

Form 3160-3
(June 2015)

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

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

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No. NMNM14847
2. Name of Operator LONGFELLOW ENERGY LP		6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No. OZZY FEDERAL COM 18D 004H
3a. Address , ,	3b. Phone No. (include area code)	9. API Well No. 30 015 48326
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SESE / 195 FSL / 650 FEL / LAT 32.8291164 / LONG -104.1235243 At proposed prod. zone SESE / 120 FSL / 20 FEL / LAT 32.8276404 / LONG -104.1056692		10. Field and Pool, or Exploratory EMPIRE/GLORIETA YESO 11. Sec., T. R. M. or Blk. and Survey or Area SEC 13/T17S/R28E/NMP
14. Distance in miles and direction from nearest town or post office* 8 miles		12. County or Parish EDDY
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 195 feet		13. State NM
16. No of acres in lease		17. Spacing Unit dedicated to this well 147.04
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 25 feet		20. BLM/BIA Bond No. in file FED:
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3699 feet		22. Approximate date work will start* 11/01/2020
		23. Estimated duration 60 days
24. Attachments		

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

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

25. Signature (Electronic Submission)	Name (Printed/Typed) BRIAN WOOD / Ph: (672) 590-9933	Date 09/18/2020
Title President		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575) 234-5959	Date 05/05/2021
Title Assistant Field Manager Lands & Minerals		
Office Carlsbad Field Office		

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

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



(Continued on page 2)

*(Instructions on page 2)

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

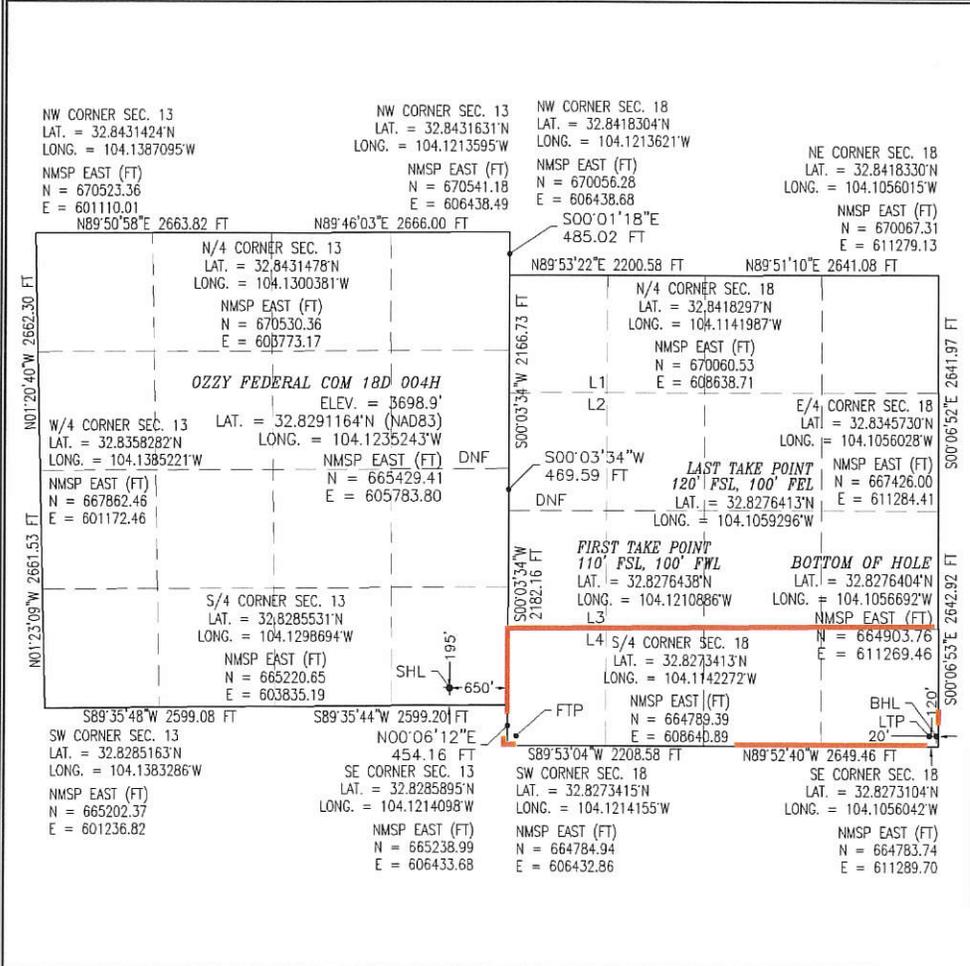
¹ API Number 30-015- 48326		² Pool Code 96210		³ Pool Name EMPIRE; GLORIETA-YESO	
⁴ Property Code 330812		⁵ Property Name OZZY FEDERAL COM 18D			⁶ Well Number 004H
⁷ OGRID No. 372210		⁸ Operator Name LONGFELLOW ENERGY, LP			⁹ Elevation 3698.9

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
P	13	17 S	28 E		195	SOUTH	650	EAST	EDDY

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
P	18	17 S	29 E		120	SOUTH	20	EAST	EDDY

¹² Dedicated Acres 147.04	¹³ Joint or Infill	¹⁴ Consolidation Code C	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



¹⁷ OPERATOR CERTIFICATION
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Brian Wood
9-17-20

Signature: **BRIAN WOOD** Date: _____
Printed Name: **brian@permitswest.com**
E-mail Address: **505 466-8120**

¹⁸ SURVEYOR CERTIFICATION
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

AUGUST 11, 2020

Date of Survey: _____

Signature and Seal of Professional Surveyor:
[Signature]
Certificate Number: **JUAN F. JARAMILLO, PLS 12797**
Professional Surveyor License No. 8396

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

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: 9-16-20

Original

Operator & OGRID No.: Longfellow Energy, LP (372210)

Amended - Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name & Number	API	SHL (ULSTR)	SHL Footages	Expected MCF/D	Flare or Vent	Comments
Ozzy Federal Com 18D 1H	30-015-	P-13-17s-28e	270' FSL & 650' FEL	225	<30 days	flare until well clean, then connect
Ozzy Federal Com 18D 2H	30-015-	P-13-17s-28e	245' FSL & 650' FEL	225	<30 days	flare until well clean, then connect
Ozzy Federal Com 18D 3H	30-015-	P-13-17s-28e	220' FSL & 650' FEL	225	<30 days	flare until well clean, then connect
Ozzy Federal Com 18D 4H	30-015-	P-13-17s-28e	195' FSL & 650' FEL	225	<30 days	flare until well clean, then connect

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is not yet dedicated, but will be connected to a 3rd party gathering system located in Eddy County, New Mexico. Gas will most likely be piped ≈900' west to Longfellow's Phillips AID State 2 (O-13-17s-28e) which is connected with DCP Operating Company, LP (36785). Operator will provide (periodically) to Gas Transporter a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Operator and Gas Transporter have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at an unknown Processing Plant located in Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Gas Transporter system at that time. Based on current information, it is Operator's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines



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

Drilling Plan Data Report

05/07/2021

APD ID: 10400061973

Submission Date: 09/18/2020

Highlighted data
reflects the most
recent changes

Operator Name: LONGFELLOW ENERGY LP

Well Name: OZZY FEDERAL COM 18D

Well Number: 004H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
872770	QUATERNARY	3699	0	0	OTHER : Caliche	USEABLE WATER	N
872771	RUSTLER ANHYDRITE	3424	275	275	ANHYDRITE	NONE	N
872772	TOP SALT	3274	425	425	SALT	NONE	N
872773	BASE OF SALT	3049	650	651	SALT	NONE	N
872774	YATES	2861	838	841	DOLOMITE	NATURAL GAS, OIL	N
872775	SEVEN RIVERS	2590	1109	1119	GYPSUM	NONE	N
872776	QUEEN	2065	1634	1656	SANDSTONE	NATURAL GAS, OIL	N
872777	SAN ANDRES	1328	2371	2412	DOLOMITE	NATURAL GAS, OIL	N
872778	GLORIETA	-70	3769	3852	DOLOMITE	NATURAL GAS, OIL	N
872779	YESO	-135	3834	3930	OTHER : Paddock Dolomite	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M

Rating Depth: 5000

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

Requesting Variance? YES

Variance request: Variance is requested to use a flex-hose. Test certificate for a typical hose is attached, Certificate for the hose in use will be available on the rig before drilling starts.

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250-psi low and 3000-psi high per Onshore Order 2 requirements. The system may be upgraded to a higher pressure, but still tested as described above. If the system is upgraded, then all the installed components will be functional and tested. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOPE will include a speed head, Kelly cock and floor safety valve (inside BOP), and choke lines and choke manifold. BOP and choke diagrams are attached.

Choke Diagram Attachment:

Operator Name: LONGFELLOW ENERGY LP

Well Name: OZZY FEDERAL COM 18D

Well Number: 004H

Ozzy_18D_4H_Choke_20200918061246.pdf

BOP Diagram Attachment:

Ozzy_18D_4H_BOP_20200918061258.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	12.25	9.625	NEW	API	N	0	1250	0	1237	3699	2462	1250	J-55	36	LT&C	1.125	1.125	DRY	1.8	DRY	1.8
2	PRODUCTI ON	8.75	7.0	NEW	API	N	0	3550	0	3481	3697	218	3550	L-80	32	BUTT	1.125	1.125	DRY	1.8	DRY	1.8
3	PRODUCTI ON	8.75	5.5	NEW	API	Y	3550	8940	3481	4070	218	-371	5390	L-80	20	BUTT	1.125	1.125	DRY	1.8	DRY	1.8

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Ozzy_18D_4H_Casing_Design_Assumptions_20200918061323.pdf

Operator Name: LONGFELLOW ENERGY LP

Well Name: OZZY FEDERAL COM 18D

Well Number: 004H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Ozzy_18D_4H_Casing_Design_Assumptions_20200918061456.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Ozzy_18D_4H_Casing_Design_Assumptions_20200918061403.pdf

Casing Design Assumptions and Worksheet(s):

Ozzy_18D_4H_Casing_Design_Assumptions_20200918061410.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1250	400	1.65	12.8	660	100	35/65 Poz C	None
SURFACE	Tail		0	1250	164	1.34	14.8	219	100	Class C	None
PRODUCTION	Lead		1050	8940	240	1.65	12.6	396	50	35/65 Poz C	None
PRODUCTION	Tail		1050	8940	1540	1.33	14.8	2048	50	Class C	None

Operator Name: LONGFELLOW ENERGY LP

Well Name: OZZY FEDERAL COM 18D

Well Number: 004H

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

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

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

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1250	OTHER : Fresh water/gel	8.4	9							
1250	3550	OTHER : Fresh water/cut brine	8.3	9.2							
3550	8940	OTHER : Cut brine	8.6	9.2							

Section 6 - Test, Logging, Coring

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

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

No electric logs are planned at this time.

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

MUD LOG/GEOLOGICAL LITHOLOGY LOG,

Coring operation description for the well:

No core or drill stem test is planned.

Operator Name: LONGFELLOW ENERGY LP

Well Name: OZZY FEDERAL COM 18D

Well Number: 004H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 1750

Anticipated Surface Pressure: 854

Anticipated Bottom Hole Temperature(F): 110

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

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Ozzy_18D_4H_H2S_Plan_20200918061619.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Ozzy_18D_4H_Horizontal_Plan_20200918061637.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Ozzy_18D_4H_Drill_Plan_20200918061920.pdf

CoFlex_Certs_20200918061929.pdf

Ozzy_18D_4H_Speedhead_Specs_20200918061936.pdf

Other Variance attachment:



Longfellow Energy
Ozzy Fed Com 18D 004H
 Eddy Co NM
 Northing: 665429.41
 Easting: 605783.80
 Plan 1 Alt



Azimuths to Grid North
 True North: -0.11°
 Magnetic North: 7.04°
 Magnetic Field
 Strength: 47867.4nT
 Dip Angle: 60.47°
 Date: 8/26/2020
 Model: HDGM_FILE

WELL DETAILS Ozzy Fed Com 18D 004H						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	665429.41	605783.80	32.829116	-104.123524	3698.90

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

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.00	0.00	0.00	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	
934.44	12.69	137.47	929.27	-51.56	47.30	2.00	137.47	52.00	
3690.12	12.69	137.47	3617.65	-497.61	456.48	0.00	0.00	501.84	
4123.19	60.00	89.89	3981.03	-534.87	692.57	12.00	-54.26	740.40	
4213.19	60.00	89.89	4006.03	-534.72	770.51	0.00	0.00	817.97	
4463.19	90.00	89.89	4070.00	-534.24	1009.24	12.00	0.00	1055.57	
8859.62	90.00	89.89	4070.00	-525.50	5405.67	0.00	0.00	5431.14	LTP Ozzy 18D 4H
8939.63	90.00	89.89	4070.00	-525.34	5485.67	0.00	0.00	5510.76	BH Ozzy 18D 4H

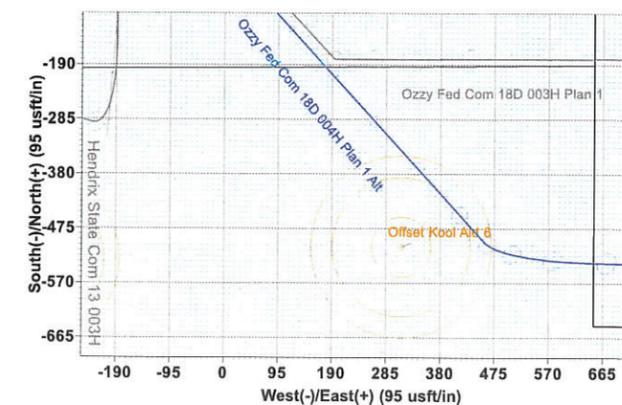
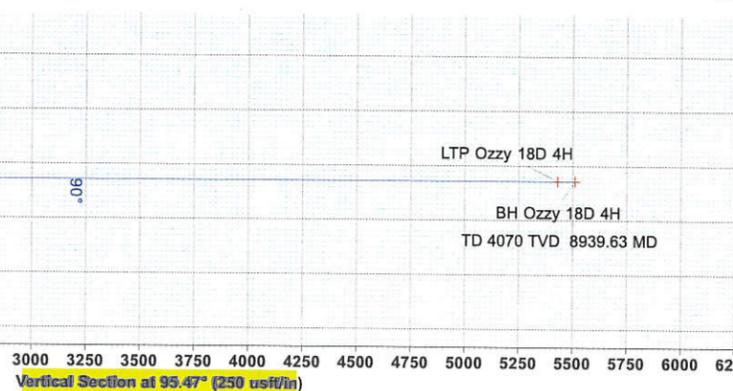
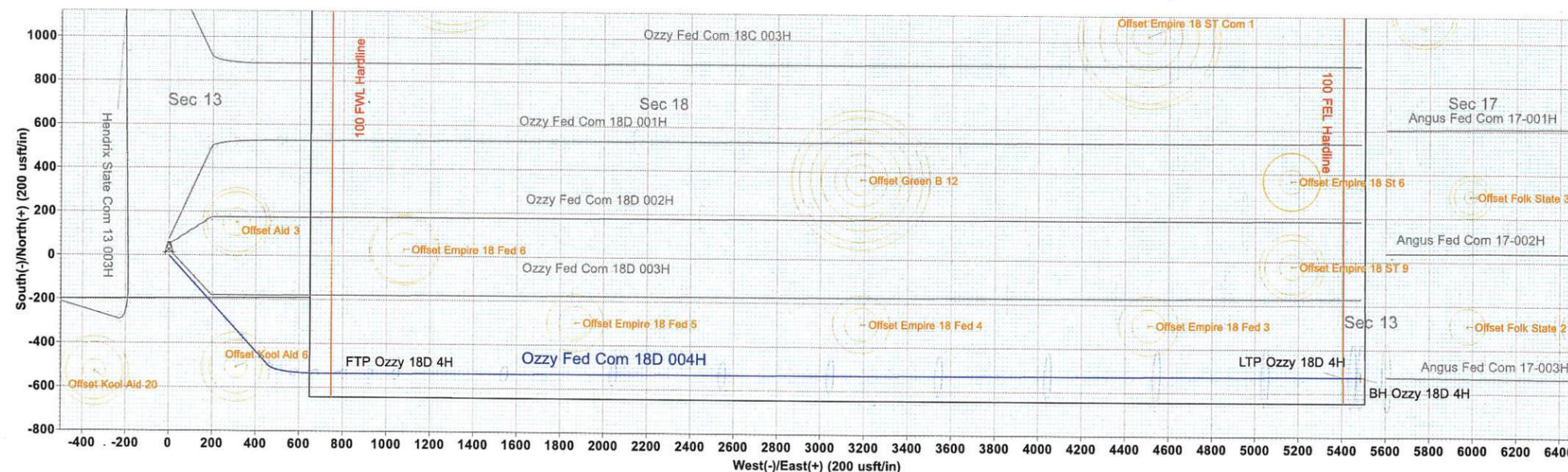
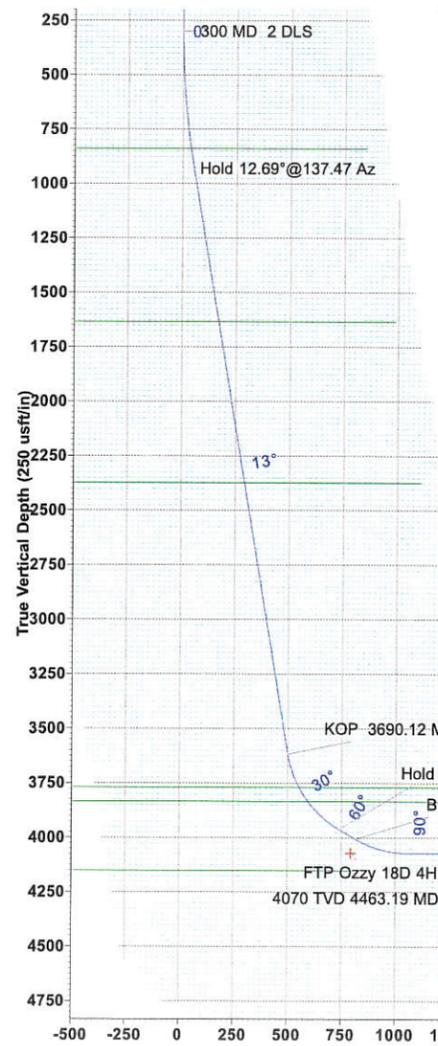
SITE DETAILS: Sec 13/18-17S-29E
 Site Centre Northing: 665375.40
 Easting: 605413.55
 Positional Uncertainty: 0.00
 Convergence: 0.11
 Local North: Grid

DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	
LTP Ozzy 18D 4H	4070.00	-525.50	5405.67	664903.91	611189.47	
BH Ozzy 18D 4H	4070.00	-525.35	5485.67	664904.06	611269.47	
FTP Ozzy 18D 4H	4070.00	-534.28	749.24	664895.13	606533.04	

WELLBORE DETAILS: OH Wellbore
 Section 13/18-17S-29E
 SHL: 195 FSL 650 FEL (Sec 13)
 BH: 120 FSL 20 FEL (Sec 18)

- LEGEND**
- OH Wellbore 18 ST 1, OH, As Drilled VS
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 - OH Wellbore 18 ST 88, OH, As Drilled VS
 - OH Wellbore 18 ST 89, OH, As Drilled VS
 - OH Wellbore 18 ST 90, OH, As Drilled VS
 - OH Wellbore 18 ST 91, OH, As Drilled VS
 - OH Wellbore 18 ST 92, OH, As Drilled VS
 - OH Wellbore 18 ST 93, OH, As Drilled VS
 - OH Wellbore 18 ST 94, OH, As Drilled VS
 - OH Wellbore 18 ST 95, OH, As Drilled VS
 - OH Wellbore 18 ST 96, OH, As Drilled VS
 - OH Wellbore 18 ST 97, OH, As Drilled VS
 - OH Wellbore 18 ST 98, OH, As Drilled VS
 - OH Wellbore 18 ST 99, OH, As Drilled VS
 - OH Wellbore 18 ST 100, OH, As Drilled VS

3698.9 GL 12 KB @ 3710.90usft
 Gr: 3698.90





Scientific Drilling, Intl

Planning Report

Database:	Midland	Local Co-ordinate Reference:	Well Ozzy Fed Com 18D 004H
Company:	Longfellow Energy	TVD Reference:	3698.9 GL 12 KB @ 3710.90usft
Project:	Eddy Co NM	MD Reference:	3698.9 GL 12 KB @ 3710.90usft
Site:	Sec 13/18-17S-29E	North Reference:	Grid
Well:	Ozzy Fed Com 18D 004H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH Wellbore		
Design:	Plan 1 Alt		

Project	Eddy Co NM, Eddy County, New Mexico		
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 13/18-17S-29E				
Site Position:		Northing:	665,375.41 usft	Latitude:	32.828970
From:	Lat/Long	Easting:	605,413.56 usft	Longitude:	-104.124730
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.11 °

Well	Ozzy Fed Com 18D 004H					
Well Position	+N/-S	54.01 usft	Northing:	665,429.41 usft	Latitude:	32.829117
	+E/-W	370.25 usft	Easting:	605,783.80 usft	Longitude:	-104.123525
Position Uncertainty		0.00 usft	Wellhead Elevation:	3,710.90 usft	Ground Level:	3,698.90 usft

Wellbore	OH Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	8/26/2020	7.15	60.47	47,867.40000000

Design	Plan 1 Alt			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	95.47

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	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	
934.44	12.69	137.47	929.27	-51.56	47.30	2.00	2.00	0.00	137.47	
3,690.12	12.69	137.47	3,617.65	-497.61	456.48	0.00	0.00	0.00	0.00	
4,123.19	60.00	89.89	3,961.03	-534.87	692.57	12.00	10.92	-10.99	-54.26	
4,213.19	60.00	89.89	4,006.03	-534.72	770.51	0.00	0.00	0.00	0.00	
4,463.19	90.00	89.89	4,070.00	-534.24	1,009.24	12.00	12.00	0.00	0.00	
8,859.63	90.00	89.89	4,070.00	-525.50	5,405.67	0.00	0.00	0.00	0.00	LTP Ozzy 18D 4H
8,939.63	90.00	89.89	4,070.00	-525.34	5,485.67	0.00	0.00	0.00	0.00	BH Ozzy 18D 4H



Scientific Drilling, Intl Planning Report

Database:	Midland	Local Co-ordinate Reference:	Well Ozzy Fed Com 18D 004H
Company:	Longfellow Energy	TVD Reference:	3698.9 GL 12 KB @ 3710.90usft
Project:	Eddy Co NM	MD Reference:	3698.9 GL 12 KB @ 3710.90usft
Site:	Sec 13/18-17S-29E	North Reference:	Grid
Well:	Ozzy Fed Com 18D 004H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH Wellbore		
Design:	Plan 1 Alt		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	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	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 MD 2 DLS										
400.00	2.00	137.47	399.98	-1.29	1.18	1.30	2.00	2.00	2.00	0.00
500.00	4.00	137.47	499.84	-5.14	4.72	5.19	2.00	2.00	2.00	0.00
600.00	6.00	137.47	599.45	-11.56	10.61	11.66	2.00	2.00	2.00	0.00
700.00	8.00	137.47	698.70	-20.54	18.85	20.72	2.00	2.00	2.00	0.00
800.00	10.00	137.47	797.47	-32.07	29.42	32.34	2.00	2.00	2.00	0.00
841.21	10.82	137.47	838.00	-37.56	34.46	37.88	2.00	2.00	2.00	0.00
Yates										
900.00	12.00	137.47	895.62	-46.13	42.32	46.52	2.00	2.00	2.00	0.00
934.44	12.69	137.47	929.27	-51.56	47.30	52.00	2.00	2.00	2.00	0.00
Hold 12.69°@137.47 Az										
1,000.00	12.69	137.47	993.23	-62.17	57.03	62.70	0.00	0.00	0.00	0.00
1,100.00	12.69	137.47	1,090.78	-78.36	71.88	79.02	0.00	0.00	0.00	0.00
1,200.00	12.69	137.47	1,188.34	-94.54	86.73	95.35	0.00	0.00	0.00	0.00
1,300.00	12.69	137.47	1,285.90	-110.73	101.58	111.67	0.00	0.00	0.00	0.00
1,400.00	12.69	137.47	1,383.46	-126.92	116.43	127.99	0.00	0.00	0.00	0.00
1,500.00	12.69	137.47	1,481.01	-143.10	131.27	144.32	0.00	0.00	0.00	0.00
1,600.00	12.69	137.47	1,578.57	-159.29	146.12	160.64	0.00	0.00	0.00	0.00
1,656.82	12.69	137.47	1,634.00	-168.49	154.56	169.92	0.00	0.00	0.00	0.00
Queen										
1,700.00	12.69	137.47	1,676.13	-175.48	160.97	176.97	0.00	0.00	0.00	0.00
1,800.00	12.69	137.47	1,773.69	-191.66	175.82	193.29	0.00	0.00	0.00	0.00
1,900.00	12.69	137.47	1,871.25	-207.85	190.67	209.62	0.00	0.00	0.00	0.00
2,000.00	12.69	137.47	1,968.80	-224.04	205.52	225.94	0.00	0.00	0.00	0.00
2,100.00	12.69	137.47	2,066.36	-240.22	220.37	242.26	0.00	0.00	0.00	0.00
2,200.00	12.69	137.47	2,163.92	-256.41	235.22	258.59	0.00	0.00	0.00	0.00
2,300.00	12.69	137.47	2,261.48	-272.60	250.06	274.91	0.00	0.00	0.00	0.00
2,400.00	12.69	137.47	2,359.03	-288.78	264.91	291.24	0.00	0.00	0.00	0.00
2,412.27	12.69	137.47	2,371.00	-290.77	266.73	293.24	0.00	0.00	0.00	0.00
San Andres										
2,500.00	12.69	137.47	2,456.59	-304.97	279.76	307.56	0.00	0.00	0.00	0.00
2,600.00	12.69	137.47	2,554.15	-321.15	294.61	323.88	0.00	0.00	0.00	0.00
2,700.00	12.69	137.47	2,651.71	-337.34	309.46	340.21	0.00	0.00	0.00	0.00
2,800.00	12.69	137.47	2,749.26	-353.53	324.31	356.53	0.00	0.00	0.00	0.00
2,900.00	12.69	137.47	2,846.82	-369.71	339.16	372.86	0.00	0.00	0.00	0.00
3,000.00	12.69	137.47	2,944.38	-385.90	354.00	389.18	0.00	0.00	0.00	0.00
3,100.00	12.69	137.47	3,041.94	-402.09	368.85	405.51	0.00	0.00	0.00	0.00
3,200.00	12.69	137.47	3,139.50	-418.27	383.70	421.83	0.00	0.00	0.00	0.00
3,300.00	12.69	137.47	3,237.05	-434.46	398.55	438.15	0.00	0.00	0.00	0.00
3,400.00	12.69	137.47	3,334.61	-450.65	413.40	454.48	0.00	0.00	0.00	0.00
3,500.00	12.69	137.47	3,432.17	-466.83	428.25	470.80	0.00	0.00	0.00	0.00
3,600.00	12.69	137.47	3,529.73	-483.02	443.10	487.13	0.00	0.00	0.00	0.00
3,690.12	12.69	137.47	3,617.65	-497.61	456.48	501.84	0.00	0.00	0.00	0.00
KOP 3690.12 MD 12 DLS										
3,700.00	13.42	133.32	3,627.27	-499.19	458.05	503.55	12.00	7.35	-42.02	
3,800.00	22.99	109.17	3,722.28	-513.62	485.03	531.78	12.00	9.57	-24.15	
3,851.91	28.66	103.24	3,769.00	-519.80	506.74	553.99	12.00	10.93	-11.42	
Glorietta										
3,900.00	34.08	99.41	3,810.05	-524.65	531.28	578.88	12.00	11.27	-7.95	
3,929.53	37.46	97.56	3,834.00	-527.19	548.35	596.11	12.00	11.43	-6.28	
Paddock										



Scientific Drilling, Intl Planning Report

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Company:	Longfellow Energy	TVD Reference:	3698.9 GL 12 KB @ 3710.90usft
Project:	Eddy Co NM	MD Reference:	3698.9 GL 12 KB @ 3710.90usft
Site:	Sec 13/18-17S-29E	North Reference:	Grid
Well:	Ozzy Fed Com 18D 004H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH Wellbore		
Design:	Plan 1 Alt		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,000.00	45.60	94.10	3,886.72	-531.81	594.79	642.78	12.00	11.55	-4.91	
4,100.00	57.28	90.57	3,948.96	-534.80	672.77	720.68	12.00	11.68	-3.54	
4,123.19	60.00	89.89	3,961.03	-534.87	692.57	740.40	12.00	11.74	-2.94	
Hold 90 ft										
4,200.00	60.00	89.89	3,999.44	-534.74	759.08	806.60	0.00	0.00	0.00	
4,213.19	60.00	89.89	4,006.03	-534.72	770.51	817.97	0.00	0.00	0.00	
Build 12 DLS										
4,220.72	60.90	89.89	4,009.74	-534.70	777.06	824.49	12.00	12.00	0.00	
FTP Ozzy 18D 4H										
4,300.00	70.42	89.89	4,042.38	-534.56	849.21	896.30	12.00	12.00	0.00	
4,400.00	82.42	89.89	4,065.82	-534.36	946.23	992.87	12.00	12.00	0.00	
4,463.19	90.00	89.89	4,070.00	-534.24	1,009.24	1,055.57	12.00	12.00	0.00	
4070 TVD 4463.19 MD										
4,500.00	90.00	89.89	4,070.00	-534.16	1,046.05	1,092.21	0.00	0.00	0.00	
4,600.00	90.00	89.89	4,070.00	-533.96	1,146.05	1,191.73	0.00	0.00	0.00	
4,700.00	90.00	89.89	4,070.00	-533.76	1,246.05	1,291.26	0.00	0.00	0.00	
4,800.00	90.00	89.89	4,070.00	-533.56	1,346.05	1,390.78	0.00	0.00	0.00	
4,900.00	90.00	89.89	4,070.00	-533.36	1,446.05	1,490.31	0.00	0.00	0.00	
5,000.00	90.00	89.89	4,070.00	-533.16	1,546.05	1,589.83	0.00	0.00	0.00	
5,100.00	90.00	89.89	4,070.00	-532.96	1,646.05	1,689.36	0.00	0.00	0.00	
5,200.00	90.00	89.89	4,070.00	-532.76	1,746.05	1,788.88	0.00	0.00	0.00	
5,300.00	90.00	89.89	4,070.00	-532.56	1,846.05	1,888.41	0.00	0.00	0.00	
5,400.00	90.00	89.89	4,070.00	-532.36	1,946.05	1,987.93	0.00	0.00	0.00	
5,500.00	90.00	89.89	4,070.00	-532.16	2,046.05	2,087.46	0.00	0.00	0.00	
5,600.00	90.00	89.89	4,070.00	-531.95	2,146.05	2,186.98	0.00	0.00	0.00	
5,700.00	90.00	89.89	4,070.00	-531.75	2,246.05	2,286.51	0.00	0.00	0.00	
5,800.00	90.00	89.89	4,070.00	-531.55	2,346.05	2,386.04	0.00	0.00	0.00	
5,900.00	90.00	89.89	4,070.00	-531.35	2,446.05	2,485.56	0.00	0.00	0.00	
6,000.00	90.00	89.89	4,070.00	-531.15	2,546.05	2,585.09	0.00	0.00	0.00	
6,100.00	90.00	89.89	4,070.00	-530.95	2,646.05	2,684.61	0.00	0.00	0.00	
6,200.00	90.00	89.89	4,070.00	-530.75	2,746.05	2,784.14	0.00	0.00	0.00	
6,300.00	90.00	89.89	4,070.00	-530.55	2,846.05	2,883.66	0.00	0.00	0.00	
6,400.00	90.00	89.89	4,070.00	-530.35	2,946.05	2,983.19	0.00	0.00	0.00	
6,500.00	90.00	89.89	4,070.00	-530.15	3,046.05	3,082.71	0.00	0.00	0.00	
6,600.00	90.00	89.89	4,070.00	-529.95	3,146.04	3,182.24	0.00	0.00	0.00	
6,700.00	90.00	89.89	4,070.00	-529.75	3,246.04	3,281.76	0.00	0.00	0.00	
6,800.00	90.00	89.89	4,070.00	-529.55	3,346.04	3,381.29	0.00	0.00	0.00	
6,900.00	90.00	89.89	4,070.00	-529.35	3,446.04	3,480.81	0.00	0.00	0.00	
7,000.00	90.00	89.89	4,070.00	-529.14	3,546.04	3,580.34	0.00	0.00	0.00	
7,100.00	90.00	89.89	4,070.00	-528.94	3,646.04	3,679.86	0.00	0.00	0.00	
7,200.00	90.00	89.89	4,070.00	-528.74	3,746.04	3,779.39	0.00	0.00	0.00	
7,300.00	90.00	89.89	4,070.00	-528.54	3,846.04	3,878.91	0.00	0.00	0.00	
7,400.00	90.00	89.89	4,070.00	-528.34	3,946.04	3,978.44	0.00	0.00	0.00	
7,500.00	90.00	89.89	4,070.00	-528.14	4,046.04	4,077.96	0.00	0.00	0.00	
7,600.00	90.00	89.89	4,070.00	-527.94	4,146.04	4,177.49	0.00	0.00	0.00	
7,700.00	90.00	89.89	4,070.00	-527.74	4,246.04	4,277.01	0.00	0.00	0.00	
7,800.00	90.00	89.89	4,070.00	-527.54	4,346.04	4,376.54	0.00	0.00	0.00	
7,900.00	90.00	89.89	4,070.00	-527.34	4,446.04	4,476.07	0.00	0.00	0.00	
8,000.00	90.00	89.89	4,070.00	-527.14	4,546.04	4,575.59	0.00	0.00	0.00	
8,100.00	90.00	89.89	4,070.00	-526.94	4,646.04	4,675.12	0.00	0.00	0.00	
8,200.00	90.00	89.89	4,070.00	-526.74	4,746.04	4,774.64	0.00	0.00	0.00	
8,300.00	90.00	89.89	4,070.00	-526.54	4,846.04	4,874.17	0.00	0.00	0.00	
8,400.00	90.00	89.89	4,070.00	-526.33	4,946.04	4,973.69	0.00	0.00	0.00	
8,500.00	90.00	89.89	4,070.00	-526.13	5,046.04	5,073.22	0.00	0.00	0.00	



Scientific Drilling, Intl Planning Report

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Company:	Longfellow Energy	TVD Reference:	3698.9 GL 12 KB @ 3710.90usft
Project:	Eddy Co NM	MD Reference:	3698.9 GL 12 KB @ 3710.90usft
Site:	Sec 13/18-17S-29E	North Reference:	Grid
Well:	Ozzy Fed Com 18D 004H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH Wellbore		
Design:	Plan 1 Alt		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,600.00	90.00	89.89	4,070.00	-525.93	5,146.04	5,172.74	0.00	0.00	0.00
8,700.00	90.00	89.89	4,070.00	-525.73	5,246.04	5,272.27	0.00	0.00	0.00
8,800.00	90.00	89.89	4,070.00	-525.53	5,346.04	5,371.79	0.00	0.00	0.00
8,859.63	90.00	89.89	4,070.00	-525.50	5,405.67	5,431.14	0.00	0.00	0.00
LTP Ozzy 18D 4H									
8,900.00	90.00	89.89	4,070.00	-525.42	5,446.04	5,471.33	0.00	0.00	0.00
8,939.63	90.00	89.89	4,070.00	-525.34	5,485.67	5,510.76	0.00	0.00	0.00
TD 4070 TVD 8939.63 MD - BH Ozzy 18D 4H									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BH Ozzy 18D 4H	0.00	0.00	4,070.00	-525.35	5,485.67	664,904.07	611,269.47	32.827641	-104.105669
- hit/miss target									
- plan misses target center by 0.01usft at 8939.62usft MD (4070.00 TVD, -525.34 N, 5485.67 E)									
- Point									
LTP Ozzy 18D 4H	0.00	0.00	4,070.00	-525.50	5,405.67	664,903.92	611,189.47	32.827641	-104.105930
- plan hits target center									
- Point									
FTP Ozzy 18D 4H	0.00	0.00	4,070.00	-534.28	749.24	664,895.14	606,533.04	32.827644	-104.121089
- plan misses target center by 66.37usft at 4220.72usft MD (4009.74 TVD, -534.70 N, 777.06 E)									
- Point									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
841.21	838.00	Yates		0.00		
1,656.82	1,634.00	Queen		0.00		
2,412.27	2,371.00	San Andres		0.00		
3,851.91	3,769.00	Glorietta		0.00		
3,929.53	3,834.00	Paddock		0.00		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
300.00	300.00	0.00	0.00	300 MD 2 DLS
934.44	929.27	-51.56	47.30	Hold 12.69°@137.47 Az
3,690.12	3,617.65	-497.61	456.48	KOP 3690.12 MD 12 DLS
4,123.19	3,961.03	-534.87	692.57	Hold 90 ft
4,213.19	4,006.03	-534.72	770.51	Build 12 DLS
4,463.19	4,070.00	-534.24	1,009.24	4070 TVD 4463.19 MD
8,939.63	4,070.00	-525.34	5,485.67	TD 4070 TVD 8939.63 MD

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	LONGFELLOW ENERGY LP
LEASE NO.:	NMNM014847
LOCATION:	Section 13, T.17 S., R.28 E., NMPM
COUNTY:	Eddy County, New Mexico

WELL NAME & NO.:	OZZY FEDERAL COM 18D 001H
SURFACE HOLE FOOTAGE:	270'/S & 650'/E
BOTTOM HOLE FOOTAGE:	1185'/S & 20'/E

WELL NAME & NO.:	OZZY FEDERAL COM 18D 002H
SURFACE HOLE FOOTAGE:	245'/S & 650'/E
BOTTOM HOLE FOOTAGE:	830'/S & 20'/E

WELL NAME & NO.:	OZZY FEDERAL COM 18D 003H
SURFACE HOLE FOOTAGE:	220'/S & 650'/E
BOTTOM HOLE FOOTAGE:	475'/S & 20'/E

WELL NAME & NO.:	OZZY FEDERAL COM 18D 004H
SURFACE HOLE FOOTAGE:	195'/S & 650'/E
BOTTOM HOLE FOOTAGE:	120'/S & 20'/E

COA

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input type="radio"/> Low	<input checked="" type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input type="radio"/> Multibowl	<input checked="" type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into a **Unknown** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

Casing Design:

1. The **9-5/8** inch surface casing shall be set at approximately **325** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - 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 will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **7 X 5-1/2** inch production casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

- ❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

- 2.

Option 1:

- a. 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.

- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **3000 (3M)** psi.

Option 2:

1. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

GENERAL 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)

Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
393-3612

1. 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.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. 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 are located, this does not include the dog house or stairway area.
3. 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.

A. CASING

1. 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.
2. Wait on cement (WOC) for Potash Areas: 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 for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. 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. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. 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.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. 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.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. 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 RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. 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. In potash areas, 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. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. 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.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. 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.
- g. 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.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. 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.

NMK03082021



H₂S Drilling Operations Plan

- a. All personnel will be trained in H₂S working conditions as required by Onshore Order 6 before drilling out of the surface casing.
- b. Two briefing areas will be established. Each will be $\geq 150'$ from the wellhead, perpendicular from one another, and easily entered and exited. See H₂S page 5 for more details.
- c. H₂S Safety Equipment/Systems:
 - i. Well Control Equipment
 - Flare line will be $\geq 150'$ from the wellhead and ignited by a pilot light.
 - Beware of SO₂ created by flaring.
 - Choke manifold will include a remotely operated choke.
 - Mud gas separator
 - ii. Protective Equipment for Essential Personnel
 - Every person on site will be required to wear a personal H₂S and SO₂ monitor at all times while on site. Monitors will not be worn on hard hats. Monitors will be worn on the front of the chest – not on the belt.
 - One self-contained breathing apparatus (SCBA) 30-minute rescue pack will be at each briefing area. Two 30-minute SCBA packs will be stored in the safety trailer.
 - Four work/escape packs will be on the rig floor. Each pack will have a long enough hose to allow unimpaired work activity.
 - Four emergency escape packs will be in the doghouse for emergency evacuation.
 - Hand signals will be used when wearing protective breathing apparatus.
 - Stokes litter or stretcher
 - Two full OSHA compliant body harnesses
 - A 100' long x 5/8" OSHA compliant rope
 - One 20-pound ABC fire extinguisher
 - iii. H₂S Detection & Monitoring Equipment
 - Every person on site will be required to wear a personal H₂S and SO₂ monitor at all times while on site. Monitors will not be worn on hard hats. Monitors will be worn on the front of the chest.



- A stationary detector with 3 sensors will be in the doghouse.
 - Sensors will be installed on the rig floor, bell nipple, and at the end of the flow line or where drilling fluids are discharged.
 - Visual alarm will be triggered at 10 ppm.
 - Audible alarm will be triggered at 10 ppm.
 - Calibration will occur at least every 30 days. Gas sample tubes will be kept in the safety trailer.
- iv. Visual Warning System
- Color-coded H₂S condition sign will be set at the entrance to the pad.
 - Color-coded condition flag will be installed to indicate current H₂S conditions.
 - Two wind socks will be installed that will be visible from all sides.
- v. Mud Program
- A water based mud with a pH of ≥ 10 will be maintained to control corrosion, H₂S gas returns to the surface, and minimize sulfide stress cracking and embrittlement.
 - Drilling mud containing H₂S gas will be degassed at an optimum location for the rig configuration.
 - This gas will be piped into the flare system.
 - Enough mud additives will be on location to scavenge and/or neutralize H₂S where formation pressures are unknown.
- vi. Metallurgy
- All equipment that has the potential to be exposed to H₂S will be suitable for H₂S service.
 - Equipment that will meet the metallurgical standards include the drill string, casing, wellhead, BOP assembly, casing head & spool, rotating head, kill lines, choke, choke manifold & lines, valves, mud-gas separators, DST tools, test units, tubing, flanges, and other related equipment (elastomer packings and seals).
- vii. Communication from well site
- Cell phones and/or two-way radios will be used to communicate from the well site.
- d. A remote-controlled choke, mud-gas separator, and a rotating head will be installed before drilling or testing any formation expected to contain H₂S.



Air Evacuation

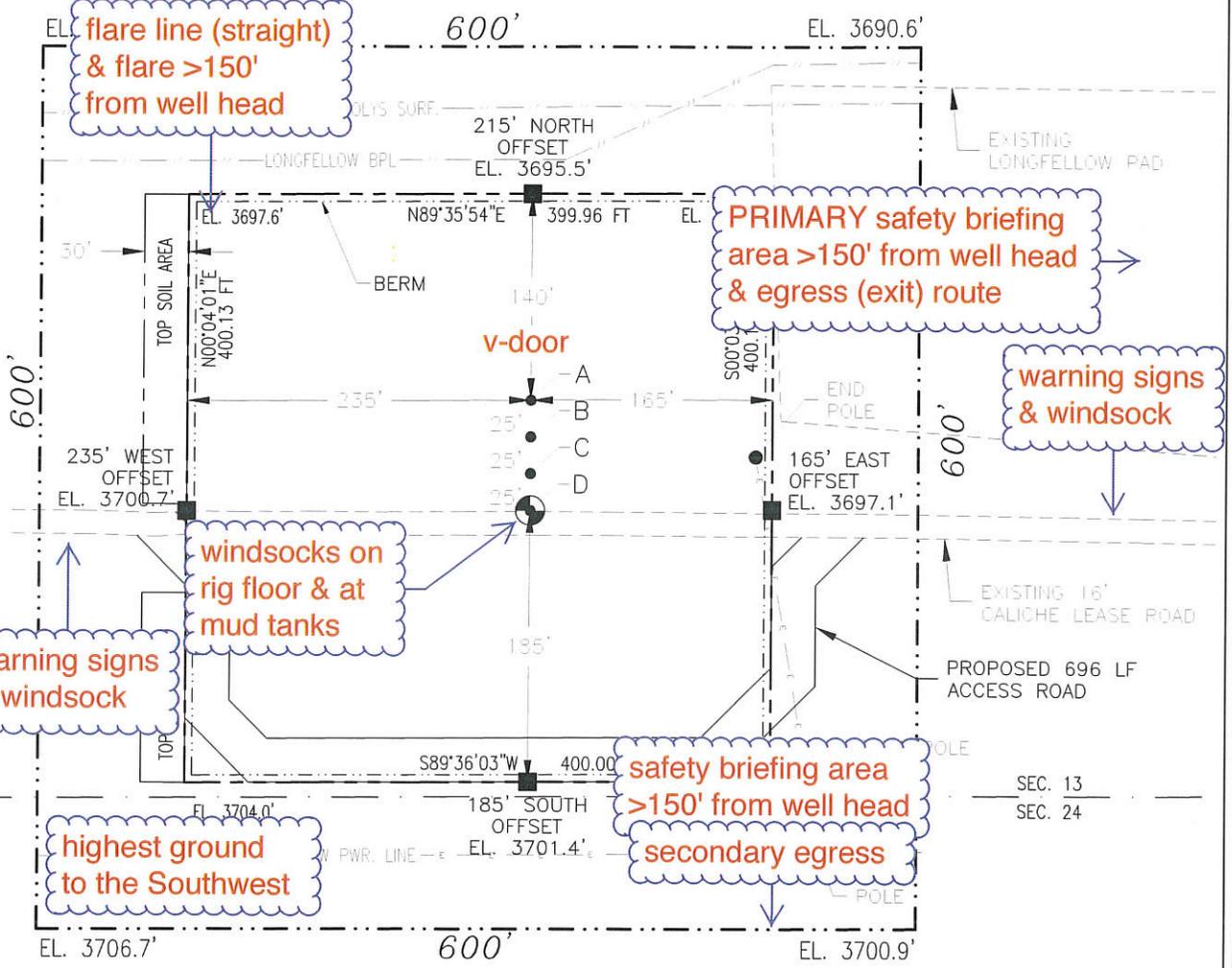
Med Flight Air Ambulance (Albuquerque)	(800) 842-4431
Lifeguard (Albuquerque)	(888) 866-7256

Veterinarian

Artesia Animal Clinic	(575) 748=2042
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SECTION 13, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO SITE MAP

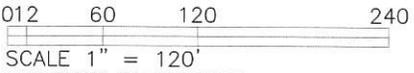
NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83) LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. VERTICAL DATUM NAVD88.



OZZY FEDERAL COM 18D 004H
 ELEV. = 3698.9'
 3.674± ACRES
 LAT. = 32.8291164°N (NAD83)
 LONG. = 104.1235243°W
 NMSP EAST (FT)
 N = 665429.41
 E = 605783.80

- A - OZZY FEDERAL COM 18D 001H
- B - OZZY FEDERAL COM 18D 002H
- C - OZZY FEDERAL COM 18D 003H
- D - OZZY FEDERAL COM 18D 004H

prevailing winds blow from South



DIRECTIONS TO LOCATION
 FROM THE INTERSECTION OF STATE HIGHWAY 82 AND CR. 211 (OLD LOCO ROAD) GO WEST ON STATE HIGHWAY 82 1.1 MILES, TURN RIGHT ON CALICHE ROAD GO NORTH 0.3 OF A MILE, TURN RIGHT GO NORTH-NORTHEAST 0.31 OF A MILE, TURN LEFT GO NORTHWEST 0.71 OF A MILE, TURN RIGHT GO NORTH 0.34 OF A MILE TO CALICHE ROAD ON THE LEFT, GO WEST 466' TO EAST SIDE OF PROPOSED PAD FOR THIS LOCATION.

LONGFELLOW ENERGY, LP
OZZY FEDERAL COM 18D 004H
 LOCATED 195 FT. FROM THE SOUTH LINE
 AND 650 FT. FROM THE EAST LINE OF
 SECTION 13, TOWNSHIP 17 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

I, FILIMON F. JARAMILLO, A NEW MEXICO LICENSED PROFESSIONAL SURVEYOR CERTIFY THAT I DESIGNED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY WAS CONDUCTED TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THAT THE SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

FILIMON F. JARAMILLO, 2797
MADRON SURVEYING, INC. 201 SOUTH CAROL (505) 234-3341
 CARLSBAD, NEW MEXICO

AUGUST 11, 2020
 SURVEY NO. 8396

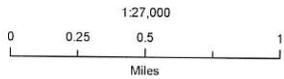
Longfellow Energy, L.P.

Ozzy Federal Com
Pad 18D
H₂S Contingency Plan:
Radius Map

Section 13, Township 17S, Range 28E
Eddy County, New Mexico



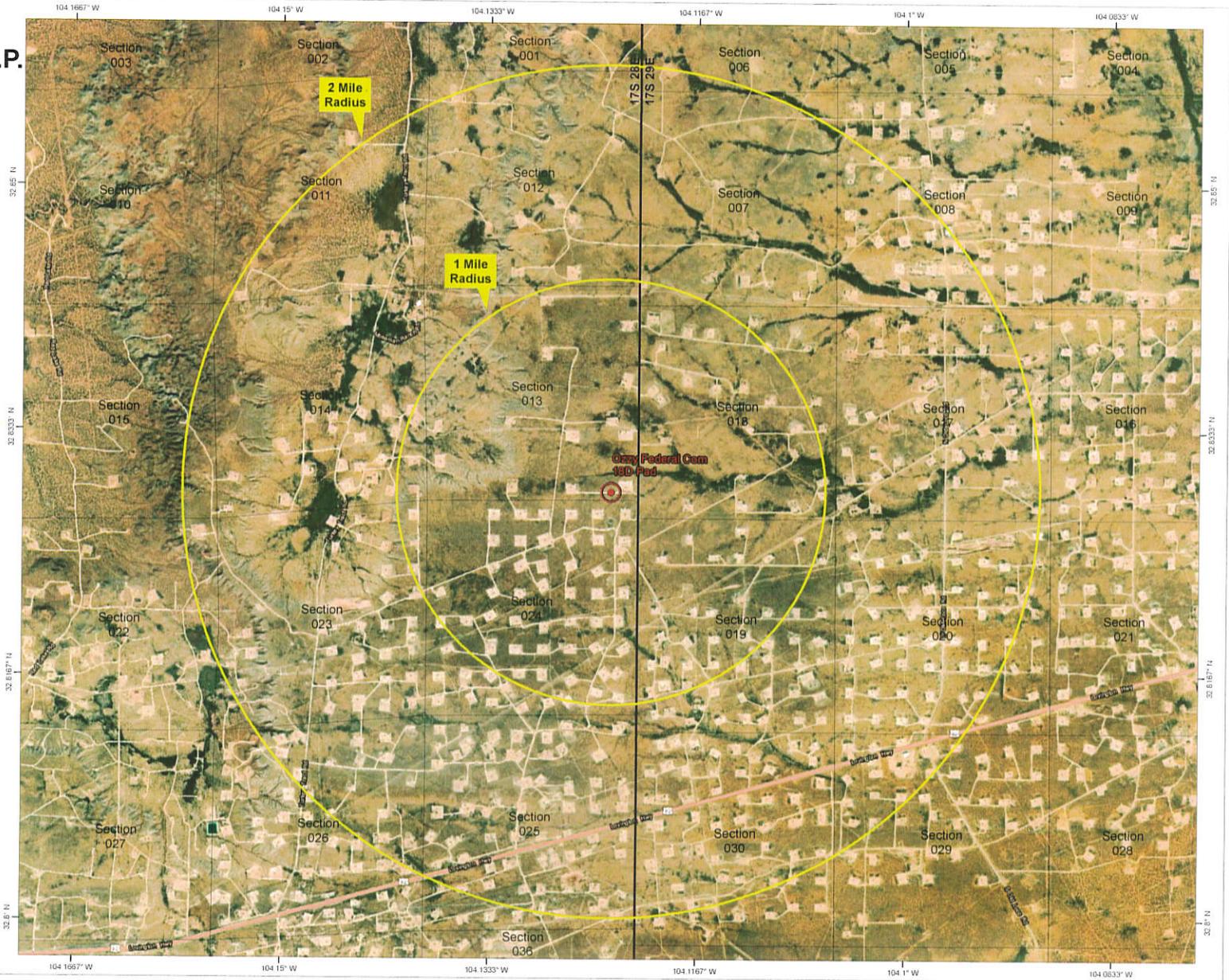
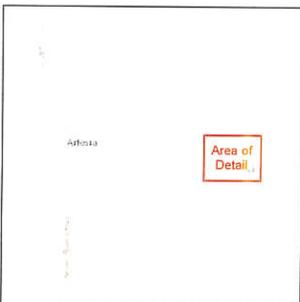
Well Pad Location

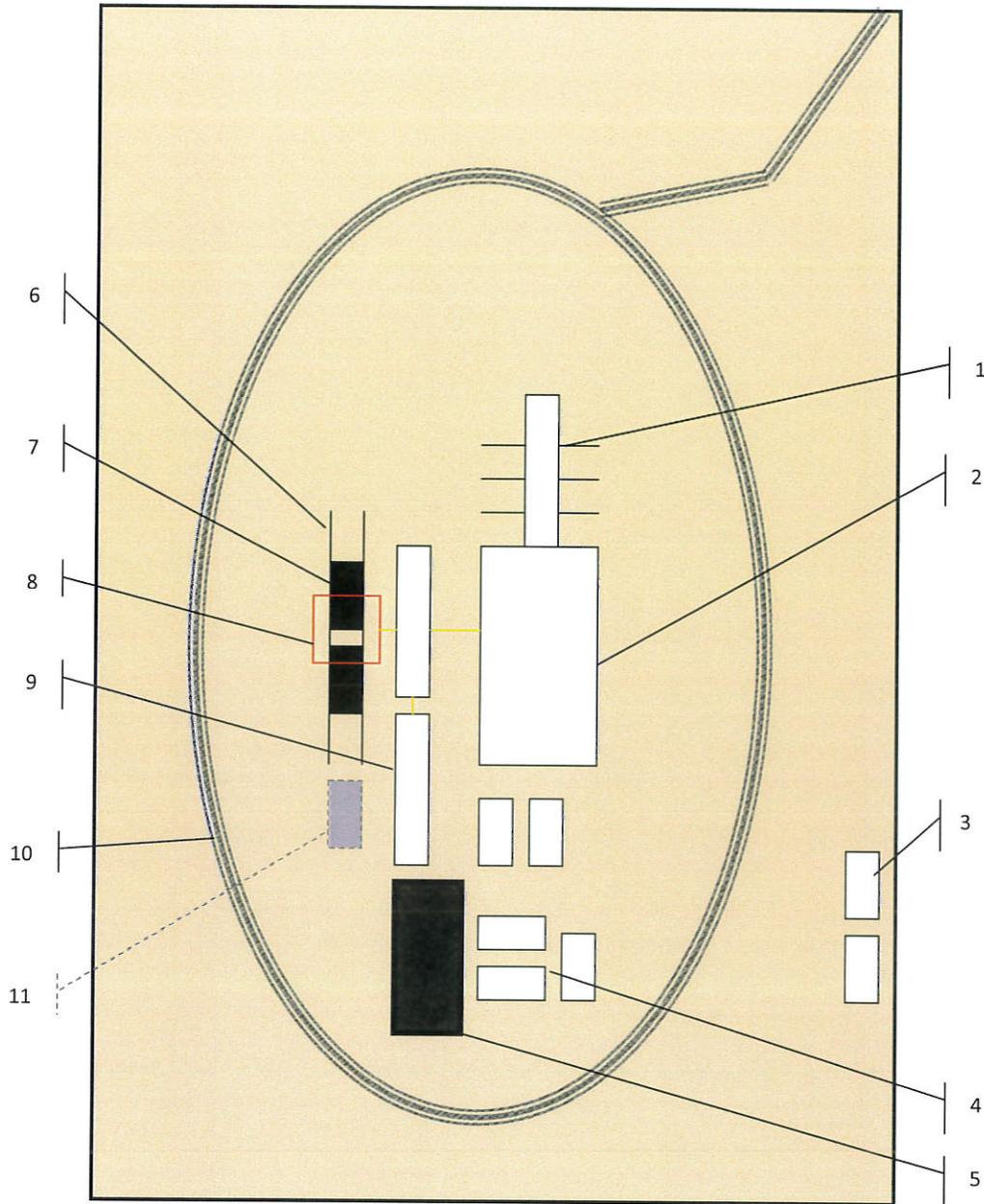


NAD 1983 New Mexico State Plane East
FIPS 3001 Feet



Prepared by Permits West, Inc., August 21, 2020
for Longfellow Energy, L.P.





Schematic Closed Loop Drilling Rig*

- 1. Pipe Rack
- 2. Drill Rig
- 3. House Trailers/ Offices
- 4. Generator/Fuel/Storage
- 5. Overflow-Frac Tank
- 6. Skids
- 7. Roll Offs
- 8. Hopper or Centrifuge
- 9. Mud Tanks
- 10. Loop Drive
- 11. Generator (only for use with centrifuge)

*Not drawn to scale: Closed loop system requires at least 30 feet beyond mud tanks. Ideally 60 feet would be available

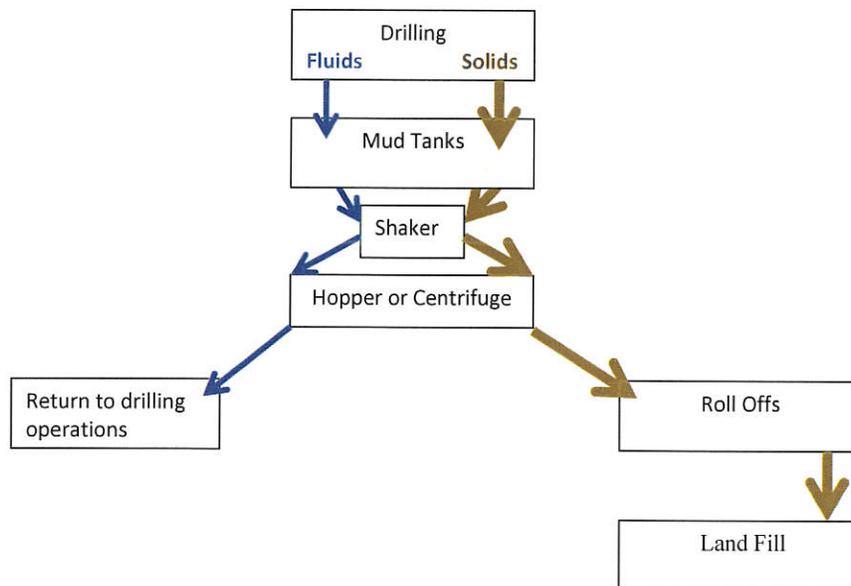


Above: Centrifugal Closed Loop System



Closed Loop Drilling System: Mud tanks to right (1)
Hopper in air to settle out solids (2)
Water return pipe (3)
Shaker between hopper and mud tanks (4)
Roll offs on skids (5)

Flow Chart for Drilling Fluids and Solids



Photos Courtesy of Gandy Corporation Oil Field Service

District I
 1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720

District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720

District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

COMMENTS

Action 27289

COMMENTS

Operator: LONGFELLOW ENERGY, LP Suite 800 Dallas, TX75225	8115 Preston Road	OGRID: 372210	Action Number: 27289	Action Type: FORM 3160-3
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Created By	Comment	Comment Date
kpickford	KP GEO Review 5/11/2021	05/11/2021

District I
 1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720
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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 27289

CONDITIONS OF APPROVAL

Operator: LONGFELLOW ENERGY, LP Suite 800 Dallas, TX75225	8115 Preston Road	OGRID: 372210	Action Number: 27289	Action Type: FORM 3160-3
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OCD Reviewer	Condition
kpickford	Notify OCD 24 hours prior to casing & cement
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104
kpickford	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system