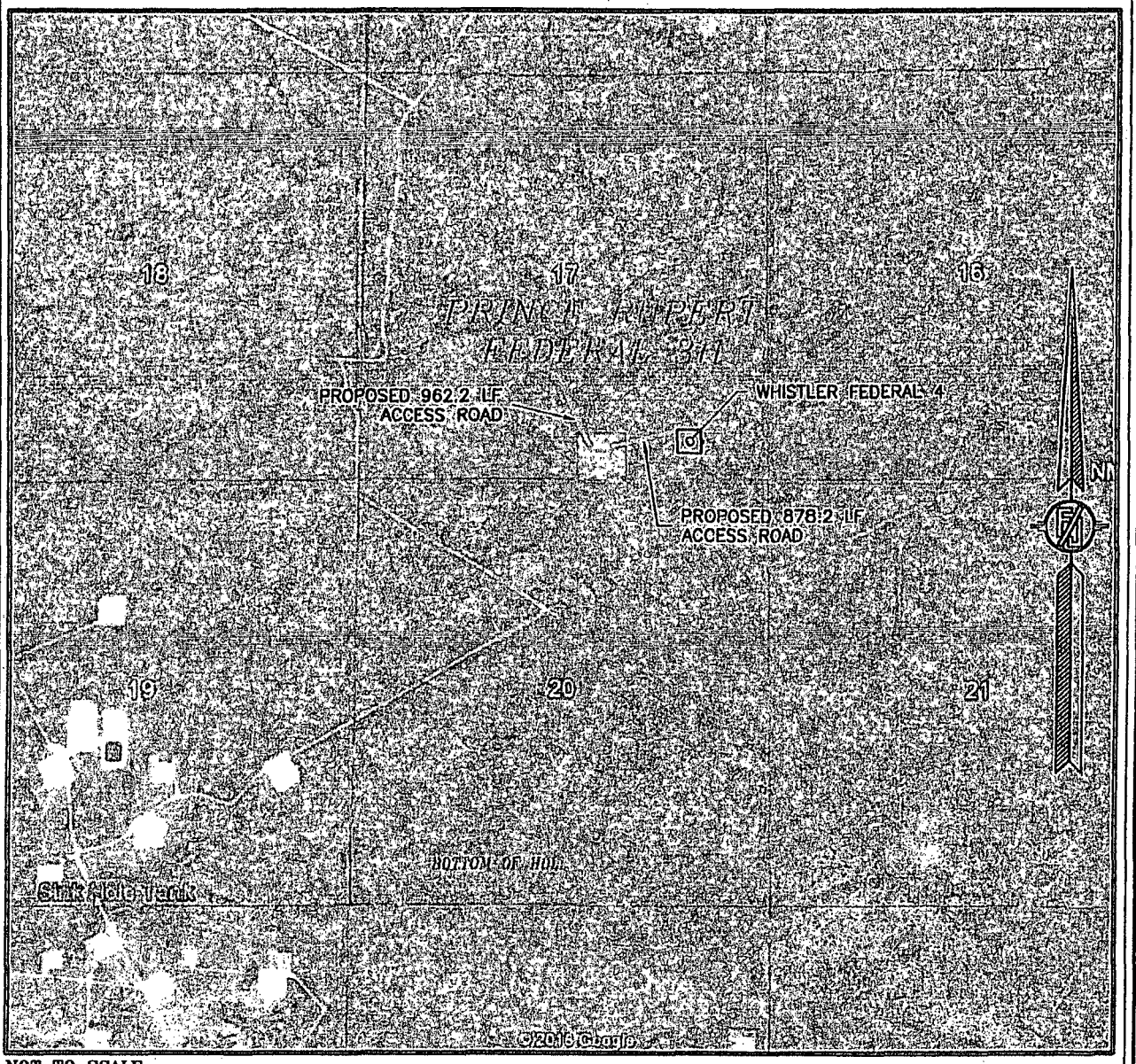
SECTION 17, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
OCTOBER 2014

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PRINCE RUPERT FEDERAL 3H
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SECTION 17, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

ACCESS AERIAL ROUTE MAP

NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
OCTOBER 2014

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Mack Energy

Chavez County
Sec.17, T15 S, R 29 E
Prince Rupert Federal 3H

Wellbore #1

Plan: Plan #2

Standard Survey Report

05 October, 2016

INTEGRITY
Directional Services